

Wednesday, January 27, 2010

**LOS ALAMOS**  
**NATIONAL LABORATORY**

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.  
2040 Savage Rd  
Charleston, SC 29407

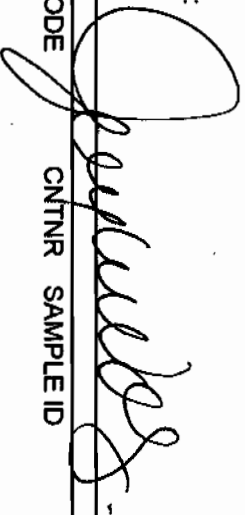
Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 1/27/2010  
TURNAROUND/REPORT DUE: 2/26/2010  
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background  
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



These Samples are on:

LANL Request Number: 10-1434  
Per Agreement Number: 126310011  
Project Cost Code: MR3A05529E00

Page 1 of 4  
REQUEST NUMBER: 10-1434

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
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EPA.901.1	1	1	RE15-10-7883	R	1/25/2010	
	1	1	RE15-10-7884	R	1/25/2010	
	1	1	RE15-10-7931	R	1/25/2010	
	1	1	RE15-10-7932	R	1/25/2010	
	1	1	RE15-10-7933	R	1/25/2010	
	1	1	RE15-10-7934	R	1/25/2010	
	1	1	RE15-10-7935	R	1/25/2010	
	1	1	RE15-10-7936	R	1/25/2010	
	1	1	RE15-10-7937	R	1/25/2010	

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REQUEST NUMBER: 10-1434

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1	1	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
		1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
EPA:906.0	1	1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
		1	RE15-10-7883	R	1/25/2010	
HASL-300:AM-241	1	1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	

**REQUEST NUMBER: 10-1434**

**REQUEST NUMBER: 10-1434**

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:AM-241	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300:ISOPU	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300:ISOU	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	

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REQUEST NUMBER: 10-1434

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	

Final Page of REQUEST NUMBER 10-1434



Wednesday, January 27, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1434

**LOS ALAMOS**

REQUEST NUMBER: 10-1434

**NATIONAL LABORATORY**

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/26/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

## LAB REQUEST COMMENTS:

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7883	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7883	1	POLY	H3	Ice	R
RE15-10-7884	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7884	1	POLY	H3	Ice	R
RE15-10-7932	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7932	1	POLY	H3	Ice	R
RE15-10-7931	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7931	1	POLY	H3	Ice	R
RE15-10-7938	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7938	1	POLY	H3	Ice	R
RE15-10-7933	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7933	1	POLY	H3	Ice	R
RE15-10-7939	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7939	1	POLY	H3	Ice	R
RE15-10-7936	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7936	1	POLY	H3	Ice	R
RE15-10-7935	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7935	1	POLY	H3	Ice	R
RE15-10-7934	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7934	1	POLY	H3	Ice	R
RE15-10-7940	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7940	1	POLY	H3	Ice	R
RE15-10-7937	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7937	1	POLY	H3	Ice	R
RE15-10-8056	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8056	1	POLY	H3	Ice	R
RE15-10-8057	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Wednesday, January 27, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1434

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8057	1	POLY	H3	Ice	R
<b>Relinquished By:</b>		<b>Date</b>	<b>Time</b>	<b>Received By:</b>	
1/27/10 1400					
Printed Name	Signature		Printed Name	Signature	
Printed Name	Signature		Printed Name	Signature	
Printed Name	Signature		Printed Name	Signature	
<b>Received for DISPOSAL By:</b>		<b>Date</b>	<b>Time</b>	<b>Remarks:</b>	
Printed Name	Signature				

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7883

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1445		SUB-MEDIA:		TUFF 1	
PRS ID: 15-008(b)		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: 15-610711		↓		FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC		↓		FIELD PREP:		NA	
TOP DEPTH: 0		0.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		0.4		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		S		EXCAVATED: YES (NO) NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES (NO) NA			
BOREHOLE: YES (NO) NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1	↓	H3	500 ML POLY	Ice	Y	
1	↓	Met+U+CLO4+C N	1 L POLY IL RS 01.11.10	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: moist sandy brown clay

FD: RE15-10-8057

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-66 mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

HF negative

Alpha  $\leq$  52 dpm  
Beta/Gamma  $\leq$  2220 dpm

PID  $\frac{\text{Ambient Reading}}{0.0} = 0.0$  ppm

COLLECTED BY (PRINT)

T. McFarlane

REVIEWED BY (PRINT) R. Saunders

RELINQUISHED BY (Printed Name) MARIN (Signature) <i>John R. Marin</i>	Date/Time 1/25/10 16:55	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) <i>Sheri Sherwood</i>	Date/Time 1/25/10 1655
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7884

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA: QBT3		OK	
TIME COLLECTED (HH:MM)		1500		SUB-MEDIA: TUFF 1			
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE: HA			
LOCATION ID:	15-610711	↓		FIELD QC TYPE: NA			
LOCATION TYPE:	GENERIC	✓		FIELD PREP: NA			
TOP DEPTH:	0	3.0		SAMPLE USAGE: INV		✓	
BOTTOM DEPTH:	0	3.8		SCREEN/PORT DESC: NA			
FIELD MATRIX:	R	OK		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	y	
1		H3	500 ML POLY	Ice	y	
1		Met+U+CLO4+C N	TOTAL POLY 1L RS 01-11-10	Ice	y	
1	✓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	y	

SAMPLE DESC: pinkish grey tuff

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-66, mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha  $\leq$  91 dpm  
Beta/Gamma  $\leq$  2410 dpm

PID  $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.4}{4.7}$  ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TL McFarland

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) MARIAN	1/25/10	(Printed Name) Sheri Shewood	1/25/10
(Signature) <i>Marian</i>	16:55	(Signature) <i>Sheri Shewood</i>	1655
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7931

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA: OBT3		Allh	
TIME COLLECTED (HH:MM)		1342		SUB-MEDIA: TUFF1		NA	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	15-610735	↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE:	GENERIC	↓		FIELD PREP: NA		↓	
TOP DEPTH:	0	0.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY IL RS 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown clayey silt, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

86-82, mesa top  
S of fire rd

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha  $\leq$  39 dpm  
Beta/Gamma  $\leq$  2370 dpm

PID  $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT) A. Goumas

RELINQUISHED BY (Printed Name) MARIN (Signature) J. R. Marin	Date/Time 1/25/10 1655	RECEIVED BY (Printed Name) Sherris Sherwood (Signature) Sherris Sherwood	Date/Time 1/25/10 1655
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7932

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		01/25/2010	MEDIA:	OBT3	ok
TIME COLLECTED (HH:MM)		1406	SUB-MEDIA:	TUFF1	L
PRS ID:	15-008(b)	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	15-610735	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	3.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	4.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	R	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA	COMPOSITE TIME INTERVAL:	NA	WATER FLOWING: YES/NO/NA	
BOREHOLE: YES/NO/NA	NO/NA	BOREHOLE DECLINATION:	NA	BOREHOLE DIRECTION:	NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY IL RS 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray tuff, few small rocks

SAMPLE COMMENTS:

Hit tuff at 3.5'

LOCATION DESC:

86-82 mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha  $\leq$  39 dpm  
Beta/Gamma  $\leq$  2490 dpmPID  $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.2}{1.3}$  ppm

COLLECTED BY (PRINT)

TLMcfarland

REVIEWED BY (PRINT)

P. Goumas

RELINQUISHED BY (Printed Name) MARIN (Signature) <i>John Marin</i>	Date/Time 1/25/10 16:58	RECEIVED BY (Printed Name) <i>Sheniferwood</i> (Signature) <i>Sheniferwood</i>	Date/Time 1/25/10 16:58
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7933

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA: OBT3		Allh	
TIME COLLECTED (HH:MM)		1339		SUB-MEDIA: TUFF 1		NA	
PRS ID: 15-008(b)		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: 15-610736		↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		0.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		0.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY IL RS 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty clay, some roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-81, mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha  $\leq$  39 dpm  
Beta/Gamma  $\leq$  2440 dpmPID  $\frac{\text{Ambient}}{\text{Reading}} \frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

TL McFarlane

REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY (Printed Name) MARIN (Signature) <i>Jan R. Marin</i>	Date/Time 1/25/10 16:56	RECEIVED BY (Printed Name) (Signature) <i>[Signature]</i>	Date/Time
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7934

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA: OBT3		OK	
TIME COLLECTED (HH:MM)		1428		SUB-MEDIA: TUFF 1		↓	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	15-610736	↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE:	GENERIC	↓		FIELD PREP: NA		↓	
TOP DEPTH:	0	3.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH:	0	3.10 3.9		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	OK		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1L RS 01-10-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: brownish gray tuff

SAMPLE COMMENTS:

Hit tuff at 1.0 ft

LOCATION DESC:

8b-81 mesa Top

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 85 dpm  
Beta/Gamma = 2880 dpm

PID Ambient 0.0  
Reading 0.0 ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

A. Grooms

RELINQUISHED BY (Printed Name) MARIN (Signature) <i>Marin</i>	Date/Time 1/25/10 1656	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) <i>Sheri Sherwood</i>	Date/Time 1/25/10 1656
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7935

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1347		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	15-610737			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	0.3		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION:	NA	BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	TOTAL POLY 1L RS 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: brown silty clay, small rocks, moist

FR: RE15-10-8079

SAMPLE COMMENTS:

NA

LOCATION DESC:

86-78, mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha = 104 dpm

Beta/Gamma = 4540 dpm

PID  $\frac{\text{Ambient Reading}}{0.0} = 0.0$  ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) A. Gornas

RELINQUISHED BY (Printed Name) MARIA IN (Signature) Jan R. Marin	Date/Time 1/25/10 1656	RECEIVED BY (Printed Name) Sherri Newwood (Signature) Sherri Newwood	Date/Time 1/25/10 1656
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

**SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7936

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA: OBT3		ok	
TIME COLLECTED(HH:MM)		1426		SUB-MEDIA: TUFF 1		↓	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA	ok	
LOCATION ID:	15-610737	↓		FIELD QC TYPE:	NA	↓	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA	↓	
TOP DEPTH:	0	2.9		SAMPLE USAGE:	INV	↓	
BOTTOM DEPTH:	0	4.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1	↓	H3	500 ML POLY	Ice	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY IL RS 01-11-10	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray, tuff

FD RE15-10-8056

SAMPLE COMMENTS:

NA

LOCATION DESC:

86-78, mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 72 dpm

Beta/Gamma = 2710 dpm

PID  $\frac{\text{Ambient Reading}}{0.0} = \frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

JLMcFarlane

REVIEWED BY (PRINT)

A. Gomas

RELINQUISHED BY (Printed Name) MARIN (Signature) J. A. Marin	Date/Time 1/25/10 16:56	RECEIVED BY (Printed Name) Sherri Sherwood (Signature) Sherri Sherwood	Date/Time 1/28/10 16:56
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7937

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		01/25/2010	MEDIA:	OBT3	Allh
TIME COLLECTED (HH:MM)		1457	SUB-MEDIA:	TUFF 1	NA
PRS ID:	15-008(b)	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	15-610738	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY IL RS 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty sand, some rocks

SAMPLE COMMENTS:

NA

LOCATION DESC:

86-80 mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha  $\pm$  85 dpm  
Beta/Gamma  $\pm$  2330 dpmPID  $\frac{\text{Ambient}}{\text{Reading}} \frac{0.1}{0.2}$  ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT) R Saunders

RELINQUISHED BY (Printed Name) MAIRY (Signature) J. R. Mair	Date/Time 1/25/10 16:56	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 1/25/10 16:56
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7938

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1525		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610738	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	2.9		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	3.7		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA		NO/NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NO/NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1L ES 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray tuff

FR RE15-10-8080

SAMPLE COMMENTS:

Hit tuff at 2.9'

LOCATION DESC:

8b-80 mesa Top

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha  $\leq$  11 dpmBeta/Gamma  $\leq$  2060 dpmPID  $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{1.9}$  ppm

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT)

R. Saunders

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) MARIN	11/25/10	(Printed Name) Sherri Sherwood	11/25/10
(Signature) [Signature]	16:56	(Signature) [Signature]	16:56
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7939

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1522		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	15-610739			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY IL RS 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

moist brown silty sand, some clay

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-79 mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha  $\leq$  27 dpm  
Beta/Gamma  $\leq$  1596 dpm

PID  $\frac{\text{Ambient}}{\text{Reading}} \frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) MARIN (Signature) <i>John R. Marin</i>	Date/Time 1/25/10 16:56	RECEIVED BY (Printed Name) Sherri Sherwood (Signature) <i>Sherri Sherwood</i>	Date/Time 1/25/10 16:56
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-7940

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:	OBT3		ok
TIME COLLECTED (HH:MM)		1600		SUB-MEDIA:	TUFF 1		↓
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	15-610739	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	3.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	3.5		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 LITER POLY IL RS 01-11-10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray, thick

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-79 mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha  $\pm$  22 dpm  
Beta/Gamma  $\pm$  7940 dpm

PID  $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.2}{0.2}$  ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) T McFarland

RELINQUISHED BY (Printed Name) <u>MARIN</u> (Signature) <u>Juan R. Marin</u>	Date/Time <u>1/25/10</u> <u>16:56</u>	RECEIVED BY (Printed Name) <u>Sherri Sherwood</u> (Signature) <u>Sherri Sherwood</u>	Date/Time <u>1/25/10</u> <u>1656</u>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8056

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:	OBT3		OK
TIME COLLECTED (HH:MM)		1426		SUB-MEDIA:	TUFF 1		↓
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	UNK	15-610737		FIELD QC TYPE:	ED		↓
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		↓
TOP DEPTH:	0	2.9		SAMPLE USAGE:	QC		↓
BOTTOM DEPTH:	0	4.0		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	RM 1/25/10 8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1.11.10 RC	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC Sample of RE 15-10-8086 1/25/10  
7936  
Gray tuff

SAMPLE COMMENTS:

LOCATION DESC: 86-78

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha  $\leq$  72 dpm  
Beta/Gamma  $\leq$  2710 dpm

PID  $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.0}$  ppm  $\frac{0.0}{0.0}$

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) A. Goumas

RELINQUISHED BY (Printed Name) MARRIN (Signature) J. R. Marini	Date/Time 1/25/10 16:56	RECEIVED BY (Printed Name) Sheri Newwood (Signature) Sheri Newwood	Date/Time 1/25/10 1656
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8057

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1445		SUB-MEDIA:		TUFF 1	
PRS ID: 15-008(b)		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: UNK		15-610711		FIELD QC TYPE: ED		NA	
LOCATION TYPE: GENERIC		ok		FIELD PREP: NA		↓	
TOP DEPTH: 0		0.0		SAMPLE USAGE: QC		↓	
BOTTOM DEPTH: 0		0.4		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	y	
1		H3	500 ML POLY	Ice	y	
1		Met+U+ClO4+C N	1 GAL POLY 1 liter 1.11.10 R	Ice	y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	y	

SAMPLE DESC: QC Sample of RE 15-10-7883 7m 1/26/10

7883  
moist brown sandy clay

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-66 mesa top

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha  $\leq$  52 dpm  
Beta/Gamma  $\leq$  2420 dpmPID  $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT) R Saunders

RELINQUISHED BY (Printed Name) MARIN (Signature) <i>John R. Marin</i>	Date/Time 1/25/10 16:57	RECEIVED BY (Printed Name) Sherrin Sherwood (Signature) <i>Sherrin Sherwood</i>	Date/Time 1/25/10 1657
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8079

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/25/2010		MEDIA:	NA		OK
TIME COLLECTED (HH:MM)		1450		SUB-MEDIA:	OTHER		
PRS ID:	15-008(b)		OK	SAMPLE TECH CODE:	DC		
LOCATION ID:	UNK		15-610737	FIELD QC TYPE:	FR		
LOCATION TYPE:	GENERIC		OK	FIELD PREP:	UF		
TOP DEPTH:	Q			SAMPLE USAGE:	QC		
BOTTOM DEPTH:	Q			SCREEN/PORT DESC:			NA
FIELD MATRIX:	W			EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	METALS+U-GEL	1 LITER POLY	Nitric Acid	Y	
1	↓	SW-846:6850	250 ML POLY	Ice	Y	
1	↓	TCN	500 ML POLY	Sodium Hydroxide	Y	

SAMPLE DESC: QC Sample of RE15-10-7935

SAMPLE COMMENTS:

Rinsate

LOCATION DESC:

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha =        dpm <sup>72m 1/25/10</sup>  
 Beta/Gamma =        dpm

PID <sup>Ambient Reading</sup> =        ppm <sup>72m 1/25/10</sup>

COLLECTED BY (PRINT)

ThMcFarlane

REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY (Printed Name) <u>MARIN</u> (Signature) <u>[Signature]</u>	Date/Time <u>1/25/10</u> <u>16:57</u>	RECEIVED BY (Printed Name) <u>Sherrin Sherwood</u> (Signature) <u>[Signature]</u>	Date/Time <u>1/25/10</u> <u>1657</u>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8080

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		01/25/2010	MEDIA:	NA	OK
TIME COLLECTED(HH:MM)		15:35	SUB-MEDIA:	OTHER	
PRS ID:	15-008(b)	OK	SAMPLE TECH CODE:	DC	
LOCATION ID:	UNK	15-610738	FIELD QC TYPE:	FR	
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	UF	
TOP DEPTH:	0		SAMPLE USAGE:	QC	
BOTTOM DEPTH:	0		SCREEN/PORT DESC:	NA	
FIELD MATRIX:	W		EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
BOREHOLE: YES/NO/NA			WATER FLOWING: YES/NO/NA		
BOREHOLE DECLINATION:	NA		BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	METALS+U-GEL	1 LITER POLY	Nitric Acid	Y	
1		SW-846:6850	250 ML POLY	Ice	Y	
1		TCN	500 ML POLY	Sodium Hydroxide	Y	

SAMPLE DESC: QC Sample of RE15-10-7938

SAMPLE COMMENTS: Rinsate

LOCATION DESC:

86-80

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha =  $\frac{1 \text{ RM } 1/25/10}{\text{dpm}}$   
 Beta/Gamma =  $\frac{\text{dpm}}{\text{dpm}}$

PID =  $\frac{1 \text{ RM } 1/25/10}{\text{Ambient Reading}} = \text{ppm}$

COLLECTED BY (PRINT)

J. MARIN

REVIEWED BY (PRINT)

TL McFarland

RELINQUISHED BY (Printed Name) MARIN (Signature) J. R. Marin	Date/Time MARIN 1/25/10 16:57	RECEIVED BY (Printed Name) Sherri Sherwood (Signature) Sherri Sherwood	Date/Time 1/25/10 1657
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## Rad Screening Data Release Form

The Following samples were received at the Field Support Facility (FSF) without screening data (list sample number):

RE15-10-7883  
7884  
7931  
7932  
7933  
7934  
7935  
7936  
7937  
7938  
7939

RE15-10-7940  
8056  
8057

These samples will not be shipped until radiological screening data documentation arrives at the FSF. I understand that it is my responsibility to ensure this information arrives at the FSF in a timely manner. If holding times are missed because screening data does not arrive, I will pick up the samples.

.....  
The following samples do not require rad screening data for the reasons stated (list sample numbers):

RE15-10-8080 FR  
8079 FR

Reason:

.....  
Print Last Name MARIN

Signature

J. R. Marin

Date 1/25/10



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7883

ARS Sample ID: ARS2-10-00023-001

Sample Collection Date: 01/25/10 14:45

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	YPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracker/Chem Recovery
GROSS ALPHA	45.44	32.43	38.09	32.90		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	49.89	16.45	17.69	17.55		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.09	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	19.62	7.19	1.50	7.21		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CD-60	0.00	0.79	0.10	0.79		nCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.00	0.00	0.07	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.14	0.15	0.06	0.15		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.33	0.43	0.11	0.43		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	0.69	0.41	0.18	0.41		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	1.16	0.90	0.26	0.90		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	1.10	0.86	0.28	0.86		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	5.30	3.64	1.41	3.84		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.21	0.24	0.10	0.24		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 2.50

*Matthew J. Ecker*  
Quality Assurance Review

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NELAP Certificate # E87558



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ARS Sample Delivery Group: ARS2-10-00023

Client Sample ID: RE15-10-78B4

Sample Collection Date: 01/25/10 15:00

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00023-002

Date Received: 01/26/10 00:00

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MGC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	29.95	25.78	31.78	26.03		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	42.70	15.72	18.25	16.57		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	23.70	8.15	1.61	8.19		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	10.50	0.11	10.50		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.16	0.14	0.08	0.14		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	-0.01	13.74	0.07	13.74		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
BU-152	0.15	0.24	0.14	0.24		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	2.30	0.63	0.17	0.64		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	0.73	0.40	0.57	0.40		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	1.93	0.87	0.16	0.87		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	4.36	3.03	1.44	3.19		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.08	0.14	0.06	0.14		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 0.92

*Matthew J. Folan*  
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7931

ARS Sample ID: ARS2-10-00023-003

Sample Collection Date: 01/25/10 13:42

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MP	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracker/Chem Recovery
GROSS ALPHA	33.20	26.91	30.56	27.22		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	47.72	17.26	19.68	18.22		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.06	0.12	0.10	0.12		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	-1.19	-30.61	4.37	-30.61		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	18.74	0.10	10.29		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.10	0.12	0.08	0.12		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.00	0.03	0.06	0.03		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.28	0.32	0.12	0.32		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.21	0.47	0.15	0.47		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	1.08	0.76	0.27	0.76		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	1.43	0.80	0.31	0.80		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	2.51	2.64	1.21	2.70		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.83	0.14	0.08	0.14		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 1.43

*Matt J. Edin*  
Quality Assurance Review

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ARS Sample Delivery Group: AR52-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7932

ARS Sample ID: AR52-10-00023-004

Sample Collection Date: 01/25/10 14:06

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MC	YPM	Qm	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	15.13	22.44	38.20	22.51		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	43.35	18.72	18.71	16.59		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	-2.70	-28.07	4.29	-28.07		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CA-40	0.05	0.13	0.11	0.13		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.23	0.20	0.08	0.20		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.24	0.20	0.07	0.20		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.00	11.12	0.12	11.12		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.61	0.49	0.09	0.49		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	0.66	0.68	0.62	0.68		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	2.18	0.97	0.17	0.98		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	2.90	3.24	1.43	3.33		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.39	0.30	0.10	0.30		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 1.01

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ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7933

ARS Sample ID: ARS2-10-00023-005

Sample Collection Date: 01/25/10 13:39

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analyte Description	Analysis Results	Analysis Error +/- 2 s	MR:	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	75.13	40.22	36.09	41.26		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	58.76	17.74	17.69	19.15		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.05	0.09	0.07	0.09		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	15.44	5.66	1.18	5.68		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	n.a.	7.71	0.08	7.71		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.00	0.00	0.06	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.14	0.13	0.05	0.13		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.00	8.01	0.09	8.01		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	0.97	0.35	0.10	0.35		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	0.97	0.50	0.21	0.50		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	0.92	0.70	0.29	0.70		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	5.44	3.80	1.34	4.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.04	0.14	0.08	0.14		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 2.33

*Matthew J. Eder*  
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7934

ARS Sample ID: ARS2-10-00023-006

Sample Collection Date: 01/25/10 14:28

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TSU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	-2.35	9.58	31.78	9.58		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	45.35	15.44	18.25	16.41		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	24.66	8.16	1.99	8.19		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	10.38	0.11	10.38		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.15	0.15	0.07	0.16		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.34	0.32	0.12	0.32		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.24	0.50	0.17	0.50		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	1.44	0.86	0.28	0.86		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	0.77	0.58	0.21	0.58		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	3.71	3.36	1.38	3.49		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.05	0.18	0.09	0.18		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 0.98

*Matthew L. Eder*  
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE18-10-7935

ARS Sample ID: ARS2-10-00023-007

Sample Collection Date: 01/25/10 13:47

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2σ	MDC	TOT	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	47.69	31.52	30.56	32.08		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	141.19	25.34	19.68	30.67		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	0.43	4.80	2.88	4.80		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	8.33	0.08	8.32		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.14	0.12	0.06	0.12		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.01	0.04	0.05	0.04		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.00	8.65	0.10	8.66		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.36	0.42	0.11	0.43		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
BA-133	0.29	0.45	0.37	0.45		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	2.38	1.28	0.43	1.28		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	41.91	6.65	1.77	11.65		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.83	0.65	0.23	0.66		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 2.46

*Matthew J. Eder*  
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ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7936

ARS Sample ID: ARS2-10-00023-008

Sample Collection Date: 01/25/10 14:26

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:26

Analyte Description	Analyte Results	Analysis Error +/- 2 s	mpc	TPM	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	28.91	27.32	38.20	27.55		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	39.59	15.57	18.71	16.31		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	-1.94	-30.91	3.71	-30.91		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	11.83	0.12	11.53		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.10	0.11	0.08	0.11		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	-0.01	15.08	0.07	15.08		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.00	11.99	0.13	11.99		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.37	0.52	0.16	0.52		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	1.72	1.07	0.31	1.08		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	0.04	0.45	0.29	0.45		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	5.36	3.67	1.46	3.87		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.45	0.46	0.17	0.46		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 0.38

*Matthew J. Feller*  
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7937

ARS Sample ID: ARS2-10-00023-009

Sample Collection Date: 01/25/10 14:57

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDR	YMI	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	56.41	33.85	36.09	34.40		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	42.67	15.79	17.69	16.64		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.16	0.21	0.10	0.21		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	-0.44	-6.08	2.30	-6.08		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	10.29	0.10	10.29		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.12	0.18	0.08	0.18		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.07	0.11	0.06	0.11		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	1.94	0.98	0.23	0.98		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.26	0.62	0.27	0.62		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-226	0.69	0.64	0.18	0.64		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	4.21	2.20	0.98	2.20		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	34.62	7.38	2.38	10.82		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	1.17	0.93	0.33	0.93		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 2.63

*Matthew J. Elder*  
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ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-7938

ARS Sample ID: ARS2-10-00023-010

Sample Collection Date: 01/25/10 15:10

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error $\pm 2\sigma$	Mn	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	48.40	31.49	31.78	32.05		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	54.09	17.17	18.25	18.40		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	24.77	8.28	1.59	8.32		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	10.40	0.11	10.40		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.03	0.08	0.07	0.08		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.00	54.99	0.12	54.99		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.29	0.50	0.17	0.50		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-223	2.95	0.96	0.28	0.96		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	1.44	0.98	0.29	0.98		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	0.66	1.64	0.90	1.65		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.01	0.09	0.08	0.09		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 0.57

*Matthew J. Eder*  
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Certificate # 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00023

Request or PU Number:

Client Sample ID: RE15-10-7939

ARS Sample ID: ARS2-10-00023-011

Sample Collection Date: 01/25/10 15:22

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	WMC	TPH	Q101	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	28.37	15.20	30.86	25.43		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	61.21	18.52	19.68	19.97		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.09	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	-0.10	-6.00	2.94	-6.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	0.01	0.09	0.01		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.06	0.08	0.07	0.08		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.10	0.12	0.06	0.12		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.37	0.28	0.10	0.28		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.14	0.48	0.19	0.48		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	2.06	0.78	0.24	0.78		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	1.75	1.39	0.46	1.39		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	13.79	5.54	1.92	5.54		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.26	0.32	0.14	0.32		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 2.19

*Matthew J. Edna*  
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Certificate # 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00023

Request or PQ Number:

Client Sample ID: RE15-10-7940

ARS Sample ID: ARS2-10-00023-012

Sample Collection Date: 01/25/10 16:00

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	Min:	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	33.50	28.77	38.20	29.06		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	44.37	16.15	18.71	17.04		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	26.35	8.47	1.57	8.50		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-60	0.00	10.25	0.10	10.25		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.00	33.64	0.08	33.64		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.00	0.03	0.06	0.03		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.18	0.28	0.12	0.25		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.72	0.54	0.15	0.55		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	1.36	0.59	0.32	0.59		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	0.81	0.51	0.19	0.51		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	4.08	3.73	1.44	3.85		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.33	0.35	0.14	0.35		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 0.46

*Matthew J. Eddy*  
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Certificate# 30658

NELAP Certificate # E87538



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00023

Request or PO Number:

Client Sample ID: RE15-10-8056

ARS Sample ID: ARS2-10-00023-013

Sample Collection Date: 01/25/10 14:26

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 16:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MnC	TpH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	70.21	39.02	36.09	39.96		pCi/g	EPA 909.0M	1/26/2010	ME	N/A
GROSS BETA	43.44	16.39	17.69	17.30		pCi/g	EPA 909.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	29.01	10.74	2.74	10.77		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CO-60	0.00	11.87	0.12	11.82		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.53	0.33	0.09	0.35		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	-0.01	15.46	0.07	15.46		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	1.16	0.63	0.14	0.63		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.66	0.61	0.21	0.62		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PA-214	1.57	0.81	0.32	0.81		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	1.48	0.83	0.38	0.85		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	0.60	2.94	1.58	2.94		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.31	0.42	0.18	0.42		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 0.32

*Matthew J. Eder*  
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Certificate# 30658

NELAP Certificate # E87558





133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: AR52-10-00023

Request or PO Number:

Client Sample ID: RE19-10-8057

ARS Sample ID: AR52-10-00023-014

Sample Collection Date: 01/25/10 14:45

Date Received: 01/26/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/26/10 14:28

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MNR	TW11	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	39.18	28.78	31.78	29.17		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
GROSS BETA	43.67	15.98	18.25	16.85		pCi/g	EPA 900.0M	1/26/2010	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
K-40	-0.78	-15.99	3.11	-15.99		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CR-50	0.00	10.50	0.11	10.50		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-134	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
CS-137	0.23	0.20	0.07	0.20		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
EU-152	0.61	0.50	0.12	0.50		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
PB-212	1.16	0.46	0.13	0.47		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
RA-228	1.32	0.81	0.28	0.81		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-235	0.82	0.84	0.18	0.84		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
U-238	5.20	3.80	1.31	3.70		pCi/g	EPA 901.1M	1/26/2010	ME	N/A
AM-241	0.01	0.09	0.08	0.09		pCi/g	EPA 901.1M	1/26/2010	ME	N/A

NOTES: % Moisture: 3.76

*Matthew J. Ecker*  
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Certificate# 30658

NELAP Certificate # E87558

## DATA VALIDATION COVER SHEET

5119-1

## Data Validation Cover Sheet

Records Use only



## Section I.

REQUEST NUMBER: 10-1434 VALIDATION DATE: 3/4/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Allison Felix ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- ☐ TPH-GRO      ☐ HIGH EXPLOSIVES      ☐ DIOXIN FURANS      ☐ LCMSMS PERCHLORATES  
☐ TPH-DRO      ☐ METALS      ☐ PCB CONGENERS      ☐ ORGANOCHLORINE  
☐ GENERAL CHEMISTRY      ☒ RADIOCHEMISTRY      ☐ LCMSMS HIGH EXPLOSIVES      PESTICIDES/POLYCHLORINATED BIPHENYLS  
☐ OTHER (DESCRIBE): \_\_\_\_\_

## Section II. Completeness Check

- | YES                                 | NO                       | N/A                                 | (CHECK ONE)                 | YES                                 | NO                       | N/A                                 | (CHECK ONE)              |
|-------------------------------------|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 6. RAW/BSS DATA          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 2. CASE NARRATIVE           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 3. SAMPLE RESULT FORMS      | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 8. QUANTITATION REPORTS  |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. SAMPLE CHROMATOGRAMS     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS            |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA    |

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

- Gamma spec results that were rejected by the laboratory due to interference, low abundance, or no valid peak were qualified R,R5a. The duplicate results for Bi-211; Cd-109; and Ra-224 were also rejected by the laboratory. The rejections occurred in a QC sample, thus, no sample results were qualified.
- It should be noted that an MS was not analyzed for tritium. However, an LCS was analyzed and passed acceptance criteria. Thus, no sample data were qualified.


Reviewed by: Mary Donovan

Level: 1


Date: 03/05/10

VALIDATOR'S SIGNATURE: Allison Felix


DATE: 3/4/10

RAD ANALYTICAL DATA VALIDATION CHECKLIST		
5119-2	Records Use only	
Rad Analytical Data Validation Checklist		

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, R9	J-, R9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. The holding time was >2 times the applicable holding time requirement.	R, R9a	J-, R9a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. The results for the affected analytes are considered not detected (U) because the associated sample concentration was less than or equal to the MDC.	U, R5	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. The analyte should be regarded as rejected because spectral interferences prevent positive identification of the analytes.	R, R5a	R, R5a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. The MDC and/or TPU documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R5b	J-, R5b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. The results for the affected analytes should be regarded as not detected (U) because the associated sample concentration was less than 3X the 1 sigma TPU.	U, R11	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The sample result is ≤5X the concentration of the related analyte in the method blank.	U, R4	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was >5X.	N/A	J, R4a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. The sample result is ≤5X the concentration of the related analyte in the trip blank, rinsate blank, or equipment blank.	U, R4d	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R4e	R, R4e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. The tracer is <10%R. Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	R, R3	R, R3

RAD ANALYTICAL DATA VALIDATION CHECKLIST		
5119-2	Records Use only	
Rad Analytical Data Validation Checklist		

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. The tracer is < the Lower Acceptance Level (LAL) but $\geq 10\%R$ . Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	UJ, R3a	J-, R3a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The Tracer%R value is > the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	N/A	J+, R3b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Required tracer information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. Tracer%R is not applicable for Gamma Spectroscopy.	R, R3d	R, R3d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, R12	R, R12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. The LCS percent recovery was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, R12a	J-, R12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, R12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R12c	R, R12c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Associated duplicate sample has DER or RER > the analytical laboratory's acceptance limits.	R, R10	J, J10
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R6	R, R6

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5119-2</b>  <b>Rad Analytical Data Validation Checklist</b>	Records Use only  

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	21. The associated matrix spike recovery was <10%. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	R, R6	R, R6
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	22. The associated matrix spike recovery was <10%. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	UJ, R6a	J-, R6a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	23. The associated matrix spike recovery was above the UAL. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	UJ, R6b	J+, R6b
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24. Required matrix spike information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. If LCS information is present, do not Reject. Qualify data based on LCS information. MS/MSD is not applicable to Gamma Spectroscopy.	R, R6c	R, R6c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. Duplicate, dilution, or reanalysis.	UJ, R88	J, R88
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist.	UJ, R, R19	J, R, R19
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27. Quantification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB NQ, NQ

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7883  
Sample ID: 245691001  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 31.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.0032	0.0235	+/-0.00275	0.050	pCi/g		CXM2	02/10/10	1813	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00468	0.0239	+/-0.00271	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	-0.000249	0.0181	+/-0.00294	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.31	0.0666	+/-0.108	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.0848	0.0425	+/-0.0182	0.100	pCi/g						
Uranium-238		2.73	0.0455	+/-0.206	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00746	0.270	+/-0.0887	0.200	pCi/g		MJH1	02/09/10	1325	947037	4
Bismuth-211	UI	4.19	R,R5a	0.311	+/-0.262	pCi/g						
Bismuth-214		1.08		0.119	+/-0.096	pCi/g						
Cadmium-109	UI	2.22	R,R5a	1.40	+/-0.474	pCi/g						
Cerium-139	U	0.00868		0.055	+/-0.0163	pCi/g						
Cesium-134	UI	0.249	R,R5a	0.100	+/-0.0417	pCi/g						
Cesium-137	U	0.0433		0.0783	+/-0.0222	pCi/g						
Cobalt-60	U	0.032		0.0692	+/-0.0191	pCi/g						
Europium-152	U	0.012		0.165	+/-0.0627	pCi/g						
Lanthanum-140	U	-0.0321		0.133	+/-0.0431	pCi/g						
Lead-212		1.53		0.096	+/-0.0787	pCi/g						
Lead-214		1.46		0.108	+/-0.0988	pCi/g						
Mercury-203	U	0.0137		0.0739	+/-0.0211	pCi/g						
Potassium-40		24.3		0.513	+/-1.21	pCi/g						
Radium-223	U	-0.785		1.14	+/-0.358	pCi/g						
Radium-224	UI	4.26	R,R5a	1.09	+/-0.565	pCi/g						
Radium-226		1.08		0.119	+/-0.096	pCi/g						
Radium-228		1.59		0.188	+/-0.165	pCi/g						
Ruthenium-106	U	-0.193		0.532	+/-0.168	pCi/g						
Sodium-22	U	-0.0165		0.0648	+/-0.0204	pCi/g						
Strontium-85	U	0.0583		0.0691	+/-0.0212	pCi/g						

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7883  
Sample ID: 245691001  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thallium-208		0.543	0.0627	+/-0.0453	0.080	pCi/g						
Thorium-227	U	0.0825	0.662	+/-0.200		pCi/g						
Thorium-231	U	-0.785	1.14	+/-0.358		pCi/g						
Thorium-234		4.66	2.21	+/-1.23	2.00	pCi/g						
Tin-113	U	0.00895	0.0779	+/-0.0227	0.100	pCi/g						
Uranium-235	U	0.0264	0.372	+/-0.113	0.500	pCi/g						
Yttrium-88	U	0.0201	0.0613	+/-0.017	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium	U	155	203	+/-63.6	250	pCi/L		KXK2	02/16/10	1743	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value

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Address : PO Box 1663  
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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7884  
Sample ID: 245691002  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 5.82%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>											
<i>AM241 "Dry Weight Corrected"</i>											
Americium-241	U	-0.00133	0.026	+/-0.00214	0.050	pCi/g		CXM2	02/10/10	1813 947354	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	0.00363	0.0245	+/-0.003	0.050	pCi/g		CXM2	02/10/10	1627 947356	2
Plutonium-239/240	U	-0.000701	0.0185	+/-0.00228	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		0.664	0.0784	+/-0.0656	0.100	pCi/g		CXM2	02/10/10	1043 947357	3
Uranium-235/236		0.0615	0.050	+/-0.016	0.100	pCi/g					
Uranium-238		0.690	0.0536	+/-0.0667	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	0.0319	0.207	+/-0.0637	0.200	pCi/g		MJH1	02/09/10	1521 947037	4
Bismuth-211	UI	4.00	R,R5a	0.284	+/-0.289	pCi/g					
Bismuth-214		1.20		0.0936	+/-0.0987	0.200	pCi/g				
Cadmium-109	UI	3.84	R,R5a	1.03	+/-0.454	pCi/g					
Cerium-139	U	-0.0124		0.0466	+/-0.0134	0.050	pCi/g				
Cesium-134	UI	0.0854	R,R5a	0.0736	+/-0.0232	0.100	pCi/g				
Cesium-137	U	-0.028		0.0489	+/-0.0154	0.100	pCi/g				
Cobalt-60	U	0.016		0.0561	+/-0.0163	0.100	pCi/g				
Europium-152	U	0.0129		0.141	+/-0.0531	0.200	pCi/g				
Lanthanum-140	U	0.0657		0.112	+/-0.0346	pCi/g					
Lead-212		1.68		0.0781	+/-0.121	0.100	pCi/g				
Lead-214		1.39		0.0989	+/-0.107	0.100	pCi/g				
Mercury-203	U	0.0347		0.0637	+/-0.0185	0.100	pCi/g				
Potassium-40		36.3		0.411	+/-1.82	1.00	pCi/g				
Radium-223	U	-0.727		0.957	+/-0.298	pCi/g					
Radium-224	UI	4.70	R,R5a	0.888	+/-0.512	pCi/g					
Radium-226		1.20		0.0936	+/-0.0987	pCi/g					
Radium-228		1.48		0.180	+/-0.154	0.500	pCi/g				
Ruthenium-106	U	-0.161		0.430	+/-0.132	0.800	pCi/g				
Sodium-22	U	-0.0416		0.0546	+/-0.0179	0.080	pCi/g				
Strontium-85	UI	0.112	R,R5a	0.0644	+/-0.0199	pCi/g					
Thallium-208		0.528		0.0505	+/-0.044	0.080	pCi/g				

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## Certificate of Analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7884  
Sample ID: 245691002

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0132	0.563	+/-0.167		pCi/g						
Thorium-231	U	-0.727	0.957	+/-0.298		pCi/g						
Thorium-234	U	0.304	1.76	+/-0.581	2.00	pCi/g						
Tin-113	U	0.000945	0.0656	+/-0.0192	0.100	pCi/g						
Uranium-235	U	0.0427	0.338	+/-0.0961	0.500	pCi/g						
Yttrium-88	U	0.0132	0.0416	+/-0.0118	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium	U	189	202	+/-64.5	250	pCi/L		KXK2	02/16/10	1921	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	78.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.4	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

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- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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**Certificate of Analysis**

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 Los Alamos, New Mexico 87545  
 Contact: Ms. Joylene Valdez  
 Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7932  
 Sample ID: 245691003  
 Matrix: R  
 Collect Date: 25-JAN-10  
 Receive Date: 28-JAN-10  
 Collector: Client  
 Moisture: 9.2%

Project: LANL01004  
 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00162	0.0228	+/-0.00301	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000774	0.027	+/-0.00251	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.000492	0.0204	+/-0.00217	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.525	0.079	+/-0.0549	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236	U	0.0309	0.0503	+/-0.0112	0.100	pCi/g						
Uranium-238		0.616	0.0539	+/-0.0616	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0018	0.0771	+/-0.0248	0.200	pCi/g		MJH1	02/09/10	1446	947037	4
Bismuth-211	UI	4.16	R,R5a	0.294	+/-0.297	pCi/g						
Bismuth-214		1.25		0.111	+/-0.106	pCi/g						
Cadmium-109	UI	4.62	R,R5a	0.694	+/-0.375	pCi/g						
Cerium-139	U	-0.0125		0.0402	+/-0.012	pCi/g						
Cesium-134	UI	0.0997	R,R5a	0.0951	+/-0.0327	pCi/g						
Cesium-137	U	-0.0301		0.0771	+/-0.0224	pCi/g						
Cobalt-60	U	0.0228		0.069	+/-0.020	pCi/g						
Europium-152	U	-0.0523		0.138	+/-0.0416	pCi/g						
Lanthanum-140	U	-0.0189		0.138	+/-0.0445	pCi/g						
Lead-212		1.80		0.0779	+/-0.116	pCi/g						
Lead-214		1.45		0.101	+/-0.110	pCi/g						
Mercury-203	U	0.00324		0.0622	+/-0.0189	pCi/g						
Potassium-40		35.7		0.528	+/-1.80	pCi/g						
Radium-223	U	0.0378		1.01	+/-0.330	pCi/g						
Radium-224	UI	5.25	R,R5a	0.887	+/-0.617	pCi/g						
Radium-226		1.25		0.111	+/-0.106	pCi/g						
Radium-228		1.87		0.258	+/-0.182	pCi/g						
Ruthenium-106	U	0.103		0.566	+/-0.162	pCi/g						
Sodium-22	U	-0.00392		0.0844	+/-0.0257	pCi/g						
Strontium-85	U	0.057		0.0647	+/-0.0199	pCi/g						
Thallium-208		0.604		0.0606	+/-0.0525	pCi/g						

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3/4/10

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TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7932  
Sample ID: 245691003

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.389	0.571	+/-0.166		pCi/g						
Thorium-231	U	0.0378	1.01	+/-0.330		pCi/g						
Thorium-234		1.76	0.750	+/-0.394	2.00	pCi/g						
Tin-113	U	-0.0355	0.0685	+/-0.0213	0.100	pCi/g						
Uranium-235	U	0.0347	0.297	+/-0.0859	0.500	pCi/g						
Yttrium-88	U	0.037	0.0683	+/-0.0176	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		212	203	+/-65.5	250	pCi/L		KXK2	02/16/10	2059	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.3	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7931  
Sample ID: 245691004  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 17.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00175	0.0267	+/-0.00179	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00106	0.0227	+/-0.00182	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00336	0.0171	+/-0.00277	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.873	0.0617	+/-0.0755	0.100	pCi/g		CXM2	02/11/10	1506	947357	3
Uranium-235/236		0.0695	0.0393	+/-0.0152	0.100	pCi/g						
Uranium-238		1.85	0.0421	+/-0.143	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0204	0.116	+/-0.0355	0.200	pCi/g		MJH1	02/09/10	1453	947037	5
Bismuth-211	UI	4.05	R,R5a	0.418	+/-0.312	pCi/g						
Bismuth-214		1.26		0.126	+/-0.123	pCi/g						
Cadmium-109	UI	4.36	R,R5a	1.04	+/-0.500	pCi/g						
Cerium-139	U	0.00178	0.0511	+/-0.0151	0.050	pCi/g						
Cesium-134	U	0.0441	0.112	+/-0.0313	0.100	pCi/g						
Cesium-137	U	0.0326	0.0875	+/-0.0361	0.100	pCi/g						
Cobalt-60	U	-0.0315	0.0809	+/-0.0261	0.100	pCi/g						
Europium-152	U	-0.0635	0.177	+/-0.0536	0.200	pCi/g						
Lanthanum-140	U	-0.0761	0.169	+/-0.0578	pCi/g							
Lead-212		1.90	0.0931	+/-0.115	0.100	pCi/g						
Lead-214		1.41	0.132	+/-0.115	0.100	pCi/g						
Mercury-203	U	-0.0244	0.0722	+/-0.0214	0.100	pCi/g						
Potassium-40		30.5	0.776	+/-1.74	1.00	pCi/g						
Radium-223	U	0.256	1.18	+/-0.378	pCi/g							
Radium-224	UI	5.85	R,R5a	1.06	+/-0.845	pCi/g						
Radium-226		1.26	0.126	+/-0.123	pCi/g							
Radium-228		2.41	0.246	+/-0.238	0.500	pCi/g						
Ruthenium-106	U	0.486	0.724	+/-0.201	0.800	pCi/g						
Sodium-22	U	-0.0329	0.0998	+/-0.0326	0.080	pCi/g						
Strontium-85	U	0.0517	0.0772	+/-0.0214	pCi/g							
Thallium-208		0.632	0.0764	+/-0.061	0.080	pCi/g						

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3/4/10

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7931  
Sample ID: 245691004

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.071	0.711	+/-0.215		pCi/g					
Thorium-231	U	0.256	1.18	+/-0.378		pCi/g					
Thorium-234		2.29	1.11	+/-0.554	2.00	pCi/g					
Tin-113	U	-0.0156	0.0848	+/-0.0255	0.100	pCi/g					
Uranium-235	U	0.0725	0.385	+/-0.114	0.500	pCi/g					
Yttrium-88	U	0.0379	0.075	+/-0.0185	0.100	pCi/g					
<b>Rad Liquid Scintillation Analysis</b>											
<i>H3 "As Received"</i>											
Tritium		278	181	+/-61.4	250	pCi/L		KXK2	02/14/10 2001	948402	6

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	72.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	101	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.7	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

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- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample

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## Certificate of Analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7938  
Sample ID: 245691005  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 3.57%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00181	0.0222	+/-0.00149	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000524	0.0251	+/-0.00436	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00183	0.019	+/-0.00403	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.665	0.0698	+/-0.0628	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.0752	0.0445	+/-0.0169	0.100	pCi/g						
Uranium-238		0.711	0.0477	+/-0.0663	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.125	0.409	+/-0.120	0.200	pCi/g		MJH1	02/09/10	1524	947037	4
Bismuth-211	UI	4.19	R,R5a	0.347	+/-0.275	pCi/g						
Bismuth-214		1.28		0.116	+/-0.0946	0.200	pCi/g					
Cadmium-109	UI	4.11	R,R5a	1.66	+/-0.658	pCi/g						
Cerium-139	U	-0.0133	0.0513	+/-0.0159	0.050	pCi/g						
Cesium-134	U	0.0684	0.0887	+/-0.027	0.100	pCi/g						
Cesium-137	U	-0.00714	0.0631	+/-0.0189	0.100	pCi/g						
Cobalt-60	U	0.00297	0.0747	+/-0.0223	0.100	pCi/g						
Europium-152	U	-0.0444	0.162	+/-0.0513	0.200	pCi/g						
Lanthanum-140	U	-0.0505	0.131	+/-0.0444	pCi/g							
Lead-212		1.85	0.0964	+/-0.0921	0.100	pCi/g						
Lead-214		1.46	0.121	+/-0.103	0.100	pCi/g						
Mercury-203	UI	0.135	R,R5a	0.0677	+/-0.0372	0.100	pCi/g					
Potassium-40		39.7	0.481	+/-2.01	1.00	pCi/g						
Radium-223	U	0.158	1.04	+/-0.342	pCi/g							
Radium-224	UI	4.40	R,R5a	1.10	+/-0.697	pCi/g						
Radium-226		1.28	0.116	+/-0.0946	pCi/g							
Radium-228		1.71	0.216	+/-0.187	0.500	pCi/g						
Ruthenium-106	U	0.284	0.602	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.0106	0.0839	+/-0.0257	0.080	pCi/g						
Strontium-85	U	0.00686	0.0578	+/-0.0199	pCi/g							
Thallium-208		0.622	0.0602	+/-0.0479	0.080	pCi/g						

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7938  
Sample ID: 245691005

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.016	0.624	+/-0.182		pCi/g						
Thorium-231	U	0.158	1.04	+/-0.342		pCi/g						
Thorium-234	U	2.17	3.32	+/-0.947	2.00	pCi/g						
Tin-113	U	-0.0393	0.0745	+/-0.0236	0.100	pCi/g						
Uranium-235	U	0.126	0.382	+/-0.114	0.500	pCi/g						
Yttrium-88	U	-0.00219	0.0555	+/-0.0175	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium	U	115	202	+/-62.1	250	pCi/L		KXK2	02/16/10	2237	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	88.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	102	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7933  
Sample ID: 245691006  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 20.6%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00339	0.026	+/-0.00244	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00296	0.0277	+/-0.0076	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00945	0.0209	+/-0.00704	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.72	0.0833	+/-0.213	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.196	0.0531	+/-0.0314	0.100	pCi/g						
Uranium-238		4.68	0.0569	+/-0.350	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0447	0.108	+/-0.0317	0.200	pCi/g		MJH1	02/09/10	1524	947037	4
Bismuth-211	UI	3.47	R,R5a	0.346	+/-0.303	pCi/g						
Bismuth-214		1.19		0.129	+/-0.0999	0.200	pCi/g					
Cadmium-109	UI	2.84	R,R5a	0.928	+/-0.377	pCi/g						
Cerium-139	U	0.00366	0.0511	+/-0.015	0.050	pCi/g						
Cesium-134	U	0.0808	0.105	+/-0.0284	0.100	pCi/g						
Cesium-137		0.317	0.0724	+/-0.0392	0.100	pCi/g						
Cobalt-60	U	0.00478	0.0743	+/-0.022	0.100	pCi/g						
Europium-152	U	0.0631	0.178	+/-0.0683	0.200	pCi/g						
Lanthanum-140	U	0.0658	0.183	+/-0.052	pCi/g							
Lead-212		1.34	0.0935	+/-0.0808	0.100	pCi/g						
Lead-214		1.21	0.121	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.0468	0.0755	+/-0.0208	0.100	pCi/g						
Potassium-40		21.3	0.684	+/-1.02	1.00	pCi/g						
Radium-223	U	0.386	1.14	+/-0.368	pCi/g							
Radium-224	UI	3.15	R,R5a	1.06	+/-0.508	pCi/g						
Radium-226		1.19	0.129	+/-0.0999	pCi/g							
Radium-228		1.32	0.264	+/-0.166	0.500	pCi/g						
Ruthenium-106	U	-0.366	0.571	+/-0.184	0.800	pCi/g						
Sodium-22	U	-0.0161	0.0854	+/-0.0261	0.080	pCi/g						
Strontium-85	UI	0.127	R,R5a	0.0857	+/-0.0246	pCi/g						
Thallium-208		0.452	0.0627	+/-0.044	0.080	pCi/g						

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
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TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7933  
245691006

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.131	0.687	+/-0.194		pCi/g						
Thorium-231	U	0.386	1.14	+/-0.368		pCi/g						
Thorium-234		5.23	1.01	+/-0.751	2.00	pCi/g						
Tin-113	U	-0.0282	0.0793	+/-0.0246	0.100	pCi/g						
Uranium-235	UI	0.503	R,R5a	+/-0.180	0.500	pCi/g						
Yttrium-88	U	-0.0393	0.045	+/-0.0175	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
H3 "As Received"												
Tritium		184	181	+/-58.0	250	pCi/L		KXK2	02/14/10	2139	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.2	(50%-105%)
Plutonium-242 Tracer	ISQPU "Dry Weight Corrected"	86.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	86.7	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

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- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7939  
Sample ID: 245691007  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 23.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00663	0.0253	+/-0.00337	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00549	0.0251	+/-0.00698	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00137	0.0189	+/-0.00349	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.37	0.0759	+/-0.115	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.104	0.0484	+/-0.0228	0.100	pCi/g						
Uranium-238		2.23	0.0518	+/-0.176	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.080	0.222	+/-0.0697	0.200	pCi/g		MJH1	02/09/10	1524	947037	4
Bismuth-211	UI	3.51	R,R5a 0.253	+/-0.286		pCi/g						
Bismuth-214		1.15	0.0969	+/-0.0955	0.200	pCi/g						
Cadmium-109	UI	3.44	R,R5a 0.963	+/-0.495		pCi/g						
Cerium-139	U	-0.011	0.0423	+/-0.0124	0.050	pCi/g						
Cesium-134	UI	0.114	R,R5a 0.0811	+/-0.0354	0.100	pCi/g						
Cesium-137		0.083	0.0563	+/-0.0194	0.100	pCi/g						
Cobalt-60	U	-0.00829	0.0514	+/-0.0164	0.100	pCi/g						
Europium-152	U	0.00503	0.125	+/-0.0401	0.200	pCi/g						
Lanthanum-140	U	-0.0847	0.0923	+/-0.0349		pCi/g						
Lead-212		1.51	0.0759	+/-0.101	0.100	pCi/g						
Lead-214		1.22	0.0882	+/-0.104	0.100	pCi/g						
Mercury-203	U	-0.00108	0.0561	+/-0.0169	0.100	pCi/g						
Potassium-40		22.8	0.478	+/-1.24	1.00	pCi/g						
Radium-223	U	-0.0559	0.875	+/-0.302		pCi/g						
Radium-224	UI	3.94	R,R5a 0.864	+/-0.590		pCi/g						
Radium-226		1.15	0.0969	+/-0.0955		pCi/g						
Radium-228		1.38	0.200	+/-0.169	0.500	pCi/g						
Ruthenium-106	U	-0.023	0.422	+/-0.128	0.800	pCi/g						
Sodium-22	U	0.00468	0.0577	+/-0.0174	0.080	pCi/g						
Strontium-85	U	0.0554	0.0566	+/-0.0166		pCi/g						
Thallium-208		0.430	0.0508	+/-0.0407	0.080	pCi/g						

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TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7939  
Sample ID: 245691007

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.347	0.527	+/-0.170		pCi/g						
Thorium-231	U	-0.0559	0.875	+/-0.302		pCi/g						
Thorium-234		1.94	1.83	+/-0.769	2.00	pCi/g						
Tin-113	U	-0.0263	0.0585	+/-0.0177	0.100	pCi/g						
Uranium-235	U	0.140	0.314	+/-0.0882	0.500	pCi/g						
Yttrium-88	U	0.0116	0.0432	+/-0.0125	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium	U	152	180	+/-56.8	250	pCi/L		KXK2	02/14/10	2317	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	78.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7936  
Sample ID: 245691008  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 3.67%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000133	0.0227	+/-0.00187	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0111	0.0279	+/-0.00809	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	-0.00734	0.0211	+/-0.00391	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.919	0.0728	+/-0.0821	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.0784	0.0464	+/-0.0176	0.100	pCi/g						
Uranium-238		1.51	0.0497	+/-0.123	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.112	0.285	+/-0.0872	0.200	pCi/g		MJH1	02/09/10	1532	947037	4
Bismuth-211	UI	4.46	R,R5a	0.336	+/-0.271	pCi/g						
Bismuth-214		1.30		0.114	+/-0.100	pCi/g						
Cadmium-109	UI	4.42	R,R5a	1.28	+/-0.625	pCi/g						
Cerium-139	U	0.00905	0.0525	+/-0.0157	0.050	pCi/g						
Cesium-134	U	0.0999	0.103	+/-0.0279	0.100	pCi/g						
Cesium-137	U	0.00503	0.0694	+/-0.0209	0.100	pCi/g						
Cobalt-60	U	-0.0124	0.066	+/-0.0209	0.100	pCi/g						
Europium-152	U	-0.0872	0.161	+/-0.0508	0.200	pCi/g						
Lanthanum-140	U	-0.0286	0.137	+/-0.0431		pCi/g						
Lead-212		1.73	0.0976	+/-0.0857	0.100	pCi/g						
Lead-214		1.55	0.117	+/-0.103	0.100	pCi/g						
Mercury-203	U	0.0043	0.0731	+/-0.0213	0.100	pCi/g						
Potassium-40		38.7	0.316	+/-1.73	1.00	pCi/g						
Radium-223	U	-0.602	1.11	+/-0.403		pCi/g						
Radium-224	UI	4.20	R,R5a	1.11	+/-0.499	pCi/g						
Radium-226		1.30	0.114	+/-0.100		pCi/g						
Radium-228		1.87	0.237	+/-0.190	0.500	pCi/g						
Ruthenium-106	U	0.0591	0.622	+/-0.183	0.800	pCi/g						
Sodium-22	U	-0.0404	0.0808	+/-0.0265	0.080	pCi/g						
Strontium-85	U	0.0567	0.0679	+/-0.0212		pCi/g						
Thallium-208		0.593	0.0607	+/-0.0544	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7936  
Sample ID: 245691008  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.157	0.674	+/-0.193		pCi/g						
Thorium-231	U	-0.602	1.11	+/-0.403		pCi/g						
Thorium-234	U	1.86	2.42	+/-0.981	2.00	pCi/g						
Tin-113	U	-0.0332	0.075	+/-0.0237	0.100	pCi/g						
Uranium-235	U	-0.0688	0.375	+/-0.115	0.500	pCi/g						
Yttrium-88	U	0.0164	0.0643	+/-0.018	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
H3 "As Received"												
Tritium		5220	369	+/-456	250	pCi/L		KXK2	02/15/10	0839	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	85.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7935  
Sample ID: 245691009  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 23.6%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00172	0.0232	+/-0.00238	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00123	0.0262	+/-0.0021	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.0173	0.0198	+/-0.00669	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		16.8	0.316	+/-1.33	0.100	pCi/g		CXM2	02/18/10	1841	952128	3
Uranium-235/236		1.44	0.202	+/-0.184	0.100	pCi/g						
Uranium-238		72.1	0.216	+/-5.46	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.308	0.475	+/-0.143	0.200	pCi/g		MJH1	02/09/10	1532	947037	5
Bismuth-211	UI	3.70	R,R5a	0.281	+/-0.226	pCi/g						
Bismuth-214		1.15		0.0915	+/-0.0834	0.200	pCi/g					
Cadmium-109	UI	2.47	R,R5a	2.29	+/-0.708	pCi/g						
Cerium-139	U	0.000849		0.0515	+/-0.0163	0.050	pCi/g					
Cesium-134	UI	0.110	R,R5a	0.0772	+/-0.0235	0.100	pCi/g					
Cesium-137	U	0.0432		0.0581	+/-0.016	0.100	pCi/g					
Cobalt-60	U	0.0142		0.052	+/-0.0152	0.100	pCi/g					
Europium-152	U	0.0395		0.138	+/-0.0549	0.200	pCi/g					
Lanthanum-140	U	-0.000368		0.0999	+/-0.030	pCi/g						
Lead-212		1.42		0.0821	+/-0.0674	0.100	pCi/g					
Lead-214		1.29		0.0978	+/-0.0856	0.100	pCi/g					
Mercury-203	U	-0.00269		0.0592	+/-0.0175	0.100	pCi/g					
Potassium-40		25.8		0.400	+/-1.17	1.00	pCi/g					
Protactinium-234m		97.3		5.31	+/-6.99	pCi/g						
Radium-223	U	0.243		0.918	+/-0.307	pCi/g						
Radium-224	UI	4.25	R,R5a	0.933	+/-0.570	pCi/g						
Radium-226		1.15		0.0915	+/-0.0834	pCi/g						
Radium-228		1.50		0.167	+/-0.154	0.500	pCi/g					
Ruthenium-106	U	-0.0133		0.446	+/-0.135	0.800	pCi/g					
Sodium-22	U	-0.0172		0.0516	+/-0.0163	0.080	pCi/g					
Strontium-85	UI	0.066	R,R5a	0.0567	+/-0.0174	pCi/g						

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Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7935  
245691009

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thallium-208		0.450	0.0478	+/-0.041	0.080	pCi/g						
Thorium-227	U	0.264	0.614	+/-0.199		pCi/g						
Thorium-231	U	0.243	0.918	+/-0.307		pCi/g						
Thorium-234		69.6	3.48	+/-6.48	2.00	pCi/g						
Tin-113	U	-0.0313	0.0611	+/-0.0183	0.100	pCi/g						
Uranium-235		1.27	0.365	+/-0.197	0.500	pCi/g						
Yttrium-88	U	-0.0438	0.0379	+/-0.0146	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		13700	369	+/-1040	250	pCi/L		KXK2	02/15/10	0855	948402	6

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	88.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	70.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

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- > Result is greater than value reported
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7934  
Sample ID: 245691010  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 9.67%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00289	0.0235	+/-0.00214	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00373	0.027	+/-0.00468	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00527	0.0204	+/-0.00306	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.825	0.0742	+/-0.0756	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236	U	0.040	0.0473	+/-0.0134	0.100	pCi/g						
Uranium-238		1.03	0.0506	+/-0.0904	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.193	0.263	+/-0.0811	0.200	pCi/g		MJH1	02/09/10	1533	947037	4
Bismuth-211	UI	3.94	R,R5a	0.316	+/-0.257	pCi/g						
Bismuth-214		1.17		0.100	+/-0.0931	0.200						
Cadmium-109	UI	3.50	R,R5a	1.40	+/-0.499	pCi/g						
Cerium-139	U	-0.00522	0.0495	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0665	0.0914	+/-0.0328	0.100	pCi/g						
Cesium-137	U	-0.0141	0.064	+/-0.0198	0.100	pCi/g						
Cobalt-60	U	-0.0267	0.0604	+/-0.0197	0.100	pCi/g						
Europium-152	U	-0.167	0.150	+/-0.0658	0.200	pCi/g						
Lanthanum-140	U	0.0726	0.137	+/-0.0403		pCi/g						
Lead-212		1.65	0.0998	+/-0.0821	0.100	pCi/g						
Lead-214		1.37	0.110	+/-0.0962	0.100	pCi/g						
Mercury-203	U	0.0414	0.0726	+/-0.0226	0.100	pCi/g						
Potassium-40		28.2	0.480	+/-1.34	1.00	pCi/g						
Radium-223	U	0.0609	1.13	+/-0.372		pCi/g						
Radium-224	UI	3.86	R,R5a	1.14	+/-0.654	pCi/g						
Radium-226		1.17	0.100	+/-0.0931		pCi/g						
Radium-228		1.69	0.221	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	0.0157	0.532	+/-0.159	0.800	pCi/g						
Sodium-22	U	0.00576	0.0712	+/-0.0211	0.080	pCi/g						
Strontium-85	U	0.0672	0.0691	+/-0.0208		pCi/g						
Thallium-208		0.585	0.0523	+/-0.0454	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7934  
245691010

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0921	0.671	+/-0.205		pCi/g						
Thorium-231	U	0.0609	1.13	+/-0.372		pCi/g						
Thorium-234	U	1.13	2.13	+/-1.00	2.00	pCi/g						
Tin-113	U	0.0108	0.0762	+/-0.0219	0.100	pCi/g						
Uranium-235	U	0.0263	0.361	+/-0.108	0.500	pCi/g						
Yttrium-88	U	-0.00791	0.0546	+/-0.0175	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		843	369	+/-156	250	pCi/L		KXK2	02/15/10	0911	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	89.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7940  
Sample ID: 245691011  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 4.85%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00488	0.0251	+/-0.00288	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000808	0.0282	+/-0.00262	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.000514	0.0213	+/-0.00226	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.700	0.0744	+/-0.0667	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236	U	0.0364	0.0474	+/-0.0129	0.100	pCi/g						
Uranium-238		0.640	0.0508	+/-0.0622	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.127	0.193	+/-0.0592	0.200	pCi/g		MJH1	02/09/10	1533	947037	4
Bismuth-211	UI	4.24	R,R5a	0.327	+/-0.296	pCi/g						
Bismuth-214		1.30		0.106	+/-0.111	pCi/g						
Cadmium-109	UI	4.14	R,R5a	1.08	+/-0.495	pCi/g						
Cerium-139	U	-0.00689		0.0472	+/-0.0145	pCi/g						
Cesium-134	UI	0.140	R,R5a	0.0943	+/-0.0365	pCi/g						
Cesium-137	U	-0.0473		0.0553	+/-0.018	pCi/g						
Cobalt-60	U	0.0271		0.0652	+/-0.0187	pCi/g						
Europium-152	U	0.0293		0.159	+/-0.0522	pCi/g						
Lanthanum-140	U	-0.00883		0.117	+/-0.036	pCi/g						
Lead-212		1.80		0.0895	+/-0.111	pCi/g						
Lead-214		1.47		0.103	+/-0.110	pCi/g						
Mercury-203	U	0.0306		0.0679	+/-0.0191	pCi/g						
Potassium-40		35.7		0.526	+/-1.80	pCi/g						
Radium-223	U	-0.014		1.02	+/-0.340	pCi/g						
Radium-224	UI	5.04	R,R5a	1.02	+/-0.779	pCi/g						
Radium-226		1.30		0.106	+/-0.111	pCi/g						
Radium-228		1.96		0.231	+/-0.180	pCi/g						
Ruthenium-106	U	0.138		0.513	+/-0.152	pCi/g						
Sodium-22	U	-0.00601		0.0712	+/-0.0223	pCi/g						
Strontium-85	U	0.062		0.0694	+/-0.0217	pCi/g						
Thallium-208		0.608		0.0545	+/-0.0515	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7940  
Sample ID: 245691011

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.322	0.566	+/-0.174		pCi/g					
Thorium-231	U	-0.014	1.02	+/-0.340		pCi/g					
Thorium-234	U	1.43	1.70	+/-0.690	2.00	pCi/g					
Tin-113	U	-0.00679	0.0656	+/-0.0197	0.100	pCi/g					
Uranium-235	U	-0.0501	0.337	+/-0.102	0.500	pCi/g					
Yttrium-88	U	0.0145	0.0503	+/-0.0139	0.100	pCi/g					
<b>Rad Liquid Scintillation Analysis</b>											
<i>H3 "As Received"</i>											
Tritium		794	369	+/-152	250	pCi/L		KXK2	02/15/10 0928	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	77.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	89.3	(50%-105%)
Uranium-232 Tracer	ISQU "Dry Weight Corrected"	102	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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 Los Alamos, New Mexico 87545  
 Contact: Ms. Joylene Valdez  
 Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7937  
 Sample ID: 245691012  
 Matrix: R  
 Collect Date: 25-JAN-10  
 Receive Date: 28-JAN-10  
 Collector: Client  
 Moisture: 23.8%

Project: LANL01004  
 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00541	0.0287	+/-0.00336	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00244	0.0293	+/-0.00303	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.0144	0.0221	+/-0.0061	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.32	0.0737	+/-0.181	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.152	0.047	+/-0.0266	0.100	pCi/g						
Uranium-238		4.53	0.0503	+/-0.334	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.227	0.355	+/-0.109	0.200	pCi/g		MJH1	02/09/10	1533	947037	4
Bismuth-211	UI	4.25	R,R5a	0.340	+/-0.281	pCi/g						
Bismuth-214		1.13		0.119	+/-0.0911	pCi/g						
Cadmium-109	UI	2.84	R,R5a	1.43	+/-0.448	pCi/g						
Cerium-139	U	0.00608		0.0557	+/-0.0164	pCi/g						
Cesium-134	U	0.060		0.0892	+/-0.024	pCi/g						
Cesium-137	UI	0.283	R,R5a	0.119	+/-0.0296	pCi/g						
Cobalt-60	U	-0.0112		0.0582	+/-0.0187	pCi/g						
Europium-152	U	-0.0108		0.163	+/-0.0698	pCi/g						
Lanthanum-140	U	-0.139		0.0993	+/-0.0427	pCi/g						
Lead-212		1.47		0.102	+/-0.0765	pCi/g						
Lead-214		1.48		0.118	+/-0.105	pCi/g						
Mercury-203	U	-0.00778		0.074	+/-0.0214	pCi/g						
Potassium-40		19.7		0.669	+/-1.08	pCi/g						
Radium-223	U	-0.848		1.11	+/-0.406	pCi/g						
Radium-224	UI	4.33	R,R5a	1.16	+/-0.576	pCi/g						
Radium-226		1.13		0.119	+/-0.0911	pCi/g						
Radium-228	UI	1.38	R,R5a	0.469	+/-0.162	pCi/g						
Ruthenium-106	U	-0.111		0.541	+/-0.168	pCi/g						
Sodium-22	U	-0.00306		0.0786	+/-0.0241	pCi/g						
Strontium-85	U	0.0349		0.0646	+/-0.0205	pCi/g						
Thallium-208		0.451		0.0596	+/-0.0445	pCi/g						

# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7937  
Sample ID: 245691012  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.271	0.715	+/-0.209		pCi/g						
Thorium-231	U	-0.848	1.11	+/-0.406		pCi/g						
Thorium-234		4.76	2.89	+/-1.16	2.00	pCi/g						
Tin-113	U	0.0308	0.0847	+/-0.0239	0.100	pCi/g						
Uranium-235	U	0.241	0.412	+/-0.119	0.500	pCi/g						
Yttrium-88	U	0.0114	0.0615	+/-0.0176	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		186	181	+/-58.1	250	pCi/L		KXK2	02/15/10	0055	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	65.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	85.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8056  
Sample ID: 245691013  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 3.56%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0042	0.0225	+/-0.00252	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00179	0.0229	+/-0.00498	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00679	0.0173	+/-0.00396	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.976	0.0546	+/-0.0806	0.100	pCi/g		CXM2	02/09/10	1126	947357	3
Uranium-235/236		0.0802	0.0348	+/-0.0156	0.100	pCi/g						
Uranium-238		1.91	0.0373	+/-0.145	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0276	0.310	+/-0.099	0.200	pCi/g		MJH1	02/09/10	1737	947037	4
Bismuth-211	UI	3.96	R,R5a 0.283	+/-0.240		pCi/g						
Bismuth-214		1.16		+/-0.0848	0.200	pCi/g						
Cadmium-109	UI	2.61	R,R5a 1.54	+/-0.530		pCi/g						
Cerium-139	U	-0.00238	0.0437	+/-0.0126	0.050	pCi/g						
Cesium-134	UI	0.0766	R,R5a 0.076	+/-0.0215	0.100	pCi/g						
Cesium-137	U	-0.0209	0.0508	+/-0.0156	0.100	pCi/g						
Cobalt-60	U	-0.0219	0.0529	+/-0.0171	0.100	pCi/g						
Europium-152	U	0.00258	0.141	+/-0.0492	0.200	pCi/g						
Lanthanum-140	U	-0.00382	0.0977	+/-0.0321		pCi/g						
Lead-212		1.79	0.0803	+/-0.0805	0.100	pCi/g						
Lead-214		1.38	0.0984	+/-0.0908	0.100	pCi/g						
Mercury-203	UI	0.0724	R,R5a 0.0549	+/-0.0281	0.100	pCi/g						
Potassium-40		37.0	0.461	+/-1.61	1.00	pCi/g						
Radium-223	U	0.210	0.918	+/-0.312		pCi/g						
Radium-224	UI	4.76	R,R5a 0.913	+/-0.580		pCi/g						
Radium-226		1.16	0.0972	+/-0.0848		pCi/g						
Radium-228		1.57	0.189	+/-0.160	0.500	pCi/g						
Ruthenium-106	U	0.0867	0.458	+/-0.138	0.800	pCi/g						
Sodium-22	U	0.0144	0.0678	+/-0.0201	0.080	pCi/g						
Strontium-85	UI	0.103	R,R5a 0.0634	+/-0.0188		pCi/g						
Thallium-208		0.532	0.0503	+/-0.0389	0.080	pCi/g						

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-8056  
245691013

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.266	0.540	+/-0.168		pCi/g						
Thorium-231	U	0.210	0.918	+/-0.312		pCi/g						
Thorium-234		2.69	2.50	+/-1.09	2.00	pCi/g						
Tin-113	U	0.0274	0.0639	+/-0.018	0.100	pCi/g						
Uranium-235	U	0.122	0.327	+/-0.0984	0.500	pCi/g						
Yttrium-88	U	-0.0179	0.0447	+/-0.015	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
H3 "As Received"												
Tritium		4080	369	+/-378	250	pCi/L		KXK2	02/15/10	0944	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8057  
Sample ID: 245691014  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 29.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00389	0.0214	+/-0.00237	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00323	0.0248	+/-0.00229	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.0117	0.0187	+/-0.00475	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.48	0.0596	+/-0.117	0.100	pCi/g		CXM2	02/09/10	1126	947357	3
Uranium-235/236		0.149	0.038	+/-0.0236	0.100	pCi/g						
Uranium-238		3.54	0.0407	+/-0.258	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.019	0.108	+/-0.034	0.200	pCi/g		MJH1	02/09/10	1727	947037	4
Bismuth-211	UI	3.96	R,R5a	+/-0.329		pCi/g						
Bismuth-214		1.17	0.133	+/-0.117	0.200	pCi/g						
Cadmium-109	UI	3.83	R,R5a	+/-0.472		pCi/g						
Cerium-139	U	-0.0282	0.0473	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0849	0.114	+/-0.0305	0.100	pCi/g						
Cesium-137		0.0903	0.078	+/-0.0303	0.100	pCi/g						
Cobalt-60	U	0.0384	0.0917	+/-0.025	0.100	pCi/g						
Europium-152	U	-0.0639	0.165	+/-0.0522	0.200	pCi/g						
Lanthanum-140	U	-0.0674	0.158	+/-0.0541		pCi/g						
Lead-212		1.34	0.112	+/-0.0952	0.100	pCi/g						
Lead-214		1.38	0.126	+/-0.120	0.100	pCi/g						
Mercury-203	U	0.00198	0.0755	+/-0.0216	0.100	pCi/g						
Potassium-40		24.3	0.717	+/-1.45	1.00	pCi/g						
Radium-223	U	0.0993	1.08	+/-0.349		pCi/g						
Radium-224	UI	3.04	R,R5a	+/-0.501		pCi/g						
Radium-226		1.17	0.133	+/-0.117		pCi/g						
Radium-228		1.55	0.295	+/-0.197	0.500	pCi/g						
Ruthenium-106	U	-0.355	0.546	+/-0.187	0.800	pCi/g						
Sodium-22	U	0.0193	0.0959	+/-0.0282	0.080	pCi/g						
Strontium-85	U	0.0348	0.073	+/-0.0206		pCi/g						
Thallium-208		0.449	0.0712	+/-0.0484	0.080	pCi/g						

AMF  
3/4/10



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8057  
Sample ID: 245691014

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.121	0.684	+/-0.206		pCi/g					
Thorium-231	U	0.0993	1.08	+/-0.349		pCi/g					
Thorium-234		3.59	1.04	+/-0.685	2.00	pCi/g					
Tin-113	U	0.010	0.0823	+/-0.0239	0.100	pCi/g					
Uranium-235	U	0.146	0.389	+/-0.114	0.500	pCi/g					
Yttrium-88	U	-0.00525	0.0612	+/-0.0195	0.100	pCi/g					
<b>Rad Liquid Scintillation Analysis</b>											
<i>H3 "As Received"</i>											
Tritium	U	89.9	181	+/-55.2	250	pCi/L		KXK2	02/15/10	0233 948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	92.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.6	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

AMF  
3/4/10

Wednesday, January 27, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1434

LOS ALAMOS

REQUEST NUMBER: 10-1434

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/26/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

845691 %

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7883	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7883	1	POLY	H3	Ice	R
RE15-10-7884	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7884	1	POLY	H3	Ice	R
RE15-10-7932	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7932	1	POLY	H3	Ice	R
RE15-10-7931	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7931	1	POLY	H3	Ice	R
RE15-10-7938	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7938	1	POLY	H3	Ice	R
RE15-10-7933	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7933	1	POLY	H3	Ice	R
RE15-10-7939	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7939	1	POLY	H3	Ice	R
RE15-10-7936	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7936	1	POLY	H3	Ice	R
RE15-10-7935	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7935	1	POLY	H3	Ice	R
RE15-10-7934	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7934	1	POLY	H3	Ice	R
RE15-10-7940	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7940	1	POLY	H3	Ice	R
RE15-10-7937	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7937	1	POLY	H3	Ice	R
RE15-10-8056	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8056	1	POLY	H3	Ice	R
RE15-10-8057	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Wednesday, January 27, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1434

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8057	1	POLY	H3	Ice	R
Relinquished By:		Date	Time	Received By:	
Signature		1/27/10	1450	Signature	
Printed Name		Printed Name		Printed Name	
Signature		Signature		Signature	
Printed Name		Printed Name		Printed Name	
Signature		Signature		Signature	
Received for DISPOSAL By:		Date	Time	Remarks:	
Signature					
Printed Name		Printed Name		Printed Name	
Signature		Signature		Signature	

Wednesday, January 27, 2010

**LOS ALAMOS  
NATIONAL LABORATORY**

ATTN: Valerie Davis  
General Engineering Laboratories, Inc., Charleston, SC.  
2040 Savage Rd  
Charleston, SC 29407

These Samples are on:  
LANL Request Number: 10-1434  
Per Agreement Number: 126310011  
Project Cost Code: MR3A05629E00

Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 1/27/2010  
TURNAROUND/REPORT DUE: 2/26/2010  
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background  
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature: 

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA 901.1	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	

Wednesday, January 27, 2010

Page 2 of 4

REQUEST NUMBER: 10-1434

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA 801.1	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	EPA 805.0	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300-AM-241	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	

Wednesday, January 27, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:AM-241	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300:ISOPU	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300:ISOU	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	

REQUEST NUMBER: 10-1434

Wednesday, January 27, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	

Final Page of REQUEST NUMBER 10-1434



February 01, 2010

[www.gel.com](http://www.gel.com)

Ms. Joylene Valdez  
Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545

Re: LANL ER Project  
Work Order: 245691  
SDG: 10-1434

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on January 28, 2010, and analyzed for Radiochemistry. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Valerie Davis  
Project Manager

Purchase Order: 72733-001-09  
Chain of Custody: 10-1434  
Enclosures



**Los Alamos National Laboratory (72733-001-09)**

**LANL ER Project**

**Work Order #: 245691**

**SDG: 10-1434**

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# Case Narrative

**Case Narrative for  
Los Alamos National Laboratory (72733-001-09)  
LANL ER Project  
Workorder #: 245691  
SDG # : 10-1434**

**February 01, 2010**

**Laboratory Identification:**

GEL Laboratories LLC  
2040 Savage Road  
Charleston, South Carolina 29407  
(843) 556-8171

**Summary**

**Sample receipt** The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on January 28, 2010 for analysis. The samples were prepared/analyzed within the required holding time. Shipping container temperatures were checked, documented, and within specifications. The samples were screened according to GEL Standard Operating Procedure. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. The containers for radiochemistry were received at 12-14C temperatures. Shipping container temperature was within specification (0 - 6C).

**Sample Identification** The laboratory received the following samples:

<b><u>Laboratory ID</u></b>	<b><u>Client ID</u></b>
245691001	RE15-10-7883
245691002	RE15-10-7884
245691003	RE15-10-7932
245691004	RE15-10-7931
245691005	RE15-10-7938
245691006	RE15-10-7933
245691007	RE15-10-7939
245691008	RE15-10-7936
245691009	RE15-10-7935
245691010	RE15-10-7934
245691011	RE15-10-7940
245691012	RE15-10-7937
245691013	RE15-10-8056
245691014	RE15-10-8057

**Case Narrative**

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

**Data Package** The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

A handwritten signature in black ink, appearing to read "Valerie Davis" with a stylized flourish at the end.

Valerie Davis

Project Manager

**List of current GEL Certifications as of 01 February 2010**

<b>State</b>	<b>Certification</b>
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

# **Chain of Custody and Supporting Documentation**

Wednesday, January 27, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1434

LOS ALAMOS

REQUEST NUMBER: 10-1434

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/26/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

245691 0/0

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7883	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7883	1	POLY	H3	Ice	R
RE15-10-7884	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7884	1	POLY	H3	Ice	R
RE15-10-7932	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7932	1	POLY	H3	Ice	R
RE15-10-7931	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7931	1	POLY	H3	Ice	R
RE15-10-7938	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7938	1	POLY	H3	Ice	R
RE15-10-7933	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7933	1	POLY	H3	Ice	R
RE15-10-7939	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7939	1	POLY	H3	Ice	R
RE15-10-7936	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7936	1	POLY	H3	Ice	R
RE15-10-7935	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7935	1	POLY	H3	Ice	R
RE15-10-7934	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7934	1	POLY	H3	Ice	R
RE15-10-7940	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7940	1	POLY	H3	Ice	R
RE15-10-7937	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7937	1	POLY	H3	Ice	R
RE15-10-8056	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8056	1	POLY	H3	Ice	R
RE15-10-8057	1	POLY	AM241+GS+ISOPU+ISO U	None	R



Wednesday, January 27, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1434

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8057	1	POLY	H3	Ice	R

Relinquished By:	Date	Time	Received By:	Date	Time
<i>Geely W. Cy</i>	1/27/10	14:10	<i>Patricia Dover-Dent</i>	1-28-10	08:45
Printed Name	Signature		Printed Name	Signature	

Printed Name	Signature	Printed Name	Signature
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Printed Name	Signature	Printed Name	Signature
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Received for DISPOSAL By:	Date	Time	Remarks:

Printed Name	Signature
--------------	-----------

# LOS ALAMOS

**NATIONAL LABORATORY**

**ATTN: Valerie Davis**

**General Engineering Laboratories, Inc., Charleston, SC.**

2040 Savage Rd

Charleston, SC 29407

**These Samples are on:**

LANL Request Number:10-1434

Per Agreement Number:126310011

**Project Cost Code: MR3A05529E00**

**Please analyse the enclosed samples according to the schedule indicated:**

SHIP DATE: 1/27/2010

**TURNAROUND/REPORT DUE: 2/26/2010**

**TURNAROUND REQ'D: 30 Days**

**RAD SCREENING: Yes, Below Background**

**LAB REQUEST COMMENTS:**

LANL ER SMO CONTACT:

**Signature:**

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7831	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	

Wednesday, January 27, 2010

REQUEST NUMBER: 10-1434

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	EPA:906.0	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300-AM-241	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	

Wednesday, January 27, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:AM-241	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8058	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300:ISOPU	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	
		1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8058	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	
	HASL-300:ISOU	1	RE15-10-7883	R	1/25/2010	
		1	RE15-10-7884	R	1/25/2010	
		1	RE15-10-7931	R	1/25/2010	
		1	RE15-10-7932	R	1/25/2010	
		1	RE15-10-7933	R	1/25/2010	
		1	RE15-10-7934	R	1/25/2010	
		1	RE15-10-7935	R	1/25/2010	
		1	RE15-10-7936	R	1/25/2010	
		1	RE15-10-7937	R	1/25/2010	

Wednesday, January 27, 2010

REQUEST NUMBER: 10-1434

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE15-10-7938	R	1/25/2010	
		1	RE15-10-7939	R	1/25/2010	
		1	RE15-10-7940	R	1/25/2010	
		1	RE15-10-8056	R	1/25/2010	
		1	RE15-10-8057	R	1/25/2010	

Final Page of REQUEST NUMBER 10-1434



Laboratories LLC

## SAMPLE RECEIPT &amp; REVIEW FORM

Client: LANL			SDG/ARCOC/Work Order: 10-1434		
Received By: Patricia Dover-Dent			Date Received: January 28, 2009		
Suspected Hazard Information		Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.	
COC/Samples marked as radioactive?			X	Maximum Counts Observed*: 40 CPM	
Classified Radioactive II by RSO?			X		
COC/Samples marked containing PCBs?			X		
Shipped as a DOT Hazardous?			X	Hazard Class Shipped: UN#:	
Samples identified as Foreign Soil?			X		

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	X			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2 Samples requiring cold preservation within 0 ≤ 6 deg. C?	X			Preservation Method: ice bags    blue ice    dry ice    none    other (describe) 0-3    12-14C
3 Chain of custody documents included with shipment?	X			
4 Sample containers intact and sealed?	X			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5 Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7 Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	X			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?			X	Sample ID's affected: time written on containers, not on COC
11 Number of containers received match number indicated on COC?	X			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	X			

Comments: FEDEX#S

7209 7849 7165 0C	7209 7849 7198 3C
7209 7849 7132 1C	7209 7849 7268 3C
7209 7849 7187 1C	7209 7849 7110 12C
7209 7849 7257 1C	7209 7849 7095 13C
7209 7849 7143 2C	7209 7849 7121 13C
7209 7849 7154 2C	7209 7849 7100 14C
7209 7849 7176 2C	
7209 7849 7202 2C	

ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 52.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

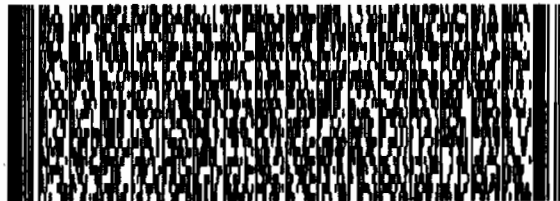
° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWKO

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3 of 3

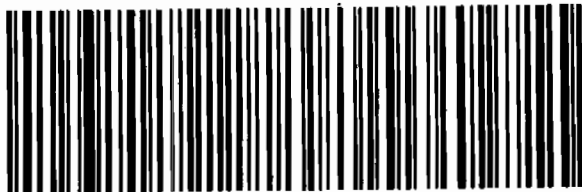
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PRIORITY OVERNIGHT

29407  
SC-US  
CHS

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Page 156 48-034 NHTF V3 U1-0

ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 60.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

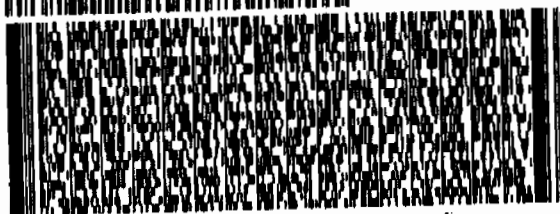
° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWGO

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1 of 2

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THU - 28JAN A1  
PRIORITY OVERNIGHT

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CHS

XX CHSA

Page 192

ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 53.0 LB MAN  
CAD: 0014176/CAFE2449

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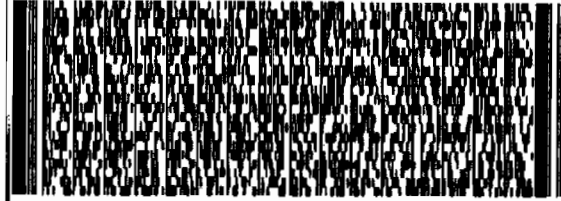
° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A0352VA00

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2 of 2

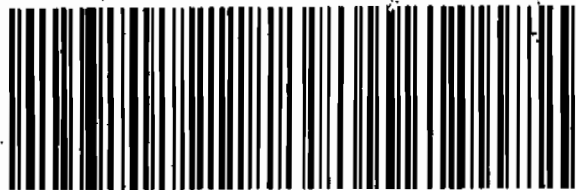
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PRIORITY OVERNIGHT

29407  
SC-US  
CHS

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ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 46.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A0515BYDO

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0201

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PRIORITY OVERNIGHT

29407  
SC-US  
CHS

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ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 52.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

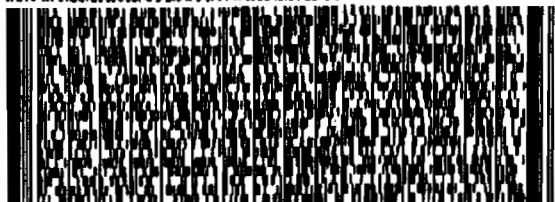
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(843) 556-8171

REF: 6B010AMR1A015AGWKO

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ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 44.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

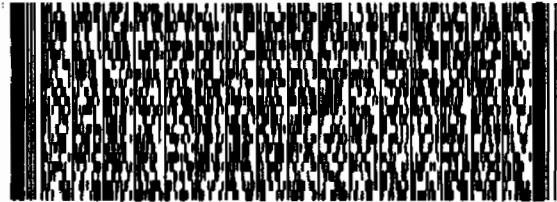
CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWKO

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1 of 3  
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0201  
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PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA

Part 1 156-18-134 NRIT V3 04-0



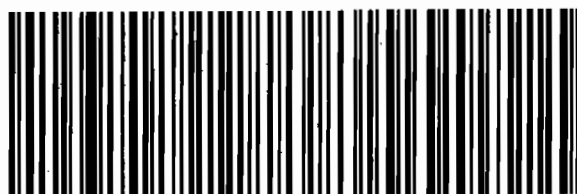
2 of 3  
MPSH 7209 7849 7154  
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THU - 28JAN A1  
PRIORITY OVERNIGHT

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Part 1 156-18-134 NRIT V3 04-0



ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 52.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

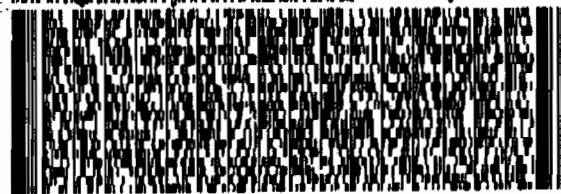
CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWKO

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ORIGIN ID: SAFA (505) 665-9968  
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SHIP DATE: 27JAN10  
ACTWGT: 59.0 LB MAN  
CAD: 0014176/CAFE2449

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° VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

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REF: 6B010AMR1A015AGWKO

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0201

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PRIORITY OVERNIGHT

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ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
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TA00 BLDG 1237 DPU 03

SHIP DATE: 27JAN10  
ACTWGT: 47.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

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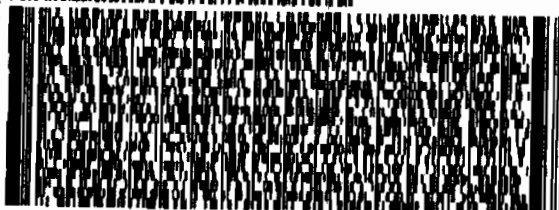
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THU - 28JAN A1

MPS# 7209 7849 7198

PRIORITY OVERNIGHT

Mstr# 7209 7849 7187 0201

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ORIGIN ID: SAFA (505) 665-9968  
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TA00 BLDG 1237 DPU 03

SHIP DATE: 27JAN10  
ACTWGT: 59.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

BILL SENDER

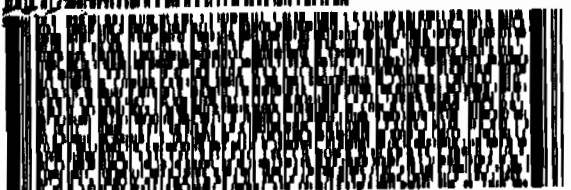
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J06200911302223

THU - 28JAN A1

TRK# 7209 7849 7110

PRIORITY OVERNIGHT

XX CHSA

29407  
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ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

SHIP DATE: 27JAN10  
ACTWGT: 35.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

BILL SENDER

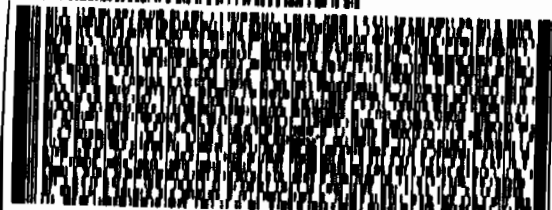
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GENERAL ENGINEERING LAB  
2040 SAVAGE RD

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THU - 28JAN A1

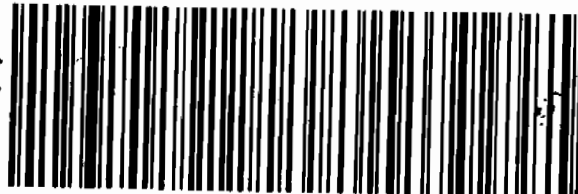
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PRIORITY OVERNIGHT

Mstr# 7209 7849 7257 0201

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SC-US  
CHS



ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

SHIP DATE: 27JAN10  
ACTWGT: 60.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

BILL SENDER

° VALERIE DAVIS  
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2040 SAVAGE RD

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REF: 6B010AMR3A05529E00

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THU - 28JAN A1

MPS# 7209 7849 7095

PRIORITY OVERNIGHT

Mstr# 7209 7849 7084 0201

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SC-US  
CHS

CAD: 0014178/CÁFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

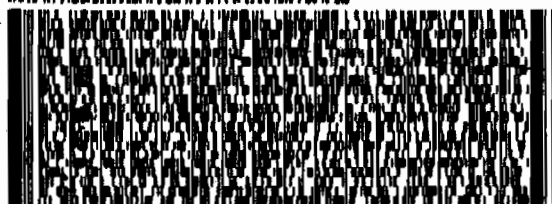
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GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A0352VA00



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1 of 2

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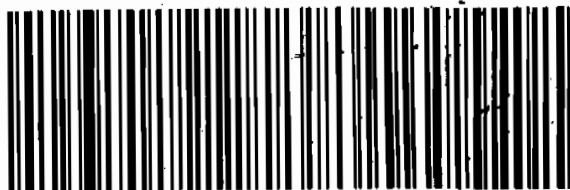
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## MASTER ##

THU - 28JAN A1  
PRIORITY OVERNIGHT

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ORIGIN ID: SAFA (505) 665-9968  
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LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 27JAN10  
ACTWGT: 59.0 LB MAN  
CAD: 0014176/CAFE2449**BILL SENDER**

0 VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC: 29407

(843) 656-8171

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**3 of 3**

MPS#

**0263**

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Mstr# 7209 7849 7084 0201

THU - 28JAN A1  
PRIORITY OVERNIGHT

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SC-US  
CHS

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# **Data Review Qualifier Flag Definition Sheet**

## Data Review Qualifier Definitions

Qualifier    Explanation

- \*    A quality control analyte recovery is outside of specified acceptance criteria
- \*\*   Analyte is a surrogate compound
- <    Result is less than value reported
- >    Result is greater than value reported
- ^    RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A    The TIC is a suspected aldol-condensation product
- B    Target analyte was detected in the associated blank
- B    Metals-Either presence of analyte detected in the associated blank, or  
MDL/IDL < sample value < PQL
- BD   Results are either below the MDC or tracer recovery is low
- C    Analyte has been confirmed by GC/MS analysis
- D    Results are reported from a diluted aliquot of the sample
- d    5-day BOD-The 2:1 depletion requirement was not met for this sample
- E    Organics-Concentration of the target analyte exceeds the instrument calibration range
- E    Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H    Analytical holding time was exceeded
- h    Preparation or preservation holding time was exceeded
- J    Value is estimated
- N    Metals-The Matrix spike sample recovery is not within specified control limits
- N    Organics-Presumptive evidence based on mass spectral library search to make a tentative  
identification of the analyte (TIC). Quantitation is based on nearest internal standard  
response factor
- N/A   Spike recovery limits do not apply. Sample concentration exceeds spike concentration  
by 4X or more
- ND   Analyte concentration is not detected above the reporting limit
- UI   Gamma Spectroscopy-Uncertain identification
- X    Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y    QC Samples were not spiked with this compound
- Z    Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

# RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-1434**

**Method/Analysis Information**

**Product:** Dry Weight  
**Analytical Method:** Dry Soil Prep  
**Analytical Batch Number:** 947354

<b>Sample ID</b>	<b>Client ID</b>
245691001	RE15-10-7883
245691002	RE15-10-7884
245691003	RE15-10-7932
245691004	RE15-10-7931
245691005	RE15-10-7938
245691006	RE15-10-7933
245691007	RE15-10-7939
245691008	RE15-10-7936
245691009	RE15-10-7935
245691010	RE15-10-7934
245691011	RE15-10-7940
245691012	RE15-10-7937
245691013	RE15-10-8056
245691014	RE15-10-8057
1202028224	245691001(RE15-10-7883) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-021 REV# 16.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Designated QC**

The following sample was used for QC: 245691001 (RE15-10-7883). The QC was from LANL work order 245691.

**QC Information**

Refer to Data Exception Report (DER).

**CSU**

The blank result is less than 1.65 times the CSU. Not Applicable.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following DER was generated for this SDG: DER 785601 was generated due to Failed RPD for DUP. The relative percent difference for the duplicate failed due to a non-homogeneous sample matrix. The Group Leader was consulted. Reporting results.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Samples 245691001, 245691006, 245691007, 245691009, 245691012 and 245691014 were a very wet mud. They could not be homogenized thoroughly prior to taking aliquot.

**Blank Decision Level**

The blank result is less than the decision level. Not Applicable.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** AM241  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 947354  
**Prep Batch Number:** 946897

<b>Sample ID</b>	<b>Client ID</b>
245691001	RE15-10-7883
245691002	RE15-10-7884
245691003	RE15-10-7932
245691004	RE15-10-7931
245691005	RE15-10-7938
245691006	RE15-10-7933
245691007	RE15-10-7939
245691008	RE15-10-7936
245691009	RE15-10-7935
245691010	RE15-10-7934

245691011	RE15-10-7940
245691012	RE15-10-7937
245691013	RE15-10-8056
245691014	RE15-10-8057
1202029343	Method Blank (MB)
1202029344	245691001(RE15-10-7883) Sample Duplicate (DUP)
1202029345	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

Aliquot for sample 1202029343 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 245691001 (RE15-10-7883). The QC was from LANL work order 245691.

##### **QC Information**

All of the QC samples met the required acceptance limits.

##### **CSU**

The blank result is less than 1.65 times the CSU.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

#### **Miscellaneous Information:**

##### **Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.



**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population. Sample, 1202029345 (LCS), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** ISOPU

Analytical Method: DOE EML HASL-300, Pu-11-RC Modified

Prep Method: Dry Soil Prep

Analytical Batch Number: 947356

Prep Batch Number: 946897

<b>Sample ID</b>	<b>Client ID</b>
245691001	RE15-10-7883
245691002	RE15-10-7884
245691003	RE15-10-7932
245691004	RE15-10-7931
245691005	RE15-10-7938
245691006	RE15-10-7933
245691007	RE15-10-7939
245691008	RE15-10-7936
245691009	RE15-10-7935
245691010	RE15-10-7934
245691011	RE15-10-7940
245691012	RE15-10-7937
245691013	RE15-10-8056
245691014	RE15-10-8057
1202029347	Method Blank (MB)
1202029348	245691001(RE15-10-7883) Sample Duplicate (DUP)
1202029349	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

Aliquot for sample 1202029347 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 245691001 (RE15-10-7883). The QC was from LANL work order 245691.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank result is less than 1.65 times the CSU.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

Product: ISOU

Analytical Method: DOE EML HASL-300, U-02-RC Modified  
Prep Method: Dry Soil Prep  
Analytical Batch Number: 947357  
Prep Batch Number: 946897

Sample ID	Client ID
245691001	RE15-10-7883
245691002	RE15-10-7884
245691003	RE15-10-7932
245691004	RE15-10-7931
245691005	RE15-10-7938
245691006	RE15-10-7933
245691007	RE15-10-7939
245691008	RE15-10-7936
245691010	RE15-10-7934
245691011	RE15-10-7940
245691012	RE15-10-7937
245691013	RE15-10-8056
245691014	RE15-10-8057
1202029350	Method Blank (MB)
1202029351	245691001(RE15-10-7883) Sample Duplicate (DUP)
1202029352	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

Aliquot for sample 1202029350 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 245691001 (RE15-10-7883). The QC was from LANL work order 245691.

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **CSU**

The U-233/234 and U-238 blank results are greater than 1.65 times the CSU but less than the MDC.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Sample Re-prep/Re-analysis**

Sample 245691004 (RE15-10-7931) was recounted due to a peak shift.

#### **Miscellaneous Information:**

##### **Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

##### **Manual Integration**

No manual integrations were performed on data in this batch.

##### **Additional Comments**

The MDCs are calculated using a blank population.

##### **Blank Decision Level**

The U-233/234 and U-238 blank results are greater than the decision level but less than the MDC.

#### **Qualifier information**

Manual qualifiers were not required.

#### **Method/Analysis Information**

**Product:** ISOU  
**Analytical Method:** DOE EML HASL-300, U-02-RC Modified  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 952128  
**Prep Batch Number:** 946897

<b>Sample ID</b>	<b>Client ID</b>
245691009	RE15-10-7935
1202040645	Method Blank (MB)
1202040646	245691009(RE15-10-7935) Sample Duplicate (DUP)
1202040647	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

##### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

Aliquot for sample 1202040645 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 245691009 (RE15-10-7935). The QC was from LANL work order 245691.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The U233/234 blank result is greater than 1.65 times the CSU but less than the MDC. Additionally, the sample results are greater than five times the blank result.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

Sample 245691009 (RE15-10-7935) was reprepared with reduced aliquot size due to high activity levels.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** GAMMA SPEC  
**Analytical Method:** DOE HASL 300, 4.5.2.3/Ga-01-R  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 947037  
**Prep Batch Number:** 946897

<b>Sample ID</b>	<b>Client ID</b>
245691001	RE15-10-7883
245691002	RE15-10-7884
245691003	RE15-10-7932
245691004	RE15-10-7931
245691005	RE15-10-7938
245691006	RE15-10-7933
245691007	RE15-10-7939
245691008	RE15-10-7936
245691009	RE15-10-7935
245691010	RE15-10-7934
245691011	RE15-10-7940
245691012	RE15-10-7937
245691013	RE15-10-8056
245691014	RE15-10-8057
1202028548	Method Blank (MB)
1202028549	245691006(RE15-10-7933) Sample Duplicate (DUP)
1202028550	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 18.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met. The initial Calibrations were performed in February 2009, March 2009, April 2009, June 2009, July 2009, August 2009, October 2009, November 2009, December 2009 and January 2010.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 245691006 (RE15-10-7933). The QC was from LANL work order 245691.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank 1202028548 (MB) result is greater than 1.65 times the CSU but less than the MDC for Co-60, K-40, and Sr-85.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Additional Comments**

Pa-234m was positively identified and added to sample 245691009 (RE15-10-7935).

**Blank Decision Level**

The blank 1202028548 (MB) result is greater than the decision level but less than the MDC for K-40, Ra-224, Ra-226, and Sr-85.

**Qualifier information**

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to high peak-width.	Mercury-203	245691005	RE15-10-7938
UI	Data rejected due to interference.	Bismuth-211	245691001	RE15-10-7883
			245691002	RE15-10-7884
			245691003	RE15-10-7932
			245691004	RE15-10-7931
			245691005	RE15-10-7938
			245691006	RE15-10-7933
			245691007	RE15-10-7939
			245691008	RE15-10-7936
			245691009	RE15-10-7935
			245691010	RE15-10-7934
			245691011	RE15-10-7940
			245691012	RE15-10-7937
			245691013	RE15-10-8056

			245691014	RE15-10-8057
			1202028549	RE15-10-7933(245691006DUP)
		Cadmium-109	245691001	RE15-10-7883
			245691002	RE15-10-7884
			245691003	RE15-10-7932
			245691004	RE15-10-7931
			245691005	RE15-10-7938
			245691006	RE15-10-7933
			245691007	RE15-10-7939
			245691008	RE15-10-7936
			245691009	RE15-10-7935
			245691010	RE15-10-7934
			245691011	RE15-10-7940
			245691012	RE15-10-7937
			245691013	RE15-10-8056
			245691014	RE15-10-8057
			1202028549	RE15-10-7933(245691006DUP)
		Mercury-203	245691013	RE15-10-8056
		Radium-224	245691001	RE15-10-7883
			245691002	RE15-10-7884
			245691003	RE15-10-7932
			245691004	RE15-10-7931
			245691005	RE15-10-7938
			245691006	RE15-10-7933
			245691007	RE15-10-7939
			245691008	RE15-10-7936
			245691009	RE15-10-7935
			245691010	RE15-10-7934
			245691011	RE15-10-7940
			245691012	RE15-10-7937
			245691013	RE15-10-8056
			245691014	RE15-10-8057
			1202028549	RE15-10-7933(245691006DUP)
UI	Data rejected due to low abundance.	Cesium-134	245691001	RE15-10-7883
			245691002	RE15-10-7884
			245691003	RE15-10-7932
			245691007	RE15-10-7939
			245691009	RE15-10-7935



			245691011	RE15-10-7940
			245691013	RE15-10-8056
		Cesium-137	245691012	RE15-10-7937
		Radium-228	245691012	RE15-10-7937
		Strontium-85	245691002	RE15-10-7884
			245691006	RE15-10-7933
			245691009	RE15-10-7935
			245691013	RE15-10-8056
UI	Data rejected due to no valid peak.	Uranium-235	245691006	RE15-10-7933

#### **Method/Analysis Information**

**Product:** H3

Analytical Method: GL-RAD-A-002

Analytical Batch Number: 948402

<b>Sample ID</b>	<b>Client ID</b>
245691001	RE15-10-7883
245691002	RE15-10-7884
245691003	RE15-10-7932
245691004	RE15-10-7931
245691005	RE15-10-7938
245691006	RE15-10-7933
245691007	RE15-10-7939
245691008	RE15-10-7936
245691009	RE15-10-7935
245691010	RE15-10-7934
245691011	RE15-10-7940
245691012	RE15-10-7937
245691013	RE15-10-8056
245691014	RE15-10-8057
1202031682	Method Blank (MB)
1202031683	245691001(RE15-10-7883) Sample Duplicate (DUP)
1202031684	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 18.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 245691001 (RE15-10-7883). The QC was from LANL work order 245691.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank result is less than 1.65 times the CSU.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

Samples 1202031682 (MB), 1202031683 (RE15-10-7883), 1202031684 (LCS), 245691004 (RE15-10-7931), 245691012 (RE15-10-7937), 245691013 (RE15-10-8056) and 245691014 (RE15-10-8057) were recounted due to the quench number being outside the calibration range. Recount is being reported. Samples 1202031682 (MB), 1202031683 (RE15-10-7883), 1202031684 (LCS), 245691006 (RE15-10-7933), 245691007 (RE15-10-7939), 245691008 (RE15-10-7936), 245691009 (RE15-10-7935), 245691010 (RE15-10-7934), 245691011 (RE15-10-7940), 245691012 (RE15-10-7937), 245691013 (RE15-10-8056) and 245691014 (RE15-10-8057) were recounted due to a detector lock out condition. Recount is being reported. Samples 245691001 (RE15-10-7883), 245691002 (RE15-10-7884), 245691003 (RE15-10-7932) and 245691005 (RE15-10-7938) were recounted due to the samples not counting within 24 hours of the laboratory control sample.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the

requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer/Date: Kath Bell 2/22/10

### DATA EXCEPTION REPORT

<b>Mo.Day Yr.</b> 01-FEB-10	<b>Division:</b> Radiochemistry	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> BALANCE	<b>Test / Method:</b>	<b>Matrix Type:</b> Solid	<b>Client Code:</b> LANL010
<b>Batch ID:</b> 946897	<b>Sample Numbers:</b> 245667001, 245667002, 245667003, 245667004, 245667005, 245667006, 245691001, 245691002, 245691003, 245691004, 245691005, 245691006, 245691007, 245691008, 245691009, 245691010, 245691011, 245691012, 245691013, 245691014, 1202028224		
<b>Potentially affected work order(s)(SDG):</b> 245663(10-1436),245664(10-1437),245667(10-1438),245686(10-1432),245688(10-1433),245691(10-1434)			
<b>Application Issues:</b> Failed RPD for DUP			
<b>Specification and Requirements</b> <b>Exception Description:</b>		<b>DER Disposition:</b>	
The relative percent difference for the duplicate failed due to a non-homogeneous sample matrix.		The Group Leader was consulted. Reporting results.	

**Originator's Name:**

David Swan

01-FEB-10

**Data Validator/Group Leader:**

Tim Winters

01-FEB-10

# SAMPLE DATA SUMMARY

## **GEL LABORATORIES LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - [www.gel.com](http://www.gel.com)

### **Certificate of Analysis Report for**

LANL010 Los Alamos National Laboratory (72733-001-09)

Client SDG: 10-1434 GEL Work Order: 245691

**The Qualifiers in this report are defined as follows:**

- \* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- \*\* Indicates the analyte is a surrogate compound.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7883  
Sample ID: 245691001  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 31.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.0032	0.0235	+/-0.00275	0.050	pCi/g		CXM2	02/10/10	1813	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00468	0.0239	+/-0.00271	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	-0.000249	0.0181	+/-0.00294	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.31	0.0666	+/-0.108	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.0848	0.0425	+/-0.0182	0.100	pCi/g						
Uranium-238		2.73	0.0455	+/-0.206	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00746	0.270	+/-0.0887	0.200	pCi/g		MJH1	02/09/10	1325	947037	4
Bismuth-211	UI	4.19	0.311	+/-0.262		pCi/g						
Bismuth-214		1.08	0.119	+/-0.096	0.200	pCi/g						
Cadmium-109	UI	2.22	1.40	+/-0.474		pCi/g						
Cerium-139	U	0.00868	0.055	+/-0.0163	0.050	pCi/g						
Cesium-134	UI	0.249	0.100	+/-0.0417	0.100	pCi/g						
Cesium-137	U	0.0433	0.0783	+/-0.0222	0.100	pCi/g						
Cobalt-60	U	0.032	0.0692	+/-0.0191	0.100	pCi/g						
Europium-152	U	0.012	0.165	+/-0.0627	0.200	pCi/g						
Lanthanum-140	U	-0.0321	0.133	+/-0.0431		pCi/g						
Lead-212		1.53	0.096	+/-0.0787	0.100	pCi/g						
Lead-214		1.46	0.108	+/-0.0988	0.100	pCi/g						
Mercury-203	U	0.0137	0.0739	+/-0.0211	0.100	pCi/g						
Potassium-40		24.3	0.513	+/-1.21	1.00	pCi/g						
Radium-223	U	-0.785	1.14	+/-0.358		pCi/g						
Radium-224	UI	4.26	1.09	+/-0.565		pCi/g						
Radium-226		1.08	0.119	+/-0.096		pCi/g						
Radium-228		1.59	0.188	+/-0.165	0.500	pCi/g						
Ruthenium-106	U	-0.193	0.532	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.0165	0.0648	+/-0.0204	0.080	pCi/g						
Strontium-85	U	0.0583	0.0691	+/-0.0212		pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7883  
Sample ID: 245691001  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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### Rad Gamma Spec Analysis

#### GAMMA SPEC "Dry Weight Corrected"

Thallium-208		0.543	0.0627	+/-0.0453	0.080	pCi/g					
Thorium-227	U	0.0825	0.662	+/-0.200		pCi/g					
Thorium-231	U	-0.785	1.14	+/-0.358		pCi/g					
Thorium-234		4.66	2.21	+/-1.23	2.00	pCi/g					
Tin-113	U	0.00895	0.0779	+/-0.0227	0.100	pCi/g					
Uranium-235	U	0.0264	0.372	+/-0.113	0.500	pCi/g					
Yttrium-88	U	0.0201	0.0613	+/-0.017	0.100	pCi/g					

### Rad Liquid Scintillation Analysis

#### H3 "As Received"

Tritium	U	155	203	+/-63.6	250	pCi/L	KXX2	02/16/10	1743	948402	5
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### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylenc Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7883  
245691001

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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H Analytical holding time was exceeded

J Value is estimated

M M if above MDC and less than LLD

M Matrix Related Failure

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7884  
Sample ID: 245691002  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 5.82%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00133	0.026	+/-0.00214	0.050	pCi/g		CXM2	02/10/10	1813	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00363	0.0245	+/-0.003	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	-0.000701	0.0185	+/-0.00228	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.664	0.0784	+/-0.0656	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.0615	0.050	+/-0.016	0.100	pCi/g						
Uranium-238		0.690	0.0536	+/-0.0667	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0319	0.207	+/-0.0637	0.200	pCi/g		MJH1	02/09/10	1521	947037	4
Bismuth-211	UI	4.00	0.284	+/-0.289		pCi/g						
Bismuth-214		1.20	0.0936	+/-0.0987	0.200	pCi/g						
Cadmium-109	UI	3.84	1.03	+/-0.454		pCi/g						
Cerium-139	U	-0.0124	0.0466	+/-0.0134	0.050	pCi/g						
Cesium-134	UI	0.0854	0.0736	+/-0.0232	0.100	pCi/g						
Cesium-137	U	-0.028	0.0489	+/-0.0154	0.100	pCi/g						
Cobalt-60	U	0.016	0.0561	+/-0.0163	0.100	pCi/g						
Europium-152	U	0.0129	0.141	+/-0.0531	0.200	pCi/g						
Lanthanum-140	U	0.0657	0.112	+/-0.0346		pCi/g						
Lead-212		1.68	0.0781	+/-0.121	0.100	pCi/g						
Lead-214		1.39	0.0989	+/-0.107	0.100	pCi/g						
Mercury-203	U	0.0347	0.0637	+/-0.0185	0.100	pCi/g						
Potassium-40		36.3	0.411	+/-1.82	1.00	pCi/g						
Radium-223	U	-0.727	0.957	+/-0.298		pCi/g						
Radium-224	UI	4.70	0.888	+/-0.512		pCi/g						
Radium-226		1.20	0.0936	+/-0.0987		pCi/g						
Radium-228		1.48	0.180	+/-0.154	0.500	pCi/g						
Ruthenium-106	U	-0.161	0.430	+/-0.132	0.800	pCi/g						
Sodium-22	U	-0.0416	0.0546	+/-0.0179	0.080	pCi/g						
Strontium-85	UI	0.112	0.0644	+/-0.0199		pCi/g						
Thallium-208		0.528	0.0505	+/-0.044	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7884  
Sample ID: 245691002

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0132	0.563	+/-0.167		pCi/g						
Thorium-231	U	-0.727	0.957	+/-0.298		pCi/g						
Thorium-234	U	0.304	1.76	+/-0.581	2.00	pCi/g						
Tin-113	U	0.000945	0.0656	+/-0.0192	0.100	pCi/g						
Uranium-235	U	0.0427	0.338	+/-0.0961	0.500	pCi/g						
Yttrium-88	U	0.0132	0.0416	+/-0.0118	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium	U	189	202	+/-64.5	250	pCi/L		KXK2	02/16/10	1921	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	78.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.4	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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## Certificate of Analysis

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Address : PO Box 1663  
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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7884 Project: LANL01004  
Sample ID: 245691002 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7932  
Sample ID: 245691003  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 9.2%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00162	0.0228	+/-0.00301	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000774	0.027	+/-0.00251	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.000492	0.0204	+/-0.00217	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.525	0.079	+/-0.0549	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236	U	0.0309	0.0503	+/-0.0112	0.100	pCi/g						
Uranium-238		0.616	0.0539	+/-0.0616	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0018	0.0771	+/-0.0248	0.200	pCi/g		MJH1	02/09/10	1446	947037	4
Bismuth-211	UI	4.16	0.294	+/-0.297		pCi/g						
Bismuth-214		1.25	0.111	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	4.62	0.694	+/-0.375		pCi/g						
Cerium-139	U	-0.0125	0.0402	+/-0.012	0.050	pCi/g						
Cesium-134	UI	0.0997	0.0951	+/-0.0327	0.100	pCi/g						
Cesium-137	U	-0.0301	0.0771	+/-0.0224	0.100	pCi/g						
Cobalt-60	U	0.0228	0.069	+/-0.020	0.100	pCi/g						
Europium-152	U	-0.0523	0.138	+/-0.0416	0.200	pCi/g						
Lanthanum-140	U	-0.0189	0.138	+/-0.0445		pCi/g						
Lead-212		1.80	0.0779	+/-0.116	0.100	pCi/g						
Lead-214		1.45	0.101	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.00324	0.0622	+/-0.0189	0.100	pCi/g						
Potassium-40		35.7	0.528	+/-1.80	1.00	pCi/g						
Radium-223	U	0.0378	1.01	+/-0.330		pCi/g						
Radium-224	UI	5.25	0.887	+/-0.617		pCi/g						
Radium-226		1.25	0.111	+/-0.106		pCi/g						
Radium-228		1.87	0.258	+/-0.182	0.500	pCi/g						
Ruthenium-106	U	0.103	0.566	+/-0.162	0.800	pCi/g						
Sodium-22	U	-0.00392	0.0844	+/-0.0257	0.080	pCi/g						
Strontium-85	U	0.057	0.0647	+/-0.0199		pCi/g						
Thallium-208		0.604	0.0606	+/-0.0525	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7932  
Sample ID: 245691003

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.389	0.571	+/-0.166		pCi/g						
Thorium-231	U	0.0378	1.01	+/-0.330		pCi/g						
Thorium-234		1.76	0.750	+/-0.394	2.00	pCi/g						
Tin-113	U	-0.0355	0.0685	+/-0.0213	0.100	pCi/g						
Uranium-235	U	0.0347	0.297	+/-0.0859	0.500	pCi/g						
Yttrium-88	U	0.037	0.0683	+/-0.0176	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		212	203	+/-65.5	250	pCi/L		KXK2	02/16/10	2059	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.3	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7932  
Sample ID: 245691003

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7931  
Sample ID: 245691004  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 17.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00175	0.0267	+/-0.00179	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00106	0.0227	+/-0.00182	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00336	0.0171	+/-0.00277	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.873	0.0617	+/-0.0755	0.100	pCi/g		CXM2	02/11/10	1506	947357	3
Uranium-235/236		0.0695	0.0393	+/-0.0152	0.100	pCi/g						
Uranium-238		1.85	0.0421	+/-0.143	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0204	0.116	+/-0.0355	0.200	pCi/g		MJH1	02/09/10	1453	947037	5
Bismuth-211	UJ	4.05	0.418	+/-0.312		pCi/g						
Bismuth-214		1.26	0.126	+/-0.123	0.200	pCi/g						
Cadmium-109	UJ	4.36	1.04	+/-0.500		pCi/g						
Cerium-139	U	0.00178	0.0511	+/-0.0151	0.050	pCi/g						
Cesium-134	U	0.0441	0.112	+/-0.0313	0.100	pCi/g						
Cesium-137	U	0.0326	0.0875	+/-0.0361	0.100	pCi/g						
Cobalt-60	U	-0.0315	0.0809	+/-0.0261	0.100	pCi/g						
Europium-152	U	-0.0635	0.177	+/-0.0536	0.200	pCi/g						
Lanthanum-140	U	-0.0761	0.169	+/-0.0578		pCi/g						
Lead-212		1.90	0.0931	+/-0.115	0.100	pCi/g						
Lead-214		1.41	0.132	+/-0.115	0.100	pCi/g						
Mercury-203	U	-0.0244	0.0722	+/-0.0214	0.100	pCi/g						
Potassium-40		30.5	0.776	+/-1.74	1.00	pCi/g						
Radium-223	U	0.256	1.18	+/-0.378		pCi/g						
Radium-224	UJ	5.85	1.06	+/-0.845		pCi/g						
Radium-226		1.26	0.126	+/-0.123		pCi/g						
Radium-228		2.41	0.246	+/-0.238	0.500	pCi/g						
Ruthenium-106	U	0.486	0.724	+/-0.201	0.800	pCi/g						
Sodium-22	U	-0.0329	0.0998	+/-0.0326	0.080	pCi/g						
Strontium-85	U	0.0517	0.0772	+/-0.0214		pCi/g						
Thallium-208		0.632	0.0764	+/-0.061	0.080	pCi/g						



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7931  
Sample ID: 245691004  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.071	0.711	+/-0.215		pCi/g					
Thorium-231	U	0.256	1.18	+/-0.378		pCi/g					
Thorium-234		2.29	1.11	+/-0.554	2.00	pCi/g					
Tin-113	U	-0.0156	0.0848	+/-0.0255	0.100	pCi/g					
Uranium-235	U	0.0725	0.385	+/-0.114	0.500	pCi/g					
Yttrium-88	U	0.0379	0.075	+/-0.0185	0.100	pCi/g					
<b>Rad Liquid Scintillation Analysis</b>											
<i>H3 "As Received"</i>											
Tritium		278	181	+/-61.4	250	pCi/L		KXK2	02/14/10	2001 948402	6

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	72.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	101	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.7	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7931  
Sample ID: 245691004  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

F Estimated Value  
H Analytical holding time was exceeded  
J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7938  
Sample ID: 245691005  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 3.57%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00181	0.0222	+/-0.00149	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000524	0.0251	+/-0.00436	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00183	0.019	+/-0.00403	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.665	0.0698	+/-0.0628	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.0752	0.0445	+/-0.0169	0.100	pCi/g						
Uranium-238		0.711	0.0477	+/-0.0663	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.125	0.409	+/-0.120	0.200	pCi/g		MJH1	02/09/10	1524	947037	4
Bismuth-211	UI	4.19	0.347	+/-0.275		pCi/g						
Bismuth-214		1.28	0.116	+/-0.0946	0.200	pCi/g						
Cadmium-109	UI	4.11	1.66	+/-0.658		pCi/g						
Cerium-139	U	-0.0133	0.0513	+/-0.0159	0.050	pCi/g						
Cesium-134	U	0.0684	0.0887	+/-0.027	0.100	pCi/g						
Cesium-137	U	-0.00714	0.0631	+/-0.0189	0.100	pCi/g						
Cobalt-60	U	0.00297	0.0747	+/-0.0223	0.100	pCi/g						
Europium-152	U	-0.0444	0.162	+/-0.0513	0.200	pCi/g						
Lanthanum-140	U	-0.0505	0.131	+/-0.0444		pCi/g						
Lead-212		1.85	0.0964	+/-0.0921	0.100	pCi/g						
Lead-214		1.46	0.121	+/-0.103	0.100	pCi/g						
Mercury-203	UI	0.135	0.0677	+/-0.0372	0.100	pCi/g						
Potassium-40		39.7	0.481	+/-2.01	1.00	pCi/g						
Radium-223	U	0.158	1.04	+/-0.342		pCi/g						
Radium-224	UI	4.40	1.10	+/-0.697		pCi/g						
Radium-226		1.28	0.116	+/-0.0946		pCi/g						
Radium-228		1.71	0.216	+/-0.187	0.500	pCi/g						
Ruthenium-106	U	0.284	0.602	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.0106	0.0839	+/-0.0257	0.080	pCi/g						
Strontium-85	U	0.00686	0.0578	+/-0.0199		pCi/g						
Thallium-208		0.622	0.0602	+/-0.0479	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:		RE15-10-7938		Project:		LANL01004						
Sample ID:		245691005		Client ID:		LANL010						
Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.016	0.624	+/-0.182		pCi/g						
Thorium-231	U	0.158	1.04	+/-0.342		pCi/g						
Thorium-234	U	2.17	3.32	+/-0.947	2.00	pCi/g						
Tin-113	U	-0.0393	0.0745	+/-0.0236	0.100	pCi/g						
Uranium-235	U	0.126	0.382	+/-0.114	0.500	pCi/g						
Yttrium-88	U	-0.00219	0.0555	+/-0.0175	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	115	202	+/-62.1	250	pCi/L		KXK2	02/16/10	2237	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	88.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	102	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7938  
Sample ID: 245691005

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7933  
Sample ID: 245691006  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 20.6%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00339	0.026	+/-0.00244	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00296	0.0277	+/-0.0076	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00945	0.0209	+/-0.00704	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.72	0.0833	+/-0.213	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.196	0.0531	+/-0.0314	0.100	pCi/g						
Uranium-238		4.68	0.0569	+/-0.350	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0447	0.108	+/-0.0317	0.200	pCi/g		MJH1	02/09/10	1524	947037	4
Bismuth-211	UI	3.47	0.346	+/-0.303		pCi/g						
Bismuth-214		1.19	0.129	+/-0.0999	0.200	pCi/g						
Cadmium-109	UI	2.84	0.928	+/-0.377		pCi/g						
Cerium-139	U	0.00366	0.0511	+/-0.015	0.050	pCi/g						
Cesium-134	U	0.0808	0.105	+/-0.0284	0.100	pCi/g						
Cesium-137		0.317	0.0724	+/-0.0392	0.100	pCi/g						
Cobalt-60	U	0.00478	0.0743	+/-0.022	0.100	pCi/g						
Europium-152	U	0.0631	0.178	+/-0.0683	0.200	pCi/g						
Lanthanum-140	U	0.0658	0.183	+/-0.052		pCi/g						
Lead-212		1.34	0.0935	+/-0.0808	0.100	pCi/g						
Lead-214		1.21	0.121	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.0468	0.0755	+/-0.0208	0.100	pCi/g						
Potassium-40		21.3	0.684	+/-1.02	1.00	pCi/g						
Radium-223	U	0.386	1.14	+/-0.368		pCi/g						
Radium-224	UI	3.15	1.06	+/-0.508		pCi/g						
Radium-226		1.19	0.129	+/-0.0999		pCi/g						
Radium-228		1.32	0.264	+/-0.166	0.500	pCi/g						
Ruthenium-106	U	-0.366	0.571	+/-0.184	0.800	pCi/g						
Sodium-22	U	-0.0161	0.0854	+/-0.0261	0.080	pCi/g						
Strontium-85	UI	0.127	0.0857	+/-0.0246		pCi/g						
Thallium-208		0.452	0.0627	+/-0.044	0.080	pCi/g						

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Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7933  
Sample ID: 245691006  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.131	0.687	+/-0.194		pCi/g						
Thorium-231	U	0.386	1.14	+/-0.368		pCi/g						
Thorium-234		5.23	1.01	+/-0.751	2.00	pCi/g						
Tin-113	U	-0.0282	0.0793	+/-0.0246	0.100	pCi/g						
Uranium-235	UI	0.503	0.336	+/-0.180	0.500	pCi/g						
Yttrium-88	U	-0.0393	0.045	+/-0.0175	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		184	181	+/-58.0	250	pCi/L		KXK2	02/14/10	2139	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	86.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	86.7	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7933  
245691006

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7939  
Sample ID: 245691007  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 23.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00663	0.0253	+/-0.00337	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00549	0.0251	+/-0.00698	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00137	0.0189	+/-0.00349	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.37	0.0759	+/-0.115	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.104	0.0484	+/-0.0228	0.100	pCi/g						
Uranium-238		2.23	0.0518	+/-0.176	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.080	0.222	+/-0.0697	0.200	pCi/g		MJH1	02/09/10	1524	947037	4
Bismuth-211	UI	3.51	0.253	+/-0.286		pCi/g						
Bismuth-214		1.15	0.0969	+/-0.0955	0.200	pCi/g						
Cadmium-109	UI	3.44	0.963	+/-0.495		pCi/g						
Cerium-139	U	-0.011	0.0423	+/-0.0124	0.050	pCi/g						
Cesium-134	UI	0.114	0.0811	+/-0.0354	0.100	pCi/g						
Cesium-137		0.083	0.0563	+/-0.0194	0.100	pCi/g						
Cobalt-60	U	-0.00829	0.0514	+/-0.0164	0.100	pCi/g						
Europium-152	U	0.00503	0.125	+/-0.0401	0.200	pCi/g						
Lanthanum-140	U	-0.0847	0.0923	+/-0.0349		pCi/g						
Lead-212		1.51	0.0759	+/-0.101	0.100	pCi/g						
Lead-214		1.22	0.0882	+/-0.104	0.100	pCi/g						
Mercury-203	U	-0.00108	0.0561	+/-0.0169	0.100	pCi/g						
Potassium-40		22.8	0.478	+/-1.24	1.00	pCi/g						
Radium-223	U	-0.0559	0.875	+/-0.302		pCi/g						
Radium-224	UI	3.94	0.864	+/-0.590		pCi/g						
Radium-226		1.15	0.0969	+/-0.0955		pCi/g						
Radium-228		1.38	0.200	+/-0.169	0.500	pCi/g						
Ruthenium-106	U	-0.023	0.422	+/-0.128	0.800	pCi/g						
Sodium-22	U	0.00468	0.0577	+/-0.0174	0.080	pCi/g						
Strontium-85	U	0.0554	0.0566	+/-0.0166		pCi/g						
Thallium-208		0.430	0.0508	+/-0.0407	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7939  
Sample ID: 245691007

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.347	0.527	+/-0.170		pCi/g						
Thorium-231	U	-0.0559	0.875	+/-0.302		pCi/g						
Thorium-234		1.94	1.83	+/-0.769	2.00	pCi/g						
Tin-113	U	-0.0263	0.0585	+/-0.0177	0.100	pCi/g						
Uranium-235	U	0.140	0.314	+/-0.0882	0.500	pCi/g						
Yttrium-88	U	0.0116	0.0452	+/-0.0125	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium	U	152	180	+/-56.8	250	pCi/L		KXK2	02/14/10	2317	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	78.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7939  
Sample ID: 245691007

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7936  
Sample ID: 245691008  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 3.67%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000133	0.0227	+/-0.00187	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0111	0.0279	+/-0.00809	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	-0.00734	0.0211	+/-0.00391	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.919	0.0728	+/-0.0821	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.0784	0.0464	+/-0.0176	0.100	pCi/g						
Uranium-238		1.51	0.0497	+/-0.123	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.112	0.285	+/-0.0872	0.200	pCi/g		MJH1	02/09/10	1532	947037	4
Bismuth-211	UI	4.46	0.336	+/-0.271		pCi/g						
Bismuth-214		1.30	0.114	+/-0.100	0.200	pCi/g						
Cadmium-109	UI	4.42	1.28	+/-0.625		pCi/g						
Cerium-139	U	0.00905	0.0525	+/-0.0157	0.050	pCi/g						
Cesium-134	U	0.0999	0.103	+/-0.0279	0.100	pCi/g						
Cesium-137	U	0.00503	0.0694	+/-0.0209	0.100	pCi/g						
Cobalt-60	U	-0.0124	0.066	+/-0.0209	0.100	pCi/g						
Europium-152	U	-0.0872	0.161	+/-0.0508	0.200	pCi/g						
Lanthanum-140	U	-0.0286	0.137	+/-0.0431		pCi/g						
Lead-212		1.73	0.0976	+/-0.0857	0.100	pCi/g						
Lead-214		1.55	0.117	+/-0.103	0.100	pCi/g						
Mercury-203	U	0.0043	0.0731	+/-0.0213	0.100	pCi/g						
Potassium-40		38.7	0.316	+/-1.73	1.00	pCi/g						
Radium-223	U	-0.602	1.11	+/-0.403		pCi/g						
Radium-224	UI	4.20	1.11	+/-0.499		pCi/g						
Radium-226		1.30	0.114	+/-0.100		pCi/g						
Radium-228		1.87	0.237	+/-0.190	0.500	pCi/g						
Ruthenium-106	U	0.0591	0.622	+/-0.183	0.800	pCi/g						
Sodium-22	U	-0.0404	0.0808	+/-0.0265	0.080	pCi/g						
Strontium-85	U	0.0567	0.0679	+/-0.0212		pCi/g						
Thallium-208		0.593	0.0607	+/-0.0544	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7936  
Sample ID: 245691008

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.157	0.674	+/-0.193		pCi/g						
Thorium-231	U	-0.602	1.11	+/-0.403		pCi/g						
Thorium-234	U	1.86	2.42	+/-0.981	2.00	pCi/g						
Tin-113	U	-0.0332	0.075	+/-0.0237	0.100	pCi/g						
Uranium-235	U	-0.0688	0.375	+/-0.115	0.500	pCi/g						
Yttrium-88	U	0.0164	0.0643	+/-0.018	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		5220	369	+/-456	250	pCi/L		KXK2	02/15/10	0839	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	85.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7936  
Sample ID: 245691008

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7935  
Sample ID: 245691009  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 23.6%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00172	0.0232	+/-0.00238	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00123	0.0262	+/-0.0021	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.0173	0.0198	+/-0.00669	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		16.8	0.316	+/-1.33	0.100	pCi/g		CXM2	02/18/10	1841	952128	3
Uranium-235/236		1.44	0.202	+/-0.184	0.100	pCi/g						
Uranium-238		72.1	0.216	+/-5.46	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.308	0.475	+/-0.143	0.200	pCi/g		MJH1	02/09/10	1532	947037	5
Bismuth-211	UI	3.70	0.281	+/-0.226		pCi/g						
Bismuth-214		1.15	0.0915	+/-0.0834	0.200	pCi/g						
Cadmium-109	UI	2.47	2.29	+/-0.708		pCi/g						
Cerium-139	U	0.000849	0.0515	+/-0.0163	0.050	pCi/g						
Cesium-134	UI	0.110	0.0772	+/-0.0235	0.100	pCi/g						
Cesium-137	U	0.0432	0.0581	+/-0.016	0.100	pCi/g						
Cobalt-60	U	0.0142	0.052	+/-0.0152	0.100	pCi/g						
Europium-152	U	0.0395	0.138	+/-0.0549	0.200	pCi/g						
Lanthanum-140	U	-0.000368	0.0999	+/-0.030		pCi/g						
Lead-212		1.42	0.0821	+/-0.0674	0.100	pCi/g						
Lead-214		1.29	0.0978	+/-0.0856	0.100	pCi/g						
Mercury-203	U	-0.00269	0.0592	+/-0.0175	0.100	pCi/g						
Potassium-40		25.8	0.400	+/-1.17	1.00	pCi/g						
Protactinium-234m		97.3	5.31	+/-6.99		pCi/g						
Radium-223	U	0.243	0.918	+/-0.307		pCi/g						
Radium-224	UI	4.25	0.933	+/-0.570		pCi/g						
Radium-226		1.15	0.0915	+/-0.0834		pCi/g						
Radium-228		1.50	0.167	+/-0.154	0.500	pCi/g						
Ruthenium-106	U	-0.0133	0.446	+/-0.135	0.800	pCi/g						
Sodium-22	U	-0.0172	0.0516	+/-0.0163	0.080	pCi/g						
Strontium-85	UI	0.066	0.0567	+/-0.0174		pCi/g						

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Address : PO Box 1663  
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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7935  
245691009

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### Rad Gamma Spec Analysis

#### GAMMA SPEC "Dry Weight Corrected"

Thallium-208		0.450	0.0478	+/-0.041	0.080	pCi/g						
Thorium-227	U	0.264	0.614	+/-0.199		pCi/g						
Thorium-231	U	0.243	0.918	+/-0.307		pCi/g						
Thorium-234		69.6	3.48	+/-6.48	2.00	pCi/g						
Tin-113	U	-0.0313	0.0611	+/-0.0183	0.100	pCi/g						
Uranium-235		1.27	0.365	+/-0.197	0.500	pCi/g						
Yttrium-88	U	-0.0438	0.0379	+/-0.0146	0.100	pCi/g						

### Rad Liquid Scintillation Analysis

#### H3 "As Received"

Tritium		13700	369	+/-1040	250	pCi/L	KXK2	02/15/10	0855	948402	6	
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### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	88.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	70.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7935 Project: LANL01004  
Sample ID: 245691009 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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D Results are reported from a diluted aliquot of the sample  
F Estimated Value  
H Analytical holding time was exceeded  
J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7934  
Sample ID: 245691010  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 9.67%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00289	0.0235	+/-0.00214	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00373	0.027	+/-0.00468	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00527	0.0204	+/-0.00306	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.825	0.0742	+/-0.0756	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236	U	0.040	0.0473	+/-0.0134	0.100	pCi/g						
Uranium-238		1.03	0.0506	+/-0.0904	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.193	0.263	+/-0.0811	0.200	pCi/g		MJH1	02/09/10	1533	947037	4
Bismuth-211	UI	3.94	0.316	+/-0.257		pCi/g						
Bismuth-214		1.17	0.100	+/-0.0931	0.200	pCi/g						
Cadmium-109	UI	3.50	1.40	+/-0.499		pCi/g						
Cerium-139	U	-0.00522	0.0495	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0665	0.0914	+/-0.0328	0.100	pCi/g						
Cesium-137	U	-0.0141	0.064	+/-0.0198	0.100	pCi/g						
Cobalt-60	U	-0.0267	0.0604	+/-0.0197	0.100	pCi/g						
Europium-152	U	-0.167	0.150	+/-0.0658	0.200	pCi/g						
Lanthanum-140	U	0.0726	0.137	+/-0.0403		pCi/g						
Lead-212		1.65	0.0998	+/-0.0821	0.100	pCi/g						
Lead-214		1.37	0.110	+/-0.0962	0.100	pCi/g						
Mercury-203	U	0.0414	0.0726	+/-0.0226	0.100	pCi/g						
Potassium-40		28.2	0.480	+/-1.34	1.00	pCi/g						
Radium-223	U	0.0609	1.13	+/-0.372		pCi/g						
Radium-224	UI	3.86	1.14	+/-0.654		pCi/g						
Radium-226		1.17	0.100	+/-0.0931		pCi/g						
Radium-228		1.69	0.221	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	0.0157	0.532	+/-0.159	0.800	pCi/g						
Sodium-22	U	0.00576	0.0712	+/-0.0211	0.080	pCi/g						
Strontium-85	U	0.0672	0.0691	+/-0.0208		pCi/g						
Thallium-208		0.585	0.0523	+/-0.0454	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7934  
Sample ID: 245691010  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0921	0.671	+/-0.205		pCi/g						
Thorium-231	U	0.0609	1.13	+/-0.372		pCi/g						
Thorium-234	U	1.13	2.13	+/-1.00	2.00	pCi/g						
Tin-113	U	0.0108	0.0762	+/-0.0219	0.100	pCi/g						
Uranium-235	U	0.0263	0.361	+/-0.108	0.500	pCi/g						
Yttrium-88	U	-0.00791	0.0546	+/-0.0175	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		843	369	+/-156	250	pCi/L		KXK2	02/15/10	0911	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	89.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7934 Project: LANL01004  
Sample ID: 245691010 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7940  
Sample ID: 245691011  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 4.85%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00488	0.0251	+/-0.00288	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000808	0.0282	+/-0.00262	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.000514	0.0213	+/-0.00226	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.700	0.0744	+/-0.0667	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236	U	0.0364	0.0474	+/-0.0129	0.100	pCi/g						
Uranium-238		0.640	0.0508	+/-0.0622	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.127	0.193	+/-0.0592	0.200	pCi/g		MJH1	02/09/10	1533	947037	4
Bismuth-211	UI	4.24	0.327	+/-0.296		pCi/g						
Bismuth-214		1.30	0.106	+/-0.111	0.200	pCi/g						
Cadmium-109	UI	4.14	1.08	+/-0.495		pCi/g						
Cerium-139	U	-0.00689	0.0472	+/-0.0145	0.050	pCi/g						
Cesium-134	UI	0.140	0.0943	+/-0.0365	0.100	pCi/g						
Cesium-137	U	-0.0473	0.0553	+/-0.018	0.100	pCi/g						
Cobalt-60	U	0.0271	0.0652	+/-0.0187	0.100	pCi/g						
Europium-152	U	0.0293	0.159	+/-0.0522	0.200	pCi/g						
Lanthanum-140	U	-0.00883	0.117	+/-0.036		pCi/g						
Lead-212		1.80	0.0895	+/-0.111	0.100	pCi/g						
Lead-214		1.47	0.103	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.0306	0.0679	+/-0.0191	0.100	pCi/g						
Potassium-40		35.7	0.526	+/-1.80	1.00	pCi/g						
Radium-223	U	-0.014	1.02	+/-0.340		pCi/g						
Radium-224	UI	5.04	1.02	+/-0.779		pCi/g						
Radium-226		1.30	0.106	+/-0.111		pCi/g						
Radium-228		1.96	0.231	+/-0.180	0.500	pCi/g						
Ruthenium-106	U	0.138	0.513	+/-0.152	0.800	pCi/g						
Sodium-22	U	-0.00601	0.0712	+/-0.0223	0.080	pCi/g						
Strontium-85	U	0.062	0.0694	+/-0.0217		pCi/g						
Thallium-208		0.608	0.0545	+/-0.0515	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7940  
245691011

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.322	0.566	+/-0.174		pCi/g						
Thorium-231	U	-0.014	1.02	+/-0.340		pCi/g						
Thorium-234	U	1.43	1.70	+/-0.690	2.00	pCi/g						
Tin-113	U	-0.00679	0.0656	+/-0.0197	0.100	pCi/g						
Uranium-235	U	-0.0501	0.337	+/-0.102	0.500	pCi/g						
Yttrium-88	U	0.0145	0.0503	+/-0.0139	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		794	369	+/-152	250	pCi/L		KXK2	02/15/10	0928	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	77.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	89.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	102	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7940  
Sample ID: 245691011

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7937  
Sample ID: 245691012  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 23.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00541	0.0287	+/-0.00336	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00244	0.0293	+/-0.00303	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.0144	0.0221	+/-0.0061	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.32	0.0737	+/-0.181	0.100	pCi/g		CXM2	02/10/10	1043	947357	3
Uranium-235/236		0.152	0.047	+/-0.0266	0.100	pCi/g						
Uranium-238		4.53	0.0503	+/-0.334	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.227	0.355	+/-0.109	0.200	pCi/g		MJH1	02/09/10	1533	947037	4
Bismuth-211	UI	4.25	0.340	+/-0.281		pCi/g						
Bismuth-214		1.13	0.119	+/-0.0911	0.200	pCi/g						
Cadmium-109	UI	2.84	1.43	+/-0.448		pCi/g						
Cerium-139	U	0.00608	0.0557	+/-0.0164	0.050	pCi/g						
Cesium-134	U	0.060	0.0892	+/-0.024	0.100	pCi/g						
Cesium-137	UI	0.283	0.119	+/-0.0296	0.100	pCi/g						
Cobalt-60	U	-0.0112	0.0582	+/-0.0187	0.100	pCi/g						
Europium-152	U	-0.0108	0.163	+/-0.0698	0.200	pCi/g						
Lanthanum-140	U	-0.139	0.0993	+/-0.0427		pCi/g						
Lead-212		1.47	0.102	+/-0.0765	0.100	pCi/g						
Lead-214		1.48	0.118	+/-0.105	0.100	pCi/g						
Mercury-203	U	-0.00778	0.074	+/-0.0214	0.100	pCi/g						
Potassium-40		19.7	0.669	+/-1.08	1.00	pCi/g						
Radium-223	U	-0.848	1.11	+/-0.406		pCi/g						
Radium-224	UI	4.33	1.16	+/-0.576		pCi/g						
Radium-226		1.13	0.119	+/-0.0911		pCi/g						
Radium-228	UI	1.38	0.469	+/-0.162	0.500	pCi/g						
Ruthenium-106	U	-0.111	0.541	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.00306	0.0786	+/-0.0241	0.080	pCi/g						
Strontium-85	U	0.0349	0.0646	+/-0.0205		pCi/g						
Thallium-208		0.451	0.0596	+/-0.0445	0.080	pCi/g						



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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylenc Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-7937  
Sample ID: 245691012

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.271	0.715	+/-0.209		pCi/g						
Thorium-231	U	-0.848	1.11	+/-0.406		pCi/g						
Thorium-234		4.76	2.89	+/-1.16	2.00	pCi/g						
Tin-113	U	0.0308	0.0847	+/-0.0239	0.100	pCi/g						
Uranium-235	U	0.241	0.412	+/-0.119	0.500	pCi/g						
Yttrium-88	U	0.0114	0.0615	+/-0.0176	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		186	181	+/-58.1	250	pCi/L		KXK2	02/15/10	0055	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	65.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	85.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID:  
Sample ID:

RE15-10-7937  
245691012

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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## Certificate of Analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8056  
Sample ID: 245691013  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 3.56%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0042	0.0225	+/-0.00252	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00179	0.0229	+/-0.00498	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.00679	0.0173	+/-0.00396	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.976	0.0546	+/-0.0806	0.100	pCi/g		CXM2	02/09/10	1126	947357	3
Uranium-235/236		0.0802	0.0348	+/-0.0156	0.100	pCi/g						
Uranium-238		1.91	0.0373	+/-0.145	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0276	0.310	+/-0.099	0.200	pCi/g		MJH1	02/09/10	1737	947037	4
Bismuth-211	UI	3.96	0.283	+/-0.240		pCi/g						
Bismuth-214		1.16	0.0972	+/-0.0848	0.200	pCi/g						
Cadmium-109	UI	2.61	1.54	+/-0.530		pCi/g						
Cerium-139	U	-0.00238	0.0437	+/-0.0126	0.050	pCi/g						
Cesium-134	UI	0.0766	0.076	+/-0.0215	0.100	pCi/g						
Cesium-137	U	-0.0209	0.0508	+/-0.0156	0.100	pCi/g						
Cobalt-60	U	-0.0219	0.0529	+/-0.0171	0.100	pCi/g						
Europium-152	U	0.00258	0.141	+/-0.0492	0.200	pCi/g						
Lanthanum-140	U	-0.00382	0.0977	+/-0.0321		pCi/g						
Lead-212		1.79	0.0803	+/-0.0805	0.100	pCi/g						
Lead-214		1.38	0.0984	+/-0.0908	0.100	pCi/g						
Mercury-203	UI	0.0724	0.0549	+/-0.0281	0.100	pCi/g						
Potassium-40		37.0	0.461	+/-1.61	1.00	pCi/g						
Radium-223	U	0.210	0.918	+/-0.312		pCi/g						
Radium-224	UI	4.76	0.913	+/-0.580		pCi/g						
Radium-226		1.16	0.0972	+/-0.0848		pCi/g						
Radium-228		1.57	0.189	+/-0.160	0.500	pCi/g						
Ruthenium-106	U	0.0867	0.458	+/-0.138	0.800	pCi/g						
Sodium-22	U	0.0144	0.0678	+/-0.0201	0.080	pCi/g						
Strontium-85	UI	0.103	0.0634	+/-0.0188		pCi/g						
Thallium-208		0.532	0.0503	+/-0.0389	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8056  
Sample ID: 245691013

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.266	0.540	+/-0.168		pCi/g						
Thorium-231	U	0.210	0.918	+/-0.312		pCi/g						
Thorium-234		2.69	2.50	+/-1.09	2.00	pCi/g						
Tin-113	U	0.0274	0.0639	+/-0.018	0.100	pCi/g						
Uranium-235	U	0.122	0.327	+/-0.0984	0.500	pCi/g						
Yttrium-88	U	-0.0179	0.0447	+/-0.015	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium		4080	369	+/-378	250	pCi/L		KXK2	02/15/10	0944	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8056  
Sample ID: 245691013

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8057  
Sample ID: 245691014  
Matrix: R  
Collect Date: 25-JAN-10  
Receive Date: 28-JAN-10  
Collector: Client  
Moisture: 29.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00389	0.0214	+/-0.00237	0.050	pCi/g		CXM2	02/10/10	1814	947354	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00323	0.0248	+/-0.00229	0.050	pCi/g		CXM2	02/10/10	1627	947356	2
Plutonium-239/240	U	0.0117	0.0187	+/-0.00475	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.48	0.0596	+/-0.117	0.100	pCi/g		CXM2	02/09/10	1126	947357	3
Uranium-235/236		0.149	0.038	+/-0.0236	0.100	pCi/g						
Uranium-238		3.54	0.0407	+/-0.258	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.019	0.108	+/-0.034	0.200	pCi/g		MJH1	02/09/10	1727	947037	4
Bismuth-211	UI	3.96	0.361	+/-0.329		pCi/g						
Bismuth-214		1.17	0.133	+/-0.117	0.200	pCi/g						
Cadmium-109	UI	3.83	1.02	+/-0.472		pCi/g						
Cerium-139	U	-0.0282	0.0473	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0849	0.114	+/-0.0305	0.100	pCi/g						
Cesium-137		0.0903	0.078	+/-0.0303	0.100	pCi/g						
Cobalt-60	U	0.0384	0.0917	+/-0.025	0.100	pCi/g						
Europium-152	U	-0.0639	0.165	+/-0.0522	0.200	pCi/g						
Lanthanum-140	U	-0.0674	0.158	+/-0.0541		pCi/g						
Lead-212		1.34	0.112	+/-0.0952	0.100	pCi/g						
Lead-214		1.38	0.126	+/-0.120	0.100	pCi/g						
Mercury-203	U	0.00198	0.0755	+/-0.0216	0.100	pCi/g						
Potassium-40		24.3	0.717	+/-1.45	1.00	pCi/g						
Radium-223	U	0.0993	1.08	+/-0.349		pCi/g						
Radium-224	UI	3.04	1.41	+/-0.501		pCi/g						
Radium-226		1.17	0.133	+/-0.117		pCi/g						
Radium-228		1.55	0.295	+/-0.197	0.500	pCi/g						
Ruthenium-106	U	-0.355	0.546	+/-0.187	0.800	pCi/g						
Sodium-22	U	0.0193	0.0959	+/-0.0282	0.080	pCi/g						
Strontium-85	U	0.0348	0.073	+/-0.0206		pCi/g						
Thallium-208		0.449	0.0712	+/-0.0484	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8057  
Sample ID: 245691014  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.121	0.684	+/-0.206		pCi/g						
Thorium-231	U	0.0993	1.08	+/-0.349		pCi/g						
Thorium-234		3.59	1.04	+/-0.685	2.00	pCi/g						
Tin-113	U	0.010	0.0823	+/-0.0239	0.100	pCi/g						
Uranium-235	U	0.146	0.389	+/-0.114	0.500	pCi/g						
Yttrium-88	U	-0.00525	0.0612	+/-0.0195	0.100	pCi/g						
<b>Rad Liquid Scintillation Analysis</b>												
<i>H3 "As Received"</i>												
Tritium	U	89.9	181	+/-55.2	250	pCi/L		KXK2	02/15/10	0233	948402	5

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	92.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.6	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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## Certificate of Analysis

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Address : PO Box 1663  
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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: February 20, 2010

Client Sample ID: RE15-10-8057  
Sample ID: 245691014

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.



# QUALITY CONTROL DATA

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## QC Summary

Report Date: February 20, 2010  
Page 1 of 7

Client : Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico  
Contact: Ms. Joylene Valdez  
Workorder: 245691

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	947354										
QC1202029344	245691001	DUP									
Americium-241		U	-0.0032	U	0.00364	pCi/g	0.641	(0-1)	CXM2	02/10/1018:14	
		TPU:	+/-0.00275		+/-0.00258						
		Yield:	82.5		73.8						
QC1202029345	LCS										
Americium-241		33.2			26.4	pCi/g	79.6	(75%-125%)		02/10/1018:14	
		TPU:			+/-1.86						
		Yield:			107						
QC1202029343	MB										
Americium-241		U	-0.00541	U	-0.00541	pCi/g				02/10/1018:14	
		TPU:	+/-0.0031		+/-0.0031						
		Yield:	78.3		78.3						
Batch	947356										
QC1202029348	245691001	DUP									
Plutonium-238		U	0.00468	U	0.00	pCi/g	0.519	(0-1)	CXM2	02/10/1016:27	
		TPU:	+/-0.00271		+/-0.00179						
		Yield:	95.1		94.7						
Plutonium-239/240		U	-0.000249	U	0.00587	pCi/g	0.453	(0-1)			
		TPU:	+/-0.00294		+/-0.00382						
		Yield:	95.1		94.7						
QC1202029349	LCS										
Plutonium-238					6.81	pCi/g		(75%-125%)			
		TPU:			+/-0.558						
		Yield:			93.8						
Plutonium-239/240		41.8			42.1	pCi/g	101	(75%-125%)			
		TPU:			+/-2.77						
		Yield:			93.8						
QC1202029347	MB										
Plutonium-238		U	-0.00158	U	-0.00158	pCi/g					
		TPU:	+/-0.00271		+/-0.00271						
		Yield:	90.4		90.4						
Plutonium-239/240		U	0.00281	U	0.00281	pCi/g					
		TPU:	+/-0.00349		+/-0.00349						
		Yield:	90.4		90.4						
Batch	947357										
QC1202029351	245691001	DUP									
Uranium-233/234			1.31		1.46	pCi/g	0.319	(0-1)	CXM2	02/09/1011:26	
		TPU:	+/-0.108		+/-0.121						
		Yield:	104		75.8						
Uranium-235/236			0.0848		0.125	pCi/g	0.462	(0-1)			
		TPU:	+/-0.0182		+/-0.0247						
		Yield:	104		75.8						
Uranium-238			2.73		2.83	pCi/g	0.118	(0-1)			
		TPU:	+/-0.206		+/-0.217						

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## QC Summary

Workorder: 245691

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	947357										
QC1202029352	LCS	Yield:	104	75.8							
Uranium-233/234				6.27	pCi/g			(75%-125%)		02/09/10	11:26
		TPU:		+/-0.543							
		Yield:		89.9							
Uranium-235/236				0.359	pCi/g			(75%-125%)			
		TPU:		+/-0.0809							
		Yield:		89.9							
Uranium-238	5.75			5.77	pCi/g		100	(75%-125%)			
		TPU:		+/-0.504							
		Yield:		89.9							
QC1202029350	MB										
Uranium-233/234			U	0.0183	pCi/g					02/09/10	11:26
		TPU:		+/-0.00512							
		Yield:		103							
Uranium-235/236			U	0.00591	pCi/g						
		TPU:		+/-0.00364							
		Yield:		103							
Uranium-238			U	0.00956	pCi/g						
		TPU:		+/-0.00383							
		Yield:		103							
Batch	952128										
QC1202040646	245691009	DUP									
Uranium-233/234				16.8	15.3	pCi/g	0.304	(0-1)	CXM2	02/18/10	18:41
		TPU:		+/-1.33	+/-1.22						
		Yield:		70.9	66.4						
Uranium-235/236				1.44	1.62	pCi/g	0.239	(0-1)			
		TPU:		+/-0.184	+/-0.200						
		Yield:		70.9	66.4						
Uranium-238				72.1	78.9	pCi/g	0.295	(0-1)			
		TPU:		+/-5.46	+/-5.96						
		Yield:		70.9	66.4						
QC1202040647	LCS										
Uranium-233/234				6.94	pCi/g			(75%-125%)		02/18/10	18:41
		TPU:		+/-0.629							
		Yield:		96.6							
Uranium-235/236			U	0.269	pCi/g			(75%-125%)			
		TPU:		+/-0.0775							
		Yield:		96.6							
Uranium-238	5.75			6.66	pCi/g		116	(75%-125%)			
		TPU:		+/-0.607							
		Yield:		96.6							
QC1202040645	MB										
Uranium-233/234			U	0.0134	pCi/g					02/18/10	18:41
		TPU:		+/-0.0049							
		Yield:		103							
Uranium-235/236			U	0.00213	pCi/g						
		TPU:		+/-0.00213							
		Yield:		103							
Uranium-238			U	0.00172	pCi/g						

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## QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	952128										
		TPU:		+/-0.00299							
		Yield:		103							
Rad Gamma Spec											
Batch	947037										
	QC1202028549 245691006 DUP										
Americium-241	U	0.0447	U	0.0195	pCi/g	0.0876		(0-1)	MJH1	02/09/10	17:44
	TPU:	+/-0.0317		+/-0.112							
Bismuth-211	UI	3.47	UI	3.47	pCi/g	0.00457		(0-1)			
	TPU:	+/-0.303		+/-0.244							
Bismuth-214		1.19		1.07	pCi/g	0.323		(0-1)			
	TPU:	+/-0.0999		+/-0.0797							
Cadmium-109	UI	2.84	UI	4.00	pCi/g	0.616		(0-1)			
	TPU:	+/-0.377		+/-0.563							
Cerium-139	U	0.00366	U	-0.006	pCi/g	0.171		(0-1)			
	TPU:	+/-0.015		+/-0.0133							
Cesium-134	U	0.0808	U	0.0284	pCi/g	0.499		(0-1)			
	TPU:	+/-0.0284		+/-0.0241							
Cesium-137		0.317		0.298	pCi/g	0.139		(0-1)			
	TPU:	+/-0.0392		+/-0.0284							
Cobalt-60	U	0.00478	U	-0.00388	pCi/g	0.117		(0-1)			
	TPU:	+/-0.022		+/-0.015							
Europium-152	U	0.0631	U	0.0507	pCi/g	0.055		(0-1)			
	TPU:	+/-0.0683		+/-0.0447							
Lanthanum-140	U	0.0658	U	0.0356	pCi/g	0.164		(0-1)			
	TPU:	+/-0.052		+/-0.0404							
Lead-212		1.34		1.37	pCi/g	0.0895		(0-1)			
	TPU:	+/-0.0808		+/-0.070							
Lead-214		1.21		1.21	pCi/g	0.00249		(0-1)			
	TPU:	+/-0.110		+/-0.0906							
Mercury-203	U	0.0468	U	0.000818	pCi/g	0.603		(0-1)			
	TPU:	+/-0.0208		+/-0.0173							
Potassium-40		21.3		21.0	pCi/g	0.0681		(0-1)			
	TPU:	+/-1.02		+/-1.18							
Protactinium-234m	U	6.36	U	5.11	pCi/g	0.104		(0-1)			
	TPU:	+/-3.44		+/-2.54							
Radium-223	U	0.386	U	0.334	pCi/g	0.0386		(0-1)			
	TPU:	+/-0.368		+/-0.308							
Radium-224	UI	3.15	UI	4.10	pCi/g	0.445		(0-1)			
	TPU:	+/-0.508		+/-0.568							
Radium-226		1.19		1.07	pCi/g	0.323		(0-1)			
	TPU:	+/-0.0999		+/-0.0797							
Radium-228		1.32		1.40	pCi/g	0.128		(0-1)			
	TPU:	+/-0.166		+/-0.147							
Ruthenium-106	U	-0.366	U	0.280	pCi/g	1.04		(0-1)			
	TPU:	+/-0.184		+/-0.127							
Sodium-22	U	-0.0161	U	-0.0392	pCi/g	0.248		(0-1)			
	TPU:	+/-0.0261		+/-0.0204							
Strontium-85	UI	0.127	U	0.00602	pCi/g	1.46		(0-1)			
	TPU:	+/-0.0246		+/-0.0168							
Thallium-208		0.452		0.454	pCi/g	0.0123		(0-1)			

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## QC Summary

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Paramname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	947037										
Thorium-227	TPU:	+/-0.044		+/-0.0374							
	U	0.131	U	0.0279	pCi/g	0.147		(0-1)			
Thorium-231	TPU:	+/-0.194		+/-0.155							
	U	0.386	U	0.334	pCi/g	0.0386		(0-1)			
Thorium-234	TPU:	+/-0.368		+/-0.308							
		5.23		5.51	pCi/g	0.0651		(0-1)			
Tin-113	TPU:	+/-0.751		+/-1.37							
	U	-0.0282	U	0.000544	pCi/g	0.331		(0-1)			
Uranium-235	TPU:	+/-0.0246		+/-0.0188							
	U1	0.503	U	0.0484	pCi/g	0.816		(0-1)			
Yttrium-88	TPU:	+/-0.180		+/-0.0989							
	U	-0.0393	U	0.0148	pCi/g	0.857		(0-1)			
	TPU:	+/-0.0175		+/-0.0141							
QC1202028550	LCS										
Americium-241	15.9			13.2	pCi/g		83.1	(75%-125%)		02/09/10	17:44
	TPU:			+/-0.672							
Bismuth-211				2.18	pCi/g						
	TPU:			+/-0.321							
Bismuth-214				0.537	pCi/g						
	TPU:			+/-0.102							
Cadmium-109				31.2	pCi/g						
	TPU:			+/-1.93							
Cerium-139			U	0.0373	pCi/g						
	TPU:			+/-0.0228							
Cesium-134			U	0.0665	pCi/g						
	TPU:			+/-0.0462							
Cesium-137	5.56			5.53	pCi/g		99.5	(75%-125%)			
	TPU:			+/-0.210							
Cobalt-60	6.41			6.71	pCi/g		105	(75%-125%)			
	TPU:			+/-0.296							
Europium-152			U	0.160	pCi/g						
	TPU:			+/-0.111							
Lanthanum-140			U	-0.000377	pCi/g						
	TPU:			+/-0.038							
Lead-212				0.917	pCi/g						
	TPU:			+/-0.103							
Lead-214				0.757	pCi/g						
	TPU:			+/-0.113							
Mercury-203			U	0.022	pCi/g						
	TPU:			+/-0.0329							
Potassium-40			U	0.597	pCi/g						
	TPU:			+/-0.284							
Protactinium-234m			U	4.86	pCi/g						
	TPU:			+/-4.86							
Radium-223			U	-0.657	pCi/g						
	TPU:			+/-0.609							
Radium-224				5.86	pCi/g						
	TPU:			+/-0.793							
Radium-226				0.537	pCi/g						
	TPU:			+/-0.102							
Radium-228				0.988	pCi/g						

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## QC Summary

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Parname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	947037										
Ruthenium-106	TPU:			+/-0.258							
		U		-0.0699	pCi/g						
Sodium-22	TPU:			+/-0.297							
		U		0.0147	pCi/g						
Strontium-85	TPU:			+/-0.0246							
		U		0.0588	pCi/g						
Thallium-208	TPU:			+/-0.0365							
				0.338	pCi/g						
Thorium-227	TPU:			+/-0.075							
		U		-0.405	pCi/g						
Thorium-231	TPU:			+/-0.346							
		U		-0.657	pCi/g						
Thorium-234	TPU:			+/-0.609							
		U		-2.03	pCi/g						
Tin-113	TPU:			+/-1.16							
		U		0.0291	pCi/g						
Uranium-235	TPU:			+/-0.0406							
		U		0.0661	pCi/g						
Yttrium-88	TPU:			+/-0.168							
		U		-0.00667	pCi/g						
	TPU:			+/-0.0202							
QC1202028548 MB											
Americium-241		U		0.00685	pCi/g					02/09/10	17:28
	TPU:			+/-0.00599							
Bismuth-211		U		0.0469	pCi/g						
	TPU:			+/-0.0511							
Bismuth-214		U		0.0393	pCi/g						
	TPU:			+/-0.0247							
Cadmium-109		U		0.0741	pCi/g						
	TPU:			+/-0.064							
Cerium-139		U		-0.00775	pCi/g						
	TPU:			+/-0.00463							
Cesium-134		U		-0.0154	pCi/g						
	TPU:			+/-0.0128							
Cesium-137		U		0.0107	pCi/g						
	TPU:			+/-0.00949							
Cobalt-60		U		0.0214	pCi/g						
	TPU:			+/-0.0127							
Europium-152		U		-0.0194	pCi/g						
	TPU:			+/-0.0222							
Lanthanum-140		U		0.0125	pCi/g						
	TPU:			+/-0.0202							
Lead-212		U		0.0158	pCi/g						
	TPU:			+/-0.0213							
Lead-214		U		0.0132	pCi/g						
	TPU:			+/-0.021							
Mercury-203		U		-0.00281	pCi/g						
	TPU:			+/-0.00727							
Potassium-40		U		0.268	pCi/g						
	TPU:			+/-0.131							
Protactinium-234m		U		-0.513	pCi/g						

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## QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	947037										
		TPU:		+/-0.820							
Radium-223			U	-0.00294	pCi/g						
		TPU:		+/-0.133							
Radium-224			U	0.179	pCi/g						
		TPU:		+/-0.241							
Radium-226			U	0.0393	pCi/g						
		TPU:		+/-0.0247							
Radium-228			U	-0.0038	pCi/g						
		TPU:		+/-0.0303							
Ruthenium-106			U	-0.115	pCi/g						
		TPU:		+/-0.0983							
Sodium-22			U	-0.0206	pCi/g						
		TPU:		+/-0.0115							
Strontium-85			U	0.0196	pCi/g						
		TPU:		+/-0.0107							
Thallium-208			U	-0.0099	pCi/g						
		TPU:		+/-0.011							
Thorium-227			U	0.00934	pCi/g						
		TPU:		+/-0.0633							
Thorium-231			U	-0.00294	pCi/g						
		TPU:		+/-0.133							
Thorium-234			U	0.0891	pCi/g						
		TPU:		+/-0.0565							
Tin-113			U	-0.0123	pCi/g						
		TPU:		+/-0.00919							
Uranium-235			U	-0.0131	pCi/g						
		TPU:		+/-0.0372							
Yttrium-88			U	-0.0106	pCi/g						
		TPU:		+/-0.0137							
<b>Rad Liquid Scintillation</b>											
Batch	948402										
QC1202031683	245691001	DUP									
Tritium			U	155	U	113	pCi/L	0.177	(0-1)	KXK2	02/15/1005:49
			TPU:	+/-63.6		+/-55.9					
QC1202031684	LCS										
Tritium			5560			5630	pCi/L		101	(75%-125%)	02/15/1010:00
			TPU:			+/-484					
QC1202031682	MB										
Tritium				U		-34.2	pCi/L				02/15/1004:11
			TPU:			+/-52.2					

### Notes:

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product

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### QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.									
BD	Results are either below the MDC or tracer recovery is low									
C	Analyte has been confirmed by GC/MS analysis									
D	Results are reported from a diluted aliquot of the sample									
F	Estimated Value									
H	Analytical holding time was exceeded									
J	Value is estimated									
M	M if above MDC and less than LLD									
M	Matrix Related Failure									
N/A	RPD or %Recovery limits do not apply.									
ND	Analyte concentration is not detected above the detection limit									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
R	Sample results are rejected									
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.									
UI	Gamma Spectroscopy--Uncertain identification									
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Y	QC Samples were not spiked with this compound									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
h	Preparation or preservation holding time was exceeded									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



# RAW DATA

## Radiochemistry Batch Checklist, Rev10

Batch#

047354

Product:

Am

Date:

2/11/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAS.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10 <sup>6</sup> MDA/ MDC, error is 150% or less of sample activity. If greater 10 <sup>6</sup> MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument big check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5 <sup>6</sup> MDA/ MDC, then RPD is 100% or less. If greater 5 <sup>6</sup> MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		See narrative
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.	✓		
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line cuts Initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly stated.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analyse.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

Devinne Green 2/11/10

Secondary Review Performed By:

Chris M 2/11/10

2/18  
LAWL

## Am/Cm Que Sheet

01-FEB-10

Batch #: 947354 Analyst: CXM2 First Client Due Date: 18-FEB-10 Internal Due Date: 08-FEB-10 Comments:  
 Tracer(s): Am241/Cm244 Tracer Code: 445-96-2-55 Expiration Date: 5/11/10 Vol: 0.1ml  
 LCS Isotope(s): Am241/Cm244 LCS Code(s): 0244-13 Expiration Date: 4/30/20/ Vol(s): 0.11g / — \* SRM  
 Spike Isotope(s): Am241/Cm244 Spike Code(s): — Expiration Date: — / — / — Vol(s): — / — / —  
 Prep Date: 2/4/10 Initials: CMM Pipet ID: 2171058 Balance ID: 50410272 Witness: MG 2/4/10

Sample ID	Client Description	Type	Hazard	Min	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot (g/ml)	Am/Cm Det #
245667001-1	RE16-10-1343	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	1	1.253	211	88
245667002-1	RE16-10-1345	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	2	1.256	211	
245667003-1	RE16-10-1347	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	3	1.259	212	
245667004-1	RE16-10-1349	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	4	1.267	213	
245667005-1	RE16-10-1351	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	5	1.254	214	
245667006-1	RE16-10-1365	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	6	1.266	215	
245691001-1	RE15-10-7883	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	7	1.255	216	
245691002-1	RE15-10-7884	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	8	1.254	217	
245691003-1	RE15-10-7932	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	9	1.263	218	
245691004-1	RE15-10-7931	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	10	1.253	219	
245691005-1	RE15-10-7938	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	11	1.264	220	
245691006-1	RE15-10-7933	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	12	1.251	231	
245691007-1	RE15-10-7939	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	13	1.264	232	
245691008-1	RE15-10-7936	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	14	1.262	233	
245691009-1	RE15-10-7935	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	15	1.253	234	
245691010-1	RE15-10-7934	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	16	1.262	235	
245691011-1	RE15-10-7940	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	17	1.256	236	
245691012-1	RE15-10-7937	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	18	1.262	237	
245691013-1	RE15-10-8056	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	19	1.265	238	
245691014-1	RE15-10-8057	SAMPLE	.05 pCi/g		SOIL	LANL010	LANL010	25-JAN-10	20	1.253	239	
1202029343-1	MB for batch 947354	MB	.05 pCi/g		SOIL	QC ACCOUNT	QC ACCOUNT		21	1.00	240	
1202029344-1	RE15-10-7883(245691001DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	QC ACCOUNT	25-JAN-10	22	1.254	241	
1202029345-1	LCS for batch 947354	LCS	.05 pCi/g		SOIL	QC ACCOUNT	QC ACCOUNT		23	0.111	242	

Choose SOP Used: GL-RAD-A-011  
 GL-RAD-A-036

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: DL 2/11/10

# Blank Correction Report

**Batch ID 947354**

GEL Sample ID	Client sample ID	Parameter	Alliquot	Result	TPU	MDA	Alliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202029344	DUP	Americium-241	1.25 g	0.00364	0.00258	0.0272	-.004328	pCi/g	NO
1202029345	LCS	Americium-241	0.111 g	26.4	1.86	0.207	-.04873874	pCi/g	NO
1202029343	MB	Americium-241	1.00 g	-0.00541	0.0031	0.0325	-.00541	pCi/g	NO
245667001	RE16-10-1343	Americium-241	1.25 g	0.00623	0.00543	0.0314	-.004328	pCi/g	NO
245667002	RE16-10-1345	Americium-241	1.26 g	-0.00283	0.00359	0.0253	-.00429365	pCi/g	NO
245667003	RE16-10-1347	Americium-241	1.26 g	-9.66E-05	0.00172	0.0257	-.00429365	pCi/g	NO
245667004	RE16-10-1349	Americium-241	1.27 g	-0.0018	0.00178	0.0266	-.00425984	pCi/g	NO
245667005	RE16-10-1351	Americium-241	1.25 g	-0.00055	0.0034	0.034	-.004328	pCi/g	NO
245667006	RE16-10-1365	Americium-241	1.27 g	-0.00424	0.00241	0.0253	-.00425984	pCi/g	NO
245691001	RE15-10-7883	Americium-241	1.26 g	-0.0032	0.00275	0.0235	-.00429365	pCi/g	NO
245691002	RE15-10-7884	Americium-241	1.25 g	-0.00133	0.00214	0.026	-.004328	pCi/g	NO
245691003	RE15-10-7932	Americium-241	1.26 g	-0.00162	0.00301	0.0228	-.00429365	pCi/g	NO
245691004	RE15-10-7931	Americium-241	1.25 g	0.00175	0.00179	0.0267	-.004328	pCi/g	NO
245691005	RE15-10-7938	Americium-241	1.26 g	-0.00181	0.00149	0.0222	-.00429365	pCi/g	NO
245691006	RE15-10-7933	Americium-241	1.25 g	0.00339	0.00244	0.026	-.004328	pCi/g	NO
245691007	RE15-10-7939	Americium-241	1.26 g	0.00663	0.00337	0.0253	-.00429365	pCi/g	NO
245691008	RE15-10-7936	Americium-241	1.26 g	0.000133	0.00187	0.0227	-.00429365	pCi/g	NO
245691009	RE15-10-7935	Americium-241	1.25 g	0.00172	0.00238	0.0232	-.004328	pCi/g	NO
245691010	RE15-10-7934	Americium-241	1.26 g	0.00289	0.00214	0.0235	-.00429365	pCi/g	NO
245691011	RE15-10-7940	Americium-241	1.25 g	0.00488	0.00288	0.0251	-.004328	pCi/g	NO
245691012	RE15-10-7937	Americium-241	1.26 g	-0.00541	0.00336	0.0287	-.00429365	pCi/g	NO
245691013	RE15-10-8056	Americium-241	1.27 g	0.0042	0.00252	0.0225	-.00425984	pCi/g	NO
245691014	RE15-10-8057	Americium-241	1.25 g	0.00389	0.00237	0.0214	-.004328	pCi/g	NO

# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354 SAMPLE ID : S0245691001_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 82.502		CHAMBER : 216 DETECTOR S/N : 79195 AVERAGE %EFFICIENCY : 38.5339 COUNT DATE : 10-FEB-2010 18:13:55 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B216.CNF:78 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W216.CNF:28 CAL DATE : 29-JAN-2010
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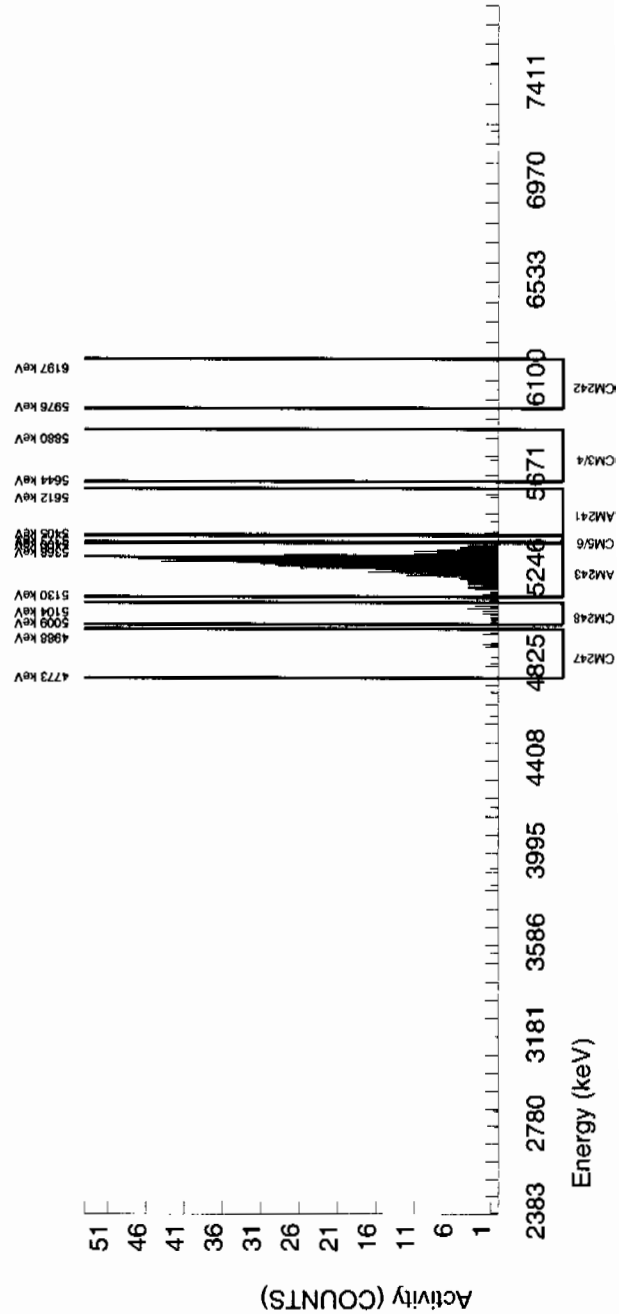
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4062E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5524.599	108.625	2.000	-2.039	2.880	2.8409	99.94000	-3.20E-03	2.75E-03	9.62E-03	2.35E-02	2.75E-03
AM243	5270.000	5283.335	46.434	669.000	666.120	2.880	1.6971	99.78000	1.05E+00	7.72E-02	5.75E-03	1.58E-02	4.07E-02
CM-242	6102.000	6062.522	4.938	1.000	1.000	0.000	4.3413	100.00000	1.69E-03	1.69E-03	1.47E-02	3.36E-02	1.69E-03
CM-3/4	5795.020	5745.961	4.938	1.000	1.000	0.000	5.1799	100.00000	1.57E-03	1.57E-03	1.75E-02	3.93E-02	1.57E-03
CM-5/6	5386.000	5375.854	0.000	6.000	6.000	0.000	14.2480	86.09000	1.09E-02	4.51E-03	5.60E-02	1.17E-01	4.46E-03
CM-247	4946.000	4910.513	54.313	10.000	10.000	0.000	13.7917	79.30000	1.98E-02	6.37E-03	5.88E-02	1.23E-01	6.25E-03
CM-248	5078.600	5068.525	13.964	17.000	17.000	0.000	19.5080	91.00000	2.93E-02	7.34E-03	7.25E-02	1.50E-01	7.10E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of AM243 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
AM-241



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

```
LIB FILE : ENV_ALPHA_AM
BKG FILE : B217.CNF;80
BKG DATE : 7-FEB-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W217.CNF;30
CAL DATE : 29-JAN-2010
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CHAMBER	217
DETECTOR S/N	79410
AVERAGE %EFFICIENCY	36.8046
COUNT DATE	10-FEB-2010 18:13:57
ELAPSED LIVE TIME(SEC)	43200.00

BATCH NUMBER : 947354  
SAMPLE ID : S0245691002\_AM  
SAMPLE QTY : 1.254 G  
SAMPLE DATE : 25-JAN-2010 00:00:00  
ANALYST : CXM2  
% YIELD : 78.100

LCS/LCSD  
ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3156E+01 pCi/G

MS/MSD	ID : 0244-B
	NUCLIDE : AM-241
	NOMINAL : 3.3156E+01 pCi/G

TRACER ID : 445-96-2-SS  
NUCLIDE : AM243  
NOMINAL : 2.9166E+00 dpm  
RESULTS : 2.2778E+00 dpm

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5528.775	4.928	1.000	-0.768	0.720	2.8409	99.94000	-1.33E-03	2.14E-03	1.06E-02	2.60E-02	2.14E-03
AM-243	5270.000	5271.186	46.382	603.000	602.280	0.720	0.8485	99.78000	1.05E+00	7.94E-02	3.18E-03	1.11E-02	4.27E-02
CM-242	6102.000	6039.005	88.706	3.000	3.000	0.000	4.3413	100.0000	5.60E-03	3.25E-03	1.63E-02	3.72E-02	3.23E-03
CM-3/4	5795.020	5760.868	0.000	1.000	1.000	0.000	5.1799	100.0000	1.74E-03	1.74E-03	1.94E-02	4.35E-02	1.74E-03
CM-5/6	5386.000	5380.687	8.162	8.000	8.000	0.000	14.2480	86.09000	1.61E-02	5.79E-03	6.20E-02	1.29E-01	5.70E-03
CM-247	4946.000	4901.551	4.928	14.000	13.280	0.720	13.7917	79.30000	2.91E-02	8.54E-03	6.51E-02	1.36E-01	8.34E-03
CM-248	5078.600	5082.479	8.162	17.000	17.000	0.000	19.5080	91.00000	3.24E-02	8.13E-03	8.03E-02	1.66E-01	7.86E-03

## NOTES:

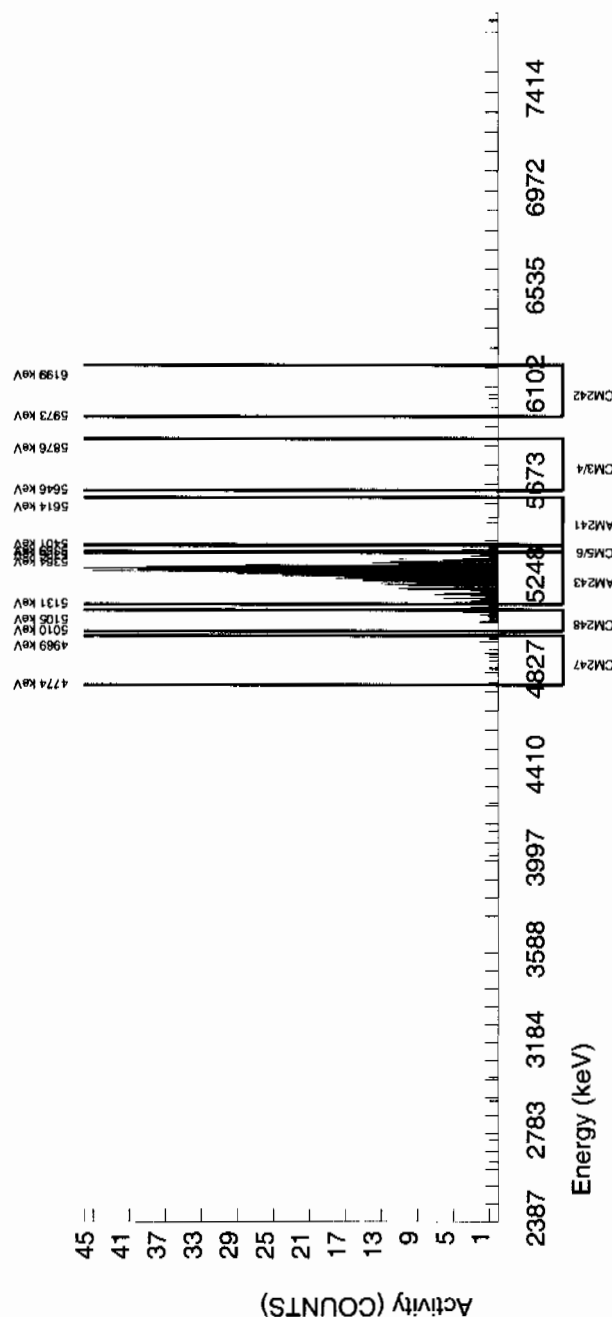
\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as  $\sqrt{\text{BKG AREA}}$ .

\* Corrections made to the following net area due to tracer impurity:

AM-241



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

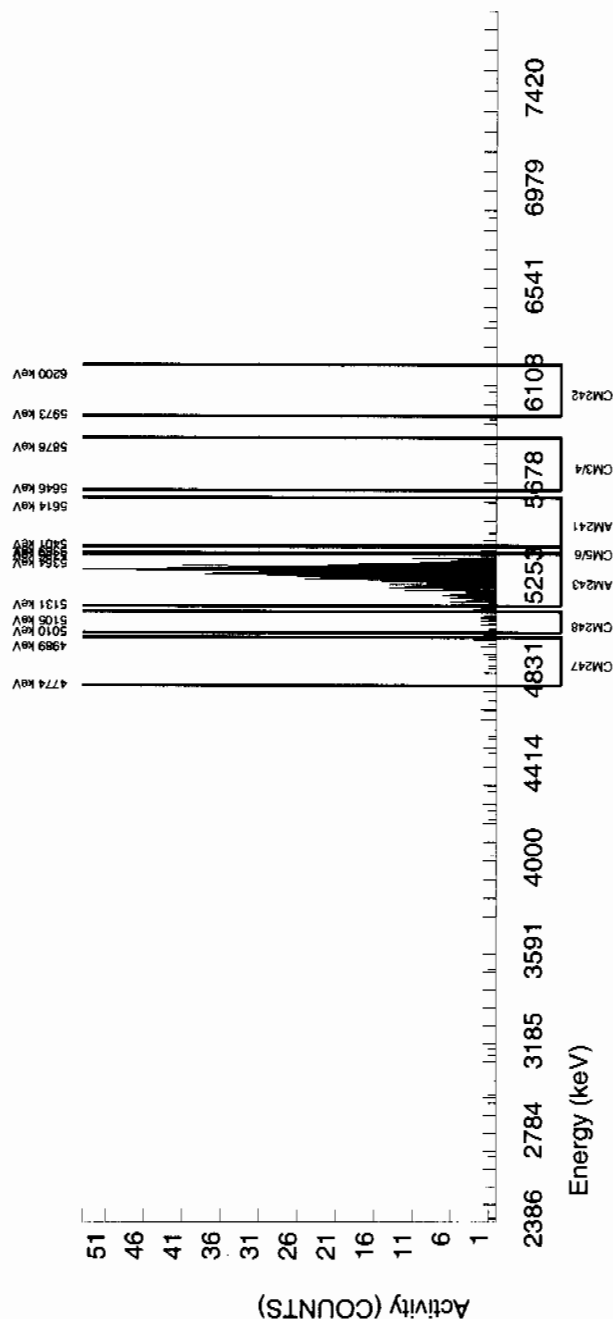
BATCH NUMBER : 947354 SAMPLE ID : S0245691003_AM SAMPLE QTY : 1.263 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 86.562				CHAMBER : 218 DETECTOR S/N : 79411 AVERAGE %EFFICIENCY : 37.5225 COUNT DATE : 10-FEB-2010 18:14:00 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B218.CNF:78 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W218.CNF:28 CAL DATE : 29-JAN-2010				
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5246E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G				
NUCLIDE ACTIVITY SUMMARY												
NUCLIDE	LIBRARY ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	127.924	3.000	-1.064	2.880	2.8409	99.94000	-1.62E-03	3.01E-03	9.35E-03	2.28E-02	3.01E-03
AM-243	5270.000	46.819	682.000	680.560	1.440	1.2000	99.78000	1.04E+00	7.62E-02	3.98E-03	1.21E-02	3.99E-02
CM-242	6102.000	4.944	1.000	1.000	0.000	4.3413	100.00000	1.64E-03	1.64E-03	1.43E-02	3.27E-02	1.64E-03
CM-3/4	5795.020	4.944	1.000	1.000	0.000	5.1799	100.00000	1.53E-03	1.53E-03	1.70E-02	3.82E-02	1.53E-03
CM-5/6	5386.000	0.000	12.000	12.000	0.000	14.2480	86.09000	2.13E-02	6.28E-03	5.45E-02	1.14E-01	6.14E-03
CM-247	4946.000	34.505	14.000	14.000	0.000	13.7917	79.30000	2.69E-02	7.39E-03	5.72E-02	1.20E-01	7.20E-03
CM-248	5078.600	5.742	21.000	21.000	0.000	19.5080	91.00000	3.52E-02	7.99E-03	7.05E-02	1.46E-01	7.68E-03

## NOTES:

\* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as  $\sqrt{\text{BKG AREA}}$ .

\* Corrections made to the following net area  
due to tracer impurity:  
AM-241

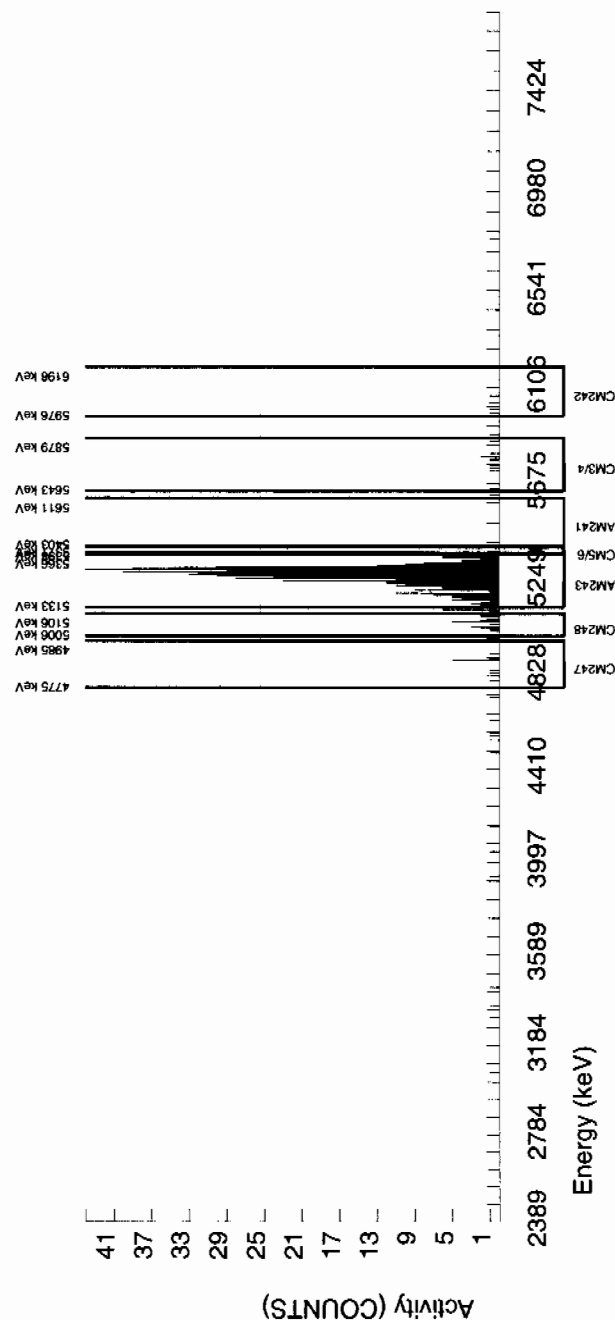


NOTES:

\* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as  $\sqrt{\text{BKG AREA}}$ .

\* Corrections made to the following net area due to tracer impurity:  
AM-241





# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947354 SAMPLE ID : S0245691005_AM SAMPLE QTY : 1.264 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 87.962</p>	<p>CHAMBER : 220 DETECTOR SN : 79413 AVERAGE %EFFICIENCY : 37.8868 COUNT DATE : 10-FEB-2010 18:14:04 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B220.CNF:78 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W220.CNF:30 CAL DATE : 29-JAN-2010</p>
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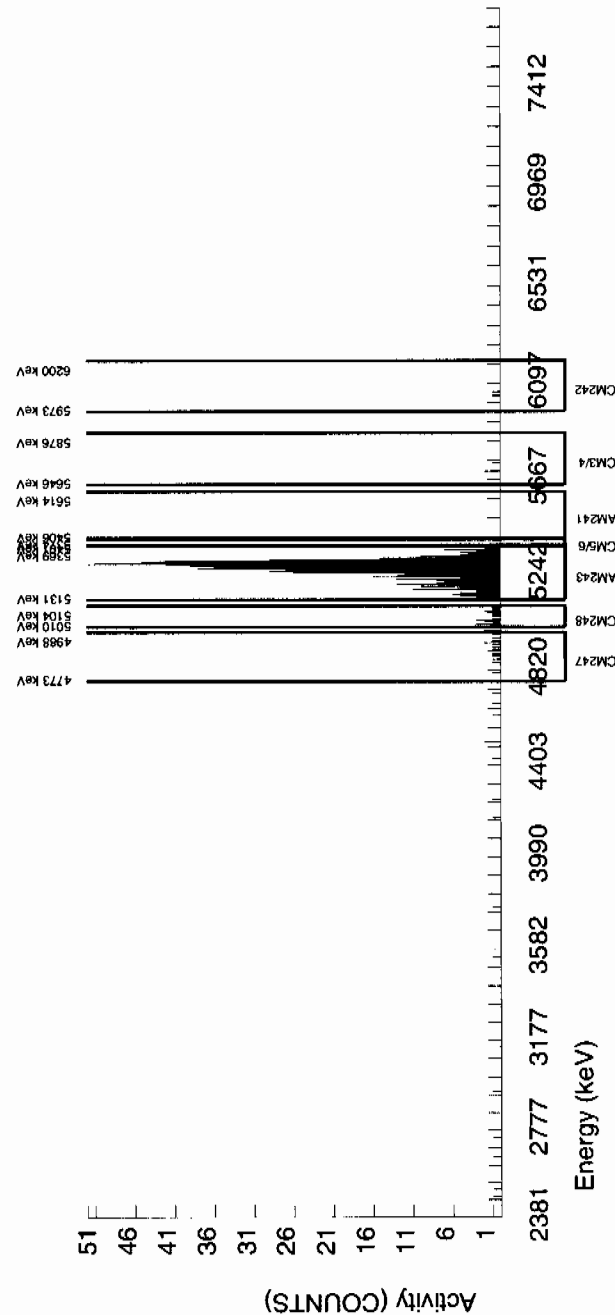
<p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5655E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5509.904	0.000	0.000	-1.215	0.000	2.8409	99.94000	-1.81E-03	1.49E-03	9.11E-03	2.22E-02	1.49E-03
AM243	5270.000	5271.871	54.288	699.000	698.280	0.720	0.8485	99.78000	1.04E+00	7.55E-02	2.72E-03	9.48E-03	3.94E-02
CM-242	6102.000	6043.153	49.227	4.000	4.000	0.000	4.3413	100.0000	6.39E-03	3.22E-03	1.39E-02	3.18E-02	3.19E-03
CM-3/4	5795.020	5722.597	4.923	3.000	2.280	0.720	5.1799	100.0000	3.39E-03	2.80E-03	1.66E-02	3.72E-02	2.79E-03
CM-5/6	5386.000	5380.363	0.000	7.000	7.000	0.000	14.2480	86.09000	1.21E-02	4.63E-03	5.30E-02	1.11E-01	4.56E-03
CM-247	4946.000	4919.280	0.000	19.000	19.000	0.000	13.7917	79.30000	3.56E-02	8.46E-03	5.57E-02	1.17E-01	8.16E-03
CM-248	5078.600	5061.937	0.000	22.000	22.000	0.000	19.5080	91.00000	3.59E-02	7.97E-03	6.87E-02	1.42E-01	7.66E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of AM243 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
AM-241



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354	CHAMBER : 231	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0245691006_AM	DETECTOR S/N : 79424	BKG FILE : B231.CNF:78
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 38.8428	BKG DATE : 7-FEB-2010
SAMPLE DATE : 25-JAN-2010 00:00:00	COUNT DATE : 10-FEB-2010 18:14:07	BKG LIVE TIME(SEC) : 60000.00
ANALYST : CXM2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W231.CNF:28
% YIELD : 74.159		CAL DATE : 29-JAN-2010

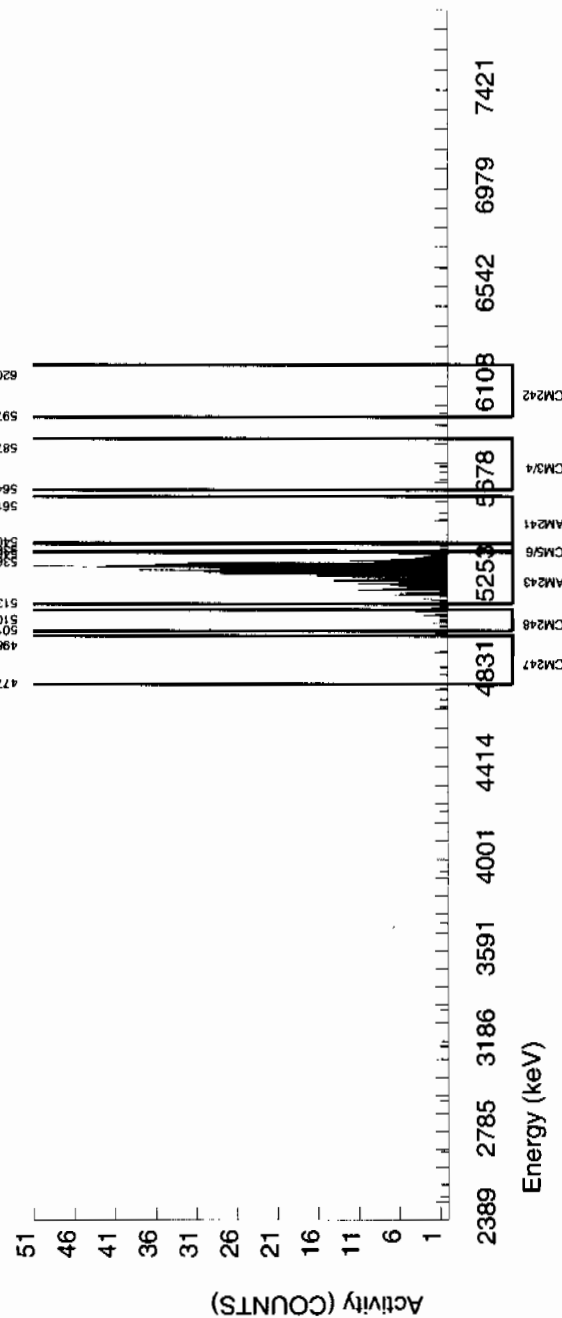
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3156E+01 pCi/G	NOMINAL : 3.3156E+01 pCi/G
RESULTS : 2.1629E+00 dpm		

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5503.902	93.751	3.000	1.950	0.000	2.8409	99.94000	3.39E-03	2.44E-03	1.06E-02	2.60E-02	2.43E-03
AM243	5270.000	5279.094	51.408	605.000	603.560	1.440	1.2000	99.78000	1.05E+00	7.96E-02	4.50E-03	1.37E-02	4.28E-02
CM-242	6102.000	5994.648	4.934	1.000	1.000	0.000	4.3413	100.0000	1.87E-03	1.87E-03	1.63E-02	3.72E-02	1.87E-03
CM-3/4	5795.020	5741.286	74.014	5.000	5.000	0.000	5.1799	100.0000	8.70E-03	3.93E-03	1.94E-02	4.35E-02	3.89E-03
CM-5/6	5386.000	5378.960	6.117	6.000	6.000	0.000	14.2480	86.09000	1.21E-02	5.00E-03	6.20E-02	1.29E-01	4.94E-03
CM-247	4946.000	4863.928	103.619	4.000	2.560	1.440	13.7917	79.30000	5.60E-03	4.93E-03	6.51E-02	1.36E-01	4.91E-03
CM-248	5078.600	5068.007	20.523	18.000	18.000	0.000	19.5080	91.00000	3.43E-02	8.39E-03	8.03E-02	1.66E-01	8.09E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of AM243 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
AM-241



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354  
SAMPLE ID : S0245691007\_AM  
SAMPLE QTY : 1.264 G  
SAMPLE DATE : 25-JAN-2010 00:00:00  
ANALYST : CXM2  
% YIELD : 78.896

CHAMBER : 232  
DETECTOR S/N : 79425  
AVERAGE %EFFICIENCY : 37.1929  
COUNT DATE : 10-FEB-2010 18:14:09  
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV\_ALPHA\_AM  
BKG FILE : B232.CNF:80  
BKG DATE : 7-FEB-2010  
BKG LIVE TIME(SEC) : 60000.00  
EFF FILE : W232.CNF:28  
CAL DATE : 29-JAN-2010

TRACER ID : 445-96-2-SS  
NUCLIDE : AM243  
NOMINAL : 2.9166E+00 dpm  
RESULTS : 2.3011E+00 dpm

MS/MSD ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3156E+01 pCi/G

LCS/LCSD ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3156E+01 pCi/G

## NUCLIDE ACTIVITY SUMMARY

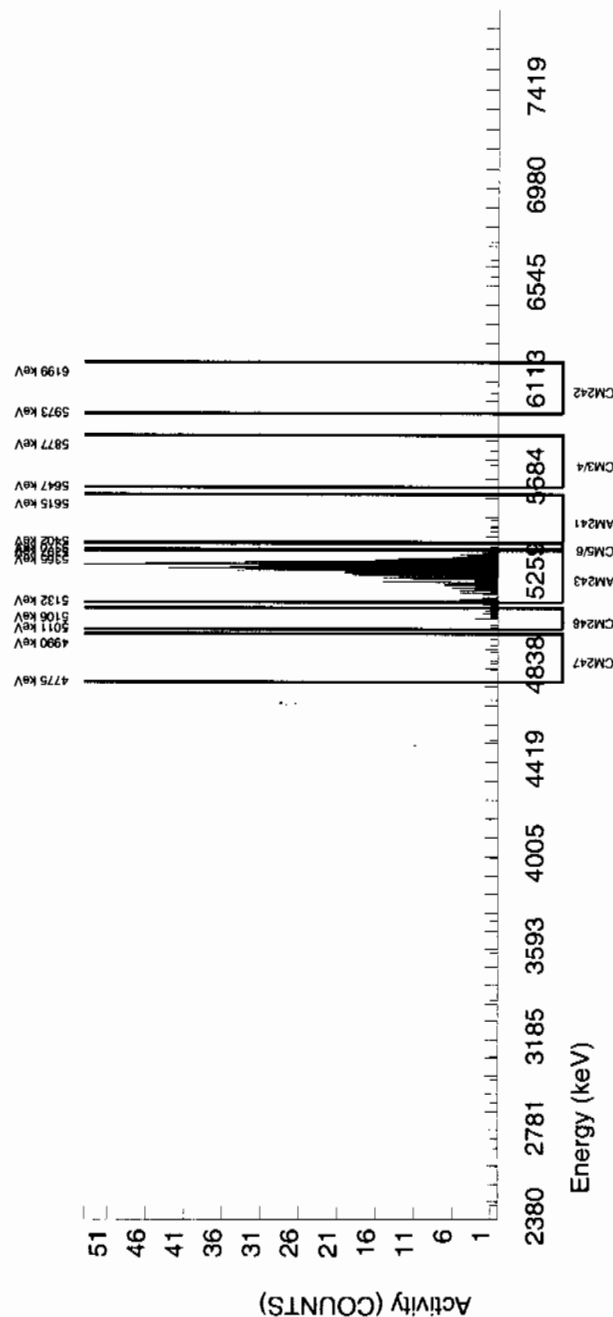
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5486.120	64.876	5.000	3.930	0.000	2.8409	99.94000	6.63E-03	3.37E-03	1.03E-02	2.53E-02	3.35E-03
AM243	5270.000	5281.310	43.886	617.000	614.840	2.160	1.4697	99.78000	1.04E+00	7.84E-02	5.36E-03	1.53E-02	4.20E-02
CM-242	6102.000	6069.683	4.990	1.000	1.000	0.000	4.3413	100.0000	1.81E-03	1.82E-03	1.58E-02	3.62E-02	1.81E-03
CM-3/4	5795.020	5782.980	59.886	2.000	1.280	0.720	5.1799	100.0000	2.16E-03	2.69E-03	1.88E-02	4.23E-02	2.68E-03
CM-5/6	5386.000	5373.819	0.000	17.000	17.000	0.000	14.2480	86.09000	3.33E-02	8.35E-03	6.02E-02	1.26E-01	8.08E-03
CM-247	4946.000	4926.354	0.000	11.000	9.560	1.440	13.7917	79.30000	2.03E-02	7.49E-03	6.33E-02	1.32E-01	7.38E-03
CM-248	5078.600	5070.045	24.869	15.000	15.000	0.000	19.5080	91.00000	2.78E-02	7.39E-03	7.80E-02	1.61E-01	7.18E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:  
AM-241

# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947354  SAMPLE ID : S0245691008_AM  SAMPLE QTY : 1.262 G  SAMPLE DATE : 25-JAN-2010 00:00:00  ANALYST : CXM2  % YIELD : 86.705</p>		<p>CHAMBER : 233  DETECTOR S/N : 79426  AVERAGE %EFFICIENCY : 37.7051  COUNT DATE : 10-FEB-2010 18:14:11  ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM  BKG FILE : B233.CNF;78  BKG DATE : 7-FEB-2010  BKG LIVE TIME(SEC) : 60000.00  EFF FILE : W233.CNF;28  CAL DATE : 29-JAN-2010</p>
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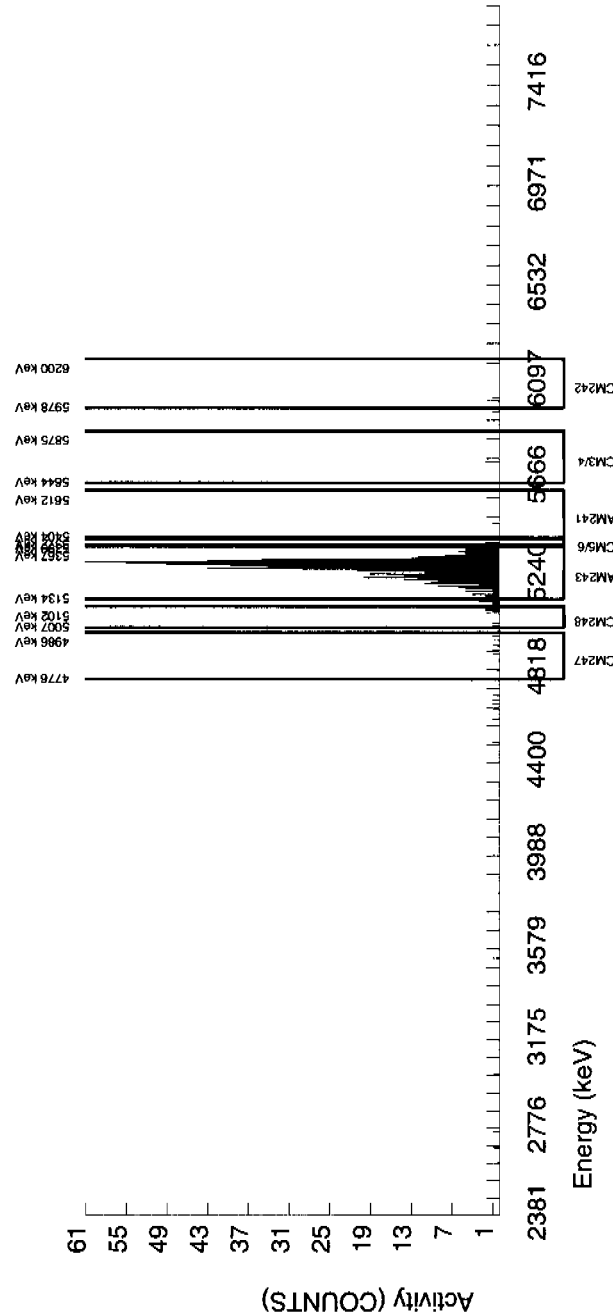
<p>TRACER  ID : 445-96-2-SS  NUCLIDE : AM243  NOMINAL : 2.9166E+00 dpm  RESULTS : 2.5288E+00 dpm</p>	<p>MS/MSD  ID : 0244-B  NUCLIDE : AM-241  NOMINAL : 3.3156E+01 pCi/G</p>	<p>LCS/LCSD  ID : 0244-B  NUCLIDE : AM-241  NOMINAL : 3.3156E+01 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5486.827	29.455	2.000	0.088	0.720	2.8409	99.94000	1.33E-04	1.87E-03	9.30E-03	2.27E-02	1.87E-03
AM-243	5270.000	5275.946	39.536	685.000	685.000	0.000	0.0000	99.78000	1.04E+00	7.60E-02	0.00E+00	4.12E-03	3.98E-02
CM-242	6102.000	6023.586	19.637	2.000	1.280	0.720	4.3413	100.0000	2.09E-03	2.59E-03	1.42E-02	3.25E-02	2.59E-03
CM-3/4	5795.020	5708.736	4.909	3.000	3.000	0.000	5.1799	100.0000	4.56E-03	2.65E-03	1.69E-02	3.80E-02	2.63E-03
CM-5/6	5386.000	5381.198	0.000	6.000	6.000	0.000	14.2480	86.09000	1.06E-02	4.36E-03	5.41E-02	1.13E-01	4.31E-03
CM-247	4946.000	4943.008	0.000	6.000	4.560	1.440	13.7917	79.30000	8.72E-03	5.10E-03	5.69E-02	1.19E-01	5.07E-03
CM-248	5078.600	5071.236	19.637	12.000	12.000	0.000	19.5080	91.00000	2.00E-02	5.91E-03	7.01E-02	1.45E-01	5.77E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of AM243 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
AM-241



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354 SAMPLE ID : S0245691009_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 83.785	CHAMBER : 234 DETECTOR S/N : 79427 AVERAGE %EFFICIENCY : 38.3923 COUNT DATE : 10-FEB-2010 18:14:14 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B234.CNF:78 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W234.CNF:28 CAL DATE : 29-JAN-2010
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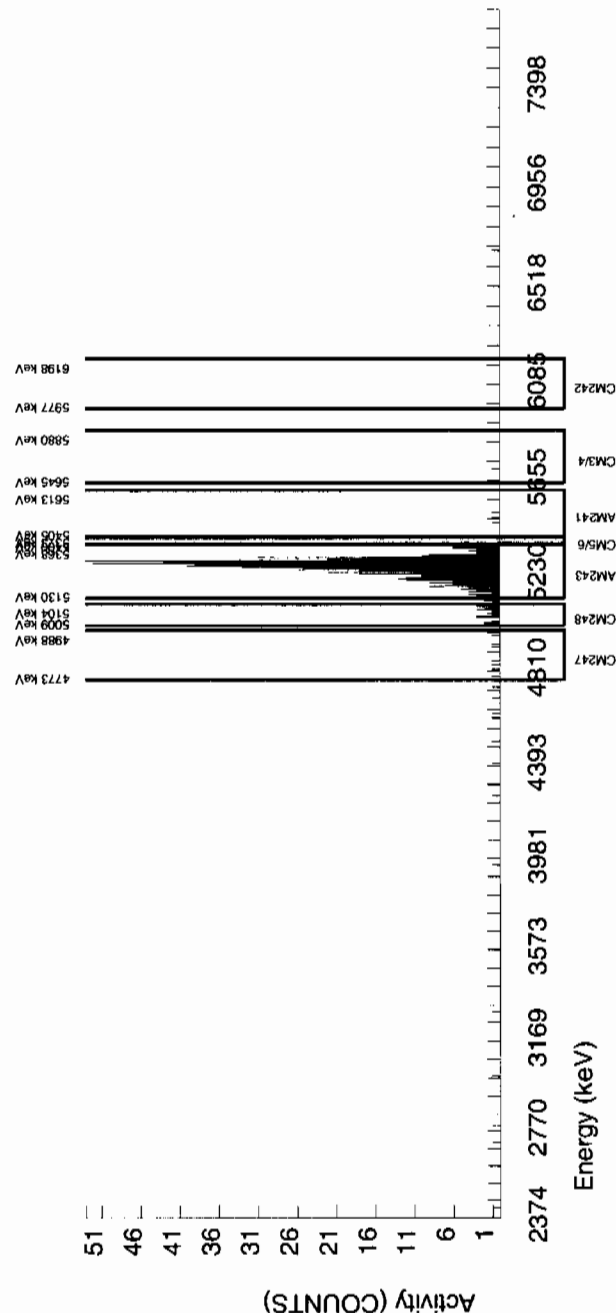
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4437E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5493.784	49.141	3.000	1.107	0.720	2.8409	99.94000	1.72E-03	2.38E-03	9.52E-03	2.32E-02	2.38E-03
AM-243	5270.000	5271.229	44.777	674.000	-0.720	0.720	0.0000	99.78000	1.05E+00	7.69E-02	0.00E+00	4.22E-03	4.04E-02
CM-242	6102.000	6087.301	0.000	0.000	0.720	0.720	4.3413	100.0000	-1.20E-03	2.06E-03	1.45E-02	3.33E-02	2.06E-03
CM-3/4	5795.020	5773.018	113.025	2.000	1.280	0.720	5.1799	100.0000	1.99E-03	2.47E-03	1.73E-02	3.89E-02	2.47E-03
CM-5/6	5386.000	5376.056	0.000	8.000	8.000	0.000	14.2480	86.09000	1.44E-02	5.18E-03	5.54E-02	1.16E-01	5.10E-03
CM-247	4946.000	4884.219	181.823	9.000	9.000	0.000	13.7917	79.30000	1.76E-02	5.97E-03	5.82E-02	1.22E-01	5.87E-03
CM-248	5078.600	5067.313	0.000	27.000	27.000	0.000	19.5080	91.00000	4.61E-02	9.32E-03	7.18E-02	1.48E-01	8.86E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of AM243 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
AM-241



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947354  SAMPLE ID : S0245691010_AM  SAMPLE QTY : 1.262 G  SAMPLE DATE : 25-JAN-2010 00:00:00  ANALYST : CXM2  % YIELD : 84.006</p>	<p>CHAMBER : 235  DETECTOR S/N : 79428  AVERAGE %EFFICIENCY : 37.6823  COUNT DATE : 10-FEB-2010 18:14:16  ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM  BKG FILE : B235.CNF:78  BKG DATE : 7-FEB-2010  BKG LIVE TIME(SEC) : 60000.00  EFF FILE : W235.CNF:28  CAL DATE : 29-JAN-2010</p>
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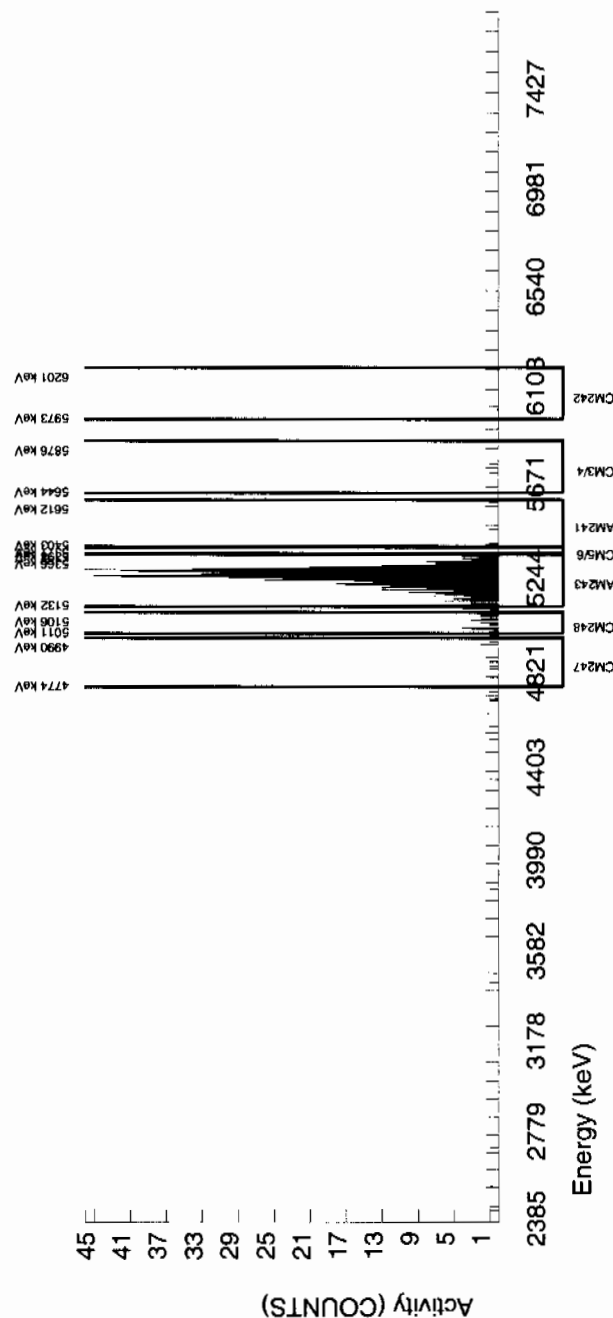
<p>TRACER  ID : 445-96-2-SS  NUCLIDE : AM243  NOMINAL : 2.9166E+00 dpm  RESULTS : 2.4501E+00 dpm</p>	<p>MS/MSD  ID : 0244-B  NUCLIDE : AM-241  NOMINAL : 3.3156E+01 pCi/G</p>	<p>LCS/LCSD  ID : 0244-B  NUCLIDE : AM-241  NOMINAL : 3.3156E+01 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5504.860	171.408	3.000	1.846	0.000	2.8409	99.94000	2.89E-03	2.14E-03	9.60E-03	2.35E-02	2.13E-03
AM243	5270.000	5268.989	54.370	664.000	663.280	0.720	0.8485	99.78000	1.04E+00	7.81E-02	2.87E-03	1.00E-02	4.05E-02
CM-242	6102.000	6037.814	4.897	1.000	1.000	0.000	4.3413	100.00000	1.68E-03	1.69E-03	1.47E-02	3.36E-02	1.68E-03
CM-3/4	5795.020	5759.669	39.179	2.000	1.280	0.720	5.1799	100.00000	2.01E-03	2.49E-03	1.75E-02	3.92E-02	2.49E-03
CM-5/6	5386.000	5373.549	0.000	5.000	5.000	0.000	14.2480	86.09000	9.10E-03	4.11E-03	5.59E-02	1.17E-01	4.07E-03
CM-247	4946.000	4897.178	4.897	9.000	6.840	2.160	13.7917	79.30000	1.35E-02	6.47E-03	5.88E-02	1.23E-01	6.42E-03
CM-248	5078.600	5067.623	40.077	25.000	25.000	0.000	19.5080	91.00000	4.30E-02	9.04E-03	7.24E-02	1.50E-01	8.60E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of AM243 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
AM-241



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354 SAMPLE ID : S0245691011_AM SAMPLE QTY : 1.250 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 77.224	CHAMBER : 236 DETECTOR S/N : 79429 AVERAGE %EFFICIENCY : 38.6953 COUNT DATE : 10-FEB-2010 18:14:18 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B236.CNF;78 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W236.CNF;28 CAL DATE : 29-JAN-2010
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TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2523E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5501.075	122.507	4.000	2.910	0.000	2.8409	99.94000	4.88E-03	2.88E-03	1.03E-02	2.51E-02	2.86E-03
AM243	5270.000	5268.197	57.264	629.000	626.120	2.880	1.6971	99.78000	1.05E+00	7.89E-02	6.15E-03	1.68E-02	4.22E-02
CM-242	6102.000	5983.394	4.900	1.000	1.000	0.000	4.3413	100.00000	1.80E-03	1.80E-03	1.57E-02	3.59E-02	1.80E-03
CM-3/4	5795.020	5759.648	0.000	0.000	0.000	0.000	5.1799	100.00000	0.00E+00	1.68E-03	1.87E-02	4.20E-02	1.68E-03
CM-5/6	5386.000	5378.854	0.000	6.000	6.000	0.000	14.2480	86.09000	1.17E-02	4.82E-03	5.98E-02	1.25E-01	4.77E-03
CM-247	4946.000	4904.287	0.000	15.000	15.000	0.000	13.7917	79.30000	3.17E-02	8.42E-03	6.28E-02	1.31E-01	8.18E-03
CM-248	5078.600	5064.601	0.000	25.000	25.000	0.000	19.5080	91.00000	4.60E-02	9.65E-03	7.75E-02	1.60E-01	9.20E-03

## NOTES:

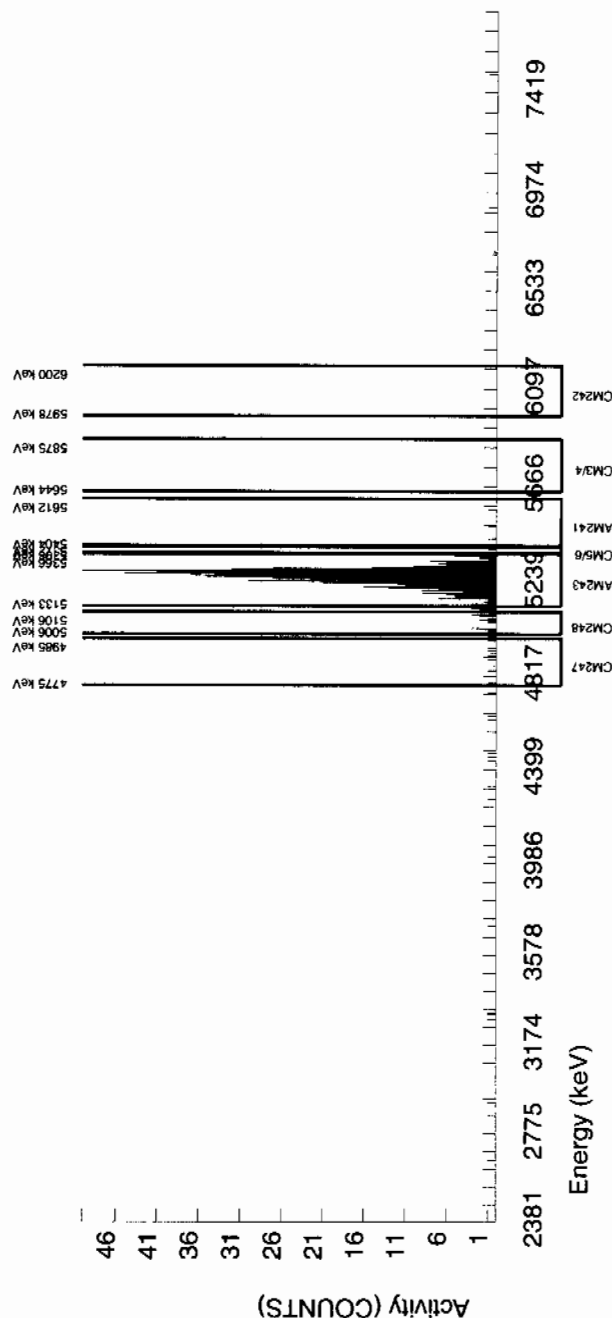
\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:

AM-241



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354	CHAMBER : 237	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0245691012_AM	DETECTOR S/N : 79430	BKG FILE : B237.CNF.78
SAMPLE QTY : 1.262 G	AVERAGE %EFFICIENCY : 39.3990	BKG DATE : 7-FEB-2010
SAMPLE DATE : 25-JAN-2010 00:00:00	COUNT DATE : 10-FEB-2010 18:14:21	BKG LIVE TIME(SEC) : 60000.00
ANALYST : CXM2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W237.CNF.28
% YIELD : 65.689		CAL DATE : 29-JAN-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3156E+01 pCi/G	NOMINAL : 3.3156E+01 pCi/G
RESULTS : 1.9159E+00 dpm		

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5470.440	4.920	1.000	-2.824	2.880	2.8409	99.94000	-5.41E-03	3.36E-03	1.17E-02	2.87E-02	3.36E-03
AM243	5270.000	5273.593	56.699	543.000	542.280	0.720	0.8485	99.78000	1.04E+00	8.27E-02	3.51E-03	1.22E-02	4.48E-02
CM-242	6102.000	6065.286	59.037	3.000	3.000	0.000	4.3413	100.00000	6.18E-03	3.59E-03	1.79E-02	4.11E-02	3.57E-03
CM-3/4	5795.020	5746.201	9.225	2.000	2.000	0.000	5.1799	100.00000	3.84E-03	2.73E-03	2.14E-02	4.80E-02	2.71E-03
CM-5/6	5386.000	5377.154	0.000	6.000	6.000	0.000	14.2480	86.09000	1.33E-02	5.52E-03	6.84E-02	1.43E-01	5.45E-03
CM-247	4946.000	4896.804	11.377	20.000	18.560	1.440	13.7917	79.30000	4.48E-02	1.15E-02	7.19E-02	1.50E-01	1.11E-02
CM-248	5078.600	5072.841	8.695	15.000	15.000	0.000	19.5080	91.00000	3.16E-02	8.42E-03	8.86E-02	1.83E-01	8.15E-03

## NOTES:

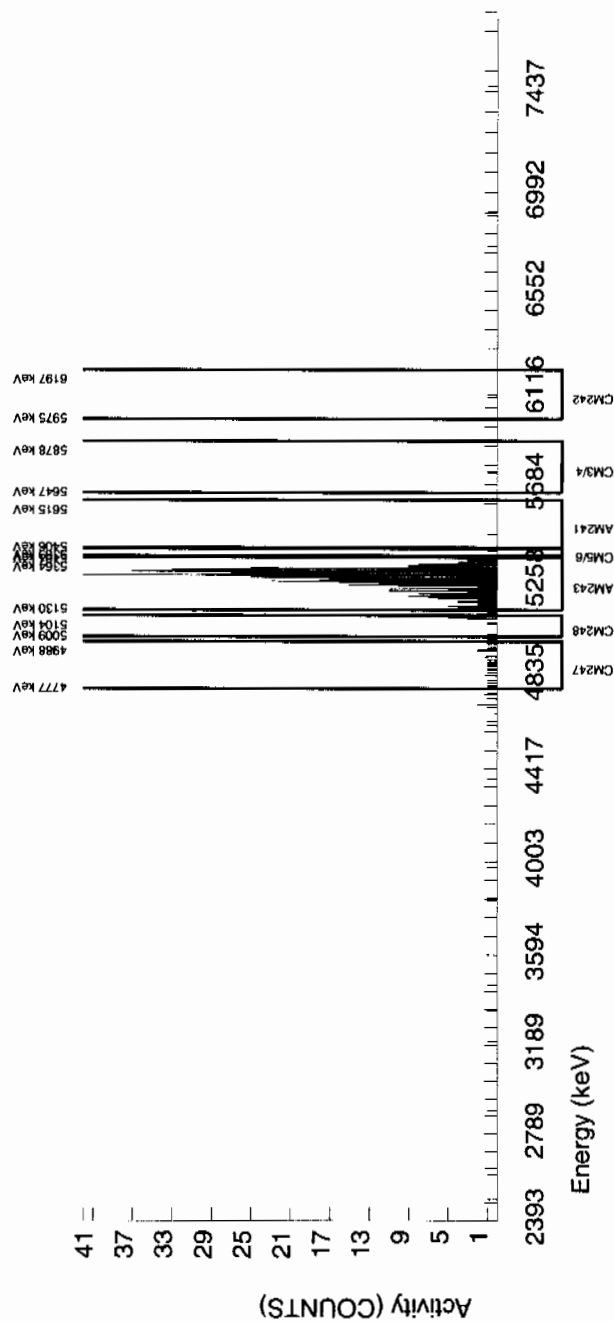
\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:

AM-241





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354  
SAMPLE ID : S0245691013\_AM  
SAMPLE QTY : 1.265 G  
SAMPLE DATE : 25-JAN-2010 00:00:00  
ANALYST : CXM2  
% YIELD : 83.813

CHAMBER : 238  
DETECTOR S/N : 79431  
AVERAGE %EFFICIENCY : 39.3479  
COUNT DATE : 10-FEB-2010 18:14:23  
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV\_ALPHA\_AM  
BKG FILE : B238.CNF:80  
BKG DATE : 8-FEB-2010  
BKG LIVE TIME(SEC) : 60000.00  
EFF FILE : W238.CNF:30  
CAL DATE : 29-JAN-2010

TRACER  
ID : 445-96-2-SS  
NUCLIDE : AM243  
NOMINAL : 2.9166E+00 dpm  
RESULTS : 2.4445E+00 dpm

MS/MSD  
ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3156E+01 pCi/G

LCS/LCSD  
ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3156E+01 pCi/G

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5543.806	93.359	4.000	2.798	0.000	2.8409	99.94000	4.20E-03	2.52E-03	9.20E-03	2.25E-02	2.51E-03
AM243	5270.000	5270.026	46.323	691.000	691.000	0.000	0.0000	99.78000	1.04E+00	7.57E-02	0.00E+00	4.07E-03	3.95E-02
CM-242	6102.000	6038.420	78.618	3.000	3.000	0.000	4.3413	100.0000	4.84E-03	2.81E-03	1.40E-02	3.22E-02	2.79E-03
CM-3/4	5795.020	5760.436	7.217	7.000	7.000	0.000	5.1799	100.0000	1.05E-02	4.03E-03	1.68E-02	3.76E-02	3.97E-03
CM-5/6	5386.000	5377.944	0.000	8.000	8.000	0.000	14.2480	86.09000	1.39E-02	5.00E-03	5.35E-02	1.12E-01	4.93E-03
CM-247	4946.000	4858.887	191.631	10.000	9.280	0.720	13.7917	79.30000	1.75E-02	6.23E-03	5.63E-02	1.18E-01	6.13E-03
CM-248	5078.600	5063.170	0.000	24.000	24.000	0.000	19.5080	91.00000	3.96E-02	8.44E-03	6.94E-02	1.43E-01	8.07E-03

## NOTES:

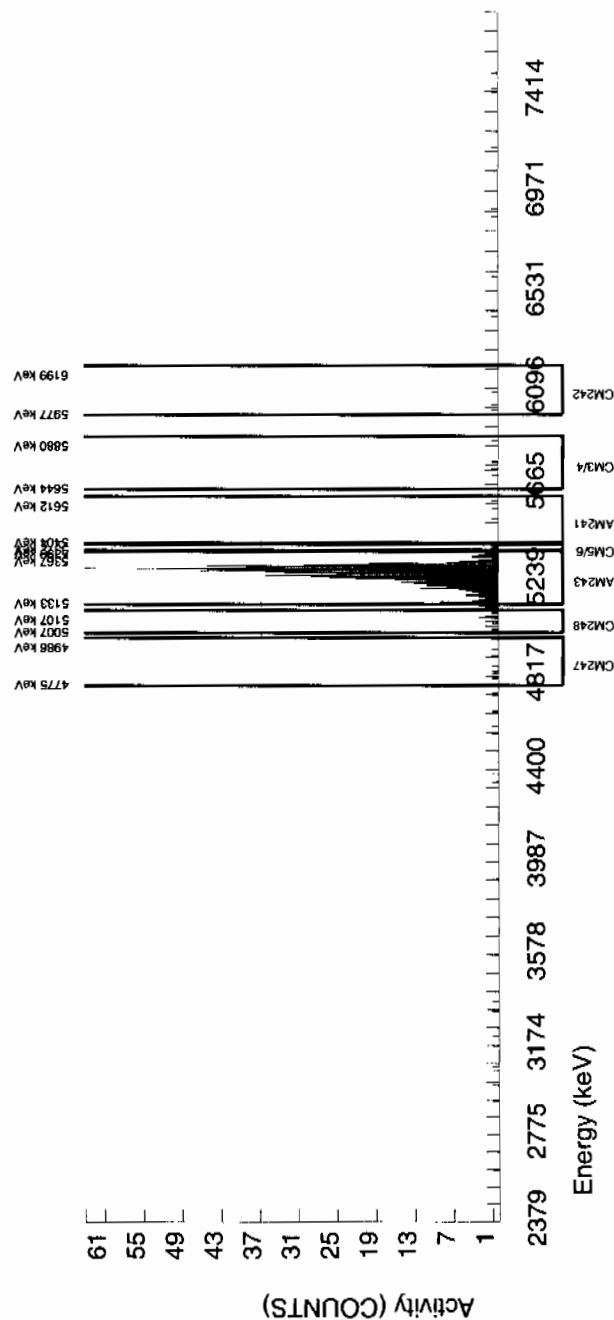
\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:

AM-241



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354 SAMPLE ID : S0245691014_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 92.444	CHAMBER : 239 DETECTOR S/N : 79432 AVERAGE %EFFICIENCY : 37.8194 COUNT DATE : 10-FEB-2010 18:14:26 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B239.CNF.78 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W239.CNF.28 CAL DATE : 29-JAN-2010
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TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6962E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5494.458	4.908	4.000	2.725	0.000	2.8409	99.94000	3.89E-03	2.37E-03	8.76E-03	2.14E-02	2.36E-03
AM243	5270.000	5274.500	46.983	734.000	732.560	1.440	1.2000	99.78000	1.05E+00	7.67E-02	3.71E-03	1.13E-02	3.88E-02
CM-242	6102.000	6054.590	63.801	2.000	2.000	0.000	4.3413	100.0000	3.07E-03	2.18E-03	1.34E-02	3.06E-02	2.17E-03
CM-3/4	5795.020	5784.315	152.141	4.000	3.280	0.720	5.1799	100.0000	4.69E-03	3.06E-03	1.60E-02	3.58E-02	3.04E-03
CM-5/6	5386.000	5380.175	17.024	5.000	5.000	0.000	14.2480	86.09000	8.29E-03	3.75E-03	5.10E-02	1.06E-01	3.71E-03
CM-247	4946.000	4908.622	170.494	19.000	18.280	0.720	13.7917	79.30000	3.29E-02	8.22E-03	5.36E-02	1.12E-01	7.96E-03
CM-248	5078.600	5076.773	0.000	27.000	27.000	0.000	19.5080	91.00000	4.24E-02	8.58E-03	6.60E-02	1.36E-01	8.15E-03

## NOTES:

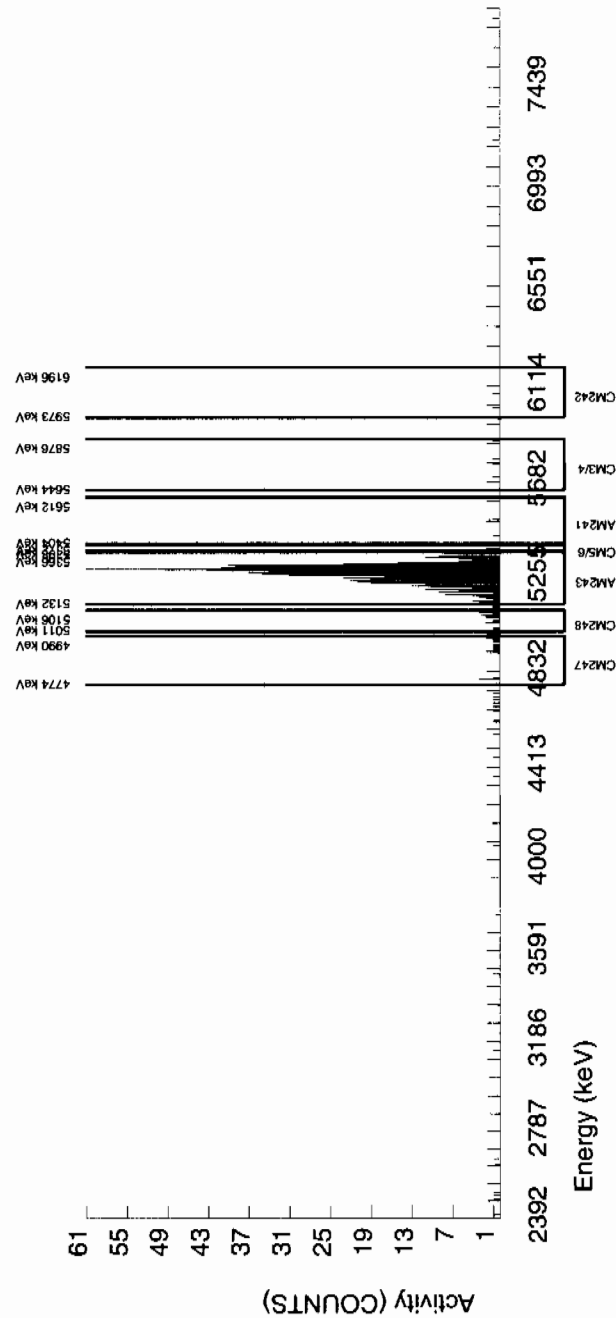
\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:

AM-241



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER	: 947354
SAMPLE ID	: S1202029343_AM
SAMPLE QTY	: 1.000 G
SAMPLE DATE	: 4-FEB-2010 00:00:00.
ANALYST	: CXM2
% YIELD	: 78.317

CHAMBER : 240  
DETECTOR S/N : 79433  
AVERAGE %EFFICIENCY : 36.8412  
COUNT DATE : 10-FEB-2010 18:14:28  
ELAPSED LIVE TIME(SEC) : 43200.00

```
LIB FILE      : ENV_ALPHA_AM
BKG FILE      : B240.CNF;78
BKG DATE      : 7-FEB-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE      : W240.CNF;28
CAL DATE      : 29-JAN-2010
```

TRACER	ID	: 445-96-2-SS
	NUCLIDE	: AM243
	NOMINAL	: 2.9166E+00 dpm
	RESULTS	: 2.2842E+00 dpm

MS/MSD  
ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3155E+01 pCi/G

LCS/LCSD	ID : 0244-B
	NUCLIDE : AM-241
	NOMINAL : 3.3155E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5508.939	0.000	0.000	-2.492	1.440	2.8409	99.94000	-5.41E-03	3.10E-03	1.33E-02	3.25E-02	3.10E-03
AM243	5270.000	5271.003	33.751	606.000	604.560	1.440	1.2000	99.78000	1.31E+00	9.96E-02	5.63E-03	1.71E-02	5.35E-02
CM-242	6102.000	6044.245	29.483	8.000	8.000	0.000	4.3413	100.0000	1.79E-02	6.42E-03	2.03E-02	4.65E-02	6.32E-03
CM-3/4	5795.020	5742.207	4.914	7.000	6.280	0.720	5.1799	100.0000	1.36E-02	6.01E-03	2.42E-02	5.43E-02	5.95E-03
CM-5/6	5386.000	5373.032	0.000	6.000	6.000	0.000	14.2480	86.09000	1.51E-02	6.24E-03	7.74E-02	1.62E-01	6.17E-03
CM-247	4946.000	4929.200	33.783	16.000	15.280	0.720	13.7917	79.30000	4.18E-02	1.14E-02	8.14E-02	1.70E-01	1.11E-02
CM-248	5078.600	5071.869	8.139	16.000	16.000	0.000	19.5080	91.00000	3.81E-02	9.84E-03	1.00E-01	2.07E-01	9.53E-03

## NOTES:

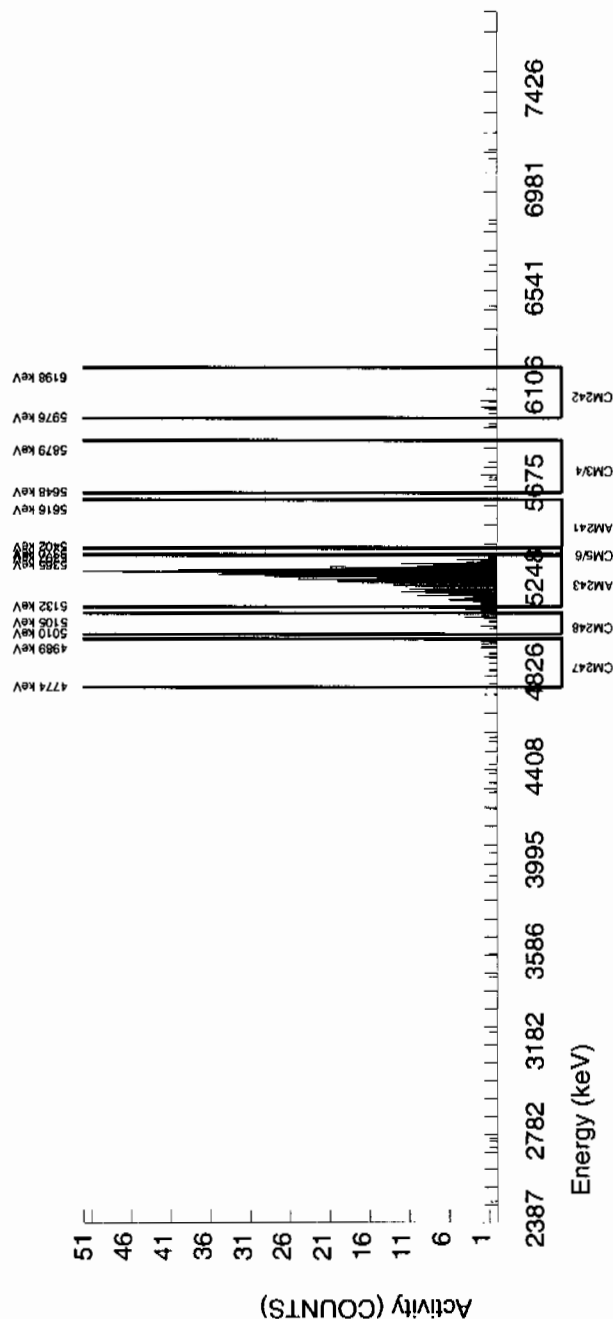
\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:

AM-241



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947354  
 SAMPLE ID : S1202029344\_AM  
 SAMPLE QTY : 1.254 G  
 SAMPLE DATE : 25-JAN-2010 00:00:00  
 ANALYST : CXM2  
 % YIELD : 73.757

CHAMBER : 241  
 DETECTOR S/N : 79434  
 AVERAGE %EFFICIENCY : 37.1962  
 COUNT DATE : 10-FEB-2010 18:14:31  
 ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV\_ALPHA\_AM  
 BKG FILE : B241.CNF:78  
 BKG DATE : 7-FEB-2010  
 BKG LIVE TIME(SEC) : 60000.00  
 EFF FILE : W241.CNF:28  
 CAL DATE : 29-JAN-2010

TRACER ID : 445-96-2-SS  
 NUCLEIDE : AM243  
 NOMINAL : 2.9166E+00 dpm  
 RESULTS : 2.1512E+00 dpm

MS/MSD ID : 0244-B  
 NUCLEIDE : AM-241  
 NOMINAL : 3.3156E+01 pCi/G

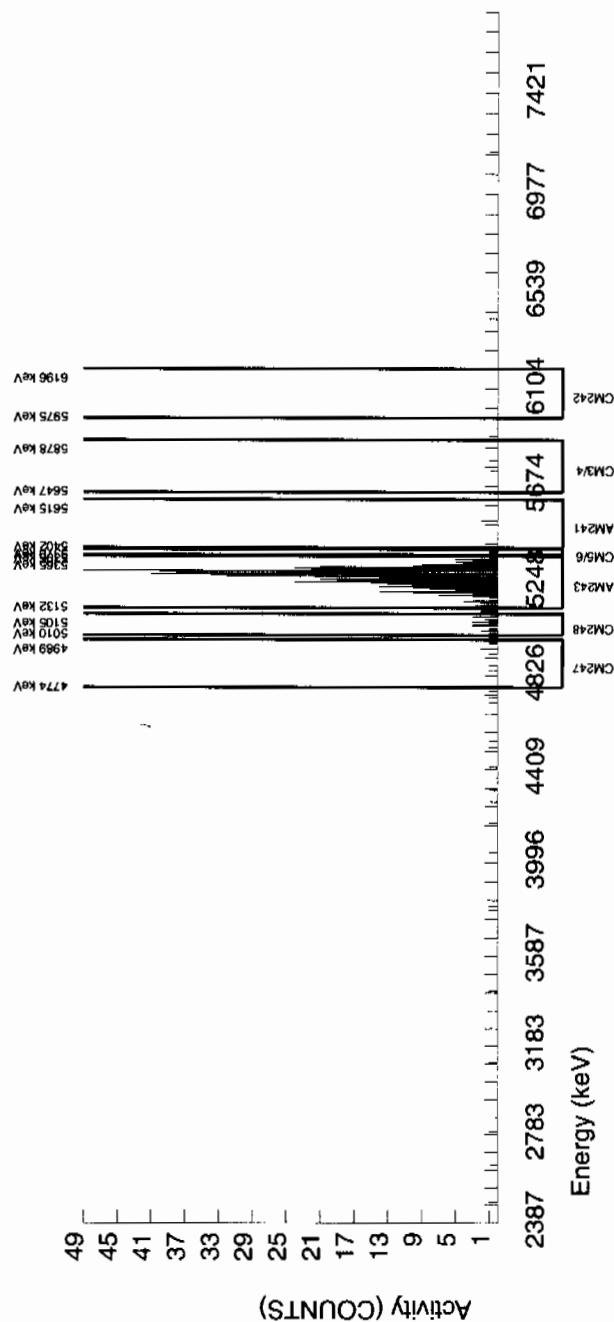
LCS/LCSD ID : 0244-B  
 NUCLEIDE : AM-241  
 NOMINAL : 3.3156E+01 pCi/G

## NUCLEIDE ACTIVITY SUMMARY

NUCLEIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5492.294	4.919	3.000	2.000	0.000	2.8409	99.94000	3.64E-03	2.58E-03	1.12E-02	2.72E-02	2.57E-03
AM243	5270.000	5274.583	30.853	577.000	574.840	2.160	1.4697	99.78000	1.05E+00	8.19E-02	5.78E-03	1.65E-02	4.38E-02
CM-242	6102.000	6085.159	0.000	0.000	0.000	0.000	4.3413	100.00000	0.00E+00	1.98E-03	1.70E-02	3.90E-02	1.95E-03
CM-3/4	5795.020	5770.265	44.273	2.000	1.280	0.720	5.1799	100.00000	2.33E-03	2.90E-03	2.03E-02	4.56E-02	2.89E-03
CM-5/6	5386.000	5378.427	0.000	15.000	15.000	0.000	14.2480	86.09000	3.17E-02	8.44E-03	6.49E-02	1.36E-01	8.18E-03
CM-247	4946.000	4928.965	4.919	9.000	8.280	0.720	13.7917	79.30000	1.90E-02	7.19E-03	6.82E-02	1.43E-01	7.08E-03
CM-248	5078.600	5065.468	0.000	27.000	26.280	0.720	19.5080	91.00000	5.25E-02	1.10E-02	8.41E-02	1.74E-01	1.05E-02

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of AM243 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
AM-241



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER : 947354  
SAMPLE ID : S1202029345\_AM  
SAMPLE QTY : 0.111 G  
SAMPLE DATE : 4-FEB-2010 00:00:00.  
ANALYST : CXM2  
% YIELD : 107.282

CHAMBER	:	242
DETECTOR S/N	:	79435
AVERAGE %EFFICIENCY	:	38.0803
COUNT DATE	:	10-FEB-2008
ELAPSED LIVE TIME(SEC)	:	43200.00

```
LIB FILE      : ENV_ALPHA_AM
BKG FILE     : B242.CNF;78
BKG DATE     : 7-FEB-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE     : W242.CNF;28
CAL DATE     : 29-JAN-2010
```

TRACER	ID	: 445-96-2-SS
	NUCLIDE	: AM243
	NOMINAL	: 2.9166E+00 dpm
	RESULTS	: 3.1289E+00 dpm

MS/MSD  
ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3155E+01 pCi/G

LCS/LCSD  
ID : 0244-B  
NUCLIDE : AM-241  
NOMINAL : 3.3155E+01 pCi/G

## NUCLIDE ACTIVITY SUMMARY

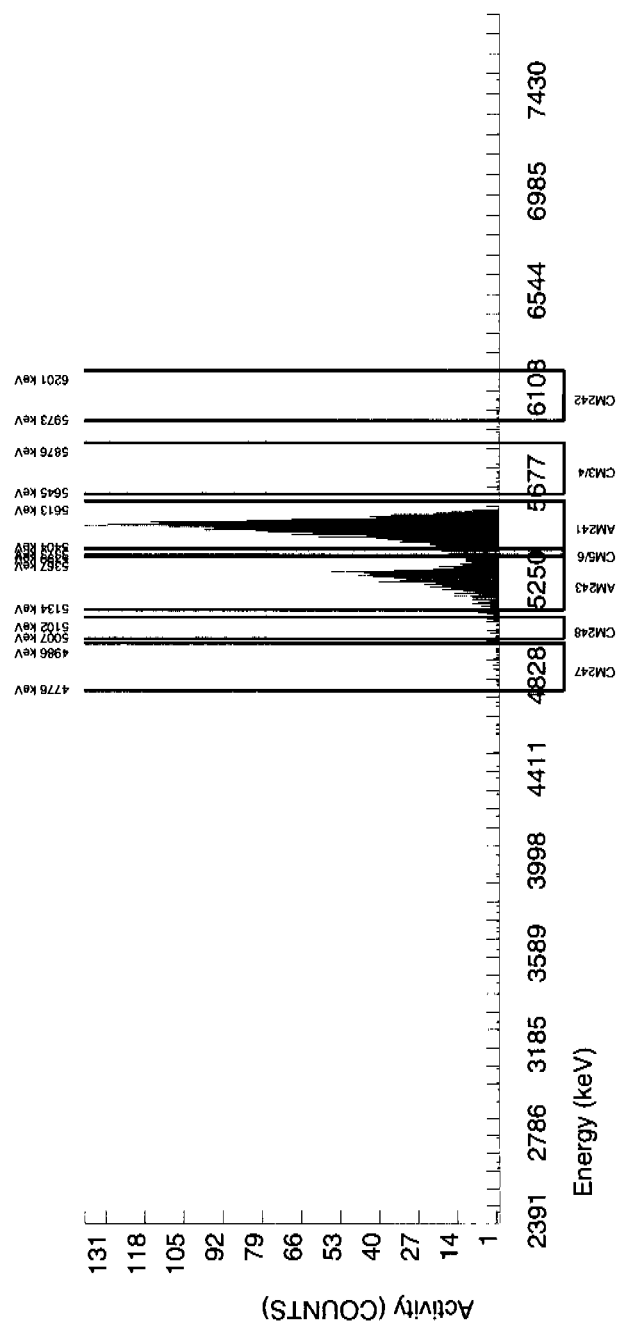
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5498.269	56.103	1913.000	1911.510	0.000	2.8409	99.94000	2.64E+01	1.86E+00	8.46E-02	2.07E-01	6.04E-01
AM-243	5270.000	5275.359	54.498	856.000	856.000	0.000	0.0000	99.78000	1.18E+01	8.85E-01	0.00E+00	3.75E-02	4.05E-01
CM-242	6102.000	6034.167	78.461	7.000	7.000	0.000	4.3413	100.0000	9.95E-02	3.82E-02	1.29E-01	2.96E-01	3.76E-02
CM-3/4	5795.020	5735.358	107.884	7.000	6.280	0.720	5.1799	100.0000	8.67E-02	3.83E-02	1.54E-01	3.46E-01	3.79E-02
CM-5/6	5386.000	5386.705	0.000	94.000	94.000	0.000	14.2480	86.09000	1.51E+00	1.85E-01	4.93E-01	1.03E+00	1.55E-01
CM-247	4946.000	4892.778	92.968	23.000	22.280	0.720	13.7917	79.30000	3.88E-01	8.82E-02	5.18E-01	1.08E+00	8.44E-02
CM-248	5078.600	5062.687	0.000	29.000	29.000	0.000	19.5080	91.00000	4.40E-01	8.67E-02	6.38E-01	1.32E+00	8.16E-02

## NOTES:

\* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)

\* Sg of AM243 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:  
AM-241



# Radiochemistry Batch Checklist, Rev10

Batch: 0473520 Product: PO Date: 2/11/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10% MDA/ MDC, error is 100% or less of sample activity. If greater 10% MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument big check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5% MDA/ MDC, then RPD is 100% or less. If greater 5% MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL/LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs Initialed and dated.	✓		
No transcription errors are apparent.			N/A
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Ht notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (if REMF, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklatrev10, revised 1/13/2010

Primary Review Performed By: Denise Green 2/11/10

Secondary Review Performed By: Jim 2/15/10

2/18  
LANL

# Plutonium Que Sheet

01-FEB-10

Batch #: 947356 Analyst: CXM2 First Client Due Date: 18-FEB-10 Internal Due Date: 08-FEB-10  
 Tracer Isotope(s): Pu-242 Pu-238 Tracer Code: 1375-A Expiration Date: 1/8/11 Vol: 0.1mL  
 LCS Isotope(s): Pu-239 Pu-238 LCS Code: 0244-B Expiration Date: 4/30/20 Vol: 0.11g  
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: Expiration Date: Vol:   
 Prep Date: 2/4/10 Initials: CMA Pipet ID: 2971058 Balance ID: 5040272

Witness: WU 2/4/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g) (l) (f)	Pu Det #
245667001-1	RE16-10-1343	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	1	1	1.253	37
245667002-1	RE16-10-1345	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	2	2	1.256	38
245667003-1	RE16-10-1347	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	3	3	1.259	39
245667004-1	RE16-10-1349	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	4	4	1.267	40
245667005-1	RE16-10-1351	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	5	5	1.254	41
245667006-1	RE16-10-1365	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	6	6	1.266	42
245691001-1	RE15-10-7883	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	7	7	1.255	43
245691002-1	RE15-10-7884	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	8	8	1.254	44
245691003-1	RE15-10-7932	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	9	9	1.263	45
245691004-1	RE15-10-7931	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	10	10	1.253	46
245691005-1	RE15-10-7938	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	11	11	1.264	47
245691006-1	RE15-10-7933	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	12	12	1.251	48
245691007-1	RE15-10-7939	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	13	13	1.264	71
245691008-1	RE15-10-7936	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	14	14	1.262	72
245691009-1	RE15-10-7935	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	15	15	1.253	73
245691010-1	RE15-10-7934	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	16	16	1.262	74
245691011-1	RE15-10-7940	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	17	17	1.250	75
245691012-1	RE15-10-7937	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	18	18	1.262	76
245691013-1	RE15-10-8056	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	19	19	1.265	83
245691014-1	RE15-10-8057	SAMPLE	05 pCi/g		SOIL	LANL010	25-JAN-10	20	20	1.253	84
1202029347-1	MB for batch 947356	MB	05 pCi/g		SOIL	QC ACCOUNT		21	21	1	85
1202029348-1	RE15-10-7883(245691001DUP)	DUP	05 pCi/g		SOIL	QC ACCOUNT	25-JAN-10	22	22	1.254	86
1202029349-1	LCS for batch 947356	LCS	05 pCi/g		SOIL	QC ACCOUNT		23	23	0.111	87

Solid Sample Dissolution by: LEACH for DIGESTION  
 Circle One

Choose SOP Used: GL-RAD-A-011 GL-RAD-A-036,  
 GL-RAD-A-045, GL-RAD-A-043

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: DS 2/11/10

# Blank Correction Report

**Batch ID 947356**

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202029348	DUP	Plutonium-238	1.25 g	0.00	0.00179	0.0275	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00587	0.00382	0.0208	.002248	pCi/g	YES
1202029349	LCS	Plutonium-238	0.111 g	6.81	0.558	0.301	-.01423423	pCi/g	NO
		Plutonium-239/240	0.111 g	42.1	2.77	0.227	.025315315	pCi/g	NO
1202029347	MB	Plutonium-238	1.00 g	-0.00158	0.00271	0.0337	-.00158	pCi/g	NO
		Plutonium-239/240	1.00 g	0.00281	0.00349	0.0255	.00281	pCi/g	YES
245667002	RE16-10-1345	Plutonium-238	1.26 g	-0.00687	0.00396	0.0235	-.00125397	pCi/g	YES
		Plutonium-239/240	1.26 g	0.000429	0.00189	0.0178	.002230159	pCi/g	YES
245667003	RE16-10-1347	Plutonium-238	1.26 g	-0.00511	0.00543	0.0233	-.00125397	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.000669	0.00217	0.0176	.002230159	pCi/g	YES
245667004	RE16-10-1349	Plutonium-238	1.27 g	0.00	0.00172	0.0263	-.00124409	pCi/g	NO
		Plutonium-239/240	1.27 g	0.0022	0.00273	0.0199	.002212598	pCi/g	YES
245667005	RE16-10-1351	Plutonium-238	1.25 g	-0.000711	0.00231	0.0248	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	-0.00375	0.00365	0.0187	.002248	pCi/g	YES
245667006	RE16-10-1365	Plutonium-238	1.27 g	-0.0014	0.00322	0.0245	-.00124409	pCi/g	NO
		Plutonium-239/240	1.27 g	-0.000702	0.00228	0.0185	.002212598	pCi/g	YES
245691001	RE15-10-7883	Plutonium-238	1.26 g	0.00468	0.00271	0.0239	-.00125397	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.000249	0.00294	0.0181	.002230159	pCi/g	YES
245691002	RE15-10-7884	Plutonium-238	1.25 g	0.00363	0.003	0.0245	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	-0.000701	0.00228	0.0185	.002248	pCi/g	YES
245691003	RE15-10-7932	Plutonium-238	1.26 g	-0.000774	0.00251	0.027	-.00125397	pCi/g	NO
		Plutonium-239/240	1.26 g	0.000492	0.00217	0.0204	.002230159	pCi/g	YES
245691004	RE15-10-7931	Plutonium-238	1.25 g	-0.00106	0.00182	0.0227	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00336	0.00277	0.0171	.002248	pCi/g	YES
245691005	RE15-10-7938	Plutonium-238	1.26 g	-0.000524	0.00436	0.0251	-.00125397	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00183	0.00403	0.019	.002230159	pCi/g	YES
245691006	RE15-10-7933	Plutonium-238	1.25 g	0.00296	0.0076	0.0277	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00945	0.00704	0.0209	.002248	pCi/g	YES
245691007	RE15-10-7939	Plutonium-238	1.26 g	0.00549	0.00698	0.0251	-.00125397	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00137	0.00349	0.0189	.002230159	pCi/g	YES
245691008	RE15-10-7936	Plutonium-238	1.26 g	0.0111	0.00809	0.0279	-.00125397	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.00734	0.00391	0.0211	.002230159	pCi/g	YES
245691009	RE15-10-7935	Plutonium-238	1.25 g	-0.00123	0.0021	0.0262	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0173	0.00669	0.0198	.002248	pCi/g	NO
245691010	RE15-10-7934	Plutonium-238	1.26 g	0.00373	0.00468	0.027	-.00125397	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00527	0.00306	0.0204	.002230159	pCi/g	YES
245691011	RE15-10-7940	Plutonium-238	1.25 g	-0.000808	0.00262	0.0282	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	0.000514	0.00226	0.0213	.002248	pCi/g	YES
245691012	RE15-10-7937	Plutonium-238	1.26 g	0.00244	0.00303	0.0293	-.00125397	pCi/g	NO



## Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Alliquot	Result	TPU	MDA	Alliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
245691012	RE15-10-7937	Plutonium-239/240	1.26 g	0.0144	0.0061	0.0221	.002230159	pCi/g	NO
245691013	RE15-10-8056	Plutonium-238	1.27 g	-0.00179	0.00498	0.0229	-.00124409	pCi/g	NO
		Plutonium-239/240	1.27 g	0.00679	0.00396	0.0173	.002212598	pCi/g	YES
245691014	RE15-10-8057	Plutonium-238	1.25 g	0.00323	0.00229	0.0248	-.001264	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0117	0.00475	0.0187	.002248	pCi/g	NO

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947356  
SAMPLE ID : S0245691001\_PU  
SAMPLE QTY : 1.255 G  
SAMPLE DATE : 25-JAN-2010 00:00:00  
ANALYST : CXM2  
% YIELD : 95.148

CHAMBER : 043  
DETECTOR S/N : 76543  
AVERAGE %EFFICIENCY : 33.6471  
COUNT DATE : 10-FEB-2010 16:27:03  
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV\_ALPHA\_PU  
BKG FILE : B043.CNF;1104  
BKG DATE : 7-FEB-2010  
BKG LIVE TIME(SEC) : 60000.00  
EFF FILE : W043.CNF;286  
CAL DATE : 3-FEB-2010

TRACER  
ID : 1375-A  
NUCLIDE : PU242  
NOMINAL : 3.3808E+00 dpm  
RESULTS : 3.2167E+00 dpm

MS/MSD  
ID : 0244-B  
NUCLIDE : PU-9/0  
NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD  
ID : 0244-B  
NUCLIDE : PU-9/0  
NOMINAL : 4.1778E+01 pCi/G

## NUCLIDE ACTIVITY SUMMARY

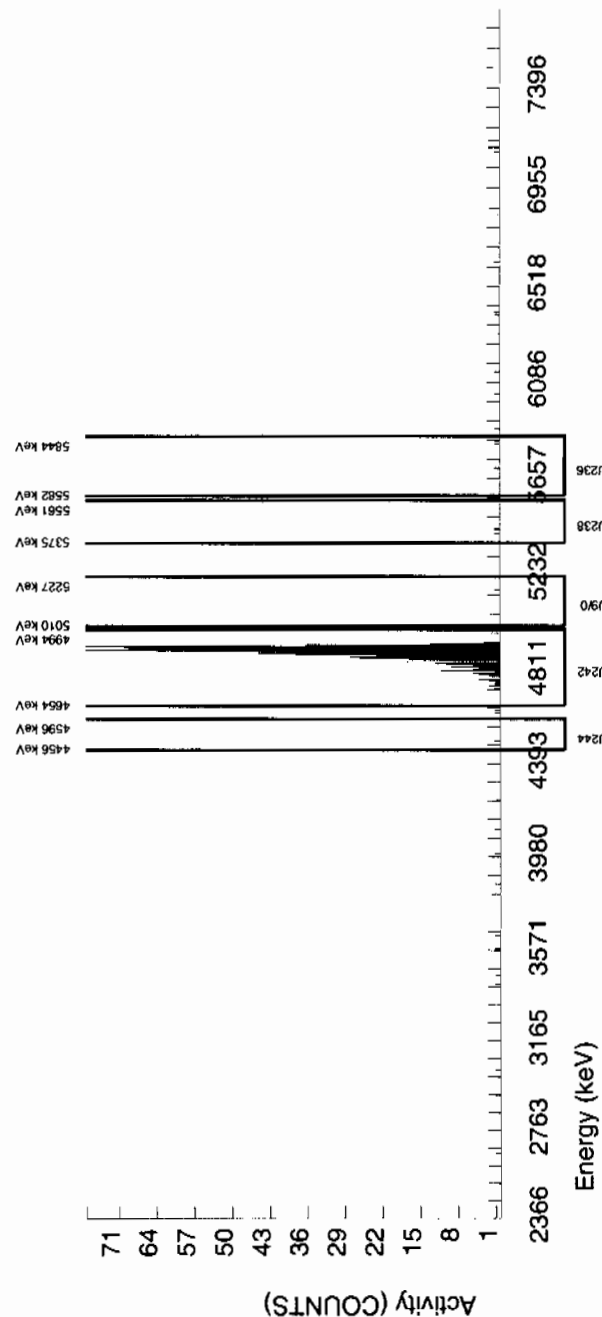
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5780.768	0.000	5.000	2.120	2.880	2.8925	100.0000	3.34E-03	4.19E-03	9.05E-03	2.23E-02	4.19E-03
PU-238	5499.000	5434.961	24.740	3.000	3.000	0.000	2.9312	99.900000	4.68E-03	2.71E-03	9.86E-03	2.39E-02	2.70E-03
PU-9/0	5155.000	5197.443	49.479	2.000	-0.160	2.160	2.0604	99.900000	-2.49E-04	2.94E-03	6.93E-03	1.81E-02	2.94E-03
PU242	4890.000	4893.569	38.867	780.000	779.280	0.720	0.8485	100.0000	1.21E+00	7.82E-02	2.85E-03	9.92E-03	4.35E-02
PU-244	4589.000	4502.612	4.948	1.000	1.000	0.000	3.7241	99.900000	1.56E-03	1.56E-03	1.25E-02	2.93E-02	1.56E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947356 SAMPLE ID : S0245691002_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 91.414		CHAMBER : 044 DETECTOR S/N : 79459 AVERAGE %EFFICIENCY : 34.2824 COUNT DATE : 10-FEB-2010 16:27:03 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B044.CNF;1114 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W044.CNF;307 CAL DATE : 3-FEB-2010
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TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 3.0905E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

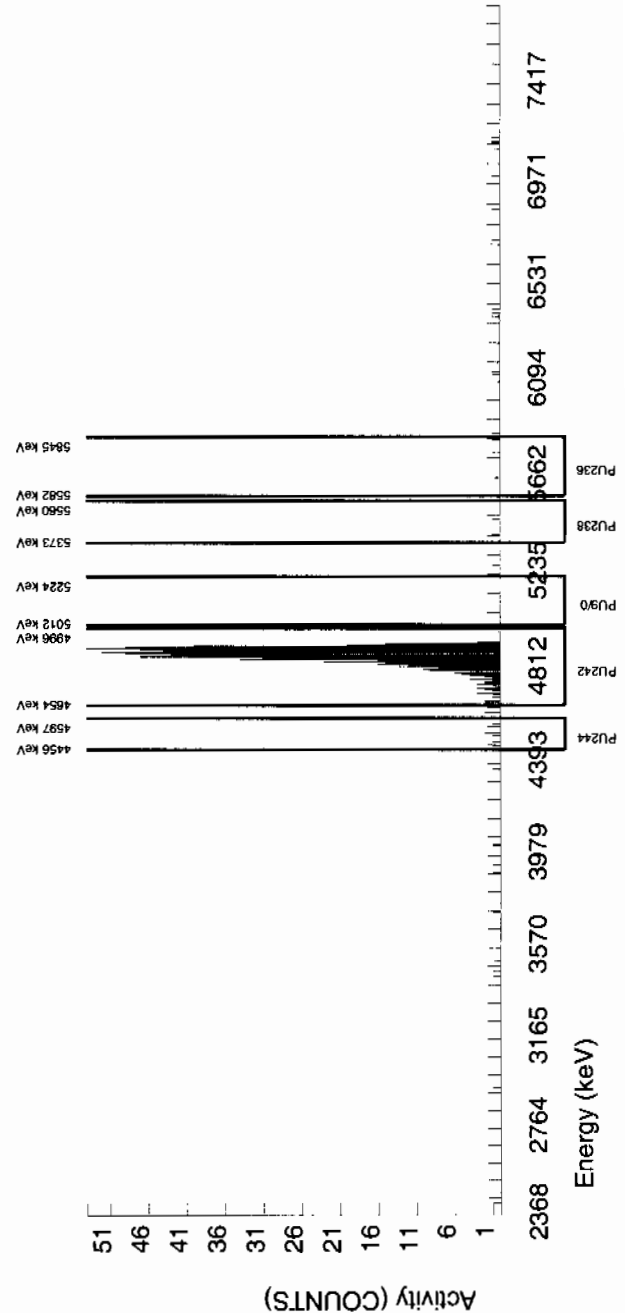
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5732.155	0.000	3.000	-2.040	5.040	2.6925	100.0000	-3.28E-03	4.15E-03	9.25E-03	2.28E-02	4.15E-03
PU-238	5499.000	5424.868	98.457	3.000	2.280	0.720	2.9312	99.900000	3.63E-03	3.00E-03	1.01E-02	2.45E-02	2.99E-03
PU-9/0	5155.000	5155.224	4.923	1.000	-0.440	1.440	2.0604	99.900000	-7.01E-04	2.28E-03	7.08E-03	1.85E-02	2.27E-03
PU242	4890.000	4877.387	59.255	765.000	762.840	2.160	1.4697	100.0000	1.21E+00	7.88E-02	5.05E-03	1.44E-02	4.41E-02
PU-244	4589.000	4534.188	4.923	7.000	7.000	0.000	3.7241	99.900000	1.12E-02	4.26E-03	1.28E-02	2.99E-02	4.22E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947356 SAMPLE ID : S0245691003_PU SAMPLE QTY : 1.263 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 83.804</p>	<p>CHAMBER : 045 DETECTOR S/N : 78783 AVERAGE %EFFICIENCY : 33.6564 COUNT DATE : 10-FEB-2010 16:27:03 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B045.CNF;1103 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W045.CNF;298 CAL DATE : 3-FEB-2010</p>
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<p>TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.8332E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

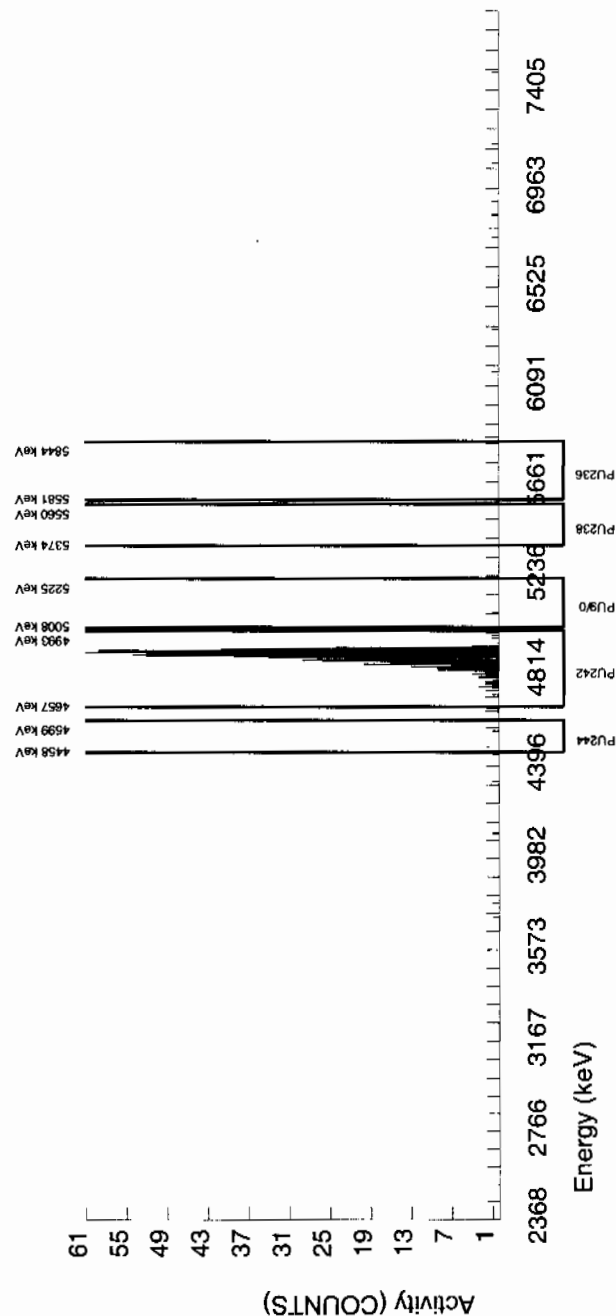
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5712.251	0.000	0.000	-5.040	5.040	2.6925	100.0000	-8.95E-03	3.82E-03	1.02E-02	2.52E-02	3.82E-03
PU-238	5499.000	5378.840	4.942	1.000	-0.440	1.440	2.9312	99.900000	-7.74E-04	2.51E-03	1.11E-02	2.70E-02	2.51E-03
PU-9/0	5155.000	5076.927	4.942	1.000	0.280	0.720	2.0604	99.900000	4.92E-04	2.17E-03	7.81E-03	2.04E-02	2.17E-03
PU242	4890.000	4882.656	44.781	688.000	686.560	1.440	1.2000	100.0000	1.21E+00	8.10E-02	4.55E-03	1.39E-02	4.61E-02
PU-244	4589.000	4569.188	0.000	4.000	4.000	0.000	3.7241	99.900000	7.03E-03	3.54E-03	1.41E-02	3.30E-02	3.52E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947356  SAMPLE ID : S0245691004_PU  SAMPLE QTY : 1.253 G  SAMPLE DATE : 25-JAN-2010 00:00:00  ANALYST : CXM2  % YIELD : 101.403</p>	<p>CHAMBER : 046  DETECTOR S/N : 76544  AVERAGE %EFFICIENCY : 33.4175  COUNT DATE : 10-FEB-2010 16:27:03  ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU  BKG FILE : B046.CNF:1114  BKG DATE : 7-FEB-2010  BKG LIVE TIME(SEC) : 60000.00  EFF FILE : W046.CNF:289  CAL DATE : 3-FEB-2010</p>
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<p>TRACER  ID : 1375-A  NUCLIDE : PU242  NOMINAL : 3.3808E+00 dpm  RESULTS : 3.4282E+00 dpm</p>	<p>MS/MSD  ID : 0244-B  NUCLIDE : PU-9/0  NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD  ID : 0244-B  NUCLIDE : PU-9/0  NOMINAL : 4.1778E+01 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

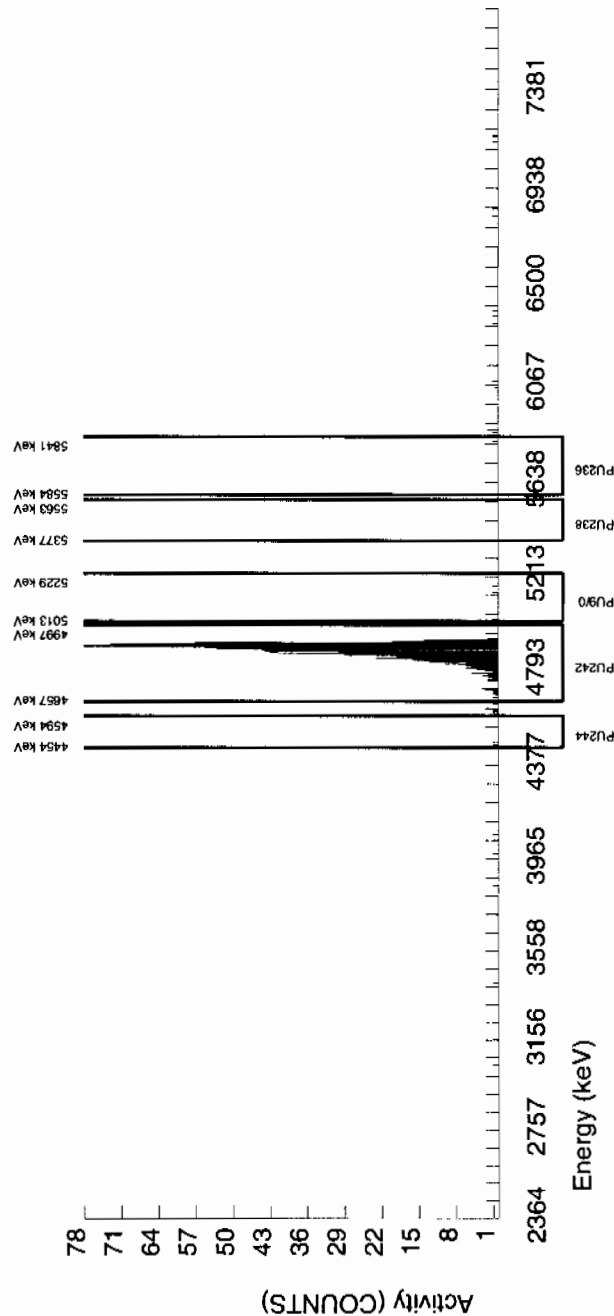
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5824.852	4.894	1.000	-1.880	2.880	2.6925	100.0000	-2.80E-03	2.61E-03	8.56E-03	2.11E-02	2.61E-03
PU-238	5499.000	5469.852	0.000	0.000	-0.720	0.720	2.9312	99.900000	-1.06E-03	1.82E-03	9.33E-03	2.27E-02	1.82E-03
PU-9/0	5155.000	5117.912	141.913	3.000	2.280	0.720	2.0604	99.900000	3.36E-03	2.77E-03	6.56E-03	1.71E-02	2.77E-03
PU242	4890.000	4886.275	47.400	827.000	824.840	2.160	1.4697	100.0000	1.22E+00	7.70E-02	4.67E-03	1.33E-02	4.24E-02
PU-244	4589.000	4475.021	14.681	2.000	2.000	0.000	3.7241	99.900000	2.95E-03	2.09E-03	1.19E-02	2.77E-02	2.09E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947356 SAMPLE ID : S0245691005_PU SAMPLE QTY : 1.264 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 88.066		CHAMBER : 047 DETECTOR S/N : 46-089B1 AVERAGE %EFFICIENCY : 34.3991 COUNT DATE : 10-FEB-2010 16:27:03 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV ALPHA.PU BKG FILE : B047.CNF;1109 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W047.CNF;303 CAL DATE : 3-FEB-2010
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TRACER ID : 1375-A NUCLEIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.9773E+00 dpm	MS/MSD ID : 0244-B NUCLEIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLEIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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## NUCLEIDE ACTIVITY SUMMARY

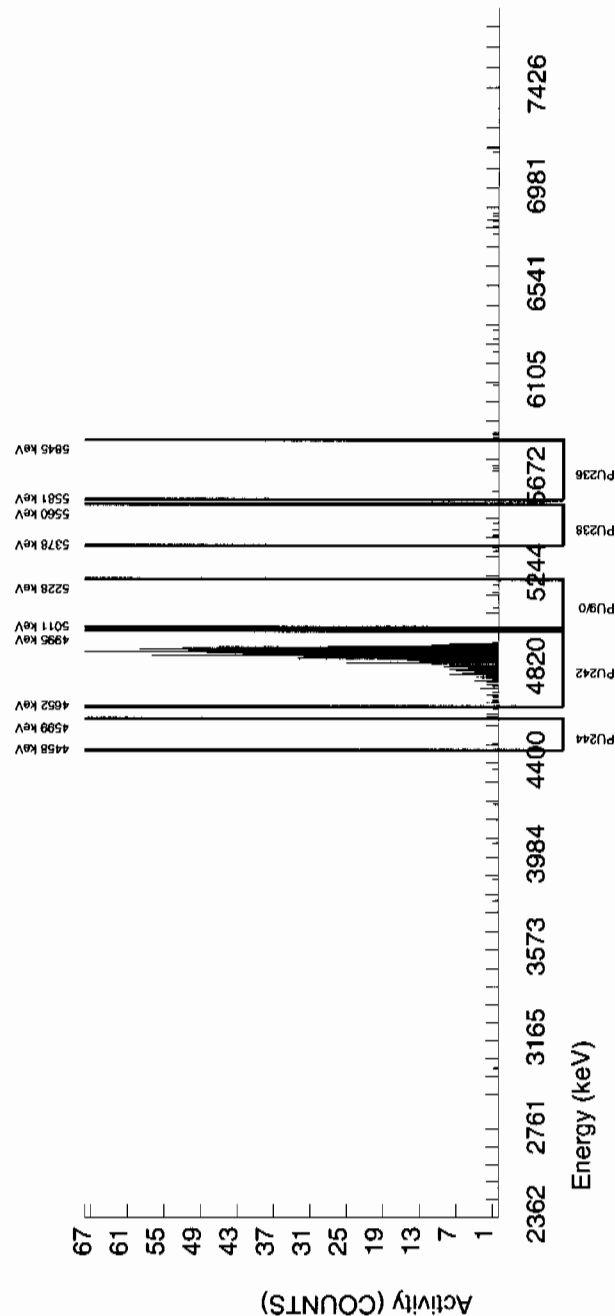
NUCLEIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5696.016	109.299	5.000	0.680	4.320	2.6925	100.0000	1.12E-03	4.71E-03	9.49E-03	2.34E-02	4.71E-03
PU-238	5499.000	5448.429	58.996	4.000	-0.320	4.320	2.9312	99.900000	-5.24E-04	4.36E-03	1.03E-02	2.51E-02	4.36E-03
PU-9/0	5155.000	5125.913	183.821	4.000	1.120	2.880	2.0604	99.900000	1.83E-03	4.03E-03	7.27E-03	1.90E-02	4.03E-03
PU242	4890.000	4885.958	42.653	741.000	737.400	3.600	1.8974	100.0000	1.20E+00	7.91E-02	6.69E-03	1.78E-02	4.46E-02
PU-244	4589.000	4543.315	0.000	3.000	1.560	1.440	3.7241	99.900000	2.55E-03	3.29E-03	1.31E-02	3.07E-02	3.29E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947356  SAMPLE ID : S0245691006_PU  SAMPLE QTY : 1.251 G  SAMPLE DATE : 25-JAN-2010 00:00:00  ANALYST : CXM2  % YIELD : 86.498</p>	<p>CHAMBER : 048  DETECTOR S/N : 42483  AVERAGE %EFFICIENCY : 32.0990  COUNT DATE : 10-FEB-2010 16:27:03  ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU  BKG FILE : B048.CNF:1110  BKG DATE : 7-FEB-2010  BKG LIVE TIME(SEC) : 60000.00  EFF FILE : W048.CNF:316  CAL DATE : 3-FEB-2010</p>
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<p>TRACER  ID : 1375-A  NUCLIDE : PU242  NOMINAL : 3.3808E+00 dpm  RESULTS : 2.9243E+00 dpm</p>	<p>MS/MSD  ID : 0244-B  NUCLIDE : PU-9/0  NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD  ID : 0244-B  NUCLIDE : PU-9/0  NOMINAL : 4.1778E+01 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

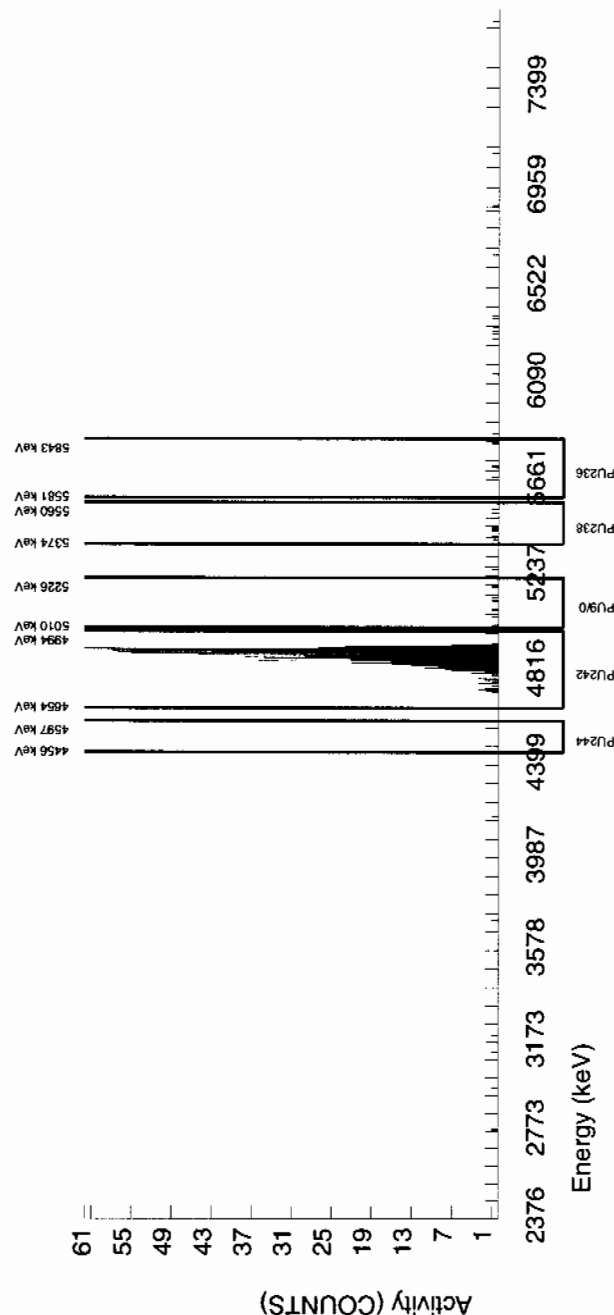
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5751.014	49.339	11.000	-4.120	15.120	2.6925	100.0000	-7.50E-03	8.52E-03	1.05E-02	2.58E-02	8.52E-03
PU-238	5499.000	5449.912	7.247	11.000	1.640	9.360	2.9312	99.900000	2.96E-03	7.60E-03	1.14E-02	2.77E-02	7.60E-03
PU-9/0	5155.000	5133.546	7.247	11.000	5.240	5.760	2.0604	99.900000	9.45E-03	7.04E-03	8.01E-03	2.09E-02	7.02E-03
PU242	4890.000	4889.492	54.345	678.000	675.840	2.160	1.4697	100.0000	1.22E+00	8.22E-02	5.71E-03	1.63E-02	4.70E-02
PU-244	4589.000	4526.617	0.000	0.000	-0.720	0.720	3.7241	99.900000	-1.30E-03	2.22E-03	1.45E-02	3.39E-02	2.22E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947356 SAMPLE ID : S0245691007_PU SAMPLE QTY : 1.264 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 94.304		CHAMBER : 071 DETECTOR S/N : 64259 AVERAGE %EFFICIENCY : 32.1673 COUNT DATE : 10-FEB-2010 16:27:04 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B071.CNF:1099 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W071.CNF:286 CAL DATE : 9-FEB-2010
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TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 3.1882E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

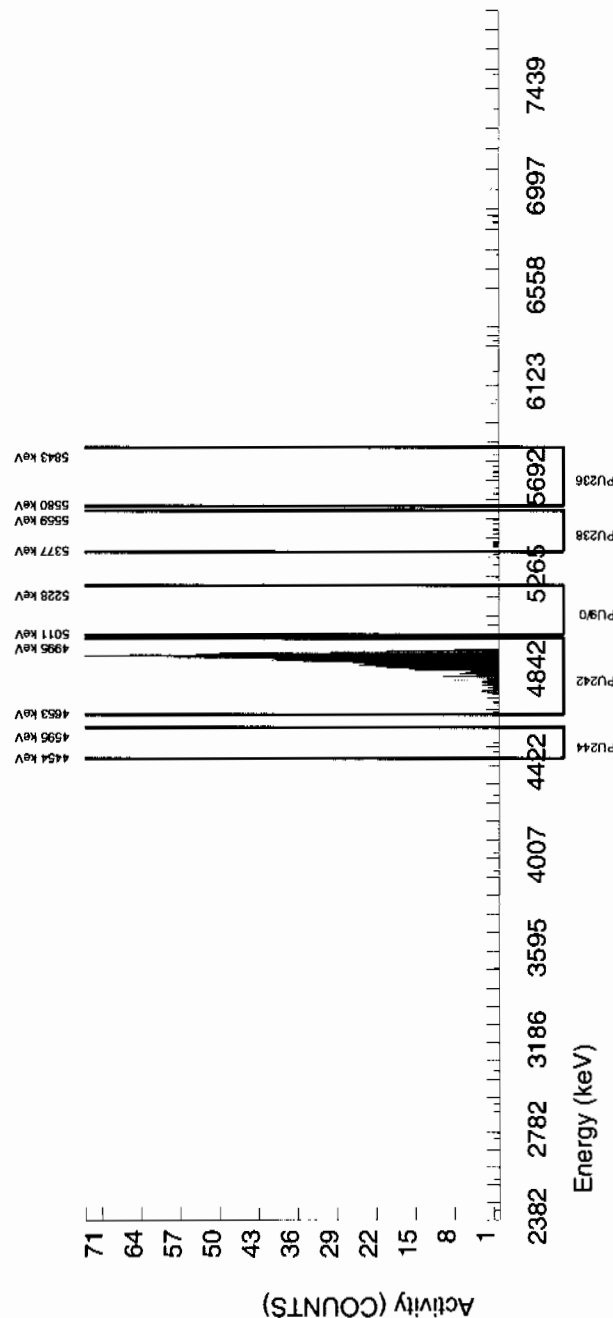
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5707.176	214.200	8.000	2.960	5.040	2.6925	100.0000	4.88E-03	5.63E-03	9.48E-03	2.34E-02	5.63E-03
PU-238	5499.000	5447.647	129.516	12.000	3.360	8.640	2.9312	99.900000	5.49E-03	6.98E-03	1.03E-02	2.51E-02	6.97E-03
PU-9/0	5155.000	5100.702	4.981	3.000	0.840	2.160	2.0604	99.900000	1.37E-03	3.49E-03	7.26E-03	1.89E-02	3.49E-03
PU242	4890.000	4898.732	35.472	742.000	738.400	3.600	1.8974	100.0000	1.20E+00	7.91E-02	6.68E-03	1.78E-02	4.45E-02
PU-244	4589.000	4511.103	44.833	3.000	2.280	0.720	3.7241	99.900000	3.72E-03	3.07E-03	1.31E-02	3.07E-02	3.06E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).





**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

```
LIB FILE : ENV_ALPHA_PU
BKG FILE : B072.CNF;1097
3KG DATE : 7-FEB-2010
TIME(SEC) : 59999.99
EFF FILE : W072.CNF;277
CAL DATE : 9-FEB-2010
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```
CHAMBER : 072
DETECTOR S/N : 45-149AA3
AVERAGE %EFFICIENCY : 32.1107
COUNT DATE : 10-FEB-2010 16:27:04
ELAPSED LIVE TIME(SEC) : 43199.99
```

ATCH NUMBER : 947356  
SAMPLE ID : S0245691008\_PU  
SAMPLE QTY : 1.262 G  
SAMPLE DATE : 25-JAN-2010 00:00:00  
ANALYST : CXM2  
% YIELD : 85.059

LCS/LCSD  
ID : 0244-B  
NUCLIDE : PU-9/0  
NOMINAL : 4.1778E+01 pCi/G

MS/MSD  
ID : 0244-B  
NUCLIDE : PU-9/0  
NOMINAL : 4.1778E+01 pCi/G

TRACER	:	1375-A
ID	:	PU242
NUCLIDE	:	3.3808E+00 dpm
NOMINAL	:	2.8756E+00 dpm
RESULTS	:	

## NUCLIDE ACTIVITY SUMMARY

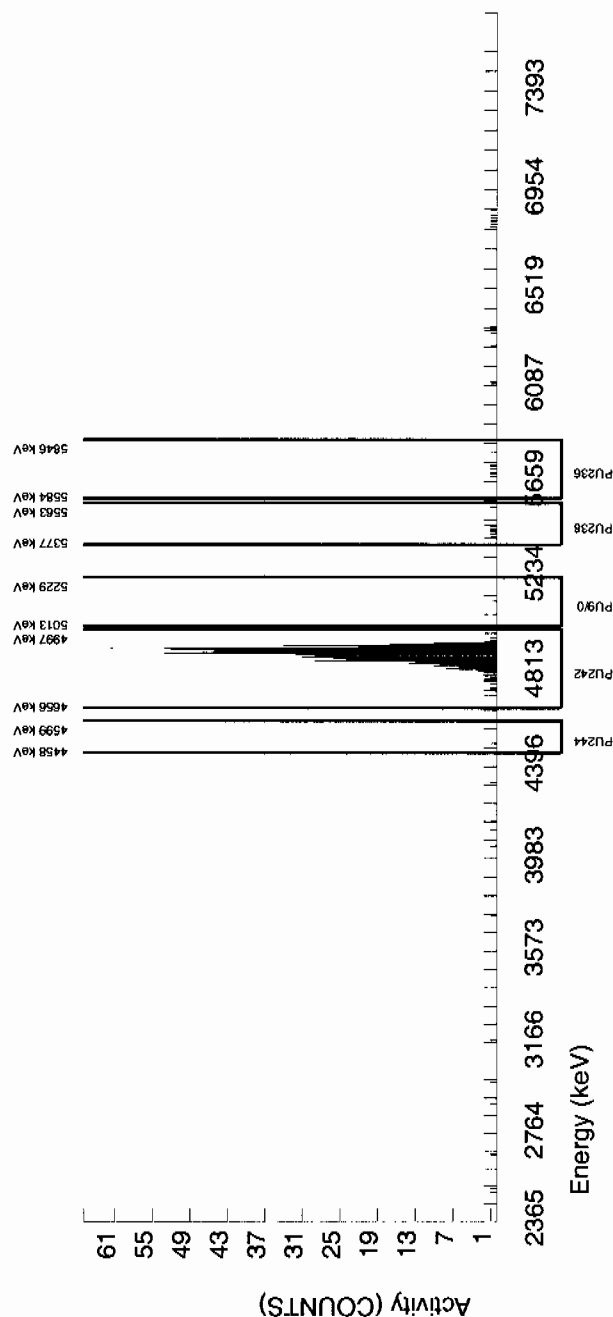
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
PU-236	5749.000	5716.228	4.964	10.000	0.640	9.360	2.6925	100.0000	1.17E-03	7.51E-03	1.05E-02	2.60E-02	7.51E-03
PU-238	5499.000	5445.944	81.912	14.000	6.080	7.920	2.9312	99.0000	1.11E-02	8.09E-03	1.15E-02	2.79E-02	8.07E-03
PU-9/0	5155.000	5128.601	4.964	1.000	-4.040	5.040	2.0604	99.90000	-7.34E-03	3.91E-03	8.08E-03	2.11E-02	3.91E-03
PU242	4890.000	4894.549	39.769	667.000	664.840	2.160	1.4697	100.0000	1.21E+00	8.19E-02	5.75E-03	1.64E-02	4.69E-02
PU-244	4589.000	4505.260	4.964	1.000	-0.440	1.440	3.7241	99.90000	-7.99E-04	2.59E-03	1.46E-02	3.41E-02	2.59E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as  $\sqrt{\text{BKG AREA}}$ .



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER	:	947356
SAMPLE ID	:	S024566
SAMPLE QTY	:	1.25
SAMPLE DATE	:	25-JAN-2019
ANALYST	:	CXM2
% YIELD	:	88.462

CHAMBER : 073  
DETECTOR S/N : 78775  
AVERAGE %EFFICIENCY : 33.1249  
COUNT DATE : 10-FEB-2010 16:27:04  
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE	:	ENV_ALPHA_PU
BKG FILE	:	B073.CNF;1099
BKG DATE	:	7-FEB-2010
BKG LIVE TIME(SEC)	:	59999.99
EFF FILE	:	W073.CNF;285
CAL DATE	:	9-FEB-2010

**TRACER**

ID : 1375-A  
NUCLIDE : PU242  
NOMINAL : 3.3808E+00 dpm  
RESULTS : 2.9907E+00 dpm

MS/MSD  
ID : 0244-B  
NUCLIDE : PU-9/0  
NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD  
ID : 0244-B  
NUCLIDE : PU-9/0  
NOMINAL : 4.1778E+01 pCi/G

## NUCLIDE ACTIVITY SUMMARY

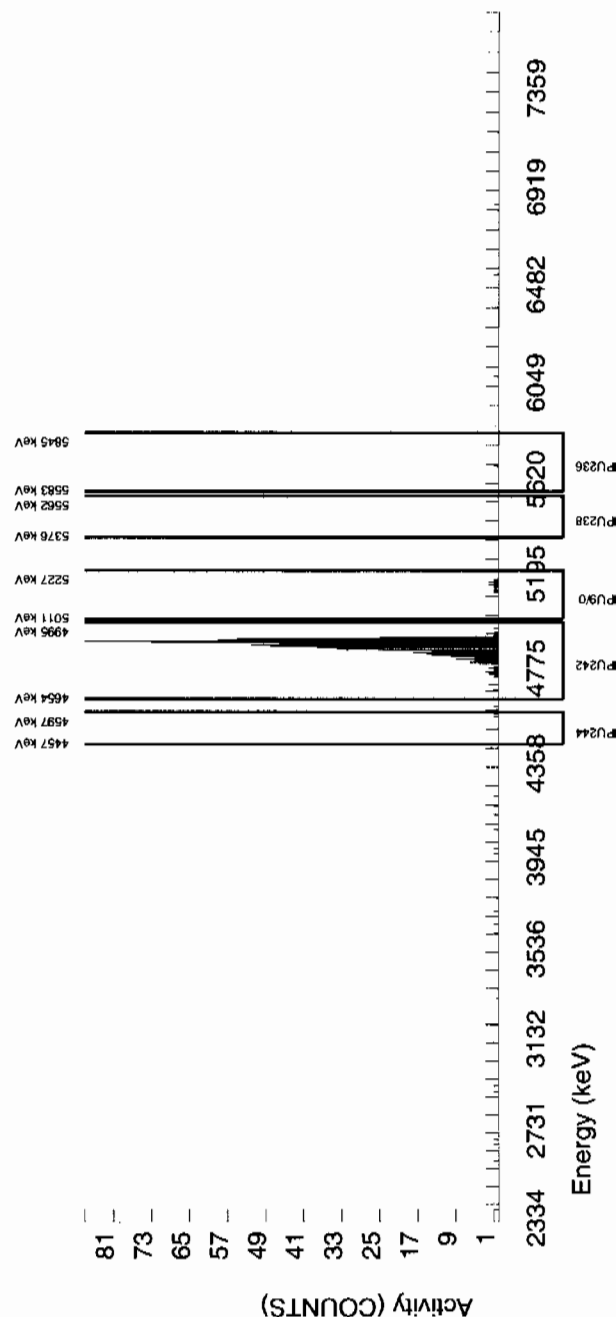
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5700.343	4.934	1.000	0.280	0.720	2.6925	100.0000	4.82E-04	2.13E-03	9.90E-03	2.44E-02	2.12E-03
PU-238	5499.000	5468.476	0.000	0.000	-0.720	0.720	2.9312	99.900000	-1.23E-03	2.10E-03	1.08E-02	2.62E-02	2.10E-03
PU-9/0	5155.000	5163.796	19.738	13.000	10.120	2.880	2.0604	99.900000	1.73E-02	6.69E-03	7.58E-03	1.98E-02	6.62E-03
PU242	4890.000	4894.249	34.417	714.000	713.280	0.720	0.8485	100.0000	1.22E+00	8.05E-02	3.12E-03	1.09E-02	4.55E-02
PU-244	4589.000	4586.680	14.803	2.000	2.000	0.000	3.7241	99.900000	3.41E-03	2.42E-03	1.37E-02	3.20E-02	2.41E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as  $\sqrt{\text{BKG AREA}}$ .



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<b>BATCH NUMBER :</b> 947356 <b>SAMPLE ID :</b> S0245691010_PU <b>SAMPLE QTY :</b> 1.262 G <b>SAMPLE DATE :</b> 25-JAN-2010 00:00:00 <b>ANALYST :</b> CXM2 <b>% YIELD :</b> 89.012		<b>CHAMBER :</b> 074 <b>DETECTOR S/N :</b> 78266 <b>AVERAGE %EFFICIENCY :</b> 31.7390 <b>COUNT DATE :</b> 10-FEB-2010 16:27:04 <b>ELAPSED LIVE TIME(SEC) :</b> 43199.99	<b>LIB FILE :</b> ENV_ALPHA_PU <b>BKG FILE :</b> B074.CNF;1121 <b>BKG DATE :</b> 7-FEB-2010 <b>BKG LIVE TIME(SEC) :</b> 59999.99 <b>EFF FILE :</b> W074.CNF;332 <b>CAL DATE :</b> 9-FEB-2010
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<b>TRACER ID :</b> 1375-A <b>NUCLIDE :</b> PU242 <b>NOMINAL :</b> 3.3808E+00 dpm <b>RESULTS :</b> 3.0093E+00 dpm	<b>MS/MSD ID :</b> 0244-B <b>NUCLIDE :</b> PU-9/0 <b>NOMINAL :</b> 4.1778E+01 pCi/G	<b>LCS/LCSD ID :</b> 0244-B <b>NUCLIDE :</b> PU-9/0 <b>NOMINAL :</b> 4.1778E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

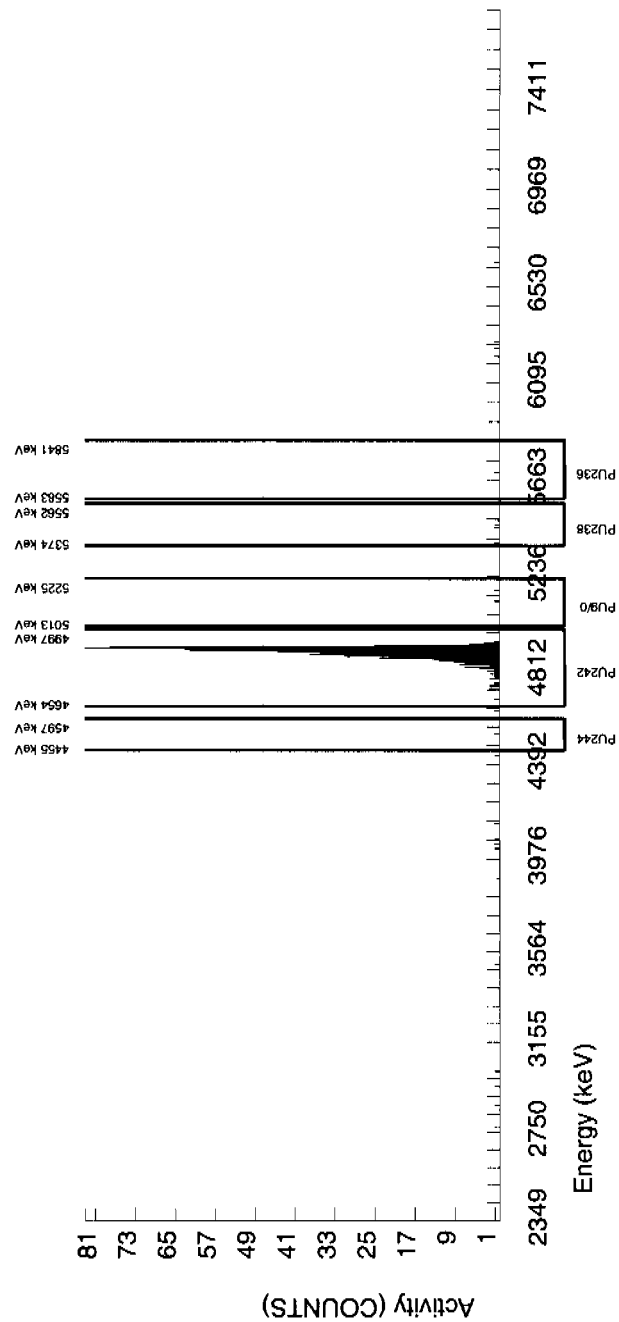
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5706.375	4.989	1.000	-0.440	1.440	2.6925	100.0000	-7.81E-04	2.53E-03	1.02E-02	2.51E-02	2.53E-03
PU-238	5499.000	5440.660	94.169	5.000	2.120	2.880	2.9312	99.900000	3.73E-03	4.68E-03	1.11E-02	2.70E-02	4.67E-03
PU-9/0	5155.000	5147.357	49.267	3.000	3.000	0.000	2.0604	99.900000	5.27E-03	3.06E-03	7.81E-03	2.04E-02	3.04E-03
PU242	4890.000	4898.179	28.903	692.000	687.680	4.320	2.0785	100.0000	1.21E+00	8.11E-02	7.87E-03	2.05E-02	4.63E-02
PU-244	4589.000	4499.553	69.847	2.000	2.000	0.000	3.7241	99.900000	3.51E-03	2.49E-03	1.41E-02	3.30E-02	2.48E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

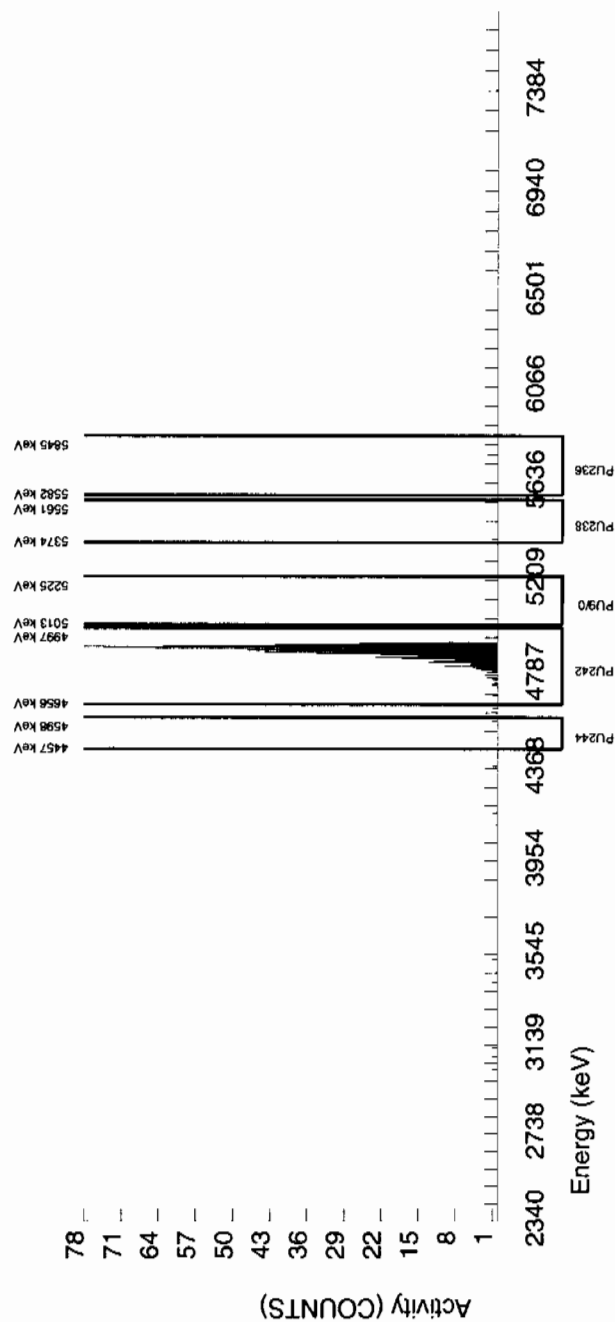
BATCH NUMBER : 947356 SAMPLE ID : S0245691011_PU SAMPLE QTY : 1.250 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 89.263				CHAMBER : 075 DETECTOR S/N : 80010 AVERAGE %EFFICIENCY : 30.5707 COUNT DATE : 10-FEB-2010 16:27:04 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B075.CNF;1102 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W075.CNF;290 CAL DATE : 9-FEB-2010					
TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 3.0178E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5764.397	4.939	2.000	2.000	0.000	2.6925	100.0000	3.71E-03	2.63E-03	1.07E-02	2.63E-02	2.62E-03
PU-238	5499.000	5395.153	4.939	1.000	-0.440	1.440	2.9312	99.90000	-8.08E-04	2.62E-03	1.16E-02	2.82E-02	2.62E-03
PU-9/0	5155.000	5214.351	4.939	1.000	0.280	0.720	2.0604	99.90000	5.14E-04	2.26E-03	8.16E-03	2.13E-02	2.26E-03
PU242	4890.000	4898.070	37.649	670.000	664.240	5.760	2.4000	100.0000	1.22E+00	8.29E-02	9.50E-03	2.40E-02	4.76E-02
PU-244	4589.000	4522.192	0.000	2.000	0.560	1.440	3.7241	99.90000	1.03E-03	3.20E-03	1.48E-02	3.45E-02	3.20E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as  $\sqrt{\text{BKG AREA}}$ .



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947356 SAMPLE ID : S0245691012_PU SAMPLE QTY : 1.262 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 85.666		CHAMBER : 076 DETECTOR S/N : 78779 AVERAGE %EFFICIENCY : 30.3696 COUNT DATE : 10-FEB-2010 16:27:04 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B076.CNF;1105 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W076.CNF;295 CAL DATE : 9-FEB-2010
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TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.8962E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

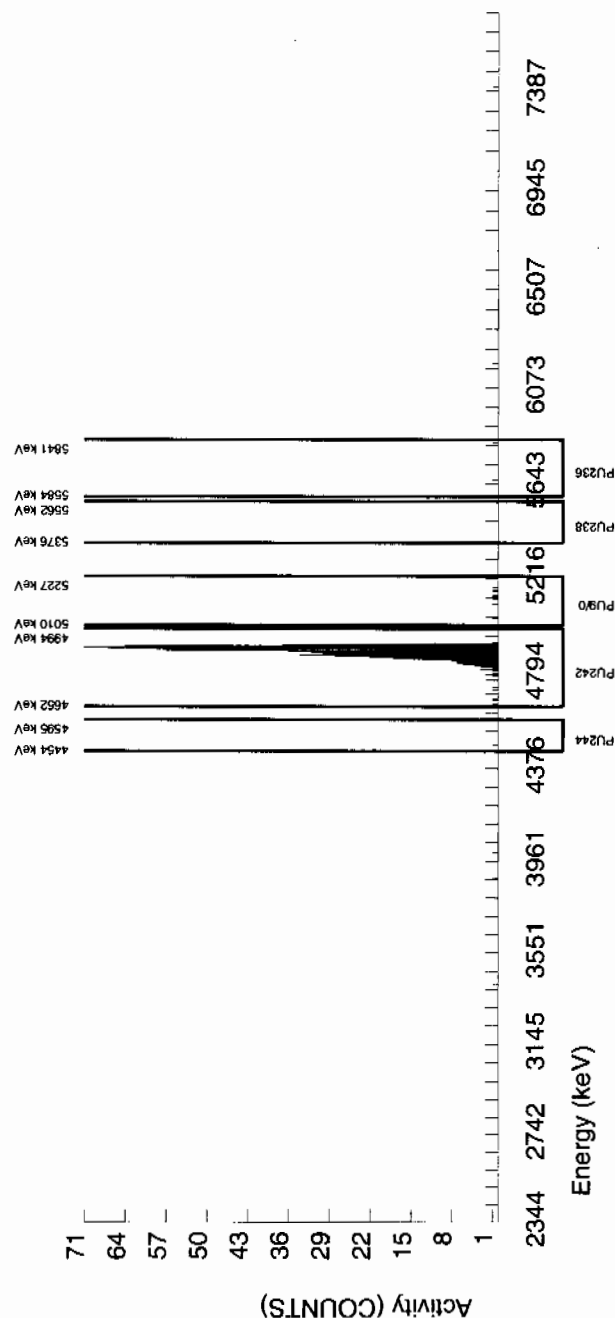
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5747.153	158.583	2.000	2.000	0.000	2.6925	100.0000	3.85E-03	2.73E-03	1.11E-02	2.73E-02	2.73E-03
PU-238	5499.000	5469.013	0.000	2.000	1.280	0.720	2.9312	99.900000	2.44E-03	3.03E-03	1.21E-02	2.93E-02	3.03E-03
PU-9/0	5155.000	5123.400	163.539	9.000	7.560	1.440	2.0604	99.900000	1.44E-02	6.10E-03	8.48E-03	2.21E-02	6.04E-03
PU242	4890.000	4898.899	30.590	634.000	633.280	0.720	0.8485	100.0000	1.21E+00	8.31E-02	3.49E-03	1.21E-02	4.80E-02
PU-244	4589.000	4485.232	4.956	1.000	1.000	0.000	3.7241	99.900000	1.91E-03	1.91E-03	1.53E-02	3.58E-02	1.91E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

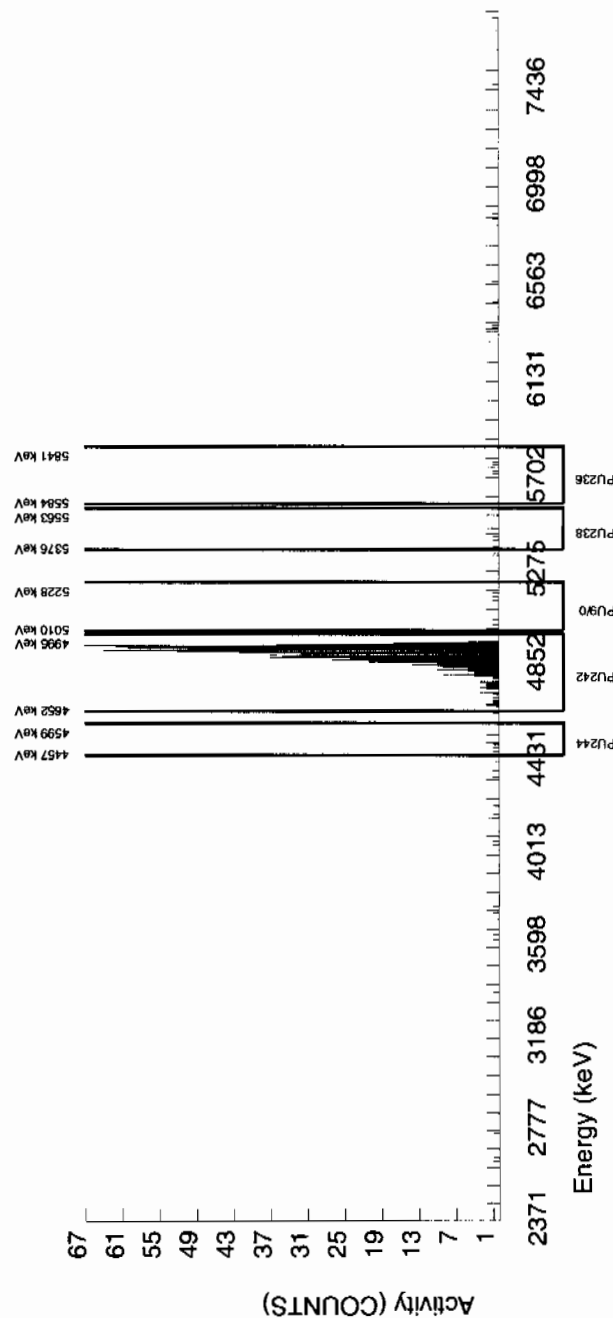
BATCH NUMBER : 947356				CHAMBER : 083				LIB FILE : ENV_ALPHA_PU					
SAMPLE ID : S0245691013_PU				DETECTOR S/N : 64278				BKG FILE : B083.CNF;1021					
SAMPLE QTY : 1.265 G				AVERAGE %EFFICIENCY : 34.7636				BKG DATE : 7-FEB-2010					
SAMPLE DATE : 25-JAN-2010 00:00:00				COUNT DATE : 10-FEB-2010 16:27:05				BKG LIVE TIME(SEC) : 59999.99					
ANALYST : CXM2				ELAPSED LIVE TIME(SEC) : 43199.99				EFF FILE : W083.CNF;292					
% YIELD : 95.703								CAL DATE : 9-FEB-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 1375-A				ID : 0244-B				ID : 0244-B					
NUCLIDE : PU242				NUCLIDE : PU-9/0				NUCLIDE : PU-9/0					
NOMINAL : 3.3808E+00 dpm				NOMINAL : 4.1778E+01 pCi/G				NOMINAL : 4.1778E+01 pCi/G					
RESULTS : 3.2355E+00 dpm													
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5751.739	5.063	6.000	0.240	5.760	2.6925	100.0000	3.61E-04	4.79E-03	8.63E-03	2.13E-02	4.79E-03
PU-238	5499.000	5447.437	7.436	6.000	-1.200	7.200	2.9312	99.900000	-1.79E-03	4.98E-03	9.41E-03	2.29E-02	4.98E-03
PU-9/0	5155.000	5104.833	162.001	6.000	4.560	1.440	2.0604	99.900000	6.79E-03	3.96E-03	6.61E-03	1.73E-02	3.95E-03
PU242	4890.000	4906.153	56.947	812.000	809.840	2.160	1.4697	100.0000	1.20E+00	7.67E-02	4.71E-03	1.35E-02	4.24E-02
PU-244	4589.000	4509.942	5.063	7.000	4.120	2.880	3.7241	99.900000	6.13E-03	4.49E-03	1.20E-02	2.79E-02	4.48E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947356	CHAMBER : 084	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0245691014_PU	DETECTOR S/N : 78265	BKG FILE : B084.CNF:1019
SAMPLE QTY : 1.253 G	AVERAGE %EFFICIENCY : 33.6931	BKG DATE : 7-FEB-2010
SAMPLE DATE : 25-JAN-2010 00:00:00	COUNT DATE : 10-FEB-2010 16:27:05	BKG LIVE TIME(SEC) : 59999.99
ANALYST : CXM2	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W084.CNF:295
% YIELD : 91.950		CAL DATE : 9-FEB-2010

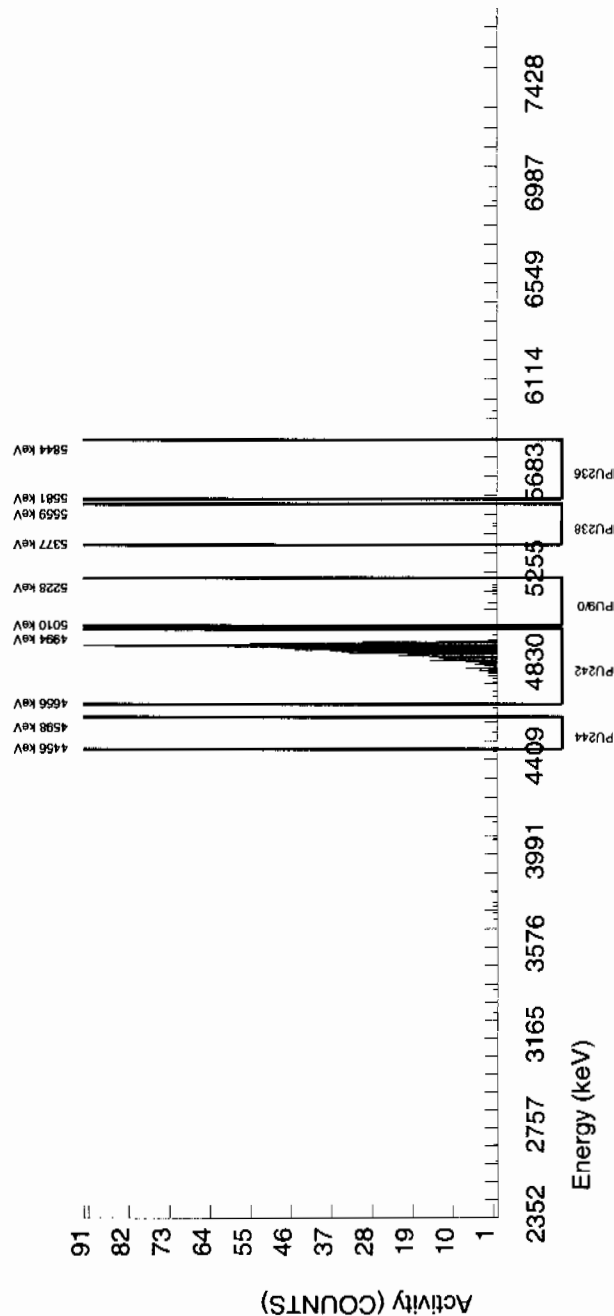
TRACER ID : 1375-A	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : PU242	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.3808E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 3.1086E+00 dpm		

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5712.235	0.000	0.000	-3.600	3.600	2.6925	100.0000	-5.87E-03	3.09E-03	9.36E-03	2.31E-02	3.09E-03
PU-238	5499.000	5470.946	20.142	2.000	2.000	0.000	2.9312	99.900000	3.23E-03	2.29E-03	1.02E-02	2.48E-02	2.28E-03
PU-9/0	5155.000	5164.173	50.355	8.000	7.280	0.720	2.0604	99.900000	1.17E-02	4.75E-03	7.17E-03	1.87E-02	4.71E-03
PU242	4890.000	4905.892	25.069	757.000	754.120	2.880	1.6971	100.0000	1.22E+00	7.92E-02	5.90E-03	1.62E-02	4.44E-02
PU-244	4589.000	4534.783	5.035	1.000	1.000	0.000	3.7241	99.900000	1.61E-03	1.62E-03	1.30E-02	3.03E-02	1.61E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of PU242 calculated as sqrt(BKG AREA).



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947356  SAMPLE ID : S1202029347_PU  SAMPLE QTY : 1.000 G  SAMPLE DATE : 4-FEB-2010 00:00:00.  ANALYST : CXM2  % YIELD : 90.428</p>	<p>CHAMBER : 085  DETECTOR S/N : 78776  AVERAGE %EFFICIENCY : 31.5289  COUNT DATE : 10-FEB-2010 16:27:05  ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU  BKG FILE : B085.CNF;1022  BKG DATE : 7-FEB-2010  BKG LIVE TIME(SEC) : 59999.99  EFF FILE : W085.CNF;302  CAL DATE : 9-FEB-2010</p>
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<p>TRACER  ID : 1375-A  NUCLIDE : PU242  NOMINAL : 3.3808E+00 dpm  RESULTS : 3.0572E+00 dpm</p>	<p>MS/MSD  ID : 0244-B  NUCLIDE : PU-9/0  NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD  ID : 0244-B  NUCLIDE : PU-9/0  NOMINAL : 4.1778E+01 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

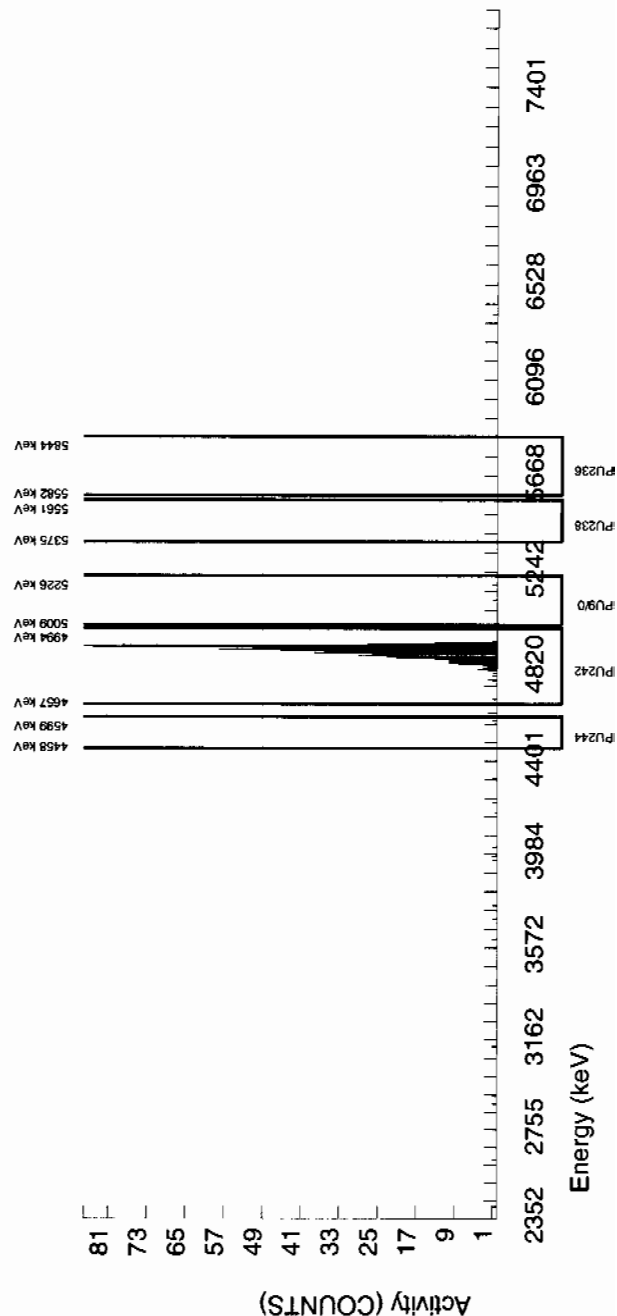
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5713.024	0.000	0.000	0.000	0.000	2.6925	100.0000	0.00E+00	2.21E-03	1.27E-02	3.14E-02	2.20E-03
PU-238	5499.000	5467.760	0.000	0.000	-0.720	0.720	2.9312	99.900000	-1.58E-03	2.71E-03	1.39E-02	3.37E-02	2.71E-03
PU-9/0	5155.000	5157.359	65.287	2.000	1.280	0.720	2.0604	99.900000	2.81E-03	3.49E-03	9.76E-03	2.55E-02	3.49E-03
PU242	4890.000	4898.068	29.525	694.000	694.000	0.000	0.0000	100.0000	1.52E+00	1.02E-01	0.00E+00	5.95E-03	5.78E-02
PU-244	4589.000	4593.996	0.000	2.000	2.000	0.000	3.7241	99.900000	4.39E-03	3.12E-03	1.76E-02	4.12E-02	3.11E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as sqrt(BKG AREA).





**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

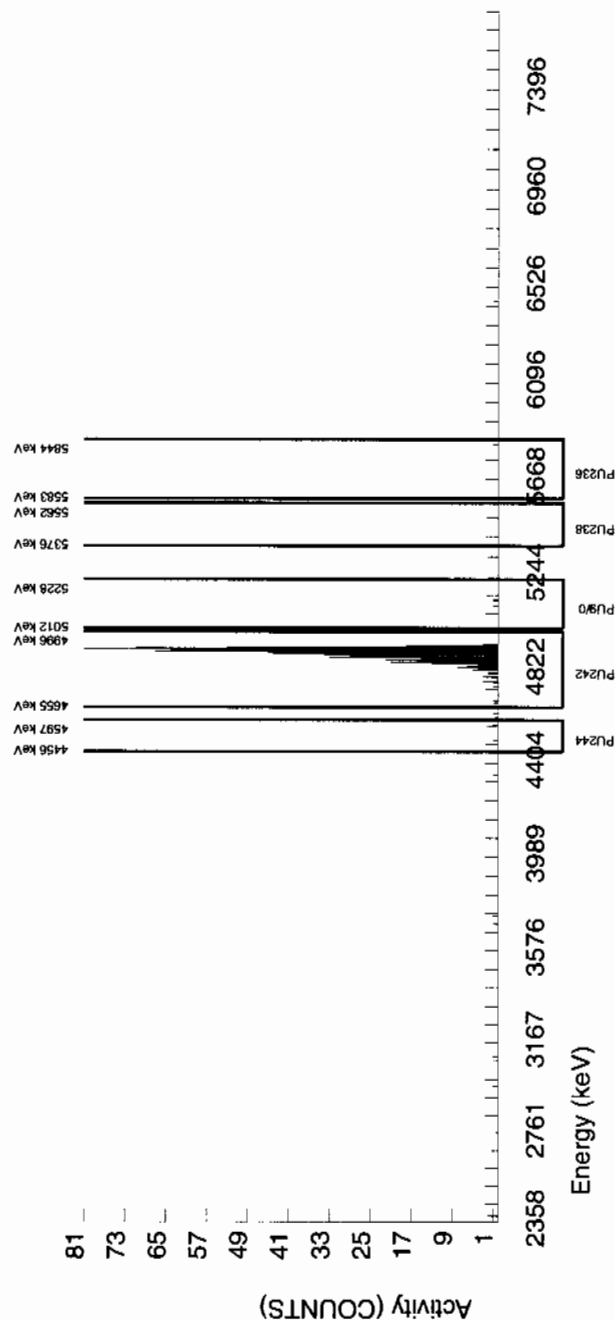
BATCH NUMBER : 947356 SAMPLE ID : S1202029348_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 94.742				CHAMBER : 086 DETECTOR S/N : 78198 AVERAGE %EFFICIENCY : 29.4361 COUNT DATE : 10-FEB-2010 16:27:05 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B086.CNF;1021 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W086.CNF;283 CAL DATE : 9-FEB-2010					
TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 3.2030E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5828.083	5.021	1.000	-0.440	1.440	2.6925	100.0000	-7.96E-04	2.58E-03	1.04E-02	2.56E-02	2.58E-03
PU-238	5499.000	5468.799	0.000	0.000	0.000	0.000	2.9312	99.900000	0.00E+00	1.79E-03	1.13E-02	2.75E-02	1.79E-03
PU-9/0	5155.000	5140.692	50.206	4.000	3.280	0.720	2.0604	99.900000	5.87E-03	3.82E-03	7.96E-03	2.08E-02	3.81E-03
PU242	4890.000	4901.095	33.601	681.000	678.840	2.160	1.4697	100.0000	1.21E+00	8.18E-02	5.67E-03	1.62E-02	4.67E-02
PU-244	4589.000	4547.380	70.289	2.000	2.000	0.000	3.7241	99.900000	3.58E-03	2.54E-03	1.44E-02	3.36E-02	2.53E-03

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sq of PU242 calculated as  $\text{sqr}(\text{BKG AREA})$ .



TRACER	ID : 1375-A	MS/MSD	LCS/LCSD
NUCLIDE	PU242	ID : 0244-B	ID : 0244-B
NOMINAL	3.3808E+00 dpm	NUCLIDE	NUCLIDE : PU-9/0
RESULTS	3.1724E+00 dpm	NOMINAL	NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD	
ID	: 0244-B
NUCLIDE	: PU-9/0
NOMINAL	: 4.1778E+01 pCi/G

## NUCLIDE ACTIVITY SUMMARY

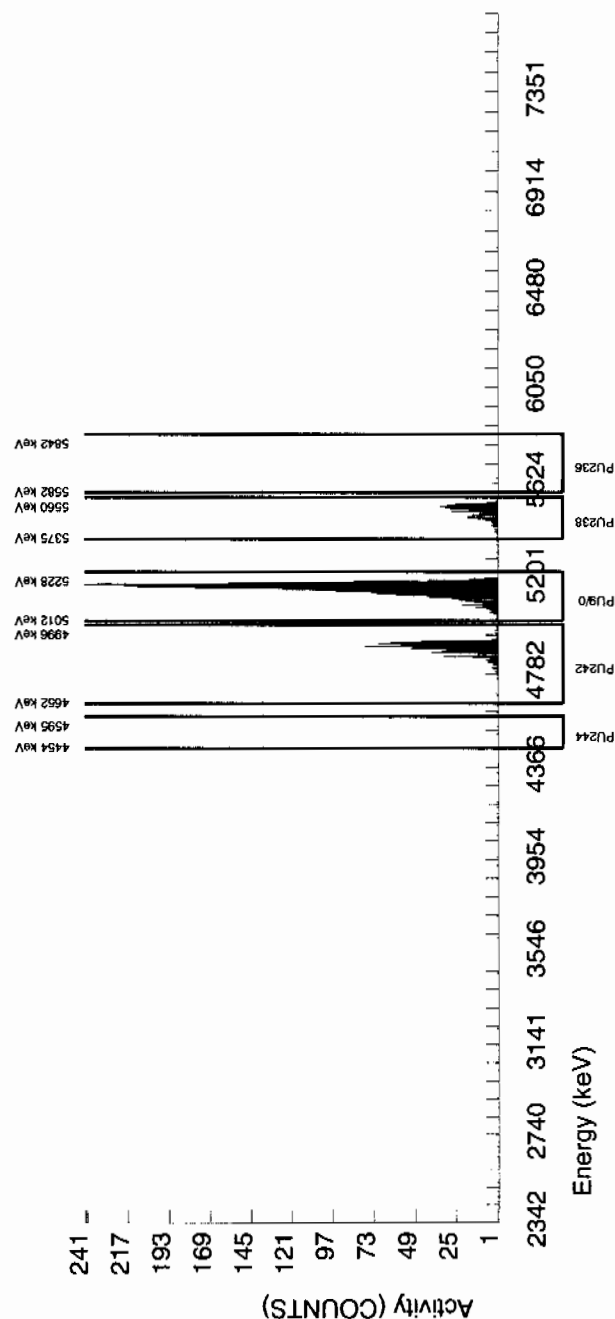
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5650.562	4.948	1.000	1.000	0.000	2.6925	100.0000	1.97E-02	1.97E-02	1.14E-01	2.81E-01	1.97E-02
PU-238	5499.000	5499.873	57.056	347.000	347.000	0.000	2.9312	99.900000	6.81E+00	5.58E-01	1.24E-01	3.01E-01	3.65E-01
PU-9/0	5155.000	5158.251	32.874	2154.000	2147.520	6.480	2.0604	99.900000	4.21E+00	2.77E+00	8.72E-02	2.27E-01	9.11E-01
PU242	4890.000	4896.292	33.449	701.000	700.280	0.720	0.8485	100.0000	1.37E+01	9.97E-01	3.59E-02	1.25E-01	5.19E-01
PU-244	4589.000	4537.426	34.637	2.000	-0.880	2.880	3.7241	99.900000	-1.73E-02	3.96E-02	1.58E-01	3.68E-01	3.96E-02

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of PU242 calculated as  $\sqrt{\text{BKG AREA}}$ .



# Radiochemistry Batch Checklist, Rev10

Batch# 947357

Product: U

Date: 2/12/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	X		
If activity less 10* MDA/MDC, error is 150% or less of sample activity. If greater 10* MDA/MDC, error is 40% or less. If below the MDA/MDC, error is okay.	X		
Instrument source check is within limits.	X		
Instrument bkg check is within limits.	X		
Method RDL/LLD has been met.	X		
If duplicate activities are less 5* MDA/MDC, then RPD is 100% or less. If greater 5* MDA/MDC, then RPD 20% or less. If below the MDA/MDC, the RPD is 0%.	X		
Or meets the client's required RER acceptance criteria.	X		case narrative
Tracer yield is 15-125% . Carrier yield 25-125%.	X		
Or meets the client's contract acceptance criteria.	X		case narrative
Method blank is less than the RDL/LLD.	X		
(If rad samples, < 5% of lowest activity)	X		
Sample was run within hold time.	X		
Sample was correctly preserved if required.	X		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	X		
No blank spaces on data forms.	X		
All line outs Initialed and dated.	X		
No transcription errors are apparent.			N/A
Aux data is correct.			N/A
Client Special requirements page has been checked.	X		
Raw Data and/ or spectrum are included and properly stated.	X		
QC data entered into QC database and batch is in REVW	X		
Hlt notification complete (if necessary)			N/A
Batch entered into Case Narrative.	X		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required. :			N/A
Review sample historical results if available (if REMF, results above MDC have been verified by historical results, recount or re-analysis.)	X		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: *[Signature]* 2/12/10

Secondary Review Performed By: *[Signature]* 2/18/10

2/8 - (2/18)  
CANL

# Uranium Que Sheet

09-FEB-10

Batch #: 947357 Analyst: CXM2 First Client Due Date: 18-FEB-10 Internal Due Date: 08-FEB-10

Tracer Isotope: U-232/U-236 Tracer Code: 1283-H Expiration Date: 12/9/10 Vol: 0.1 ml  
 LCS Isotope: U-238 LCS Code: 0244-A Expiration Date: 10/31/20 Vol: 0.108 g \* SRM  
 Spike Isotope: U-238 Spike Code: Expiration Date: Vol:   
 Prep Date: 2/4/10 Initials: CCM Pipet ID: 297058 Balance ID: 5041027Z

Witness: AL 2/4/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet Weight (g)	U Det #
245667001-1	RE15-10-1343	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	1	1	0.529	139
245667002-1	RE15-10-1345	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	2	2	0.527	140
245667003-1	RE15-10-1347	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	3	3	0.522	145
245667004-1	RE15-10-1349	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	4	4	0.504	146
245667005-1	RE15-10-1351	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	5	5	0.518	147
245667006-1	RE15-10-1365	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	6	6	0.502	148
245691001-1	RE15-10-7883	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	7	7	0.511	1
245691002-1	RE15-10-7884	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	8	8	0.508	2
245691003-1	RE15-10-7932	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	9	9	0.507	3
245691004-1	RE15-10-7931	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	10	10	0.510	162
245691005-1	RE15-10-7938	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	11	11	0.502	5
245691006-1	RE15-10-7933	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	12	12	0.505	6
245691007-1	RE15-10-7939	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	13	13	0.518	7
245691008-1	RE15-10-7936	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	14	14	0.518	8
245691009-1	RE15-10-7935	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	15	15	0.504	9
245691010-1	RE15-10-7934	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	16	16	0.501	60
245691011-1	RE15-10-7940	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	17	17	0.504	11
245691012-1	RE15-10-7937	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	18	18	0.508	12
245691013-1	RE15-10-8056	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	19	19	0.516	166
245691014-1	RE15-10-8057	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	20	20	0.514	169
1202029350-1	MB for batch 947357	MB		.1 pCi/g	SOIL	QC ACCOUNT		21	21	1.00	170
1202029351-1	RE15-10-7883(245691001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	25-JAN-10	22	22	0.526	171
1202029352-1	LCS for batch 947357	LCS		.1 pCi/g	SOIL	QC ACCOUNT		23	23	0.108	172

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By:

W. J. Jones 2/12/10

# Blank Correction Report

**Batch ID 947357**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202029351	DUP	Uranium-233/234	0.526 g	1.46	0.121	0.0748	.034790875	pCi/g	NO
		Uranium-235/236	0.526 g	0.125	0.0247	0.0477	.011235741	pCi/g	NO
		Uranium-238	0.526 g	2.83	0.217	0.0511	.018174905	pCi/g	NO
1202029352	LCS	Uranium-233/234	0.108 g	6.27	0.543	0.306	.169444444	pCi/g	NO
		Uranium-235/236	0.108 g	0.359	0.0809	0.195	.054722222	pCi/g	NO
		Uranium-238	0.108 g	5.77	0.504	0.209	.088518519	pCi/g	NO
1202029350	MB	Uranium-233/234	1.00 g	0.0183	0.00512	0.0302	.0183	pCi/g	YES
		Uranium-235/236	1.00 g	0.00591	0.00364	0.0192	.00591	pCi/g	YES
		Uranium-238	1.00 g	0.00956	0.00383	0.0206	.00956	pCi/g	YES
245667001	RE16-10-1343	Uranium-233/234	0.529 g	0.992	0.0942	0.0938	.034593573	pCi/g	NO
		Uranium-235/236	0.529 g	0.0459	0.0163	0.0598	.011172023	pCi/g	YES
		Uranium-238	0.529 g	1.09	0.101	0.064	.018071834	pCi/g	NO
245667002	RE16-10-1345	Uranium-233/234	0.527 g	0.944	0.0879	0.0883	.034724858	pCi/g	NO
		Uranium-235/236	0.527 g	0.0562	0.0172	0.0563	.011214421	pCi/g	NO
		Uranium-238	0.527 g	0.941	0.0878	0.0603	.018140417	pCi/g	NO
245667003	RE16-10-1347	Uranium-233/234	0.522 g	0.820	0.0798	0.0881	.035057471	pCi/g	NO
		Uranium-235/236	0.522 g	0.0345	0.0125	0.0562	.011321839	pCi/g	YES
		Uranium-238	0.522 g	0.877	0.084	0.0602	.018314176	pCi/g	NO
245667004	RE16-10-1349	Uranium-233/234	0.504 g	0.824	0.0832	0.106	.036309524	pCi/g	NO
		Uranium-235/236	0.504 g	0.0568	0.0191	0.0673	.011726190	pCi/g	YES
		Uranium-238	0.504 g	1.04	0.0992	0.072	.018968254	pCi/g	NO
245667005	RE16-10-1351	Uranium-233/234	0.518 g	0.964	0.092	0.0933	.035328185	pCi/g	NO
		Uranium-235/236	0.518 g	0.0548	0.0163	0.0595	.011409266	pCi/g	YES
		Uranium-238	0.518 g	1.12	0.103	0.0637	.018455598	pCi/g	NO
245667006	RE16-10-1365	Uranium-233/234	0.502 g	0.924	0.111	0.194	.036454183	pCi/g	NO
		Uranium-235/236	0.502 g	0.0758	0.0305	0.123	.011772908	pCi/g	NO
		Uranium-238	0.502 g	0.989	0.117	0.132	.019043825	pCi/g	NO
245691001	RE15-10-7883	Uranium-233/234	0.511 g	1.31	0.108	0.0666	.035812133	pCi/g	NO
		Uranium-235/236	0.511 g	0.0848	0.0182	0.0425	.011565558	pCi/g	NO
		Uranium-238	0.511 g	2.73	0.206	0.0455	.018708415	pCi/g	NO
245691002	RE15-10-7884	Uranium-233/234	0.508 g	0.664	0.0656	0.0764	.036023822	pCi/g	NO
		Uranium-235/236	0.508 g	0.0615	0.016	0.050	.011633858	pCi/g	NO
		Uranium-238	0.508 g	0.690	0.0667	0.0536	.018818898	pCi/g	NO
245691003	RE15-10-7932	Uranium-233/234	0.507 g	0.525	0.0549	0.079	.038094675	pCi/g	NO
		Uranium-235/236	0.507 g	0.0309	0.0112	0.0503	.011656805	pCi/g	YES
		Uranium-238	0.507 g	0.616	0.0616	0.0539	.018856016	pCi/g	NO
245691004	RE15-10-7931	Uranium-233/234	0.514 g	0.873	0.0755	0.0617	.035603113	pCi/g	NO
		Uranium-235/236	0.514 g	0.0695	0.0152	0.0393	.011488054	pCi/g	NO
		Uranium-238	0.514 g	1.85	0.143	0.0421	.018599222	pCi/g	NO
245691005	RE15-10-7938	Uranium-233/234	0.502 g	0.665	0.0628	0.0698	.036454183	pCi/g	NO
		Uranium-235/236	0.502 g	0.0752	0.0169	0.0445	.011772908	pCi/g	NO

# Blank Correction Report

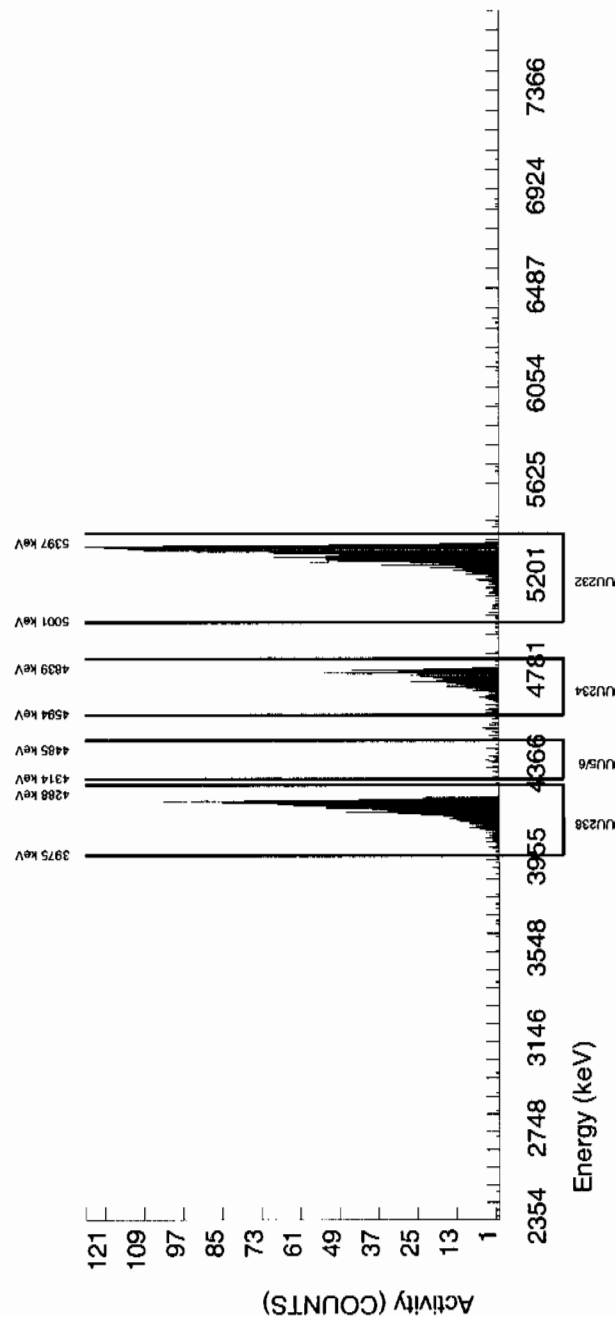
GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
245691005	RE15-10-7938	Uranium-238	0.502 g	0.711	0.0663	0.0477	.019043825	pCi/g	NO
245691006	RE15-10-7933	Uranium-233/234	0.505 g	2.72	0.213	0.0833	.036237624	pCi/g	NO
		Uranium-235/236	0.505 g	0.196	0.0314	0.0531	.011702970	pCi/g	NO
		Uranium-238	0.505 g	4.68	0.350	0.0569	.018930693	pCi/g	NO
245691007	RE15-10-7939	Uranium-233/234	0.518 g	1.37	0.115	0.0759	.035328185	pCi/g	NO
		Uranium-235/236	0.518 g	0.104	0.0228	0.0484	.011409266	pCi/g	NO
		Uranium-238	0.518 g	2.23	0.176	0.0518	.018455598	pCi/g	NO
245691008	RE15-10-7936	Uranium-233/234	0.518 g	0.919	0.0821	0.0728	.035328185	pCi/g	NO
		Uranium-235/236	0.518 g	0.0784	0.0176	0.0464	.011409266	pCi/g	NO
		Uranium-238	0.518 g	1.51	0.123	0.0497	.018455598	pCi/g	NO
245691010	RE15-10-7934	Uranium-233/234	0.501 g	0.825	0.0756	0.0742	.036526946	pCi/g	NO
		Uranium-235/236	0.501 g	0.040	0.0134	0.0473	.011796407	pCi/g	YES
		Uranium-238	0.501 g	1.03	0.0904	0.0506	.019081836	pCi/g	NO
245691011	RE15-10-7940	Uranium-233/234	0.504 g	0.700	0.0667	0.0744	.036309524	pCi/g	NO
		Uranium-235/236	0.504 g	0.0364	0.0129	0.0474	.011726190	pCi/g	YES
		Uranium-238	0.504 g	0.640	0.0622	0.0508	.018968254	pCi/g	NO
245691012	RE15-10-7937	Uranium-233/234	0.508 g	2.32	0.181	0.0737	.036023622	pCi/g	NO
		Uranium-235/236	0.508 g	0.152	0.0266	0.047	.011633858	pCi/g	NO
		Uranium-238	0.508 g	4.53	0.334	0.0503	.018818898	pCi/g	NO
245691013	RE15-10-8056	Uranium-233/234	0.516 g	0.976	0.0806	0.0546	.035465116	pCi/g	NO
		Uranium-235/236	0.516 g	0.0802	0.0156	0.0348	.011453488	pCi/g	NO
		Uranium-238	0.516 g	1.91	0.145	0.0373	.018527132	pCi/g	NO
245691014	RE15-10-8057	Uranium-233/234	0.514 g	1.48	0.117	0.0596	.035603113	pCi/g	NO
		Uranium-235/236	0.514 g	0.149	0.0236	0.038	.011498054	pCi/g	NO
		Uranium-238	0.514 g	3.54	0.258	0.0407	.018599222	pCi/g	NO

# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947357 SAMPLE ID : S0245691001_UU SAMPLE QTY : 0.511 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 103.575				CHAMBER : 001 DETECTOR S/N : 79451 AVERAGE %EFFICIENCY : 32.2368 COUNT DATE : 10-FEB-2010 10:43:06 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B001.CNF;1123 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W001.CNF;382 CAL DATE : 3-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5065E+00 dpm RESULTS : 4.6676E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5305.108	54.103	1505.000	1504.000	1.000	1.0000	100.0000	3.97E+00	2.92E-01	6.14E-03	1.94E-02	1.03E-01
U-3/4	4763.020	4756.924	22.882	502.000	496.478	4.000	4.8416	100.0000	1.31E+00	1.08E-01	2.97E-02	6.66E-02	5.93E-02
U-235	4391.000	4395.728	30.566	27.000	26.000	1.000	2.2152	80.90000	8.48E-02	1.82E-02	1.68E-02	4.25E-02	1.73E-02
U-238	4184.730	4188.603	38.426	1037.000	1035.000	2.000	3.1208	100.0000	2.73E+00	2.06E-01	1.92E-02	4.55E-02	8.51E-02

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
U-3/4



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

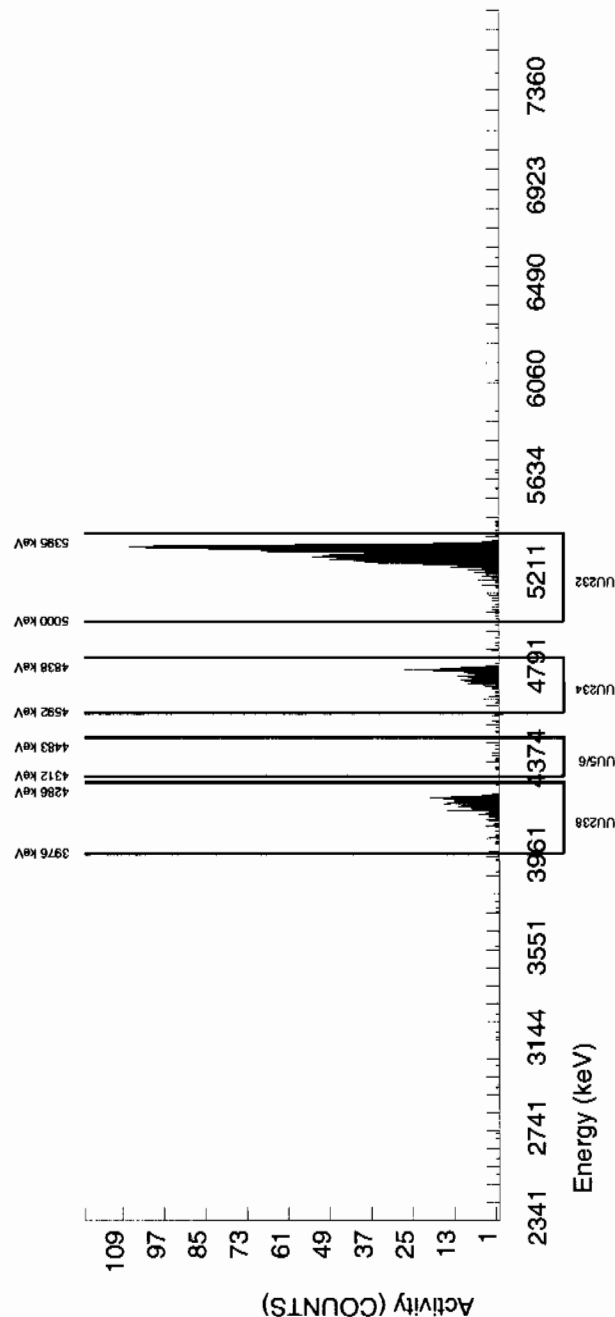
BATCH NUMBER : 947357 SAMPLE ID : S0245691002_UU SAMPLE QTY : 0.508 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 96.440				CHAMBER : 002 DETECTOR S/N : 79452 AVERAGE %EFFICIENCY : 29.5805 COUNT DATE : 10-FEB-2010 10:43:06 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B002.CNF:1113 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W002.CNF:328 CAL DATE : 3-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5065E+00 dpm RESULTS : 4.3461E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5307.672	35.957	1292.000	1285.000	7.000	2.6458	100.0000	4.00E+00	3.00E-01	1.91E-02	4.67E-02	1.12E-01
U-3/4	4763.020	4758.918	17.402	220.000	213.700	5.000	4.8416	100.0000	6.64E-01	6.56E-02	3.50E-02	7.84E-02	4.65E-02
U-235	4391.000	4389.717	44.184	16.000	16.000	0.000	2.2152	80.90000	6.15E-02	1.60E-02	1.98E-02	5.00E-02	1.54E-02
U-238	4184.730	4183.790	64.004	222.000	222.000	0.000	3.1208	100.0000	6.90E-01	6.67E-02	2.26E-02	5.36E-02	4.63E-02

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area  
due to tracer impurity:  
U-3/4



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

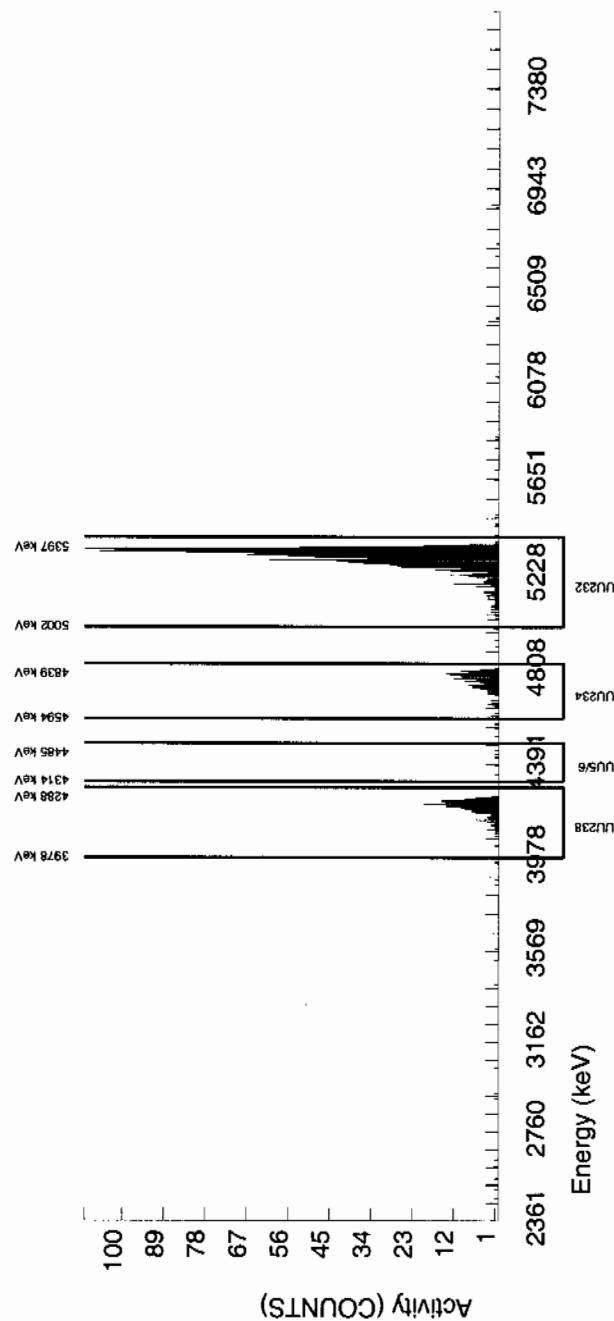
BATCH NUMBER : 947357 SAMPLE ID : S0245691003_UU SAMPLE QTY : 0.507 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 91.317				CHAMBER : 003 DETECTOR S/N : 79453 AVERAGE %EFFICIENCY : 31.0941 COUNT DATE : 10-FEB-2010 10:43:06 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B003.CNF:1108 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W003.CNF:341 CAL DATE : 3-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5065E+00 dpm RESULTS : 4.1152E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.228	56.093	1282.000	1279.000	3.000	1.7321	100.0000	4.00E+00	3.00E-01	1.26E-02	3.37E-02	1.12E-01
U-3/4	4763.020	4767.283	66.225	171.000	167.706	2.000	4.8416	100.0000	5.25E-01	5.49E-02	3.52E-02	7.90E-02	4.10E-02
U-235	4391.000	4400.985	134.117	8.000	8.000	0.000	2.2152	80.90000	3.09E-02	1.11E-02	1.99E-02	5.03E-02	1.09E-02
U-238	4184.730	4198.726	38.874	198.000	197.000	1.000	3.1208	100.0000	6.16E-01	6.16E-02	2.27E-02	5.39E-02	4.41E-02

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:  
U-3/4

**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

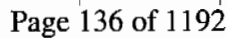
NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as  $\sqrt{\text{BKG AREA}}$ .

\* Corrections made to the following net area due to tracer impurity:



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<b>BATCH NUMBER :</b> 947357 <b>SAMPLE ID :</b> S0245691005_UU <b>SAMPLE QTY :</b> 0.502 G <b>SAMPLE DATE :</b> 25-JAN-2010 00:00:00 <b>ANALYST :</b> CXM2 <b>% YIELD :</b> 101.602	<b>CHAMBER :</b> 005 <b>DETECTOR S/N :</b> 79454 <b>AVERAGE %EFFICIENCY :</b> 31.9230 <b>COUNT DATE :</b> 10-FEB-2010 10:43:06 <b>ELAPSED LIVE TIME(SEC) :</b> 59999.99	<b>LIB FILE :</b> ENV_ALPHA_UU <b>BKG FILE :</b> B005.CNF.1103 <b>BKG DATE :</b> 7-FEB-2010 <b>BKG LIVE TIME(SEC) :</b> 59999.99 <b>EFF FILE :</b> W005.CNF.337 <b>CAL DATE :</b> 3-FEB-2010
	<b>LCS/LCSD</b> <b>ID :</b> 0244-A <b>NUCLIDE :</b> U-238 <b>NOMINAL :</b> 5.7500E+00 pCi/G	

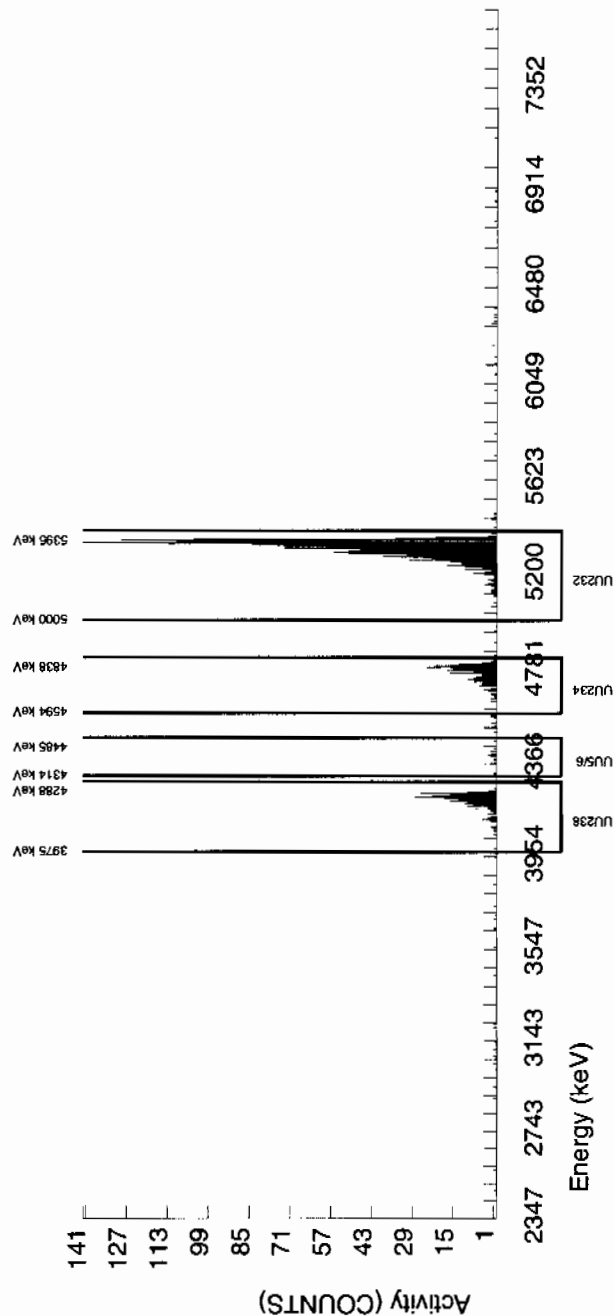
<b>TRACER</b> <b>ID :</b> 1283-H <b>NUCLIDE :</b> U232 <b>NOMINAL :</b> 4.5065E+00 dpm <b>RESULTS :</b> 4.5788E+00 dpm	<b>MS/MSD</b> <b>ID :</b> 0244-A <b>NUCLIDE :</b> U-238 <b>NOMINAL :</b> 5.7500E+00 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5321.529	42.140	1465.000	1461.000	4.000	2.0000	100.0000	4.04E+00	2.98E-01	1.29E-02	3.32E-02	1.06E-01
U-3/4	4763.020	4773.803	41.615	242.000	240.522	0.000	4.8416	100.0000	6.65E-01	6.28E-02	3.12E-02	6.98E-02	4.29E-02
U-235	4391.000	4410.337	96.057	22.000	22.000	0.000	2.2152	80.90000	7.52E-02	1.69E-02	1.76E-02	4.45E-02	1.60E-02
U-238	4184.730	4204.017	39.748	259.000	257.000	2.000	3.1208	100.0000	7.11E-01	6.63E-02	2.01E-02	4.77E-02	4.47E-02

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
U-3/4



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER : 947357				CHAMBER : 006				LIB FILE : ENV_ALPHA_UU					
SAMPLE ID : S0245691006_UU				DETECTOR S/N : 79455				BKG FILE : B006.CNF;1116					
SAMPLE QTY : 0.505 G				AVERAGE %EFFICIENCY : 31.1643				BKG DATE : 7-FEB-2010					
SAMPLE DATE : 25-JAN-2010 00:00:00				COUNT DATE : 10-FEB-2010 10:43:06				BKG LIVE TIME(SEC) : 59999.99					
ANALYST : CXM2				ELAPSED LIVE TIME(SEC) : 59999.99				EFF FILE : W006.CNF;361					
% YIELD : 86.694								CAL DATE : 3-FEB-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 1283-H				ID : 0244-A				ID : 0244-A					
NUCLIDE : U232				NUCLIDE : U-238				NUCLIDE : U-238					
NOMINAL : 4.5065E+00 dpm				NOMINAL : 5.7500E+00 pCi/G				NOMINAL : 5.7500E+00 pCi/G					
RESULTS : 3.9069E+00 dpm													
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5305.573	34.761	1218.000	1217.000	1.000	1.0000	100.0000	4.02E+00	3.04E-01	7.68E-03	2.43E-02	1.15E-01
U-3/4	4763.020	4757.882	57.369	826.000	824.769	0.000	4.8416	100.0000	2.72E+00	2.13E-01	3.72E-02	8.33E-02	9.48E-02
U-235	4391.000	4396.874	7.792	48.000	48.000	0.000	2.2152	80.90000	1.96E-01	3.14E-02	2.10E-02	5.31E-02	2.83E-02
U-238	4184.730	4190.083	44.470	1418.000	1418.000	0.000	3.1208	100.0000	4.68E+00	3.50E-01	2.40E-02	5.69E-02	1.24E-01

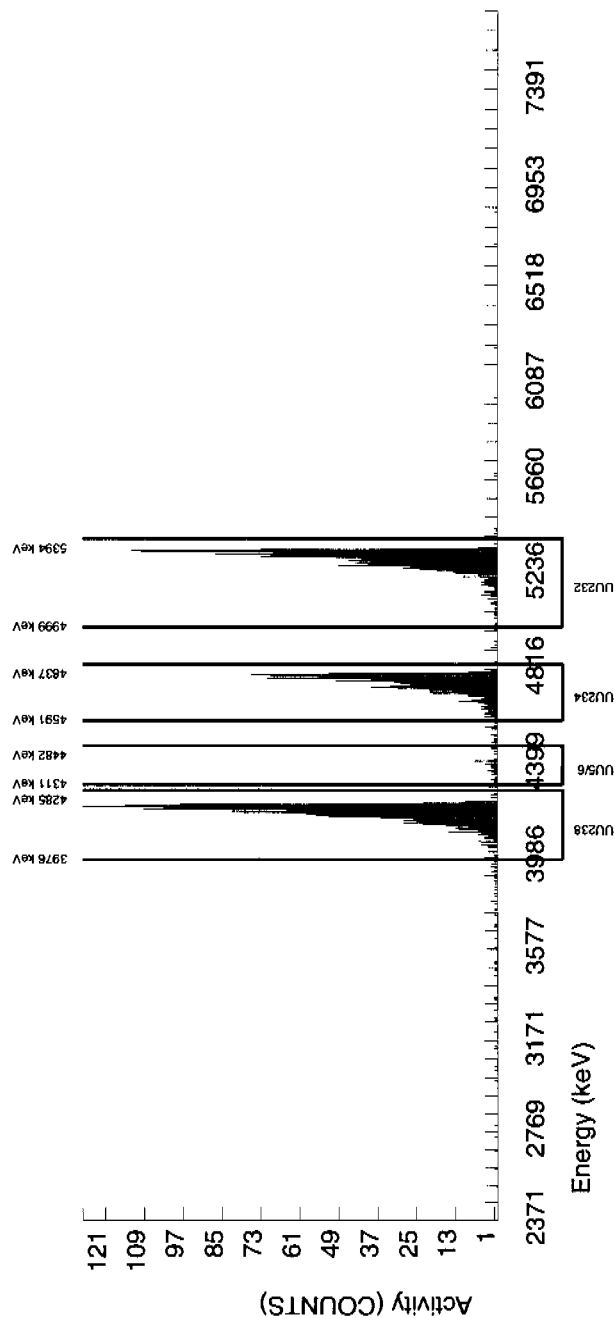
## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

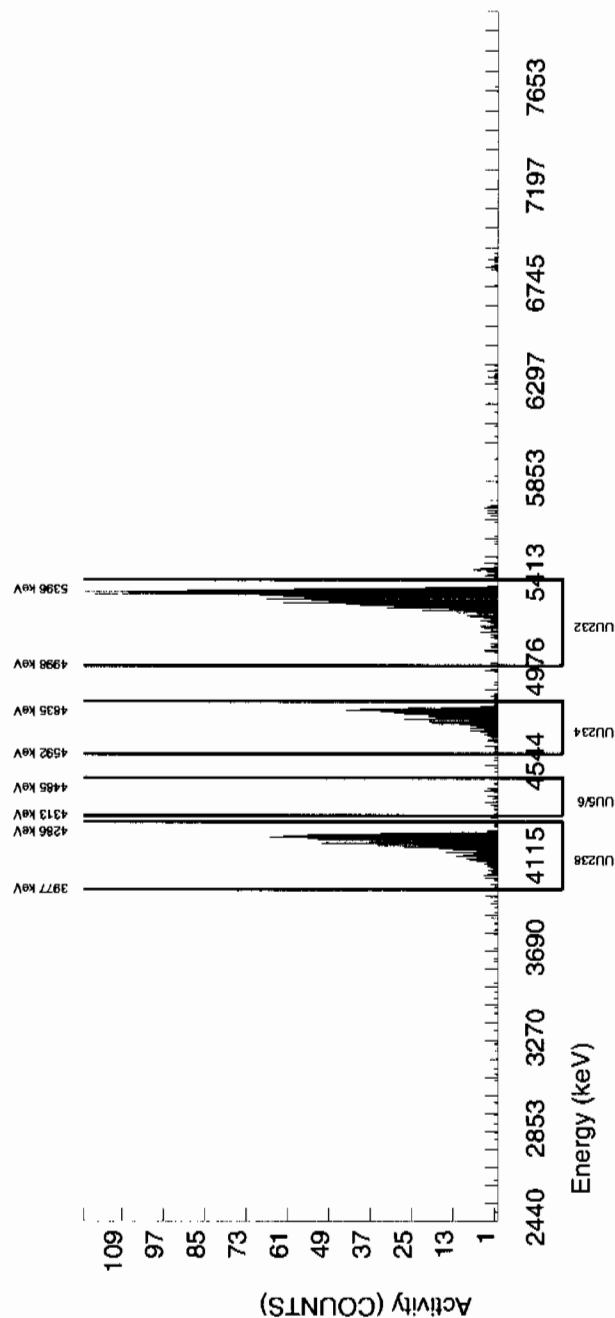
BATCH NUMBER : 947357				CHAMBER : 007				LIB FILE : ENV_ALPHA_UU					
SAMPLE ID : S0245691007_UU				DETECTOR S/N : 67607				BKG FILE : B007.CNF:1111					
SAMPLE QTY : 0.518 G				AVERAGE %EFFICIENCY : 29.5407				BKG DATE : 7-FEB-2010					
SAMPLE DATE : 25-JAN-2010 00:00:00				COUNT DATE : 10-FEB-2010 10:43:07				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : CXM2				ELAPSED LIVE TIME(SEC) : 60000.00				EFF FILE : W007.CNF:312					
% YIELD : 97.922								CAL DATE : 3-FEB-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 1283-H				ID : 0244-A				ID : 0244-A					
NUCLIDE : U232				NUCLIDE : U-238				NUCLIDE : U-238					
NOMINAL : 4.5065E+00 dpm				NOMINAL : 5.7500E+00 pCi/G				NOMINAL : 5.7500E+00 pCi/G					
RESULTS : 4.4129E+00 dpm													
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.342	61.863	1316.000	1303.000	13.000	3.6056	100.0000	3.92E+00	2.94E-01	2.52E-02	5.86E-02	1.10E-01
U-3/4	4763.020	4766.654	51.759	456.000	454.682	0.000	4.8416	100.0000	1.37E+00	1.15E-01	3.39E-02	7.59E-02	6.41E-02
U-235	4391.000	4398.811	55.029	31.000	28.000	3.000	2.2152	80.90000	1.04E-01	2.28E-02	1.91E-02	4.84E-02	2.17E-02
U-238	4184.730	4193.396	52.346	745.000	742.000	3.000	3.1208	100.0000	2.23E+00	1.76E-01	2.18E-02	5.18E-02	8.22E-02

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:  
U-3/4

TRACER	ID	: 1283-H	MS/MSD	ID	: 0244-A	LCS/LCSD	ID	: 0244-A
	NUCLIDE	: U232		NUCLIDE	: U-238		NUCLIDE	: U-238
	NOMINAL	: 4.5065E+00 dpm		NOMINAL	: 5.7500E+00 pCi/G		NOMINAL	: 5.7500E+00 pCi/G
RESULTS		: 4.2757E+00 dpm						

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY	TPU	DLC	MDC	UNC
									pCi/G	1-SIGMA	pCi/G	pCi/G	pCi/G
U232	5302.100	5298.611	57.073	1361.000	1358.000	3.000	1.7321	100.0000	3.92E+00	2.92E-01	1.16E-02	3.11E-02	1.07E-01
U-3/4	4763.020	4755.024	34.856	322.000	318.626	2.000	4.8416	100.0000	9.19E-01	8.21E-02	3.25E-02	7.28E-02	5.18E-02
U-235	4391.000	4403.773	119.521	22.000	22.000	0.000	2.2152	80.90000	7.84E-02	1.76E-02	1.84E-02	4.64E-02	1.67E-02
U-238	4184.730	4179.842	36.736	523.000	522.000	1.000	3.1208	100.0000	1.51E+00	1.23E-01	2.09E-02	4.97E-02	6.60E-02

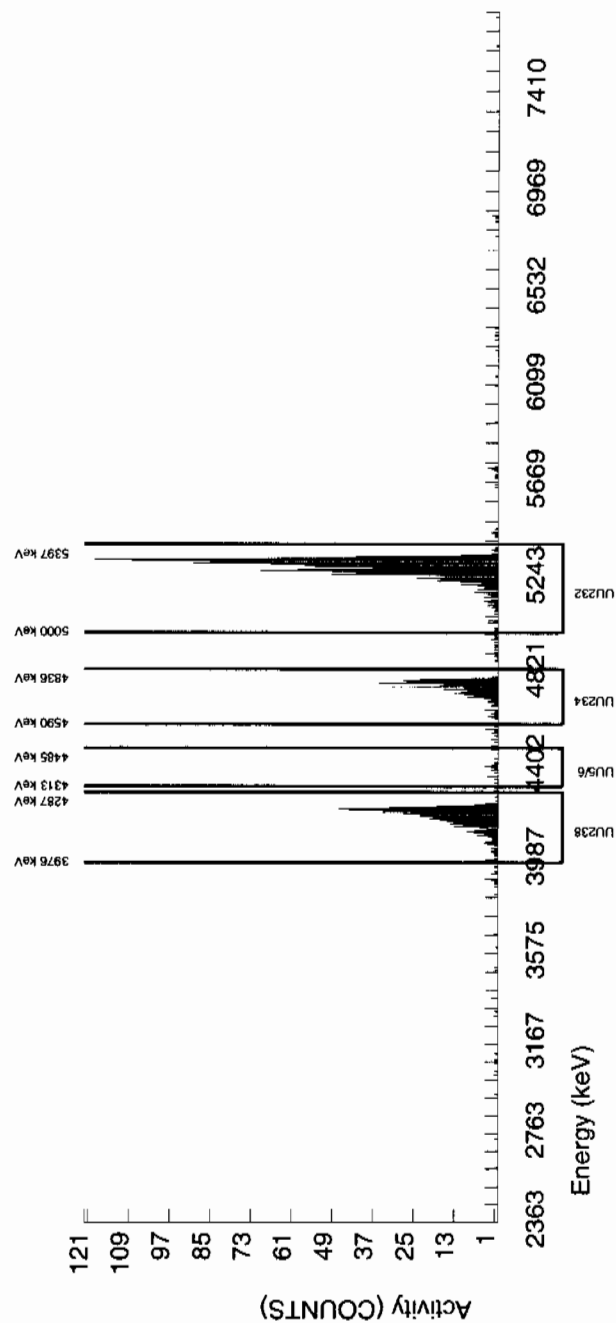
## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as  $\text{sqr}(\text{BKG AREA})$ .

\* Corrections made to the following net area due to tracer impurity:  
U-3/4

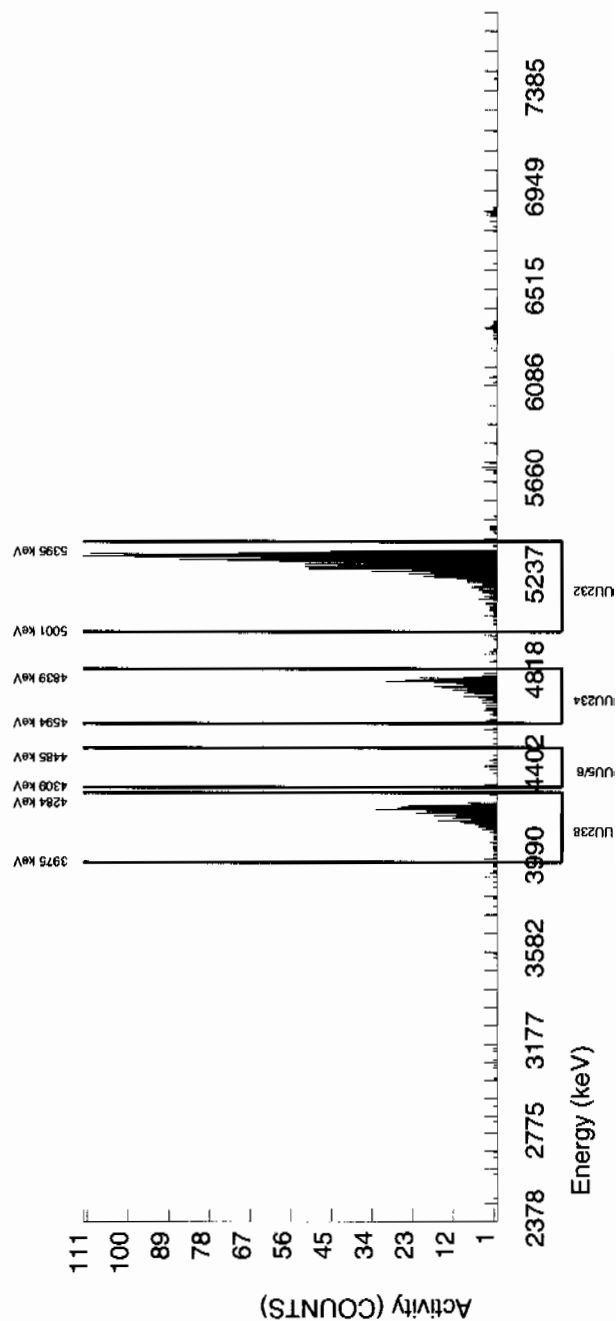


# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<b>BATCH NUMBER :</b> 947357 <b>SAMPLE ID :</b> S0245691010_UU <b>SAMPLE QTY :</b> 0.501 G <b>SAMPLE DATE :</b> 25-JAN-2010 00:00:00 <b>ANALYST :</b> CXM2 <b>% YIELD :</b> 95.911		<b>CHAMBER :</b> 010 <b>DETECTOR S/N :</b> 72529 <b>AVERAGE %EFFICIENCY :</b> 31.8962 <b>COUNT DATE :</b> 10-FEB-2010 10:43:07 <b>ELAPSED LIVE TIME(SEC) :</b> 60000.00	<b>LIB FILE :</b> ENV_ALPHA_UU <b>BKG FILE :</b> B010.CNF:1122 <b>BKG DATE :</b> 7-FEB-2010 <b>BKG LIVE TIME(SEC) :</b> 60000.00 <b>EFF FILE :</b> W010.CNF:335 <b>CAL DATE :</b> 3-FEB-2010
<b>TRACER ID :</b> 1283-H <b>NUCLIDE :</b> U232 <b>NOMINAL :</b> 4.5065E+00 dpm <b>RESULTS :</b> 4.3223E+00 dpm	<b>MS/MSD ID :</b> 0244-A <b>NUCLIDE :</b> U-238 <b>NOMINAL :</b> 5.7500E+00 pCi/G	<b>LCS/LCSD ID :</b> 0244-A <b>NUCLIDE :</b> U-238 <b>NOMINAL :</b> 5.7500E+00 pCi/G	
NUCLIDE ACTIVITY SUMMARY			
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM
U232	5302.100	5304.664	43.018
U-3/4	4763.020	4759.016	41.443
U-235	4391.000	4383.847	0.000
U-238	4184.730	4190.269	47.152
	GROSS AREA	NET AREA	BKG AREA
	1386.000	1378.000	8.000
	284.000	280.606	2.000
	12.000	11.000	1.000
	353.000	351.000	2.000
	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA
	100.0000	4.05E+00	3.01E-01
	100.0000	8.25E-01	7.56E-02
	80.90000	4.00E-02	1.34E-02
	100.0000	1.03E+00	9.04E-02
	BKG Sg	DLC pCi/G	MDC pCi/G
	2.8284	1.93E-02	4.66E-02
	4.8416	3.31E-02	7.42E-02
	2.2152	1.87E-02	4.73E-02
	3.1208	2.13E-02	5.06E-02
	UNC pCi/G		
	1.10E-01		
	4.96E-02		
	1.31E-02		
	5.54E-02		

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
U-3/4



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947357 SAMPLE ID : S0245691011_UU SAMPLE QTY : 0.504 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 102.282	CHAMBER : 011 DETECTOR S/N : 72531 AVERAGE %EFFICIENCY : 29.6489 COUNT DATE : 10-FEB-2010 10:43:07 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B011.CNF:1114 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W011.CNF:313 CAL DATE : 3-FEB-2010
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TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5065E+00 dpm RESULTS : 4.6094E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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## NUCLIDE ACTIVITY SUMMARY

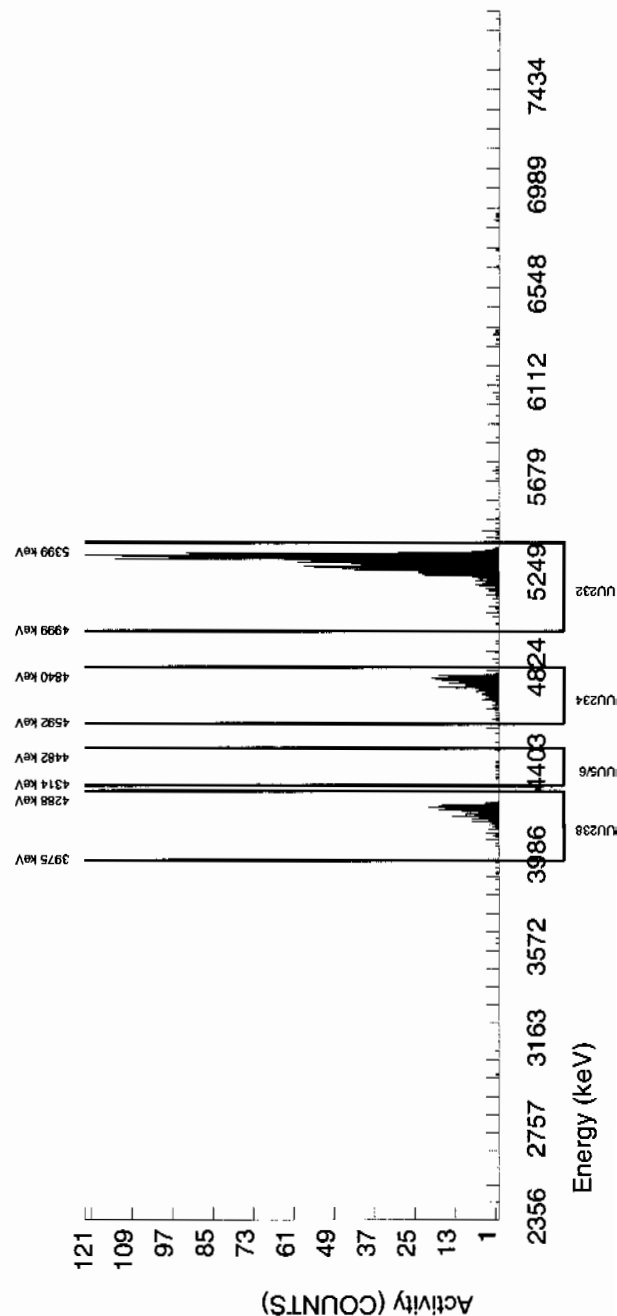
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5313.024	33.612	1372.000	1366.000	6.000	2.4495	100.0000	4.03E+00	3.00E-01	1.68E-02	4.16E-02	1.09E-01
U-3/4	4763.020	4764.110	55.323	241.000	237.618	2.000	4.8416	100.0000	7.00E-01	6.67E-02	3.32E-02	7.44E-02	4.58E-02
U-235	4391.000	4393.932	149.862	11.000	10.000	1.000	2.2152	80.90000	3.64E-02	1.29E-02	1.88E-02	4.74E-02	1.26E-02
U-238	4184.730	4192.344	57.450	218.000	217.000	1.000	3.1208	100.0000	6.40E-01	6.22E-02	2.14E-02	5.08E-02	4.36E-02

## NOTES:

\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area  
due to tracer impurity:  
U-3/4



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947357 SAMPLE ID : S0245691012_UU SAMPLE QTY : 0.508 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 103.336		CHAMBER : 012 DETECTOR S/N : 67594 AVERAGE %EFFICIENCY : 29.3895 COUNT DATE : 10-FEB-2010 10:43:07 ELAPSED LIVE TIME(SEC) : 60000.00		LIB FILE : ENV_ALPHA_UU BKG FILE : B012.CNF:1116 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W012.CNF:314 CAL DATE : 3-FEB-2010	
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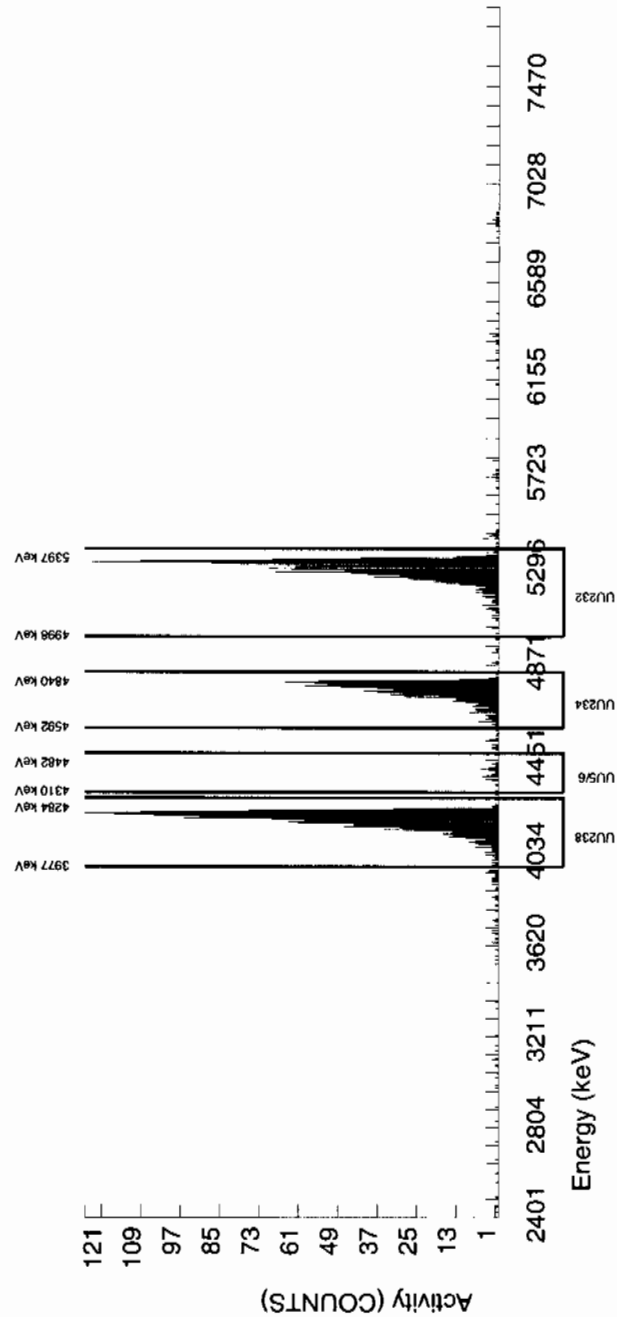
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5065E+00 dpm RESULTS : 4.6569E+00 dpm		MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G		LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5307.713	57.720	1376.000	1368.000	8.000	2.8284	100.0000	4.00E+00	2.97E-01	1.92E-02	4.63E-02	1.09E-01
U-3/4	4763.020	4759.638	60.643	800.000	793.616	5.000	4.8416	100.0000	2.32E+00	1.81E-01	3.29E-02	7.37E-02	8.28E-02
U-235	4391.000	4403.167	42.096	44.000	42.000	2.000	2.2152	80.90000	1.52E-01	2.66E-02	1.86E-02	4.70E-02	2.45E-02
U-238	4184.730	4191.963	53.217	1558.000	1550.000	8.000	3.1208	100.0000	4.53E+00	3.34E-01	2.12E-02	5.03E-02	1.16E-01

## NOTES:

- \* Sg calculated via blank population.  
 (Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
 U-3/4



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 947357  SAMPLE ID : S0245691013_UU  SAMPLE QTY : 0.516 G  SAMPLE DATE : 25-JAN-2010 00:00:00  ANALYST : CXM2  % YIELD : 103.234</p>	<p>CHAMBER : 166  DETECTOR S/N : 74545  AVERAGE %EFFICIENCY : 39.0948  COUNT DATE : 9-FEB-2010 11:26:31  ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_UU  BKG FILE : B166.CNF;169  BKG DATE : 7-FEB-2010  BKG LIVE TIME(SEC) : 60000.00  EFF FILE : W166.CNF;55  CAL DATE : 21-JAN-2010</p>
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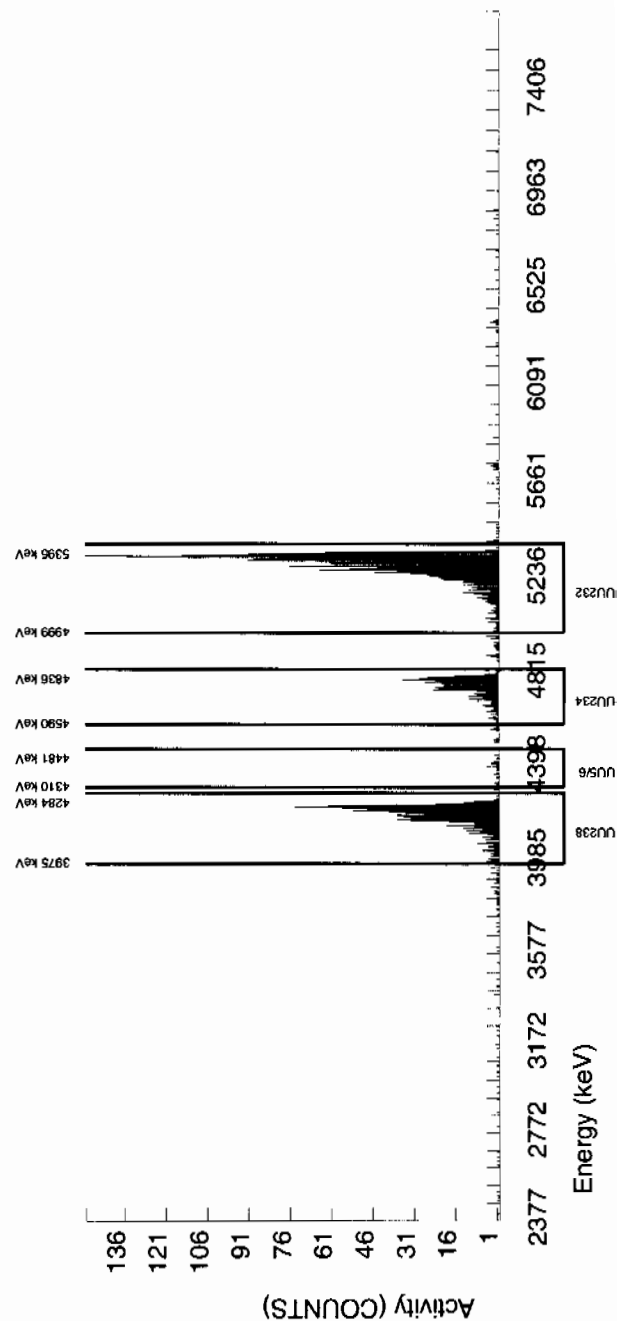
<p>TRACER  ID : 1283-H  NUCLIDE : U232  NOMINAL : 4.5065E+00 dpm  RESULTS : 4.6523E+00 dpm</p>	<p>MS/MSD  ID : 0244-A  NUCLIDE : U-238  NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD  ID : 0244-A  NUCLIDE : U-238  NOMINAL : 5.7500E+00 pCi/G</p>
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## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5302.401	56.916	1829.000	1818.000	11.000	3.3166	100.0000	3.93E+00	2.83E-01	1.67E-02	3.92E-02	9.28E-02
U-3/4	4763.020	4757.787	60.654	454.000	451.160	1.000	4.8416	100.0000	9.76E-01	8.06E-02	2.44E-02	5.46E-02	4.60E-02
U-235	4391.000	4405.067	0.000	30.000	30.000	0.000	2.2152	80.900000	8.02E-02	1.56E-02	1.38E-02	3.48E-02	1.46E-02
U-238	4184.730	4184.785	32.786	885.000	885.000	0.000	3.1208	100.0000	1.91E+00	1.45E-01	1.57E-02	3.73E-02	6.43E-02

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
U-3/4



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER :	947357
SAMPLE ID :	S0245691014_UU
SAMPLE QTY :	0.514 G
SAMPLE DATE :	25-JAN-2010 00:00:00
ANALYST :	CXM2
% YIELD :	98.589

CHAMBER : 169  
DETECTOR S/N : 72548  
AVERAGE %EFFICIENCY : 37.6264  
COUNT DATE : 9-FEB-2010 11:26:38  
ELAPSED LIVE TIME(SEC) : 60000.00

```
LIB FILE : ENV_ALPHA_UU
BKG FILE : B169.CNF;171
BKG DATE : 7-FEB-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W169.CNF;65
CAL DATE : 21-JAN-2010
```

TRACER

ID	: 1283-H
NUCLIDE	: U232
NOMINAL	: 4.5065E+00 dpm
RESULTS	: 4.4430E+00 dpm

## MS/MSD

ID : 0244-A  
NUCLIDE : U-238  
NOMINAL : 5.7500E+00 pCi/G

## LCS/LCSD

ID : 0244-A  
NUCLIDE : U-238  
NOMINAL : 5.7500E+00 pCi/G

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U-232	5302.100	5305.019	47.098	1674.000	1671.000	3.000	1.7321	100.0000	3.95E+00	2.86E-01	9.52E-03	2.54E-02	9.68E-02
U-3/4	4763.020	4762.535	60.401	631.000	628.309	1.000	4.8416	100.0000	1.48E+00	1.17E-01	2.66E-02	5.96E-02	5.93E-02
U-235	4391.000	4409.569	7.644	52.000	51.000	1.000	2.2152	80.90000	1.49E-01	2.36E-01	1.50E-02	3.80E-02	2.13E-02
U-238	4184.730	4189.075	42.514	1499.000	1497.000	2.000	3.1208	100.0000	3.54E+00	2.58E-01	1.72E-02	4.07E-02	9.15E-02

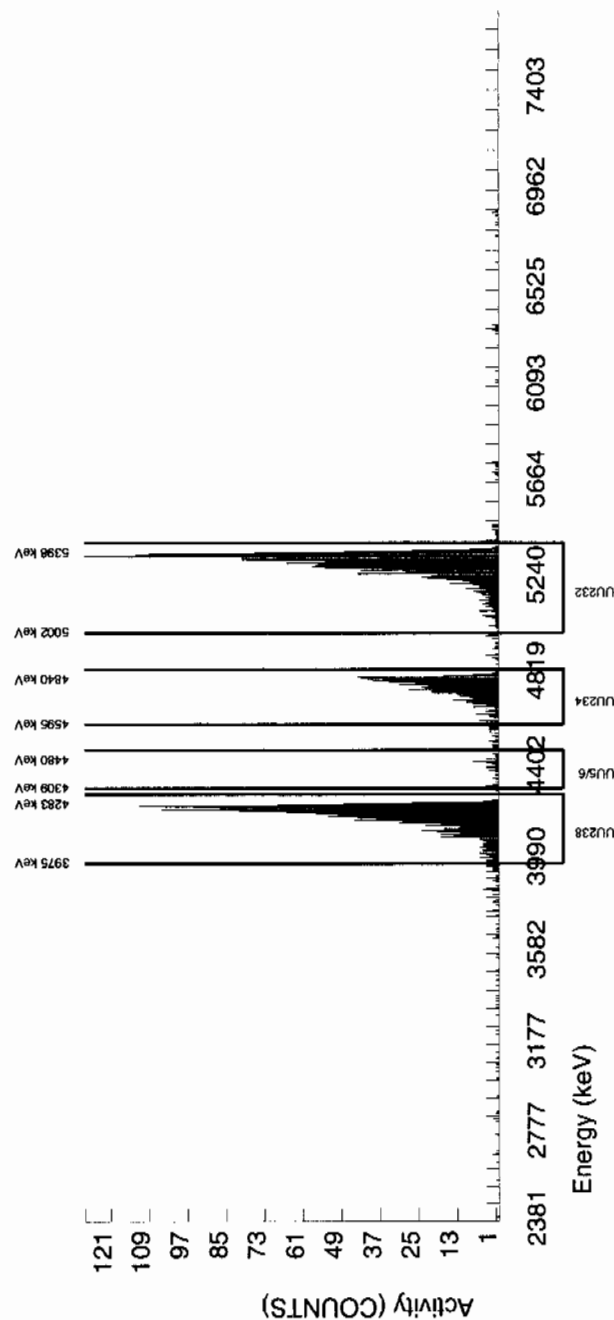
## NOTES:

\* Sg calculated via blank population.

(Sq updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:



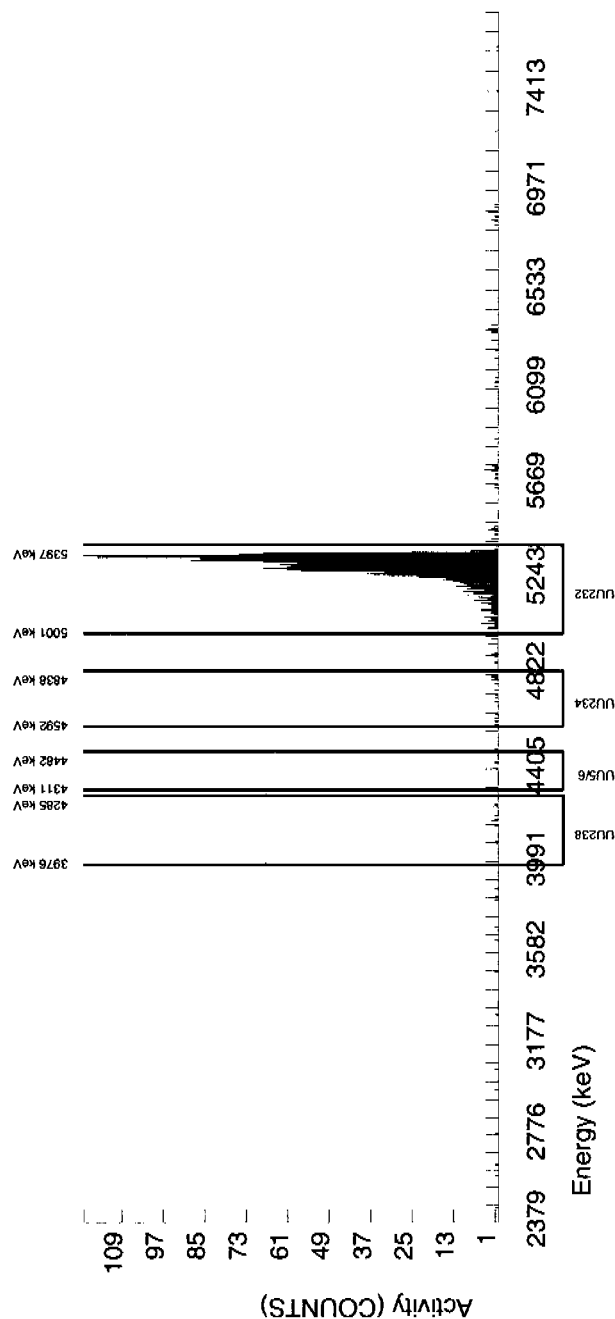
NOTES:

\* Sq calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sq of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947357 SAMPLE ID : S1202029351_UU SAMPLE QTY : 0.526 G SAMPLE DATE : 25-JAN-2010 00:00:00 ANALYST : CXM2 % YIELD : 75.798		CHAMBER : 171 DETECTOR S/N : 78260 AVERAGE %EFFICIENCY : 38.1329 COUNT DATE : 9-FEB-2010 11:26:44 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B171.CNF:175 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W171.CNF:72 CAL DATE : 21-JAN-2010
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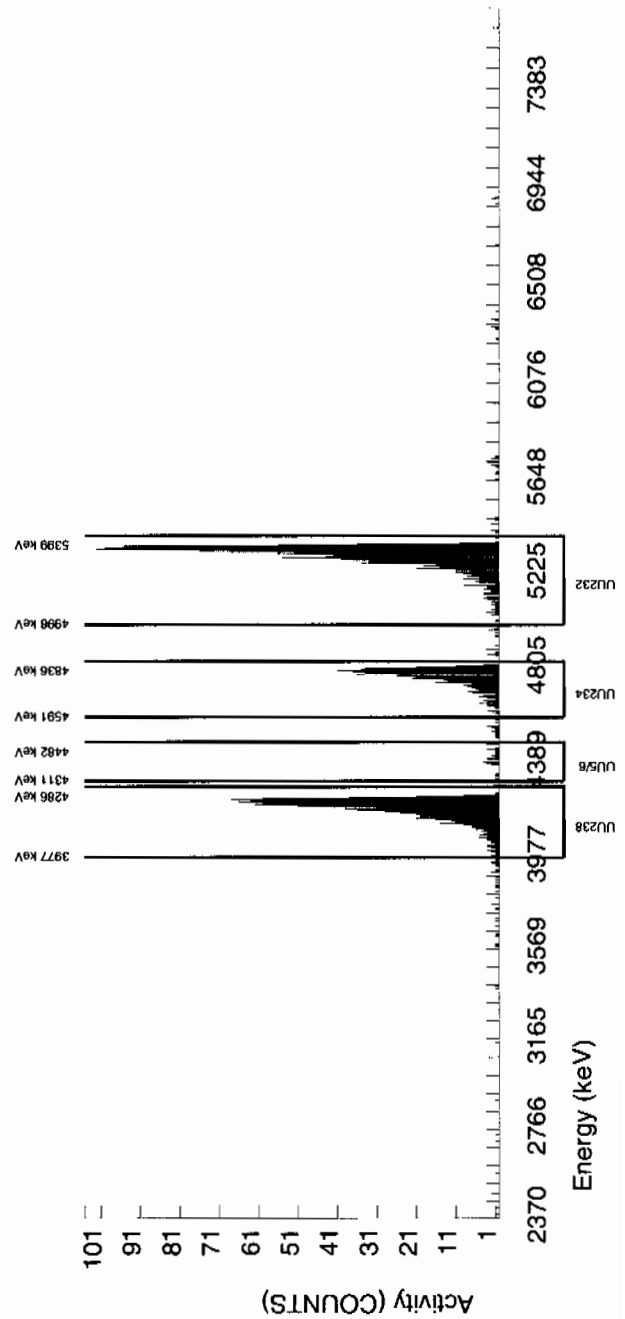
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5065E+00 dpm RESULTS : 3.4159E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
---	--	--

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5308.477	55.770	1316.000	1302.000	14.000	3.7417	100.0000	3.86E+00	2.89E-01	2.58E-02	5.96E-02	1.08E-01
U-3/4	4763.020	4767.649	50.367	495.000	491.683	2.000	4.8416	100.0000	1.46E+00	1.21E-01	3.34E-02	7.48E-02	6.60E-02
U-235	4391.000	4408.942	61.327	37.000	34.000	3.000	2.2152	80.90000	1.25E-01	2.47E-02	1.89E-02	4.77E-02	2.32E-02
U-238	4184.730	4191.537	56.670	958.000	956.000	2.000	3.1208	100.0000	2.83E+00	2.17E-01	2.15E-02	5.11E-02	9.18E-02

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
U-3/4



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 947357	CHAMBER : 172	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202029352_UU	DETECTOR S/N : 78772	BKG FILE : B172.CNF;173
SAMPLE QTY : 0.108 G	AVERAGE %EFFICIENCY : 38.2928	BKG DATE : 7-FEB-2010
SAMPLE DATE : 4-FEB-2010 00:00:00.	COUNT DATE : 9-FEB-2010 11:26:46	BKG LIVE TIME(SEC) : 60000.00
ANALYST : CXM2	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W172.CNF;65
% YIELD : 89.917		CAL DATE : 21-JAN-2010

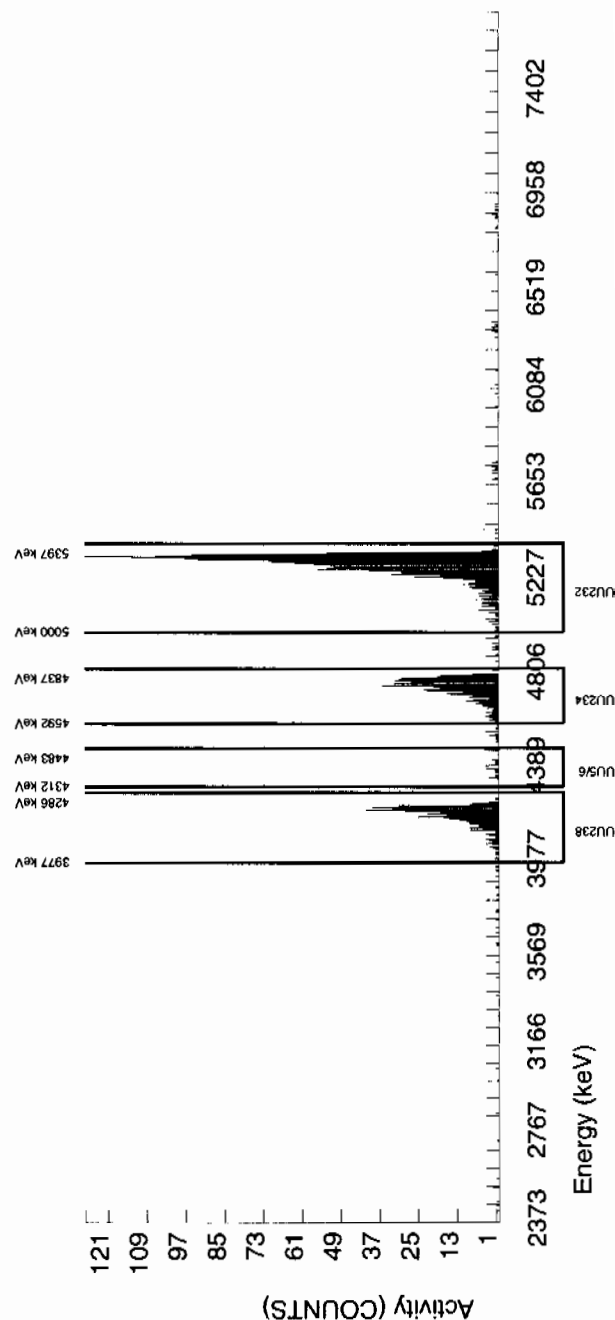
TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5053E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.0510E+00 dpm		

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5303.537	42.028	1553.000	1551.000	2.000	1.4142	100.0000	1.88E+01	1.48E+00	3.99E-02	1.13E-01	4.78E-01
U-3/4	4763.020	4753.610	65.449	521.000	517.431	2.000	4.8416	100.0000	6.27E+00	5.43E-01	1.36E-01	3.06E-01	2.77E-01
U-235	4391.000	4395.176	55.335	25.000	24.000	1.000	2.2152	80.90000	3.59E-01	8.09E-02	7.72E-02	1.95E-01	7.63E-02
U-238	4184.730	4186.970	54.026	477.000	476.000	1.000	3.1208	100.0000	5.77E+00	5.04E-01	8.79E-02	2.09E-01	2.65E-01

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
U-3/4



## Radiochemistry Batch Checklist, Rev10

Batch# 952128 Product: U Date: 2/20/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		Case narrative
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria	✓		
No blank spaces on data forms.			
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: Sophia 2/20/10Secondary Review Performed By: [Signature] 2/20/10

2/19

2/25

# Uranium Que Sheet

11-FEB-10

Batch #: 952128 Analyst: CXM2 First Client Due Date: 25-FEB-10 Internal Due Date: 19-FEB-10  
 Tracer Isotope: U-232/U-236 Tracer Code: 1283-H Expiration Date: 12/9/10 Vol: 0.1 mL  
 LCS Isotope: U-238 LCS Code: 0244-A Expiration Date: 10/31/10 Vol: 0.109 g \* SRM  
 Spike Isotope: U-238 Spike Code: 00 Expiration Date: 2/16/10  
 Prep Date: 2/16/10 Initials: *CSM* Pipet ID: 2A71058 Balance ID: 50410272

Witness: *W. 2/16/10*

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet Quot Aliquot (g/1/1)	U Det #
245691009-2	REIS-10-7935	SAMPLE		.1 pCi/g	SOIL	LANL010	25-JAN-10	1	1	0.204	113
1202040645-1	MB for batch 952128	MB		UCF pCi/g to pCi	SOIL	QC ACCOUNT		2	2	1	114
1202040646-2	REIS-10-7935(245691009DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	25-JAN-10	3	3	0.213	115
1202040647-1	LCS for batch 952128	LCS		UCF pCi/g to pCi	SOIL	QC ACCOUNT		4	4	0.109	119

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION  
 Circle One

Data Reviewed By: J. 2/16/10



# Blank Correction Report

**Batch ID 952128**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202040646	DUP	Uranium-233/234	0.213 g	15.3	1.22	0.313	.062910798	pCi/g	NO
		Uranium-235/236	0.213 g	1.62	0.200	0.200	.01	pCi/g	NO
		Uranium-238	0.213 g	78.9	5.96	0.214	.008075117	pCi/g	NO
1202040647	LCS	Uranium-233/234	0.109 g	6.94	0.629	0.423	.122935780	pCi/g	NO
		Uranium-235/236	0.109 g	0.269	0.0775	0.270	.019541284	pCi/g	NO
		Uranium-238	0.109 g	6.66	0.607	0.289	.015779817	pCi/g	NO
1202040645	MB	Uranium-233/234	1.00 g	0.0134	0.0049	0.0435	.0134	pCi/g	YES
		Uranium-235/236	1.00 g	0.00213	0.00213	0.0277	.00213	pCi/g	YES
		Uranium-238	1.00 g	0.00172	0.00299	0.0297	.00172	pCi/g	YES
245691009	RE15-10-7935	Uranium-233/234	0.204 g	16.8	1.33	0.316	.065686275	pCi/g	NO
		Uranium-235/236	0.204 g	1.44	0.184	0.202	.010441176	pCi/g	NO
		Uranium-238	0.204 g	72.1	5.46	0.216	.008431373	pCi/g	NO

**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER	952128	CHAMBER	113	LIB FILE	ENV_ALPHA_UU
SAMPLE ID	S0245691009_UU	DETECTOR S/N	45-111B4	BKG FILE	B113.CNF:446
SAMPLE QTY	0.204 G	AVERAGE %EFFICIENCY	24.8218	BKG DATE	14-FEB-2010
SAMPLE DATE	25-JAN-2010 00:00:00	COUNT DATE	18-FEB-2010 18:41:38	BKG LIVE TIME(SEC)	60000.00
ANALYST	CXM2	ELAPSED LIVE TIME(SEC)	60000.00	EFF FILE	W113.CNF:125
% YIELD	70.941			CAL DATE	18-FEB-2010

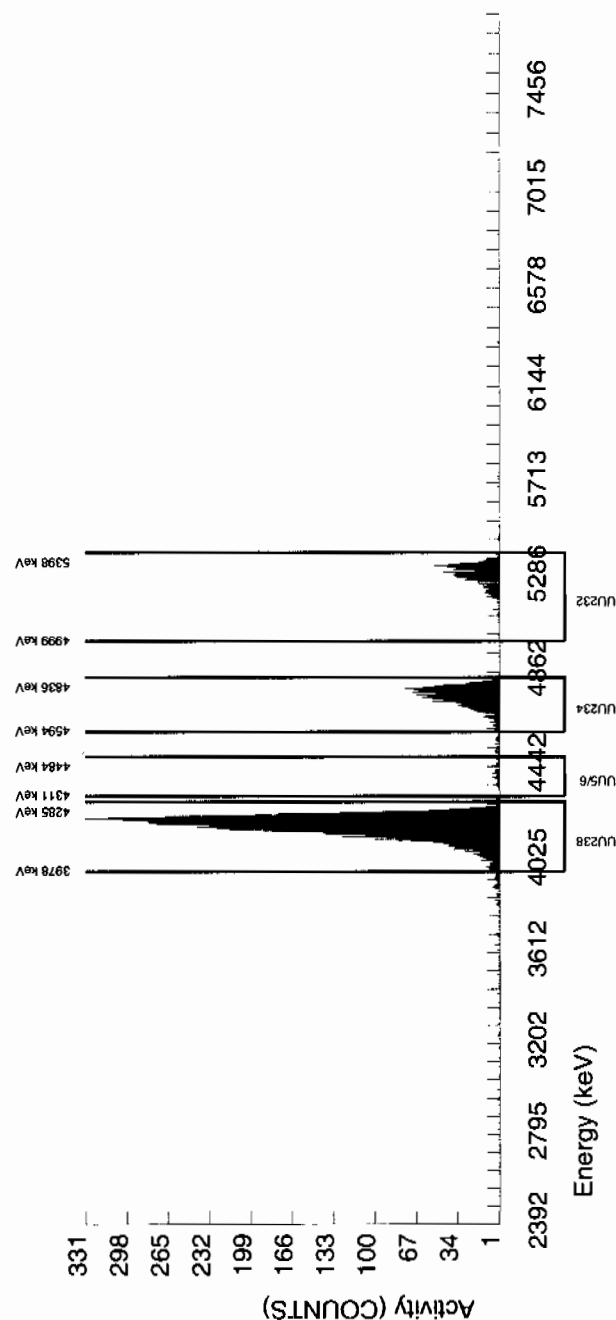
TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5065E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5300.644	73.123	796.000	793.000	3.000	1.7321	100.0000	9.95E+00	8.22E-01	5.05E-02	1.35E-01	3.55E-01
U-3/4	4763.020	4752.851	76.283	1342.000	1340.197	1.000	4.8416	100.0000	1.68E+01	1.33E+00	1.41E-01	3.16E-01	4.59E-01
U-235	4391.000	4417.515	78.869	93.000	93.000	0.000	2.2152	80.90000	1.44E+00	1.84E-01	7.99E-02	2.02E-01	1.49E-01
U-238	4184.730	4182.849	78.869	5753.000	5753.000	0.000	3.1208	100.0000	7.21E+01	5.46E+00	9.10E-02	2.16E-01	9.51E-01

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as  $\text{sqr}(\text{BKG AREA})$ .
- \* Corrections made to the following net area  
due to tracer impurity:  
U-3/4



# GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 952128		CHAMBER : 114		LIB FILE : ENV_ALPHA_UU	
SAMPLE ID : S1202040645_UU		DETECTOR S/N : 78258		BKG FILE : B114.CNF:447	
SAMPLE QTY : 1.000 G		AVERAGE %EFFICIENCY : 25.4572		BKG DATE : 14-FEB-2010	
SAMPLE DATE : 16-FEB-2010 00:00:00		COUNT DATE : 18-FEB-2010 18:41:41		BKG LIVE TIME(SEC) : 60000.00	
ANALYST : CXM2		ELAPSED LIVE TIME(SEC) : 60000.00		EFF FILE : W114.CNF:121	
% YIELD : 102.752				CAL DATE : 18-FEB-2010	

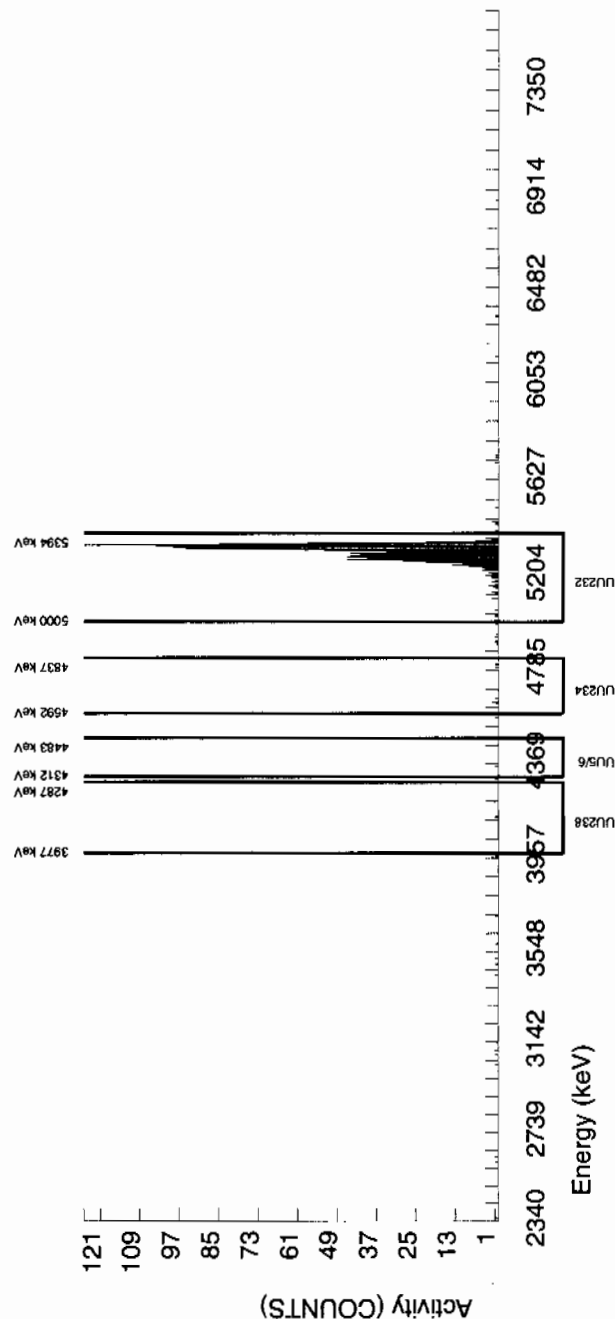
TRACER ID : 1283-H		MS/MSD ID : 0244-A		LCS/LCSD ID : 0244-A	
NUCLIDE : U232		NUCLIDE : U-238		NUCLIDE : U-238	
NOMINAL : 4.5038E+00 dpm		NOMINAL : 5.7500E+00 pCi/G		NOMINAL : 5.7500E+00 pCi/G	
RESULTS : 4.6278E+00 dpm					

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5316.428	28.354	1178.000	1178.000	0.000	0.0000	100.0000	2.03E+00	1.54E-01	0.00E+00	4.67E-03	5.91E-02
U-3/4	4763.020	4703.535	7.299	9.000	7.808	0.000	4.8416	100.0000	1.34E-02	4.90E-03	1.94E-02	4.35E-02	4.81E-03
U-235	4391.000	4364.233	4.969	1.000	1.000	0.000	2.2152	80.90000	2.13E-03	2.13E-03	1.10E-02	2.77E-02	2.13E-03
U-238	4184.730	4139.546	9.318	2.000	1.000	1.000	3.1208	100.0000	1.72E-03	2.99E-03	1.25E-02	2.97E-02	2.98E-03

## NOTES:

- \* Sg calculated via blank population.  
(Sg updated 10-FEB-2010)
- \* Sg of U232 calculated as sqrt(BKG AREA).
- \* Corrections made to the following net area due to tracer impurity:  
U-3/4



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 952128	CHAMBER : 115	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202040646_UU	DETECTOR S/N : 79995	BKG FILE : B115.CNF:454
SAMPLE QTY : 0.213 G	AVERAGE %EFFICIENCY : 25.6793	BKG DATE : 14-FEB-2010
SAMPLE DATE : 25-JAN-2010 00:00:00	COUNT DATE : 18-FEB-2010 18:41:43	BKG LIVE TIME(SEC) : 60000.00
ANALYST : CXM2	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W115.CNF:149
% YIELD : 66.410		CAL DATE : 18-FEB-2010

TRACER ID : 1283-H	MS/MSD ID : 0244-A	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5065E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 2.9928E+00 dpm		

## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5297.259	58.783	770.000	768.000	2.000	1.4142	100.0000	9.53E+00	7.90E-01	4.08E-02	1.15E-01	3.45E-01
U-3/4	4763.020	4753.958	64.242	1234.000	1230.223	3.000	4.8416	100.0000	1.53E+01	1.22E+00	1.40E-01	3.13E-01	4.36E-01
U-235	4391.000	4400.390	29.486	107.000	106.000	1.000	2.2152	80.90000	1.62E+00	2.00E-01	7.90E-02	2.00E-01	1.59E-01
U-238	4184.730	4182.480	56.088	6362.000	6361.000	1.000	3.1208	100.0000	7.89E+01	5.96E+00	9.00E-02	2.14E-01	9.89E-01

## NOTES:

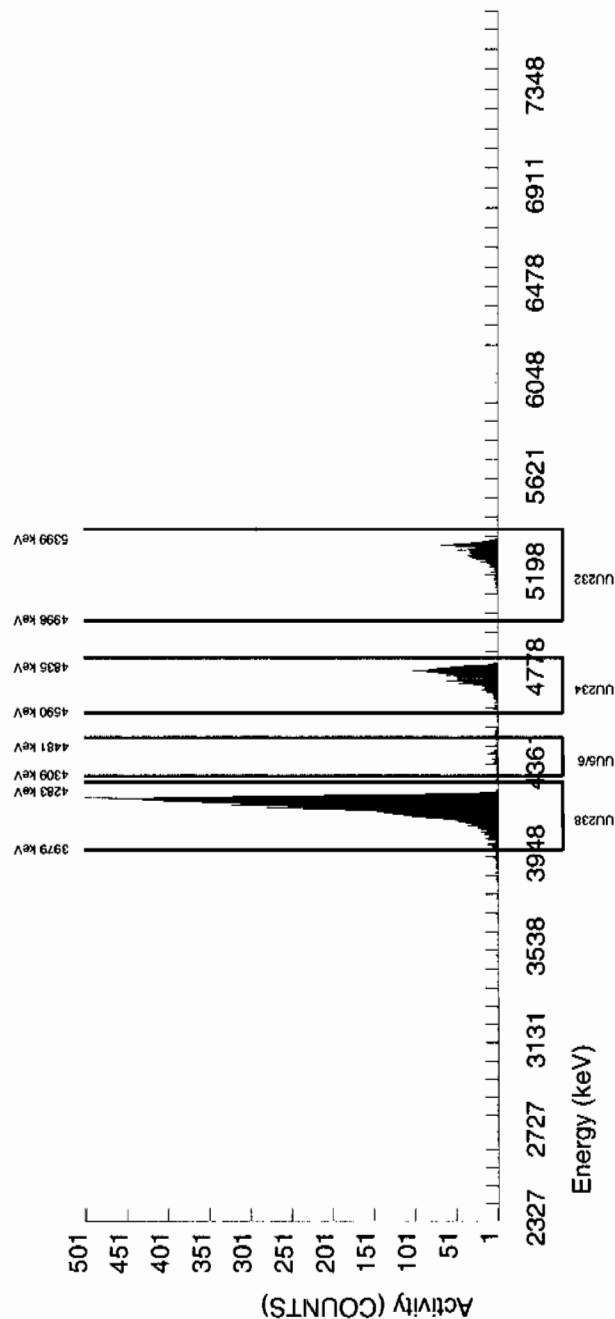
\* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:

U-3/4



**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER : 952128				CHAMBER : 119				LIB FILE : ENV_ALPHA_UU					
SAMPLE ID : S1202040647_UU				DETECTOR S/N : 79450				BKG FILE : B119.CNF.460					
SAMPLE QTY : 0.109 G				AVERAGE %EFFICIENCY : 25.5204				BKG DATE : 14-FEB-2010					
SAMPLE DATE : 16-FEB-2010 00:00:00				COUNT DATE : 18-FEB-2010 18:41:46				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : CXM2				ELAPSED LIVE TIME(SEC) : 60000.00				EFF FILE : W119.CNF.121					
% YIELD : 96.581								CAL DATE : 18-FEB-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 1283-H				ID : 0244-A				ID : 0244-A					
NUCLIDE : U232				NUCLIDE : U-238				NUCLIDE : U-238					
NOMINAL : 4.5038E+00 dpm				NOMINAL : 5.7500E+00 pCi/G				NOMINAL : 5.7500E+00 pCi/G					
RESULTS : 4.3498E+00 dpm													
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.770	39.283	1114.000	1110.000	4.000	2.0000	100.0000	1.86E+01	1.52E+00	7.80E-02	2.01E-01	5.61E-01
U-3/4	4763.020	4765.184	40.761	415.000	413.877	0.000	4.8416	100.0000	6.94E+00	6.29E-01	1.89E-01	4.23E-01	3.41E-01
U-235	4391.000	4407.706	39.448	13.000	13.000	0.000	2.2152	80.90000	2.69E-01	7.75E-02	1.07E-01	2.70E-01	7.47E-02
U-238	4184.730	4196.194	28.770	397.000	397.000	0.000	3.1208	100.0000	6.66E+00	6.07E-01	1.22E-01	2.89E-01	3.34E-01

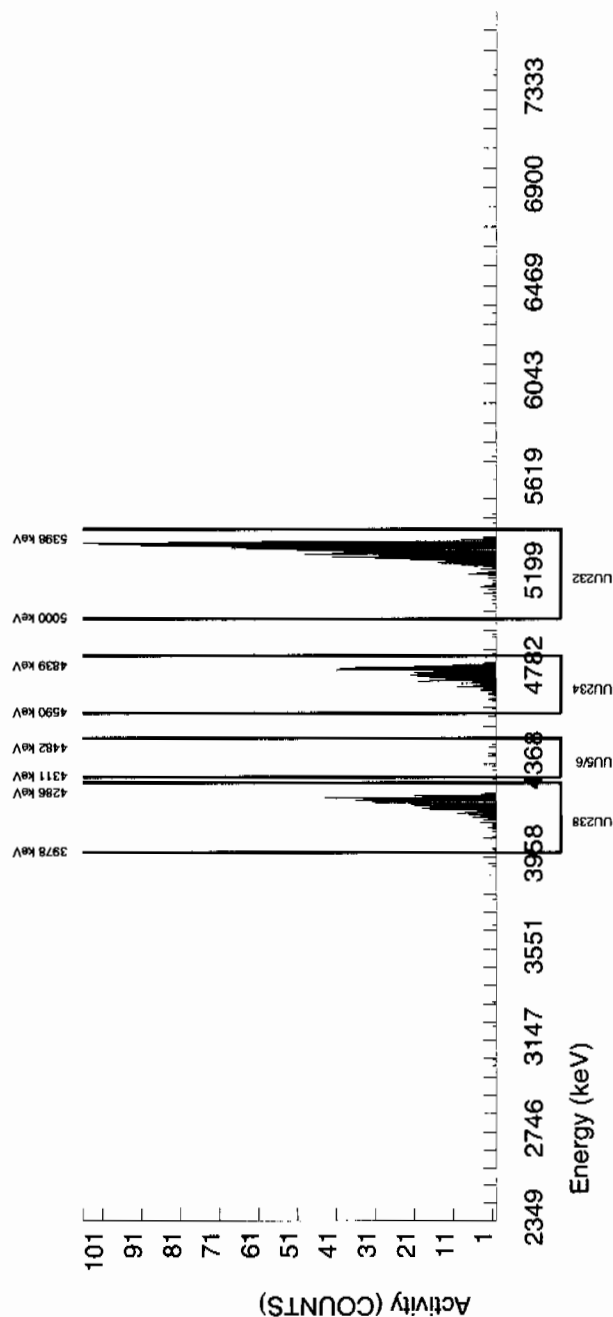
## NOTES:

\* Sg calculated via blank population.

Sg calculated via Brain Pro  
(Sg updated 10-FEB-2010)

\* Sg of U232 calculated as sqrt(BKG AREA).

\* Corrections made to the following net area due to tracer impurity:



# Radiochemistry Batch Checklist, Rev10

Batch# 947037

Product: X-S

Date: 2/10/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.			NA
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)			
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			NA
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs Initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: K. Bat 2/10/10

Secondary Review Performed By: Seulan 2/11/10

LANL

2/18

T.G. - 2/8/10

# Gamma Spec Que Sheet

02/01/2010

Batch #: 947037 Analyst: MJHI First Client Due Date: 02/18/2010 Internal Due Date: 02/08/2010  
Gamma Spike Isotope: Mixed Gamma Spike Code: 019 Expiration Date: 0/9 Vol: 0/9 Nominal Concentration: 0/9 Co-60 6.413  
Gamma LCS Isotope: Mixed Gamma LCS Code: 032-A Expiration Date: 12/2/10 Vol: 1.074 Nominal Concentration: 0.5137 5.562 Am-241 15.91  
Initials: BF Prep Date: 2/1/10 Library: 50110 Witness: 0/9

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Detector	Sealing Date/Time (if Applicable)
245667001-1	RE16-10-1343	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00	C9n	132.72	10 2/1/10
245667002-1	RE16-10-1345	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		130.46	12
245667003-1	RE16-10-1347	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		119.48	16
245667004-1	RE16-10-1349	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		129.99	13
245667005-1	RE16-10-1351	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		120.30	23
245667006-1	RE16-10-1365	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		118.19	20
245691001-1	RE15-10-7883	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		127.31	19
245691002-1	RE15-10-7884	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		145.72	22
245691003-1	RE15-10-7932	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		135.05	25
245691004-1	RE15-10-7931	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		129.92	17
245691005-1	RE15-10-7938	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		126.97	10
245691006-1	RE15-10-7933	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		149.71	13
245691007-1	RE15-10-7939	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		144.93	16
245691008-1	RE15-10-7936	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		122.13	12
245691009-1	RE15-10-7935	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		141.89	18
245691010-1	RE15-10-7934	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		136.29	19
245691011-1	RE15-10-7940	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		134.15	20
245691012-1	RE15-10-7937	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		137.64	23
245691013-1	RE15-10-8056	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		127.76	1827 2/9/10
245691014-1	RE15-10-8057	SAMPLE		LANL010	SOIL	25-JAN-10 12:00:00		130.09	17
1202028548-1	MB	MB		QC ACCOUNT	SOIL	2/1/10		149.71	21
1202028549-1	DUP RE15-10-7933(245691006)	DUP		QC ACCOUNT	SOIL	25-JAN-10 12:00:00		148.15	10
1202028550-1	LCS	LCS		QC ACCOUNT	SOIL	2/1/10		155.44	19

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: Kbt 2/10/10  
Two history J.d.hg  
of Euland 2/11/10

## Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
947037	245667001	SAMPLE	09-FEB-10		Americium-241	-0.02281	0.3532	0.200
					Sodium-22	0.00972	0.08052	0.080
					Thorium-234	0.4279	2.819	2.00
947037	245667002	SAMPLE	09-FEB-10		Americium-241	-0.07933	0.2429	0.200
					Thorium-234	0.2901	2.052	2.00
947037	245667003	SAMPLE	09-FEB-10		Americium-241	-0.1571	0.2201	0.200
					Sodium-22	0.05259	0.08254	0.080
947037	245667004	SAMPLE	09-FEB-10		Cerium-139	-0.00578	0.055	0.050
					Cesium-134	0.08277	0.1117	0.100
					Sodium-22	0.01656	0.102	0.080
947037	245667005	SAMPLE	09-FEB-10		Americium-241	-0.3315	0.3411	0.200
					Cerium-139	-0.05468	0.05057	0.050
					Sodium-22	0.00772	0.09496	0.080
					Thorium-234	1.487	3.055	2.00
947037	245667006	SAMPLE	09-FEB-10					
947037	245691001	SAMPLE	09-FEB-10		Americium-241	0.00746	0.2699	0.200
					Cerium-139	0.00868	0.05502	0.050
947037	245691002	SAMPLE	09-FEB-10		Americium-241	0.03193	0.2071	0.200
947037	245691003	SAMPLE	09-FEB-10		Sodium-22	-0.00392	0.08437	0.080
947037	245691004	SAMPLE	09-FEB-10		Cerium-139	0.00178	0.05109	0.050
					Cesium-134	0.04414	0.1117	0.100
					Sodium-22	-0.03289	0.09982	0.080
947037	245691005	SAMPLE	09-FEB-10		Americium-241	-0.1253	0.4091	0.200
					Cerium-139	-0.01325	0.05125	0.050
					Sodium-22	-0.0106	0.08393	0.080
					Thorium-234	2.173	3.317	2.00
947037	245691006	SAMPLE	09-FEB-10		Cerium-139	0.00366	0.05106	0.050
					Cesium-134	0.08075	0.1048	0.100
					Sodium-22	-0.01614	0.08538	0.080
947037	245691007	SAMPLE	09-FEB-10		Americium-241	0.08002	0.2223	0.200
947037	245691008	SAMPLE	09-FEB-10		Americium-241	0.1121	0.2846	0.200
					Cerium-139	0.00905	0.05251	0.050
					Cesium-134	0.0999	0.1029	0.100
					Sodium-22	-0.04042	0.08075	0.080
					Thorium-234	1.862	2.419	2.00
947037	245691009	SAMPLE	09-FEB-10		Americium-241	0.3081	0.4745	0.200
					Cerium-139	0.00085	0.0515	0.050
947037	245691010	SAMPLE	09-FEB-10		Americium-241	0.1926	0.2628	0.200
					Thorium-234	1.128	2.133	2.00
947037	245691011	SAMPLE	09-FEB-10					
947037	245691012	SAMPLE	09-FEB-10		Americium-241	0.2272	0.3552	0.200
					Cerium-139	0.00608	0.05571	0.050
947037	245691013	SAMPLE	09-FEB-10		Americium-241	-0.02762	0.3099	0.200



## Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
947037	245691014	SAMPLE	09-FEB-10		Cesium-134	0.08487	0.114	0.100
					Sodium-22	0.01925	0.09591	0.080
947037	1202028548	MB	09-FEB-10					
947037	1202028549	DUP	09-FEB-10		Americium-241	0.01948	0.3649	0.200
947037	1202028550	LCS	09-FEB-10		Cerium-139	0.03729	0.08161	0.050
					Cesium-134	0.06648	0.1615	0.100
					Europium-152	0.1601	0.3384	0.200
					Mercury-203	0.02195	0.1185	0.100
					Potassium-40	0.5971	1.094	1.00
					Ruthenium-106	-0.06985	0.9975	0.800
					Sodium-22	0.01469	0.08627	0.080
					Thorium-234	-2.025	3.479	2.00
					Tin-113	0.02914	0.144	0.100
					Uranium-235	0.06613	0.587	0.500

# GEL QUALS

Batch ID: 947037

Report run on: February 10, 2010 3:55 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
245667001-1 09-FEB-2010 13:16	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.027			
	Cadmium-109	UI	UI	UI	Data rejected due to high peak-width.		3.167			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.389			
245667002-1 09-FEB-2010 13:17	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.617			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.138			
	Radium-224	UI	UI	UI	Data rejected due to interference.		2.846			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.06885			
245667003-1 09-FEB-2010 13:17	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.352			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.817			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1503		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.333			
245667004-1 09-FEB-2010 13:19	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.224			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.276			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.675			
245667005-1 09-FEB-2010 13:21	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.895			
	Bismuth-214	UI	UI	UI	Data rejected due to low abundance.		.9239		.2	.2
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		1.787			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.212			
	Radium-226	UI	UI	UI	Data rejected due to low abundance.		.9239			

# GEL QUALS

Batch ID: 947037

Report run on: February 10, 2010 3:55 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
245667006-1 09-FEB-2010 13:24	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.509			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.307			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.446			
	Radium-228	UI	UI	UI	Data rejected due to low abundance.		1.448		.5	.5
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.07565			
245691001-1 09-FEB-2010 13:25	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.189			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.224			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.2486		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.255			
245691003-1 09-FEB-2010 14:46	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.161			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.616			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.09971		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.248			
245691004-1 09-FEB-2010 14:53	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.049			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.356			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.849			
245691002-1 09-FEB-2010 15:21	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.002			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.836			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08537		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.695			

# GEL QUALS

Batch ID: 947037

Report run on: February 10, 2010 3:55 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
245691002-1 09-FEB-2010 15:21	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1121			
245691005-1 09-FEB-2010 15:24	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.194			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.112			
	Mercury-203	UI	UI	UI	Data rejected due to high peak-width.		.1353		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.398			
245691006-1 09-FEB-2010 15:24	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.471			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.838			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.145			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1267			
	Uranium-235	UI	UI	UI	Data rejected due to no valid peak.		.5033		.5	.5
245691007-1 09-FEB-2010 15:24	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.505			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.438			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1135		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.944			
245691008-1 09-FEB-2010 15:32	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.461			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.415			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.202			
245691009-1 09-FEB-2010 15:32	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.701			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.47			

# GEL QUALS

Batch ID: 947037

Report run on: February 10, 2010 3:55 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
245691009-1 09-FEB-2010 15:32	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1101		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.245			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.06596			
245691010-1 09-FEB-2010 15:33	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.939			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.495			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.855			
245691011-1 09-FEB-2010 15:33	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.238			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.137			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1395		.1	.1
245691012-1 09-FEB-2010 15:33	Radium-224	UI	UI	UI	Data rejected due to interference.		5.042			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.249			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.836			
245691013-1 09-FEB-2010 17:37	Cesium-137	UI	UI	UI	Data rejected due to low abundance.		.2829		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.333			
	Radium-228	UI	UI	UI	Data rejected due to low abundance.		1.376		.5	.5
245691014-1 09-FEB-2010 17:27	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.957			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.825			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.036			
245691013-1 09-FEB-2010 17:37	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.962			

# GEL QUALS

Batch ID: 947037

Report run on: February 10, 2010 3:55 PM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
245691013-1 09-FEB-2010 17:37	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.612			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.0766		.1	.1
	Mercury-203	UI	UI	UI	Data rejected due to interference.		.07237		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.758			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1025			
1202028549-1 DUP 09-FEB-2010 17:44	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.466			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.995			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.103			



Bismuth-214	✓	0.9041	0.08579	pCi/g 0.1134	0.200	609	4	1.539	IDENTIFIED	8.549	<input type="checkbox"/>	
Cadmium-109	INT	2.138	0.4682	pCi/g 1.339	Y	87.06	3	0.9973	IDENTIFIED	21.56	<input checked="" type="checkbox"/>	UI
Cerium-143	—	515.8	90.85	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	
Gross Gamma	—	8.776	1.763	pCi/g 2.902	N		0				<input type="checkbox"/>	
Iodine-123	HE	1.80E+06	2.32E+06	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135	HE	1.44E+15	2.56E+15	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	
Krypton-85	HE	13.44	3.399	pCi/g 12.61	N	0	10	0	NOT_IDENTI	0	<input type="checkbox"/>	
Lead-212	✓	1.393	0.07068	pCi/g 0.08081	0.100	238.4	4	1.111	IDENTIFIED	3.627	<input type="checkbox"/>	
Lead-214	✓	0.9103	0.07951	pCi/g 0.1087	0.100	351.7	4	1.298	IDENTIFIED	7.72	<input type="checkbox"/>	
Lutetium-177	HE	1.966	0.6185	pCi/g 1.842	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237	HE	0.6173	0.1494	pCi/g 0.39	N	87.06	3	0.9973	IDENTIFIED	21.56	<input type="checkbox"/>	
Niobium-97	HE	22940	46070	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	
Polonium-212	NR	1.393	0.07068	pCi/g 0.08081	N	238.4	4	1.111	IDENTIFIED	3.627	<input type="checkbox"/>	
Polonium-214	NR	0.9103	0.07951	pCi/g 0.1087	N	351.7	4	1.298	IDENTIFIED	7.72	<input type="checkbox"/>	
Polonium-216	NR	1.393	0.07068	pCi/g 0.08081	N	238.4	4	1.111	IDENTIFIED	3.627	<input type="checkbox"/>	
Polonium-218	NR	0.9103	0.07951	pCi/g 0.1087	N	351.7	4	1.298	IDENTIFIED	7.72	<input type="checkbox"/>	
Potassium-40	✓	36.05	1.624	pCi/g 0.4665	1.00	1460	1	2.201	IDENTIFIED	2.753	<input type="checkbox"/>	
Radium-224	INT	2.846	0.5694	pCi/g 0.9197	Y	241.2	1	1.624	IDENTIFIED	19.82	<input checked="" type="checkbox"/>	UI
Radium-226	✓	0.9041	0.08579	pCi/g 0.1134	Y	609	4	1.539	IDENTIFIED	8.549	<input type="checkbox"/>	
Radium-228	✓	1.199	0.1375	pCi/g 0.2052	0.500	910.6	3	1.652	IDENTIFIED	10.07	<input type="checkbox"/>	
Strontium-85	LA	0.06885	0.01742	pCi/g 0.06459	Y	0	10	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.4453	0.04396	pCi/g 0.05612	0.080	582.9	1	1.58	IDENTIFIED	9.202	<input type="checkbox"/>	
Thorium-228	NR	1.414	0.07175	pCi/g 0.08203	N	238.4	4	1.111	IDENTIFIED	3.627	<input type="checkbox"/>	
Thorium-230	NR	0.9041	0.08579	pCi/g 0.1134	N	609	4	1.539	IDENTIFIED	8.549	<input type="checkbox"/>	
Thorium-232	NR	1.199	0.1375	pCi/g 0.2052	N	910.6	3	1.652	IDENTIFIED	10.07	<input type="checkbox"/>	
Tin-126	HE	0.2102	0.04602	pCi/g 0.1322	N	87.06	3	0.9973	IDENTIFIED	21.56	<input type="checkbox"/>	
Titanium-44	—	0.3115	0.02448	pCi/g 0.0658	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>	
Uranium-234	NR	0.9041	0.08579	pCi/g 0.1134	N	609	4	1.539	IDENTIFIED	8.549	<input type="checkbox"/>	
Zirconium-97	—	3.26E+06	9.07E+05	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue		
245667003	25-JAN-10 12:00	09-FEB-10 13:17	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228	✓	1.529	0.1869	pCi/g 0.22	N	911.3	3	1.317	IDENTIFIED	10.68	<input type="checkbox"/>	
Americium-243	INT	0.3202	0.03693	pCi/g 0.07776	N	74.76	1	1.126	IDENTIFIED	10.77	<input type="checkbox"/>	
Annihilation Rad. HE		0.08311	0.03118	pCi/g 0.04847	N	510.8	1	1.294	IDENTIFIED	37.21	<input type="checkbox"/>	
Bismuth-211	INT	3.352	0.2862	pCi/g 0.3035	Y	351.8	4	1.082	IDENTIFIED	6.564	<input checked="" type="checkbox"/>	UI
Bismuth-212	HE	0.7398	0.1911	pCi/g 0.5991	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.073	0.09774	pCi/g 0.1113	0.200	609.3	4	1.35	IDENTIFIED	7.419	<input type="checkbox"/>	
Cadmium-109	INT	2.817	0.5345	pCi/g 0.8604	Y	87.29	3	0.9907	IDENTIFIED	18.36	<input checked="" type="checkbox"/>	UI
Cerium-143	—	237.5	80.96	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.1503	0.03985	pCi/g 0.09768	0.100	0	9	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gross Gamma	—	9.647	1.578	pCi/g 2.656	N		0				<input type="checkbox"/>	
Iodine-123	HE	3.26E+06	2.29E+06	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-133	HE	945.4	2800	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.461	0.1011	pCi/g 0.08056	0.100	238.6	4	0.9638	IDENTIFIED	3.584	<input type="checkbox"/>	
Lead-214	✓	1.166	0.1041	pCi/g 0.1058	0.100	351.8	4	1.082	IDENTIFIED	6.564	<input type="checkbox"/>	





Thorium-232	NR	1.238	0.2065	pCi/g	0.2814	N	911.8	3	1.774	IDENTIFIED	15.85	<input type="checkbox"/>	
Tin-126	NR	0.2238	0.0431	pCi/g	0.1308	N	87	3	1.359	IDENTIFIED	18.84	<input type="checkbox"/>	
Titanium-44	—	0.2964	0.02393	pCi/g	0.05753	N	0	5	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	—	2.4943	1.64E-06	ug/g	1.5205	N	0					<input type="checkbox"/>	
Uranium-234	NR	0.8114	0.1024	pCi/g	0.148	N	609.6	4	1.632	IDENTIFIED	11.73	<input type="checkbox"/>	
Zirconium-97	—	4.02E+06	1.18E+06	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
245667005	25-JAN-10 12:00	09-FEB-10 13:21	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	✓	1.538	0.1904	pCi/g	0.2539	N	910.2	3	2.024	IDENTIFIED	10.95	<input type="checkbox"/>		
Americium-243	INT	0.4519	0.04918	pCi/g	0.1061	N	74.62	1	1.264	IDENTIFIED	9.934	<input type="checkbox"/>		
Annihilation Rad.	HE	0.08899	0.03824	pCi/g	0.05578	N	510.4	1	1.575	IDENTIFIED	42.88	<input type="checkbox"/>		
Bismuth-211	INT	2.895	0.2661	pCi/g	0.3917	Y	351.5	4	1.312	IDENTIFIED	8.597	<input checked="" type="checkbox"/>	✓	
Bismuth-212	HE	1.125	0.2124	pCi/g	0.748	N	0	10	0	NOT_IDENTI	0	<input type="checkbox"/>		
Bismuth-214	LA	0.9239	0.08546	pCi/g	0.2777	0.200	0	10	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI	Data rejected due to low abundance.
Cadmium-109	INT	1.787	0.5813	pCi/g	1.421	Y	86.58	3	0.9651	IDENTIFIED	32.16	<input checked="" type="checkbox"/>	✓	
Cerium-143	—	940.2	157.5	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>		
Gross Gamma	—	8.082	1.246	pCi/g	2.905	N	0					<input type="checkbox"/>		
Lead-212	✓	1.553	0.08117	pCi/g	0.1028	0.100	238.3	4	1.114	IDENTIFIED	3.795	<input type="checkbox"/>		
Lead-214	✓	1.007	0.09624	pCi/g	0.1286	0.100	351.5	4	1.312	IDENTIFIED	8.597	<input type="checkbox"/>		
Lutetium-177	HE	3.03	0.9127	pCi/g	2.256	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>		
Neptunium-237	HE	0.516	0.176	pCi/g	0.3999	N	86.58	3	0.9651	IDENTIFIED	32.16	<input type="checkbox"/>		
Niobium-95m	—	0.6029	0.09163	pCi/g	0.3028	N	0	10	0	NOT_IDENTI	0	<input type="checkbox"/>		
Polonium-212	NR	1.553	0.08117	pCi/g	0.1028	N	238.3	4	1.114	IDENTIFIED	3.795	<input type="checkbox"/>		
Polonium-214	NR	1.007	0.09624	pCi/g	0.1286	N	351.5	4	1.312	IDENTIFIED	8.597	<input type="checkbox"/>		
Polonium-216	NR	1.553	0.08117	pCi/g	0.1028	N	238.3	4	1.114	IDENTIFIED	3.795	<input type="checkbox"/>		
Polonium-218	NR	1.007	0.09624	pCi/g	0.1286	N	351.5	4	1.312	IDENTIFIED	8.597	<input type="checkbox"/>		
Potassium-40	✓	26.57	1.413	pCi/g	0.4459	1.00	1459	1	2.084	IDENTIFIED	3.776	<input type="checkbox"/>		
Radium-224	INT	4.212	0.7595	pCi/g	1.17	Y	241.3	1	1.952	IDENTIFIED	17.81	<input checked="" type="checkbox"/>	✓	
Radium-226	LA	0.9239	0.08546	pCi/g	0.2777	Y	0	10	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI	Data rejected due to low abundance.
Radium-228	✓	1.538	0.1904	pCi/g	0.2539	0.500	910.2	3	2.024	IDENTIFIED	10.95	<input type="checkbox"/>		
Thallium-208	✓	0.5292	0.04486	pCi/g	0.06101	0.080	582.4	1	1.521	IDENTIFIED	7.831	<input type="checkbox"/>		
Thorium-228	NR	1.576	0.0824	pCi/g	0.1044	N	238.3	4	1.114	IDENTIFIED	3.795	<input type="checkbox"/>		
Thorium-230	—	0.9239	0.08546	pCi/g	0.2777	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>		
Thorium-232	NR	1.538	0.1904	pCi/g	0.2539	N	910.2	3	2.024	IDENTIFIED	10.95	<input type="checkbox"/>		
Tin-126	HE	0.1757	0.05714	pCi/g	0.1688	N	86.58	3	0.9651	IDENTIFIED	32.16	<input type="checkbox"/>		
Titanium-44	—	0.3879	0.03323	pCi/g	0.09387	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>		
Uranium-234	—	0.9239	0.08546	pCi/g	0.2777	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>		
Zirconium-97	—	6.56E+06	1.21E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>		

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
245667006	25-JAN-10 12:00	09-FEB-10 13:24	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	LA	1.448	0.1662	pCi/g	0.4848	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>		
Americium-243	INT	0.3818	0.03568	pCi/g	0.07334	N	74.93	1	1.2	IDENTIFIED	8.428	<input type="checkbox"/>		
Annihilation Rad.	—	0.1593	0.03336	pCi/g	0.04151	N	511.2	1	1.832	IDENTIFIED	20.41	<input type="checkbox"/>		

Bismuth-211	INT	3.509	0.2819	pCi/g 0.2986	Y	352	4	1.342	IDENTIFIED	6.452	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Bismuth-212	—	1.298	0.2585	pCi/g 0.6448	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>	<input type="checkbox"/>	
Bismuth-214	✓	0.8903	0.08711	pCi/g 0.105	0.200	609.7	4	1.415	IDENTIFIED	8.048	<input type="checkbox"/>	<input type="checkbox"/>	
Cadmium-109	INT	3.307	0.4251	pCi/g 1.066	Y	87.33	3	0.9609	IDENTIFIED	11.97	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Cerium-143	—	361.1	85.29	pCi/g 0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	<input type="checkbox"/>	
Gross Gamma	—	8.964	1.193	pCi/g 2.675	N		0				<input type="checkbox"/>	<input type="checkbox"/>	
Iodine-133	HE	1280	2838	pCi/g 0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	<input type="checkbox"/>	
Iodine-135	HE	1.88E+15	2.45E+15	pCi/g 0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	<input type="checkbox"/>	
Krypton-85	HE	14.76	4.031	pCi/g 13.36	N	0	12	0	NOT_IDENTI	0	<input type="checkbox"/>	<input type="checkbox"/>	
Lead-212	✓	1.571	0.1001	pCi/g 0.08811	0.100	238.7	4	1.158	IDENTIFIED	3.51	<input type="checkbox"/>	<input type="checkbox"/>	
Lead-214	✓	1.221	0.1031	pCi/g 0.1041	0.100	352	4	1.342	IDENTIFIED	6.452	<input type="checkbox"/>	<input type="checkbox"/>	
Lutetium-177	HE	2.179	0.6794	pCi/g 1.967	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>	<input type="checkbox"/>	
Neptunium-237	INT	0.9544	0.1573	pCi/g 0.3183	N	87.33	3	0.9609	IDENTIFIED	11.97	<input type="checkbox"/>	<input type="checkbox"/>	
Polonium-212	NR	1.571	0.1001	pCi/g 0.08811	N	238.7	4	1.158	IDENTIFIED	3.51	<input type="checkbox"/>	<input type="checkbox"/>	
Polonium-214	NR	1.221	0.1031	pCi/g 0.1041	N	352	4	1.342	IDENTIFIED	6.452	<input type="checkbox"/>	<input type="checkbox"/>	
Polonium-216	NR	1.571	0.1001	pCi/g 0.08811	N	238.7	4	1.158	IDENTIFIED	3.51	<input type="checkbox"/>	<input type="checkbox"/>	
Polonium-218	NR	1.221	0.1031	pCi/g 0.1041	N	352	4	1.342	IDENTIFIED	6.452	<input type="checkbox"/>	<input type="checkbox"/>	
Potassium-40	✓	34.31	1.755	pCi/g 0.4768	1.00	1461	1	1.845	IDENTIFIED	2.676	<input type="checkbox"/>	<input type="checkbox"/>	
Radium-224	INT	3.446	0.5794	pCi/g 1.002	Y	241.6	1	1.707	IDENTIFIED	16.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Radium-226	✓	0.8903	0.08711	pCi/g 0.105	Y	609.7	4	1.415	IDENTIFIED	8.048	<input type="checkbox"/>	<input type="checkbox"/>	
Radium-228	LA	1.448	0.1662	pCi/g 0.4848	0.500	0	12	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Data rejected due to low abundance.
Strontium-85	LA	0.07565	0.02065	pCi/g 0.06843	Y	0	12	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Data rejected due to low abundance.
Thallium-208	✓	0.5125	0.04906	pCi/g 0.05632	0.080	583.5	1	1.282	IDENTIFIED	8.076	<input type="checkbox"/>	<input type="checkbox"/>	
Thorium-228	NR	1.595	0.1016	pCi/g 0.08944	N	238.7	4	1.158	IDENTIFIED	3.51	<input type="checkbox"/>	<input type="checkbox"/>	
Thorium-230	NR	0.8903	0.08711	pCi/g 0.105	N	609.7	4	1.415	IDENTIFIED	8.048	<input type="checkbox"/>	<input type="checkbox"/>	
Thorium-232	—	1.448	0.1662	pCi/g 0.4848	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>	<input type="checkbox"/>	
Tin-126	NR	0.325	0.04178	pCi/g 0.105	N	87.33	3	0.9609	IDENTIFIED	11.97	<input type="checkbox"/>	<input type="checkbox"/>	
Titanium-44	—	0.3441	0.02556	pCi/g 0.07313	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>	<input type="checkbox"/>	
Uranium-234	NR	0.8903	0.08711	pCi/g 0.105	N	609.7	4	1.415	IDENTIFIED	8.048	<input type="checkbox"/>	<input type="checkbox"/>	
Zirconium-97	HE	1.04E+06	8.66E+05	pCi/g 0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue	
245691001	25-JAN-10 12:00	09-FEB-10 13:25	15.1	SAMPLE	LOAD	1	LANL	LANL01004KEL		N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.587	0.1648	pCi/g 0.1877	N	911.6	3	1.419	IDENTIFIED	8.714	<input type="checkbox"/>	
Americium-243	INT	0.397	0.04999	pCi/g 0.09564	N	74.86	1	1.617	IDENTIFIED	11.95	<input type="checkbox"/>	
Annihilation Rad.	—	0.1569	0.03382	pCi/g 0.04611	N	510.7	1	1.565	IDENTIFIED	21.35	<input type="checkbox"/>	
Bismuth-211	INT	4.189	0.2621	pCi/g 0.3105	Y	351.8	4	1.308	IDENTIFIED	5.382	<input checked="" type="checkbox"/>	UI
Bismuth-212	—	1.141	0.2384	pCi/g 0.6426	N	0	9	0	FAIL_ABUND 0		<input type="checkbox"/>	
Bismuth-214	✓	1.079	0.09597	pCi/g 0.1186	0.200	609.4	4	1.595	IDENTIFIED	7.976	<input type="checkbox"/>	
Cadmium-109	INT	2.224	0.474	pCi/g 1.401	Y	87.22	3	1.245	IDENTIFIED	20.84	<input checked="" type="checkbox"/>	UI
Cerium-143	—	1046	147.8	pCi/g 0	N	0	9	0	SHORT_HLIF 0		<input type="checkbox"/>	
Cesium-134	LA	0.2486	0.04167	pCi/g 0.1002	0.100	0	9	0	FAIL_ABUND 0		<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gross Gamma	—	9.137	1.378	pCi/g 3.934	N		0				<input type="checkbox"/>	
Iodine-133	HE	1534	2775	pCi/g 0	N	0	9	0	SHORT_HLIF 0		<input type="checkbox"/>	
Lead-212	✓	1.531	0.07866	pCi/g 0.09601	0.100	238.5	4	1.309	IDENTIFIED	3.658	<input type="checkbox"/>	
Lead-214	✓	1.457	0.09878	pCi/g 0.1082	0.100	351.8	4	1.308	IDENTIFIED	5.382	<input type="checkbox"/>	

Neptunium-237	HE	0.642	0.152	pCi/g 0.4217	N	87.22	3	1.245	IDENTIFIED	20.84	<input type="checkbox"/>	
Niobium-95m	HE	0.3377	0.0779	pCi/g 0.2493	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>	
Polonium-212	NR	1.531	0.07866	pCi/g 0.09601	N	238.5	4	1.309	IDENTIFIED	3.658	<input type="checkbox"/>	
Polonium-214	NR	1.457	0.09878	pCi/g 0.1082	N	351.8	4	1.308	IDENTIFIED	5.382	<input type="checkbox"/>	
Polonium-216	NR	1.531	0.07866	pCi/g 0.09601	N	238.5	4	1.309	IDENTIFIED	3.658	<input type="checkbox"/>	
Polonium-218	NR	1.457	0.09878	pCi/g 0.1082	N	351.8	4	1.308	IDENTIFIED	5.382	<input type="checkbox"/>	
Potassium-40	✓	24.27	1.211	pCi/g 0.5126	1.00	1461	1	2.087	IDENTIFIED	3.322	<input type="checkbox"/>	
Radium-224	INT	4.255	0.5646	pCi/g 1.092	Y	241.6	1	1.691	IDENTIFIED	12.96	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.079	0.09597	pCi/g 0.1186	Y	609.4	4	1.595	IDENTIFIED	7.976	<input type="checkbox"/>	
Radium-228	✓	1.587	0.1648	pCi/g 0.1877	0.500	911.6	3	1.419	IDENTIFIED	8.714	<input type="checkbox"/>	
Sodium-24	HE	16450	3.20E+05	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.5426	0.04529	pCi/g 0.06274	0.080	583.3	1	1.415	IDENTIFIED	7.621	<input type="checkbox"/>	
Thorium-228	NR	1.554	0.07985	pCi/g 0.09746	N	238.5	4	1.309	IDENTIFIED	3.658	<input type="checkbox"/>	
Thorium-230	NR	1.079	0.09597	pCi/g 0.1186	N	609.4	4	1.595	IDENTIFIED	7.976	<input type="checkbox"/>	
Thorium-232	NR	1.587	0.1648	pCi/g 0.1877	N	911.6	3	1.419	IDENTIFIED	8.714	<input type="checkbox"/>	
Thorium-234	✓	4.659	1.226	pCi/g 2.208	2.00	63.47	2	1.131	IDENTIFIED	24.81	<input type="checkbox"/>	
Tin-126	HE	0.2186	0.0466	pCi/g 0.1383	N	87.22	3	1.245	IDENTIFIED	20.84	<input type="checkbox"/>	
Titanium-44	—	0.4039	0.03173	pCi/g 0.08857	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	—	13.871	3.65E-06	ug/g 3.288	N	0					<input type="checkbox"/>	
Tungsten-181	HE	1.012	0.2237	pCi/g 0.73	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>	
Uranium-234	NR	1.079	0.09597	pCi/g 0.1186	N	609.4	4	1.595	IDENTIFIED	7.976	<input type="checkbox"/>	
Uranium-238	HE	4.659	1.226	pCi/g 2.208	N	63.47	2	1.131	IDENTIFIED	24.81	<input type="checkbox"/>	
Zirconium-97	—	4.24E+06	9.86E+05	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue	
245691002	25-JAN-10 12:00	09-FEB-10 15:21	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL		N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy	***FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.476	0.154	pCi/g 0.1801	N	911.5	3	1.71	IDENTIFIED	8.066	<input type="checkbox"/>	
Americium-243	INT	0.3854	0.03718	pCi/g 0.07472	N	74.82	1	1.337	IDENTIFIED	8.741	<input type="checkbox"/>	
Annihilation Rad.	—	0.124	0.02569	pCi/g 0.04036	N	510.8	1	2.889	IDENTIFIED	20.11	<input type="checkbox"/>	
Bismuth-211	INT	4.002	0.2893	pCi/g 0.2838	Y	351.9	4	1.505	IDENTIFIED	4.295	<input checked="" type="checkbox"/>	UI
Bismuth-212	—	1.002	0.2018	pCi/g 0.5555	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.196	0.0987	pCi/g 0.09358	0.200	609.3	4	1.738	IDENTIFIED	5.853	<input type="checkbox"/>	
Cadmium-109	INT	3.836	0.454	pCi/g 1.031	Y	87.24	3	1.245	IDENTIFIED	10.86	<input checked="" type="checkbox"/>	UI
Cerium-143	—	787.5	123.7	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.08537	0.02315	pCi/g 0.07359	0.100	0	9	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gross Gamma	—	9.858	1.374	pCi/g 1.94	N	0					<input type="checkbox"/>	
Krypton-85	—	21.85	3.882	pCi/g 12.55	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>	
Lead-212	✓	1.681	0.121	pCi/g 0.0781	0.100	238.7	4	1.257	IDENTIFIED	2.853	<input type="checkbox"/>	
Lead-214	✓	1.392	0.107	pCi/g 0.0989	0.100	351.9	4	1.505	IDENTIFIED	4.295	<input type="checkbox"/>	
Lutetium-177	HE	2.632	0.6664	pCi/g 1.856	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237	INT	1.107	0.1738	pCi/g 0.3017	N	87.24	3	1.245	IDENTIFIED	10.86	<input type="checkbox"/>	
Niobium-97	HE	73750	39190	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Polonium-212	NR	1.681	0.121	pCi/g 0.0781	N	238.7	4	1.257	IDENTIFIED	2.853	<input type="checkbox"/>	
Polonium-214	NR	1.392	0.107	pCi/g 0.0989	N	351.9	4	1.505	IDENTIFIED	4.295	<input type="checkbox"/>	
Polonium-216	NR	1.681	0.121	pCi/g 0.0781	N	238.7	4	1.257	IDENTIFIED	2.853	<input type="checkbox"/>	
Polonium-218	NR	1.392	0.107	pCi/g 0.0989	N	351.9	4	1.505	IDENTIFIED	4.295	<input type="checkbox"/>	

Potassium-40	✓	36.3	1.822	pCi/g 0.4112	1.00	1461	1	2.533	IDENTIFIED	2.054	<input type="checkbox"/>	
Radium-224	INT	4.695	0.5119	pCi/g 0.8877	Y	241.6	1	1.855	IDENTIFIED	8.919	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.196	0.0987	pCi/g 0.09358	Y	609.3	4	1.738	IDENTIFIED	5.853	<input type="checkbox"/>	
Radium-228	✓	1.476	0.154	pCi/g 0.1801	0.500	911.5	3	1.71	IDENTIFIED	8.066	<input type="checkbox"/>	
Strontium-85	LA	0.1121	0.01991	pCi/g 0.06436	Y	0	9	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.5275	0.044	pCi/g 0.05046	0.080	583.3	1	1.583	IDENTIFIED	6.339	<input type="checkbox"/>	
Thorium-228	NR	1.706	0.1228	pCi/g 0.07929	N	238.7	4	1.257	IDENTIFIED	2.853	<input type="checkbox"/>	
Thorium-230	NR	1.196	0.0987	pCi/g 0.09358	N	609.3	4	1.738	IDENTIFIED	5.853	<input type="checkbox"/>	
Thorium-232	NR	1.476	0.154	pCi/g 0.1801	N	911.5	3	1.71	IDENTIFIED	8.066	<input type="checkbox"/>	
Tin-126	NR	0.377	0.04462	pCi/g 0.1017	N	87.24	3	1.245	IDENTIFIED	10.86	<input type="checkbox"/>	
Titanium-44	—	0.3627	0.02499	pCi/g 0.06891	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Uranium-234	NR	1.196	0.0987	pCi/g 0.09358	N	609.3	4	1.738	IDENTIFIED	5.853	<input type="checkbox"/>	
Zirconium-97	—	3.16E+06	9.43E+05	pCi/g 0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
245691003	25-JAN-10 12:00	09-FEB-10 14:46	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.868	0.1821	pCi/g 0.258	N	911	3	1.829 IDENTIFIED	7.718	<input type="checkbox"/>	
Americium-243	INT	0.393	0.02759	pCi/g 0.04397	N	74.82	1	0.8167 IDENTIFIED	4.843	<input type="checkbox"/>	
Annihilation Rad.	—	0.1216	0.03707	pCi/g 0.04522	N	510.9	1	2.221 IDENTIFIED	30.05	<input type="checkbox"/>	
Bismuth-211	INT	4.161	0.2971	pCi/g 0.2937	Y	351.9	4	1.087 IDENTIFIED	4.829	<input checked="" type="checkbox"/>	
Bismuth-212	—	1.499	0.2696	pCi/g 0.7355	N	0	9	0 FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.251	0.1061	pCi/g 0.1108	0.200	609.1	4	1.452 IDENTIFIED	5.962	<input type="checkbox"/>	
Cadmium-109	INT	4.616	0.3751	pCi/g 0.694	Y	87.25	3	1.226 IDENTIFIED	6.114	<input checked="" type="checkbox"/>	
Cerium-143	—	399.1	83.78	pCi/g 0	N	0	9	0 SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.09971	0.03273	pCi/g 0.09506	0.100	0	9	0 FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gold-195	HE	0.3655	0.1334	pCi/g 0.2788	N	0	9	0 FAIL_ABUND	0	<input type="checkbox"/>	
Gross Gamma	—	10.65	1.449	pCi/g 3.291	N	0				<input type="checkbox"/>	
Iodine-135	HE	3.79E+15	3.18E+15	pCi/g 0	N	0	9	0 SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.802	0.1156	pCi/g 0.07788	0.100	238.6	4	0.9737 IDENTIFIED	2.955	<input type="checkbox"/>	
Lead-214	✓	1.447	0.11	pCi/g 0.1009	0.100	351.9	4	1.087 IDENTIFIED	4.829	<input type="checkbox"/>	
Lutetium-177	HE	2.832	0.7209	pCi/g 1.734	N	0	9	0 FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237	INT	1.332	0.175	pCi/g 0.2086	N	87.25	3	1.226 IDENTIFIED	6.114	<input type="checkbox"/>	
Polonium-212	NR	1.802	0.1156	pCi/g 0.07788	N	238.6	4	0.9737 IDENTIFIED	2.955	<input type="checkbox"/>	
Polonium-214	NR	1.447	0.11	pCi/g 0.1009	N	351.9	4	1.087 IDENTIFIED	4.829	<input type="checkbox"/>	
Polonium-216	NR	1.802	0.1156	pCi/g 0.07788	N	238.6	4	0.9737 IDENTIFIED	2.955	<input type="checkbox"/>	
Polonium-218	NR	1.447	0.11	pCi/g 0.1009	N	351.9	4	1.087 IDENTIFIED	4.829	<input type="checkbox"/>	
Potassium-40	✓	35.65	1.8	pCi/g 0.528	1.00	1461	1	2.039 IDENTIFIED	2.712	<input type="checkbox"/>	
Radium-224	INT	5.248	0.6167	pCi/g 0.8873	Y	241.5	1	1.662 IDENTIFIED	10.51	<input checked="" type="checkbox"/>	
Radium-226	✓	1.251	0.1061	pCi/g 0.1108	Y	609.1	4	1.452 IDENTIFIED	5.962	<input type="checkbox"/>	
Radium-228	✓	1.868	0.1821	pCi/g 0.258	0.500	911	3	1.829 IDENTIFIED	7.718	<input type="checkbox"/>	
Technetium-99m	—	4.81E+15	0	pCi/g 0	N	0	9	0 SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.604	0.0525	pCi/g 0.06062	0.080	583	1	1.372 IDENTIFIED	6.617	<input type="checkbox"/>	
Thorium-228	NR	1.829	0.1173	pCi/g 0.07907	N	238.6	4	0.9737 IDENTIFIED	2.955	<input type="checkbox"/>	
Thorium-230	NR	1.251	0.1061	pCi/g 0.1108	N	609.1	4	1.452 IDENTIFIED	5.962	<input type="checkbox"/>	
Thorium-232	NR	1.868	0.1821	pCi/g 0.258	N	911	3	1.829 IDENTIFIED	7.718	<input type="checkbox"/>	
Thorium-234	✓	1.756	0.3942	pCi/g 0.7498	2.00	63.39	2	0.9652 IDENTIFIED	20.43	<input type="checkbox"/>	



Uranium-238 *NR* 2.287 0.5541 pCi/g 1.107 N 63.41 2 0.8759 IDENTIFIED 22.36 ☐ ☐

Zirconium-97 *—* 2.83E+06 1.20E+06 pCi/g 0 N 0 9 0 SHORT\_HLIF 0 ☐ ☐

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
245691005	25-JAN-10 12:00	09-FEB-10 15:24	15.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>✓</i>	1.708	0.187	pCi/g	0.2162	N	910.3 3	1.574	IDENTIFIED 9.044	<input type="checkbox"/>	<input type="checkbox"/>
Americium-243 <i>INT</i>	0.3685	0.04502	pCi/g	0.1144	N	74.53 1	0.8903	IDENTIFIED 10.92	<input type="checkbox"/>	<input type="checkbox"/>
Annihilation Rad. <i>—</i>	0.1562	0.03158	pCi/g	0.04412	N	510.2 1	1.718	IDENTIFIED 19.96	<input type="checkbox"/>	<input type="checkbox"/>
Bismuth-211 <i>INT</i>	4.194	0.2751	pCi/g	0.3467	Y	351.5 4	1.305	IDENTIFIED 5.452	<input checked="" type="checkbox"/>	<i>UI</i> <input type="checkbox"/>
Bismuth-212 HE	1.131	0.2637	pCi/g	0.7137	N	0 7 0	FAIL_ABUND 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bismuth-214 <i>✓</i>	1.279	0.09461	pCi/g	0.1155	0.200	608.7 4	1.32	IDENTIFIED 6.345	<input type="checkbox"/>	<input type="checkbox"/>
Cadmium-109 <i>INT</i>	4.112	0.6578	pCi/g	1.655	Y	87 3	1.218	IDENTIFIED 14.97	<input checked="" type="checkbox"/>	<i>UI</i> <input type="checkbox"/>
Cerium-143 <i>—</i>	1397	184.9	pCi/g	0	N	0 7 0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cesium-135 HE	0.3151	0.09132	pCi/g	0.3024	N	0 7 0	NOT_IDENTI 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Gamma <i>—</i>	11.04	1.509	pCi/g	3.509	N	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Iodine-123 HE	2.00E+06	3.09E+06	pCi/g	0	N	0 7 0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead-212 <i>✓</i>	1.853	0.09213	pCi/g	0.09637	0.100	238.3 4	1.129	IDENTIFIED 3.217	<input type="checkbox"/>	<input type="checkbox"/>
Lead-214 <i>✓</i>	1.459	0.103	pCi/g	0.1209	0.100	351.5 4	1.305	IDENTIFIED 5.452	<input type="checkbox"/>	<input type="checkbox"/>
Lutetium-177 HE	3.045	0.9315	pCi/g	2.185	N	0 7 0	FAIL_ABUND 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mercury-203 <i>↑PW</i>	0.1353	0.03715	pCi/g	0.06772	0.100	277.8 1	3.939	IDENTIFIED 27.26	<input checked="" type="checkbox"/>	<i>UI</i> Data rejected due to high peak-width. <input type="checkbox"/>
Neptunium-237 <i>INT</i>	1.187	0.2259	pCi/g	0.4906	N	87 3	1.218	IDENTIFIED 14.97	<input type="checkbox"/>	<input type="checkbox"/>
Niobium-95 <i>INT</i>	0.1512	0.02944	pCi/g	0.06892	N	767.2 1	1.835	IDENTIFIED 19.16	<input type="checkbox"/>	<input type="checkbox"/>
Polonium-212 <i>NR</i>	1.853	0.09213	pCi/g	0.09637	N	238.3 4	1.129	IDENTIFIED 3.217	<input type="checkbox"/>	<input type="checkbox"/>
Polonium-214 <i>NR</i>	1.459	0.103	pCi/g	0.1209	N	351.5 4	1.305	IDENTIFIED 5.452	<input type="checkbox"/>	<input type="checkbox"/>
Polonium-216 <i>NR</i>	1.853	0.09213	pCi/g	0.09637	N	238.3 4	1.129	IDENTIFIED 3.217	<input type="checkbox"/>	<input type="checkbox"/>
Polonium-218 <i>NR</i>	1.459	0.103	pCi/g	0.1209	N	351.5 4	1.305	IDENTIFIED 5.452	<input type="checkbox"/>	<input type="checkbox"/>
Potassium-40 <i>✓</i>	39.72	2.009	pCi/g	0.4808	1.00	1459 1	2.013	IDENTIFIED 2.649	<input type="checkbox"/>	<input type="checkbox"/>
Radium-224 <i>INT</i>	4.398	0.6972	pCi/g	1.096	Y	241.3 1	1.668	IDENTIFIED 15.55	<input checked="" type="checkbox"/>	<i>UI</i> <input type="checkbox"/>
Radium-226 <i>✓</i>	1.279	0.09461	pCi/g	0.1155	Y	608.7 4	1.32	IDENTIFIED 6.345	<input type="checkbox"/>	<input type="checkbox"/>
Radium-228 <i>✓</i>	1.708	0.187	pCi/g	0.2162	0.500	910.3 3	1.574	IDENTIFIED 9.044	<input type="checkbox"/>	<input type="checkbox"/>
Thallium-208 <i>✓</i>	0.6219	0.04789	pCi/g	0.06024	0.080	582.6 1	1.416	IDENTIFIED 6.928	<input type="checkbox"/>	<input type="checkbox"/>
Thorium-228 <i>NR</i>	1.881	0.09354	pCi/g	0.09784	N	238.3 4	1.129	IDENTIFIED 3.217	<input type="checkbox"/>	<input type="checkbox"/>
Thorium-230 <i>NR</i>	1.278	0.09461	pCi/g	0.1155	N	608.7 4	1.32	IDENTIFIED 6.345	<input type="checkbox"/>	<input type="checkbox"/>
Thorium-232 <i>NR</i>	1.708	0.187	pCi/g	0.2162	N	910.3 3	1.574	IDENTIFIED 9.044	<input type="checkbox"/>	<input type="checkbox"/>
Tin-126 <i>NR</i>	0.4042	0.06465	pCi/g	0.1713	N	87 3	1.218	IDENTIFIED 14.97	<input type="checkbox"/>	<input type="checkbox"/>
Titanium-44 <i>—</i>	0.1564	0.026	pCi/g	0.08525	N	0 7 0	NOT_IDENTI 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Uranium <i>—</i>	6.5227	2.82E-06	ug/g	4.9371	N	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uranium-234 <i>NR</i>	1.278	0.09461	pCi/g	0.1155	N	608.7 4	1.32	IDENTIFIED 6.345	<input type="checkbox"/>	<input type="checkbox"/>
Zirconium-97 <i>—</i>	5.87E+06	1.12E+06	pCi/g	0	N	0 7 0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
245691006	25-JAN-10 12:00	09-FEB-10 15:24	15.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>✓</i>	1.319	0.166	pCi/g	0.2637	N	911.7 3	1.808	IDENTIFIED 11.46	<input type="checkbox"/>	<input type="checkbox"/>
Americium-243 <i>INT</i>	0.2598	0.02847	pCi/g	0.06131	N	74.82 1	1.087	IDENTIFIED 10.07	<input type="checkbox"/>	<input type="checkbox"/>
Annihilation Rad. HE	0.1278	0.0418	pCi/g	0.05432	N	511.1 1	2.086	IDENTIFIED 32.52	<input type="checkbox"/>	<input type="checkbox"/>

Barium-137m	✓	0.2995	0.03705	pCi/g 0.06852	N	662.1	2	1.165	IDENTIFIED	11.68	<input type="checkbox"/>	
Bismuth-210	HE	1.548	0.418	pCi/g 0.8229	N	46.27	3	1.297	IDENTIFIED	26.7	<input type="checkbox"/>	
Bismuth-211	INT	3.471	0.303	pCi/g 0.346	Y	352	4	1.387	IDENTIFIED	7.937	<input checked="" type="checkbox"/>	UI
Bismuth-212	HE	0.8429	0.2162	pCi/g 0.7143	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.186	0.09988	pCi/g 0.1293	0.200	609.4	4	1.55	IDENTIFIED	7.003	<input type="checkbox"/>	
Cadmium-109	INT	2.838	0.3768	pCi/g 0.9277	Y	87.09	3	1.379	IDENTIFIED	12.67	<input checked="" type="checkbox"/>	UI
Cerium-143	—	522	101.3	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-137	✓	0.3166	0.03917	pCi/g 0.07244	0.100	662.1	2	1.165	IDENTIFIED	11.68	<input type="checkbox"/>	
Gross Gamma	—	8.159	1.269	pCi/g 3.08	N	0					<input type="checkbox"/>	
Iodine-123	HE	1.01E+06	3.12E+06	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-133	HE	2953	3318	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	
Krypton-85	HE	24.71	4.804	pCi/g 16.71	N	0	11	0	NOT_IDENTI	0	<input type="checkbox"/>	
Lead-210	HE	1.548	0.418	pCi/g 0.8229	N	46.27	3	1.297	IDENTIFIED	26.7	<input type="checkbox"/>	
Lead-212	✓	1.343	0.08079	pCi/g 0.09345	0.100	238.7	4	1.357	IDENTIFIED	3.943	<input type="checkbox"/>	
Lead-214	✓	1.207	0.11	pCi/g 0.1207	0.100	352	4	1.387	IDENTIFIED	7.937	<input type="checkbox"/>	
Lutetium-177	HE	2.496	0.6666	pCi/g 2.022	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237	INT	0.8191	0.1377	pCi/g 0.3002	N	87.09	3	1.379	IDENTIFIED	12.67	<input type="checkbox"/>	
Niobium-97	HE	9939	65120	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	
Polonium-210	HE	1.548	0.4168	pCi/g 0.8229	N	46.27	3	1.297	IDENTIFIED	26.7	<input type="checkbox"/>	
Polonium-212	NR	1.343	0.08079	pCi/g 0.09345	N	238.7	4	1.357	IDENTIFIED	3.943	<input type="checkbox"/>	
Polonium-214	NR	1.207	0.11	pCi/g 0.1207	N	352	4	1.387	IDENTIFIED	7.937	<input type="checkbox"/>	
Polonium-216	NR	1.343	0.08079	pCi/g 0.09345	N	238.7	4	1.357	IDENTIFIED	3.943	<input type="checkbox"/>	
Polonium-218	NR	1.207	0.11	pCi/g 0.1207	N	352	4	1.387	IDENTIFIED	7.937	<input type="checkbox"/>	
Potassium-40	✓	21.26	1.023	pCi/g 0.6838	1.00	1461	1	2.427	IDENTIFIED	3.719	<input type="checkbox"/>	
Radium-224	INT	3.145	0.5075	pCi/g 1.064	Y	241.7	1	1.559	IDENTIFIED	15.65	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.186	0.09988	pCi/g 0.1293	Y	609.4	4	1.55	IDENTIFIED	7.003	<input type="checkbox"/>	
Radium-228	✓	1.319	0.166	pCi/g 0.2637	0.500	911.7	3	1.808	IDENTIFIED	11.46	<input type="checkbox"/>	
Strontium-85	LA	0.1267	0.02464	pCi/g 0.08571	Y	0	11	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-200	HE	72.73	249.2	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.4519	0.04396	pCi/g 0.06269	0.080	583.3	1	1.224	IDENTIFIED	8.805	<input type="checkbox"/>	
Thorium-228	NR	1.364	0.08202	pCi/g 0.09487	N	238.7	4	1.357	IDENTIFIED	3.943	<input type="checkbox"/>	
Thorium-230	NR	1.186	0.09988	pCi/g 0.1293	N	609.4	4	1.55	IDENTIFIED	7.003	<input type="checkbox"/>	
Thorium-232	NR	1.319	0.166	pCi/g 0.2637	N	911.7	3	1.808	IDENTIFIED	11.46	<input type="checkbox"/>	
Thorium-234	✓	5.23	0.7507	pCi/g 1.009	2.00	63.14	2	1.226	IDENTIFIED	11.04	<input type="checkbox"/>	
Tin-126	NR	0.279	0.03704	pCi/g 0.09107	N	87.09	3	1.379	IDENTIFIED	12.67	<input type="checkbox"/>	
Titanium-44	—	0.3065	0.02189	pCi/g 0.05656	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	—	15.791	2.23E-06	ug/g 1.5042	N	0					<input type="checkbox"/>	
Uranium-234	NR	1.186	0.09988	pCi/g 0.1293	N	609.4	4	1.55	IDENTIFIED	7.003	<input type="checkbox"/>	
Uranium-235	NVP	0.5033	0.1799	pCi/g 0.3359	0.500	143.7	1	1.358	IDENTIFIED	34.53	<input checked="" type="checkbox"/>	UI
Uranium-238	NR	5.23	0.7507	pCi/g 1.009	N	63.14	2	1.226	IDENTIFIED	11.04	<input type="checkbox"/>	
Zirconium-97	HE	6.33E+05	1.14E+06	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
245691007	25-JAN-10 12:00	09-FEB-10 15:24	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL		N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.376	0.1688	pCi/g 0.1997	N	911.3	3	1.563	IDENTIFIED	10.74	<input type="checkbox"/> <input type="text"/>
Americium-243	INT	0.3081	0.02963	pCi/g 0.07474	N	74.88	1	0.9069	IDENTIFIED	8.675	<input type="checkbox"/> <input type="text"/>





Cerium-143	—	985.4	141.7	pCi/g 0	N	0	7	0	SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-135	HE	0.3636	0.08849	pCi/g 0.2997	N	0	7	0	NOT_IDENTI 0	<input type="checkbox"/>	
Gross Gamma	—	11.23	1.557	pCi/g 4.14	N		0			<input type="checkbox"/>	
Lead-212	✓	1.734	0.0857	pCi/g 0.0976	0.100	238.5	4	1.121	IDENTIFIED 3.44	<input type="checkbox"/>	
Lead-214	✓	1.552	0.1026	pCi/g 0.1171	0.100	351.7	4	1.286	IDENTIFIED 5.198	<input type="checkbox"/>	
Lutetium-177	HE	2.418	0.8128	pCi/g 2.109	N	0	7	0	FAIL_ABUND 0	<input type="checkbox"/>	
Neptunium-237	INT	1.274	0.2231	pCi/g 0.3745	N	87	3	1.385	IDENTIFIED 13.63	<input type="checkbox"/>	
Niobium-95	HE	0.1275	0.03333	pCi/g 0.07681	N	767.3	1	1.251	IDENTIFIED 25.88	<input type="checkbox"/>	
Niobium-97	HE	75600	53370	pCi/g 0	N	0	7	0	SHORT_HLIF 0	<input type="checkbox"/>	
Polonium-212	NR	1.734	0.0857	pCi/g 0.0976	N	238.5	4	1.121	IDENTIFIED 3.44	<input type="checkbox"/>	
Polonium-214	NR	1.552	0.1026	pCi/g 0.1171	N	351.7	4	1.286	IDENTIFIED 5.198	<input type="checkbox"/>	
Polonium-216	NR	1.734	0.0857	pCi/g 0.0976	N	238.5	4	1.121	IDENTIFIED 3.44	<input type="checkbox"/>	
Polonium-218	NR	1.552	0.1026	pCi/g 0.1171	N	351.7	4	1.286	IDENTIFIED 5.198	<input type="checkbox"/>	
Potassium-40	✓	38.69	1.727	pCi/g 0.3156	1.00	1460	1	1.927	IDENTIFIED 2.685	<input type="checkbox"/>	
Radium-224	INT	4.202	0.499	pCi/g 1.111	Y	241.3	1	1.59	IDENTIFIED 11.55	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.302	0.1001	pCi/g 0.1138	Y	609	4	1.439	IDENTIFIED 6.497	<input type="checkbox"/>	
Radium-228	✓	1.871	0.19	pCi/g 0.237	0.500	910.9	3	1.515	IDENTIFIED 8.544	<input type="checkbox"/>	
Thallium-200	—	475.5	234.9	pCi/g 0	N	0	7	0	SHORT_HLIF 0	<input type="checkbox"/>	
Thallium-208	✓	0.593	0.05441	pCi/g 0.06066	0.080	583	1	1.465	IDENTIFIED 8.45	<input type="checkbox"/>	
Thorium-228	NR	1.76	0.087	pCi/g 0.09908	N	238.5	4	1.121	IDENTIFIED 3.44	<input type="checkbox"/>	
Thorium-230	NR	1.302	0.1001	pCi/g 0.1138	N	609	4	1.439	IDENTIFIED 6.497	<input type="checkbox"/>	
Thorium-232	NR	1.871	0.19	pCi/g 0.237	N	910.9	3	1.515	IDENTIFIED 8.544	<input type="checkbox"/>	
Tin-126	NR	0.4339	0.06138	pCi/g 0.126	N	87	3	1.385	IDENTIFIED 13.63	<input type="checkbox"/>	
Titanium-44	—	0.4111	0.03052	pCi/g 0.08216	N	0	7	0	FAIL_ABUND 0	<input type="checkbox"/>	
Total Uranium	—	5.5072	2.92E-06	ug/g 3.6015	N		0			<input type="checkbox"/>	
Uranium-234	NR	1.302	0.1001	pCi/g 0.1138	N	609	4	1.439	IDENTIFIED 6.497	<input type="checkbox"/>	
Zirconium-97	—	6.02E+06	1.13E+06	pCi/g 0	N	0	7	0	SHORT_HLIF 0	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
245691009	25-JAN-10 12:00	09-FEB-10 15:32	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.495	0.1537	pCi/g 0.1672	N	910.9	3	1.975	IDENTIFIED 7.866	<input type="checkbox"/>	
Americium-243	INT	0.3009	0.0548	pCi/g 0.1417	N	75.05	1	1.185	IDENTIFIED 17.73	<input type="checkbox"/>	
Annihilation Rad.	—	0.09763	0.02817	pCi/g 0.03795	N	510.7	1	2.007	IDENTIFIED 28.67	<input type="checkbox"/>	
Bismuth-211	INT	3.701	0.2262	pCi/g 0.2806	Y	351.9	4	1.346	IDENTIFIED 5.202	<input checked="" type="checkbox"/>	UI
Bismuth-212	✓	1.102	0.1903	pCi/g 0.3659	N	726.9	1	2.015	IDENTIFIED 16.53	<input type="checkbox"/>	
Bismuth-214	✓	1.153	0.08338	pCi/g 0.09145	0.200	609.1	4	1.636	IDENTIFIED 5.691	<input type="checkbox"/>	
Cadmium-109	INT	2.47	0.7079	pCi/g 2.287	Y	87.3	3	0.998	IDENTIFIED 28.29	<input checked="" type="checkbox"/>	UI
Cerium-141	—	0.3099	0.04053	pCi/g 0.1349	N	0	14	0	NOT_IDENTI 0	<input type="checkbox"/>	
Cerium-143	—	593.5	98.17	pCi/g 0	N	0	14	0	SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134	LA	0.1101	0.02348	pCi/g 0.07723	0.100	0	14	0	NOT_IDENTI 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gadolinium-153	—	0.8958	0.09281	pCi/g 0.224	N	0	14	0	FAIL_ABUND 0	<input type="checkbox"/>	
Gold-195	—	2.608	0.2703	pCi/g 0.6725	N	0	14	0	FAIL_ABUND 0	<input type="checkbox"/>	
Gross Gamma	✓	17.02	1.946	pCi/g 4.249	N		0			<input type="checkbox"/>	
Iodine-123	HE	1.11E+06	3.30E+06	pCi/g 0	N	0	14	0	SHORT_HLIF 0	<input type="checkbox"/>	
Iodine-133	HE	3515	2460	pCi/g 0	N	0	14	0	SHORT_HLIF 0	<input type="checkbox"/>	
Krypton-85	HE	12.86	3.39	pCi/g 11.06	N	0	14	0	NOT_IDENTI 0	<input type="checkbox"/>	

Lead-212	✓	1.418	0.06742	pCi/g 0.08208	0.100	238.7	4	1.171	IDENTIFIED	3.14	<input type="checkbox"/>	
Lead-214	✓	1.288	0.08557	pCi/g 0.09779	0.100	351.9	4	1.346	IDENTIFIED	5.202	<input type="checkbox"/>	
Lutetium-177	NR	3.285	0.6569	pCi/g 1.468	N	209.5	1	1.292	IDENTIFIED	19.81	<input type="checkbox"/>	
Neptunium-237	HE	0.7129	0.2172	pCi/g 0.5998	N	87.3	3	0.998	IDENTIFIED	28.29	<input type="checkbox"/>	
Niobium-95	NR	0.3623	0.04343	pCi/g 0.05644	N	766.5	1	1.885	IDENTIFIED	11.08	<input type="checkbox"/>	
Polonium-212	NR	1.418	0.06742	pCi/g 0.08208	N	238.7	4	1.171	IDENTIFIED	3.14	<input type="checkbox"/>	
Polonium-214	NR	1.288	0.08557	pCi/g 0.09779	N	351.9	4	1.346	IDENTIFIED	5.202	<input type="checkbox"/>	
Polonium-216	NR	1.418	0.06742	pCi/g 0.08208	N	238.7	4	1.171	IDENTIFIED	3.14	<input type="checkbox"/>	
Polonium-218	NR	1.288	0.08557	pCi/g 0.09779	N	351.9	4	1.346	IDENTIFIED	5.202	<input type="checkbox"/>	
Potassium-40	✓	25.75	1.174	pCi/g 0.4	1.00	1460	1	2.365	IDENTIFIED	2.528	<input type="checkbox"/>	
Protactinium-234m	✓	97.34	6.985	pCi/g 5.306	N	1001	1	1.98	IDENTIFIED	4.728	<input type="checkbox"/>	
Radium-224	INT	4.245	0.5703	pCi/g 0.9328	Y	241.8	1	1.767	IDENTIFIED	13.14	<input checked="" type="checkbox"/>	
Radium-226	✓	1.153	0.08338	pCi/g 0.09145	Y	609.1	4	1.636	IDENTIFIED	5.691	<input type="checkbox"/>	
Radium-228	✓	1.495	0.1537	pCi/g 0.1672	0.500	910.9	3	1.975	IDENTIFIED	7.866	<input type="checkbox"/>	
Rhenium-183	HE	0.3124	0.09374	pCi/g 0.2125	N	0	14	0	FAIL_ABUND	0	<input type="checkbox"/>	
Sodium-24	HE	2.93E+05	3.34E+05	pCi/g 0	N	0	14	0	SHORT_HLIF	0	<input type="checkbox"/>	
Strontium-85	LA	0.06596	0.01739	pCi/g 0.05673	Y	0	14	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.45	0.041	pCi/g 0.0478	0.080	582.9	1	1.633	IDENTIFIED	8.226	<input type="checkbox"/>	
Thorium-228	NR	1.439	0.06844	pCi/g 0.08333	N	238.7	4	1.171	IDENTIFIED	3.14	<input type="checkbox"/>	
Thorium-230	NR	1.153	0.08338	pCi/g 0.09145	N	609.1	4	1.636	IDENTIFIED	5.691	<input type="checkbox"/>	
Thorium-232	NR	1.495	0.1537	pCi/g 0.1672	N	910.9	3	1.975	IDENTIFIED	7.866	<input type="checkbox"/>	
Thorium-234	✓	69.57	6.481	pCi/g 3.484	2.00	63.43	2	1.005	IDENTIFIED	3.008	<input type="checkbox"/>	
Tin-126	HE	0.2428	0.06958	pCi/g 0.2289	N	87.3	3	0.998	IDENTIFIED	28.29	<input type="checkbox"/>	
Titanium-44	—	0.3276	0.03434	pCi/g 0.1026	N	0	14	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	—	207.56	1.93E-05	ug/g 5.1856	N	0					<input type="checkbox"/>	
Tungsten-181	—	4.533	0.3831	pCi/g 1.258	N	0	14	0	NOT_IDENTI	0	<input type="checkbox"/>	
Uranium-231	NR	4.924	1.187	pCi/g 2.428	N	94.75	1	1.024	IDENTIFIED	23.77	<input type="checkbox"/>	
Uranium-234	NR	1.153	0.08338	pCi/g 0.09145	N	609.1	4	1.636	IDENTIFIED	5.691	<input type="checkbox"/>	
Uranium-235	✓	1.266	0.1974	pCi/g 0.3653	0.500	143.9	1	1.09	IDENTIFIED	13.32	<input type="checkbox"/>	
Uranium-238	NR	69.57	6.481	pCi/g 3.484	N	63.43	2	1.005	IDENTIFIED	3.008	<input type="checkbox"/>	
Zirconium-97	✓	4.44E+06	8.67E+05	pCi/g 0	N	0	14	0	SHORT_HLIF	0	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue		
245691010	25-JAN-10 12:00	09-FEB-10 15:33	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228 ✓	1.688	0.1764	pCi/g	0.2211	N	911.7	3	1.74	IDENTIFIED	8.791	<input type="checkbox"/>	
Americium-243 INT	0.4076	0.0507	pCi/g	0.09479	N	74.86	1	1.617	IDENTIFIED	11.79	<input type="checkbox"/>	
Annihilation Rad. —	0.1661	0.03429	pCi/g	0.04773	N	511	1	1.914	IDENTIFIED	20.43	<input type="checkbox"/>	
Bismuth-211 INT	3.939	0.2566	pCi/g	0.3158	Y	351.8	4	1.214	IDENTIFIED	5.678	<input checked="" type="checkbox"/>	UI
Bismuth-212 HE	0.971	0.2382	pCi/g	0.7034	N	0	7	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214 ✓	1.171	0.09309	pCi/g	0.1003	0.200	609.4	4	1.605	IDENTIFIED	6.907	<input type="checkbox"/>	
Cadmium-109 INT	3.495	0.4992	pCi/g	1.397	Y	87.22	3	1.216	IDENTIFIED	13.57	<input checked="" type="checkbox"/>	UI
Cerium-143 —	1061	149.2	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-135 NR	0.5541	0.1243	pCi/g	0.2468	N	269.7	1	1.332	IDENTIFIED	22.1	<input type="checkbox"/>	
Gross Gamma —	9.422	1.465	pCi/g	3.777	N	0					<input type="checkbox"/>	
Iodine-123 HE	9.43E+05	3.15E+06	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212 ✓	1.645	0.08212	pCi/g	0.09984	0.100	238.6	4	1.317	IDENTIFIED	3.45	<input type="checkbox"/>	



Polonium-218	NR	1.474	0.11	pCi/g 0.1034	N	352.1	4	1.188	IDENTIFIED	5.099	<input type="checkbox"/>	
Potassium-40	✓	35.74	1.803	pCi/g 0.5256	1.00	1461	1	1.975	IDENTIFIED	2.535	<input type="checkbox"/>	
Radium-224	ENT	5.042	0.7791	pCi/g 1.018	Y	241.5	1	1.944	IDENTIFIED	14.68	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.3	0.1107	pCi/g 0.1057	Y	609.6	4	1.503	IDENTIFIED	6.443	<input type="checkbox"/>	
Radium-228	✓	1.961	0.1804	pCi/g 0.2313	0.500	911.7	3	1.639	IDENTIFIED	6.866	<input type="checkbox"/>	
Sodium-24	HE	4.62E+05	3.17E+05	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.6083	0.05145	pCi/g 0.0545	0.080	583.6	1	1.248	IDENTIFIED	6.716	<input type="checkbox"/>	
Thorium-228	NR	1.827	0.1131	pCi/g 0.09081	N	238.7	4	1.09	IDENTIFIED	3.171	<input type="checkbox"/>	
Thorium-230	NR	1.3	0.1107	pCi/g 0.1057	N	609.6	4	1.503	IDENTIFIED	6.443	<input type="checkbox"/>	
Thorium-232	NR	1.961	0.1804	pCi/g 0.2313	N	911.7	3	1.639	IDENTIFIED	6.866	<input type="checkbox"/>	
Tin-126	NR	0.4066	0.04863	pCi/g 0.1069	N	87.39	3	1.23	IDENTIFIED	11	<input type="checkbox"/>	
Titanium-44	—	0.4088	0.02731	pCi/g 0.07493	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	—	4.2353	2.05E-06	ug/g 2.5346	N	0					<input type="checkbox"/>	
Uranium-234	NR	1.3	0.1107	pCi/g 0.1057	N	609.6	4	1.503	IDENTIFIED	6.443	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue		
245691012	25-JAN-10 12:00	09-FEB-10 15:33	15.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228	—	1.376	0.1622	pCi/g 0.4691	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Americium-243	ENT	0.391	0.05287	pCi/g 0.1115	N	74.73	1	1.418	IDENTIFIED	12.77	<input type="checkbox"/>	
Annihilation Rad.	HE	0.08224	0.03223	pCi/g 0.05209	N	510.3	1	1.277	IDENTIFIED	39.09	<input type="checkbox"/>	
Barium-137m	—	0.2676	0.028	pCi/g 0.1124	N	0	13	0	NOT_IDENTI	0	<input type="checkbox"/>	
Bismuth-211	ENT	4.249	0.2807	pCi/g 0.3398	Y	351.5	4	1.363	IDENTIFIED	5.747	<input checked="" type="checkbox"/>	UI
Bismuth-212	✓	1.374	0.2548	pCi/g 0.5042	N	726.7	1	1.923	IDENTIFIED	18.11	<input type="checkbox"/>	
Bismuth-214	✓	1.126	0.09111	pCi/g 0.119	0.200	608.7	4	1.567	IDENTIFIED	7.163	<input type="checkbox"/>	
Cadmium-109	ENT	2.836	0.4479	pCi/g 1.434	Y	87.05	3	1.248	IDENTIFIED	15.03	<input checked="" type="checkbox"/>	UI
Cerium-143	—	1132	156.6	pCi/g 0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-137	LA	0.2829	0.02961	pCi/g 0.1188	0.100	0	13	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gross Gamma	—	8.034	1.177	pCi/g 2.86	N	0					<input type="checkbox"/>	
Iodine-123	HE	1.48E+06	3.17E+06	pCi/g 0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135	HE	1.72E+15	2.96E+15	pCi/g 0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.472	0.0765	pCi/g 0.102	0.100	238.3	4	1.285	IDENTIFIED	3.752	<input type="checkbox"/>	
Lead-214	✓	1.478	0.105	pCi/g 0.1184	0.100	351.5	4	1.363	IDENTIFIED	5.747	<input type="checkbox"/>	
Lutetium-177	HE	2.534	0.6615	pCi/g 2.139	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237	ENT	0.8185	0.1544	pCi/g 0.4156	N	87.05	3	1.248	IDENTIFIED	15.03	<input type="checkbox"/>	
Niobium-95m	—	0.4549	0.08542	pCi/g 0.2795	N	0	13	0	NOT_IDENTI	0	<input type="checkbox"/>	
Polonium-212	NR	1.472	0.0765	pCi/g 0.102	N	238.3	4	1.285	IDENTIFIED	3.752	<input type="checkbox"/>	
Polonium-214	NR	1.478	0.105	pCi/g 0.1184	N	351.5	4	1.363	IDENTIFIED	5.747	<input type="checkbox"/>	
Polonium-216	NR	1.472	0.0765	pCi/g 0.102	N	238.3	4	1.285	IDENTIFIED	3.752	<input type="checkbox"/>	
Polonium-218	NR	1.478	0.105	pCi/g 0.1184	N	351.5	4	1.363	IDENTIFIED	5.747	<input type="checkbox"/>	
Potassium-40	✓	19.66	1.082	pCi/g 0.669	1.00	1459	1	2.406	IDENTIFIED	4.032	<input type="checkbox"/>	
Radium-224	ENT	4.333	0.5763	pCi/g 1.16	Y	241.4	1	1.728	IDENTIFIED	13	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.126	0.09111	pCi/g 0.119	Y	608.7	4	1.567	IDENTIFIED	7.163	<input type="checkbox"/>	
Radium-228	LA	1.376	0.1622	pCi/g 0.4691	0.500	0	13	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Sodium-24	HE	1.81E+05	3.76E+05	pCi/g 0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.4514	0.04452	pCi/g 0.05955	0.080	582.6	1	1.407	IDENTIFIED	9.315	<input type="checkbox"/>	
Thorium-228	NR	1.495	0.07766	pCi/g 0.1035	N	238.3	4	1.285	IDENTIFIED	3.752	<input type="checkbox"/>	

Thorium-230	NR	1.126	0.09111	pCi/g 0.119	N	608.7	4	1.567	IDENTIFIED	7.163	<input type="checkbox"/>	
Thorium-232	-	1.376	0.1622	pCi/g 0.4691	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Thorium-234	✓	4.762	1.161	pCi/g 2.889	2.00	63.17	2	1.148	IDENTIFIED	22.65	<input type="checkbox"/>	
Tin-126	NR	0.2787	0.04402	pCi/g 0.1418	N	87.05	3	1.248	IDENTIFIED	15.03	<input type="checkbox"/>	
Titanium-44	-	0.3696	0.0331	pCi/g 0.09529	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	-	14.279	3.45E-06	ug/g 4.3005	N		0				<input type="checkbox"/>	
Uranium-234	NR	1.126	0.09111	pCi/g 0.119	N	608.7	4	1.567	IDENTIFIED	7.163	<input type="checkbox"/>	
Uranium-238	HE	4.762	1.161	pCi/g 2.889	N	63.17	2	1.148	IDENTIFIED	22.65	<input type="checkbox"/>	
Zirconium-97	-	5.94E+06	1.28E+06	pCi/g 0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
245691013	25-JAN-10 12:00	09-FEB-10 17:37	15.2	SAMPLE	LOAD	1	LANL	LANL01004GEL		N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err (%)	Qual	Qual Comment
Actinium-228	✓	1.574	0.1598	pCi/g 0.1888	N	910.9	3	2.078	IDENTIFIED	7.698		<input type="checkbox"/>	
Americium-243	INT	0.3303	0.03878	pCi/g 0.09693	N	75.01	1	0.9572	IDENTIFIED	10.97		<input type="checkbox"/>	
Annihilation Rad.	-	0.1216	0.03014	pCi/g 0.03966	N	510.7	1	2.193	IDENTIFIED	24.55		<input type="checkbox"/>	
Bismuth-211	INT	3.962	0.2395	pCi/g 0.2825	Y	351.9	4	1.249	IDENTIFIED	5.123		<input checked="" type="checkbox"/>	
Bismuth-212	✓	1.164	0.1947	pCi/g 0.5656	N	0	12	0	FAIL_ABUND	0		<input type="checkbox"/>	
Bismuth-214	✓	1.161	0.08482	pCi/g 0.09719	0.200	609.1	4	1.368	IDENTIFIED	5.785		<input type="checkbox"/>	
Cadmium-109	INT	2.612	0.5297	pCi/g 1.535	Y	87.33	3	1.226	IDENTIFIED	19.75		<input checked="" type="checkbox"/>	
Cerium-143	-	799.4	115.9	pCi/g 0	N	0	12	0	SHORT_HLIF	0		<input type="checkbox"/>	
Cesium-134	LA	0.0766	0.02151	pCi/g 0.07596	0.100	0	12	0	NOT_IDENTI	0		<input checked="" type="checkbox"/>	Data rejected due to low abundance.
Gross Gamma	✓	10.33	1.449	pCi/g 2.608	N	0						<input type="checkbox"/>	
Iodine-123	HE	1.23E+06	2.86E+06	pCi/g 0	N	0	12	0	SHORT_HLIF	0		<input type="checkbox"/>	
Iodine-133	HE	340.4	2737	pCi/g 0	N	0	12	0	SHORT_HLIF	0		<input type="checkbox"/>	
Iodine-135	HE	1.32E+14	3.18E+15	pCi/g 0	N	0	12	0	SHORT_HLIF	0		<input type="checkbox"/>	
Krypton-85	-	19.96	3.668	pCi/g 12.35	N	0	12	0	NOT_IDENTI	0		<input type="checkbox"/>	
Lead-212	✓	1.787	0.08052	pCi/g 0.08034	0.100	238.7	4	1.209	IDENTIFIED	2.745		<input type="checkbox"/>	
Lead-214	✓	1.378	0.09075	pCi/g 0.09844	0.100	351.9	4	1.249	IDENTIFIED	5.123		<input type="checkbox"/>	
Mercury-203	INT	0.07237	0.02814	pCi/g 0.05487	0.100	277.8	1	2.017	IDENTIFIED	38.77		<input checked="" type="checkbox"/>	
Neptunium-237	NR	0.7538	0.1715	pCi/g 0.4095	N	87.33	3	1.226	IDENTIFIED	19.75		<input type="checkbox"/>	
Niobium-97	HE	64100	42730	pCi/g 0	N	0	12	0	SHORT_HLIF	0		<input type="checkbox"/>	
Polonium-212	NR	1.787	0.08052	pCi/g 0.08034	N	238.7	4	1.209	IDENTIFIED	2.745		<input type="checkbox"/>	
Polonium-214	NR	1.378	0.09075	pCi/g 0.09844	N	351.9	4	1.249	IDENTIFIED	5.123		<input type="checkbox"/>	
Polonium-216	NR	1.787	0.08052	pCi/g 0.08034	N	238.7	4	1.209	IDENTIFIED	2.745		<input type="checkbox"/>	
Polonium-218	NR	1.378	0.09075	pCi/g 0.09844	N	351.9	4	1.249	IDENTIFIED	5.123		<input type="checkbox"/>	
Potassium-40	✓	36.95	1.613	pCi/g 0.4605	1.00	1460	1	2.4	IDENTIFIED	2.154		<input type="checkbox"/>	
Radium-224	INT	4.758	0.5795	pCi/g 0.913	Y	241.7	1	1.767	IDENTIFIED	11.86		<input checked="" type="checkbox"/>	
Radium-226	✓	1.161	0.08482	pCi/g 0.09719	Y	609.1	4	1.368	IDENTIFIED	5.785		<input type="checkbox"/>	
Radium-228	✓	1.574	0.1598	pCi/g 0.1888	0.500	910.9	3	2.078	IDENTIFIED	7.698		<input type="checkbox"/>	
Strontium-85	LA	0.1025	0.01883	pCi/g 0.06339	Y	0	12	0	NOT_IDENTI	0		<input checked="" type="checkbox"/>	Data rejected due to low abundance.
Thallium-200	HE	8.687	200.7	pCi/g 0	N	0	12	0	SHORT_HLIF	0		<input type="checkbox"/>	
Thallium-208	✓	0.5316	0.03892	pCi/g 0.05034	0.080	583.1	1	1.67	IDENTIFIED	6.184		<input type="checkbox"/>	
Thorium-228	NR	1.815	0.08175	pCi/g 0.08157	N	238.7	4	1.209	IDENTIFIED	2.745		<input type="checkbox"/>	
Thorium-230	NR	1.161	0.08482	pCi/g 0.09719	N	609.1	4	1.368	IDENTIFIED	5.785		<input type="checkbox"/>	
Thorium-232	NR	1.574	0.1598	pCi/g 0.1888	N	910.9	3	2.078	IDENTIFIED	7.698		<input type="checkbox"/>	
Thorium-234	✓	2.688	1.091	pCi/g 2.504	2.00	63.37	2	1.169	IDENTIFIED	39.62		<input type="checkbox"/>	



Uranium-238 *NR* 3.585 0.6845 pCi/g 1.035 N 63.2 2 0.8312 IDENTIFIED 16.66 ☐ ☐  
 Zirconium-97 *—* 3.34E+06 1.26E+06 pCi/g 0 N 0 6 0 SHORT\_HLIF 0 ☐ ☐

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202028548		09-FEB-10 17:28	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Iodine-133 HE	0.1727	8.21	pCi/g	0	N	0	6	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Iodine-135 HE	1.76E+07	1.64E+08	pCi/g	0	N	0	6	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Niobium-97 HE	71.99	53.21	pCi/g	0	N	0	6	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Sodium-24 HE	66.58	190.9	pCi/g	0	N	0	6	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Thallium-200 HE	2.707	1.628	pCi/g	0	N	0	6	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Zirconium-97 HE	587	1021	pCi/g	0	N	0	6	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202028549	25-JAN-10 12:00	09-FEB-10 17:44	15.2	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.399	0.1465	pCi/g	0.1732	N	910.3	3	1.509	IDENTIFIED	8.458	<input type="checkbox"/> <input type="checkbox"/>
Americium-243	0.3308	0.04107	pCi/g	0.101	N	74.55	1	1.053	IDENTIFIED	11.14	<input type="checkbox"/> <input type="checkbox"/>
Annihilation Rad. HE	0.05725	0.0273	pCi/g	0.04025	N	510.1	1	1.693	IDENTIFIED	47.57	<input type="checkbox"/> <input type="checkbox"/>
Barium-137m	0.2817	0.02689	pCi/g	0.04998	N	660.9	2	1.646	IDENTIFIED	9.219	<input type="checkbox"/> <input type="checkbox"/>
Bismuth-211	3.466	0.2442	pCi/g	0.2713	Y	351.5	4	1.147	IDENTIFIED	6.03	<input type="checkbox"/> <input type="checkbox"/>
Bismuth-212 <i>—</i>	1.209	0.2109	pCi/g	0.5948	N	0	11	0	FAIL_ABUND 0	<input type="checkbox"/>	<input type="checkbox"/>
Bismuth-214	1.07	0.07971	pCi/g	0.08943	0.200	608.7	4	1.271	IDENTIFIED	6.404	<input type="checkbox"/> <input type="checkbox"/>
Cadmium-109	3.995	0.5629	pCi/g	1.155	Y	86.8	3	1.362	IDENTIFIED	12.91	<input type="checkbox"/> <input type="checkbox"/>
Cerium-143 <i>—</i>	947.3	132.9	pCi/g	0	N	0	11	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Cesium-137	0.2978	0.02844	pCi/g	0.05283	0.100	660.9	2	1.646	IDENTIFIED	9.219	<input type="checkbox"/> <input type="checkbox"/>
Gross Gamma <i>—</i>	8.372	1.196	pCi/g	3.076	N	0				<input type="checkbox"/>	<input type="checkbox"/>
Iodine-123 HE	1.21E+06	2.94E+06	pCi/g	0	N	0	11	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Iodine-133 HE	2812	2875	pCi/g	0	N	0	11	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Iodine-135 HE	4.07E+15	3.35E+15	pCi/g	0	N	0	11	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Lead-212	1.37	0.06998	pCi/g	0.07945	0.100	238.2	4	1.191	IDENTIFIED	3.425	<input type="checkbox"/> <input type="checkbox"/>
Lead-214	1.206	0.0906	pCi/g	0.09455	0.100	351.5	4	1.147	IDENTIFIED	6.03	<input type="checkbox"/> <input type="checkbox"/>
Lutetium-177 HE	2.551	0.6413	pCi/g	1.801	N	0	11	0	FAIL_ABUND 0	<input type="checkbox"/>	<input type="checkbox"/>
Neptunium-237	1.153	0.2013	pCi/g	0.3419	N	86.8	3	1.362	IDENTIFIED	12.91	<input type="checkbox"/> <input type="checkbox"/>
Niobium-95m HE	0.2469	0.06142	pCi/g	0.2098	N	0	11	0	NOT_IDENTI 0	<input type="checkbox"/>	<input type="checkbox"/>
Niobium-97 <i>—</i>	1.24E+05	57360	pCi/g	0	N	0	11	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="checkbox"/>
Polonium-212 <i>NR</i>	1.37	0.06998	pCi/g	0.07945	N	238.2	4	1.191	IDENTIFIED	3.425	<input type="checkbox"/> <input type="checkbox"/>
Polonium-214 <i>NR</i>	1.206	0.0906	pCi/g	0.09455	N	351.5	4	1.147	IDENTIFIED	6.03	<input type="checkbox"/> <input type="checkbox"/>
Polonium-216 <i>NR</i>	1.37	0.06998	pCi/g	0.07945	N	238.2	4	1.191	IDENTIFIED	3.425	<input type="checkbox"/> <input type="checkbox"/>
Polonium-218 <i>NR</i>	1.206	0.0906	pCi/g	0.09455	N	351.5	4	1.147	IDENTIFIED	6.03	<input type="checkbox"/> <input type="checkbox"/>
Potassium-40	19.5	1.074	pCi/g	3.085	1.00	0	11	0	NOT_IDENTI 0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Radium-224	4.103	0.5677	pCi/g	0.9038	Y	241.3	1	1.809	IDENTIFIED	13.49	<input type="checkbox"/> <input type="checkbox"/>
Radium-226	1.07	0.07971	pCi/g	0.08943	Y	608.7	4	1.271	IDENTIFIED	6.404	<input type="checkbox"/> <input type="checkbox"/>
Radium-228	1.399	0.1465	pCi/g	0.1732	0.500	910.3	3	1.509	IDENTIFIED	8.458	<input type="checkbox"/> <input type="checkbox"/>
Thallium-208	0.4539	0.0374	pCi/g	0.04723	0.080	582.5	1	1.47	IDENTIFIED	7.522	<input type="checkbox"/> <input type="checkbox"/>
Thorium-228	1.391	0.07105	pCi/g	0.08067	N	238.2	4	1.191	IDENTIFIED	3.425	<input type="checkbox"/> <input type="checkbox"/>
Thorium-230	1.07	0.07971	pCi/g	0.08943	N	608.7	4	1.271	IDENTIFIED	6.404	<input type="checkbox"/> <input type="checkbox"/>



Uranium-238 3.585 0.6845 pCi/g 1.035 N 63.2 2 0.8312 IDENTIFIED 16.66 ☐ ☐

Zirconium-97 3.34E+06 1.26E+06 pCi/g 0 N 0 6 0 SHORT\_HLIF 0 ☐ ☐

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202028548		09-FEB-10 17:28	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Iodine-133 HE	0.1727	8.21	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Iodine-135 HE	1.76E+07	1.64E+08	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Niobium-97 HE	71.99	53.21	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Sodium-24 HE	66.58	190.9	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Thallium-200 HE	2.707	1.628	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Zirconium-97 HE	587	1021	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202028549	25-JAN-10 12:00	09-FEB-10 17:44	15.2	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 ✓	1.399	0.1465	pCi/g	0.1732	N	910.3	3	1.509	IDENTIFIED	8.458			<input type="checkbox"/>	
Americium-243 INT	0.3308	0.04107	pCi/g	0.101	N	74.55	1	1.053	IDENTIFIED	11.14			<input type="checkbox"/>	
Annihilation Rad. HE	0.05725	0.0273	pCi/g	0.04025	N	510.1	1	1.693	IDENTIFIED	47.57			<input type="checkbox"/>	
Barium-137m NR	0.2817	0.02689	pCi/g	0.04998	N	660.9	2	1.646	IDENTIFIED	9.219			<input type="checkbox"/>	
Bismuth-211 INT	3.466	0.2442	pCi/g	0.2713	Y	351.5	4	1.147	IDENTIFIED	6.03			<input checked="" type="checkbox"/>	
Bismuth-212 ✓	1.209	0.2109	pCi/g	0.5948	N	0	10	0	FAIL_ABUND	0			<input type="checkbox"/>	
Bismuth-214 ✓	1.07	0.07971	pCi/g	0.08943	0.200	608.7	4	1.271	IDENTIFIED	6.404			<input type="checkbox"/>	
Cadmium-109 INT	3.995	0.5629	pCi/g	1.155	Y	86.8	3	1.362	IDENTIFIED	12.91			<input checked="" type="checkbox"/>	
Cerium-143 ✓	1350	172.8	pCi/g	0	N	0	10	0	SHORT_HLIF	0			<input type="checkbox"/>	
Cesium-135 NR	0.4609	0.091	pCi/g	0.2259	N	269.8	1	2.011	IDENTIFIED	19.33			<input type="checkbox"/>	
Cesium-137 ✓	0.2978	0.02844	pCi/g	0.05283	0.100	660.9	2	1.646	IDENTIFIED	9.219			<input type="checkbox"/>	
Gross Gamma ✓	8.372	1.196	pCi/g	3.076	N	0							<input type="checkbox"/>	
Iodine-123 HE	1.21E+06	2.94E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0			<input type="checkbox"/>	
Iodine-133 HE	2812	2875	pCi/g	0	N	0	10	0	SHORT_HLIF	0			<input type="checkbox"/>	
Iodine-135 HE	4.07E+15	3.35E+15	pCi/g	0	N	0	10	0	SHORT_HLIF	0			<input type="checkbox"/>	
Lead-212 ✓	1.37	0.06998	pCi/g	0.07945	0.100	238.2	4	1.191	IDENTIFIED	3.425			<input type="checkbox"/>	
Lead-214 ✓	1.206	0.0906	pCi/g	0.09455	0.100	351.5	4	1.147	IDENTIFIED	6.03			<input type="checkbox"/>	
Lutetium-177 HE	2.551	0.6413	pCi/g	1.801	N	0	10	0	FAIL_ABUND	0			<input type="checkbox"/>	
Neptunium-237 INT	1.153	0.2013	pCi/g	0.3419	N	86.8	3	1.362	IDENTIFIED	12.91			<input type="checkbox"/>	
Niobium-95m HE	0.2469	0.06142	pCi/g	0.2098	N	0	10	0	NOT_IDENTI	0			<input type="checkbox"/>	
Niobium-97 ✓	1.24E+05	57360	pCi/g	0	N	0	10	0	SHORT_HLIF	0			<input type="checkbox"/>	
Polonium-212 NR	1.37	0.06998	pCi/g	0.07945	N	238.2	4	1.191	IDENTIFIED	3.425			<input type="checkbox"/>	
Polonium-214 NR	1.206	0.0906	pCi/g	0.09455	N	351.5	4	1.147	IDENTIFIED	6.03			<input type="checkbox"/>	
Polonium-216 NR	1.37	0.06998	pCi/g	0.07945	N	238.2	4	1.191	IDENTIFIED	3.425			<input type="checkbox"/>	
Polonium-218 NR	1.206	0.0906	pCi/g	0.09455	N	351.5	4	1.147	IDENTIFIED	6.03			<input type="checkbox"/>	
Potassium-40 ✓	20.96	1.179	pCi/g	0.4805	1.00	1459	1	2.242	IDENTIFIED	3.614			<input type="checkbox"/>	
Radium-224 INT	4.103	0.5677	pCi/g	0.9038	Y	241.3	1	1.809	IDENTIFIED	13.49			<input checked="" type="checkbox"/>	
Radium-226 ✓	1.07	0.07971	pCi/g	0.08943	Y	608.7	4	1.271	IDENTIFIED	6.404			<input type="checkbox"/>	
Radium-228 ✓	1.399	0.1465	pCi/g	0.1732	0.500	910.3	3	1.509	IDENTIFIED	8.458			<input type="checkbox"/>	
Thallium-208 ✓	0.4539	0.0374	pCi/g	0.04723	0.080	582.5	1	1.47	IDENTIFIED	7.522			<input type="checkbox"/>	
Thorium-228 NR	1.391	0.07105	pCi/g	0.08067	N	238.2	4	1.191	IDENTIFIED	3.425			<input type="checkbox"/>	

Thorium-230	NR	1.07	0.07971	pCi/g 0.08943	N	608.7	4	1.271	IDENTIFIED	6.404	<input type="checkbox"/>	
Thorium-232	NR	1.399	0.1465	pCi/g 0.1732	N	910.3	3	1.509	IDENTIFIED	8.458	<input type="checkbox"/>	
Thorium-234	✓	5.506	1.37	pCi/g 2.683	2.00	63.03	2	0.75	IDENTIFIED	22.85	<input type="checkbox"/>	
Tin-126	NR	0.3926	0.05532	pCi/g 0.1144	N	86.8	3	1.362	IDENTIFIED	12.91	<input type="checkbox"/>	
Titanium-44	—	0.121	0.0214	pCi/g 0.07267	N	0	10	0	NOT_IDENTI	0	<input type="checkbox"/>	
Total Uranium	✓	16.403	4.08E-06	ug/g 3.9941	N	0					<input type="checkbox"/>	
Uranium-234	NR	1.07	0.07971	pCi/g 0.08943	N	608.7	4	1.271	IDENTIFIED	6.404	<input type="checkbox"/>	
Uranium-238	NR	5.506	1.37	pCi/g 2.683	N	63.03	2	0.75	IDENTIFIED	22.85	<input type="checkbox"/>	
Zirconium-97	✓	4.64E+06	1.03E+06	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue			
1202020550		09-FEB-10 17:44	0	LCS	LOAD	1		GEL	N	RGSP			
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment			
Actinium-228	HE	0.9877	0.2579	pCi/g	0.5367	N	912	3	1.428	IDENTIFIED	25.5	<input type="checkbox"/>	
Americium-241		13.22	0.6722	pCi/g	0.5421	0.200	59.51	1	1.249	IDENTIFIED	2.987	<input type="checkbox"/>	
Americium-243		0.3239	0.0483	pCi/g	0.1484	N	74.86	1	1.543	IDENTIFIED	14.38	<input type="checkbox"/>	
Annihilation Rad. HE		0.0952	0.06079	pCi/g	0.09274	N	510.8	1	1.844	IDENTIFIED	63.79	<input type="checkbox"/>	
Barium-137m		5.234	0.1984	pCi/g	0.1132	N	661.7	2	1.587	IDENTIFIED	2.428	<input type="checkbox"/>	
Bismuth-211		2.176	0.321	pCi/g	0.6334	Y	351.7	1	1.418	IDENTIFIED	14.4	<input type="checkbox"/>	
Bismuth-214		0.5371	0.1022	pCi/g	0.2191	0.200	609.5	4	1.671	IDENTIFIED	18.62	<input type="checkbox"/>	
Cadmium-109		31.23	1.932	pCi/g	2.365	Y	88.09	2	1.404	IDENTIFIED	4.275	<input type="checkbox"/>	
Cerium-143	HE	23.25	5.426	pCi/g	18.86	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Cesium-137		5.533	0.2103	pCi/g	0.1196	0.100	661.7	2	1.587	IDENTIFIED	2.428	<input type="checkbox"/>	
Cobalt-57		0.2394	0.03644	pCi/g	0.06811	N	122.2	1	1.243	IDENTIFIED	14.93	<input type="checkbox"/>	
Cobalt-60		6.714	0.296	pCi/g	0.07984	0.100	1333	1	1.936	IDENTIFIED	2.421	<input type="checkbox"/>	
Gross Gamma		26.64	2.637	pCi/g	4.474	N	0					<input type="checkbox"/>	
Lead-212		0.9169	0.1029	pCi/g	0.2094	0.100	238.4	4	1.221	IDENTIFIED	10.62	<input type="checkbox"/>	
Lead-214		0.7571	0.1134	pCi/g	0.3231	0.100	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Lutetium-177	HE	2.097	0.5907	pCi/g	1.799	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237		6.936	0.8362	pCi/g	1.267	N	0	13	0	NOT_IDENTI	0	<input type="checkbox"/>	
Niobium-97		1182	220.8	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	
Polonium-212		0.9169	0.1029	pCi/g	0.2094	N	238.4	4	1.221	IDENTIFIED	10.62	<input type="checkbox"/>	
Polonium-214		0.7571	0.1134	pCi/g	0.3231	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Polonium-216		0.9169	0.1029	pCi/g	0.2094	N	238.4	4	1.221	IDENTIFIED	10.62	<input type="checkbox"/>	
Polonium-218		0.7571	0.1134	pCi/g	0.3231	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	
Radium-224		5.862	0.7925	pCi/g	2.732	Y	0	13	0	NOT_IDENTI	0	<input type="checkbox"/>	
Radium-226		0.5371	0.1022	pCi/g	0.2191	Y	609.5	4	1.671	IDENTIFIED	18.62	<input type="checkbox"/>	
Radium-228		0.9877	0.2579	pCi/g	0.5367	0.500	912	3	1.428	IDENTIFIED	25.5	<input type="checkbox"/>	
Silver-110m	HE	0.1732	0.04064	pCi/g	0.1396	N	0	13	0	NOT_IDENTI	0	<input type="checkbox"/>	
Sodium-24	HE	414.7	342.2	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	
Technetium-99m	HE	1.29E+08	6.53E+08	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208		0.3375	0.07504	pCi/g	0.1087	0.080	583.6	1	2.143	IDENTIFIED	21.97	<input type="checkbox"/>	
Thorium-228		0.9249	0.1038	pCi/g	0.2112	N	238.4	4	1.221	IDENTIFIED	10.62	<input type="checkbox"/>	
Thorium-230		0.5371	0.1022	pCi/g	0.2191	N	609.5	4	1.671	IDENTIFIED	18.62	<input type="checkbox"/>	
Thorium-232	HE	0.9877	0.2579	pCi/g	0.5367	N	912	3	1.428	IDENTIFIED	25.5	<input type="checkbox"/>	
Tin-126		3.099	0.1917	pCi/g	0.2357	N	88.09	2	1.404	IDENTIFIED	4.275	<input type="checkbox"/>	
Titanium-44		0.2576	0.04278	pCi/g	0.1161	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>	

Thorium-232	1.399	0.1465	pCi/g 0.1732	N	910.3	3	1.509	IDENTIFIED	8.458	<input type="checkbox"/>	
Thorium-234	5.506	1.37	pCi/g 2.683	2.00	63.03	2	0.75	IDENTIFIED	22.85	<input type="checkbox"/>	
Tin-126	0.3926	0.05532	pCi/g 0.1144	N	86.8	3	1.362	IDENTIFIED	12.91	<input type="checkbox"/>	
Titanium-44	0.121	0.0214	pCi/g 0.07267	N	0	11	0	NOT_IDENTI	0	<input type="checkbox"/>	
Total Uranium	16.403	4.08E-06	ug/g 3.9941	N	0					<input type="checkbox"/>	
Uranium-234	1.07	0.07971	pCi/g 0.08943	N	608.7	4	1.271	IDENTIFIED	6.404	<input type="checkbox"/>	
Uranium-238	5.506	1.37	pCi/g 2.683	N	63.03	2	0.75	IDENTIFIED	22.85	<input type="checkbox"/>	
Zirconium-97	4.64E+06	1.03E+06	pCi/g 0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue			
1202028550		09-FEB-10 17:44	0	LCS	LOAD	1		GEL		N	RGSP			
Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	HE	0.9877	0.2579	pCi/g	0.5367	N	912	3	1.428	IDENTIFIED	25.5			
Americium-241	✓	13.22	0.6722	pCi/g	0.5421	0.200	59.51	1	1.249	IDENTIFIED	2.987			
Americium-243		0.3239	0.0483	pCi/g	0.1484	N	74.86	1	1.543	IDENTIFIED	14.38			
Annihilation Rad.	HE	0.0952	0.06079	pCi/g	0.09274	N	510.8	1	1.844	IDENTIFIED	63.79			
Barium-137m		5.234	0.1984	pCi/g	0.1132	N	661.7	2	1.587	IDENTIFIED	2.428			
Bismuth-211		2.176	0.321	pCi/g	0.6334	Y	351.7	1	1.418	IDENTIFIED	14.4			
Bismuth-214		0.5371	0.1022	pCi/g	0.2191	0.200	609.5	4	1.671	IDENTIFIED	18.62			
Cadmium-109		31.23	1.932	pCi/g	2.365	Y	88.09	2	1.404	IDENTIFIED	4.275			
Cerium-143	HE	23.25	5.426	pCi/g	18.86	N	0	13	0	FAIL_ABUND	0			
Cesium-137	✓	5.533	0.2103	pCi/g	0.1196	0.100	661.7	2	1.587	IDENTIFIED	2.428			
Cobalt-57		0.2394	0.03644	pCi/g	0.06811	N	122.2	1	1.243	IDENTIFIED	14.93			
Cobalt-60	✓	6.714	0.296	pCi/g	0.07984	0.100	1333	1	1.936	IDENTIFIED	2.421			
Gross Gamma		26.64	2.637	pCi/g	4.474	N	0							
Lead-212		0.9169	0.1029	pCi/g	0.2094	0.100	238.4	4	1.221	IDENTIFIED	10.62			
Lead-214		0.7571	0.1134	pCi/g	0.3231	0.100	0	13	0	FAIL_ABUND	0			
Lutetium-177	HE	2.097	0.5907	pCi/g	1.799	N	0	13	0	FAIL_ABUND	0			
Neptunium-237		6.936	0.8362	pCi/g	1.267	N	0	13	0	NOT_IDENTI	0			
Niobium-97		1182	220.8	pCi/g	0	N	0	13	0	SHORT_HLIF	0			
Polonium-212		0.9169	0.1029	pCi/g	0.2094	N	238.4	4	1.221	IDENTIFIED	10.62			
Polonium-214		0.7571	0.1134	pCi/g	0.3231	N	0	13	0	FAIL_ABUND	0			
Polonium-216		0.9169	0.1029	pCi/g	0.2094	N	238.4	4	1.221	IDENTIFIED	10.62			
Polonium-218		0.7571	0.1134	pCi/g	0.3231	N	0	13	0	FAIL_ABUND	0			
Radium-224		5.862	0.7925	pCi/g	2.732	Y	0	13	0	NOT_IDENTI	0			
Radium-226		0.5371	0.1022	pCi/g	0.2191	Y	609.5	4	1.671	IDENTIFIED	18.62			
Radium-228		0.9877	0.2579	pCi/g	0.5367	0.500	912	3	1.428	IDENTIFIED	25.5			
Silver-110m	HE	0.1732	0.04064	pCi/g	0.1396	N	0	13	0	NOT_IDENTI	0			
Sodium-24	HE	414.7	342.2	pCi/g	0	N	0	13	0	SHORT_HLIF	0			
Technetium-99m	HE	1.29E+08	6.53E+08	pCi/g	0	N	0	13	0	SHORT_HLIF	0			
Thallium-208		0.3375	0.07504	pCi/g	0.1087	0.080	583.6	1	2.143	IDENTIFIED	21.97			
Thorium-228		0.9249	0.1038	pCi/g	0.2112	N	238.4	4	1.221	IDENTIFIED	10.62			
Thorium-230		0.5371	0.1022	pCi/g	0.2191	N	609.5	4	1.671	IDENTIFIED	18.62			
Thorium-232	HE	0.9877	0.2579	pCi/g	0.5367	N	912	3	1.428	IDENTIFIED	25.5			
Tin-126		3.099	0.1917	pCi/g	0.2357	N	88.09	2	1.404	IDENTIFIED	4.275			
Titanium-44		0.2576	0.04278	pCi/g	0.1161	N	0	13	0	FAIL_ABUND	0			
Uranium-234		0.5371	0.1022	pCi/g	0.2191	N	609.5	4	1.671	IDENTIFIED	18.62			

Zirconium-97	HE	3796	3397	pCi/g 0	N	0	13	0	SHORT_HLIF 0	<input type="checkbox"/>	<input type="text"/>
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\*\*\* = Number of isotopes identified with a keyline at this energy.

# Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Paramname	Result	Uncertainty	Units	DL	RDL
947037	245681014	SAMPLE	09-FEB-10	Lead-212	1.34	0.09516	pCi/g	0.05611	0.100
				Lead-214	1.377	0.1199	pCi/g	0.06288	0.100
				Potassium-40	24.25	1.451	pCi/g	0.3588	1.00
				Protactinium-234m	7.304	3.134	pCi/g	5.731	N
				Radium-224	3.036	0.5013	pCi/g	0.7048	Y
				Radium-226	1.165	0.1174	pCi/g	0.06666	Y
				Radium-228	1.545	0.1968	pCi/g	0.1478	0.500
				Radon-220	37.98	14.01	pCi/g	26.02	N
				Thallium-208	0.4485	0.04838	pCi/g	0.0356	0.080
				Thorium-234	3.585	0.6845	pCi/g	0.5177	2.00
				Zirconium-97	3.34E+06	1.26E+06	pCi/g	0	N

947037	1202028548	MB	09-FEB-10	Bismuth-214	0.03933	0.02474	pCi/g	0.03828	0.200
				Iodine-135	1.76E+07	1.64E+08	pCi/g	0	N
				Niobium-97	71.99	53.21	pCi/g	0	N
				Potassium-40	0.2684	0.1305	pCi/g	0.2684	(1.00)
				Radium-224	0.1786	0.2405	pCi/g	0.1619	(Y)
				Radium-226	0.03933	0.02474	pCi/g	0.03828	(Y)
				Sodium-24	66.58	190.9	pCi/g	0	N
				Strontium-85	0.01957	0.01073	pCi/g	0.01886	(Y)
				Zirconium-97	587	1021	pCi/g	0	N

947037	1202028549	DUP	09-FEB-10	Bismuth-211	3.466	0.2442	pCi/g	0.1357	Y
				Bismuth-214	1.07	0.07971	pCi/g	0.04474	0.200
				Cadmium-109	3.995	0.5629	pCi/g	0.578	Y
				Cerium-143	1350	172.8	pCi/g	0	N
				Cesium-137	0.2978	0.02644	pCi/g	0.02643	0.100
				Gross Gamma	8.372	1.196	pCi/g	1.49	N
				Iodine-123	1.21E+06	2.94E+06	pCi/g	0	N
				Iodine-133	2812	2875	pCi/g	0	N
				Iodine-135	4.07E+15	3.35E+15	pCi/g	0	N
				Lead-212	1.37	0.08998	pCi/g	0.03975	0.100
				Lead-214	1.206	0.0906	pCi/g	0.0473	0.100
				Niobium-97	1.24E+05	57960	pCi/g	0	N
				Potassium-40	20.96	1.179	pCi/g	0.2404	1.00
				Protactinium-234m	5.112	2.541	pCi/g	3.983	Y
				Radium-224	4.103	0.5677	pCi/g	0.4622	Y
				Radium-226	1.07	0.07971	pCi/g	0.04474	Y
				Radium-228	1.399	0.1465	pCi/g	0.06664	0.500

## VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 15:26:23.67

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691001.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 13:25:50.
Sample ID          : G245691001 Sample quantity : 1.27310E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.47 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.47*	219	669	1.13	126.81	122	12	3.04E-02	24.8	
2	2	74.86	451	600	1.62	149.56	144	15	6.26E-02	12.0	4.23E+00
3	2	77.19	709	421	1.31	154.22	144	15	9.85E-02	6.7	
4	1	87.22	167	422	1.24	174.25	171	23	2.32E-02	20.8	2.29E+00
5	1	90.17	179	485	1.49	180.16	171	23	2.49E-02	23.6	
6	1	92.96*	408	420	1.49	185.73	171	23	5.67E-02	11.4	
7	0	185.92*	289	291	1.52	371.51	366	10	4.02E-02	13.0	
8	0	209.03	67	241	1.38	417.69	415	8	9.35E-03	41.6	
9	3	238.54*	1162	195	1.31	476.69	471	17	1.61E-01	3.7	2.72E+00
10	3	241.63	283	221	1.69	482.85	471	17	3.94E-02	13.0	
11	0	269.94	106	213	1.74	539.45	534	12	1.48E-02	29.1	
12	0	295.16	403	228	1.45	589.84	585	11	5.59E-02	8.8	
13	0	303.36	119	397	9.66	606.24	596	24	1.66E-02	45.3	
14	0	338.20	276	153	1.36	675.87	671	11	3.83E-02	10.5	
15	0	351.84*	696	158	1.31	703.13	697	13	9.67E-02	5.4	
16	0	463.92	39	132	1.56	927.19	920	12	5.36E-03	62.1	
17	0	510.75*	151	123	1.56	1020.80	1013	17	2.10E-02	21.4	
18	0	568.51*	107	177	1.93	1136.29	1129	16	1.48E-02	30.1	
19	0	583.29*	396	110	1.41	1165.84	1160	14	5.50E-02	7.6	
20	0	609.41*	418	135	1.59	1218.06	1210	15	5.80E-02	8.0	
21	0	728.11	97	64	3.24	1455.38	1449	14	1.35E-02	20.5	
22	0	769.32	70	95	1.83	1537.80	1530	18	9.75E-03	35.2	
23	0	795.91	126	45	1.92	1590.97	1582	20	1.74E-02	16.3	
24	0	860.53	61	60	1.58	1720.19	1713	13	8.43E-03	29.6	
25	0	911.57	260	58	1.42	1822.27	1816	14	3.61E-02	8.7	
26	0	970.35*	90	128	1.50	1939.83	1929	14	1.25E-02	28.8	
27	0	1120.75	123	36	1.35	2240.64	2235	13	1.71E-02	13.5	
28	0	1238.52	40	66	1.50	2476.24	2471	12	5.60E-03	42.6	
29	0	1378.65	27	20	1.54	2756.58	2751	9	3.80E-03	35.2	
30	0	1408.97	18	14	1.25	2817.26	2813	9	2.43E-03	44.8	
31	0	1461.30*	1026	24	2.09	2921.96	2914	16	1.43E-01	3.3	
32	0	1562.14	23	0	1.54	3123.74	3117	13	3.19E-03	20.9	
33	0	1764.85*	87	10	2.50	3529.43	3522	14	1.21E-02	13.9	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 15:26:26

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 13:25:50
Sample ID        : G245691001 Sample quantity : 127.31 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.47 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.427E+01	2.422E+00	5.127E-01	3.818E-02	47.343
CD-109	+	88.03	*	2.224E+00	9.481E-01	1.344E+00	1.204E-01	1.655
SN-126	+	64.28		1.844E+00	9.539E-01	8.039E-01	1.174E-01	2.294
	+	86.94		9.089E-01	5.341E-01	5.978E-01	2.475E-01	1.521
	+	87.57	*	2.186E-01	9.320E-02	1.327E-01	1.183E-02	1.648
TL-208		277.35		6.766E-01	4.047E-01	7.059E-01	7.448E-02	0.959
	+	510.84		7.264E-01	3.190E-01	2.100E-01	2.145E-02	3.459
	+	583.14	*	5.426E-01	9.057E-02	6.188E-02	4.208E-03	8.770
	+	860.37		7.820E-01	4.676E-01	4.555E-01	4.079E-02	1.717
BI-211		72.87		1.137E+01	3.919E+00	6.125E+00	4.799E-01	1.857
	+	351.07	*	4.189E+00	5.242E-01	3.039E-01	1.941E-02	13.781
PB-212	+	74.81		2.449E+00	6.578E-01	5.630E-01	6.904E-02	4.349
	+	77.11		2.189E+00	3.439E-01	3.204E-01	2.588E-02	6.832
	+	87.30		1.011E+00	4.427E-01	6.627E-01	8.869E-02	1.526
	+	238.63	*	1.531E+00	1.573E-01	9.344E-02	6.744E-03	16.385
		300.09		8.759E-01	1.292E+00	1.390E+00	1.148E-01	0.630
PO-212	+	74.81		2.449E+00	6.578E-01	5.630E-01	6.904E-02	4.349
	+	77.11		2.189E+00	3.439E-01	3.204E-01	2.588E-02	6.832
	+	87.30		1.011E+00	4.427E-01	6.627E-01	8.869E-02	1.526
		115.19		1.116E+00	3.661E+00	6.039E+00	3.845E-01	0.185
	+	238.63	*	1.531E+00	1.573E-01	9.344E-02	6.744E-03	16.385
		300.09		8.759E-01	1.292E+00	1.390E+00	1.148E-01	0.630
BI-214	+	609.31	*	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219
	+	1120.29		1.649E+00	4.701E-01	4.257E-01	3.894E-02	3.873
	+	1764.49		1.573E+00	4.490E-01	3.311E-01	2.007E-02	4.750
PB-214	+	74.81		4.219E+00	1.108E+00	9.701E-01	1.053E-01	4.349
	+	77.11		3.752E+00	6.552E-01	5.492E-01	6.099E-02	6.832
	+	87.30		1.732E+00	7.504E-01	1.135E+00	1.336E-01	1.526
	+	241.98		2.244E+00	6.086E-01	5.630E-01	4.490E-02	3.986
	+	295.21		1.434E+00	2.814E-01	2.265E-01	1.933E-02	6.332
	+	351.92	*	1.457E+00	1.976E-01	1.059E-01	8.734E-03	13.754
PO-214	+	74.81		4.219E+00	1.108E+00	9.701E-01	1.053E-01	4.349
	+	77.11		3.752E+00	6.552E-01	5.492E-01	6.099E-02	6.832
	+	87.30		1.732E+00	7.504E-01	1.135E+00	1.336E-01	1.526

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.244E+00	6.086E-01	5.630E-01	4.490E-02	3.986
	+	295.21		1.434E+00	2.814E-01	2.265E-01	1.933E-02	6.332
	+	351.92	*	1.457E+00	1.976E-01	1.059E-01	8.734E-03	13.754
	+	74.81		2.449E+00	6.578E-01	5.630E-01	6.904E-02	4.349
	+	77.11		2.189E+00	3.439E-01	3.204E-01	2.588E-02	6.832
	+	87.30		1.011E+00	4.427E-01	6.627E-01	8.869E-02	1.526
PO-218	+	238.63	*	1.531E+00	1.573E-01	9.344E-02	6.744E-03	16.385
	+	300.09		8.759E-01	1.292E+00	1.390E+00	1.148E-01	0.630
	+	74.81		4.219E+00	1.108E+00	9.701E-01	1.053E-01	4.349
	+	77.11		3.752E+00	6.552E-01	5.492E-01	6.099E-02	6.832
	+	87.30		1.732E+00	7.504E-01	1.135E+00	1.336E-01	1.526
	+	241.98		2.244E+00	6.086E-01	5.630E-01	4.490E-02	3.986
RA-224	+	295.21		1.434E+00	2.814E-01	2.265E-01	1.933E-02	6.332
	+	351.92	*	1.457E+00	1.976E-01	1.059E-01	8.734E-03	13.754
	+	240.98	*	4.255E+00	1.129E+00	1.063E+00	6.022E-02	4.004
RA-226	+	609.31	*	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219
	+	1120.29		1.649E+00	4.701E-01	4.257E-01	3.894E-02	3.873
	+	1764.49		1.573E+00	4.490E-01	3.311E-01	2.007E-02	4.750
AC-228	+	338.32		1.828E+00	8.390E-01	3.952E-01	1.611E-01	4.625
	+	911.07	*	1.587E+00	3.296E-01	1.864E-01	2.109E-02	8.512
	+	969.11		9.694E-01	6.010E-01	3.303E-01	7.657E-02	2.934
RA-228	+	338.32		1.828E+00	8.390E-01	3.952E-01	1.611E-01	4.625
	+	911.07	*	1.587E+00	3.296E-01	1.864E-01	2.109E-02	8.512
	+	969.11		9.694E-01	6.010E-01	3.303E-01	7.657E-02	2.934
TH-228	+	74.81		2.486E+00	6.267E-01	5.715E-01	4.582E-02	4.349
	+	77.11		2.222E+00	3.491E-01	3.252E-01	2.627E-02	6.832
	+	87.30		1.026E+00	4.375E-01	6.727E-01	5.983E-02	1.526
	+	238.63	*	1.554E+00	1.597E-01	9.485E-02	6.846E-03	16.385
TH-230	+	300.09		8.891E-01	1.411E+00	1.411E+00	8.313E-01	0.630
	+	609.31	*	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219
	+	1120.29		1.649E+00	4.701E-01	4.257E-01	3.894E-02	3.873
	+	1764.49		1.573E+00	4.490E-01	3.311E-01	2.007E-02	4.750
TH-232	+	338.32		1.828E+00	3.997E-01	3.952E-01	2.285E-02	4.625
	+	911.07	*	1.587E+00	3.296E-01	1.864E-01	2.109E-02	8.512
	+	969.11		9.694E-01	6.010E-01	3.303E-01	7.657E-02	2.934
TH-234	+	63.29	*	4.659E+00	2.451E+00	2.109E+00	3.689E-01	2.209
	+	92.38		3.481E+00	1.007E+00	8.728E-01	1.567E-01	3.988
U-234	+	609.31	*	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219
	+	1120.29		1.649E+00	4.701E-01	4.257E-01	3.894E-02	3.873
	+	1764.49		1.573E+00	4.490E-01	3.311E-01	2.007E-02	4.750
NP-237	+	86.50	*	6.420E-01	3.041E-01	4.045E-01	9.076E-02	1.587
	+	95.87		-2.678E-01	1.144E+00	1.617E+00	3.947E-01	-0.166
U-238	+	63.29	*	4.659E+00	2.451E+00	2.109E+00	3.689E-01	2.209
	+	92.38		3.481E+00	8.416E-01	8.728E-01	7.289E-02	3.988
AM-243	+	74.67	*	3.970E-01	9.998E-02	9.153E-02	7.259E-03	4.337
	+	86.72		2.408E+01	1.026E+01	1.513E+01	1.338E+00	1.591
	+	117.66		-3.861E+00	3.885E+00	6.049E+00	3.758E-01	-0.638
ANH-511	+	142.18		2.359E+01	1.837E+01	3.124E+01	1.739E+00	0.755
	+	511.00	*	1.569E-01	6.764E-02	4.538E-02	2.678E-03	3.458



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	3.331E-02	3.315E-01	5.524E-01	3.750E-02	0.060
NA-22		1274.54	*	-1.654E-02	4.081E-02	6.471E-02	4.317E-03	-0.256
NA-24		1368.53	*	1.645E-02	4.081E-02	Half-Life too short		
AL-26		1129.67		-5.034E-01	1.790E+00	2.847E+00	1.757E-01	-0.177
		1808.65	*	-1.073E-02	2.956E-02	4.446E-02	2.596E-03	-0.241
TI-44		67.85		-5.528E-02	6.022E-02	7.696E-02	5.875E-03	-0.718
	+	78.38	*	4.039E-01	6.346E-02	8.483E-02	6.924E-03	4.761
SC-46		889.25	*	1.650E-02	3.799E-02	6.401E-02	5.562E-03	0.258
	+	1120.51		2.821E-01	7.823E-02	1.322E-01	8.338E-03	2.134
V-48		944.10		1.547E-02	8.954E-01	1.443E+00	1.216E-01	0.011
		983.50	*	-3.675E-02	7.716E-02	1.178E-01	9.472E-03	-0.312
		1312.09		-4.297E-02	7.373E-02	1.133E-01	8.059E-03	-0.379
CR-51		320.08	*	1.526E-01	3.739E-01	6.403E-01	4.143E-02	0.238
MN-52		744.21		-4.318E-02	2.314E-01	3.698E-01	2.514E-02	-0.117
		848.13		2.257E+00	6.143E+00	1.032E+01	8.388E-01	0.219
		935.52		2.128E-01	2.635E-01	4.556E-01	3.873E-02	0.467
		1246.25		-2.784E+00	7.501E+00	1.105E+01	6.982E-01	-0.252
		1333.61		4.225E+00	4.959E+00	8.988E+00	6.622E-01	0.470
		1434.06	*	-3.291E-02	1.916E-01	3.071E-01	2.215E-02	-0.107
MN-54		834.83	*	1.613E-02	3.854E-02	6.463E-02	5.141E-03	0.250
CO-56		846.75	*	-3.772E-04	3.719E-02	6.008E-02	4.874E-03	-0.006
		977.42		3.922E-01	2.910E+00	4.742E+00	3.842E-01	0.083
		1037.82		2.952E-01	2.995E-01	5.457E-01	4.341E-02	0.541
		1175.09		1.321E-01	2.042E+00	3.426E+00	1.885E-01	0.039
	+	1238.25		1.517E-01	1.297E-01	1.770E-01	1.163E-02	0.857
		1360.21		1.159E-01	9.312E-01	1.566E+00	1.149E-01	0.074
		1771.40		-1.111E+00	3.771E-01	3.302E-01	1.990E-02	-3.364
CO-57		122.06	*	1.843E-02	2.641E-02	4.416E-02	2.636E-03	0.417
		136.48		2.606E-02	2.171E-01	3.541E-01	2.338E-02	0.074
CO-58		810.76	*	-1.373E-02	4.050E-02	6.350E-02	4.866E-03	-0.216
FE-59		142.65		2.503E+00	2.830E+00	4.746E+00	2.639E-01	0.527
		192.34		-3.848E-01	1.008E+00	1.593E+00	1.850E-01	-0.242
		1099.22	*	-1.065E-01	9.059E-02	1.335E-01	1.002E-02	-0.798
		1291.56		5.265E-02	1.138E-01	1.984E-01	1.643E-02	0.265
CO-60		1173.22		-6.068E-03	4.123E-02	6.775E-02	3.713E-03	-0.090
		1332.49	*	3.196E-02	3.815E-02	6.915E-02	5.096E-03	0.462
ZN-65		1115.52	*	-4.151E-02	9.693E-02	1.311E-01	8.383E-03	-0.317
GE-68		1077.35	*	1.217E+00	1.229E+00	2.234E+00	1.546E-01	0.545
AS-73		53.44	*	-4.966E-01	8.183E-01	1.321E+00	9.767E-02	-0.376
AS-74		595.88	*	-4.783E-02	9.705E-02	1.534E-01	9.086E-03	-0.312
		634.78		-4.714E-02	3.405E-01	5.507E-01	3.237E-02	-0.086
SE-75		66.05		2.490E+00	5.622E+00	8.275E+00	7.943E-01	0.301
		96.73		-3.878E-01	9.346E-01	1.300E+00	1.710E-01	-0.298
		121.11		-6.177E-02	1.421E-01	2.269E-01	2.125E-02	-0.272
		136.00		2.436E-03	4.052E-02	6.596E-02	3.799E-03	0.037
		198.60		1.523E+00	2.015E+00	3.274E+00	2.235E-01	0.465
		264.65	*	2.744E-02	4.739E-02	7.252E-02	4.217E-03	0.378
		279.53		-1.280E-02	1.118E-01	1.873E-01	1.173E-02	-0.068
	+	303.91		6.889E+00	6.276E+00	3.657E+00	3.493E-01	1.883

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	400.65		3.296E-01	2.706E-01	4.788E-01	4.299E-02	0.689
		87.88		4.726E+02	2.015E+02	3.376E+02	3.021E+01	1.400
		200.40		-5.220E+01	1.790E+02	2.841E+02	1.546E+01	-0.184
	+	239.00		2.418E+02	2.236E+01	3.716E+01	2.102E+00	6.507
		249.79		-1.493E+01	6.765E+01	1.068E+02	6.089E+00	-0.140
		281.68		-1.090E+02	9.262E+01	1.435E+02	8.316E+00	-0.760
	+	297.23		3.391E+02	9.628E+01	1.294E+02	7.525E+00	2.620
		303.76		5.776E+02	5.243E+02	3.068E+02	1.784E+01	1.883
		439.47		-3.030E+01	1.271E+02	2.073E+02	1.191E+01	-0.146
	*	484.57		-1.743E+02	2.305E+02	3.605E+02	2.111E+01	-0.484
		520.65		9.187E+00	1.018E+01	1.786E+01	1.056E+00	0.514
		574.64		1.312E+02	2.578E+02	3.854E+02	2.287E+01	0.341
		578.91		-7.744E+01	1.016E+02	1.325E+02	7.860E+00	-0.585
		585.48		1.573E+03	2.802E+02	5.193E+02	3.080E+01	3.029
		755.35		2.472E+01	1.574E+02	2.595E+02	1.800E+01	0.095
		817.79		1.424E+02	1.265E+02	2.263E+02	1.750E+01	0.629
		698.33		-2.743E+00	3.543E+01	5.743E+01	3.588E+00	-0.048
		776.49		9.763E-02	4.121E-01	5.965E-01	4.295E-02	0.164
SR-82	*	1395.20		3.665E-01	7.628E+00	1.272E+01	9.266E-01	0.029
		520.41		4.301E-02	6.921E-02	1.192E-01	7.049E-03	0.361
		529.64		2.439E-02	1.011E-01	1.698E-01	1.005E-02	0.144
RB-83	*	552.65		1.293E-01	2.006E-01	3.458E-01	2.052E-02	0.374
		881.50		5.612E-02	7.018E-02	1.219E-01	1.046E-02	0.460
		513.99		1.137E+01	8.285E+00	1.328E+01	7.843E-01	0.856
RB-84	*	513.99		5.827E-02	4.245E-02	6.806E-02	4.019E-03	0.856
KR-85	*	513.99		5.827E-02	4.245E-02	6.806E-02	4.019E-03	0.856
SR-85	*	513.99		5.827E-02	4.245E-02	6.806E-02	4.019E-03	0.856
RB-86	*	1076.63		8.960E-01	7.767E-01	1.430E+00	9.905E-02	0.627
Y-88	*	898.02		-1.595E-02	3.974E-02	6.124E-02	5.421E-03	-0.261
ZR-88	*	1836.01		2.014E-02	3.399E-02	6.149E-02	3.510E-03	0.328
		392.90		5.873E-03	3.169E-02	5.338E-02	2.972E-03	0.110
		1204.90		7.923E-01	1.836E+01	3.068E+01	1.792E+00	0.026
Y-91	*	1204.90		7.923E-01	1.836E+01	3.068E+01	1.792E+00	0.026
NB-94	*	702.63		-1.001E-02	3.758E-02	6.004E-02	3.781E-03	-0.167
NB-95	*	871.10		-1.222E-03	3.479E-02	5.598E-02	4.725E-03	-0.022
		765.79		5.718E-02	5.422E-02	8.425E-02	5.954E-03	0.679
		235.69		3.377E-01	1.558E-01	2.426E-01	1.797E-02	1.392
NB-95M	*	235.69		3.377E-01	1.558E-01	2.426E-01	1.797E-02	1.392
ZR-95	*	724.18		2.855E-02	1.118E-01	1.619E-01	1.216E-02	0.176
NB-97	*	756.15		3.363E-02	6.883E-02	1.167E-01	9.346E-03	0.288
		657.90		-1.325E-01	6.883E-02	Half-Life	too short	
		1024.50		-2.941E+00	6.883E-02	Half-Life	too short	
ZR-97	*	254.15		-2.820E+00	6.883E-02	Half-Life	too short	
		355.39		3.698E+00	6.883E-02	Half-Life	too short	
		507.63		4.241E+00	6.883E-02	Half-Life	too short	
MO-99	*	602.52		-4.724E-01	6.883E-02	Half-Life	too short	
		1021.30		9.917E-01	6.883E-02	Half-Life	too short	
		1147.95		-1.981E+00	6.883E-02	Half-Life	too short	
		1362.66		-1.778E+00	6.883E-02	Half-Life	too short	
		1750.46		5.336E+00	6.883E-02	Half-Life	too short	
		140.51		-5.332E-01	2.726E+01	4.419E+01	1.189E+01	-0.012
		181.06		-1.499E+00	2.085E+01	2.922E+01	4.962E+00	-0.051
		366.43		-3.684E+01	8.319E+01	1.352E+02	7.695E+00	-0.273

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	739.58	*		-5.877E+00	1.161E+01	1.796E+01	2.551E+00	-0.327
	778.00			-1.748E+01	3.772E+01	5.231E+01	3.777E+00	-0.334
TC-99M	140.51	*		-6.711E+08	3.772E+01	Half-Life	too short	
RH-101	127.23			-4.159E-04	3.606E-02	5.861E-02	3.420E-03	-0.007
	198.01	*		3.091E-02	3.703E-02	6.039E-02	3.276E-03	0.512
	325.23			-3.694E-02	2.358E-01	3.922E-01	2.277E-02	-0.094
RH-102	418.52			-1.306E-01	2.992E-01	4.840E-01	2.745E-02	-0.270
	475.06	*		1.665E-02	2.948E-02	5.064E-02	2.956E-03	0.329
	631.29			1.016E-02	5.403E-02	8.986E-02	5.286E-03	0.113
	697.49			-2.645E-02	7.961E-02	1.263E-01	7.880E-03	-0.209
	766.84			9.793E-02	1.499E-01	2.235E-01	1.582E-02	0.438
	1046.59			9.241E-02	1.062E-01	1.924E-01	1.408E-02	0.480
	1112.84			3.364E-02	2.297E-01	3.722E-01	2.390E-02	0.090
RU-103	497.08	*		-3.460E-02	3.799E-02	5.779E-02	7.329E-03	-0.599
	610.33			1.164E+01	2.586E+00	2.976E+00	4.601E-01	3.912
RH-106	511.85	+		7.837E-01	3.378E-01	4.558E-01	2.690E-02	1.719
	621.84	*		-1.926E-01	3.363E-01	5.249E-01	6.187E-02	-0.367
	1050.47			-7.594E-01	2.155E+00	3.484E+00	2.532E-01	-0.218
RU-106	511.85	+		7.837E-01	3.378E-01	4.558E-01	2.690E-02	1.719
	621.84	*		-1.926E-01	3.357E-01	5.249E-01	3.095E-02	-0.367
	1050.47			-7.594E-01	2.155E+00	3.484E+00	2.532E-01	-0.218
AG-108M	433.93	*		8.795E-03	3.121E-02	5.282E-02	3.290E-03	0.166
	614.37			3.234E-02	4.375E-02	6.700E-02	4.282E-03	0.483
	722.95			-2.783E-03	4.721E-02	6.594E-02	4.603E-03	-0.042
AG-110M	657.75	*		-5.533E-02	3.727E-02	5.320E-02	3.301E-03	-1.040
	677.61			-7.650E-03	3.119E-01	5.083E-01	3.227E-02	-0.015
	706.67			-3.507E-02	2.331E-01	3.756E-01	2.504E-02	-0.093
	763.93			1.239E-01	1.922E-01	2.899E-01	2.128E-02	0.427
	884.67			-6.471E-03	5.032E-02	8.014E-02	7.135E-03	-0.081
	937.48			-1.894E-01	1.182E-01	1.557E-01	1.370E-02	-1.216
	1384.27			7.194E-02	1.366E-01	2.247E-01	1.705E-02	0.320
IN-111	171.28			-7.424E-01	1.083E+00	1.695E+00	8.898E-02	-0.438
	245.39	*		6.744E-01	1.212E+00	1.758E+00	9.993E-02	0.384
IN-113M	391.69	*		8.945E-03	4.532E-02	7.641E-02	4.559E-03	0.117
SN-113	391.69	*		8.945E-03	4.532E-02	7.641E-02	4.559E-03	0.117
IN-114M	190.27	*		-4.327E-02	2.147E-01	2.979E-01	1.601E-02	-0.145
CD-115	260.90			-9.445E+01	1.345E+02	2.059E+02	1.183E+01	-0.459
	492.35			1.585E+01	3.550E+01	5.991E+01	3.518E+00	0.265
	527.90	*		2.139E+00	1.031E+01	1.727E+01	1.022E+00	0.124
SN-117M	156.02			1.851E+00	2.500E+00	4.161E+00	2.230E-01	0.445
	158.56	*		-7.547E-03	5.969E-02	9.606E-02	5.113E-03	-0.079
SB-122	563.90	*		1.596E-01	2.471E+00	3.544E+00	2.103E-01	0.045
	692.80			-2.141E+01	4.212E+01	6.565E+01	4.058E+00	-0.326
I-123	159.00	*		-4.262E+00	4.212E+01	Half-Life	too short	
	528.96			5.820E+01	4.212E+01	Half-Life	too short	
TE-123M	159.00	*		-2.263E-02	3.126E-02	4.901E-02	2.647E-03	-0.462
I-124	602.71	*		-3.164E-01	8.026E-01	1.092E+00	6.464E-02	-0.290
	722.78			1.259E-01	4.915E+00	6.936E+00	4.535E-01	0.018
	1325.50			-1.675E+01	3.177E+01	4.903E+01	3.570E+00	-0.342

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25		4.507E+01	3.586E+01	6.073E+01	4.442E+00	0.742
		1509.49		4.127E-01	1.475E+01	2.438E+01	1.715E+00	0.017
		1691.02		-1.691E+00	3.005E+00	4.231E+00	2.706E-01	-0.400
		602.71		-1.855E-02	4.706E-02	6.405E-02	3.792E-03	-0.290
		645.85		1.243E-01	4.867E-01	8.135E-01	5.365E-02	0.153
		709.31		3.927E+00	2.973E+00	5.313E+00	3.388E-01	0.739
		713.82		-1.218E+00	1.648E+00	2.499E+00	2.645E-01	-0.488
		722.78		1.070E-02	4.177E-01	5.896E-01	3.999E-02	0.018
		968.20		1.517E+01	3.851E+00	7.295E+00	5.978E-01	2.079
		1045.16		1.347E-01	2.359E+00	3.976E+00	2.917E-01	0.034
		1325.50		-1.520E+00	2.884E+00	4.451E+00	3.241E-01	-0.342
		1368.21		1.144E-01	1.624E+00	2.713E+00	3.442E-01	0.042
		1436.60		-5.117E-01	2.997E+00	4.800E+00	3.460E-01	-0.107
		1691.02	*	-3.391E-02	6.026E-02	8.482E-02	5.809E-03	-0.400
SB-125		427.89	*	6.567E-03	9.571E-02	1.597E-01	9.509E-03	0.041
	+	463.38		3.626E-01	4.513E-01	5.259E-01	3.561E-02	0.689
		600.56		1.015E-01	1.900E-01	3.158E-01	2.152E-02	0.321
		635.90		-6.157E-02	2.560E-01	4.101E-01	2.812E-02	-0.150
TE-125M		109.28	*	-8.564E+00	1.008E+01	1.586E+01	1.402E+00	-0.540
		388.63		1.025E-02	2.129E-01	3.560E-01	1.986E-02	0.029
		666.33	*	-2.233E-01	2.151E-01	3.247E-01	1.908E-02	-0.688
SB-126		753.82		-6.036E-01	1.459E+00	2.280E+00	1.577E-01	-0.265
		223.80		1.866E-01	4.286E+00	6.885E+00	3.842E-01	0.027
		278.60		3.722E+00	2.514E+00	4.497E+00	2.603E-01	0.828
	+	296.50		1.423E+01	2.648E+00	3.890E+00	2.261E-01	3.658
		414.70		1.004E-03	7.521E-02	1.252E-01	7.084E-03	0.008
		415.30		1.264E+00	6.326E+00	1.065E+01	6.027E-01	0.119
		555.20		1.158E+00	4.167E+00	6.996E+00	4.152E-01	0.166
		573.80		1.344E+00	1.258E+00	1.978E+00	1.174E-01	0.680
		593.00		-4.465E-01	9.665E-01	1.530E+00	9.066E-02	-0.292
		656.30		-4.572E+00	3.322E+00	4.749E+00	2.771E-01	-0.963
		666.33		-9.329E-02	8.985E-02	1.357E-01	7.972E-03	-0.688
		675.00		-1.003E+00	2.076E+00	3.253E+00	1.944E-01	-0.308
		695.00		-7.420E-03	7.600E-02	1.229E-01	7.633E-03	-0.060
		697.00		-2.184E-02	2.747E-01	4.451E-01	2.774E-02	-0.049
SB-127		720.50	*	3.377E-02	1.481E-01	2.325E-01	1.514E-02	0.145
		856.80		1.436E-01	4.836E-01	7.044E-01	5.810E-02	0.204
		989.30		4.197E-01	1.333E+00	2.206E+00	1.760E-01	0.190
		1034.80		7.110E-02	8.998E+00	1.510E+01	1.127E+00	0.005
		1213.00		6.413E-02	4.888E+00	8.144E+00	4.831E-01	0.008
		61.10		6.340E+01	6.544E+01	9.839E+01	1.015E+01	0.644
		252.40		6.989E-03	4.397E+00	7.023E+00	2.917E+00	0.001
		290.80		-6.699E+00	2.521E+01	3.625E+01	3.315E+00	-0.185
		411.60		1.361E+00	1.205E+01	2.018E+01	2.886E+00	0.067
		444.90		4.648E+00	8.968E+00	1.541E+01	1.656E+00	0.302
		473.00		-6.397E-01	1.660E+00	2.671E+00	2.985E-01	-0.239
		543.00		3.638E+00	1.523E+01	2.556E+01	3.310E+00	0.142
		603.60		-8.355E+00	1.379E+01	1.828E+01	1.975E+00	-0.457
		685.20	*	-1.910E-01	1.378E+00	2.222E+00	2.132E-01	-0.086

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		698.50		-3.959E-01	1.570E+01	2.556E+01	3.744E+00	-0.015
		722.20		1.965E+01	3.187E+01	4.822E+01	4.638E+00	0.407
		783.80		3.568E+00	3.665E+00	6.400E+00	7.372E-01	0.557
		57.60		8.036E+00	6.593E+00	1.056E+01	7.908E-01	0.761
		145.22		-3.488E-01	7.497E-01	1.163E+00	6.421E-02	-0.300
		172.10		-2.508E-02	1.278E-01	2.045E-01	1.075E-02	-0.123
		202.84	*	-3.315E-02	5.169E-02	8.066E-02	4.401E-03	-0.411
I-131		374.96		-8.086E-02	1.972E-01	3.208E-01	1.813E-02	-0.252
		80.18		2.316E-01	5.195E+00	7.491E+00	6.253E-01	0.031
		284.30		-6.464E-01	1.478E+00	2.433E+00	1.568E-01	-0.266
		364.48	*	8.069E-02	1.123E-01	1.954E-01	1.247E-02	0.413
		636.97		-9.161E-01	1.474E+00	2.276E+00	1.493E-01	-0.402
TE-132		722.89		-2.301E-01	7.929E+00	1.112E+01	7.350E-01	-0.021
		49.72		-2.361E+01	1.836E+01	2.864E+01	2.782E+00	-0.824
		111.76		-3.686E+00	3.085E+01	5.007E+01	4.661E+00	-0.074
		116.30		9.689E+00	2.759E+01	4.558E+01	4.149E+00	0.213
BA-133		228.16	*	1.759E-01	7.355E-01	1.191E+00	1.700E-01	0.148
		53.15		-2.261E+00	3.519E+00	5.671E+00	4.188E-01	-0.399
		79.62		2.978E+00	1.582E+00	2.367E+00	3.555E-01	1.258
		81.00		-1.276E-01	1.165E-01	1.567E-01	2.466E-02	-0.814
		276.40		7.826E-01	4.222E-01	6.975E-01	9.038E-02	1.122
I-133	+	302.84		4.694E-01	4.288E-01	2.536E-01	2.958E-02	1.851
		356.01	*	2.912E-02	4.596E-02	7.032E-02	8.105E-03	0.414
		383.85		-5.481E-02	3.220E-01	5.317E-01	5.727E-02	-0.103
	+	510.53		1.525E+00	3.220E-01	Half-Life	too short	
		529.87	*	1.534E-03	3.220E-01	Half-Life	too short	
		706.58		-5.471E-02	3.220E-01	Half-Life	too short	
		856.28		-4.220E-02	3.220E-01	Half-Life	too short	
		875.33		3.370E-03	3.220E-01	Half-Life	too short	
		1236.41		9.490E-01	3.220E-01	Half-Life	too short	
		1298.22		5.000E-02	3.220E-01	Half-Life	too short	
CS-134		475.35		8.749E-01	1.939E+00	3.307E+00	1.930E-01	0.265
		563.23		1.930E-01	4.246E-01	6.333E-01	3.835E-02	0.305
	+	569.32		7.942E-01	4.798E-01	5.454E-01	3.329E-02	1.456
		604.70		-3.234E-02	4.005E-02	5.182E-02	3.082E-03	-0.624
	+	795.84	*	2.486E-01	8.333E-02	9.931E-02	7.468E-03	2.503
		801.93		-3.202E-01	4.838E-01	6.206E-01	4.704E-02	-0.516
		1038.57		2.882E+00	3.751E+00	6.720E+00	4.984E-01	0.429
CS-135		1167.94		1.193E+00	2.411E+00	4.199E+00	2.337E-01	0.284
		1365.15		6.451E-01	1.177E+00	2.082E+00	1.622E-01	0.310
		268.24	*	2.810E-01	1.815E-01	2.910E-01	2.221E-02	0.965
	I-135	288.45		-8.147E+09	1.815E-01	Half-Life	too short	
		417.63		-1.075E+10	1.815E-01	Half-Life	too short	
		546.56		-1.122E+10	1.815E-01	Half-Life	too short	
		836.80		4.732E+09	1.815E-01	Half-Life	too short	
		1038.76		1.180E+10	1.815E-01	Half-Life	too short	
		1124.00		2.272E+10	1.815E-01	Half-Life	too short	
		1131.51		-1.370E+09	1.815E-01	Half-Life	too short	
		1260.41	*	-4.593E+08	1.815E-01	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1457.56		1.900E+11	1.815E-01	Half-Life	too short	
		1678.03		-3.142E+09	1.815E-01	Half-Life	too short	
		1706.46		1.533E+08	1.815E-01	Half-Life	too short	
		1791.20		6.715E+09	1.815E-01	Half-Life	too short	
CS-136		66.91		-8.149E-01	9.213E-01	1.266E+00	1.886E-01	-0.644
	+	86.29		2.845E+00	1.242E+00	2.093E+00	2.715E-01	1.359
		153.22		6.012E-01	7.280E-01	1.215E+00	8.388E-02	0.495
		163.89		-2.068E-01	1.176E+00	1.887E+00	1.286E-01	-0.110
		176.55		2.392E-02	3.934E-01	6.363E-01	3.857E-02	0.038
		273.65		-1.072E+00	5.594E-01	7.116E-01	4.694E-02	-1.506
		340.57		4.644E-01	1.573E-01	2.682E-01	1.648E-02	1.731
		818.51		6.615E-02	7.149E-02	1.259E-01	9.756E-03	0.525
		1048.07	*	-2.662E-02	1.005E-01	1.640E-01	1.268E-02	-0.162
		1235.34		9.313E-02	6.663E-01	9.700E-01	9.913E-02	0.096
BA-137M		661.65	*	4.097E-02	4.207E-02	7.316E-02	4.260E-03	0.560
CS-137		661.65	*	4.331E-02	4.447E-02	7.733E-02	4.522E-03	0.560
CE-139		165.85	*	8.683E-03	3.261E-02	5.326E-02	2.780E-03	0.163
BA-140		162.64		6.886E-01	8.007E-01	1.339E+00	8.103E-02	0.514
	+	304.84		4.197E+00	3.972E+00	2.336E+00	6.375E-01	1.797
		423.70		-1.155E+00	2.071E+00	3.220E+00	1.023E+00	-0.359
		537.32	*	-2.643E-02	2.561E-01	4.185E-01	1.362E-01	-0.063
LA-140		328.77		3.255E-01	3.238E-01	5.649E-01	3.670E-02	0.576
		432.53		1.459E+00	1.985E+00	3.454E+00	2.188E-01	0.422
		487.03		-2.327E-02	1.372E-01	2.242E-01	1.485E-02	-0.104
		751.79		-5.652E-01	1.659E+00	2.609E+00	2.091E-01	-0.217
		815.85		-2.245E-02	3.250E-01	5.229E-01	4.603E-02	-0.043
		867.82		-1.479E+00	1.549E+00	2.076E+00	1.840E-01	-0.712
		919.63		3.860E-02	3.177E+00	4.821E+00	5.140E-01	0.008
		925.24		5.962E-02	1.247E+00	2.018E+00	1.843E-01	0.030
		1596.49	*	-3.210E-02	8.618E-02	1.333E-01	9.018E-03	-0.241
CE-141		145.44	*	-3.013E-02	6.778E-02	1.052E-01	6.060E-03	-0.286
CE-143		57.37		1.227E-03	6.778E-02	Half-Life	too short	
		231.56		9.700E-04	6.778E-02	Half-Life	too short	
		293.26	*	1.046E-03	6.778E-02	Half-Life	too short	
	+	350.59		3.226E-02	6.778E-02	Half-Life	too short	
		490.36		6.092E-04	6.778E-02	Half-Life	too short	
		664.57		1.106E-03	6.778E-02	Half-Life	too short	
		721.93		1.147E-03	6.778E-02	Half-Life	too short	
CE-144		80.11		3.372E-01	2.410E+00	3.490E+00	2.892E-01	0.097
		133.54	*	-2.394E-01	2.197E-01	3.364E-01	4.766E-02	-0.712
PM-144		476.78		-7.239E-03	6.882E-02	1.131E-01	7.891E-03	-0.064
		618.01		-1.011E-02	3.326E-02	5.311E-02	3.316E-03	-0.190
		696.49	*	-1.163E-03	3.462E-02	5.631E-02	3.508E-03	-0.021
		778.57		-4.884E-01	2.484E+00	3.716E+00	2.687E-01	-0.131
PR-144		696.49	*	-7.880E-02	2.346E+00	3.815E+00	2.375E-01	-0.021
		1489.15		7.876E-01	9.784E+00	1.635E+01	1.159E+00	0.048
PM-146		453.90	*	7.869E-02	4.280E-02	7.860E-02	6.769E-03	1.001
		633.02		3.238E-01	1.325E+00	2.207E+00	8.128E-01	0.147
		735.90		2.345E-02	1.634E-01	2.539E-01	7.130E-02	0.092

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	747.13		-6.050E-03	8.822E-02	1.425E-01	1.856E-02	-0.042
		91.11		7.824E-01	3.767E-01	6.104E-01	5.638E-02	1.282
		319.41		-1.060E+00	3.335E+00	5.497E+00	3.196E-01	-0.193
		439.89		5.667E-01	5.213E+00	8.723E+00	5.012E-01	0.065
		531.02	*	7.580E-02	5.473E-01	9.117E-01	1.238E-01	0.083
PM-149		285.90	*	4.464E+01	8.853E+01	1.523E+02	2.160E+01	0.293
EU-152		121.78		-7.923E-05	7.712E-02	1.255E-01	9.717E-03	-0.001
		244.69		4.511E-01	3.873E-01	5.831E-01	3.313E-02	0.774
		344.27	*	1.200E-02	1.253E-01	1.614E-01	1.051E-02	0.074
		443.98		-2.743E-01	9.187E-01	1.493E+00	8.591E-02	-0.184
		778.89		-5.688E-02	2.736E-01	4.229E-01	3.058E-02	-0.134
		867.32		-5.429E-01	9.263E-01	1.246E+00	1.045E-01	-0.436
		964.01		1.016E-01	3.740E-01	5.342E-01	4.400E-02	0.190
		1085.78		4.266E-01	3.605E-01	6.702E-01	4.561E-02	0.636
		1112.02		1.010E-01	3.118E-01	5.260E-01	3.383E-02	0.192
		1407.95	+	2.079E-01	1.868E-01	3.390E-01	2.462E-02	0.613
		69.67		3.551E-01	2.663E+00	2.802E+00	2.156E-01	0.127
		83.37		1.193E+01	1.738E+01	2.556E+01	2.183E+00	0.467
		97.43	*	2.895E-02	9.350E-02	1.351E-01	1.051E-02	0.214
		103.18		-7.005E-02	1.144E-01	1.824E-01	1.321E-02	-0.384
		123.07		5.170E-02	5.496E-02	9.242E-02	8.768E-03	0.559
EU-154		247.94		-1.245E-01	4.000E-01	6.047E-01	5.732E-02	-0.206
		591.81		-6.180E-02	6.544E-01	1.037E+00	1.022E-01	-0.060
		723.30		-6.109E-02	1.987E-01	2.687E-01	2.070E-02	-0.227
		756.87		6.438E-01	7.452E-01	1.300E+00	1.410E-01	0.495
		873.19		1.614E-01	3.003E-01	5.096E-01	6.186E-02	0.317
		996.32		-1.677E-01	3.636E-01	5.517E-01	9.616E-02	-0.304
		1004.76		3.695E-03	2.141E-01	3.601E-01	3.980E-02	0.010
		1274.45	*	-4.113E-02	1.146E-01	1.827E-01	1.808E-02	-0.225
		48.70		8.221E-01	2.253E+00	3.779E+00	2.650E-01	0.218
		60.01		-1.043E+00	5.690E+00	8.165E+00	6.143E-01	-0.128
EU-155	+	86.54		2.633E-01	1.123E-01	1.916E-01	1.707E-02	1.374
		105.31	*	8.433E-02	1.173E-01	1.962E-01	1.412E-02	0.430
		86.79	+	7.030E-01	2.997E-01	5.045E-01	4.463E-02	1.393
		197.04		1.773E-01	6.215E-01	1.012E+00	5.482E-02	0.175
		215.65		9.107E-02	8.011E-01	1.292E+00	7.151E-02	0.070
		298.57		1.907E-01	1.892E-01	2.111E-01	1.228E-02	0.903
		879.36	*	-9.579E-03	1.434E-01	2.299E-01	1.967E-02	-0.042
		962.29		1.172E-01	6.523E-01	9.233E-01	7.620E-02	0.127
		966.15		4.889E-01	2.811E-01	4.542E-01	3.731E-02	1.077
		1177.93		-3.002E-01	3.464E-01	5.283E-01	2.923E-02	-0.568
HO-166M		1271.85		1.010E-01	6.973E-01	1.175E+00	7.786E-02	0.086
		80.57		-2.937E-01	3.160E-01	4.339E-01	3.610E-02	-0.677
		184.41		1.547E-01	4.742E-02	7.606E-02	4.057E-03	2.034
		280.46		-8.520E-02	8.686E-02	1.391E-01	8.059E-03	-0.612
		410.95		1.452E-01	2.488E-01	4.280E-01	2.415E-02	0.339
		711.68	*	-2.680E-02	6.418E-02	1.009E-01	6.465E-03	-0.266
		752.31		-7.998E-02	2.672E-01	4.221E-01	2.912E-02	-0.190
		810.29		-2.559E-02	6.057E-02	9.412E-02	7.185E-03	-0.272

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		-9.116E+00	2.872E+01	4.688E+01	3.419E+00	-0.194
		52.39		-4.384E+00	1.515E+01	2.477E+01	1.821E+00	-0.177
		59.40		2.700E+00	3.061E+01	4.450E+01	3.348E+00	0.061
		66.72	*	-1.479E+01	3.284E+01	4.645E+01	3.531E+00	-0.318
LU-176	+	88.36		5.186E-01	2.210E-01	3.813E-01	3.396E-02	1.360
		201.83		-3.222E-02	3.200E-02	4.907E-02	2.674E-03	-0.657
		306.84	*	1.705E-02	2.918E-02	4.444E-02	2.585E-03	0.384
		401.10		3.709E+00	7.123E+00	1.221E+01	6.839E-01	0.304
LU-177		112.95		2.742E-01	1.705E+00	2.797E+00	1.821E-01	0.098
	+	208.36	*	1.568E+00	1.307E+00	1.991E+00	1.093E-01	0.788
LU-177M		52.97		-9.906E-01	1.593E+00	2.570E+00	1.896E-01	-0.385
		54.07		-3.320E-02	8.431E-01	1.391E+00	1.032E-01	-0.024
		61.30		2.285E+00	1.719E+00	2.623E+00	1.974E-01	0.871
		121.62		-2.771E-02	3.943E-01	6.400E-01	3.826E-02	-0.043
		147.16		-4.105E-01	6.838E-01	1.080E+00	5.928E-02	-0.380
		171.86		-2.125E-01	5.205E-01	8.252E-01	4.334E-02	-0.258
		218.09		-9.658E-02	9.180E-01	1.465E+00	8.129E-02	-0.066
	+	268.79		2.139E+00	1.252E+00	1.512E+00	8.720E-02	1.414
		319.02		-1.046E-01	2.596E-01	4.259E-01	2.475E-02	-0.246
		367.43		-8.036E-01	8.931E-01	1.407E+00	7.998E-02	-0.571
HF-181		413.65	*	-8.586E-02	1.830E-01	2.957E-01	1.672E-02	-0.290
		56.28		6.298E-02	9.721E-01	1.609E+00	1.201E-01	0.039
		57.53		6.553E-01	5.541E-01	8.861E-01	6.638E-02	0.739
		65.20		2.603E+00	1.151E+00	1.793E+00	1.357E-01	1.452
		133.02		-5.992E-02	7.021E-02	1.100E-01	6.292E-03	-0.545
		136.25		5.182E-02	4.734E-01	7.720E-01	4.373E-02	0.067
		345.85		-2.205E-01	2.225E-01	2.966E-01	1.709E-02	-0.743
		482.03	*	3.701E-02	4.288E-02	7.501E-02	4.390E-03	0.493
W-181		56.28		5.779E-02	3.796E-01	6.301E-01	4.705E-02	0.092
		57.53		2.566E-01	2.172E-01	3.473E-01	2.602E-02	0.739
		65.20	*	1.012E+00	4.474E-01	6.973E-01	5.277E-02	1.452
TA-182		67.75		-1.035E-01	1.319E-01	1.835E-01	1.400E-02	-0.564
		100.10		1.598E-01	2.008E-01	3.142E-01	2.361E-02	0.509
		152.43		1.408E-01	3.725E-01	6.121E-01	3.312E-02	0.230
		222.10		4.773E-02	3.718E-01	5.997E-01	3.341E-02	0.080
		1001.68		6.632E-02	2.210E+00	3.581E+00	2.809E-01	0.019
	+	1121.28		7.792E-01	2.161E-01	3.659E-01	2.303E-02	2.130
		1189.05		1.752E-01	3.034E-01	5.308E-01	3.003E-02	0.330
		1221.42	*	8.901E-02	2.035E-01	3.504E-01	2.113E-02	0.254
		1230.97		2.952E-01	4.771E-01	7.846E-01	4.818E-02	0.376
RE-183		57.98		3.027E-01	2.270E-01	3.481E-01	2.610E-02	0.870
		59.32		1.443E-02	1.259E-01	1.834E-01	1.379E-02	0.079
		67.20		-1.884E-01	2.354E-01	3.272E-01	2.492E-02	-0.576
		162.32	*	7.668E-02	1.175E-01	1.950E-01	1.027E-02	0.393
	+	208.81		1.417E+00	1.181E+00	1.804E+00	9.910E-02	0.786
		291.72		1.464E-02	1.116E+00	1.637E+00	9.510E-02	0.009
RE-184		57.98		1.116E+00	8.366E-01	1.283E+00	9.620E-02	0.870
		59.32		5.314E-02	4.638E-01	6.753E-01	5.079E-02	0.079
		67.20		-6.944E-01	8.675E-01	1.206E+00	9.181E-02	-0.576



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		1.132E-01	3.820E-01	6.252E-01	3.303E-02	0.181
		216.55		6.766E-02	2.807E-01	4.555E-01	2.523E-02	0.149
		252.85	*	-5.465E-02	2.372E-01	3.738E-01	2.137E-02	-0.146
		318.01		-1.320E-01	4.480E-01	7.395E-01	4.298E-02	-0.179
		792.07		1.155E+00	1.112E+00	1.755E+00	1.298E-01	0.658
		903.28		1.096E+00	9.625E-01	1.690E+00	1.482E-01	0.649
		920.93		2.872E-02	4.894E-01	7.928E-01	6.840E-02	0.036
		59.72		-5.899E-03	3.357E-01	4.857E-01	3.654E-02	-0.012
		61.14		1.944E-01	1.880E-01	2.839E-01	2.136E-02	0.685
		69.30		-1.875E-01	4.899E-01	4.944E-01	3.798E-02	-0.379
		592.07		-5.096E-01	2.651E+00	4.168E+00	2.470E-01	-0.122
		646.12	*	9.677E-03	4.195E-02	6.997E-02	4.098E-03	0.138
		717.42		6.387E-02	8.523E-01	1.398E+00	9.050E-02	0.046
		874.81		1.648E-01	6.146E-01	1.018E+00	8.643E-02	0.162
		880.27		4.875E-01	7.740E-01	1.326E+00	1.136E-01	0.368
RE-188		155.03	*	1.867E-01	1.895E-01	3.182E-01	1.710E-02	0.587
		477.96		2.729E-01	3.115E+00	5.187E+00	3.031E-01	0.053
		633.10		6.176E-01	2.663E+00	4.447E+00	2.615E-01	0.139
W-188	+	63.58		1.871E+02	9.393E+01	1.030E+02	7.767E+00	1.817
		227.08		-2.612E+00	1.379E+01	2.189E+01	1.226E+00	-0.119
IR-192	*	290.67		-2.695E+00	8.831E+00	1.267E+01	7.357E-01	-0.213
	+	295.96		1.093E+00	2.036E-01	3.053E-01	1.803E-02	3.579
		308.46		3.465E-02	1.111E-01	1.662E-01	9.777E-03	0.208
	*	316.51		-1.513E-02	3.443E-02	5.637E-02	3.294E-03	-0.268
		468.07		1.368E-02	7.228E-02	1.059E-01	7.101E-03	0.129
AU-195		604.41		-5.652E-01	5.595E-01	7.035E-01	8.027E-02	-0.803
		612.46		2.676E+00	9.689E-01	1.657E+00	1.269E-01	1.615
		65.12		4.921E-01	2.082E-01	3.253E-01	2.461E-02	1.513
		66.83		-5.940E-02	1.082E-01	1.523E-01	1.159E-02	-0.390
	+	75.70		1.284E+00	3.235E-01	4.944E-01	3.951E-02	2.598
	*	98.88		2.608E-01	2.685E-01	4.001E-01	3.053E-02	0.652
		129.76		4.945E+00	3.088E+00	5.297E+00	3.064E-01	0.933
TL-200	*	367.94		-3.240E-04	3.088E+00	Half-Life	too short	
		579.30		-1.984E-03	3.088E+00	Half-Life	too short	
		828.27		-1.256E-03	3.088E+00	Half-Life	too short	
		1205.75		5.892E-04	3.088E+00	Half-Life	too short	
TL-201		68.90		-4.150E+00	7.782E+00	7.753E+00	5.944E-01	-0.535
		70.82		1.698E+00	3.371E+00	4.639E+00	3.591E-01	0.366
		80.30		-6.708E-01	5.588E+00	7.996E+00	6.637E-01	-0.084
		135.34		4.529E+00	2.582E+01	4.224E+01	2.399E+00	0.107
TL-202	*	167.43		-1.326E+00	7.674E+00	1.231E+01	6.431E-01	-0.108
		68.90		-3.769E-01	7.068E-01	7.041E-01	5.399E-02	-0.535
		70.82		1.538E-01	3.053E-01	4.201E-01	3.252E-02	0.366
		80.30		-6.077E-02	5.063E-01	7.244E-01	6.013E-02	-0.084
HG-203	*	439.56		-1.572E-02	6.232E-02	1.015E-01	5.830E-03	-0.155
		70.83		1.136E+00	1.225E+00	1.825E+00	2.385E-01	0.622
		72.87		2.260E+00	8.109E-01	1.217E+00	1.546E-01	1.857
		82.60		3.095E-01	1.526E+00	1.870E+00	2.554E-01	0.166
	*	279.20		1.374E-02	4.217E-02	7.205E-02	4.430E-03	0.191

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-207		72.80		6.698E-01	2.257E-01	3.536E-01	2.770E-02	1.894
	+	74.97		7.126E-01	1.795E-01	2.506E-01	1.992E-02	2.844
		84.90		2.654E-01	2.283E-01	3.408E-01	2.957E-02	0.779
	+	569.67		1.238E-01	7.476E-02	8.445E-02	5.013E-03	1.466
		1063.62	*	-2.935E-02	5.452E-02	8.777E-02	6.233E-03	-0.334
TL-207		1770.23		-1.956E-01	5.264E-01	6.541E-01	3.946E-02	-0.299
		81.07		-2.753E-01	2.545E-01	3.466E-01	2.897E-02	-0.794
		83.78		8.779E-02	1.471E-01	2.155E-01	1.849E-02	0.407
		94.90		9.330E-01	2.995E-01	4.728E-01	3.806E-02	1.973
		122.32		1.849E+00	1.836E+00	3.103E+00	2.119E-01	0.596
		144.24		-1.066E-02	7.316E-01	1.157E+00	8.127E-02	-0.009
		154.21		2.406E-01	4.397E-01	7.265E-01	4.849E-02	0.331
	+	269.46		5.009E-01	2.933E-01	3.601E-01	2.172E-02	1.391
		323.87	*	-7.850E-01	7.164E-01	1.114E+00	1.841E-01	-0.704
	+	338.28		7.634E+00	1.799E+00	2.603E+00	2.738E-01	2.933
PO-209		445.03		3.246E-01	2.161E+00	3.624E+00	3.713E-01	0.090
		260.50		-1.876E+00	9.917E+00	1.565E+01	8.987E-01	-0.120
		262.80		-1.029E+01	2.815E+01	4.226E+01	2.429E+00	-0.243
		896.60	*	-1.986E+00	6.917E+00	1.079E+01	9.488E-01	-0.184
		46.50	*	-1.655E-01	3.331E+00	5.429E+00	4.138E-01	-0.030
PB-210		46.50	*	-1.655E-01	3.331E+00	5.429E+00	4.138E-01	-0.030
PO-210		46.50	*	-1.655E-01	3.331E+00	5.429E+00	3.538E-01	-0.030
PB-211		404.84	*	-9.072E-01	1.135E+00	1.549E+00	9.654E-01	-0.586
		427.08		6.829E-01	2.176E+00	3.617E+00	2.235E+00	0.189
		831.96		-9.769E-02	1.264E+00	1.979E+00	1.238E+00	-0.049
BI-212	+	727.18	*	1.141E+00	4.768E-01	6.359E-01	5.294E-02	1.795
		785.46		1.216E+00	1.847E+00	3.159E+00	2.311E-01	0.385
		1620.62		3.598E-01	1.154E+00	1.992E+00	1.330E-01	0.181
PO-215		81.07		-2.753E-01	2.545E-01	3.466E-01	2.897E-02	-0.794
		83.78		8.779E-02	1.471E-01	2.155E-01	1.849E-02	0.407
		94.90		9.330E-01	2.995E-01	4.728E-01	3.806E-02	1.973
		122.32		1.849E+00	1.836E+00	3.103E+00	2.119E-01	0.596
		144.24		-1.066E-02	7.316E-01	1.157E+00	8.127E-02	-0.009
		154.21		2.406E-01	4.397E-01	7.265E-01	4.849E-02	0.331
	+	269.46		5.009E-01	2.933E-01	3.601E-01	2.172E-02	1.391
		323.87	*	-7.850E-01	7.164E-01	1.114E+00	1.841E-01	-0.704
	+	338.28		7.634E+00	1.799E+00	2.603E+00	2.738E-01	2.933
		445.03		3.246E-01	2.161E+00	3.624E+00	3.713E-01	0.090
RN-219	+	271.23		6.426E-01	3.779E-01	4.493E-01	3.632E-02	1.430
		401.81	*	2.033E-01	4.337E-01	7.401E-01	1.001E-01	0.275
RN-220		549.76	*	-2.674E+00	2.497E+01	4.076E+01	2.419E+00	-0.066
RA-223		81.07		-2.753E-01	2.545E-01	3.466E-01	2.897E-02	-0.794
		83.78		8.779E-02	1.471E-01	2.155E-01	1.849E-02	0.407
		94.90		9.330E-01	2.995E-01	4.728E-01	3.806E-02	1.973
		122.32		1.849E+00	1.836E+00	3.103E+00	2.119E-01	0.596
		144.24		-1.066E-02	7.316E-01	1.157E+00	8.127E-02	-0.009
		154.21		2.406E-01	4.397E-01	7.265E-01	4.849E-02	0.331
	+	269.46		5.009E-01	2.933E-01	3.601E-01	2.172E-02	1.391
		323.87	*	-7.850E-01	7.164E-01	1.114E+00	1.841E-01	-0.704

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227	+	338.28		7.634E+00	1.799E+00	2.603E+00	2.738E-01	2.933
		445.03		3.246E-01	2.161E+00	3.624E+00	3.713E-01	0.090
		79.80		1.963E+00	1.920E+00	2.823E+00	6.030E-01	0.695
		236.00		1.685E+00	3.644E-01	5.634E-01	5.840E-02	2.991
		256.20	*	8.250E-02	3.996E-01	6.449E-01	8.984E-02	0.128
		286.10		6.952E-01	1.505E+00	2.588E+00	2.992E-01	0.269
TH-227		299.80		1.884E+00	2.417E+00	2.614E+00	4.259E-01	0.721
	+	304.40		6.172E+00	5.693E+00	3.333E+00	5.767E-01	1.852
		334.20		-4.056E-01	2.690E+00	3.875E+00	7.103E-01	-0.105
		79.80		1.963E+00	1.921E+00	2.823E+00	6.108E-01	0.695
	+	94.00		1.345E+01	4.221E+00	4.523E+00	9.768E-01	2.974
		236.00		1.685E+00	3.536E-01	5.634E-01	5.046E-02	2.991
TH-229		256.20	*	8.250E-02	3.997E-01	6.449E-01	1.088E-01	0.128
		286.10		6.952E-01	1.657E+00	2.588E+00	2.592E+00	0.269
		299.80		1.884E+00	2.417E+00	2.614E+00	4.259E-01	0.721
	+	304.40		6.172E+00	5.693E+00	3.333E+00	5.767E-01	1.852
		334.20		-4.056E-01	2.690E+00	3.875E+00	7.103E-01	-0.105
		85.43		4.215E-01	2.318E-01	3.519E-01	3.069E-02	1.198
PA-231	+	88.47		2.985E-01	1.272E-01	2.191E-01	1.948E-02	1.362
		100.00		1.801E-01	2.091E-01	3.279E-01	2.467E-02	0.549
		193.63	*	-2.857E-01	5.505E-01	8.650E-01	4.667E-02	-0.330
		210.97		7.143E-01	9.547E-01	1.396E+00	7.686E-02	0.512
		283.67	*	-8.792E-01	1.565E+00	2.495E+00	3.438E-01	-0.352
		301.29		8.412E-01	6.529E-01	1.031E+00	1.078E-01	0.816
TH-231		81.07		-2.753E-01	2.545E-01	3.466E-01	2.897E-02	-0.794
		83.78		8.779E-02	1.471E-01	2.155E-01	1.849E-02	0.407
		94.90		9.330E-01	2.995E-01	4.728E-01	3.806E-02	1.973
		122.32		1.849E+00	1.836E+00	3.103E+00	2.119E-01	0.596
		144.24		-1.066E-02	7.316E-01	1.157E+00	8.127E-02	-0.009
		154.21		2.406E-01	4.397E-01	7.265E-01	4.849E-02	0.331
U-231	+	269.46		5.009E-01	2.933E-01	3.601E-01	2.172E-02	1.391
		323.87	*	-7.850E-01	7.164E-01	1.114E+00	1.841E-01	-0.704
	+	338.28		7.634E+00	1.799E+00	2.603E+00	2.738E-01	2.933
		445.03		3.246E-01	2.161E+00	3.624E+00	3.713E-01	0.090
		84.21		9.721E-01	6.398E+00	9.207E+00	7.932E-01	0.106
	+	92.29		1.316E+01	3.181E+00	4.747E+00	3.970E-01	2.772
PA-233		95.87	*	-3.006E-01	1.282E+00	1.815E+00	1.442E-01	-0.166
		108.00		-6.546E-01	2.205E+00	3.558E+00	2.440E-01	-0.184
	+	75.28		2.079E+01	5.865E+00	7.651E+00	1.147E+00	2.718
	+	86.59		4.280E+00	2.124E+00	3.106E+00	8.350E-01	1.378
		300.12		4.450E-01	6.691E-01	7.168E-01	9.636E-02	0.621
		311.98	*	4.559E-03	7.321E-02	1.075E-01	6.637E-03	0.042
PA-234		340.50		2.443E+00	9.452E-01	1.330E+00	3.054E-01	1.837
		398.62		-1.137E-02	2.227E+00	3.709E+00	9.573E-01	-0.003
		415.76		3.312E-01	1.681E+00	2.828E+00	5.811E-01	0.117
	+	63.00		5.430E+00	2.814E+00	3.043E+00	4.542E-01	1.784
		94.67		6.550E-01	2.160E-01	3.591E-01	4.321E-02	1.824
		98.44		6.151E-02	1.154E-01	1.613E-01	8.976E-02	0.381
		99.86		4.748E-01	5.596E-01	8.348E-01	6.293E-02	0.569

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00	8.674E-02	1.971E-01	3.265E-01	3.516E-02	0.266
		131.20	-4.747E-02	1.156E-01	1.848E-01	1.064E-02	-0.257
		152.70	1.421E-01	3.624E-01	5.947E-01	9.318E-02	0.239
	+	186.00	7.254E+00	2.902E+00	2.815E+00	8.579E-01	2.577
		226.40	-2.255E-01	4.361E-01	6.800E-01	7.792E-02	-0.332
		227.20	-2.269E-02	4.639E-01	7.414E-01	4.151E-02	-0.031
		248.90	-4.858E-01	8.822E-01	1.358E+00	2.914E-01	-0.358
	+	293.70	6.883E+00	1.645E+00	1.890E+00	3.040E-01	3.643
		369.80	-3.527E-01	8.122E-01	1.313E+00	2.730E-01	-0.269
	+	568.70	4.028E+00	2.433E+00	2.761E+00	1.639E-01	1.459
	+	569.50	1.099E+00	6.636E-01	7.530E-01	4.470E-02	1.459
		574.00	1.913E+00	1.810E+00	2.844E+00	1.688E-01	0.673
		699.00	3.391E-01	7.546E-01	1.269E+00	2.301E-01	0.267
		706.10	-1.472E-01	1.181E+00	1.904E+00	8.417E-01	-0.077
		733.00	4.867E-02	4.557E-01	6.371E-01	1.371E-01	0.076
		742.81	5.206E-01	1.378E+00	2.245E+00	1.505E+00	0.232
	+	796.30	4.832E+00	2.039E+00	1.885E+00	5.033E-01	2.563
		805.60	1.666E+00	1.166E+00	1.866E+00	5.667E-01	0.893
		819.60	-2.244E-02	1.178E+00	1.904E+00	7.203E-01	-0.012
		826.30	3.554E-01	7.777E-01	1.292E+00	5.762E-01	0.275
		831.60	-1.982E-01	6.348E-01	9.925E-01	2.942E-01	-0.200
		876.40	-2.113E-01	9.042E-01	1.384E+00	1.422E+00	-0.153
		880.51	1.346E-01	2.871E-01	4.844E-01	4.151E-02	0.278
		883.24	-1.029E-02	2.795E-01	4.492E-01	3.019E-01	-0.023
		899.00	-4.997E-01	8.561E-01	1.249E+00	5.463E-01	-0.400
		925.00	3.479E-02	1.298E+00	2.095E+00	1.800E-01	0.017
		926.50	-2.702E-02	1.903E-01	3.021E-01	7.631E-02	-0.089
		946.00	-1.901E-02	3.115E-01	4.980E-01	9.296E-02	-0.038
		949.00	9.309E-02	4.883E-01	7.995E-01	6.699E-02	0.116
		980.50	1.290E-01	7.453E-01	1.219E+00	9.835E-02	0.106
		1394.10	6.064E-02	8.006E-01	1.341E+00	8.706E-01	0.045
PA-234M		766.42	1.367E+01	1.679E+01	2.337E+01	1.180E+01	0.585
		1001.03	-6.892E-01	4.909E+00	7.820E+00	7.280E-01	-0.088
U-235	+	89.95	3.127E+00	1.765E+00	2.057E+00	6.351E-01	1.520
	+	93.35	4.185E+00	1.506E+00	1.458E+00	4.069E-01	2.870
		105.00	9.173E-01	1.161E+00	1.900E+00	5.594E-01	0.483
		143.76	2.638E-02	2.259E-01	3.593E-01	5.826E-02	0.073
		163.35	-3.626E-02	5.192E-01	8.368E-01	1.491E-01	-0.043
	+	185.71	2.687E-01	7.111E-02	1.048E-01	5.600E-03	2.564
		205.31	2.813E-01	6.308E-01	9.061E-01	1.620E-01	0.310
NP-236		94.67	5.009E-01	1.579E-01	2.728E-01	2.203E-02	1.836
		98.44	4.649E-02	8.340E-02	1.219E-01	9.358E-03	0.381
		111.00	6.561E-02	1.490E-01	2.469E-01	1.641E-02	0.266
		160.31	-1.044E-01	8.833E-02	1.355E-01	7.179E-03	-0.770
NP-239		99.55	1.892E-01	1.858E-01	2.793E-01	2.114E-02	0.677
		117.00	-5.116E-02	1.936E-01	3.119E-01	1.950E-02	-0.164
	+	209.75	1.119E+00	9.324E-01	1.433E+00	7.882E-02	0.781
		228.18	5.805E-02	2.434E-01	3.943E-01	2.210E-02	0.147
		277.60	3.103E-01	1.923E-01	3.383E-01	1.957E-02	0.917

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		-1.929E-01	1.526E+00	2.203E+00	1.275E-01	-0.088
AM-241		59.54	*	7.455E-03	1.775E-01	2.575E-01	2.120E-02	0.029
CM-243		99.55		1.947E-01	1.912E-01	2.874E-01	2.175E-02	0.677
		103.76	*	-1.018E-02	1.049E-01	1.706E-01	1.227E-02	-0.060
		117.00		-5.263E-02	1.992E-01	3.209E-01	2.006E-02	-0.164
	+	209.75		1.103E+00	9.192E-01	1.413E+00	7.770E-02	0.781
		228.18		5.865E-02	2.459E-01	3.985E-01	2.233E-02	0.147
		277.60		3.128E-01	1.939E-01	3.410E-01	1.973E-02	0.917
AM-246		798.80		1.772E-02	1.504E-01	2.139E-01	1.601E-02	0.083
		1036.00		-2.129E-03	2.993E-01	5.015E-01	3.736E-02	-0.004
		1062.04		5.323E-02	2.314E-01	3.956E-01	2.817E-02	0.135
		1078.86	*	-4.566E-02	1.419E-01	2.302E-01	1.588E-02	-0.198
CM-247		278.00		1.168E+00	7.787E-01	1.392E+00	8.057E-02	0.839
		287.40		9.705E-01	1.253E+00	2.184E+00	1.268E-01	0.444
		402.60	*	-1.309E-02	3.946E-02	6.443E-02	3.614E-03	-0.203
CF-249		252.85		-2.051E-01	8.903E-01	1.403E+00	8.019E-02	-0.146
		333.44		-5.341E-02	2.044E-01	2.922E-01	1.692E-02	-0.183
		387.95	*	-2.330E-03	4.245E-02	7.055E-02	3.940E-03	-0.033
CF-251		176.60	*	2.177E-02	1.354E-01	2.199E-01	1.162E-02	0.099
		227.00		-9.172E-02	4.136E-01	6.554E-01	3.669E-02	-0.140
		285.00		-1.129E+00	1.744E+00	2.838E+00	1.646E-01	-0.398

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691001      *
* Acquisition date   : 9-FEB-2010 13:25:50 Detector SN#      :              *
* Detector ID        : GAM19          Sensitivity            : 5.000          *
* Geometry           : CAN            Energy tolerance       : 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit        : 75.000         *
* Elapsed real time  : 0 02:00:01.47 Half life ratio       : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library  : SOLID          *
* Sample ID          : G245691001    Analyst initials      : MJH1           *
* Batch Number       : 947037        Sample Quantity      : 1.2731E+02 GRAM   *
* Recovery           : 1.00000        Carrier Weight       : 0.00000         *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope       :              *
* MSD DPM             : 0.000          MSD Isotope           :              *
* LCS DPM             : 0.000          LCS Isotope            :              *
* LCSD DPM            : 0.000          LCSD Isotope           :              *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.427E+01	2.374E+00	5.126E-01	0.000E+00
CD-109	2.224E+00	9.291E-01	1.401E+00	0.000E+00
SN-126	2.186E-01	9.133E-02	1.383E-01	0.000E+00
TL-208	5.426E-01	8.876E-02	6.274E-02	0.000E+00
BI-211	4.189E+00	5.137E-01	3.105E-01	0.000E+00
PB-212	1.531E+00	1.542E-01	9.601E-02	0.000E+00
PO-212	1.531E+00	1.542E-01	9.601E-02	0.000E+00
BI-214	1.079E+00	1.881E-01	1.186E-01	0.000E+00
PB-214	1.457E+00	1.936E-01	1.082E-01	0.000E+00
PO-214	1.457E+00	1.936E-01	1.082E-01	0.000E+00
PO-216	1.531E+00	1.542E-01	9.601E-02	0.000E+00
PO-218	1.457E+00	1.936E-01	1.082E-01	0.000E+00
RA-224	4.255E+00	1.107E+00	1.092E+00	0.000E+00
RA-226	1.079E+00	1.881E-01	1.186E-01	0.000E+00
AC-228	1.587E+00	3.230E-01	1.877E-01	0.000E+00
RA-228	1.587E+00	3.230E-01	1.877E-01	0.000E+00
TH-228	1.554E+00	1.565E-01	9.746E-02	0.000E+00
TH-230	1.079E+00	1.881E-01	1.186E-01	0.000E+00
TH-232	1.587E+00	3.230E-01	1.877E-01	0.000E+00
TH-234	4.659E+00	2.402E+00	2.208E+00	0.000E+00
U-234	1.079E+00	1.881E-01	1.186E-01	0.000E+00
NP-237	6.420E-01	2.980E-01	4.217E-01	0.000E+00
U-238	4.659E+00	2.402E+00	2.208E+00	0.000E+00
AM-243	3.970E-01	9.798E-02	9.564E-02	0.000E+00
ANH-511	1.569E-01	6.629E-02	4.611E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	3.331E-02	3.249E-01	5.618E-01	0.000E+00 NOT IDENT.
NA-22	-1.654E-02	4.000E-02	6.484E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	6.263E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.073E-02	2.897E-02	4.431E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.219E-02	8.857E-02	0.000E+00	FAIL ABUN
SC-46	1.650E-02	3.723E-02	6.449E-02	0.000E+00	FAIL ABUN
V-48	-3.675E-02	7.562E-02	1.185E-01	0.000E+00	NOT IDENT.
CR-51	1.526E-01	3.664E-01	6.551E-01	0.000E+00	NOT IDENT.
MN-52	-3.291E-02	1.878E-01	3.071E-01	0.000E+00	NOT IDENT.
MN-54	1.613E-02	3.777E-02	6.517E-02	0.000E+00	NOT IDENT.
CO-56	-3.772E-04	3.645E-02	6.057E-02	0.000E+00	FAIL ABUN
CO-57	1.843E-02	2.588E-02	4.582E-02	0.000E+00	NOT IDENT.
CO-58	-1.373E-02	3.969E-02	6.406E-02	0.000E+00	NOT IDENT.
FE-59	-1.065E-01	8.878E-02	1.340E-01	0.000E+00	NOT IDENT.
CO-60	3.196E-02	3.739E-02	6.924E-02	0.000E+00	NOT IDENT.
ZN-65	-4.151E-02	9.500E-02	1.316E-01	0.000E+00	NOT IDENT.
GE-68	1.217E+00	1.204E+00	2.244E+00	0.000E+00	NOT IDENT.
AS-73	-4.966E-01	8.019E-01	1.386E+00	0.000E+00	NOT IDENT.
AS-74	-4.783E-02	9.510E-02	1.555E-01	0.000E+00	NOT IDENT.
SE-75	2.744E-02	4.644E-02	7.440E-02	0.000E+00	FAIL ABUN
BR-77	9.187E+00	9.974E+00	1.814E+01	0.000E+00	FAIL ABUN
SR-82	9.763E-02	4.039E-01	6.022E-01	0.000E+00	NOT IDENT.
RB-83	4.301E-02	6.782E-02	1.211E-01	0.000E+00	NOT IDENT.
RB-84	5.612E-02	6.878E-02	1.228E-01	0.000E+00	NOT IDENT.
KR-85	1.137E+01	8.119E+00	1.349E+01	0.000E+00	NOT IDENT.
SR-85	5.827E-02	4.160E-02	6.914E-02	0.000E+00	NOT IDENT.
RB-86	8.960E-01	7.611E-01	1.436E+00	0.000E+00	NOT IDENT.
Y-88	2.014E-02	3.331E-02	6.126E-02	0.000E+00	NOT IDENT.
ZR-88	5.873E-03	3.106E-02	5.445E-02	0.000E+00	NOT IDENT.
Y-91	7.923E-01	1.799E+01	3.077E+01	0.000E+00	NOT IDENT.
NB-94	-1.001E-02	3.683E-02	6.070E-02	0.000E+00	NOT IDENT.
NB-95	5.718E-02	5.314E-02	8.508E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.527E-01	2.493E-01	0.000E+00	NOT IDENT.
ZR-95	3.363E-02	6.745E-02	1.179E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	9.714E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.932E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-5.877E+00	1.137E+01	1.815E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.362E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	3.091E-02	3.629E-02	6.222E-02	0.000E+00	NOT IDENT.
RH-102	1.665E-02	2.889E-02	5.150E-02	0.000E+00	NOT IDENT.
RU-103	-3.460E-02	3.723E-02	5.874E-02	0.000E+00	FAIL ABUN
RH-106	-1.926E-01	3.296E-01	5.318E-01	0.000E+00	FAIL ABUN
RU-106	-1.926E-01	3.290E-01	5.318E-01	0.000E+00	FAIL ABUN
AG-108M	8.795E-03	3.058E-02	5.380E-02	0.000E+00	NOT IDENT.
AG-110M	-5.533E-02	3.652E-02	5.384E-02	0.000E+00	NOT IDENT.
IN-111	6.744E-01	1.188E+00	1.805E+00	0.000E+00	NOT IDENT.
IN-113M	8.945E-03	4.442E-02	7.794E-02	0.000E+00	NOT IDENT.
SN-113	8.945E-03	4.442E-02	7.794E-02	0.000E+00	NOT IDENT.
IN-114M	-4.327E-02	2.104E-01	3.071E-01	0.000E+00	NOT IDENT.
CD-115	2.139E+00	1.010E+01	1.753E+01	0.000E+00	NOT IDENT.
SN-117M	-7.547E-03	5.850E-02	9.929E-02	0.000E+00	NOT IDENT.
SB-122	1.596E-01	2.421E+00	3.595E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	5.769E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.263E-02	3.064E-02	5.066E-02	0.000E+00	NOT IDENT.
I-124	-3.164E-01	7.865E-01	1.107E+00	0.000E+00	NOT IDENT.
SB-124	-3.391E-02	5.905E-02	8.461E-02	0.000E+00	NOT IDENT.
SB-125	6.567E-03	9.379E-02	1.627E-01	0.000E+00	FAIL ABUN
TE-125M	-8.564E+00	9.876E+00	1.648E+01	0.000E+00	NOT IDENT.
I-126	-2.233E-01	2.107E-01	3.286E-01	0.000E+00	NOT IDENT.
SB-126	3.377E-02	1.451E-01	2.350E-01	0.000E+00	FAIL ABUN
SB-127	-1.910E-01	1.350E+00	2.248E+00	0.000E+00	NOT IDENT.
XE-127	-3.315E-02	5.065E-02	8.308E-02	0.000E+00	NOT IDENT.
I-131	8.069E-02	1.100E-01	1.995E-01	0.000E+00	NOT IDENT.
TE-132	1.759E-01	7.208E-01	1.225E+00	0.000E+00	NOT IDENT.
BA-133	2.912E-02	4.504E-02	7.183E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.438E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.167E-02	1.002E-01	0.000E+00	FAIL ABUN
CS-135	2.810E-01	1.779E-01	2.985E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.364E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.662E-02	9.853E-02	1.648E-01	0.000E+00	FAIL ABUN
BA-137M	4.097E-02	4.123E-02	7.403E-02	0.000E+00	NOT IDENT.
CS-137	4.331E-02	4.358E-02	7.826E-02	0.000E+00	NOT IDENT.
CE-139	8.683E-03	3.195E-02	5.502E-02	0.000E+00	NOT IDENT.
BA-140	-2.643E-02	2.510E-01	4.249E-01	0.000E+00	FAIL ABUN
LA-140	-3.210E-02	8.445E-02	1.331E-01	0.000E+00	NOT IDENT.
CE-141	-3.013E-02	6.642E-02	1.089E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.896E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.394E-01	2.153E-01	3.486E-01	0.000E+00	NOT IDENT.
PM-144	-1.163E-03	3.392E-02	5.694E-02	0.000E+00	NOT IDENT.
PR-144	-7.880E-02	2.299E+00	3.858E+00	0.000E+00	NOT IDENT.

PM-146	7.869E-02	4.194E-02	7.999E-02	0.000E+00	NOT IDENT.
ND-147	7.580E-02	5.363E-01	9.258E-01	0.000E+00	FAIL ABUN
PM-149	4.464E+01	8.676E+01	1.561E+02	0.000E+00	NOT IDENT.
EU-152	1.200E-02	1.228E-01	1.650E-01	0.000E+00	FAIL ABUN
GD-153	2.895E-02	9.163E-02	1.406E-01	0.000E+00	NOT IDENT.
EU-154	-4.113E-02	1.123E-01	1.830E-01	0.000E+00	NOT IDENT.
EU-155	8.433E-02	1.149E-01	2.040E-01	0.000E+00	FAIL ABUN
TB-160	-9.579E-03	1.405E-01	2.317E-01	0.000E+00	FAIL ABUN
HO-166M	-2.680E-02	6.289E-02	1.020E-01	0.000E+00	NOT IDENT.
TM-171	-1.479E+01	3.218E+01	4.861E+01	0.000E+00	NOT IDENT.
LU-176	1.705E-02	2.859E-02	4.550E-02	0.000E+00	FAIL ABUN
LU-177	1.568E+00	1.281E+00	2.050E+00	0.000E+00	FAIL ABUN
LU-177M	-8.586E-02	1.794E-01	3.014E-01	0.000E+00	FAIL ABUN
HF-181	3.701E-02	4.202E-02	7.628E-02	0.000E+00	NOT IDENT.
W-181	0.000E+00	4.385E-01	7.300E-01	0.000E+00	NOT IDENT.
TA-182	8.901E-02	1.994E-01	3.513E-01	0.000E+00	FAIL ABUN
RE-183	7.668E-02	1.151E-01	2.015E-01	0.000E+00	FAIL ABUN
RE-184	-5.465E-02	2.325E-01	3.838E-01	0.000E+00	NOT IDENT.
OS-185	9.677E-03	4.111E-02	7.083E-02	0.000E+00	NOT IDENT.
RE-188	1.867E-01	1.858E-01	3.290E-01	0.000E+00	NOT IDENT.
W-188	-2.695E+00	8.654E+00	1.298E+01	0.000E+00	FAIL ABUN
IR-192	-1.513E-02	3.374E-02	5.768E-02	0.000E+00	FAIL ABUN
AU-195	2.608E-01	2.632E-01	4.164E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.264E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.326E+00	7.521E+00	1.271E+01	0.000E+00	NOT IDENT.
TL-202	-1.572E-02	6.107E-02	1.034E-01	0.000E+00	NOT IDENT.
HG-203	1.374E-02	4.132E-02	7.386E-02	0.000E+00	NOT IDENT.
BI-207	-2.935E-02	5.343E-02	8.819E-02	0.000E+00	FAIL ABUN
TL-207	-7.850E-01	7.021E-01	1.140E+00	0.000E+00	FAIL ABUN
PO-209	-1.986E+00	6.778E+00	1.087E+01	0.000E+00	NOT IDENT.
BI-210	-1.655E-01	3.264E+00	5.711E+00	0.000E+00	NOT IDENT.
PB-210	-1.655E-01	3.264E+00	5.711E+00	0.000E+00	NOT IDENT.
PO-210	-1.655E-01	3.264E+00	5.711E+00	0.000E+00	NOT IDENT.
PB-211	-9.072E-01	1.112E+00	1.579E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.673E-01	6.426E-01	0.000E+00	FAIL ABUN
PO-215	-7.850E-01	7.021E-01	1.140E+00	0.000E+00	FAIL ABUN
RN-219	2.033E-01	4.250E-01	7.547E-01	0.000E+00	FAIL ABUN
RN-220	-2.674E+00	2.447E+01	4.137E+01	0.000E+00	NOT IDENT.
RA-223	-7.850E-01	7.021E-01	1.140E+00	0.000E+00	FAIL ABUN
AC-227	8.250E-02	3.917E-01	6.620E-01	0.000E+00	FAIL ABUN
TH-227	8.250E-02	3.917E-01	6.620E-01	0.000E+00	FAIL ABUN
TH-229	-2.857E-01	5.395E-01	8.915E-01	0.000E+00	FAIL ABUN
PA-231	-8.792E-01	1.534E+00	2.557E+00	0.000E+00	NOT IDENT.
TH-231	-7.850E-01	7.021E-01	1.140E+00	0.000E+00	FAIL ABUN
U-231	-3.006E-01	1.256E+00	1.890E+00	0.000E+00	FAIL ABUN
PA-233	4.559E-03	7.174E-02	1.100E-01	0.000E+00	FAIL ABUN
PA-234	-1.901E-02	3.053E-01	5.013E-01	0.000E+00	FAIL ABUN
PA-234M	-6.892E-01	4.811E+00	7.865E+00	0.000E+00	NOT IDENT.
U-235	2.638E-02	2.214E-01	3.720E-01	0.000E+00	FAIL ABUN
NP-236	-1.044E-01	8.656E-02	1.401E-01	0.000E+00	NOT IDENT.
NP-239	-5.116E-02	1.897E-01	3.238E-01	0.000E+00	FAIL ABUN
AM-241	7.455E-03	1.739E-01	2.699E-01	0.000E+00	NOT IDENT.
CM-243	-1.018E-02	1.028E-01	1.775E-01	0.000E+00	FAIL ABUN
AM-246	-4.566E-02	1.390E-01	2.313E-01	0.000E+00	NOT IDENT.
CM-247	-1.309E-02	3.867E-02	6.569E-02	0.000E+00	NOT IDENT.
CF-249	-2.330E-03	4.160E-02	7.197E-02	0.000E+00	NOT IDENT.
CF-251	2.177E-02	1.327E-01	2.270E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691001.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 13:25:50.
Sample ID          : G245691001 Sample quantity : 1.27310E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.47 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1026	10.67*	1.168E+00	2.427E+01	2.427E+01	9.98
CD-109	88.03	167	3.72*	6.092E+00	2.175E+00	2.224E+00	42.63
SN-126	64.28	219	9.60	3.650E+00	1.844E+00	1.844E+00	51.73
	86.94	167	8.90	6.092E+00	9.089E-01	9.089E-01	58.76
	87.57	167	37.00*	6.092E+00	2.186E-01	2.186E-01	42.63
TL-208	277.35	-----	6.80	4.511E+00	-----	Line Not Found	-----
	510.84	151	21.60	2.842E+00	7.264E-01	7.264E-01	43.91
	583.14	396	84.20*	2.554E+00	5.426E-01	5.426E-01	16.69
	860.37	61	12.46	1.836E+00	7.820E-01	7.820E-01	59.79
BI-211	72.87	-----	1.27	4.857E+00	-----	Line Not Found	-----
	351.07	696	12.94*	3.787E+00	4.189E+00	4.189E+00	12.51
PB-212	74.81	451	10.70	5.073E+00	2.449E+00	2.449E+00	26.86
	77.11	709	18.00	5.307E+00	2.189E+00	2.189E+00	15.71
	87.30	167	8.00	6.092E+00	1.011E+00	1.011E+00	43.78
	238.63	1162	44.60*	5.017E+00	1.531E+00	1.531E+00	10.28
	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
PO-212	74.81	451	10.70	5.073E+00	2.449E+00	2.449E+00	26.86
	77.11	709	18.00	5.307E+00	2.189E+00	2.189E+00	15.71
	87.30	167	8.00	6.092E+00	1.011E+00	1.011E+00	43.78
	115.19	-----	0.60	6.866E+00	-----	Line Not Found	-----
	238.63	1162	44.60*	5.017E+00	1.531E+00	1.531E+00	10.28
	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
BI-214	609.31	418	46.30*	2.464E+00	1.079E+00	1.079E+00	17.79
	1120.29	123	15.10	1.455E+00	1.649E+00	1.649E+00	28.51
	1764.49	87	15.80	1.029E+00	1.573E+00	1.573E+00	28.55
PB-214	74.81	451	6.21	5.073E+00	4.219E+00	4.219E+00	26.25
	77.11	709	10.50	5.307E+00	3.752E+00	3.752E+00	17.46
	87.30	167	4.67	6.092E+00	1.732E+00	1.732E+00	43.32
	241.98	283	7.49	4.973E+00	2.244E+00	2.244E+00	27.12
	295.21	403	19.20	4.313E+00	1.434E+00	1.434E+00	19.63
	351.92	696	37.20*	3.787E+00	1.457E+00	1.457E+00	13.56
PO-214	74.81	451	6.21	5.073E+00	4.219E+00	4.219E+00	26.25

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-216	77.11	709	10.50	5.307E+00	3.752E+00	3.752E+00	17.46
	87.30	167	4.67	6.092E+00	1.732E+00	1.732E+00	43.32
	241.98	283	7.49	4.973E+00	2.244E+00	2.244E+00	27.12
	295.21	403	19.20	4.313E+00	1.434E+00	1.434E+00	19.63
	351.92	696	37.20*	3.787E+00	1.457E+00	1.457E+00	13.56
	74.81	451	10.70	5.073E+00	2.449E+00	2.449E+00	26.86
	77.11	709	18.00	5.307E+00	2.189E+00	2.189E+00	15.71
	87.30	167	8.00	6.092E+00	1.011E+00	1.011E+00	43.78
	238.63	1162	44.60*	5.017E+00	1.531E+00	1.531E+00	10.28
	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
PO-218	74.81	451	6.21	5.073E+00	4.219E+00	4.219E+00	26.25
	77.11	709	10.50	5.307E+00	3.752E+00	3.752E+00	17.46
	87.30	167	4.67	6.092E+00	1.732E+00	1.732E+00	43.32
	241.98	283	7.49	4.973E+00	2.244E+00	2.244E+00	27.12
	295.21	403	19.20	4.313E+00	1.434E+00	1.434E+00	19.63
	351.92	696	37.20*	3.787E+00	1.457E+00	1.457E+00	13.56
RA-224	240.98	283	3.95*	4.973E+00	4.255E+00	4.255E+00	26.53
RA-226	609.31	418	46.30*	2.464E+00	1.079E+00	1.079E+00	17.79
	1120.29	123	15.10	1.455E+00	1.649E+00	1.649E+00	28.51
	1764.49	87	15.80	1.029E+00	1.573E+00	1.573E+00	28.55
AC-228	338.32	276	11.40	3.901E+00	1.828E+00	1.828E+00	45.89
	911.07	260	27.70*	1.745E+00	1.587E+00	1.587E+00	20.78
	969.11	90	16.60	1.652E+00	9.694E-01	9.694E-01	62.00
RA-228	338.32	276	11.40	3.901E+00	1.828E+00	1.828E+00	45.89
	911.07	260	27.70*	1.745E+00	1.587E+00	1.587E+00	20.78
	969.11	90	16.60	1.652E+00	9.694E-01	9.694E-01	62.00
TH-228	74.81	451	10.70	5.073E+00	2.449E+00	2.486E+00	25.21
	77.11	709	18.00	5.307E+00	2.189E+00	2.222E+00	15.71
	87.30	167	8.00	6.092E+00	1.011E+00	1.026E+00	42.63
	238.63	1162	44.60*	5.017E+00	1.531E+00	1.554E+00	10.28
TH-230	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
	609.31	418	46.30*	2.464E+00	1.079E+00	1.079E+00	17.79
	1120.29	123	15.10	1.455E+00	1.649E+00	1.649E+00	28.51
	1764.49	87	15.80	1.029E+00	1.573E+00	1.573E+00	28.55
TH-232	338.32	276	11.40	3.901E+00	1.828E+00	1.828E+00	21.86
	911.07	260	27.70*	1.745E+00	1.587E+00	1.587E+00	20.78
	969.11	90	16.60	1.652E+00	9.694E-01	9.694E-01	62.00
TH-234	63.29	219	3.80*	3.650E+00	4.659E+00	4.659E+00	52.62
	92.38	408	5.41	6.396E+00	3.481E+00	3.481E+00	28.94
U-234	609.31	418	46.30*	2.464E+00	1.079E+00	1.079E+00	17.79
	1120.29	123	15.10	1.455E+00	1.649E+00	1.649E+00	28.51
	1764.49	87	15.80	1.029E+00	1.573E+00	1.573E+00	28.55
NP-237	86.50	167	12.60*	6.092E+00	6.420E-01	6.420E-01	47.36
	95.87	-----	2.60	6.515E+00	-----	Line Not Found	-----
U-238	63.29	219	3.80*	3.650E+00	4.659E+00	4.659E+00	52.62
	92.38	408	5.41	6.396E+00	3.481E+00	3.481E+00	24.18
AM-243	74.67	451	66.00*	5.073E+00	3.970E-01	3.970E-01	25.19
	86.72	167	0.34	6.092E+00	2.408E+01	2.408E+01	42.63
	117.66	-----	0.55	6.871E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	142.18	-----	0.13	6.659E+00	-----	Line Not Found	-----
ANH-511	511.00	151	100.00*	2.842E+00	1.569E-01	1.569E-01	43.11

Flag: "\*" = Keyline

Total number of lines in spectrum 33  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 30 90.91%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.427E+01	2.427E+01	0.242E+01	9.98	
CD-109	464.00D	1.02	2.175E+00	2.224E+00	0.948E+00	42.63	
SN-126	1.00E+05Y	1.00	2.186E-01	2.186E-01	0.932E-01	42.63	
TL-208	1.41E+10Y	1.00	5.426E-01	5.426E-01	0.906E-01	16.69	
BI-211	7.04E+08Y	1.00	4.189E+00	4.189E+00	0.524E+00	12.51	
PB-212	1.41E+10Y	1.00	1.531E+00	1.531E+00	0.157E+00	10.28	
PO-212	1.41E+10Y	1.00	1.531E+00	1.531E+00	0.157E+00	10.28	
BI-214	1600.00Y	1.00	1.079E+00	1.079E+00	0.192E+00	17.79	
PB-214	1600.00Y	1.00	1.457E+00	1.457E+00	0.198E+00	13.56	
PO-214	1600.00Y	1.00	1.457E+00	1.457E+00	0.198E+00	13.56	
PO-216	1.41E+10Y	1.00	1.531E+00	1.531E+00	0.157E+00	10.28	
PO-218	1600.00Y	1.00	1.457E+00	1.457E+00	0.198E+00	13.56	
RA-224	1.41E+10Y	1.00	4.255E+00	4.255E+00	1.129E+00	26.53	
RA-226	1600.00Y	1.00	1.079E+00	1.079E+00	0.192E+00	17.79	
AC-228	1.41E+10Y	1.00	1.587E+00	1.587E+00	0.330E+00	20.78	
RA-228	1.41E+10Y	1.00	1.587E+00	1.587E+00	0.330E+00	20.78	
TH-228	1.91Y	1.02	1.531E+00	1.554E+00	0.160E+00	10.28	
TH-230	4.47E+09Y	1.00	1.079E+00	1.079E+00	0.192E+00	17.79	
TH-232	1.41E+10Y	1.00	1.587E+00	1.587E+00	0.330E+00	20.78	
TH-234	4.47E+09Y	1.00	4.659E+00	4.659E+00	2.451E+00	52.62	
U-234	4.47E+09Y	1.00	1.079E+00	1.079E+00	0.192E+00	17.79	
NP-237	2.14E+06Y	1.00	6.420E-01	6.420E-01	3.041E-01	47.36	
U-238	4.47E+09Y	1.00	4.659E+00	4.659E+00	2.451E+00	52.62	
AM-243	7380.00Y	1.00	3.970E-01	3.970E-01	0.100E+00	25.19	
ANH-511	1.00E+09Y	1.00	1.569E-01	1.569E-01	0.676E-01	43.11	
Total Activity :			6.574E+01	6.581E+01			

Grand Total Activity : 6.574E+01 6.581E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	90.17	179	485	1.49	180.16	171	23	2.49E-02	47.2	6.26E+00	T
0	185.92	289	291	1.52	371.51	366	10	4.02E-02	25.9	5.88E+00	T
0	209.03	67	241	1.38	417.69	415	8	9.35E-03	83.2	5.48E+00	T
0	269.94	106	213	1.74	539.45	534	12	1.48E-02	58.3	4.60E+00	T
0	303.36	119	397	9.66	606.24	596	24	1.66E-02	90.6	4.23E+00	T
0	463.92	39	132	1.56	927.19	920	12	5.36E-03	****	3.07E+00	T
0	568.51	107	177	1.93	1136.29	1129	16	1.48E-02	60.1	2.61E+00	T
0	728.11	97	64	3.24	1455.38	1449	14	1.35E-02	40.9	2.12E+00	T
0	769.32	70	95	1.83	1537.80	1530	18	9.75E-03	70.4	2.02E+00	
0	795.91	126	45	1.92	1590.97	1582	20	1.74E-02	32.7	1.97E+00	T
0	1238.52	40	66	1.50	2476.24	2471	12	5.60E-03	85.3	1.34E+00	T
0	1378.65	27	20	1.54	2756.58	2751	9	3.80E-03	70.3	1.22E+00	
0	1408.97	18	14	1.25	2817.26	2813	9	2.43E-03	89.5	1.20E+00	T
0	1562.14	23	0	1.54	3123.74	3117	13	3.19E-03	41.7	1.11E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691001.CNF;1 *
* Acquisition date   : 9-FEB-2010 13:25:50.  Detector SN#      :             *
* Detector ID        : GAM19                      Sensitivity    : 5.00000     *
* Geometry           : CAN                      Energy tolerance: 1.50000     *
* Elapsed live time: 0 02:00:00.00             Abundance limit : 75.00000     *
* Elapsed real time: 0 02:00:01.47             Half life ratio : 8.00000     *
*****
*                                     SAMPLE DATA                            *
* Sample date        : 25-JAN-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G245691001             Analyst initials: MJH1          *
* Batch Number       : 947037                 Sample Quantity : 1.27310E+02 GRAM *
*****
*                                     QC DATA                               *
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope      :             *
* MSD ID             :                      MSD Isotope       :             *
* LCS ID             : 1032-A                 LCS Isotope      :             *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.427E+01	2.422E+00	5.127E-01	3.818E-02	47.343
CD-109	2.224E+00	9.481E-01	1.344E+00	1.204E-01	1.655
SN-126	2.186E-01	9.320E-02	1.327E-01	1.183E-02	1.648
TL-208	5.426E-01	9.057E-02	6.188E-02	4.208E-03	8.770
BI-211	4.189E+00	5.242E-01	3.039E-01	1.941E-02	13.781
PB-212	1.531E+00	1.573E-01	9.344E-02	6.744E-03	16.385
PO-212	1.531E+00	1.573E-01	9.344E-02	6.744E-03	16.385
BI-214	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219
PB-214	1.457E+00	1.976E-01	1.059E-01	8.734E-03	13.754
PO-214	1.457E+00	1.976E-01	1.059E-01	8.734E-03	13.754
PO-216	1.531E+00	1.573E-01	9.344E-02	6.744E-03	16.385
PO-218	1.457E+00	1.976E-01	1.059E-01	8.734E-03	13.754
RA-224	4.255E+00	1.129E+00	1.063E+00	6.022E-02	4.004
AC-226	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219
RA-228	1.587E+00	3.296E-01	1.864E-01	2.109E-02	8.512
TH-228	1.554E+00	1.597E-01	9.485E-02	6.846E-03	16.385
TH-230	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.587E+00	3.296E-01	1.864E-01	2.109E-02	8.512
TH-234	4.659E+00	2.451E+00	2.109E+00	3.689E-01	2.209
U-234	1.079E+00	1.919E-01	1.171E-01	9.204E-03	9.219
NP-237	6.420E-01	3.041E-01	4.045E-01	9.076E-02	1.587
U-238	4.659E+00	2.451E+00	2.109E+00	3.689E-01	2.209
AM-243	3.970E-01	9.998E-02	9.153E-02	7.259E-03	4.337
ANH-511	1.569E-01	6.764E-02	4.538E-02	2.678E-03	3.458

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.331E-02		3.315E-01	5.524E-01	3.750E-02	0.060
NA-22	-1.654E-02		4.081E-02	6.471E-02	4.317E-03	-0.256
NA-24	1.645E-02		3.195E-01	Half-Life	too short	
AL-26	-1.073E-02		2.956E-02	4.446E-02	2.596E-03	-0.241
TI-44	4.039E-01	+	6.346E-02	8.483E-02	6.924E-03	4.761
SC-46	1.650E-02		3.799E-02	6.401E-02	5.562E-03	0.258
V-48	-3.675E-02		7.716E-02	1.178E-01	9.472E-03	-0.312
CR-51	1.526E-01		3.739E-01	6.403E-01	4.143E-02	0.238
MN-52	-3.291E-02		1.916E-01	3.071E-01	2.215E-02	-0.107
MN-54	1.613E-02		3.854E-02	6.463E-02	5.141E-03	0.250
CO-56	-3.772E-04		3.719E-02	6.008E-02	4.874E-03	-0.006
CO-57	1.843E-02		2.641E-02	4.416E-02	2.636E-03	0.417
CO-58	-1.373E-02		4.050E-02	6.350E-02	4.866E-03	-0.216
FE-59	-1.065E-01		9.059E-02	1.335E-01	1.002E-02	-0.798
CO-60	3.196E-02		3.815E-02	6.915E-02	5.096E-03	0.462
ZN-65	-4.151E-02		9.693E-02	1.311E-01	8.383E-03	-0.317
GE-68	1.217E+00		1.229E+00	2.234E+00	1.546E-01	0.545
AS-73	-4.966E-01		8.183E-01	1.321E+00	9.767E-02	-0.376
AS-74	-4.783E-02		9.705E-02	1.534E-01	9.086E-03	-0.312
SE-75	2.744E-02		4.739E-02	7.252E-02	4.217E-03	0.378
BR-77	9.187E+00		1.018E+01	1.786E+01	1.056E+00	0.514
SR-82	9.763E-02		4.121E-01	5.965E-01	4.295E-02	0.164
RB-83	4.301E-02		6.921E-02	1.192E-01	7.049E-03	0.361
RB-84	5.612E-02		7.018E-02	1.219E-01	1.046E-02	0.460
KR-85	1.137E+01		8.285E+00	1.328E+01	7.843E-01	0.856
SR-85	5.827E-02		4.245E-02	6.806E-02	4.019E-03	0.856
RB-86	8.960E-01		7.767E-01	1.430E+00	9.905E-02	0.627
Y-88	2.014E-02		3.399E-02	6.149E-02	3.510E-03	0.328
ZR-88	5.873E-03		3.169E-02	5.338E-02	2.972E-03	0.110
Y-91	7.923E-01		1.836E+01	3.068E+01	1.792E+00	0.026
NB-94	-1.001E-02		3.758E-02	6.004E-02	3.781E-03	-0.167
NB-95	5.718E-02		5.422E-02	8.425E-02	5.954E-03	0.679
NB-95M	3.377E-01		1.558E-01	2.426E-01	1.797E-02	1.392
ZR-95	3.363E-02		6.883E-02	1.167E-01	9.346E-03	0.288
NB-97	-1.325E-01		4.956E-02	Half-Life	too short	
ZR-97	4.241E+00		9.858E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99	-5.877E+00		1.161E+01	1.796E+01	2.551E+00	-0.327
TC-99M	-6.711E+08		1.715E+10	Half-Life too short		
RH-101	3.091E-02		3.703E-02	6.039E-02	3.276E-03	0.512
RH-102	1.665E-02		2.948E-02	5.064E-02	2.956E-03	0.329
RU-103	-3.460E-02		3.799E-02	5.779E-02	7.329E-03	-0.599
RH-106	-1.926E-01		3.363E-01	5.249E-01	6.187E-02	-0.367
RU-106	-1.926E-01		3.357E-01	5.249E-01	3.095E-02	-0.367
AG-108M	8.795E-03		3.121E-02	5.282E-02	3.290E-03	0.166
AG-110M	-5.533E-02		3.727E-02	5.320E-02	3.301E-03	-1.040
IN-111	6.744E-01		1.212E+00	1.758E+00	9.993E-02	0.384
IN-113M	8.945E-03		4.532E-02	7.641E-02	4.559E-03	0.117
SN-113	8.945E-03		4.532E-02	7.641E-02	4.559E-03	0.117
IN-114M	-4.327E-02		2.147E-01	2.979E-01	1.601E-02	-0.145
CD-115	2.139E+00		1.031E+01	1.727E+01	1.022E+00	0.124
SN-117M	-7.547E-03		5.969E-02	9.606E-02	5.113E-03	-0.079
SB-122	1.596E-01		2.471E+00	3.544E+00	2.103E-01	0.045
I-123	-4.262E+00		2.943E+00	Half-Life too short		
TE-123M	-2.263E-02		3.126E-02	4.901E-02	2.647E-03	-0.462
I-124	-3.164E-01		8.026E-01	1.092E+00	6.464E-02	-0.290
SB-124	-3.391E-02		6.026E-02	8.482E-02	5.809E-03	-0.400
SB-125	6.567E-03		9.571E-02	1.597E-01	9.509E-03	0.041
TE-125M	-8.564E+00		1.008E+01	1.586E+01	1.402E+00	-0.540
I-126	-2.233E-01		2.151E-01	3.247E-01	1.908E-02	-0.688
SB-126	3.377E-02		1.481E-01	2.325E-01	1.514E-02	0.145
SB-127	-1.910E-01		1.378E+00	2.222E+00	2.132E-01	-0.086
XE-127	-3.315E-02		5.169E-02	8.066E-02	4.401E-03	-0.411
I-131	8.069E-02		1.123E-01	1.954E-01	1.247E-02	0.413
TE-132	1.759E-01		7.355E-01	1.191E+00	1.700E-01	0.148
BA-133	2.912E-02		4.596E-02	7.032E-02	8.105E-03	0.414
I-133	1.534E-03		2.775E-03	Half-Life too short		
CS-134	2.486E-01	+	8.333E-02	9.931E-02	7.468E-03	2.503
CS-135	2.810E-01		1.815E-01	2.910E-01	2.221E-02	0.965
I-135	-4.593E+08		2.226E+09	Half-Life too short		
CS-136	-2.662E-02		1.005E-01	1.640E-01	1.268E-02	-0.162
BA-137M	4.097E-02		4.207E-02	7.316E-02	4.260E-03	0.560
CS-137	4.331E-02		4.447E-02	7.733E-02	4.522E-03	0.560
CE-139	8.683E-03		3.261E-02	5.326E-02	2.780E-03	0.163
BA-140	-2.643E-02		2.561E-01	4.185E-01	1.362E-01	-0.063
LA-140	-3.210E-02		8.618E-02	1.333E-01	9.018E-03	-0.241
CE-141	-3.013E-02		6.778E-02	1.052E-01	6.060E-03	-0.286
CE-143	1.046E-03		1.478E-04	Half-Life too short		
CE-144	-2.394E-01		2.197E-01	3.364E-01	4.766E-02	-0.712
PM-144	-1.163E-03		3.462E-02	5.631E-02	3.508E-03	-0.021
PR-144	-7.880E-02		2.346E+00	3.815E+00	2.375E-01	-0.021
PM-146	7.869E-02		4.280E-02	7.860E-02	6.769E-03	1.001
ND-147	7.580E-02		5.473E-01	9.117E-01	1.238E-01	0.083
PM-149	4.464E+01		8.853E+01	1.523E+02	2.160E+01	0.293
EU-152	1.200E-02		1.253E-01	1.614E-01	1.051E-02	0.074



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	2.895E-02		9.350E-02	1.351E-01	1.051E-02	0.214
EU-154	-4.113E-02		1.146E-01	1.827E-01	1.808E-02	-0.225
EU-155	8.433E-02		1.173E-01	1.962E-01	1.412E-02	0.430
TB-160	-9.579E-03		1.434E-01	2.299E-01	1.967E-02	-0.042
HO-166M	-2.680E-02		6.418E-02	1.009E-01	6.465E-03	-0.266
TM-171	-1.479E+01		3.284E+01	4.645E+01	3.531E+00	-0.318
LU-176	1.705E-02		2.918E-02	4.444E-02	2.585E-03	0.384
LU-177	1.568E+00	+	1.307E+00	1.991E+00	1.093E-01	0.788
LU-177M	-8.586E-02		1.830E-01	2.957E-01	1.672E-02	-0.290
HF-181	3.701E-02		4.288E-02	7.501E-02	4.390E-03	0.493
W-181	1.012E+00		4.474E-01	6.973E-01	5.277E-02	1.452
TA-182	8.901E-02		2.035E-01	3.504E-01	2.113E-02	0.254
RE-183	7.668E-02		1.175E-01	1.950E-01	1.027E-02	0.393
RE-184	-5.465E-02		2.372E-01	3.738E-01	2.137E-02	-0.146
OS-185	9.677E-03		4.195E-02	6.997E-02	4.098E-03	0.138
RE-188	1.867E-01		1.895E-01	3.182E-01	1.710E-02	0.587
W-188	-2.695E+00		8.831E+00	1.267E+01	7.357E-01	-0.213
IR-192	-1.513E-02		3.443E-02	5.637E-02	3.294E-03	-0.268
AU-195	2.608E-01		2.685E-01	4.001E-01	3.053E-02	0.652
TL-200	-3.240E-04		2.175E-04	Half-Life too short		
TL-201	-1.326E+00		7.674E+00	1.231E+01	6.431E-01	-0.108
TL-202	-1.572E-02		6.232E-02	1.015E-01	5.830E-03	-0.155
HG-203	1.374E-02		4.217E-02	7.205E-02	4.430E-03	0.191
BI-207	-2.935E-02		5.452E-02	8.777E-02	6.233E-03	-0.334
TL-207	-7.850E-01		7.164E-01	1.114E+00	1.841E-01	-0.704
PO-209	-1.986E+00		6.917E+00	1.079E+01	9.488E-01	-0.184
BI-210	-1.655E-01		3.331E+00	5.429E+00	4.138E-01	-0.030
PB-210	-1.655E-01		3.331E+00	5.429E+00	4.138E-01	-0.030
PO-210	-1.655E-01		3.331E+00	5.429E+00	3.538E-01	-0.030
PB-211	-9.072E-01		1.135E+00	1.549E+00	9.654E-01	-0.586
BI-212	1.141E+00	+	4.768E-01	6.359E-01	5.294E-02	1.795
PO-215	-7.850E-01		7.164E-01	1.114E+00	1.841E-01	-0.704
RN-219	2.033E-01		4.337E-01	7.401E-01	1.001E-01	0.275
RN-220	-2.674E+00		2.497E+01	4.076E+01	2.419E+00	-0.066
RA-223	-7.850E-01		7.164E-01	1.114E+00	1.841E-01	-0.704
AC-227	8.250E-02		3.996E-01	6.449E-01	8.984E-02	0.128
TH-227	8.250E-02		3.997E-01	6.449E-01	1.088E-01	0.128
TH-229	-2.857E-01		5.505E-01	8.650E-01	4.667E-02	-0.330
PA-231	-8.792E-01		1.565E+00	2.495E+00	3.438E-01	-0.352
TH-231	-7.850E-01		7.164E-01	1.114E+00	1.841E-01	-0.704
U-231	-3.006E-01		1.282E+00	1.815E+00	1.442E-01	-0.166
PA-233	4.559E-03		7.321E-02	1.075E-01	6.637E-03	0.042
PA-234	-1.901E-02		3.115E-01	4.980E-01	9.296E-02	-0.038
PA-234M	-6.892E-01		4.909E+00	7.820E+00	7.280E-01	-0.088
U-235	2.638E-02		2.259E-01	3.593E-01	5.826E-02	0.073
NP-236	-1.044E-01		8.833E-02	1.355E-01	7.179E-03	-0.770
NP-239	-5.116E-02		1.936E-01	3.119E-01	1.950E-02	-0.164
AM-241	7.455E-03		1.775E-01	2.575E-01	2.120E-02	0.029

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.018E-02		1.049E-01	1.706E-01	1.227E-02	-0.060
AM-246	-4.566E-02		1.419E-01	2.302E-01	1.588E-02	-0.198
CM-247	-1.309E-02		3.946E-02	6.443E-02	3.614E-03	-0.203
CF-249	-2.330E-03		4.245E-02	7.055E-02	3.940E-03	-0.033
CF-251	2.177E-02		1.354E-01	2.199E-01	1.162E-02	0.099

## VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691001          *
* Acquisition date   : 9-FEB-2010 13:25:50 Detector SN# :                *
* Detector ID        : GAM19 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000           *
* Elapsed real time  : 0 02:00:01.47 Half life ratio : 8.000            *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G245691001 Analyst initials: MJH1                 *
* Batch Number       : 947037 Sample Quantity : 1.2731E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight  : 0.00000                *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 12-MAR-2009 10:24:54 MS Isotope :                 *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.427E+01	2.374E+00	2.565E-01	1.211E+00
CD-109	2.224E+00	9.291E-01	7.009E-01	4.740E-01
SN-126	2.186E-01	9.133E-02	6.920E-02	4.660E-02
TL-208	5.426E-01	8.876E-02	3.139E-02	4.529E-02
BI-211	4.189E+00	5.137E-01	1.554E-01	2.621E-01
PB-212	1.531E+00	1.542E-01	4.803E-02	7.866E-02
PO-212	1.531E+00	1.542E-01	4.803E-02	7.866E-02
BI-214	1.079E+00	1.881E-01	5.934E-02	9.597E-02
PB-214	1.457E+00	1.936E-01	5.415E-02	9.878E-02
PO-214	1.457E+00	1.936E-01	5.415E-02	9.878E-02
PO-216	1.531E+00	1.542E-01	4.803E-02	7.866E-02
PO-218	1.457E+00	1.936E-01	5.415E-02	9.878E-02
RA-224	4.255E+00	1.107E+00	5.462E-01	5.646E-01
RA-226	1.079E+00	1.881E-01	5.934E-02	9.597E-02
AC-228	1.587E+00	3.230E-01	9.392E-02	1.648E-01
RA-228	1.587E+00	3.230E-01	9.392E-02	1.648E-01
TH-228	1.554E+00	1.565E-01	4.876E-02	7.985E-02
TH-230	1.079E+00	1.881E-01	5.934E-02	9.597E-02
TH-232	1.587E+00	3.230E-01	9.392E-02	1.648E-01
TH-234	4.659E+00	2.402E+00	1.105E+00	1.226E+00
U-234	1.079E+00	1.881E-01	5.934E-02	9.597E-02
NP-237	6.420E-01	2.980E-01	2.110E-01	1.520E-01
U-238	4.659E+00	2.402E+00	1.105E+00	1.226E+00
AM-243	3.970E-01	9.798E-02	4.785E-02	4.999E-02
ANH-511	1.569E-01	6.629E-02	2.307E-02	3.382E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	3.331E-02	3.249E-01	2.811E-01	1.657E-01 NOT IDENT.
NA-22	-1.654E-02	4.000E-02	3.244E-02	2.041E-02 NOT IDENT.

NA-24	1.645E+04	6.263E+05	0.000E+00	3.195E+05	SHORT HLIF
AL-26	-1.073E-02	2.897E-02	2.217E-02	1.478E-02	NOT IDENT.
TI-44	4.039E-01	6.219E-02	4.431E-02	3.173E-02	FAIL ABUN
SC-46	1.650E-02	3.723E-02	3.226E-02	1.899E-02	FAIL ABUN
V-48	-3.675E-02	7.562E-02	5.930E-02	3.858E-02	NOT IDENT.
CR-51	1.526E-01	3.664E-01	3.277E-01	1.869E-01	NOT IDENT.
MN-52	-3.291E-02	1.878E-01	1.537E-01	9.582E-02	NOT IDENT.
MN-54	1.613E-02	3.777E-02	3.261E-02	1.927E-02	NOT IDENT.
CO-56	-3.772E-04	3.645E-02	3.031E-02	1.860E-02	FAIL ABUN
CO-57	1.843E-02	2.588E-02	2.292E-02	1.320E-02	NOT IDENT.
CO-58	-1.373E-02	3.969E-02	3.205E-02	2.025E-02	NOT IDENT.
FE-59	-1.065E-01	8.878E-02	6.705E-02	4.529E-02	NOT IDENT.
CO-60	3.196E-02	3.739E-02	3.464E-02	1.907E-02	NOT IDENT.
ZN-65	-4.151E-02	9.500E-02	6.586E-02	4.847E-02	NOT IDENT.
GE-68	1.217E+00	1.204E+00	1.123E+00	6.143E-01	NOT IDENT.
AS-73	-4.966E-01	8.019E-01	6.936E-01	4.092E-01	NOT IDENT.
AS-74	-4.783E-02	9.510E-02	7.777E-02	4.852E-02	NOT IDENT.
SE-75	2.744E-02	4.644E-02	3.722E-02	2.369E-02	FAIL ABUN
BR-77	9.187E+00	9.974E+00	9.077E+00	5.089E+00	FAIL ABUN
SR-82	9.763E-02	4.039E-01	3.013E-01	2.061E-01	NOT IDENT.
RB-83	4.301E-02	6.782E-02	6.059E-02	3.460E-02	NOT IDENT.
RB-84	5.612E-02	6.878E-02	6.146E-02	3.509E-02	NOT IDENT.
KR-85	1.137E+01	8.119E+00	6.751E+00	4.142E+00	NOT IDENT.
SR-85	5.827E-02	4.160E-02	3.459E-02	2.123E-02	NOT IDENT.
RB-86	8.960E-01	7.611E-01	7.184E-01	3.883E-01	NOT IDENT.
Y-88	2.014E-02	3.331E-02	3.065E-02	1.700E-02	NOT IDENT.
ZR-88	5.873E-03	3.106E-02	2.724E-02	1.585E-02	NOT IDENT.
Y-91	7.923E-01	1.799E+01	1.539E+01	9.180E+00	NOT IDENT.
NB-94	-1.001E-02	3.683E-02	3.037E-02	1.879E-02	NOT IDENT.
NB-95	5.718E-02	5.314E-02	4.256E-02	2.711E-02	NOT IDENT.
NB-95M	3.377E-01	1.527E-01	1.247E-01	7.790E-02	NOT IDENT.
ZR-95	3.363E-02	6.745E-02	5.899E-02	3.441E-02	NOT IDENT.
NB-97	-1.325E+05	9.714E+04	0.000E+00	4.956E+04	SHORT HLIF
ZR-97	4.241E+06	1.932E+06	0.000E+00	9.858E+05	SHORT HLIF
MO-99	-5.877E+00	1.137E+01	9.078E+00	5.803E+00	NOT IDENT.
TC-99M	-6.711E+14	3.362E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	3.091E-02	3.629E-02	3.113E-02	1.851E-02	NOT IDENT.
RH-102	1.665E-02	2.889E-02	2.577E-02	1.474E-02	NOT IDENT.
RU-103	-3.460E-02	3.723E-02	2.939E-02	1.900E-02	FAIL ABUN
RH-106	-1.926E-01	3.296E-01	2.660E-01	1.682E-01	FAIL ABUN
RU-106	-1.926E-01	3.290E-01	2.660E-01	1.679E-01	FAIL ABUN
AG-108M	8.795E-03	3.058E-02	2.691E-02	1.560E-02	NOT IDENT.
AG-110M	-5.533E-02	3.652E-02	2.694E-02	1.863E-02	NOT IDENT.
IN-111	6.744E-01	1.188E+00	9.031E-01	6.060E-01	NOT IDENT.
IN-113M	8.945E-03	4.442E-02	3.899E-02	2.266E-02	NOT IDENT.
SN-113	8.945E-03	4.442E-02	3.899E-02	2.266E-02	NOT IDENT.
IN-114M	-4.327E-02	2.104E-01	1.536E-01	1.074E-01	NOT IDENT.
CD-115	2.139E+00	1.010E+01	8.772E+00	5.154E+00	NOT IDENT.
SN-117M	-7.547E-03	5.850E-02	4.967E-02	2.985E-02	NOT IDENT.
SB-122	1.596E-01	2.421E+00	1.799E+00	1.235E+00	NOT IDENT.
I-123	-4.262E+06	5.769E+06	0.000E+00	2.943E+06	SHORT HLIF
TE-123M	-2.263E-02	3.064E-02	2.534E-02	1.563E-02	NOT IDENT.
I-124	-3.164E-01	7.865E-01	5.538E-01	4.013E-01	NOT IDENT.
SB-124	-3.391E-02	5.905E-02	4.233E-02	3.013E-02	NOT IDENT.
SB-125	6.567E-03	9.379E-02	8.139E-02	4.785E-02	FAIL ABUN
TE-125M	-8.564E+00	9.876E+00	8.247E+00	5.039E+00	NOT IDENT.
I-126	-2.233E-01	2.107E-01	1.644E-01	1.075E-01	NOT IDENT.
SB-126	3.377E-02	1.451E-01	1.175E-01	7.404E-02	FAIL ABUN
SB-127	-1.910E-01	1.350E+00	1.125E+00	6.889E-01	NOT IDENT.
XE-127	-3.315E-02	5.065E-02	4.156E-02	2.584E-02	NOT IDENT.
I-131	8.069E-02	1.100E-01	9.980E-02	5.614E-02	NOT IDENT.
TE-132	1.759E-01	7.208E-01	6.127E-01	3.677E-01	NOT IDENT.
BA-133	2.912E-02	4.504E-02	3.594E-02	2.298E-02	FAIL ABUN
I-133	1.534E+03	5.438E+03	0.000E+00	2.775E+03	SHORT HLIF
CS-134	2.486E-01	8.167E-02	5.014E-02	4.167E-02	FAIL ABUN
CS-135	2.810E-01	1.779E-01	1.494E-01	9.075E-02	NOT IDENT.
I-135	-4.593E+14	4.364E+15	0.000E+00	2.226E+15	SHORT HLIF
CS-136	-2.662E-02	9.853E-02	8.247E-02	5.027E-02	FAIL ABUN
BA-137M	4.097E-02	4.123E-02	3.704E-02	2.103E-02	NOT IDENT.
CS-137	4.331E-02	4.358E-02	3.915E-02	2.224E-02	NOT IDENT.
CE-139	8.683E-03	3.195E-02	2.753E-02	1.630E-02	NOT IDENT.
BA-140	-2.643E-02	2.510E-01	2.126E-01	1.280E-01	FAIL ABUN
LA-140	-3.210E-02	8.445E-02	6.658E-02	4.309E-02	NOT IDENT.
CE-141	-3.013E-02	6.642E-02	5.448E-02	3.389E-02	NOT IDENT.
CE-143	1.046E+03	2.896E+02	0.000E+00	1.478E+02	SHORT HLIF
CE-144	-2.394E-01	2.153E-01	1.744E-01	1.098E-01	NOT IDENT.
PM-144	-1.163E-03	3.392E-02	2.849E-02	1.731E-02	NOT IDENT.
PR-144	-7.880E-02	2.299E+00	1.930E+00	1.173E+00	NOT IDENT.

PM-146	7.869E-02	4.194E-02	4.002E-02	2.140E-02	NOT IDENT.
ND-147	7.580E-02	5.363E-01	4.632E-01	2.736E-01	FAIL ABUN
PM-149	4.464E+01	8.676E+01	7.810E+01	4.426E+01	NOT IDENT.
EU-152	1.200E-02	1.228E-01	8.254E-02	6.266E-02	FAIL ABUN
GD-153	2.895E-02	9.163E-02	7.036E-02	4.675E-02	NOT IDENT.
EU-154	-4.113E-02	1.123E-01	9.157E-02	5.730E-02	NOT IDENT.
EU-155	8.433E-02	1.149E-01	1.021E-01	5.863E-02	FAIL ABUN
TB-160	-9.579E-03	1.405E-01	1.159E-01	7.169E-02	FAIL ABUN
HO-166M	-2.680E-02	6.289E-02	5.105E-02	3.209E-02	NOT IDENT.
TM-171	-1.479E+01	3.218E+01	2.432E+01	1.642E+01	NOT IDENT.
LU-176	1.705E-02	2.859E-02	2.276E-02	1.459E-02	FAIL ABUN
LU-177	1.568E+00	1.281E+00	1.025E+00	6.535E-01	FAIL ABUN
LU-177M	-8.586E-02	1.794E-01	1.508E-01	9.151E-02	FAIL ABUN
HF-181	3.701E-02	4.202E-02	3.816E-02	2.144E-02	NOT IDENT.
W-181	1.012E+00	4.385E-01	3.652E-01	2.237E-01	NOT IDENT.
TA-182	8.901E-02	1.994E-01	1.758E-01	1.017E-01	FAIL ABUN
RE-183	7.668E-02	1.151E-01	1.008E-01	5.875E-02	FAIL ABUN
RE-184	-5.465E-02	2.325E-01	1.920E-01	1.186E-01	NOT IDENT.
OS-185	9.677E-03	4.111E-02	3.544E-02	2.098E-02	NOT IDENT.
RE-188	1.867E-01	1.858E-01	1.646E-01	9.477E-02	NOT IDENT.
W-188	-2.695E+00	8.654E+00	6.493E+00	4.415E+00	FAIL ABUN
IR-192	-1.513E-02	3.374E-02	2.886E-02	1.721E-02	FAIL ABUN
AU-195	2.608E-01	2.632E-01	2.083E-01	1.343E-01	FAIL ABUN
TL-200	-3.240E+02	4.264E+02	0.000E+00	2.175E+02	SHORT HLIF
TL-201	-1.326E+00	7.521E+00	6.360E+00	3.837E+00	NOT IDENT.
TL-202	-1.572E-02	6.107E-02	5.172E-02	3.116E-02	NOT IDENT.
HG-203	1.374E-02	4.132E-02	3.695E-02	2.108E-02	NOT IDENT.
BI-207	-2.935E-02	5.343E-02	4.412E-02	2.726E-02	FAIL ABUN
TL-207	-7.850E-01	7.021E-01	5.703E-01	3.582E-01	FAIL ABUN
PO-209	-1.986E+00	6.778E+00	5.439E+00	3.458E+00	NOT IDENT.
BI-210	-1.655E-01	3.264E+00	2.857E+00	1.666E+00	NOT IDENT.
PB-210	-1.655E-01	3.264E+00	2.857E+00	1.666E+00	NOT IDENT.
PO-210	-1.655E-01	3.264E+00	2.857E+00	1.666E+00	NOT IDENT.
PB-211	-9.072E-01	1.112E+00	7.901E-01	5.675E-01	NOT IDENT.
BI-212	1.141E+00	4.673E-01	3.215E-01	2.384E-01	FAIL ABUN
PO-215	-7.850E-01	7.021E-01	5.703E-01	3.582E-01	FAIL ABUN
RN-219	2.033E-01	4.250E-01	3.776E-01	2.168E-01	FAIL ABUN
RN-220	-2.674E+00	2.447E+01	2.070E+01	1.249E+01	NOT IDENT.
RA-223	-7.850E-01	7.021E-01	5.703E-01	3.582E-01	FAIL ABUN
AC-227	8.250E-02	3.917E-01	3.312E-01	1.998E-01	FAIL ABUN
TH-227	8.250E-02	3.917E-01	3.312E-01	1.999E-01	FAIL ABUN
TH-229	-2.857E-01	5.395E-01	4.460E-01	2.752E-01	FAIL ABUN
PA-231	-8.792E-01	1.534E+00	1.279E+00	7.825E-01	NOT IDENT.
TH-231	-7.850E-01	7.021E-01	5.703E-01	3.582E-01	FAIL ABUN
U-231	-3.006E-01	1.256E+00	9.456E-01	6.410E-01	FAIL ABUN
PA-233	4.559E-03	7.174E-02	5.504E-02	3.660E-02	FAIL ABUN
PA-234	-1.901E-02	3.053E-01	2.508E-01	1.558E-01	FAIL ABUN
PA-234M	-6.892E-01	4.811E+00	3.935E+00	2.455E+00	NOT IDENT.
U-235	2.638E-02	2.214E-01	1.861E-01	1.130E-01	FAIL ABUN
NP-236	-1.044E-01	8.656E-02	7.007E-02	4.416E-02	NOT IDENT.
NP-239	-5.116E-02	1.897E-01	1.620E-01	9.680E-02	FAIL ABUN
AM-241	7.455E-03	1.739E-01	1.350E-01	8.873E-02	NOT IDENT.
CM-243	-1.018E-02	1.028E-01	8.879E-02	5.243E-02	FAIL ABUN
AM-246	-4.566E-02	1.390E-01	1.157E-01	7.094E-02	NOT IDENT.
CM-247	-1.309E-02	3.867E-02	3.287E-02	1.973E-02	NOT IDENT.
CF-249	-2.330E-03	4.160E-02	3.601E-02	2.122E-02	NOT IDENT.
CF-251	2.177E-02	1.327E-01	1.135E-01	6.769E-02	NOT IDENT.

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 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON ,SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
46.50	330.4184
46.50	330.4184
46.50	330.4184
48.70	320.5806
49.72	379.5052
51.35	338.1995
52.39	354.2634
52.97	378.9801
53.15	379.0583
53.44	382.1225
54.07	369.6482
56.28	408.8922
56.28	403.9792
57.37	0.0000
57.53	367.4583
57.53	367.4594
57.60	367.4865
57.98	363.9618
57.98	363.9618
59.32	426.0237
59.32	426.0237
59.40	426.0600
59.54	426.1242
59.72	426.2058
60.01	438.9698
61.10	426.8296
61.14	426.8469
61.30	423.7562
63.00	448.4660
63.29	448.6004
63.29	448.6004
63.58	448.7343
64.28	449.0566
65.12	458.7668
65.20	458.8038
65.20	458.8038
66.05	479.8545
66.72	499.2569
66.83	499.3125
66.91	526.3878
67.20	526.5393
67.20	526.5393
67.75	536.3759
67.85	553.1452
68.90	529.8163
68.90	529.8163
69.30	530.0254
69.67	494.3387
70.82	504.8669
70.82	504.8669
70.83	477.3342
72.80	502.2294
72.87	521.4587
72.87	521.4587
74.67	495.7081
74.81	495.7742
74.81	495.7742
74.81	495.7742
74.81	495.7742
74.81	495.7742
74.81	495.7742
74.97	495.8478
75.28	495.9913
75.70	496.1859
77.11	496.8354
77.11	496.8354

77.11	496.8354
77.11	496.8354
77.11	496.8354
77.11	496.8354
77.11	496.8354
78.38	445.3624
79.62	447.4741
79.80	447.5471
79.80	447.5471
80.11	468.6070
80.18	468.6354
80.30	468.6869
80.30	468.6869
80.57	518.7415
81.00	531.8350
81.07	531.8672
81.07	531.8672
81.07	531.8672
81.07	531.8672
82.60	481.4868
83.37	465.1242
83.78	465.2930
83.78	465.2930
83.78	465.2930
83.78	465.2930
84.21	504.2578
84.90	481.9219
85.43	490.2334
86.29	484.1230
86.50	505.2633
86.54	505.2804
86.59	505.3033
86.72	505.3604
86.79	505.3890
86.94	555.6771
87.30	555.8488
87.30	555.8488
87.30	555.8488
87.30	555.8488
87.30	555.8488
87.30	555.8488
87.57	479.1871
87.88	479.3134
88.03	479.3748
88.36	479.5101
88.47	479.5552
89.95	480.1579
91.11	480.6252
92.29	481.0997
92.38	481.1358
92.38	481.1358
93.35	481.5219
94.00	481.7800
94.67	482.0434
94.67	482.0452
94.90	396.3107
94.90	396.3107
94.90	396.3107
94.90	396.3107
95.87	414.5778
95.87	414.5778
96.73	395.2677
97.43	349.7314
98.44	346.7437
98.44	346.7450
98.88	327.2327
99.55	332.3183
99.55	332.3183
99.86	340.5873
100.00	338.4419
100.10	338.4696
103.18	396.0658
103.76	376.7411
105.00	343.1940
105.31	357.6656
108.00	383.1198
109.28	394.8300

111.00	345.7933
111.00	345.7933
111.76	353.2198
112.95	345.2618
115.19	315.8041
116.30	300.5150
117.00	314.1459
117.00	314.1459
117.66	331.9299
121.11	324.4327
121.62	317.2678
121.78	317.3038
122.06	295.5152
122.32	290.3657
122.32	290.3657
122.32	290.3657
122.32	290.3657
123.07	299.8916
127.23	388.4839
129.76	318.0221
131.20	371.7381
133.02	358.5662
133.54	356.5938
135.34	304.5186
136.00	306.7524
136.25	306.8036
136.48	308.9521
140.51	332.9510
140.51	0.0000
142.18	293.2286
142.65	305.9789
143.76	318.8682
144.24	321.0796
144.24	321.0796
144.24	321.0796
144.24	321.0796
145.22	335.0204
145.44	331.8954
147.16	336.4897
152.43	339.7266
152.70	345.0918
153.22	329.2709
154.21	335.8488
154.21	335.8488
154.21	335.8488
154.21	335.8488
155.03	320.0674
156.02	324.5186
158.56	327.1525
159.00	0.0000
159.00	346.4258
160.31	362.7000
161.27	306.3389
162.32	294.7830
162.64	288.4303
163.35	330.2315
163.89	333.5447
165.85	313.5948
167.43	331.0283
171.28	323.1814
171.86	308.2526
172.10	297.5522
176.55	292.9263
176.60	287.5497
181.06	312.6758
184.41	334.0276
185.71	294.4308
186.00	275.4240
190.27	274.3321
192.34	290.0655
193.63	302.2257
197.04	301.6881
198.01	271.3312
198.60	271.4167
200.40	312.0444
201.83	329.7480
202.84	313.5362
205.31	271.2784



208.36	308.5178
208.81	302.4520
209.75	267.5135
209.75	267.5135
210.97	284.3563
215.65	258.4190
216.55	246.4338
218.09	260.9383
222.10	249.3238
223.80	245.1160
226.40	263.1161
227.00	254.3473
227.08	254.3578
227.20	248.8421
228.16	242.3199
228.18	242.3215
228.18	242.3215
231.56	0.0000
235.69	238.0905
236.00	238.1264
236.00	238.1264
238.63	232.4191
238.63	232.4191
238.63	232.4191
238.63	232.4191
239.00	232.4589
240.98	232.6758
241.98	233.4541
241.98	233.4541
241.98	233.4541
244.69	189.1412
245.39	189.2020
247.94	214.4443
248.90	219.0091
249.79	198.9775
252.40	186.9054
252.85	190.3019
252.85	190.3019
254.15	0.0000
256.20	191.7136
256.20	191.7136
260.50	188.7155
260.90	204.4778
262.80	183.7674
264.65	159.0539
268.24	175.8380
268.79	181.8939
269.46	190.3688
269.46	190.3688
269.46	190.3688
269.46	190.3688
271.23	209.1759
273.65	277.1867
276.40	168.0633
277.35	179.0526
277.60	179.0719
277.60	179.0719
278.00	181.1157
278.60	173.0098
279.20	199.3293
279.53	204.7946
280.46	215.7543
281.68	214.0536
283.67	185.1863
284.30	183.4200
285.00	188.0157
285.90	160.8276
286.10	160.8427
286.10	160.8427
287.40	167.2947
288.45	0.0000
290.67	204.8538
290.80	203.3473
291.72	200.3901
293.26	0.0000
293.70	179.2831
295.21	186.9974
295.21	186.9974

295.21	186.9974
295.96	173.3680
296.50	173.4075
297.23	173.4608
298.57	173.5559
299.80	173.6440
299.80	173.6440
300.09	173.6649
300.09	173.6649
300.09	173.6649
300.09	173.6649
300.12	173.6672
301.29	160.0336
302.84	160.1340
303.76	160.1938
303.91	160.2045
304.40	160.2365
304.40	160.2365
304.84	160.2643
306.84	160.3946
308.46	157.4421
311.98	154.6049
316.51	161.9385
318.01	159.2732
319.02	163.0206
319.41	163.0455
320.08	149.2666
323.87	203.0112
323.87	203.0112
323.87	203.0112
323.87	203.0112
325.23	186.4999
328.77	173.8128
333.44	180.6107
334.20	169.8541
334.20	169.8541
334.30	169.8608
338.28	164.2436
338.28	164.2436
338.28	164.2436
338.28	164.2436
338.32	164.2457
338.32	164.2457
338.32	164.2457
340.50	142.4023
340.57	142.4061
344.27	139.5044
345.85	162.8534
350.59	0.0000
351.07	118.4160
351.92	118.4532
351.92	118.4532
351.92	118.4532
355.39	0.0000
356.01	110.5374
364.48	112.4414
366.43	135.9641
367.43	139.7639
367.94	0.0000
369.80	122.9852
374.96	134.4989
383.85	148.1342
387.95	144.5674
388.63	137.9853
391.69	126.7798
391.69	126.7798
392.90	129.6717
398.62	140.3597
400.65	116.7314
401.10	131.9363
401.81	129.1203
402.60	147.1989
404.84	154.9156
410.95	119.9984
411.60	121.9297
413.65	138.2173
414.70	119.1956
415.30	118.2662

415.76	118.2844
417.63	0.0000
418.52	132.7151
423.70	130.0732
427.08	115.8554
427.89	119.7174
432.53	91.1232
433.93	95.0035
439.47	91.3285
439.56	91.3320
439.89	85.5723
443.98	102.0522
444.90	83.7842
445.03	93.4182
445.03	93.4182
445.03	93.4182
445.03	93.4182
453.90	72.4347
463.38	95.8990
468.07	90.5408
473.00	104.9282
475.06	93.3293
475.35	96.2543
476.78	105.0508
477.59	104.1030
477.96	100.2226
482.03	86.7076
484.57	112.1250
487.03	98.5477
490.36	0.0000
492.35	81.1145
497.08	92.9741
507.63	0.0000
510.53	0.0000
510.84	88.4394
511.00	88.4432
511.85	88.4647
511.85	88.4647
513.99	93.4385
513.99	93.4385
520.41	81.7882
520.65	75.8815
527.90	79.9895
528.96	0.0000
529.64	78.0530
529.87	0.0000
531.02	82.0375
537.32	87.1363
543.00	71.4076
546.56	0.0000
549.76	79.4922
552.65	78.5603
555.20	89.5627
563.23	86.4382
563.90	96.4283
568.70	106.8772
569.32	106.8955
569.50	106.9007
569.67	106.9060
573.80	81.6866
574.00	81.6906
574.64	95.0441
578.91	105.1692
579.30	0.0000
583.14	94.2593
585.48	81.9438
591.81	87.1068
592.07	87.1131
593.00	94.5072
595.88	100.6177
600.56	87.3099
602.52	0.0000
602.71	104.1583
602.71	104.1583
603.60	105.8639
604.41	115.9714
604.70	107.5755
609.31	94.9157

609.31	94.9157
609.31	94.9157
609.31	94.9157
610.33	97.6343
612.46	85.8965
614.37	74.1444
618.01	85.0090
621.84	93.1972
621.84	93.1972
631.29	71.0835
633.02	65.0188
633.10	65.0203
634.78	70.1287
635.90	69.1322
636.97	75.2538
645.85	66.2489
646.12	68.2922
656.30	90.9469
657.75	105.2908
657.90	0.0000
661.65	93.1150
661.65	93.1150
664.57	0.0000
666.33	124.9785
666.33	124.9785
675.00	85.2067
677.61	73.9617
685.20	76.1553
692.80	78.3564
695.00	74.2720
696.49	77.3950
696.49	77.3950
697.00	81.5324
697.49	86.7029
698.33	84.6546
698.50	84.6586
699.00	79.5059
702.63	99.2086
706.10	97.2221
706.58	0.0000
706.67	95.1670
709.31	66.2438
711.68	84.9229
713.82	79.7841
717.42	62.2222
720.50	64.8621
721.93	0.0000
722.20	58.8318
722.78	72.6831
722.78	72.6831
722.89	72.6848
722.95	72.6865
723.30	76.1532
724.18	79.6315
727.18	76.2230
733.00	65.9171
735.90	68.9996
739.58	72.9668
742.81	58.4158
744.21	64.6958
747.13	61.6072
751.79	65.8531
752.31	65.8608
753.82	70.0670
755.35	59.6287
756.15	56.5009
756.87	51.2777
763.93	66.3825
765.79	78.6438
766.42	92.6379
766.84	101.3867
776.49	54.3068
778.00	70.5967
778.57	68.3531
778.89	66.6051
783.80	57.9031
785.46	65.2968
792.07	52.7356

795.84	54.8907
796.30	54.8958
798.80	54.5729
801.93	70.4655
805.60	43.6348
810.29	66.7099
810.76	66.7176
815.85	59.3687
817.79	41.3632
818.51	43.4914
819.60	51.9895
826.30	44.6260
828.27	0.0000
831.60	65.9507
831.96	62.7653
834.83	63.8672
836.80	0.0000
846.75	51.2227
848.13	43.7647
856.28	0.0000
856.80	44.5567
860.37	57.7890
867.32	61.2402
867.82	69.6671
871.10	55.7718
873.19	48.2849
874.81	55.8137
875.33	0.0000
876.40	61.2012
879.36	56.9401
880.27	46.2051
880.51	50.5066
881.50	45.1418
883.24	50.5342
884.67	55.9267
889.25	45.2136
896.60	48.5145
898.02	52.8425
899.00	58.2464
903.28	37.1850
911.07	43.2490
911.07	43.2490
911.07	43.2490
919.63	59.5695
920.93	59.5842
925.00	61.8010
925.24	61.8038
926.50	61.8191
935.52	49.9778
937.48	76.0823
944.10	51.1492
946.00	55.5235
949.00	59.9132
962.29	70.9874
964.01	78.2944
966.15	74.6829
968.20	64.5082
969.11	43.7422
969.11	43.7422
969.11	43.7422
977.42	47.0963
980.50	49.3165
983.50	63.5989
989.30	51.5933
996.32	53.8605
1001.03	51.3402
1001.68	52.2639
1004.76	55.9638
1021.30	0.0000
1024.50	0.0000
1034.80	54.4290
1036.00	52.5956
1037.82	38.7683
1038.57	41.5430
1038.76	0.0000
1045.16	48.0623
1046.59	36.9808
1048.07	49.0125

1050.47	49.9592
1050.47	49.9592
1062.04	51.9167
1063.62	58.4242
1076.63	39.0383
1077.35	40.9027
1078.86	55.7935
1085.78	31.6550
1099.22	65.3259
1112.02	48.9759
1112.84	52.7580
1115.52	56.1523
1120.29	46.5647
1120.29	46.5647
1120.29	46.5647
1120.29	46.5647
1120.51	52.4544
1121.28	52.4613
1124.00	0.0000
1129.67	62.4297
1131.51	0.0000
1147.95	0.0000
1167.94	48.1570
1173.22	50.0908
1175.09	47.2697
1177.93	62.4255
1189.05	51.1699
1204.90	57.9545
1205.75	0.0000
1213.00	68.4961
1221.42	62.8740
1230.97	50.8876
1235.34	67.1083
1236.41	0.0000
1238.25	45.8516
1246.25	56.1148
1260.41	0.0000
1271.85	43.2184
1274.45	44.1956
1274.54	44.1975
1291.56	32.7549
1298.22	0.0000
1312.09	37.6924
1325.50	34.8647
1325.50	34.8647
1332.49	26.1760
1333.61	27.1501
1360.21	26.2870
1362.66	0.0000
1365.15	23.3838
1368.21	25.3441
1368.53	0.0000
1376.25	26.7690
1384.27	14.6564
1394.10	12.7212
1395.20	13.7015
1407.95	13.7277
1434.06	18.7016
1436.60	17.7239
1457.56	0.0000
1460.81	21.7386
1489.15	14.8816
1509.49	22.8840
1596.49	25.1729
1620.62	15.1526
1678.03	0.0000
1691.02	12.2344
1691.02	12.2344
1706.46	0.0000
1750.46	0.0000
1764.49	15.4370
1764.49	15.4370
1764.49	15.4370
1764.49	15.4370
1770.23	15.8894
1771.40	63.8593
1791.20	0.0000
1808.65	14.4871

1836.01

10.3825

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691001

Total Uranium Activity	1.3871E+01	ug/g
Total Uranium Counting Unc.	7.1478E+00	ug/g
Total Uranium Tpu	3.6468E-06	ug/g
Total Uranium Mda	3.2880E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037                      SAMPLE ID   : G245691001
*  ANALYST       : MJH1                        DETECTOR    : GAM19
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 13:25:50.23    SAMPLE ALQT  : 127.310 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.137E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.378E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.934E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.913E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:21:57.16

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691002.CNF;1
Sample date   : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:21:30.
Sample ID     : G245691002      Sample quantity  : 1.45720E+02 GRAM
Detector name : GAM22           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.46 0.0%
Energy tolerance: 1.50000 keV   Analyst Initials : MJH1
Abundance limit : 75.00000      Sensitivity    : 5.00000
Batch ID       : 947037         Detector SN#    :
Matrix Spike ID :               LCS ID          : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.28*	19	494	0.92	126.80	124	6	2.70E-03	190.9	
2	3	74.82	609	720	1.34	149.87	144	16	8.46E-02	8.7	1.24E+00
3	3	77.16	888	524	1.03	154.54	144	16	1.23E-01	5.5	
4	5	84.37	160	626	1.27	168.95	164	29	2.22E-02	28.1	1.39E+00
5	5	87.24*	405	546	1.25	174.68	164	29	5.63E-02	10.9	
6	5	89.96	241	544	1.09	180.13	164	29	3.34E-02	17.4	
7	5	92.60*	255	619	1.30	185.39	164	29	3.55E-02	19.7	
8	0	129.02	133	551	1.01	258.16	255	8	1.85E-02	31.7	
9	0	186.02*	257	817	1.37	372.05	365	15	3.57E-02	25.6	
10	0	209.39	168	477	1.20	418.75	414	9	2.34E-02	24.7	
11	3	238.69*	1952	324	1.26	477.31	470	18	2.71E-01	2.9	1.89E+00
12	3	241.60	480	315	1.86	483.11	470	18	6.67E-02	8.9	
13	0	270.89*	180	429	1.27	541.65	535	13	2.50E-02	25.2	
14	0	295.32*	528	442	1.34	590.46	582	13	7.34E-02	9.4	
15	0	300.68*	114	352	1.15	601.18	596	11	1.58E-02	33.8	
16	0	338.46*	432	437	1.39	676.68	671	14	6.00E-02	11.5	
17	0	351.90*	1086	257	1.50	703.53	697	12	1.51E-01	4.3	
18	0	463.13	135	259	1.62	925.84	919	14	1.87E-02	26.8	
19	0	510.83*	207	220	2.89	1021.16	1013	16	2.87E-02	20.1	
20	0	583.32*	678	217	1.58	1166.05	1160	15	9.41E-02	6.3	
21	0	609.26*	820	254	1.74	1217.90	1208	18	1.14E-01	5.9	
22	0	727.15*	153	166	1.22	1453.57	1449	13	2.13E-02	19.2	
23	0	793.85	76	138	2.29	1586.91	1583	14	1.05E-02	34.8	
24	0	860.61	96	119	1.47	1720.37	1712	15	1.33E-02	26.9	
25	0	911.47*	442	139	1.71	1822.06	1814	18	6.14E-02	8.1	
26	1	964.22	104	109	2.34	1927.54	1920	25	1.44E-02	23.2	2.58E+00
27	1	968.96*	343	94	2.54	1937.01	1920	25	4.76E-02	8.6	
28	0	1120.58*	146	208	2.19	2240.18	2229	20	2.03E-02	26.2	
29	0	1460.69*	2870	84	2.53	2920.40	2908	23	3.99E-01	2.1	
30	0	1587.73*	65	73	1.39	3174.53	3161	29	9.06E-03	40.8	
31	0	1764.78*	168	33	2.87	3528.75	3520	19	2.33E-02	11.9	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 17:21:59

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691002.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MJH1  
 Sample date : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:21:30  
 Sample ID : G245691002 Sample quantity : 145.72 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA22 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.46 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.630E+01	3.644E+00	4.089E-01	3.746E-02	88.760
CD-109	+	88.03	*	3.836E+00	9.080E-01	9.623E-01	9.131E-02	3.986
SN-126	+	64.28		1.203E-01	4.596E-01	6.471E-01	9.399E-02	0.186
	+	86.94		1.567E+00	7.346E-01	3.970E-01	1.649E-01	3.948
	+	87.57	*	3.770E-01	8.925E-02	9.496E-02	8.966E-03	3.970
TL-208		277.35		2.992E-01	3.604E-01	5.491E-01	9.054E-02	0.545
	+	510.84		5.740E-01	2.427E-01	1.813E-01	2.362E-02	3.166
	+	583.14	*	5.275E-01	8.801E-02	4.912E-02	5.326E-03	10.740
	+	860.37		6.790E-01	3.733E-01	4.005E-01	4.667E-02	1.695
BI-211		72.87		3.932E+00	2.770E+00	4.254E+00	3.405E-01	0.924
	+	351.07	*	4.002E+00	5.787E-01	2.731E-01	3.186E-02	14.655
PB-212	+	74.81		2.377E+00	5.097E-01	4.276E-01	5.306E-02	5.559
	+	77.11		1.966E+00	2.709E-01	2.435E-01	2.036E-02	8.072
	+	87.30		1.744E+00	4.481E-01	4.403E-01	6.046E-02	3.961
	+	238.63	*	1.681E+00	2.419E-01	7.451E-02	9.845E-03	22.555
	+	300.09		1.454E+00	1.004E+00	1.006E+00	1.467E-01	1.445
PO-212	+	74.81		2.377E+00	5.097E-01	4.276E-01	5.306E-02	5.559
	+	77.11		1.966E+00	2.709E-01	2.435E-01	2.036E-02	8.072
	+	87.30		1.744E+00	4.481E-01	4.403E-01	6.046E-02	3.961
		115.19		1.975E+00	3.157E+00	5.131E+00	4.251E-01	0.385
	+	238.63	*	1.681E+00	2.419E-01	7.451E-02	9.845E-03	22.555
	+	300.09		1.454E+00	1.004E+00	1.006E+00	1.467E-01	1.445
BI-214	+	609.31	*	1.196E+00	1.974E-01	9.118E-02	1.060E-02	13.123
	+	1120.29		1.064E+00	5.697E-01	4.215E-01	4.657E-02	2.525
	+	1764.49		1.597E+00	4.025E-01	2.124E-01	1.770E-02	7.516
PB-214	+	74.81		4.096E+00	8.466E-01	7.368E-01	8.122E-02	5.559
	+	77.11		3.370E+00	5.306E-01	4.174E-01	4.722E-02	8.072
	+	87.30		2.987E+00	7.437E-01	7.542E-01	9.175E-02	3.961
	+	241.98		2.476E+00	5.575E-01	4.151E-01	5.709E-02	5.965
	+	295.21		1.187E+00	2.844E-01	1.861E-01	2.771E-02	6.379
	+	351.92	*	1.392E+00	2.140E-01	9.517E-02	1.213E-02	14.628
PO-214	+	74.81		4.096E+00	8.466E-01	7.368E-01	8.122E-02	5.559
	+	77.11		3.370E+00	5.306E-01	4.174E-01	4.722E-02	8.072
	+	87.30		2.987E+00	7.437E-01	7.542E-01	9.175E-02	3.961

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.476E+00	5.575E-01	4.151E-01	5.709E-02	5.965
	+	295.21		1.187E+00	2.844E-01	1.861E-01	2.771E-02	6.379
	+	351.92	*	1.392E+00	2.140E-01	9.517E-02	1.213E-02	14.628
	+	74.81		2.377E+00	5.097E-01	4.276E-01	5.306E-02	5.559
	+	77.11		1.966E+00	2.709E-01	2.435E-01	2.036E-02	8.072
	+	87.30		1.744E+00	4.481E-01	4.403E-01	6.046E-02	3.961
PO-218	+	238.63	*	1.681E+00	2.419E-01	7.451E-02	9.845E-03	22.555
	+	300.09		1.454E+00	1.004E+00	1.006E+00	1.467E-01	1.445
	+	74.81		4.096E+00	8.466E-01	7.368E-01	8.122E-02	5.559
	+	77.11		3.370E+00	5.306E-01	4.174E-01	4.722E-02	8.072
	+	87.30		2.987E+00	7.437E-01	7.542E-01	9.175E-02	3.961
	+	241.98		2.476E+00	5.575E-01	4.151E-01	5.709E-02	5.965
RA-224	+	295.21		1.187E+00	2.844E-01	1.861E-01	2.771E-02	6.379
	+	351.92	*	1.392E+00	2.140E-01	9.517E-02	1.213E-02	14.628
	+	240.98	*	4.695E+00	1.024E+00	8.471E-01	1.060E-01	5.543
RA-226	+	609.31	*	1.196E+00	1.974E-01	9.118E-02	1.060E-02	13.123
	+	1120.29		1.064E+00	5.697E-01	4.215E-01	4.657E-02	2.525
AC-228	+	1764.49		1.597E+00	4.025E-01	2.124E-01	1.770E-02	7.516
	+	338.32		1.766E+00	8.473E-01	3.192E-01	1.343E-01	5.531
	+	911.07	*	1.476E+00	3.081E-01	1.771E-01	2.347E-02	8.331
RA-228	+	969.11		2.007E+00	5.943E-01	2.969E-01	7.169E-02	6.759
	+	338.32		1.766E+00	8.473E-01	3.192E-01	1.343E-01	5.531
	+	911.07	*	1.476E+00	3.081E-01	1.771E-01	2.347E-02	8.331
TH-228	+	969.11		2.007E+00	5.943E-01	2.969E-01	7.169E-02	6.759
	+	74.81		2.413E+00	4.665E-01	4.341E-01	3.577E-02	5.559
	+	77.11		1.995E+00	2.750E-01	2.472E-01	2.067E-02	8.072
TH-230	+	87.30		1.770E+00	4.190E-01	4.469E-01	4.206E-02	3.961
	+	238.63	*	1.706E+00	2.456E-01	7.565E-02	9.995E-03	22.555
	+	300.09		1.476E+00	1.335E+00	1.021E+00	6.143E-01	1.445
	+	609.31	*	1.196E+00	1.974E-01	9.117E-02	1.060E-02	13.123
	+	1120.29		1.064E+00	5.697E-01	4.214E-01	4.657E-02	2.525
TH-232	+	1764.49		1.597E+00	4.024E-01	2.124E-01	1.770E-02	7.516
	+	338.32		1.766E+00	4.586E-01	3.192E-01	3.796E-02	5.531
	+	911.07	*	1.476E+00	3.081E-01	1.771E-01	2.347E-02	8.331
TH-234	+	969.11		2.007E+00	5.943E-01	2.969E-01	7.169E-02	6.759
	+	63.29	*	3.039E-01	1.161E+00	1.633E+00	2.843E-01	0.186
U-234	+	92.38		1.548E+00	6.728E-01	6.262E-01	1.147E-01	2.472
	+	609.31	*	1.196E+00	1.974E-01	9.117E-02	1.060E-02	13.123
	+	1120.29		1.064E+00	5.697E-01	4.214E-01	4.657E-02	2.525
NP-237	+	1764.49		1.597E+00	4.024E-01	2.124E-01	1.770E-02	7.516
	+	86.50	*	1.107E+00	3.477E-01	2.816E-01	6.376E-02	3.931
U-238	+	95.87		-7.445E-02	8.984E-01	1.286E+00	3.181E-01	-0.058
	+	63.29	*	3.039E-01	1.161E+00	1.633E+00	2.843E-01	0.186
AM-243	+	92.38		1.548E+00	6.262E-01	6.262E-01	5.706E-02	2.472
	+	74.67	*	3.854E-01	7.437E-02	6.952E-02	5.667E-03	5.544
	+	86.72		4.152E+01	9.828E+00	1.054E+01	9.848E-01	3.940
ANH-511		117.66		-1.189E+00	3.414E+00	5.356E+00	4.424E-01	-0.222
		142.18		-5.400E+00	1.537E+01	2.564E+01	2.265E+00	-0.211
	+	511.00	*	1.240E-01	5.139E-02	3.916E-02	3.924E-03	3.166

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	2.064E-01	2.759E-01	4.616E-01	4.817E-02	0.447
NA-22		1274.54	*	-4.161E-02	3.580E-02	5.411E-02	4.663E-03	-0.769
NA-24		1368.53	*	-5.782E-01	3.580E-02	Half-Life too short		
AL-26		1129.67		3.241E-02	1.645E+00	2.354E+00	2.050E-01	0.014
		1808.65	*	1.957E-02	2.040E-02	3.795E-02	3.103E-03	0.516
TI-44		67.85		-1.271E-02	3.653E-02	5.962E-02	4.551E-03	-0.213
	+	78.38	*	3.627E-01	4.999E-02	6.418E-02	5.442E-03	5.651
SC-46		889.25	*	-2.369E-02	3.329E-02	5.265E-02	5.894E-03	-0.450
	+	1120.51		1.822E-01	9.679E-02	1.036E-01	9.160E-03	1.759
V-48		944.10		-7.696E-01	8.024E-01	1.240E+00	1.344E-01	-0.621
		983.50	*	-3.389E-03	5.939E-02	9.720E-02	1.019E-02	-0.035
		1312.09		9.089E-03	6.593E-02	1.099E-01	9.682E-03	0.083
CR-51		320.08	*	1.205E-01	3.171E-01	5.377E-01	6.963E-02	0.224
MN-52		744.21		-7.463E-02	1.976E-01	3.131E-01	3.403E-02	-0.238
		848.13		2.177E-01	5.648E+00	9.431E+00	1.050E+00	0.023
		935.52		2.440E-01	2.187E-01	3.815E-01	4.165E-02	0.640
		1246.25		-1.817E+00	6.807E+00	1.113E+01	9.407E-01	-0.163
		1333.61		2.696E-01	4.210E+00	6.971E+00	6.217E-01	0.039
		1434.06	*	4.635E-03	1.902E-01	3.118E-01	2.786E-02	0.015
MN-54		834.83	*	2.778E-03	3.224E-02	5.404E-02	6.003E-03	0.051
CO-56		846.75	*	3.505E-03	3.404E-02	5.704E-02	6.349E-03	0.061
		977.42		3.146E-01	2.707E+00	3.977E+00	4.194E-01	0.079
		1037.82		-1.787E-01	2.874E-01	4.508E-01	4.649E-02	-0.396
		1175.09		-1.950E+00	1.868E+00	2.911E+00	2.344E-01	-0.670
		1238.25		8.798E-02	8.000E-02	1.395E-01	1.209E-02	0.631
		1360.21		-7.415E-02	8.524E-01	1.392E+00	1.243E-01	-0.053
		1771.40		2.353E-02	1.999E-01	2.851E-01	2.369E-02	0.083
CO-57		122.06	*	-1.785E-02	2.320E-02	3.566E-02	2.941E-03	-0.500
		136.48		-3.816E-02	1.823E-01	3.062E-01	2.841E-02	-0.125
CO-58		810.76	*	-1.576E-02	3.048E-02	4.930E-02	5.460E-03	-0.320
FE-59		142.65		-1.452E+00	2.463E+00	3.987E+00	3.528E-01	-0.364
		192.34		-2.314E-01	9.347E-01	1.336E+00	1.984E-01	-0.173
		1099.22	*	3.218E-02	8.137E-02	1.353E-01	1.326E-02	0.238
		1291.56		-3.444E-02	1.045E-01	1.688E-01	1.664E-02	-0.204
CO-60		1173.22		-1.324E-02	3.759E-02	6.141E-02	4.939E-03	-0.216
		1332.49	*	1.599E-02	3.259E-02	5.565E-02	4.963E-03	0.287
ZN-65		1115.52	*	6.550E-02	1.010E-01	1.463E-01	1.305E-02	0.448
GE-68		1077.35	*	9.355E-01	1.100E+00	1.879E+00	1.772E-01	0.498
AS-73		53.44	*	2.624E-01	6.457E-01	1.066E+00	8.057E-02	0.246
AS-74		595.88	*	-9.801E-02	7.528E-02	1.149E-01	1.191E-02	-0.853
		634.78		8.486E-02	2.906E-01	4.864E-01	5.098E-02	0.174
SE-75		66.05		-2.006E+00	4.353E+00	6.250E+00	5.963E-01	-0.321
		96.73		-7.142E-01	7.588E-01	1.035E+00	1.424E-01	-0.690
		121.11		-1.404E-01	1.263E-01	1.906E-01	2.084E-02	-0.737
		136.00		1.711E-03	3.429E-02	5.808E-02	5.040E-03	0.029
		198.60		2.886E-02	1.622E+00	2.605E+00	3.045E-01	0.011
		264.65	*	1.944E-02	4.540E-02	6.510E-02	8.763E-03	0.299
		279.53		7.022E-02	9.784E-02	1.603E-01	2.275E-02	0.438
		303.91		7.051E-01	1.986E+00	2.959E+00	4.509E-01	0.238

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	400.65		3.204E-02	2.158E-01	3.566E-01	4.173E-02	0.090
		87.88		8.343E+02	1.975E+02	2.887E+02	2.736E+01	2.890
		200.40		-1.730E+02	1.502E+02	2.354E+02	2.589E+01	-0.735
	+	239.00		2.717E+02	3.716E+01	3.226E+01	4.014E+00	8.422
		249.79		3.513E+00	5.836E+01	9.448E+01	1.215E+01	0.037
		281.68		-3.742E+01	8.257E+01	1.292E+02	1.800E+01	-0.290
		297.23		3.100E+02	9.209E+01	1.066E+02	1.434E+01	2.907
		303.76		7.073E+01	1.707E+02	2.551E+02	3.374E+01	0.277
		439.47		6.769E+01	1.214E+02	2.028E+02	1.952E+01	0.334
		484.57		-8.969E+01	1.993E+02	3.137E+02	3.101E+01	-0.286
		520.65	*	-1.147E-01	8.879E+00	1.489E+01	1.498E+00	-0.008
		574.64		-1.614E+02	1.805E+02	2.782E+02	2.863E+01	-0.580
		578.91		4.672E+01	8.277E+01	1.230E+02	1.268E+01	0.380
		585.48		2.017E+03	3.090E+02	4.488E+02	4.636E+01	4.494
		755.35		7.408E+01	1.503E+02	2.500E+02	2.725E+01	0.296
		817.79		1.195E+02	1.037E+02	1.839E+02	2.037E+01	0.650
		698.33		2.581E+01	2.869E+01	4.889E+01	5.231E+00	0.528
		776.49	*	-3.852E-01	3.247E-01	4.811E-01	5.276E-02	-0.801
		1395.20		-5.793E+00	8.386E+00	1.280E+01	1.145E+00	-0.453
RB-83	*	520.41		-6.478E-03	5.802E-02	9.683E-02	9.745E-03	-0.067
		529.64		-4.756E-02	8.688E-02	1.414E-01	1.429E-02	-0.336
		552.65		1.870E-01	1.617E-01	2.835E-01	2.893E-02	0.660
RB-84		881.50	*	5.164E-02	6.011E-02	1.042E-01	1.166E-02	0.495
KR-85		513.99	*	2.185E+01	7.764E+00	1.218E+01	1.222E+00	1.794
SR-85		513.99	*	1.121E-01	3.982E-02	6.247E-02	6.268E-03	1.794
RB-86		1076.63	*	7.028E-01	6.946E-01	1.197E+00	1.129E-01	0.587
Y-88		898.02		-1.499E-02	3.383E-02	5.444E-02	6.117E-03	-0.275
		1836.01	*	1.322E-02	2.349E-02	4.156E-02	3.360E-03	0.318
ZR-88		392.90	*	1.475E-02	2.625E-02	4.419E-02	4.114E-03	0.334
Y-91		1204.90	*	1.512E+01	1.699E+01	2.948E+01	2.424E+00	0.513
NB-94	*	702.63		-4.514E-04	2.825E-02	4.607E-02	4.937E-03	-0.010
		871.10		9.290E-03	2.911E-02	4.925E-02	5.501E-03	0.189
NB-95		765.79	*	2.239E-02	3.832E-02	6.379E-02	6.975E-03	0.351
NB-95M		235.69	*	1.067E-01	1.294E-01	1.896E-01	2.506E-02	0.563
ZR-95		724.18		1.614E-01	9.355E-02	1.448E-01	1.651E-02	1.115
		756.15	*	2.188E-02	6.459E-02	1.066E-01	1.237E-02	0.205
NB-97	*	657.90		7.375E-02	6.459E-02	Half-Life	too short	
		1024.50		-5.221E+00	6.459E-02	Half-Life	too short	
ZR-97		254.15		-4.530E+00	6.459E-02	Half-Life	too short	
		355.39		2.354E+00	6.459E-02	Half-Life	too short	
		507.63	*	3.155E+00	6.459E-02	Half-Life	too short	
		602.52		-1.428E+00	6.459E-02	Half-Life	too short	
		1021.30		-2.947E+00	6.459E-02	Half-Life	too short	
		1147.95		-1.638E+00	6.459E-02	Half-Life	too short	
		1362.66		1.856E-01	6.459E-02	Half-Life	too short	
		1750.46		8.920E-01	6.459E-02	Half-Life	too short	
MO-99		140.51		-1.275E+01	2.373E+01	3.806E+01	1.056E+01	-0.335
		181.06		-1.041E+01	1.683E+01	2.363E+01	4.523E+00	-0.441
		366.43		-4.451E+01	6.878E+01	1.100E+02	1.167E+01	-0.404

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		739.58	*	-1.932E-01	9.550E+00	1.549E+01	2.565E+00	-0.012
		778.00		-4.961E+01	2.953E+01	4.173E+01	4.579E+00	-1.189
TC-99M		140.51	*	-1.964E+10	2.953E+01	Half-Life	too short	
RH-101		127.23		-6.496E-03	3.423E-02	4.760E-02	3.979E-03	-0.136
		198.01	*	4.384E-04	2.958E-02	4.750E-02	5.182E-03	0.009
		325.23		-1.708E-01	1.954E-01	3.137E-01	3.899E-02	-0.545
RH-102		418.52		-1.568E-01	2.401E-01	3.793E-01	3.599E-02	-0.413
		475.06	*	1.532E-02	2.505E-02	4.169E-02	4.100E-03	0.367
		631.29		2.300E-02	4.403E-02	7.460E-02	7.812E-03	0.308
		697.49		3.058E-02	6.516E-02	1.090E-01	1.166E-02	0.281
		766.84		3.790E-02	9.834E-02	1.622E-01	1.774E-02	0.234
		1046.59		-3.016E-02	9.889E-02	1.582E-01	1.551E-02	-0.191
		1112.84		1.294E-01	2.500E-01	3.593E-01	3.216E-02	0.360
RU-103		497.08	*	-2.516E-02	3.375E-02	5.167E-02	7.755E-03	-0.487
	+	610.33		1.292E+01	2.740E+00	2.299E+00	4.064E-01	5.622
RH-106	+	511.85		6.193E-01	2.567E-01	3.452E-01	3.460E-02	1.794
		621.84	*	-1.610E-01	2.635E-01	4.188E-01	6.116E-02	-0.384
		1050.47		-1.049E+00	1.946E+00	3.057E+00	2.984E-01	-0.343
RU-106	+	511.85		6.193E-01	2.567E-01	3.452E-01	3.460E-02	1.794
		621.84	*	-1.610E-01	2.630E-01	4.188E-01	4.375E-02	-0.384
		1050.47		-1.049E+00	1.946E+00	3.057E+00	2.984E-01	-0.343
AG-108M		433.93	*	4.015E-03	2.733E-02	4.487E-02	4.442E-03	0.089
		614.37		1.747E-02	3.669E-02	5.392E-02	5.772E-03	0.324
		722.95		2.662E-03	3.919E-02	5.493E-02	6.078E-03	0.048
AG-110M		657.75	*	2.752E-02	2.760E-02	4.762E-02	5.118E-03	0.578
		677.61		4.989E-02	2.576E-01	4.264E-01	4.610E-02	0.117
		706.67		1.423E-01	1.697E-01	2.887E-01	3.154E-02	0.493
		763.93		-5.921E-02	1.501E-01	2.377E-01	2.644E-02	-0.249
		884.67		4.211E-02	4.318E-02	7.516E-02	8.571E-03	0.560
		937.48		5.929E-02	9.551E-02	1.630E-01	1.817E-02	0.364
		1384.27		-2.124E-01	1.460E-01	2.087E-01	1.915E-02	-1.018
IN-111		171.28		5.068E-01	8.892E-01	1.504E+00	1.501E-01	0.337
		245.39	*	8.867E-02	1.007E+00	1.430E+00	1.814E-01	0.062
IN-113M		391.69	*	9.454E-04	3.841E-02	6.325E-02	6.040E-03	0.015
SN-113		391.69	*	9.454E-04	3.841E-02	6.325E-02	6.040E-03	0.015
IN-114M		190.27	*	1.305E-01	1.745E-01	2.610E-01	2.774E-02	0.500
CD-115		260.90		-3.725E+01	1.186E+02	1.882E+02	2.501E+01	-0.198
		492.35		-1.805E+01	2.965E+01	4.601E+01	4.567E+00	-0.392
		527.90	*	1.935E+00	9.051E+00	1.532E+01	1.547E+00	0.126
SN-117M		156.02		4.333E-01	1.988E+00	3.352E+00	3.142E-01	0.129
		158.56	*	-3.872E-02	4.836E-02	7.866E-02	7.460E-03	-0.492
SB-122		563.90	*	-6.702E-03	1.704E+00	2.838E+00	2.909E-01	-0.002
		692.80		-2.277E+00	3.720E+01	6.061E+01	6.471E+00	-0.038
I-123		159.00	*	-3.899E+00	3.720E+01	Half-Life	too short	
		528.96		-2.116E+02	3.720E+01	Half-Life	too short	
TE-123M		159.00	*	-1.871E-02	2.485E-02	4.048E-02	3.866E-03	-0.462
I-124		602.71	*	-1.039E-01	6.432E-01	9.051E-01	9.401E-02	-0.115
		722.78		-2.545E-01	4.083E+00	5.661E+00	6.110E-01	-0.045
		1325.50		-4.156E-01	3.126E+01	4.878E+01	4.332E+00	-0.009

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25		4.352E+01	2.601E+01	4.743E+01	4.239E+00	0.917
		1509.49		1.186E+01	1.327E+01	2.324E+01	2.065E+00	0.510
		1691.02		-1.257E+00	2.665E+00	4.127E+00	3.529E-01	-0.305
		602.71		-6.018E-03	3.725E-02	5.242E-02	5.445E-03	-0.115
		645.85		-2.961E-01	3.943E-01	6.174E-01	6.753E-02	-0.480
		709.31		-5.495E-01	2.234E+00	3.590E+00	3.856E-01	-0.153
		713.82		-7.474E-01	1.317E+00	2.066E+00	2.821E-01	-0.362
		722.78		-2.137E-02	3.428E-01	4.753E-01	5.200E-02	-0.045
	+	968.20		2.066E+01	4.168E+00	6.015E+00	6.396E-01	3.435
		1045.16		-8.846E-01	2.183E+00	3.470E+00	3.408E-01	-0.255
		1325.50		-3.727E-02	2.803E+00	4.374E+00	3.884E-01	-0.009
		1368.21		-2.849E-01	1.403E+00	2.263E+00	3.096E-01	-0.126
		1436.60		4.061E-01	2.982E+00	4.939E+00	4.413E-01	0.082
		1691.02	*	-2.490E-02	5.278E-02	8.172E-02	7.269E-03	-0.305
SB-125		427.89	*	-3.409E-02	7.365E-02	1.172E-01	1.137E-02	-0.291
	+	463.38		7.398E-01	4.036E-01	4.670E-01	4.842E-02	1.584
		600.56		1.713E-01	1.618E-01	2.475E-01	2.701E-02	0.692
		635.90		5.868E-02	2.324E-01	3.814E-01	4.220E-02	0.154
TE-125M		109.28	*	6.359E+00	8.012E+00	1.312E+01	1.329E+00	0.485
		388.63		-1.131E-02	1.773E-01	2.910E-01	2.755E-02	-0.039
		666.33	*	1.104E-01	1.487E-01	2.530E-01	2.673E-02	0.436
SB-126		753.82		6.363E-01	1.323E+00	2.199E+00	2.396E-01	0.289
		223.80		-1.050E+00	3.642E+00	5.871E+00	6.966E-01	-0.179
		278.60		1.238E+00	2.235E+00	3.645E+00	5.096E-01	0.340
	+	296.50		1.183E+01	2.737E+00	3.043E+00	4.099E-01	3.889
		414.70		3.479E-04	6.508E-02	1.065E-01	1.008E-02	0.003
		415.30		1.950E+00	5.252E+00	8.740E+00	8.276E-01	0.223
		555.20		-1.137E+00	3.285E+00	5.381E+00	5.496E-01	-0.211
		573.80		-7.288E-01	8.750E-01	1.389E+00	1.429E-01	-0.525
		593.00		-4.009E-01	7.672E-01	1.206E+00	1.248E-01	-0.333
		656.30		1.488E+00	2.704E+00	4.572E+00	4.816E-01	0.326
		666.33		4.613E-02	6.213E-02	1.057E-01	1.117E-02	0.436
		675.00		5.001E-01	1.695E+00	2.821E+00	2.991E-01	0.177
		695.00		1.671E-03	6.700E-02	1.096E-01	1.171E-02	0.015
		697.00		4.610E-02	2.297E-01	3.792E-01	4.055E-02	0.122
		720.50	*	-3.660E-02	1.335E-01	1.899E-01	2.047E-02	-0.193
		856.80		8.399E-02	4.270E-01	6.189E-01	6.900E-02	0.136
		989.30		9.634E-01	1.093E+00	1.884E+00	1.965E-01	0.511
		1034.80		7.153E+00	8.014E+00	1.375E+01	1.367E+00	0.520
SB-127		1213.00		-1.277E+00	4.083E+00	6.674E+00	5.518E-01	-0.191
		61.10		-1.936E+00	4.708E+01	6.991E+01	7.059E+00	-0.028
		252.40		2.462E+00	3.910E+00	6.235E+00	2.690E+00	0.395
		290.80		-1.592E+01	2.082E+01	2.913E+01	4.483E+00	-0.547
		411.60		5.983E+00	1.067E+01	1.784E+01	2.889E+00	0.335
		444.90		-7.957E+00	8.129E+00	1.242E+01	1.648E+00	-0.641
		473.00		3.267E-01	1.400E+00	2.290E+00	3.139E-01	0.143
		543.00		-5.668E+00	1.257E+01	2.044E+01	3.142E+00	-0.277
		603.60		-2.476E+00	1.130E+01	1.584E+01	2.184E+00	-0.156
		685.20	*	1.292E-01	1.092E+00	1.800E+00	2.338E-01	0.072



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		698.50		1.142E+01	1.291E+01	2.183E+01	3.721E+00	0.523
		722.20		-6.621E+00	2.816E+01	3.844E+01	4.965E+00	-0.172
		783.80		4.035E+00	2.921E+00	5.026E+00	7.121E-01	0.803
		57.60		1.214E+00	4.546E+00	7.638E+00	5.486E-01	0.159
		145.22		9.013E-01	6.347E-01	1.079E+00	9.654E-02	0.835
		172.10		-3.793E-02	1.047E-01	1.720E-01	1.721E-02	-0.221
		202.84	*	2.657E-02	4.374E-02	7.076E-02	7.844E-03	0.375
I-131		374.96		6.336E-02	1.649E-01	2.768E-01	2.818E-02	0.229
		80.18		8.853E-01	4.903E+00	5.707E+00	4.969E-01	0.155
		284.30		-7.926E-01	1.379E+00	2.141E+00	3.027E-01	-0.370
		364.48	*	9.875E-02	9.295E-02	1.602E-01	1.776E-02	0.616
		636.97		-2.945E-01	1.315E+00	2.101E+00	2.287E-01	-0.140
TE-132		722.89		1.461E-01	6.598E+00	9.214E+00	9.985E-01	0.016
		49.72		-1.971E-01	1.454E+01	2.441E+01	2.535E+00	-0.008
		111.76		-6.026E+00	2.655E+01	4.126E+01	4.388E+00	-0.146
		116.30		-7.889E+00	2.495E+01	3.923E+01	4.153E+00	-0.201
		228.16	*	2.607E-01	6.165E-01	1.016E+00	1.810E-01	0.257
BA-133		53.15		6.716E-01	2.800E+00	4.600E+00	3.491E-01	0.146
		79.62		1.023E+00	1.363E+00	1.638E+00	2.491E-01	0.625
		81.00		-9.197E-03	1.037E-01	1.185E-01	1.888E-02	-0.078
		276.40		1.816E-01	3.750E-01	5.358E-01	9.695E-02	0.339
		302.84		1.246E-01	1.394E-01	2.114E-01	3.525E-02	0.589
I-133		356.01	*	5.852E-03	3.957E-02	5.749E-02	8.591E-03	0.102
		383.85		-4.763E-02	2.559E-01	4.180E-01	5.593E-02	-0.114
	+	510.53		1.285E+00	2.559E-01	Half-Life	too short	
		529.87	*	-1.744E-03	2.559E-01	Half-Life	too short	
		706.58		2.745E-01	2.559E-01	Half-Life	too short	
		856.28		-2.193E-02	2.559E-01	Half-Life	too short	
		875.33		-2.009E-02	2.559E-01	Half-Life	too short	
		1236.41		8.391E-01	2.559E-01	Half-Life	too short	
		1298.22		6.211E-02	2.559E-01	Half-Life	too short	
		475.35		7.622E-01	1.646E+00	2.721E+00	2.676E-01	0.280
CS-134		563.23		6.616E-05	2.929E-01	4.880E-01	5.035E-02	0.000
		569.32		1.664E-01	1.654E-01	2.870E-01	2.976E-02	0.580
		604.70		1.178E-02	3.306E-02	4.820E-02	5.018E-03	0.244
		795.84	*	8.537E-02	4.630E-02	7.215E-02	7.986E-03	1.183
		801.93		-1.902E-01	4.059E-01	5.231E-01	5.793E-02	-0.364
		1038.57		-3.384E+00	3.635E+00	5.577E+00	5.522E-01	-0.607
		1167.94		1.002E+00	2.166E+00	3.704E+00	3.010E-01	0.270
		1365.15		-6.524E-01	1.062E+00	1.598E+00	1.488E-01	-0.408
		268.24	*	1.138E-01	1.690E-01	2.402E-01	3.474E-02	0.474
		288.45		2.350E+09	1.690E-01	Half-Life	too short	
CS-135		417.63		-6.078E+09	1.690E-01	Half-Life	too short	
		546.56		-7.117E+09	1.690E-01	Half-Life	too short	
		836.80		-3.616E+09	1.690E-01	Half-Life	too short	
		1038.76		-1.516E+10	1.690E-01	Half-Life	too short	
		1124.00		1.098E+11	1.690E-01	Half-Life	too short	
		1131.51		-4.099E+09	1.690E-01	Half-Life	too short	
		1260.41	*	-2.928E+09	1.690E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1457.56		1.412E+12	1.690E-01	Half-Life	too short	
		1678.03		-6.281E+09	1.690E-01	Half-Life	too short	
		1706.46		-1.283E+10	1.690E-01	Half-Life	too short	
		1791.20		-1.788E+08	1.690E-01	Half-Life	too short	
		66.91		-1.336E-01	6.946E-01	1.008E+00	1.499E-01	-0.133
	+	86.29		4.926E+00	1.257E+00	1.697E+00	2.259E-01	2.903
		153.22		1.871E-01	5.796E-01	9.809E-01	1.002E-01	0.191
		163.89		1.040E+00	9.610E-01	1.646E+00	1.752E-01	0.632
		176.55		1.777E-01	3.175E-01	5.357E-01	5.669E-02	0.332
		273.65		-3.651E-01	4.652E-01	6.170E-01	8.729E-02	-0.592
		340.57		6.156E-01	1.587E-01	2.392E-01	2.865E-02	2.574
		818.51		4.580E-02	5.842E-02	1.018E-01	1.128E-02	0.450
		1048.07	*	4.904E-02	8.895E-02	1.503E-01	1.520E-02	0.326
		1235.34		5.026E-01	5.249E-01	9.063E-01	1.059E-01	0.555
BA-137M		661.65	*	-2.646E-02	2.913E-02	4.513E-02	4.759E-03	-0.586
CS-137		661.65	*	-2.798E-02	3.079E-02	4.771E-02	5.037E-03	-0.586
CE-139		165.85	*	-1.244E-02	2.686E-02	4.411E-02	4.326E-03	-0.282
BA-140		162.64		2.861E-01	6.734E-01	1.138E+00	1.151E-01	0.251
		304.84		9.281E-01	1.216E+00	1.808E+00	5.378E-01	0.513
		423.70		1.354E-01	1.552E+00	2.545E+00	8.316E-01	0.053
LA-140		537.32	*	1.464E-01	2.064E-01	3.480E-01	1.168E-01	0.421
		328.77		3.817E-01	2.614E-01	4.521E-01	5.711E-02	0.844
		432.53		2.171E-01	1.712E+00	2.785E+00	2.774E-01	0.078
		487.03		3.936E-02	1.152E-01	1.891E-01	1.960E-02	0.208
		751.79		-1.457E-01	1.531E+00	2.470E+00	2.873E-01	-0.059
		815.85		-5.627E-02	2.458E-01	4.050E-01	4.803E-02	-0.139
		867.82		-4.934E-02	1.405E+00	1.992E+00	2.295E-01	-0.025
		919.63		2.740E-01	2.741E+00	3.906E+00	4.957E-01	0.070
		925.24		-1.704E-01	9.657E-01	1.578E+00	1.804E-01	-0.108
		1596.49	*	6.569E-02	6.915E-02	1.119E-01	9.813E-03	0.587
CE-141		145.44	*	9.219E-02	5.609E-02	9.773E-02	8.896E-03	0.943
CE-143		57.37		-7.059E-05	5.609E-02	Half-Life	too short	
		231.56		-8.614E-04	5.609E-02	Half-Life	too short	
		293.26	*	7.875E-04	5.609E-02	Half-Life	too short	
	+	350.59		3.210E-02	5.609E-02	Half-Life	too short	
		490.36		4.248E-04	5.609E-02	Half-Life	too short	
		664.57		6.363E-04	5.609E-02	Half-Life	too short	
		721.93		-3.320E-04	5.609E-02	Half-Life	too short	
CE-144		80.11		4.720E-01	2.254E+00	2.629E+00	2.273E-01	0.180
		133.54	*	1.692E-01	2.044E-01	3.132E-01	4.862E-02	0.540
PM-144		476.78		2.605E-02	5.790E-02	9.563E-02	1.010E-02	0.272
		618.01		4.472E-02	2.745E-02	4.678E-02	4.974E-03	0.956
		696.49	*	9.912E-03	2.919E-02	4.853E-02	5.190E-03	0.204
		778.57		-3.362E+00	1.976E+00	2.786E+00	3.057E-01	-1.207
PR-144		696.49	*	6.717E-01	1.978E+00	3.289E+00	3.516E-01	0.204
		1489.15		-8.003E+00	1.022E+01	1.530E+01	1.362E+00	-0.523
PM-146		453.90	*	8.008E-03	3.821E-02	6.264E-02	7.279E-03	0.128
		633.02		1.588E-02	1.169E+00	1.928E+00	7.296E-01	0.008
		735.90		1.072E-01	1.362E-01	2.108E-01	6.187E-02	0.508

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	747.13		5.113E-02	7.604E-02	1.277E-01	1.983E-02	0.400
		91.11		7.512E-01	2.717E-01	4.355E-01	4.303E-02	1.725
		319.41		1.677E+00	2.806E+00	4.793E+00	6.067E-01	0.350
		439.89		3.576E+00	4.916E+00	8.270E+00	7.964E-01	0.432
PM-149	*	531.02		-2.376E-01	4.608E-01	7.493E-01	1.188E-01	-0.317
		285.90		5.375E+01	8.298E+01	1.352E+02	2.557E+01	0.398
EU-152		121.78		-9.474E-02	6.890E-02	1.028E-01	9.865E-03	-0.922
		244.69		1.290E-01	3.200E-01	4.618E-01	5.847E-02	0.279
		344.27	*	1.290E-02	1.061E-01	1.354E-01	1.627E-02	0.095
		443.98		-6.036E-01	7.856E-01	1.222E+00	1.180E-01	-0.494
		778.89		-3.543E-01	2.229E-01	3.170E-01	3.479E-02	-1.118
		867.32		4.512E-01	8.131E-01	1.209E+00	1.350E-01	0.373
		964.01		7.009E-01	3.336E-01	4.907E-01	5.236E-02	1.428
		1085.78		-2.316E-01	3.363E-01	5.201E-01	4.846E-02	-0.445
		1112.02		1.572E-01	3.508E-01	5.017E-01	4.496E-02	0.313
		1407.95		1.290E-01	1.568E-01	2.731E-01	2.442E-02	0.472
GD-153	+	69.67		4.534E-02	1.441E+00	2.116E+00	1.642E-01	0.021
		83.37		2.705E+01	1.542E+01	1.981E+01	1.778E+00	1.366
	*	97.43		-5.259E-02	7.760E-02	1.078E-01	9.480E-03	-0.488
		103.18		-3.096E-02	9.145E-02	1.449E-01	1.239E-02	-0.214
EU-154		123.07		1.738E-02	4.702E-02	7.544E-02	8.368E-03	0.230
		247.94		1.457E-01	3.174E-01	5.211E-01	7.745E-02	0.280
		591.81		3.607E-01	5.434E-01	8.432E-01	1.096E-01	0.428
		723.30		6.351E-02	1.665E-01	2.391E-01	2.758E-02	0.266
		756.87		4.878E-01	7.039E-01	1.179E+00	1.617E-01	0.414
		873.19		3.721E-02	2.518E-01	4.220E-01	5.975E-02	0.088
		996.32		-1.158E-01	3.251E-01	5.205E-01	9.719E-02	-0.223
		1004.76		-7.330E-02	1.785E-01	2.844E-01	3.672E-02	-0.258
	*	1274.45		-1.156E-01	1.004E-01	1.513E-01	1.710E-02	-0.764
		48.70		2.439E-02	1.816E+00	3.054E+00	2.487E-01	0.008
EU-155	+	60.01		7.927E-01	4.082E+00	6.131E+00	4.354E-01	0.129
		86.54		4.541E-01	1.076E-01	1.576E-01	1.483E-02	2.881
	*	105.31		1.874E-02	9.422E-02	1.520E-01	1.305E-02	0.123
		86.79		1.213E+00	2.872E-01	4.185E-01	3.913E-02	2.899
TB-160	+	197.04		2.188E-02	5.040E-01	8.105E-01	8.813E-02	0.027
		215.65		-5.429E-03	6.675E-01	1.091E+00	1.261E-01	-0.005
		298.57		1.078E-01	1.633E-01	1.712E-01	2.295E-02	0.630
		879.36	*	-6.431E-02	1.208E-01	1.939E-01	2.169E-02	-0.332
		962.29		1.210E+00	5.238E-01	8.453E-01	9.033E-02	1.431
		966.15		1.586E+00	2.798E-01	4.627E-01	4.929E-02	3.427
		1177.93		-2.829E-01	3.029E-01	4.759E-01	3.840E-02	-0.594
		1271.85		-7.860E-01	5.687E-01	8.397E-01	7.217E-02	-0.936
HO-166M		80.57		7.643E-04	2.873E-01	3.304E-01	2.871E-02	0.002
		184.41		8.261E-02	3.329E-02	5.723E-02	5.966E-03	1.443
		280.46		-1.135E-02	7.725E-02	1.228E-01	1.715E-02	-0.092
		410.95		1.832E-01	2.139E-01	3.623E-01	3.420E-02	0.506
	*	711.68		-5.532E-02	5.031E-02	7.604E-02	8.175E-03	-0.727
		752.31		-2.877E-02	2.459E-01	3.962E-01	4.316E-02	-0.073
		810.29		-2.519E-03	4.579E-02	7.636E-02	8.442E-03	-0.033

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		-6.701E+00	2.299E+01	3.814E+01	2.975E+00	-0.176
		52.39		-3.306E+00	1.236E+01	1.997E+01	1.533E+00	-0.166
		59.40		5.212E+00	2.192E+01	3.301E+01	2.333E+00	0.158
LU-176	+	66.72	*	-4.985E+00	2.521E+01	3.658E+01	2.764E+00	-0.136
		88.36		8.942E-01	2.117E-01	3.085E-01	2.918E-02	2.898
		201.83		6.095E-03	2.581E-02	4.272E-02	4.720E-03	0.143
		306.84	*	9.434E-03	2.224E-02	3.469E-02	4.552E-03	0.272
		401.10		2.244E+00	5.598E+00	9.351E+00	8.762E-01	0.240
LU-177	+	112.95		-5.924E-01	1.471E+00	2.269E+00	1.886E-01	-0.261
		208.36	*	2.632E+00	1.333E+00	1.766E+00	1.993E-01	1.491
LU-177M	+	52.97		1.569E-01	1.270E+00	2.078E+00	1.581E-01	0.075
		54.07		3.366E-01	6.633E-01	1.098E+00	8.226E-02	0.306
		61.30		1.710E-01	1.217E+00	1.821E+00	1.310E-01	0.094
		121.62		-5.015E-01	3.522E-01	5.253E-01	4.327E-02	-0.955
		147.16		-4.936E-01	5.774E-01	9.437E-01	8.510E-02	-0.523
		171.86		-1.189E-01	4.228E-01	6.966E-01	6.967E-02	-0.171
		218.09		-2.645E-01	7.697E-01	1.241E+00	1.446E-01	-0.213
		268.79		8.878E-01	8.737E-01	1.257E+00	1.709E-01	0.706
		319.02		1.514E-01	2.182E-01	3.737E-01	4.735E-02	0.405
		367.43		-3.037E-01	7.228E-01	1.170E+00	1.236E-01	-0.259
		413.65	*	-8.919E-02	1.545E-01	2.459E-01	2.325E-02	-0.363
HF-181		56.28		-3.647E-01	7.111E-01	1.165E+00	8.483E-02	-0.313
		57.53		5.731E-03	3.848E-01	6.414E-01	4.610E-02	0.009
		65.20		-3.458E-01	8.437E-01	1.215E+00	9.058E-02	-0.285
		133.02		3.686E-02	6.487E-02	9.915E-02	8.451E-03	0.372
		136.25		-1.294E-02	3.991E-01	6.742E-01	5.816E-02	-0.019
		345.85		-5.683E-02	2.354E-01	2.611E-01	3.020E-02	-0.218
W-181		482.03	*	1.485E-02	3.625E-02	5.974E-02	5.897E-03	0.249
		56.28		-1.425E-01	2.783E-01	4.557E-01	3.320E-02	-0.313
		57.53		2.055E-03	1.507E-01	2.512E-01	1.805E-02	0.008
		65.20	*	-1.344E-01	3.278E-01	4.721E-01	3.520E-02	-0.285
TA-182		67.75		-2.581E-02	8.734E-02	1.428E-01	1.089E-02	-0.181
		100.10		1.813E-01	1.521E-01	2.533E-01	2.195E-02	0.716
		152.43		7.414E-02	2.928E-01	4.948E-01	4.565E-02	0.150
		222.10		2.986E-01	3.116E-01	5.219E-01	6.159E-02	0.572
		1001.68		1.505E+00	1.792E+00	2.995E+00	3.087E-01	0.502
	+	1121.28		5.032E-01	2.673E-01	2.840E-01	2.508E-02	1.772
		1189.05		-2.950E-01	2.602E-01	4.029E-01	3.277E-02	-0.732
		1221.42	*	-1.652E-02	1.742E-01	2.880E-01	2.395E-02	-0.057
		1230.97		-6.559E-01	4.455E-01	6.786E-01	5.679E-02	-0.967
RE-183		57.98		6.940E-02	1.497E-01	2.530E-01	1.811E-02	0.274
		59.32		2.077E-02	9.017E-02	1.358E-01	9.603E-03	0.153
		67.20		-4.365E-02	1.677E-01	2.577E-01	1.955E-02	-0.169
		162.32	*	4.979E-02	9.832E-02	1.665E-01	1.607E-02	0.299
	+	208.81		2.361E+00	1.196E+00	1.601E+00	1.810E-01	1.474
		291.72		-7.006E-01	9.061E-01	1.269E+00	1.728E-01	-0.552
RE-184		57.98		2.557E-01	5.517E-01	9.322E-01	6.671E-02	0.274
		59.32		7.646E-02	3.319E-01	4.998E-01	3.535E-02	0.153
		67.20		-1.608E-01	6.176E-01	9.491E-01	7.202E-02	-0.169

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		2.115E-02	3.121E-01	5.226E-01	5.018E-02	0.040
		216.55		8.890E-02	2.351E-01	3.889E-01	4.509E-02	0.229
		252.85	*	3.100E-02	2.005E-01	3.255E-01	4.224E-02	0.095
		318.01		1.015E-01	3.748E-01	6.338E-01	8.055E-02	0.160
		792.07		7.437E-01	1.021E+00	1.486E+00	1.637E-01	0.500
		903.28		1.896E-01	9.262E-01	1.335E+00	1.491E-01	0.142
		920.93		4.227E-01	4.192E-01	6.619E-01	7.303E-02	0.639
		59.72		3.422E-02	2.430E-01	3.643E-01	2.579E-02	0.094
		61.14		-3.078E-03	1.334E-01	1.983E-01	1.424E-02	-0.016
		69.30		-6.811E-02	2.614E-01	3.794E-01	2.934E-02	-0.180
		592.07		1.222E+00	2.143E+00	3.414E+00	3.534E-01	0.358
		646.12	*	-2.766E-02	3.353E-02	5.223E-02	5.489E-03	-0.530
		717.42		4.703E-01	7.175E-01	1.212E+00	1.305E-01	0.388
		874.81		-1.494E-01	4.955E-01	8.079E-01	9.029E-02	-0.185
		880.27		1.646E-01	6.834E-01	1.150E+00	1.286E-01	0.143
RE-188		155.03	*	1.218E-01	1.500E-01	2.567E-01	2.396E-02	0.475
		477.96		2.014E+00	2.645E+00	4.428E+00	4.362E-01	0.455
		633.10		2.751E-01	2.341E+00	3.884E+00	4.069E-01	0.071
W-188	+	63.58		1.222E+01	4.665E+01	7.047E+01	5.178E+00	0.173
		227.08		7.039E+00	1.133E+01	1.881E+01	2.255E+00	0.374
IR-192		290.67	*	-5.003E+00	7.182E+00	1.011E+01	1.381E+00	-0.495
	+	295.96		9.054E-01	2.096E-01	2.346E-01	3.174E-02	3.859
		308.46		-9.208E-03	7.998E-02	1.336E-01	1.749E-02	-0.069
		316.51	*	1.964E-03	2.877E-02	4.831E-02	6.174E-03	0.041
		468.07		-3.084E-02	6.242E-02	8.367E-02	8.656E-03	-0.369
AU-195		604.41		-3.493E-02	4.510E-01	6.386E-01	9.103E-02	-0.055
		612.46		4.081E+00	9.674E-01	1.502E+00	1.727E-01	2.718
		65.12		-6.927E-02	1.525E-01	2.192E-01	1.633E-02	-0.316
		66.83		-1.622E-02	8.335E-02	1.209E-01	9.147E-03	-0.134
	+	75.70		1.247E+00	2.407E-01	3.672E-01	3.025E-02	3.397
		98.88	*	1.802E-01	2.037E-01	3.218E-01	2.806E-02	0.560
	+	129.76		5.251E+00	3.357E+00	4.581E+00	3.861E-01	1.146
TL-200		367.94	*	-1.098E-04	3.357E+00	Half-Life	too short	
		579.30		5.606E-03	3.357E+00	Half-Life	too short	
		828.27		2.008E-03	3.357E+00	Half-Life	too short	
		1205.75		1.983E-03	3.357E+00	Half-Life	too short	
TL-201		68.90		-1.708E+00	3.980E+00	6.120E+00	4.716E-01	-0.279
		70.82		-7.488E-01	2.394E+00	3.461E+00	2.716E-01	-0.216
		80.30		6.746E-01	5.353E+00	6.209E+00	5.378E-01	0.109
		135.34		-6.590E+00	2.233E+01	3.743E+01	3.218E+00	-0.176
TL-202		167.43	*	-3.498E+00	6.290E+00	1.028E+01	1.014E+00	-0.340
		68.90		-1.530E-01	3.566E-01	5.482E-01	4.225E-02	-0.279
		70.82		-6.690E-02	2.138E-01	3.092E-01	2.426E-02	-0.216
		80.30		6.029E-02	4.784E-01	5.549E-01	4.806E-02	0.109
HG-203		439.56	*	3.294E-02	5.847E-02	9.771E-02	9.406E-03	0.337
		70.83		-2.809E-01	9.265E-01	1.340E+00	1.759E-01	-0.210
		72.87		7.824E-01	5.567E-01	8.465E-01	1.084E-01	0.924
		82.60		3.539E-01	1.037E+00	1.397E+00	1.945E-01	0.253
	*	279.20		3.469E-02	3.703E-02	6.095E-02	8.627E-03	0.569

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-207		72.80		1.963E-01	1.607E-01	2.455E-01	1.964E-02	0.800
	+	74.97		6.918E-01	1.335E-01	1.822E-01	1.490E-02	3.797
	+	84.90		3.499E-01	1.994E-01	2.615E-01	2.391E-02	1.338
		569.67		2.859E-02	2.557E-02	4.458E-02	4.579E-03	0.641
		1063.62	*	2.855E-03	4.685E-02	7.665E-02	7.359E-03	0.037
TL-207		1770.23		6.810E-01	4.653E-01	7.886E-01	6.555E-02	0.864
		81.07		-2.274E-02	2.288E-01	2.612E-01	2.282E-02	-0.087
	+	83.78		2.307E-01	1.315E-01	1.713E-01	1.545E-02	1.347
		94.90		4.586E-01	2.147E-01	3.310E-01	2.959E-02	1.386
		122.32		-1.011E+00	1.611E+00	2.491E+00	2.216E-01	-0.406
		144.24		5.589E-01	6.234E-01	1.050E+00	1.039E-01	0.532
		154.21		1.866E-01	3.458E-01	5.881E-01	5.941E-02	0.317
	+	269.46		5.448E-01	2.848E-01	2.973E-01	4.084E-02	1.832
		323.87	*	-7.269E-01	5.962E-01	9.196E-01	1.828E-01	-0.790
	+	338.28		7.373E+00	2.022E+00	2.154E+00	3.185E-01	3.424
		445.03		-1.882E+00	1.884E+00	2.875E+00	3.694E-01	-0.655
PO-209		260.50		-3.354E+00	8.783E+00	1.390E+01	1.845E+00	-0.241
		262.80		-1.782E+01	2.476E+01	3.847E+01	5.140E+00	-0.463
		896.60	*	2.063E+00	5.836E+00	9.882E+00	1.107E+00	0.209
		46.50	*	-1.427E+00	2.665E+00	4.312E+00	4.006E-01	-0.331
PB-210		46.50	*	-1.427E+00	2.665E+00	4.312E+00	4.006E-01	-0.331
PO-210		46.50	*	-1.427E+00	2.664E+00	4.312E+00	3.625E-01	-0.331
PB-211		404.84	*	-1.619E-01	8.102E-01	1.306E+00	8.201E-01	-0.124
		427.08		-4.297E-01	1.678E+00	2.668E+00	1.661E+00	-0.161
BI-212		831.96		3.459E-01	1.041E+00	1.730E+00	1.091E+00	0.200
	+	727.18	*	1.002E+00	4.036E-01	5.434E-01	6.490E-02	1.843
		785.46		2.095E+00	1.492E+00	2.535E+00	2.787E-01	0.826
		1620.62		8.151E-01	9.111E-01	1.653E+00	1.441E-01	0.493
PO-215		81.07		-2.274E-02	2.288E-01	2.612E-01	2.282E-02	-0.087
	+	83.78		2.307E-01	1.315E-01	1.713E-01	1.545E-02	1.347
		94.90		4.586E-01	2.147E-01	3.310E-01	2.959E-02	1.386
		122.32		-1.011E+00	1.611E+00	2.491E+00	2.216E-01	-0.406
		144.24		5.589E-01	6.234E-01	1.050E+00	1.039E-01	0.532
		154.21		1.866E-01	3.458E-01	5.881E-01	5.941E-02	0.317
	+	269.46		5.448E-01	2.848E-01	2.973E-01	4.084E-02	1.832
		323.87	*	-7.269E-01	5.962E-01	9.196E-01	1.828E-01	-0.790
	+	338.28		7.373E+00	2.022E+00	2.154E+00	3.185E-01	3.424
		445.03		-1.882E+00	1.884E+00	2.875E+00	3.694E-01	-0.655
	+	271.23		6.989E-01	3.674E-01	3.936E-01	5.831E-02	1.776
RN-219		401.81	*	9.012E-02	3.472E-01	5.762E-01	8.915E-02	0.156
RN-220		549.76	*	-1.588E+00	2.108E+01	3.506E+01	3.574E+00	-0.045
RA-223		81.07		-2.274E-02	2.288E-01	2.612E-01	2.282E-02	-0.087
	+	83.78		2.307E-01	1.315E-01	1.713E-01	1.545E-02	1.347
		94.90		4.586E-01	2.147E-01	3.310E-01	2.959E-02	1.386
		122.32		-1.011E+00	1.611E+00	2.491E+00	2.216E-01	-0.406
		144.24		5.589E-01	6.234E-01	1.050E+00	1.039E-01	0.532
		154.21		1.866E-01	3.458E-01	5.881E-01	5.941E-02	0.317
	+	269.46		5.448E-01	2.848E-01	2.973E-01	4.084E-02	1.832
		323.87	*	-7.269E-01	5.962E-01	9.196E-01	1.828E-01	-0.790

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227	+	338.28		7.373E+00	2.022E+00	2.154E+00	3.185E-01	3.424
		445.03		-1.882E+00	1.884E+00	2.875E+00	3.694E-01	-0.655
		79.80		1.014E+00	1.726E+00	2.048E+00	4.404E-01	0.495
		236.00		9.936E-01	2.944E-01	4.171E-01	6.293E-02	2.382
		256.20	*	1.317E-02	3.333E-01	5.381E-01	9.819E-02	0.024
		286.10		8.843E-01	1.381E+00	2.251E+00	3.836E-01	0.393
TH-227	+	299.80		2.694E+00	1.899E+00	2.222E+00	4.499E-01	1.213
		304.40		1.636E+00	1.757E+00	2.654E+00	5.567E-01	0.616
		334.20		-1.031E+00	2.255E+00	3.167E+00	6.703E-01	-0.325
		79.80		1.014E+00	1.726E+00	2.048E+00	4.460E-01	0.495
	+	94.00		5.981E+00	2.699E+00	3.124E+00	6.850E-01	1.915
		236.00		9.936E-01	2.898E-01	4.171E-01	5.905E-02	2.382
TH-229		256.20	*	1.317E-02	3.334E-01	5.381E-01	1.108E-01	0.024
		286.10		8.843E-01	1.637E+00	2.251E+00	2.273E+00	0.393
	+	299.80		2.694E+00	1.899E+00	2.222E+00	4.499E-01	1.213
		304.40		1.636E+00	1.757E+00	2.654E+00	5.567E-01	0.616
		334.20		-1.031E+00	2.255E+00	3.167E+00	6.703E-01	-0.325
	+	85.43		3.453E-01	1.968E-01	2.710E-01	2.493E-02	1.274
PA-231	+	88.47		5.148E-01	1.218E-01	1.764E-01	1.667E-02	2.918
		100.00		1.590E-01	1.588E-01	2.633E-01	2.282E-02	0.604
		193.63	*	-1.717E-01	4.611E-01	7.236E-01	7.780E-02	-0.237
		210.97		1.710E+00	7.967E-01	1.217E+00	1.386E-01	1.405
		283.67	*	-9.311E-01	1.405E+00	2.163E+00	4.040E-01	-0.430
	+	301.29		1.078E+00	7.476E-01	8.943E-01	1.422E-01	1.205
TH-231		81.07		-2.274E-02	2.288E-01	2.612E-01	2.282E-02	-0.087
	+	83.78		2.307E-01	1.315E-01	1.713E-01	1.545E-02	1.347
		94.90		4.586E-01	2.147E-01	3.310E-01	2.959E-02	1.386
		122.32		-1.011E+00	1.611E+00	2.491E+00	2.216E-01	-0.406
		144.24		5.589E-01	6.234E-01	1.050E+00	1.039E-01	0.532
		154.21		1.866E-01	3.458E-01	5.881E-01	5.941E-02	0.317
U-231	+	269.46		5.448E-01	2.848E-01	2.973E-01	4.084E-02	1.832
		323.87	*	-7.269E-01	5.962E-01	9.196E-01	1.828E-01	-0.790
	+	338.28		7.373E+00	2.022E+00	2.154E+00	3.185E-01	3.424
		445.03		-1.882E+00	1.884E+00	2.875E+00	3.694E-01	-0.655
	+	84.21		9.971E+00	5.683E+00	7.400E+00	6.708E-01	1.347
	+	92.29		5.929E+00	2.399E+00	3.345E+00	3.050E-01	1.772
PA-233		95.87	*	-8.468E-02	1.022E+00	1.463E+00	1.299E-01	-0.058
		108.00		-3.573E-01	1.810E+00	2.875E+00	2.417E-01	-0.124
	+	75.28		2.019E+01	4.663E+00	5.525E+00	8.352E-01	3.654
	+	86.59		7.381E+00	2.562E+00	2.563E+00	6.935E-01	2.880
	+	300.12		7.511E-01	5.249E-01	6.201E-01	1.118E-01	1.211
		311.98	*	1.418E-02	5.154E-02	8.733E-02	1.144E-02	0.162
PA-234		340.50		3.190E+00	1.057E+00	1.178E+00	2.965E-01	2.707
		398.62		-1.438E+00	1.837E+00	2.841E+00	7.634E-01	-0.506
		415.76		-2.318E-01	1.395E+00	2.262E+00	4.956E-01	-0.102
	+	63.00		3.543E-01	1.353E+00	2.058E+00	3.048E-01	0.172
		94.67		4.222E-01	1.621E-01	2.452E-01	3.098E-02	1.722
		98.44		5.034E-02	9.225E-02	1.293E-01	7.217E-02	0.389
		99.86		4.348E-01	4.034E-01	6.699E-01	5.812E-02	0.649

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00	-1.046E-01	1.637E-01	2.547E-01	3.029E-02	-0.411
		131.20	6.275E-02	1.061E-01	1.623E-01	1.375E-02	0.387
		152.70	7.726E-02	2.850E-01	4.814E-01	8.360E-02	0.160
	+	186.00	4.354E+00	2.625E+00	2.171E+00	6.899E-01	2.006
		226.40	-2.128E-02	3.602E-01	5.852E-01	9.125E-02	-0.036
		227.20	1.689E-01	3.843E-01	6.346E-01	7.611E-02	0.266
		248.90	4.977E-01	7.177E-01	1.175E+00	2.861E-01	0.423
		293.70	5.250E+00	1.315E+00	1.425E+00	2.882E-01	3.683
		369.80	-6.048E-01	6.992E-01	1.086E+00	2.450E-01	-0.557
		568.70	5.319E-01	8.252E-01	1.414E+00	1.452E-01	0.376
		569.50	2.597E-01	2.273E-01	3.965E-01	4.073E-02	0.655
		574.00	-1.151E+00	1.260E+00	1.990E+00	2.047E-01	-0.578
		699.00	2.826E-01	6.037E-01	1.006E+00	2.023E-01	0.281
		706.10	3.306E-01	8.762E-01	1.439E+00	6.482E-01	0.230
		733.00	-5.609E-02	3.694E-01	5.069E-01	1.173E-01	-0.111
		742.81	-1.075E+00	1.335E+00	1.709E+00	1.154E+00	-0.629
		796.30	1.709E+00	9.994E-01	1.404E+00	3.920E-01	1.217
		805.60	1.032E+00	8.619E-01	1.432E+00	4.500E-01	0.721
		819.60	5.091E-02	9.693E-01	1.625E+00	6.282E-01	0.031
		826.30	-8.531E-02	6.894E-01	1.142E+00	5.169E-01	-0.075
		831.60	-3.231E-01	5.636E-01	8.760E-01	2.685E-01	-0.369
		876.40	-7.298E-01	1.047E+00	1.138E+00	1.173E+00	-0.641
		880.51	9.820E-02	2.470E-01	4.190E-01	4.686E-02	0.234
		883.24	3.304E-01	3.341E-01	4.433E-01	2.996E-01	0.745
		899.00	-4.902E-01	7.191E-01	1.085E+00	4.805E-01	-0.452
		925.00	-7.508E-03	9.898E-01	1.635E+00	1.799E-01	-0.005
		926.50	-4.503E-02	1.495E-01	2.416E-01	6.326E-02	-0.186
		946.00	* -4.274E-03	2.743E-01	4.519E-01	8.982E-02	-0.009
		949.00	6.286E-01	4.019E-01	7.110E-01	7.682E-02	0.884
		980.50	1.804E-01	6.038E-01	1.011E+00	1.063E-01	0.179
PA-234M		1394.10	-1.086E+00	1.157E+00	1.326E+00	8.639E-01	-0.819
		766.42	7.371E+00	1.093E+01	1.721E+01	8.807E+00	0.428
U-235	+	1001.03	* 1.418E+00	4.049E+00	6.597E+00	7.560E-01	0.215
	+	89.95	2.988E+00	1.393E+00	1.570E+00	4.875E-01	1.903
	+	93.35	1.861E+00	9.017E-01	1.040E+00	2.928E-01	1.789
		105.00	2.987E-01	9.250E-01	1.492E+00	4.448E-01	0.200
		143.76	* 4.273E-02	1.922E-01	3.186E-01	5.620E-02	0.134
		163.35	3.585E-01	4.239E-01	7.161E-01	1.403E-01	0.501
	+	185.71	1.613E-01	8.435E-02	8.027E-02	8.405E-03	2.009
		205.31	1.877E-01	5.383E-01	7.783E-01	1.585E-01	0.241
NP-236		94.67	3.222E-01	1.197E-01	1.861E-01	1.667E-02	1.731
		98.44	3.803E-02	6.650E-02	9.775E-02	8.546E-03	0.389
		111.00	-7.909E-02	1.237E-01	1.926E-01	1.608E-02	-0.411
		160.31	* -4.553E-02	7.008E-02	1.146E-01	1.095E-02	-0.397
NP-239		99.55	1.408E-01	1.358E-01	2.252E-01	1.957E-02	0.625
		117.00	* 1.067E-02	1.707E-01	2.721E-01	2.249E-02	0.039
	+	209.75	1.862E+00	9.430E-01	1.255E+00	1.424E-01	1.483
		228.18	8.290E-02	2.003E-01	3.303E-01	3.974E-02	0.251
		277.60	1.184E-01	1.668E-01	2.644E-01	3.686E-02	0.448



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		-3.072E-01	1.256E+00	1.793E+00	2.163E-01	-0.171
AM-241		59.54	*	3.193E-02	1.273E-01	1.918E-01	1.499E-02	0.166
CM-243		99.55		1.449E-01	1.397E-01	2.318E-01	2.014E-02	0.625
		103.76	*	5.157E-02	8.257E-02	1.352E-01	1.153E-02	0.381
		117.00		1.098E-02	1.757E-01	2.800E-01	2.314E-02	0.039
	+	209.75		1.836E+00	9.296E-01	1.238E+00	1.403E-01	1.483
		228.18		8.376E-02	2.024E-01	3.338E-01	4.016E-02	0.251
		277.60		1.194E-01	1.682E-01	2.666E-01	3.716E-02	0.448
AM-246		798.80		-1.025E-01	1.381E-01	1.764E-01	1.945E-02	-0.581
		1036.00		1.571E-01	2.698E-01	4.557E-01	4.525E-02	0.345
		1062.04		1.811E-01	2.000E-01	3.431E-01	3.300E-02	0.528
		1078.86	*	4.658E-02	1.201E-01	2.003E-01	1.885E-02	0.233
CM-247		278.00		4.426E-01	6.903E-01	1.092E+00	1.524E-01	0.405
		287.40		6.482E-01	1.197E+00	1.807E+00	2.486E-01	0.359
		402.60	*	1.547E-02	3.103E-02	5.202E-02	4.880E-03	0.297
CF-249		252.85		1.163E-01	7.524E-01	1.221E+00	1.585E-01	0.095
		333.44		-8.805E-02	1.700E-01	2.387E-01	2.888E-02	-0.369
		387.95	*	7.491E-03	3.436E-02	5.709E-02	5.426E-03	0.131
CF-251		176.60	*	6.233E-02	1.094E-01	1.846E-01	1.876E-02	0.338
		227.00		2.151E-01	3.402E-01	5.648E-01	6.770E-02	0.381
		285.00		-1.230E+00	1.619E+00	2.486E+00	3.439E-01	-0.495

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691002      *
* Acquisition date   : 9-FEB-2010 15:21:30 Detector SN#      :              *
* Detector ID        : GAM22                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000       *
* Elapsed real time  : 0 02:00:02.46           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691002           Analyst initials: MJH1          *
* Batch Number       : 947037              Sample Quantity : 1.4572E+02 GRAM   *
* Recovery           : 1.00000             Carrier Weight  : 0.00000        *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                    *
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope      :                *
* MSD DPM             : 0.000              MSD Isotope      :                *
* LCS DPM             : 0.000              LCS Isotope       :                *
* LCSD DPM            : 0.000              LCSD Isotope      :                *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.630E+01	3.571E+00	4.112E-01	0.000E+00
CD-109	3.836E+00	8.899E-01	1.031E+00	0.000E+00
SN-126	3.770E-01	8.746E-02	1.017E-01	0.000E+00
TL-208	5.275E-01	8.625E-02	5.046E-02	0.000E+00
BI-211	4.002E+00	5.671E-01	2.838E-01	0.000E+00
PB-212	1.681E+00	2.371E-01	7.810E-02	0.000E+00
PO-212	1.681E+00	2.371E-01	7.810E-02	0.000E+00
BI-214	1.196E+00	1.935E-01	9.358E-02	0.000E+00
PB-214	1.392E+00	2.097E-01	9.890E-02	0.000E+00
PO-214	1.392E+00	2.097E-01	9.890E-02	0.000E+00
PO-216	1.681E+00	2.371E-01	7.810E-02	0.000E+00
PO-218	1.392E+00	2.097E-01	9.890E-02	0.000E+00
RA-224	4.695E+00	1.003E+00	8.877E-01	0.000E+00
RA-226	1.196E+00	1.935E-01	9.358E-02	0.000E+00
AC-228	1.476E+00	3.019E-01	1.801E-01	0.000E+00
RA-228	1.476E+00	3.019E-01	1.801E-01	0.000E+00
TH-228	1.706E+00	2.407E-01	7.929E-02	0.000E+00
TH-230	1.196E+00	1.934E-01	9.358E-02	0.000E+00
TH-232	1.476E+00	3.019E-01	1.801E-01	0.000E+00
TH-234	3.039E-01	1.138E+00	1.761E+00	0.000E+00
U-234	1.196E+00	1.934E-01	9.358E-02	0.000E+00
NP-237	1.107E+00	3.407E-01	3.017E-01	0.000E+00
U-238	3.039E-01	1.138E+00	1.761E+00	0.000E+00
AM-243	3.854E-01	7.288E-02	7.472E-02	0.000E+00
ANH-511	1.240E-01	5.036E-02	4.036E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	2.064E-01	2.704E-01	4.764E-01	0.000E+00 NOT IDENT.
NA-22	-4.161E-02	3.508E-02	5.459E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	6.224E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.957E-02	1.999E-02	3.796E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.899E-02	6.891E-02	0.000E+00	FAIL ABUN
SC-46	-2.369E-02	3.263E-02	5.357E-02	0.000E+00	FAIL ABUN
V-48	-3.389E-03	5.820E-02	9.866E-02	0.000E+00	NOT IDENT.
CR-51	1.205E-01	3.107E-01	5.600E-01	0.000E+00	NOT IDENT.
MN-52	4.635E-03	1.864E-01	3.137E-01	0.000E+00	NOT IDENT.
MN-54	2.778E-03	3.160E-02	5.506E-02	0.000E+00	NOT IDENT.
CO-56	3.505E-03	3.336E-02	5.810E-02	0.000E+00	NOT IDENT.
CO-57	-1.785E-02	2.274E-02	3.793E-02	0.000E+00	NOT IDENT.
CO-58	-1.576E-02	2.987E-02	5.027E-02	0.000E+00	NOT IDENT.
FE-59	3.218E-02	7.974E-02	1.370E-01	0.000E+00	NOT IDENT.
CO-60	1.599E-02	3.194E-02	5.608E-02	0.000E+00	NOT IDENT.
ZN-65	6.550E-02	9.900E-02	1.480E-01	0.000E+00	NOT IDENT.
GE-68	9.355E-01	1.078E+00	1.903E+00	0.000E+00	NOT IDENT.
AS-73	2.624E-01	6.328E-01	1.154E+00	0.000E+00	NOT IDENT.
AS-74	-9.801E-02	7.378E-02	1.180E-01	0.000E+00	NOT IDENT.
SE-75	1.944E-02	4.449E-02	6.809E-02	0.000E+00	NOT IDENT.
BR-77	-1.147E-01	8.701E+00	1.533E+01	0.000E+00	FAIL ABUN
SR-82	-3.852E-01	3.182E-01	4.911E-01	0.000E+00	NOT IDENT.
RB-83	-6.478E-03	5.686E-02	9.975E-02	0.000E+00	NOT IDENT.
RB-84	5.164E-02	5.891E-02	1.061E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	7.609E+00	1.255E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.902E-02	6.436E-02	0.000E+00	NOT IDENT.
RB-86	7.028E-01	6.807E-01	1.212E+00	0.000E+00	NOT IDENT.
Y-88	1.322E-02	2.302E-02	4.156E-02	0.000E+00	NOT IDENT.
ZR-88	1.475E-02	2.572E-02	4.580E-02	0.000E+00	NOT IDENT.
Y-91	1.512E+01	1.665E+01	2.978E+01	0.000E+00	NOT IDENT.
NB-94	-4.514E-04	2.768E-02	4.713E-02	0.000E+00	NOT IDENT.
NB-95	2.239E-02	3.755E-02	6.512E-02	0.000E+00	NOT IDENT.
NB-95M	1.067E-01	1.268E-01	1.987E-01	0.000E+00	NOT IDENT.
ZR-95	2.188E-02	6.330E-02	1.088E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	7.681E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.848E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.932E-01	9.359E+00	1.583E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.585E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	4.384E-04	2.899E-02	4.999E-02	0.000E+00	NOT IDENT.
RH-102	1.532E-02	2.455E-02	4.303E-02	0.000E+00	NOT IDENT.
RU-103	-2.516E-02	3.307E-02	5.328E-02	0.000E+00	FAIL ABUN
RH-106	-1.610E-01	2.583E-01	4.297E-01	0.000E+00	FAIL ABUN
RU-106	-1.610E-01	2.577E-01	4.297E-01	0.000E+00	FAIL ABUN
AG-108M	4.015E-03	2.678E-02	4.641E-02	0.000E+00	NOT IDENT.
AG-110M	2.752E-02	2.705E-02	4.879E-02	0.000E+00	NOT IDENT.
IN-111	8.867E-02	9.865E-01	1.498E+00	0.000E+00	NOT IDENT.
IN-113M	9.454E-04	3.764E-02	6.557E-02	0.000E+00	NOT IDENT.
SN-113	9.454E-04	3.764E-02	6.557E-02	0.000E+00	NOT IDENT.
IN-114M	1.305E-01	1.710E-01	2.749E-01	0.000E+00	NOT IDENT.
CD-115	1.935E+00	8.870E+00	1.577E+01	0.000E+00	NOT IDENT.
SN-117M	-3.872E-02	4.739E-02	8.319E-02	0.000E+00	NOT IDENT.
SB-122	-6.702E-03	1.670E+00	2.918E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	5.075E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.871E-02	2.436E-02	4.281E-02	0.000E+00	NOT IDENT.
I-124	-1.039E-01	6.303E-01	9.292E-01	0.000E+00	NOT IDENT.
SB-124	-2.490E-02	5.173E-02	8.188E-02	0.000E+00	FAIL ABUN
SB-125	-3.409E-02	7.217E-02	1.212E-01	0.000E+00	FAIL ABUN
TE-125M	6.359E+00	7.852E+00	1.399E+01	0.000E+00	NOT IDENT.
I-126	1.104E-01	1.457E-01	2.591E-01	0.000E+00	NOT IDENT.
SB-126	-3.660E-02	1.308E-01	1.941E-01	0.000E+00	FAIL ABUN
SB-127	1.292E-01	1.071E+00	1.842E+00	0.000E+00	NOT IDENT.
XE-127	2.657E-02	4.286E-02	7.444E-02	0.000E+00	NOT IDENT.
I-131	9.875E-02	9.109E-02	1.664E-01	0.000E+00	NOT IDENT.
TE-132	2.607E-01	6.041E-01	1.066E+00	0.000E+00	NOT IDENT.
BA-133	5.852E-03	3.878E-02	5.973E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.906E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.537E-02	7.359E-02	0.000E+00	NOT IDENT.
CS-135	1.138E-01	1.656E-01	2.511E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.961E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.904E-02	8.717E-02	1.523E-01	0.000E+00	FAIL ABUN
BA-137M	-2.646E-02	2.854E-02	4.623E-02	0.000E+00	NOT IDENT.
CS-137	-2.798E-02	3.017E-02	4.887E-02	0.000E+00	NOT IDENT.
CE-139	-1.244E-02	2.632E-02	4.661E-02	0.000E+00	NOT IDENT.
BA-140	1.464E-01	2.023E-01	3.582E-01	0.000E+00	NOT IDENT.
LA-140	6.569E-02	6.777E-02	1.123E-01	0.000E+00	NOT IDENT.
CE-141	9.219E-02	5.496E-02	1.035E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.424E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.692E-01	2.003E-01	3.325E-01	0.000E+00	NOT IDENT.
PM-144	9.912E-03	2.861E-02	4.966E-02	0.000E+00	NOT IDENT.
PR-144	6.717E-01	1.939E+00	3.365E+00	0.000E+00	NOT IDENT.

PM-146	8.008E-03	3.744E-02	6.472E-02	0.000E+00	NOT IDENT.
ND-147	-2.376E-01	4.516E-01	7.715E-01	0.000E+00	FAIL ABUN
PM-149	5.375E+01	8.132E+01	1.411E+02	0.000E+00	NOT IDENT.
EU-152	1.290E-02	1.040E-01	1.408E-01	0.000E+00	FAIL ABUN
GD-153	-5.259E-02	7.605E-02	1.152E-01	0.000E+00	FAIL ABUN
EU-154	-1.156E-01	9.838E-02	1.526E-01	0.000E+00	NOT IDENT.
EU-155	1.874E-02	9.233E-02	1.622E-01	0.000E+00	FAIL ABUN
TB-160	-6.431E-02	1.184E-01	1.974E-01	0.000E+00	FAIL ABUN
HO-166M	-5.532E-02	4.930E-02	7.776E-02	0.000E+00	NOT IDENT.
TM-171	-4.985E+00	2.471E+01	3.941E+01	0.000E+00	NOT IDENT.
LU-176	9.434E-03	2.179E-02	3.616E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.306E+00	1.856E+00	0.000E+00	FAIL ABUN
LU-177M	-8.919E-02	1.514E-01	2.546E-01	0.000E+00	NOT IDENT.
HF-181	1.485E-02	3.553E-02	6.164E-02	0.000E+00	NOT IDENT.
W-181	-1.344E-01	3.212E-01	5.088E-01	0.000E+00	NOT IDENT.
TA-182	-1.652E-02	1.707E-01	2.909E-01	0.000E+00	FAIL ABUN
RE-183	4.979E-02	9.635E-02	1.760E-01	0.000E+00	FAIL ABUN
RE-184	3.100E-02	1.965E-01	3.408E-01	0.000E+00	NOT IDENT.
OS-185	-2.766E-02	3.286E-02	5.353E-02	0.000E+00	NOT IDENT.
RE-188	1.218E-01	1.470E-01	2.716E-01	0.000E+00	NOT IDENT.
W-188	-5.003E+00	7.038E+00	1.056E+01	0.000E+00	FAIL ABUN
IR-192	1.964E-03	2.819E-02	5.032E-02	0.000E+00	FAIL ABUN
AU-195	1.802E-01	1.996E-01	3.438E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	3.599E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.498E+00	6.164E+00	1.086E+01	0.000E+00	NOT IDENT.
TL-202	3.294E-02	5.730E-02	1.010E-01	0.000E+00	NOT IDENT.
HG-203	3.469E-02	3.629E-02	6.367E-02	0.000E+00	NOT IDENT.
BI-207	2.855E-03	4.592E-02	7.766E-02	0.000E+00	FAIL ABUN
TL-207	-7.269E-01	5.843E-01	9.574E-01	0.000E+00	FAIL ABUN
PO-209	2.063E+00	5.719E+00	1.005E+01	0.000E+00	NOT IDENT.
BI-210	-1.427E+00	2.612E+00	4.679E+00	0.000E+00	NOT IDENT.
PB-210	-1.427E+00	2.612E+00	4.679E+00	0.000E+00	NOT IDENT.
PO-210	-1.427E+00	2.611E+00	4.679E+00	0.000E+00	NOT IDENT.
PB-211	-1.619E-01	7.940E-01	1.353E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	3.956E-01	5.555E-01	0.000E+00	FAIL ABUN
PO-215	-7.269E-01	5.843E-01	9.574E-01	0.000E+00	FAIL ABUN
RN-219	9.012E-02	3.403E-01	5.970E-01	0.000E+00	FAIL ABUN
RN-220	-1.588E+00	2.066E+01	3.607E+01	0.000E+00	NOT IDENT.
RA-223	-7.269E-01	5.843E-01	9.574E-01	0.000E+00	FAIL ABUN
AC-227	1.317E-02	3.267E-01	5.632E-01	0.000E+00	FAIL ABUN
TH-227	1.317E-02	3.267E-01	5.632E-01	0.000E+00	FAIL ABUN
TH-229	-1.717E-01	4.518E-01	7.620E-01	0.000E+00	FAIL ABUN
PA-231	-9.311E-01	1.377E+00	2.259E+00	0.000E+00	FAIL ABUN
TH-231	-7.269E-01	5.843E-01	9.574E-01	0.000E+00	FAIL ABUN
U-231	-8.468E-02	1.001E+00	1.564E+00	0.000E+00	FAIL ABUN
PA-233	1.418E-02	5.051E-02	9.100E-02	0.000E+00	FAIL ABUN
PA-234	-4.274E-03	2.688E-01	4.591E-01	0.000E+00	FAIL ABUN
PA-234M	1.418E+00	3.968E+00	6.693E+00	0.000E+00	NOT IDENT.
U-235	4.273E-02	1.883E-01	3.377E-01	0.000E+00	FAIL ABUN
NP-236	-4.553E-02	6.868E-02	1.211E-01	0.000E+00	NOT IDENT.
NP-239	1.067E-02	1.673E-01	2.897E-01	0.000E+00	FAIL ABUN
AM-241	3.193E-02	1.248E-01	2.071E-01	0.000E+00	NOT IDENT.
CM-243	5.157E-02	8.092E-02	1.443E-01	0.000E+00	FAIL ABUN
AM-246	4.658E-02	1.177E-01	2.029E-01	0.000E+00	NOT IDENT.
CM-247	1.547E-02	3.041E-02	5.390E-02	0.000E+00	NOT IDENT.
CF-249	7.491E-03	3.367E-02	5.920E-02	0.000E+00	NOT IDENT.
CF-251	6.233E-02	1.072E-01	1.948E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691002.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:21:30.
Sample ID          : G245691002 Sample quantity : 1.45720E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.46 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	2870	10.67*	1.909E+00	3.630E+01	3.630E+01	10.04
CD-109	88.03	405	3.72*	7.482E+00	3.750E+00	3.836E+00	23.67
SN-126	64.28	19	9.60	4.332E+00	1.203E-01	1.203E-01	382.01
	86.94	405	8.90	7.482E+00	1.567E+00	1.567E+00	46.87
	87.57	405	37.00*	7.482E+00	3.770E-01	3.770E-01	23.67
TL-208	277.35	-----	6.80	6.182E+00	-----	Line Not Found	-----
	510.84	207	21.60	4.299E+00	5.740E-01	5.740E-01	42.28
	583.14	678	84.20*	3.930E+00	5.275E-01	5.275E-01	16.68
	860.37	96	12.46	2.923E+00	6.790E-01	6.790E-01	54.98
BI-211	72.87	-----	1.27	5.897E+00	-----	Line Not Found	-----
	351.07	1086	12.94*	5.402E+00	4.002E+00	4.002E+00	14.46
PB-212	74.81	609	10.70	6.167E+00	2.377E+00	2.377E+00	21.44
	77.11	888	18.00	6.468E+00	1.966E+00	1.966E+00	13.78
	87.30	405	8.00	7.482E+00	1.744E+00	1.744E+00	25.70
	238.63	1952	44.60*	6.709E+00	1.681E+00	1.681E+00	14.39
	300.09	114	3.41	5.909E+00	1.454E+00	1.454E+00	69.07
PO-212	74.81	609	10.70	6.167E+00	2.377E+00	2.377E+00	21.44
	77.11	888	18.00	6.468E+00	1.966E+00	1.966E+00	13.78
	87.30	405	8.00	7.482E+00	1.744E+00	1.744E+00	25.70
	115.19	-----	0.60	8.535E+00	-----	Line Not Found	-----
	238.63	1952	44.60*	6.709E+00	1.681E+00	1.681E+00	14.39
	300.09	114	3.41	5.909E+00	1.454E+00	1.454E+00	69.07
BI-214	609.31	820	46.30*	3.811E+00	1.196E+00	1.196E+00	16.50
	1120.29	146	15.10	2.345E+00	1.064E+00	1.064E+00	53.53
	1764.49	168	15.80	1.716E+00	1.597E+00	1.597E+00	25.21
PB-214	74.81	609	6.21	6.167E+00	4.096E+00	4.096E+00	20.67
	77.11	888	10.50	6.468E+00	3.370E+00	3.370E+00	15.75
	87.30	405	4.67	7.482E+00	2.987E+00	2.987E+00	24.89
	241.98	480	7.49	6.666E+00	2.476E+00	2.476E+00	22.52
	295.21	528	19.20	5.969E+00	1.187E+00	1.187E+00	23.96
	351.92	1086	37.20*	5.402E+00	1.392E+00	1.392E+00	15.37
PO-214	74.81	609	6.21	6.167E+00	4.096E+00	4.096E+00	20.67

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	888	10.50	6.468E+00	3.370E+00	3.370E+00	15.75
	87.30	405	4.67	7.482E+00	2.987E+00	2.987E+00	24.89
	241.98	480	7.49	6.666E+00	2.476E+00	2.476E+00	22.52
	295.21	528	19.20	5.969E+00	1.187E+00	1.187E+00	23.96
	351.92	1086	37.20*	5.402E+00	1.392E+00	1.392E+00	15.37
PO-216	74.81	609	10.70	6.167E+00	2.377E+00	2.377E+00	21.44
	77.11	888	18.00	6.468E+00	1.966E+00	1.966E+00	13.78
	87.30	405	8.00	7.482E+00	1.744E+00	1.744E+00	25.70
	238.63	1952	44.60*	6.709E+00	1.681E+00	1.681E+00	14.39
	300.09	114	3.41	5.909E+00	1.454E+00	1.454E+00	69.07
PO-218	74.81	609	6.21	6.167E+00	4.096E+00	4.096E+00	20.67
	77.11	888	10.50	6.468E+00	3.370E+00	3.370E+00	15.75
	87.30	405	4.67	7.482E+00	2.987E+00	2.987E+00	24.89
	241.98	480	7.49	6.666E+00	2.476E+00	2.476E+00	22.52
	295.21	528	19.20	5.969E+00	1.187E+00	1.187E+00	23.96
	351.92	1086	37.20*	5.402E+00	1.392E+00	1.392E+00	15.37
RA-224	240.98	480	3.95*	6.666E+00	4.695E+00	4.695E+00	21.81
RA-226	609.31	820	46.30*	3.811E+00	1.196E+00	1.196E+00	16.50
	1120.29	146	15.10	2.345E+00	1.064E+00	1.064E+00	53.53
	1764.49	168	15.80	1.716E+00	1.597E+00	1.597E+00	25.21
AC-228	338.32	432	11.40	5.524E+00	1.766E+00	1.766E+00	47.99
	911.07	442	27.70*	2.788E+00	1.476E+00	1.476E+00	20.87
	969.11	343	16.60	2.649E+00	2.007E+00	2.007E+00	29.62
RA-228	338.32	432	11.40	5.524E+00	1.766E+00	1.766E+00	47.99
	911.07	442	27.70*	2.788E+00	1.476E+00	1.476E+00	20.87
	969.11	343	16.60	2.649E+00	2.007E+00	2.007E+00	29.62
TH-228	74.81	609	10.70	6.167E+00	2.377E+00	2.413E+00	19.33
	77.11	888	18.00	6.468E+00	1.966E+00	1.995E+00	13.78
	87.30	405	8.00	7.482E+00	1.744E+00	1.770E+00	23.67
	238.63	1952	44.60*	6.709E+00	1.681E+00	1.706E+00	14.39
	300.09	114	3.41	5.909E+00	1.454E+00	1.476E+00	90.43
TH-230	609.31	820	46.30*	3.811E+00	1.196E+00	1.196E+00	16.50
	1120.29	146	15.10	2.345E+00	1.064E+00	1.064E+00	53.53
	1764.49	168	15.80	1.716E+00	1.597E+00	1.597E+00	25.21
TH-232	338.32	432	11.40	5.524E+00	1.766E+00	1.766E+00	25.97
	911.07	442	27.70*	2.788E+00	1.476E+00	1.476E+00	20.87
	969.11	343	16.60	2.649E+00	2.007E+00	2.007E+00	29.62
TH-234	63.29	19	3.80*	4.332E+00	3.039E-01	3.039E-01	382.13
	92.38	255	5.41	7.854E+00	1.548E+00	1.548E+00	43.47
U-234	609.31	820	46.30*	3.811E+00	1.196E+00	1.196E+00	16.50
	1120.29	146	15.10	2.345E+00	1.064E+00	1.064E+00	53.53
	1764.49	168	15.80	1.716E+00	1.597E+00	1.597E+00	25.21
NP-237	86.50	405	12.60*	7.482E+00	1.107E+00	1.107E+00	31.40
	95.87	-----	2.60	8.032E+00	-----	Line Not Found	-----
U-238	63.29	19	3.80*	4.332E+00	3.039E-01	3.039E-01	382.13
	92.38	255	5.41	7.854E+00	1.548E+00	1.548E+00	40.46
AM-243	74.67	609	66.00*	6.167E+00	3.854E-01	3.854E-01	19.29
	86.72	405	0.34	7.482E+00	4.152E+01	4.152E+01	23.67
	117.66	-----	0.55	8.550E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	142.18	-----	0.13	8.387E+00	-----	Line Not Found	-----
ANH-511	511.00	207	100.00*	4.299E+00	1.240E-01	1.240E-01	41.45

Flag: "\*" = Keyline

Total number of lines in spectrum 31  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 29 93.55%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.630E+01	3.630E+01	0.364E+01	10.04	
CD-109	464.00D	1.02	3.750E+00	3.836E+00	0.908E+00	23.67	
SN-126	1.00E+05Y	1.00	3.770E-01	3.770E-01	0.892E-01	23.67	
TL-208	1.41E+10Y	1.00	5.275E-01	5.275E-01	0.880E-01	16.68	
BI-211	7.04E+08Y	1.00	4.002E+00	4.002E+00	0.579E+00	14.46	
PB-212	1.41E+10Y	1.00	1.681E+00	1.681E+00	0.242E+00	14.39	
PO-212	1.41E+10Y	1.00	1.681E+00	1.681E+00	0.242E+00	14.39	
BI-214	1600.00Y	1.00	1.196E+00	1.196E+00	0.197E+00	16.50	
PB-214	1600.00Y	1.00	1.392E+00	1.392E+00	0.214E+00	15.37	
PO-214	1600.00Y	1.00	1.392E+00	1.392E+00	0.214E+00	15.37	
PO-216	1.41E+10Y	1.00	1.681E+00	1.681E+00	0.242E+00	14.39	
PO-218	1600.00Y	1.00	1.392E+00	1.392E+00	0.214E+00	15.37	
RA-224	1.41E+10Y	1.00	4.695E+00	4.695E+00	1.024E+00	21.81	
RA-226	1600.00Y	1.00	1.196E+00	1.196E+00	0.197E+00	16.50	
AC-228	1.41E+10Y	1.00	1.476E+00	1.476E+00	0.308E+00	20.87	
RA-228	1.41E+10Y	1.00	1.476E+00	1.476E+00	0.308E+00	20.87	
TH-228	1.91Y	1.02	1.681E+00	1.706E+00	0.246E+00	14.39	
TH-230	4.47E+09Y	1.00	1.196E+00	1.196E+00	0.197E+00	16.50	
TH-232	1.41E+10Y	1.00	1.476E+00	1.476E+00	0.308E+00	20.87	
TH-234	4.47E+09Y	1.00	3.039E-01	3.039E-01	11.61E-01	382.13	
U-234	4.47E+09Y	1.00	1.196E+00	1.196E+00	0.197E+00	16.50	
NP-237	2.14E+06Y	1.00	1.107E+00	1.107E+00	0.348E+00	31.40	
U-238	4.47E+09Y	1.00	3.039E-01	3.039E-01	11.61E-01	382.13	
AM-243	7380.00Y	1.00	3.854E-01	3.854E-01	0.744E-01	19.29	
ANH-511	1.00E+09Y	1.00	1.240E-01	1.240E-01	0.514E-01	41.45	
Total Activity :			7.198E+01	7.210E+01			

Grand Total Activity : 7.198E+01 7.210E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	84.37	160	626	1.27	168.95	164	29	2.22E-02	56.3	7.24E+00	T
5	89.96	241	544	1.09	180.13	164	29	3.34E-02	34.8	7.68E+00	T
0	129.02	133	551	1.01	258.16	255	8	1.85E-02	63.4	8.53E+00	T
0	186.02	257	817	1.37	372.05	365	15	3.57E-02	51.2	7.60E+00	T
0	209.39	168	477	1.20	418.75	414	9	2.34E-02	49.4	7.18E+00	T
0	270.89	180	429	1.27	541.65	535	13	2.50E-02	50.4	6.26E+00	T
0	463.13	135	259	1.62	925.84	919	14	1.87E-02	53.6	4.58E+00	T
0	727.15	153	166	1.22	1453.57	1449	13	2.13E-02	38.5	3.34E+00	T
0	793.85	76	138	2.29	1586.91	1583	14	1.05E-02	69.6	3.12E+00	
1	964.22	104	109	2.34	1927.54	1920	25	1.44E-02	46.4	2.66E+00	T
0	1587.73	65	73	1.39	3174.53	3161	29	9.06E-03	81.6	1.81E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691002.CNF;1
* Acquisition date   : 9-FEB-2010 15:21:30. Detector SN#      :
* Detector ID        : GAM22 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:02.46 Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245691002 Analyst initials: MJHL
* Batch Number       : 947037 Sample Quantity : 1.45720E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28.08MS Isotope      :
* MSD ID             : MSD Isotope      :
* LCS ID             : 1032-A LCS Isotope :
*****

```

## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.630E+01	3.644E+00	4.089E-01	3.746E-02	88.760
CD-109	3.836E+00	9.080E-01	9.623E-01	9.131E-02	3.986
SN-126	3.770E-01	8.925E-02	9.496E-02	8.966E-03	3.970
TL-208	5.275E-01	8.801E-02	4.912E-02	5.326E-03	10.740
BI-211	4.002E+00	5.787E-01	2.731E-01	3.186E-02	14.655
PB-212	1.681E+00	2.419E-01	7.451E-02	9.845E-03	22.555
PO-212	1.681E+00	2.419E-01	7.451E-02	9.845E-03	22.555
BI-214	1.196E+00	1.974E-01	9.118E-02	1.060E-02	13.123
PB-214	1.392E+00	2.140E-01	9.517E-02	1.213E-02	14.628
PO-214	1.392E+00	2.140E-01	9.517E-02	1.213E-02	14.628
PO-216	1.681E+00	2.419E-01	7.451E-02	9.845E-03	22.555
PO-218	1.392E+00	2.140E-01	9.517E-02	1.213E-02	14.628
RA-224	4.695E+00	1.024E+00	8.471E-01	1.060E-01	5.543
RA-226	1.196E+00	1.974E-01	9.118E-02	1.060E-02	13.123
AC-228	1.476E+00	3.081E-01	1.771E-01	2.347E-02	8.331
RA-228	1.476E+00	3.081E-01	1.771E-01	2.347E-02	8.331
TH-228	1.706E+00	2.456E-01	7.565E-02	9.995E-03	22.555
TH-230	1.196E+00	1.974E-01	9.117E-02	1.060E-02	13.123

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.476E+00	3.081E-01	1.771E-01	2.347E-02	8.331
TH-234	3.039E-01	1.161E+00	1.633E+00	2.843E-01	0.186
U-234	1.196E+00	1.974E-01	9.117E-02	1.060E-02	13.123
NP-237	1.107E+00	3.477E-01	2.816E-01	6.376E-02	3.931
U-238	3.039E-01	1.161E+00	1.633E+00	2.843E-01	0.186
AM-243	3.854E-01	7.437E-02	6.952E-02	5.667E-03	5.544
ANH-511	1.240E-01	5.139E-02	3.916E-02	3.924E-03	3.166

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.064E-01		2.759E-01	4.616E-01	4.817E-02	0.447
NA-22	-4.161E-02		3.580E-02	5.411E-02	4.663E-03	-0.769
NA-24	-5.782E-01		3.176E-01	Half-Life too short		
AL-26	1.957E-02		2.040E-02	3.795E-02	3.103E-03	0.516
TI-44	3.627E-01	+	4.999E-02	6.418E-02	5.442E-03	5.651
SC-46	-2.369E-02		3.329E-02	5.265E-02	5.894E-03	-0.450
V-48	-3.389E-03		5.939E-02	9.720E-02	1.019E-02	-0.035
CR-51	1.205E-01		3.171E-01	5.377E-01	6.963E-02	0.224
MN-52	4.635E-03		1.902E-01	3.118E-01	2.786E-02	0.015
MN-54	2.778E-03		3.224E-02	5.404E-02	6.003E-03	0.051
CO-56	3.505E-03		3.404E-02	5.704E-02	6.349E-03	0.061
CO-57	-1.785E-02		2.320E-02	3.566E-02	2.941E-03	-0.500
CO-58	-1.576E-02		3.048E-02	4.930E-02	5.460E-03	-0.320
FE-59	3.218E-02		8.137E-02	1.353E-01	1.326E-02	0.238
CO-60	1.599E-02		3.259E-02	5.565E-02	4.963E-03	0.287
ZN-65	6.550E-02		1.010E-01	1.463E-01	1.305E-02	0.448
GE-68	9.355E-01		1.100E+00	1.879E+00	1.772E-01	0.498
AS-73	2.624E-01		6.457E-01	1.066E+00	8.057E-02	0.246
AS-74	-9.801E-02		7.528E-02	1.149E-01	1.191E-02	-0.853
SE-75	1.944E-02		4.540E-02	6.510E-02	8.763E-03	0.299
BR-77	-1.147E-01		8.879E+00	1.489E+01	1.498E+00	-0.008
SR-82	-3.852E-01		3.247E-01	4.811E-01	5.276E-02	-0.801
RB-83	-6.478E-03		5.802E-02	9.683E-02	9.745E-03	-0.067
RB-84	5.164E-02		6.011E-02	1.042E-01	1.166E-02	0.495
KR-85	2.185E+01		7.764E+00	1.218E+01	1.222E+00	1.794
SR-85	1.121E-01		3.982E-02	6.247E-02	6.268E-03	1.794
RB-86	7.028E-01		6.946E-01	1.197E+00	1.129E-01	0.587
Y-88	1.322E-02		2.349E-02	4.156E-02	3.360E-03	0.318
ZR-88	1.475E-02		2.625E-02	4.419E-02	4.114E-03	0.334
Y-91	1.512E+01		1.699E+01	2.948E+01	2.424E+00	0.513
NB-94	-4.514E-04		2.825E-02	4.607E-02	4.937E-03	-0.010
NB-95	2.239E-02		3.832E-02	6.379E-02	6.975E-03	0.351
NB-95M	1.067E-01		1.294E-01	1.896E-01	2.506E-02	0.563
ZR-95	2.188E-02		6.459E-02	1.066E-01	1.237E-02	0.205
NB-97	7.375E-02		3.919E-02	Half-Life too short		
ZR-97	3.155E+00		9.430E-01	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99	-1.932E-01		9.550E+00	1.549E+01	2.565E+00	-0.012
TC-99M	-1.964E+10		1.829E+10	Half-Life too short		
RH-101	4.384E-04		2.958E-02	4.750E-02	5.182E-03	0.009
RH-102	1.532E-02		2.505E-02	4.169E-02	4.100E-03	0.367
RU-103	-2.516E-02		3.375E-02	5.167E-02	7.755E-03	-0.487
RH-106	-1.610E-01		2.635E-01	4.188E-01	6.116E-02	-0.384
RU-106	-1.610E-01		2.630E-01	4.188E-01	4.375E-02	-0.384
AG-108M	4.015E-03		2.733E-02	4.487E-02	4.442E-03	0.089
AG-110M	2.752E-02		2.760E-02	4.762E-02	5.118E-03	0.578
IN-111	8.867E-02		1.007E+00	1.430E+00	1.814E-01	0.062
IN-113M	9.454E-04		3.841E-02	6.325E-02	6.040E-03	0.015
SN-113	9.454E-04		3.841E-02	6.325E-02	6.040E-03	0.015
IN-114M	1.305E-01		1.745E-01	2.610E-01	2.774E-02	0.500
CD-115	1.935E+00		9.051E+00	1.532E+01	1.547E+00	0.126
SN-117M	-3.872E-02		4.836E-02	7.866E-02	7.460E-03	-0.492
SB-122	-6.702E-03		1.704E+00	2.838E+00	2.909E-01	-0.002
I-123	-3.899E+00		2.589E+00	Half-Life too short		
TE-123M	-1.871E-02		2.485E-02	4.048E-02	3.866E-03	-0.462
I-124	-1.039E-01		6.432E-01	9.051E-01	9.401E-02	-0.115
SB-124	-2.490E-02		5.278E-02	8.172E-02	7.269E-03	-0.305
SB-125	-3.409E-02		7.365E-02	1.172E-01	1.137E-02	-0.291
TE-125M	6.359E+00		8.012E+00	1.312E+01	1.329E+00	0.485
I-126	1.104E-01		1.487E-01	2.530E-01	2.673E-02	0.436
SB-126	-3.660E-02		1.335E-01	1.899E-01	2.047E-02	-0.193
SB-127	1.292E-01		1.092E+00	1.800E+00	2.338E-01	0.072
XE-127	2.657E-02		4.374E-02	7.076E-02	7.844E-03	0.375
I-131	9.875E-02		9.295E-02	1.602E-01	1.776E-02	0.616
TE-132	2.607E-01		6.165E-01	1.016E+00	1.810E-01	0.257
BA-133	5.852E-03		3.957E-02	5.749E-02	8.591E-03	0.102
I-133	-1.744E-03		2.503E-03	Half-Life too short		
CS-134	8.537E-02		4.630E-02	7.215E-02	7.986E-03	1.183
CS-135	1.138E-01		1.690E-01	2.402E-01	3.474E-02	0.474
I-135	-2.928E+09		2.531E+09	Half-Life too short		
CS-136	4.904E-02		8.895E-02	1.503E-01	1.520E-02	0.326
BA-137M	-2.646E-02		2.913E-02	4.513E-02	4.759E-03	-0.586
CS-137	-2.798E-02		3.079E-02	4.771E-02	5.037E-03	-0.586
CE-139	-1.244E-02		2.686E-02	4.411E-02	4.326E-03	-0.282
BA-140	1.464E-01		2.064E-01	3.480E-01	1.168E-01	0.421
LA-140	6.569E-02		6.915E-02	1.119E-01	9.813E-03	0.587
CE-141	9.219E-02		5.609E-02	9.773E-02	8.896E-03	0.943
CE-143	7.875E-04		1.237E-04	Half-Life too short		
CE-144	1.692E-01		2.044E-01	3.132E-01	4.862E-02	0.540
PM-144	9.912E-03		2.919E-02	4.853E-02	5.190E-03	0.204
PR-144	6.717E-01		1.978E+00	3.289E+00	3.516E-01	0.204
PM-146	8.008E-03		3.821E-02	6.264E-02	7.279E-03	0.128
ND-147	-2.376E-01		4.608E-01	7.493E-01	1.188E-01	-0.317
PM-149	5.375E+01		8.298E+01	1.352E+02	2.557E+01	0.398
EU-152	1.290E-02		1.061E-01	1.354E-01	1.627E-02	0.095

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-5.259E-02		7.760E-02	1.078E-01	9.480E-03	-0.488
EU-154	-1.156E-01		1.004E-01	1.513E-01	1.710E-02	-0.764
EU-155	1.874E-02		9.422E-02	1.520E-01	1.305E-02	0.123
TB-160	-6.431E-02		1.208E-01	1.939E-01	2.169E-02	-0.332
HO-166M	-5.532E-02		5.031E-02	7.604E-02	8.175E-03	-0.727
TM-171	-4.985E+00		2.521E+01	3.658E+01	2.764E+00	-0.136
LU-176	9.434E-03		2.224E-02	3.469E-02	4.552E-03	0.272
LU-177	2.632E+00	+	1.333E+00	1.766E+00	1.993E-01	1.491
LU-177M	-8.919E-02		1.545E-01	2.459E-01	2.325E-02	-0.363
HF-181	1.485E-02		3.625E-02	5.974E-02	5.897E-03	0.249
W-181	-1.344E-01		3.278E-01	4.721E-01	3.520E-02	-0.285
TA-182	-1.652E-02		1.742E-01	2.880E-01	2.395E-02	-0.057
RE-183	4.979E-02		9.832E-02	1.665E-01	1.607E-02	0.299
RE-184	3.100E-02		2.005E-01	3.255E-01	4.224E-02	0.095
OS-185	-2.766E-02		3.353E-02	5.223E-02	5.489E-03	-0.530
RE-188	1.218E-01		1.500E-01	2.567E-01	2.396E-02	0.475
W-188	-5.003E+00		7.182E+00	1.011E+01	1.381E+00	-0.495
IR-192	1.964E-03		2.877E-02	4.831E-02	6.174E-03	0.041
AU-195	1.802E-01		2.037E-01	3.218E-01	2.806E-02	0.560
TL-200	-1.098E-04		1.836E-04	Half-Life too short		
TL-201	-3.498E+00		6.290E+00	1.028E+01	1.014E+00	-0.340
TL-202	3.294E-02		5.847E-02	9.771E-02	9.406E-03	0.337
HG-203	3.469E-02		3.703E-02	6.095E-02	8.627E-03	0.569
BI-207	2.855E-03		4.685E-02	7.665E-02	7.359E-03	0.037
TL-207	-7.269E-01		5.962E-01	9.196E-01	1.828E-01	-0.790
PO-209	2.063E+00		5.836E+00	9.882E+00	1.107E+00	0.209
BI-210	-1.427E+00		2.665E+00	4.312E+00	4.006E-01	-0.331
PB-210	-1.427E+00		2.665E+00	4.312E+00	4.006E-01	-0.331
PO-210	-1.427E+00		2.664E+00	4.312E+00	3.625E-01	-0.331
PB-211	-1.619E-01		8.102E-01	1.306E+00	8.201E-01	-0.124
BI-212	1.002E+00	+	4.036E-01	5.434E-01	6.490E-02	1.843
PO-215	-7.269E-01		5.962E-01	9.196E-01	1.828E-01	-0.790
RN-219	9.012E-02		3.472E-01	5.762E-01	8.915E-02	0.156
RN-220	-1.588E+00		2.108E+01	3.506E+01	3.574E+00	-0.045
RA-223	-7.269E-01		5.962E-01	9.196E-01	1.828E-01	-0.790
AC-227	1.317E-02		3.333E-01	5.381E-01	9.819E-02	0.024
TH-227	1.317E-02		3.334E-01	5.381E-01	1.108E-01	0.024
TH-229	-1.717E-01		4.611E-01	7.236E-01	7.780E-02	-0.237
PA-231	-9.311E-01		1.405E+00	2.163E+00	4.040E-01	-0.430
TH-231	-7.269E-01		5.962E-01	9.196E-01	1.828E-01	-0.790
U-231	-8.468E-02		1.022E+00	1.463E+00	1.299E-01	-0.058
PA-233	1.418E-02		5.154E-02	8.733E-02	1.144E-02	0.162
PA-234	-4.274E-03		2.743E-01	4.519E-01	8.982E-02	-0.009
PA-234M	1.418E+00		4.049E+00	6.597E+00	7.560E-01	0.215
U-235	4.273E-02		1.922E-01	3.186E-01	5.620E-02	0.134
NP-236	-4.553E-02		7.008E-02	1.146E-01	1.095E-02	-0.397
NP-239	1.067E-02		1.707E-01	2.721E-01	2.249E-02	0.039
AM-241	3.193E-02		1.273E-01	1.918E-01	1.499E-02	0.166

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	5.157E-02		8.257E-02	1.352E-01	1.153E-02	0.381
AM-246	4.658E-02		1.201E-01	2.003E-01	1.885E-02	0.233
CM-247	1.547E-02		3.103E-02	5.202E-02	4.880E-03	0.297
CF-249	7.491E-03		3.436E-02	5.709E-02	5.426E-03	0.131
CF-251	6.233E-02		1.094E-01	1.846E-01	1.876E-02	0.338

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691002            *
* Acquisition date   : 9-FEB-2010 15:21:30 Detector SN#      :              *
* Detector ID        : GAM22                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000       *
* Elapsed real time  : 0 02:00:02.46           Half life ratio : 8.000       *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G245691002           Analyst initials: MJH1           *
* Batch Number       : 947037              Sample Quantity : 1.4572E+02 GRAM    *
* Recovery           : 1.00000             Carrier Weight  : 0.00000         *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 2-DEC-2009 16:47:28 MS Isotope         :              *
* MSD DPM            : 0.000                MSD Isotope       :              *
* LCS DPM            : 0.000                LCS Isotope        :              *
* LCSD DPM           : 0.000                LCSD Isotope       :              *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.630E+01	3.571E+00	2.057E-01	1.822E+00
CD-109	3.836E+00	8.899E-01	5.156E-01	4.540E-01
SN-126	3.770E-01	8.746E-02	5.088E-02	4.462E-02
TL-208	5.275E-01	8.625E-02	2.525E-02	4.400E-02
BI-211	4.002E+00	5.671E-01	1.420E-01	2.893E-01
PB-212	1.681E+00	2.371E-01	3.908E-02	1.210E-01
PO-212	1.681E+00	2.371E-01	3.908E-02	1.210E-01
BI-214	1.196E+00	1.935E-01	4.682E-02	9.870E-02
PB-214	1.392E+00	2.097E-01	4.948E-02	1.070E-01
PO-214	1.392E+00	2.097E-01	4.948E-02	1.070E-01
PO-216	1.681E+00	2.371E-01	3.908E-02	1.210E-01
PO-218	1.392E+00	2.097E-01	4.948E-02	1.070E-01
RA-224	4.695E+00	1.003E+00	4.441E-01	5.119E-01
RA-226	1.196E+00	1.935E-01	4.682E-02	9.870E-02
AC-228	1.476E+00	3.019E-01	9.012E-02	1.540E-01
RA-228	1.476E+00	3.019E-01	9.012E-02	1.540E-01
TH-228	1.706E+00	2.407E-01	3.967E-02	1.228E-01
TH-230	1.196E+00	1.934E-01	4.682E-02	9.870E-02
TH-232	1.476E+00	3.019E-01	9.012E-02	1.540E-01
TH-234	3.039E-01	1.138E+00	8.811E-01	5.807E-01
U-234	1.196E+00	1.934E-01	4.682E-02	9.870E-02
NP-237	1.107E+00	3.407E-01	1.509E-01	1.738E-01
U-238	3.039E-01	1.138E+00	8.811E-01	5.807E-01
AM-243	3.854E-01	7.288E-02	3.738E-02	3.718E-02
ANH-511	1.240E-01	5.036E-02	2.019E-02	2.569E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	2.064E-01	2.704E-01	2.383E-01	1.380E-01 NOT IDENT.
NA-22	-4.161E-02	3.508E-02	2.731E-02	1.790E-02 NOT IDENT.

NA-24	-5.782E+05	6.224E+05	0.000E+00	3.176E+05	SHORT HLIF
AL-26	1.957E-02	1.999E-02	1.899E-02	1.020E-02	NOT IDENT.
TI-44	3.627E-01	4.899E-02	3.447E-02	2.499E-02	FAIL ABUN
SC-46	-2.369E-02	3.263E-02	2.680E-02	1.665E-02	FAIL ABUN
V-48	-3.389E-03	5.820E-02	4.936E-02	2.970E-02	NOT IDENT.
CR-51	1.205E-01	3.107E-01	2.802E-01	1.585E-01	NOT IDENT.
MN-52	4.635E-03	1.864E-01	1.569E-01	9.510E-02	NOT IDENT.
MN-54	2.778E-03	3.160E-02	2.755E-02	1.612E-02	NOT IDENT.
CO-56	3.505E-03	3.336E-02	2.907E-02	1.702E-02	NOT IDENT.
CO-57	-1.785E-02	2.274E-02	1.898E-02	1.160E-02	NOT IDENT.
CO-58	-1.576E-02	2.987E-02	2.515E-02	1.524E-02	NOT IDENT.
FE-59	3.218E-02	7.974E-02	6.853E-02	4.069E-02	NOT IDENT.
CO-60	1.599E-02	3.194E-02	2.806E-02	1.630E-02	NOT IDENT.
ZN-65	6.550E-02	9.900E-02	7.405E-02	5.051E-02	NOT IDENT.
GE-68	9.355E-01	1.078E+00	9.523E-01	5.501E-01	NOT IDENT.
AS-73	2.624E-01	6.328E-01	5.773E-01	3.229E-01	NOT IDENT.
AS-74	-9.801E-02	7.378E-02	5.902E-02	3.764E-02	NOT IDENT.
SE-75	1.944E-02	4.449E-02	3.406E-02	2.270E-02	NOT IDENT.
BR-77	-1.147E-01	8.701E+00	7.672E+00	4.439E+00	FAIL ABUN
SR-82	-3.852E-01	3.182E-01	2.457E-01	1.623E-01	NOT IDENT.
RB-83	-6.478E-03	5.686E-02	4.990E-02	2.901E-02	NOT IDENT.
RB-84	5.164E-02	5.891E-02	5.307E-02	3.005E-02	NOT IDENT.
KR-85	2.185E+01	7.609E+00	6.279E+00	3.882E+00	NOT IDENT.
SR-85	1.121E-01	3.902E-02	3.220E-02	1.991E-02	NOT IDENT.
RB-86	7.028E-01	6.807E-01	6.063E-01	3.473E-01	NOT IDENT.
Y-88	1.322E-02	2.302E-02	2.079E-02	1.175E-02	NOT IDENT.
ZR-88	1.475E-02	2.572E-02	2.292E-02	1.312E-02	NOT IDENT.
Y-91	1.512E+01	1.665E+01	1.490E+01	8.494E+00	NOT IDENT.
NB-94	-4.514E-04	2.768E-02	2.358E-02	1.412E-02	NOT IDENT.
NB-95	2.239E-02	3.755E-02	3.258E-02	1.916E-02	NOT IDENT.
NB-95M	1.067E-01	1.268E-01	9.943E-02	6.470E-02	NOT IDENT.
ZR-95	2.188E-02	6.330E-02	5.445E-02	3.229E-02	NOT IDENT.
NB-97	7.375E+04	7.681E+04	0.000E+00	3.919E+04	SHORT HLIF
ZR-97	3.155E+06	1.848E+06	0.000E+00	9.430E+05	SHORT HLIF
MO-99	-1.932E-01	9.359E+00	7.920E+00	4.775E+00	NOT IDENT.
TC-99M	-1.964E+16	3.585E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	4.384E-04	2.899E-02	2.501E-02	1.479E-02	NOT IDENT.
RH-102	1.532E-02	2.455E-02	2.153E-02	1.253E-02	NOT IDENT.
RU-103	-2.516E-02	3.307E-02	2.665E-02	1.687E-02	FAIL ABUN
RH-106	-1.610E-01	2.583E-01	2.150E-01	1.318E-01	FAIL ABUN
RU-106	-1.610E-01	2.577E-01	2.150E-01	1.315E-01	FAIL ABUN
AG-108M	4.015E-03	2.678E-02	2.322E-02	1.366E-02	NOT IDENT.
AG-110M	2.752E-02	2.705E-02	2.441E-02	1.380E-02	NOT IDENT.
IN-111	8.867E-02	9.865E-01	7.494E-01	5.033E-01	NOT IDENT.
IN-113M	9.454E-04	3.764E-02	3.280E-02	1.920E-02	NOT IDENT.
SN-113	9.454E-04	3.764E-02	3.280E-02	1.920E-02	NOT IDENT.
IN-114M	1.305E-01	1.710E-01	1.375E-01	8.723E-02	NOT IDENT.
CD-115	1.935E+00	8.870E+00	7.892E+00	4.525E+00	NOT IDENT.
SN-117M	-3.872E-02	4.739E-02	4.162E-02	2.418E-02	NOT IDENT.
SB-122	-6.702E-03	1.670E+00	1.460E+00	8.520E-01	NOT IDENT.
I-123	-3.899E+06	5.075E+06	0.000E+00	2.589E+06	SHORT HLIF
TE-123M	-1.871E-02	2.436E-02	2.142E-02	1.243E-02	NOT IDENT.
I-124	-1.039E-01	6.303E-01	4.649E-01	3.216E-01	NOT IDENT.
SB-124	-2.490E-02	5.173E-02	4.097E-02	2.639E-02	FAIL ABUN
SB-125	-3.409E-02	7.217E-02	6.065E-02	3.682E-02	FAIL ABUN
TE-125M	6.359E+00	7.852E+00	7.000E+00	4.006E+00	NOT IDENT.
I-126	1.104E-01	1.457E-01	1.296E-01	7.434E-02	NOT IDENT.
SB-126	-3.660E-02	1.308E-01	9.711E-02	6.676E-02	FAIL ABUN
SB-127	1.292E-01	1.071E+00	9.217E-01	5.462E-01	NOT IDENT.
XE-127	2.657E-02	4.286E-02	3.724E-02	2.187E-02	NOT IDENT.
I-131	9.875E-02	9.109E-02	8.324E-02	4.647E-02	NOT IDENT.
TE-132	2.607E-01	6.041E-01	5.331E-01	3.082E-01	NOT IDENT.
BA-133	5.852E-03	3.878E-02	2.988E-02	1.979E-02	NOT IDENT.
I-133	-1.744E+03	4.906E+03	0.000E+00	2.503E+03	SHORT HLIF
CS-134	8.537E-02	4.537E-02	3.682E-02	2.315E-02	NOT IDENT.
CS-135	1.138E-01	1.656E-01	1.256E-01	8.448E-02	NOT IDENT.
I-135	-2.928E+15	4.961E+15	0.000E+00	2.531E+15	SHORT HLIF
CS-136	4.904E-02	8.717E-02	7.619E-02	4.448E-02	FAIL ABUN
BA-137M	-2.646E-02	2.854E-02	2.313E-02	1.456E-02	NOT IDENT.
CS-137	-2.798E-02	3.017E-02	2.445E-02	1.540E-02	NOT IDENT.
CE-139	-1.244E-02	2.632E-02	2.332E-02	1.343E-02	NOT IDENT.
BA-140	1.464E-01	2.023E-01	1.792E-01	1.032E-01	NOT IDENT.
LA-140	6.569E-02	6.777E-02	5.620E-02	3.458E-02	NOT IDENT.
CE-141	9.219E-02	5.496E-02	5.181E-02	2.804E-02	NOT IDENT.
CE-143	7.875E+02	2.424E+02	0.000E+00	1.237E+02	SHORT HLIF
CE-144	1.692E-01	2.003E-01	1.663E-01	1.022E-01	NOT IDENT.
PM-144	9.912E-03	2.861E-02	2.484E-02	1.460E-02	NOT IDENT.
PR-144	6.717E-01	1.939E+00	1.684E+00	9.891E-01	NOT IDENT.



PM-146	8.008E-03	3.744E-02	3.238E-02	1.910E-02	NOT IDENT.
ND-147	-2.376E-01	4.516E-01	3.860E-01	2.304E-01	FAIL ABUN
PM-149	5.375E+01	8.132E+01	7.059E+01	4.149E+01	NOT IDENT.
EU-152	1.290E-02	1.040E-01	7.043E-02	5.307E-02	FAIL ABUN
GD-153	-5.259E-02	7.605E-02	5.764E-02	3.880E-02	FAIL ABUN
EU-154	-1.156E-01	9.838E-02	7.636E-02	5.019E-02	NOT IDENT.
EU-155	1.874E-02	9.233E-02	8.114E-02	4.711E-02	FAIL ABUN
TB-160	-6.431E-02	1.184E-01	9.874E-02	6.040E-02	FAIL ABUN
HO-166M	-5.532E-02	4.930E-02	3.890E-02	2.515E-02	NOT IDENT.
TM-171	-4.985E+00	2.471E+01	1.972E+01	1.261E+01	NOT IDENT.
LU-176	9.434E-03	2.179E-02	1.809E-02	1.112E-02	FAIL ABUN
LU-177	2.632E+00	1.306E+00	9.287E-01	6.664E-01	FAIL ABUN
LU-177M	-8.919E-02	1.514E-01	1.274E-01	7.725E-02	NOT IDENT.
HF-181	1.485E-02	3.553E-02	3.084E-02	1.813E-02	NOT IDENT.
W-181	-1.344E-01	3.212E-01	2.546E-01	1.639E-01	NOT IDENT.
TA-182	-1.652E-02	1.707E-01	1.455E-01	8.709E-02	FAIL ABUN
RE-183	4.979E-02	9.635E-02	8.806E-02	4.916E-02	FAIL ABUN
RE-184	3.100E-02	1.965E-01	1.705E-01	1.003E-01	NOT IDENT.
OS-185	-2.766E-02	3.286E-02	2.678E-02	1.677E-02	NOT IDENT.
RE-188	1.218E-01	1.470E-01	1.359E-01	7.498E-02	NOT IDENT.
W-188	-5.003E+00	7.038E+00	5.281E+00	3.591E+00	FAIL ABUN
IR-192	1.964E-03	2.819E-02	2.517E-02	1.438E-02	FAIL ABUN
AU-195	1.802E-01	1.996E-01	1.720E-01	1.018E-01	FAIL ABUN
TL-200	-1.098E+02	3.599E+02	0.000E+00	1.836E+02	SHORT HLIF
TL-201	-3.498E+00	6.164E+00	5.435E+00	3.145E+00	NOT IDENT.
TL-202	3.294E-02	5.730E-02	5.055E-02	2.924E-02	NOT IDENT.
HG-203	3.469E-02	3.629E-02	3.185E-02	1.851E-02	NOT IDENT.
BI-207	2.855E-03	4.592E-02	3.885E-02	2.343E-02	FAIL ABUN
TL-207	-7.269E-01	5.843E-01	4.790E-01	2.981E-01	FAIL ABUN
PO-209	2.063E+00	5.719E+00	5.029E+00	2.918E+00	NOT IDENT.
BI-210	-1.427E+00	2.612E+00	2.341E+00	1.332E+00	NOT IDENT.
PB-210	-1.427E+00	2.612E+00	2.341E+00	1.332E+00	NOT IDENT.
PO-210	-1.427E+00	2.611E+00	2.341E+00	1.332E+00	NOT IDENT.
PB-211	-1.619E-01	7.940E-01	6.771E-01	4.051E-01	NOT IDENT.
BI-212	1.002E+00	3.956E-01	2.779E-01	2.018E-01	FAIL ABUN
PO-215	-7.269E-01	5.843E-01	4.790E-01	2.981E-01	FAIL ABUN
RN-219	9.012E-02	3.403E-01	2.987E-01	1.736E-01	FAIL ABUN
RN-220	-1.588E+00	2.066E+01	1.805E+01	1.054E+01	NOT IDENT.
RA-223	-7.269E-01	5.843E-01	4.790E-01	2.981E-01	FAIL ABUN
AC-227	1.317E-02	3.267E-01	2.817E-01	1.667E-01	FAIL ABUN
TH-227	1.317E-02	3.267E-01	2.817E-01	1.667E-01	FAIL ABUN
TH-229	-1.717E-01	4.518E-01	3.812E-01	2.305E-01	FAIL ABUN
PA-231	-9.311E-01	1.377E+00	1.130E+00	7.025E-01	FAIL ABUN
TH-231	-7.269E-01	5.843E-01	4.790E-01	2.981E-01	FAIL ABUN
U-231	-8.468E-02	1.001E+00	7.826E-01	5.108E-01	FAIL ABUN
PA-233	1.418E-02	5.051E-02	4.552E-02	2.577E-02	FAIL ABUN
PA-234	-4.274E-03	2.688E-01	2.297E-01	1.371E-01	FAIL ABUN
PA-234M	1.418E+00	3.968E+00	3.348E+00	2.025E+00	NOT IDENT.
U-235	4.273E-02	1.883E-01	1.689E-01	9.608E-02	FAIL ABUN
NP-236	-4.553E-02	6.868E-02	6.060E-02	3.504E-02	NOT IDENT.
NP-239	1.067E-02	1.673E-01	1.449E-01	8.537E-02	FAIL ABUN
AM-241	3.193E-02	1.248E-01	1.036E-01	6.365E-02	NOT IDENT.
CM-243	5.157E-02	8.092E-02	7.220E-02	4.129E-02	FAIL ABUN
AM-246	4.658E-02	1.177E-01	1.015E-01	6.006E-02	NOT IDENT.
CM-247	1.547E-02	3.041E-02	2.696E-02	1.551E-02	NOT IDENT.
CF-249	7.491E-03	3.367E-02	2.962E-02	1.718E-02	NOT IDENT.
CF-251	6.233E-02	1.072E-01	9.747E-02	5.469E-02	NOT IDENT.

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT          *
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ENERGY	MDA COUNTS
46.50	373.9135
46.50	373.9135
46.50	373.9135
48.70	368.6566
49.72	370.3785
51.35	382.3280
52.39	380.3680
52.97	370.1674
53.15	365.8019
53.44	358.8030
54.07	357.9034
56.28	416.8861
56.28	416.8907
57.37	0.0000
57.53	416.1924
57.53	416.1957
57.60	403.9837
57.98	405.5575
57.98	405.5575
59.32	421.1154
59.32	421.1154
59.40	421.2489
59.54	421.4833
59.72	430.3929
60.01	430.8872
61.10	451.4861
61.14	451.5560
61.30	451.8372
63.00	498.8794
63.29	504.2796
63.29	504.2796
63.58	547.5504
64.28	547.5369
65.12	553.6525
65.20	547.9572
65.20	547.9572
66.05	561.4385
66.72	539.2435
66.83	539.4613
66.91	539.6205
67.20	544.3227
67.20	544.3227
67.75	571.8284
67.85	572.0364
68.90	567.8584
68.90	567.8584
69.30	563.6104
69.67	543.5067
70.82	577.1005
70.82	577.1005
70.83	577.1212
72.80	593.1072
72.87	593.2515
72.87	593.2515
74.67	554.4619
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74.81	554.7216
74.81	554.7216
74.97	555.0203
75.28	555.5956
75.70	556.3718
77.11	558.9659
77.11	558.9659

77.11	558.9659
77.11	558.9659
77.11	558.9659
77.11	558.9659
77.11	558.9659
78.38	513.7432
79.62	483.4645
79.80	483.7424
79.80	483.7424
80.11	511.9794
80.18	512.0934
80.30	512.2885
80.30	512.2885
80.57	512.7266
81.00	513.4257
81.07	513.5397
81.07	513.5397
81.07	513.5397
81.07	513.5397
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83.78	479.4158
83.78	479.4158
83.78	479.4158
84.21	480.0512
84.90	481.0642
85.43	481.8403
86.29	483.0924
86.50	483.3972
86.54	483.4558
86.59	483.5285
86.72	483.7185
86.79	483.8170
86.94	484.0374
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87.88	485.3950
88.03	485.6107
88.36	486.0844
88.47	486.2438
89.95	488.3588
91.11	490.0071
92.29	491.6719
92.38	491.7985
92.38	491.7985
93.35	493.1562
94.00	494.0636
94.67	450.9668
94.67	450.9732
94.90	451.2637
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94.90	451.2637
94.90	451.2637
95.87	509.0464
95.87	509.0464
96.73	544.2799
97.43	527.4729
98.44	458.9471
98.44	458.9492
98.88	451.0248
99.55	447.2736
99.55	447.2736
99.86	437.8432
100.00	438.0088
100.10	425.0529
103.18	479.0837
103.76	429.1908
105.00	459.2826
105.31	466.2803
108.00	481.7402
109.28	429.7216

111.00	494.3440
111.00	494.3440
111.76	468.3212
112.95	483.2098
115.19	445.0754
116.30	481.4662
117.00	460.6595
117.00	460.6595
117.66	470.4963
121.11	505.3260
121.62	522.0210
121.78	522.2126
122.06	488.0201
122.32	488.3112
122.32	488.3112
122.32	488.3112
122.32	488.3112
123.07	449.9298
127.23	538.0260
129.76	548.0757
131.20	511.7405
133.02	484.0394
133.54	476.0806
135.34	507.6059
136.00	492.2920
136.25	492.5536
136.48	499.0320
140.51	516.7244
140.51	0.0000
142.18	525.7150
142.65	532.5359
143.76	510.2171
144.24	483.5464
144.24	483.5464
144.24	483.5464
144.24	483.5464
145.22	456.3772
145.44	462.9346
147.16	541.0361
152.43	478.5538
152.70	488.0115
153.22	488.5008
154.21	470.9617
154.21	470.9617
154.21	470.9617
154.21	470.9617
155.03	460.6021
156.02	480.9319
158.56	500.0042
159.00	0.0000
159.00	491.0952
160.31	495.0999
161.27	472.5860
162.32	476.3120
162.64	479.4095
163.35	456.5483
163.89	454.1760
165.85	507.6997
167.43	497.7922
171.28	435.4631
171.86	457.8442
172.10	458.0383
176.55	417.3581
176.60	417.3946
181.06	463.5996
184.41	406.3708
185.71	407.2457
186.00	407.4429
190.27	395.1412
192.34	437.5295
193.63	451.0981
197.04	421.7162
198.01	422.3567
198.60	426.7330
200.40	505.9228
201.83	457.9449
202.84	445.0355
205.31	451.3257

208.36	492.2781
208.81	454.7345
209.75	413.7929
209.75	413.7929
210.97	408.0435
215.65	427.6502
216.55	405.6740
218.09	439.4386
222.10	387.2509
223.80	426.4907
226.40	412.4745
227.00	382.6670
227.08	382.7091
227.20	392.1350
228.16	387.4536
228.18	387.4650
228.18	387.4650
231.56	0.0000
235.69	454.6395
236.00	431.2500
236.00	431.2500
238.63	346.5656
238.63	346.5656
238.63	346.5656
238.63	346.5656
239.00	346.7383
240.98	347.6592
241.98	298.8777
241.98	298.8777
241.98	298.8777
244.69	339.1502
245.39	318.9934
247.94	329.4753
248.90	311.6785
249.79	334.5564
252.40	307.7132
252.85	319.7318
252.85	319.7318
254.15	0.0000
256.20	331.9154
256.20	331.9154
260.50	365.2441
260.90	354.5529
262.80	378.2870
264.65	330.4224
268.24	358.2202
268.79	367.2502
269.46	360.5167
269.46	360.5167
269.46	360.5167
269.46	360.5167
271.23	352.4805
273.65	383.5592
276.40	333.3971
277.35	322.5293
277.60	329.8106
277.60	329.8106
278.00	329.9693
278.60	341.1590
279.20	322.4976
279.53	322.6215
280.46	349.7045
281.68	351.3229
283.67	346.5504
284.30	347.9246
285.00	353.8076
285.90	299.2587
286.10	300.4490
286.10	300.4490
287.40	303.8929
288.45	0.0000
290.67	344.1057
290.80	344.1569
291.72	346.0248
293.26	0.0000
293.70	324.1841
295.21	317.1875
295.21	317.1875

295.21	317.1875
295.96	335.5970
296.50	335.8003
297.23	336.0758
298.57	336.5817
299.80	286.9415
299.80	286.9415
300.09	287.0376
300.09	287.0376
300.09	287.0376
300.09	287.0376
300.12	287.0453
301.29	291.9805
302.84	289.4377
303.76	288.2065
303.91	288.2527
304.40	257.8907
304.40	257.8907
304.84	264.1214
306.84	264.9207
308.46	285.0963
311.98	252.9483
316.51	273.6600
318.01	269.4536
319.02	263.2294
319.41	267.0620
320.08	278.4218
323.87	346.8478
323.87	346.8478
323.87	346.8478
323.87	346.8478
325.23	343.5921
328.77	289.4155
333.44	325.7411
334.20	311.8202
334.20	311.8202
334.30	299.2523
338.28	281.7983
338.28	281.7983
338.28	281.7983
338.28	281.7983
338.32	281.8128
338.32	281.8128
338.32	281.8128
340.50	271.0179
340.57	271.0353
344.27	260.1058
345.85	270.8718
350.59	0.0000
351.07	254.6484
351.92	254.8587
351.92	254.8587
351.92	254.8587
355.39	0.0000
356.01	230.1232
364.48	196.6270
366.43	236.9725
367.43	226.4577
367.94	0.0000
369.80	240.6548
374.96	229.0351
383.85	249.7329
387.95	247.6717
388.63	257.7765
391.69	250.4975
391.69	250.4975
392.90	231.7848
398.62	264.0851
400.65	235.3825
401.10	226.4200
401.81	232.6017
402.60	225.7090
404.84	256.4340
410.95	239.5175
411.60	241.6810
413.65	265.4987
414.70	241.3020
415.30	217.9942

415.76	231.3283
417.63	0.0000
418.52	233.9087
423.70	205.1758
427.08	204.7232
427.89	204.8592
432.53	194.2743
433.93	205.8771
439.47	199.5305
439.56	199.5445
439.89	195.4401
443.98	211.7276
444.90	217.1025
445.03	217.1254
445.03	217.1254
445.03	217.1254
445.03	217.1254
453.90	219.7051
463.38	181.0905
468.07	198.3949
473.00	187.7605
475.06	192.3267
475.35	197.7142
476.78	195.7868
477.59	188.4115
477.96	188.4652
482.03	190.1130
484.57	211.9962
487.03	182.1949
490.36	0.0000
492.35	186.1577
497.08	194.4025
507.63	0.0000
510.53	0.0000
510.84	197.4287
511.00	197.4507
511.85	184.7629
511.85	184.7629
513.99	197.8682
513.99	197.8682
520.41	199.6805
520.65	199.7158
527.90	184.9976
528.96	0.0000
529.64	197.2564
529.87	0.0000
531.02	192.8122
537.32	149.8860
543.00	161.6772
546.56	0.0000
549.76	176.4910
552.65	153.3166
555.20	187.4937
563.23	183.7458
563.90	186.6714
568.70	175.8464
569.32	173.0614
569.50	167.3776
569.67	167.3955
573.80	206.9385
574.00	209.8263
574.64	207.1400
578.91	180.4189
579.30	0.0000
583.14	184.1914
585.48	182.8178
591.81	147.5806
592.07	149.2103
593.00	176.9116
595.88	200.1733
600.56	151.2932
602.52	0.0000
602.71	198.1064
602.71	198.1064
603.60	206.5427
604.41	214.9790
604.70	203.3475
609.31	180.3818

609.31	180.3818
609.31	180.3818
609.31	180.3818
610.33	188.9967
612.46	207.6628
614.37	174.3683
618.01	136.4416
621.84	178.8045
621.84	178.8045
631.29	146.2174
633.02	170.1033
633.10	165.1653
634.78	153.4485
635.90	161.4745
636.97	166.5337
645.85	157.4310
646.12	158.4533
656.30	147.3529
657.75	133.4302
657.90	0.0000
661.65	180.9814
661.65	180.9814
664.57	0.0000
666.33	153.2339
666.33	153.2339
675.00	163.0964
677.61	158.2598
685.20	144.6637
692.80	175.9543
695.00	181.2853
696.49	170.1574
696.49	170.1574
697.00	176.3567
697.49	169.2230
698.33	158.0135
698.50	158.0292
699.00	167.3078
702.63	174.8352
706.10	158.6746
706.58	0.0000
706.67	143.2646
709.31	156.8830
711.68	175.6826
713.82	156.2256
717.42	132.6823
720.50	161.9700
721.93	0.0000
722.20	160.3313
722.78	156.8175
722.78	156.8175
722.89	156.8267
722.95	156.8298
723.30	156.8605
724.18	148.0145
727.18	153.6044
733.00	159.4438
735.90	132.5732
739.58	142.6102
742.81	159.6538
744.21	151.3564
747.13	133.6869
751.79	171.9903
752.31	174.1476
753.82	163.7162
755.35	163.8424
756.15	170.2534
756.87	162.9106
763.93	201.7088
765.79	185.9553
766.42	188.1381
766.84	197.7461
776.49	169.8513
778.00	177.4591
778.57	177.5098
778.89	168.9808
783.80	112.5687
785.46	121.7319
792.07	156.8462



795.84	123.8561
796.30	122.0351
798.80	159.2074
801.93	142.7610
805.60	115.1515
810.29	125.6467
810.76	133.1224
815.85	120.3774
817.79	99.9393
818.51	110.2505
819.60	122.4584
826.30	143.4749
828.27	0.0000
831.60	168.2682
831.96	146.6717
834.83	167.5796
836.80	0.0000
846.75	148.6194
848.13	137.3459
856.28	0.0000
856.80	123.1474
860.37	148.3460
867.32	127.0741
867.82	143.8259
871.10	131.1157
873.19	131.2375
874.81	138.9996
875.33	0.0000
876.40	159.2435
879.36	148.8858
880.27	140.2969
880.51	137.4290
881.50	122.1055
883.24	117.3876
884.67	123.2388
889.25	144.7109
896.60	109.3643
898.02	131.7049
899.00	137.5724
903.28	118.9005
911.07	130.4972
911.07	130.4972
911.07	130.4972
919.63	126.5755
920.93	106.4887
925.00	127.3521
925.24	133.2441
926.50	135.2758
935.52	119.0609
937.48	127.0361
944.10	158.9841
946.00	150.2161
949.00	116.7592
962.29	116.6509
964.01	118.4729
966.15	118.5767
968.20	118.6742
969.11	118.7198
969.11	118.7198
969.11	118.7198
977.42	113.6664
980.50	113.2503
983.50	122.4170
989.30	113.6483
996.32	145.2305
1001.03	116.1973
1001.68	108.1420
1004.76	131.5461
1021.30	0.0000
1024.50	0.0000
1034.80	121.8223
1036.00	126.9971
1037.82	154.7550
1038.57	164.0290
1038.76	0.0000
1045.16	139.7709
1046.59	131.6205
1048.07	107.0033

1050.47	129.7529
1050.47	129.7529
1062.04	114.8017
1063.62	135.5689
1076.63	113.3452
1077.35	117.5362
1078.86	114.4810
1085.78	130.4191
1099.22	131.0599
1112.02	152.9907
1112.84	154.8801
1115.52	166.1023
1120.29	155.2903
1120.29	155.2903
1120.29	155.2903
1120.29	155.2903
1120.51	155.3057
1121.28	133.1543
1124.00	0.0000
1129.67	130.2523
1131.51	0.0000
1147.95	0.0000
1167.94	139.0978
1173.22	144.0538
1175.09	153.5686
1177.93	154.6609
1189.05	162.8142
1204.90	153.2124
1205.75	0.0000
1213.00	167.9380
1221.42	172.2327
1230.97	224.6023
1235.34	173.0182
1236.41	0.0000
1238.25	158.7511
1246.25	173.6279
1260.41	0.0000
1271.85	119.6217
1274.45	122.6393
1274.54	122.6431
1291.56	110.5792
1298.22	0.0000
1312.09	87.6501
1325.50	84.0558
1325.50	84.0558
1332.49	76.3068
1333.61	82.2806
1360.21	78.9445
1362.66	0.0000
1365.15	74.0565
1368.21	68.1141
1368.53	0.0000
1376.25	62.2516
1384.27	102.6568
1394.10	71.6630
1395.20	64.6172
1407.95	64.8574
1434.06	58.1968
1436.60	55.1750
1457.56	0.0000
1460.81	48.3511
1489.15	65.3206
1509.49	52.1301
1596.49	30.7257
1620.62	30.5347
1678.03	0.0000
1691.02	31.0755
1691.02	31.0755
1706.46	0.0000
1750.46	0.0000
1764.49	23.1277
1764.49	23.1277
1764.49	23.1277
1764.49	23.1277
1770.23	28.5031
1771.40	28.5109
1791.20	0.0000
1808.65	15.9770

1836.01

20.0966

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691002

Total Uranium Activity	9.2402E-01	ug/g
Total Uranium Counting Unc.	3.3874E+00	ug/g
Total Uranium Tpu	1.7283E-06	ug/g
Total Uranium Mda	2.6226E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 947037          SAMPLE ID   : G245691002
*  ANALYST       : MJH1           DETECTOR    : GAM22
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 15:21:30.66  SAMPLE ALQT: 145.720 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.858E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.374E+00
GROSS GAMMA MDA (pCi/GRAM )     : 1.940E+00
GROSS GAMMA DLC (pCi/GRAM )     : 9.437E-01

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 16:47:04.17

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                  *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691003.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 14:46:29.
Sample ID          : G245691003 Sample quantity : 1.35050E+02 GRAM
Detector name      : GAM25 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.09 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.65*	81	592	0.90	92.86	89	9	1.12E-02	57.3	
2	0	63.39*	235	635	0.97	126.34	123	8	3.26E-02	20.4	
3	2	74.82	905	459	0.82	149.20	144	15	1.26E-01	4.8	1.62E+00
4	2	77.10*	1307	424	0.85	153.75	144	15	1.82E-01	3.7	
5	0	84.09*	185	479	1.19	167.73	164	7	2.57E-02	21.3	
6	6	87.25*	568	318	1.23	174.06	171	23	7.89E-02	6.1	3.61E+00
7	6	89.94	321	343	1.06	179.44	171	23	4.46E-02	10.7	
8	6	92.83*	536	449	1.43	185.22	171	23	7.44E-02	9.1	
9	0	99.75*	122	505	1.04	199.05	195	10	1.69E-02	36.0	
10	0	129.71	70	359	0.84	258.98	254	7	9.76E-03	46.4	
11	0	185.84*	327	405	1.16	371.22	365	12	4.54E-02	13.9	
12	0	209.35	138	300	0.88	418.23	413	10	1.92E-02	25.0	
13	6	238.61*	1544	200	0.97	476.74	472	16	2.14E-01	3.0	5.02E+00
14	6	241.50	395	264	1.66	482.52	472	16	5.48E-02	10.5	
15	0	270.14	118	233	1.30	539.81	535	10	1.64E-02	25.9	
16	0	277.55	52	264	1.43	554.62	551	12	7.27E-03	63.9	
17	0	295.15*	387	218	1.15	589.82	585	10	5.38E-02	8.8	
18	0	299.88	95	220	1.27	599.27	595	10	1.32E-02	31.0	
19	0	327.93	102	157	0.85	655.37	651	9	1.42E-02	24.3	
20	0	338.25*	275	131	1.24	676.02	672	8	3.82E-02	9.6	
21	0	351.86*	753	156	1.09	703.24	699	10	1.05E-01	4.8	
22	0	463.12	87	94	0.95	925.74	921	10	1.21E-02	23.5	
23	0	510.90*	123	201	2.22	1021.31	1016	16	1.71E-02	30.0	
24	0	582.99*	457	95	1.37	1165.47	1158	14	6.35E-02	6.6	
25	0	609.14*	500	84	1.45	1217.78	1210	13	6.95E-02	6.0	
26	0	726.82	131	84	1.44	1453.12	1446	13	1.81E-02	16.9	
27	0	769.17	97	109	4.02	1537.82	1530	18	1.34E-02	27.3	
28	0	794.92	52	61	1.30	1589.32	1584	11	7.15E-03	32.4	
29	0	860.67	98	60	1.37	1720.82	1713	16	1.36E-02	20.4	
30	0	911.00*	312	67	1.83	1821.49	1815	11	4.34E-02	7.7	
31	0	969.18*	163	108	1.61	1937.84	1930	13	2.26E-02	15.5	
32	0	1120.14	75	73	2.02	2239.77	2235	11	1.04E-02	25.0	
33	0	1407.53	33	16	2.00	2814.58	2807	16	4.58E-03	32.2	
34	0	1460.51*	1517	30	2.04	2920.54	2911	17	2.11E-01	2.7	
35	0	1588.35	17	29	1.36	3176.26	3168	13	2.32E-03	71.0	
36	0	1764.26*	87	4	3.08	3528.10	3520	17	1.21E-02	12.5	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 16:47:06

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 14:46:29
Sample ID        : G245691003 Sample quantity : 135.05 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.09 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.565E+01	3.599E+00	5.268E-01	4.486E-02	67.671
CD-109	+	88.03	*	4.616E+00	7.503E-01	6.582E-01	7.073E-02	7.013
SN-126	+	64.28		6.950E-01	3.048E-01	2.803E-01	4.466E-02	2.480
	+	86.94		1.886E+00	8.222E-01	2.676E-01	1.120E-01	7.048
	+	87.57	*	4.537E-01	7.374E-02	6.456E-02	6.922E-03	7.028
TL-208	+	277.35		4.517E-01	5.805E-01	5.371E-01	7.630E-02	0.841
	+	510.84		5.630E-01	3.465E-01	2.048E-01	2.712E-02	2.750
	+	583.14	*	6.040E-01	1.050E-01	5.945E-02	6.702E-03	10.160
	+	860.37		1.235E+00	5.206E-01	4.173E-01	4.362E-02	2.960
BI-210	+	46.50	*	6.039E-01	6.948E-01	5.910E-01	6.094E-02	1.022
PB-210	+	46.50	*	6.039E-01	6.948E-01	5.910E-01	6.094E-02	1.022
PO-210	+	46.50	*	6.039E-01	6.944E-01	5.910E-01	5.628E-02	1.022
BI-211		72.87		8.741E-01	1.573E+00	2.333E+00	2.355E-01	0.375
	+	351.07	*	4.161E+00	5.942E-01	2.854E-01	3.007E-02	14.582
PB-212	+	74.81		2.424E+00	4.088E-01	2.566E-01	3.543E-02	9.447
	+	77.11		2.092E+00	2.648E-01	1.538E-01	1.576E-02	13.601
	+	87.30		2.098E+00	4.004E-01	2.982E-01	4.369E-02	7.036
	+	238.63	*	1.802E+00	2.312E-01	7.516E-02	8.556E-03	23.977
	+	300.09		1.742E+00	1.100E+00	1.035E+00	1.289E-01	1.683
PO-212	+	74.81		2.424E+00	4.088E-01	2.566E-01	3.543E-02	9.447
	+	77.11		2.092E+00	2.648E-01	1.538E-01	1.576E-02	13.601
	+	87.30		2.098E+00	4.004E-01	2.982E-01	4.369E-02	7.036
		115.19		2.304E+00	2.453E+00	4.277E+00	5.305E-01	0.539
	+	238.63	*	1.802E+00	2.312E-01	7.516E-02	8.556E-03	23.977
	+	300.09		1.742E+00	1.100E+00	1.035E+00	1.289E-01	1.683
BI-214	+	609.31	*	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
	+	1120.29		9.870E-01	5.057E-01	4.662E-01	5.059E-02	2.117
	+	1764.49		1.623E+00	4.259E-01	3.099E-01	2.553E-02	5.239
PB-214	+	74.81		4.177E+00	6.630E-01	4.421E-01	5.560E-02	9.447
	+	77.11		3.585E+00	5.299E-01	2.636E-01	3.366E-02	13.601
	+	87.30		3.595E+00	6.466E-01	5.109E-01	6.741E-02	7.036
	+	241.98		2.768E+00	6.687E-01	4.534E-01	5.408E-02	6.104
	+	295.21		1.245E+00	2.706E-01	1.818E-01	2.305E-02	6.851
	+	351.92	*	1.447E+00	2.201E-01	9.807E-02	1.152E-02	14.759

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		4.177E+00	6.630E-01	4.421E-01	5.560E-02	9.447
	+	77.11		3.585E+00	5.299E-01	2.636E-01	3.366E-02	13.601
	+	87.30		3.595E+00	6.466E-01	5.109E-01	6.741E-02	7.036
	+	241.98		2.768E+00	6.687E-01	4.534E-01	5.408E-02	6.104
	+	295.21		1.245E+00	2.706E-01	1.818E-01	2.305E-02	6.851
PO-216	+	351.92	*	1.447E+00	2.201E-01	9.807E-02	1.152E-02	14.759
	+	74.81		2.424E+00	4.088E-01	2.566E-01	3.543E-02	9.447
	+	77.11		2.092E+00	2.648E-01	1.538E-01	1.576E-02	13.601
	+	87.30		2.098E+00	4.004E-01	2.982E-01	4.369E-02	7.036
	+	238.63	*	1.802E+00	2.312E-01	7.516E-02	8.556E-03	23.977
PO-218	+	300.09		1.742E+00	1.100E+00	1.035E+00	1.289E-01	1.683
	+	74.81		4.177E+00	6.630E-01	4.421E-01	5.560E-02	9.447
	+	77.11		3.585E+00	5.299E-01	2.636E-01	3.366E-02	13.601
	+	87.30		3.595E+00	6.466E-01	5.109E-01	6.741E-02	7.036
	+	241.98		2.768E+00	6.687E-01	4.534E-01	5.408E-02	6.104
RA-224	+	295.21		1.245E+00	2.706E-01	1.818E-01	2.305E-02	6.851
	+	351.92	*	1.447E+00	2.201E-01	9.807E-02	1.152E-02	14.759
	+	240.98	*	5.248E+00	1.233E+00	8.564E-01	9.000E-02	6.128
	+	609.31	*	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
	+	1120.29		9.870E-01	5.057E-01	4.662E-01	5.059E-02	2.117
AC-228	+	1764.49		1.623E+00	4.259E-01	3.099E-01	2.553E-02	5.239
	+	338.32		1.668E+00	7.650E-01	3.435E-01	1.431E-01	4.855
	+	911.07	*	1.868E+00	3.641E-01	2.551E-01	3.034E-02	7.324
	+	969.11		1.715E+00	6.677E-01	3.941E-01	9.300E-02	4.351
	+	338.32		1.668E+00	7.650E-01	3.435E-01	1.431E-01	4.855
RA-228	+	911.07	*	1.868E+00	3.641E-01	2.551E-01	3.034E-02	7.324
	+	969.11		1.715E+00	6.677E-01	3.941E-01	9.300E-02	4.351
	+	74.81		2.461E+00	3.466E-01	2.605E-01	2.663E-02	9.447
	+	77.11		2.123E+00	2.689E-01	1.561E-01	1.600E-02	13.601
	+	87.30		2.130E+00	3.462E-01	3.027E-01	3.242E-02	7.036
TH-228	+	238.63	*	1.829E+00	2.347E-01	7.630E-02	8.686E-03	23.977
	+	300.09		1.769E+00	1.521E+00	1.051E+00	6.270E-01	1.683
	+	85.43		3.281E-01	1.438E-01	1.503E-01	1.595E-02	2.183
	+	88.47		6.195E-01	1.007E-01	8.850E-02	9.530E-03	7.000
	+	100.00		3.034E-01	2.214E-01	1.803E-01	2.058E-02	1.682
TH-229	+	193.63	*	1.350E-01	4.412E-01	7.300E-01	6.964E-02	0.185
	+	210.97		4.860E-01	6.969E-01	1.051E+00	1.042E-01	0.462
	+	609.31	*	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
	+	1120.29		9.870E-01	5.057E-01	4.661E-01	5.059E-02	2.117
	+	1764.49		1.623E+00	4.259E-01	3.098E-01	2.553E-02	5.239
TH-232	+	338.32		1.668E+00	3.640E-01	3.435E-01	3.580E-02	4.855
	+	911.07	*	1.868E+00	3.641E-01	2.551E-01	3.034E-02	7.324
	+	969.11		1.715E+00	6.677E-01	3.941E-01	9.300E-02	4.351
	+	63.29	*	1.756E+00	7.885E-01	7.071E-01	1.316E-01	2.483
	+	92.38		2.980E+00	7.918E-01	4.514E-01	8.720E-02	6.602
U-234	+	609.31	*	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
	+	1120.29		9.870E-01	5.057E-01	4.661E-01	5.059E-02	2.117
	+	1764.49		1.623E+00	4.259E-01	3.098E-01	2.553E-02	5.239
	+	86.50	*	1.332E+00	3.500E-01	1.977E-01	4.593E-02	6.738
	+							



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	+	95.87	*	4.580E-01	7.267E-01	9.332E-01	2.393E-01	0.491
		63.29	*	1.756E+00	7.885E-01	7.071E-01	1.316E-01	2.483
	+	92.38	*	2.980E+00	6.345E-01	4.514E-01	4.954E-02	6.602
AM-243	+	74.67	*	3.930E-01	5.517E-02	4.158E-02	4.223E-03	9.451
	+	86.72	*	4.996E+01	8.120E+00	7.082E+00	7.563E-01	7.055
		117.66	*	-3.814E+00	2.637E+00	4.112E+00	5.170E-01	-0.928
		142.18	*	-5.506E+00	1.401E+01	2.260E+01	2.551E+00	-0.244
ANH-511	+	511.00	*	1.216E-01	7.414E-02	4.424E-02	4.554E-03	2.749

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-3.821E-02	3.155E-01	5.096E-01	5.395E-02	-0.075
NA-22		1274.54	*	-3.916E-03	5.142E-02	8.396E-02	6.885E-03	-0.047
NA-24		1368.53	*	-3.051E-01	5.142E-02	Half-Life too short		
AL-26		1129.67	*	-1.513E-01	1.829E+00	3.022E+00	2.580E-01	-0.050
		1808.65	*	3.545E-03	3.238E-02	5.446E-02	4.463E-03	0.065
TI-44		67.85	*	7.797E-03	1.863E-02	2.975E-02	2.961E-03	0.262
	+	78.38	*	3.860E-01	4.887E-02	4.237E-02	4.363E-03	9.110
SC-46		889.25	*	2.143E-03	3.961E-02	6.478E-02	6.204E-03	0.033
	+	1120.51	*	1.690E-01	8.583E-02	1.288E-01	1.108E-02	1.311
V-48		944.10	*	-5.051E-03	1.002E+00	1.620E+00	1.520E-01	-0.003
		983.50	*	9.327E-03	7.573E-02	1.234E-01	1.144E-02	0.076
		1312.09	*	-8.896E-03	8.365E-02	1.355E-01	1.104E-02	-0.066
CR-51		320.08	*	5.834E-02	3.251E-01	5.531E-01	6.142E-02	0.105
MN-52		744.21	*	-3.791E-02	2.483E-01	4.058E-01	4.385E-02	-0.093
		848.13	*	2.501E+00	7.006E+00	1.180E+01	1.183E+00	0.212
		935.52	*	2.683E-01	2.868E-01	4.990E-01	4.692E-02	0.538
		1246.25	*	1.963E+00	8.204E+00	1.378E+01	1.131E+00	0.142
		1333.61	*	8.271E-01	5.032E+00	8.267E+00	6.715E-01	0.100
		1434.06	*	5.435E-03	2.279E-01	3.715E-01	3.062E-02	0.015
MN-54		834.83	*	-2.524E-03	4.170E-02	6.794E-02	6.894E-03	-0.037
CO-56		846.75	*	8.054E-03	4.155E-02	6.904E-02	6.927E-03	0.117
		977.42	*	-1.908E-01	3.196E+00	5.121E+00	4.756E-01	-0.037
		1037.82	*	1.453E-01	3.337E-01	5.792E-01	5.496E-02	0.251
		1175.09	*	2.808E-01	2.713E+00	4.531E+00	3.729E-01	0.062
		1238.25	*	1.222E-01	1.047E-01	1.855E-01	1.572E-02	0.659
		1360.21	*	-6.622E-02	1.048E+00	1.698E+00	1.386E-01	-0.039
		1771.40	*	4.167E-02	2.190E-01	3.286E-01	2.705E-02	0.127
CO-57		122.06	*	-1.445E-02	1.811E-02	2.938E-02	3.788E-03	-0.492
		136.48	*	-4.358E-03	1.563E-01	2.614E-01	3.205E-02	-0.017
CO-58		810.76	*	-1.838E-02	4.427E-02	7.017E-02	7.281E-03	-0.262
FE-59		142.65	*	-4.881E-01	2.187E+00	3.557E+00	4.002E-01	-0.137
		192.34	*	3.005E-01	8.364E-01	1.386E+00	1.943E-01	0.217
		1099.22	*	-3.590E-03	9.452E-02	1.571E-01	1.480E-02	-0.023
		1291.56	*	-6.185E-02	1.382E-01	2.168E-01	2.037E-02	-0.285
CO-60		1173.22	*	-2.714E-02	5.490E-02	8.755E-02	7.206E-03	-0.310
		1332.49	*	2.279E-02	3.998E-02	6.870E-02	5.579E-03	0.332

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZN-65		1115.52	*	2.405E-02	1.097E-01	1.614E-01	1.394E-02	0.149
GE-68		1077.35	*	-2.465E-01	1.302E+00	2.139E+00	1.893E-01	-0.115
AS-73		53.44	*	1.686E-01	1.621E-01	2.705E-01	2.596E-02	0.623
AS-74		595.88	*	3.528E-02	9.648E-02	1.583E-01	1.715E-02	0.223
		634.78		1.101E-01	3.250E-01	5.596E-01	6.155E-02	0.197
SE-75		66.05		3.912E-01	1.946E+00	2.859E+00	3.295E-01	0.137
		96.73		4.732E-01	5.814E-01	7.618E-01	1.174E-01	0.621
		121.11		4.015E-02	9.384E-02	1.609E-01	2.365E-02	0.250
		136.00		-1.072E-02	2.920E-02	4.811E-02	5.708E-03	-0.223
		198.60		3.644E-01	1.534E+00	2.491E+00	2.615E-01	0.146
		264.65	*	-2.609E-02	3.971E-02	5.710E-02	6.258E-03	-0.457
		279.53		-3.272E-02	9.900E-02	1.537E-01	1.753E-02	-0.213
		303.91		4.519E-01	1.926E+00	2.929E+00	3.899E-01	0.154
		400.65		-1.572E-01	2.479E-01	3.930E-01	4.546E-02	-0.400
BR-77	+	87.88		9.969E+02	1.620E+02	2.311E+02	2.482E+01	4.313
		200.40		-9.934E+00	1.383E+02	2.245E+02	2.175E+01	-0.044
	+	239.00		2.893E+02	3.476E+01	3.734E+01	3.910E+00	7.748
		249.79		-4.423E+01	5.934E+01	9.055E+01	9.662E+00	-0.489
		281.68		-4.938E+00	8.781E+01	1.229E+02	1.370E+01	-0.040
		297.23		1.191E+02	7.133E+01	9.143E+01	1.007E+01	1.302
		303.76		4.639E+01	1.645E+02	2.509E+02	2.747E+01	0.185
		439.47		1.193E+02	1.424E+02	2.454E+02	2.364E+01	0.486
		484.57		-1.430E+02	2.231E+02	3.447E+02	3.471E+01	-0.415
		520.65	*	5.813E+00	1.056E+01	1.774E+01	1.839E+00	0.328
		574.64		-2.088E+02	2.216E+02	3.263E+02	3.499E+01	-0.640
		578.91		8.565E+01	9.663E+01	1.473E+02	1.583E+01	0.581
		585.48		8.789E+02	2.513E+02	4.210E+02	4.540E+01	2.088
		755.35		1.377E+02	1.887E+02	3.262E+02	3.505E+01	0.422
		817.79		-8.911E+01	1.434E+02	2.219E+02	2.285E+01	-0.402
SR-82		698.33		-3.985E-01	3.649E+01	6.069E+01	6.673E+00	-0.007
		776.49	*	2.162E-01	4.348E-01	6.571E-01	6.974E-02	0.329
		1395.20		-3.959E+00	1.011E+01	1.549E+01	1.270E+00	-0.256
RB-83		520.41	*	3.061E-02	7.000E-02	1.167E-01	1.210E-02	0.262
		529.64		-1.047E-02	1.054E-01	1.688E-01	1.762E-02	-0.062
		552.65		9.167E-02	1.858E-01	3.106E-01	3.290E-02	0.295
RB-84		881.50	*	2.261E-02	7.331E-02	1.227E-01	1.186E-02	0.184
KR-85		513.99	*	1.112E+01	7.756E+00	1.235E+01	1.274E+00	0.900
SR-85		513.99	*	5.701E-02	3.977E-02	6.333E-02	6.533E-03	0.900
RB-86		1076.63	*	-6.689E-01	8.312E-01	1.285E+00	1.138E-01	-0.521
Y-88		898.02		1.402E-02	4.134E-02	6.935E-02	6.596E-03	0.202
		1836.01	*	3.695E-02	3.523E-02	6.849E-02	5.597E-03	0.539
ZR-88		392.90	*	-2.512E-02	2.988E-02	4.682E-02	4.262E-03	-0.536
Y-91		1204.90	*	-1.834E+01	2.304E+01	3.616E+01	2.976E+00	-0.507
NB-94		702.63	*	2.543E-02	3.347E-02	5.858E-02	6.432E-03	0.434
		871.10		2.188E-03	3.770E-02	6.176E-02	6.041E-03	0.035
NB-95		765.79	*	1.523E-02	5.412E-02	7.958E-02	8.500E-03	0.191
NB-95M		235.69	*	-4.709E-02	1.133E-01	1.572E-01	1.802E-02	-0.300
ZR-95		724.18		1.062E-01	1.122E-01	1.759E-01	2.023E-02	0.604
		756.15	*	4.902E-02	8.180E-02	1.402E-01	1.606E-02	0.350

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	657.90	*		-1.468E-01	8.180E-02	Half-Life	too short	
	1024.50			1.575E+00	8.180E-02	Half-Life	too short	
ZR-97	254.15			-3.414E+00	8.180E-02	Half-Life	too short	
	355.39			1.094E+00	8.180E-02	Half-Life	too short	
	507.63	*		1.545E+00	8.180E-02	Half-Life	too short	
	602.52			3.689E+00	8.180E-02	Half-Life	too short	
	1021.30			-5.483E+00	8.180E-02	Half-Life	too short	
	1147.95			4.155E-01	8.180E-02	Half-Life	too short	
	1362.66			1.169E+00	8.180E-02	Half-Life	too short	
	1750.46			-8.304E+00	8.180E-02	Half-Life	too short	
MO-99	140.51			3.319E+00	2.011E+01	3.380E+01	9.700E+00	0.098
	181.06			-9.197E+00	1.583E+01	2.227E+01	4.143E+00	-0.413
	366.43			5.414E+01	7.336E+01	1.276E+02	1.250E+01	0.424
	739.58	*		-3.023E+00	1.301E+01	2.115E+01	3.497E+00	-0.143
	778.00			-8.408E+00	3.695E+01	5.612E+01	5.951E+00	-0.150
TC-99M	140.51	*		4.808E+09	3.695E+01	Half-Life	too short	
RH-101	127.23			-2.534E-02	2.705E-02	3.858E-02	4.828E-03	-0.657
	198.01	*		-2.795E-03	2.817E-02	4.506E-02	4.342E-03	-0.062
	325.23			4.503E-02	2.227E-01	3.354E-01	3.573E-02	0.134
RH-102	418.52			1.194E-01	2.615E-01	4.437E-01	4.172E-02	0.269
	475.06	*		4.493E-03	2.808E-02	4.630E-02	4.622E-03	0.097
	631.29			-2.754E-02	4.881E-02	7.798E-02	8.566E-03	-0.353
	697.49			2.220E-02	8.292E-02	1.405E-01	1.545E-02	0.158
	766.84			1.180E-01	1.417E-01	2.179E-01	2.326E-02	0.542
	1046.59			2.291E-03	1.296E-01	2.175E-01	1.960E-02	0.011
	1112.84			-8.236E-03	2.429E-01	3.740E-01	3.234E-02	-0.022
RU-103	497.08	*		-1.677E-02	4.013E-02	6.295E-02	9.545E-03	-0.266
	610.33			1.350E+01	2.912E+00	2.949E+00	5.300E-01	4.579
RH-106	511.85	+		6.074E-01	3.703E-01	4.290E-01	4.419E-02	1.416
	621.84	*		1.026E-01	3.235E-01	5.553E-01	8.311E-02	0.185
	1050.47			7.118E-01	2.596E+00	4.442E+00	3.994E-01	0.160
RU-106	511.85	+		6.074E-01	3.703E-01	4.290E-01	4.419E-02	1.416
	621.84	*		1.026E-01	3.233E-01	5.553E-01	6.080E-02	0.185
	1050.47			7.118E-01	2.596E+00	4.442E+00	3.994E-01	0.160
AG-108M	433.93	*		3.625E-03	3.106E-02	5.144E-02	5.083E-03	0.070
	614.37			2.528E-02	3.998E-02	6.237E-02	6.978E-03	0.405
	722.95			1.956E-02	4.752E-02	7.143E-02	7.982E-03	0.274
AG-110M	657.75	*		-5.279E-02	3.870E-02	5.781E-02	6.514E-03	-0.913
	677.61			-1.701E-01	3.076E-01	4.902E-01	5.509E-02	-0.347
	706.67			-1.422E-01	2.061E-01	3.230E-01	3.604E-02	-0.440
	763.93			1.805E-02	2.002E-01	2.892E-01	3.150E-02	0.062
	884.67			3.677E-03	5.222E-02	8.554E-02	8.450E-03	0.043
	937.48			-9.423E-02	1.303E-01	1.971E-01	1.909E-02	-0.478
	1384.27			-4.425E-02	1.660E-01	2.612E-01	2.205E-02	-0.169
IN-111	171.28			4.423E-01	8.333E-01	1.404E+00	1.268E-01	0.315
	245.39	*		8.636E-02	9.822E-01	1.410E+00	1.493E-01	0.061
IN-113M	391.69	*		-3.551E-02	4.255E-02	6.666E-02	6.227E-03	-0.533
SN-113	391.69	*		-3.551E-02	4.255E-02	6.666E-02	6.227E-03	-0.533
IN-114M	190.27	*		3.891E-02	1.733E-01	2.565E-01	2.428E-02	0.152

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CD-115	260.90			1.403E+02	1.122E+02	1.905E+02	2.069E+01	0.737
	492.35			-7.965E+00	3.599E+01	5.750E+01	5.830E+00	-0.139
	527.90	*		2.095E+00	1.074E+01	1.759E+01	1.834E+00	0.119
SN-117M	156.02			-7.178E-01	1.832E+00	2.987E+00	2.979E-01	-0.240
	158.56	*		-1.515E-02	4.298E-02	7.008E-02	6.804E-03	-0.216
SB-122	563.90	*		2.001E+00	2.130E+00	3.641E+00	3.883E-01	0.549
	692.80			7.443E-01	4.724E+01	7.876E+01	8.673E+00	0.009
I-123	159.00	*		-5.261E-01	4.724E+01	Half-Life	too short	
	528.96			5.115E+01	4.724E+01	Half-Life	too short	
TE-123M	159.00	*		-2.603E-03	2.215E-02	3.651E-02	3.545E-03	-0.071
I-124	602.71	*		3.102E-01	7.359E-01	1.124E+00	1.222E-01	0.276
	722.78			2.652E+00	4.909E+00	7.474E+00	8.151E-01	0.355
	1325.50			4.266E+00	3.491E+01	5.798E+01	4.715E+00	0.074
	1376.25			1.159E+01	3.604E+01	6.071E+01	4.966E+00	0.191
	1509.49			1.402E+01	1.560E+01	2.834E+01	2.350E+00	0.495
	1691.02			-2.489E-01	3.895E+00	6.395E+00	5.302E-01	-0.039
SB-124	602.71			1.803E-02	4.278E-02	6.536E-02	7.105E-03	0.276
	645.85			-1.680E-01	4.693E-01	7.634E-01	8.735E-02	-0.220
	709.31			1.301E-01	2.715E+00	4.529E+00	4.963E-01	0.029
	713.82			-5.000E-01	1.617E+00	2.616E+00	3.610E-01	-0.191
	722.78			2.235E-01	4.137E-01	6.299E-01	6.962E-02	0.355
+	968.20			1.765E+01	5.709E+00	8.014E+00	7.465E-01	2.202
	1045.16			-8.684E-01	2.785E+00	4.548E+00	4.100E-01	-0.191
	1325.50			3.839E-01	3.142E+00	5.218E+00	4.243E-01	0.074
	1368.21			-1.795E+00	1.890E+00	2.675E+00	3.529E-01	-0.671
	1436.60			-6.808E-01	3.691E+00	5.830E+00	4.806E-01	-0.117
	1691.02	*		-4.947E-03	7.741E-02	1.271E-01	1.099E-02	-0.039
SB-125	427.89	*		1.123E-02	8.191E-02	1.361E-01	1.314E-02	0.083
+	463.38			7.709E-01	3.715E-01	5.219E-01	5.463E-02	1.477
	600.56			1.928E-01	1.813E-01	3.109E-01	3.535E-02	0.620
	635.90			-4.206E-02	2.626E-01	4.353E-01	5.030E-02	-0.097
TE-125M	109.28	*		4.868E+00	6.486E+00	1.126E+01	1.496E+00	0.432
I-126	388.63			6.952E-02	1.924E-01	3.225E-01	2.961E-02	0.216
	666.33	*		-2.619E-01	1.981E-01	2.967E-01	3.285E-02	-0.882
	753.82			7.669E-01	1.661E+00	2.826E+00	3.039E-01	0.271
SB-126	223.80			1.838E+00	3.481E+00	5.762E+00	5.863E-01	0.319
+	278.60			2.986E+00	3.829E+00	3.844E+00	4.286E-01	0.777
+	296.50			1.240E+01	2.580E+00	3.249E+00	3.582E-01	3.815
	414.70			-3.726E-02	6.717E-02	1.064E-01	9.959E-03	-0.350
	415.30			-2.942E+00	5.589E+00	8.871E+00	8.309E-01	-0.332
	555.20			-2.934E+00	3.850E+00	5.758E+00	6.108E-01	-0.510
	573.80			-1.346E+00	1.134E+00	1.632E+00	1.749E-01	-0.825
	593.00			-1.512E-01	9.703E-01	1.529E+00	1.655E-01	-0.099
	656.30			-7.637E-01	3.420E+00	5.630E+00	6.229E-01	-0.136
	666.33			-1.094E-01	8.278E-02	1.240E-01	1.373E-02	-0.882
	675.00			7.020E-02	1.961E+00	3.283E+00	3.629E-01	0.021
	695.00			8.507E-02	8.519E-02	1.504E-01	1.655E-02	0.566
	697.00			3.487E-01	2.927E-01	5.214E-01	5.735E-02	0.669
	720.50	*		4.946E-02	1.662E-01	2.476E-01	2.703E-02	0.200

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		856.80		2.577E-01	4.637E-01	7.073E-01	7.025E-02	0.364
		989.30		5.187E-01	1.423E+00	2.367E+00	2.188E-01	0.219
		1034.80		-5.498E+00	9.629E+00	1.535E+01	1.391E+00	-0.358
		1213.00		-4.879E-02	5.500E+00	9.080E+00	7.470E-01	-0.005
		61.10		7.309E+00	1.927E+01	2.877E+01	3.490E+00	0.254
		252.40		1.919E-02	3.823E+00	6.113E+00	2.599E+00	0.003
		290.80		-1.788E+00	2.018E+01	3.008E+01	3.956E+00	-0.059
		411.60		3.165E+00	1.131E+01	1.899E+01	3.061E+00	0.167
		444.90		3.948E-01	8.841E+00	1.454E+01	1.933E+00	0.027
		473.00		5.509E-02	1.587E+00	2.595E+00	3.581E-01	0.021
		543.00		1.907E+01	1.710E+01	2.890E+01	4.511E+00	0.660
		603.60		2.327E+00	1.228E+01	1.838E+01	2.602E+00	0.127
		685.20	*	-4.136E-01	1.411E+00	2.299E+00	3.058E-01	-0.180
		698.50		-1.674E+00	1.622E+01	2.680E+01	4.617E+00	-0.062
XE-127		722.20		9.318E+00	3.393E+01	5.040E+01	6.557E+00	0.185
		783.80		2.081E-01	3.722E+00	6.156E+00	8.517E-01	0.034
		57.60		-9.668E-02	1.584E+00	2.525E+00	2.461E-01	-0.038
		145.22		4.386E-01	5.400E-01	9.263E-01	1.021E-01	0.474
		172.10		1.173E-01	1.002E-01	1.724E-01	1.561E-02	0.680
		202.84	*	-1.146E-02	4.005E-02	6.426E-02	6.259E-03	-0.178
I-131		374.96		8.922E-02	1.757E-01	3.011E-01	2.883E-02	0.296
		80.18		1.312E+00	2.908E+00	3.765E+00	3.923E-01	0.348
		284.30		4.190E-01	1.388E+00	2.132E+00	2.448E-01	0.196
		364.48	*	2.786E-03	1.017E-01	1.699E-01	1.744E-02	0.016
TE-132		636.97		3.465E-01	1.521E+00	2.595E+00	2.955E-01	0.134
		722.89		4.215E+00	7.911E+00	1.204E+01	1.318E+00	0.350
		49.72		2.234E+00	2.969E+00	4.582E+00	5.310E-01	0.488
		111.76		-1.074E+01	2.026E+01	3.358E+01	4.648E+00	-0.320
BA-133		116.30		1.364E+01	1.861E+01	3.225E+01	4.552E+00	0.423
		228.16	*	-3.200E-01	5.948E-01	9.275E-01	1.546E-01	-0.345
		53.15		6.219E-01	6.859E-01	1.140E+00	1.093E-01	0.546
		79.62		2.606E-01	7.109E-01	1.041E+00	1.693E-01	0.250
I-133		81.00		2.048E-02	6.233E-02	7.996E-02	1.352E-02	0.256
	+	276.40		4.464E-01	5.747E-01	5.782E-01	9.288E-02	0.772
		302.84		6.874E-02	1.305E-01	2.022E-01	3.015E-02	0.340
		356.01	*	3.557E-03	4.012E-02	5.949E-02	8.435E-03	0.060
CS-134		383.85		-6.324E-02	2.640E-01	4.314E-01	5.649E-02	-0.147
	+	510.53		1.236E+00	2.640E-01	Half-Life	too short	
		529.87	*	-1.878E-03	2.640E-01	Half-Life	too short	
		706.58		-2.480E-01	2.640E-01	Half-Life	too short	
		856.28		-1.664E-01	2.640E-01	Half-Life	too short	
		875.33		1.922E-02	2.640E-01	Half-Life	too short	
		1236.41		1.113E+00	2.640E-01	Half-Life	too short	
		1298.22		-5.781E-02	2.640E-01	Half-Life	too short	
CS-134		475.35		3.035E-01	1.856E+00	3.060E+00	3.055E-01	0.099
		563.23		5.085E-02	3.779E-01	6.126E-01	6.570E-02	0.083
		569.32		1.164E-01	2.016E-01	3.369E-01	3.635E-02	0.346
		604.70		-1.587E-02	3.784E-02	5.328E-02	5.805E-03	-0.298
	+	795.84	*	9.971E-02	6.545E-02	9.377E-02	9.871E-03	1.063

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	801.93			-4.129E-01	4.689E-01	6.646E-01	6.958E-02	-0.621
	1038.57			5.460E-02	4.207E+00	7.063E+00	6.390E-01	0.008
	1167.94			1.411E-01	3.132E+00	5.210E+00	4.308E-01	0.027
	1365.15			-1.928E-01	1.179E+00	1.882E+00	1.614E-01	-0.102
CS-135	268.24		*	1.891E-01	1.484E-01	2.284E-01	2.757E-02	0.828
I-135	288.45			1.518E+10	1.484E-01	Half-Life	too short	
	417.63			1.626E+10	1.484E-01	Half-Life	too short	
	546.56			-6.837E+09	1.484E-01	Half-Life	too short	
	836.80			9.413E+09	1.484E-01	Half-Life	too short	
	1038.76			1.532E+09	1.484E-01	Half-Life	too short	
	1124.00			9.819E+09	1.484E-01	Half-Life	too short	
	1131.51			8.920E+08	1.484E-01	Half-Life	too short	
	1260.41		*	3.785E+09	1.484E-01	Half-Life	too short	
	1457.56			9.583E+11	1.484E-01	Half-Life	too short	
	1678.03			-2.192E+09	1.484E-01	Half-Life	too short	
	1706.46			-3.115E+10	1.484E-01	Half-Life	too short	
	1791.20			7.991E+09	1.484E-01	Half-Life	too short	
CS-136	66.91			4.646E-02	3.290E-01	4.814E-01	7.802E-02	0.097
+	86.29			5.920E+00	1.115E+00	1.303E+00	1.863E-01	4.545
	153.22			1.639E-01	5.403E-01	9.080E-01	1.010E-01	0.181
	163.89			-3.036E-02	8.692E-01	1.422E+00	1.439E-01	-0.021
	176.55			-5.844E-02	2.954E-01	4.812E-01	4.632E-02	-0.121
	273.65			3.934E-01	5.455E-01	6.458E-01	7.440E-02	0.609
	340.57			2.425E-01	1.214E-01	2.017E-01	2.136E-02	1.202
	818.51			-1.962E-02	7.779E-02	1.247E-01	1.284E-02	-0.157
	1048.07		*	4.226E-02	1.231E-01	2.117E-01	1.980E-02	0.200
	1235.34			5.801E-01	7.017E-01	1.216E+00	1.406E-01	0.477
BA-137M	661.65		*	-2.847E-02	4.235E-02	7.166E-02	7.939E-03	-0.397
CS-137	661.65		*	-3.009E-02	4.477E-02	7.576E-02	8.402E-03	-0.397
CE-139	165.85		*	-1.246E-02	2.392E-02	3.855E-02	3.438E-03	-0.323
BA-140	162.64			1.653E-01	6.028E-01	9.998E-01	9.739E-02	0.165
	304.84			1.872E-01	1.164E+00	1.759E+00	5.071E-01	0.106
	423.70			-3.119E-01	1.751E+00	2.844E+00	9.285E-01	-0.110
	537.32		*	2.274E-02	2.652E-01	4.257E-01	1.434E-01	0.053
LA-140	328.77			7.614E-01	3.795E-01	5.180E-01	5.694E-02	1.470
	432.53			-8.610E-01	1.960E+00	3.121E+00	3.102E-01	-0.276
	487.03			4.424E-02	1.374E-01	2.285E-01	2.411E-02	0.194
	751.79			-1.817E+00	1.873E+00	2.840E+00	3.270E-01	-0.640
	815.85			-1.145E-01	3.515E-01	5.603E-01	6.253E-02	-0.204
	867.82			-2.633E-01	1.667E+00	2.300E+00	2.350E-01	-0.115
	919.63			2.676E-01	2.958E+00	4.837E+00	5.474E-01	0.055
	925.24			7.575E-02	1.086E+00	1.772E+00	1.759E-01	0.043
	1596.49		*	-1.889E-02	8.894E-02	1.379E-01	1.147E-02	-0.137
CE-141	145.44		*	8.099E-03	4.932E-02	8.277E-02	9.205E-03	0.098
CE-143	57.37			2.885E-05	4.932E-02	Half-Life	too short	
	231.56			1.130E-03	4.932E-02	Half-Life	too short	
	293.26		*	3.991E-04	4.932E-02	Half-Life	too short	
+	350.59			3.296E-02	4.932E-02	Half-Life	too short	
	490.36			-1.896E-03	4.932E-02	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		664.57	-9.164E-05	4.932E-02	Half-Life	too short	
		721.93	3.896E-04	4.932E-02	Half-Life	too short	
CE-144		80.11	5.979E-01	1.337E+00	1.731E+00	1.795E-01	0.345
		133.54 *	-5.984E-02	1.538E-01	2.532E-01	4.477E-02	-0.236
PM-144		476.78	2.107E-02	6.578E-02	1.096E-01	1.173E-02	0.192
		618.01	-1.060E-02	3.097E-02	5.077E-02	5.647E-03	-0.209
		696.49 *	6.557E-02	3.767E-02	6.871E-02	7.560E-03	0.954
		778.57	-2.037E-01	2.429E+00	3.866E+00	4.099E-01	-0.053
PR-144		696.49 *	4.443E+00	2.553E+00	4.656E+00	5.122E-01	0.954
		1489.15	4.847E+00	1.213E+01	2.080E+01	1.722E+00	0.233
PM-146		453.90 *	1.379E-02	4.216E-02	7.050E-02	8.232E-03	0.196
		633.02	-1.716E-01	1.227E+00	2.033E+00	7.725E-01	-0.084
		735.90	3.954E-03	1.663E-01	2.760E-01	8.100E-02	0.014
		747.13	-1.010E-02	9.215E-02	1.510E-01	2.336E-02	-0.067
ND-147	+	91.11	8.898E-01	2.155E-01	3.113E-01	3.573E-02	2.858
		319.41	-1.315E+00	2.945E+00	4.837E+00	5.197E-01	-0.272
		439.89	3.030E+00	5.795E+00	9.819E+00	9.463E-01	0.309
		531.02 *	-3.276E-01	5.629E-01	8.620E-01	1.385E-01	-0.380
PM-149		285.90 *	-8.789E+01	8.637E+01	1.257E+02	2.144E+01	-0.699
EU-152		121.78	-2.985E-02	5.207E-02	8.550E-02	1.178E-02	-0.349
		244.69	-1.690E-01	3.125E-01	4.264E-01	4.510E-02	-0.396
		344.27 *	-5.228E-02	8.315E-02	1.337E-01	1.436E-02	-0.391
		443.98	-5.473E-01	9.053E-01	1.418E+00	1.373E-01	-0.386
		778.89	-5.979E-02	2.775E-01	4.363E-01	4.623E-02	-0.137
		867.32	-7.757E-01	1.031E+00	1.301E+00	1.278E-01	-0.596
		964.01	3.085E-01	3.998E-01	5.998E-01	5.595E-02	0.514
		1085.78	1.108E-01	4.156E-01	7.099E-01	6.251E-02	0.156
		1112.02	5.612E-02	3.337E-01	5.525E-01	4.779E-02	0.102
	+	1407.95	3.879E-01	2.519E-01	3.612E-01	2.967E-02	1.074
GD-153		69.67	-8.681E-02	7.016E-01	1.103E+00	1.102E-01	-0.079
	+	83.37	2.570E+01	1.126E+01	1.422E+01	1.496E+00	1.807
		97.43 *	1.989E-02	6.095E-02	7.766E-02	8.746E-03	0.256
		103.18	-4.860E-02	7.619E-02	1.130E-01	1.312E-02	-0.430
EU-154		123.07	-2.793E-02	3.780E-02	6.143E-02	9.097E-03	-0.455
		247.94	-1.502E-01	3.162E-01	4.913E-01	6.415E-02	-0.306
		591.81	-5.187E-01	6.558E-01	9.727E-01	1.301E-01	-0.533
		723.30	9.927E-02	2.001E-01	3.030E-01	3.525E-02	0.328
		756.87	3.810E-01	8.858E-01	1.506E+00	2.044E-01	0.253
		873.19	2.165E-01	3.254E-01	5.588E-01	7.304E-02	0.388
		996.32	-1.472E-02	4.236E-01	6.792E-01	1.227E-01	-0.022
		1004.76	-6.685E-02	2.453E-01	3.842E-01	4.637E-02	-0.174
		1274.45 *	3.913E-03	1.416E-01	2.334E-01	2.564E-02	0.017
EU-155		48.70	1.043E-01	3.455E-01	5.229E-01	4.977E-02	0.199
		60.01	1.322E+00	1.589E+00	2.421E+00	2.382E-01	0.546
	+	86.54	5.464E-01	8.907E-02	1.251E-01	1.344E-02	4.367
		105.31 *	1.046E-01	7.360E-02	1.299E-01	1.535E-02	0.805
TB-160	+	86.79	1.460E+00	2.372E-01	3.450E-01	3.686E-02	4.230
		197.04	-2.058E-01	4.822E-01	7.591E-01	7.298E-02	-0.271
		215.65	8.028E-01	6.266E-01	1.071E+00	1.072E-01	0.750

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	+	298.57		2.535E-01	1.594E-01	1.867E-01	2.055E-02	1.357
		879.36	*	-8.718E-02	1.526E-01	2.352E-01	2.279E-02	-0.371
		962.29		7.409E-02	7.180E-01	1.011E+00	9.433E-02	0.073
		966.15		1.015E+00	3.248E-01	5.516E-01	5.142E-02	1.840
		1177.93		-1.357E-02	4.314E-01	7.131E-01	5.870E-02	-0.019
		1271.85		-9.500E-02	8.152E-01	1.326E+00	1.087E-01	-0.072
		80.57		5.228E-02	1.730E-01	2.218E-01	2.304E-02	0.236
	+	184.41		1.965E-01	5.770E-02	5.685E-02	5.306E-03	3.457
		280.46		-5.067E-02	8.502E-02	1.133E-01	1.264E-02	-0.447
		410.95		2.715E-01	2.220E-01	3.923E-01	3.655E-02	0.692
TM-171		711.68	*	2.800E-02	5.957E-02	1.025E-01	1.122E-02	0.273
		752.31		-2.072E-01	3.000E-01	4.680E-01	5.036E-02	-0.443
		810.29		-4.160E-02	6.686E-02	1.040E-01	1.078E-02	-0.400
		51.35		-6.290E+00	5.145E+00	7.766E+00	7.416E-01	-0.810
		52.39		8.039E-01	2.847E+00	4.629E+00	4.430E-01	0.174
LU-176		59.40		-1.260E+00	8.437E+00	1.232E+01	1.211E+00	-0.102
		66.72	*	-9.822E-01	1.195E+01	1.732E+01	1.719E+00	-0.057
	+	88.36		1.076E+00	1.749E-01	2.328E-01	2.505E-02	4.623
		201.83		-6.190E-03	2.440E-02	3.923E-02	3.812E-03	-0.158
LU-177		306.84	*	4.989E-03	1.997E-02	3.424E-02	3.736E-03	0.146
		401.10		8.408E-01	6.215E+00	1.037E+01	9.540E-01	0.081
		112.95		-7.885E-01	1.096E+00	1.798E+00	2.202E-01	-0.438
LU-177M	+	208.36	*	2.832E+00	1.442E+00	1.669E+00	1.645E-01	1.696
		52.97		3.309E-01	3.041E-01	5.086E-01	4.876E-02	0.651
HF-181		54.07		1.243E-01	1.788E-01	2.945E-01	2.832E-02	0.422
		61.30		9.215E-02	5.083E-01	7.522E-01	7.406E-02	0.123
		121.62		-6.114E-02	2.627E-01	4.389E-01	5.643E-02	-0.139
		147.16		-1.929E-01	4.958E-01	8.116E-01	8.796E-02	-0.238
		171.86		4.620E-01	4.030E-01	6.933E-01	6.273E-02	0.666
		218.09		-9.217E-01	7.421E-01	1.114E+00	1.121E-01	-0.827
	+	268.79		2.128E+00	1.126E+00	1.292E+00	1.421E-01	1.647
		319.02		-1.021E-01	2.288E-01	3.759E-01	4.041E-02	-0.272
		367.43		-1.168E-01	7.940E-01	1.311E+00	1.281E-01	-0.089
		413.65	*	-1.811E-01	1.620E-01	2.455E-01	2.295E-02	-0.738
W-181		56.28		-7.033E-02	2.250E-01	3.550E-01	3.442E-02	-0.198
		57.53		1.320E-02	1.319E-01	2.116E-01	2.063E-02	0.062
		65.20		-2.355E-01	3.787E-01	5.342E-01	5.286E-02	-0.441
		133.02		-1.888E-03	5.128E-02	8.203E-02	9.896E-03	-0.023
		136.25		-7.441E-02	3.399E-01	5.639E-01	6.654E-02	-0.132
		345.85		-4.774E-02	1.626E-01	2.580E-01	2.651E-02	-0.185
	*	482.03		1.315E-02	3.983E-02	6.642E-02	6.674E-03	0.198
TA-182		56.28		-2.747E-02	8.808E-02	1.390E-01	1.348E-02	-0.198
		57.53		5.173E-03	5.166E-02	8.290E-02	8.079E-03	0.062
	*	65.20		-9.154E-02	1.472E-01	2.076E-01	2.055E-02	-0.441
	+	67.75		3.028E-02	4.409E-02	7.105E-02	7.069E-03	0.426
		100.10		2.924E-01	2.134E-01	2.127E-01	2.429E-02	1.374
		152.43		8.472E-02	2.710E-01	4.559E-01	4.711E-02	0.186
		222.10		-2.385E-01	3.076E-01	4.759E-01	4.827E-02	-0.501
		1001.68		4.033E-01	2.345E+00	3.794E+00	3.491E-01	0.106



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183	+	1121.28		4.667E-01	2.371E-01	3.539E-01	3.040E-02	1.319
		1189.05		-3.611E-01	3.686E-01	5.619E-01	4.625E-02	-0.643
		1221.42	*	7.737E-03	2.239E-01	3.707E-01	3.049E-02	0.021
		1230.97		-1.639E-01	5.555E-01	8.962E-01	7.367E-02	-0.183
		57.98		-1.855E-03	5.357E-02	8.544E-02	8.344E-03	-0.022
		59.32		-1.684E-02	3.220E-02	5.024E-02	4.938E-03	-0.335
		67.20		2.675E-02	8.539E-02	1.259E-01	1.251E-02	0.212
		162.32	*	2.612E-02	8.797E-02	1.461E-01	1.360E-02	0.179
	+	208.81		2.546E+00	1.296E+00	1.534E+00	1.513E-01	1.660
		291.72		-8.884E-01	9.071E-01	1.256E+00	1.391E-01	-0.707
RE-184		57.98		-6.835E-03	1.974E-01	3.149E-01	3.075E-02	-0.022
		59.32		-6.202E-02	1.186E-01	1.850E-01	1.818E-02	-0.335
		67.20		9.852E-02	3.145E-01	4.638E-01	4.609E-02	0.212
		161.27		-5.881E-02	2.784E-01	4.564E-01	4.300E-02	-0.129
		216.55		5.828E-02	2.273E-01	3.726E-01	3.736E-02	0.156
		252.85	*	-1.570E-01	2.084E-01	3.173E-01	3.403E-02	-0.495
		318.01		-9.005E-02	3.980E-01	6.626E-01	7.132E-02	-0.136
		792.07		6.664E-01	1.150E+00	1.745E+00	1.833E-01	0.382
		903.28		7.958E-01	1.104E+00	1.812E+00	1.715E-01	0.439
		920.93		-9.454E-02	4.601E-01	7.306E-01	6.892E-02	-0.129
OS-185		59.72		1.179E-02	9.501E-02	1.405E-01	1.382E-02	0.084
		61.14		8.109E-03	5.552E-02	8.203E-02	8.076E-03	0.099
		69.30		4.681E-03	1.234E-01	1.952E-01	1.950E-02	0.024
		592.07		-1.620E+00	2.704E+00	4.098E+00	4.433E-01	-0.395
		646.12	*	-1.522E-02	3.986E-02	6.470E-02	7.140E-03	-0.235
		717.42		-1.216E-01	9.033E-01	1.484E+00	1.621E-01	-0.082
		874.81		1.853E-01	6.413E-01	1.071E+00	1.043E-01	0.173
		880.27		-4.632E-01	8.528E-01	1.318E+00	1.276E-01	-0.351
		155.03	*	2.063E-01	1.400E-01	2.435E-01	2.453E-02	0.847
		477.96		-6.601E-01	3.035E+00	4.866E+00	4.871E-01	-0.136
RE-188		633.10		-3.291E-01	2.478E+00	4.115E+00	4.523E-01	-0.080
	+	63.58		7.057E+01	2.967E+01	3.663E+01	3.616E+00	1.927
		227.08		-5.214E+00	1.096E+01	1.721E+01	1.762E+00	-0.303
		290.67	*	7.181E-01	6.934E+00	1.048E+01	1.161E+00	0.069
	+	295.96		9.495E-01	1.978E-01	2.663E-01	2.950E-02	3.566
		308.46		-3.558E-02	7.448E-02	1.221E-01	1.334E-02	-0.291
		316.51	*	1.170E-02	3.055E-02	5.253E-02	5.674E-03	0.223
		468.07		1.799E-02	6.667E-02	9.800E-02	1.025E-02	0.184
		604.41		-2.428E-01	5.105E-01	7.135E-01	1.043E-01	-0.340
		612.46		9.235E-01	7.509E-01	1.220E+00	1.458E-01	0.757
AU-195		65.12		-4.064E-02	6.802E-02	9.610E-02	9.509E-03	-0.423
		66.83		3.632E-03	3.936E-02	5.749E-02	5.708E-03	0.063
	+	75.70		1.272E+00	1.785E-01	2.603E-01	2.653E-02	4.887
	+	98.88	*	3.655E-01	2.667E-01	2.650E-01	3.007E-02	1.379
	+	129.76		3.185E+00	2.979E+00	4.076E+00	5.021E-01	0.782
		367.94	*	-2.765E-04	2.979E+00	Half-Life	too short	
		579.30		2.152E-03	2.979E+00	Half-Life	too short	
		828.27		3.766E-03	2.979E+00	Half-Life	too short	
		1205.75		-1.738E-03	2.979E+00	Half-Life	too short	
						Half-Life	too short	
TL-200								

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-201		68.90		-1.486E+00	2.001E+00	3.062E+00	3.055E-01	-0.485
		70.82		-1.764E-01	1.308E+00	1.888E+00	1.894E-01	-0.093
		80.30		1.179E+00	3.188E+00	4.106E+00	4.261E-01	0.287
		135.34		5.020E-01	1.858E+01	3.117E+01	3.702E+00	0.016
		167.43	*	2.142E-01	5.507E+00	9.108E+00	8.147E-01	0.024
TL-202		68.90		-1.336E-01	1.800E-01	2.754E-01	2.748E-02	-0.485
		70.82		-1.582E-02	1.174E-01	1.694E-01	1.699E-02	-0.093
		80.30		1.058E-01	2.861E-01	3.684E-01	3.824E-02	0.287
		439.56	*	4.489E-02	6.948E-02	1.185E-01	1.142E-02	0.379
HG-203		70.83		-6.576E-02	5.090E-01	7.346E-01	1.068E-01	-0.090
		72.87		1.739E-01	3.134E-01	4.640E-01	6.593E-02	0.375
	+	82.60		1.911E+00	8.619E-01	9.499E-01	1.423E-01	2.011
BI-207		279.20	*	3.237E-03	3.776E-02	6.014E-02	6.827E-03	0.054
		72.80		3.066E-02	9.103E-02	1.339E-01	1.351E-02	0.229
	+	74.97		7.054E-01	9.903E-02	1.341E-01	1.363E-02	5.262
	+	84.90		3.324E-01	1.457E-01	1.843E-01	1.952E-02	1.803
		569.67		1.894E-02	3.150E-02	5.272E-02	5.639E-03	0.359
TL-207		1063.62	*	2.080E-02	5.801E-02	9.980E-02	8.907E-03	0.208
		1770.23		1.848E-02	4.612E-01	6.593E-01	5.428E-02	0.028
		81.07		4.278E-02	1.375E-01	1.764E-01	1.836E-02	0.243
	+	83.78		2.192E-01	9.605E-02	1.254E-01	1.321E-02	1.748
		94.90		2.116E-01	1.859E-01	2.471E-01	2.747E-02	0.856
		122.32		-1.455E+00	1.276E+00	2.026E+00	2.696E-01	-0.718
		144.24		3.881E-01	5.506E-01	9.250E-01	1.102E-01	0.420
		154.21		1.614E-01	3.232E-01	5.467E-01	5.956E-02	0.295
	+	269.46		4.981E-01	2.638E-01	3.216E-01	3.585E-02	1.549
		323.87	*	3.784E-02	6.599E-01	9.841E-01	1.849E-01	0.038
PO-209	+	338.28		6.964E+00	1.639E+00	2.367E+00	3.228E-01	2.941
		445.03		4.015E-01	2.050E+00	3.409E+00	4.388E-01	0.118
		260.50		5.048E+00	8.491E+00	1.398E+01	1.518E+00	0.361
		262.80		8.867E+00	2.333E+01	3.799E+01	4.139E+00	0.233
		896.60	*	2.860E+00	7.111E+00	1.202E+01	1.140E+00	0.238
PB-211		404.84	*	-3.558E-02	8.705E-01	1.435E+00	9.004E-01	-0.025
		427.08		-8.658E-01	1.915E+00	2.921E+00	1.819E+00	-0.296
		831.96		-1.682E+00	1.731E+00	2.015E+00	1.268E+00	-0.835
BI-212	+	727.18	*	1.499E+00	5.391E-01	7.243E-01	8.703E-02	2.070
		785.46		7.154E-01	1.897E+00	3.119E+00	3.291E-01	0.229
		1620.62		1.666E-01	1.403E+00	2.376E+00	1.975E-01	0.070
PO-215		81.07		4.278E-02	1.375E-01	1.764E-01	1.836E-02	0.243
	+	83.78		2.192E-01	9.605E-02	1.254E-01	1.321E-02	1.748
		94.90		2.116E-01	1.859E-01	2.471E-01	2.747E-02	0.856
		122.32		-1.455E+00	1.276E+00	2.026E+00	2.696E-01	-0.718
		144.24		3.881E-01	5.506E-01	9.250E-01	1.102E-01	0.420
		154.21		1.614E-01	3.232E-01	5.467E-01	5.956E-02	0.295
	+	269.46		4.981E-01	2.638E-01	3.216E-01	3.585E-02	1.549
		323.87	*	3.784E-02	6.599E-01	9.841E-01	1.849E-01	0.038
	+	338.28		6.964E+00	1.639E+00	2.367E+00	3.228E-01	2.941
		445.03		4.015E-01	2.050E+00	3.409E+00	4.388E-01	0.118
RN-219	+	271.23		6.391E-01	3.402E-01	4.120E-01	5.109E-02	1.551

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-220 RA-223		401.81	*	-5.622E-02	3.900E-01	6.393E-01	9.827E-02	-0.088
		549.76	*	8.795E+00	2.427E+01	4.021E+01	4.252E+00	0.219
		81.07		4.278E-02	1.375E-01	1.764E-01	1.836E-02	0.243
	+	83.78		2.192E-01	9.605E-02	1.254E-01	1.321E-02	1.748
		94.90		2.116E-01	1.859E-01	2.471E-01	2.747E-02	0.856
AC-227		122.32		-1.455E+00	1.276E+00	2.026E+00	2.696E-01	-0.718
		144.24		3.881E-01	5.506E-01	9.250E-01	1.102E-01	0.420
		154.21		1.614E-01	3.232E-01	5.467E-01	5.956E-02	0.295
	+	269.46		4.981E-01	2.638E-01	3.216E-01	3.585E-02	1.549
		323.87	*	3.784E-02	6.599E-01	9.841E-01	1.849E-01	0.038
	+	338.28		6.964E+00	1.639E+00	2.367E+00	3.228E-01	2.941
		445.03		4.015E-01	2.050E+00	3.409E+00	4.388E-01	0.118
		79.80		4.426E-01	1.032E+00	1.331E+00	2.961E-01	0.333
		236.00		5.835E-02	2.153E-01	3.137E-01	4.256E-02	0.186
		256.20	*	3.889E-01	3.294E-01	5.520E-01	9.195E-02	0.705
TH-227		286.10		-1.414E+00	1.445E+00	2.120E+00	3.169E-01	-0.667
	+	299.80		3.229E+00	2.089E+00	2.491E+00	4.677E-01	1.296
		304.40		4.244E-02	1.734E+00	2.596E+00	5.095E-01	0.016
		334.20		7.162E-01	2.261E+00	3.422E+00	6.952E-01	0.209
		79.80		4.426E-01	1.033E+00	1.331E+00	2.997E-01	0.333
	+	94.00		1.152E+01	3.364E+00	2.602E+00	5.948E-01	4.425
		236.00		5.835E-02	2.153E-01	3.137E-01	3.929E-02	0.186
		256.20	*	3.889E-01	3.314E-01	5.520E-01	1.059E-01	0.705
		286.10		-1.414E+00	2.016E+00	2.120E+00	2.133E+00	-0.667
	+	299.80		3.229E+00	2.089E+00	2.491E+00	4.677E-01	1.296
PA-231		304.40		4.244E-02	1.734E+00	2.596E+00	5.095E-01	0.016
		334.20		7.162E-01	2.261E+00	3.422E+00	6.952E-01	0.209
		283.67	*	2.211E-01	1.512E+00	2.152E+00	3.601E-01	0.103
	+	301.29		1.291E+00	8.199E-01	9.602E-01	1.344E-01	1.345
		81.07		4.278E-02	1.375E-01	1.764E-01	1.836E-02	0.243
TH-231	+	83.78		2.192E-01	9.605E-02	1.254E-01	1.321E-02	1.748
		94.90		2.116E-01	1.859E-01	2.471E-01	2.747E-02	0.856
		122.32		-1.455E+00	1.276E+00	2.026E+00	2.696E-01	-0.718
		144.24		3.881E-01	5.506E-01	9.250E-01	1.102E-01	0.420
		154.21		1.614E-01	3.232E-01	5.467E-01	5.956E-02	0.295
U-231	+	269.46		4.981E-01	2.638E-01	3.216E-01	3.585E-02	1.549
		323.87	*	3.784E-02	6.599E-01	9.841E-01	1.849E-01	0.038
	+	338.28		6.964E+00	1.639E+00	2.367E+00	3.228E-01	2.941
		445.03		4.015E-01	2.050E+00	3.409E+00	4.388E-01	0.118
	+	84.21		9.435E+00	4.135E+00	5.346E+00	5.644E-01	1.765
	+	92.29		1.137E+01	2.421E+00	2.870E+00	3.149E-01	3.961
		95.87	*	5.189E-01	8.146E-01	1.057E+00	1.181E-01	0.491
		108.00		5.379E-02	1.431E+00	2.437E+00	2.904E-01	0.022
	+	75.28		2.059E+01	3.897E+00	3.919E+00	6.377E-01	5.253
	+	86.59		8.882E+00	2.678E+00	2.049E+00	5.645E-01	4.334
PA-233	+	300.12		9.001E-01	5.765E-01	6.961E-01	1.139E-01	1.293
		311.98	*	8.684E-03	5.238E-02	8.927E-02	9.858E-03	0.097
		340.50		1.345E+00	6.710E-01	1.007E+00	2.469E-01	1.336
		398.62		7.554E-03	2.056E+00	3.404E+00	9.128E-01	0.002

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		-2.673E-01	1.474E+00	2.398E+00	5.244E-01	-0.111
		63.00		2.047E+00	8.999E-01	1.059E+00	1.718E-01	1.933
		94.67		2.361E-01	1.380E-01	1.859E-01	2.648E-02	1.270
	+	98.44		1.481E-01	1.354E-01	1.035E-01	5.825E-02	1.431
	+	99.86		7.677E-01	5.602E-01	5.602E-01	6.389E-02	1.370
		111.00		-9.046E-02	1.263E-01	2.073E-01	3.065E-02	-0.436
	+	131.20		1.194E-01	1.117E-01	1.346E-01	1.643E-02	0.887
		152.70		1.712E-01	2.630E-01	4.456E-01	8.002E-02	0.384
	+	186.00		7.075E+00	2.970E+00	2.366E+00	7.437E-01	2.990
		226.40		-9.236E-02	3.477E-01	5.526E-01	7.905E-02	-0.167
		227.20		-2.311E-01	3.718E-01	5.786E-01	5.927E-02	-0.399
		248.90		-1.714E-01	7.129E-01	1.123E+00	2.614E-01	-0.153
	+	293.70		5.977E+00	1.533E+00	1.514E+00	2.820E-01	3.949
		369.80		-4.252E-01	7.672E-01	1.224E+00	2.720E-01	-0.348
		568.70		8.081E-03	1.038E+00	1.665E+00	1.780E-01	0.005
		569.50		1.647E-01	2.792E-01	4.670E-01	4.995E-02	0.353
		574.00		-2.021E+00	1.624E+00	2.321E+00	2.489E-01	-0.871
		699.00		-2.388E-01	7.694E-01	1.250E+00	2.533E-01	-0.191
		706.10		-1.576E-01	1.036E+00	1.698E+00	7.660E-01	-0.093
		733.00		-9.145E-02	4.521E-01	6.668E-01	1.544E-01	-0.137
		742.81		9.238E-01	1.544E+00	2.456E+00	1.659E+00	0.376
	+	796.30		1.938E+00	1.365E+00	1.799E+00	4.984E-01	1.077
		805.60		1.139E-01	1.090E+00	1.804E+00	5.628E-01	0.063
		819.60		3.426E-01	1.271E+00	2.122E+00	8.156E-01	0.161
		826.30		1.242E-01	8.851E-01	1.464E+00	6.601E-01	0.085
		831.60		-8.509E-01	7.558E-01	1.049E+00	3.181E-01	-0.811
		876.40		-1.881E-01	9.397E-01	1.471E+00	1.513E+00	-0.128
		880.51		-1.173E-01	3.077E-01	4.835E-01	4.679E-02	-0.243
		883.24		3.040E-01	3.608E-01	5.280E-01	3.557E-01	0.576
		899.00		-3.702E-01	8.808E-01	1.349E+00	5.921E-01	-0.274
		925.00		8.615E-02	1.129E+00	1.844E+00	1.738E-01	0.047
		926.50		6.328E-02	1.666E-01	2.793E-01	7.140E-02	0.227
		946.00	*	-3.168E-01	3.672E-01	5.408E-01	1.034E-01	-0.586
		949.00		5.461E-01	5.177E-01	9.065E-01	8.494E-02	0.602
		980.50		-3.428E-01	7.858E-01	1.210E+00	1.122E-01	-0.283
		1394.10		-4.337E-01	1.171E+00	1.748E+00	1.137E+00	-0.248
PA-234M		766.42		1.105E+01	1.591E+01	2.278E+01	1.165E+01	0.485
		1001.03	*	-2.971E-01	5.457E+00	8.658E+00	9.069E-01	-0.034
U-235	+	89.95		3.544E+00	1.351E+00	1.251E+00	3.947E-01	2.834
	+	93.35		3.582E+00	1.223E+00	9.259E-01	2.672E-01	3.869
		105.00		1.009E+00	7.961E-01	1.261E+00	3.896E-01	0.800
		143.76	*	3.470E-02	1.718E-01	2.840E-01	5.362E-02	0.122
		163.35		-4.863E-02	3.834E-01	6.248E-01	1.209E-01	-0.078
	+	185.71		2.620E-01	7.693E-02	8.810E-02	8.249E-03	2.974
		205.31		-6.048E-03	4.881E-01	6.992E-01	1.373E-01	-0.009
NP-236		94.67		1.815E-01	1.036E-01	1.413E-01	1.569E-02	1.285
	+	98.44		1.120E-01	8.170E-02	7.824E-02	8.858E-03	1.431
		111.00		-6.843E-02	9.537E-02	1.568E-01	1.900E-02	-0.436
		160.31	*	-1.707E-02	6.220E-02	1.017E-01	9.686E-03	-0.168

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	99.55		2.559E-01	1.867E-01	1.861E-01	2.120E-02	1.375
		117.00	*	-1.025E-01	1.301E-01	2.119E-01	2.654E-02	-0.484
	+	209.75		2.009E+00	1.023E+00	1.227E+00	1.213E-01	1.637
		228.18		-1.032E-01	1.942E-01	3.037E-01	3.117E-02	-0.340
		277.60		2.179E-01	2.793E-01	2.816E-01	3.135E-02	0.774
AM-241	+	334.30		3.115E-01	1.274E+00	1.921E+00	2.017E-01	0.162
		59.54	*	-1.796E-03	4.950E-02	7.266E-02	7.549E-03	-0.025
CM-243	+	99.55		2.633E-01	1.922E-01	1.915E-01	2.181E-02	1.375
		103.76	*	-2.842E-02	6.969E-02	1.047E-01	1.219E-02	-0.271
		117.00		-1.054E-01	1.339E-01	2.180E-01	2.731E-02	-0.484
	+	209.75		1.980E+00	1.008E+00	1.210E+00	1.196E-01	1.637
		228.18		-1.043E-01	1.962E-01	3.069E-01	3.149E-02	-0.340
AM-246	+	277.60		2.196E-01	2.816E-01	2.839E-01	3.161E-02	0.774
		798.80		-1.080E-01	1.665E-01	2.174E-01	2.272E-02	-0.497
		1036.00		-3.709E-02	3.244E-01	5.389E-01	4.882E-02	-0.069
		1062.04		8.749E-02	2.496E-01	4.294E-01	3.836E-02	0.204
		1078.86	*	6.978E-02	1.427E-01	2.486E-01	2.199E-02	0.281
CM-247	+	278.00		9.034E-01	1.158E+00	1.177E+00	1.312E-01	0.767
		287.40		5.261E-01	1.114E+00	1.810E+00	2.010E-01	0.291
		402.60	*	-5.430E-03	3.401E-02	5.567E-02	5.132E-03	-0.098
CF-249		252.85		-5.893E-01	7.818E-01	1.191E+00	1.277E-01	-0.495
		333.44		4.521E-02	1.819E-01	2.567E-01	2.699E-02	0.176
		387.95	*	7.884E-03	3.763E-02	6.252E-02	5.753E-03	0.126
CF-251		176.60	*	-1.590E-02	1.021E-01	1.666E-01	1.526E-02	-0.095
		227.00		-1.356E-01	3.298E-01	5.198E-01	5.323E-02	-0.261
		285.00		-4.033E-01	1.583E+00	2.463E+00	2.740E-01	-0.164

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691003      *
* Acquisition date   : 9-FEB-2010 14:46:29 Detector SN#      :              *
* Detector ID        : GAM25                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:02.09           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691003           Analyst initials: MJH1          *
* Batch Number       : 947037              Sample Quantity  : 1.3505E+02 GRAM   *
* Recovery           : 1.00000             Carrier Weight   : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                    *
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43 MS Isotope      :                *
* MSD DPM             : 0.000              MSD Isotope      :                *
* LCS DPM             : 0.000              LCS Isotope       :                *
* LCSD DPM            : 0.000              LCSD Isotope      :                *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.565E+01	3.527E+00	5.280E-01	0.000E+00
CD-109	4.616E+00	7.352E-01	6.940E-01	0.000E+00
SN-126	4.537E-01	7.227E-02	6.808E-02	0.000E+00
TL-208	6.040E-01	1.029E-01	6.062E-02	0.000E+00
BI-210	6.039E-01	6.809E-01	6.300E-01	0.000E+00
PB-210	6.039E-01	6.809E-01	6.300E-01	0.000E+00
PO-210	6.039E-01	6.805E-01	6.300E-01	0.000E+00
BI-211	4.161E+00	5.824E-01	2.937E-01	0.000E+00
PB-212	1.802E+00	2.265E-01	7.788E-02	0.000E+00
PO-212	1.802E+00	2.265E-01	7.788E-02	0.000E+00
BI-214	1.251E+00	2.079E-01	1.108E-01	0.000E+00
PB-214	1.447E+00	2.157E-01	1.009E-01	0.000E+00
PO-214	1.447E+00	2.157E-01	1.009E-01	0.000E+00
PO-216	1.802E+00	2.265E-01	7.788E-02	0.000E+00
PO-218	1.447E+00	2.157E-01	1.009E-01	0.000E+00
RA-224	5.248E+00	1.209E+00	8.873E-01	0.000E+00
RA-226	1.251E+00	2.079E-01	1.108E-01	0.000E+00
AC-228	1.868E+00	3.568E-01	2.580E-01	0.000E+00
RA-228	1.868E+00	3.568E-01	2.580E-01	0.000E+00
TH-228	1.829E+00	2.300E-01	7.907E-02	0.000E+00
TH-229	1.350E-01	4.324E-01	7.593E-01	0.000E+00
TH-230	1.251E+00	2.079E-01	1.108E-01	0.000E+00
TH-232	1.868E+00	3.568E-01	2.580E-01	0.000E+00
TH-234	1.756E+00	7.727E-01	7.498E-01	0.000E+00
U-234	1.251E+00	2.079E-01	1.108E-01	0.000E+00
NP-237	1.332E+00	3.430E-01	2.086E-01	0.000E+00
U-238	1.756E+00	7.727E-01	7.498E-01	0.000E+00
AM-243	3.930E-01	5.407E-02	4.397E-02	0.000E+00
ANH-511	1.216E-01	7.266E-02	4.522E-02	0.000E+00

---- Non-Identified Nuclides ----

Key-Line	Activity	K.L. Act error	MDA
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Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)	
BE-7	-3.821E-02	3.092E-01	5.215E-01	0.000E+00	NOT IDENT.
NA-22	-3.916E-03	5.039E-02	8.437E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	7.693E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	3.545E-03	3.173E-02	5.436E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.790E-02	4.477E-02	0.000E+00	FAIL ABUN
SC-46	2.143E-03	3.882E-02	6.554E-02	0.000E+00	FAIL ABUN
V-48	9.327E-03	7.421E-02	1.246E-01	0.000E+00	NOT IDENT.
CR-51	5.834E-02	3.186E-01	5.701E-01	0.000E+00	NOT IDENT.
MN-52	5.435E-03	2.233E-01	3.725E-01	0.000E+00	NOT IDENT.
MN-54	-2.524E-03	4.087E-02	6.881E-02	0.000E+00	NOT IDENT.
CO-56	8.054E-03	4.071E-02	6.991E-02	0.000E+00	NOT IDENT.
CO-57	-1.445E-02	1.774E-02	3.080E-02	0.000E+00	NOT IDENT.
CO-58	-1.838E-02	4.339E-02	7.112E-02	0.000E+00	NOT IDENT.
FE-59	-3.590E-03	9.263E-02	1.583E-01	0.000E+00	NOT IDENT.
CO-60	2.279E-02	3.918E-02	6.897E-02	0.000E+00	NOT IDENT.
ZN-65	2.405E-02	1.075E-01	1.626E-01	0.000E+00	NOT IDENT.
GE-68	-2.465E-01	1.276E+00	2.156E+00	0.000E+00	NOT IDENT.
AS-73	1.686E-01	1.589E-01	2.877E-01	0.000E+00	NOT IDENT.
AS-74	3.528E-02	9.455E-02	1.613E-01	0.000E+00	NOT IDENT.
SE-75	-2.609E-02	3.892E-02	5.906E-02	0.000E+00	NOT IDENT.
BR-77	5.813E+00	1.035E+01	1.813E+01	0.000E+00	FAIL ABUN
SR-82	2.162E-01	4.261E-01	6.665E-01	0.000E+00	NOT IDENT.
RB-83	3.061E-02	6.860E-02	1.193E-01	0.000E+00	NOT IDENT.
RB-84	2.261E-02	7.184E-02	1.241E-01	0.000E+00	NOT IDENT.
KR-85	1.112E+01	7.601E+00	1.262E+01	0.000E+00	NOT IDENT.
SR-85	5.701E-02	3.897E-02	6.472E-02	0.000E+00	NOT IDENT.
RB-86	-6.689E-01	8.146E-01	1.295E+00	0.000E+00	NOT IDENT.
Y-88	3.695E-02	3.452E-02	6.834E-02	0.000E+00	NOT IDENT.
ZR-88	-2.512E-02	2.928E-02	4.809E-02	0.000E+00	NOT IDENT.
Y-91	-1.834E+01	2.258E+01	3.638E+01	0.000E+00	NOT IDENT.
NB-94	2.543E-02	3.280E-02	5.952E-02	0.000E+00	NOT IDENT.
NB-95	1.523E-02	5.304E-02	8.073E-02	0.000E+00	NOT IDENT.
NB-95M	-4.709E-02	1.110E-01	1.629E-01	0.000E+00	NOT IDENT.
ZR-95	4.902E-02	8.017E-02	1.423E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.056E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.928E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.023E+00	1.275E+01	2.147E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.856E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.795E-03	2.761E-02	4.685E-02	0.000E+00	NOT IDENT.
RH-102	4.493E-03	2.752E-02	4.738E-02	0.000E+00	NOT IDENT.
RU-103	-1.677E-02	3.932E-02	6.438E-02	0.000E+00	FAIL ABUN
RH-106	1.026E-01	3.170E-01	5.655E-01	0.000E+00	FAIL ABUN
RU-106	1.026E-01	3.168E-01	5.655E-01	0.000E+00	FAIL ABUN
AG-108M	3.625E-03	3.044E-02	5.274E-02	0.000E+00	NOT IDENT.
AG-110M	-5.279E-02	3.793E-02	5.881E-02	0.000E+00	NOT IDENT.
IN-111	8.636E-02	9.625E-01	1.461E+00	0.000E+00	NOT IDENT.
IN-113M	-3.551E-02	4.169E-02	6.847E-02	0.000E+00	NOT IDENT.
SN-113	-3.551E-02	4.169E-02	6.847E-02	0.000E+00	NOT IDENT.
IN-114M	3.891E-02	1.698E-01	2.669E-01	0.000E+00	NOT IDENT.
CD-115	2.095E+00	1.052E+01	1.797E+01	0.000E+00	NOT IDENT.
SN-117M	-1.515E-02	4.213E-02	7.315E-02	0.000E+00	NOT IDENT.
SB-122	2.001E+00	2.087E+00	3.715E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	4.387E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.603E-03	2.171E-02	3.811E-02	0.000E+00	NOT IDENT.
I-124	3.102E-01	7.212E-01	1.146E+00	0.000E+00	NOT IDENT.
SB-124	-4.947E-03	7.587E-02	1.270E-01	0.000E+00	FAIL ABUN
SB-125	1.123E-02	8.027E-02	1.395E-01	0.000E+00	FAIL ABUN
TE-125M	4.868E+00	6.357E+00	1.183E+01	0.000E+00	NOT IDENT.
I-126	-2.619E-01	1.941E-01	3.018E-01	0.000E+00	NOT IDENT.
SB-126	4.946E-02	1.629E-01	2.515E-01	0.000E+00	FAIL ABUN
SB-127	-4.136E-01	1.383E+00	2.337E+00	0.000E+00	NOT IDENT.
XE-127	-1.146E-02	3.925E-02	6.678E-02	0.000E+00	NOT IDENT.
I-131	2.786E-03	9.970E-02	1.748E-01	0.000E+00	NOT IDENT.
TE-132	-3.200E-01	5.829E-01	9.619E-01	0.000E+00	NOT IDENT.
BA-133	3.557E-03	3.932E-02	6.121E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.894E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.414E-02	9.506E-02	0.000E+00	FAIL ABUN
CS-135	1.891E-01	1.454E-01	2.362E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.233E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.226E-02	1.206E-01	2.135E-01	0.000E+00	FAIL ABUN
BA-137M	-2.847E-02	4.151E-02	7.290E-02	0.000E+00	NOT IDENT.
CS-137	-3.009E-02	4.388E-02	7.706E-02	0.000E+00	NOT IDENT.
CE-139	-1.246E-02	2.344E-02	4.021E-02	0.000E+00	NOT IDENT.
BA-140	2.274E-02	2.599E-01	4.347E-01	0.000E+00	NOT IDENT.
LA-140	-1.889E-02	8.716E-02	1.380E-01	0.000E+00	FAIL ABUN
CE-141	8.099E-03	4.833E-02	8.652E-02	0.000E+00	NOT IDENT.

CE-143	0.000E+00	1.642E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.984E-02	1.507E-01	2.651E-01	0.000E+00	NOT IDENT.
PM-144	6.557E-02	3.691E-02	6.982E-02	0.000E+00	NOT IDENT.
PR-144	4.443E+00	2.501E+00	4.732E+00	0.000E+00	NOT IDENT.
PM-146	1.379E-02	4.132E-02	7.222E-02	0.000E+00	NOT IDENT.
ND-147	-3.276E-01	5.516E-01	8.805E-01	0.000E+00	FAIL ABUN
PM-149	-8.789E+01	8.464E+01	1.299E+02	0.000E+00	NOT IDENT.
EU-152	-5.228E-02	8.149E-02	1.377E-01	0.000E+00	FAIL ABUN
GD-153	1.989E-02	5.973E-02	8.175E-02	0.000E+00	FAIL ABUN
EU-154	3.913E-03	1.388E-01	2.345E-01	0.000E+00	NOT IDENT.
EU-155	1.046E-01	7.212E-02	1.365E-01	0.000E+00	FAIL ABUN
TB-160	-8.718E-02	1.495E-01	2.380E-01	0.000E+00	FAIL ABUN
HO-166M	2.800E-02	5.838E-02	1.041E-01	0.000E+00	FAIL ABUN
TM-171	-9.822E-01	1.171E+01	1.835E+01	0.000E+00	NOT IDENT.
LU-176	4.989E-03	1.958E-02	3.532E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.413E+00	1.734E+00	0.000E+00	FAIL ABUN
LU-177M	-1.811E-01	1.588E-01	2.519E-01	0.000E+00	FAIL ABUN
HF-181	1.315E-02	3.904E-02	6.796E-02	0.000E+00	NOT IDENT.
W-181	-9.154E-02	1.442E-01	2.200E-01	0.000E+00	NOT IDENT.
TA-182	7.737E-03	2.195E-01	3.728E-01	0.000E+00	FAIL ABUN
RE-183	2.612E-02	8.621E-02	1.524E-01	0.000E+00	FAIL ABUN
RE-184	-1.570E-01	2.042E-01	3.285E-01	0.000E+00	NOT IDENT.
OS-185	-1.522E-02	3.907E-02	6.585E-02	0.000E+00	NOT IDENT.
RE-188	2.063E-01	1.372E-01	2.543E-01	0.000E+00	NOT IDENT.
W-188	7.181E-01	6.796E+00	1.082E+01	0.000E+00	FAIL ABUN
IR-192	1.170E-02	2.994E-02	5.416E-02	0.000E+00	FAIL ABUN
AU-195	0.000E+00	2.614E-01	2.788E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	3.962E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	2.142E-01	5.397E+00	9.497E+00	0.000E+00	NOT IDENT.
TL-202	4.489E-02	6.809E-02	1.215E-01	0.000E+00	NOT IDENT.
HG-203	3.237E-03	3.700E-02	6.215E-02	0.000E+00	FAIL ABUN
BI-207	2.080E-02	5.685E-02	1.006E-01	0.000E+00	FAIL ABUN
TL-207	3.784E-02	6.467E-01	1.014E+00	0.000E+00	FAIL ABUN
PO-209	2.860E+00	6.968E+00	1.215E+01	0.000E+00	NOT IDENT.
PB-211	-3.558E-02	8.531E-01	1.473E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.283E-01	7.355E-01	0.000E+00	FAIL ABUN
PO-215	3.784E-02	6.467E-01	1.014E+00	0.000E+00	FAIL ABUN
RN-219	-5.622E-02	3.822E-01	6.563E-01	0.000E+00	FAIL ABUN
RN-220	8.795E+00	2.379E+01	4.104E+01	0.000E+00	NOT IDENT.
RA-223	3.784E-02	6.467E-01	1.014E+00	0.000E+00	FAIL ABUN
AC-227	3.889E-01	3.228E-01	5.713E-01	0.000E+00	FAIL ABUN
TH-227	3.889E-01	3.248E-01	5.713E-01	0.000E+00	FAIL ABUN
PA-231	2.211E-01	1.482E+00	2.223E+00	0.000E+00	FAIL ABUN
TH-231	3.784E-02	6.467E-01	1.014E+00	0.000E+00	FAIL ABUN
U-231	5.189E-01	7.983E-01	1.113E+00	0.000E+00	FAIL ABUN
PA-233	8.684E-03	5.133E-02	9.206E-02	0.000E+00	FAIL ABUN
PA-234	-3.168E-01	3.598E-01	5.465E-01	0.000E+00	FAIL ABUN
PA-234M	-2.971E-01	5.348E+00	8.740E+00	0.000E+00	NOT IDENT.
U-235	3.470E-02	1.684E-01	2.969E-01	0.000E+00	FAIL ABUN
NP-236	-1.707E-02	6.096E-02	1.061E-01	0.000E+00	FAIL ABUN
NP-239	-1.025E-01	1.275E-01	2.223E-01	0.000E+00	FAIL ABUN
AM-241	-1.796E-03	4.851E-02	7.713E-02	0.000E+00	NOT IDENT.
CM-243	-2.842E-02	6.829E-02	1.101E-01	0.000E+00	FAIL ABUN
AM-246	6.978E-02	1.399E-01	2.506E-01	0.000E+00	NOT IDENT.
CM-247	-5.430E-03	3.333E-02	5.715E-02	0.000E+00	FAIL ABUN
CF-249	7.884E-03	3.688E-02	6.423E-02	0.000E+00	NOT IDENT.
CF-251	-1.590E-02	1.000E-01	1.736E-01	0.000E+00	NOT IDENT.



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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691003.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 14:46:29.
Sample ID          : G245691003 Sample quantity : 1.35050E+02 GRAM
Detector name      : GAM25 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.09 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1517	10.67*	1.109E+00	3.565E+01	3.565E+01	10.10
CD-109	88.03	568	3.72*	9.404E+00	4.513E+00	4.616E+00	16.25
SN-126	64.28	235	9.60	9.779E+00	6.950E-01	6.950E-01	43.86
	86.94	568	8.90	9.404E+00	1.886E+00	1.886E+00	43.59
	87.57	568	37.00*	9.404E+00	4.537E-01	4.537E-01	16.25
TL-208	277.35	52	6.80	4.736E+00	4.517E-01	4.517E-01	128.51
	510.84	123	21.60	2.808E+00	5.630E-01	5.630E-01	61.54
	583.14	457	84.20*	2.497E+00	6.040E-01	6.040E-01	17.38
	860.37	98	12.46	1.765E+00	1.235E+00	1.235E+00	42.14
BI-210	46.50	81	4.05*	9.199E+00	6.031E-01	6.039E-01	115.05
PB-210	46.50	81	4.05*	9.199E+00	6.031E-01	6.039E-01	115.05
PO-210	46.50	81	4.05*	9.199E+00	6.031E-01	6.039E-01	114.98
BI-211	72.87	-----	1.27	9.724E+00	-----	Line Not Found	-----
	351.07	753	12.94*	3.886E+00	4.161E+00	4.161E+00	14.28
PB-212	74.81	905	10.70	9.694E+00	2.424E+00	2.424E+00	16.86
	77.11	1307	18.00	9.652E+00	2.092E+00	2.092E+00	12.66
	87.30	568	8.00	9.404E+00	2.098E+00	2.098E+00	19.08
	238.63	1544	44.60*	5.339E+00	1.802E+00	1.802E+00	12.83
	300.09	95	3.41	4.445E+00	1.742E+00	1.742E+00	63.16
PO-212	74.81	905	10.70	9.694E+00	2.424E+00	2.424E+00	16.86
	77.11	1307	18.00	9.652E+00	2.092E+00	2.092E+00	12.66
	87.30	568	8.00	9.404E+00	2.098E+00	2.098E+00	19.08
	115.19	-----	0.60	8.498E+00	-----	Line Not Found	-----
	238.63	1544	44.60*	5.339E+00	1.802E+00	1.802E+00	12.83
	300.09	95	3.41	4.445E+00	1.742E+00	1.742E+00	63.16
BI-214	609.31	500	46.30*	2.401E+00	1.251E+00	1.251E+00	16.97
	1120.29	75	15.10	1.398E+00	9.870E-01	9.870E-01	51.23
	1764.49	87	15.80	9.413E-01	1.623E+00	1.623E+00	26.23
PB-214	74.81	905	6.21	9.694E+00	4.177E+00	4.177E+00	15.87
	77.11	1307	10.50	9.652E+00	3.585E+00	3.585E+00	14.78
	87.30	568	4.67	9.404E+00	3.595E+00	3.595E+00	17.99
	241.98	395	7.49	5.290E+00	2.768E+00	2.768E+00	24.16

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	387	19.20	4.503E+00	1.245E+00	1.245E+00	21.73
	351.92	753	37.20*	3.886E+00	1.447E+00	1.447E+00	15.20
	74.81	905	6.21	9.694E+00	4.177E+00	4.177E+00	15.87
	77.11	1307	10.50	9.652E+00	3.585E+00	3.585E+00	14.78
	87.30	568	4.67	9.404E+00	3.595E+00	3.595E+00	17.99
PO-216	241.98	395	7.49	5.290E+00	2.768E+00	2.768E+00	24.16
	295.21	387	19.20	4.503E+00	1.245E+00	1.245E+00	21.73
	351.92	753	37.20*	3.886E+00	1.447E+00	1.447E+00	15.20
	74.81	905	10.70	9.694E+00	2.424E+00	2.424E+00	16.86
	77.11	1307	18.00	9.652E+00	2.092E+00	2.092E+00	12.66
PO-218	87.30	568	8.00	9.404E+00	2.098E+00	2.098E+00	19.08
	238.63	1544	44.60*	5.339E+00	1.802E+00	1.802E+00	12.83
	300.09	95	3.41	4.445E+00	1.742E+00	1.742E+00	63.16
	74.81	905	6.21	9.694E+00	4.177E+00	4.177E+00	15.87
	77.11	1307	10.50	9.652E+00	3.585E+00	3.585E+00	14.78
RA-224	87.30	568	4.67	9.404E+00	3.595E+00	3.595E+00	17.99
	241.98	395	7.49	5.290E+00	2.768E+00	2.768E+00	24.16
	295.21	387	19.20	4.503E+00	1.245E+00	1.245E+00	21.73
	351.92	753	37.20*	3.886E+00	1.447E+00	1.447E+00	15.20
	240.98	395	3.95*	5.290E+00	5.248E+00	5.248E+00	23.50
RA-226	609.31	500	46.30*	2.401E+00	1.251E+00	1.251E+00	16.97
	1120.29	75	15.10	1.398E+00	9.870E-01	9.870E-01	51.23
	1764.49	87	15.80	9.413E-01	1.623E+00	1.623E+00	26.23
	338.32	275	11.40	4.019E+00	1.668E+00	1.668E+00	45.88
	911.07	312	27.70*	1.678E+00	1.868E+00	1.868E+00	19.49
AC-228	969.11	163	16.60	1.589E+00	1.715E+00	1.715E+00	38.94
	338.32	275	11.40	4.019E+00	1.668E+00	1.668E+00	45.88
	911.07	312	27.70*	1.678E+00	1.868E+00	1.868E+00	19.49
	969.11	163	16.60	1.589E+00	1.715E+00	1.715E+00	38.94
	74.81	905	10.70	9.694E+00	2.424E+00	2.424E+00	14.08
TH-228	77.11	1307	18.00	9.652E+00	2.092E+00	2.123E+00	12.66
	87.30	568	8.00	9.404E+00	2.098E+00	2.130E+00	16.25
	238.63	1544	44.60*	5.339E+00	1.802E+00	1.829E+00	12.83
	300.09	95	3.41	4.445E+00	1.742E+00	1.769E+00	85.99
	85.43	185	16.50	9.490E+00	3.281E-01	3.281E-01	43.82
TH-229	88.47	568	27.10	9.404E+00	6.194E-01	6.195E-01	16.25
	100.00	122	12.40	9.017E+00	3.034E-01	3.034E-01	72.98
	193.63	-----	4.59*	6.236E+00	-----	Line Not Found	-----
	210.97	-----	3.26	5.861E+00	-----	Line Not Found	-----
	609.31	500	46.30*	2.401E+00	1.251E+00	1.251E+00	16.97
TH-230	1120.29	75	15.10	1.398E+00	9.870E-01	9.870E-01	51.23
	1764.49	87	15.80	9.413E-01	1.623E+00	1.623E+00	26.23
	338.32	275	11.40	4.019E+00	1.668E+00	1.668E+00	21.83
	911.07	312	27.70*	1.678E+00	1.868E+00	1.868E+00	19.49
	969.11	163	16.60	1.589E+00	1.715E+00	1.715E+00	38.94
TH-232	63.29	235	3.80*	9.779E+00	1.756E+00	1.756E+00	44.90
	92.38	536	5.41	9.238E+00	2.980E+00	2.980E+00	26.57
	609.31	500	46.30*	2.401E+00	1.251E+00	1.251E+00	16.97
	1120.29	75	15.10	1.398E+00	9.870E-01	9.870E-01	51.23

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1764.49	87	15.80	9.413E-01	1.623E+00	1.623E+00	26.23
NP-237	86.50	568	12.60*	9.404E+00	1.332E+00	1.332E+00	26.27
	95.87	-----	2.60	9.143E+00	-----	Line Not Found	-----
U-238	63.29	235	3.80*	9.779E+00	1.756E+00	1.756E+00	44.90
	92.38	536	5.41	9.238E+00	2.980E+00	2.980E+00	21.29
AM-243	74.67	905	66.00*	9.694E+00	3.930E-01	3.930E-01	14.04
	86.72	568	0.34	9.404E+00	4.996E+01	4.996E+01	16.25
	117.66	-----	0.55	8.415E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.617E+00	-----	Line Not Found	-----
ANH-511	511.00	123	100.00*	2.808E+00	1.216E-01	1.216E-01	60.97

Flag: "\*" = Keyline

Summary of Nuclide Activity  
Sample ID : G245691003

Page : 4  
Acquisition date : 9-FEB-2010 14:46:29

Total number of lines in spectrum 36  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 34 94.44%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.565E+01	3.565E+01	0.360E+01	10.10	
CD-109	464.00D	1.02	4.513E+00	4.616E+00	0.750E+00	16.25	
SN-126	1.00E+05Y	1.00	4.537E-01	4.537E-01	0.737E-01	16.25	
TL-208	1.41E+10Y	1.00	6.040E-01	6.040E-01	1.050E-01	17.38	
BI-210	22.26Y	1.00	6.031E-01	6.039E-01	6.948E-01	115.05	
PB-210	22.26Y	1.00	6.031E-01	6.039E-01	6.948E-01	115.05	
PO-210	22.26Y	1.00	6.031E-01	6.039E-01	6.944E-01	114.98	
BI-211	7.04E+08Y	1.00	4.161E+00	4.161E+00	0.594E+00	14.28	
PB-212	1.41E+10Y	1.00	1.802E+00	1.802E+00	0.231E+00	12.83	
PO-212	1.41E+10Y	1.00	1.802E+00	1.802E+00	0.231E+00	12.83	
BI-214	1600.00Y	1.00	1.251E+00	1.251E+00	0.212E+00	16.97	
PB-214	1600.00Y	1.00	1.447E+00	1.447E+00	0.220E+00	15.20	
PO-214	1600.00Y	1.00	1.447E+00	1.447E+00	0.220E+00	15.20	
PO-216	1.41E+10Y	1.00	1.802E+00	1.802E+00	0.231E+00	12.83	
PO-218	1600.00Y	1.00	1.447E+00	1.447E+00	0.220E+00	15.20	
RA-224	1.41E+10Y	1.00	5.248E+00	5.248E+00	1.233E+00	23.50	
RA-226	1600.00Y	1.00	1.251E+00	1.251E+00	0.212E+00	16.97	
AC-228	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.364E+00	19.49	
RA-228	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.364E+00	19.49	
TH-228	1.91Y	1.02	1.802E+00	1.829E+00	0.235E+00	12.83	
TH-229	7340.00Y	1.00	6.194E-01	6.195E-01	1.007E-01	16.25	K
TH-230	4.47E+09Y	1.00	1.251E+00	1.251E+00	0.212E+00	16.97	
TH-232	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.364E+00	19.49	
TH-234	4.47E+09Y	1.00	1.756E+00	1.756E+00	0.788E+00	44.90	
U-234	4.47E+09Y	1.00	1.251E+00	1.251E+00	0.212E+00	16.97	
NP-237	2.14E+06Y	1.00	1.332E+00	1.332E+00	0.350E+00	26.27	
U-238	4.47E+09Y	1.00	1.756E+00	1.756E+00	0.788E+00	44.90	
AM-243	7380.00Y	1.00	3.930E-01	3.930E-01	0.552E-01	14.04	
ANH-511	1.00E+09Y	1.00	1.216E-01	1.216E-01	0.741E-01	60.97	
Total Activity :			8.057E+01	8.071E+01			

Grand Total Activity : 8.057E+01 8.071E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G245691003

Page : 5  
Acquisition date : 9-FEB-2010 14:46:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	89.94	321	343	1.06	179.44	171	23	4.46E-02	21.4	9.33E+00	T
0	129.71	70	359	0.84	258.98	254	7	9.76E-03	92.7	8.01E+00	T
0	185.84	327	405	1.16	371.22	365	12	4.54E-02	27.8	6.42E+00	T
0	209.35	138	300	0.88	418.23	413	10	1.92E-02	50.0	5.89E+00	T
0	270.14	118	233	1.30	539.81	535	10	1.64E-02	51.8	4.84E+00	T
0	327.93	102	157	0.85	655.37	651	9	1.42E-02	48.6	4.13E+00	T
0	463.12	87	94	0.95	925.74	921	10	1.21E-02	47.0	3.06E+00	T
0	726.82	131	84	1.44	1453.12	1446	13	1.81E-02	33.9	2.05E+00	T
0	769.17	97	109	4.02	1537.82	1530	18	1.34E-02	54.5	1.95E+00	
0	794.92	52	61	1.30	1589.32	1584	11	7.15E-03	64.8	1.89E+00	T
0	1407.53	33	16	2.00	2814.58	2807	16	4.58E-03	64.4	1.14E+00	T
0	1588.35	17	29	1.36	3176.26	3168	13	2.32E-03	****	1.03E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691003.CNF;1 *
* Acquisition date   : 9-FEB-2010 14:46:29.  Detector SN#      :             *
* Detector ID        : GAM25                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:02.09             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
* Sample date        : 25-JAN-2010 12:00:00  Nuclide Library   : SOLID        *
* Sample ID          : G245691003             Analyst initials: MJH1          *
* Batch Number       : 947037                 Sample Quantity  : 1.35050E+02 GRAM *
*****
*                                     QC DATA                                *
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43.34MS Isotope       :             *
* MSD ID              :                      MSD Isotope       :             *
* LCS ID              : 1032-A                 LCS Isotope     :             *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.565E+01	3.599E+00	5.268E-01	4.486E-02	67.671
CD-109	4.616E+00	7.503E-01	6.582E-01	7.073E-02	7.013
SN-126	4.537E-01	7.374E-02	6.456E-02	6.922E-03	7.028
TL-208	6.040E-01	1.050E-01	5.945E-02	6.702E-03	10.160
BI-210	6.039E-01	6.948E-01	5.910E-01	6.094E-02	1.022
PB-210	6.039E-01	6.948E-01	5.910E-01	6.094E-02	1.022
PO-210	6.039E-01	6.944E-01	5.910E-01	5.628E-02	1.022
BI-211	4.161E+00	5.942E-01	2.854E-01	3.007E-02	14.582
PB-212	1.802E+00	2.312E-01	7.516E-02	8.556E-03	23.977
PO-212	1.802E+00	2.312E-01	7.516E-02	8.556E-03	23.977
BI-214	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
PB-214	1.447E+00	2.201E-01	9.807E-02	1.152E-02	14.759
PO-214	1.447E+00	2.201E-01	9.807E-02	1.152E-02	14.759
PO-216	1.802E+00	2.312E-01	7.516E-02	8.556E-03	23.977
PO-218	1.447E+00	2.201E-01	9.807E-02	1.152E-02	14.759
RA-224	5.248E+00	1.233E+00	8.564E-01	9.000E-02	6.128
RA-226	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
AC-228	1.868E+00	3.641E-01	2.551E-01	3.034E-02	7.324

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.868E+00	3.641E-01	2.551E-01	3.034E-02	7.324
TH-228	1.829E+00	2.347E-01	7.630E-02	8.686E-03	23.977
TH-229	6.195E-01	1.007E-01	7.300E-01	6.964E-02	0.849
TH-230	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
TH-232	1.868E+00	3.641E-01	2.551E-01	3.034E-02	7.324
TH-234	1.756E+00	7.885E-01	7.071E-01	1.316E-01	2.483
U-234	1.251E+00	2.122E-01	1.087E-01	1.312E-02	11.501
NP-237	1.332E+00	3.500E-01	1.977E-01	4.593E-02	6.738
U-238	1.756E+00	7.885E-01	7.071E-01	1.316E-01	2.483
AM-243	3.930E-01	5.517E-02	4.158E-02	4.223E-03	9.451
ANH-511	1.216E-01	7.414E-02	4.424E-02	4.554E-03	2.749

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.821E-02		3.155E-01	5.096E-01	5.395E-02	-0.075
NA-22	-3.916E-03		5.142E-02	8.396E-02	6.885E-03	-0.047
NA-24	-3.051E-01		3.925E-01	Half-Life too short		
AL-26	3.545E-03		3.238E-02	5.446E-02	4.463E-03	0.065
TI-44	3.860E-01	+	4.887E-02	4.237E-02	4.363E-03	9.110
SC-46	2.143E-03		3.961E-02	6.478E-02	6.204E-03	0.033
V-48	9.327E-03		7.573E-02	1.234E-01	1.144E-02	0.076
CR-51	5.834E-02		3.251E-01	5.531E-01	6.142E-02	0.105
MN-52	5.435E-03		2.279E-01	3.715E-01	3.062E-02	0.015
MN-54	-2.524E-03		4.170E-02	6.794E-02	6.894E-03	-0.037
CO-56	8.054E-03		4.155E-02	6.904E-02	6.927E-03	0.117
CO-57	-1.445E-02		1.811E-02	2.938E-02	3.788E-03	-0.492
CO-58	-1.838E-02		4.427E-02	7.017E-02	7.281E-03	-0.262
FE-59	-3.590E-03		9.452E-02	1.571E-01	1.480E-02	-0.023
CO-60	2.279E-02		3.998E-02	6.870E-02	5.579E-03	0.332
ZN-65	2.405E-02		1.097E-01	1.614E-01	1.394E-02	0.149
GE-68	-2.465E-01		1.302E+00	2.139E+00	1.893E-01	-0.115
AS-73	1.686E-01		1.621E-01	2.705E-01	2.596E-02	0.623
AS-74	3.528E-02		9.648E-02	1.583E-01	1.715E-02	0.223
SE-75	-2.609E-02		3.971E-02	5.710E-02	6.258E-03	-0.457
BR-77	5.813E+00		1.056E+01	1.774E+01	1.839E+00	0.328
SR-82	2.162E-01		4.348E-01	6.571E-01	6.974E-02	0.329
RB-83	3.061E-02		7.000E-02	1.167E-01	1.210E-02	0.262
RB-84	2.261E-02		7.331E-02	1.227E-01	1.186E-02	0.184
KR-85	1.112E+01		7.756E+00	1.235E+01	1.274E+00	0.900
SR-85	5.701E-02		3.977E-02	6.333E-02	6.533E-03	0.900
RB-86	-6.689E-01		8.312E-01	1.285E+00	1.138E-01	-0.521
Y-88	3.695E-02		3.523E-02	6.849E-02	5.597E-03	0.539
ZR-88	-2.512E-02		2.988E-02	4.682E-02	4.262E-03	-0.536
Y-91	-1.834E+01		2.304E+01	3.616E+01	2.976E+00	-0.507
NB-94	2.543E-02		3.347E-02	5.858E-02	6.432E-03	0.434
NB-95	1.523E-02		5.412E-02	7.958E-02	8.500E-03	0.191

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	-4.709E-02		1.133E-01	1.572E-01	1.802E-02	-0.300
ZR-95	4.902E-02		8.180E-02	1.402E-01	1.606E-02	0.350
NB-97	-1.468E-01		5.387E-02	Half-Life	too short	
ZR-97	1.545E+00		9.834E-01	Half-Life	too short	
MO-99	-3.023E+00		1.301E+01	2.115E+01	3.497E+00	-0.143
TC-99M	4.808E+09		1.457E+10	Half-Life	too short	
RH-101	-2.795E-03		2.817E-02	4.506E-02	4.342E-03	-0.062
RH-102	4.493E-03		2.808E-02	4.630E-02	4.622E-03	0.097
RU-103	-1.677E-02		4.013E-02	6.295E-02	9.545E-03	-0.266
RH-106	1.026E-01		3.235E-01	5.553E-01	8.311E-02	0.185
RU-106	1.026E-01		3.233E-01	5.553E-01	6.080E-02	0.185
AG-108M	3.625E-03		3.106E-02	5.144E-02	5.083E-03	0.070
AG-110M	-5.279E-02		3.870E-02	5.781E-02	6.514E-03	-0.913
IN-111	8.636E-02		9.822E-01	1.410E+00	1.493E-01	0.061
IN-113M	-3.551E-02		4.255E-02	6.666E-02	6.227E-03	-0.533
SN-113	-3.551E-02		4.255E-02	6.666E-02	6.227E-03	-0.533
IN-114M	3.891E-02		1.733E-01	2.565E-01	2.428E-02	0.152
CD-115	2.095E+00		1.074E+01	1.759E+01	1.834E+00	0.119
SN-117M	-1.515E-02		4.298E-02	7.008E-02	6.804E-03	-0.216
SB-122	2.001E+00		2.130E+00	3.641E+00	3.883E-01	0.549
I-123	-5.261E-01		2.238E+00	Half-Life	too short	
TE-123M	-2.603E-03		2.215E-02	3.651E-02	3.545E-03	-0.071
I-124	3.102E-01		7.359E-01	1.124E+00	1.222E-01	0.276
SB-124	-4.947E-03		7.741E-02	1.271E-01	1.099E-02	-0.039
SB-125	1.123E-02		8.191E-02	1.361E-01	1.314E-02	0.083
TE-125M	4.868E+00		6.486E+00	1.126E+01	1.496E+00	0.432
I-126	-2.619E-01		1.981E-01	2.967E-01	3.285E-02	-0.882
SB-126	4.946E-02		1.662E-01	2.476E-01	2.703E-02	0.200
SB-127	-4.136E-01		1.411E+00	2.299E+00	3.058E-01	-0.180
XE-127	-1.146E-02		4.005E-02	6.426E-02	6.259E-03	-0.178
I-131	2.786E-03		1.017E-01	1.699E-01	1.744E-02	0.016
TE-132	-3.200E-01		5.948E-01	9.275E-01	1.546E-01	-0.345
BA-133	3.557E-03		4.012E-02	5.949E-02	8.435E-03	0.060
I-133	-1.878E-03		3.007E-03	Half-Life	too short	
CS-134	9.971E-02	+	6.545E-02	9.377E-02	9.871E-03	1.063
CS-135	1.891E-01		1.484E-01	2.284E-01	2.757E-02	0.828
I-135	3.785E+09		3.180E+09	Half-Life	too short	
CS-136	4.226E-02		1.231E-01	2.117E-01	1.980E-02	0.200
BA-137M	-2.847E-02		4.235E-02	7.166E-02	7.939E-03	-0.397
CS-137	-3.009E-02		4.477E-02	7.576E-02	8.402E-03	-0.397
CE-139	-1.246E-02		2.392E-02	3.855E-02	3.438E-03	-0.323
BA-140	2.274E-02		2.652E-01	4.257E-01	1.434E-01	0.053
LA-140	-1.889E-02		8.894E-02	1.379E-01	1.147E-02	-0.137
CE-141	8.099E-03		4.932E-02	8.277E-02	9.205E-03	0.098
CE-143	3.991E-04		8.378E-05	Half-Life	too short	
CE-144	-5.984E-02		1.538E-01	2.532E-01	4.477E-02	-0.236
PM-144	6.557E-02		3.767E-02	6.871E-02	7.560E-03	0.954
PR-144	4.443E+00		2.553E+00	4.656E+00	5.122E-01	0.954



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146	1.379E-02		4.216E-02	7.050E-02	8.232E-03	0.196
ND-147	-3.276E-01		5.629E-01	8.620E-01	1.385E-01	-0.380
PM-149	-8.789E+01		8.637E+01	1.257E+02	2.144E+01	-0.699
EU-152	-5.228E-02		8.315E-02	1.337E-01	1.436E-02	-0.391
GD-153	1.989E-02		6.095E-02	7.766E-02	8.746E-03	0.256
EU-154	3.913E-03		1.416E-01	2.334E-01	2.564E-02	0.017
EU-155	1.046E-01		7.360E-02	1.299E-01	1.535E-02	0.805
TB-160	-8.718E-02		1.526E-01	2.352E-01	2.279E-02	-0.371
HO-166M	2.800E-02		5.957E-02	1.025E-01	1.122E-02	0.273
TM-171	-9.822E-01		1.195E+01	1.732E+01	1.719E+00	-0.057
LU-176	4.989E-03		1.997E-02	3.424E-02	3.736E-03	0.146
LU-177	2.832E+00	+	1.442E+00	1.669E+00	1.645E-01	1.696
LU-177M	-1.811E-01		1.620E-01	2.455E-01	2.295E-02	-0.738
HF-181	1.315E-02		3.983E-02	6.642E-02	6.674E-03	0.198
W-181	-9.154E-02		1.472E-01	2.076E-01	2.055E-02	-0.441
TA-182	7.737E-03		2.239E-01	3.707E-01	3.049E-02	0.021
RE-183	2.612E-02		8.797E-02	1.461E-01	1.360E-02	0.179
RE-184	-1.570E-01		2.084E-01	3.173E-01	3.403E-02	-0.495
OS-185	-1.522E-02		3.986E-02	6.470E-02	7.140E-03	-0.235
RE-188	2.063E-01		1.400E-01	2.435E-01	2.453E-02	0.847
W-188	7.181E-01		6.934E+00	1.048E+01	1.161E+00	0.069
IR-192	1.170E-02		3.055E-02	5.253E-02	5.674E-03	0.223
AU-195	3.655E-01	+	2.667E-01	2.650E-01	3.007E-02	1.379
TL-200	-2.765E-04		2.021E-04	Half-Life too short		
TL-201	2.142E-01		5.507E+00	9.108E+00	8.147E-01	0.024
TL-202	4.489E-02		6.948E-02	1.185E-01	1.142E-02	0.379
HG-203	3.237E-03		3.776E-02	6.014E-02	6.827E-03	0.054
BI-207	2.080E-02		5.801E-02	9.980E-02	8.907E-03	0.208
TL-207	3.784E-02		6.599E-01	9.841E-01	1.849E-01	0.038
PO-209	2.860E+00		7.111E+00	1.202E+01	1.140E+00	0.238
PB-211	-3.558E-02		8.705E-01	1.435E+00	9.004E-01	-0.025
BI-212	1.499E+00	+	5.391E-01	7.243E-01	8.703E-02	2.070
PO-215	3.784E-02		6.599E-01	9.841E-01	1.849E-01	0.038
RN-219	-5.622E-02		3.900E-01	6.393E-01	9.827E-02	-0.088
RN-220	8.795E+00		2.427E+01	4.021E+01	4.252E+00	0.219
RA-223	3.784E-02		6.599E-01	9.841E-01	1.849E-01	0.038
AC-227	3.889E-01		3.294E-01	5.520E-01	9.195E-02	0.705
TH-227	3.889E-01		3.314E-01	5.520E-01	1.059E-01	0.705
PA-231	2.211E-01		1.512E+00	2.152E+00	3.601E-01	0.103
TH-231	3.784E-02		6.599E-01	9.841E-01	1.849E-01	0.038
U-231	5.189E-01		8.146E-01	1.057E+00	1.181E-01	0.491
PA-233	8.684E-03		5.238E-02	8.927E-02	9.858E-03	0.097
PA-234	-3.168E-01		3.672E-01	5.408E-01	1.034E-01	-0.586
PA-234M	-2.971E-01		5.457E+00	8.658E+00	9.069E-01	-0.034
U-235	3.470E-02		1.718E-01	2.840E-01	5.362E-02	0.122
NP-236	-1.707E-02		6.220E-02	1.017E-01	9.686E-03	-0.168
NP-239	-1.025E-01		1.301E-01	2.119E-01	2.654E-02	-0.484
AM-241	-1.796E-03		4.950E-02	7.266E-02	7.549E-03	-0.025

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.842E-02		6.969E-02	1.047E-01	1.219E-02	-0.271
AM-246	6.978E-02		1.427E-01	2.486E-01	2.199E-02	0.281
CM-247	-5.430E-03		3.401E-02	5.567E-02	5.132E-03	-0.098
CF-249	7.884E-03		3.763E-02	6.252E-02	5.753E-03	0.126
CF-251	-1.590E-02		1.021E-01	1.666E-01	1.526E-02	-0.095

# VAX/VMS Nuclide Identification Report Generated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*
*                               DETECTOR DATA                                *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691003             *
* Acquisition date   : 9-FEB-2010 14:46:29 Detector SN#      :                 *
* Detector ID        : GAM25 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000  *
* Elapsed real time  : 0 02:00:02.09 Half life ratio : 8.000   *
*****
*
*                               SAMPLE DATA                                  *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G245691003 Analyst initials: MJH1       *
* Batch Number       : 947037 Sample Quantity : 1.3505E+02 GRAM *
* Recovery           : 1.00000 Carrier Weight  : 0.00000       *
*****
*
*                               QC DATA                                     *
*
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43 MS Isotope         :                 *
* MSD DPM             : 0.000 MSD Isotope                     :                 *
* LCS DPM             : 0.000 LCS Isotope                     :                 *
* LCSD DPM            : 0.000 LCSD Isotope                    :                 *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.565E+01	3.527E+00	2.641E-01	1.800E+00
CD-109	4.616E+00	7.352E-01	3.472E-01	3.751E-01
SN-126	4.537E-01	7.227E-02	3.406E-02	3.687E-02
TL-208	6.040E-01	1.029E-01	3.033E-02	5.250E-02
BI-210	6.039E-01	6.809E-01	3.152E-01	3.474E-01
PB-210	6.039E-01	6.809E-01	3.152E-01	3.474E-01
PO-210	6.039E-01	6.805E-01	3.152E-01	3.472E-01
BI-211	4.161E+00	5.824E-01	1.469E-01	2.971E-01
PB-212	1.802E+00	2.265E-01	3.896E-02	1.156E-01
PO-212	1.802E+00	2.265E-01	3.896E-02	1.156E-01
BI-214	1.251E+00	2.079E-01	5.543E-02	1.061E-01
PB-214	1.447E+00	2.157E-01	5.049E-02	1.100E-01
PO-214	1.447E+00	2.157E-01	5.049E-02	1.100E-01
PO-216	1.802E+00	2.265E-01	3.896E-02	1.156E-01
PO-218	1.447E+00	2.157E-01	5.049E-02	1.100E-01
RA-224	5.248E+00	1.209E+00	4.439E-01	6.167E-01
RA-226	1.251E+00	2.079E-01	5.543E-02	1.061E-01
AC-228	1.868E+00	3.568E-01	1.291E-01	1.821E-01
RA-228	1.868E+00	3.568E-01	1.291E-01	1.821E-01
TH-228	1.829E+00	2.300E-01	3.956E-02	1.173E-01
TH-229	1.350E-01	4.324E-01	3.799E-01	2.206E-01
TH-230	1.251E+00	2.079E-01	5.542E-02	1.061E-01
TH-232	1.868E+00	3.568E-01	1.291E-01	1.821E-01
TH-234	1.756E+00	7.727E-01	3.751E-01	3.942E-01
U-234	1.251E+00	2.079E-01	5.542E-02	1.061E-01
NP-237	1.332E+00	3.430E-01	1.044E-01	1.750E-01
U-238	1.756E+00	7.727E-01	3.751E-01	3.942E-01
AM-243	3.930E-01	5.407E-02	2.200E-02	2.759E-02
ANH-511	1.216E-01	7.266E-02	2.262E-02	3.707E-02

---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )		
BE-7	-3.821E-02	3.092E-01	2.609E-01	1.578E-01	NOT IDENT.
NA-22	-3.916E-03	5.039E-02	4.221E-02	2.571E-02	NOT IDENT.
NA-24	-3.051E+05	7.693E+05	0.000E+00	3.925E+05	SHORT HLIF
AL-26	3.545E-03	3.173E-02	2.720E-02	1.619E-02	NOT IDENT.
TI-44	3.860E-01	4.790E-02	2.240E-02	2.444E-02	FAIL ABUN
SC-46	2.143E-03	3.882E-02	3.279E-02	1.981E-02	FAIL ABUN
V-48	9.327E-03	7.421E-02	6.235E-02	3.786E-02	NOT IDENT.
CR-51	5.834E-02	3.186E-01	2.852E-01	1.625E-01	NOT IDENT.
MN-52	5.435E-03	2.233E-01	1.863E-01	1.139E-01	NOT IDENT.
MN-54	-2.524E-03	4.087E-02	3.443E-02	2.085E-02	NOT IDENT.
CO-56	8.054E-03	4.071E-02	3.498E-02	2.077E-02	NOT IDENT.
CO-57	-1.445E-02	1.774E-02	1.541E-02	9.053E-03	NOT IDENT.
CO-58	-1.838E-02	4.339E-02	3.558E-02	2.214E-02	NOT IDENT.
FE-59	-3.590E-03	9.263E-02	7.921E-02	4.726E-02	NOT IDENT.
CO-60	2.279E-02	3.918E-02	3.451E-02	1.999E-02	NOT IDENT.
ZN-65	2.405E-02	1.075E-01	8.135E-02	5.483E-02	NOT IDENT.
GE-68	-2.465E-01	1.276E+00	1.079E+00	6.509E-01	NOT IDENT.
AS-73	1.686E-01	1.589E-01	1.439E-01	8.106E-02	NOT IDENT.
AS-74	3.528E-02	9.455E-02	8.071E-02	4.824E-02	NOT IDENT.
SE-75	-2.609E-02	3.892E-02	2.955E-02	1.986E-02	NOT IDENT.
BR-77	5.813E+00	1.035E+01	9.068E+00	5.280E+00	FAIL ABUN
SR-82	2.162E-01	4.261E-01	3.334E-01	2.174E-01	NOT IDENT.
RB-83	3.061E-02	6.860E-02	5.967E-02	3.500E-02	NOT IDENT.
RB-84	2.261E-02	7.184E-02	6.210E-02	3.665E-02	NOT IDENT.
KR-85	1.112E+01	7.601E+00	6.315E+00	3.878E+00	NOT IDENT.
SR-85	5.701E-02	3.897E-02	3.238E-02	1.988E-02	NOT IDENT.
RB-86	-6.689E-01	8.146E-01	6.481E-01	4.156E-01	NOT IDENT.
Y-88	3.695E-02	3.452E-02	3.419E-02	1.761E-02	NOT IDENT.
ZR-88	-2.512E-02	2.928E-02	2.406E-02	1.494E-02	NOT IDENT.
Y-91	-1.834E+01	2.258E+01	1.820E+01	1.152E+01	NOT IDENT.
NB-94	2.543E-02	3.280E-02	2.978E-02	1.674E-02	NOT IDENT.
NB-95	1.523E-02	5.304E-02	4.039E-02	2.706E-02	NOT IDENT.
NB-95M	-4.709E-02	1.110E-01	8.151E-02	5.664E-02	NOT IDENT.
ZR-95	4.902E-02	8.017E-02	7.117E-02	4.090E-02	NOT IDENT.
NB-97	-1.468E+05	1.056E+05	0.000E+00	5.387E+04	SHORT HLIF
ZR-97	1.545E+06	1.928E+06	0.000E+00	9.834E+05	SHORT HLIF
MO-99	-3.023E+00	1.275E+01	1.074E+01	6.503E+00	NOT IDENT.
TC-99M	4.808E+15	2.856E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.795E-03	2.761E-02	2.344E-02	1.409E-02	NOT IDENT.
RH-102	4.493E-03	2.752E-02	2.371E-02	1.404E-02	NOT IDENT.
RU-103	-1.677E-02	3.932E-02	3.221E-02	2.006E-02	FAIL ABUN
RH-106	1.026E-01	3.170E-01	2.829E-01	1.617E-01	FAIL ABUN
RU-106	1.026E-01	3.168E-01	2.829E-01	1.616E-01	FAIL ABUN
AG-108M	3.625E-03	3.044E-02	2.638E-02	1.553E-02	NOT IDENT.
AG-110M	-5.279E-02	3.793E-02	2.942E-02	1.935E-02	NOT IDENT.
IN-111	8.636E-02	9.625E-01	7.308E-01	4.911E-01	NOT IDENT.
IN-113M	-3.551E-02	4.169E-02	3.425E-02	2.127E-02	NOT IDENT.
SN-113	-3.551E-02	4.169E-02	3.425E-02	2.127E-02	NOT IDENT.
IN-114M	3.891E-02	1.698E-01	1.335E-01	8.663E-02	NOT IDENT.
CD-115	2.095E+00	1.052E+01	8.991E+00	5.368E+00	NOT IDENT.
SN-117M	-1.515E-02	4.213E-02	3.660E-02	2.149E-02	NOT IDENT.
SB-122	2.001E+00	2.087E+00	1.859E+00	1.065E+00	NOT IDENT.
I-123	-5.261E+05	4.387E+06	0.000E+00	2.238E+06	SHORT HLIF
TE-123M	-2.603E-03	2.171E-02	1.906E-02	1.108E-02	NOT IDENT.
I-124	3.102E-01	7.212E-01	5.732E-01	3.679E-01	NOT IDENT.
SB-124	-4.947E-03	7.587E-02	6.356E-02	3.871E-02	FAIL ABUN
SB-125	1.123E-02	8.027E-02	6.980E-02	4.095E-02	FAIL ABUN
TE-125M	4.868E+00	6.357E+00	5.921E+00	3.243E+00	NOT IDENT.
I-126	-2.619E-01	1.941E-01	1.510E-01	9.905E-02	NOT IDENT.
SB-126	4.946E-02	1.629E-01	1.258E-01	8.310E-02	FAIL ABUN
SB-127	-4.136E-01	1.383E+00	1.169E+00	7.054E-01	NOT IDENT.
XE-127	-1.146E-02	3.925E-02	3.341E-02	2.003E-02	NOT IDENT.
I-131	2.786E-03	9.970E-02	8.744E-02	5.087E-02	NOT IDENT.
TE-132	-3.200E-01	5.829E-01	4.812E-01	2.974E-01	NOT IDENT.
BA-133	3.557E-03	3.932E-02	3.062E-02	2.006E-02	FAIL ABUN
I-133	-1.878E+03	5.894E+03	0.000E+00	3.007E+03	SHORT HLIF
CS-134	9.971E-02	6.414E-02	4.756E-02	3.273E-02	FAIL ABUN
CS-135	1.891E-01	1.454E-01	1.182E-01	7.421E-02	NOT IDENT.
I-135	3.785E+15	6.233E+15	0.000E+00	3.180E+15	SHORT HLIF
CS-136	4.226E-02	1.206E-01	1.068E-01	6.156E-02	FAIL ABUN
BA-137M	-2.847E-02	4.151E-02	3.647E-02	2.118E-02	NOT IDENT.
CS-137	-3.009E-02	4.388E-02	3.855E-02	2.239E-02	NOT IDENT.
CE-139	-1.246E-02	2.344E-02	2.012E-02	1.196E-02	NOT IDENT.
BA-140	2.274E-02	2.599E-01	2.175E-01	1.326E-01	NOT IDENT.
LA-140	-1.889E-02	8.716E-02	6.905E-02	4.447E-02	FAIL ABUN
CE-141	8.099E-03	4.833E-02	4.329E-02	2.466E-02	NOT IDENT.

CE-143	3.991E+02	1.642E+02	0.000E+00	8.378E+01	SHORT HLIF
CE-144	-5.984E-02	1.507E-01	1.326E-01	7.690E-02	NOT IDENT.
PM-144	6.557E-02	3.691E-02	3.493E-02	1.883E-02	NOT IDENT.
PR-144	4.443E+00	2.501E+00	2.367E+00	1.276E+00	NOT IDENT.
PM-146	1.379E-02	4.132E-02	3.613E-02	2.108E-02	NOT IDENT.
ND-147	-3.276E-01	5.516E-01	4.405E-01	2.815E-01	FAIL ABUN
PM-149	-8.789E+01	8.464E+01	6.497E+01	4.318E+01	NOT IDENT.
EU-152	-5.228E-02	8.149E-02	6.887E-02	4.158E-02	FAIL ABUN
GD-153	1.989E-02	5.973E-02	4.090E-02	3.047E-02	FAIL ABUN
EU-154	3.913E-03	1.388E-01	1.173E-01	7.080E-02	NOT IDENT.
EU-155	1.046E-01	7.212E-02	6.831E-02	3.680E-02	FAIL ABUN
TB-160	-8.718E-02	1.495E-01	1.191E-01	7.629E-02	FAIL ABUN
HO-166M	2.800E-02	5.838E-02	5.208E-02	2.979E-02	FAIL ABUN
TM-171	-9.822E-01	1.171E+01	9.179E+00	5.976E+00	NOT IDENT.
LU-176	4.989E-03	1.958E-02	1.767E-02	9.987E-03	FAIL ABUN
LU-177	2.832E+00	1.413E+00	8.674E-01	7.209E-01	FAIL ABUN
LU-177M	-1.811E-01	1.588E-01	1.260E-01	8.100E-02	FAIL ABUN
HF-181	1.315E-02	3.904E-02	3.400E-02	1.992E-02	NOT IDENT.
W-181	-9.154E-02	1.442E-01	1.101E-01	7.358E-02	NOT IDENT.
TA-182	7.737E-03	2.195E-01	1.865E-01	1.120E-01	FAIL ABUN
RE-183	2.612E-02	8.621E-02	7.625E-02	4.399E-02	FAIL ABUN
RE-184	-1.570E-01	2.042E-01	1.643E-01	1.042E-01	NOT IDENT.
OS-185	-1.522E-02	3.907E-02	3.294E-02	1.993E-02	NOT IDENT.
RE-188	2.063E-01	1.372E-01	1.272E-01	6.998E-02	NOT IDENT.
W-188	7.181E-01	6.796E+00	5.415E+00	3.467E+00	FAIL ABUN
IR-192	1.170E-02	2.994E-02	2.710E-02	1.527E-02	FAIL ABUN
AU-195	3.655E-01	2.614E-01	1.395E-01	1.334E-01	FAIL ABUN
TL-200	-2.765E+02	3.962E+02	0.000E+00	2.021E+02	SHORT HLIF
TL-201	2.142E-01	5.397E+00	4.751E+00	2.754E+00	NOT IDENT.
TL-202	4.489E-02	6.809E-02	6.077E-02	3.474E-02	NOT IDENT.
HG-203	3.237E-03	3.700E-02	3.109E-02	1.888E-02	FAIL ABUN
BI-207	2.080E-02	5.685E-02	5.034E-02	2.900E-02	FAIL ABUN
TL-207	3.784E-02	6.467E-01	5.074E-01	3.299E-01	FAIL ABUN
PO-209	2.860E+00	6.968E+00	6.081E+00	3.555E+00	NOT IDENT.
PB-211	-3.558E-02	8.531E-01	7.368E-01	4.352E-01	NOT IDENT.
BI-212	1.499E+00	5.283E-01	3.680E-01	2.696E-01	FAIL ABUN
PO-215	3.784E-02	6.467E-01	5.074E-01	3.299E-01	FAIL ABUN
RN-219	-5.622E-02	3.822E-01	3.283E-01	1.950E-01	FAIL ABUN
RN-220	8.795E+00	2.379E+01	2.053E+01	1.214E+01	NOT IDENT.
RA-223	3.784E-02	6.467E-01	5.074E-01	3.299E-01	FAIL ABUN
AC-227	3.889E-01	3.228E-01	2.858E-01	1.647E-01	FAIL ABUN
TH-227	3.889E-01	3.248E-01	2.858E-01	1.657E-01	FAIL ABUN
PA-231	2.211E-01	1.482E+00	1.112E+00	7.562E-01	FAIL ABUN
TH-231	3.784E-02	6.467E-01	5.074E-01	3.299E-01	FAIL ABUN
U-231	5.189E-01	7.983E-01	5.569E-01	4.073E-01	FAIL ABUN
PA-233	8.684E-03	5.133E-02	4.606E-02	2.619E-02	FAIL ABUN
PA-234	-3.168E-01	3.598E-01	2.734E-01	1.836E-01	FAIL ABUN
PA-234M	-2.971E-01	5.348E+00	4.373E+00	2.728E+00	NOT IDENT.
U-235	3.470E-02	1.684E-01	1.485E-01	8.590E-02	FAIL ABUN
NP-236	-1.707E-02	6.096E-02	5.310E-02	3.110E-02	FAIL ABUN
NP-239	-1.025E-01	1.275E-01	1.112E-01	6.505E-02	FAIL ABUN
AM-241	-1.796E-03	4.851E-02	3.859E-02	2.475E-02	NOT IDENT.
CM-243	-2.842E-02	6.829E-02	5.508E-02	3.484E-02	FAIL ABUN
AM-246	6.978E-02	1.399E-01	1.254E-01	7.135E-02	NOT IDENT.
CM-247	-5.430E-03	3.333E-02	2.859E-02	1.701E-02	FAIL ABUN
CF-249	7.884E-03	3.688E-02	3.213E-02	1.882E-02	NOT IDENT.
CF-251	-1.590E-02	1.000E-01	8.685E-02	5.104E-02	NOT IDENT.

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
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ENERGY	MDA COUNTS
46.50	288.7149
46.50	288.7149
46.50	288.7149
48.70	282.6424
49.72	262.3026
51.35	326.5789
52.39	291.9467
52.97	268.5463
53.15	278.6216
53.44	275.6649
54.07	303.9154
56.28	334.4386
56.28	334.4432
57.37	0.0000
57.53	340.5805
57.53	340.5828
57.60	349.6104
57.98	359.0825
57.98	359.0825
59.32	405.9432
59.32	405.9432
59.40	388.4473
59.54	388.6568
59.72	387.4252
60.01	354.7838
61.10	381.9218
61.14	397.0777
61.30	397.3185
63.00	412.7737
63.29	413.2163
63.29	413.2163
63.58	413.6568
64.28	414.7180
65.12	425.9427
65.20	426.0664
65.20	426.0664
66.05	385.8629
66.72	411.4349
66.83	400.8095
66.91	400.9206
67.20	399.7896
67.20	399.7896
67.75	379.2963
67.85	392.1947
68.90	449.5313
68.90	449.5313
69.30	415.1695
69.67	427.3788
70.82	450.1582
70.82	450.1582
70.83	450.1729
72.80	457.8816
72.87	457.9881
72.87	457.9881
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74.81	424.0955
74.81	424.0955
74.81	424.0955
74.81	424.0955
74.81	424.0955
74.81	424.0955
74.97	424.3161
75.28	424.7437
75.70	425.3239
77.11	427.2522
77.11	427.2522

77.11	427.2522
77.11	427.2522
77.11	427.2522
77.11	427.2522
77.11	427.2522
78.38	400.5356
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79.80	359.6726
79.80	359.6726
80.11	360.0182
80.18	360.0955
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80.30	365.0649
80.57	365.3690
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81.07	356.2377
81.07	356.2377
81.07	356.2377
81.07	356.2377
82.60	387.9325
83.37	331.8881
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83.78	332.2990
83.78	332.2990
83.78	332.2990
84.21	332.7264
84.90	328.5081
85.43	329.0234
86.29	329.8556
86.50	330.0580
86.54	330.0969
86.59	330.1459
86.72	300.6942
86.79	300.7538
86.94	300.8878
87.30	301.2024
87.30	301.2024
87.30	301.2024
87.30	301.2024
87.30	301.2024
87.30	301.2024
87.30	301.2024
87.57	301.4388
87.88	301.7087
88.03	301.8391
88.36	302.1257
88.47	302.2225
89.95	303.5033
91.11	304.4992
92.29	305.5054
92.38	305.5827
92.38	305.5827
93.35	306.4036
94.00	306.9528
94.67	307.5131
94.67	307.5168
94.90	307.7104
94.90	307.7104
94.90	307.7104
94.90	307.7104
95.87	255.4158
95.87	255.4158
96.73	233.1979
97.43	233.6331
98.44	221.5303
98.44	221.5303
98.88	242.1822
99.55	242.6112
99.55	242.6112
99.86	242.8084
100.00	242.8968
100.10	242.9635
103.18	306.7751
103.76	294.3220
105.00	261.0609
105.31	265.2397
108.00	311.3836
109.28	284.4442

111.00	300.5332
111.00	300.5332
111.76	295.8177
112.95	286.9778
115.19	244.2557
116.30	233.3568
117.00	270.1748
117.00	270.1748
117.66	283.9406
121.11	231.4636
121.62	251.4899
121.78	265.9571
122.06	274.2158
122.32	288.7691
122.32	288.7691
122.32	288.7691
122.32	288.7691
123.07	282.9462
127.23	315.1092
129.76	286.6606
131.20	266.9069
133.02	268.4865
133.54	276.5228
135.34	250.7323
136.00	264.9713
136.25	260.4732
136.48	259.6688
140.51	272.0961
140.51	0.0000
142.18	282.3896
142.65	287.3513
143.76	281.3953
144.24	259.0546
144.24	259.0546
144.24	259.0546
144.24	259.0546
145.22	255.7800
145.44	276.6636
147.16	267.1719
152.43	269.8828
152.70	262.3604
153.22	280.8274
154.21	269.8262
154.21	269.8262
154.21	269.8262
154.21	269.8262
155.03	239.4659
156.02	281.3364
158.56	253.6180
159.00	0.0000
159.00	245.1015
160.31	248.6016
161.27	248.0611
162.32	231.9619
162.64	233.0702
163.35	248.0133
163.89	245.3214
165.85	259.9078
167.43	235.0614
171.28	239.6096
171.86	225.9729
172.10	226.0657
176.55	236.7734
176.60	236.7927
181.06	264.2250
184.41	247.9658
185.71	248.4892
186.00	248.6038
190.27	248.2652
192.34	256.2510
193.63	247.5261
197.04	245.7401
198.01	235.7675
198.60	226.6636
200.40	239.7415
201.83	245.4636
202.84	246.8798
205.31	224.2688



208.36	209.0043
208.81	209.1439
209.75	209.4314
209.75	209.4314
210.97	208.7516
215.65	181.5083
216.55	212.5651
218.09	244.9856
222.10	241.0183
223.80	199.7139
226.40	214.4416
227.00	214.6198
227.08	214.6441
227.20	218.9936
228.16	214.9599
228.18	214.9659
228.18	214.9659
231.56	0.0000
235.69	212.7933
236.00	212.8806
236.00	212.8806
238.63	191.7142
238.63	191.7142
238.63	191.7142
238.63	191.7142
239.00	191.8068
240.98	192.3070
241.98	192.5580
241.98	192.5580
241.98	192.5580
244.69	190.4758
245.39	167.4384
247.94	186.2844
248.90	178.7404
249.79	196.7267
252.40	175.0742
252.85	194.1428
252.85	194.1428
254.15	0.0000
256.20	140.0553
256.20	140.0553
260.50	158.8258
260.90	136.3638
262.80	157.0141
264.65	167.1040
268.24	136.4453
268.79	141.6557
269.46	160.5585
269.46	160.5585
269.46	160.5585
269.46	160.5585
271.23	174.5903
273.65	144.1930
276.40	185.9908
277.35	179.2991
277.60	179.3530
277.60	179.3530
278.00	179.4355
278.60	179.5625
279.20	179.6863
279.53	179.7561
280.46	171.2983
281.68	152.4800
283.67	147.6164
284.30	145.9849
285.00	162.3364
285.90	184.5554
286.10	184.5975
286.10	184.5975
287.40	148.8281
288.45	0.0000
290.67	156.8465
290.80	162.4708
291.72	185.0707
293.26	0.0000
293.70	158.7821
295.21	147.7896
295.21	147.7896

295.21	147.7896
295.96	154.9561
296.50	155.0474
297.23	155.1736
298.57	155.4019
299.80	147.1234
299.80	147.1234
300.09	147.1691
300.09	147.1691
300.09	147.1691
300.09	147.1691
300.12	147.1742
301.29	133.1927
302.84	130.5789
303.76	136.3922
303.91	136.4133
304.40	140.7511
304.40	140.7511
304.84	133.7067
306.84	125.6190
308.46	125.8385
311.98	126.3096
316.51	141.3134
318.01	152.3543
319.02	155.2215
319.41	156.1873
320.08	140.9370
323.87	149.4707
323.87	149.4707
323.87	149.4707
323.87	149.4707
325.23	151.1326
328.77	163.3434
333.44	146.5308
334.20	140.7773
334.20	140.7773
334.30	140.7914
338.28	148.1590
338.28	148.1590
338.28	148.1590
338.28	148.1590
338.32	148.1639
338.32	148.1639
338.32	148.1639
340.50	109.1952
340.57	109.2024
344.27	136.9998
345.85	120.7870
350.59	0.0000
351.07	123.7401
351.92	120.2978
351.92	120.2978
351.92	120.2978
355.39	0.0000
356.01	109.3449
364.48	117.9562
366.43	102.0987
367.43	118.2785
367.94	0.0000
369.80	128.9672
374.96	109.5690
383.85	116.2107
387.95	116.6335
388.63	113.8102
391.69	144.0959
391.69	144.0959
392.90	148.1207
398.62	136.2082
400.65	142.2930
401.10	119.9239
401.81	128.7773
402.60	122.0303
404.84	124.2211
410.95	96.3521
411.60	116.0788
413.65	131.0578
414.70	114.4070
415.30	113.4769

415.76	107.5979
417.63	0.0000
418.52	100.9183
423.70	110.2920
427.08	106.6114
427.89	96.7114
432.53	116.0903
433.93	107.2025
439.47	104.6586
439.56	109.6985
439.89	109.7268
443.98	113.1125
444.90	95.0026
445.03	91.9803
445.03	91.9803
445.03	91.9803
445.03	91.9803
453.90	102.7954
463.38	98.4170
468.07	83.9520
473.00	96.0340
475.06	97.2158
475.35	99.3062
476.78	97.3405
477.59	104.6510
477.96	106.7531
482.03	87.3223
484.57	107.2718
487.03	98.0749
490.36	0.0000
492.35	102.6431
497.08	102.9915
507.63	0.0000
510.53	0.0000
510.84	92.3240
511.00	92.3346
511.85	92.3890
511.85	92.3890
513.99	85.0824
513.99	85.0824
520.41	90.8028
520.65	88.6789
527.90	88.0459
528.96	0.0000
529.64	93.5261
529.87	0.0000
531.02	98.9910
537.32	88.6064
543.00	70.5026
546.56	0.0000
549.76	71.9075
552.65	70.9509
555.20	90.7509
563.23	97.8163
563.90	82.4661
568.70	97.0557
569.32	86.0599
569.50	86.0718
569.67	86.0814
573.80	119.4994
574.00	119.5159
574.64	110.7086
578.91	76.3712
579.30	0.0000
583.14	93.4900
585.48	85.6008
591.81	101.8279
592.07	101.8418
593.00	91.8221
595.88	88.6194
600.56	76.4979
602.52	0.0000
602.71	88.6128
602.71	88.6128
603.60	85.6554
604.41	105.2421
604.70	105.2620
609.31	87.4578

609.31	87.4578
609.31	87.4578
609.31	87.4578
610.33	75.4415
612.46	72.5156
614.37	71.0871
618.01	88.2165
621.84	84.7694
621.84	84.7694
631.29	73.3262
633.02	66.9761
633.10	66.9796
634.78	65.2087
635.90	79.9546
636.97	77.2447
645.85	75.7919
646.12	75.8040
656.30	90.1868
657.75	120.9673
657.90	0.0000
661.65	96.0545
661.65	96.0545
664.57	0.0000
666.33	119.6781
666.33	119.6781
675.00	77.0372
677.61	85.6147
685.20	87.8596
692.80	96.7581
695.00	84.5239
696.49	71.2848
696.49	71.2848
697.00	80.8123
697.49	94.1467
698.33	97.0444
698.50	98.0034
699.00	101.8381
702.63	72.4728
706.10	82.1577
706.58	0.0000
706.67	87.9166
709.31	75.5997
711.68	68.9854
713.82	78.6547
717.42	78.8029
720.50	68.9827
721.93	0.0000
722.20	70.6496
722.78	72.2772
722.78	72.2772
722.89	72.2809
722.95	75.4953
723.30	75.5087
724.18	78.7577
727.18	88.5402
733.00	91.3416
735.90	89.2575
739.58	92.3420
742.81	68.1526
744.21	78.9177
747.13	73.1799
751.79	96.8223
752.31	93.9117
753.82	78.3203
755.35	75.4397
756.15	79.3903
756.87	87.2639
763.93	85.2723
765.79	95.1987
766.42	96.8689
766.84	95.2483
776.49	62.6978
778.00	74.3024
778.57	73.7720
778.89	73.7847
783.80	75.5046
785.46	69.5984
792.07	66.4958

795.84	58.2878
796.30	64.9635
798.80	80.0488
801.93	82.6732
805.60	76.2913
810.29	88.5328
810.76	85.5333
815.85	76.6587
817.79	77.7369
818.51	69.6839
819.60	60.6255
826.30	68.9214
828.27	0.0000
831.60	99.5695
831.96	99.5863
834.83	86.4879
836.80	0.0000
846.75	65.4734
848.13	60.3958
856.28	0.0000
856.80	41.1055
860.37	50.4344
867.32	73.9902
867.82	63.6811
871.10	68.2542
873.19	58.9997
874.81	64.2206
875.33	0.0000
876.40	70.4853
879.36	73.6902
880.27	73.7197
880.51	71.6498
881.50	58.1752
883.24	48.8623
884.67	61.3767
889.25	56.2860
896.60	47.0533
898.02	52.3132
899.00	64.8957
903.28	55.0519
911.07	84.1660
911.07	84.1660
911.07	84.1660
919.63	60.1847
920.93	58.1045
925.00	48.6796
925.24	48.6841
926.50	44.4743
935.52	60.5834
937.48	85.0977
944.10	67.1959
946.00	88.5968
949.00	59.8500
962.29	91.3335
964.01	87.8116
966.15	80.7129
968.20	90.4723
969.11	64.6465
969.11	64.6465
969.11	64.6465
977.42	61.6173
980.50	63.8571
983.50	57.4318
989.30	60.8207
996.32	70.7891
1001.03	74.1924
1001.68	67.6626
1004.76	73.2076
1021.30	0.0000
1024.50	0.0000
1034.80	70.9186
1036.00	65.4242
1037.82	58.0909
1038.57	64.5626
1038.76	0.0000
1045.16	73.9681
1046.59	70.3099
1048.07	67.5702

1050.47	66.7031
1050.47	66.7031
1062.04	61.4077
1063.62	63.3045
1076.63	69.2214
1077.35	61.7542
1078.86	49.6163
1085.78	56.3110
1099.22	60.3542
1112.02	59.9412
1112.84	59.3849
1115.52	66.6679
1120.29	57.9570
1120.29	57.9570
1120.29	57.9570
1120.29	57.9570
1120.51	63.6631
1121.28	58.6557
1124.00	0.0000
1129.67	67.6805
1131.51	0.0000
1147.95	0.0000
1167.94	91.7529
1173.22	94.8219
1175.09	85.1999
1177.93	85.2786
1189.05	99.2151
1204.90	99.7380
1205.75	0.0000
1213.00	88.2385
1221.42	83.5647
1230.97	95.6580
1235.34	90.8545
1236.41	0.0000
1238.25	83.0327
1246.25	70.3615
1260.41	0.0000
1271.85	62.9410
1274.45	62.9923
1274.54	65.9919
1291.56	59.3073
1298.22	0.0000
1312.09	43.4969
1325.50	35.5483
1325.50	35.5483
1332.49	29.5168
1333.61	31.5626
1360.21	34.8923
1362.66	0.0000
1365.15	28.7770
1368.21	42.1745
1368.53	0.0000
1376.25	45.3678
1384.27	34.1051
1394.10	29.0208
1395.20	26.9564
1407.95	23.9331
1434.06	24.1109
1436.60	26.2258
1457.56	0.0000
1460.81	23.2354
1489.15	20.2231
1509.49	18.1939
1596.49	24.0876
1620.62	24.5500
1678.03	0.0000
1691.02	16.3336
1691.02	16.3336
1706.46	0.0000
1750.46	0.0000
1764.49	12.7103
1764.49	12.7103
1764.49	12.7103
1764.49	12.7103
1770.23	10.2795
1771.40	8.5687
1791.20	0.0000
1808.65	13.8276

1836.01

7.9506

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691003

Total Uranium Activity	5.2398E+00	ug/g
Total Uranium Counting Unc.	2.3001E+00	ug/g
Total Uranium Tpu	1.1735E-06	ug/g
Total Uranium Mda	1.1182E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037          SAMPLE ID   : G245691003
*  ANALYST       : MJH1            DETECTOR    : GAM25
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 9-FEB-2010 14:46:29.12  SAMPLE ALQT: 135.050 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.065E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.449E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.291E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.598E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 16:53:37.69

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691004.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 14:53:04.
Sample ID          : G245691004 Sample quantity : 1.29920E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:09.89 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.50*	117	450	1.21	92.64	88	9	1.63E-02	35.4	
2	0	63.41*	204	583	0.88	126.45	123	8	2.83E-02	22.4	
3	2	74.83*	602	478	1.03	149.30	144	14	8.37E-02	7.0	3.04E+00
4	2	77.15*	994	434	0.92	153.95	144	14	1.38E-01	4.7	
5	5	87.24	366	404	1.10	174.13	163	29	5.08E-02	10.4	2.75E+00
6	5	89.97	235	433	1.30	179.60	163	29	3.27E-02	16.9	
7	5	92.74*	417	349	1.14	185.15	163	29	5.79E-02	9.7	
8	0	129.23	79	293	1.48	258.15	254	7	1.10E-02	37.4	
9	0	185.98*	196	256	1.21	371.70	368	9	2.72E-02	17.1	
10	0	209.18	64	262	0.99	418.11	415	9	8.94E-03	47.0	
11	5	238.54*	1181	119	1.02	476.85	470	20	1.64E-01	3.3	2.62E+00
12	5	241.38	319	183	1.82	482.53	470	20	4.43E-02	13.7	
13	0	270.43	72	190	1.14	540.65	536	9	1.00E-02	36.4	
14	0	294.95*	376	143	1.09	589.72	584	11	5.22E-02	8.1	
15	0	299.66	90	137	1.22	599.14	596	9	1.25E-02	25.4	
16	0	327.79	50	143	1.68	655.43	652	9	7.00E-03	44.9	
17	0	337.87*	198	165	1.06	675.59	670	11	2.74E-02	14.6	
18	0	351.80*	527	133	1.16	703.47	699	10	7.32E-02	6.1	
19	0	463.09	54	99	1.31	926.17	920	11	7.50E-03	38.2	
20	0	510.89*	163	116	2.22	1021.82	1012	22	2.27E-02	20.1	
21	0	582.77*	334	103	1.29	1165.65	1160	13	4.64E-02	8.4	
22	0	608.88*	351	98	1.47	1217.90	1211	15	4.88E-02	8.3	
23	0	661.75*	15	76	1.42	1323.70	1319	10	2.13E-03	110.9	
24	0	726.72	83	60	1.18	1453.71	1447	14	1.15E-02	23.1	
25	0	768.42	39	89	1.24	1537.15	1531	13	5.42E-03	52.1	
26	0	910.43*	273	40	1.62	1821.37	1813	16	3.79E-02	8.1	
27	0	964.22	40	33	1.23	1929.01	1924	9	5.53E-03	31.1	
28	0	968.15*	114	44	1.30	1936.89	1933	10	1.58E-02	14.4	
29	0	1119.74	96	46	1.53	2240.29	2236	13	1.33E-02	18.1	
30	0	1459.52*	876	17	2.00	2920.40	2910	18	1.22E-01	3.6	
31	0	1763.31*	56	10	2.12	3528.54	3522	13	7.82E-03	18.0	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 16:53:40

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 14:53:04
Sample ID        : G245691004 Sample quantity : 129.92 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:09.89 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.046E+01	3.475E+00	7.751E-01	6.882E-02	39.300
CD-109	+	88.03	*	4.356E+00	1.000E+00	9.963E-01	9.726E-02	4.373
SN-126	+	64.28		9.053E-01	4.299E-01	4.075E-01	6.505E-02	2.221
	+	86.94		1.780E+00	8.280E-01	4.057E-01	1.688E-01	4.387
	+	87.57	*	4.282E-01	9.834E-02	9.778E-02	9.542E-03	4.379
BA-137M	+	661.65	*	3.079E-02	6.838E-02	8.161E-02	6.875E-03	0.377
CS-137	+	661.65	*	3.255E-02	7.228E-02	8.627E-02	7.282E-03	0.377
TL-208	+	277.35		3.245E-01	3.967E-01	6.980E-01	8.886E-02	0.465
	+	510.84		1.063E+00	4.464E-01	2.417E-01	2.953E-02	4.397
	+	583.14	*	6.324E-01	1.220E-01	7.516E-02	7.109E-03	8.413
		860.37		5.761E-01	4.044E-01	7.456E-01	7.015E-02	0.773
BI-210	+	46.50	*	1.326E+00	9.491E-01	8.500E-01	9.221E-02	1.560
PB-210	+	46.50	*	1.326E+00	9.491E-01	8.500E-01	9.221E-02	1.560
PO-210	+	46.50	*	1.326E+00	9.476E-01	8.500E-01	8.588E-02	1.560
BI-211	+	72.87		2.371E+00	2.229E+00	3.514E+00	3.436E-01	0.675
	+	351.07	*	4.049E+00	6.242E-01	4.080E-01	3.808E-02	9.923
PB-212	+	74.81		2.393E+00	4.665E-01	3.770E-01	5.094E-02	6.349
	+	77.11		2.353E+00	3.195E-01	2.251E-01	2.194E-02	10.454
	+	87.30		1.980E+00	4.960E-01	4.519E-01	6.313E-02	4.382
	+	238.63	*	1.901E+00	2.300E-01	9.037E-02	9.111E-03	21.039
	+	300.09		2.286E+00	1.188E+00	1.254E+00	1.366E-01	1.822
PO-212	+	74.81		2.393E+00	4.665E-01	3.770E-01	5.094E-02	6.349
	+	77.11		2.353E+00	3.195E-01	2.251E-01	2.194E-02	10.454
	+	87.30		1.980E+00	4.960E-01	4.519E-01	6.313E-02	4.382
		115.19		9.748E-01	3.642E+00	6.101E+00	6.869E-01	0.160
	+	238.63	*	1.901E+00	2.300E-01	9.037E-02	9.111E-03	21.039
	+	300.09		2.286E+00	1.188E+00	1.254E+00	1.366E-01	1.822
BI-214	+	609.31	*	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
	+	1120.29		1.879E+00	7.078E-01	6.325E-01	6.762E-02	2.971
	+	1764.49		1.532E+00	5.672E-01	3.350E-01	2.833E-02	4.574
PB-214	+	74.81		4.124E+00	7.686E-01	6.495E-01	7.959E-02	6.349
	+	77.11		4.034E+00	6.281E-01	3.859E-01	4.774E-02	10.454
	+	87.30		3.392E+00	8.218E-01	7.741E-01	9.626E-02	4.382
	+	241.98		3.085E+00	9.076E-01	5.449E-01	5.800E-02	5.662

----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		1.669E+00	3.290E-01	2.151E-01	2.389E-02	7.762
	+	351.92	*	1.408E+00	2.292E-01	1.291E-01	1.380E-02	10.906
	+	74.81		4.124E+00	7.686E-01	6.495E-01	7.959E-02	6.349
	+	77.11		4.034E+00	6.281E-01	3.859E-01	4.774E-02	10.454
	+	87.30		3.392E+00	8.218E-01	7.741E-01	9.626E-02	4.382
	+	241.98		3.085E+00	9.076E-01	5.449E-01	5.800E-02	5.662
PO-216	+	295.21		1.669E+00	3.290E-01	2.151E-01	2.389E-02	7.762
	+	351.92	*	1.408E+00	2.292E-01	1.291E-01	1.380E-02	10.906
	+	74.81		2.393E+00	4.665E-01	3.770E-01	5.094E-02	6.349
	+	77.11		2.353E+00	3.195E-01	2.251E-01	2.194E-02	10.454
	+	87.30		1.980E+00	4.960E-01	4.519E-01	6.313E-02	4.382
	+	238.63	*	1.901E+00	2.300E-01	9.037E-02	9.111E-03	21.039
PO-218	+	300.09		2.286E+00	1.188E+00	1.254E+00	1.366E-01	1.822
	+	74.81		4.124E+00	7.686E-01	6.495E-01	7.959E-02	6.349
	+	77.11		4.034E+00	6.281E-01	3.859E-01	4.774E-02	10.454
	+	87.30		3.392E+00	8.218E-01	7.741E-01	9.626E-02	4.382
	+	241.98		3.085E+00	9.076E-01	5.449E-01	5.800E-02	5.662
	+	295.21		1.669E+00	3.290E-01	2.151E-01	2.389E-02	7.762
RA-224	+	351.92	*	1.408E+00	2.292E-01	1.291E-01	1.380E-02	10.906
RA-226	+	240.98	*	5.849E+00	1.689E+00	1.029E+00	9.309E-02	5.683
AC-228	+	609.31	*	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
	+	1120.29		1.879E+00	7.078E-01	6.325E-01	6.762E-02	2.971
	+	1764.49		1.532E+00	5.672E-01	3.350E-01	2.833E-02	4.574
	+	338.32		1.661E+00	8.410E-01	4.384E-01	1.812E-01	3.789
	+	911.07	*	2.405E+00	4.757E-01	2.440E-01	2.767E-02	9.858
	+	969.11		1.775E+00	6.589E-01	5.133E-01	1.200E-01	3.459
TH-228	+	338.32		1.661E+00	8.410E-01	4.384E-01	1.812E-01	3.789
	+	911.07	*	2.405E+00	4.757E-01	2.440E-01	2.767E-02	9.858
	+	969.11		1.775E+00	6.589E-01	5.133E-01	1.200E-01	3.459
	+	74.81		2.430E+00	4.165E-01	3.827E-01	3.760E-02	6.349
	+	77.11		2.389E+00	3.244E-01	2.285E-01	2.228E-02	10.454
	+	87.30		2.010E+00	4.617E-01	4.587E-01	4.476E-02	4.382
TH-230	+	238.63	*	1.930E+00	2.335E-01	9.175E-02	9.249E-03	21.039
	+	300.09		2.321E+00	1.813E+00	1.273E+00	7.559E-01	1.822
	+	609.31	*	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
	+	1120.29		1.879E+00	7.078E-01	6.325E-01	6.762E-02	2.971
	+	1764.49		1.532E+00	5.671E-01	3.350E-01	2.832E-02	4.574
	+	338.32		1.661E+00	5.080E-01	4.384E-01	3.950E-02	3.789
TH-232	+	911.07	*	2.405E+00	4.757E-01	2.440E-01	2.767E-02	9.858
	+	969.11		1.775E+00	6.589E-01	5.133E-01	1.200E-01	3.459
	+	63.29	*	2.287E+00	1.108E+00	1.052E+00	1.964E-01	2.173
	+	92.38		3.375E+00	9.116E-01	6.791E-01	1.274E-01	4.970
	+	609.31	*	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
	+	1120.29		1.879E+00	7.078E-01	6.325E-01	6.762E-02	2.971
U-234	+	1764.49		1.532E+00	5.671E-01	3.350E-01	2.832E-02	4.574
	+	86.50	*	1.257E+00	3.882E-01	2.862E-01	6.533E-02	4.393
	+	95.87		-3.805E-01	8.894E-01	1.296E+00	3.266E-01	-0.294
	+	63.29	*	2.287E+00	1.108E+00	1.052E+00	1.964E-01	2.173
	+	92.38		3.375E+00	7.369E-01	6.791E-01	6.769E-02	4.970

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	+	74.67	*	3.880E-01	6.636E-02	6.110E-02	5.965E-03	6.351
	+	86.72		4.715E+01	1.083E+01	1.074E+01	1.048E+00	4.390
		117.66		-3.847E+00	3.882E+00	6.109E+00	6.975E-01	-0.630
		142.18		3.622E+00	1.872E+01	3.097E+01	3.194E+00	0.117
ANH-511	+	511.00	*	2.296E-01	9.450E-02	5.224E-02	4.665E-03	4.396

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	1.739E-02	3.791E-01	6.239E-01	5.936E-02	0.028
NA-22		1274.54	*	-3.289E-02	6.514E-02	9.952E-02	8.384E-03	-0.330
NA-24		1368.53	*	-5.077E-01	6.514E-02	Half-Life too short		
AL-26		1129.67		-2.568E+00	2.225E+00	3.087E+00	2.580E-01	-0.832
		1808.65	*	-2.457E-02	3.441E-02	4.427E-02	3.711E-03	-0.555
TI-44		67.85		-2.645E-03	2.714E-02	4.384E-02	4.318E-03	-0.060
	+	78.38	*	4.342E-01	5.896E-02	6.474E-02	6.308E-03	6.708
SC-46		889.25	*	-2.080E-03	5.449E-02	8.985E-02	7.866E-03	-0.023
	+	1120.51		3.217E-01	1.193E-01	1.776E-01	1.490E-02	1.811
V-48		944.10		-2.349E-01	1.188E+00	1.916E+00	1.677E-01	-0.123
		983.50	*	6.751E-02	9.307E-02	1.642E-01	1.432E-02	0.411
		1312.09		-2.571E-02	1.010E-01	1.640E-01	1.392E-02	-0.157
CR-51		320.08	*	-1.018E-02	3.916E-01	6.579E-01	6.283E-02	-0.015
MN-52		744.21		1.191E-01	3.190E-01	5.516E-01	4.795E-02	0.216
		848.13		-2.984E-01	8.446E+00	1.398E+01	1.229E+00	-0.021
		935.52		-4.472E-02	3.332E-01	5.416E-01	4.740E-02	-0.083
		1246.25		-8.081E+00	1.034E+01	1.516E+01	1.267E+00	-0.533
		1333.61		-1.813E+00	6.800E+00	1.102E+01	9.390E-01	-0.165
		1434.06	*	-2.179E-02	3.229E-01	5.325E-01	4.591E-02	-0.041
MN-54		834.83	*	3.527E-02	5.375E-02	9.398E-02	8.264E-03	0.375
CO-56		846.75	*	4.915E-02	4.656E-02	8.538E-02	7.505E-03	0.576
		977.42		3.333E+00	4.302E+00	7.569E+00	6.607E-01	0.440
		1037.82		-1.766E-01	4.153E-01	6.457E-01	5.871E-02	-0.273
		1175.09		-1.049E+00	3.370E+00	5.282E+00	4.318E-01	-0.199
		1238.25		9.341E-02	1.442E-01	2.440E-01	2.097E-02	0.383
		1360.21		-7.521E-01	1.242E+00	1.889E+00	1.617E-01	-0.398
		1771.40		-7.988E-03	2.216E-01	3.585E-01	3.027E-02	-0.022
CO-57		122.06	*	1.348E-02	2.558E-02	4.319E-02	5.060E-03	0.312
		136.48		4.512E-02	2.129E-01	3.534E-01	3.978E-02	0.128
CO-58		810.76	*	1.502E-02	4.865E-02	8.352E-02	7.355E-03	0.180
FE-59		142.65		2.524E+00	2.944E+00	4.900E+00	5.036E-01	0.515
		192.34		1.310E-01	1.014E+00	1.648E+00	2.214E-01	0.079
		1099.22	*	1.462E-02	1.275E-01	2.100E-01	1.927E-02	0.070
		1291.56		-6.319E-02	1.720E-01	2.628E-01	2.532E-02	-0.240
CO-60		1173.22		-1.365E-02	6.626E-02	1.050E-01	8.575E-03	-0.130
		1332.49	*	-3.149E-02	5.225E-02	8.069E-02	6.877E-03	-0.390
ZN-65		1115.52	*	-2.595E-02	1.503E-01	2.058E-01	1.732E-02	-0.126
GE-68		1077.35	*	9.128E-01	1.731E+00	2.975E+00	2.539E-01	0.307
AS-73		53.44	*	5.110E-02	2.407E-01	4.080E-01	4.082E-02	0.125

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-74		595.88	*	-5.191E-02	1.142E-01	1.761E-01	1.552E-02	-0.295
		634.78		-4.511E-02	4.403E-01	6.994E-01	6.024E-02	-0.064
SE-75		66.05		-8.809E-01	2.742E+00	4.128E+00	4.748E-01	-0.213
		96.73		-6.267E-01	7.651E-01	1.089E+00	1.597E-01	-0.576
		121.11		6.739E-02	1.379E-01	2.324E-01	3.180E-02	0.290
		136.00		-2.599E-02	4.057E-02	6.457E-02	6.983E-03	-0.402
		198.60		6.710E-01	1.915E+00	3.097E+00	2.984E-01	0.217
		264.65	*	-4.480E-02	5.511E-02	7.769E-02	7.138E-03	-0.577
		279.53		-9.530E-02	1.129E-01	1.817E-01	1.723E-02	-0.525
		303.91		6.727E-01	2.446E+00	3.725E+00	4.431E-01	0.181
		400.65		7.768E-02	2.974E-01	5.021E-01	5.527E-02	0.155
BR-77	+	87.88		9.421E+02	2.164E+02	3.109E+02	3.035E+01	3.030
		200.40		5.360E+01	1.678E+02	2.749E+02	2.397E+01	0.195
	+	239.00		3.056E+02	3.434E+01	4.542E+01	4.102E+00	6.729
		249.79		-6.506E+01	7.468E+01	1.115E+02	1.014E+01	-0.583
		281.68		-2.790E+00	9.257E+01	1.567E+02	1.439E+01	-0.018
		297.23		1.651E+02	7.582E+01	1.072E+02	9.838E+00	1.540
		303.76		6.478E+01	2.089E+02	3.192E+02	2.927E+01	0.203
		439.47		1.030E+02	1.723E+02	2.961E+02	2.580E+01	0.348
		484.57		-7.240E+01	2.879E+02	4.620E+02	4.105E+01	-0.157
		520.65	*	-6.137E+00	1.310E+01	1.963E+01	1.755E+00	-0.313
		574.64		-7.019E+01	2.533E+02	3.989E+02	3.542E+01	-0.176
		578.91		-8.263E+01	1.215E+02	1.559E+02	1.383E+01	-0.530
		585.48		4.388E+02	2.698E+02	4.392E+02	3.885E+01	0.999
		755.35		2.500E+02	2.318E+02	4.195E+02	3.656E+01	0.596
		817.79		1.503E+00	1.649E+02	2.749E+02	2.416E+01	0.005
SR-82		698.33		-8.214E+00	4.214E+01	6.985E+01	5.981E+00	-0.118
		776.49	*	-3.995E-01	5.171E-01	8.034E-01	7.031E-02	-0.497
		1395.20		-1.027E+01	1.348E+01	1.972E+01	1.694E+00	-0.521
RB-83		520.41	*	-4.896E-02	8.584E-02	1.272E-01	1.137E-02	-0.385
		529.64		6.344E-02	1.310E-01	2.217E-01	1.982E-02	0.286
		552.65		-8.591E-02	2.481E-01	3.897E-01	3.477E-02	-0.220
RB-84		881.50	*	-3.652E-02	9.247E-02	1.468E-01	1.287E-02	-0.249
KR-85		513.99	*	1.009E+01	8.334E+00	1.479E+01	1.321E+00	0.682
SR-85		513.99	*	5.173E-02	4.273E-02	7.583E-02	6.775E-03	0.682
RB-86		1076.63	*	-1.744E-01	1.166E+00	1.872E+00	1.598E-01	-0.093
Y-88		898.02		4.497E-03	5.252E-02	8.723E-02	7.662E-03	0.052
		1836.01	*	3.791E-02	3.698E-02	7.521E-02	6.272E-03	0.504
ZR-88		392.90	*	2.238E-02	3.448E-02	5.978E-02	5.037E-03	0.374
Y-91		1204.90	*	1.702E+01	2.662E+01	4.563E+01	3.766E+00	0.373
NB-94		702.63	*	-2.997E-03	4.107E-02	6.876E-02	5.898E-03	-0.044
		871.10		1.917E-02	4.210E-02	7.308E-02	6.413E-03	0.262
NB-95		765.79	*	7.776E-02	5.881E-02	9.869E-02	8.620E-03	0.788
NB-95M		235.69	*	8.684E-02	1.444E-01	2.138E-01	2.183E-02	0.406
ZR-95		724.18		1.237E-01	1.368E-01	2.200E-01	2.065E-02	0.562
		756.15	*	8.454E-02	1.005E-01	1.789E-01	1.715E-02	0.472
NB-97		657.90	*	9.592E-02	1.005E-01	Half-Life	too short	
		1024.50		3.090E+00	1.005E-01	Half-Life	too short	
ZR-97		254.15		6.799E+00	1.005E-01	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		355.39		1.331E+00	1.005E-01	Half-Life	too short	
		507.63	*	2.830E+00	1.005E-01	Half-Life	too short	
		602.52		-7.601E+00	1.005E-01	Half-Life	too short	
		1021.30		-8.469E+00	1.005E-01	Half-Life	too short	
		1147.95		-4.627E+00	1.005E-01	Half-Life	too short	
		1362.66		5.654E+00	1.005E-01	Half-Life	too short	
		1750.46		-7.276E-01	1.005E-01	Half-Life	too short	
MO-99		140.51		-5.420E+00	2.853E+01	4.586E+01	1.298E+01	-0.118
		181.06		3.414E+00	1.966E+01	3.061E+01	5.582E+00	0.112
		366.43		8.217E+00	9.060E+01	1.521E+02	1.332E+01	0.054
		739.58	*	-1.519E+00	1.505E+01	2.504E+01	3.810E+00	-0.061
		778.00		-6.343E+01	4.678E+01	6.795E+01	5.948E+00	-0.934
TC-99M		140.51	*	-7.944E+09	4.678E+01	Half-Life	too short	
RH-101		127.23		1.709E-02	3.628E-02	5.497E-02	6.252E-03	0.311
		198.01	*	-1.833E-03	3.491E-02	5.529E-02	4.807E-03	-0.033
		325.23		5.578E-02	2.637E-01	3.979E-01	3.617E-02	0.140
RH-102		418.52		-1.652E-01	3.299E-01	5.247E-01	4.512E-02	-0.315
		475.06	*	-3.001E-02	3.504E-02	5.318E-02	4.711E-03	-0.564
		631.29		-1.801E-02	6.622E-02	1.033E-01	8.920E-03	-0.174
		697.49		4.845E-02	9.723E-02	1.702E-01	1.457E-02	0.285
		766.84		3.460E-01	1.603E-01	2.839E-01	2.480E-02	1.219
		1046.59		-9.788E-02	1.476E-01	2.216E-01	1.909E-02	-0.442
		1112.84		3.014E-01	3.194E-01	5.433E-01	4.575E-02	0.555
RU-103		497.08	*	4.202E-02	4.772E-02	8.313E-02	1.192E-02	0.506
	+	610.33		1.363E+01	3.209E+00	3.470E+00	5.812E-01	3.927
RH-106	+	511.85		1.147E+00	4.720E-01	4.971E-01	4.440E-02	2.307
		621.84	*	4.863E-01	4.043E-01	7.138E-01	9.565E-02	0.681
		1050.47		2.592E-01	2.903E+00	4.790E+00	4.122E-01	0.054
RU-106	+	511.85		1.147E+00	4.720E-01	4.971E-01	4.440E-02	2.307
		621.84	*	4.863E-01	4.013E-01	7.138E-01	6.201E-02	0.681
		1050.47		2.592E-01	2.903E+00	4.790E+00	4.122E-01	0.054
AG-108M		433.93	*	-2.228E-02	3.929E-02	6.197E-02	5.593E-03	-0.360
		614.37		8.186E-03	5.348E-02	7.664E-02	6.945E-03	0.107
		722.95		1.580E-02	5.831E-02	8.820E-02	7.917E-03	0.179
AG-110M		657.75	*	5.103E-02	5.521E-02	8.542E-02	7.445E-03	0.597
		677.61		-3.729E-02	4.042E-01	6.396E-01	5.587E-02	-0.058
		706.67		-5.609E-02	2.812E-01	4.660E-01	4.114E-02	-0.120
		763.93		-4.808E-03	2.067E-01	3.001E-01	2.692E-02	-0.016
		884.67		-5.649E-03	6.897E-02	1.133E-01	1.024E-02	-0.050
		937.48		-6.873E-02	1.498E-01	2.349E-01	2.128E-02	-0.293
		1384.27		-1.243E-01	1.776E-01	2.603E-01	2.298E-02	-0.477
IN-111		171.28		-2.594E-01	1.026E+00	1.644E+00	1.381E-01	-0.158
		245.39	*	-7.276E-01	1.306E+00	1.756E+00	1.593E-01	-0.414
IN-113M		391.69	*	-1.558E-02	5.104E-02	8.295E-02	7.207E-03	-0.188
SN-113		391.69	*	-1.558E-02	5.104E-02	8.295E-02	7.207E-03	-0.188
IN-114M		190.27	*	7.029E-02	2.144E-01	3.157E-01	2.719E-02	0.223
CD-115		260.90		-4.404E+01	1.492E+02	2.317E+02	2.117E+01	-0.190
		492.35		-1.294E+00	4.341E+01	7.083E+01	6.305E+00	-0.018
		527.90	*	3.973E+00	1.354E+01	2.257E+01	2.018E+00	0.176

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M		156.02		-1.710E+00	2.379E+00	3.739E+00	3.443E-01	-0.457
		158.56	*	5.256E-02	5.752E-02	9.766E-02	8.778E-03	0.538
SB-122		563.90	*	-3.364E-01	2.528E+00	4.045E+00	3.602E-01	-0.083
		692.80		6.800E+00	5.412E+01	9.220E+01	7.878E+00	0.074
I-123		159.00	*	3.660E+00	5.412E+01	Half-Life	too short	
		528.96		4.525E+02	5.412E+01	Half-Life	too short	
TE-123M		159.00	*	1.801E-02	3.006E-02	5.037E-02	4.534E-03	0.357
I-124		602.71	*	-5.519E-01	9.081E-01	1.169E+00	1.027E-01	-0.472
		722.78		-7.781E-02	6.263E+00	9.157E+00	7.910E-01	-0.008
		1325.50		-7.780E+00	4.741E+01	7.790E+01	6.630E+00	-0.100
		1376.25		5.335E+01	4.128E+01	7.876E+01	6.753E+00	0.677
		1509.49		9.601E+00	1.849E+01	3.322E+01	2.873E+00	0.289
		1691.02		2.214E+00	3.597E+00	6.858E+00	5.866E-01	0.323
SB-124		602.71		-3.206E-02	5.275E-02	6.794E-02	5.967E-03	-0.472
		645.85		3.152E-01	6.452E-01	1.082E+00	9.807E-02	0.291
		709.31		2.522E+00	3.866E+00	6.659E+00	5.726E-01	0.379
		713.82		-9.177E-01	2.180E+00	3.536E+00	4.255E-01	-0.260
		722.78		-6.552E-03	5.274E-01	7.711E-01	6.804E-02	-0.008
	+	968.20		1.828E+01	5.505E+00	9.485E+00	8.286E-01	1.927
		1045.16		-7.890E-01	3.235E+00	5.138E+00	4.428E-01	-0.154
		1325.50		-6.997E-01	4.264E+00	7.006E+00	5.963E-01	-0.100
		1368.21		-1.735E+00	2.176E+00	3.171E+00	4.263E-01	-0.547
		1436.60		5.444E-02	4.894E+00	8.163E+00	7.039E-01	0.007
		1691.02	*	4.398E-02	7.145E-02	1.362E-01	1.212E-02	0.323
SB-125		427.89	*	3.442E-02	1.121E-01	1.891E-01	1.668E-02	0.182
	+	463.38		6.747E-01	5.192E-01	6.419E-01	6.085E-02	1.051
		600.56		5.691E-02	2.066E-01	3.418E-01	3.218E-02	0.167
		635.90		-3.261E-02	3.424E-01	5.443E-01	5.064E-02	-0.060
TE-125M		109.28	*	7.579E+00	8.870E+00	1.518E+01	1.866E+00	0.499
I-126		388.63		4.308E-02	2.254E-01	3.797E-01	3.214E-02	0.113
		666.33	*	9.633E-02	2.753E-01	4.009E-01	3.385E-02	0.240
		753.82		7.906E-01	2.086E+00	3.599E+00	3.136E-01	0.220
SB-126		223.80		1.197E+00	4.517E+00	7.333E+00	6.546E-01	0.163
		278.60		3.663E-01	2.567E+00	4.388E+00	4.028E-01	0.083
		296.50		1.225E+01	2.524E+00	3.917E+00	3.596E-01	3.127
		414.70		3.583E-02	8.448E-02	1.441E-01	1.236E-02	0.249
		415.30		5.766E+00	6.956E+00	1.218E+01	1.045E+00	0.473
		555.20		1.015E+00	4.961E+00	8.190E+00	7.306E-01	0.124
		573.80		-2.688E-01	1.266E+00	2.007E+00	1.782E-01	-0.134
		593.00		7.971E-01	1.199E+00	2.046E+00	1.804E-01	0.390
		656.30		9.044E+00	4.889E+00	8.323E+00	7.046E-01	1.087
		666.33		4.025E-02	1.150E-01	1.675E-01	1.414E-02	0.240
		675.00		1.295E+00	2.542E+00	4.263E+00	3.614E-01	0.304
		695.00		7.859E-03	9.913E-02	1.682E-01	1.438E-02	0.047
		697.00		1.447E-01	3.383E-01	5.893E-01	5.044E-02	0.245
		720.50	*	2.204E-02	2.012E-01	2.987E-01	2.579E-02	0.074
		856.80		-5.537E-01	6.555E-01	9.989E-01	8.777E-02	-0.554
		989.30		1.184E-01	1.779E+00	2.939E+00	2.562E-01	0.040
		1034.80		-3.692E-01	1.178E+01	1.920E+01	1.659E+00	-0.019



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Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1213.00		-9.531E-01	6.973E+00	1.110E+01	9.186E-01	-0.086
	61.10		1.677E+01	2.780E+01	4.360E+01	5.352E+00	0.385
	252.40		8.831E-01	4.940E+00	7.911E+00	3.333E+00	0.112
	290.80		-1.655E+01	2.492E+01	3.507E+01	4.069E+00	-0.472
	411.60		-8.984E+00	1.423E+01	2.238E+01	3.512E+00	-0.401
	444.90		-1.010E+01	1.160E+01	1.767E+01	2.229E+00	-0.572
	473.00		1.671E+00	1.868E+00	3.274E+00	4.263E-01	0.510
	543.00		-3.457E+00	1.934E+01	3.087E+01	4.502E+00	-0.112
	603.60		-1.077E+01	1.603E+01	2.043E+01	2.578E+00	-0.527
	685.20	*	8.952E-01	1.727E+00	2.897E+00	3.275E-01	0.309
	698.50		-9.027E+00	1.901E+01	3.068E+01	4.843E+00	-0.294
	722.20		5.805E+00	4.140E+01	6.168E+01	6.892E+00	0.094
	783.80		7.324E+00	4.823E+00	8.919E+00	1.116E+00	0.821
	57.60		1.607E-01	2.176E+00	3.720E+00	3.736E-01	0.043
XE-127	145.22		5.590E-02	7.220E-01	1.163E+00	1.172E-01	0.048
	172.10		3.256E-02	1.229E-01	2.024E-01	1.702E-02	0.161
	202.84	*	-2.344E-02	4.748E-02	7.415E-02	6.482E-03	-0.316
	374.96		-2.233E-01	2.286E-01	3.537E-01	3.060E-02	-0.631
I-131	80.18		-3.321E+00	4.792E+00	5.484E+00	5.368E-01	-0.606
	284.30		-1.282E+00	1.603E+00	2.584E+00	2.483E-01	-0.496
	364.48	*	-4.439E-02	1.209E-01	1.962E-01	1.811E-02	-0.226
	636.97		7.061E-01	1.890E+00	3.145E+00	2.857E-01	0.224
TE-132	722.89		1.857E-01	1.012E+01	1.485E+01	1.291E+00	0.013
	49.72		1.167E+00	4.312E+00	6.755E+00	8.109E-01	0.173
	111.76		2.403E+00	2.958E+01	4.926E+01	6.338E+00	0.049
	116.30		1.661E+01	2.753E+01	4.664E+01	6.115E+00	0.356
BA-133	228.16	*	-3.253E-01	7.497E-01	1.164E+00	1.851E-01	-0.280
	53.15		7.772E-01	1.010E+00	1.741E+00	1.741E-01	0.447
	79.62		-5.051E-02	1.247E+00	1.500E+00	2.383E-01	-0.034
	81.00		-1.099E-01	1.039E-01	1.138E-01	1.878E-02	-0.966
	276.40		1.753E-01	3.969E-01	6.875E-01	1.017E-01	0.255
	302.84		9.478E-02	1.642E-01	2.558E-01	3.492E-02	0.371
	356.01	*	5.996E-03	5.225E-02	7.774E-02	1.039E-02	0.077
I-133	383.85		-1.756E-01	3.394E-01	5.427E-01	6.808E-02	-0.324
	510.53	+	2.342E+00	3.394E-01	Half-Life	too short	
	529.87	*	1.529E-03	3.394E-01	Half-Life	too short	
	706.58		-1.282E-01	3.394E-01	Half-Life	too short	
	856.28		-8.637E-01	3.394E-01	Half-Life	too short	
	875.33		1.147E-01	3.394E-01	Half-Life	too short	
	1236.41		1.577E+00	3.394E-01	Half-Life	too short	
	1298.22		-4.891E-01	3.394E-01	Half-Life	too short	
	475.35		-2.067E+00	2.283E+00	3.447E+00	3.054E-01	-0.600
	563.23		-8.204E-03	4.475E-01	7.237E-01	6.503E-02	-0.011
CS-134	569.32		1.103E-01	2.447E-01	4.113E-01	3.704E-02	0.268
	604.70		2.103E-03	4.305E-02	6.097E-02	5.362E-03	0.034
	795.84	*	4.414E-02	6.267E-02	1.105E-01	9.765E-03	0.399
	801.93		-2.587E-01	5.353E-01	8.495E-01	7.499E-02	-0.305
	1038.57		-1.869E+00	5.147E+00	8.062E+00	6.960E-01	-0.232
	1167.94		-1.940E-01	3.639E+00	5.859E+00	4.800E-01	-0.033

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CS-135 I-135	1365.15			4.383E-01	1.479E+00	2.579E+00	2.310E-01	0.170
	268.24	*		8.801E-02	2.017E-01	2.934E-01	3.061E-02	0.300
	288.45			1.898E+10	2.017E-01	Half-Life	too short	
	417.63			-1.131E+10	2.017E-01	Half-Life	too short	
	546.56			-5.728E+09	2.017E-01	Half-Life	too short	
	836.80			1.662E+10	2.017E-01	Half-Life	too short	
	1038.76			-7.704E+09	2.017E-01	Half-Life	too short	
	1124.00			4.050E+10	2.017E-01	Half-Life	too short	
	1131.51			-1.307E+09	2.017E-01	Half-Life	too short	
	1260.41	*		4.188E+09	2.017E-01	Half-Life	too short	
	1457.56			1.181E+12	2.017E-01	Half-Life	too short	
	1678.03			-6.534E+09	2.017E-01	Half-Life	too short	
	1706.46			-2.823E+10	2.017E-01	Half-Life	too short	
	1791.20			4.480E+09	2.017E-01	Half-Life	too short	
CS-136	66.91			-1.762E-01	4.677E-01	7.012E-01	1.134E-01	-0.251
	86.29	+		5.589E+00	1.390E+00	1.771E+00	2.416E-01	3.155
	153.22			3.749E-01	6.829E-01	1.143E+00	1.186E-01	0.328
	163.89			-2.106E-01	1.097E+00	1.769E+00	1.692E-01	-0.119
	176.55			-3.377E-01	3.875E-01	5.974E-01	5.356E-02	-0.565
	273.65			-5.444E-03	5.912E-01	8.284E-01	8.041E-02	-0.007
	340.57			2.398E-02	1.519E-01	2.274E-01	2.099E-02	0.105
	818.51			-2.413E-02	9.412E-02	1.527E-01	1.343E-02	-0.158
	1048.07	*		2.811E-03	1.348E-01	2.208E-01	1.982E-02	0.013
	1235.34			9.435E-01	9.821E-01	1.638E+00	1.906E-01	0.576
CE-139	165.85	*		1.776E-03	3.020E-02	4.930E-02	4.111E-03	0.036
BA-140	162.64			-3.298E-01	7.865E-01	1.254E+00	1.145E-01	-0.263
	304.84			-2.820E-02	1.482E+00	2.203E+00	6.212E-01	-0.013
LA-140	423.70			-1.754E+00	2.380E+00	3.555E+00	1.152E+00	-0.493
	537.32	*		2.455E-01	3.506E-01	5.863E-01	1.948E-01	0.419
	328.77	+		5.216E-01	4.712E-01	6.325E-01	6.029E-02	0.825
	432.53			-6.598E-01	2.508E+00	4.058E+00	3.691E-01	-0.163
	487.03			1.424E-01	1.695E-01	2.949E-01	2.775E-02	0.483
	751.79			-1.732E-01	2.300E+00	3.831E+00	3.686E-01	-0.045
	815.85			-2.031E-01	3.970E-01	6.251E-01	6.104E-02	-0.325
	867.82			-3.483E-01	1.687E+00	2.734E+00	2.523E-01	-0.127
	919.63			4.894E-01	3.141E+00	5.282E+00	5.680E-01	0.093
	925.24			-1.330E+00	1.439E+00	2.113E+00	1.962E-01	-0.629
CE-141	1596.49	*		-7.614E-02	1.157E-01	1.690E-01	1.459E-02	-0.451
	145.44	*		-3.335E-02	6.474E-02	1.034E-01	1.054E-02	-0.323
CE-143	57.37			1.003E-05	6.474E-02	Half-Life	too short	
	231.56			2.573E-03	6.474E-02	Half-Life	too short	
+ CE-144	293.26	*		7.182E-04	6.474E-02	Half-Life	too short	
	350.59			3.215E-02	6.474E-02	Half-Life	too short	
	490.36			-2.229E-03	6.474E-02	Half-Life	too short	
	664.57			-1.291E-04	6.474E-02	Half-Life	too short	
	721.93			3.139E-04	6.474E-02	Half-Life	too short	
CE-144	80.11			-1.530E+00	2.203E+00	2.521E+00	2.455E-01	-0.607
	133.54	*		-3.581E-02	2.138E-01	3.492E-01	5.924E-02	-0.103
PM-144	476.78			1.018E-02	7.885E-02	1.307E-01	1.261E-02	0.078

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		618.01		3.150E-04	4.118E-02	6.629E-02	5.929E-03	0.005
		696.49	*	2.232E-02	4.258E-02	7.476E-02	6.400E-03	0.299
		778.57		-4.871E+00	3.171E+00	4.504E+00	3.944E-01	-1.081
PR-144		696.49	*	1.513E+00	2.885E+00	5.066E+00	4.335E-01	0.299
		1489.15		-6.973E+00	1.397E+01	2.099E+01	1.815E+00	-0.332
PM-146		453.90	*	3.619E-02	4.493E-02	7.879E-02	8.552E-03	0.459
		633.02		-1.465E-01	1.679E+00	2.670E+00	9.978E-01	-0.055
		735.90		-6.167E-02	1.774E-01	2.863E-01	8.193E-02	-0.215
		747.13		8.621E-03	1.181E-01	1.994E-01	2.808E-02	0.043
ND-147	+	91.11		9.531E-01	3.370E-01	4.625E-01	4.870E-02	2.061
		319.41		-5.328E-01	3.520E+00	5.867E+00	5.351E-01	-0.091
		439.89		3.776E+00	6.980E+00	1.195E+01	1.042E+00	0.316
		531.02	*	-2.375E-01	7.290E-01	1.152E+00	1.744E-01	-0.206
PM-149		285.90	*	-1.115E+01	9.604E+01	1.616E+02	2.563E+01	-0.069
EU-152		121.78		2.121E-02	7.457E-02	1.248E-01	1.583E-02	0.170
		244.69		-8.142E-02	3.813E-01	5.290E-01	4.795E-02	-0.154
		344.27	*	-6.347E-02	1.073E-01	1.725E-01	1.632E-02	-0.368
		443.98		-7.530E-01	1.140E+00	1.778E+00	1.554E-01	-0.423
		778.89		-4.699E-01	3.570E-01	5.198E-01	4.551E-02	-0.904
		867.32		1.170E-02	9.693E-01	1.610E+00	1.413E-01	0.007
	+	964.01		7.151E-01	4.498E-01	7.228E-01	6.317E-02	0.989
		1085.78		1.479E-01	4.774E-01	8.069E-01	6.867E-02	0.183
		1112.02		5.232E-01	4.369E-01	7.920E-01	6.671E-02	0.661
		1407.95		7.873E-02	2.565E-01	4.442E-01	3.822E-02	0.177
GD-153		69.67		2.432E-01	1.103E+00	1.695E+00	1.664E-01	0.143
		83.37		1.637E+01	1.122E+01	1.930E+01	1.880E+00	0.848
		97.43	*	-2.841E-02	7.897E-02	1.160E-01	1.186E-02	-0.245
		103.18		-6.330E-02	9.584E-02	1.548E-01	1.631E-02	-0.409
EU-154		123.07		-2.081E-02	5.338E-02	8.658E-02	1.195E-02	-0.240
		247.94		3.994E-01	4.012E-01	6.471E-01	7.653E-02	0.617
		591.81		3.073E-01	8.232E-01	1.370E+00	1.620E-01	0.224
		723.30		6.608E-02	2.439E-01	3.688E-01	3.521E-02	0.179
		756.87		9.066E-01	1.065E+00	1.897E+00	2.285E-01	0.478
		873.19		-2.953E-02	3.848E-01	6.327E-01	7.816E-02	-0.047
		996.32		-4.754E-01	4.961E-01	7.136E-01	1.271E-01	-0.666
		1004.76		-4.505E-02	2.985E-01	4.817E-01	5.634E-02	-0.094
		1274.45	*	-2.834E-02	1.750E-01	2.787E-01	3.109E-02	-0.102
EU-155		48.70		-7.181E-02	4.856E-01	7.459E-01	7.492E-02	-0.096
		60.01		3.120E+00	2.278E+00	3.654E+00	3.676E-01	0.854
	+	86.54		5.157E-01	1.186E-01	1.693E-01	1.664E-02	3.046
		105.31	*	1.183E-01	1.021E-01	1.766E-01	1.897E-02	0.670
TB-160	+	86.79		1.378E+00	3.164E-01	4.536E-01	4.424E-02	3.037
		197.04		-3.758E-01	6.039E-01	9.253E-01	8.036E-02	-0.406
		215.65		3.963E-01	8.182E-01	1.346E+00	1.192E-01	0.294
	+	298.57		3.326E-01	1.718E-01	2.268E-01	2.081E-02	1.467
		879.36	*	3.790E-02	1.782E-01	3.016E-01	2.644E-02	0.126
		962.29		8.802E-01	8.753E-01	1.399E+00	1.223E-01	0.629
		966.15		1.762E+00	4.069E-01	7.211E-01	6.301E-02	2.444
		1177.93		2.305E-01	5.381E-01	9.058E-01	7.411E-02	0.254

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85			3.234E-01	1.027E+00	1.710E+00	1.438E-01	0.189
	80.57			6.688E-02	2.581E-01	3.171E-01	3.089E-02	0.211
	184.41			4.531E-02	4.575E-02	6.992E-02	5.977E-03	0.648
	280.46			-8.082E-02	8.958E-02	1.437E-01	1.319E-02	-0.563
	410.95			1.393E-01	2.831E-01	4.843E-01	4.142E-02	0.288
	711.68	*		2.280E-02	8.080E-02	1.390E-01	1.196E-02	0.164
	752.31			1.737E-01	3.704E-01	6.443E-01	5.612E-02	0.270
TM-171	810.29			2.082E-02	7.303E-02	1.251E-01	1.099E-02	0.166
	51.35			-4.574E+00	7.296E+00	1.218E+01	1.219E+00	-0.375
	52.39			1.730E-01	4.168E+00	7.023E+00	7.026E-01	0.025
	59.40			1.780E+00	1.208E+01	1.857E+01	1.872E+00	0.096
LU-176	66.72	*		-7.233E+00	1.696E+01	2.540E+01	2.507E+00	-0.285
	88.36			1.016E+00	2.332E-01	3.298E-01	3.224E-02	3.080
	201.83			-1.643E-02	2.975E-02	4.634E-02	4.047E-03	-0.355
LU-177	306.84	*		-1.960E-02	2.552E-02	4.083E-02	3.741E-03	-0.480
	401.10			1.179E+00	7.710E+00	1.293E+01	1.097E+00	0.091
	112.95			-2.125E-01	1.638E+00	2.703E+00	3.005E-01	-0.079
LU-177M	208.36	*		1.825E+00	1.722E+00	2.171E+00	1.909E-01	0.841
	52.97			2.946E-01	4.491E-01	7.715E-01	7.718E-02	0.382
	54.07			5.320E-02	2.546E-01	4.312E-01	4.315E-02	0.123
HF-181	61.30			1.311E-01	7.401E-01	1.143E+00	1.144E-01	0.115
	121.62			1.170E-01	3.826E-01	6.408E-01	7.484E-02	0.183
	147.16			-3.786E-01	6.456E-01	1.025E+00	1.018E-01	-0.369
	171.86			2.702E-02	4.940E-01	8.048E-01	6.763E-02	0.034
	218.09			-1.111E-01	9.368E-01	1.491E+00	1.324E-01	-0.075
	268.79			1.038E+00	1.064E+00	1.603E+00	1.469E-01	0.648
	319.02			6.456E-02	2.692E-01	4.598E-01	4.194E-02	0.140
	367.43			3.456E-01	9.860E-01	1.684E+00	1.472E-01	0.205
	413.65	*		-9.405E-02	2.030E-01	3.245E-01	2.780E-02	-0.290
	56.28			1.080E-02	3.161E-01	5.401E-01	5.415E-02	0.020
	57.53			1.093E-02	1.823E-01	3.116E-01	3.129E-02	0.035
	65.20			-1.410E-01	5.205E-01	7.859E-01	7.783E-02	-0.179
	133.02			2.278E-02	7.263E-02	1.157E-01	1.271E-02	0.197
	136.25			-2.223E-01	4.767E-01	7.661E-01	8.234E-02	-0.290
	345.85			-1.249E-01	2.223E-01	3.452E-01	3.090E-02	-0.362
W-181	482.03	*		-2.202E-02	5.188E-02	8.198E-02	7.278E-03	-0.269
	56.28			4.275E-03	1.238E-01	2.115E-01	2.120E-02	0.020
	57.53			4.250E-03	7.141E-02	1.220E-01	1.226E-02	0.035
TA-182	65.20	*		-5.480E-02	2.023E-01	3.054E-01	3.025E-02	-0.179
	67.75			-1.928E-02	6.898E-02	1.040E-01	1.024E-02	-0.185
	100.10			1.271E-02	1.613E-01	2.699E-01	2.798E-02	0.047
RE-183	152.43			2.232E-01	3.443E-01	5.794E-01	5.508E-02	0.385
	222.10			-2.158E-01	3.811E-01	5.892E-01	5.251E-02	-0.366
	1001.68			3.804E+00	2.710E+00	5.025E+00	4.371E-01	0.757
	1121.28			6.402E-01	2.699E-01	4.682E-01	3.927E-02	1.367
	1189.05			-4.153E-01	4.200E-01	6.005E-01	4.931E-02	-0.692
	1221.42	*		-1.341E-01	2.906E-01	4.470E-01	3.708E-02	-0.300
	1230.97			-4.370E-01	7.402E-01	1.126E+00	9.370E-02	-0.388
	57.98			-5.837E-02	7.586E-02	1.244E-01	1.250E-02	-0.469

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		3.269E-03	4.936E-02	7.564E-02	7.621E-03	0.043
		67.20		-1.411E-02	1.193E-01	1.812E-01	1.787E-02	-0.078
		162.32	*	-1.531E-03	1.134E-01	1.847E-01	1.599E-02	-0.008
	+	208.81		1.641E+00	1.548E+00	1.937E+00	1.704E-01	0.847
		291.72		3.974E-01	1.052E+00	1.619E+00	1.487E-01	0.245
		57.98		-2.151E-01	2.795E-01	4.584E-01	4.606E-02	-0.469
		59.32		1.203E-02	1.817E-01	2.785E-01	2.806E-02	0.043
		67.20		-5.199E-02	4.396E-01	6.676E-01	6.583E-02	-0.078
		161.27		5.716E-02	3.749E-01	6.156E-01	5.387E-02	0.093
		216.55		2.668E-01	2.860E-01	4.808E-01	4.263E-02	0.555
		252.85	*	4.849E-02	2.648E-01	4.252E-01	3.872E-02	0.114
		318.01		2.545E-02	4.666E-01	7.881E-01	7.191E-02	0.032
		792.07		1.784E-01	1.260E+00	2.130E+00	1.868E-01	0.084
		903.28		1.176E-01	1.264E+00	1.842E+00	1.611E-01	0.064
OS-185		920.93		2.718E-01	5.121E-01	8.974E-01	7.853E-02	0.303
		59.72		1.294E-01	1.345E-01	2.131E-01	2.146E-02	0.607
		61.14		4.820E-02	7.909E-02	1.242E-01	1.244E-02	0.388
		69.30		9.660E-03	1.808E-01	2.935E-01	2.883E-02	0.033
		592.07		1.450E+00	3.275E+00	5.488E+00	4.843E-01	0.264
		646.12	*	-1.192E-03	5.591E-02	8.944E-02	7.637E-03	-0.013
		717.42		-1.104E-01	1.108E+00	1.848E+00	1.593E-01	-0.060
		874.81		3.227E-01	7.726E-01	1.332E+00	1.169E-01	0.242
		880.27		2.793E-02	9.848E-01	1.636E+00	1.434E-01	0.017
		155.03	*	4.203E-02	1.768E-01	2.921E-01	2.713E-02	0.144
RE-188		477.96		9.553E-01	3.626E+00	6.070E+00	5.382E-01	0.157
		633.10		-1.686E-01	3.404E+00	5.437E+00	4.689E-01	-0.031
	+	63.58		9.192E+01	4.211E+01	5.401E+01	5.371E+00	1.702
W-188		227.08		-6.168E+00	1.396E+01	2.171E+01	1.943E+00	-0.284
		290.67	*	-6.113E+00	8.595E+00	1.205E+01	1.107E+00	-0.507
IR-192	+	295.96		1.273E+00	2.383E-01	3.284E-01	3.034E-02	3.876
		308.46		-2.961E-02	1.010E-01	1.672E-01	1.538E-02	-0.177
		316.51	*	5.480E-03	3.591E-02	6.104E-02	5.584E-03	0.090
		468.07		-4.566E-02	8.666E-02	1.168E-01	1.102E-02	-0.391
		604.41		-1.498E-02	5.785E-01	8.110E-01	1.064E-01	-0.018
		612.46		7.659E-03	9.964E-01	1.402E+00	1.402E-01	0.005
		65.12		-2.784E-04	9.424E-02	1.441E-01	1.427E-02	-0.002
AU-195		66.83		-2.024E-02	5.601E-02	8.414E-02	8.303E-03	-0.241
	+	75.70		1.256E+00	2.148E-01	3.562E-01	3.475E-02	3.526
		98.88	*	2.997E-01	2.039E-01	3.562E-01	3.668E-02	0.842
	+	129.76		5.093E+00	3.856E+00	5.474E+00	6.132E-01	0.930
TL-200		367.94	*	1.027E-04	3.856E+00	Half-Life	too short	
		579.30		-3.158E-03	3.856E+00	Half-Life	too short	
		828.27		3.388E-03	3.856E+00	Half-Life	too short	
		1205.75		3.196E-03	3.856E+00	Half-Life	too short	
TL-201		68.90		-3.007E-01	2.765E+00	4.668E+00	4.589E-01	-0.064
		70.82		3.861E-01	1.828E+00	2.808E+00	2.753E-01	0.137
		80.30		2.397E+00	4.791E+00	5.983E+00	5.827E-01	0.401
		135.34		-2.007E+01	2.638E+01	4.173E+01	4.513E+00	-0.481
		167.43	*	3.487E+00	6.947E+00	1.159E+01	9.679E-01	0.301

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90	-2.703E-02	2.485E-01	4.196E-01	4.125E-02	-0.064
		70.82	3.461E-02	1.639E-01	2.518E-01	2.468E-02	0.137
		80.30	2.149E-01	4.296E-01	5.364E-01	5.225E-02	0.401
		439.56 *	4.927E-02	8.328E-02	1.431E-01	1.247E-02	0.344
HG-203		70.83	1.496E-01	7.105E-01	1.091E+00	1.569E-01	0.137
		72.87	4.716E-01	4.459E-01	6.990E-01	9.776E-02	0.675
		82.60	-1.880E-01	8.969E-01	1.342E+00	1.942E-01	-0.140
		279.20 *	-2.436E-02	4.281E-02	7.023E-02	6.609E-03	-0.347
BI-207		72.80	1.251E-01	1.294E-01	2.035E-01	1.990E-02	0.615
	+	74.97	6.965E-01	1.191E-01	1.733E-01	1.691E-02	4.019
		84.90	2.790E-01	1.493E-01	2.581E-01	2.516E-02	1.081
		569.67	3.375E-02	3.757E-02	6.538E-02	5.814E-03	0.516
		1063.62 *	-4.558E-02	7.268E-02	1.101E-01	9.443E-03	-0.414
		1770.23	-1.026E+00	6.873E-01	7.320E-01	6.183E-02	-1.401
TL-207		81.07	-2.452E-01	2.272E-01	2.510E-01	2.445E-02	-0.977
		83.78	1.662E-01	9.719E-02	1.678E-01	1.635E-02	0.991
		94.90	2.446E-01	2.140E-01	3.375E-01	3.406E-02	0.725
		122.32	1.121E+00	1.781E+00	3.016E+00	3.671E-01	0.372
		144.24	4.460E-01	7.381E-01	1.217E+00	1.343E-01	0.367
		154.21	1.879E-02	4.163E-01	6.817E-01	6.923E-02	0.028
	+	269.46	4.212E-01	3.094E-01	3.983E-01	3.717E-02	1.057
		323.87 *	2.562E-01	7.560E-01	1.153E+00	2.069E-01	0.222
	+	338.28	6.936E+00	2.207E+00	2.845E+00	3.582E-01	2.438
		445.03	-2.188E+00	2.711E+00	4.158E+00	5.063E-01	-0.526
PO-209		260.50	-1.144E+01	1.111E+01	1.632E+01	1.491E+00	-0.701
		262.80	1.409E+01	3.060E+01	4.986E+01	4.559E+00	0.283
		896.60 *	4.426E+00	9.505E+00	1.646E+01	1.439E+00	0.269
PB-211		404.84 *	-2.581E-01	1.072E+00	1.727E+00	1.082E+00	-0.150
		427.08	4.062E-01	2.572E+00	4.275E+00	2.657E+00	0.095
		831.96	-1.623E+00	2.047E+00	2.722E+00	1.706E+00	-0.596
BI-212	+	727.18 *	1.381E+00	6.523E-01	8.266E-01	8.294E-02	1.671
		785.46	-8.534E-01	2.337E+00	3.777E+00	3.310E-01	-0.226
		1620.62	1.623E+00	1.411E+00	2.813E+00	2.424E-01	0.577
PO-215		81.07	-2.452E-01	2.272E-01	2.510E-01	2.445E-02	-0.977
		83.78	1.662E-01	9.719E-02	1.678E-01	1.635E-02	0.991
		94.90	2.446E-01	2.140E-01	3.375E-01	3.406E-02	0.725
		122.32	1.121E+00	1.781E+00	3.016E+00	3.671E-01	0.372
		144.24	4.460E-01	7.381E-01	1.217E+00	1.343E-01	0.367
		154.21	1.879E-02	4.163E-01	6.817E-01	6.923E-02	0.028
	+	269.46	4.212E-01	3.094E-01	3.983E-01	3.717E-02	1.057
		323.87 *	2.562E-01	7.560E-01	1.153E+00	2.069E-01	0.222
	+	338.28	6.936E+00	2.207E+00	2.845E+00	3.582E-01	2.438
		445.03	-2.188E+00	2.711E+00	4.158E+00	5.063E-01	-0.526
RN-219	+	271.23	5.404E-01	3.981E-01	5.096E-01	5.490E-02	1.060
		401.81 *	-4.003E-02	4.791E-01	7.900E-01	1.181E-01	-0.051
RN-220		549.76 *	7.371E+00	3.133E+01	5.193E+01	4.636E+00	0.142
RA-223		81.07	-2.452E-01	2.272E-01	2.510E-01	2.445E-02	-0.977
		83.78	1.662E-01	9.719E-02	1.678E-01	1.635E-02	0.991
		94.90	2.446E-01	2.140E-01	3.375E-01	3.406E-02	0.725

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		1.121E+00	1.781E+00	3.016E+00	3.671E-01	0.372
		144.24		4.460E-01	7.381E-01	1.217E+00	1.343E-01	0.367
		154.21		1.879E-02	4.163E-01	6.817E-01	6.923E-02	0.028
	+	269.46		4.212E-01	3.094E-01	3.983E-01	3.717E-02	1.057
		323.87	*	2.562E-01	7.560E-01	1.153E+00	2.069E-01	0.222
	+	338.28		6.936E+00	2.207E+00	2.845E+00	3.582E-01	2.438
		445.03		-2.188E+00	2.711E+00	4.158E+00	5.063E-01	-0.526
		79.80		-7.221E-02	1.587E+00	1.908E+00	4.192E-01	-0.038
		236.00		3.683E-01	2.795E-01	4.287E-01	5.369E-02	0.859
		256.20	*	7.104E-02	4.307E-01	6.903E-01	1.079E-01	0.103
		286.10		4.076E-01	1.619E+00	2.780E+00	3.775E-01	0.147
	+	299.80		4.236E+00	2.281E+00	3.088E+00	5.487E-01	1.372
TH-227		304.40		1.398E+00	2.106E+00	3.293E+00	6.157E-01	0.425
		334.20		2.430E+00	2.891E+00	4.514E+00	8.847E-01	0.538
		79.80		-7.221E-02	1.587E+00	1.908E+00	4.243E-01	-0.038
	+	94.00		1.304E+01	3.862E+00	3.669E+00	8.211E-01	3.555
		236.00		3.683E-01	2.789E-01	4.287E-01	4.881E-02	0.859
		256.20	*	7.104E-02	4.308E-01	6.903E-01	1.264E-01	0.103
		286.10		4.076E-01	1.669E+00	2.780E+00	2.792E+00	0.147
	+	299.80		4.236E+00	2.281E+00	3.088E+00	5.487E-01	1.372
		304.40		1.398E+00	2.106E+00	3.293E+00	6.157E-01	0.425
		334.20		2.430E+00	2.891E+00	4.514E+00	8.847E-01	0.538
		85.43		3.324E-01	1.507E-01	2.613E-01	2.548E-02	1.272
	+	88.47		5.846E-01	1.343E-01	1.871E-01	1.830E-02	3.125
TH-229		100.00		2.051E-02	1.676E-01	2.810E-01	2.911E-02	0.073
		193.63	*	1.141E-01	5.364E-01	8.753E-01	7.570E-02	0.130
		210.97		1.494E+00	8.611E-01	1.372E+00	1.210E-01	1.089
		283.67	*	1.627E-01	1.600E+00	2.727E+00	4.230E-01	0.060
		301.29		1.081E+00	7.396E-01	1.197E+00	1.513E-01	0.903
		81.07		-2.452E-01	2.272E-01	2.510E-01	2.445E-02	-0.977
		83.78		1.662E-01	9.719E-02	1.678E-01	1.635E-02	0.991
		94.90		2.446E-01	2.140E-01	3.375E-01	3.406E-02	0.725
		122.32		1.121E+00	1.781E+00	3.016E+00	3.671E-01	0.372
		144.24		4.460E-01	7.381E-01	1.217E+00	1.343E-01	0.367
		154.21		1.879E-02	4.163E-01	6.817E-01	6.923E-02	0.028
	+	269.46		4.212E-01	3.094E-01	3.983E-01	3.717E-02	1.057
U-231		323.87	*	2.562E-01	7.560E-01	1.153E+00	2.069E-01	0.222
	+	338.28		6.936E+00	2.207E+00	2.845E+00	3.582E-01	2.438
		445.03		-2.188E+00	2.711E+00	4.158E+00	5.063E-01	-0.526
		84.21		7.714E+00	4.221E+00	7.297E+00	7.111E-01	1.057
	+	92.29		1.289E+01	2.814E+00	4.048E+00	4.033E-01	3.184
		95.87	*	-4.314E-01	1.003E+00	1.469E+00	1.490E-01	-0.294
		108.00		-1.164E+00	1.971E+00	3.190E+00	3.450E-01	-0.365
	+	75.28		2.032E+01	4.330E+00	5.266E+00	8.434E-01	3.859
	+	86.59		8.382E+00	2.870E+00	2.755E+00	7.496E-01	3.042
	+	300.12		1.181E+00	6.265E-01	8.669E-01	1.318E-01	1.362
		311.98	*	-3.776E-03	6.657E-02	1.118E-01	1.048E-02	-0.034
		340.50		2.964E-01	7.502E-01	1.140E+00	2.732E-01	0.260
PA-233		398.62		-4.525E-02	2.453E+00	4.066E+00	1.081E+00	-0.011

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		4.025E-01	1.859E+00	3.122E+00	6.724E-01	0.129
		63.00		2.666E+00	1.269E+00	1.569E+00	2.555E-01	1.700
		94.67		3.195E-01	1.625E-01	2.582E-01	3.475E-02	1.237
		98.44		1.197E-01	1.085E-01	1.445E-01	8.101E-02	0.828
		99.86		6.471E-02	4.244E-01	7.124E-01	7.375E-02	0.091
		111.00		-9.652E-02	1.800E-01	2.913E-01	4.044E-02	-0.331
		131.20		2.739E-02	1.247E-01	1.861E-01	2.066E-02	0.147
		152.70		2.618E-01	3.364E-01	5.651E-01	9.889E-02	0.463
		186.00		5.890E+00	2.727E+00	2.822E+00	8.803E-01	2.087
		226.40		5.162E-02	4.326E-01	6.965E-01	9.345E-02	0.074
		227.20		-3.076E-01	4.804E-01	7.378E-01	6.605E-02	-0.417
		248.90		-2.604E-01	9.094E-01	1.415E+00	3.198E-01	-0.184
		293.70		8.012E+00	1.920E+00	1.977E+00	3.477E-01	4.052
		369.80		2.795E-01	9.280E-01	1.577E+00	3.440E-01	0.177
		568.70		5.328E-01	1.227E+00	2.062E+00	1.834E-01	0.258
		569.50		1.516E-01	3.410E-01	5.729E-01	5.094E-02	0.265
		574.00		-3.802E-01	1.788E+00	2.833E+00	2.516E-01	-0.134
		699.00		-5.834E-01	8.853E-01	1.396E+00	2.660E-01	-0.418
		706.10		-4.790E-01	1.403E+00	2.271E+00	1.012E+00	-0.211
		733.00		-2.155E-02	4.595E-01	6.671E-01	1.482E-01	-0.032
		742.81		7.771E-01	1.850E+00	3.089E+00	2.077E+00	0.252
		796.30		8.851E-01	1.206E+00	2.098E+00	5.687E-01	0.422
		805.60		-2.867E-01	1.284E+00	2.091E+00	6.418E-01	-0.137
		819.60		-7.845E-01	1.601E+00	2.488E+00	9.471E-01	-0.315
		826.30		-8.723E-01	1.179E+00	1.712E+00	7.664E-01	-0.510
		831.60		-6.225E-01	9.248E-01	1.417E+00	4.236E-01	-0.439
		876.40		-1.124E-01	1.095E+00	1.785E+00	1.835E+00	-0.063
		880.51		-4.365E-02	3.622E-01	5.925E-01	5.193E-02	-0.074
		883.24		-1.315E-01	3.917E-01	6.097E-01	4.099E-01	-0.216
		899.00		-4.357E-01	1.092E+00	1.692E+00	7.399E-01	-0.258
		925.00		-1.706E+00	1.497E+00	2.128E+00	1.862E-01	-0.802
		926.50		-6.327E-02	2.193E-01	3.491E-01	8.841E-02	-0.181
		946.00	*	-8.371E-02	4.074E-01	6.562E-01	1.235E-01	-0.128
		949.00		1.840E-01	6.382E-01	1.080E+00	9.444E-02	0.170
		980.50		-1.475E+00	1.100E+00	1.543E+00	1.346E-01	-0.956
		1394.10		-1.497E+00	1.753E+00	2.026E+00	1.319E+00	-0.739
		766.42		3.357E+01	2.360E+01	2.918E+01	1.481E+01	1.151
		1001.03	*	9.528E+00	6.269E+00	1.167E+01	1.171E+00	0.817
U-235	+	89.95		3.795E+00	1.746E+00	1.721E+00	5.373E-01	2.206
		93.35		4.058E+00	1.398E+00	1.293E+00	3.683E-01	3.138
		105.00		1.186E+00	1.056E+00	1.732E+00	5.281E-01	0.685
		143.76	*	7.247E-02	2.274E-01	3.704E-01	6.790E-02	0.196
		163.35		-2.533E-01	5.003E-01	7.906E-01	1.507E-01	-0.320
NP-236	+	185.71		2.181E-01	7.692E-02	1.037E-01	8.882E-03	2.103
		205.31		1.886E-01	5.760E-01	8.426E-01	1.613E-01	0.224
		94.67		2.453E-01	1.215E-01	1.962E-01	1.978E-02	1.250
		98.44		9.046E-02	6.511E-02	1.092E-01	1.122E-02	0.828
		111.00		-7.301E-02	1.360E-01	2.203E-01	2.423E-02	-0.331
		160.31	*	2.611E-02	8.472E-02	1.401E-01	1.238E-02	0.186



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		8.216E-02	1.413E-01	2.408E-01	2.489E-02	0.341
		117.00	*	-8.713E-02	1.900E-01	3.080E-01	3.503E-02	-0.283
	+	209.75		1.294E+00	1.221E+00	1.494E+00	1.315E-01	0.867
		228.18		-1.069E-01	2.446E-01	3.804E-01	3.408E-02	-0.281
		277.60		1.352E-01	1.935E-01	3.395E-01	3.116E-02	0.398
		334.30		1.302E+00	1.616E+00	2.543E+00	2.298E-01	0.512
AM-241		59.54	*	2.044E-02	7.096E-02	1.097E-01	1.165E-02	0.186
CM-243		99.55		8.454E-02	1.454E-01	2.478E-01	2.561E-02	0.341
		103.76	*	1.007E-02	8.769E-02	1.468E-01	1.551E-02	0.069
		117.00		-8.965E-02	1.955E-01	3.169E-01	3.604E-02	-0.283
	+	209.75		1.276E+00	1.204E+00	1.472E+00	1.297E-01	0.867
		228.18		-1.080E-01	2.472E-01	3.843E-01	3.443E-02	-0.281
		277.60		1.363E-01	1.951E-01	3.422E-01	3.141E-02	0.398
AM-246		798.80		-8.070E-02	1.913E-01	3.072E-01	2.696E-02	-0.263
		1036.00		-6.853E-02	3.919E-01	6.279E-01	5.425E-02	-0.109
		1062.04		-2.975E-01	3.186E-01	4.634E-01	3.974E-02	-0.642
	*	1078.86		2.502E-01	2.004E-01	3.658E-01	3.120E-02	0.684
		278.00		6.131E-01	7.906E-01	1.392E+00	1.278E-01	0.440
CM-247		287.40		4.331E-01	1.295E+00	2.232E+00	2.051E-01	0.194
	*	402.60		1.244E-03	4.312E-02	7.166E-02	6.087E-03	0.017
CF-249		252.85		1.820E-01	9.936E-01	1.596E+00	1.453E-01	0.114
		333.44		8.690E-02	2.456E-01	3.202E-01	2.896E-02	0.271
CF-251	*	387.95		2.124E-02	4.476E-02	7.680E-02	6.507E-03	0.277
	*	176.60		-1.164E-01	1.336E-01	2.060E-01	1.743E-02	-0.565
		227.00		-1.027E-01	4.133E-01	6.507E-01	5.824E-02	-0.158
		285.00		-1.491E+00	1.867E+00	3.009E+00	2.764E-01	-0.495

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691004      *
* Acquisition date   : 9-FEB-2010 14:53:04 Detector SN# :                   *
* Detector ID        : GAM17 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:09.89 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G245691004 Analyst initials: MJH1                  *
* Batch Number       : 947037 Sample Quantity : 1.2992E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*                                     *                                       *
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.046E+01	3.406E+00	7.756E-01	0.000E+00
CD-109	4.356E+00	9.805E-01	1.043E+00	0.000E+00
SN-126	4.282E-01	9.637E-02	1.023E-01	0.000E+00
BA-137M	3.079E-02	6.701E-02	8.274E-02	0.000E+00
CS-137	3.255E-02	7.083E-02	8.746E-02	0.000E+00
TL-208	6.324E-01	1.196E-01	7.636E-02	0.000E+00
BI-210	1.326E+00	9.301E-01	8.982E-01	0.000E+00
PB-210	1.326E+00	9.301E-01	8.982E-01	0.000E+00
PO-210	1.326E+00	9.287E-01	8.982E-01	0.000E+00
BI-211	4.049E+00	6.117E-01	4.179E-01	0.000E+00
PB-212	1.901E+00	2.254E-01	9.313E-02	0.000E+00
PO-212	1.901E+00	2.254E-01	9.313E-02	0.000E+00
BI-214	1.262E+00	2.402E-01	1.262E-01	0.000E+00
PB-214	1.408E+00	2.247E-01	1.323E-01	0.000E+00
PO-214	1.408E+00	2.247E-01	1.323E-01	0.000E+00
PO-216	1.901E+00	2.254E-01	9.313E-02	0.000E+00
PO-218	1.408E+00	2.247E-01	1.323E-01	0.000E+00
RA-224	5.849E+00	1.656E+00	1.061E+00	0.000E+00
RA-226	1.262E+00	2.402E-01	1.262E-01	0.000E+00
AC-228	2.405E+00	4.661E-01	2.461E-01	0.000E+00
RA-228	2.405E+00	4.661E-01	2.461E-01	0.000E+00
TH-228	1.930E+00	2.288E-01	9.454E-02	0.000E+00
TH-230	1.262E+00	2.402E-01	1.262E-01	0.000E+00
TH-232	2.405E+00	4.661E-01	2.461E-01	0.000E+00
TH-234	2.287E+00	1.086E+00	1.107E+00	0.000E+00
U-234	1.262E+00	2.402E-01	1.262E-01	0.000E+00
NP-237	1.257E+00	3.804E-01	2.996E-01	0.000E+00
U-238	2.287E+00	1.086E+00	1.107E+00	0.000E+00
AM-243	3.880E-01	6.504E-02	6.410E-02	0.000E+00
ANH-511	2.296E-01	9.261E-02	5.318E-02	0.000E+00

---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	1.739E-02	3.716E-01	6.358E-01	0.000E+00	NOT IDENT.
NA-22	-3.289E-02	6.384E-02	9.982E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	8.755E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-2.457E-02	3.373E-02	4.414E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.778E-02	6.787E-02	0.000E+00	FAIL ABUN
SC-46	-2.080E-03	5.340E-02	9.065E-02	0.000E+00	FAIL ABUN
V-48	6.751E-02	9.121E-02	1.654E-01	0.000E+00	NOT IDENT.
CR-51	-1.018E-02	3.838E-01	6.748E-01	0.000E+00	NOT IDENT.
MN-52	-2.179E-02	3.164E-01	5.330E-01	0.000E+00	NOT IDENT.
MN-54	3.527E-02	5.268E-02	9.492E-02	0.000E+00	NOT IDENT.
CO-56	4.915E-02	4.563E-02	8.621E-02	0.000E+00	NOT IDENT.
CO-57	1.348E-02	2.507E-02	4.497E-02	0.000E+00	NOT IDENT.
CO-58	1.502E-02	4.768E-02	8.439E-02	0.000E+00	NOT IDENT.
FE-59	1.462E-02	1.250E-01	2.111E-01	0.000E+00	NOT IDENT.
CO-60	-3.149E-02	5.121E-02	8.087E-02	0.000E+00	NOT IDENT.
ZN-65	-2.595E-02	1.473E-01	2.068E-01	0.000E+00	NOT IDENT.
GE-68	9.128E-01	1.697E+00	2.992E+00	0.000E+00	NOT IDENT.
AS-73	5.110E-02	2.359E-01	4.302E-01	0.000E+00	NOT IDENT.
AS-74	-5.191E-02	1.119E-01	1.789E-01	0.000E+00	NOT IDENT.
SE-75	-4.480E-02	5.401E-02	7.992E-02	0.000E+00	NOT IDENT.
BR-77	-6.137E+00	1.283E+01	1.998E+01	0.000E+00	FAIL ABUN
SR-82	-3.995E-01	5.067E-01	8.124E-01	0.000E+00	NOT IDENT.
RB-83	-4.896E-02	8.412E-02	1.294E-01	0.000E+00	NOT IDENT.
RB-84	-3.652E-02	9.062E-02	1.481E-01	0.000E+00	NOT IDENT.
KR-85	1.009E+01	8.167E+00	1.506E+01	0.000E+00	NOT IDENT.
SR-85	5.173E-02	4.188E-02	7.719E-02	0.000E+00	NOT IDENT.
RB-86	-1.744E-01	1.143E+00	1.882E+00	0.000E+00	NOT IDENT.
Y-88	3.791E-02	3.624E-02	7.498E-02	0.000E+00	NOT IDENT.
ZR-88	2.238E-02	3.379E-02	6.112E-02	0.000E+00	NOT IDENT.
Y-91	1.702E+01	2.609E+01	4.580E+01	0.000E+00	NOT IDENT.
NB-94	-2.997E-03	4.025E-02	6.964E-02	0.000E+00	NOT IDENT.
NB-95	7.776E-02	5.763E-02	9.981E-02	0.000E+00	NOT IDENT.
NB-95M	8.684E-02	1.415E-01	2.204E-01	0.000E+00	NOT IDENT.
ZR-95	8.454E-02	9.851E-02	1.810E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.554E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.349E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.519E+00	1.475E+01	2.534E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.098E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.833E-03	3.422E-02	5.714E-02	0.000E+00	NOT IDENT.
RH-102	-3.001E-02	3.434E-02	5.420E-02	0.000E+00	NOT IDENT.
RU-103	4.202E-02	4.676E-02	8.467E-02	0.000E+00	FAIL ABUN
RH-106	4.863E-01	3.962E-01	7.243E-01	0.000E+00	FAIL ABUN
RU-106	4.863E-01	3.932E-01	7.243E-01	0.000E+00	FAIL ABUN
AG-108M	-2.228E-02	3.851E-02	6.325E-02	0.000E+00	NOT IDENT.
AG-110M	5.103E-02	5.410E-02	8.661E-02	0.000E+00	NOT IDENT.
IN-111	-7.276E-01	1.280E+00	1.809E+00	0.000E+00	NOT IDENT.
IN-113M	-1.558E-02	5.002E-02	8.481E-02	0.000E+00	NOT IDENT.
SN-113	-1.558E-02	5.002E-02	8.481E-02	0.000E+00	NOT IDENT.
IN-114M	7.029E-02	2.101E-01	3.264E-01	0.000E+00	NOT IDENT.
CD-115	3.973E+00	1.327E+01	2.297E+01	0.000E+00	NOT IDENT.
SN-117M	5.256E-02	5.637E-02	1.013E-01	0.000E+00	NOT IDENT.
SB-122	-3.364E-01	2.477E+00	4.111E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	5.987E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.801E-02	2.946E-02	5.224E-02	0.000E+00	NOT IDENT.
I-124	-5.519E-01	8.899E-01	1.187E+00	0.000E+00	NOT IDENT.
SB-124	4.398E-02	7.003E-02	1.360E-01	0.000E+00	FAIL ABUN
SB-125	3.442E-02	1.098E-01	1.930E-01	0.000E+00	FAIL ABUN
TE-125M	7.579E+00	8.693E+00	1.584E+01	0.000E+00	NOT IDENT.
I-126	9.633E-02	2.698E-01	4.064E-01	0.000E+00	NOT IDENT.
SB-126	2.204E-02	1.971E-01	3.024E-01	0.000E+00	NOT IDENT.
SB-127	8.952E-01	1.693E+00	2.935E+00	0.000E+00	NOT IDENT.
XE-127	-2.344E-02	4.653E-02	7.660E-02	0.000E+00	NOT IDENT.
I-131	-4.439E-02	1.184E-01	2.008E-01	0.000E+00	NOT IDENT.
TE-132	-3.253E-01	7.347E-01	1.200E+00	0.000E+00	NOT IDENT.
BA-133	5.996E-03	5.121E-02	7.961E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.514E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.414E-02	6.142E-02	1.117E-01	0.000E+00	NOT IDENT.
CS-135	8.801E-02	1.977E-01	3.017E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.322E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.811E-03	1.321E-01	2.221E-01	0.000E+00	FAIL ABUN
CE-139	1.776E-03	2.959E-02	5.109E-02	0.000E+00	NOT IDENT.
BA-140	2.455E-01	3.436E-01	5.964E-01	0.000E+00	NOT IDENT.
LA-140	-7.614E-02	1.134E-01	1.688E-01	0.000E+00	FAIL ABUN
CE-141	-3.335E-02	6.344E-02	1.074E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.394E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	-3.581E-02	2.095E-01	3.631E-01	0.000E+00	NOT IDENT.
PM-144	2.232E-02	4.173E-02	7.573E-02	0.000E+00	NOT IDENT.
PR-144	1.513E+00	2.828E+00	5.132E+00	0.000E+00	NOT IDENT.
PM-146	3.619E-02	4.403E-02	8.036E-02	0.000E+00	NOT IDENT.
ND-147	-2.375E-01	7.144E-01	1.172E+00	0.000E+00	FAIL ABUN
PM-149	-1.115E+01	9.411E+01	1.660E+02	0.000E+00	NOT IDENT.
EU-152	-6.347E-02	1.051E-01	1.768E-01	0.000E+00	FAIL ABUN
GD-153	-2.841E-02	7.739E-02	1.212E-01	0.000E+00	NOT IDENT.
EU-154	-2.834E-02	1.715E-01	2.796E-01	0.000E+00	NOT IDENT.
EU-155	1.183E-01	1.000E-01	1.843E-01	0.000E+00	FAIL ABUN
TB-160	3.790E-02	1.746E-01	3.043E-01	0.000E+00	FAIL ABUN
HO-166M	2.280E-02	7.919E-02	1.408E-01	0.000E+00	NOT IDENT.
TM-171	-7.233E+00	1.662E+01	2.670E+01	0.000E+00	NOT IDENT.
LU-176	-1.960E-02	2.501E-02	4.191E-02	0.000E+00	FAIL ABUN
LU-177	1.825E+00	1.688E+00	2.242E+00	0.000E+00	FAIL ABUN
LU-177M	-9.405E-02	1.990E-01	3.315E-01	0.000E+00	NOT IDENT.
HF-181	-2.202E-02	5.084E-02	8.354E-02	0.000E+00	NOT IDENT.
W-181	-5.480E-02	1.982E-01	3.211E-01	0.000E+00	NOT IDENT.
TA-182	-1.341E-01	2.848E-01	4.486E-01	0.000E+00	NOT IDENT.
RE-183	-1.531E-03	1.112E-01	1.915E-01	0.000E+00	FAIL ABUN
RE-184	4.849E-02	2.595E-01	4.378E-01	0.000E+00	NOT IDENT.
OS-185	-1.192E-03	5.479E-02	9.071E-02	0.000E+00	NOT IDENT.
RE-188	4.203E-02	1.733E-01	3.030E-01	0.000E+00	NOT IDENT.
W-188	-6.113E+00	8.423E+00	1.238E+01	0.000E+00	FAIL ABUN
IR-192	5.480E-03	3.519E-02	6.262E-02	0.000E+00	FAIL ABUN
AU-195	2.997E-01	1.999E-01	3.721E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.946E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	3.487E+00	6.808E+00	1.201E+01	0.000E+00	NOT IDENT.
TL-202	4.927E-02	8.162E-02	1.460E-01	0.000E+00	NOT IDENT.
HG-203	-2.436E-02	4.195E-02	7.219E-02	0.000E+00	NOT IDENT.
BI-207	-4.558E-02	7.122E-02	1.108E-01	0.000E+00	FAIL ABUN
TL-207	2.562E-01	7.408E-01	1.183E+00	0.000E+00	FAIL ABUN
PO-209	4.426E+00	9.315E+00	1.661E+01	0.000E+00	NOT IDENT.
PB-211	-2.581E-01	1.051E+00	1.764E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.393E-01	8.367E-01	0.000E+00	FAIL ABUN
PO-215	2.562E-01	7.408E-01	1.183E+00	0.000E+00	FAIL ABUN
RN-219	-4.003E-02	4.695E-01	8.073E-01	0.000E+00	FAIL ABUN
RN-220	7.371E+00	3.070E+01	5.280E+01	0.000E+00	NOT IDENT.
RA-223	2.562E-01	7.408E-01	1.183E+00	0.000E+00	FAIL ABUN
AC-227	7.104E-02	4.221E-01	7.105E-01	0.000E+00	FAIL ABUN
TH-227	7.104E-02	4.221E-01	7.105E-01	0.000E+00	FAIL ABUN
TH-229	1.141E-01	5.256E-01	9.049E-01	0.000E+00	FAIL ABUN
PA-231	1.627E-01	1.568E+00	2.802E+00	0.000E+00	NOT IDENT.
TH-231	2.562E-01	7.408E-01	1.183E+00	0.000E+00	FAIL ABUN
U-231	-4.314E-01	9.834E-01	1.535E+00	0.000E+00	FAIL ABUN
PA-233	-3.776E-03	6.524E-02	1.147E-01	0.000E+00	FAIL ABUN
PA-234	-8.371E-02	3.992E-01	6.613E-01	0.000E+00	FAIL ABUN
PA-234M	9.528E+00	6.144E+00	1.175E+01	0.000E+00	NOT IDENT.
U-235	7.247E-02	2.228E-01	3.847E-01	0.000E+00	FAIL ABUN
NP-236	2.611E-02	8.303E-02	1.453E-01	0.000E+00	NOT IDENT.
NP-239	-8.713E-02	1.862E-01	3.209E-01	0.000E+00	FAIL ABUN
AM-241	2.044E-02	6.954E-02	1.155E-01	0.000E+00	NOT IDENT.
CM-243	1.007E-02	8.594E-02	1.532E-01	0.000E+00	FAIL ABUN
AM-246	2.502E-01	1.964E-01	3.678E-01	0.000E+00	NOT IDENT.
CM-247	1.244E-03	4.226E-02	7.323E-02	0.000E+00	NOT IDENT.
CF-249	2.124E-02	4.387E-02	7.853E-02	0.000E+00	NOT IDENT.
CF-251	-1.164E-01	1.309E-01	2.133E-01	0.000E+00	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691004.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 14:53:04.
Sample ID          : G245691004 Sample quantity   : 1.29920E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:09.89 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 947037 Detector SN#         :
Matrix Spike ID    : LCS ID                       : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	876	10.67*	7.783E-01	3.046E+01	3.046E+01	11.41
CD-109	88.03	366	3.72*	6.675E+00	4.259E+00	4.356E+00	22.97
SN-126	64.28	204	9.60	6.778E+00	9.053E-01	9.053E-01	47.49
	86.94	366	8.90	6.675E+00	1.780E+00	1.780E+00	46.51
	87.57	366	37.00*	6.675E+00	4.282E-01	4.282E-01	22.97
BA-137M	661.65	15	89.98*	1.603E+00	3.077E-02	3.079E-02	222.04
CS-137	661.65	15	85.12*	1.603E+00	3.252E-02	3.255E-02	222.04
TL-208	277.35	-----	6.80	3.568E+00	-----	Line Not Found	-----
	510.84	163	21.60	2.057E+00	1.063E+00	1.063E+00	41.99
	583.14	334	84.20*	1.812E+00	6.324E-01	6.324E-01	19.29
	860.37	-----	12.46	1.247E+00	-----	Line Not Found	-----
BI-210	46.50	117	4.05*	6.312E+00	1.325E+00	1.326E+00	71.55
PB-210	46.50	117	4.05*	6.312E+00	1.325E+00	1.326E+00	71.55
PO-210	46.50	117	4.05*	6.312E+00	1.325E+00	1.326E+00	71.44
BI-211	72.87	-----	1.27	6.803E+00	-----	Line Not Found	-----
	351.07	527	12.94*	2.908E+00	4.049E+00	4.049E+00	15.42
PB-212	74.81	602	10.70	6.795E+00	2.393E+00	2.393E+00	19.49
	77.11	994	18.00	6.782E+00	2.353E+00	2.353E+00	13.58
	87.30	366	8.00	6.675E+00	1.980E+00	1.980E+00	25.05
	238.63	1181	44.60*	4.023E+00	1.901E+00	1.901E+00	12.10
	300.09	90	3.41	3.344E+00	2.286E+00	2.286E+00	51.98
PO-212	74.81	602	10.70	6.795E+00	2.393E+00	2.393E+00	19.49
	77.11	994	18.00	6.782E+00	2.353E+00	2.353E+00	13.58
	87.30	366	8.00	6.675E+00	1.980E+00	1.980E+00	25.05
	115.19	-----	0.60	6.177E+00	-----	Line Not Found	-----
	238.63	1181	44.60*	4.023E+00	1.901E+00	1.901E+00	12.10
	300.09	90	3.41	3.344E+00	2.286E+00	2.286E+00	51.98
BI-214	609.31	351	46.30*	1.737E+00	1.262E+00	1.262E+00	19.43
	1120.29	96	15.10	9.773E-01	1.879E+00	1.879E+00	37.67
	1764.49	56	15.80	6.717E-01	1.532E+00	1.532E+00	37.02
PB-214	74.81	602	6.21	6.795E+00	4.124E+00	4.124E+00	18.64
	77.11	994	10.50	6.782E+00	4.034E+00	4.034E+00	15.57

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	87.30	366	4.67	6.675E+00	3.392E+00	3.392E+00	24.23
	241.98	319	7.49	3.986E+00	3.085E+00	3.085E+00	29.42
	295.21	376	19.20	3.390E+00	1.669E+00	1.669E+00	19.71
	351.92	527	37.20*	2.908E+00	1.408E+00	1.408E+00	16.28
	74.81	602	6.21	6.795E+00	4.124E+00	4.124E+00	18.64
	77.11	994	10.50	6.782E+00	4.034E+00	4.034E+00	15.57
	87.30	366	4.67	6.675E+00	3.392E+00	3.392E+00	24.23
	241.98	319	7.49	3.986E+00	3.085E+00	3.085E+00	29.42
PO-216	295.21	376	19.20	3.390E+00	1.669E+00	1.669E+00	19.71
	351.92	527	37.20*	2.908E+00	1.408E+00	1.408E+00	16.28
	74.81	602	10.70	6.795E+00	2.393E+00	2.393E+00	19.49
	77.11	994	18.00	6.782E+00	2.353E+00	2.353E+00	13.58
	87.30	366	8.00	6.675E+00	1.980E+00	1.980E+00	25.05
	238.63	1181	44.60*	4.023E+00	1.901E+00	1.901E+00	12.10
	300.09	90	3.41	3.344E+00	2.286E+00	2.286E+00	51.98
	74.81	602	6.21	6.795E+00	4.124E+00	4.124E+00	18.64
PO-218	77.11	994	10.50	6.782E+00	4.034E+00	4.034E+00	15.57
	87.30	366	4.67	6.675E+00	3.392E+00	3.392E+00	24.23
	241.98	319	7.49	3.986E+00	3.085E+00	3.085E+00	29.42
	295.21	376	19.20	3.390E+00	1.669E+00	1.669E+00	19.71
	351.92	527	37.20*	2.908E+00	1.408E+00	1.408E+00	16.28
	240.98	319	3.95*	3.986E+00	5.849E+00	5.849E+00	28.88
	609.31	351	46.30*	1.737E+00	1.262E+00	1.262E+00	19.43
	1120.29	96	15.10	9.773E-01	1.879E+00	1.879E+00	37.67
AC-228	1764.49	56	15.80	6.717E-01	1.532E+00	1.532E+00	37.02
	338.32	198	11.40	3.014E+00	1.661E+00	1.661E+00	50.63
	911.07	273	27.70*	1.182E+00	2.405E+00	2.405E+00	19.78
	969.11	114	16.60	1.116E+00	1.775E+00	1.775E+00	37.11
	338.32	198	11.40	3.014E+00	1.661E+00	1.661E+00	50.63
	911.07	273	27.70*	1.182E+00	2.405E+00	2.405E+00	19.78
	969.11	114	16.60	1.116E+00	1.775E+00	1.775E+00	37.11
	74.81	602	10.70	6.795E+00	2.393E+00	2.430E+00	17.14
TH-228	77.11	994	18.00	6.782E+00	2.353E+00	2.389E+00	13.58
	87.30	366	8.00	6.675E+00	1.980E+00	2.010E+00	22.97
	238.63	1181	44.60*	4.023E+00	1.901E+00	1.930E+00	12.10
	300.09	90	3.41	3.344E+00	2.286E+00	2.321E+00	78.15
	609.31	351	46.30*	1.737E+00	1.262E+00	1.262E+00	19.43
	1120.29	96	15.10	9.773E-01	1.879E+00	1.879E+00	37.67
	1764.49	56	15.80	6.717E-01	1.532E+00	1.532E+00	37.02
	338.32	198	11.40	3.014E+00	1.661E+00	1.661E+00	30.58
TH-232	911.07	273	27.70*	1.182E+00	2.405E+00	2.405E+00	19.78
	969.11	114	16.60	1.116E+00	1.775E+00	1.775E+00	37.11
	63.29	204	3.80*	6.778E+00	2.287E+00	2.287E+00	48.46
	92.38	417	5.41	6.594E+00	3.375E+00	3.375E+00	27.01
	609.31	351	46.30*	1.737E+00	1.262E+00	1.262E+00	19.43
	1120.29	96	15.10	9.773E-01	1.879E+00	1.879E+00	37.67
	1764.49	56	15.80	6.717E-01	1.532E+00	1.532E+00	37.02
	86.50	366	12.60*	6.675E+00	1.257E+00	1.257E+00	30.88
NP-237	95.87	-----	2.60	6.543E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-238	63.29	204	3.80*	6.778E+00	2.287E+00	2.287E+00	48.46
	92.38	417	5.41	6.594E+00	3.375E+00	3.375E+00	21.83
AM-243	74.67	602	66.00*	6.795E+00	3.880E-01	3.880E-01	17.10
	86.72	366	0.34	6.675E+00	4.715E+01	4.715E+01	22.97
	117.66	-----	0.55	6.127E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.624E+00	-----	Line Not Found	-----
ANH-511	511.00	163	100.00*	2.057E+00	2.296E-01	2.296E-01	41.15

Flag: "\*" = Keyline

Total number of lines in spectrum 31  
Number of unidentified lines 1  
Number of lines tentatively identified by NID 30 96.77%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.046E+01	3.046E+01	0.348E+01	11.41	
CD-109	464.00D	1.02	4.259E+00	4.356E+00	1.000E+00	22.97	
SN-126	1.00E+05Y	1.00	4.282E-01	4.282E-01	0.983E-01	22.97	
BA-137M	30.17Y	1.00	3.077E-02	3.079E-02	6.838E-02	222.04	
CS-137	30.17Y	1.00	3.252E-02	3.255E-02	7.228E-02	222.04	
TL-208	1.41E+10Y	1.00	6.324E-01	6.324E-01	1.220E-01	19.29	
BI-210	22.26Y	1.00	1.325E+00	1.326E+00	0.949E+00	71.55	
PB-210	22.26Y	1.00	1.325E+00	1.326E+00	0.949E+00	71.55	
PO-210	22.26Y	1.00	1.325E+00	1.326E+00	0.948E+00	71.44	
BI-211	7.04E+08Y	1.00	4.049E+00	4.049E+00	0.624E+00	15.42	
PB-212	1.41E+10Y	1.00	1.901E+00	1.901E+00	0.230E+00	12.10	
PO-212	1.41E+10Y	1.00	1.901E+00	1.901E+00	0.230E+00	12.10	
BI-214	1600.00Y	1.00	1.262E+00	1.262E+00	0.245E+00	19.43	
PB-214	1600.00Y	1.00	1.408E+00	1.408E+00	0.229E+00	16.28	
PO-214	1600.00Y	1.00	1.408E+00	1.408E+00	0.229E+00	16.28	
PO-216	1.41E+10Y	1.00	1.901E+00	1.901E+00	0.230E+00	12.10	
PO-218	1600.00Y	1.00	1.408E+00	1.408E+00	0.229E+00	16.28	
RA-224	1.41E+10Y	1.00	5.849E+00	5.849E+00	1.689E+00	28.88	
RA-226	1600.00Y	1.00	1.262E+00	1.262E+00	0.245E+00	19.43	
AC-228	1.41E+10Y	1.00	2.405E+00	2.405E+00	0.476E+00	19.78	
RA-228	1.41E+10Y	1.00	2.405E+00	2.405E+00	0.476E+00	19.78	
TH-228	1.91Y	1.02	1.901E+00	1.930E+00	0.234E+00	12.10	
TH-230	4.47E+09Y	1.00	1.262E+00	1.262E+00	0.245E+00	19.43	
TH-232	1.41E+10Y	1.00	2.405E+00	2.405E+00	0.476E+00	19.78	
TH-234	4.47E+09Y	1.00	2.287E+00	2.287E+00	1.108E+00	48.46	
U-234	4.47E+09Y	1.00	1.262E+00	1.262E+00	0.245E+00	19.43	
NP-237	2.14E+06Y	1.00	1.257E+00	1.257E+00	0.388E+00	30.88	
U-238	4.47E+09Y	1.00	2.287E+00	2.287E+00	1.108E+00	48.46	
AM-243	7380.00Y	1.00	3.880E-01	3.880E-01	0.664E-01	17.10	
ANH-511	1.00E+09Y	1.00	2.296E-01	2.296E-01	0.945E-01	41.15	
Total Activity :			8.026E+01	8.039E+01			

Grand Total Activity : 8.026E+01 8.039E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	89.97	235	433	1.30	179.60	163	29	3.27E-02	33.8	6.64E+00	T
0	129.23	79	293	1.48	258.15	254	7	1.10E-02	74.9	5.89E+00	T
0	185.98	196	256	1.21	371.70	368	9	2.72E-02	34.2	4.81E+00	T
0	209.18	64	262	0.99	418.11	415	9	8.94E-03	93.9	4.43E+00	T
0	270.43	72	190	1.14	540.65	536	9	1.00E-02	72.9	3.64E+00	T
0	327.79	50	143	1.68	655.43	652	9	7.00E-03	89.8	3.10E+00	T
0	463.09	54	99	1.31	926.17	920	11	7.50E-03	76.4	2.26E+00	T
0	726.72	83	60	1.18	1453.71	1447	14	1.15E-02	46.1	1.46E+00	T
0	768.42	39	89	1.24	1537.15	1531	13	5.42E-03	****	1.39E+00	
0	964.22	40	33	1.23	1929.01	1924	9	5.53E-03	62.3	1.12E+00	T

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691004.CNF;1
* Acquisition date   : 9-FEB-2010 14:53:04.   Detector SN#      :
* Detector ID        : GAM17                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:09.89          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-JAN-2010 12:00:00   Nuclide Library  : SOLID
* Sample ID          : G245691004             Analyst initials: MJH1
* Batch Number       : 947037                 Sample Quantity  : 1.29920E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36.18MS Isotope      :
* MSD ID             :                      MSD Isotope      :
* LCS ID             : 1032-A                LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.046E+01	3.475E+00	7.751E-01	6.882E-02	39.300
CD-109	4.356E+00	1.000E+00	9.963E-01	9.726E-02	4.373
SN-126	4.282E-01	9.834E-02	9.778E-02	9.542E-03	4.379
BA-137M	3.079E-02	6.838E-02	8.161E-02	6.875E-03	0.377
CS-137	3.255E-02	7.228E-02	8.627E-02	7.282E-03	0.377
TL-208	6.324E-01	1.220E-01	7.516E-02	7.109E-03	8.413
BI-210	1.326E+00	9.491E-01	8.500E-01	9.221E-02	1.560
PB-210	1.326E+00	9.491E-01	8.500E-01	9.221E-02	1.560
PO-210	1.326E+00	9.476E-01	8.500E-01	8.588E-02	1.560
BI-211	4.049E+00	6.242E-01	4.080E-01	3.808E-02	9.923
PB-212	1.901E+00	2.300E-01	9.037E-02	9.111E-03	21.039
PO-212	1.901E+00	2.300E-01	9.037E-02	9.111E-03	21.039
BI-214	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
PB-214	1.408E+00	2.292E-01	1.291E-01	1.380E-02	10.906
PO-214	1.408E+00	2.292E-01	1.291E-01	1.380E-02	10.906
PO-216	1.901E+00	2.300E-01	9.037E-02	9.111E-03	21.039
PO-218	1.408E+00	2.292E-01	1.291E-01	1.380E-02	10.906
RA-224	5.849E+00	1.689E+00	1.029E+00	9.309E-02	5.683

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
AC-228	2.405E+00	4.757E-01	2.440E-01	2.767E-02	9.858
RA-228	2.405E+00	4.757E-01	2.440E-01	2.767E-02	9.858
TH-228	1.930E+00	2.335E-01	9.175E-02	9.249E-03	21.039
TH-230	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
TH-232	2.405E+00	4.757E-01	2.440E-01	2.767E-02	9.858
TH-234	2.287E+00	1.108E+00	1.052E+00	1.964E-01	2.173
U-234	1.262E+00	2.451E-01	1.243E-01	1.264E-02	10.152
NP-237	1.257E+00	3.882E-01	2.862E-01	6.533E-02	4.393
U-238	2.287E+00	1.108E+00	1.052E+00	1.964E-01	2.173
AM-243	3.880E-01	6.636E-02	6.110E-02	5.965E-03	6.351
ANH-511	2.296E-01	9.450E-02	5.224E-02	4.665E-03	4.396

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.739E-02		3.791E-01	6.239E-01	5.936E-02	0.028
NA-22	-3.289E-02		6.514E-02	9.952E-02	8.384E-03	-0.330
NA-24	-5.077E-01		4.467E-01	Half-Life too short		
AL-26	-2.457E-02		3.441E-02	4.427E-02	3.711E-03	-0.555
TI-44	4.342E-01	+	5.896E-02	6.474E-02	6.308E-03	6.708
SC-46	-2.080E-03		5.449E-02	8.985E-02	7.866E-03	-0.023
V-48	6.751E-02		9.307E-02	1.642E-01	1.432E-02	0.411
CR-51	-1.018E-02		3.916E-01	6.579E-01	6.283E-02	-0.015
MN-52	-2.179E-02		3.229E-01	5.325E-01	4.591E-02	-0.041
MN-54	3.527E-02		5.375E-02	9.398E-02	8.264E-03	0.375
CO-56	4.915E-02		4.656E-02	8.538E-02	7.505E-03	0.576
CO-57	1.348E-02		2.558E-02	4.319E-02	5.060E-03	0.312
CO-58	1.502E-02		4.865E-02	8.352E-02	7.355E-03	0.180
FE-59	1.462E-02		1.275E-01	2.100E-01	1.927E-02	0.070
CO-60	-3.149E-02		5.225E-02	8.069E-02	6.877E-03	-0.390
ZN-65	-2.595E-02		1.503E-01	2.058E-01	1.732E-02	-0.126
GE-68	9.128E-01		1.731E+00	2.975E+00	2.539E-01	0.307
AS-73	5.110E-02		2.407E-01	4.080E-01	4.082E-02	0.125
AS-74	-5.191E-02		1.142E-01	1.761E-01	1.552E-02	-0.295
SE-75	-4.480E-02		5.511E-02	7.769E-02	7.138E-03	-0.577
BR-77	-6.137E+00		1.310E+01	1.963E+01	1.755E+00	-0.313
SR-82	-3.995E-01		5.171E-01	8.034E-01	7.031E-02	-0.497
RB-83	-4.896E-02		8.584E-02	1.272E-01	1.137E-02	-0.385
RB-84	-3.652E-02		9.247E-02	1.468E-01	1.287E-02	-0.249
KR-85	1.009E+01		8.334E+00	1.479E+01	1.321E+00	0.682
SR-85	5.173E-02		4.273E-02	7.583E-02	6.775E-03	0.682
RB-86	-1.744E-01		1.166E+00	1.872E+00	1.598E-01	-0.093
Y-88	3.791E-02		3.698E-02	7.521E-02	6.272E-03	0.504
ZR-88	2.238E-02		3.448E-02	5.978E-02	5.037E-03	0.374
Y-91	1.702E+01		2.662E+01	4.563E+01	3.766E+00	0.373
NB-94	-2.997E-03		4.107E-02	6.876E-02	5.898E-03	-0.044

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	7.776E-02		5.881E-02	9.869E-02	8.620E-03	0.788
NB-95M	8.684E-02		1.444E-01	2.138E-01	2.183E-02	0.406
ZR-95	8.454E-02		1.005E-01	1.789E-01	1.715E-02	0.472
NB-97	9.592E-02		7.928E-02	Half-Life too short		
ZR-97	2.830E+00		1.198E+00	Half-Life too short		
MO-99	-1.519E+00		1.505E+01	2.504E+01	3.810E+00	-0.061
TC-99M	-7.944E+09		2.091E+10	Half-Life too short		
RH-101	-1.833E-03		3.491E-02	5.529E-02	4.807E-03	-0.033
RH-102	-3.001E-02		3.504E-02	5.318E-02	4.711E-03	-0.564
RU-103	4.202E-02		4.772E-02	8.313E-02	1.192E-02	0.506
RH-106	4.863E-01		4.043E-01	7.138E-01	9.565E-02	0.681
RU-106	4.863E-01		4.013E-01	7.138E-01	6.201E-02	0.681
AG-108M	-2.228E-02		3.929E-02	6.197E-02	5.593E-03	-0.360
AG-110M	5.103E-02		5.521E-02	8.542E-02	7.445E-03	0.597
IN-111	-7.276E-01		1.306E+00	1.756E+00	1.593E-01	-0.414
IN-113M	-1.558E-02		5.104E-02	8.295E-02	7.207E-03	-0.188
SN-113	-1.558E-02		5.104E-02	8.295E-02	7.207E-03	-0.188
IN-114M	7.029E-02		2.144E-01	3.157E-01	2.719E-02	0.223
CD-115	3.973E+00		1.354E+01	2.257E+01	2.018E+00	0.176
SN-117M	5.256E-02		5.752E-02	9.766E-02	8.778E-03	0.538
SB-122	-3.364E-01		2.528E+00	4.045E+00	3.602E-01	-0.083
I-123	3.660E+00		3.055E+00	Half-Life too short		
TE-123M	1.801E-02		3.006E-02	5.037E-02	4.534E-03	0.357
I-124	-5.519E-01		9.081E-01	1.169E+00	1.027E-01	-0.472
SB-124	4.398E-02		7.145E-02	1.362E-01	1.212E-02	0.323
SB-125	3.442E-02		1.121E-01	1.891E-01	1.668E-02	0.182
TE-125M	7.579E+00		8.870E+00	1.518E+01	1.866E+00	0.499
I-126	9.633E-02		2.753E-01	4.009E-01	3.385E-02	0.240
SB-126	2.204E-02		2.012E-01	2.987E-01	2.579E-02	0.074
SB-127	8.952E-01		1.727E+00	2.897E+00	3.275E-01	0.309
XE-127	-2.344E-02		4.748E-02	7.415E-02	6.482E-03	-0.316
I-131	-4.439E-02		1.209E-01	1.962E-01	1.811E-02	-0.226
TE-132	-3.253E-01		7.497E-01	1.164E+00	1.851E-01	-0.280
BA-133	5.996E-03		5.225E-02	7.774E-02	1.039E-02	0.077
I-133	1.529E-03		3.834E-03	Half-Life too short		
CS-134	4.414E-02		6.267E-02	1.105E-01	9.765E-03	0.399
CS-135	8.801E-02		2.017E-01	2.934E-01	3.061E-02	0.300
I-135	4.188E+09		3.736E+09	Half-Life too short		
CS-136	2.811E-03		1.348E-01	2.208E-01	1.982E-02	0.013
CE-139	1.776E-03		3.020E-02	4.930E-02	4.111E-03	0.036
BA-140	2.455E-01		3.506E-01	5.863E-01	1.948E-01	0.419
LA-140	-7.614E-02		1.157E-01	1.690E-01	1.459E-02	-0.451
CE-141	-3.335E-02		6.474E-02	1.034E-01	1.054E-02	-0.323
CE-143	7.182E-04		1.222E-04	Half-Life too short		
CE-144	-3.581E-02		2.138E-01	3.492E-01	5.924E-02	-0.103
PM-144	2.232E-02		4.258E-02	7.476E-02	6.400E-03	0.299
PR-144	1.513E+00		2.885E+00	5.066E+00	4.335E-01	0.299
PM-146	3.619E-02		4.493E-02	7.879E-02	8.552E-03	0.459

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-2.375E-01		7.290E-01	1.152E+00	1.744E-01	-0.206
PM-149	-1.115E+01		9.604E+01	1.616E+02	2.563E+01	-0.069
EU-152	-6.347E-02		1.073E-01	1.725E-01	1.632E-02	-0.368
GD-153	-2.841E-02		7.897E-02	1.160E-01	1.186E-02	-0.245
EU-154	-2.834E-02		1.750E-01	2.787E-01	3.109E-02	-0.102
EU-155	1.183E-01		1.021E-01	1.766E-01	1.897E-02	0.670
TB-160	3.790E-02		1.782E-01	3.016E-01	2.644E-02	0.126
HO-166M	2.280E-02		8.080E-02	1.390E-01	1.196E-02	0.164
TM-171	-7.233E+00		1.696E+01	2.540E+01	2.507E+00	-0.285
LU-176	-1.960E-02		2.552E-02	4.083E-02	3.741E-03	-0.480
LU-177	1.825E+00	+	1.722E+00	2.171E+00	1.909E-01	0.841
LU-177M	-9.405E-02		2.030E-01	3.245E-01	2.780E-02	-0.290
HF-181	-2.202E-02		5.188E-02	8.198E-02	7.278E-03	-0.269
W-181	-5.480E-02		2.023E-01	3.054E-01	3.025E-02	-0.179
TA-182	-1.341E-01		2.906E-01	4.470E-01	3.708E-02	-0.300
RE-183	-1.531E-03		1.134E-01	1.847E-01	1.599E-02	-0.008
RE-184	4.849E-02		2.648E-01	4.252E-01	3.872E-02	0.114
OS-185	-1.192E-03		5.591E-02	8.944E-02	7.637E-03	-0.013
RE-188	4.203E-02		1.768E-01	2.921E-01	2.713E-02	0.144
W-188	-6.113E+00		8.595E+00	1.205E+01	1.107E+00	-0.507
IR-192	5.480E-03		3.591E-02	6.104E-02	5.584E-03	0.090
AU-195	2.997E-01		2.039E-01	3.562E-01	3.668E-02	0.842
TL-200	1.027E-04		2.523E-04	Half-Life too short		
TL-201	3.487E+00		6.947E+00	1.159E+01	9.679E-01	0.301
TL-202	4.927E-02		8.328E-02	1.431E-01	1.247E-02	0.344
HG-203	-2.436E-02		4.281E-02	7.023E-02	6.609E-03	-0.347
BI-207	-4.558E-02		7.268E-02	1.101E-01	9.443E-03	-0.414
TL-207	2.562E-01		7.560E-01	1.153E+00	2.069E-01	0.222
PO-209	4.426E+00		9.505E+00	1.646E+01	1.439E+00	0.269
PB-211	-2.581E-01		1.072E+00	1.727E+00	1.082E+00	-0.150
BI-212	1.381E+00	+	6.523E-01	8.266E-01	8.294E-02	1.671
PO-215	2.562E-01		7.560E-01	1.153E+00	2.069E-01	0.222
RN-219	-4.003E-02		4.791E-01	7.900E-01	1.181E-01	-0.051
RN-220	7.371E+00		3.133E+01	5.193E+01	4.636E+00	0.142
RA-223	2.562E-01		7.560E-01	1.153E+00	2.069E-01	0.222
AC-227	7.104E-02		4.307E-01	6.903E-01	1.079E-01	0.103
TH-227	7.104E-02		4.308E-01	6.903E-01	1.264E-01	0.103
TH-229	1.141E-01		5.364E-01	8.753E-01	7.570E-02	0.130
PA-231	1.627E-01		1.600E+00	2.727E+00	4.230E-01	0.060
TH-231	2.562E-01		7.560E-01	1.153E+00	2.069E-01	0.222
U-231	-4.314E-01		1.003E+00	1.469E+00	1.490E-01	-0.294
PA-233	-3.776E-03		6.657E-02	1.118E-01	1.048E-02	-0.034
PA-234	-8.371E-02		4.074E-01	6.562E-01	1.235E-01	-0.128
PA-234M	9.528E+00		6.269E+00	1.167E+01	1.171E+00	0.817
U-235	7.247E-02		2.274E-01	3.704E-01	6.790E-02	0.196
NP-236	2.611E-02		8.472E-02	1.401E-01	1.238E-02	0.186
NP-239	-8.713E-02		1.900E-01	3.080E-01	3.503E-02	-0.283
AM-241	2.044E-02		7.096E-02	1.097E-01	1.165E-02	0.186

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.007E-02		8.769E-02	1.468E-01	1.551E-02	0.069
AM-246	2.502E-01		2.004E-01	3.658E-01	3.120E-02	0.684
CM-247	1.244E-03		4.312E-02	7.166E-02	6.087E-03	0.017
CF-249	2.124E-02		4.476E-02	7.680E-02	6.507E-03	0.277
CF-251	-1.164E-01		1.336E-01	2.060E-01	1.743E-02	-0.565

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691004            *
* Acquisition date   : 9-FEB-2010 14:53:04 Detector SN#      :              *
* Detector ID        : GAM17 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:09.89 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691004 Analyst initials: MJH1          *
* Batch Number       : 947037 Sample Quantity : 1.2992E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME  : 6-JAN-2010 11:41:36 MS Isotope         :              *
* MSD DPM           : 0.000 MSD Isotope                     :              *
* LCS DPM           : 0.000 LCS Isotope                      :              *
* LCSD DPM          : 0.000 LCSD Isotope                    :              *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.046E+01	3.406E+00	3.880E-01	1.738E+00
CD-109	4.356E+00	9.805E-01	5.216E-01	5.002E-01
SN-126	4.282E-01	9.637E-02	5.120E-02	4.917E-02
BA-137M	3.079E-02	6.701E-02	4.139E-02	3.419E-02
CS-137	3.255E-02	7.083E-02	4.376E-02	3.614E-02
TL-208	6.324E-01	1.196E-01	3.820E-02	6.100E-02
BI-210	1.326E+00	9.301E-01	4.494E-01	4.745E-01
PB-210	1.326E+00	9.301E-01	4.494E-01	4.745E-01
PO-210	1.326E+00	9.287E-01	4.494E-01	4.738E-01
BI-211	4.049E+00	6.117E-01	2.091E-01	3.121E-01
PB-212	1.901E+00	2.254E-01	4.659E-02	1.150E-01
PO-212	1.901E+00	2.254E-01	4.659E-02	1.150E-01
BI-214	1.262E+00	2.402E-01	6.312E-02	1.226E-01
PB-214	1.408E+00	2.247E-01	6.617E-02	1.146E-01
PO-214	1.408E+00	2.247E-01	6.617E-02	1.146E-01
PO-216	1.901E+00	2.254E-01	4.659E-02	1.150E-01
PO-218	1.408E+00	2.247E-01	6.617E-02	1.146E-01
RA-224	5.849E+00	1.656E+00	5.306E-01	8.447E-01
RA-226	1.262E+00	2.402E-01	6.312E-02	1.226E-01
AC-228	2.405E+00	4.661E-01	1.231E-01	2.378E-01
RA-228	2.405E+00	4.661E-01	1.231E-01	2.378E-01
TH-228	1.930E+00	2.288E-01	4.730E-02	1.168E-01
TH-230	1.262E+00	2.402E-01	6.312E-02	1.226E-01
TH-232	2.405E+00	4.661E-01	1.231E-01	2.378E-01
TH-234	2.287E+00	1.086E+00	5.538E-01	5.541E-01
U-234	1.262E+00	2.402E-01	6.312E-02	1.226E-01
NP-237	1.257E+00	3.804E-01	1.499E-01	1.941E-01
U-238	2.287E+00	1.086E+00	5.538E-01	5.541E-01
AM-243	3.880E-01	6.504E-02	3.207E-02	3.318E-02
ANH-511	2.296E-01	9.261E-02	2.660E-02	4.725E-02

---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	1.739E-02	3.716E-01	3.181E-01	1.896E-01 NOT IDENT.
NA-22	-3.289E-02	6.384E-02	4.994E-02	3.257E-02 NOT IDENT.
NA-24	-5.077E+05	8.755E+05	0.000E+00	4.467E+05 SHORT HLIF
AL-26	-2.457E-02	3.373E-02	2.208E-02	1.721E-02 NOT IDENT.
TI-44	4.342E-01	5.778E-02	3.395E-02	2.948E-02 FAIL ABUN
SC-46	-2.080E-03	5.340E-02	4.535E-02	2.724E-02 FAIL ABUN
V-48	6.751E-02	9.121E-02	8.276E-02	4.653E-02 NOT IDENT.
CR-51	-1.018E-02	3.838E-01	3.376E-01	1.958E-01 NOT IDENT.
MN-52	-2.179E-02	3.164E-01	2.667E-01	1.614E-01 NOT IDENT.
MN-54	3.527E-02	5.268E-02	4.749E-02	2.688E-02 NOT IDENT.
CO-56	4.915E-02	4.563E-02	4.313E-02	2.328E-02 NOT IDENT.
CO-57	1.348E-02	2.507E-02	2.250E-02	1.279E-02 NOT IDENT.
CO-58	1.502E-02	4.768E-02	4.222E-02	2.433E-02 NOT IDENT.
FE-59	1.462E-02	1.250E-01	1.056E-01	6.376E-02 NOT IDENT.
CO-60	-3.149E-02	5.121E-02	4.046E-02	2.613E-02 NOT IDENT.
ZN-65	-2.595E-02	1.473E-01	1.035E-01	7.517E-02 NOT IDENT.
GE-68	9.128E-01	1.697E+00	1.497E+00	8.656E-01 NOT IDENT.
AS-73	5.110E-02	2.359E-01	2.152E-01	1.204E-01 NOT IDENT.
AS-74	-5.191E-02	1.119E-01	8.948E-02	5.710E-02 NOT IDENT.
SE-75	-4.480E-02	5.401E-02	3.999E-02	2.756E-02 NOT IDENT.
BR-77	-6.137E+00	1.283E+01	9.997E+00	6.548E+00 FAIL ABUN
SR-82	-3.995E-01	5.067E-01	4.064E-01	2.585E-01 NOT IDENT.
RB-83	-4.896E-02	8.412E-02	6.475E-02	4.292E-02 NOT IDENT.
RB-84	-3.652E-02	9.062E-02	7.412E-02	4.624E-02 NOT IDENT.
KR-85	1.009E+01	8.167E+00	7.532E+00	4.167E+00 NOT IDENT.
SR-85	5.173E-02	4.188E-02	3.862E-02	2.137E-02 NOT IDENT.
RB-86	-1.744E-01	1.143E+00	9.417E-01	5.831E-01 NOT IDENT.
Y-88	3.791E-02	3.624E-02	3.751E-02	1.849E-02 NOT IDENT.
ZR-88	2.238E-02	3.379E-02	3.058E-02	1.724E-02 NOT IDENT.
Y-91	1.702E+01	2.609E+01	2.292E+01	1.331E+01 NOT IDENT.
NB-94	-2.997E-03	4.025E-02	3.484E-02	2.054E-02 NOT IDENT.
NB-95	7.776E-02	5.763E-02	4.993E-02	2.940E-02 NOT IDENT.
NB-95M	8.684E-02	1.415E-01	1.103E-01	7.219E-02 NOT IDENT.
ZR-95	8.454E-02	9.851E-02	9.056E-02	5.026E-02 NOT IDENT.
NB-97	9.592E+04	1.554E+05	0.000E+00	7.928E+04 SHORT HLIF
ZR-97	2.830E+06	2.349E+06	0.000E+00	1.198E+06 SHORT HLIF
MO-99	-1.519E+00	1.475E+01	1.268E+01	7.526E+00 NOT IDENT.
TC-99M	-7.944E+15	4.098E+16	0.000E+00	0.000E+00 SHORT HLIF
RH-101	-1.833E-03	3.422E-02	2.859E-02	1.746E-02 NOT IDENT.
RH-102	-3.001E-02	3.434E-02	2.712E-02	1.752E-02 NOT IDENT.
RU-103	4.202E-02	4.676E-02	4.236E-02	2.386E-02 FAIL ABUN
RH-106	4.863E-01	3.962E-01	3.624E-01	2.022E-01 FAIL ABUN
RU-106	4.863E-01	3.932E-01	3.624E-01	2.006E-01 FAIL ABUN
AG-108M	-2.228E-02	3.851E-02	3.165E-02	1.965E-02 NOT IDENT.
AG-110M	5.103E-02	5.410E-02	4.333E-02	2.760E-02 NOT IDENT.
IN-111	-7.276E-01	1.280E+00	9.051E-01	6.531E-01 NOT IDENT.
IN-113M	-1.558E-02	5.002E-02	4.243E-02	2.552E-02 NOT IDENT.
SN-113	-1.558E-02	5.002E-02	4.243E-02	2.552E-02 NOT IDENT.
IN-114M	7.029E-02	2.101E-01	1.633E-01	1.072E-01 NOT IDENT.
CD-115	3.973E+00	1.327E+01	1.149E+01	6.769E+00 NOT IDENT.
SN-117M	5.256E-02	5.637E-02	5.067E-02	2.876E-02 NOT IDENT.
SB-122	-3.364E-01	2.477E+00	2.057E+00	1.264E+00 NOT IDENT.
I-123	3.660E+06	5.987E+06	0.000E+00	3.055E+06 SHORT HLIF
TE-123M	1.801E-02	2.946E-02	2.613E-02	1.503E-02 NOT IDENT.
I-124	-5.519E-01	8.899E-01	5.941E-01	4.540E-01 NOT IDENT.
SB-124	4.398E-02	7.003E-02	6.802E-02	3.573E-02 FAIL ABUN
SB-125	3.442E-02	1.098E-01	9.658E-02	5.604E-02 FAIL ABUN
TE-125M	7.579E+00	8.693E+00	7.923E+00	4.435E+00 NOT IDENT.
I-126	9.633E-02	2.698E-01	2.033E-01	1.376E-01 NOT IDENT.
SB-126	2.204E-02	1.971E-01	1.513E-01	1.006E-01 NOT IDENT.
SB-127	8.952E-01	1.693E+00	1.468E+00	8.636E-01 NOT IDENT.
XE-127	-2.344E-02	4.653E-02	3.832E-02	2.374E-02 NOT IDENT.
I-131	-4.439E-02	1.184E-01	1.005E-01	6.043E-02 NOT IDENT.
TE-132	-3.253E-01	7.347E-01	6.005E-01	3.749E-01 NOT IDENT.
BA-133	5.996E-03	5.121E-02	3.983E-02	2.613E-02 NOT IDENT.
I-133	1.529E+03	7.514E+03	0.000E+00	3.834E+03 SHORT HLIF
CS-134	4.414E-02	6.142E-02	5.589E-02	3.134E-02 NOT IDENT.
CS-135	8.801E-02	1.977E-01	1.510E-01	1.009E-01 NOT IDENT.
I-135	4.188E+15	7.322E+15	0.000E+00	3.736E+15 SHORT HLIF
CS-136	2.811E-03	1.321E-01	1.111E-01	6.741E-02 FAIL ABUN
CE-139	1.776E-03	2.959E-02	2.556E-02	1.510E-02 NOT IDENT.
BA-140	2.455E-01	3.436E-01	2.984E-01	1.753E-01 NOT IDENT.
LA-140	-7.614E-02	1.134E-01	8.447E-02	5.783E-02 FAIL ABUN
CE-141	-3.335E-02	6.344E-02	5.371E-02	3.237E-02 NOT IDENT.
CE-143	7.182E+02	2.394E+02	0.000E+00	1.222E+02 SHORT HLIF



CE-144	-3.581E-02	2.095E-01	1.817E-01	1.069E-01	NOT IDENT.
PM-144	2.232E-02	4.173E-02	3.789E-02	2.129E-02	NOT IDENT.
PR-144	1.513E+00	2.828E+00	2.567E+00	1.443E+00	NOT IDENT.
PM-146	3.619E-02	4.403E-02	4.021E-02	2.246E-02	NOT IDENT.
ND-147	-2.375E-01	7.144E-01	5.864E-01	3.645E-01	FAIL ABUN
PM-149	-1.115E+01	9.411E+01	8.305E+01	4.802E+01	NOT IDENT.
EU-152	-6.347E-02	1.051E-01	8.843E-02	5.364E-02	FAIL ABUN
GD-153	-2.841E-02	7.739E-02	6.065E-02	3.948E-02	NOT IDENT.
EU-154	-2.834E-02	1.715E-01	1.399E-01	8.749E-02	NOT IDENT.
EU-155	1.183E-01	1.000E-01	9.219E-02	5.104E-02	FAIL ABUN
TB-160	3.790E-02	1.746E-01	1.523E-01	8.909E-02	FAIL ABUN
HO-166M	2.280E-02	7.919E-02	7.042E-02	4.040E-02	NOT IDENT.
TM-171	-7.233E+00	1.662E+01	1.336E+01	8.479E+00	NOT IDENT.
LU-176	-1.960E-02	2.501E-02	2.097E-02	1.276E-02	FAIL ABUN
LU-177	1.825E+00	1.688E+00	1.121E+00	8.610E-01	FAIL ABUN
LU-177M	-9.405E-02	1.990E-01	1.658E-01	1.015E-01	NOT IDENT.
HF-181	-2.202E-02	5.084E-02	4.179E-02	2.594E-02	NOT IDENT.
W-181	-5.480E-02	1.982E-01	1.606E-01	1.011E-01	NOT IDENT.
TA-182	-1.341E-01	2.848E-01	2.244E-01	1.453E-01	NOT IDENT.
RE-183	-1.531E-03	1.112E-01	9.580E-02	5.671E-02	FAIL ABUN
RE-184	4.849E-02	2.595E-01	2.190E-01	1.324E-01	NOT IDENT.
OS-185	-1.192E-03	5.479E-02	4.538E-02	2.795E-02	NOT IDENT.
RE-188	4.203E-02	1.733E-01	1.516E-01	8.841E-02	NOT IDENT.
W-188	-6.113E+00	8.423E+00	6.194E+00	4.298E+00	FAIL ABUN
IR-192	5.480E-03	3.519E-02	3.133E-02	1.795E-02	FAIL ABUN
AU-195	2.997E-01	1.999E-01	1.861E-01	1.020E-01	FAIL ABUN
TL-200	1.027E+02	4.946E+02	0.000E+00	2.523E+02	SHORT HLIF
TL-201	3.487E+00	6.808E+00	6.009E+00	3.474E+00	NOT IDENT.
TL-202	4.927E-02	8.162E-02	7.305E-02	4.164E-02	NOT IDENT.
HG-203	-2.436E-02	4.195E-02	3.612E-02	2.141E-02	NOT IDENT.
BI-207	-4.558E-02	7.122E-02	5.543E-02	3.634E-02	FAIL ABUN
TL-207	2.562E-01	7.408E-01	5.916E-01	3.780E-01	FAIL ABUN
PO-209	4.426E+00	9.315E+00	8.308E+00	4.752E+00	NOT IDENT.
PB-211	-2.581E-01	1.051E+00	8.826E-01	5.361E-01	NOT IDENT.
BI-212	1.381E+00	6.393E-01	4.186E-01	3.262E-01	FAIL ABUN
PO-215	2.562E-01	7.408E-01	5.916E-01	3.780E-01	FAIL ABUN
RN-219	-4.003E-02	4.695E-01	4.039E-01	2.395E-01	FAIL ABUN
RN-220	7.371E+00	3.070E+01	2.642E+01	1.567E+01	NOT IDENT.
RA-223	2.562E-01	7.408E-01	5.916E-01	3.780E-01	FAIL ABUN
AC-227	7.104E-02	4.221E-01	3.555E-01	2.154E-01	FAIL ABUN
TH-227	7.104E-02	4.221E-01	3.555E-01	2.154E-01	FAIL ABUN
TH-229	1.141E-01	5.256E-01	4.527E-01	2.682E-01	FAIL ABUN
PA-231	1.627E-01	1.568E+00	1.402E+00	8.000E-01	NOT IDENT.
TH-231	2.562E-01	7.408E-01	5.916E-01	3.780E-01	FAIL ABUN
U-231	-4.314E-01	9.834E-01	7.680E-01	5.017E-01	FAIL ABUN
PA-233	-3.776E-03	6.524E-02	5.738E-02	3.328E-02	FAIL ABUN
PA-234	-8.371E-02	3.992E-01	3.309E-01	2.037E-01	FAIL ABUN
PA-234M	9.528E+00	6.144E+00	5.878E+00	3.135E+00	NOT IDENT.
U-235	7.247E-02	2.228E-01	1.925E-01	1.137E-01	FAIL ABUN
NP-236	2.611E-02	8.303E-02	7.270E-02	4.236E-02	NOT IDENT.
NP-239	-8.713E-02	1.862E-01	1.606E-01	9.499E-02	FAIL ABUN
AM-241	2.044E-02	6.954E-02	5.780E-02	3.548E-02	NOT IDENT.
CM-243	1.007E-02	8.594E-02	7.666E-02	4.384E-02	FAIL ABUN
AM-246	2.502E-01	1.964E-01	1.840E-01	1.002E-01	NOT IDENT.
CM-247	1.244E-03	4.226E-02	3.664E-02	2.156E-02	NOT IDENT.
CF-249	2.124E-02	4.387E-02	3.929E-02	2.238E-02	NOT IDENT.
CF-251	-1.164E-01	1.309E-01	1.067E-01	6.678E-02	NOT IDENT.

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*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON ,SC 29417   *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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ENERGY	MDA COUNTS
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46.50	260.9104
46.50	260.9104
46.50	260.9104
48.70	272.6796
49.72	272.2313
51.35	314.8705
52.39	293.7828
52.97	280.6912
53.15	280.8310
53.44	303.9836
54.07	296.8563
56.28	321.7404
56.28	321.7423
57.37	0.0000
57.53	327.1050
57.53	327.1070
57.60	327.1651
57.98	363.5941
57.98	363.5941
59.32	362.2769
59.32	362.2769
59.40	362.3517
59.54	362.4831
59.72	335.4520
60.01	318.8520
61.10	375.6292
61.14	375.6667
61.30	407.0287
63.00	406.5912
63.29	406.8833
63.29	406.8833
63.58	407.1755
64.28	390.4088
65.12	397.7748
65.20	397.8516
65.20	397.8516
66.05	399.9857
66.72	426.9853
66.83	421.8262
66.91	421.9067
67.20	406.3672
67.20	406.3672
67.75	430.6756
67.85	421.7945
68.90	427.4290
68.90	427.4290
69.30	421.1122
69.67	432.6255
70.82	425.7910
70.82	425.7910
70.83	425.8008
72.80	439.7468
72.87	439.8146
72.87	439.8146
74.67	416.0895
74.81	416.2172
74.81	416.2172
74.81	416.2172
74.81	416.2172
74.81	416.2172
74.81	416.2172
74.97	416.3662
75.28	416.6500
75.70	417.0379
77.11	418.3245
77.11	418.3245

77.11	418.3245
77.11	418.3245
77.11	418.3245
77.11	418.3245
77.11	418.3245
78.38	392.4111
79.62	371.7455
79.80	371.8876
79.80	371.8876
80.11	437.3232
80.18	437.3896
80.30	345.1088
80.30	345.1088
80.57	345.3045
81.00	438.1462
81.07	438.2101
81.07	438.2101
81.07	438.2101
81.07	438.2101
82.60	375.4457
83.37	319.9772
83.78	320.2504
83.78	320.2504
83.78	320.2504
83.78	320.2504
84.21	320.5324
84.90	320.9841
85.43	321.3305
86.29	321.8911
86.50	322.0267
86.54	322.0517
86.59	322.0856
86.72	322.1696
86.79	322.2124
86.94	322.3106
87.30	322.5445
87.30	322.5445
87.30	322.5445
87.30	322.5445
87.30	322.5445
87.30	322.5445
87.57	322.7176
87.88	322.9176
88.03	323.0140
88.36	323.2246
88.47	323.2961
89.95	324.2405
91.11	324.9742
92.29	325.7169
92.38	325.7740
92.38	325.7740
93.35	326.3810
94.00	326.7845
94.67	278.2572
94.67	278.2602
94.90	278.3817
94.90	278.3817
94.90	278.3817
94.90	278.3817
95.87	291.5034
95.87	291.5034
96.73	317.2418
97.43	303.5984
98.44	246.7118
98.44	246.7118
98.88	244.2816
99.55	264.3365
99.55	264.3365
99.86	275.7813
100.00	275.8514
100.10	275.9036
103.18	276.4917
103.76	253.0802
105.00	243.1875
105.31	243.3203
108.00	286.4822
109.28	243.0911

111.00	281.2402
111.00	281.2402
111.76	279.6802
112.95	286.0193
115.19	272.5894
116.30	244.0366
117.00	264.6770
117.00	264.6770
117.66	283.4037
121.11	235.2106
121.62	240.2869
121.78	240.3482
122.06	231.6575
122.32	231.7527
122.32	231.7527
122.32	231.7527
122.32	231.7527
123.07	262.3785
127.23	243.8884
129.76	280.4488
131.20	261.7307
133.02	250.5183
133.54	253.6978
135.34	259.3652
136.00	252.6294
136.25	252.7220
136.48	227.8260
140.51	262.3355
140.51	0.0000
142.18	253.8995
142.65	224.8307
143.76	234.2751
144.24	227.3598
144.24	227.3598
144.24	227.3598
144.24	227.3598
145.22	217.5567
145.44	246.9760
147.16	226.2643
152.43	206.4508
152.70	206.5268
153.22	214.8578
154.21	230.5138
154.21	230.5138
154.21	230.5138
154.21	230.5138
155.03	216.4090
156.02	241.3445
158.56	197.8516
159.00	0.0000
159.00	208.2776
160.31	216.9000
161.27	216.1372
162.32	210.2214
162.64	223.7761
163.35	229.1674
163.89	209.6112
165.85	196.6174
167.43	177.2079
171.28	195.8798
171.86	190.7793
172.10	187.6911
176.55	217.1944
176.60	217.2090
181.06	221.3551
184.41	234.6985
185.71	213.2060
186.00	213.2792
190.27	189.6974
192.34	195.5245
193.63	187.2079
197.04	195.4960
198.01	178.4109
198.60	172.0365
200.40	172.3859
201.83	192.2073
202.84	181.5520
205.31	152.0694

208.36	191.9513
208.81	190.4045
209.75	190.5992
209.75	190.5992
210.97	141.4927
215.65	175.2714
216.55	158.8887
218.09	184.5657
222.10	188.6716
223.80	177.8841
226.40	164.9839
227.00	171.7774
227.08	179.6002
227.20	189.6642
228.16	175.3314
228.18	175.3345
228.18	175.3345
231.56	0.0000
235.69	162.0352
236.00	162.0864
236.00	162.0864
238.63	145.5804
238.63	145.5804
238.63	145.5804
238.63	145.5804
239.00	145.6328
240.98	145.9163
241.98	146.0580
241.98	146.0580
241.98	146.0580
244.69	143.0381
245.39	161.8781
247.94	117.5214
248.90	151.5962
249.79	164.2734
252.40	147.5264
252.85	148.7335
252.85	148.7335
254.15	0.0000
256.20	145.7585
256.20	145.7585
260.50	167.0839
260.90	152.1604
262.80	138.5693
264.65	169.3405
268.24	146.2207
268.79	151.5172
269.46	144.6370
269.46	144.6370
269.46	144.6370
269.46	144.6370
271.23	157.0853
273.65	160.9242
276.40	143.7828
277.35	131.6185
277.60	137.7918
277.60	137.7918
278.00	131.6940
278.60	137.9116
279.20	149.4115
279.53	149.4530
280.46	152.2144
281.68	128.5966
283.67	126.1702
284.30	146.5443
285.00	144.8663
285.90	129.0666
286.10	124.6680
286.10	124.6680
287.40	122.1524
288.45	0.0000
290.67	136.3406
290.80	136.3547
291.72	113.7188
293.26	0.0000
293.70	108.2146
295.21	108.3520
295.21	108.3520

295.21	108.3520
295.96	82.0287
296.50	78.4972
297.23	78.5455
298.57	78.6342
299.80	113.0610
299.80	113.0610
300.09	113.0900
300.09	113.0900
300.09	113.0900
300.09	113.0900
300.12	113.0919
301.29	128.9641
302.84	106.1727
303.76	113.4333
303.91	113.4468
304.40	97.6902
304.40	97.6902
304.84	114.9707
306.84	121.4580
308.46	118.0131
311.98	109.3165
316.51	104.2749
318.01	105.3073
319.02	102.6666
319.41	112.6948
320.08	109.1162
323.87	97.7699
323.87	97.7699
323.87	97.7699
323.87	97.7699
325.23	109.5612
328.77	118.6524
333.44	112.7090
334.20	108.8519
334.20	108.8519
334.30	108.8609
338.28	125.4227
338.28	125.4227
338.28	125.4227
338.28	125.4227
338.32	125.4269
338.32	125.4269
338.32	125.4269
340.50	116.7661
340.57	116.7719
344.27	118.5801
345.85	120.8407
350.59	0.0000
351.07	131.0998
351.92	108.0756
351.92	108.0756
351.92	108.0756
355.39	0.0000
356.01	95.6906
364.48	91.2024
366.43	88.5051
367.43	87.6260
367.94	0.0000
369.80	87.7736
374.96	116.5118
383.85	102.9375
387.95	87.9346
388.63	88.9315
391.69	101.5747
391.69	101.5747
392.90	83.4370
398.62	100.1248
400.65	94.4769
401.10	94.5053
401.81	99.3742
402.60	98.4608
404.84	97.6403
410.95	90.2683
411.60	105.8432
413.65	99.1798
414.70	80.7596
415.30	73.0042

415.76	82.7627
417.63	0.0000
418.52	94.6156
423.70	98.8455
427.08	97.0966
427.89	90.2775
432.53	95.4637
433.93	96.5331
439.47	80.0644
439.56	80.0681
439.89	80.0854
443.98	93.1738
444.90	94.2187
445.03	94.2259
445.03	94.2259
445.03	94.2259
445.03	94.2259
453.90	52.8536
463.38	67.3969
468.07	80.4590
473.00	56.4854
475.06	88.8688
475.35	88.8849
476.78	72.7844
477.59	74.8412
477.96	71.8223
482.03	84.1601
484.57	86.3152
487.03	68.1328
490.36	0.0000
492.35	73.4403
497.08	58.2959
507.63	0.0000
510.53	0.0000
510.84	63.8992
511.00	63.9049
511.85	63.9351
511.85	63.9351
513.99	64.0099
513.99	64.0099
520.41	74.5972
520.65	74.6060
527.90	68.6587
528.96	0.0000
529.64	65.5994
529.87	0.0000
531.02	81.2778
537.32	70.0507
543.00	62.9205
546.56	0.0000
549.76	61.0391
552.65	72.7250
555.20	65.4341
563.23	69.9437
563.90	68.9078
568.70	62.7001
569.32	63.7830
569.50	64.8516
569.67	56.3513
573.80	67.1240
574.00	64.9987
574.64	67.1528
578.91	75.2018
579.30	0.0000
583.14	72.7916
585.48	72.0193
591.81	67.7296
592.07	63.4365
593.00	60.2383
595.88	70.0186
600.56	56.1434
602.52	0.0000
602.71	69.1719
602.71	69.1719
603.60	72.6612
604.41	57.1135
604.70	57.1216
609.31	55.2972

609.31	55.2972
609.31	55.2972
609.31	55.2972
610.33	55.3237
612.46	69.4980
614.37	60.8655
618.01	65.3265
621.84	46.9026
621.84	46.9026
631.29	56.9718
633.02	54.8248
633.10	54.8279
634.78	57.0654
635.90	59.2916
636.97	50.5329
645.85	54.0498
646.12	61.7781
656.30	40.7857
657.75	60.3317
657.90	0.0000
661.65	76.6585
661.65	76.6585
664.57	0.0000
666.33	62.3472
666.33	62.3472
675.00	51.4117
677.61	60.4221
685.20	49.3979
692.80	60.3752
695.00	64.9441
696.49	55.9589
696.49	55.9589
697.00	59.5837
697.49	59.5950
698.33	65.0373
698.50	69.5594
699.00	69.5726
702.63	61.5370
706.10	74.3185
706.58	0.0000
706.67	74.3365
709.31	62.6205
711.68	63.5930
713.82	70.9255
717.42	57.3737
720.50	54.7119
721.93	0.0000
722.20	56.2723
722.78	62.3708
722.78	62.3708
722.89	62.3742
722.95	56.2889
723.30	56.2979
724.18	56.3190
727.18	47.5503
733.00	41.2493
735.90	52.3117
739.58	58.8250
742.81	53.3810
744.21	57.0957
747.13	56.2418
751.79	62.8153
752.31	57.2849
753.82	64.7158
755.35	53.6543
756.15	58.2996
756.87	54.6139
763.93	44.8676
765.79	43.3524
766.42	41.8151
766.84	41.8217
776.49	69.9719
778.00	76.5487
778.57	79.3658
778.89	73.7732
783.80	42.1040
785.46	64.6016
792.07	54.4430



795.84	54.5237
796.30	50.7727
798.80	66.8208
801.93	56.5371
805.60	53.7854
810.29	43.4844
810.76	43.4922
815.85	49.2603
817.79	44.5571
818.51	49.3111
819.60	52.1775
826.30	61.8198
828.27	0.0000
831.60	73.3793
831.96	78.1542
834.83	60.1099
836.80	0.0000
846.75	30.6672
848.13	45.0654
856.28	0.0000
856.80	67.3340
860.37	43.3422
867.32	37.6584
867.82	42.4939
871.10	36.7429
873.19	45.4796
874.81	42.6014
875.33	0.0000
876.40	46.5012
879.36	41.7014
880.27	42.6852
880.51	45.5989
881.50	50.4677
883.24	50.4994
884.67	52.4681
889.25	51.5805
896.60	39.0303
898.02	38.0736
899.00	43.9464
903.28	32.6017
911.07	35.3057
911.07	35.3057
911.07	35.3057
919.63	31.4758
920.93	28.5377
925.00	51.2434
925.24	49.2761
926.50	42.3964
935.52	47.4727
937.48	52.4527
944.10	46.6190
946.00	48.6339
949.00	49.6765
962.29	49.8975
964.01	66.5690
966.15	14.9886
968.20	54.9946
969.11	50.0110
969.11	50.0110
969.11	50.0110
977.42	44.1300
980.50	68.2706
983.50	35.1735
989.30	47.3224
996.32	53.4852
1001.03	32.3422
1001.68	32.3492
1004.76	50.5957
1021.30	0.0000
1024.50	0.0000
1034.80	41.8849
1036.00	41.9009
1037.82	46.0151
1038.57	45.0033
1038.76	0.0000
1045.16	43.0459
1046.59	45.1150
1048.07	36.9299

1050.47	36.9580
1050.47	36.9580
1062.04	54.6045
1063.62	51.5381
1076.63	52.7780
1077.35	40.3692
1078.86	34.1730
1085.78	31.1323
1099.22	45.8434
1112.02	35.5605
1112.84	36.6150
1115.52	57.5835
1120.29	48.2281
1120.29	48.2281
1120.29	48.2281
1120.29	48.2281
1120.51	48.2304
1121.28	48.9408
1124.00	0.0000
1129.67	52.5659
1131.51	0.0000
1147.95	0.0000
1167.94	54.2099
1173.22	57.4857
1175.09	60.7100
1177.93	52.2324
1189.05	57.7415
1204.90	47.2549
1205.75	0.0000
1213.00	62.4321
1221.42	65.8103
1230.97	76.7999
1235.34	59.5627
1236.41	0.0000
1238.25	73.7010
1246.25	57.5676
1260.41	0.0000
1271.85	39.3697
1274.45	40.4904
1274.54	47.0585
1291.56	39.5736
1298.22	0.0000
1312.09	31.3119
1325.50	33.2681
1325.50	33.2681
1332.49	34.2524
1333.61	32.4109
1360.21	27.0353
1362.66	0.0000
1365.15	18.6678
1368.21	27.0884
1368.53	0.0000
1376.25	19.6550
1384.27	21.5700
1394.10	27.2618
1395.20	25.3894
1407.95	25.4674
1434.06	23.7305
1436.60	20.8953
1457.56	0.0000
1460.81	22.9258
1489.15	17.3086
1509.49	13.5249
1596.49	22.6556
1620.62	5.9412
1678.03	0.0000
1691.02	4.0202
1691.02	4.0202
1706.46	0.0000
1750.46	0.0000
1764.49	6.9958
1764.49	6.9958
1764.49	6.9958
1764.49	6.9958
1770.23	22.4709
1771.40	6.1299
1791.20	0.0000
1808.65	10.2917

1836.01

3.1041

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691004

Total Uranium Activity	6.8375E+00	ug/g
Total Uranium Counting Unc.	3.2327E+00	ug/g
Total Uranium Tpu	1.6493E-06	ug/g
Total Uranium Mda	1.6499E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*   BATCH ID      : 947037                        SAMPLE ID   : G245691004
*   ANALYST       : MJH1                          DETECTOR    : GAM17
*   SAMPLE DATE   : 25-JAN-2010 12:00:00.00      COUNT TIME   : 0 02:00:00.00
*   ANALYSIS DATE : 9-FEB-2010 14:53:04.54      SAMPLE ALQT  : 129.920 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.028E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.508E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.742E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.815E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:24:34.14

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691005.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:09.
Sample ID          : G245691005 Sample quantity : 1.26970E+02 GRAM
Detector name      : GAM10 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.19 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.53*	317	379	0.89	149.20	145	13	4.40E-02	10.9	1.53E+00
2	1	76.83	554	428	0.92	153.80	145	13	7.70E-02	7.3	
3	0	87.00*	266	470	1.22	174.11	171	7	3.69E-02	15.0	
4	0	92.83*	177	673	1.52	185.77	182	12	2.46E-02	31.2	
5	0	185.69*	264	448	1.16	371.32	365	13	3.67E-02	18.1	
6	0	208.93	132	394	1.31	417.78	412	11	1.83E-02	30.4	
7	6	238.27*	1431	236	1.13	476.41	470	18	1.99E-01	3.2	2.73E+00
8	6	241.26	298	354	1.67	482.39	470	18	4.14E-02	15.6	
9	0	270.18	113	222	1.29	540.18	535	10	1.57E-02	26.5	
10	0	277.84	130	258	3.94	555.49	549	13	1.80E-02	27.3	
11	1	294.74	416	149	1.40	589.25	583	22	5.77E-02	7.2	2.41E+00
12	1	299.74*	105	157	1.40	599.25	583	22	1.46E-02	23.3	
13	0	327.05	58	155	1.47	653.83	650	8	8.04E-03	39.4	
14	0	337.94	281	184	1.23	675.60	670	11	3.90E-02	11.1	
15	0	351.51*	714	204	1.31	702.73	698	11	9.92E-02	5.5	
16	0	461.79	103	134	1.44	923.14	917	13	1.43E-02	25.1	
17	0	510.17*	155	130	1.72	1019.86	1012	14	2.15E-02	20.0	
18	0	582.57*	466	107	1.42	1164.59	1157	16	6.47E-02	6.9	
19	0	608.69*	507	106	1.32	1216.81	1211	14	7.04E-02	6.3	
20	0	727.07*	98	89	1.98	1453.48	1448	13	1.36E-02	23.0	
21	0	767.23	89	58	1.83	1533.76	1529	10	1.24E-02	19.2	
22	0	793.78	51	75	2.00	1586.85	1580	12	7.12E-03	36.6	
23	0	859.98	46	72	1.26	1719.23	1713	13	6.40E-03	40.6	
24	0	910.30*	279	67	1.57	1819.83	1813	16	3.87E-02	9.0	
25	2	963.77*	54	51	2.11	1926.76	1921	21	7.56E-03	29.1	1.40E+00
26	2	968.25*	172	44	1.99	1935.71	1921	21	2.38E-02	11.4	
27	0	1119.29*	127	133	1.80	2237.78	2229	19	1.77E-02	23.6	
28	0	1376.05	48	29	2.41	2751.36	2745	13	6.67E-03	27.3	
29	0	1407.84	21	25	1.45	2814.96	2808	14	2.96E-03	53.9	
30	0	1459.38	1589	38	2.01	2918.08	2909	16	2.21E-01	2.6	
31	0	1728.18*	14	5	1.79	3455.90	3450	10	1.97E-03	44.6	
32	0	1763.13*	92	15	1.82	3525.83	3518	16	1.27E-02	15.0	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 17:24:36

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691005.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MJH1  
 Sample date : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:09  
 Sample ID : G245691005 Sample quantity : 126.97 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA10 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.19 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.972E+01	4.019E+00	4.810E-01	4.143E-02	82.592
NB-95	+	765.79	*	1.512E-01	5.888E-02	6.827E-02	4.764E-03	2.214
CD-109	+	88.03	*	4.112E+00	1.316E+00	1.589E+00	1.801E-01	2.588
SN-126		64.28		3.813E-01	6.870E-01	1.150E+00	1.966E-01	0.332
	+	86.94		1.680E+00	8.665E-01	6.826E-01	2.866E-01	2.462
	+	87.57	*	4.042E-01	1.293E-01	1.644E-01	1.860E-02	2.458
HG-203		70.83		-1.159E+00	1.542E+00	2.196E+00	3.357E-01	-0.528
		72.87		1.751E+00	9.090E-01	1.398E+00	2.078E-01	1.252
		82.60		3.737E-01	1.316E+00	2.089E+00	3.215E-01	0.179
	+	279.20	*	1.353E-01	7.431E-02	6.608E-02	4.459E-03	2.047
TL-208	+	277.35		1.227E+00	6.821E-01	5.857E-01	6.388E-02	2.095
	+	510.84		7.231E-01	2.986E-01	2.010E-01	2.113E-02	3.597
	+	583.14	*	6.219E-01	9.577E-02	5.943E-02	3.993E-03	10.464
	+	860.37		5.938E-01	4.858E-01	4.748E-01	4.637E-02	1.251
BI-211		72.87		8.799E+00	4.483E+00	7.025E+00	7.726E-01	1.252
	+	351.07	*	4.194E+00	5.502E-01	3.395E-01	2.475E-02	12.354
PB-212	+	74.81		2.273E+00	5.946E-01	6.726E-01	9.683E-02	3.379
	+	77.11		2.194E+00	4.014E-01	3.727E-01	4.075E-02	5.886
	+	87.30		1.869E+00	6.265E-01	7.636E-01	1.152E-01	2.448
	+	238.63	*	1.853E+00	1.843E-01	9.383E-02	7.117E-03	19.748
	+	300.09		2.091E+00	9.897E-01	1.233E+00	1.084E-01	1.696
PO-212	+	74.81		2.273E+00	5.946E-01	6.726E-01	9.683E-02	3.379
	+	77.11		2.194E+00	4.014E-01	3.727E-01	4.075E-02	5.886
	+	87.30		1.869E+00	6.265E-01	7.636E-01	1.152E-01	2.448
		115.19		-7.085E-01	3.737E+00	5.984E+00	4.281E-01	-0.118
	+	238.63	*	1.853E+00	1.843E-01	9.383E-02	7.117E-03	19.748
	+	300.09		2.091E+00	9.897E-01	1.233E+00	1.084E-01	1.696
BI-214	+	609.31	*	1.279E+00	1.892E-01	1.140E-01	8.674E-03	11.216
	+	1120.29		1.762E+00	8.485E-01	5.178E-01	5.060E-02	3.403
	+	1764.49		1.754E+00	5.398E-01	1.700E-01	1.135E-02	10.318
PB-214	+	74.81		3.916E+00	1.000E+00	1.159E+00	1.532E-01	3.379
	+	77.11		3.761E+00	7.454E-01	6.389E-01	8.515E-02	5.886
	+	87.30		3.202E+00	1.054E+00	1.308E+00	1.789E-01	2.448
	+	241.98		2.319E+00	7.468E-01	5.649E-01	4.700E-02	4.106

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		1.449E+00	2.471E-01	2.160E-01	1.951E-02	6.707
	+	351.92	*	1.459E+00	2.060E-01	1.183E-01	1.061E-02	12.329
	+	74.81		3.916E+00	1.000E+00	1.159E+00	1.532E-01	3.379
	+	77.11		3.761E+00	7.454E-01	6.389E-01	8.515E-02	5.886
	+	87.30		3.202E+00	1.054E+00	1.308E+00	1.789E-01	2.448
PO-216	+	241.98		2.319E+00	7.468E-01	5.649E-01	4.700E-02	4.106
	+	295.21		1.449E+00	2.471E-01	2.160E-01	1.951E-02	6.707
	+	351.92	*	1.459E+00	2.060E-01	1.183E-01	1.061E-02	12.329
	+	74.81		2.273E+00	5.946E-01	6.726E-01	9.683E-02	3.379
	+	77.11		2.194E+00	4.014E-01	3.727E-01	4.075E-02	5.886
PO-218	+	87.30		1.869E+00	6.265E-01	7.636E-01	1.152E-01	2.448
	+	238.63	*	1.853E+00	1.843E-01	9.383E-02	7.117E-03	19.748
	+	300.09		2.091E+00	9.897E-01	1.233E+00	1.084E-01	1.696
	+	74.81		3.916E+00	1.000E+00	1.159E+00	1.532E-01	3.379
	+	77.11		3.761E+00	7.454E-01	6.389E-01	8.515E-02	5.886
RA-224	+	87.30		3.202E+00	1.054E+00	1.308E+00	1.789E-01	2.448
	+	241.98		2.319E+00	7.468E-01	5.649E-01	4.700E-02	4.106
	+	295.21		1.449E+00	2.471E-01	2.160E-01	1.951E-02	6.707
	+	351.92	*	1.459E+00	2.060E-01	1.183E-01	1.061E-02	12.329
	+	240.98	*	4.398E+00	1.394E+00	1.068E+00	6.553E-02	4.119
RA-226	+	609.31	*	1.279E+00	1.892E-01	1.140E-01	8.674E-03	11.216
	+	1120.29		1.762E+00	8.485E-01	5.178E-01	5.060E-02	3.403
	+	1764.49		1.754E+00	5.398E-01	1.700E-01	1.135E-02	10.318
	+	338.32		1.818E+00	8.462E-01	3.588E-01	1.468E-01	5.067
	+	911.07	*	1.708E+00	3.740E-01	2.147E-01	2.650E-02	7.955
AC-228	+	969.11		1.866E+00	6.140E-01	3.728E-01	8.813E-02	5.006
	+	338.32		1.818E+00	8.462E-01	3.588E-01	1.468E-01	5.067
	+	911.07	*	1.708E+00	3.740E-01	2.147E-01	2.650E-02	7.955
	+	969.11		1.866E+00	6.140E-01	3.728E-01	8.813E-02	5.006
	+	74.81		2.307E+00	5.644E-01	6.829E-01	7.516E-02	3.379
TH-228	+	77.11		2.227E+00	4.075E-01	3.784E-01	4.137E-02	5.886
	+	87.30		1.898E+00	6.071E-01	7.752E-01	8.759E-02	2.448
	+	238.63	*	1.881E+00	1.871E-01	9.525E-02	7.226E-03	19.748
	+	300.09		2.123E+00	1.595E+00	1.252E+00	7.388E-01	1.696
	+	609.31	*	1.278E+00	1.892E-01	1.140E-01	8.674E-03	11.216
TH-230	+	1120.29		1.762E+00	8.485E-01	5.178E-01	5.060E-02	3.403
	+	1764.49		1.754E+00	5.397E-01	1.700E-01	1.135E-02	10.318
	+	338.32		1.818E+00	4.219E-01	3.588E-01	2.405E-02	5.067
	+	911.07	*	1.708E+00	3.740E-01	2.147E-01	2.650E-02	7.955
	+	969.11		1.866E+00	6.140E-01	3.728E-01	8.813E-02	5.006
U-234	+	609.31	*	1.278E+00	1.892E-01	1.140E-01	8.674E-03	11.216
	+	1120.29		1.762E+00	8.485E-01	5.178E-01	5.060E-02	3.403
	+	1764.49		1.754E+00	5.397E-01	1.700E-01	1.135E-02	10.318
	+	86.50	*	1.187E+00	4.518E-01	4.708E-01	1.106E-01	2.521
	+	95.87		-8.010E-02	1.112E+00	1.621E+00	4.051E-01	-0.049
AM-243	+	74.67	*	3.685E-01	9.004E-02	1.095E-01	1.200E-02	3.364
	+	86.72		4.451E+01	1.424E+01	1.815E+01	2.044E+00	2.453
	+	117.66		-1.274E-01	3.872E+00	6.276E+00	4.355E-01	-0.020
	+	142.18		-8.935E+00	1.939E+01	3.027E+01	1.807E+00	-0.295



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	+	511.00	*	1.562E-01	6.316E-02	4.344E-02	2.783E-03	3.596

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-6.098E-02	3.226E-01	5.135E-01	3.819E-02	-0.119
NA-22		1274.54	*	-1.060E-02	5.132E-02	8.378E-02	6.489E-03	-0.127
NA-24		1368.53	*	-4.154E-01	5.132E-02	Half-Life too short		
AL-26		1129.67		-7.061E-02	1.960E+00	3.212E+00	2.253E-01	-0.022
		1808.65	*	-5.900E-03	2.909E-02	4.480E-02	2.840E-03	-0.132
TI-44		67.85		1.882E-02	5.962E-02	9.999E-02	1.129E-02	0.188
		78.38	*	1.564E-01	5.200E-02	8.169E-02	8.939E-03	1.915
SC-46		889.25	*	-5.426E-02	4.122E-02	5.786E-02	5.726E-03	-0.938
	+	1120.51		3.017E-01	1.439E-01	1.563E-01	1.123E-02	1.930
V-48		944.10		-1.046E+00	9.936E-01	1.443E+00	1.398E-01	-0.725
		983.50	*	-2.408E-02	7.517E-02	1.179E-01	1.091E-02	-0.204
		1312.09		-3.350E-02	9.403E-02	1.504E-01	1.256E-02	-0.223
CR-51		320.08	*	-2.486E-02	3.635E-01	5.997E-01	4.332E-02	-0.041
MN-52		744.21		-5.600E-02	2.493E-01	4.055E-01	2.645E-02	-0.138
		848.13		-2.482E+00	7.306E+00	1.162E+01	1.030E+00	-0.214
		935.52		2.010E-01	2.997E-01	5.138E-01	5.023E-02	0.391
		1246.25		1.259E+00	8.552E+00	1.442E+01	1.050E+00	0.087
		1333.61		-3.412E-01	5.748E+00	9.468E+00	8.226E-01	-0.036
		1434.06	*	1.284E-02	2.538E-01	4.212E-01	3.559E-02	0.030
MN-54		834.83	*	-1.469E-02	4.495E-02	7.205E-02	6.155E-03	-0.204
CO-56		846.75	*	9.159E-03	4.194E-02	7.011E-02	6.191E-03	0.131
		977.42		1.257E+00	3.050E+00	5.149E+00	4.799E-01	0.244
		1037.82		-3.714E-01	3.514E-01	5.037E-01	4.529E-02	-0.737
		1175.09		2.368E-01	2.664E+00	4.490E+00	2.782E-01	0.053
		1238.25		1.041E-01	1.107E-01	1.954E-01	1.457E-02	0.533
		1360.21		2.991E-03	9.283E-01	1.537E+00	1.328E-01	0.002
		1771.40		-4.636E-02	1.879E-01	2.845E-01	1.885E-02	-0.163
CO-57		122.06	*	-7.410E-03	2.672E-02	4.278E-02	2.822E-03	-0.173
		136.48		-7.269E-02	2.150E-01	3.414E-01	2.388E-02	-0.213
CO-58		810.76	*	-6.620E-03	4.321E-02	7.023E-02	5.619E-03	-0.094
FE-59		142.65		4.673E-02	2.983E+00	4.751E+00	2.831E-01	0.010
		192.34		2.045E-01	9.978E-01	1.595E+00	1.875E-01	0.128
		1099.22	*	1.750E-03	1.154E-01	1.858E-01	1.551E-02	0.009
		1291.56		-1.295E-01	1.471E-01	2.231E-01	2.064E-02	-0.581
CO-60		1173.22		-5.091E-03	5.571E-02	9.256E-02	5.708E-03	-0.055
		1332.49	*	2.973E-03	4.467E-02	7.457E-02	6.480E-03	0.040
ZN-65		1115.52	*	1.758E-01	1.221E-01	1.967E-01	1.433E-02	0.894
GE-68		1077.35	*	9.479E-01	1.423E+00	2.431E+00	1.926E-01	0.390
AS-73		53.44	*	7.646E-02	1.611E+00	2.701E+00	3.574E-01	0.028
AS-74		595.88	*	2.734E-02	8.924E-02	1.533E-01	8.756E-03	0.178
		634.78		-2.051E-03	3.662E-01	6.130E-01	3.236E-02	-0.003
SE-75		66.05		-1.091E+01	6.652E+00	1.015E+01	1.308E+00	-1.075
		96.73		3.186E-01	9.120E-01	1.357E+00	1.921E-01	0.235

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77		121.11		5.450E-02	1.392E-01	2.293E-01	2.246E-02	0.238
		136.00		-1.957E-02	4.031E-02	6.358E-02	3.948E-03	-0.308
		198.60		1.205E+00	1.894E+00	3.041E+00	2.154E-01	0.396
		264.65	*	-3.551E-02	4.909E-02	6.821E-02	4.351E-03	-0.521
		279.53		-2.105E-02	1.223E-01	1.775E-01	1.216E-02	-0.119
		303.91		1.111E+00	2.213E+00	3.353E+00	3.361E-01	0.331
		400.65		-1.311E-01	2.678E-01	4.237E-01	4.138E-02	-0.309
	+	87.88		8.949E+02	2.863E+02	4.043E+02	4.583E+01	2.214
		200.40		2.100E+00	1.743E+02	2.756E+02	1.589E+01	0.008
	+	239.00		2.997E+02	2.660E+01	4.098E+01	2.508E+00	7.315
		249.79		3.387E+01	6.514E+01	1.120E+02	6.955E+00	0.302
		281.68		2.645E+01	1.010E+02	1.510E+02	9.724E+00	0.175
		297.23		1.085E+02	5.648E+01	1.012E+02	6.607E+00	1.072
		303.76		8.887E+01	1.894E+02	2.865E+02	1.880E+01	0.310
		439.47		-6.637E+01	1.460E+02	2.295E+02	1.543E+01	-0.289
		484.57		-2.484E+01	2.283E+02	3.653E+02	2.393E+01	-0.068
		520.65	*	-2.970E+00	1.076E+01	1.690E+01	1.072E+00	-0.176
		574.64		-7.190E+01	2.302E+02	3.579E+02	2.119E+01	-0.201
		578.91		3.781E+00	1.009E+02	1.487E+02	8.744E+00	0.025
		585.48		2.914E+02	2.009E+02	3.303E+02	1.921E+01	0.882
SR-82		755.35		1.336E+02	1.719E+02	3.014E+02	2.036E+01	0.443
		817.79		4.947E+01	1.402E+02	2.376E+02	1.934E+01	0.208
		698.33		1.386E+01	3.513E+01	6.010E+01	3.372E+00	0.231
		776.49	*	5.789E-02	4.145E-01	6.880E-01	4.960E-02	0.084
RB-83		1395.20		-3.809E-01	1.148E+01	1.887E+01	1.616E+00	-0.020
		520.41	*	-1.587E-02	7.092E-02	1.118E-01	7.097E-03	-0.142
		529.64		-7.234E-03	1.102E-01	1.758E-01	1.104E-02	-0.041
		552.65		1.202E-02	2.033E-01	3.265E-01	1.995E-02	0.037
RB-84		881.50	*	-6.770E-03	7.742E-02	1.257E-01	1.219E-02	-0.054
KR-85		513.99	*	1.338E+00	7.775E+00	1.110E+01	7.088E-01	0.121
SR-85		513.99	*	6.862E-03	3.988E-02	5.691E-02	3.635E-03	0.121
RB-86		1076.63	*	9.399E-01	9.182E-01	1.612E+00	1.279E-01	0.583
Y-88		898.02		2.732E-02	4.489E-02	7.713E-02	7.836E-03	0.354
		1836.01	*	-2.187E-03	3.500E-02	5.573E-02	3.419E-03	-0.039
ZR-88		392.90	*	1.534E-02	3.146E-02	5.298E-02	3.601E-03	0.290
Y-91		1204.90	*	5.812E+00	2.218E+01	3.778E+01	2.509E+00	0.154
NB-94		702.63	*	-1.274E-02	3.526E-02	5.709E-02	3.250E-03	-0.223
		871.10		5.215E-03	3.500E-02	5.811E-02	5.482E-03	0.090
NB-95M		235.69	*	2.012E-01	1.455E-01	2.306E-01	1.789E-02	0.873
ZR-95		724.18		1.072E-01	1.127E-01	1.774E-01	1.265E-02	0.604
		756.15	*	4.697E-02	7.422E-02	1.287E-01	1.011E-02	0.365
NB-97		657.90	*	-1.110E-01	7.422E-02	Half-Life	too short	
		1024.50		2.076E+00	7.422E-02	Half-Life	too short	
ZR-97		254.15		-6.629E+00	7.422E-02	Half-Life	too short	
		355.39		2.801E+00	7.422E-02	Half-Life	too short	
		507.63	*	5.866E+00	7.422E-02	Half-Life	too short	
		602.52		2.244E+00	7.422E-02	Half-Life	too short	
		1021.30		-2.285E+00	7.422E-02	Half-Life	too short	
		1147.95		-4.071E+00	7.422E-02	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1362.66			4.617E+00	7.422E-02	Half-Life	too short	
	1750.46			4.962E-02	7.422E-02	Half-Life	too short	
MO-99	140.51			-3.412E+00	2.875E+01	4.567E+01	1.233E+01	-0.075
	181.06			8.234E+00	1.915E+01	2.770E+01	4.729E+00	0.297
	366.43			-6.049E+01	8.504E+01	1.332E+02	9.023E+00	-0.454
	739.58	*		1.210E+01	1.232E+01	2.175E+01	3.057E+00	0.557
	778.00			-4.078E+00	3.655E+01	5.943E+01	4.305E+00	-0.069
TC-99M	140.51	*		-5.278E+09	3.655E+01	Half-Life	too short	
RH-101	127.23			-1.802E-02	3.398E-02	5.372E-02	3.433E-03	-0.336
	198.01	*		-9.835E-03	3.537E-02	5.446E-02	3.128E-03	-0.181
	325.23			2.299E-01	2.413E-01	3.757E-01	2.501E-02	0.612
RH-102	418.52			6.871E-03	2.925E-01	4.773E-01	3.231E-02	0.014
	475.06	*		1.045E-02	2.921E-02	4.842E-02	3.194E-03	0.216
	631.29			-1.753E-02	5.609E-02	9.183E-02	4.886E-03	-0.191
	697.49			6.386E-02	7.927E-02	1.393E-01	7.792E-03	0.458
	766.84			3.802E-01	1.481E-01	2.405E-01	1.684E-02	1.581
	1046.59			-8.149E-02	1.394E-01	2.127E-01	1.787E-02	-0.383
	1112.84			-1.289E-01	3.200E-01	4.193E-01	3.070E-02	-0.307
RU-103	497.08	*		-2.112E-02	4.064E-02	6.261E-02	8.123E-03	-0.337
	610.33			1.175E+01	2.285E+00	2.916E+00	4.469E-01	4.031
RH-106	511.85			2.950E-01	2.315E-01	4.094E-01	2.620E-02	0.721
	621.84	*		2.843E-01	3.369E-01	5.942E-01	6.869E-02	0.478
	1050.47			1.524E+00	2.583E+00	4.395E+00	3.666E-01	0.347
RU-106	511.85			2.950E-01	2.315E-01	4.094E-01	2.620E-02	0.721
	621.84	*		2.843E-01	3.357E-01	5.942E-01	3.227E-02	0.478
	1050.47			1.524E+00	2.583E+00	4.395E+00	3.666E-01	0.347
AG-108M	433.93	*		4.646E-03	3.567E-02	5.845E-02	4.191E-03	0.079
	614.37			-2.194E-02	4.270E-02	5.898E-02	3.557E-03	-0.372
	722.95			-2.377E-02	4.723E-02	6.405E-02	4.202E-03	-0.371
AG-110M	657.75	*		-3.844E-02	3.405E-02	5.167E-02	2.799E-03	-0.744
	677.61			2.738E-01	3.131E-01	5.550E-01	3.115E-02	0.493
	706.67			2.556E-02	2.228E-01	3.734E-01	2.285E-02	0.068
	763.93			9.335E-02	1.889E-01	2.857E-01	2.068E-02	0.327
	884.67			3.989E-02	5.254E-02	9.151E-02	9.173E-03	0.436
	937.48			-8.697E-02	1.304E-01	1.995E-01	2.001E-02	-0.436
	1384.27			-1.127E-01	1.720E-01	2.427E-01	2.143E-02	-0.464
IN-111	171.28			-1.237E-01	1.055E+00	1.671E+00	9.192E-02	-0.074
	245.39	*		-1.768E-01	1.212E+00	1.780E+00	1.099E-01	-0.099
IN-113M	391.69	*		-3.926E-02	4.714E-02	7.302E-02	5.207E-03	-0.538
SN-113	391.69	*		-3.926E-02	4.714E-02	7.302E-02	5.207E-03	-0.538
IN-114M	190.27	*		1.015E-02	2.120E-01	2.992E-01	1.697E-02	0.034
CD-115	260.90			2.481E+01	1.264E+02	2.138E+02	1.346E+01	0.116
	492.35			1.691E+01	3.549E+01	5.929E+01	3.861E+00	0.285
	527.90	*		1.695E+00	1.118E+01	1.815E+01	1.142E+00	0.093
SN-117M	156.02			-2.473E+00	2.458E+00	3.759E+00	2.128E-01	-0.658
	158.56	*		-7.705E-03	5.759E-02	9.159E-02	5.137E-03	-0.084
SB-122	563.90	*		-7.185E-01	2.212E+00	3.440E+00	2.069E-01	-0.209
	692.80			-1.409E+01	4.545E+01	7.392E+01	4.070E+00	-0.191
I-123	159.00	*		1.999E+00	4.545E+01	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	528.96			-4.597E+01	4.545E+01	Half-Life too short		
TE-123M	159.00	*		9.571E-03	2.955E-02	4.794E-02	2.723E-03	0.200
I-124	602.71	*		2.303E-01	7.775E-01	1.170E+00	6.599E-02	0.197
	722.78			-2.139E+00	4.978E+00	6.817E+00	4.150E-01	-0.314
	1325.50			-1.758E+01	3.919E+01	6.174E+01	5.293E+00	-0.285
+	1376.25			9.334E+01	5.161E+01	7.773E+01	6.689E+00	1.201
	1509.49			8.708E+00	1.685E+01	2.955E+01	2.416E+00	0.295
	1691.02			2.931E+00	3.806E+00	7.066E+00	5.082E-01	0.415
SB-124	602.71			1.333E-02	4.502E-02	6.772E-02	3.822E-03	0.197
	645.85			4.907E-01	5.642E-01	9.958E-01	5.943E-02	0.493
	709.31			2.120E+00	2.915E+00	5.094E+00	2.966E-01	0.416
	713.82			-5.697E-01	1.706E+00	2.760E+00	2.836E-01	-0.206
	722.78			-1.796E-01	4.178E-01	5.721E-01	3.632E-02	-0.314
+	968.20			1.921E+01	4.755E+00	7.855E+00	7.404E-01	2.446
	1045.16			-6.493E-01	2.879E+00	4.548E+00	3.830E-01	-0.143
	1325.50			-1.576E+00	3.513E+00	5.535E+00	4.745E-01	-0.285
	1368.21			-1.189E+00	1.950E+00	2.542E+00	3.426E-01	-0.468
	1436.60			-5.422E-01	4.091E+00	6.620E+00	5.589E-01	-0.082
	1691.02	*		5.801E-02	7.536E-02	1.399E-01	1.063E-02	0.415
SB-125	427.89	*		-1.965E-02	9.015E-02	1.444E-01	1.005E-02	-0.136
	463.38			6.853E-01	3.392E-01	5.567E-01	4.176E-02	1.231
	600.56			-7.041E-02	1.806E-01	2.956E-01	1.949E-02	-0.238
	635.90			7.674E-02	2.865E-01	4.886E-01	3.098E-02	0.157
TE-125M	109.28	*		3.718E+00	9.922E+00	1.639E+01	1.573E+00	0.227
I-126	388.63			1.185E-01	2.146E-01	3.625E-01	2.463E-02	0.327
	666.33	*		5.888E-02	1.911E-01	3.258E-01	1.634E-02	0.181
	753.82			3.477E-01	1.522E+00	2.564E+00	1.724E-01	0.136
SB-126	223.80			-2.949E+00	4.101E+00	6.714E+00	4.020E-01	-0.439
+	278.60			8.123E+00	4.459E+00	4.492E+00	2.883E-01	1.808
	296.50			9.286E+00	1.831E+00	3.418E+00	2.230E-01	2.717
	414.70			-2.865E-02	7.637E-02	1.214E-01	8.223E-03	-0.236
	415.30			-3.355E+00	6.365E+00	1.000E+01	6.778E-01	-0.335
	555.20			-2.354E+00	4.040E+00	6.134E+00	3.735E-01	-0.384
	573.80			-7.356E-01	1.095E+00	1.710E+00	1.013E-01	-0.430
	593.00			-6.863E-01	9.187E-01	1.461E+00	8.387E-02	-0.470
	656.30			-3.031E+00	3.445E+00	5.372E+00	2.689E-01	-0.564
	666.33			2.460E-02	7.987E-02	1.362E-01	6.830E-03	0.181
	675.00			-2.129E+00	2.025E+00	3.094E+00	1.601E-01	-0.688
	695.00			-4.183E-02	8.165E-02	1.308E-01	7.253E-03	-0.320
	697.00			6.121E-02	2.804E-01	4.739E-01	2.647E-02	0.129
	720.50	*		1.015E-01	1.539E-01	2.477E-01	1.497E-02	0.410
	856.80			-3.909E-02	5.465E-01	7.681E-01	6.972E-02	-0.051
	989.30			1.637E+00	1.354E+00	2.432E+00	2.232E-01	0.673
	1034.80			2.099E+00	9.413E+00	1.555E+01	1.333E+00	0.135
	1213.00			5.292E-01	5.597E+00	9.412E+00	6.368E-01	0.056
SB-127	61.10			-9.315E+01	8.574E+01	1.354E+02	1.903E+01	-0.688
	252.40			-7.615E-01	4.140E+00	6.866E+00	2.857E+00	-0.111
	290.80			-1.741E+01	2.485E+01	3.453E+01	3.323E+00	-0.504
	411.60			-5.606E+00	1.263E+01	1.998E+01	2.957E+00	-0.281

---- Non-Identified Nuclides ----

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	444.90			-1.170E+01	1.019E+01	1.502E+01	1.699E+00	-0.779
	473.00			5.844E-01	1.719E+00	2.844E+00	3.305E-01	0.205
	543.00			-6.700E+00	1.771E+01	2.746E+01	3.594E+00	-0.244
	603.60			7.073E+00	1.322E+01	2.030E+01	2.168E+00	0.348
	685.20	*		-3.811E-01	1.434E+00	2.341E+00	2.148E-01	-0.163
	698.50			5.304E+00	1.582E+01	2.693E+01	3.879E+00	0.197
	722.20			-8.595E+00	3.428E+01	4.799E+01	4.484E+00	-0.179
	783.80			5.455E+00	3.874E+00	6.984E+00	8.096E-01	0.781
XE-127	57.60			4.856E+00	1.014E+01	1.719E+01	2.185E+00	0.282
	145.22			5.275E-01	7.172E-01	1.187E+00	7.001E-02	0.444
	172.10			-5.172E-02	1.267E-01	1.979E-01	1.090E-02	-0.261
	202.84	*		-4.541E-02	5.034E-02	7.589E-02	4.395E-03	-0.598
	374.96			1.355E-01	2.053E-01	3.496E-01	2.372E-02	0.387
I-131	80.18			2.230E+00	5.675E+00	8.526E+00	9.394E-01	0.262
	284.30			9.381E-01	1.622E+00	2.692E+00	1.896E-01	0.348
	364.48	*		-7.084E-03	1.144E-01	1.873E-01	1.378E-02	-0.038
	636.97			1.027E+00	1.626E+00	2.840E+00	1.707E-01	0.362
	722.89			-3.812E+00	7.985E+00	1.087E+01	6.703E-01	-0.351
TE-132	49.72			7.874E+00	4.301E+01	7.262E+01	1.037E+01	0.108
	111.76			-2.392E+00	3.116E+01	5.052E+01	5.042E+00	-0.047
	116.30			-1.022E+01	2.906E+01	4.614E+01	4.461E+00	-0.222
	228.16	*		5.160E-01	7.032E-01	1.215E+00	1.758E-01	0.425
BA-133	53.15			1.382E+00	7.033E+00	1.185E+01	1.570E+00	0.117
	79.62			2.245E-01	1.614E+00	2.398E+00	3.996E-01	0.094
	81.00			-2.285E-01	1.353E-01	1.754E-01	3.031E-02	-1.303
	276.40	+		1.212E+00	6.802E-01	6.877E-01	9.109E-02	1.763
	302.84			7.217E-02	1.561E-01	2.356E-01	2.839E-02	0.306
	356.01	*		2.683E-02	4.616E-02	6.983E-02	8.425E-03	0.384
	383.85			-3.030E-01	2.984E-01	4.527E-01	5.175E-02	-0.669
I-133	510.53	+		1.621E+00	2.984E-01	Half-Life	too short	
	529.87	*		-4.203E-04	2.984E-01	Half-Life	too short	
	706.58			4.246E-02	2.984E-01	Half-Life	too short	
	856.28			-2.383E-01	2.984E-01	Half-Life	too short	
	875.33			9.826E-02	2.984E-01	Half-Life	too short	
	1236.41			1.280E+00	2.984E-01	Half-Life	too short	
	1298.22			1.061E-02	2.984E-01	Half-Life	too short	
CS-134	475.35			5.737E-01	1.943E+00	3.204E+00	2.113E-01	0.179
	563.23			-9.293E-02	3.998E-01	6.271E-01	3.849E-02	-0.148
	569.32			1.731E-01	2.032E-01	3.451E-01	2.117E-02	0.502
	604.70			1.907E-02	3.760E-02	5.766E-02	3.260E-03	0.331
	795.84	*		6.835E-02	5.409E-02	8.787E-02	6.774E-03	0.778
	801.93			-2.215E-02	4.459E-01	7.196E-01	5.634E-02	-0.031
	1038.57			-6.044E+00	4.379E+00	6.003E+00	5.113E-01	-1.007
	1167.94			-7.301E-01	3.034E+00	4.989E+00	3.130E-01	-0.146
	1365.15			4.902E-01	1.168E+00	2.042E+00	1.842E-01	0.240
CS-135	268.24	*		3.151E-01	1.826E-01	2.949E-01	2.383E-02	1.068
I-135	288.45			8.792E+09	1.826E-01	Half-Life	too short	
	417.63			-7.787E+09	1.826E-01	Half-Life	too short	
	546.56			-2.863E+09	1.826E-01	Half-Life	too short	

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CS-136		836.80		1.582E+10	1.826E-01	Half-Life	too short	
		1038.76		-2.784E+10	1.826E-01	Half-Life	too short	
		1124.00		1.193E+10	1.826E-01	Half-Life	too short	
		1131.51		6.909E+09	1.826E-01	Half-Life	too short	
		1260.41	*	-5.636E+09	1.826E-01	Half-Life	too short	
		1457.56		1.769E+12	1.826E-01	Half-Life	too short	
		1678.03		-1.156E+10	1.826E-01	Half-Life	too short	
		1706.46		-1.019E+10	1.826E-01	Half-Life	too short	
		1791.20		-8.957E+08	1.826E-01	Half-Life	too short	
		66.91		-3.952E-01	1.023E+00	1.671E+00	2.863E-01	-0.236
	+	86.29		5.281E+00	1.763E+00	2.398E+00	3.533E-01	2.202
		153.22		9.329E-01	7.083E-01	1.192E+00	8.532E-02	0.783
		163.89		1.991E-01	1.121E+00	1.805E+00	1.266E-01	0.110
		176.55		3.809E-01	3.887E-01	6.446E-01	4.056E-02	0.591
		273.65		1.581E-01	6.369E-01	7.016E-01	5.005E-02	0.225
BA-137M		340.57		9.861E-02	1.369E-01	2.090E-01	1.469E-02	0.472
		818.51		7.000E-04	7.837E-02	1.290E-01	1.054E-02	0.005
		1048.07	*	-9.123E-02	1.267E-01	1.913E-01	1.674E-02	-0.477
		1235.34		1.180E+00	7.069E-01	1.291E+00	1.394E-01	0.914
		661.65	*	-6.753E-03	3.580E-02	5.895E-02	2.908E-03	-0.115
		661.65	*	-7.139E-03	3.784E-02	6.231E-02	3.092E-03	-0.115
		165.85	*	-1.325E-02	3.170E-02	4.963E-02	2.711E-03	-0.267
		162.64		-1.197E-01	7.921E-01	1.257E+00	7.893E-02	-0.095
		304.84		7.227E-01	1.358E+00	2.044E+00	5.615E-01	0.354
		423.70		-5.791E-01	1.851E+00	2.931E+00	9.370E-01	-0.198
LA-140		537.32	*	4.093E-02	2.697E-01	4.366E-01	1.423E-01	0.094
		328.77		6.572E-01	3.564E-01	5.769E-01	4.203E-02	1.139
		432.53		9.160E-01	2.257E+00	3.761E+00	2.734E-01	0.244
		487.03		7.791E-02	1.345E-01	2.263E-01	1.635E-02	0.344
		751.79		-8.139E-01	1.802E+00	2.872E+00	2.250E-01	-0.283
		815.85		-1.339E-01	3.451E-01	5.484E-01	5.015E-02	-0.244
		867.82		-1.064E+00	1.498E+00	2.208E+00	2.158E-01	-0.482
		919.63		3.704E+00	2.954E+00	5.224E+00	6.129E-01	0.709
		925.24		-2.761E-01	1.178E+00	1.875E+00	1.942E-01	-0.147
		1596.49	*	-5.049E-02	8.883E-02	1.313E-01	1.019E-02	-0.384
CE-141		145.44	*	4.187E-03	6.582E-02	1.060E-01	6.490E-03	0.039
CE-143		57.37		3.161E-04	6.582E-02	Half-Life	too short	
		231.56		-1.668E-03	6.582E-02	Half-Life	too short	
	+	293.26	*	1.397E-03	6.582E-02	Half-Life	too short	
	+	350.59		3.366E-02	6.582E-02	Half-Life	too short	
		490.36		-1.625E-03	6.582E-02	Half-Life	too short	
		664.57		5.131E-04	6.582E-02	Half-Life	too short	
		721.93		-4.510E-04	6.582E-02	Half-Life	too short	
CE-144		80.11		-3.898E-01	2.675E+00	3.922E+00	4.304E-01	-0.099
		133.54	*	-1.698E-01	2.169E-01	3.361E-01	4.829E-02	-0.505
PM-144		476.78		2.202E-02	6.816E-02	1.126E-01	8.577E-03	0.195
		618.01		-4.584E-03	3.362E-02	5.588E-02	3.265E-03	-0.082
		696.49	*	-1.691E-02	3.602E-02	5.787E-02	3.229E-03	-0.292
		778.57		2.672E-01	2.427E+00	4.018E+00	2.916E-01	0.067

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PR-144	696.49	*		-1.146E+00	2.441E+00	3.922E+00	2.186E-01	-0.292
	1489.15			-1.012E+01	1.239E+01	1.760E+01	1.454E+00	-0.575
PM-146	453.90	*		1.930E-02	4.247E-02	7.103E-02	6.561E-03	0.272
	633.02			-4.100E-01	1.443E+00	2.355E+00	8.654E-01	-0.174
	735.90			-6.061E-02	1.539E-01	2.453E-01	6.870E-02	-0.247
	747.13			2.812E-02	9.660E-02	1.635E-01	2.107E-02	0.172
ND-147	91.11			1.935E-01	4.341E-01	5.433E-01	6.057E-02	0.356
	319.41			-3.663E-01	3.268E+00	5.379E+00	3.570E-01	-0.068
	439.89			1.269E+00	5.727E+00	9.446E+00	6.352E-01	0.134
	531.02	*		1.336E-01	5.852E-01	9.543E-01	1.310E-01	0.140
PM-149	285.90	*		-5.528E+01	9.803E+01	1.584E+02	2.291E+01	-0.349
EU-152	121.78			-1.080E-02	7.675E-02	1.236E-01	1.019E-02	-0.087
	244.69			4.113E-02	3.682E-01	5.496E-01	3.391E-02	0.075
	344.27	*		-4.437E-02	1.026E-01	1.589E-01	1.171E-02	-0.279
	443.98			-7.012E-01	9.677E-01	1.486E+00	9.976E-02	-0.472
	778.89			-2.546E-02	2.773E-01	4.543E-01	3.299E-02	-0.056
	867.32			1.171E-01	8.879E-01	1.391E+00	1.299E-01	0.084
	964.01	+		6.812E-01	4.016E-01	6.329E-01	5.996E-02	1.076
	1085.78			3.139E-01	4.407E-01	7.572E-01	5.895E-02	0.415
	1112.02			-2.628E-01	4.589E-01	5.872E-01	4.307E-02	-0.448
	1407.95	+		2.669E-01	2.887E-01	3.849E-01	3.282E-02	0.694
GD-153	69.67			2.650E-01	2.210E+00	3.512E+00	3.917E-01	0.075
	83.37			1.962E+01	1.872E+01	2.878E+01	3.190E+00	0.682
	97.43	*		4.097E-02	9.341E-02	1.397E-01	1.300E-02	0.293
	103.18			-4.092E-02	1.090E-01	1.751E-01	1.480E-02	-0.234
EU-154	123.07			3.252E-02	5.455E-02	9.040E-02	8.934E-03	0.360
	247.94			-1.660E-01	3.638E-01	5.977E-01	5.849E-02	-0.278
	591.81			-2.209E-02	5.931E-01	9.954E-01	9.702E-02	-0.022
	723.30			-1.641E-01	2.129E-01	2.805E-01	2.055E-02	-0.585
	756.87			6.136E-02	8.010E-01	1.333E+00	1.431E-01	0.046
	873.19			5.100E-02	3.148E-01	5.229E-01	6.728E-02	0.098
	996.32			-1.765E-01	4.168E-01	6.466E-01	1.164E-01	-0.273
	1004.76			-6.830E-02	2.408E-01	3.794E-01	4.518E-02	-0.180
	1274.45	*		-1.696E-03	1.413E-01	2.347E-01	2.500E-02	-0.007
EU-155	48.70			-1.986E+00	5.703E+00	9.435E+00	1.133E+00	-0.210
	60.01			-9.300E+00	7.719E+00	1.215E+01	1.496E+00	-0.766
	86.54	+		4.868E-01	1.558E-01	2.218E-01	2.510E-02	2.195
	105.31	*		1.135E-01	1.151E-01	1.944E-01	1.613E-02	0.584
TB-160	86.79	+		1.301E+00	4.161E-01	5.947E-01	6.700E-02	2.187
	197.04			-4.130E-01	6.035E-01	9.101E-01	5.220E-02	-0.454
	215.65			3.973E-02	7.219E-01	1.224E+00	7.239E-02	0.032
	298.57	+		3.043E-01	1.429E-01	2.209E-01	1.444E-02	1.378
	879.36	*		-6.318E-02	1.558E-01	2.455E-01	2.367E-02	-0.257
	962.29	+		1.258E+00	7.417E-01	1.160E+00	1.102E-01	1.084
	966.15			1.420E+00	3.203E-01	5.987E-01	5.658E-02	2.371
	1177.93			-7.631E-03	4.217E-01	7.049E-01	4.396E-02	-0.011
	1271.85			-1.115E-02	8.442E-01	1.403E+00	1.079E-01	-0.008
HO-166M	80.57			-2.243E-01	3.425E-01	4.885E-01	5.366E-02	-0.459
	184.41	+		1.813E-01	6.639E-02	6.948E-02	3.902E-03	2.609

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		280.46		-5.236E-02	9.595E-02	1.354E-01	8.709E-03	-0.387
		410.95		9.100E-02	2.493E-01	4.158E-01	2.819E-02	0.219
		711.68	*	1.838E-02	6.439E-02	1.092E-01	6.409E-03	0.168
		752.31		-1.195E-01	2.906E-01	4.650E-01	3.112E-02	-0.257
		810.29		-8.630E-03	6.512E-02	1.060E-01	8.448E-03	-0.081
		51.35		-1.672E+01	6.418E+01	1.064E+02	1.399E+01	-0.157
		52.39		-3.665E+00	3.241E+01	5.404E+01	7.157E+00	-0.068
		59.40		-2.189E+01	4.139E+01	6.751E+01	8.386E+00	-0.324
		66.72	*	-1.668E+01	3.697E+01	6.032E+01	6.871E+00	-0.276
		88.36		9.586E-01	3.067E-01	4.166E-01	4.686E-02	2.301
LU-176	+	201.83		-1.091E-02	2.795E-02	4.671E-02	2.700E-03	-0.234
		306.84	*	-2.257E-02	2.446E-02	3.845E-02	2.529E-03	-0.587
LU-177		401.10		-4.746E+00	7.101E+00	1.111E+01	7.544E-01	-0.427
		112.95		1.221E+00	1.699E+00	2.840E+00	2.091E-01	0.430
LU-177M	+	208.36	*	3.045E+00	1.863E+00	2.123E+00	1.241E-01	1.434
		52.97		1.057E+00	3.192E+00	5.405E+00	7.161E-01	0.195
HF-181		54.07		4.830E-01	1.640E+00	2.772E+00	3.656E-01	0.174
		61.30		-2.136E+00	2.203E+00	3.480E+00	4.210E-01	-0.614
		121.62		1.094E-01	3.878E-01	6.360E-01	4.208E-02	0.172
		147.16		-3.376E-01	6.664E-01	1.046E+00	6.121E-02	-0.323
		171.86		-1.821E-01	5.073E-01	7.945E-01	4.374E-02	-0.229
		218.09		-3.538E-01	8.452E-01	1.404E+00	8.334E-02	-0.252
	+	268.79		2.242E+00	1.198E+00	1.531E+00	9.724E-02	1.465
		319.02		4.474E-02	2.546E-01	4.259E-01	2.825E-02	0.105
		367.43		-5.103E-01	9.245E-01	1.466E+00	9.926E-02	-0.348
		413.65	*	2.019E-02	1.741E-01	2.860E-01	1.938E-02	0.071
W-181		56.28		3.742E-01	1.675E+00	2.820E+00	3.643E-01	0.133
		57.53		2.149E-01	8.594E-01	1.447E+00	1.841E-01	0.148
		65.20		-9.761E-01	1.280E+00	2.062E+00	2.382E-01	-0.473
		133.02		-4.081E-02	7.005E-02	1.102E-01	6.845E-03	-0.370
		136.25		-2.301E-01	4.737E-01	7.471E-01	4.572E-02	-0.308
		345.85		-8.928E-02	2.160E-01	3.203E-01	2.154E-02	-0.279
		482.03	*	4.734E-03	4.168E-02	6.786E-02	4.454E-03	0.070
		56.28		1.463E-01	6.553E-01	1.103E+00	1.425E-01	0.133
		57.53		8.384E-02	3.366E-01	5.668E-01	7.212E-02	0.148
		65.20	*	-3.792E-01	4.975E-01	8.011E-01	9.256E-02	-0.473
TA-182		67.75		4.342E-02	1.425E-01	2.390E-01	2.700E-02	0.182
		100.10		-1.570E-01	1.912E-01	3.012E-01	2.677E-02	-0.521
		152.43		2.331E-01	3.576E-01	5.885E-01	3.377E-02	0.396
		222.10		2.446E-01	3.465E-01	6.016E-01	3.593E-02	0.407
		1001.68		7.307E-01	2.288E+00	3.811E+00	3.438E-01	0.192
		1121.28		6.748E-01	2.126E-01	4.021E-01	2.882E-02	1.678
		1189.05		-1.877E-01	3.601E-01	5.772E-01	3.695E-02	-0.325
		1221.42	*	2.329E-01	2.475E-01	4.387E-01	3.025E-02	0.531
		1230.97		-5.045E-01	5.690E-01	8.842E-01	6.229E-02	-0.571
		57.98		1.915E-01	3.267E-01	5.556E-01	7.029E-02	0.345
RE-183		59.32		-9.081E-02	1.707E-01	2.783E-01	3.461E-02	-0.326
		67.20		-5.877E-02	2.613E-01	4.302E-01	4.881E-02	-0.137
	*	162.32		2.448E-03	1.158E-01	1.852E-01	1.024E-02	0.013



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	208.81		2.731E+00	1.671E+00	1.905E+00	1.114E-01	1.434
		291.72		-4.241E-01	1.089E+00	1.553E+00	1.009E-01	-0.273
		57.98		7.054E-01	1.204E+00	2.047E+00	2.590E-01	0.345
		59.32		-3.343E-01	6.283E-01	1.025E+00	1.274E-01	-0.326
		67.20		-2.165E-01	9.623E-01	1.585E+00	1.798E-01	-0.137
		161.27		-1.343E-01	3.731E-01	5.866E-01	3.257E-02	-0.229
		216.55		8.419E-02	2.618E-01	4.486E-01	2.656E-02	0.188
		252.85	*	-7.938E-02	2.203E-01	3.630E-01	2.263E-02	-0.219
		318.01		2.098E-01	4.508E-01	7.654E-01	5.074E-02	0.274
		792.07		1.978E+00	1.242E+00	2.054E+00	1.552E-01	0.963
OS-185		903.28		-8.341E-01	1.301E+00	1.680E+00	1.694E-01	-0.496
		920.93		7.905E-01	4.717E-01	8.755E-01	8.684E-02	0.903
		59.72		-1.929E-01	4.494E-01	7.361E-01	9.104E-02	-0.262
		61.14		-2.628E-01	2.419E-01	3.831E-01	4.645E-02	-0.686
		69.30		2.749E-01	3.984E-01	6.457E-01	7.217E-02	0.426
		592.07		-1.905E-01	2.414E+00	4.038E+00	2.322E-01	-0.047
		646.12	*	3.851E-02	4.775E-02	8.402E-02	4.316E-03	0.458
		717.42		-5.491E-02	8.931E-01	1.476E+00	8.828E-02	-0.037
		874.81		1.596E-01	6.190E-01	1.037E+00	9.876E-02	0.154
		880.27		-2.683E-01	8.691E-01	1.383E+00	1.336E-01	-0.194
RE-188		155.03	*	1.815E-01	1.840E-01	3.063E-01	1.740E-02	0.593
		477.96		-2.262E+00	3.127E+00	4.767E+00	3.138E-01	-0.475
		633.10		-8.644E-01	2.900E+00	4.752E+00	2.518E-01	-0.182
W-188		63.58		7.958E+01	7.323E+01	1.244E+02	1.463E+01	0.640
		227.08		1.113E+01	1.273E+01	2.223E+01	1.338E+00	0.501
		290.67	*	-4.040E+00	8.408E+00	1.189E+01	7.721E-01	-0.340
IR-192	+	295.96		1.105E+00	1.757E-01	2.915E-01	1.925E-02	3.791
		308.46		-1.053E-02	9.422E-02	1.554E-01	1.033E-02	-0.068
		316.51	*	2.661E-05	3.497E-02	5.796E-02	3.853E-03	0.000
		468.07		-4.130E-02	7.338E-02	9.727E-02	7.212E-03	-0.425
		604.41		2.579E-01	5.091E-01	7.798E-01	8.781E-02	0.331
AU-195		612.46		-9.554E-03	7.110E-01	1.038E+00	7.652E-02	-0.009
		65.12		-1.828E-01	2.307E-01	3.709E-01	4.289E-02	-0.493
		66.83		-5.402E-02	1.226E-01	2.001E-01	2.278E-02	-0.270
	+	75.70		1.937E+00	3.543E-01	5.733E-01	6.271E-02	3.378
		98.88	*	2.142E-01	2.664E-01	4.049E-01	3.674E-02	0.529
TL-200		129.76		5.364E+00	3.054E+00	5.242E+00	3.307E-01	1.023
		367.94	*	-4.718E-05	3.054E+00	Half-Life	too short	
		579.30		7.674E-04	3.054E+00	Half-Life	too short	
		828.27		-1.463E-03	3.054E+00	Half-Life	too short	
TL-201		1205.75		1.027E-03	3.054E+00	Half-Life	too short	
		68.90		3.249E+00	6.274E+00	1.057E+01	1.185E+00	0.307
		70.82		-2.998E+00	3.975E+00	5.681E+00	6.298E-01	-0.528
		80.30		-2.992E+00	6.414E+00	9.249E+00	1.015E+00	-0.323
		135.34		-1.848E+01	2.639E+01	4.121E+01	2.532E+00	-0.448
TL-202		167.43	*	4.385E+00	7.277E+00	1.192E+01	6.520E-01	0.368
		68.90		2.909E-01	5.619E-01	9.469E-01	1.061E-01	0.307
		70.82		-2.678E-01	3.550E-01	5.074E-01	5.625E-02	-0.528
		80.30		-2.673E-01	5.730E-01	8.263E-01	9.071E-02	-0.323

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-207		439.56	*	-1.399E-02	6.912E-02	1.106E-01	7.438E-03	-0.126
		72.80		4.261E-01	2.576E-01	4.019E-01	4.420E-02	1.060
	+	74.97		6.615E-01	1.616E-01	2.853E-01	3.123E-02	2.319
		84.90		2.196E-01	2.393E-01	3.658E-01	4.082E-02	0.600
TL-207		569.67		2.621E-02	3.162E-02	5.363E-02	3.198E-03	0.489
		1063.62	*	-2.852E-03	6.283E-02	1.009E-01	8.212E-03	-0.028
		1770.23		-7.267E-01	5.031E-01	5.459E-01	3.622E-02	-1.331
		81.07		-5.015E-01	2.908E-01	3.870E-01	4.257E-02	-1.296
		83.78		1.564E-01	1.593E-01	2.443E-01	2.712E-02	0.640
		94.90		-5.619E-01	2.692E-01	3.987E-01	3.893E-02	-1.409
		122.32		2.173E-02	1.849E+00	2.997E+00	2.212E-01	0.007
		144.24		5.576E-01	7.318E-01	1.198E+00	8.783E-02	0.465
		154.21		4.189E-01	4.220E-01	7.026E-01	4.869E-02	0.596
	+	269.46		5.249E-01	2.805E-01	3.552E-01	2.343E-02	1.478
PO-209		323.87	*	1.583E-01	6.843E-01	1.013E+00	1.706E-01	0.156
	+	338.28		7.591E+00	1.884E+00	2.556E+00	2.826E-01	2.970
		445.03		-2.652E+00	2.364E+00	3.499E+00	3.782E-01	-0.758
		260.50		2.308E+00	9.281E+00	1.574E+01	9.904E-01	0.147
		262.80		-2.615E+01	2.566E+01	4.065E+01	2.565E+00	-0.643
		896.60	*	3.646E+00	7.815E+00	1.330E+01	1.342E+00	0.274
BI-210		46.50	*	5.426E+00	9.048E+00	1.553E+01	1.523E+00	0.349
PB-210		46.50	*	5.426E+00	9.048E+00	1.553E+01	1.523E+00	0.349
PO-210		46.50	*	5.426E+00	9.045E+00	1.553E+01	1.394E+00	0.349
PB-211		404.84	*	3.748E-01	1.015E+00	1.648E+00	1.029E+00	0.227
BI-212		427.08		-7.745E-01	2.090E+00	3.222E+00	1.995E+00	-0.240
		831.96		8.358E-01	1.516E+00	2.439E+00	1.528E+00	0.343
	+	727.18	*	1.131E+00	5.273E-01	7.064E-01	5.651E-02	1.601
		785.46		1.182E+00	1.946E+00	3.278E+00	2.428E-01	0.361
PO-215		1620.62		7.651E-01	1.271E+00	2.273E+00	1.733E-01	0.337
		81.07		-5.015E-01	2.908E-01	3.870E-01	4.257E-02	-1.296
		83.78		1.564E-01	1.593E-01	2.443E-01	2.712E-02	0.640
		94.90		-5.619E-01	2.692E-01	3.987E-01	3.893E-02	-1.409
		122.32		2.173E-02	1.849E+00	2.997E+00	2.212E-01	0.007
		144.24		5.576E-01	7.318E-01	1.198E+00	8.783E-02	0.465
		154.21		4.189E-01	4.220E-01	7.026E-01	4.869E-02	0.596
	+	269.46		5.249E-01	2.805E-01	3.552E-01	2.343E-02	1.478
		323.87	*	1.583E-01	6.843E-01	1.013E+00	1.706E-01	0.156
	+	338.28		7.591E+00	1.884E+00	2.556E+00	2.826E-01	2.970
RN-219		445.03		-2.652E+00	2.364E+00	3.499E+00	3.782E-01	-0.758
	+	271.23		6.734E-01	3.618E-01	4.334E-01	3.693E-02	1.554
		401.81	*	-2.841E-01	4.427E-01	6.917E-01	9.723E-02	-0.411
RN-220		549.76	*	-3.813E+00	2.777E+01	4.393E+01	2.694E+00	-0.087
RA-223		81.07		-5.015E-01	2.908E-01	3.870E-01	4.257E-02	-1.296
		83.78		1.564E-01	1.593E-01	2.443E-01	2.712E-02	0.640
		94.90		-5.619E-01	2.692E-01	3.987E-01	3.893E-02	-1.409
		122.32		2.173E-02	1.849E+00	2.997E+00	2.212E-01	0.007
		144.24		5.576E-01	7.318E-01	1.198E+00	8.783E-02	0.465
		154.21		4.189E-01	4.220E-01	7.026E-01	4.869E-02	0.596
	+	269.46		5.249E-01	2.805E-01	3.552E-01	2.343E-02	1.478

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		323.87	*	1.583E-01	6.843E-01	1.013E+00	1.706E-01	0.156
	+	338.28		7.591E+00	1.884E+00	2.556E+00	2.826E-01	2.970
		445.03		-2.652E+00	2.364E+00	3.499E+00	3.782E-01	-0.758
		79.80		-3.219E-01	2.078E+00	3.045E+00	6.864E-01	-0.106
		236.00		1.056E+00	3.124E-01	5.050E-01	5.363E-02	2.090
		256.20	*	-1.604E-02	3.636E-01	6.085E-01	8.616E-02	-0.026
		286.10		-3.542E-01	1.616E+00	2.664E+00	3.173E-01	-0.133
TH-227	+	299.80		3.875E+00	1.913E+00	2.857E+00	4.732E-01	1.356
		304.40		1.136E+00	1.969E+00	2.990E+00	5.252E-01	0.380
		334.20		-1.620E+00	2.533E+00	3.457E+00	6.441E-01	-0.469
		79.80		-3.219E-01	2.078E+00	3.045E+00	6.944E-01	-0.106
	+	94.00		6.534E+00	4.332E+00	3.737E+00	8.345E-01	1.749
		236.00		1.056E+00	3.075E-01	5.050E-01	4.671E-02	2.090
		256.20	*	-1.604E-02	3.636E-01	6.085E-01	1.038E-01	-0.026
TH-229		286.10		-3.542E-01	1.654E+00	2.664E+00	2.670E+00	-0.133
	+	299.80		3.875E+00	1.913E+00	2.857E+00	4.732E-01	1.356
		304.40		1.136E+00	1.969E+00	2.990E+00	5.252E-01	0.380
		334.20		-1.620E+00	2.533E+00	3.457E+00	6.441E-01	-0.469
		85.43		2.937E-01	2.498E-01	3.834E-01	4.289E-02	0.766
	+	88.47		5.518E-01	1.765E-01	2.362E-01	2.649E-02	2.336
		100.00		-1.605E-01	1.986E-01	3.131E-01	2.787E-02	-0.513
PA-231		193.63	*	1.708E-01	5.312E-01	8.536E-01	4.868E-02	0.200
		210.97		6.489E-01	8.475E-01	1.319E+00	7.739E-02	0.492
		283.67	*	1.132E+00	1.775E+00	2.708E+00	3.809E-01	0.418
TH-231		301.29		1.375E+00	6.828E-01	1.102E+00	1.199E-01	1.248
		81.07		-5.015E-01	2.908E-01	3.870E-01	4.257E-02	-1.296
		83.78		1.564E-01	1.593E-01	2.443E-01	2.712E-02	0.640
		94.90		-5.619E-01	2.692E-01	3.987E-01	3.893E-02	-1.409
		122.32		2.173E-02	1.849E+00	2.997E+00	2.212E-01	0.007
		144.24		5.576E-01	7.318E-01	1.198E+00	8.783E-02	0.465
		154.21		4.189E-01	4.220E-01	7.026E-01	4.869E-02	0.596
U-231	+	269.46		5.249E-01	2.805E-01	3.552E-01	2.343E-02	1.478
		323.87	*	1.583E-01	6.843E-01	1.013E+00	1.706E-01	0.156
	+	338.28		7.591E+00	1.884E+00	2.556E+00	2.826E-01	2.970
		445.03		-2.652E+00	2.364E+00	3.499E+00	3.782E-01	-0.758
		84.21		6.484E+00	6.750E+00	1.035E+01	1.151E+00	0.626
	+	92.29		6.479E+00	4.095E+00	4.177E+00	4.300E-01	1.551
		95.87	*	-9.114E-02	1.265E+00	1.845E+00	1.768E-01	-0.049
PA-233		108.00		-1.763E+00	2.242E+00	3.530E+00	2.779E-01	-0.499
	+	75.28		1.930E+01	5.315E+00	8.675E+00	1.454E+00	2.225
	+	86.59		7.912E+00	3.232E+00	3.608E+00	1.002E+00	2.193
	+	300.12		1.080E+00	5.240E-01	8.063E-01	1.111E-01	1.340
		311.98	*	2.989E-02	6.502E-02	1.104E-01	7.641E-03	0.271
		340.50		5.629E-01	6.790E-01	1.027E+00	2.384E-01	0.548
		398.62		1.283E+00	2.143E+00	3.590E+00	9.369E-01	0.357
PA-234		415.76		-9.722E-01	1.703E+00	2.651E+00	5.535E-01	-0.367
		63.00		2.154E+00	2.230E+00	3.752E+00	6.564E-01	0.574
		94.67		-3.396E-01	1.958E-01	2.926E-01	3.879E-02	-1.161
		98.44		1.434E-01	1.338E-01	1.676E-01	9.365E-02	0.856

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		99.86		-3.983E-01	5.032E-01	7.942E-01	7.087E-02	-0.502
		111.00		-1.842E-02	1.969E-01	3.193E-01	3.624E-02	-0.058
		131.20		2.062E-02	1.158E-01	1.883E-01	1.180E-02	0.109
		152.70		3.929E-01	3.489E-01	5.767E-01	9.102E-02	0.681
	+	186.00		6.527E+00	3.090E+00	2.614E+00	7.979E-01	2.497
		226.40		7.792E-04	4.070E-01	6.870E-01	8.016E-02	0.001
		227.20		3.891E-01	4.315E-01	7.540E-01	4.538E-02	0.516
		248.90		5.525E-01	8.084E-01	1.386E+00	2.993E-01	0.399
	+	293.70		6.955E+00	1.518E+00	1.828E+00	2.989E-01	3.804
		369.80		-1.289E-01	8.822E-01	1.435E+00	3.030E-01	-0.090
		568.70		9.071E-01	9.997E-01	1.708E+00	1.020E-01	0.531
		569.50		2.359E-01	2.808E-01	4.767E-01	2.843E-02	0.495
		574.00		-1.055E+00	1.570E+00	2.452E+00	1.453E-01	-0.430
		699.00		3.330E-01	7.383E-01	1.264E+00	2.266E-01	0.263
		706.10		-1.560E-01	1.111E+00	1.824E+00	8.051E-01	-0.086
		733.00		1.029E-01	4.194E-01	6.203E-01	1.328E-01	0.166
		742.81		-9.385E-01	1.605E+00	2.326E+00	1.558E+00	-0.404
		796.30		8.086E-01	1.067E+00	1.627E+00	4.352E-01	0.497
		805.60		5.351E-01	1.141E+00	1.928E+00	5.869E-01	0.278
		819.60		-3.415E-01	1.347E+00	2.157E+00	8.180E-01	-0.158
		826.30		-3.955E-01	9.559E-01	1.491E+00	6.664E-01	-0.265
		831.60		1.413E-01	7.366E-01	1.226E+00	3.653E-01	0.115
		876.40		3.843E-01	9.746E-01	1.514E+00	1.558E+00	0.254
		880.51		-9.054E-02	3.147E-01	5.017E-01	4.852E-02	-0.180
		883.24		2.881E-01	3.644E-01	5.457E-01	3.676E-01	0.528
		899.00		1.321E-01	9.270E-01	1.530E+00	6.738E-01	0.086
		925.00		-2.762E-01	1.235E+00	1.968E+00	1.944E-01	-0.140
		926.50		-5.931E-04	1.755E-01	2.860E-01	7.357E-02	-0.002
		946.00	*	-8.485E-02	3.333E-01	5.289E-01	1.019E-01	-0.160
		949.00		7.340E-01	5.030E-01	9.121E-01	8.791E-02	0.805
		980.50		-1.692E-01	7.672E-01	1.217E+00	1.129E-01	-0.139
		1394.10		4.870E-01	1.263E+00	2.124E+00	1.382E+00	0.229
PA-234M	+	766.42		4.000E+01	2.535E+01	2.529E+01	1.277E+01	1.581
		1001.03	*	3.073E-01	5.156E+00	8.398E+00	8.667E-01	0.037
TH-234		63.29	*	2.173E+00	1.894E+00	3.169E+00	6.245E-01	0.686
	+	92.38		1.691E+00	1.102E+00	1.090E+00	2.063E-01	1.552
U-235		89.95		1.162E+00	1.744E+00	2.070E+00	6.532E-01	0.561
	+	93.35		2.033E+00	1.394E+00	1.272E+00	3.626E-01	1.598
		105.00		7.151E-01	1.152E+00	1.893E+00	5.627E-01	0.378
		143.76	*	1.264E-01	2.277E-01	3.689E-01	6.032E-02	0.343
		163.35		-9.845E-02	4.965E-01	7.856E-01	1.405E-01	-0.125
	+	185.71		2.417E-01	8.852E-02	9.614E-02	5.411E-03	2.515
		205.31		6.382E-02	5.563E-01	8.390E-01	1.509E-01	0.076
NP-236		94.67		-2.556E-01	1.468E-01	2.222E-01	2.179E-02	-1.151
		98.44		1.085E-01	8.157E-02	1.267E-01	1.159E-02	0.856
		111.00		-1.393E-02	1.490E-01	2.415E-01	1.824E-02	-0.058
		160.31	*	-1.188E-04	8.394E-02	1.342E-01	7.478E-03	-0.001
U-238		63.29	*	2.173E+00	1.894E+00	3.169E+00	6.245E-01	0.686
	+	92.38		1.691E+00	1.069E+00	1.090E+00	1.120E-01	1.552

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		-2.279E-03	1.734E-01	2.700E-01	2.422E-02	-0.008
		117.00	*	-5.297E-03	1.952E-01	3.165E-01	2.214E-02	-0.017
	+	209.75		2.154E+00	1.318E+00	1.521E+00	8.910E-02	1.416
		228.18		1.681E-01	2.277E-01	3.955E-01	2.383E-02	0.425
	+	277.60		5.917E-01	3.248E-01	3.376E-01	2.165E-02	1.752
AM-241		334.30		-8.965E-01	1.428E+00	1.963E+00	1.313E-01	-0.457
		59.54	*	-1.253E-01	2.395E-01	3.906E-01	5.016E-02	-0.321
CM-243		99.55		-2.346E-03	1.784E-01	2.778E-01	2.492E-02	-0.008
		103.76	*	4.955E-03	1.017E-01	1.663E-01	1.393E-02	0.030
		117.00		-5.450E-03	2.008E-01	3.256E-01	2.278E-02	-0.017
	+	209.75		2.124E+00	1.299E+00	1.500E+00	8.783E-02	1.416
		228.18		1.699E-01	2.301E-01	3.996E-01	2.408E-02	0.425
AM-246	+	277.60		5.965E-01	3.274E-01	3.404E-01	2.183E-02	1.752
		798.80		-8.730E-02	1.648E-01	2.196E-01	1.692E-02	-0.397
		1036.00		-1.161E-01	3.224E-01	5.013E-01	4.288E-02	-0.231
		1062.04		9.770E-02	2.639E-01	4.400E-01	3.593E-02	0.222
		1078.86	*	-9.634E-02	1.731E-01	2.640E-01	2.085E-02	-0.365
CM-247	+	278.00		2.454E+00	1.347E+00	1.391E+00	8.920E-02	1.765
		287.40		-4.528E-02	1.297E+00	2.158E+00	1.397E-01	-0.021
		402.60	*	-5.053E-03	3.876E-02	6.280E-02	4.264E-03	-0.080
CF-249		252.85		-2.978E-01	8.265E-01	1.362E+00	8.492E-02	-0.219
		333.44		-2.073E-01	1.937E-01	2.563E-01	1.714E-02	-0.809
		387.95	*	6.460E-02	4.120E-02	7.328E-02	4.979E-03	0.882
CF-251		176.60	*	9.088E-02	1.353E-01	2.216E-01	1.229E-02	0.410
		227.00		2.394E-01	3.844E-01	6.648E-01	4.000E-02	0.360
		285.00		2.633E-01	1.835E+00	3.080E+00	1.989E-01	0.086

## VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691005      *
* Acquisition date   : 9-FEB-2010 15:24:09 Detector SN# :                   *
* Detector ID        : GAM10 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time  : 0 02:00:01.19 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G245691005 Analyst initials: MJH1                  *
* Batch Number      : 947037 Sample Quantity : 1.2697E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME : 16-MAR-2009 13:18:08 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.972E+01	3.938E+00	4.808E-01	0.000E+00
NB-95	1.512E-01	5.770E-02	6.892E-02	0.000E+00
CD-109	4.112E+00	1.289E+00	1.655E+00	0.000E+00
SN-126	4.042E-01	1.267E-01	1.713E-01	0.000E+00
HG-203	1.353E-01	7.282E-02	6.772E-02	0.000E+00
TL-208	6.219E-01	9.386E-02	6.024E-02	0.000E+00
BI-211	4.194E+00	5.392E-01	3.467E-01	0.000E+00
PB-212	1.853E+00	1.806E-01	9.637E-02	0.000E+00
PO-212	1.853E+00	1.806E-01	9.637E-02	0.000E+00
BI-214	1.279E+00	1.854E-01	1.155E-01	0.000E+00
PB-214	1.459E+00	2.019E-01	1.209E-01	0.000E+00
PO-214	1.459E+00	2.019E-01	1.209E-01	0.000E+00
PO-216	1.853E+00	1.806E-01	9.637E-02	0.000E+00
PO-218	1.459E+00	2.019E-01	1.209E-01	0.000E+00
RA-224	4.398E+00	1.367E+00	1.096E+00	0.000E+00
RA-226	1.279E+00	1.854E-01	1.155E-01	0.000E+00
AC-228	1.708E+00	3.666E-01	2.162E-01	0.000E+00
RA-228	1.708E+00	3.666E-01	2.162E-01	0.000E+00
TH-228	1.881E+00	1.833E-01	9.784E-02	0.000E+00
TH-230	1.278E+00	1.854E-01	1.155E-01	0.000E+00
TH-232	1.708E+00	3.666E-01	2.162E-01	0.000E+00
U-234	1.278E+00	1.854E-01	1.155E-01	0.000E+00
NP-237	1.187E+00	4.428E-01	4.906E-01	0.000E+00
AM-243	3.685E-01	8.824E-02	1.144E-01	0.000E+00
ANH-511	1.562E-01	6.190E-02	4.412E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-6.098E-02	3.161E-01	5.221E-01	0.000E+00 NOT IDENT.
NA-22	-1.060E-02	5.029E-02	8.393E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	8.388E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-5.900E-03	2.851E-02	4.464E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.096E-02	8.525E-02	0.000E+00	NOT IDENT.
SC-46	-5.426E-02	4.039E-02	5.828E-02	0.000E+00	FAIL ABUN
V-48	-2.408E-02	7.367E-02	1.186E-01	0.000E+00	NOT IDENT.
CR-51	-2.486E-02	3.562E-01	6.133E-01	0.000E+00	NOT IDENT.
MN-52	1.284E-02	2.488E-01	4.212E-01	0.000E+00	NOT IDENT.
MN-54	-1.469E-02	4.405E-02	7.264E-02	0.000E+00	NOT IDENT.
CO-56	9.159E-03	4.111E-02	7.067E-02	0.000E+00	NOT IDENT.
CO-57	-7.410E-03	2.619E-02	4.437E-02	0.000E+00	NOT IDENT.
CO-58	-6.620E-03	4.234E-02	7.084E-02	0.000E+00	NOT IDENT.
FE-59	1.750E-03	1.131E-01	1.866E-01	0.000E+00	NOT IDENT.
CO-60	2.973E-03	4.377E-02	7.466E-02	0.000E+00	NOT IDENT.
ZN-65	1.758E-01	1.196E-01	1.975E-01	0.000E+00	NOT IDENT.
GE-68	9.479E-01	1.394E+00	2.442E+00	0.000E+00	NOT IDENT.
AS-73	7.646E-02	1.579E+00	2.834E+00	0.000E+00	NOT IDENT.
AS-74	2.734E-02	8.745E-02	1.553E-01	0.000E+00	NOT IDENT.
SE-75	-3.551E-02	4.810E-02	6.995E-02	0.000E+00	NOT IDENT.
BR-77	-2.970E+00	1.055E+01	1.716E+01	0.000E+00	FAIL ABUN
SR-82	5.789E-02	4.062E-01	6.944E-01	0.000E+00	NOT IDENT.
RB-83	-1.587E-02	6.950E-02	1.136E-01	0.000E+00	NOT IDENT.
RB-84	-6.770E-03	7.588E-02	1.266E-01	0.000E+00	NOT IDENT.
KR-85	1.338E+00	7.620E+00	1.127E+01	0.000E+00	NOT IDENT.
SR-85	6.862E-03	3.908E-02	5.780E-02	0.000E+00	NOT IDENT.
RB-86	9.399E-01	8.999E-01	1.619E+00	0.000E+00	NOT IDENT.
Y-88	-2.187E-03	3.430E-02	5.552E-02	0.000E+00	NOT IDENT.
ZR-88	1.534E-02	3.084E-02	5.402E-02	0.000E+00	NOT IDENT.
Y-91	5.812E+00	2.173E+01	3.788E+01	0.000E+00	NOT IDENT.
NB-94	-1.274E-02	3.455E-02	5.771E-02	0.000E+00	NOT IDENT.
NB-95M	2.012E-01	1.426E-01	2.369E-01	0.000E+00	NOT IDENT.
ZR-95	4.697E-02	7.273E-02	1.299E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	9.522E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.193E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.210E+01	1.207E+01	2.197E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.358E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-9.835E-03	3.467E-02	5.608E-02	0.000E+00	NOT IDENT.
RH-102	1.045E-02	2.863E-02	4.924E-02	0.000E+00	FAIL ABUN
RU-103	-2.112E-02	3.983E-02	6.362E-02	0.000E+00	NOT IDENT.
RH-106	2.843E-01	3.302E-01	6.018E-01	0.000E+00	NOT IDENT.
RU-106	2.843E-01	3.290E-01	6.018E-01	0.000E+00	NOT IDENT.
AG-108M	4.646E-03	3.496E-02	5.951E-02	0.000E+00	NOT IDENT.
AG-110M	-3.844E-02	3.337E-02	5.228E-02	0.000E+00	NOT IDENT.
IN-111	-1.768E-01	1.188E+00	1.828E+00	0.000E+00	NOT IDENT.
IN-113M	-3.926E-02	4.620E-02	7.445E-02	0.000E+00	NOT IDENT.
SN-113	-3.926E-02	4.620E-02	7.445E-02	0.000E+00	NOT IDENT.
IN-114M	1.015E-02	2.077E-01	3.083E-01	0.000E+00	NOT IDENT.
CD-115	1.695E+00	1.096E+01	1.842E+01	0.000E+00	NOT IDENT.
SN-117M	-7.705E-03	5.644E-02	9.463E-02	0.000E+00	NOT IDENT.
SB-122	-7.185E-01	2.168E+00	3.489E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.048E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	9.571E-03	2.896E-02	4.953E-02	0.000E+00	NOT IDENT.
I-124	2.303E-01	7.620E-01	1.185E+00	0.000E+00	FAIL ABUN
SB-124	5.801E-02	7.386E-02	1.395E-01	0.000E+00	FAIL ABUN
SB-125	-1.965E-02	8.835E-02	1.470E-01	0.000E+00	NOT IDENT.
TE-125M	3.718E+00	9.723E+00	1.702E+01	0.000E+00	NOT IDENT.
I-126	5.888E-02	1.873E-01	3.296E-01	0.000E+00	NOT IDENT.
SB-126	1.015E-01	1.508E-01	2.503E-01	0.000E+00	FAIL ABUN
SB-127	-3.811E-01	1.405E+00	2.367E+00	0.000E+00	NOT IDENT.
XE-127	-4.541E-02	4.933E-02	7.814E-02	0.000E+00	NOT IDENT.
I-131	-7.084E-03	1.121E-01	1.912E-01	0.000E+00	NOT IDENT.
TE-132	5.160E-01	6.891E-01	1.249E+00	0.000E+00	NOT IDENT.
BA-133	2.683E-02	4.523E-02	7.131E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	6.342E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.835E-02	5.300E-02	8.866E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.790E-01	3.024E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.564E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.123E-02	1.241E-01	1.922E-01	0.000E+00	FAIL ABUN
BA-137M	-6.753E-03	3.508E-02	5.964E-02	0.000E+00	NOT IDENT.
CS-137	-7.139E-03	3.708E-02	6.305E-02	0.000E+00	NOT IDENT.
CE-139	-1.325E-02	3.106E-02	5.125E-02	0.000E+00	NOT IDENT.
BA-140	4.093E-02	2.643E-01	4.431E-01	0.000E+00	NOT IDENT.
LA-140	-5.049E-02	8.705E-02	1.311E-01	0.000E+00	NOT IDENT.
CE-141	4.187E-03	6.450E-02	1.097E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.624E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.698E-01	2.126E-01	3.481E-01	0.000E+00	NOT IDENT.
PM-144	-1.691E-02	3.530E-02	5.851E-02	0.000E+00	NOT IDENT.
PR-144	-1.146E+00	2.392E+00	3.965E+00	0.000E+00	NOT IDENT.
PM-146	1.930E-02	4.162E-02	7.227E-02	0.000E+00	NOT IDENT.

ND-147	1.336E-01	5.735E-01	9.688E-01	0.000E+00	NOT IDENT.
PM-149	-5.528E+01	9.607E+01	1.623E+02	0.000E+00	NOT IDENT.
EU-152	-4.437E-02	1.005E-01	1.623E-01	0.000E+00	FAIL ABUN
GD-153	4.097E-02	9.154E-02	1.453E-01	0.000E+00	NOT IDENT.
EU-154	-1.696E-03	1.384E-01	2.352E-01	0.000E+00	NOT IDENT.
EU-155	1.135E-01	1.128E-01	2.021E-01	0.000E+00	FAIL ABUN
TB-160	-6.318E-02	1.527E-01	2.473E-01	0.000E+00	FAIL ABUN
HO-166M	1.838E-02	6.310E-02	1.104E-01	0.000E+00	FAIL ABUN
TM-171	-1.668E+01	3.623E+01	6.309E+01	0.000E+00	NOT IDENT.
LU-176	-2.257E-02	2.397E-02	3.935E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.826E+00	2.185E+00	0.000E+00	FAIL ABUN
LU-177M	2.019E-02	1.706E-01	2.914E-01	0.000E+00	FAIL ABUN
HF-181	4.734E-03	4.085E-02	6.898E-02	0.000E+00	NOT IDENT.
W-181	-3.792E-01	4.876E-01	8.382E-01	0.000E+00	NOT IDENT.
TA-182	2.329E-01	2.426E-01	4.397E-01	0.000E+00	NOT IDENT.
RE-183	2.448E-03	1.135E-01	1.912E-01	0.000E+00	FAIL ABUN
RE-184	-7.938E-02	2.159E-01	3.725E-01	0.000E+00	NOT IDENT.
OS-185	3.851E-02	4.680E-02	8.504E-02	0.000E+00	NOT IDENT.
RE-188	1.815E-01	1.803E-01	3.166E-01	0.000E+00	NOT IDENT.
W-188	-4.040E+00	8.240E+00	1.218E+01	0.000E+00	NOT IDENT.
IR-192	2.661E-05	3.427E-02	5.928E-02	0.000E+00	FAIL ABUN
AU-195	2.142E-01	2.611E-01	4.211E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.487E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	4.385E+00	7.132E+00	1.231E+01	0.000E+00	NOT IDENT.
TL-202	-1.399E-02	6.774E-02	1.126E-01	0.000E+00	NOT IDENT.
BI-207	-2.852E-03	6.158E-02	1.013E-01	0.000E+00	FAIL ABUN
TL-207	1.583E-01	6.706E-01	1.036E+00	0.000E+00	FAIL ABUN
PO-209	3.646E+00	7.659E+00	1.340E+01	0.000E+00	NOT IDENT.
BI-210	5.426E+00	8.867E+00	1.632E+01	0.000E+00	NOT IDENT.
PB-210	5.426E+00	8.867E+00	1.632E+01	0.000E+00	NOT IDENT.
PO-210	5.426E+00	8.864E+00	1.632E+01	0.000E+00	NOT IDENT.
PB-211	3.748E-01	9.943E-01	1.680E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.168E-01	7.137E-01	0.000E+00	FAIL ABUN
PO-215	1.583E-01	6.706E-01	1.036E+00	0.000E+00	FAIL ABUN
RN-219	-2.841E-01	4.338E-01	7.051E-01	0.000E+00	FAIL ABUN
RN-220	-3.813E+00	2.721E+01	4.457E+01	0.000E+00	NOT IDENT.
RA-223	1.583E-01	6.706E-01	1.036E+00	0.000E+00	FAIL ABUN
AC-227	-1.604E-02	3.564E-01	6.244E-01	0.000E+00	FAIL ABUN
TH-227	-1.604E-02	3.564E-01	6.244E-01	0.000E+00	FAIL ABUN
TH-229	1.708E-01	5.205E-01	8.794E-01	0.000E+00	FAIL ABUN
PA-231	1.132E+00	1.739E+00	2.774E+00	0.000E+00	NOT IDENT.
TH-231	1.583E-01	6.706E-01	1.036E+00	0.000E+00	FAIL ABUN
U-231	-9.114E-02	1.240E+00	1.920E+00	0.000E+00	FAIL ABUN
PA-233	2.989E-02	6.372E-02	1.130E-01	0.000E+00	FAIL ABUN
PA-234	-8.485E-02	3.267E-01	5.322E-01	0.000E+00	FAIL ABUN
PA-234M	3.073E-01	5.053E+00	8.444E+00	0.000E+00	FAIL ABUN
TH-234	2.173E+00	1.856E+00	3.317E+00	0.000E+00	FAIL ABUN
U-235	1.264E-01	2.231E-01	3.817E-01	0.000E+00	FAIL ABUN
NP-236	-1.188E-04	8.226E-02	1.386E-01	0.000E+00	NOT IDENT.
U-238	2.173E+00	1.856E+00	3.317E+00	0.000E+00	FAIL ABUN
NP-239	-5.297E-03	1.913E-01	3.284E-01	0.000E+00	FAIL ABUN
AM-241	-1.253E-01	2.347E-01	4.091E-01	0.000E+00	NOT IDENT.
CM-243	4.955E-03	9.965E-02	1.729E-01	0.000E+00	FAIL ABUN
AM-246	-9.634E-02	1.697E-01	2.652E-01	0.000E+00	NOT IDENT.
CM-247	-5.053E-03	3.799E-02	6.401E-02	0.000E+00	FAIL ABUN
CF-249	6.460E-02	4.038E-02	7.473E-02	0.000E+00	NOT IDENT.
CF-251	9.088E-02	1.326E-01	2.286E-01	0.000E+00	NOT IDENT.



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691005.CNF;1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:09.
Sample ID        : G245691005 Sample quantity : 1.26970E+02 GRAM
Detector name    : GAM10 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.19 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 947037 Detector SN# :
Matrix Spike ID  : LCS ID : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1589	10.67*	1.108E+00	3.972E+01	3.972E+01	10.12
NB-95	765.79	89	99.81*	2.056E+00	1.282E-01	1.512E-01	38.95
CD-109	88.03	266	3.72*	5.253E+00	4.020E+00	4.112E+00	31.99
SN-126	64.28	-----	9.60	2.419E+00	-----	Line Not Found	-----
	86.94	266	8.90	5.253E+00	1.680E+00	1.680E+00	51.57
	87.57	266	37.00*	5.253E+00	4.042E-01	4.042E-01	31.99
HG-203	70.83	-----	4.75	3.353E+00	-----	Line Not Found	-----
	72.87	-----	8.00	3.633E+00	-----	Line Not Found	-----
	82.60	-----	3.55	4.818E+00	-----	Line Not Found	-----
	279.20	130	77.30*	4.604E+00	1.079E-01	1.353E-01	54.93
TL-208	277.35	130	6.80	4.604E+00	1.227E+00	1.227E+00	55.60
	510.84	155	21.60	2.932E+00	7.231E-01	7.231E-01	41.29
	583.14	466	84.20*	2.629E+00	6.219E-01	6.219E-01	15.40
	860.37	46	12.46	1.842E+00	5.938E-01	5.938E-01	81.80
BI-211	72.87	-----	1.27	3.633E+00	-----	Line Not Found	-----
	351.07	714	12.94*	3.890E+00	4.194E+00	4.194E+00	13.12
PB-212	74.81	317	10.70	3.854E+00	2.273E+00	2.273E+00	26.16
	77.11	554	18.00	4.150E+00	2.194E+00	2.194E+00	18.30
	87.30	266	8.00	5.253E+00	1.869E+00	1.869E+00	33.52
	238.63	1431	44.60*	5.119E+00	1.853E+00	1.853E+00	9.94
	300.09	105	3.41	4.363E+00	2.091E+00	2.091E+00	47.33
PO-212	74.81	317	10.70	3.854E+00	2.273E+00	2.273E+00	26.16
	77.11	554	18.00	4.150E+00	2.194E+00	2.194E+00	18.30
	87.30	266	8.00	5.253E+00	1.869E+00	1.869E+00	33.52
	115.19	-----	0.60	6.657E+00	-----	Line Not Found	-----
	238.63	1431	44.60*	5.119E+00	1.853E+00	1.853E+00	9.94
	300.09	105	3.41	4.363E+00	2.091E+00	2.091E+00	47.33
BI-214	609.31	507	46.30*	2.533E+00	1.278E+00	1.279E+00	14.80
	1120.29	127	15.10	1.416E+00	1.762E+00	1.762E+00	48.16
	1764.49	92	15.80	9.768E-01	1.754E+00	1.754E+00	30.77
PB-214	74.81	317	6.21	3.854E+00	3.916E+00	3.916E+00	25.53
	77.11	554	10.50	4.150E+00	3.761E+00	3.761E+00	19.82

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	87.30	266	4.67	5.253E+00	3.202E+00	3.202E+00	32.91
	241.98	298	7.49	5.076E+00	2.319E+00	2.319E+00	32.20
	295.21	416	19.20	4.416E+00	1.449E+00	1.449E+00	17.05
	351.92	714	37.20*	3.890E+00	1.459E+00	1.459E+00	14.12
	74.81	317	6.21	3.854E+00	3.916E+00	3.916E+00	25.53
	77.11	554	10.50	4.150E+00	3.761E+00	3.761E+00	19.82
	87.30	266	4.67	5.253E+00	3.202E+00	3.202E+00	32.91
	241.98	298	7.49	5.076E+00	2.319E+00	2.319E+00	32.20
	295.21	416	19.20	4.416E+00	1.449E+00	1.449E+00	17.05
	351.92	714	37.20*	3.890E+00	1.459E+00	1.459E+00	14.12
PO-216	74.81	317	10.70	3.854E+00	2.273E+00	2.273E+00	26.16
	77.11	554	18.00	4.150E+00	2.194E+00	2.194E+00	18.30
	87.30	266	8.00	5.253E+00	1.869E+00	1.869E+00	33.52
	238.63	1431	44.60*	5.119E+00	1.853E+00	1.853E+00	9.94
	300.09	105	3.41	4.363E+00	2.091E+00	2.091E+00	47.33
PO-218	74.81	317	6.21	3.854E+00	3.916E+00	3.916E+00	25.53
	77.11	554	10.50	4.150E+00	3.761E+00	3.761E+00	19.82
	87.30	266	4.67	5.253E+00	3.202E+00	3.202E+00	32.91
	241.98	298	7.49	5.076E+00	2.319E+00	2.319E+00	32.20
	295.21	416	19.20	4.416E+00	1.449E+00	1.449E+00	17.05
RA-224	351.92	714	37.20*	3.890E+00	1.459E+00	1.459E+00	14.12
	240.98	298	3.95*	5.076E+00	4.398E+00	4.398E+00	31.71
RA-226	609.31	507	46.30*	2.533E+00	1.278E+00	1.279E+00	14.80
	1120.29	127	15.10	1.416E+00	1.762E+00	1.762E+00	48.16
AC-228	1764.49	92	15.80	9.768E-01	1.754E+00	1.754E+00	30.77
	338.32	281	11.40	4.003E+00	1.818E+00	1.818E+00	46.55
	911.07	279	27.70*	1.741E+00	1.708E+00	1.708E+00	21.90
	969.11	172	16.60	1.637E+00	1.866E+00	1.866E+00	32.91
	338.32	281	11.40	4.003E+00	1.818E+00	1.818E+00	46.55
RA-228	911.07	279	27.70*	1.741E+00	1.708E+00	1.708E+00	21.90
	969.11	172	16.60	1.637E+00	1.866E+00	1.866E+00	32.91
	74.81	317	10.70	3.854E+00	2.273E+00	2.307E+00	24.46
TH-228	77.11	554	18.00	4.150E+00	2.194E+00	2.227E+00	18.30
	87.30	266	8.00	5.253E+00	1.869E+00	1.898E+00	31.99
	238.63	1431	44.60*	5.119E+00	1.853E+00	1.881E+00	9.94
	300.09	105	3.41	4.363E+00	2.091E+00	2.123E+00	75.14
	609.31	507	46.30*	2.533E+00	1.278E+00	1.278E+00	14.80
TH-230	1120.29	127	15.10	1.416E+00	1.762E+00	1.762E+00	48.16
	1764.49	92	15.80	9.768E-01	1.754E+00	1.754E+00	30.77
	338.32	281	11.40	4.003E+00	1.818E+00	1.818E+00	23.21
TH-232	911.07	279	27.70*	1.741E+00	1.708E+00	1.708E+00	21.90
	969.11	172	16.60	1.637E+00	1.866E+00	1.866E+00	32.91
	609.31	507	46.30*	2.533E+00	1.278E+00	1.278E+00	14.80
U-234	1120.29	127	15.10	1.416E+00	1.762E+00	1.762E+00	48.16
	1764.49	92	15.80	9.768E-01	1.754E+00	1.754E+00	30.77
	86.50	266	12.60*	5.253E+00	1.187E+00	1.187E+00	38.07
NP-237	95.87	-----	2.60	5.933E+00	-----	Line Not Found	-----
AM-243	74.67	317	66.00*	3.854E+00	3.685E-01	3.685E-01	24.44
	86.72	266	0.34	5.253E+00	4.451E+01	4.451E+01	31.99

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	117.66	-----	0.55	6.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.676E+00	-----	Line Not Found	-----
ANH-511	511.00	155	100.00*	2.932E+00	1.562E-01	1.562E-01	40.44

Flag: "\*" = Keyline

Total number of lines in spectrum 32  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 28 87.50%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.972E+01	3.972E+01	0.402E+01	10.12	
NB-95	64.02D	1.18	1.282E-01	1.512E-01	0.589E-01	38.95	
CD-109	464.00D	1.02	4.020E+00	4.112E+00	1.316E+00	31.99	
SN-126	1.00E+05Y	1.00	4.042E-01	4.042E-01	1.293E-01	31.99	
HG-203	46.60D	1.25	1.079E-01	1.353E-01	0.743E-01	54.93	
TL-208	1.41E+10Y	1.00	6.219E-01	6.219E-01	0.958E-01	15.40	
BI-211	7.04E+08Y	1.00	4.194E+00	4.194E+00	0.550E+00	13.12	
PB-212	1.41E+10Y	1.00	1.853E+00	1.853E+00	0.184E+00	9.94	
PO-212	1.41E+10Y	1.00	1.853E+00	1.853E+00	0.184E+00	9.94	
BI-214	1600.00Y	1.00	1.278E+00	1.279E+00	0.189E+00	14.80	
PB-214	1600.00Y	1.00	1.459E+00	1.459E+00	0.206E+00	14.12	
PO-214	1600.00Y	1.00	1.459E+00	1.459E+00	0.206E+00	14.12	
PO-216	1.41E+10Y	1.00	1.853E+00	1.853E+00	0.184E+00	9.94	
PO-218	1600.00Y	1.00	1.459E+00	1.459E+00	0.206E+00	14.12	
RA-224	1.41E+10Y	1.00	4.398E+00	4.398E+00	1.394E+00	31.71	
RA-226	1600.00Y	1.00	1.278E+00	1.279E+00	0.189E+00	14.80	
AC-228	1.41E+10Y	1.00	1.708E+00	1.708E+00	0.374E+00	21.90	
RA-228	1.41E+10Y	1.00	1.708E+00	1.708E+00	0.374E+00	21.90	
TH-228	1.91Y	1.02	1.853E+00	1.881E+00	0.187E+00	9.94	
TH-230	4.47E+09Y	1.00	1.278E+00	1.278E+00	0.189E+00	14.80	
TH-232	1.41E+10Y	1.00	1.708E+00	1.708E+00	0.374E+00	21.90	
U-234	4.47E+09Y	1.00	1.278E+00	1.278E+00	0.189E+00	14.80	
NP-237	2.14E+06Y	1.00	1.187E+00	1.187E+00	0.452E+00	38.07	
AM-243	7380.00Y	1.00	3.685E-01	3.685E-01	0.900E-01	24.44	
ANH-511	1.00E+09Y	1.00	1.562E-01	1.562E-01	0.632E-01	40.44	
Total Activity :			7.734E+01	7.751E+01			

Grand Total Activity : 7.734E+01 7.751E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.83	177	673	1.52	185.77	182	12	2.46E-02	62.4	5.73E+00	T
0	185.69	264	448	1.16	371.32	365	13	3.67E-02	36.2	5.98E+00	T
0	208.93	132	394	1.31	417.78	412	11	1.83E-02	60.9	5.58E+00	T
0	270.18	113	222	1.29	540.18	535	10	1.57E-02	53.0	4.69E+00	T
0	327.05	58	155	1.47	653.83	650	8	8.04E-03	78.8	4.10E+00	
0	461.79	103	134	1.44	923.14	917	13	1.43E-02	50.2	3.17E+00	
0	727.07	98	89	1.98	1453.48	1448	13	1.36E-02	45.9	2.16E+00	T
0	793.78	51	75	2.00	1586.85	1580	12	7.12E-03	73.1	1.99E+00	
2	963.77	54	51	2.11	1926.76	1921	21	7.56E-03	58.2	1.65E+00	T
0	1376.05	48	29	2.41	2751.36	2745	13	6.67E-03	54.6	1.16E+00	T
0	1407.84	21	25	1.45	2814.96	2808	14	2.96E-03	****	1.14E+00	T
0	1728.18	14	5	1.79	3455.90	3450	10	1.97E-03	89.2	9.87E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691005.CNF;1
* Acquisition date   : 9-FEB-2010 15:24:09. Detector SN#      :
* Detector ID        : GAM10 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.19 Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245691005 Analyst initials: MJH1
* Batch Number       : 947037 Sample Quantity : 1.26970E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08.8MS Isotope      :
* MSD ID              : MSD Isotope      :
* LCS ID              : 1032-A LCS Isotope :
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.972E+01	4.019E+00	4.810E-01	4.143E-02	82.592
NB-95	1.512E-01	5.888E-02	6.827E-02	4.764E-03	2.214
CD-109	4.112E+00	1.316E+00	1.589E+00	1.801E-01	2.588
SN-126	4.042E-01	1.293E-01	1.644E-01	1.860E-02	2.458
HG-203	1.353E-01	7.431E-02	6.608E-02	4.459E-03	2.047
TL-208	6.219E-01	9.577E-02	5.943E-02	3.993E-03	10.464
BI-211	4.194E+00	5.502E-01	3.395E-01	2.475E-02	12.354
PB-212	1.853E+00	1.843E-01	9.383E-02	7.117E-03	19.748
PO-212	1.853E+00	1.843E-01	9.383E-02	7.117E-03	19.748
BI-214	1.279E+00	1.892E-01	1.140E-01	8.674E-03	11.216
PB-214	1.459E+00	2.060E-01	1.183E-01	1.061E-02	12.329
PO-214	1.459E+00	2.060E-01	1.183E-01	1.061E-02	12.329
PO-216	1.853E+00	1.843E-01	9.383E-02	7.117E-03	19.748
PO-218	1.459E+00	2.060E-01	1.183E-01	1.061E-02	12.329
RA-224	4.398E+00	1.394E+00	1.068E+00	6.553E-02	4.119
RA-226	1.279E+00	1.892E-01	1.140E-01	8.674E-03	11.216
AC-228	1.708E+00	3.740E-01	2.147E-01	2.650E-02	7.955
RA-228	1.708E+00	3.740E-01	2.147E-01	2.650E-02	7.955

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.881E+00	1.871E-01	9.525E-02	7.226E-03	19.748
TH-230	1.278E+00	1.892E-01	1.140E-01	8.674E-03	11.216
TH-232	1.708E+00	3.740E-01	2.147E-01	2.650E-02	7.955
U-234	1.278E+00	1.892E-01	1.140E-01	8.674E-03	11.216
NP-237	1.187E+00	4.518E-01	4.708E-01	1.106E-01	2.521
AM-243	3.685E-01	9.004E-02	1.095E-01	1.200E-02	3.364
ANH-511	1.562E-01	6.316E-02	4.344E-02	2.783E-03	3.596

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.098E-02		3.226E-01	5.135E-01	3.819E-02	-0.119
NA-22	-1.060E-02		5.132E-02	8.378E-02	6.489E-03	-0.127
NA-24	-4.154E-01		4.280E-01	Half-Life too short		
AL-26	-5.900E-03		2.909E-02	4.480E-02	2.840E-03	-0.132
TI-44	1.564E-01		5.200E-02	8.169E-02	8.939E-03	1.915
SC-46	-5.426E-02		4.122E-02	5.786E-02	5.726E-03	-0.938
V-48	-2.408E-02		7.517E-02	1.179E-01	1.091E-02	-0.204
CR-51	-2.486E-02		3.635E-01	5.997E-01	4.332E-02	-0.041
MN-52	1.284E-02		2.538E-01	4.212E-01	3.559E-02	0.030
MN-54	-1.469E-02		4.495E-02	7.205E-02	6.155E-03	-0.204
CO-56	9.159E-03		4.194E-02	7.011E-02	6.191E-03	0.131
CO-57	-7.410E-03		2.672E-02	4.278E-02	2.822E-03	-0.173
CO-58	-6.620E-03		4.321E-02	7.023E-02	5.619E-03	-0.094
FE-59	1.750E-03		1.154E-01	1.858E-01	1.551E-02	0.009
CO-60	2.973E-03		4.467E-02	7.457E-02	6.480E-03	0.040
ZN-65	1.758E-01		1.221E-01	1.967E-01	1.433E-02	0.894
GE-68	9.479E-01		1.423E+00	2.431E+00	1.926E-01	0.390
AS-73	7.646E-02		1.611E+00	2.701E+00	3.574E-01	0.028
AS-74	2.734E-02		8.924E-02	1.533E-01	8.756E-03	0.178
SE-75	-3.551E-02		4.909E-02	6.821E-02	4.351E-03	-0.521
BR-77	-2.970E+00		1.076E+01	1.690E+01	1.072E+00	-0.176
SR-82	5.789E-02		4.145E-01	6.880E-01	4.960E-02	0.084
RB-83	-1.587E-02		7.092E-02	1.118E-01	7.097E-03	-0.142
RB-84	-6.770E-03		7.742E-02	1.257E-01	1.219E-02	-0.054
KR-85	1.338E+00		7.775E+00	1.110E+01	7.088E-01	0.121
SR-85	6.862E-03		3.988E-02	5.691E-02	3.635E-03	0.121
RB-86	9.399E-01		9.182E-01	1.612E+00	1.279E-01	0.583
Y-88	-2.187E-03		3.500E-02	5.573E-02	3.419E-03	-0.039
ZR-88	1.534E-02		3.146E-02	5.298E-02	3.601E-03	0.290
Y-91	5.812E+00		2.218E+01	3.778E+01	2.509E+00	0.154
NB-94	-1.274E-02		3.526E-02	5.709E-02	3.250E-03	-0.223
NB-95M	2.012E-01		1.455E-01	2.306E-01	1.789E-02	0.873
ZR-95	4.697E-02		7.422E-02	1.287E-01	1.011E-02	0.365
NB-97	-1.110E-01		4.858E-02	Half-Life too short		
ZR-97	5.866E+00		1.119E+00	Half-Life too short		
MO-99	1.210E+01		1.232E+01	2.175E+01	3.057E+00	0.557

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	-5.278E+09		2.224E+10	Half-Life too short		
RH-101	-9.835E-03		3.537E-02	5.446E-02	3.128E-03	-0.181
RH-102	1.045E-02		2.921E-02	4.842E-02	3.194E-03	0.216
RU-103	-2.112E-02		4.064E-02	6.261E-02	8.123E-03	-0.337
RH-106	2.843E-01		3.369E-01	5.942E-01	6.869E-02	0.478
RU-106	2.843E-01		3.357E-01	5.942E-01	3.227E-02	0.478
AG-108M	4.646E-03		3.567E-02	5.845E-02	4.191E-03	0.079
AG-110M	-3.844E-02		3.405E-02	5.167E-02	2.799E-03	-0.744
IN-111	-1.768E-01		1.212E+00	1.780E+00	1.099E-01	-0.099
IN-113M	-3.926E-02		4.714E-02	7.302E-02	5.207E-03	-0.538
SN-113	-3.926E-02		4.714E-02	7.302E-02	5.207E-03	-0.538
IN-114M	1.015E-02		2.120E-01	2.992E-01	1.697E-02	0.034
CD-115	1.695E+00		1.118E+01	1.815E+01	1.142E+00	0.093
SN-117M	-7.705E-03		5.759E-02	9.159E-02	5.137E-03	-0.084
SB-122	-7.185E-01		2.212E+00	3.440E+00	2.069E-01	-0.209
I-123	1.999E+00		3.086E+00	Half-Life too short		
TE-123M	9.571E-03		2.955E-02	4.794E-02	2.723E-03	0.200
I-124	2.303E-01		7.775E-01	1.170E+00	6.599E-02	0.197
SB-124	5.801E-02		7.536E-02	1.399E-01	1.063E-02	0.415
SB-125	-1.965E-02		9.015E-02	1.444E-01	1.005E-02	-0.136
TE-125M	3.718E+00		9.922E+00	1.639E+01	1.573E+00	0.227
I-126	5.888E-02		1.911E-01	3.258E-01	1.634E-02	0.181
SB-126	1.015E-01		1.539E-01	2.477E-01	1.497E-02	0.410
SB-127	-3.811E-01		1.434E+00	2.341E+00	2.148E-01	-0.163
XE-127	-4.541E-02		5.034E-02	7.589E-02	4.395E-03	-0.598
I-131	-7.084E-03		1.144E-01	1.873E-01	1.378E-02	-0.038
TE-132	5.160E-01		7.032E-01	1.215E+00	1.758E-01	0.425
BA-133	2.683E-02		4.616E-02	6.983E-02	8.425E-03	0.384
I-133	-4.203E-04		3.236E-03	Half-Life too short		
CS-134	6.835E-02		5.409E-02	8.787E-02	6.774E-03	0.778
CS-135	3.151E-01		1.826E-01	2.949E-01	2.383E-02	1.068
I-135	-5.636E+09		3.349E+09	Half-Life too short		
CS-136	-9.123E-02		1.267E-01	1.913E-01	1.674E-02	-0.477
BA-137M	-6.753E-03		3.580E-02	5.895E-02	2.908E-03	-0.115
CS-137	-7.139E-03		3.784E-02	6.231E-02	3.092E-03	-0.115
CE-139	-1.325E-02		3.170E-02	4.963E-02	2.711E-03	-0.267
BA-140	4.093E-02		2.697E-01	4.366E-01	1.423E-01	0.094
LA-140	-5.049E-02		8.883E-02	1.313E-01	1.019E-02	-0.384
CE-141	4.187E-03		6.582E-02	1.060E-01	6.490E-03	0.039
CE-143	1.397E-03	+	1.849E-04	Half-Life too short		
CE-144	-1.698E-01		2.169E-01	3.361E-01	4.829E-02	-0.505
PM-144	-1.691E-02		3.602E-02	5.787E-02	3.229E-03	-0.292
PR-144	-1.146E+00		2.441E+00	3.922E+00	2.186E-01	-0.292
PM-146	1.930E-02		4.247E-02	7.103E-02	6.561E-03	0.272
ND-147	1.336E-01		5.852E-01	9.543E-01	1.310E-01	0.140
PM-149	-5.528E+01		9.803E+01	1.584E+02	2.291E+01	-0.349
EU-152	-4.437E-02		1.026E-01	1.589E-01	1.171E-02	-0.279
GD-153	4.097E-02		9.341E-02	1.397E-01	1.300E-02	0.293



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	-1.696E-03		1.413E-01	2.347E-01	2.500E-02	-0.007
EU-155	1.135E-01		1.151E-01	1.944E-01	1.613E-02	0.584
TB-160	-6.318E-02		1.558E-01	2.455E-01	2.367E-02	-0.257
HO-166M	1.838E-02		6.439E-02	1.092E-01	6.409E-03	0.168
TM-171	-1.668E+01		3.697E+01	6.032E+01	6.871E+00	-0.276
LU-176	-2.257E-02		2.446E-02	3.845E-02	2.529E-03	-0.587
LU-177	3.045E+00	+	1.863E+00	2.123E+00	1.241E-01	1.434
LU-177M	2.019E-02		1.741E-01	2.860E-01	1.938E-02	0.071
HF-181	4.734E-03		4.168E-02	6.786E-02	4.454E-03	0.070
W-181	-3.792E-01		4.975E-01	8.011E-01	9.256E-02	-0.473
TA-182	2.329E-01		2.475E-01	4.387E-01	3.025E-02	0.531
RE-183	2.448E-03		1.158E-01	1.852E-01	1.024E-02	0.013
RE-184	-7.938E-02		2.203E-01	3.630E-01	2.263E-02	-0.219
OS-185	3.851E-02		4.775E-02	8.402E-02	4.316E-03	0.458
RE-188	1.815E-01		1.840E-01	3.063E-01	1.740E-02	0.593
W-188	-4.040E+00		8.408E+00	1.189E+01	7.721E-01	-0.340
IR-192	2.661E-05		3.497E-02	5.796E-02	3.853E-03	0.000
AU-195	2.142E-01		2.664E-01	4.049E-01	3.674E-02	0.529
TL-200	-4.718E-05		2.289E-04	Half-Life too short		
TL-201	4.385E+00		7.277E+00	1.192E+01	6.520E-01	0.368
TL-202	-1.399E-02		6.912E-02	1.106E-01	7.438E-03	-0.126
BI-207	-2.852E-03		6.283E-02	1.009E-01	8.212E-03	-0.028
TL-207	1.583E-01		6.843E-01	1.013E+00	1.706E-01	0.156
PO-209	3.646E+00		7.815E+00	1.330E+01	1.342E+00	0.274
BI-210	5.426E+00		9.048E+00	1.553E+01	1.523E+00	0.349
PB-210	5.426E+00		9.048E+00	1.553E+01	1.523E+00	0.349
PO-210	5.426E+00		9.045E+00	1.553E+01	1.394E+00	0.349
PB-211	3.748E-01		1.015E+00	1.648E+00	1.029E+00	0.227
BI-212	1.131E+00	+	5.273E-01	7.064E-01	5.651E-02	1.601
PO-215	1.583E-01		6.843E-01	1.013E+00	1.706E-01	0.156
RN-219	-2.841E-01		4.427E-01	6.917E-01	9.723E-02	-0.411
RN-220	-3.813E+00		2.777E+01	4.393E+01	2.694E+00	-0.087
RA-223	1.583E-01		6.843E-01	1.013E+00	1.706E-01	0.156
AC-227	-1.604E-02		3.636E-01	6.085E-01	8.616E-02	-0.026
TH-227	-1.604E-02		3.636E-01	6.085E-01	1.038E-01	-0.026
TH-229	1.708E-01		5.312E-01	8.536E-01	4.868E-02	0.200
PA-231	1.132E+00		1.775E+00	2.708E+00	3.809E-01	0.418
TH-231	1.583E-01		6.843E-01	1.013E+00	1.706E-01	0.156
U-231	-9.114E-02		1.265E+00	1.845E+00	1.768E-01	-0.049
PA-233	2.989E-02		6.502E-02	1.104E-01	7.641E-03	0.271
PA-234	-8.485E-02		3.333E-01	5.289E-01	1.019E-01	-0.160
PA-234M	3.073E-01		5.156E+00	8.398E+00	8.667E-01	0.037
TH-234	2.173E+00		1.894E+00	3.169E+00	6.245E-01	0.686
U-235	1.264E-01		2.277E-01	3.689E-01	6.032E-02	0.343
NP-236	-1.188E-04		8.394E-02	1.342E-01	7.478E-03	-0.001
U-238	2.173E+00		1.894E+00	3.169E+00	6.245E-01	0.686
NP-239	-5.297E-03		1.952E-01	3.165E-01	2.214E-02	-0.017
AM-241	-1.253E-01		2.395E-01	3.906E-01	5.016E-02	-0.321

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	4.955E-03		1.017E-01	1.663E-01	1.393E-02	0.030
AM-246	-9.634E-02		1.731E-01	2.640E-01	2.085E-02	-0.365
CM-247	-5.053E-03		3.876E-02	6.280E-02	4.264E-03	-0.080
CF-249	6.460E-02		4.120E-02	7.328E-02	4.979E-03	0.882
CF-251	9.088E-02		1.353E-01	2.216E-01	1.229E-02	0.410

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691005          *
* Acquisition date   : 9-FEB-2010 15:24:09 Detector SN#      :              *
* Detector ID        : GAM10                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.19             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691005              Analyst initials: MJH1          *
* Batch Number       : 947037                  Sample Quantity : 1.2697E+02 GRAM    *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08 MS Isotope       :              *
* MSD DPM             : 0.000                     MSD Isotope   :              *
* LCS DPM             : 0.000                     LCS Isotope   :              *
* LCSD DPM            : 0.000                     LCSD Isotope  :              *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.972E+01	3.938E+00	2.406E-01	2.009E+00
NB-95	1.512E-01	5.770E-02	3.448E-02	2.944E-02
CD-109	4.112E+00	1.289E+00	8.282E-01	6.578E-01
SN-126	4.042E-01	1.267E-01	8.570E-02	6.465E-02
HG-203	1.353E-01	7.282E-02	3.388E-02	3.715E-02
TL-208	6.219E-01	9.386E-02	3.014E-02	4.789E-02
BI-211	4.194E+00	5.392E-01	1.735E-01	2.751E-01
PB-212	1.853E+00	1.806E-01	4.821E-02	9.213E-02
PO-212	1.853E+00	1.806E-01	4.821E-02	9.213E-02
BI-214	1.279E+00	1.854E-01	5.777E-02	9.461E-02
PB-214	1.459E+00	2.019E-01	6.046E-02	1.030E-01
PO-214	1.459E+00	2.019E-01	6.046E-02	1.030E-01
PO-216	1.853E+00	1.806E-01	4.821E-02	9.213E-02
PO-218	1.459E+00	2.019E-01	6.046E-02	1.030E-01
RA-224	4.398E+00	1.367E+00	5.485E-01	6.972E-01
RA-226	1.279E+00	1.854E-01	5.777E-02	9.461E-02
AC-228	1.708E+00	3.666E-01	1.082E-01	1.870E-01
RA-228	1.708E+00	3.666E-01	1.082E-01	1.870E-01
TH-228	1.881E+00	1.833E-01	4.895E-02	9.354E-02
TH-230	1.278E+00	1.854E-01	5.777E-02	9.461E-02
TH-232	1.708E+00	3.666E-01	1.082E-01	1.870E-01
U-234	1.278E+00	1.854E-01	5.777E-02	9.461E-02
NP-237	1.187E+00	4.428E-01	2.455E-01	2.259E-01
AM-243	3.685E-01	8.824E-02	5.724E-02	4.502E-02
ANH-511	1.562E-01	6.190E-02	2.207E-02	3.158E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-6.098E-02	3.161E-01	2.612E-01	1.613E-01 NOT IDENT.
NA-22	-1.060E-02	5.029E-02	4.199E-02	2.566E-02 NOT IDENT.

NA-24	-4.154E+05	8.388E+05	0.000E+00	4.280E+05	SHORT HLIF
AL-26	-5.900E-03	2.851E-02	2.233E-02	1.455E-02	NOT IDENT.
TI-44	1.564E-01	5.096E-02	4.265E-02	2.600E-02	NOT IDENT.
SC-46	-5.426E-02	4.039E-02	2.916E-02	2.061E-02	FAIL ABUN
V-48	-2.408E-02	7.367E-02	5.934E-02	3.758E-02	NOT IDENT.
CR-51	-2.486E-02	3.562E-01	3.068E-01	1.817E-01	NOT IDENT.
MN-52	1.284E-02	2.488E-01	2.107E-01	1.269E-01	NOT IDENT.
MN-54	-1.469E-02	4.405E-02	3.634E-02	2.247E-02	NOT IDENT.
CO-56	9.159E-03	4.111E-02	3.536E-02	2.097E-02	NOT IDENT.
CO-57	-7.410E-03	2.619E-02	2.220E-02	1.336E-02	NOT IDENT.
CO-58	-6.620E-03	4.234E-02	3.544E-02	2.160E-02	NOT IDENT.
FE-59	1.750E-03	1.131E-01	9.334E-02	5.771E-02	NOT IDENT.
CO-60	2.973E-03	4.377E-02	3.735E-02	2.233E-02	NOT IDENT.
ZN-65	1.758E-01	1.196E-01	9.879E-02	6.104E-02	NOT IDENT.
GE-68	9.479E-01	1.394E+00	1.221E+00	7.113E-01	NOT IDENT.
AS-73	7.646E-02	1.579E+00	1.418E+00	8.056E-01	NOT IDENT.
AS-74	2.734E-02	8.745E-02	7.771E-02	4.462E-02	NOT IDENT.
SE-75	-3.551E-02	4.810E-02	3.500E-02	2.454E-02	NOT IDENT.
BR-77	-2.970E+00	1.055E+01	8.586E+00	5.382E+00	FAIL ABUN
SR-82	5.789E-02	4.062E-01	3.474E-01	2.073E-01	NOT IDENT.
RB-83	-1.587E-02	6.950E-02	5.681E-02	3.546E-02	NOT IDENT.
RB-84	-6.770E-03	7.588E-02	6.334E-02	3.871E-02	NOT IDENT.
KR-85	1.338E+00	7.620E+00	5.638E+00	3.888E+00	NOT IDENT.
SR-85	6.862E-03	3.908E-02	2.892E-02	1.994E-02	NOT IDENT.
RB-86	9.399E-01	8.999E-01	8.099E-01	4.591E-01	NOT IDENT.
Y-88	-2.187E-03	3.430E-02	2.778E-02	1.750E-02	NOT IDENT.
ZR-88	1.534E-02	3.084E-02	2.703E-02	1.573E-02	NOT IDENT.
Y-91	5.812E+00	2.173E+01	1.895E+01	1.109E+01	NOT IDENT.
NB-94	-1.274E-02	3.455E-02	2.887E-02	1.763E-02	NOT IDENT.
NB-95M	2.012E-01	1.426E-01	1.185E-01	7.275E-02	NOT IDENT.
ZR-95	4.697E-02	7.273E-02	6.501E-02	3.711E-02	NOT IDENT.
NB-97	-1.110E+05	9.522E+04	0.000E+00	4.858E+04	SHORT HLIF
ZR-97	5.866E+06	2.193E+06	0.000E+00	1.119E+06	SHORT HLIF
MO-99	1.210E+01	1.207E+01	1.099E+01	6.160E+00	NOT IDENT.
TC-99M	-5.278E+15	4.358E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-9.835E-03	3.467E-02	2.806E-02	1.769E-02	NOT IDENT.
RH-102	1.045E-02	2.863E-02	2.463E-02	1.461E-02	FAIL ABUN
RU-103	-2.112E-02	3.983E-02	3.183E-02	2.032E-02	NOT IDENT.
RH-106	2.843E-01	3.302E-01	3.011E-01	1.685E-01	NOT IDENT.
RU-106	2.843E-01	3.290E-01	3.011E-01	1.678E-01	NOT IDENT.
AG-108M	4.646E-03	3.496E-02	2.977E-02	1.783E-02	NOT IDENT.
AG-110M	-3.844E-02	3.337E-02	2.616E-02	1.702E-02	NOT IDENT.
IN-111	-1.768E-01	1.188E+00	9.144E-01	6.062E-01	NOT IDENT.
IN-113M	-3.926E-02	4.620E-02	3.725E-02	2.357E-02	NOT IDENT.
SN-113	-3.926E-02	4.620E-02	3.725E-02	2.357E-02	NOT IDENT.
IN-114M	1.015E-02	2.077E-01	1.542E-01	1.060E-01	NOT IDENT.
CD-115	1.695E+00	1.096E+01	9.217E+00	5.591E+00	NOT IDENT.
SN-117M	-7.705E-03	5.644E-02	4.734E-02	2.880E-02	NOT IDENT.
SB-122	-7.185E-01	2.168E+00	1.745E+00	1.106E+00	NOT IDENT.
I-123	1.999E+06	6.048E+06	0.000E+00	3.086E+06	SHORT HLIF
TE-123M	9.571E-03	2.896E-02	2.478E-02	1.477E-02	NOT IDENT.
I-124	2.303E-01	7.620E-01	5.929E-01	3.888E-01	FAIL ABUN
SB-124	5.801E-02	7.386E-02	6.981E-02	3.768E-02	FAIL ABUN
SB-125	-1.965E-02	8.835E-02	7.356E-02	4.508E-02	NOT IDENT.
TE-125M	3.718E+00	9.723E+00	8.516E+00	4.961E+00	NOT IDENT.
I-126	5.888E-02	1.873E-01	1.649E-01	9.556E-02	NOT IDENT.
SB-126	1.015E-01	1.508E-01	1.252E-01	7.695E-02	FAIL ABUN
SB-127	-3.811E-01	1.405E+00	1.184E+00	7.169E-01	NOT IDENT.
XE-127	-4.541E-02	4.933E-02	3.909E-02	2.517E-02	NOT IDENT.
I-131	-7.084E-03	1.121E-01	9.567E-02	5.722E-02	NOT IDENT.
TE-132	5.160E-01	6.891E-01	6.249E-01	3.511E-01	NOT IDENT.
BA-133	2.683E-02	4.523E-02	3.567E-02	2.308E-02	FAIL ABUN
I-133	-4.203E+02	6.342E+03	0.000E+00	3.236E+03	SHORT HLIF
CS-134	6.835E-02	5.300E-02	4.435E-02	2.704E-02	NOT IDENT.
CS-135	3.151E-01	1.790E-01	1.513E-01	9.132E-02	NOT IDENT.
I-135	-5.636E+15	6.564E+15	0.000E+00	3.349E+15	SHORT HLIF
CS-136	-9.123E-02	1.241E-01	9.614E-02	6.334E-02	FAIL ABUN
BA-137M	-6.753E-03	3.508E-02	2.984E-02	1.790E-02	NOT IDENT.
CS-137	-7.139E-03	3.708E-02	3.154E-02	1.892E-02	NOT IDENT.
CE-139	-1.325E-02	3.106E-02	2.564E-02	1.585E-02	NOT IDENT.
BA-140	4.093E-02	2.643E-01	2.217E-01	1.349E-01	NOT IDENT.
LA-140	-5.049E-02	8.705E-02	6.559E-02	4.442E-02	NOT IDENT.
CE-141	4.187E-03	6.450E-02	5.488E-02	3.291E-02	NOT IDENT.
CE-143	1.397E+03	3.624E+02	0.000E+00	1.849E+02	SHORT HLIF
CE-144	-1.698E-01	2.126E-01	1.742E-01	1.085E-01	NOT IDENT.
PM-144	-1.691E-02	3.530E-02	2.927E-02	1.801E-02	NOT IDENT.
PR-144	-1.146E+00	2.392E+00	1.984E+00	1.221E+00	NOT IDENT.
PM-146	1.930E-02	4.162E-02	3.616E-02	2.124E-02	NOT IDENT.

ND-147	1.336E-01	5.735E-01	4.847E-01	2.926E-01	NOT IDENT.
PM-149	-5.528E+01	9.607E+01	8.119E+01	4.902E+01	NOT IDENT.
EU-152	-4.437E-02	1.005E-01	8.122E-02	5.129E-02	FAIL ABUN
GD-153	4.097E-02	9.154E-02	7.270E-02	4.671E-02	NOT IDENT.
EU-154	-1.696E-03	1.384E-01	1.177E-01	7.063E-02	NOT IDENT.
EU-155	1.135E-01	1.128E-01	1.011E-01	5.755E-02	FAIL ABUN
TB-160	-6.318E-02	1.527E-01	1.237E-01	7.789E-02	FAIL ABUN
HO-166M	1.838E-02	6.310E-02	5.522E-02	3.219E-02	FAIL ABUN
TM-171	-1.668E+01	3.623E+01	3.156E+01	1.848E+01	NOT IDENT.
LU-176	-2.257E-02	2.397E-02	1.969E-02	1.223E-02	FAIL ABUN
LU-177	3.045E+00	1.826E+00	1.093E+00	9.315E-01	FAIL ABUN
LU-177M	2.019E-02	1.706E-01	1.458E-01	8.705E-02	FAIL ABUN
HF-181	4.734E-03	4.085E-02	3.451E-02	2.084E-02	NOT IDENT.
W-181	-3.792E-01	4.876E-01	4.193E-01	2.488E-01	NOT IDENT.
TA-182	2.329E-01	2.426E-01	2.200E-01	1.238E-01	NOT IDENT.
RE-183	2.448E-03	1.135E-01	9.568E-02	5.788E-02	FAIL ABUN
RE-184	-7.938E-02	2.159E-01	1.864E-01	1.101E-01	NOT IDENT.
OS-185	3.851E-02	4.680E-02	4.254E-02	2.388E-02	NOT IDENT.
RE-188	1.815E-01	1.803E-01	1.584E-01	9.198E-02	NOT IDENT.
W-188	-4.040E+00	8.240E+00	6.094E+00	4.204E+00	NOT IDENT.
IR-192	2.661E-05	3.427E-02	2.966E-02	1.748E-02	FAIL ABUN
AU-195	2.142E-01	2.611E-01	2.107E-01	1.332E-01	FAIL ABUN
TL-200	-4.718E+01	4.487E+02	0.000E+00	2.289E+02	SHORT HLIF
TL-201	4.385E+00	7.132E+00	6.157E+00	3.639E+00	NOT IDENT.
TL-202	-1.399E-02	6.774E-02	5.634E-02	3.456E-02	NOT IDENT.
BI-207	-2.852E-03	6.158E-02	5.070E-02	3.142E-02	FAIL ABUN
TL-207	1.583E-01	6.706E-01	5.184E-01	3.422E-01	FAIL ABUN
PO-209	3.646E+00	7.659E+00	6.702E+00	3.908E+00	NOT IDENT.
BI-210	5.426E+00	8.867E+00	8.166E+00	4.524E+00	NOT IDENT.
PB-210	5.426E+00	8.867E+00	8.166E+00	4.524E+00	NOT IDENT.
PO-210	5.426E+00	8.864E+00	8.166E+00	4.523E+00	NOT IDENT.
PB-211	3.748E-01	9.943E-01	8.406E-01	5.073E-01	NOT IDENT.
BI-212	1.131E+00	5.168E-01	3.571E-01	2.637E-01	FAIL ABUN
PO-215	1.583E-01	6.706E-01	5.184E-01	3.422E-01	FAIL ABUN
RN-219	-2.841E-01	4.338E-01	3.527E-01	2.213E-01	FAIL ABUN
RN-220	-3.813E+00	2.721E+01	2.230E+01	1.389E+01	NOT IDENT.
RA-223	1.583E-01	6.706E-01	5.184E-01	3.422E-01	FAIL ABUN
AC-227	-1.604E-02	3.564E-01	3.124E-01	1.818E-01	FAIL ABUN
TH-227	-1.604E-02	3.564E-01	3.124E-01	1.818E-01	FAIL ABUN
TH-229	1.708E-01	5.205E-01	4.399E-01	2.656E-01	FAIL ABUN
PA-231	1.132E+00	1.739E+00	1.388E+00	8.875E-01	NOT IDENT.
TH-231	1.583E-01	6.706E-01	5.184E-01	3.422E-01	FAIL ABUN
U-231	-9.114E-02	1.240E+00	9.604E-01	6.326E-01	FAIL ABUN
PA-233	2.989E-02	6.372E-02	5.652E-02	3.251E-02	FAIL ABUN
PA-234	-8.485E-02	3.267E-01	2.663E-01	1.667E-01	FAIL ABUN
PA-234M	3.073E-01	5.053E+00	4.225E+00	2.578E+00	FAIL ABUN
TH-234	2.173E+00	1.856E+00	1.659E+00	9.468E-01	FAIL ABUN
U-235	1.264E-01	2.231E-01	1.909E-01	1.138E-01	FAIL ABUN
NP-236	-1.188E-04	8.226E-02	6.936E-02	4.197E-02	NOT IDENT.
U-238	2.173E+00	1.856E+00	1.659E+00	9.468E-01	FAIL ABUN
NP-239	-5.297E-03	1.913E-01	1.643E-01	9.758E-02	FAIL ABUN
AM-241	-1.253E-01	2.347E-01	2.047E-01	1.197E-01	NOT IDENT.
CM-243	4.955E-03	9.965E-02	8.648E-02	5.084E-02	FAIL ABUN
AM-246	-9.634E-02	1.697E-01	1.327E-01	8.657E-02	NOT IDENT.
CM-247	-5.053E-03	3.799E-02	3.202E-02	1.938E-02	FAIL ABUN
CF-249	6.460E-02	4.038E-02	3.739E-02	2.060E-02	NOT IDENT.
CF-251	9.088E-02	1.326E-01	1.144E-01	6.764E-02	NOT IDENT.

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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ENERGY	MDA COUNTS
46.50	280.4353
46.50	280.4353
46.50	280.4353
48.70	308.7673
49.72	288.4139
51.35	310.0055
52.39	322.8994
52.97	299.2169
53.15	305.8613
53.44	310.7373
54.07	314.0263
56.28	323.2427
56.28	323.2454
57.37	0.0000
57.53	323.2882
57.53	323.2895
57.60	313.0030
57.98	308.5852
57.98	308.5852
59.32	346.3800
59.32	346.3800
59.40	346.4453
59.54	346.5601
59.72	341.0393
60.01	377.1949
61.10	377.2081
61.14	377.2425
61.30	358.4182
63.00	326.5027
63.29	318.1450
63.29	318.1450
63.58	318.3539
64.28	331.2674
65.12	395.0165
65.20	395.0864
65.20	395.0864
66.05	432.2519
66.72	382.0159
66.83	385.9493
66.91	386.0168
67.20	386.2621
67.20	386.2621
67.75	366.5222
67.85	366.6017
68.90	389.6140
68.90	389.6140
69.30	376.4359
69.67	395.2823
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70.83	461.9070
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72.87	418.6606
72.87	418.6606
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74.81	414.9612
74.81	414.9612
74.81	414.9612
74.81	414.9612
74.97	415.0953
75.28	415.3568
75.70	415.7092
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77.11	416.8873

77.11	416.8873
77.11	416.8873
77.11	416.8873
77.11	416.8873
77.11	416.8873
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83.78	380.0895
83.78	380.0895
84.21	371.4464
84.90	392.8406
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86.29	504.6772
86.50	504.8752
86.54	504.9112
86.59	504.9575
86.72	537.5540
86.79	537.6196
86.94	537.7701
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87.30	550.6316
87.30	550.6316
87.30	550.6316
87.30	550.6316
87.30	550.6316
87.57	550.9032
87.88	504.6563
88.03	504.7947
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88.47	442.0497
89.95	443.2386
91.11	444.1627
92.29	486.4766
92.38	486.5551
92.38	486.5551
93.35	487.3886
94.00	487.9451
94.67	488.5114
94.67	488.5163
94.90	488.7124
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98.44	280.0205
98.88	297.0743
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99.55	315.1936
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100.10	344.7459
103.18	310.5235
103.76	307.7324
105.00	308.3559
105.31	296.1308
108.00	358.5565
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111.00	329.0236
111.00	329.0236
111.76	317.9488
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116.30	304.4301
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117.00	293.1935
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121.62	282.5250
121.78	301.6427
122.06	311.2953
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122.32	305.0581
122.32	305.0581
122.32	305.0581
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127.23	344.5732
129.76	294.4226
131.20	346.5126
133.02	339.8614
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136.48	306.9011
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140.51	0.0000
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142.65	333.4206
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144.24	294.8099
144.24	294.8099
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145.44	318.2398
147.16	313.4700
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152.70	289.2037
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154.21	294.1737
154.21	294.1737
154.21	294.1737
154.21	294.1737
155.03	297.7980
156.02	351.3687
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161.27	305.6690
162.32	299.3572
162.64	302.8240
163.35	303.0831
163.89	290.9686
165.85	310.7205
167.43	267.4740
171.28	281.1027
171.86	290.3302
172.10	294.9313
176.55	260.0966
176.60	273.7408
181.06	250.0085
184.41	257.8171
185.71	258.1856
186.00	258.2680
190.27	269.8508
192.34	269.2972
193.63	261.5677
197.04	288.0694
198.01	277.8973
198.60	245.4927
200.40	273.9300
201.83	277.5491
202.84	300.3353
205.31	255.8753



208.36	262.6643
208.81	262.7849
209.75	258.4450
209.75	258.4450
210.97	261.5903
215.65	241.5029
216.55	243.4961
218.09	260.7743
222.10	234.0973
223.80	272.0697
226.40	252.1136
227.00	232.5076
227.08	223.5476
227.20	224.4720
228.16	230.9671
228.18	230.9710
228.18	230.9710
231.56	0.0000
235.69	262.1097
236.00	262.1871
236.00	262.1871
238.63	242.3130
238.63	242.3130
238.63	242.3130
238.63	242.3130
239.00	242.3945
240.98	242.8345
241.98	243.0565
241.98	243.0565
241.98	243.0565
244.69	220.4762
245.39	226.4586
247.94	221.4856
248.90	184.1191
249.79	186.0999
252.40	186.5304
252.85	190.2817
252.85	190.2817
254.15	0.0000
256.20	186.2311
256.20	186.2311
260.50	180.4500
260.90	179.5868
262.80	200.2786
264.65	190.1969
268.24	181.8324
268.79	199.8124
269.46	191.1584
269.46	191.1584
269.46	191.1584
269.46	191.1584
271.23	191.7543
273.65	168.4369
276.40	178.2004
277.35	178.3395
277.60	178.3772
277.60	178.3772
278.00	178.4352
278.60	178.5251
279.20	185.0045
279.53	194.0826
280.46	198.7477
281.68	176.3369
283.67	176.6226
284.30	186.6393
285.00	195.5154
285.90	213.6165
286.10	204.1974
286.10	204.1974
287.40	200.6230
288.45	0.0000
290.67	195.8369
290.80	206.4836
291.72	205.1169
293.26	0.0000
293.70	176.9066
295.21	177.1166
295.21	177.1166

295.21	177.1166
295.96	177.2216
296.50	177.2954
297.23	177.3976
298.57	177.5849
299.80	177.7552
299.80	177.7552
300.09	177.7950
300.09	177.7950
300.09	177.7950
300.09	177.7950
300.12	177.7978
301.29	163.7993
302.84	154.8017
303.76	142.6401
303.91	142.6583
304.40	138.1069
304.40	138.1069
304.84	139.6903
306.84	176.8013
308.46	158.7410
311.98	156.2726
316.51	161.6462
318.01	150.1988
319.02	149.3426
319.41	154.2350
320.08	151.4011
323.87	130.8029
323.87	130.8029
323.87	130.8029
323.87	130.8029
325.23	135.6104
328.77	156.2793
333.44	180.3276
334.20	161.6014
334.20	161.6014
334.30	161.6114
338.28	141.6160
338.28	141.6160
338.28	141.6160
338.28	141.6160
338.32	141.6204
338.32	141.6204
338.32	141.6204
340.50	144.9921
340.57	144.9988
344.27	161.4062
345.85	167.4239
350.59	0.0000
351.07	154.8027
351.92	154.8955
351.92	154.8955
351.92	154.8955
355.39	0.0000
356.01	116.2992
364.48	130.1904
366.43	142.3965
367.43	145.5022
367.94	0.0000
369.80	142.7172
374.96	129.0879
383.85	140.9980
387.95	109.8441
388.63	132.2772
391.69	155.9859
391.69	155.9859
392.90	124.4759
398.62	118.7842
400.65	145.5946
401.10	152.8150
401.81	154.9354
402.60	140.6395
404.84	135.6960
410.95	125.8925
411.60	140.3953
413.65	117.8321
414.70	129.2858
415.30	131.4028

415.76	133.5096
417.63	0.0000
418.52	121.2936
423.70	112.3143
427.08	116.7100
427.89	111.5552
432.53	125.4547
433.93	128.6962
439.47	118.6193
439.56	111.2777
439.89	101.8488
443.98	119.9856
444.90	130.5788
445.03	130.5901
445.03	130.5901
445.03	130.5901
445.03	130.5901
453.90	94.2094
463.38	97.0586
468.07	104.1438
473.00	99.5078
475.06	95.3366
475.35	99.6370
476.78	97.5706
477.59	102.9771
477.96	112.6552
482.03	92.4760
484.57	96.9104
487.03	84.1021
490.36	0.0000
492.35	83.2624
497.08	100.8176
507.63	0.0000
510.53	0.0000
510.84	85.6106
511.00	85.6178
511.85	89.1510
511.85	89.1510
513.99	98.0007
513.99	98.0007
520.41	97.6697
520.65	97.6805
527.90	90.3331
528.96	0.0000
529.64	97.0288
529.87	0.0000
531.02	91.5791
537.32	91.8704
543.00	102.1215
546.56	0.0000
549.76	98.0104
552.65	88.1107
555.20	93.8053
563.23	110.9913
563.90	103.1771
568.70	75.3137
569.32	80.9583
569.50	80.9648
569.67	80.9714
573.80	109.1774
574.00	109.1863
574.64	105.9651
578.91	100.9089
579.30	0.0000
583.14	91.4523
585.48	90.6470
591.81	82.7331
592.07	82.7442
593.00	97.3345
595.88	82.8909
600.56	104.9768
602.52	0.0000
602.71	97.4661
602.71	97.4661
603.60	91.4136
604.41	89.9236
604.70	89.9356
609.31	94.4024

609.31	94.4024
609.31	94.4024
609.31	94.4024
610.33	74.8837
612.46	78.0149
614.37	93.3938
618.01	98.4551
621.84	82.0338
621.84	82.0338
631.29	90.7098
633.02	91.7055
633.10	91.7104
634.78	86.2157
635.90	87.1864
636.97	80.7320
645.85	88.4989
646.12	88.5082
656.30	98.2581
657.75	92.7013
657.90	0.0000
661.65	87.2284
661.65	87.2284
664.57	0.0000
666.33	89.2805
666.33	89.2805
675.00	94.3262
677.61	68.9330
685.20	88.0980
692.80	91.2258
695.00	97.0170
696.49	96.1226
696.49	96.1226
697.00	86.6255
697.49	77.1201
698.33	82.8624
698.50	84.7738
699.00	81.9331
702.63	95.4126
706.10	92.6805
706.58	0.0000
706.67	89.8347
709.31	76.5371
711.68	82.3551
713.82	86.2603
717.42	74.8674
720.50	64.5258
721.93	0.0000
722.20	81.7419
722.78	83.3638
722.78	83.3638
722.89	83.3680
722.95	83.3701
723.30	99.4180
724.18	78.5982
727.18	76.1224
733.00	65.9961
735.90	79.2874
739.58	63.9085
742.81	90.1664
744.21	78.5755
747.13	73.8087
751.79	82.6986
752.31	83.6883
753.82	72.0524
755.35	64.3000
756.15	68.2192
756.87	74.0870
763.93	70.0517
765.79	74.9915
766.42	78.2715
766.84	76.3261
776.49	74.6418
778.00	73.7018
778.57	69.7866
778.89	74.7086
783.80	60.0752
785.46	73.3612
792.07	64.2113

795.84	57.7067
796.30	62.6623
798.80	75.9255
801.93	77.3354
805.60	75.4526
810.29	76.5770
810.76	76.5902
815.85	72.7451
817.79	60.8302
818.51	65.8340
819.60	72.8449
826.30	83.0223
828.27	0.0000
831.60	85.1847
831.96	80.1836
834.83	101.3354
836.80	0.0000
846.75	64.4844
848.13	71.5720
856.28	0.0000
856.80	62.3517
860.37	62.7674
867.32	55.8151
867.82	68.7938
871.10	55.8876
873.19	58.9785
874.81	57.9936
875.33	0.0000
876.40	57.0076
879.36	72.3503
880.27	71.3535
880.51	71.3586
881.50	67.3036
883.24	52.0384
884.67	52.0633
889.25	72.5930
896.60	54.3237
898.02	56.4005
899.00	64.6258
903.28	77.0453
911.07	56.6462
911.07	56.6462
911.07	56.6462
919.63	41.3145
920.93	37.1988
925.00	58.9775
925.24	57.9469
926.50	51.7590
935.52	66.4469
937.48	81.0335
944.10	73.9208
946.00	65.6317
949.00	47.9676
962.29	61.0862
964.01	58.6756
966.15	58.7152
968.20	58.7535
969.11	54.2222
969.11	54.2222
969.11	54.2222
977.42	48.4022
980.50	55.8208
983.50	57.9823
989.30	42.2451
996.32	68.7975
1001.03	64.6576
1001.68	62.5492
1004.76	66.8529
1021.30	0.0000
1024.50	0.0000
1034.80	50.3299
1036.00	57.8470
1037.82	70.7405
1038.57	73.9729
1038.76	0.0000
1045.16	66.5985
1046.59	76.3007
1048.07	69.8813

1050.47	52.7181
1050.47	52.7181
1062.04	58.2952
1063.62	68.0418
1076.63	50.9541
1077.35	53.1344
1078.86	74.8556
1085.78	48.9155
1099.22	75.2936
1112.02	82.1375
1112.84	78.5044
1115.52	56.6391
1120.29	64.7646
1120.29	64.7646
1120.29	64.7646
1120.29	64.7646
1120.51	64.7704
1121.28	64.7848
1124.00	0.0000
1129.67	68.0377
1131.51	0.0000
1147.95	0.0000
1167.94	82.4923
1173.22	78.8989
1175.09	75.2223
1177.93	74.3522
1189.05	82.0309
1204.90	75.8254
1205.75	0.0000
1213.00	81.6156
1221.42	79.9158
1230.97	98.9630
1235.34	68.8831
1236.41	0.0000
1238.25	87.8195
1246.25	70.0224
1260.41	0.0000
1271.85	60.0033
1274.45	57.1851
1274.54	60.9974
1291.56	65.0892
1298.22	0.0000
1312.09	51.9521
1325.50	45.3668
1325.50	45.3668
1332.49	40.6089
1333.61	41.5880
1360.21	24.3347
1362.66	0.0000
1365.15	21.4396
1368.21	30.7207
1368.53	0.0000
1376.25	31.8253
1384.27	32.8932
1394.10	24.5310
1395.20	28.4631
1407.95	27.5636
1434.06	26.7396
1436.60	28.7369
1457.56	0.0000
1460.81	17.0815
1489.15	27.0736
1509.49	22.1593
1596.49	24.6299
1620.62	14.4398
1678.03	0.0000
1691.02	9.4164
1691.02	9.4164
1706.46	0.0000
1750.46	0.0000
1764.49	3.6392
1764.49	3.6392
1764.49	3.6392
1764.49	3.6392
1770.23	23.3777
1771.40	9.5658
1791.20	0.0000
1808.65	11.7748

1836.01

12.9111

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691005

Total Uranium Activity	6.5227E+00	ug/g
Total Uranium Counting Unc.	5.5216E+00	ug/g
Total Uranium Tpu	2.8171E-06	ug/g
Total Uranium Mda	4.9371E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 947037                          SAMPLE ID   : G245691005
*  ANALYST       : MJH1                             DETECTOR    : GAM10
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 15:24:09.72          SAMPLE ALQT  : 126.970 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.104E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.509E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.509E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.700E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:25:26.54

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691006.CNF;1
Sample date   : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:34.
Sample ID     : G245691006 Sample quantity : 1.48710E+02 GRAM
Detector name : GAM13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 947037 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.27*	181	590	1.30	92.30	88	9	2.51E-02	26.7	
2	0	63.14*	582	881	1.23	126.04	121	10	8.08E-02	11.0	
3	3	74.82	500	723	1.09	149.42	144	14	6.94E-02	10.1	1.85E+00
4	3	77.07*	870	581	1.07	153.92	144	14	1.21E-01	5.7	
5	0	83.98*	117	493	1.51	167.74	165	6	1.62E-02	32.8	
6	4	87.09	296	479	1.38	173.97	171	22	4.12E-02	12.7	3.97E+00
7	4	89.89	234	594	1.31	179.56	171	22	3.25E-02	19.4	
8	4	92.59*	810	470	1.22	184.96	171	22	1.12E-01	6.6	
9	0	129.28	86	489	0.96	258.36	253	9	1.19E-02	47.9	
10	0	143.65*	132	485	1.36	287.11	282	11	1.83E-02	34.5	
11	0	185.72*	394	472	1.34	371.27	364	13	5.47E-02	13.2	
12	0	209.13	117	276	1.00	418.10	415	8	1.62E-02	26.4	
13	5	238.72*	1118	240	1.36	477.29	473	16	1.55E-01	3.9	1.83E+00
14	5	241.74	230	301	1.56	483.33	473	16	3.19E-02	15.6	
15	0	269.86*	157	223	2.10	539.58	534	11	2.18E-02	20.6	
16	0	295.29*	408	220	1.26	590.46	586	11	5.66E-02	8.7	
17	0	299.99	73	170	0.66	599.87	597	7	1.01E-02	31.8	
18	0	328.21	53	223	1.35	656.32	651	10	7.34E-03	54.6	
19	0	338.73*	237	202	1.19	677.36	672	12	3.29E-02	14.1	
20	0	352.02*	622	348	1.39	703.95	696	16	8.64E-02	7.9	
21	0	464.06	140	162	0.78	928.10	920	15	1.95E-02	21.7	
22	0	511.14*	128	224	2.09	1022.29	1013	19	1.78E-02	32.5	
23	0	583.28*	340	114	1.22	1166.62	1160	13	4.72E-02	8.8	
24	0	609.42*	472	130	1.55	1218.92	1212	13	6.56E-02	7.0	
25	0	662.08	215	119	1.17	1324.27	1317	12	2.99E-02	11.7	
26	0	727.81*	73	72	1.21	1455.77	1451	9	1.02E-02	25.2	
27	0	768.69	22	134	0.95	1537.56	1534	12	3.08E-03	108.6	
28	0	911.68*	221	84	1.81	1823.64	1816	14	3.07E-02	11.5	
29	0	969.61*	100	106	1.50	1939.55	1935	13	1.39E-02	24.2	
30	0	1001.83*	30	50	1.75	2004.03	1998	10	4.15E-03	53.9	
31	0	1121.33	80	109	1.65	2243.13	2237	15	1.11E-02	30.3	
32	0	1461.28*	935	35	2.43	2923.35	2910	22	1.30E-01	3.7	
33	0	1765.08	79	7	2.68	3531.27	3524	14	1.10E-02	13.3	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:34
Sample ID         : G245691006 Sample quantity : 148.71 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA13 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.126E+01	2.047E+00	6.794E-01	4.153E-02	31.291
CD-109	+	88.03	*	2.838E+00	7.536E-01	8.626E-01	6.806E-02	3.290
SN-126	+	64.28		2.070E+00	5.597E-01	3.756E-01	5.848E-02	5.512
	+	86.94		1.160E+00	5.611E-01	3.513E-01	1.448E-01	3.301
	+	87.57	*	2.790E-01	7.407E-02	8.466E-02	6.697E-03	3.295
BA-137M	+	661.65	*	2.995E-01	7.409E-02	6.676E-02	5.445E-03	4.486
CS-137	+	661.65	*	3.166E-01	7.834E-02	7.057E-02	5.768E-03	4.486
TL-208		277.35		2.459E-02	3.916E-01	6.490E-01	7.601E-02	0.038
	+	510.84		5.916E-01	3.902E-01	2.434E-01	2.645E-02	2.431
	+	583.14	*	4.519E-01	8.792E-02	6.089E-02	5.040E-03	7.421
		860.37		6.403E-01	3.755E-01	6.708E-01	5.656E-02	0.955
BI-210	+	46.50	*	1.548E+00	8.359E-01	7.545E-01	6.150E-02	2.051
PB-210	+	46.50	*	1.548E+00	8.359E-01	7.545E-01	6.150E-02	2.051
PO-210	+	46.50	*	1.548E+00	8.337E-01	7.545E-01	5.379E-02	2.051
BI-211		72.87		2.316E+00	2.091E+00	3.268E+00	2.858E-01	0.709
	+	351.07	*	3.471E+00	6.060E-01	3.321E-01	2.420E-02	10.452
PB-212	+	74.81		1.603E+00	3.818E-01	3.504E-01	4.458E-02	4.573
	+	77.11		1.661E+00	2.373E-01	2.095E-01	1.780E-02	7.929
	+	87.30		1.290E+00	3.661E-01	3.913E-01	4.992E-02	3.297
	+	238.63	*	1.343E+00	1.616E-01	8.887E-02	8.073E-03	15.114
	+	300.09		1.354E+00	8.722E-01	1.246E+00	1.185E-01	1.087
PO-212	+	74.81		1.603E+00	3.818E-01	3.504E-01	4.458E-02	4.573
	+	77.11		1.661E+00	2.373E-01	2.095E-01	1.780E-02	7.929
	+	87.30		1.290E+00	3.661E-01	3.913E-01	4.992E-02	3.297
		115.19		-1.080E+00	3.350E+00	5.414E+00	6.279E-01	-0.200
	+	238.63	*	1.343E+00	1.616E-01	8.887E-02	8.073E-03	15.114
	+	300.09		1.354E+00	8.722E-01	1.246E+00	1.185E-01	1.087
BI-214	+	609.31	*	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
	+	1120.29		1.036E+00	6.343E-01	5.402E-01	4.832E-02	1.918
	+	1764.49		1.410E+00	3.823E-01	3.605E-01	2.047E-02	3.912
PB-214	+	74.81		2.761E+00	6.388E-01	6.038E-01	6.867E-02	4.573
	+	77.11		2.847E+00	4.610E-01	3.591E-01	4.098E-02	7.929
	+	87.30		2.210E+00	6.111E-01	6.703E-01	7.410E-02	3.297
	+	241.98		1.658E+00	5.433E-01	5.355E-01	5.184E-02	3.097

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		1.331E+00	2.664E-01	2.075E-01	2.032E-02	6.415
	+	351.92	*	1.207E+00	2.200E-01	1.158E-01	1.037E-02	10.427
	+	74.81		2.761E+00	6.388E-01	6.038E-01	6.867E-02	4.573
	+	77.11		2.847E+00	4.610E-01	3.591E-01	4.098E-02	7.929
	+	87.30		2.210E+00	6.111E-01	6.703E-01	7.410E-02	3.297
	+	241.98		1.658E+00	5.433E-01	5.355E-01	5.184E-02	3.097
PO-216	+	295.21		1.331E+00	2.664E-01	2.075E-01	2.032E-02	6.415
	+	351.92	*	1.207E+00	2.200E-01	1.158E-01	1.037E-02	10.427
	+	74.81		1.603E+00	3.818E-01	3.504E-01	4.458E-02	4.573
	+	77.11		1.661E+00	2.373E-01	2.095E-01	1.780E-02	7.929
	+	87.30		1.290E+00	3.661E-01	3.913E-01	4.992E-02	3.297
	+	238.63	*	1.343E+00	1.616E-01	8.887E-02	8.073E-03	15.114
PO-218	+	300.09		1.354E+00	8.722E-01	1.246E+00	1.185E-01	1.087
	+	74.81		2.761E+00	6.388E-01	6.038E-01	6.867E-02	4.573
	+	77.11		2.847E+00	4.610E-01	3.591E-01	4.098E-02	7.929
	+	87.30		2.210E+00	6.111E-01	6.703E-01	7.410E-02	3.297
	+	241.98		1.658E+00	5.433E-01	5.355E-01	5.184E-02	3.097
	+	295.21		1.331E+00	2.664E-01	2.075E-01	2.032E-02	6.415
RA-224	+	351.92	*	1.207E+00	2.200E-01	1.158E-01	1.037E-02	10.427
RA-226	+	240.98	*	3.145E+00	1.015E+00	1.012E+00	7.987E-02	3.108
	+	609.31	*	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
	+	1120.29		1.036E+00	6.343E-01	5.402E-01	4.832E-02	1.918
AC-228	+	1764.49		1.410E+00	3.823E-01	3.605E-01	2.047E-02	3.912
	+	338.32		1.454E+00	7.229E-01	3.305E-01	1.353E-01	4.401
	+	911.07	*	1.319E+00	3.321E-01	2.589E-01	2.689E-02	5.096
RA-228	+	969.11		1.051E+00	5.624E-01	6.096E-01	1.392E-01	1.724
	+	338.32		1.454E+00	7.229E-01	3.305E-01	1.353E-01	4.401
	+	911.07	*	1.319E+00	3.321E-01	2.589E-01	2.689E-02	5.096
TH-228	+	969.11		1.051E+00	5.624E-01	6.096E-01	1.392E-01	1.724
	+	74.81		1.627E+00	3.570E-01	3.558E-01	3.096E-02	4.573
	+	77.11		1.686E+00	2.409E-01	2.127E-01	1.807E-02	7.929
	+	87.30		1.310E+00	3.478E-01	3.972E-01	3.148E-02	3.297
	+	238.63	*	1.364E+00	1.640E-01	9.022E-02	8.196E-03	15.114
	+	300.09		1.375E+00	1.195E+00	1.264E+00	7.477E-01	1.087
TH-230	+	609.31	*	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
	+	1120.29		1.036E+00	6.343E-01	5.402E-01	4.832E-02	1.918
	+	1764.49		1.410E+00	3.823E-01	3.605E-01	2.047E-02	3.912
TH-232	+	338.32		1.454E+00	4.221E-01	3.305E-01	2.301E-02	4.401
	+	911.07	*	1.319E+00	3.321E-01	2.589E-01	2.689E-02	5.096
	+	969.11		1.051E+00	5.624E-01	6.096E-01	1.392E-01	1.724
TH-234	+	63.29	*	5.230E+00	1.501E+00	9.316E-01	1.709E-01	5.614
	+	92.38		5.262E+00	1.177E+00	5.876E-01	1.058E-01	8.955
U-234	+	609.31	*	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
	+	1120.29		1.036E+00	6.343E-01	5.402E-01	4.832E-02	1.918
	+	1764.49		1.410E+00	3.823E-01	3.605E-01	2.047E-02	3.912
U-235	+	89.95		3.033E+00	1.500E+00	1.169E+00	3.590E-01	2.596
	+	93.35		6.326E+00	1.959E+00	7.086E-01	1.985E-01	8.927
	+	105.00		9.555E-01	9.638E-01	1.571E+00	4.762E-01	0.608
	+	143.76	*	5.033E-01	3.598E-01	3.158E-01	5.830E-02	1.594

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		163.35		6.855E-02	4.920E-01	7.679E-01	1.449E-01	0.089
	+	185.71		3.329E-01	9.162E-02	6.740E-02	5.320E-03	4.938
		205.31		3.035E-01	5.596E-01	8.539E-01	1.603E-01	0.356
NP-237	+	86.50	*	8.191E-01	2.755E-01	2.790E-01	6.171E-02	2.936
		95.87		-3.496E-01	8.736E-01	1.265E+00	3.129E-01	-0.276
U-238	+	63.29	*	5.230E+00	1.501E+00	9.316E-01	1.709E-01	5.614
	+	92.38		5.262E+00	8.281E-01	5.876E-01	4.960E-02	8.955
AM-243	+	74.67	*	2.598E-01	5.694E-02	5.679E-02	4.906E-03	4.575
	+	86.72		3.072E+01	8.157E+00	1.047E+01	8.329E-01	2.934
		117.66		-1.865E-01	3.570E+00	5.823E+00	6.969E-01	-0.032
	+	142.18		4.227E+01	2.953E+01	2.753E+01	2.917E+00	1.536
ANH-511	+	511.00	*	1.278E-01	8.361E-02	5.259E-02	3.670E-03	2.430

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-6.933E-02	3.506E-01	5.792E-01	4.355E-02	-0.120
NA-22		1274.54	*	-1.614E-02	5.218E-02	8.454E-02	4.772E-03	-0.191
NA-24		1368.53	*	-3.716E-01	5.218E-02	Half-Life too short		
AL-26		1129.67		-2.955E+00	2.706E+00	3.271E+00	1.939E-01	-0.903
		1808.65	*	2.068E-02	3.135E-02	5.775E-02	3.259E-03	0.358
TI-44		67.85		-2.325E-02	2.509E-02	3.913E-02	3.543E-03	-0.594
	+	78.38	*	3.065E-01	4.379E-02	5.246E-02	4.418E-03	5.843
SC-46		889.25	*	8.826E-04	4.491E-02	7.448E-02	5.640E-03	0.012
	+	1120.51		1.774E-01	1.080E-01	1.374E-01	8.259E-03	1.292
V-48		944.10		-4.807E-02	1.029E+00	1.688E+00	1.233E-01	-0.028
		983.50	*	7.971E-03	8.570E-02	1.416E-01	1.002E-02	0.056
		1312.09		-5.915E-02	8.866E-02	1.371E-01	7.774E-03	-0.431
CR-51		320.08	*	-9.328E-02	3.747E-01	6.039E-01	4.700E-02	-0.154
MN-52		744.21		1.015E-01	2.943E-01	4.850E-01	3.937E-02	0.209
		848.13		3.218E+00	8.085E+00	1.382E+01	1.076E+00	0.233
		935.52		4.125E-01	3.033E-01	5.471E-01	4.019E-02	0.754
		1246.25		4.025E+00	8.673E+00	1.493E+01	8.354E-01	0.270
		1333.61		3.301E+00	5.430E+00	9.539E+00	5.426E-01	0.346
		1434.06	*	-1.845E-01	2.598E-01	3.882E-01	2.231E-02	-0.475
MN-54		834.83	*	5.475E-03	4.458E-02	7.485E-02	5.874E-03	0.073
CO-56		846.75	*	-4.237E-02	4.811E-02	7.469E-02	5.821E-03	-0.567
		977.42		-1.548E+00	4.356E+00	5.883E+00	4.183E-01	-0.263
		1037.82		-2.312E-01	3.465E-01	5.300E-01	3.860E-02	-0.436
		1175.09		1.860E+00	2.622E+00	4.469E+00	2.458E-01	0.416
		1238.25		1.274E-01	9.368E-02	1.706E-01	1.017E-02	0.747
		1360.21		6.103E-01	1.118E+00	1.952E+00	1.114E-01	0.313
		1771.40		2.193E-01	2.709E-01	4.570E-01	2.593E-02	0.480
CO-57		122.06	*	1.355E-03	2.402E-02	3.926E-02	4.966E-03	0.035
		136.48		-4.469E-02	2.024E-01	3.246E-01	3.799E-02	-0.138
CO-58		810.76	*	-2.000E-02	4.486E-02	7.236E-02	5.764E-03	-0.276
FE-59	+	142.65		6.495E+00	4.537E+00	4.686E+00	4.941E-01	1.386
		192.34		1.935E-01	8.861E-01	1.515E+00	1.966E-01	0.128

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60		1099.22	*	3.655E-02	1.087E-01	1.812E-01	1.294E-02	0.202
		1291.56		5.278E-02	1.474E-01	2.519E-01	1.840E-02	0.210
		1173.22		1.511E-03	5.430E-02	8.775E-02	4.823E-03	0.017
		1332.49	*	4.783E-03	4.401E-02	7.364E-02	4.189E-03	0.065
ZN-65		1115.52	*	8.044E-03	1.183E-01	1.654E-01	1.004E-02	0.049
GE-68		1077.35	*	5.881E-02	1.500E+00	2.447E+00	1.564E-01	0.024
AS-73		53.44	*	1.815E-01	2.232E-01	3.800E-01	3.210E-02	0.478
AS-74		595.88	*	-4.764E-03	1.034E-01	1.691E-01	1.299E-02	-0.028
SE-75		634.78		-7.505E-02	4.251E-01	6.848E-01	5.457E-02	-0.110
		66.05		-3.172E-01	2.503E+00	3.788E+00	4.127E-01	-0.084
		96.73		-5.502E-01	7.247E-01	1.030E+00	1.429E-01	-0.534
		121.11		-4.990E-02	1.333E-01	2.102E-01	3.030E-02	-0.237
BR-77		136.00		-8.646E-03	3.786E-02	6.070E-02	6.856E-03	-0.142
		198.60		-2.186E-01	1.730E+00	2.855E+00	2.551E-01	-0.077
		264.65	*	-8.490E-03	4.721E-02	6.797E-02	5.324E-03	-0.125
		279.53		9.939E-02	1.103E-01	1.892E-01	1.522E-02	0.525
		303.91		5.451E-01	2.348E+00	3.434E+00	3.649E-01	0.159
		400.65		-1.011E-01	3.045E-01	4.641E-01	4.265E-02	-0.218
	+	87.88		6.177E+02	1.640E+02	2.621E+02	2.069E+01	2.357
		200.40		1.396E+02	1.557E+02	2.716E+02	2.152E+01	0.514
	+	239.00		2.173E+02	2.425E+01	3.379E+01	2.669E+00	6.431
		249.79		4.068E+00	6.274E+01	1.048E+02	8.243E+00	0.039
		281.68		-8.496E+01	9.067E+01	1.424E+02	1.092E+01	-0.597
		297.23		2.761E+02	8.586E+01	1.165E+02	8.760E+00	2.370
		303.76		1.976E+01	2.054E+02	2.975E+02	2.216E+01	0.066
		439.47		-1.229E+02	1.605E+02	2.586E+02	1.634E+01	-0.475
		484.57		1.491E+02	2.444E+02	4.228E+02	2.850E+01	0.353
		520.65	*	5.674E+00	1.159E+01	1.981E+01	1.399E+00	0.286
SR-82		574.64		-7.442E+01	2.344E+02	3.774E+02	2.835E+01	-0.197
		578.91		1.423E+01	1.069E+02	1.542E+02	1.164E+01	0.092
		585.48		1.402E+03	2.921E+02	5.132E+02	3.900E+01	2.732
		755.35		5.947E+01	1.874E+02	3.085E+02	2.498E+01	0.193
		817.79		-3.093E+01	1.642E+02	2.703E+02	2.140E+01	-0.114
		698.33		-4.303E+01	4.059E+01	6.030E+01	4.923E+00	-0.714
		776.49	*	-1.855E-01	4.823E-01	6.989E-01	5.625E-02	-0.265
		1395.20		-1.237E+00	1.128E+01	1.835E+01	1.051E+00	-0.067
RB-83		520.41	*	2.081E-02	7.781E-02	1.280E-01	9.040E-03	0.163
		529.64		4.934E-02	1.124E-01	1.915E-01	1.367E-02	0.258
		552.65		-2.608E-01	2.253E-01	3.419E-01	2.508E-02	-0.763
RB-84		881.50	*	5.880E-02	8.100E-02	1.414E-01	1.077E-02	0.416
KR-85		513.99	*	2.471E+01	9.609E+00	1.618E+01	1.134E+00	1.527
SR-85		513.99	*	1.267E-01	4.928E-02	8.299E-02	5.814E-03	1.527
RB-86		1076.63	*	1.766E-01	9.239E-01	1.527E+00	9.766E-02	0.116
Y-88		898.02		-9.617E-03	4.945E-02	8.058E-02	6.099E-03	-0.119
ZR-88		1836.01	*	-3.934E-02	3.505E-02	4.494E-02	2.531E-03	-0.876
		392.90	*	-1.459E-02	3.402E-02	5.323E-02	3.118E-03	-0.274
Y-91		1204.90	*	1.419E+01	2.005E+01	3.527E+01	1.955E+00	0.402
NB-94		702.63	*	4.062E-02	4.110E-02	7.057E-02	5.761E-03	0.576
		871.10		-6.373E-03	3.836E-02	6.277E-02	4.817E-03	-0.102

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	765.79	*		7.043E-02	5.665E-02	9.071E-02	7.325E-03	0.776
NB-95M	235.69	*		-3.450E-02	1.327E-01	1.926E-01	1.782E-02	-0.179
ZR-95	724.18			-2.342E-03	1.333E-01	1.848E-01	1.650E-02	-0.013
	756.15	*		5.858E-02	7.821E-02	1.329E-01	1.199E-02	0.441
NB-97	657.90	*		9.939E-03	7.821E-02	Half-Life	too short	
	1024.50			4.679E+00	7.821E-02	Half-Life	too short	
ZR-97	254.15			-1.392E+00	7.821E-02	Half-Life	too short	
	355.39			1.830E+00	7.821E-02	Half-Life	too short	
	507.63	*		6.328E-01	7.821E-02	Half-Life	too short	
	602.52			4.048E+00	7.821E-02	Half-Life	too short	
	1021.30			-1.552E+00	7.821E-02	Half-Life	too short	
	1147.95			-2.999E-01	7.821E-02	Half-Life	too short	
	1362.66			-6.171E-03	7.821E-02	Half-Life	too short	
	1750.46			4.415E+00	7.821E-02	Half-Life	too short	
MO-99	140.51			-2.097E+00	2.897E+01	4.095E+01	1.164E+01	-0.051
	181.06			-7.141E+00	1.959E+01	2.693E+01	4.835E+00	-0.265
	366.43			-2.020E+01	9.181E+01	1.465E+02	9.421E+00	-0.138
	739.58	*		-1.285E+00	1.375E+01	2.194E+01	3.272E+00	-0.059
	778.00			1.480E+01	3.972E+01	6.690E+01	5.383E+00	0.221
TC-99M	140.51	*		-3.246E+09	3.972E+01	Half-Life	too short	
RH-101	127.23			1.642E-02	3.433E-02	5.096E-02	6.188E-03	0.322
	198.01	*		-2.078E-02	3.227E-02	5.220E-02	4.133E-03	-0.398
	325.23			1.507E-01	2.441E-01	3.650E-01	2.617E-02	0.413
RH-102	418.52			-4.424E-02	3.197E-01	5.064E-01	3.096E-02	-0.087
	475.06	*		2.724E-02	3.161E-02	5.539E-02	3.686E-03	0.492
	631.29			9.449E-04	6.296E-02	1.029E-01	8.170E-03	0.009
	697.49			2.461E-02	8.968E-02	1.478E-01	1.207E-02	0.166
	766.84			2.452E-01	1.531E-01	2.491E-01	2.011E-02	0.984
	1046.59			6.814E-02	1.257E-01	2.147E-01	1.425E-02	0.317
	1112.84			-5.815E-02	2.773E-01	4.193E-01	2.550E-02	-0.139
RU-103	497.08	*		9.129E-03	4.358E-02	7.353E-02	9.678E-03	0.124
	610.33			1.281E+01	2.751E+00	3.065E+00	4.988E-01	4.180
RH-106	511.85	+		6.383E-01	4.176E-01	4.616E-01	3.225E-02	1.383
	621.84	*		-3.663E-01	3.696E-01	5.558E-01	7.164E-02	-0.659
	1050.47			-1.647E-01	2.514E+00	4.073E+00	2.691E-01	-0.040
RU-106	511.85	+		6.383E-01	4.176E-01	4.616E-01	3.225E-02	1.383
	621.84	*		-3.663E-01	3.677E-01	5.558E-01	4.377E-02	-0.659
	1050.47			-1.647E-01	2.514E+00	4.073E+00	2.691E-01	-0.040
AG-108M	433.93	*		-1.746E-03	3.855E-02	6.205E-02	4.175E-03	-0.028
	614.37			-3.170E-02	5.136E-02	6.820E-02	5.586E-03	-0.465
	722.95			5.711E-03	5.815E-02	8.158E-02	6.937E-03	0.070
AG-110M	657.75	*		-1.023E-02	4.633E-02	6.354E-02	5.338E-03	-0.161
	677.61			-2.198E-02	3.842E-01	6.205E-01	5.225E-02	-0.035
	706.67			7.756E-03	2.643E-01	4.277E-01	3.597E-02	0.018
	763.93			1.899E-01	2.027E-01	3.200E-01	2.669E-02	0.593
	884.67			-3.940E-02	5.767E-02	9.016E-02	7.134E-03	-0.437
	937.48			2.590E-02	1.333E-01	2.228E-01	1.716E-02	0.116
	1384.27			-1.598E-01	2.454E-01	3.255E-01	1.980E-02	-0.491
IN-111	171.28			-8.455E-01	1.004E+00	1.533E+00	1.204E-01	-0.551

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	245.39	*		-5.274E-01	1.191E+00	1.699E+00	1.339E-01	-0.310
IN-113M	391.69	*		-2.824E-02	4.923E-02	7.633E-02	4.756E-03	-0.370
SN-113	391.69	*		-2.824E-02	4.923E-02	7.633E-02	4.756E-03	-0.370
IN-114M	190.27	*		1.385E-02	2.002E-01	2.820E-01	2.229E-02	0.049
CD-115	260.90			-5.126E+01	1.343E+02	2.191E+02	1.711E+01	-0.234
	492.35			3.627E+00	3.816E+01	6.401E+01	4.361E+00	0.057
	527.90	*		-4.503E+00	1.184E+01	1.914E+01	1.364E+00	-0.235
SN-117M	156.02			-1.379E+00	2.434E+00	3.811E+00	3.443E-01	-0.362
	158.56	*		1.797E-02	5.770E-02	9.353E-02	8.167E-03	0.192
SB-122	563.90	*		-1.692E-01	2.320E+00	3.807E+00	2.827E-01	-0.044
	692.80			4.167E+01	5.130E+01	8.755E+01	7.149E+00	0.476
I-123	159.00	*		1.006E+00	5.130E+01	Half-Life	too short	
	528.96			5.822E+01	5.130E+01	Half-Life	too short	
TE-123M	159.00	*		4.814E-03	2.983E-02	4.807E-02	4.198E-03	0.100
I-124	602.71	*		2.251E-01	9.242E-01	1.288E+00	9.960E-02	0.175
	722.78			1.449E+00	6.049E+00	8.606E+00	7.012E-01	0.168
	1325.50			-6.243E+00	3.981E+01	6.492E+01	3.689E+00	-0.096
	1376.25			5.343E+01	3.733E+01	6.917E+01	3.955E+00	0.772
	1509.49			1.487E+01	1.825E+01	3.257E+01	1.878E+00	0.457
SB-124	1691.02			-1.485E+00	4.208E+00	6.382E+00	3.655E-01	-0.233
	602.71			1.303E-02	5.351E-02	7.458E-02	5.768E-03	0.175
	645.85			-3.321E-02	5.821E-01	9.441E-01	8.118E-02	-0.035
	709.31			-8.510E-01	3.437E+00	5.451E+00	4.447E-01	-0.156
	713.82			-4.245E-01	1.962E+00	3.114E+00	3.647E-01	-0.136
	722.78			1.216E-01	5.077E-01	7.223E-01	6.027E-02	0.168
+	968.20			1.082E+01	5.295E+00	7.729E+00	5.539E-01	1.400
	1045.16			1.065E+00	2.692E+00	4.543E+00	3.020E-01	0.234
	1325.50			-5.596E-01	3.568E+00	5.820E+00	3.306E-01	-0.096
	1368.21			2.386E-02	1.858E+00	3.073E+00	3.635E-01	0.008
	1436.60			-5.875E+00	4.393E+00	5.993E+00	3.445E-01	-0.980
SB-125	1691.02	*		-2.939E-02	8.330E-02	1.263E-01	7.868E-03	-0.233
	427.89	*		-3.300E-02	9.940E-02	1.646E-01	1.059E-02	-0.200
+	463.38			1.251E+00	5.498E-01	6.195E-01	4.592E-02	2.019
	600.56			-6.353E-02	2.014E-01	3.232E-01	2.721E-02	-0.197
	635.90			-6.266E-02	3.204E-01	5.154E-01	4.496E-02	-0.122
TE-125M	109.28	*		4.048E-01	8.431E+00	1.387E+01	1.685E+00	0.029
I-126	388.63			6.751E-02	2.257E-01	3.692E-01	2.186E-02	0.183
	666.33	*		-1.454E-01	2.378E-01	3.111E-01	2.538E-02	-0.467
	753.82			-7.834E-01	1.732E+00	2.679E+00	2.170E-01	-0.292
SB-126	223.80			-1.444E+00	3.876E+00	6.406E+00	5.078E-01	-0.225
	278.60			3.889E+00	2.554E+00	4.472E+00	3.440E-01	0.870
+	296.50			1.327E+01	2.523E+00	3.555E+00	2.676E-01	3.733
	414.70			-2.019E-02	8.608E-02	1.357E-01	8.243E-03	-0.149
	415.30			-2.430E-01	7.086E+00	1.131E+01	6.876E-01	-0.021
	555.20			4.504E+00	4.481E+00	7.847E+00	5.772E-01	0.574
	573.80			-6.816E-01	1.194E+00	1.890E+00	1.419E-01	-0.361
	593.00			6.688E-02	1.074E+00	1.769E+00	1.355E-01	0.038
	656.30			-2.726E+00	4.660E+00	6.146E+00	4.990E-01	-0.444
	666.33			-6.076E-02	9.939E-02	1.300E-01	1.061E-02	-0.467



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		675.00		-7.181E-01	2.459E+00	3.907E+00	3.189E-01	-0.184
		695.00		6.395E-02	9.176E-02	1.554E-01	1.269E-02	0.412
		697.00		1.727E-01	3.143E-01	5.275E-01	4.307E-02	0.327
		720.50	*	5.379E-02	1.805E-01	2.808E-01	2.288E-02	0.192
		856.80		-5.225E-01	5.816E-01	9.023E-01	6.989E-02	-0.579
		989.30		-1.028E+00	1.560E+00	2.418E+00	1.702E-01	-0.425
		1034.80		6.116E+00	9.603E+00	1.655E+01	1.113E+00	0.369
		1213.00		-2.324E+00	4.955E+00	7.968E+00	4.425E-01	-0.292
		61.10		1.038E+01	2.605E+01	4.036E+01	4.786E+00	0.257
		252.40		-3.806E+00	4.434E+00	6.584E+00	2.758E+00	-0.578
		290.80		7.248E+00	2.352E+01	3.470E+01	3.605E+00	0.209
		411.60		6.536E+00	1.447E+01	2.369E+01	3.431E+00	0.276
		444.90		-4.283E+00	1.059E+01	1.738E+01	1.931E+00	-0.246
		473.00		6.589E-02	1.840E+00	3.085E+00	3.590E-01	0.021
		543.00		1.122E+00	1.979E+01	3.241E+01	4.416E+00	0.035
		603.60		1.497E+01	1.490E+01	2.204E+01	2.628E+00	0.679
		685.20	*	-5.236E-01	1.584E+00	2.499E+00	2.762E-01	-0.209
XE-127		698.50		-2.514E+01	1.888E+01	2.691E+01	4.193E+00	-0.934
		722.20		2.395E+01	4.037E+01	5.940E+01	6.419E+00	0.403
		783.80		-1.031E+00	4.208E+00	6.926E+00	8.326E-01	-0.149
		57.60		2.090E+00	2.171E+00	3.633E+00	3.358E-01	0.575
		145.22		9.077E-01	7.673E-01	1.162E+00	1.193E-01	0.781
I-131		172.10		-5.807E-02	1.191E-01	1.852E-01	1.455E-02	-0.313
		202.84	*	-5.865E-02	4.738E-02	7.368E-02	5.839E-03	-0.796
		374.96		-3.535E-02	2.114E-01	3.376E-01	2.108E-02	-0.105
		80.18		5.076E-01	4.481E+00	5.380E+00	4.507E-01	0.094
		284.30		-1.783E-01	1.447E+00	2.372E+00	1.933E-01	-0.075
TE-132		364.48	*	2.284E-04	1.242E-01	2.008E-01	1.422E-02	0.001
		636.97		8.622E-01	1.804E+00	3.037E+00	2.582E-01	0.284
		722.89		1.130E+00	9.824E+00	1.381E+01	1.133E+00	0.082
		49.72		2.950E+00	3.891E+00	6.196E+00	6.307E-01	0.476
		111.76		-9.753E+00	2.932E+01	4.618E+01	5.962E+00	-0.211
BA-133		116.30		-4.829E+00	2.606E+01	4.231E+01	5.709E+00	-0.114
		228.16	*	-2.209E-01	6.544E-01	1.080E+00	1.658E-01	-0.204
		53.15		7.227E-01	9.428E-01	1.603E+00	1.346E-01	0.451
		79.62		-3.490E-01	1.091E+00	1.464E+00	2.207E-01	-0.238
		81.00		1.669E-03	9.643E-02	1.150E-01	1.805E-02	0.015
I-133		276.40		2.031E-01	3.849E-01	6.494E-01	9.041E-02	0.313
		302.84		9.380E-02	1.636E-01	2.443E-01	3.070E-02	0.384
		356.01	*	-2.364E-02	5.490E-02	7.638E-02	9.170E-03	-0.310
		383.85		2.022E-01	3.239E-01	5.395E-01	5.935E-02	0.375
	+	510.53		1.326E+00	3.239E-01	Half-Life too short		
CS-134		529.87	*	2.953E-03	3.239E-01	Half-Life too short		
		706.58		1.259E-02	3.239E-01	Half-Life too short		
		856.28		-1.181E+00	3.239E-01	Half-Life too short		
		875.33		-1.546E-02	3.239E-01	Half-Life too short		
		1236.41		7.867E-02	3.239E-01	Half-Life too short		
		1298.22		-1.920E-01	3.239E-01	Half-Life too short		
		475.35		1.328E+00	2.066E+00	3.580E+00	2.383E-01	0.371

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135		563.23		-2.474E-02	4.001E-01	6.570E-01	4.938E-02	-0.038
		569.32		9.240E-02	2.354E-01	3.891E-01	2.959E-02	0.237
		604.70		1.905E-02	4.177E-02	6.174E-02	4.798E-03	0.309
		795.84	*	8.075E-02	5.674E-02	1.026E-01	8.267E-03	0.787
		801.93		-4.585E-01	4.999E-01	7.736E-01	6.208E-02	-0.593
		1038.57		-9.612E-01	4.206E+00	6.717E+00	4.499E-01	-0.143
		1167.94		-4.067E-01	2.990E+00	4.769E+00	2.647E-01	-0.085
		1365.15		-2.207E-02	1.316E+00	2.169E+00	1.364E-01	-0.010
		268.24	*	1.459E-01	1.746E-01	2.624E-01	2.423E-02	0.556
		288.45		1.356E+10	1.746E-01	Half-Life	too short	
		417.63		6.827E+09	1.746E-01	Half-Life	too short	
		546.56		1.054E+10	1.746E-01	Half-Life	too short	
		836.80		2.144E+09	1.746E-01	Half-Life	too short	
		1038.76		-3.639E+09	1.746E-01	Half-Life	too short	
		1124.00		1.130E+11	1.746E-01	Half-Life	too short	
		1131.51		6.294E+08	1.746E-01	Half-Life	too short	
		1260.41	*	-5.063E+09	1.746E-01	Half-Life	too short	
		1457.56		3.715E+11	1.746E-01	Half-Life	too short	
		1678.03		-7.249E+09	1.746E-01	Half-Life	too short	
		1706.46		-9.230E+09	1.746E-01	Half-Life	too short	
		1791.20		1.266E+10	1.746E-01	Half-Life	too short	
		66.91		1.540E-01	4.233E-01	6.513E-01	1.024E-01	0.236
	+	86.29		3.645E+00	1.028E+00	1.514E+00	1.882E-01	2.407
		153.22		2.164E-01	6.661E-01	1.083E+00	1.116E-01	0.200
CS-136		163.89		-3.830E-01	1.143E+00	1.750E+00	1.607E-01	-0.219
		176.55		-1.504E-01	3.828E-01	5.974E-01	5.024E-02	-0.252
		273.65		-3.105E-01	5.169E-01	7.213E-01	6.029E-02	-0.430
		340.57		2.684E-01	1.545E-01	2.434E-01	1.761E-02	1.103
		818.51		-1.667E-02	9.499E-02	1.516E-01	1.201E-02	-0.110
		1048.07	*	-8.775E-02	1.251E-01	1.911E-01	1.356E-02	-0.459
		1235.34		-5.573E-01	6.333E-01	9.832E-01	9.696E-02	-0.567
		165.85	*	3.662E-03	3.001E-02	4.815E-02	3.775E-03	0.076
		162.64		1.550E-01	7.863E-01	1.231E+00	1.079E-01	0.126
		304.84		3.301E-01	1.310E+00	2.018E+00	5.588E-01	0.164
CE-139 BA-140		423.70		1.871E+00	2.214E+00	3.587E+00	1.143E+00	0.522
		537.32	*	-2.455E-01	3.028E-01	4.567E-01	1.498E-01	-0.538
	+	328.77		4.002E-01	4.380E-01	5.524E-01	4.250E-02	0.725
		432.53		-2.915E+00	2.411E+00	3.610E+00	2.461E-01	-0.808
		487.03		-1.215E-01	1.469E-01	2.319E-01	1.723E-02	-0.524
		751.79		-4.211E-01	2.042E+00	3.225E+00	2.928E-01	-0.131
		815.85		7.532E-03	3.821E-01	6.385E-01	5.742E-02	0.012
		867.82		-1.188E+00	1.590E+00	2.476E+00	2.030E-01	-0.480
		919.63		-2.477E+00	3.244E+00	4.704E+00	4.565E-01	-0.527
		925.24		8.012E-01	1.229E+00	2.136E+00	1.713E-01	0.375
CE-141 CE-143		1596.49	*	6.579E-02	1.040E-01	1.819E-01	1.048E-02	0.362
		145.44	*	4.675E-02	6.944E-02	1.030E-01	1.068E-02	0.454
		57.37		2.721E-04	6.944E-02	Half-Life	too short	
		231.56		9.996E-04	6.944E-02	Half-Life	too short	
		293.26	*	5.220E-04	6.944E-02	Half-Life	too short	

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	+	350.59		2.786E-02	6.944E-02	Half-Life	too short	
		490.36		3.448E-04	6.944E-02	Half-Life	too short	
		664.57		6.530E-03	6.944E-02	Half-Life	too short	
		721.93		8.490E-04	6.944E-02	Half-Life	too short	
CE-144		80.11		1.642E-01	2.054E+00	2.462E+00	2.049E-01	0.067
		133.54	*	-1.135E-01	2.108E-01	3.159E-01	5.476E-02	-0.359
PM-144		476.78		-1.155E-02	7.460E-02	1.236E-01	9.498E-03	-0.093
		618.01		1.777E-02	3.590E-02	6.066E-02	4.918E-03	0.293
		696.49	*	1.593E-02	4.049E-02	6.727E-02	5.495E-03	0.237
		778.57		1.403E+00	2.628E+00	4.559E+00	3.668E-01	0.308
PR-144		696.49	*	1.080E+00	2.744E+00	4.559E+00	3.722E-01	0.237
		1489.15		1.726E+01	1.503E+01	2.764E+01	1.592E+00	0.625
PM-146		453.90	*	1.560E-02	4.665E-02	7.974E-02	7.237E-03	0.196
		633.02		7.686E-01	1.613E+00	2.679E+00	9.971E-01	0.287
		735.90		-1.615E-01	1.740E-01	2.479E-01	7.055E-02	-0.652
		747.13		-2.948E-02	1.142E-01	1.798E-01	2.469E-02	-0.164
ND-147	+	91.11		7.628E-01	3.032E-01	5.177E-01	4.669E-02	1.473
		319.41		-2.456E+00	3.398E+00	5.328E+00	3.865E-01	-0.461
		439.89		-4.011E+00	6.439E+00	1.046E+01	6.615E-01	-0.384
		531.02	*	-3.603E-02	6.309E-01	1.042E+00	1.474E-01	-0.035
PM-149		285.90	*	-1.444E+00	9.198E+01	1.516E+02	2.276E+01	-0.010
EU-152		121.78		-2.826E-02	7.210E-02	1.136E-01	1.537E-02	-0.249
		244.69		-5.785E-02	3.674E-01	5.343E-01	4.211E-02	-0.108
		344.27	*	6.311E-02	1.367E-01	1.711E-01	1.283E-02	0.369
		443.98		-3.008E-01	1.030E+00	1.703E+00	1.084E-01	-0.177
		778.89		1.340E-01	3.011E-01	5.197E-01	4.179E-02	0.258
		867.32		-6.659E-01	9.668E-01	1.516E+00	1.166E-01	-0.439
		964.01		5.822E-01	3.718E-01	6.061E-01	4.358E-02	0.961
		1085.78		-1.070E-01	4.676E-01	7.445E-01	4.706E-02	-0.144
		1112.02		-2.856E-03	3.731E-01	5.907E-01	3.597E-02	-0.005
		1407.95		-7.657E-02	2.096E-01	3.311E-01	1.899E-02	-0.231
GD-153		69.67		1.785E-01	9.991E-01	1.524E+00	1.363E-01	0.117
	+	83.37		1.925E+01	1.274E+01	1.913E+01	1.557E+00	1.006
		97.43	*	-6.931E-03	7.507E-02	1.097E-01	9.979E-03	-0.063
		103.18		-1.143E-01	9.043E-02	1.407E-01	1.390E-02	-0.812
EU-154		123.07		1.370E-02	4.924E-02	8.107E-02	1.182E-02	0.169
		247.94		8.262E-02	3.605E-01	5.875E-01	6.417E-02	0.141
		591.81		4.281E-01	6.938E-01	1.183E+00	1.298E-01	0.362
		723.30		-4.742E-03	2.415E-01	3.348E-01	3.048E-02	-0.014
		756.87		4.546E-01	8.366E-01	1.401E+00	1.626E-01	0.324
		873.19		-3.062E-02	3.462E-01	5.702E-01	6.608E-02	-0.054
		996.32		1.187E-01	5.048E-01	7.283E-01	1.241E-01	0.163
		1004.76		1.786E-01	3.227E-01	4.787E-01	5.004E-02	0.373
		1274.45	*	-4.065E-02	1.461E-01	2.374E-01	2.193E-02	-0.171
EU-155		48.70		1.570E-01	4.379E-01	6.885E-01	5.197E-02	0.228
		60.01		-5.131E-02	2.103E+00	3.215E+00	3.077E-01	-0.016
	+	86.54		3.360E-01	8.931E-02	1.425E-01	1.149E-02	2.358
		105.31	*	1.226E-01	9.567E-02	1.634E-01	1.677E-02	0.750
TB-160	+	86.79		8.976E-01	2.384E-01	3.848E-01	3.060E-02	2.333

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		197.04		-5.561E-01	5.434E-01	8.632E-01	6.834E-02	-0.644
		215.65		5.982E-01	7.229E-01	1.253E+00	9.941E-02	0.477
	+	298.57		1.971E-01	1.264E-01	2.003E-01	1.503E-02	0.984
		879.36	*	6.352E-02	1.656E-01	2.823E-01	2.153E-02	0.225
		962.29		-4.045E-03	6.514E-01	9.906E-01	7.133E-02	-0.004
		966.15		9.448E-01	2.889E-01	5.137E-01	3.688E-02	1.839
		1177.93		-2.338E-01	4.396E-01	6.771E-01	3.726E-02	-0.345
		1271.85		1.985E-01	8.438E-01	1.430E+00	8.045E-02	0.139
		80.57		2.904E-01	2.496E-01	3.178E-01	2.637E-02	0.914
	+	184.41		2.496E-01	6.872E-02	7.476E-02	5.899E-03	3.339
		280.46		-1.782E-02	8.789E-02	1.438E-01	1.104E-02	-0.124
		410.95		1.889E-01	2.918E-01	4.833E-01	2.918E-02	0.391
		711.68	*	2.409E-02	7.194E-02	1.189E-01	9.699E-03	0.203
		752.31		-1.527E-01	3.318E-01	5.132E-01	4.159E-02	-0.297
TM-171		810.29		-3.041E-02	6.710E-02	1.082E-01	8.592E-03	-0.281
		51.35		-1.059E+01	6.702E+00	1.081E+01	8.704E-01	-0.979
		52.39		6.627E-01	3.871E+00	6.480E+00	5.344E-01	0.102
		59.40		8.457E+00	1.088E+01	1.711E+01	1.641E+00	0.494
LU-176	+	66.72	*	4.968E+00	1.524E+01	2.344E+01	2.139E+00	0.212
		88.36		6.616E-01	1.757E-01	2.789E-01	2.212E-02	2.373
		201.83		-1.718E-02	2.782E-02	4.591E-02	3.637E-03	-0.374
		306.84	*	-2.153E-02	2.452E-02	3.819E-02	2.831E-03	-0.564
LU-177		401.10		-2.371E+00	7.923E+00	1.210E+01	7.185E-01	-0.196
		112.95		-1.150E-01	1.587E+00	2.522E+00	2.842E-01	-0.046
	+	208.36	*	2.496E+00	1.333E+00	1.917E+00	1.520E-01	1.302
		52.97		3.208E-01	4.196E-01	7.136E-01	5.964E-02	0.450
LU-177M		54.07		2.059E-01	2.383E-01	4.058E-01	3.477E-02	0.507
		61.30		1.089E+00	6.945E-01	1.109E+00	1.052E-01	0.982
		121.62		-1.449E-01	3.695E-01	5.823E-01	7.321E-02	-0.249
		147.16		-4.750E-02	6.911E-01	9.872E-01	9.921E-02	-0.048
		171.86		-2.275E-01	4.763E-01	7.411E-01	5.819E-02	-0.307
		218.09		-6.783E-01	8.295E-01	1.347E+00	1.068E-01	-0.504
	+	268.79		2.882E+00	1.207E+00	1.422E+00	1.104E-01	2.027
		319.02		-5.094E-02	2.617E-01	4.233E-01	3.072E-02	-0.120
		367.43		-2.831E-01	9.721E-01	1.543E+00	9.894E-02	-0.183
		413.65	*	-1.466E-01	2.069E-01	3.168E-01	1.921E-02	-0.463
		56.28		-2.693E-01	3.000E-01	4.961E-01	4.459E-02	-0.543
		57.53		1.614E-01	1.743E-01	3.036E-01	2.802E-02	0.531
		65.20		1.468E-01	4.907E-01	7.551E-01	6.965E-02	0.194
		133.02		3.655E-02	7.060E-02	1.047E-01	1.210E-02	0.349
HF-181		136.25		-6.717E-02	4.431E-01	7.128E-01	8.001E-02	-0.094
		345.85		2.600E-01	2.388E-01	3.452E-01	2.359E-02	0.753
		482.03	*	4.753E-03	4.648E-02	7.810E-02	5.247E-03	0.061
		56.28		-1.053E-01	1.174E-01	1.942E-01	1.745E-02	-0.542
		57.53		6.304E-02	6.826E-02	1.189E-01	1.097E-02	0.530
		65.20	*	5.704E-02	1.907E-01	2.934E-01	2.706E-02	0.194
TA-182		67.75		-5.980E-02	5.961E-02	9.266E-02	8.395E-03	-0.645
		100.10		6.899E-02	1.518E-01	2.545E-01	2.407E-02	0.271
		152.43		-9.775E-03	3.350E-01	5.374E-01	5.080E-02	-0.018

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		222.10		8.528E-02	3.309E-01	5.616E-01	4.453E-02	0.152
	+	1001.68		2.801E+00	3.029E+00	4.770E+00	3.319E-01	0.587
	+	1121.28		4.900E-01	2.982E-01	3.805E-01	2.285E-02	1.288
		1189.05		-4.716E-01	3.548E-01	5.317E-01	2.935E-02	-0.887
		1221.42	*	9.043E-02	2.166E-01	3.725E-01	2.073E-02	0.243
		1230.97		1.037E-01	5.261E-01	8.900E-01	4.964E-02	0.117
RE-183		57.98		7.062E-02	7.271E-02	1.217E-01	1.133E-02	0.580
		59.32		3.657E-02	4.466E-02	7.033E-02	6.732E-03	0.520
		67.20		-4.496E-02	1.122E-01	1.677E-01	1.525E-02	-0.268
		162.32	*	-3.122E-02	1.171E-01	1.800E-01	1.490E-02	-0.173
	+	208.81		2.239E+00	1.196E+00	1.713E+00	1.358E-01	1.307
		291.72		-1.591E-01	9.970E-01	1.423E+00	1.078E-01	-0.112
RE-184		57.98		2.602E-01	2.679E-01	4.483E-01	4.175E-02	0.580
		59.32		1.346E-01	1.644E-01	2.589E-01	2.478E-02	0.520
		67.20		-1.656E-01	4.131E-01	6.177E-01	5.618E-02	-0.268
		161.27		-4.236E-01	3.693E-01	5.593E-01	4.701E-02	-0.757
		216.55		-4.041E-02	2.560E-01	4.282E-01	3.396E-02	-0.094
		252.85	*	-1.479E-01	2.212E-01	3.559E-01	2.794E-02	-0.416
		318.01		9.176E-02	4.529E-01	7.486E-01	5.443E-02	0.123
		792.07		-7.945E-01	1.187E+00	1.895E+00	1.517E-01	-0.419
		903.28		-4.584E-01	1.377E+00	1.947E+00	1.459E-01	-0.235
		920.93		-4.654E-01	5.074E-01	7.691E-01	5.705E-02	-0.605
OS-185		59.72		4.279E-03	1.238E-01	1.897E-01	1.820E-02	0.023
		61.14		4.286E-02	7.432E-02	1.158E-01	1.100E-02	0.370
		69.30		2.536E-02	1.669E-01	2.704E-01	2.423E-02	0.094
		592.07		1.699E+00	2.826E+00	4.821E+00	3.688E-01	0.352
		646.12	*	-7.182E-03	4.998E-02	8.055E-02	6.484E-03	-0.089
		717.42		-2.432E-01	1.075E+00	1.705E+00	1.390E-01	-0.143
		874.81		-1.515E-02	6.756E-01	1.118E+00	8.559E-02	-0.014
		880.27		5.811E-01	9.095E-01	1.578E+00	1.203E-01	0.368
RE-188		155.03	*	7.317E-02	1.780E-01	2.900E-01	2.654E-02	0.252
		477.96		-1.028E+00	3.373E+00	5.537E+00	3.699E-01	-0.186
		633.10		1.749E+00	3.227E+00	5.459E+00	4.343E-01	0.320
W-188	+	63.58		2.102E+02	5.041E+01	6.093E+01	5.685E+00	3.451
		227.08		-2.051E+00	1.188E+01	1.977E+01	1.567E+00	-0.104
		290.67	*	3.556E+00	8.090E+00	1.204E+01	9.137E-01	0.295
IR-192	+	295.96		1.015E+00	1.933E-01	2.793E-01	2.124E-02	3.634
		308.46		-6.570E-02	9.420E-02	1.482E-01	1.104E-02	-0.443
		316.51	*	1.187E-02	3.604E-02	5.888E-02	4.307E-03	0.202
		468.07		2.044E-02	7.908E-02	1.177E-01	8.691E-03	0.174
		604.41		2.978E-01	5.680E-01	8.434E-01	1.051E-01	0.353
		612.46		3.037E+00	1.101E+00	1.821E+00	1.675E-01	1.668
AU-195		65.12		8.004E-02	8.985E-02	1.408E-01	1.299E-02	0.569
		66.83		1.762E-02	5.059E-02	7.789E-02	7.102E-03	0.226
	+	75.70		8.409E-01	1.843E-01	2.951E-01	2.531E-02	2.849
		98.88	*	2.455E-01	2.072E-01	3.351E-01	3.114E-02	0.733
	+	129.76		4.307E+00	4.158E+00	4.825E+00	5.736E-01	0.893
TL-200		367.94	*	7.273E-05	4.158E+00	Half-Life too short		
		579.30		3.286E-03	4.158E+00	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-201		828.27	-2.820E-03	4.158E+00	Half-Life	too short	
		1205.75	2.765E-03	4.158E+00	Half-Life	too short	
		68.90	7.478E-02	2.564E+00	4.329E+00	3.891E-01	0.017
		70.82	9.700E-01	1.704E+00	2.631E+00	2.333E-01	0.369
		80.30	4.459E+00	4.696E+00	5.911E+00	4.914E-01	0.754
TL-202		135.34	-8.885E+00	2.471E+01	3.939E+01	4.459E+00	-0.226
		167.43	* -1.165E+00	6.996E+00	1.108E+01	8.680E-01	-0.105
		68.90	6.697E-03	2.296E-01	3.877E-01	3.485E-02	0.017
		70.82	8.663E-02	1.521E-01	2.349E-01	2.084E-02	0.369
		80.30	3.983E-01	4.195E-01	5.281E-01	4.390E-02	0.754
HG-203		439.56	* -4.617E-02	7.658E-02	1.246E-01	7.871E-03	-0.371
		70.83	3.731E-01	6.599E-01	1.017E+00	1.400E-01	0.367
		72.87	4.608E-01	4.187E-01	6.502E-01	8.638E-02	0.709
	+	82.60	1.431E+00	9.596E-01	1.363E+00	1.837E-01	1.050
		279.20	* 4.679E-02	4.166E-02	7.201E-02	5.734E-03	0.650
BI-207		72.80	1.184E-01	1.214E-01	1.890E-01	1.654E-02	0.627
	+	74.97	4.664E-01	1.022E-01	1.446E-01	1.246E-02	3.226
	+	84.90	2.489E-01	1.647E-01	2.485E-01	2.002E-02	1.002
		569.67	1.441E-02	3.671E-02	6.068E-02	4.535E-03	0.237
		1063.62	* -2.581E-02	6.929E-02	1.084E-01	7.053E-03	-0.238
TL-207		1770.23	9.009E-01	5.803E-01	1.084E+00	6.152E-02	0.831
		81.07	2.023E-03	2.130E-01	2.539E-01	2.100E-02	0.008
	+	83.78	1.641E-01	1.086E-01	1.636E-01	1.328E-02	1.003
		94.90	5.311E-01	2.146E-01	3.436E-01	3.013E-02	1.546
		122.32	4.786E-01	1.658E+00	2.732E+00	3.569E-01	0.175
PO-209	+	144.24	1.631E+00	1.141E+00	1.207E+00	1.357E-01	1.351
		154.21	2.040E-01	4.031E-01	6.591E-01	6.626E-02	0.309
	+	269.46	6.747E-01	2.829E-01	3.566E-01	2.837E-02	1.892
	+	323.87	* 3.862E-01	7.355E-01	1.090E+00	1.858E-01	0.354
	+	338.28	6.074E+00	1.842E+00	2.301E+00	2.581E-01	2.640
PB-211		445.03	-8.736E-01	2.438E+00	4.013E+00	4.254E-01	-0.218
		260.50	-1.379E-01	9.889E+00	1.641E+01	1.282E+00	-0.008
		262.80	-8.765E+00	2.582E+01	4.214E+01	3.287E+00	-0.208
		896.60	* -2.650E+00	8.872E+00	1.434E+01	1.079E+00	-0.185
		404.84	* -3.341E-01	1.104E+00	1.706E+00	1.064E+00	-0.196
BI-212		427.08	-1.609E+00	2.551E+00	3.581E+00	2.215E+00	-0.449
		831.96	-1.036E+00	1.594E+00	2.303E+00	1.441E+00	-0.450
	+	727.18	* 8.429E-01	4.324E-01	6.975E-01	6.696E-02	1.208
		785.46	5.157E-01	2.023E+00	3.444E+00	2.763E-01	0.150
		1620.62	5.213E-02	1.594E+00	2.598E+00	1.495E-01	0.020
PO-215		81.07	2.023E-03	2.130E-01	2.539E-01	2.100E-02	0.008
	+	83.78	1.641E-01	1.086E-01	1.636E-01	1.328E-02	1.003
		94.90	5.311E-01	2.146E-01	3.436E-01	3.013E-02	1.546
		122.32	4.786E-01	1.658E+00	2.732E+00	3.569E-01	0.175
	+	144.24	1.631E+00	1.141E+00	1.207E+00	1.357E-01	1.351
		154.21	2.040E-01	4.031E-01	6.591E-01	6.626E-02	0.309
	+	269.46	6.747E-01	2.829E-01	3.566E-01	2.837E-02	1.892
	+	323.87	* 3.862E-01	7.355E-01	1.090E+00	1.858E-01	0.354
	+	338.28	6.074E+00	1.842E+00	2.301E+00	2.581E-01	2.640

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	445.03		-8.736E-01	2.438E+00	4.013E+00	4.254E-01	-0.218
		271.23		8.657E-01	3.660E-01	4.458E-01	4.277E-02	1.942
		401.81	*	-1.792E-01	4.888E-01	7.423E-01	1.015E-01	-0.241
RN-220		549.76	*	-1.591E+01	2.831E+01	4.494E+01	3.285E+00	-0.354
RA-223	+	81.07		2.023E-03	2.130E-01	2.539E-01	2.100E-02	0.008
		83.78		1.641E-01	1.086E-01	1.636E-01	1.328E-02	1.003
		94.90		5.311E-01	2.146E-01	3.436E-01	3.013E-02	1.546
		122.32		4.786E-01	1.658E+00	2.732E+00	3.569E-01	0.175
		144.24		1.631E+00	1.141E+00	1.207E+00	1.357E-01	1.351
		154.21		2.040E-01	4.031E-01	6.591E-01	6.626E-02	0.309
		269.46		6.747E-01	2.829E-01	3.566E-01	2.837E-02	1.892
		323.87	*	3.862E-01	7.355E-01	1.090E+00	1.858E-01	0.354
		338.28		6.074E+00	1.842E+00	2.301E+00	2.581E-01	2.640
		445.03		-8.736E-01	2.438E+00	4.013E+00	4.254E-01	-0.218
AC-227	+	79.80		-4.134E-01	1.390E+00	1.865E+00	3.990E-01	-0.222
		236.00		1.311E-01	2.527E-01	3.820E-01	4.490E-02	0.343
		256.20	*	1.308E-01	3.883E-01	6.543E-01	9.763E-02	0.200
		286.10		-8.849E-03	1.530E+00	2.523E+00	3.173E-01	-0.004
		299.80		2.510E+00	1.654E+00	2.598E+00	4.407E-01	0.966
		304.40		1.822E-02	2.066E+00	2.974E+00	5.329E-01	0.006
		334.20		-2.062E+00	2.920E+00	3.594E+00	6.742E-01	-0.574
TH-227	+	79.80		-4.134E-01	1.390E+00	1.865E+00	4.042E-01	-0.222
		94.00		2.033E+01	5.175E+00	4.021E+00	8.761E-01	5.057
		236.00		1.311E-01	2.526E-01	3.820E-01	4.023E-02	0.343
		256.20	*	1.308E-01	3.885E-01	6.543E-01	1.158E-01	0.200
		286.10		-8.849E-03	1.530E+00	2.523E+00	2.530E+00	-0.004
		299.80		2.510E+00	1.654E+00	2.598E+00	4.407E-01	0.966
		304.40		1.822E-02	2.066E+00	2.974E+00	5.329E-01	0.006
TH-229	+	334.20		-2.062E+00	2.920E+00	3.594E+00	6.742E-01	-0.574
		85.43		2.457E-01	1.626E-01	2.491E-01	1.999E-02	0.987
		88.47		3.809E-01	1.011E-01	1.600E-01	1.272E-02	2.380
		100.00		8.951E-02	1.582E-01	2.661E-01	2.513E-02	0.336
		193.63	*	4.021E-01	4.760E-01	8.309E-01	6.573E-02	0.484
PA-231	+	210.97		6.314E-01	8.092E-01	1.251E+00	9.924E-02	0.505
		283.67	*	-1.356E+00	1.530E+00	2.390E+00	3.503E-01	-0.568
		301.29		1.004E+00	6.497E-01	1.066E+00	1.222E-01	0.942
TH-231	+	81.07		2.023E-03	2.130E-01	2.539E-01	2.100E-02	0.008
		83.78		1.641E-01	1.086E-01	1.636E-01	1.328E-02	1.003
		94.90		5.311E-01	2.146E-01	3.436E-01	3.013E-02	1.546
		122.32		4.786E-01	1.658E+00	2.732E+00	3.569E-01	0.175
		144.24		1.631E+00	1.141E+00	1.207E+00	1.357E-01	1.351
		154.21		2.040E-01	4.031E-01	6.591E-01	6.626E-02	0.309
		269.46		6.747E-01	2.829E-01	3.566E-01	2.837E-02	1.892
		323.87	*	3.862E-01	7.355E-01	1.090E+00	1.858E-01	0.354
		338.28		6.074E+00	1.842E+00	2.301E+00	2.581E-01	2.640
		445.03		-8.736E-01	2.438E+00	4.013E+00	4.254E-01	-0.218
U-231	+	84.21		7.097E+00	4.697E+00	7.115E+00	5.759E-01	0.997
		92.29		2.016E+01	3.173E+00	4.758E+00	4.011E-01	4.238
		95.87	*	-3.978E-01	9.898E-01	1.440E+00	1.281E-01	-0.276

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233		108.00	-9.432E-01	1.896E+00	3.055E+00	3.224E-01	-0.309
	+	75.28	1.361E+01	3.447E+00	4.453E+00	6.830E-01	3.056
	+	86.59	5.461E+00	2.007E+00	2.321E+00	6.178E-01	2.353
	+	300.12	6.997E-01	4.567E-01	7.351E-01	1.048E-01	0.952
		311.98	1.440E-02	6.440E-02	1.067E-01	8.150E-03	0.135
		340.50	1.487E+00	8.262E-01	1.205E+00	2.806E-01	1.234
PA-234		398.62	-4.638E-01	2.366E+00	3.748E+00	9.702E-01	-0.124
		415.76	7.100E-02	1.855E+00	2.973E+00	6.144E-01	0.024
	+	63.00	6.096E+00	1.659E+00	1.787E+00	2.846E-01	3.412
		94.67	6.276E-01	1.751E-01	2.685E-01	3.352E-02	2.337
		98.44	1.010E-01	1.044E-01	1.357E-01	7.584E-02	0.744
		99.86	2.617E-01	4.030E-01	6.796E-01	6.405E-02	0.385
		111.00	-6.034E-02	1.714E-01	2.773E-01	3.847E-02	-0.218
		131.20	1.017E-01	1.136E-01	1.712E-01	2.010E-02	0.594
		152.70	-2.120E-03	3.261E-01	5.235E-01	9.142E-02	-0.004
	+	186.00	8.987E+00	3.659E+00	2.978E+00	9.238E-01	3.018
		226.40	2.484E-01	3.756E-01	6.453E-01	8.234E-02	0.385
		227.20	-1.470E-01	4.037E-01	6.664E-01	5.280E-02	-0.221
		248.90	5.536E-01	7.992E-01	1.358E+00	3.005E-01	0.408
		293.70	4.036E+00	1.120E+00	1.574E+00	2.643E-01	2.565
		369.80	3.165E-02	8.929E-01	1.445E+00	3.033E-01	0.022
		568.70	3.968E-01	1.205E+00	1.986E+00	1.483E-01	0.200
		569.50	1.279E-01	3.257E-01	5.384E-01	4.023E-02	0.237
		574.00	-1.110E+00	1.705E+00	2.682E+00	2.013E-01	-0.414
		699.00	-1.138E+00	9.103E-01	1.300E+00	2.455E-01	-0.875
		706.10	-1.304E-01	1.327E+00	2.128E+00	9.471E-01	-0.061
		733.00	2.725E-02	4.725E-01	6.598E-01	1.452E-01	0.041
		742.81	-3.388E-02	1.670E+00	2.680E+00	1.800E+00	-0.013
		796.30	1.772E+00	1.195E+00	2.014E+00	5.409E-01	0.880
		805.60	7.158E-01	1.186E+00	2.030E+00	6.184E-01	0.353
		819.60	6.696E-01	1.593E+00	2.617E+00	9.913E-01	0.256
		826.30	-3.410E-01	1.041E+00	1.677E+00	7.481E-01	-0.203
		831.60	-3.957E-01	7.654E-01	1.214E+00	3.597E-01	-0.326
		876.40	1.363E-01	1.017E+00	1.686E+00	1.732E+00	0.081
		880.51	2.415E-01	3.314E-01	5.782E-01	4.407E-02	0.418
		883.24	7.024E-02	3.401E-01	5.669E-01	3.804E-01	0.124
		899.00	4.364E-01	1.012E+00	1.698E+00	7.389E-01	0.257
		925.00	5.551E-01	1.279E+00	2.186E+00	1.617E-01	0.254
		926.50	1.926E-01	1.958E-01	3.394E-01	8.445E-02	0.567
		946.00	* -1.712E-01	3.568E-01	5.622E-01	1.023E-01	-0.305
		949.00	-2.535E-02	5.327E-01	8.734E-01	6.354E-02	-0.029
		980.50	3.009E-01	8.900E-01	1.499E+00	1.063E-01	0.201
		1394.10	-7.282E-01	1.372E+00	1.980E+00	1.283E+00	-0.368
PA-234M		766.42	2.317E+01	1.969E+01	2.571E+01	1.302E+01	0.901
NP-236	+	1001.03	* 6.359E+00	6.883E+00	1.067E+01	9.145E-01	0.596
		94.67	4.813E-01	1.261E-01	2.041E-01	1.784E-02	2.358
		98.44	7.634E-02	6.680E-02	1.026E-01	9.472E-03	0.744
		111.00	-4.564E-02	1.296E-01	2.098E-01	2.304E-02	-0.218
		160.31	* -4.315E-02	8.304E-02	1.299E-01	1.107E-02	-0.332



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		1.214E-01	1.382E-01	2.302E-01	2.160E-02	0.527
		117.00	*	6.771E-02	1.776E-01	2.944E-01	3.494E-02	0.230
	+	209.75		1.766E+00	9.431E-01	1.340E+00	1.063E-01	1.317
		228.18		-8.953E-02	2.135E-01	3.515E-01	2.785E-02	-0.255
		277.60		1.012E-01	1.880E-01	3.178E-01	2.447E-02	0.319
		334.30		-1.261E+00	1.639E+00	2.020E+00	1.420E-01	-0.624
AM-241		59.54	*	4.467E-02	6.346E-02	9.955E-02	1.012E-02	0.449
CM-243		99.55		1.249E-01	1.422E-01	2.369E-01	2.222E-02	0.527
		103.76	*	-4.289E-02	8.370E-02	1.351E-01	1.345E-02	-0.317
		117.00		6.966E-02	1.827E-01	3.029E-01	3.594E-02	0.230
	+	209.75		1.741E+00	9.297E-01	1.321E+00	1.048E-01	1.317
		228.18		-9.046E-02	2.157E-01	3.552E-01	2.814E-02	-0.255
		277.60		1.020E-01	1.896E-01	3.204E-01	2.467E-02	0.319
AM-246		798.80		-1.482E-01	1.728E-01	2.717E-01	2.169E-02	-0.546
		1036.00		-1.329E-01	3.286E-01	5.161E-01	3.466E-02	-0.257
		1062.04		-2.807E-01	2.977E-01	4.422E-01	2.882E-02	-0.635
		1078.86	*	-1.150E-02	1.723E-01	2.786E-01	1.777E-02	-0.041
		278.00		7.792E-01	7.833E-01	1.346E+00	1.036E-01	0.579
CM-247		287.40		3.477E-01	1.242E+00	2.074E+00	1.580E-01	0.168
		402.60	*	-2.072E-02	4.398E-02	6.642E-02	3.955E-03	-0.312
		252.85		-5.549E-01	8.298E-01	1.335E+00	1.048E-01	-0.416
CF-249		333.44		-7.009E-02	2.363E-01	2.742E-01	1.931E-02	-0.256
		387.95	*	2.475E-02	4.318E-02	7.177E-02	4.262E-03	0.345
CF-251		176.60	*	-4.871E-02	1.317E-01	2.058E-01	1.619E-02	-0.237
		227.00		-5.347E-02	3.566E-01	5.944E-01	4.710E-02	-0.090
		285.00		8.629E-01	1.706E+00	2.882E+00	2.202E-01	0.299

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691006      *
* Acquisition date   : 9-FEB-2010 15:24:34 Detector SN#      :              *
* Detector ID        : GAM13 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance : 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000  *
* Elapsed real time  : 0 02:00:01.72 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691006 Analyst initials: MJH1          *
* Batch Number       : 947037 Sample Quantity : 1.4871E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope      :              *
* LCS DPM             : 0.000 LCS Isotope      :              *
* LCSD DPM            : 0.000 LCSD Isotope     :              *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.126E+01	2.006E+00	6.838E-01	0.000E+00
CD-109	2.838E+00	7.386E-01	9.277E-01	0.000E+00
SN-126	2.790E-01	7.259E-02	9.107E-02	0.000E+00
BA-137M	2.995E-01	7.261E-02	6.852E-02	0.000E+00
CS-137	3.166E-01	7.677E-02	7.244E-02	0.000E+00
TL-208	4.519E-01	8.617E-02	6.269E-02	0.000E+00
BI-210	1.548E+00	8.192E-01	8.229E-01	0.000E+00
PB-210	1.548E+00	8.192E-01	8.229E-01	0.000E+00
PO-210	1.548E+00	8.170E-01	8.229E-01	0.000E+00
BI-211	3.471E+00	5.938E-01	3.460E-01	0.000E+00
PB-212	1.343E+00	1.583E-01	9.345E-02	0.000E+00
PO-212	1.343E+00	1.583E-01	9.345E-02	0.000E+00
BI-214	1.186E+00	1.958E-01	1.293E-01	0.000E+00
PB-214	1.207E+00	2.156E-01	1.207E-01	0.000E+00
PO-214	1.207E+00	2.156E-01	1.207E-01	0.000E+00
PO-216	1.343E+00	1.583E-01	9.345E-02	0.000E+00
PO-218	1.207E+00	2.156E-01	1.207E-01	0.000E+00
RA-224	3.145E+00	9.947E-01	1.064E+00	0.000E+00
RA-226	1.186E+00	1.958E-01	1.293E-01	0.000E+00
AC-228	1.319E+00	3.254E-01	2.637E-01	0.000E+00
RA-228	1.319E+00	3.254E-01	2.637E-01	0.000E+00
TH-228	1.364E+00	1.608E-01	9.487E-02	0.000E+00
TH-230	1.186E+00	1.958E-01	1.293E-01	0.000E+00
TH-232	1.319E+00	3.254E-01	2.637E-01	0.000E+00
TH-234	5.230E+00	1.471E+00	1.009E+00	0.000E+00
U-234	1.186E+00	1.958E-01	1.293E-01	0.000E+00
U-235	5.033E-01	3.526E-01	3.359E-01	0.000E+00
NP-237	8.191E-01	2.700E-01	3.002E-01	0.000E+00
U-238	5.230E+00	1.471E+00	1.009E+00	0.000E+00
AM-243	2.598E-01	5.580E-02	6.131E-02	0.000E+00
ANH-511	1.278E-01	8.193E-02	5.432E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	-6.933E-02	3.436E-01	5.992E-01	0.000E+00	NOT IDENT.
NA-22	-1.614E-02	5.113E-02	8.538E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	8.200E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.068E-02	3.073E-02	5.781E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.291E-02	5.656E-02	0.000E+00	FAIL ABUN
SC-46	8.826E-04	4.402E-02	7.589E-02	0.000E+00	FAIL ABUN
V-48	7.971E-03	8.398E-02	1.439E-01	0.000E+00	NOT IDENT.
CR-51	-9.328E-02	3.672E-01	6.307E-01	0.000E+00	NOT IDENT.
MN-52	-1.845E-01	2.546E-01	3.909E-01	0.000E+00	NOT IDENT.
MN-54	5.475E-03	4.369E-02	7.639E-02	0.000E+00	NOT IDENT.
CO-56	-4.237E-02	4.715E-02	7.620E-02	0.000E+00	NOT IDENT.
CO-57	1.355E-03	2.354E-02	4.192E-02	0.000E+00	NOT IDENT.
CO-58	-2.000E-02	4.396E-02	7.391E-02	0.000E+00	NOT IDENT.
FE-59	3.655E-02	1.065E-01	1.836E-01	0.000E+00	FAIL ABUN
CO-60	4.783E-03	4.313E-02	7.429E-02	0.000E+00	NOT IDENT.
ZN-65	8.044E-03	1.160E-01	1.676E-01	0.000E+00	NOT IDENT.
GE-68	5.881E-02	1.470E+00	2.482E+00	0.000E+00	NOT IDENT.
AS-73	1.815E-01	2.188E-01	4.132E-01	0.000E+00	NOT IDENT.
AS-74	-4.764E-03	1.013E-01	1.740E-01	0.000E+00	NOT IDENT.
SE-75	-8.490E-03	4.627E-02	7.130E-02	0.000E+00	NOT IDENT.
BR-77	5.674E+00	1.136E+01	2.045E+01	0.000E+00	FAIL ABUN
SR-82	-1.855E-01	4.726E-01	7.145E-01	0.000E+00	NOT IDENT.
RB-83	2.081E-02	7.626E-02	1.322E-01	0.000E+00	NOT IDENT.
RB-84	5.880E-02	7.938E-02	1.441E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	9.416E+00	1.671E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.829E-02	8.571E-02	0.000E+00	NOT IDENT.
RB-86	1.766E-01	9.054E-01	1.548E+00	0.000E+00	NOT IDENT.
Y-88	-3.934E-02	3.435E-02	4.497E-02	0.000E+00	NOT IDENT.
ZR-88	-1.459E-02	3.334E-02	5.533E-02	0.000E+00	NOT IDENT.
Y-91	1.419E+01	1.965E+01	3.567E+01	0.000E+00	NOT IDENT.
NB-94	4.062E-02	4.027E-02	7.233E-02	0.000E+00	NOT IDENT.
NB-95	7.043E-02	5.551E-02	9.277E-02	0.000E+00	NOT IDENT.
NB-95M	-3.450E-02	1.301E-01	2.026E-01	0.000E+00	NOT IDENT.
ZR-95	5.858E-02	7.664E-02	1.360E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.276E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.238E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.285E+00	1.347E+01	2.246E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.396E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.078E-02	3.163E-02	5.512E-02	0.000E+00	NOT IDENT.
RH-102	2.724E-02	3.098E-02	5.731E-02	0.000E+00	NOT IDENT.
RU-103	9.129E-03	4.271E-02	7.599E-02	0.000E+00	FAIL ABUN
RH-106	-3.663E-01	3.622E-01	5.714E-01	0.000E+00	FAIL ABUN
RU-106	-3.663E-01	3.603E-01	5.714E-01	0.000E+00	FAIL ABUN
AG-108M	-1.746E-03	3.778E-02	6.434E-02	0.000E+00	NOT IDENT.
AG-110M	-1.023E-02	4.540E-02	6.523E-02	0.000E+00	NOT IDENT.
IN-111	-5.274E-01	1.167E+00	1.786E+00	0.000E+00	NOT IDENT.
IN-113M	-2.824E-02	4.824E-02	7.933E-02	0.000E+00	NOT IDENT.
SN-113	-2.824E-02	4.824E-02	7.933E-02	0.000E+00	NOT IDENT.
IN-114M	1.385E-02	1.962E-01	2.981E-01	0.000E+00	NOT IDENT.
CD-115	-4.503E+00	1.161E+01	1.975E+01	0.000E+00	NOT IDENT.
SN-117M	1.797E-02	5.655E-02	9.927E-02	0.000E+00	NOT IDENT.
SB-122	-1.692E-01	2.274E+00	3.922E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.108E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	4.814E-03	2.923E-02	5.102E-02	0.000E+00	NOT IDENT.
I-124	2.251E-01	9.057E-01	1.325E+00	0.000E+00	NOT IDENT.
SB-124	-2.939E-02	8.164E-02	1.267E-01	0.000E+00	FAIL ABUN
SB-125	-3.300E-02	9.741E-02	1.708E-01	0.000E+00	FAIL ABUN
TE-125M	4.048E-01	8.262E+00	1.485E+01	0.000E+00	NOT IDENT.
I-126	-1.454E-01	2.331E-01	3.193E-01	0.000E+00	NOT IDENT.
SB-126	5.379E-02	1.769E-01	2.876E-01	0.000E+00	FAIL ABUN
SB-127	-5.236E-01	1.552E+00	2.563E+00	0.000E+00	NOT IDENT.
XE-127	-5.865E-02	4.643E-02	7.776E-02	0.000E+00	NOT IDENT.
I-131	2.284E-04	1.217E-01	2.091E-01	0.000E+00	NOT IDENT.
TE-132	-2.209E-01	6.414E-01	1.137E+00	0.000E+00	NOT IDENT.
BA-133	-2.364E-02	5.380E-02	7.957E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.503E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.075E-02	5.561E-02	1.048E-01	0.000E+00	NOT IDENT.
CS-135	1.459E-01	1.711E-01	2.751E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.416E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.775E-02	1.226E-01	1.939E-01	0.000E+00	FAIL ABUN
CE-139	3.662E-03	2.941E-02	5.106E-02	0.000E+00	NOT IDENT.
BA-140	-2.455E-01	2.967E-01	4.711E-01	0.000E+00	NOT IDENT.
LA-140	6.579E-02	1.020E-01	1.827E-01	0.000E+00	FAIL ABUN
CE-141	4.675E-02	6.805E-02	1.095E-01	0.000E+00	NOT IDENT.

CE-143	0.000E+00	1.986E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.135E-01	2.066E-01	3.366E-01	0.000E+00	NOT IDENT.
PM-144	1.593E-02	3.968E-02	6.896E-02	0.000E+00	NOT IDENT.
PR-144	1.080E+00	2.689E+00	4.673E+00	0.000E+00	NOT IDENT.
PM-146	1.560E-02	4.571E-02	8.259E-02	0.000E+00	NOT IDENT.
ND-147	-3.603E-02	6.183E-01	1.075E+00	0.000E+00	FAIL ABUN
PM-149	-1.444E+00	9.014E+01	1.587E+02	0.000E+00	NOT IDENT.
EU-152	6.311E-02	1.340E-01	1.784E-01	0.000E+00	NOT IDENT.
GD-153	-6.931E-03	7.357E-02	1.177E-01	0.000E+00	FAIL ABUN
EU-154	-4.065E-02	1.432E-01	2.397E-01	0.000E+00	NOT IDENT.
EU-155	1.226E-01	9.376E-02	1.750E-01	0.000E+00	FAIL ABUN
TB-160	6.352E-02	1.623E-01	2.877E-01	0.000E+00	FAIL ABUN
HO-166M	2.409E-02	7.050E-02	1.218E-01	0.000E+00	FAIL ABUN
TM-171	4.968E+00	1.493E+01	2.537E+01	0.000E+00	NOT IDENT.
LU-176	-2.153E-02	2.403E-02	3.992E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.307E+00	2.022E+00	0.000E+00	FAIL ABUN
LU-177M	-1.466E-01	2.028E-01	3.288E-01	0.000E+00	FAIL ABUN
HF-181	4.753E-03	4.555E-02	8.078E-02	0.000E+00	NOT IDENT.
W-181	5.704E-02	1.868E-01	3.176E-01	0.000E+00	NOT IDENT.
TA-182	9.043E-02	2.123E-01	3.766E-01	0.000E+00	FAIL ABUN
RE-183	-3.122E-02	1.148E-01	1.910E-01	0.000E+00	FAIL ABUN
RE-184	-1.479E-01	2.167E-01	3.737E-01	0.000E+00	NOT IDENT.
OS-185	-7.182E-03	4.898E-02	8.273E-02	0.000E+00	NOT IDENT.
RE-188	7.317E-02	1.744E-01	3.079E-01	0.000E+00	NOT IDENT.
W-188	3.556E+00	7.928E+00	1.260E+01	0.000E+00	FAIL ABUN
IR-192	1.187E-02	3.532E-02	6.151E-02	0.000E+00	FAIL ABUN
AU-195	2.455E-01	2.030E-01	3.594E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.885E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.165E+00	6.856E+00	1.174E+01	0.000E+00	NOT IDENT.
TL-202	-4.617E-02	7.505E-02	1.291E-01	0.000E+00	NOT IDENT.
HG-203	4.679E-02	4.082E-02	7.545E-02	0.000E+00	FAIL ABUN
BI-207	-2.581E-02	6.790E-02	1.100E-01	0.000E+00	FAIL ABUN
TL-207	3.862E-01	7.208E-01	1.138E+00	0.000E+00	FAIL ABUN
PO-209	-2.650E+00	8.694E+00	1.461E+01	0.000E+00	NOT IDENT.
PB-211	-3.341E-01	1.082E+00	1.772E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.238E-01	7.143E-01	0.000E+00	FAIL ABUN
PO-215	3.862E-01	7.208E-01	1.138E+00	0.000E+00	FAIL ABUN
RN-219	-1.792E-01	4.790E-01	7.710E-01	0.000E+00	FAIL ABUN
RN-220	-1.591E+01	2.775E+01	4.633E+01	0.000E+00	NOT IDENT.
RA-223	3.862E-01	7.208E-01	1.138E+00	0.000E+00	FAIL ABUN
AC-227	1.308E-01	3.805E-01	6.869E-01	0.000E+00	FAIL ABUN
TH-227	1.308E-01	3.807E-01	6.869E-01	0.000E+00	FAIL ABUN
TH-229	4.021E-01	4.665E-01	8.780E-01	0.000E+00	FAIL ABUN
PA-231	-1.356E+00	1.499E+00	2.503E+00	0.000E+00	FAIL ABUN
TH-231	3.862E-01	7.208E-01	1.138E+00	0.000E+00	FAIL ABUN
U-231	-3.978E-01	9.700E-01	1.546E+00	0.000E+00	FAIL ABUN
PA-233	1.440E-02	6.312E-02	1.115E-01	0.000E+00	FAIL ABUN
PA-234	-1.712E-01	3.496E-01	5.720E-01	0.000E+00	FAIL ABUN
PA-234M	6.359E+00	6.745E+00	1.084E+01	0.000E+00	FAIL ABUN
NP-236	-4.315E-02	8.138E-02	1.378E-01	0.000E+00	NOT IDENT.
NP-239	6.771E-02	1.741E-01	3.146E-01	0.000E+00	FAIL ABUN
AM-241	4.467E-02	6.219E-02	1.080E-01	0.000E+00	NOT IDENT.
CM-243	-4.289E-02	8.203E-02	1.448E-01	0.000E+00	FAIL ABUN
AM-246	-1.150E-02	1.689E-01	2.825E-01	0.000E+00	NOT IDENT.
CM-247	-2.072E-02	4.310E-02	6.899E-02	0.000E+00	NOT IDENT.
CF-249	2.475E-02	4.232E-02	7.461E-02	0.000E+00	NOT IDENT.
CF-251	-4.871E-02	1.291E-01	2.179E-01	0.000E+00	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691006.CNF;1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:34.
Sample ID        : G245691006 Sample quantity   : 1.48710E+02 GRAM
Detector name    : GAM13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 947037 Detector SN#       :
Matrix Spike ID  : LCS ID                   : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	935	10.67*	1.041E+00	2.126E+01	2.126E+01	9.63
CD-109	88.03	296	3.72*	7.248E+00	2.775E+00	2.838E+00	26.55
SN-126	64.28	582	9.60	7.391E+00	2.070E+00	2.070E+00	27.04
	86.94	296	8.90	7.248E+00	1.160E+00	1.160E+00	48.39
	87.57	296	37.00*	7.248E+00	2.790E-01	2.790E-01	26.55
BA-137M	661.65	215	89.98*	2.017E+00	2.992E-01	2.995E-01	24.74
CS-137	661.65	215	85.12*	2.017E+00	3.163E-01	3.166E-01	24.74
TL-208	277.35	-----	6.80	4.225E+00	-----	Line Not Found	-----
	510.84	128	21.60	2.535E+00	5.916E-01	5.916E-01	65.95
	583.14	340	84.20*	2.256E+00	4.519E-01	4.519E-01	19.46
	860.37	-----	12.46	1.606E+00	-----	Line Not Found	-----
BI-210	46.50	181	4.05*	7.295E+00	1.546E+00	1.548E+00	54.01
PB-210	46.50	181	4.05*	7.295E+00	1.546E+00	1.548E+00	54.01
PO-210	46.50	181	4.05*	7.295E+00	1.546E+00	1.548E+00	53.87
BI-211	72.87	-----	1.27	7.369E+00	-----	Line Not Found	-----
	351.07	622	12.94*	3.496E+00	3.471E+00	3.471E+00	17.46
PB-212	74.81	500	10.70	7.358E+00	1.603E+00	1.603E+00	23.83
	77.11	870	18.00	7.343E+00	1.661E+00	1.661E+00	14.29
	87.30	296	8.00	7.248E+00	1.290E+00	1.290E+00	28.37
	238.63	1118	44.60*	4.712E+00	1.343E+00	1.343E+00	12.03
	300.09	73	3.41	3.977E+00	1.354E+00	1.354E+00	64.40
PO-212	74.81	500	10.70	7.358E+00	1.603E+00	1.603E+00	23.83
	77.11	870	18.00	7.343E+00	1.661E+00	1.661E+00	14.29
	87.30	296	8.00	7.248E+00	1.290E+00	1.290E+00	28.37
	115.19	-----	0.60	6.822E+00	-----	Line Not Found	-----
	238.63	1118	44.60*	4.712E+00	1.343E+00	1.343E+00	12.03
	300.09	73	3.41	3.977E+00	1.354E+00	1.354E+00	64.40
BI-214	609.31	472	46.30*	2.170E+00	1.186E+00	1.186E+00	16.84
	1120.29	80	15.10	1.286E+00	1.036E+00	1.036E+00	61.22
	1764.49	79	15.80	8.985E-01	1.410E+00	1.410E+00	27.11
PB-214	74.81	500	6.21	7.358E+00	2.761E+00	2.761E+00	23.13
	77.11	870	10.50	7.343E+00	2.847E+00	2.847E+00	16.19

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	87.30	296	4.67	7.248E+00	2.210E+00	2.210E+00	27.65
	241.98	230	7.49	4.671E+00	1.658E+00	1.658E+00	32.76
	295.21	408	19.20	4.027E+00	1.331E+00	1.331E+00	20.01
	351.92	622	37.20*	3.496E+00	1.207E+00	1.207E+00	18.22
	74.81	500	6.21	7.358E+00	2.761E+00	2.761E+00	23.13
	77.11	870	10.50	7.343E+00	2.847E+00	2.847E+00	16.19
	87.30	296	4.67	7.248E+00	2.210E+00	2.210E+00	27.65
	241.98	230	7.49	4.671E+00	1.658E+00	1.658E+00	32.76
PO-216	295.21	408	19.20	4.027E+00	1.331E+00	1.331E+00	20.01
	351.92	622	37.20*	3.496E+00	1.207E+00	1.207E+00	18.22
	74.81	500	10.70	7.358E+00	1.603E+00	1.603E+00	23.83
	77.11	870	18.00	7.343E+00	1.661E+00	1.661E+00	14.29
	87.30	296	8.00	7.248E+00	1.290E+00	1.290E+00	28.37
	238.63	1118	44.60*	4.712E+00	1.343E+00	1.343E+00	12.03
	300.09	73	3.41	3.977E+00	1.354E+00	1.354E+00	64.40
	74.81	500	6.21	7.358E+00	2.761E+00	2.761E+00	23.13
PO-218	77.11	870	10.50	7.343E+00	2.847E+00	2.847E+00	16.19
	87.30	296	4.67	7.248E+00	2.210E+00	2.210E+00	27.65
	241.98	230	7.49	4.671E+00	1.658E+00	1.658E+00	32.76
	295.21	408	19.20	4.027E+00	1.331E+00	1.331E+00	20.01
	351.92	622	37.20*	3.496E+00	1.207E+00	1.207E+00	18.22
	240.98	230	3.95*	4.671E+00	3.145E+00	3.145E+00	32.28
	609.31	472	46.30*	2.170E+00	1.186E+00	1.186E+00	16.84
	1120.29	80	15.10	1.286E+00	1.036E+00	1.036E+00	61.22
AC-228	1764.49	79	15.80	8.985E-01	1.410E+00	1.410E+00	27.11
	338.32	237	11.40	3.608E+00	1.454E+00	1.454E+00	49.70
	911.07	221	27.70*	1.528E+00	1.319E+00	1.319E+00	25.17
	969.11	100	16.60	1.451E+00	1.051E+00	1.051E+00	53.53
	338.32	237	11.40	3.608E+00	1.454E+00	1.454E+00	49.70
	911.07	221	27.70*	1.528E+00	1.319E+00	1.319E+00	25.17
	969.11	100	16.60	1.451E+00	1.051E+00	1.051E+00	53.53
	74.81	500	10.70	7.358E+00	1.603E+00	1.627E+00	21.94
TH-228	77.11	870	18.00	7.343E+00	1.661E+00	1.686E+00	14.29
	87.30	296	8.00	7.248E+00	1.290E+00	1.310E+00	26.55
	238.63	1118	44.60*	4.712E+00	1.343E+00	1.364E+00	12.03
	300.09	73	3.41	3.977E+00	1.354E+00	1.375E+00	86.91
	609.31	472	46.30*	2.170E+00	1.186E+00	1.186E+00	16.84
	1120.29	80	15.10	1.286E+00	1.036E+00	1.036E+00	61.22
	1764.49	79	15.80	8.985E-01	1.410E+00	1.410E+00	27.11
	338.32	237	11.40	3.608E+00	1.454E+00	1.454E+00	29.02
TH-232	911.07	221	27.70*	1.528E+00	1.319E+00	1.319E+00	25.17
	969.11	100	16.60	1.451E+00	1.051E+00	1.051E+00	53.53
	63.29	582	3.80*	7.391E+00	5.230E+00	5.230E+00	28.71
	92.38	810	5.41	7.180E+00	5.262E+00	5.262E+00	22.37
	609.31	472	46.30*	2.170E+00	1.186E+00	1.186E+00	16.84
	1120.29	80	15.10	1.286E+00	1.036E+00	1.036E+00	61.22
	1764.49	79	15.80	8.985E-01	1.410E+00	1.410E+00	27.11
	89.95	234	2.70	7.215E+00	3.033E+00	3.033E+00	49.44
U-235	93.35	810	4.50	7.180E+00	6.326E+00	6.326E+00	30.96

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	105.00	-----	2.10	6.995E+00	-----	Line Not Found	-----
	143.76	132	10.50*	6.295E+00	5.033E-01	5.033E-01	71.49
	163.35	-----	4.70	5.928E+00	-----	Line Not Found	-----
	185.71	394	54.00	5.530E+00	3.329E-01	3.329E-01	27.53
	205.31	-----	4.70	5.207E+00	-----	Line Not Found	-----
NP-237	86.50	296	12.60*	7.248E+00	8.191E-01	8.191E-01	33.63
	95.87	-----	2.60	7.135E+00	-----	Line Not Found	-----
U-238	63.29	582	3.80*	7.391E+00	5.230E+00	5.230E+00	28.71
	92.38	810	5.41	7.180E+00	5.262E+00	5.262E+00	15.74
AM-243	74.67	500	66.00*	7.358E+00	2.598E-01	2.598E-01	21.92
	86.72	296	0.34	7.248E+00	3.072E+01	3.072E+01	26.55
	117.66	-----	0.55	6.778E+00	-----	Line Not Found	-----
	142.18	132	0.13	6.295E+00	4.227E+01	4.227E+01	69.85
ANH-511	511.00	128	100.00*	2.535E+00	1.278E-01	1.278E-01	65.42

Flag: "\*" = Keyline

Summary of Nuclide Activity  
Sample ID : G245691006

Page : 4  
Acquisition date : 9-FEB-2010 15:24:34

Total number of lines in spectrum 33  
Number of unidentified lines 1  
Number of lines tentatively identified by NID 32 96.97%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.126E+01	2.126E+01	0.205E+01	9.63	
CD-109	464.00D	1.02	2.775E+00	2.838E+00	0.754E+00	26.55	
SN-126	1.00E+05Y	1.00	2.790E-01	2.790E-01	0.741E-01	26.55	
BA-137M	30.17Y	1.00	2.992E-01	2.995E-01	0.741E-01	24.74	
CS-137	30.17Y	1.00	3.163E-01	3.166E-01	0.783E-01	24.74	
TL-208	1.41E+10Y	1.00	4.519E-01	4.519E-01	0.879E-01	19.46	
BI-210	22.26Y	1.00	1.546E+00	1.548E+00	0.836E+00	54.01	
PB-210	22.26Y	1.00	1.546E+00	1.548E+00	0.836E+00	54.01	
PO-210	22.26Y	1.00	1.546E+00	1.548E+00	0.834E+00	53.87	
BI-211	7.04E+08Y	1.00	3.471E+00	3.471E+00	0.606E+00	17.46	
PB-212	1.41E+10Y	1.00	1.343E+00	1.343E+00	0.162E+00	12.03	
PO-212	1.41E+10Y	1.00	1.343E+00	1.343E+00	0.162E+00	12.03	
BI-214	1600.00Y	1.00	1.186E+00	1.186E+00	0.200E+00	16.84	
PB-214	1600.00Y	1.00	1.207E+00	1.207E+00	0.220E+00	18.22	
PO-214	1600.00Y	1.00	1.207E+00	1.207E+00	0.220E+00	18.22	
PO-216	1.41E+10Y	1.00	1.343E+00	1.343E+00	0.162E+00	12.03	
PO-218	1600.00Y	1.00	1.207E+00	1.207E+00	0.220E+00	18.22	
RA-224	1.41E+10Y	1.00	3.145E+00	3.145E+00	1.015E+00	32.28	
RA-226	1600.00Y	1.00	1.186E+00	1.186E+00	0.200E+00	16.84	
AC-228	1.41E+10Y	1.00	1.319E+00	1.319E+00	0.332E+00	25.17	
RA-228	1.41E+10Y	1.00	1.319E+00	1.319E+00	0.332E+00	25.17	
TH-228	1.91Y	1.02	1.343E+00	1.364E+00	0.164E+00	12.03	
TH-230	4.47E+09Y	1.00	1.186E+00	1.186E+00	0.200E+00	16.84	
TH-232	1.41E+10Y	1.00	1.319E+00	1.319E+00	0.332E+00	25.17	
TH-234	4.47E+09Y	1.00	5.230E+00	5.230E+00	1.501E+00	28.71	
U-234	4.47E+09Y	1.00	1.186E+00	1.186E+00	0.200E+00	16.84	
U-235	7.04E+08Y	1.00	5.033E-01	5.033E-01	3.598E-01	71.49	
NP-237	2.14E+06Y	1.00	8.191E-01	8.191E-01	2.755E-01	33.63	
U-238	4.47E+09Y	1.00	5.230E+00	5.230E+00	1.501E+00	28.71	
AM-243	7380.00Y	1.00	2.598E-01	2.598E-01	0.569E-01	21.92	
ANH-511	1.00E+09Y	1.00	1.278E-01	1.278E-01	0.836E-01	65.42	

Total Activity : 6.650E+01 6.659E+01

Grand Total Activity : 6.650E+01 6.659E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.98	117	493	1.51	167.74	165	6	1.62E-02	65.7	7.28E+00	T
0	129.28	86	489	0.96	258.36	253	9	1.19E-02	95.8	6.57E+00	T
0	209.13	117	276	1.00	418.10	415	8	1.62E-02	52.8	5.15E+00	T
0	269.86	157	223	2.10	539.58	534	11	2.18E-02	41.2	4.31E+00	T
0	328.21	53	223	1.35	656.32	651	10	7.34E-03	****	3.70E+00	T
0	464.06	140	162	0.78	928.10	920	15	1.95E-02	43.3	2.76E+00	T
0	727.81	73	72	1.21	1455.77	1451	9	1.02E-02	50.4	1.86E+00	T
0	768.69	22	134	0.95	1537.56	1534	12	3.08E-03	****	1.77E+00	
0	1001.83	30	50	1.75	2004.03	1998	10	4.15E-03	****	1.41E+00	T

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691006.CNF;1
* Acquisition date   : 9-FEB-2010 15:24:34.  Detector SN#      :
* Detector ID        : GAM13                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.72             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 25-JAN-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G245691006             Analyst initials: MJH1
* Batch Number       : 947037                 Sample Quantity : 1.48710E+02 GRAM
*****
*                               QC DATA                                *
*
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22.03MS Isotope       :
* MSD ID              :                      MSD Isotope       :
* LCS ID              : 1032-A                LCS Isotope      :
*****

```

## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.126E+01	2.047E+00	6.794E-01	4.153E-02	31.291
CD-109	2.838E+00	7.536E-01	8.626E-01	6.806E-02	3.290
SN-126	2.790E-01	7.407E-02	8.466E-02	6.697E-03	3.295
BA-137M	2.995E-01	7.409E-02	6.676E-02	5.445E-03	4.486
CS-137	3.166E-01	7.834E-02	7.057E-02	5.768E-03	4.486
TL-208	4.519E-01	8.792E-02	6.089E-02	5.040E-03	7.421
BI-210	1.548E+00	8.359E-01	7.545E-01	6.150E-02	2.051
PB-210	1.548E+00	8.359E-01	7.545E-01	6.150E-02	2.051
PO-210	1.548E+00	8.337E-01	7.545E-01	5.379E-02	2.051
BI-211	3.471E+00	6.060E-01	3.321E-01	2.420E-02	10.452
PB-212	1.343E+00	1.616E-01	8.887E-02	8.073E-03	15.114
PO-212	1.343E+00	1.616E-01	8.887E-02	8.073E-03	15.114
BI-214	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
PB-214	1.207E+00	2.200E-01	1.158E-01	1.037E-02	10.427
PO-214	1.207E+00	2.200E-01	1.158E-01	1.037E-02	10.427
PO-216	1.343E+00	1.616E-01	8.887E-02	8.073E-03	15.114
PO-218	1.207E+00	2.200E-01	1.158E-01	1.037E-02	10.427
RA-224	3.145E+00	1.015E+00	1.012E+00	7.987E-02	3.108

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
AC-228	1.319E+00	3.321E-01	2.589E-01	2.689E-02	5.096
RA-228	1.319E+00	3.321E-01	2.589E-01	2.689E-02	5.096
TH-228	1.364E+00	1.640E-01	9.022E-02	8.196E-03	15.114
TH-230	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
TH-232	1.319E+00	3.321E-01	2.589E-01	2.689E-02	5.096
TH-234	5.230E+00	1.501E+00	9.316E-01	1.709E-01	5.614
U-234	1.186E+00	1.998E-01	1.258E-01	1.176E-02	9.432
U-235	5.033E-01	3.598E-01	3.158E-01	5.830E-02	1.594
NP-237	8.191E-01	2.755E-01	2.790E-01	6.171E-02	2.936
U-238	5.230E+00	1.501E+00	9.316E-01	1.709E-01	5.614
AM-243	2.598E-01	5.694E-02	5.679E-02	4.906E-03	4.575
ANH-511	1.278E-01	8.361E-02	5.259E-02	3.670E-03	2.430

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.933E-02		3.506E-01	5.792E-01	4.355E-02	-0.120
NA-22	-1.614E-02		5.218E-02	8.454E-02	4.772E-03	-0.191
NA-24	-3.716E-01		4.184E-01	Half-Life	too short	
AL-26	2.068E-02		3.135E-02	5.775E-02	3.259E-03	0.358
TI-44	3.065E-01	+	4.379E-02	5.246E-02	4.418E-03	5.843
SC-46	8.826E-04		4.491E-02	7.448E-02	5.640E-03	0.012
V-48	7.971E-03		8.570E-02	1.416E-01	1.002E-02	0.056
CR-51	-9.328E-02		3.747E-01	6.039E-01	4.700E-02	-0.154
MN-52	-1.845E-01		2.598E-01	3.882E-01	2.231E-02	-0.475
MN-54	5.475E-03		4.458E-02	7.485E-02	5.874E-03	0.073
CO-56	-4.237E-02		4.811E-02	7.469E-02	5.821E-03	-0.567
CO-57	1.355E-03		2.402E-02	3.926E-02	4.966E-03	0.035
CO-58	-2.000E-02		4.486E-02	7.236E-02	5.764E-03	-0.276
FE-59	3.655E-02		1.087E-01	1.812E-01	1.294E-02	0.202
CO-60	4.783E-03		4.401E-02	7.364E-02	4.189E-03	0.065
ZN-65	8.044E-03		1.183E-01	1.654E-01	1.004E-02	0.049
GE-68	5.881E-02		1.500E+00	2.447E+00	1.564E-01	0.024
AS-73	1.815E-01		2.232E-01	3.800E-01	3.210E-02	0.478
AS-74	-4.764E-03		1.034E-01	1.691E-01	1.299E-02	-0.028
SE-75	-8.490E-03		4.721E-02	6.797E-02	5.324E-03	-0.125
BR-77	5.674E+00		1.159E+01	1.981E+01	1.399E+00	0.286
SR-82	-1.855E-01		4.823E-01	6.989E-01	5.625E-02	-0.265
RB-83	2.081E-02		7.781E-02	1.280E-01	9.040E-03	0.163
RB-84	5.880E-02		8.100E-02	1.414E-01	1.077E-02	0.416
KR-85	2.471E+01		9.609E+00	1.618E+01	1.134E+00	1.527
SR-85	1.267E-01		4.928E-02	8.299E-02	5.814E-03	1.527
RB-86	1.766E-01		9.239E-01	1.527E+00	9.766E-02	0.116
Y-88	-3.934E-02		3.505E-02	4.494E-02	2.531E-03	-0.876
ZR-88	-1.459E-02		3.402E-02	5.323E-02	3.118E-03	-0.274
Y-91	1.419E+01		2.005E+01	3.527E+01	1.955E+00	0.402

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94	4.062E-02		4.110E-02	7.057E-02	5.761E-03	0.576
NB-95	7.043E-02		5.665E-02	9.071E-02	7.325E-03	0.776
NB-95M	-3.450E-02		1.327E-01	1.926E-01	1.782E-02	-0.179
ZR-95	5.858E-02		7.821E-02	1.329E-01	1.199E-02	0.441
NB-97	9.939E-03		6.512E-02	Half-Life	too short	
ZR-97	6.328E-01		1.142E+00	Half-Life	too short	
MO-99	-1.285E+00		1.375E+01	2.194E+01	3.272E+00	-0.059
TC-99M	-3.246E+09		2.243E+10	Half-Life	too short	
RH-101	-2.078E-02		3.227E-02	5.220E-02	4.133E-03	-0.398
RH-102	2.724E-02		3.161E-02	5.539E-02	3.686E-03	0.492
RU-103	9.129E-03		4.358E-02	7.353E-02	9.678E-03	0.124
RH-106	-3.663E-01		3.696E-01	5.558E-01	7.164E-02	-0.659
RU-106	-3.663E-01		3.677E-01	5.558E-01	4.377E-02	-0.659
AG-108M	-1.746E-03		3.855E-02	6.205E-02	4.175E-03	-0.028
AG-110M	-1.023E-02		4.633E-02	6.354E-02	5.338E-03	-0.161
IN-111	-5.274E-01		1.191E+00	1.699E+00	1.339E-01	-0.310
IN-113M	-2.824E-02		4.923E-02	7.633E-02	4.756E-03	-0.370
SN-113	-2.824E-02		4.923E-02	7.633E-02	4.756E-03	-0.370
IN-114M	1.385E-02		2.002E-01	2.820E-01	2.229E-02	0.049
CD-115	-4.503E+00		1.184E+01	1.914E+01	1.364E+00	-0.235
SN-117M	1.797E-02		5.770E-02	9.353E-02	8.167E-03	0.192
SB-122	-1.692E-01		2.320E+00	3.807E+00	2.827E-01	-0.044
I-123	1.006E+00		3.117E+00	Half-Life	too short	
TE-123M	4.814E-03		2.983E-02	4.807E-02	4.198E-03	0.100
I-124	2.251E-01		9.242E-01	1.288E+00	9.960E-02	0.175
SB-124	-2.939E-02		8.330E-02	1.263E-01	7.868E-03	-0.233
SB-125	-3.300E-02		9.940E-02	1.646E-01	1.059E-02	-0.200
TE-125M	4.048E-01		8.431E+00	1.387E+01	1.685E+00	0.029
I-126	-1.454E-01		2.378E-01	3.111E-01	2.538E-02	-0.467
SB-126	5.379E-02		1.805E-01	2.808E-01	2.288E-02	0.192
SB-127	-5.236E-01		1.584E+00	2.499E+00	2.762E-01	-0.209
XE-127	-5.865E-02		4.738E-02	7.368E-02	5.839E-03	-0.796
I-131	2.284E-04		1.242E-01	2.008E-01	1.422E-02	0.001
TE-132	-2.209E-01		6.544E-01	1.080E+00	1.658E-01	-0.204
BA-133	-2.364E-02		5.490E-02	7.638E-02	9.170E-03	-0.310
I-133	2.953E-03		3.318E-03	Half-Life	too short	
CS-134	8.075E-02		5.674E-02	1.026E-01	8.267E-03	0.787
CS-135	1.459E-01		1.746E-01	2.624E-01	2.423E-02	0.556
I-135	-5.063E+09		3.273E+09	Half-Life	too short	
CS-136	-8.775E-02		1.251E-01	1.911E-01	1.356E-02	-0.459
CE-139	3.662E-03		3.001E-02	4.815E-02	3.775E-03	0.076
BA-140	-2.455E-01		3.028E-01	4.567E-01	1.498E-01	-0.538
LA-140	6.579E-02		1.040E-01	1.819E-01	1.048E-02	0.362
CE-141	4.675E-02		6.944E-02	1.030E-01	1.068E-02	0.454
CE-143	5.220E-04		1.013E-04	Half-Life	too short	
CE-144	-1.135E-01		2.108E-01	3.159E-01	5.476E-02	-0.359
PM-144	1.593E-02		4.049E-02	6.727E-02	5.495E-03	0.237
PR-144	1.080E+00		2.744E+00	4.559E+00	3.722E-01	0.237

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146	1.560E-02		4.665E-02	7.974E-02	7.237E-03	0.196
ND-147	-3.603E-02		6.309E-01	1.042E+00	1.474E-01	-0.035
PM-149	-1.444E+00		9.198E+01	1.516E+02	2.276E+01	-0.010
EU-152	6.311E-02		1.367E-01	1.711E-01	1.283E-02	0.369
GD-153	-6.931E-03		7.507E-02	1.097E-01	9.979E-03	-0.063
EU-154	-4.065E-02		1.461E-01	2.374E-01	2.193E-02	-0.171
EU-155	1.226E-01		9.567E-02	1.634E-01	1.677E-02	0.750
TB-160	6.352E-02		1.656E-01	2.823E-01	2.153E-02	0.225
HO-166M	2.409E-02		7.194E-02	1.189E-01	9.699E-03	0.203
TM-171	4.968E+00		1.524E+01	2.344E+01	2.139E+00	0.212
LU-176	-2.153E-02		2.452E-02	3.819E-02	2.831E-03	-0.564
LU-177	2.496E+00	+	1.333E+00	1.917E+00	1.520E-01	1.302
LU-177M	-1.466E-01		2.069E-01	3.168E-01	1.921E-02	-0.463
HF-181	4.753E-03		4.648E-02	7.810E-02	5.247E-03	0.061
W-181	5.704E-02		1.907E-01	2.934E-01	2.706E-02	0.194
TA-182	9.043E-02		2.166E-01	3.725E-01	2.073E-02	0.243
RE-183	-3.122E-02		1.171E-01	1.800E-01	1.490E-02	-0.173
RE-184	-1.479E-01		2.212E-01	3.559E-01	2.794E-02	-0.416
OS-185	-7.182E-03		4.998E-02	8.055E-02	6.484E-03	-0.089
RE-188	7.317E-02		1.780E-01	2.900E-01	2.654E-02	0.252
W-188	3.556E+00		8.090E+00	1.204E+01	9.137E-01	0.295
IR-192	1.187E-02		3.604E-02	5.888E-02	4.307E-03	0.202
AU-195	2.455E-01		2.072E-01	3.351E-01	3.114E-02	0.733
TL-200	7.273E-05		2.492E-04	Half-Life	too short	
TL-201	-1.165E+00		6.996E+00	1.108E+01	8.680E-01	-0.105
TL-202	-4.617E-02		7.658E-02	1.246E-01	7.871E-03	-0.371
HG-203	4.679E-02		4.166E-02	7.201E-02	5.734E-03	0.650
BI-207	-2.581E-02		6.929E-02	1.084E-01	7.053E-03	-0.238
TL-207	3.862E-01		7.355E-01	1.090E+00	1.858E-01	0.354
PO-209	-2.650E+00		8.872E+00	1.434E+01	1.079E+00	-0.185
PB-211	-3.341E-01		1.104E+00	1.706E+00	1.064E+00	-0.196
BI-212	8.429E-01	+	4.324E-01	6.975E-01	6.696E-02	1.208
PO-215	3.862E-01		7.355E-01	1.090E+00	1.858E-01	0.354
RN-219	-1.792E-01		4.888E-01	7.423E-01	1.015E-01	-0.241
RN-220	-1.591E+01		2.831E+01	4.494E+01	3.285E+00	-0.354
RA-223	3.862E-01		7.355E-01	1.090E+00	1.858E-01	0.354
AC-227	1.308E-01		3.883E-01	6.543E-01	9.763E-02	0.200
TH-227	1.308E-01		3.885E-01	6.543E-01	1.158E-01	0.200
TH-229	4.021E-01		4.760E-01	8.309E-01	6.573E-02	0.484
PA-231	-1.356E+00		1.530E+00	2.390E+00	3.503E-01	-0.568
TH-231	3.862E-01		7.355E-01	1.090E+00	1.858E-01	0.354
U-231	-3.978E-01		9.898E-01	1.440E+00	1.281E-01	-0.276
PA-233	1.440E-02		6.440E-02	1.067E-01	8.150E-03	0.135
PA-234	-1.712E-01		3.568E-01	5.622E-01	1.023E-01	-0.305
PA-234M	6.359E+00	+	6.883E+00	1.067E+01	9.145E-01	0.596
NP-236	-4.315E-02		8.304E-02	1.299E-01	1.107E-02	-0.332
NP-239	6.771E-02		1.776E-01	2.944E-01	3.494E-02	0.230
AM-241	4.467E-02		6.346E-02	9.955E-02	1.012E-02	0.449

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-4.289E-02		8.370E-02	1.351E-01	1.345E-02	-0.317
AM-246	-1.150E-02		1.723E-01	2.786E-01	1.777E-02	-0.041
CM-247	-2.072E-02		4.398E-02	6.642E-02	3.955E-03	-0.312
CF-249	2.475E-02		4.318E-02	7.177E-02	4.262E-03	0.345
CF-251	-4.871E-02		1.317E-01	2.058E-01	1.619E-02	-0.237

# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691006          *
* Acquisition date   : 9-FEB-2010 15:24:34 Detector SN# :                  *
* Detector ID        : GAM13 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.72 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G245691006 Analyst initials: MJH1                 *
* Batch Number       : 947037 Sample Quantity : 1.4871E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.126E+01	2.006E+00	3.421E-01	1.023E+00
CD-109	2.838E+00	7.386E-01	4.641E-01	3.768E-01
SN-126	2.790E-01	7.259E-02	4.556E-02	3.704E-02
BA-137M	2.995E-01	7.261E-02	3.428E-02	3.705E-02
CS-137	3.166E-01	7.677E-02	3.624E-02	3.917E-02
TL-208	4.519E-01	8.617E-02	3.136E-02	4.396E-02
BI-210	1.548E+00	8.192E-01	4.117E-01	4.180E-01
PB-210	1.548E+00	8.192E-01	4.117E-01	4.180E-01
PO-210	1.548E+00	8.170E-01	4.117E-01	4.168E-01
BI-211	3.471E+00	5.938E-01	1.731E-01	3.030E-01
PB-212	1.343E+00	1.583E-01	4.675E-02	8.079E-02
PO-212	1.343E+00	1.583E-01	4.675E-02	8.079E-02
BI-214	1.186E+00	1.958E-01	6.471E-02	9.988E-02
PB-214	1.207E+00	2.156E-01	6.036E-02	1.100E-01
PO-214	1.207E+00	2.156E-01	6.036E-02	1.100E-01
PO-216	1.343E+00	1.583E-01	4.675E-02	8.079E-02
PO-218	1.207E+00	2.156E-01	6.036E-02	1.100E-01
RA-224	3.145E+00	9.947E-01	5.322E-01	5.075E-01
RA-226	1.186E+00	1.958E-01	6.471E-02	9.988E-02
AC-228	1.319E+00	3.254E-01	1.319E-01	1.660E-01
RA-228	1.319E+00	3.254E-01	1.319E-01	1.660E-01
TH-228	1.364E+00	1.608E-01	4.746E-02	8.202E-02
TH-230	1.186E+00	1.958E-01	6.471E-02	9.988E-02
TH-232	1.319E+00	3.254E-01	1.319E-01	1.660E-01
TH-234	5.230E+00	1.471E+00	5.049E-01	7.507E-01
U-234	1.186E+00	1.958E-01	6.471E-02	9.988E-02
U-235	5.033E-01	3.526E-01	1.681E-01	1.799E-01
NP-237	8.191E-01	2.700E-01	1.502E-01	1.377E-01
U-238	5.230E+00	1.471E+00	5.049E-01	7.507E-01
AM-243	2.598E-01	5.580E-02	3.067E-02	2.847E-02
ANH-511	1.278E-01	8.193E-02	2.717E-02	4.180E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-6.933E-02	3.436E-01	2.998E-01	1.753E-01 NOT IDENT.
NA-22	-1.614E-02	5.113E-02	4.272E-02	2.609E-02 NOT IDENT.
NA-24	-3.716E+05	8.200E+05	0.000E+00	4.184E+05 SHORT HLIF
AL-26	2.068E-02	3.073E-02	2.892E-02	1.568E-02 NOT IDENT.
TI-44	3.065E-01	4.291E-02	2.830E-02	2.189E-02 FAIL ABUN
SC-46	8.826E-04	4.402E-02	3.797E-02	2.246E-02 FAIL ABUN
V-48	7.971E-03	8.398E-02	7.201E-02	4.285E-02 NOT IDENT.
CR-51	-9.328E-02	3.672E-01	3.156E-01	1.873E-01 NOT IDENT.
MN-52	-1.845E-01	2.546E-01	1.956E-01	1.299E-01 NOT IDENT.
MN-54	5.475E-03	4.369E-02	3.822E-02	2.229E-02 NOT IDENT.
CO-56	-4.237E-02	4.715E-02	3.812E-02	2.406E-02 NOT IDENT.
CO-57	1.355E-03	2.354E-02	2.097E-02	1.201E-02 NOT IDENT.
CO-58	-2.000E-02	4.396E-02	3.697E-02	2.243E-02 NOT IDENT.
FE-59	3.655E-02	1.065E-01	9.187E-02	5.433E-02 FAIL ABUN
CO-60	4.783E-03	4.313E-02	3.717E-02	2.200E-02 NOT IDENT.
ZN-65	8.044E-03	1.160E-01	8.383E-02	5.917E-02 NOT IDENT.
GE-68	5.881E-02	1.470E+00	1.242E+00	7.501E-01 NOT IDENT.
AS-73	1.815E-01	2.188E-01	2.067E-01	1.116E-01 NOT IDENT.
AS-74	-4.764E-03	1.013E-01	8.705E-02	5.170E-02 NOT IDENT.
SE-75	-8.490E-03	4.627E-02	3.567E-02	2.361E-02 NOT IDENT.
BR-77	5.674E+00	1.136E+01	1.023E+01	5.795E+00 FAIL ABUN
SR-82	-1.855E-01	4.726E-01	3.575E-01	2.411E-01 NOT IDENT.
RB-83	2.081E-02	7.626E-02	6.612E-02	3.891E-02 NOT IDENT.
RB-84	5.880E-02	7.938E-02	7.212E-02	4.050E-02 NOT IDENT.
KR-85	2.471E+01	9.416E+00	8.361E+00	4.804E+00 NOT IDENT.
SR-85	1.267E-01	4.829E-02	4.288E-02	2.464E-02 NOT IDENT.
RB-86	1.766E-01	9.054E-01	7.746E-01	4.619E-01 NOT IDENT.
Y-88	-3.934E-02	3.435E-02	2.250E-02	1.753E-02 NOT IDENT.
ZR-88	-1.459E-02	3.334E-02	2.768E-02	1.701E-02 NOT IDENT.
Y-91	1.419E+01	1.965E+01	1.785E+01	1.002E+01 NOT IDENT.
NB-94	4.062E-02	4.027E-02	3.619E-02	2.055E-02 NOT IDENT.
NB-95	7.043E-02	5.551E-02	4.641E-02	2.832E-02 NOT IDENT.
NB-95M	-3.450E-02	1.301E-01	1.014E-01	6.636E-02 NOT IDENT.
ZR-95	5.858E-02	7.664E-02	6.804E-02	3.910E-02 NOT IDENT.
NB-97	9.939E+03	1.276E+05	0.000E+00	6.512E+04 SHORT HLIF
ZR-97	6.328E+05	2.238E+06	0.000E+00	1.142E+06 SHORT HLIF
MO-99	-1.285E+00	1.347E+01	1.124E+01	6.874E+00 NOT IDENT.
TC-99M	-3.246E+15	4.396E+16	0.000E+00	0.000E+00 SHORT HLIF
RH-101	-2.078E-02	3.163E-02	2.758E-02	1.614E-02 NOT IDENT.
RH-102	2.724E-02	3.098E-02	2.867E-02	1.581E-02 NOT IDENT.
RU-103	9.129E-03	4.271E-02	3.802E-02	2.179E-02 FAIL ABUN
RH-106	-3.663E-01	3.622E-01	2.859E-01	1.848E-01 FAIL ABUN
RU-106	-3.663E-01	3.603E-01	2.859E-01	1.838E-01 FAIL ABUN
AG-108M	-1.746E-03	3.778E-02	3.219E-02	1.927E-02 NOT IDENT.
AG-110M	-1.023E-02	4.540E-02	3.264E-02	2.317E-02 NOT IDENT.
IN-111	-5.274E-01	1.167E+00	8.934E-01	5.954E-01 NOT IDENT.
IN-113M	-2.824E-02	4.824E-02	3.969E-02	2.461E-02 NOT IDENT.
SN-113	-2.824E-02	4.824E-02	3.969E-02	2.461E-02 NOT IDENT.
IN-114M	1.385E-02	1.962E-01	1.491E-01	1.001E-01 NOT IDENT.
CD-115	-4.503E+00	1.161E+01	9.881E+00	5.922E+00 NOT IDENT.
SN-117M	1.797E-02	5.655E-02	4.967E-02	2.885E-02 NOT IDENT.
SB-122	-1.692E-01	2.274E+00	1.962E+00	1.160E+00 NOT IDENT.
I-123	1.006E+06	6.108E+06	0.000E+00	3.117E+06 SHORT HLIF
TE-123M	4.814E-03	2.923E-02	2.553E-02	1.492E-02 NOT IDENT.
I-124	2.251E-01	9.057E-01	6.630E-01	4.621E-01 NOT IDENT.
SB-124	-2.939E-02	8.164E-02	6.338E-02	4.165E-02 FAIL ABUN
SB-125	-3.300E-02	9.741E-02	8.543E-02	4.970E-02 FAIL ABUN
TE-125M	4.048E-01	8.262E+00	7.428E+00	4.215E+00 NOT IDENT.
I-126	-1.454E-01	2.331E-01	1.597E-01	1.189E-01 NOT IDENT.
SB-126	5.379E-02	1.769E-01	1.439E-01	9.026E-02 FAIL ABUN
SB-127	-5.236E-01	1.552E+00	1.282E+00	7.918E-01 NOT IDENT.
XE-127	-5.865E-02	4.643E-02	3.891E-02	2.369E-02 NOT IDENT.
I-131	2.284E-04	1.217E-01	1.046E-01	6.208E-02 NOT IDENT.
TE-132	-2.209E-01	6.414E-01	5.689E-01	3.272E-01 NOT IDENT.
BA-133	-2.364E-02	5.380E-02	3.981E-02	2.745E-02 NOT IDENT.
I-133	2.953E+03	6.503E+03	0.000E+00	3.318E+03 SHORT HLIF
CS-134	8.075E-02	5.561E-02	5.243E-02	2.837E-02 NOT IDENT.
CS-135	1.459E-01	1.711E-01	1.376E-01	8.729E-02 NOT IDENT.
I-135	-5.063E+15	6.416E+15	0.000E+00	3.273E+15 SHORT HLIF
CS-136	-8.775E-02	1.226E-01	9.701E-02	6.257E-02 FAIL ABUN
CE-139	3.662E-03	2.941E-02	2.555E-02	1.501E-02 NOT IDENT.
BA-140	-2.455E-01	2.967E-01	2.357E-01	1.514E-01 NOT IDENT.
LA-140	6.579E-02	1.020E-01	9.140E-02	5.202E-02 FAIL ABUN
CE-141	4.675E-02	6.805E-02	5.480E-02	3.472E-02 NOT IDENT.



CE-143	5.220E+02	1.986E+02	0.000E+00	1.013E+02	SHORT HLIF
CE-144	-1.135E-01	2.066E-01	1.684E-01	1.054E-01	NOT IDENT.
PM-144	1.593E-02	3.968E-02	3.450E-02	2.025E-02	NOT IDENT.
PR-144	1.080E+00	2.689E+00	2.338E+00	1.372E+00	NOT IDENT.
PM-146	1.560E-02	4.571E-02	4.132E-02	2.332E-02	NOT IDENT.
ND-147	-3.603E-02	6.183E-01	5.377E-01	3.154E-01	FAIL ABUN
PM-149	-1.444E+00	9.014E+01	7.940E+01	4.599E+01	NOT IDENT.
EU-152	6.311E-02	1.340E-01	8.925E-02	6.834E-02	NOT IDENT.
GD-153	-6.931E-03	7.357E-02	5.888E-02	3.753E-02	FAIL ABUN
EU-154	-4.065E-02	1.432E-01	1.199E-01	7.307E-02	NOT IDENT.
EU-155	1.226E-01	9.376E-02	8.757E-02	4.784E-02	FAIL ABUN
TB-160	6.352E-02	1.623E-01	1.440E-01	8.282E-02	FAIL ABUN
HO-166M	2.409E-02	7.050E-02	6.095E-02	3.597E-02	FAIL ABUN
TM-171	4.968E+00	1.493E+01	1.269E+01	7.619E+00	NOT IDENT.
LU-176	-2.153E-02	2.403E-02	1.997E-02	1.226E-02	FAIL ABUN
LU-177	2.496E+00	1.307E+00	1.012E+00	6.666E-01	FAIL ABUN
LU-177M	-1.466E-01	2.028E-01	1.645E-01	1.035E-01	FAIL ABUN
HF-181	4.753E-03	4.555E-02	4.041E-02	2.324E-02	NOT IDENT.
W-181	5.704E-02	1.868E-01	1.589E-01	9.533E-02	NOT IDENT.
TA-182	9.043E-02	2.123E-01	1.884E-01	1.083E-01	FAIL ABUN
RE-183	-3.122E-02	1.148E-01	9.555E-02	5.857E-02	FAIL ABUN
RE-184	-1.479E-01	2.167E-01	1.870E-01	1.106E-01	NOT IDENT.
OS-185	-7.182E-03	4.898E-02	4.139E-02	2.499E-02	NOT IDENT.
RE-188	7.317E-02	1.744E-01	1.541E-01	8.900E-02	NOT IDENT.
W-188	3.556E+00	7.928E+00	6.306E+00	4.045E+00	FAIL ABUN
IR-192	1.187E-02	3.532E-02	3.077E-02	1.802E-02	FAIL ABUN
AU-195	2.455E-01	2.030E-01	1.798E-01	1.036E-01	FAIL ABUN
TL-200	7.273E+01	4.885E+02	0.000E+00	2.492E+02	SHORT HLIF
TL-201	-1.165E+00	6.856E+00	5.874E+00	3.498E+00	NOT IDENT.
TL-202	-4.617E-02	7.505E-02	6.460E-02	3.829E-02	NOT IDENT.
HG-203	4.679E-02	4.082E-02	3.775E-02	2.083E-02	FAIL ABUN
BI-207	-2.581E-02	6.790E-02	5.504E-02	3.464E-02	FAIL ABUN
TL-207	3.862E-01	7.208E-01	5.692E-01	3.677E-01	FAIL ABUN
PO-209	-2.650E+00	8.694E+00	7.307E+00	4.436E+00	NOT IDENT.
PB-211	-3.341E-01	1.082E+00	8.864E-01	5.518E-01	NOT IDENT.
BI-212	8.429E-01	4.238E-01	3.574E-01	2.162E-01	FAIL ABUN
PO-215	3.862E-01	7.208E-01	5.692E-01	3.677E-01	FAIL ABUN
RN-219	-1.792E-01	4.790E-01	3.858E-01	2.444E-01	FAIL ABUN
RN-220	-1.591E+01	2.775E+01	2.318E+01	1.416E+01	NOT IDENT.
RA-223	3.862E-01	7.208E-01	5.692E-01	3.677E-01	FAIL ABUN
AC-227	1.308E-01	3.805E-01	3.437E-01	1.941E-01	FAIL ABUN
TH-227	1.308E-01	3.807E-01	3.437E-01	1.942E-01	FAIL ABUN
TH-229	4.021E-01	4.665E-01	4.392E-01	2.380E-01	FAIL ABUN
PA-231	-1.356E+00	1.499E+00	1.252E+00	7.650E-01	FAIL ABUN
TH-231	3.862E-01	7.208E-01	5.692E-01	3.677E-01	FAIL ABUN
U-231	-3.978E-01	9.700E-01	7.733E-01	4.949E-01	FAIL ABUN
PA-233	1.440E-02	6.312E-02	5.579E-02	3.220E-02	FAIL ABUN
PA-234	-1.712E-01	3.496E-01	2.862E-01	1.784E-01	FAIL ABUN
PA-234M	6.359E+00	6.745E+00	5.424E+00	3.441E+00	FAIL ABUN
NP-236	-4.315E-02	8.138E-02	6.896E-02	4.152E-02	NOT IDENT.
NP-239	6.771E-02	1.741E-01	1.574E-01	8.881E-02	FAIL ABUN
AM-241	4.467E-02	6.219E-02	5.403E-02	3.173E-02	NOT IDENT.
CM-243	-4.289E-02	8.203E-02	7.243E-02	4.185E-02	FAIL ABUN
AM-246	-1.150E-02	1.689E-01	1.413E-01	8.616E-02	NOT IDENT.
CM-247	-2.072E-02	4.310E-02	3.451E-02	2.199E-02	NOT IDENT.
CF-249	2.475E-02	4.232E-02	3.733E-02	2.159E-02	NOT IDENT.
CF-251	-4.871E-02	1.291E-01	1.090E-01	6.585E-02	NOT IDENT.

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
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ENERGY	MDA COUNTS
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46.50	359.9534
46.50	359.9534
46.50	359.9534
48.70	364.5737
49.72	357.3065
51.35	460.9958
52.39	401.8662
52.97	390.8882
53.15	394.5657
53.44	395.0129
54.07	389.1533
56.28	489.6920
56.28	489.6978
57.37	0.0000
57.53	443.5652
57.53	443.5691
57.60	442.1232
57.98	445.8613
57.98	445.8613
59.32	458.2305
59.32	458.2305
59.40	458.3631
59.54	458.5947
59.72	499.4223
60.01	499.9440
61.10	521.5986
61.14	521.6728
61.30	503.5612
63.00	496.4286
63.29	496.9268
63.29	496.9268
63.58	497.4251
64.28	515.4487
65.12	524.9165
65.20	525.0585
65.20	525.0585
66.05	505.1805
66.72	504.9687
66.83	505.1585
66.91	505.2908
67.20	556.7571
67.20	556.7571
67.75	574.1641
67.85	574.3564
68.90	551.3283
68.90	551.3283
69.30	544.6578
69.67	543.6916
70.82	545.6959
70.82	545.6959
70.83	545.7143
72.80	592.8263
72.87	592.9554
72.87	592.9554
74.67	552.3022
74.81	552.5384
74.81	552.5384
74.81	552.5384
74.81	552.5384
74.81	552.5384
74.81	552.5384
74.97	552.8113
75.28	553.3328
75.70	554.0412
77.11	556.4028
77.11	556.4028

77.11	556.4028
77.11	556.4028
77.11	556.4028
77.11	556.4028
77.11	556.4028
78.38	590.4644
79.62	542.8900
79.80	543.1752
79.80	543.1752
80.11	530.6322
80.18	530.7424
80.30	461.0664
80.30	461.0664
80.57	439.0567
81.00	532.0035
81.07	532.1122
81.07	532.1122
81.07	532.1122
81.07	532.1122
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83.78	553.1760
83.78	553.1760
83.78	553.1760
84.21	536.8915
84.90	469.9804
85.43	470.6744
86.29	471.7965
86.50	472.0701
86.54	472.1208
86.59	472.1866
86.72	472.3538
86.79	372.8311
86.94	372.9870
87.30	373.3548
87.30	373.3548
87.30	373.3548
87.30	373.3548
87.30	373.3548
87.30	373.3548
87.30	373.3548
87.57	373.6306
87.88	373.9465
88.03	374.0984
88.36	374.4342
88.47	374.5461
89.95	376.0393
91.11	377.2027
92.29	378.3781
92.38	378.4680
92.38	378.4680
93.35	379.4275
94.00	380.0671
94.67	380.7208
94.67	380.7267
94.90	380.9506
94.90	380.9506
94.90	380.9506
94.90	380.9506
95.87	425.6269
95.87	425.6269
96.73	429.4842
97.43	379.0211
98.44	338.9041
98.44	338.9041
98.88	339.5715
99.55	343.2762
99.55	343.2762
99.86	367.0967
100.00	364.2785
100.10	364.3709
103.18	387.8987
103.76	371.5954
105.00	330.9591
105.31	331.2030
108.00	401.3712
109.28	370.4414

111.00	389.0431
111.00	389.0431
111.76	389.7166
112.95	368.4971
115.19	376.4550
116.30	364.1216
117.00	337.1016
117.00	337.1016
117.66	349.8660
121.11	347.3341
121.62	347.7130
121.78	347.8312
122.06	336.6783
122.32	328.5974
122.32	328.5974
122.32	328.5974
122.32	328.5974
123.07	332.2248
127.23	344.5179
129.76	382.5092
131.20	323.6345
133.02	324.8169
133.54	360.3631
135.34	345.9439
136.00	337.8912
136.25	338.0562
136.48	340.3353
140.51	329.5966
140.51	0.0000
142.18	343.5477
142.65	315.3333
143.76	315.9949
144.24	316.2781
144.24	316.2781
144.24	316.2781
144.24	316.2781
145.22	316.3156
145.44	329.4290
147.16	315.8272
152.43	338.5943
152.70	345.3355
153.22	340.1694
154.21	337.4708
154.21	337.4708
154.21	337.4708
154.21	337.4708
155.03	352.2754
156.02	399.2075
158.56	347.8199
159.00	0.0000
159.00	350.3021
160.31	362.2067
161.27	372.8231
162.32	328.8981
162.64	302.3057
163.35	301.5527
163.89	329.7774
165.85	316.2890
167.43	311.5038
171.28	315.7567
171.86	303.5965
172.10	308.2467
176.55	332.1587
176.60	331.0438
181.06	324.1950
184.41	293.5325
185.71	294.1216
186.00	294.2534
190.27	279.8486
192.34	285.1065
193.63	268.0780
197.04	309.1847
198.01	307.8533
198.60	283.3276
200.40	269.8663
201.83	323.7987
202.84	339.4124
205.31	287.5095

208.36	336.1579
208.81	332.0569
209.75	263.4043
209.75	263.4043
210.97	275.3879
215.65	260.2996
216.55	281.5051
218.09	298.4762
222.10	258.0045
223.80	272.3422
226.40	230.9540
227.00	248.6323
227.08	248.6591
227.20	256.0649
228.16	257.3096
228.18	261.0051
228.18	261.0051
231.56	0.0000
235.69	287.5728
236.00	287.6859
236.00	287.6859
238.63	253.3120
238.63	253.3120
238.63	253.3120
238.63	253.3120
239.00	253.4298
240.98	254.0615
241.98	254.3788
241.98	254.3788
241.98	254.3788
244.69	256.1787
245.39	254.8904
247.94	218.2991
248.90	206.3825
249.79	207.5531
252.40	229.1258
252.85	224.4946
252.85	224.4946
254.15	0.0000
256.20	233.0363
256.20	233.0363
260.50	239.9864
260.90	243.9386
262.80	215.6055
264.65	200.6367
268.24	189.0702
268.79	188.0293
269.46	188.1714
269.46	188.1714
269.46	188.1714
269.46	188.1714
271.23	247.2574
273.65	252.6148
276.40	236.5792
277.35	249.5526
277.60	235.9179
277.60	235.9179
278.00	226.2310
278.60	204.8223
279.20	204.9594
279.53	206.0138
280.46	235.6897
281.68	230.1045
283.67	218.7853
284.30	192.3072
285.00	182.5864
285.90	201.5347
286.10	201.5782
286.10	201.5782
287.40	199.8856
288.45	0.0000
290.67	185.8946
290.80	189.0999
291.72	187.6966
293.26	0.0000
293.70	199.2523
295.21	186.8001
295.21	186.8001

295.21	186.8001
295.96	186.9486
296.50	171.8661
297.23	172.0000
298.57	172.2441
299.80	221.3963
299.80	221.3963
300.09	207.0204
300.09	207.0204
300.09	207.0204
300.09	207.0204
300.12	207.0267
301.29	208.8887
302.84	186.6932
303.76	193.3154
303.91	183.6775
304.40	180.5480
304.40	180.5480
304.84	167.9967
306.84	194.9437
308.46	186.1619
311.98	174.6455
316.51	166.2657
318.01	172.6438
319.02	180.9999
319.41	194.3690
320.08	180.1653
323.87	159.4722
323.87	159.4722
323.87	159.4722
323.87	159.4722
325.23	158.0391
328.77	214.7507
333.44	190.8309
334.20	199.2744
334.20	199.2744
334.30	199.2949
338.28	134.4091
338.28	134.4091
338.28	134.4091
338.28	134.4091
338.32	134.4150
338.32	134.4150
338.32	134.4150
340.50	180.4254
340.57	180.4386
344.27	164.8596
345.85	146.9150
350.59	0.0000
351.07	164.4979
351.92	164.6265
351.92	164.6265
351.92	164.6265
355.39	0.0000
356.01	171.1772
364.48	162.2422
366.43	166.8021
367.43	165.8795
367.94	0.0000
369.80	152.2856
374.96	160.5179
383.85	145.4727
387.95	148.1606
388.63	159.1461
391.69	172.6727
391.69	172.6727
392.90	169.5667
398.62	170.3780
400.65	169.5607
401.10	167.4224
401.81	168.6231
402.60	172.0413
404.84	183.4065
410.95	174.3276
411.60	172.1967
413.65	186.9467
414.70	165.9448
415.30	158.2246

415.76	153.8244
417.63	0.0000
418.52	151.9292
423.70	133.4846
427.08	163.0830
427.89	156.6573
432.53	168.9711
433.93	150.1579
439.47	167.1521
439.56	161.7123
439.89	161.7536
443.98	145.8496
444.90	147.7756
445.03	145.0526
445.03	145.0526
445.03	145.0526
445.03	145.0526
453.90	131.3271
463.38	150.7451
468.07	122.1854
473.00	133.1757
475.06	116.5848
475.35	120.3391
476.78	139.1400
477.59	135.4826
477.96	138.3218
482.03	128.4124
484.57	111.7412
487.03	134.5094
490.36	0.0000
492.35	113.2939
497.08	116.5077
507.63	0.0000
510.53	0.0000
510.84	129.0789
511.00	129.0929
511.85	129.1679
511.85	129.1679
513.99	119.7716
513.99	119.7716
520.41	114.4044
520.65	111.6415
527.90	118.9460
528.96	0.0000
529.64	102.6228
529.87	0.0000
531.02	121.1273
537.32	133.3007
543.00	121.0907
546.56	0.0000
549.76	116.7106
552.65	135.5911
555.20	99.3972
563.23	117.7013
563.90	118.7373
568.70	117.1069
569.32	113.1790
569.50	113.1929
569.67	113.2040
573.80	129.4192
574.00	129.4351
574.64	118.5293
578.91	106.5208
579.30	0.0000
583.14	97.1160
585.48	105.2717
591.81	98.6269
592.07	98.6412
593.00	113.8028
595.88	112.9898
600.56	123.4178
602.52	0.0000
602.71	116.4824
602.71	116.4824
603.60	87.8304
604.41	106.4586
604.70	106.4766
609.31	115.9148

609.31	115.9148
609.31	115.9148
609.31	115.9148
610.33	106.8278
612.46	120.5405
614.37	127.4719
618.01	98.1023
621.84	121.8733
621.84	121.8733
631.29	103.9935
633.02	95.8495
633.10	95.8540
634.78	113.4832
635.90	111.4910
636.97	98.1288
645.85	103.8037
646.12	106.9329
656.30	120.0593
657.75	106.2238
657.90	0.0000
661.65	106.4497
661.65	106.4497
664.57	0.0000
666.33	110.2167
666.33	110.2167
675.00	118.1113
677.61	116.1606
685.20	102.8446
692.80	93.6740
695.00	98.0420
696.49	102.3844
696.49	102.3844
697.00	99.2121
697.49	103.5053
698.33	127.0360
698.50	136.6531
699.00	140.9622
702.63	101.6403
706.10	125.4008
706.58	0.0000
706.67	122.2188
709.31	118.0889
711.68	97.8117
713.82	106.5241
717.42	105.6419
720.50	97.1675
721.93	0.0000
722.20	95.4500
722.78	106.2869
722.78	106.2869
722.89	109.8948
722.95	109.8998
723.30	109.9172
724.18	118.9805
727.18	107.2419
733.00	81.4801
735.90	97.9167
739.58	93.7329
742.81	100.4318
744.21	96.1318
747.13	107.2066
751.79	97.5828
752.31	104.1869
753.82	98.7759
755.35	80.1770
756.15	71.4191
756.87	71.4429
763.93	78.7755
765.79	93.0374
766.42	102.5305
766.84	102.5509
776.49	97.0767
778.00	85.7905
778.57	85.1401
778.89	85.1532
783.80	102.9763
785.46	93.7710
792.07	116.4118



795.84	87.6947
796.30	84.9126
798.80	121.4439
801.93	102.9079
805.60	83.4013
810.29	90.1543
810.76	91.1131
815.85	88.4979
817.79	97.0570
818.51	96.1459
819.60	86.7610
826.30	104.0493
828.27	0.0000
831.60	106.1895
831.96	108.1042
834.83	99.6957
836.80	0.0000
846.75	105.9459
848.13	83.0900
856.28	0.0000
856.80	112.1631
860.37	73.9295
867.32	90.5213
867.82	87.6527
871.10	76.2002
873.19	80.1293
874.81	78.2529
875.33	0.0000
876.40	83.1393
879.36	77.4365
880.27	71.6559
880.51	71.6634
881.50	68.7856
883.24	77.5618
884.67	87.3102
889.25	75.8148
896.60	86.7728
898.02	85.8480
899.00	77.0986
903.28	89.4560
911.07	87.2925
911.07	87.2925
911.07	87.2925
919.63	77.9512
920.93	81.7352
925.00	61.1561
925.24	58.2030
926.50	54.2839
935.52	65.3783
937.48	81.2910
944.10	74.5483
946.00	84.5504
949.00	81.6647
962.29	92.1029
964.01	68.6942
966.15	63.5950
968.20	103.2087
969.11	156.5903
969.11	156.5903
969.11	156.5903
977.42	91.4949
980.50	75.6149
983.50	77.7222
989.30	90.0339
996.32	74.7701
1001.03	89.4180
1001.68	77.2447
1004.76	87.2192
1021.30	0.0000
1024.50	0.0000
1034.80	54.5355
1036.00	67.9417
1037.82	73.1379
1038.57	64.9149
1038.76	0.0000
1045.16	58.8740
1046.59	57.8708
1048.07	79.6162

1050.47	64.1620
1050.47	64.1620
1062.04	89.3699
1063.62	85.2598
1076.63	69.9880
1077.35	76.2734
1078.86	78.4058
1085.78	75.4541
1099.22	72.6499
1112.02	74.9918
1112.84	81.2438
1115.52	76.2363
1120.29	79.9986
1120.29	79.9986
1120.29	79.9986
1120.29	79.9986
1120.51	80.0047
1121.28	79.5715
1124.00	0.0000
1129.67	116.7321
1131.51	0.0000
1147.95	0.0000
1167.94	84.0588
1173.22	84.2048
1175.09	70.2130
1177.93	92.9847
1189.05	102.3117
1204.90	66.3768
1205.75	0.0000
1213.00	81.5443
1221.42	78.0036
1230.97	84.8396
1235.34	101.0029
1236.41	0.0000
1238.25	67.0825
1246.25	80.5087
1260.41	0.0000
1271.85	67.7808
1274.45	75.4787
1274.54	75.4815
1291.56	62.4269
1298.22	0.0000
1312.09	57.9785
1325.50	52.3878
1325.50	52.3878
1332.49	46.6641
1333.61	37.9268
1360.21	37.2406
1362.66	0.0000
1365.15	37.2936
1368.21	36.3432
1368.53	0.0000
1376.25	40.3651
1384.27	61.1805
1394.10	41.5591
1395.20	33.6537
1407.95	45.6952
1434.06	40.0223
1436.60	50.0628
1457.56	0.0000
1460.81	41.3232
1489.15	28.4355
1509.49	29.6099
1596.49	29.2314
1620.62	33.6071
1678.03	0.0000
1691.02	21.3644
1691.02	21.3644
1706.46	0.0000
1750.46	0.0000
1764.49	19.0161
1764.49	19.0161
1764.49	19.0161
1764.49	19.0161
1770.23	10.1549
1771.40	11.8509
1791.20	0.0000
1808.65	11.5236

1836.01

21.2548

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691006

Total Uranium Activity	1.5791E+01	ug/g
Total Uranium Counting Unc.	4.3802E+00	ug/g
Total Uranium Tpu	2.2348E-06	ug/g
Total Uranium Mda	1.5042E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037                          SAMPLE ID   : G245691006
*  ANALYST       : MJH1                             DETECTOR    : GAM13
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 15:24:34.05          SAMPLE ALQT  : 148.710 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.159E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.269E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.080E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.500E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:26:16.11

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691007.CNF;1
Sample date   : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:58.
Sample ID    : G245691007 Sample quantity : 1.44930E+02 GRAM
Detector name : GAM16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.03 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID      : 947037 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.38*	101	487	0.65	126.95	124	7	1.40E-02	38.7	
2	3	74.88	401	374	0.91	149.95	145	14	5.58E-02	8.7	1.04E+00
3	3	77.13*	657	430	0.93	154.44	145	14	9.13E-02	6.4	
4	4	87.15	302	456	1.27	174.48	165	27	4.19E-02	13.6	5.23E+00
5	4	90.01	203	325	1.06	180.21	165	27	2.83E-02	15.6	
6	4	92.70*	449	353	1.23	185.60	165	27	6.24E-02	9.1	
7	0	185.99*	267	395	1.16	372.17	367	10	3.72E-02	15.8	
8	0	208.97	130	336	0.96	418.14	415	9	1.80E-02	26.9	
9	6	238.60*	1354	166	0.98	477.39	471	19	1.88E-01	3.2	1.38E+00
10	6	241.47	312	264	1.72	483.14	471	19	4.33E-02	13.9	
11	0	269.61*	138	226	1.14	539.41	534	11	1.91E-02	23.0	
12	0	295.17*	483	223	1.11	590.52	585	11	6.70E-02	7.6	
13	0	300.20	91	174	0.74	600.60	597	9	1.27E-02	28.0	
14	0	327.87	86	170	1.27	655.92	652	10	1.19E-02	30.3	
15	0	338.54	269	221	1.34	677.28	672	13	3.73E-02	12.9	
16	0	351.89*	690	244	1.13	703.96	698	13	9.58E-02	6.1	
17	0	462.76	98	144	1.56	925.69	921	14	1.36E-02	27.7	
18	0	510.88*	137	179	1.58	1021.92	1015	16	1.91E-02	25.9	
19	0	583.20*	373	119	1.25	1166.55	1161	13	5.18E-02	8.1	
20	0	609.39*	527	138	1.17	1218.92	1213	13	7.33E-02	6.4	
21	0	661.51	66	49	1.42	1323.13	1318	9	9.11E-03	22.9	
22	0	727.17	97	77	1.02	1454.42	1449	11	1.34E-02	20.3	
23	0	782.81	7	33	1.55	1565.69	1563	6	9.39E-04	143.5	
24	0	786.30	51	57	0.74	1572.66	1568	13	7.13E-03	33.0	
25	0	795.18	68	81	1.42	1590.43	1584	15	9.49E-03	30.9	
26	0	861.33	45	75	1.36	1722.69	1719	12	6.28E-03	40.5	
27	0	911.28*	268	102	1.56	1822.56	1817	15	3.73E-02	10.7	
28	0	970.57*	84	201	1.54	1941.11	1930	17	1.17E-02	41.4	
29	0	1120.92*	86	96	1.71	2241.71	2234	12	1.19E-02	25.7	
30	0	1377.90	37	40	1.31	2755.48	2750	13	5.12E-03	38.7	
31	0	1460.90*	1133	27	1.78	2921.41	2912	18	1.57E-01	3.2	
32	0	1588.01	35	9	1.71	3175.50	3171	9	4.86E-03	22.9	
33	0	1729.52*	23	7	3.04	3458.36	3450	15	3.18E-03	34.9	
34	0	1764.36*	92	3	2.24	3527.99	3520	14	1.28E-02	12.0	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 17:26:18

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691007.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MJH1  
 Sample date : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:58  
 Sample ID : G245691007 Sample quantity : 144.93 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA16 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.03 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.278E+01	2.473E+00	4.749E-01	4.175E-02	47.953
CD-109	+	88.03	*	3.438E+00	9.906E-01	8.999E-01	8.671E-02	3.820
SN-126	+	64.28		7.683E-01	6.045E-01	6.341E-01	9.238E-02	1.212
	+	86.94		1.405E+00	6.976E-01	3.717E-01	1.545E-01	3.779
	+	87.57	*	3.379E-01	9.736E-02	8.884E-02	8.518E-03	3.803
CS-135	+	268.24	*	4.648E-01	2.222E-01	1.924E-01	2.453E-02	2.416
BA-137M	+	661.65	*	7.853E-02	3.671E-02	5.197E-02	4.613E-03	1.511
CS-137	+	661.65	*	8.301E-02	3.881E-02	5.494E-02	4.885E-03	1.511
TL-208		277.35		2.622E-01	3.165E-01	5.257E-01	7.814E-02	0.499
	+	510.84		5.559E-01	2.967E-01	1.713E-01	2.167E-02	3.244
	+	583.14	*	4.299E-01	8.139E-02	4.950E-02	4.907E-03	8.683
	+	860.37		4.905E-01	4.004E-01	3.755E-01	3.759E-02	1.306
BI-211		72.87		-1.640E-01	2.506E+00	3.863E+00	3.140E-01	-0.042
	+	351.07	*	3.505E+00	5.717E-01	2.437E-01	2.664E-02	14.383
BI-212	+	727.18	*	9.555E-01	4.008E-01	3.337E-01	3.486E-02	2.864
	+	785.46		3.251E+00	2.168E+00	1.248E+00	1.160E-01	2.605
		1620.62		9.896E-01	1.042E+00	1.966E+00	1.670E-01	0.503
PB-212	+	74.81		1.900E+00	4.063E-01	4.282E-01	5.349E-02	4.438
	+	77.11		1.763E+00	2.716E-01	2.429E-01	2.063E-02	7.259
	+	87.30		1.563E+00	4.767E-01	4.120E-01	5.699E-02	3.793
	+	238.63	*	1.505E+00	2.022E-01	7.251E-02	8.585E-03	20.756
	+	300.09		1.567E+00	9.009E-01	9.372E-01	1.228E-01	1.672
PO-212	+	74.81		1.900E+00	4.063E-01	4.282E-01	5.349E-02	4.438
	+	77.11		1.763E+00	2.716E-01	2.429E-01	2.063E-02	7.259
	+	87.30		1.563E+00	4.767E-01	4.120E-01	5.699E-02	3.793
		115.19		-5.447E-01	2.722E+00	4.535E+00	3.784E-01	-0.120
	+	238.63	*	1.505E+00	2.022E-01	7.251E-02	8.585E-03	20.756
	+	300.09		1.567E+00	9.009E-01	9.372E-01	1.228E-01	1.672
BI-214	+	609.31	*	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133
	+	1120.29		9.716E-01	5.098E-01	4.372E-01	4.694E-02	2.222
	+	1764.49		1.435E+00	3.652E-01	2.969E-01	2.457E-02	4.834
PB-214	+	74.81		3.274E+00	6.748E-01	7.378E-01	8.202E-02	4.438
	+	77.11		3.023E+00	5.195E-01	4.165E-01	4.752E-02	7.259
	+	87.30		2.677E+00	7.985E-01	7.058E-01	8.666E-02	3.793

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	241.98		2.080E+00	6.329E-01	4.367E-01	5.410E-02	4.763
	+	295.21		1.451E+00	2.936E-01	1.768E-01	2.360E-02	8.205
	+	351.92	*	1.219E+00	2.088E-01	8.495E-02	1.027E-02	14.353
	+	74.81		3.274E+00	6.748E-01	7.378E-01	8.202E-02	4.438
	+	77.11		3.023E+00	5.195E-01	4.165E-01	4.752E-02	7.259
	+	87.30		2.677E+00	7.985E-01	7.058E-01	8.666E-02	3.793
PO-216	+	241.98		2.080E+00	6.329E-01	4.367E-01	5.410E-02	4.763
	+	295.21		1.451E+00	2.936E-01	1.768E-01	2.360E-02	8.205
	+	351.92	*	1.219E+00	2.088E-01	8.495E-02	1.027E-02	14.353
	+	74.81		1.900E+00	4.063E-01	4.282E-01	5.349E-02	4.438
	+	77.11		1.763E+00	2.716E-01	2.429E-01	2.063E-02	7.259
	+	87.30		1.563E+00	4.767E-01	4.120E-01	5.699E-02	3.793
PO-218	+	238.63	*	1.505E+00	2.022E-01	7.251E-02	8.585E-03	20.756
	+	300.09		1.567E+00	9.009E-01	9.372E-01	1.228E-01	1.672
	+	74.81		3.274E+00	6.748E-01	7.378E-01	8.202E-02	4.438
	+	77.11		3.023E+00	5.195E-01	4.165E-01	4.752E-02	7.259
	+	87.30		2.677E+00	7.985E-01	7.058E-01	8.666E-02	3.793
	+	241.98		2.080E+00	6.329E-01	4.367E-01	5.410E-02	4.763
RA-224	+	295.21		1.451E+00	2.936E-01	1.768E-01	2.360E-02	8.205
	+	351.92	*	1.219E+00	2.088E-01	8.495E-02	1.027E-02	14.353
	+	240.98	*	3.944E+00	1.180E+00	8.253E-01	9.095E-02	4.779
RA-226	+	609.31	*	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133
	+	1120.29		9.716E-01	5.098E-01	4.372E-01	4.694E-02	2.222
	+	1764.49		1.435E+00	3.652E-01	2.969E-01	2.457E-02	4.834
AC-228	+	338.32		1.507E+00	7.396E-01	2.744E-01	1.147E-01	5.491
	+	911.07	*	1.376E+00	3.375E-01	1.965E-01	2.334E-02	7.001
	+	969.11		7.634E-01	6.576E-01	3.595E-01	8.478E-02	2.123
RA-228	+	338.32		1.507E+00	7.396E-01	2.744E-01	1.147E-01	5.491
	+	911.07	*	1.376E+00	3.375E-01	1.965E-01	2.334E-02	7.001
	+	969.11		7.634E-01	6.576E-01	3.595E-01	8.478E-02	2.123
TH-228	+	74.81		1.929E+00	3.717E-01	4.347E-01	3.637E-02	4.438
	+	77.11		1.790E+00	2.757E-01	2.466E-01	2.095E-02	7.259
	+	87.30		1.587E+00	4.572E-01	4.183E-01	3.997E-02	3.793
TH-230	+	238.63	*	1.528E+00	2.053E-01	7.361E-02	8.715E-03	20.756
	+	300.09		1.591E+00	1.303E+00	9.515E-01	5.691E-01	1.672
	+	609.31	*	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133
	+	1120.29		9.716E-01	5.098E-01	4.372E-01	4.693E-02	2.222
	+	1764.49		1.435E+00	3.652E-01	2.969E-01	2.457E-02	4.834
	+	338.32		1.507E+00	4.212E-01	2.744E-01	2.995E-02	5.491
TH-232	+	911.07	*	1.376E+00	3.375E-01	1.965E-01	2.334E-02	7.001
	+	969.11		7.634E-01	6.576E-01	3.595E-01	8.478E-02	2.123
	+	63.29	*	1.941E+00	1.539E+00	1.695E+00	2.956E-01	1.145
TH-234	+	92.38		3.263E+00	8.460E-01	5.834E-01	1.072E-01	5.594
	+	609.31	*	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133
	+	1120.29		9.716E-01	5.098E-01	4.372E-01	4.693E-02	2.222
NP-237	+	1764.49		1.435E+00	3.652E-01	2.969E-01	2.457E-02	4.834
	+	86.50	*	9.922E-01	3.517E-01	2.638E-01	5.988E-02	3.762
	+	95.87		-5.021E-01	7.570E-01	1.097E+00	2.717E-01	-0.458
U-238	+	63.29	*	1.941E+00	1.539E+00	1.695E+00	2.956E-01	1.145



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	+	92.38		3.263E+00	6.683E-01	5.834E-01	5.383E-02	5.594
	+	74.67	*	3.081E-01	5.925E-02	6.963E-02	5.764E-03	4.425
	+	86.72		3.721E+01	1.072E+01	9.868E+00	9.364E-01	3.771
		117.66		-3.330E-01	2.899E+00	4.841E+00	4.028E-01	-0.069
ANH-511		142.18		-1.542E+01	1.482E+01	2.329E+01	1.986E+00	-0.662
	+	511.00	*	1.201E-01	6.331E-02	3.702E-02	3.521E-03	3.243

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-8.553E-02	2.642E-01	4.274E-01	4.323E-02	-0.200
NA-22		1274.54	*	4.681E-03	3.476E-02	5.725E-02	4.764E-03	0.082
NA-24		1368.53	*	6.710E-02	3.476E-02	Half-Life too short		
AL-26		1129.67		-1.323E+00	1.437E+00	2.123E+00	1.779E-01	-0.623
		1808.65	*	-1.523E-02	2.126E-02	2.842E-02	2.324E-03	-0.536
TI-44		67.85		-2.576E-02	3.819E-02	5.686E-02	4.403E-03	-0.453
	+	78.38	*	3.254E-01	5.012E-02	5.948E-02	5.122E-03	5.470
SC-46		889.25	*	-5.738E-03	3.001E-02	4.918E-02	4.649E-03	-0.117
	+	1120.51		1.664E-01	8.659E-02	1.200E-01	1.014E-02	1.386
V-48		944.10		-3.648E-01	8.142E-01	1.264E+00	1.181E-01	-0.289
		983.50	*	-1.484E-02	5.925E-02	9.579E-02	8.817E-03	-0.155
		1312.09		-2.334E-02	7.055E-02	1.095E-01	9.194E-03	-0.213
CR-51		320.08	*	3.739E-02	3.178E-01	5.069E-01	5.926E-02	0.074
MN-52		744.21		-3.971E-02	2.071E-01	3.258E-01	2.991E-02	-0.122
		848.13		2.981E-01	5.646E+00	9.510E+00	8.951E-01	0.031
		935.52		2.841E-01	2.355E-01	4.265E-01	3.995E-02	0.666
		1246.25		-4.576E+00	6.242E+00	9.362E+00	7.716E-01	-0.489
MN-54		1333.61		1.524E+00	3.971E+00	6.744E+00	5.690E-01	0.226
		1434.06	*	9.449E-02	1.886E-01	3.260E-01	2.781E-02	0.290
		834.83	*	8.319E-03	3.451E-02	5.892E-02	5.534E-03	0.141
		846.75	*	8.196E-03	3.217E-02	5.512E-02	5.187E-03	0.149
CO-56		977.42		-1.494E+00	2.709E+00	3.972E+00	3.666E-01	-0.376
		1037.82		-8.662E-02	2.561E-01	4.078E-01	3.834E-02	-0.212
		1175.09		9.979E-02	2.055E+00	3.371E+00	2.712E-01	0.030
		1238.25		9.674E-02	8.276E-02	1.460E-01	1.239E-02	0.662
CO-57		1360.21		-7.805E-02	7.107E-01	1.125E+00	9.528E-02	-0.069
		1771.40		-4.302E-01	2.349E-01	2.507E-01	2.071E-02	-1.716
		122.06	*	4.066E-04	1.975E-02	3.312E-02	2.752E-03	0.012
		136.48		2.216E-02	1.669E-01	2.795E-01	2.541E-02	0.079
CO-58		810.76	*	-1.674E-02	3.095E-02	4.947E-02	4.635E-03	-0.338
FE-59		142.65		3.995E-01	2.252E+00	3.733E+00	3.187E-01	0.107
		192.34		-6.606E-01	7.899E-01	1.232E+00	1.745E-01	-0.536
		1099.22	*	9.627E-03	7.794E-02	1.295E-01	1.204E-02	0.074
CO-60		1291.56		-3.501E-02	1.090E-01	1.701E-01	1.624E-02	-0.206
		1173.22		-1.206E-02	4.219E-02	6.715E-02	5.399E-03	-0.180
		1332.49	*	-8.287E-03	3.272E-02	5.105E-02	4.306E-03	-0.162
ZN-65		1115.52	*	1.562E-02	8.008E-02	1.169E-01	9.927E-03	0.134
GE-68		1077.35	*	1.752E-01	1.003E+00	1.680E+00	1.467E-01	0.104

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-73		53.44	*	9.190E-02	6.919E-01	1.092E+00	8.328E-02	0.084
AS-74		595.88	*	-9.008E-03	7.568E-02	1.222E-01	1.134E-02	-0.074
		634.78		-5.176E-02	3.195E-01	5.116E-01	4.637E-02	-0.101
SE-75		66.05		-3.896E+00	4.421E+00	5.955E+00	5.729E-01	-0.654
		96.73		-1.020E+00	6.523E-01	8.876E-01	1.227E-01	-1.149
		121.11		-1.991E-02	1.062E-01	1.766E-01	1.939E-02	-0.113
		136.00		1.162E-02	3.114E-02	5.264E-02	4.468E-03	0.221
		198.60		-1.005E+00	1.555E+00	2.423E+00	2.598E-01	-0.415
		264.65	*	-2.305E-02	4.062E-02	5.517E-02	6.438E-03	-0.418
		279.53		-5.377E-02	9.223E-02	1.419E-01	1.736E-02	-0.379
		303.91		-1.493E+00	2.044E+00	2.691E+00	3.740E-01	-0.555
		400.65		3.914E-02	2.085E-01	3.536E-01	4.116E-02	0.111
BR-77	+	87.88		7.483E+02	2.156E+02	2.721E+02	2.619E+01	2.750
		200.40		-2.615E+01	1.362E+02	2.202E+02	2.188E+01	-0.119
	+	239.00		2.435E+02	3.084E+01	3.351E+01	3.675E+00	7.266
		249.79		-7.961E+01	5.536E+01	8.023E+01	9.028E+00	-0.992
		281.68		-1.225E+01	7.434E+01	1.175E+02	1.407E+01	-0.104
		297.23		1.056E+02	6.768E+01	8.624E+01	1.014E+01	1.225
		303.76		-1.361E+02	1.748E+02	2.294E+02	2.673E+01	-0.594
		439.47		-1.079E+01	1.131E+02	1.873E+02	1.767E+01	-0.058
		484.57		2.135E+00	1.828E+02	3.028E+02	2.881E+01	0.007
		520.65	*	-7.455E-01	8.551E+00	1.399E+01	1.329E+00	-0.053
		574.64		-4.554E+01	1.831E+02	2.936E+02	2.751E+01	-0.155
		578.91		3.157E+01	7.772E+01	1.162E+02	1.087E+01	0.272
		585.48		6.384E+02	2.078E+02	3.544E+02	3.306E+01	1.801
		755.35		2.731E+01	1.481E+02	2.408E+02	2.219E+01	0.113
		817.79		-1.052E+02	1.089E+02	1.662E+02	1.556E+01	-0.633
SR-82		698.33		-4.169E-01	2.937E+01	4.724E+01	4.263E+00	-0.009
		776.49	*	-4.472E-01	3.197E-01	4.300E-01	3.987E-02	-1.040
		1395.20		-2.358E+00	8.555E+00	1.336E+01	1.136E+00	-0.177
RB-83		520.41	*	-1.221E-02	5.556E-02	8.990E-02	8.542E-03	-0.136
		529.64		1.373E-02	8.474E-02	1.411E-01	1.339E-02	0.097
		552.65		3.901E-02	1.572E-01	2.629E-01	2.481E-02	0.148
RB-84		881.50	*	2.243E-02	5.565E-02	9.643E-02	9.111E-03	0.233
KR-85		513.99	*	1.080E+01	6.491E+00	1.072E+01	1.020E+00	1.007
SR-85		513.99	*	5.538E-02	3.329E-02	5.499E-02	5.229E-03	1.007
RB-86		1076.63	*	-1.410E-01	6.579E-01	1.059E+00	9.251E-02	-0.133
Y-88		898.02		-1.257E-03	3.149E-02	5.236E-02	4.973E-03	-0.024
		1836.01	*	1.158E-02	2.506E-02	4.520E-02	3.670E-03	0.256
ZR-88		392.90	*	-1.323E-02	2.452E-02	3.970E-02	3.672E-03	-0.333
Y-91		1204.90	*	2.735E+01	1.728E+01	3.160E+01	2.570E+00	0.866
NB-94		702.63	*	2.159E-02	2.828E-02	4.835E-02	4.370E-03	0.447
		871.10		9.921E-03	2.690E-02	4.653E-02	4.391E-03	0.213
NB-95		765.79	*	-2.132E-02	4.092E-02	6.338E-02	5.858E-03	-0.336
NB-95M		235.69	*	2.922E-02	1.103E-01	1.616E-01	1.922E-02	0.181
ZR-95		724.18		1.203E-02	8.248E-02	1.177E-01	1.157E-02	0.102
		756.15	*	5.476E-02	6.180E-02	1.063E-01	1.067E-02	0.515
NB-97		657.90	*	-1.319E-01	6.180E-02	Half-Life too short		
		1024.50		2.739E+00	6.180E-02	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-97	254.15			-2.609E+00	6.180E-02	Half-Life	too short	
	355.39			1.178E+00	6.180E-02	Half-Life	too short	
	507.63	*		2.315E+00	6.180E-02	Half-Life	too short	
	602.52			-5.131E+00	6.180E-02	Half-Life	too short	
	1021.30			-6.337E+00	6.180E-02	Half-Life	too short	
	1147.95			1.326E+00	6.180E-02	Half-Life	too short	
	1362.66			-2.028E+00	6.180E-02	Half-Life	too short	
	1750.46			-2.404E-01	6.180E-02	Half-Life	too short	
MO-99	140.51			-3.435E+00	2.165E+01	3.491E+01	9.654E+00	-0.098
	181.06			-1.784E+00	1.564E+01	2.278E+01	4.256E+00	-0.078
	366.43			3.059E+01	6.479E+01	1.124E+02	1.136E+01	0.272
	739.58	*		-7.015E+00	1.039E+01	1.551E+01	2.404E+00	-0.452
	778.00			-7.560E+00	3.184E+01	4.274E+01	3.965E+00	-0.177
TC-99M	140.51	*		-5.321E+09	3.184E+01	Half-Life	too short	
RH-101	127.23			-7.676E-03	2.616E-02	4.322E-02	3.598E-03	-0.178
	198.01	*		-5.434E-03	2.852E-02	4.554E-02	4.496E-03	-0.119
	325.23			6.411E-02	1.949E-01	2.818E-01	3.163E-02	0.228
RH-102	418.52			-1.303E-01	2.292E-01	3.682E-01	3.449E-02	-0.354
	475.06	*		6.140E-03	2.467E-02	4.157E-02	3.951E-03	0.148
	631.29			-1.795E-02	4.645E-02	7.285E-02	6.620E-03	-0.246
	697.49			5.362E-03	6.724E-02	1.090E-01	9.832E-03	0.049
	766.84			9.453E-02	1.059E-01	1.816E-01	1.679E-02	0.521
	1046.59			6.822E-03	9.342E-02	1.552E-01	1.383E-02	0.044
	1112.84			-2.042E-01	1.998E-01	2.534E-01	2.154E-02	-0.806
	497.08	*		-7.162E-03	3.132E-02	5.078E-02	7.477E-03	-0.141
RU-103	610.33	+		1.238E+01	2.641E+00	2.707E+00	4.602E-01	4.574
RH-106	511.85	+		5.998E-01	3.162E-01	3.749E-01	3.565E-02	1.600
	621.84	*		-2.302E-02	2.555E-01	4.119E-01	5.644E-02	-0.056
	1050.47			-2.062E+00	1.855E+00	2.672E+00	2.375E-01	-0.772
RU-106	511.85	+		5.998E-01	3.162E-01	3.749E-01	3.565E-02	1.600
	621.84	*		-2.302E-02	2.555E-01	4.119E-01	3.767E-02	-0.056
	1050.47			-2.062E+00	1.855E+00	2.672E+00	2.375E-01	-0.772
AG-108M	433.93	*		-1.639E-02	2.746E-02	4.344E-02	4.228E-03	-0.377
	614.37			-6.148E-03	3.648E-02	5.090E-02	4.839E-03	-0.121
	722.95			-1.982E-02	3.740E-02	4.849E-02	4.574E-03	-0.409
AG-110M	657.75	*		-3.504E-02	3.557E-02	4.409E-02	4.035E-03	-0.795
	677.61			9.612E-03	2.469E-01	4.000E-01	3.671E-02	0.024
	706.67			-1.137E-01	1.898E-01	2.896E-01	2.687E-02	-0.393
	763.93			-2.087E-01	1.543E-01	2.151E-01	2.036E-02	-0.970
	884.67			-3.196E-02	3.944E-02	6.046E-02	5.867E-03	-0.529
	937.48			-1.817E-01	1.036E-01	1.426E-01	1.376E-02	-1.274
	1384.27			2.688E-02	1.469E-01	2.116E-01	1.850E-02	0.127
	171.28			1.019E-01	8.183E-01	1.354E+00	1.245E-01	0.075
IN-111	245.39	*		8.250E-02	9.682E-01	1.398E+00	1.557E-01	0.059
IN-113M	391.69	*		-2.627E-02	3.539E-02	5.646E-02	5.359E-03	-0.465
SN-113	391.69	*		-2.627E-02	3.539E-02	5.646E-02	5.359E-03	-0.465
IN-114M	190.27	*		2.800E-02	1.660E-01	2.452E-01	2.371E-02	0.114
CD-115	260.90			9.655E+00	1.139E+02	1.837E+02	2.120E+01	0.053
	492.35			-8.267E+00	2.890E+01	4.672E+01	4.445E+00	-0.177

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M	527.90	*		-3.339E+00	8.784E+00	1.400E+01	1.329E+00	-0.238
	156.02			-1.049E+00	1.841E+00	2.967E+00	2.617E-01	-0.354
	158.56	*		-3.357E-03	4.419E-02	7.280E-02	6.466E-03	-0.046
SB-122	563.90	*		8.518E-01	1.717E+00	2.914E+00	2.742E-01	0.292
	692.80			2.561E+00	4.024E+01	6.516E+01	5.866E+00	0.039
I-123	159.00	*		-7.481E-02	4.024E+01	Half-Life	too short	
	528.96			7.073E+01	4.024E+01	Half-Life	too short	
TE-123M	159.00	*		-3.579E-04	2.305E-02	3.806E-02	3.404E-03	-0.009
I-124	602.71	*		-4.995E-01	6.048E-01	8.327E-01	7.701E-02	-0.600
	722.78			-1.004E+00	3.781E+00	5.098E+00	4.645E-01	-0.197
SB-124	1325.50			1.117E+01	2.758E+01	4.693E+01	3.952E+00	0.238
	1376.25			8.400E+01	3.275E+01	6.161E+01	5.229E+00	1.363
	1509.49			1.887E+01	1.223E+01	2.440E+01	2.087E+00	0.773
	1691.02			1.500E+00	3.111E+00	5.583E+00	4.695E-01	0.269
	602.71			-2.892E-02	3.501E-02	4.821E-02	4.459E-03	-0.600
	645.85			-5.115E-01	4.071E-01	5.747E-01	5.453E-02	-0.890
	709.31			1.206E+00	2.464E+00	4.120E+00	3.735E-01	0.293
	713.82			1.627E-01	1.435E+00	2.329E+00	2.881E-01	0.070
	722.78			-8.422E-02	3.173E-01	4.278E-01	3.974E-02	-0.197
	968.20			1.384E+01	3.502E+00	6.564E+00	6.079E-01	2.108
	1045.16			-5.212E-01	2.086E+00	3.354E+00	2.992E-01	-0.155
	1325.50			1.001E+00	2.472E+00	4.206E+00	3.542E-01	0.238
	1368.21			2.166E-01	1.295E+00	2.142E+00	2.867E-01	0.101
	1436.60			-2.058E-01	3.016E+00	5.018E+00	4.282E-01	-0.041
	1691.02	*		2.968E-02	6.158E-02	1.105E-01	9.679E-03	0.269
SB-125	427.89	*		-2.943E-02	7.598E-02	1.235E-01	1.180E-02	-0.238
	463.38			7.719E-01	4.345E-01	4.762E-01	4.813E-02	1.621
	600.56			6.966E-02	1.420E-01	2.403E-01	2.368E-02	0.290
	635.90			2.995E-01	2.307E-01	4.107E-01	3.993E-02	0.729
TE-125M	109.28	*		-9.789E-01	7.302E+00	1.205E+01	1.226E+00	-0.081
I-126	388.63			4.834E-02	1.613E-01	2.760E-01	2.582E-02	0.175
	666.33	*		6.994E-02	1.688E-01	2.501E-01	2.224E-02	0.280
SB-126	753.82			-4.320E-01	1.320E+00	2.048E+00	1.887E-01	-0.211
	223.80			8.492E-01	3.364E+00	5.518E+00	5.828E-01	0.154
	278.60			8.645E-01	2.085E+00	3.406E+00	4.086E-01	0.254
	296.50			1.446E+01	2.784E+00	3.171E+00	3.733E-01	4.562
	414.70			1.203E-03	5.958E-02	9.981E-02	9.334E-03	0.012
	415.30			1.247E-02	4.964E+00	8.305E+00	7.768E-01	0.002
	555.20			-2.971E-01	3.145E+00	5.113E+00	4.823E-01	-0.058
	573.80			-1.193E-03	9.167E-01	1.499E+00	1.405E-01	-0.001
	593.00			4.374E-02	7.307E-01	1.198E+00	1.113E-01	0.037
	656.30			2.554E+00	3.100E+00	4.805E+00	4.284E-01	0.531
	666.33			2.923E-02	7.054E-02	1.045E-01	9.296E-03	0.280
	675.00			1.460E+00	1.543E+00	2.700E+00	2.411E-01	0.541
	695.00			2.609E-02	7.007E-02	1.162E-01	1.047E-02	0.225
	697.00			1.660E-02	2.357E-01	3.818E-01	3.443E-02	0.043
	720.50	*		3.866E-02	1.166E-01	1.870E-01	1.702E-02	0.207
	856.80			-1.453E-01	4.691E-01	6.348E-01	5.982E-02	-0.229
	989.30			-5.238E-01	9.940E-01	1.553E+00	1.426E-01	-0.337

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1034.80			1.509E-02	6.656E+00	1.099E+01	9.859E-01	0.001
	1213.00			2.948E-01	3.824E+00	6.274E+00	5.116E-01	0.047
	61.10			3.606E+01	5.210E+01	7.725E+01	7.832E+00	0.467
	252.40			8.203E+00	4.924E+00	6.306E+00	2.691E+00	1.301
	290.80			-1.901E+01	2.144E+01	2.800E+01	3.870E+00	-0.679
	411.60			1.077E+00	1.058E+01	1.782E+01	2.875E+00	0.060
	444.90			-3.383E+00	7.884E+00	1.271E+01	1.668E+00	-0.266
	473.00			-4.508E-02	1.441E+00	2.385E+00	3.214E-01	-0.019
	543.00			-1.180E+01	1.443E+01	2.202E+01	3.285E+00	-0.536
	603.60			-1.451E+01	1.181E+01	1.434E+01	1.858E+00	-1.011
XE-127	685.20	*		-9.001E-01	1.137E+00	1.689E+00	1.969E-01	-0.533
	698.50			1.591E+00	1.291E+01	2.100E+01	3.371E+00	0.076
	722.20			9.643E-01	2.503E+01	3.526E+01	4.072E+00	0.027
	783.80	+		8.790E-01	2.524E+00	5.437E+00	7.012E-01	0.162
	57.60			-3.417E+00	5.065E+00	7.643E+00	5.525E-01	-0.447
	145.22			5.832E-02	5.693E-01	9.356E-01	8.032E-02	0.062
	172.10			-3.922E-02	9.838E-02	1.589E-01	1.464E-02	-0.247
	202.84	*		-2.222E-02	3.834E-02	6.066E-02	6.066E-03	-0.366
	374.96			1.204E-01	1.516E-01	2.671E-01	2.627E-02	0.451
	80.18			1.056E+00	4.550E+00	5.694E+00	5.033E-01	0.186
I-131	284.30			-4.352E-01	1.220E+00	1.900E+00	2.332E-01	-0.229
	364.48	*		-9.329E-02	9.139E-02	1.412E-01	1.493E-02	-0.661
	636.97			9.067E-01	1.340E+00	2.289E+00	2.177E-01	0.396
	722.89			-1.667E+00	6.080E+00	8.186E+00	7.502E-01	-0.204
	49.72			1.115E+01	1.610E+01	2.613E+01	2.730E+00	0.426
	111.76			-2.207E+00	2.270E+01	3.804E+01	4.063E+00	-0.058
	116.30			7.109E+00	2.086E+01	3.549E+01	3.774E+00	0.200
	228.16	*		1.059E-01	5.840E-01	9.533E-01	1.615E-01	0.111
	53.15			3.102E-01	2.990E+00	4.712E+00	3.610E-01	0.066
	79.62			-1.127E-01	1.124E+00	1.579E+00	2.414E-01	-0.071
TE-132	81.00			3.945E-03	9.613E-02	1.186E-01	1.899E-02	0.033
	276.40			2.550E-01	3.122E-01	5.174E-01	8.612E-02	0.493
	302.84			-1.022E-01	1.367E-01	1.792E-01	2.767E-02	-0.570
	356.01	*		1.224E-04	3.648E-02	5.444E-02	7.866E-03	0.002
	383.85			6.470E-02	2.356E-01	4.027E-01	5.332E-02	0.161
	510.53	+		1.247E+00	2.356E-01	Half-Life	too short	
	529.87	*		-6.625E-04	2.356E-01	Half-Life	too short	
	706.58			-2.397E-01	2.356E-01	Half-Life	too short	
	856.28			1.545E-01	2.356E-01	Half-Life	too short	
	875.33			-7.090E-02	2.356E-01	Half-Life	too short	
I-133	1236.41			7.049E-01	2.356E-01	Half-Life	too short	
	1298.22			-1.261E-01	2.356E-01	Half-Life	too short	
	475.35			2.364E-01	1.585E+00	2.654E+00	2.522E-01	0.089
	563.23			7.638E-02	2.986E-01	4.984E-01	4.727E-02	0.153
	569.32			-1.764E-01	1.690E-01	2.510E-01	2.384E-02	-0.703
	604.70			-2.420E-03	3.165E-02	4.473E-02	4.141E-03	-0.054
	795.84	+	*	1.135E-01	7.085E-02	7.956E-02	7.459E-03	1.426
	801.93			-1.896E-01	3.477E-01	4.725E-01	4.430E-02	-0.401
	1038.57			-4.811E-01	3.218E+00	5.230E+00	4.682E-01	-0.092
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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135		1167.94		2.496E-01	2.214E+00	3.655E+00	2.955E-01	0.068
		1365.15		7.151E-02	8.727E-01	1.426E+00	1.265E-01	0.050
		288.45		3.311E+10	8.727E-01	Half-Life	too short	
		417.63		-2.849E+09	8.727E-01	Half-Life	too short	
		546.56		6.986E+09	8.727E-01	Half-Life	too short	
		836.80		1.878E+10	8.727E-01	Half-Life	too short	
		1038.76		-1.722E+09	8.727E-01	Half-Life	too short	
		1124.00		3.136E+10	8.727E-01	Half-Life	too short	
		1131.51		-4.902E+09	8.727E-01	Half-Life	too short	
		1260.41	*	-2.862E+09	8.727E-01	Half-Life	too short	
		1457.56		2.620E+11	8.727E-01	Half-Life	too short	
		1678.03		7.717E+08	8.727E-01	Half-Life	too short	
		1706.46		8.362E+09	8.727E-01	Half-Life	too short	
		1791.20		-1.925E+09	8.727E-01	Half-Life	too short	
CS-136		66.91		-4.837E-01	7.004E-01	9.506E-01	1.419E-01	-0.509
	+	86.29		4.415E+00	1.340E+00	1.664E+00	2.232E-01	2.653
		153.22		4.737E-01	5.276E-01	9.028E-01	8.808E-02	0.525
		163.89		3.081E-02	9.216E-01	1.500E+00	1.502E-01	0.021
		176.55		2.700E-02	2.979E-01	4.914E-01	4.808E-02	0.055
		273.65		-1.289E-01	4.214E-01	5.852E-01	7.192E-02	-0.220
		340.57		2.495E-01	1.152E-01	1.931E-01	2.136E-02	1.292
		818.51		1.140E-02	5.911E-02	1.011E-01	9.470E-03	0.113
		1048.07	*	4.041E-02	8.429E-02	1.457E-01	1.349E-02	0.277
		1235.34		-2.092E-01	5.414E-01	8.512E-01	9.838E-02	-0.246
CE-139		165.85	*	-1.101E-02	2.479E-02	4.005E-02	3.633E-03	-0.275
BA-140		162.64		1.508E-02	6.445E-01	1.049E+00	9.929E-02	0.014
		304.84		2.119E-01	1.202E+00	1.720E+00	5.003E-01	0.123
		423.70		-1.226E-02	1.526E+00	2.548E+00	8.315E-01	-0.005
LA-140		537.32	*	1.673E-01	2.320E-01	3.897E-01	1.301E-01	0.429
	+	328.77		5.942E-01	3.664E-01	4.586E-01	5.285E-02	1.296
		432.53		5.468E-01	1.745E+00	2.940E+00	2.881E-01	0.186
		487.03		-2.403E-02	1.109E-01	1.805E-01	1.805E-02	-0.133
		751.79		-1.043E+00	1.545E+00	2.314E+00	2.331E-01	-0.451
		815.85		-1.139E-01	2.484E-01	3.993E-01	4.106E-02	-0.285
		867.82		-8.247E-01	1.335E+00	1.781E+00	1.755E-01	-0.463
		919.63		-1.484E+00	2.418E+00	3.526E+00	3.983E-01	-0.421
		925.24		-5.332E-02	8.561E-01	1.417E+00	1.402E-01	-0.038
		1596.49	*	-8.466E-02	6.980E-02	9.200E-02	7.836E-03	-0.920
CE-141		145.44	*	-7.393E-03	5.115E-02	8.317E-02	7.275E-03	-0.089
CE-143		57.37		-3.082E-04	5.115E-02	Half-Life	too short	
		231.56		1.022E-04	5.115E-02	Half-Life	too short	
		293.26	*	4.170E-04	5.115E-02	Half-Life	too short	
	+	350.59		2.814E-02	5.115E-02	Half-Life	too short	
		490.36		3.295E-04	5.115E-02	Half-Life	too short	
		664.57		5.813E-04	5.115E-02	Half-Life	too short	
		721.93		-3.102E-04	5.115E-02	Half-Life	too short	
CE-144		80.11		4.397E-01	2.089E+00	2.610E+00	2.292E-01	0.168
		133.54	*	-2.079E-02	1.603E-01	2.658E-01	4.105E-02	-0.078
PM-144		476.78		8.866E-03	5.612E-02	9.402E-02	9.631E-03	0.094

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		9.230E-04	2.662E-02	4.341E-02	4.076E-03	0.021
		696.49	*	7.472E-03	3.025E-02	4.971E-02	4.484E-03	0.150
		778.57		4.848E-01	2.074E+00	2.981E+00	2.766E-01	0.163
PR-144		696.49	*	5.063E-01	2.050E+00	3.368E+00	3.037E-01	0.150
		1489.15		-1.681E+00	8.731E+00	1.416E+01	1.210E+00	-0.119
PM-146		453.90	*	2.020E-02	3.661E-02	6.296E-02	7.190E-03	0.321
		633.02		-1.026E+00	1.267E+00	1.817E+00	6.810E-01	-0.565
		735.90		-4.888E-02	1.360E-01	2.099E-01	6.037E-02	-0.233
		747.13		1.329E-02	7.850E-02	1.277E-01	1.838E-02	0.104
ND-147	+	91.11		7.622E-01	2.501E-01	4.153E-01	4.151E-02	1.835
		319.41		1.184E+00	2.831E+00	4.599E+00	5.222E-01	0.257
		439.89		-1.352E+00	4.631E+00	7.556E+00	7.133E-01	-0.179
		531.02	*	5.502E-02	4.521E-01	7.505E-01	1.161E-01	0.073
PM-149		285.90	*	-9.483E+01	7.946E+01	1.142E+02	2.010E+01	-0.830
EU-152		121.78		-5.144E-03	5.723E-02	9.552E-02	9.221E-03	-0.054
		244.69		5.223E-02	2.959E-01	4.302E-01	4.784E-02	0.121
		344.27	*	5.030E-03	8.023E-02	1.206E-01	1.348E-02	0.042
		443.98		2.389E-01	7.476E-01	1.272E+00	1.202E-01	0.188
		778.89		5.599E-02	2.395E-01	3.441E-01	3.192E-02	0.163
		867.32		1.266E-01	7.241E-01	1.080E+00	1.019E-01	0.117
		964.01		5.246E-01	2.971E-01	5.007E-01	4.645E-02	1.048
		1085.78		-2.933E-02	3.233E-01	5.264E-01	4.570E-02	-0.056
		1112.02		-3.398E-01	2.712E-01	3.684E-01	3.135E-02	-0.922
		1407.95		1.404E-01	1.561E-01	2.803E-01	2.387E-02	0.501
GD-153		69.67		-1.267E-01	1.260E+00	2.062E+00	1.625E-01	-0.061
		83.37		1.403E+01	1.248E+01	1.978E+01	1.803E+00	0.709
		97.43	*	-5.209E-02	6.554E-02	9.539E-02	8.474E-03	-0.546
		103.18		-3.474E-02	8.242E-02	1.368E-01	1.179E-02	-0.254
EU-154		123.07		5.994E-04	4.080E-02	6.836E-02	7.606E-03	0.009
		247.94		5.054E-03	2.874E-01	4.632E-01	6.265E-02	0.011
		591.81		-5.346E-01	5.209E-01	7.688E-01	9.365E-02	-0.695
		723.30		-8.287E-02	1.564E-01	2.028E-01	2.023E-02	-0.409
		756.87		4.202E-01	6.791E-01	1.143E+00	1.419E-01	0.368
		873.19		-1.667E-01	2.408E-01	3.746E-01	4.808E-02	-0.445
		996.32		-1.930E-01	3.395E-01	5.308E-01	9.570E-02	-0.364
		1004.76		-2.270E-01	1.963E-01	2.838E-01	3.409E-02	-0.800
		1274.45	*	3.341E-02	9.550E-02	1.611E-01	1.784E-02	0.207
EU-155		48.70		-1.853E+00	2.097E+00	3.144E+00	2.583E-01	-0.589
		60.01		2.754E+00	4.457E+00	6.604E+00	4.717E-01	0.417
	+	86.54		4.070E-01	1.174E-01	1.552E-01	1.482E-02	2.622
		105.31	*	1.160E-01	8.728E-02	1.533E-01	1.326E-02	0.757
TB-160	+	86.79		1.087E+00	3.133E-01	4.153E-01	3.944E-02	2.618
		197.04		-3.674E-02	4.813E-01	7.724E-01	7.607E-02	-0.048
		215.65		4.044E-01	6.030E-01	1.009E+00	1.044E-01	0.401
		298.57		1.006E-01	1.350E-01	1.623E-01	1.906E-02	0.619
		879.36	*	6.077E-02	1.144E-01	2.001E-01	1.890E-02	0.304
		962.29		2.048E-01	5.283E-01	7.946E-01	7.377E-02	0.258
		966.15		4.404E-01	2.369E-01	3.937E-01	3.649E-02	1.119
		1177.93		-1.322E-01	3.382E-01	5.328E-01	4.291E-02	-0.248

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85		1.528E-01	5.750E-01	9.606E-01	7.978E-02	0.159
	80.57		8.631E-02	2.652E-01	3.340E-01	2.947E-02	0.258
	184.41		9.845E-02	3.464E-02	5.600E-02	5.330E-03	1.758
	280.46		-4.393E-02	7.195E-02	1.104E-01	1.324E-02	-0.398
	410.95		2.767E-01	2.116E-01	3.776E-01	3.525E-02	0.733
	711.68	*	8.474E-03	5.454E-02	8.883E-02	8.059E-03	0.095
TM-171	752.31		-2.167E-01	2.488E-01	3.648E-01	3.358E-02	-0.594
	810.29		-2.139E-02	4.692E-02	7.567E-02	7.074E-03	-0.283
	51.35		-1.812E+01	2.617E+01	3.959E+01	3.120E+00	-0.458
	52.39		-1.809E+00	1.314E+01	2.047E+01	1.587E+00	-0.088
	59.40		8.836E+00	2.234E+01	3.547E+01	2.519E+00	0.249
	66.72	*	6.958E+00	2.414E+01	3.479E+01	2.666E+00	0.200
LU-176	88.36	+	8.014E-01	2.309E-01	2.708E-01	2.600E-02	2.959
	201.83		8.120E-03	2.281E-02	3.780E-02	3.770E-03	0.215
	306.84	*	3.070E-02	2.029E-02	3.486E-02	4.044E-03	0.880
LU-177	401.10		-1.446E+00	5.562E+00	9.176E+00	8.525E-01	-0.158
	112.95		2.267E-01	1.245E+00	2.107E+00	1.765E-01	0.108
	208.36	+	2.565E+00	1.406E+00	1.729E+00	1.755E-01	1.483
LU-177M	52.97	*	1.101E-01	1.353E+00	2.131E+00	1.637E-01	0.052
	54.07		4.036E-02	7.270E-01	1.142E+00	8.632E-02	0.035
	61.30		8.538E-01	1.334E+00	1.975E+00	1.433E-01	0.432
	121.62		-5.559E-02	2.943E-01	4.892E-01	4.060E-02	-0.114
	147.16		-1.658E-01	5.164E-01	8.315E-01	7.170E-02	-0.199
	171.86		-1.621E-01	3.961E-01	6.394E-01	5.888E-02	-0.254
	218.09		-1.946E-02	7.043E-01	1.141E+00	1.188E-01	-0.017
	268.79	+	2.336E+00	1.110E+00	1.239E+00	1.455E-01	1.885
	319.02		7.774E-02	2.194E-01	3.552E-01	4.036E-02	0.219
	367.43		9.540E-02	7.166E-01	1.218E+00	1.228E-01	0.078
	413.65	*	-1.397E-01	1.472E-01	2.305E-01	2.154E-02	-0.606
	56.28		1.161E-01	7.781E-01	1.226E+00	8.998E-02	0.095
HF-181	57.53		-2.830E-01	4.265E-01	6.440E-01	4.659E-02	-0.439
	65.20		-1.514E-01	8.422E-01	1.190E+00	8.990E-02	-0.127
	133.02		-2.123E-02	5.095E-02	8.345E-02	6.998E-03	-0.254
	136.25		6.677E-02	3.665E-01	6.151E-01	5.185E-02	0.109
	345.85		-6.427E-02	1.635E-01	2.360E-01	2.529E-02	-0.272
	482.03	*	-3.481E-03	3.387E-02	5.565E-02	5.293E-03	-0.063
W-181	56.28		4.493E-02	3.045E-01	4.796E-01	3.520E-02	0.094
	57.53		-1.108E-01	1.670E-01	2.522E-01	1.825E-02	-0.439
	65.20	*	-5.882E-02	3.272E-01	4.625E-01	3.493E-02	-0.127
TA-182	67.75		-5.828E-02	9.129E-02	1.362E-01	1.054E-02	-0.428
	100.10		1.338E-01	1.384E-01	2.414E-01	2.112E-02	0.554
	152.43		2.974E-02	2.696E-01	4.485E-01	3.919E-02	0.066
	222.10		-2.505E-02	2.897E-01	4.676E-01	4.918E-02	-0.054
	1001.68		1.677E+00	1.824E+00	3.211E+00	2.932E-01	0.522
	1121.28	+	4.594E-01	2.391E-01	3.381E-01	2.854E-02	1.359
RE-183	1189.05		-3.420E-01	2.603E-01	3.645E-01	2.947E-02	-0.938
	1221.42	*	-4.293E-02	1.557E-01	2.463E-01	2.014E-02	-0.174
	1230.97		1.185E-01	3.976E-01	6.641E-01	5.448E-02	0.178
	57.98		-2.172E-01	1.706E-01	2.489E-01	1.792E-02	-0.872



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		2.454E-02	9.182E-02	1.450E-01	1.031E-02	0.169
		67.20		-4.562E-02	1.761E-01	2.461E-01	1.894E-02	-0.185
		162.32	*	2.250E-02	9.304E-02	1.527E-01	1.371E-02	0.147
	+	208.81		2.300E+00	1.261E+00	1.576E+00	1.601E-01	1.460
		291.72		-4.809E-01	8.901E-01	1.202E+00	1.424E-01	-0.400
		57.98		-8.001E-01	6.284E-01	9.171E-01	6.603E-02	-0.872
		59.32		9.036E-02	3.380E-01	5.338E-01	3.794E-02	0.169
		67.20		-1.680E-01	6.484E-01	9.066E-01	6.978E-02	-0.185
		161.27		-1.447E-01	2.978E-01	4.813E-01	4.307E-02	-0.301
		216.55		8.936E-02	2.196E-01	3.633E-01	3.766E-02	0.246
		252.85	*	3.171E-01	1.915E-01	3.309E-01	3.750E-02	0.958
		318.01		-4.686E-02	3.919E-01	6.156E-01	7.007E-02	-0.076
		792.07		1.219E+00	9.671E-01	1.292E+00	1.203E-01	0.944
		903.28		-2.586E-01	7.831E-01	1.265E+00	1.195E-01	-0.204
OS-185		920.93		-3.109E-01	3.571E-01	5.400E-01	5.079E-02	-0.576
		59.72		1.534E-01	2.642E-01	3.909E-01	2.781E-02	0.392
		61.14		1.005E-01	1.473E-01	2.185E-01	1.582E-02	0.460
		69.30		-4.161E-02	2.164E-01	3.691E-01	2.898E-02	-0.113
		592.07		-2.313E+00	2.111E+00	3.101E+00	2.884E-01	-0.746
		646.12	*	-4.676E-02	3.519E-02	4.937E-02	4.438E-03	-0.947
		717.42		-4.884E-01	7.503E-01	1.129E+00	1.026E-01	-0.433
		874.81		-2.556E-01	4.537E-01	7.155E-01	6.756E-02	-0.357
		880.27		3.847E-01	6.261E-01	1.103E+00	1.042E-01	0.349
		155.03	*	2.529E-02	1.371E-01	2.286E-01	2.011E-02	0.111
RE-188		477.96		-3.484E-01	2.487E+00	4.078E+00	3.878E-01	-0.085
		633.10		-2.433E+00	2.472E+00	3.657E+00	3.319E-01	-0.665
	+	63.58		7.803E+01	6.062E+01	7.988E+01	5.937E+00	0.977
W-188		227.08		-3.862E+00	1.070E+01	1.699E+01	1.810E+00	-0.227
		290.67	*	-6.336E+00	7.386E+00	9.694E+00	1.150E+00	-0.654
	+	295.96		1.107E+00	2.133E-01	2.620E-01	3.099E-02	4.223
IR-192		308.46		-1.437E-01	8.415E-02	1.153E-01	1.337E-02	-1.247
		316.51	*	1.396E-02	2.946E-02	4.804E-02	5.490E-03	0.291
		468.07		-1.901E-03	6.279E-02	9.131E-02	9.188E-03	-0.021
		604.41		-7.401E-02	4.254E-01	5.944E-01	7.988E-02	-0.125
		612.46		-4.415E-02	6.670E-01	9.425E-01	9.809E-02	-0.047
AU-195		65.12		-1.893E-02	1.519E-01	2.154E-01	1.625E-02	-0.088
		66.83		1.875E-02	7.960E-02	1.144E-01	8.776E-03	0.164
	+	75.70		9.971E-01	1.918E-01	3.510E-01	2.937E-02	2.841
		98.88	*	2.228E-01	1.747E-01	3.075E-01	2.707E-02	0.725
		129.76		1.675E+00	2.267E+00	3.887E+00	3.245E-01	0.431
TL-200		367.94	*	7.174E-05	2.267E+00	Half-Life	too short	
		579.30		-1.833E-04	2.267E+00	Half-Life	too short	
		828.27		-1.998E-03	2.267E+00	Half-Life	too short	
		1205.75		3.396E-03	2.267E+00	Half-Life	too short	
TL-201		68.90		-1.679E-01	3.483E+00	5.971E+00	4.670E-01	-0.028
		70.82		1.751E+00	2.196E+00	3.509E+00	2.796E-01	0.499
		80.30		1.341E+00	4.981E+00	6.248E+00	5.496E-01	0.215
		135.34		1.561E+01	2.017E+01	3.461E+01	2.913E+00	0.451
		167.43	*	-8.067E-01	5.739E+00	9.398E+00	8.556E-01	-0.086

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90	-1.503E-02	3.119E-01	5.347E-01	4.182E-02	-0.028
		70.82	1.564E-01	1.961E-01	3.134E-01	2.497E-02	0.499
		80.30	1.198E-01	4.449E-01	5.581E-01	4.910E-02	0.215
		439.56 *	-1.071E-02	5.459E-02	8.970E-02	8.465E-03	-0.119
HG-203		70.83	6.828E-01	8.522E-01	1.357E+00	1.792E-01	0.503
		72.87	-3.263E-02	4.987E-01	7.686E-01	9.906E-02	-0.042
		82.60	9.348E-02	8.887E-01	1.356E+00	1.899E-01	0.069
		279.20 *	-1.080E-03	3.371E-02	5.375E-02	6.551E-03	-0.020
BI-207		72.80	-1.644E-02	1.461E-01	2.248E-01	1.826E-02	-0.073
	+	74.97	5.530E-01	1.064E-01	1.797E-01	1.492E-02	3.077
		84.90	4.667E-01	1.505E-01	2.659E-01	2.468E-02	1.755
		569.67	-2.123E-02	2.632E-02	4.002E-02	3.757E-03	-0.530
		1063.62 *	2.563E-02	4.208E-02	7.341E-02	6.471E-03	0.349
		1770.23	-2.137E+00	6.745E-01	5.718E-01	4.725E-02	-3.737
TL-207		81.07	8.281E-03	2.121E-01	2.616E-01	2.322E-02	0.032
		83.78	2.371E-01	9.606E-02	1.697E-01	1.554E-02	1.398
		94.90	2.685E-01	1.773E-01	2.883E-01	2.607E-02	0.931
		122.32	5.070E-01	1.344E+00	2.286E+00	2.047E-01	0.222
		144.24	3.719E-01	5.672E-01	9.558E-01	9.170E-02	0.389
		154.21	3.191E-01	3.210E-01	5.506E-01	5.298E-02	0.579
	+	269.46	5.468E-01	2.601E-01	3.029E-01	3.602E-02	1.806
		323.87 *	-5.592E-02	6.042E-01	8.410E-01	1.609E-01	-0.066
	+	338.28	6.292E+00	1.844E+00	2.106E+00	2.952E-01	2.987
		445.03	-5.930E-01	1.841E+00	2.994E+00	3.801E-01	-0.198
PO-209		260.50	2.661E+00	8.446E+00	1.378E+01	1.589E+00	0.193
		262.80	-2.360E+00	2.207E+01	3.518E+01	4.077E+00	-0.067
		896.60 *	-1.730E+00	5.619E+00	9.085E+00	8.593E-01	-0.190
BI-210		46.50 *	-9.443E-01	3.036E+00	4.698E+00	4.381E-01	-0.201
PB-210		46.50 *	-9.443E-01	3.036E+00	4.698E+00	4.381E-01	-0.201
PO-210		46.50 *	-9.443E-01	3.036E+00	4.698E+00	3.968E-01	-0.201
PB-211		404.84 *	3.933E-02	7.925E-01	1.331E+00	8.356E-01	0.030
		427.08	7.707E-02	1.677E+00	2.808E+00	1.748E+00	0.027
		831.96	-3.212E-02	1.035E+00	1.733E+00	1.088E+00	-0.019
PO-215		81.07	8.281E-03	2.121E-01	2.616E-01	2.322E-02	0.032
		83.78	2.371E-01	9.606E-02	1.697E-01	1.554E-02	1.398
		94.90	2.685E-01	1.773E-01	2.883E-01	2.607E-02	0.931
		122.32	5.070E-01	1.344E+00	2.286E+00	2.047E-01	0.222
		144.24	3.719E-01	5.672E-01	9.558E-01	9.170E-02	0.389
		154.21	3.191E-01	3.210E-01	5.506E-01	5.298E-02	0.579
	+	269.46	5.468E-01	2.601E-01	3.029E-01	3.602E-02	1.806
		323.87 *	-5.592E-02	6.042E-01	8.410E-01	1.609E-01	-0.066
	+	338.28	6.292E+00	1.844E+00	2.106E+00	2.952E-01	2.987
		445.03	-5.930E-01	1.841E+00	2.994E+00	3.801E-01	-0.198
RN-219		271.23	4.486E-01	2.423E-01	3.784E-01	4.955E-02	1.186
		401.81 *	4.355E-02	3.385E-01	5.718E-01	8.819E-02	0.076
RN-220		549.76 *	-2.005E+01	2.170E+01	3.276E+01	3.095E+00	-0.612
RA-223		81.07	8.281E-03	2.121E-01	2.616E-01	2.322E-02	0.032
		83.78	2.371E-01	9.606E-02	1.697E-01	1.554E-02	1.398
		94.90	2.685E-01	1.773E-01	2.883E-01	2.607E-02	0.931

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		5.070E-01	1.344E+00	2.286E+00	2.047E-01	0.222
		144.24		3.719E-01	5.672E-01	9.558E-01	9.170E-02	0.389
		154.21		3.191E-01	3.210E-01	5.506E-01	5.298E-02	0.579
	+	269.46		5.468E-01	2.601E-01	3.029E-01	3.602E-02	1.806
		323.87	*	-5.592E-02	6.042E-01	8.410E-01	1.609E-01	-0.066
	+	338.28		6.292E+00	1.844E+00	2.106E+00	2.952E-01	2.987
		445.03		-5.930E-01	1.841E+00	2.994E+00	3.801E-01	-0.198
		79.80		-1.099E-01	1.426E+00	2.006E+00	4.323E-01	-0.055
		236.00		1.560E-01	2.008E-01	3.024E-01	4.214E-02	0.516
		256.20	*	-3.468E-01	3.382E-01	5.037E-01	8.602E-02	-0.689
		286.10		-1.149E+00	1.295E+00	1.929E+00	3.003E-01	-0.595
	+	299.80		2.905E+00	1.719E+00	2.197E+00	4.219E-01	1.322
TH-227		304.40		-2.033E-01	1.791E+00	2.502E+00	5.011E-01	-0.081
		334.20		-1.680E-02	2.068E+00	2.893E+00	5.957E-01	-0.006
		79.80		-1.099E-01	1.426E+00	2.006E+00	4.378E-01	-0.055
	+	94.00		1.261E+01	3.610E+00	3.093E+00	6.797E-01	4.077
		236.00		1.560E-01	2.006E-01	3.024E-01	3.907E-02	0.516
		256.20	*	-3.468E-01	3.398E-01	5.037E-01	9.849E-02	-0.689
		286.10		-1.149E+00	1.727E+00	1.929E+00	1.943E+00	-0.595
	+	299.80		2.905E+00	1.719E+00	2.197E+00	4.219E-01	1.322
		304.40		-2.033E-01	1.791E+00	2.502E+00	5.011E-01	-0.081
		334.20		-1.680E-02	2.068E+00	2.893E+00	5.957E-01	-0.006
		85.43		4.904E-01	1.465E-01	2.621E-01	2.448E-02	1.871
	+	88.47		4.613E-01	1.329E-01	1.554E-01	1.491E-02	2.968
TH-229		100.00		1.363E-01	1.435E-01	2.502E-01	2.190E-02	0.545
		193.63	*	-2.195E-01	4.252E-01	6.775E-01	6.611E-02	-0.324
		210.97		7.892E-01	6.842E-01	1.057E+00	1.080E-01	0.746
		283.67	*	3.102E-01	1.224E+00	1.983E+00	3.430E-01	0.156
PA-231	+	301.29		1.162E+00	6.720E-01	8.888E-01	1.295E-01	1.307
TH-231		81.07		8.281E-03	2.121E-01	2.616E-01	2.322E-02	0.032
		83.78		2.371E-01	9.606E-02	1.697E-01	1.554E-02	1.398
		94.90		2.685E-01	1.773E-01	2.883E-01	2.607E-02	0.931
		122.32		5.070E-01	1.344E+00	2.286E+00	2.047E-01	0.222
U-231		144.24		3.719E-01	5.672E-01	9.558E-01	9.170E-02	0.389
		154.21		3.191E-01	3.210E-01	5.506E-01	5.298E-02	0.579
	+	269.46		5.468E-01	2.601E-01	3.029E-01	3.602E-02	1.806
		323.87	*	-5.592E-02	6.042E-01	8.410E-01	1.609E-01	-0.066
	+	338.28		6.292E+00	1.844E+00	2.106E+00	2.952E-01	2.987
		445.03		-5.930E-01	1.841E+00	2.994E+00	3.801E-01	-0.198
		84.21		1.212E+01	4.245E+00	7.507E+00	6.910E-01	1.614
	+	92.29		1.251E+01	2.561E+00	3.660E+00	3.379E-01	3.417
		95.87	*	-5.713E-01	8.512E-01	1.249E+00	1.121E-01	-0.458
		108.00		-4.876E-01	1.640E+00	2.691E+00	2.279E-01	-0.181
	+	75.28		1.614E+01	3.719E+00	5.294E+00	8.040E-01	3.048
	+	86.59		6.615E+00	2.541E+00	2.524E+00	6.841E-01	2.621
	+	300.12		8.098E-01	4.733E-01	6.166E-01	1.039E-01	1.313
PA-233		311.98	*	7.345E-02	5.392E-02	9.191E-02	1.074E-02	0.799
		340.50		1.322E+00	6.376E-01	9.540E-01	2.360E-01	1.386
		398.62		-3.156E-01	1.685E+00	2.790E+00	7.492E-01	-0.113

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		1.743E-01	1.308E+00	2.206E+00	4.821E-01	0.079
		63.00		2.263E+00	1.782E+00	2.360E+00	3.505E-01	0.959
		94.67		3.020E-01	1.350E-01	2.194E-01	2.788E-02	1.377
		98.44		6.037E-02	8.003E-02	1.216E-01	6.788E-02	0.496
		99.86		4.811E-01	3.592E-01	6.335E-01	5.548E-02	0.759
		111.00		-5.068E-02	1.417E-01	2.347E-01	2.802E-02	-0.216
		131.20		-1.062E-01	8.380E-02	1.317E-01	1.102E-02	-0.806
		152.70		8.802E-02	2.575E-01	4.318E-01	7.387E-02	0.204
		186.00		5.639E+00	2.517E+00	2.358E+00	7.425E-01	2.391
		226.40		-2.291E-01	3.424E-01	5.331E-01	7.781E-02	-0.430
		227.20		-1.244E-01	3.616E-01	5.748E-01	6.124E-02	-0.216
		248.90		-7.734E-01	6.819E-01	9.826E-01	2.313E-01	-0.787
		293.70		6.964E+00	1.699E+00	1.432E+00	2.735E-01	4.862
		369.80		-1.102E-02	6.788E-01	1.143E+00	2.556E-01	-0.010
		568.70		-4.695E-01	8.362E-01	1.299E+00	1.220E-01	-0.361
		569.50		-2.285E-01	2.349E-01	3.515E-01	3.300E-02	-0.650
		574.00		-7.839E-02	1.309E+00	2.131E+00	1.997E-01	-0.037
		699.00		-2.181E-01	6.180E-01	9.627E-01	1.855E-01	-0.227
		706.10		-5.425E-01	9.669E-01	1.432E+00	6.397E-01	-0.379
		733.00		8.932E-02	3.628E-01	5.501E-01	1.233E-01	0.162
		742.81		7.136E-01	1.211E+00	1.890E+00	1.272E+00	0.378
		796.30		2.205E+00	1.488E+00	1.540E+00	4.202E-01	1.432
		805.60		6.989E-01	7.921E-01	1.384E+00	4.271E-01	0.505
		819.60		2.324E-01	9.985E-01	1.706E+00	6.517E-01	0.136
		826.30		-3.398E-01	6.840E-01	1.069E+00	4.801E-01	-0.318
		831.60		-2.850E-01	5.510E-01	8.755E-01	2.633E-01	-0.326
		876.40		6.742E-02	6.763E-01	1.136E+00	1.168E+00	0.059
		880.51		6.837E-02	2.271E-01	3.900E-01	3.684E-02	0.175
		883.24		2.480E-03	2.256E-01	3.775E-01	2.542E-01	0.007
		899.00		-1.925E-01	6.361E-01	1.020E+00	4.476E-01	-0.189
		925.00		-2.727E-01	9.033E-01	1.457E+00	1.369E-01	-0.187
		926.50		4.809E-02	1.359E-01	2.333E-01	5.961E-02	0.206
		946.00	*	-6.127E-02	2.682E-01	4.244E-01	8.108E-02	-0.144
		949.00		-2.687E-01	3.834E-01	5.942E-01	5.542E-02	-0.452
		980.50		2.807E-01	6.256E-01	1.079E+00	9.944E-02	0.260
		1394.10		1.659E-01	9.021E-01	1.505E+00	9.794E-01	0.110
PA-234M	+	766.42		2.867E+00	1.114E+01	1.819E+01	9.249E+00	0.158
		1001.03	*	-4.267E-02	4.250E+00	6.961E+00	7.247E-01	-0.006
U-235	+	89.95		3.031E+00	1.336E+00	1.496E+00	4.651E-01	2.027
		93.35		3.923E+00	1.319E+00	1.131E+00	3.190E-01	3.468
		105.00		1.178E+00	9.123E-01	1.493E+00	4.452E-01	0.789
		143.76	*	1.404E-01	1.764E-01	2.965E-01	5.182E-02	0.474
		163.35		5.266E-02	4.011E-01	6.551E-01	1.261E-01	0.080
		185.71		2.089E-01	6.903E-02	8.708E-02	8.319E-03	2.398
NP-236	+	205.31		-1.173E-01	4.800E-01	6.866E-01	1.358E-01	-0.171
		94.67		2.308E-01	1.004E-01	1.666E-01	1.509E-02	1.385
		98.44		4.558E-02	5.502E-02	9.192E-02	8.115E-03	0.496
		111.00		-3.834E-02	1.071E-01	1.776E-01	1.492E-02	-0.216
		160.31	*	-1.976E-02	6.553E-02	1.068E-01	9.533E-03	-0.185

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		1.483E-01	1.214E-01	2.134E-01	1.872E-02	0.695
		117.00	*	4.892E-02	1.424E-01	2.423E-01	2.018E-02	0.202
	+	209.75		1.814E+00	9.947E-01	1.219E+00	1.241E-01	1.489
		228.18		3.373E-02	1.899E-01	3.100E-01	3.311E-02	0.109
		277.60		1.051E-01	1.520E-01	2.516E-01	3.011E-02	0.418
		334.30		-9.046E-02	1.167E+00	1.623E+00	1.788E-01	-0.056
AM-241		59.54	*	8.002E-02	1.394E-01	2.062E-01	1.618E-02	0.388
CM-243		99.55		1.526E-01	1.249E-01	2.196E-01	1.926E-02	0.695
		103.76	*	-2.514E-02	7.756E-02	1.293E-01	1.111E-02	-0.194
		117.00		5.033E-02	1.465E-01	2.493E-01	2.076E-02	0.202
	+	209.75		1.788E+00	9.806E-01	1.201E+00	1.224E-01	1.489
		228.18		3.408E-02	1.919E-01	3.133E-01	3.345E-02	0.109
		277.60		1.060E-01	1.532E-01	2.536E-01	3.036E-02	0.418
AM-246		798.80		6.433E-02	1.180E-01	1.850E-01	1.725E-02	0.348
		1036.00		7.281E-02	2.352E-01	4.005E-01	3.591E-02	0.182
		1062.04		-1.240E-01	1.943E-01	2.989E-01	2.638E-02	-0.415
		1078.86	*	1.755E-03	1.212E-01	1.996E-01	1.741E-02	0.009
		278.00		3.300E-01	6.307E-01	1.036E+00	1.241E-01	0.319
CM-247		287.40		5.960E-01	1.027E+00	1.692E+00	2.015E-01	0.352
		402.60	*	3.672E-03	3.138E-02	5.297E-02	4.925E-03	0.069
CF-249		252.85		1.190E+00	7.184E-01	1.241E+00	1.407E-01	0.958
		333.44		1.922E-02	1.730E-01	2.227E-01	2.458E-02	0.086
		387.95	*	1.399E-02	3.128E-02	5.397E-02	5.063E-03	0.259
CF-251		176.60	*	9.301E-03	1.026E-01	1.692E-01	1.578E-02	0.055
		227.00		-1.295E-01	3.212E-01	5.089E-01	5.418E-02	-0.254
		285.00		-1.938E+00	1.487E+00	2.144E+00	2.560E-01	-0.904

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691007      *
* Acquisition date   : 9-FEB-2010 15:24:58 Detector SN#      :              *
* Detector ID        : GAM16 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:02.03 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID          : G245691007 Analyst initials: MJH1          *
* Batch Number       : 947037 Sample Quantity : 1.4493E+02 GRAM   *
* Recovery           : 1.00000 Carrier Weight  : 0.00000         *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 MS Isotope      :          *
* MSD DPM             : 0.000 MSD Isotope      :              *
* LCS DPM             : 0.000 LCS Isotope      :              *
* LCSD DPM            : 0.000 LCSD Isotope     :              *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.278E+01	2.424E+00	4.775E-01	0.000E+00
CD-109	3.438E+00	9.708E-01	9.626E-01	0.000E+00
SN-126	3.379E-01	9.542E-02	9.505E-02	0.000E+00
CS-135	4.648E-01	2.177E-01	2.010E-01	0.000E+00
BA-137M	7.853E-02	3.597E-02	5.322E-02	0.000E+00
CS-137	8.301E-02	3.803E-02	5.625E-02	0.000E+00
TL-208	4.299E-01	7.976E-02	5.083E-02	0.000E+00
BI-211	3.505E+00	5.602E-01	2.531E-01	0.000E+00
BI-212	9.555E-01	3.928E-01	3.409E-01	0.000E+00
PB-212	1.505E+00	1.982E-01	7.594E-02	0.000E+00
PO-212	1.505E+00	1.982E-01	7.594E-02	0.000E+00
BI-214	1.146E+00	1.872E-01	9.691E-02	0.000E+00
PB-214	1.219E+00	2.046E-01	8.822E-02	0.000E+00
PO-214	1.219E+00	2.046E-01	8.822E-02	0.000E+00
PO-216	1.505E+00	1.982E-01	7.594E-02	0.000E+00
PO-218	1.219E+00	2.046E-01	8.822E-02	0.000E+00
RA-224	3.949E+00	1.156E+00	8.642E-01	0.000E+00
RA-226	1.146E+00	1.872E-01	9.691E-02	0.000E+00
AC-228	1.376E+00	3.308E-01	1.997E-01	0.000E+00
RA-228	1.376E+00	3.308E-01	1.997E-01	0.000E+00
TH-228	1.528E+00	2.012E-01	7.709E-02	0.000E+00
TH-230	1.146E+00	1.872E-01	9.691E-02	0.000E+00
TH-232	1.376E+00	3.308E-01	1.997E-01	0.000E+00
TH-234	1.941E+00	1.508E+00	1.825E+00	0.000E+00
U-234	1.146E+00	1.872E-01	9.691E-02	0.000E+00
NP-237	9.922E-01	3.446E-01	2.823E-01	0.000E+00
U-238	1.941E+00	1.508E+00	1.825E+00	0.000E+00
AM-243	3.081E-01	5.807E-02	7.474E-02	0.000E+00
ANH-511	1.201E-01	6.204E-02	3.813E-02	0.000E+00

---- Non-Identified Nuclides ----

Key-Line Activity	K.L. Act error	MDA
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Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)	
BE-7	-8.553E-02	2.589E-01	4.408E-01	0.000E+00	NOT IDENT.
NA-22	4.681E-03	3.407E-02	5.774E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	5.463E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.523E-02	2.083E-02	2.842E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.912E-02	6.379E-02	0.000E+00	FAIL ABUN
SC-46	-5.738E-03	2.941E-02	5.001E-02	0.000E+00	FAIL ABUN
V-48	-1.484E-02	5.807E-02	9.719E-02	0.000E+00	NOT IDENT.
CR-51	3.739E-02	3.115E-01	5.275E-01	0.000E+00	NOT IDENT.
MN-52	9.449E-02	1.848E-01	3.278E-01	0.000E+00	NOT IDENT.
MN-54	8.319E-03	3.382E-02	6.001E-02	0.000E+00	NOT IDENT.
CO-56	8.196E-03	3.153E-02	5.612E-02	0.000E+00	NOT IDENT.
CO-57	4.066E-04	1.936E-02	3.519E-02	0.000E+00	NOT IDENT.
CO-58	-1.674E-02	3.033E-02	5.042E-02	0.000E+00	NOT IDENT.
FE-59	9.627E-03	7.638E-02	1.311E-01	0.000E+00	NOT IDENT.
CO-60	-8.287E-03	3.207E-02	5.143E-02	0.000E+00	NOT IDENT.
ZN-65	1.562E-02	7.848E-02	1.183E-01	0.000E+00	NOT IDENT.
GE-68	1.752E-01	9.833E-01	1.701E+00	0.000E+00	NOT IDENT.
AS-73	9.190E-02	6.781E-01	1.180E+00	0.000E+00	NOT IDENT.
AS-74	-9.008E-03	7.416E-02	1.254E-01	0.000E+00	NOT IDENT.
SE-75	-2.305E-02	3.981E-02	5.765E-02	0.000E+00	NOT IDENT.
BR-77	-7.455E-01	8.380E+00	1.440E+01	0.000E+00	FAIL ABUN
SR-82	-4.472E-01	3.133E-01	4.387E-01	0.000E+00	NOT IDENT.
RB-83	-1.221E-02	5.445E-02	9.255E-02	0.000E+00	NOT IDENT.
RB-84	2.243E-02	5.454E-02	9.809E-02	0.000E+00	NOT IDENT.
KR-85	1.080E+01	6.361E+00	1.104E+01	0.000E+00	NOT IDENT.
SR-85	5.538E-02	3.262E-02	5.663E-02	0.000E+00	NOT IDENT.
RB-86	-1.410E-01	6.448E-01	1.072E+00	0.000E+00	NOT IDENT.
Y-88	1.158E-02	2.456E-02	4.520E-02	0.000E+00	NOT IDENT.
ZR-88	-1.323E-02	2.403E-02	4.113E-02	0.000E+00	NOT IDENT.
Y-91	2.735E+01	1.693E+01	3.191E+01	0.000E+00	NOT IDENT.
NB-94	2.159E-02	2.772E-02	4.943E-02	0.000E+00	NOT IDENT.
NB-95	-2.132E-02	4.010E-02	6.467E-02	0.000E+00	NOT IDENT.
NB-95M	2.922E-02	1.081E-01	1.693E-01	0.000E+00	NOT IDENT.
ZR-95	5.476E-02	6.056E-02	1.085E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.029E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.648E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-7.015E+00	1.018E+01	1.584E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.287E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-5.434E-03	2.795E-02	4.788E-02	0.000E+00	NOT IDENT.
RH-102	6.140E-03	2.417E-02	4.288E-02	0.000E+00	NOT IDENT.
RU-103	-7.162E-03	3.069E-02	5.233E-02	0.000E+00	FAIL ABUN
RH-106	-2.302E-02	2.504E-01	4.223E-01	0.000E+00	FAIL ABUN
RU-106	-2.302E-02	2.504E-01	4.223E-01	0.000E+00	FAIL ABUN
AG-108M	-1.639E-02	2.691E-02	4.490E-02	0.000E+00	NOT IDENT.
AG-110M	-3.504E-02	3.486E-02	4.515E-02	0.000E+00	NOT IDENT.
IN-111	8.250E-02	9.488E-01	1.464E+00	0.000E+00	NOT IDENT.
IN-113M	-2.627E-02	3.468E-02	5.849E-02	0.000E+00	NOT IDENT.
SN-113	-2.627E-02	3.468E-02	5.849E-02	0.000E+00	NOT IDENT.
IN-114M	2.800E-02	1.627E-01	2.581E-01	0.000E+00	NOT IDENT.
CD-115	-3.339E+00	8.609E+00	1.441E+01	0.000E+00	NOT IDENT.
SN-117M	-3.357E-03	4.331E-02	7.692E-02	0.000E+00	NOT IDENT.
SB-122	8.518E-01	1.682E+00	2.995E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	4.721E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-3.579E-04	2.259E-02	4.021E-02	0.000E+00	NOT IDENT.
I-124	-4.995E-01	5.927E-01	8.544E-01	0.000E+00	NOT IDENT.
SB-124	2.968E-02	6.035E-02	1.107E-01	0.000E+00	NOT IDENT.
SB-125	-2.943E-02	7.446E-02	1.277E-01	0.000E+00	FAIL ABUN
TE-125M	-9.789E-01	7.156E+00	1.283E+01	0.000E+00	NOT IDENT.
I-126	6.994E-02	1.654E-01	2.560E-01	0.000E+00	NOT IDENT.
SB-126	3.866E-02	1.143E-01	1.911E-01	0.000E+00	FAIL ABUN
SB-127	-9.001E-01	1.115E+00	1.728E+00	0.000E+00	FAIL ABUN
XE-127	-2.222E-02	3.757E-02	6.375E-02	0.000E+00	NOT IDENT.
I-131	-9.329E-02	8.957E-02	1.465E-01	0.000E+00	NOT IDENT.
TE-132	1.059E-01	5.723E-01	9.994E-01	0.000E+00	NOT IDENT.
BA-133	1.224E-04	3.575E-02	5.652E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.890E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.943E-02	8.112E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	4.646E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.041E-02	8.260E-02	1.476E-01	0.000E+00	FAIL ABUN
CE-139	-1.101E-02	2.429E-02	4.228E-02	0.000E+00	NOT IDENT.
BA-140	1.673E-01	2.274E-01	4.009E-01	0.000E+00	NOT IDENT.
LA-140	-8.466E-02	6.840E-02	9.230E-02	0.000E+00	FAIL ABUN
CE-141	-7.393E-03	5.012E-02	8.803E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.680E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.079E-02	1.571E-01	2.819E-01	0.000E+00	NOT IDENT.
PM-144	7.472E-03	2.965E-02	5.084E-02	0.000E+00	NOT IDENT.

PR-144	5.063E-01	2.009E+00	3.445E+00	0.000E+00	NOT IDENT.
PM-146	2.020E-02	3.588E-02	6.501E-02	0.000E+00	NOT IDENT.
ND-147	5.502E-02	4.431E-01	7.722E-01	0.000E+00	FAIL ABUN
PM-149	-9.483E+01	7.787E+01	1.192E+02	0.000E+00	NOT IDENT.
EU-152	5.030E-03	7.863E-02	1.253E-01	0.000E+00	NOT IDENT.
GD-153	-5.209E-02	6.423E-02	1.018E-01	0.000E+00	NOT IDENT.
EU-154	3.341E-02	9.359E-02	1.625E-01	0.000E+00	NOT IDENT.
EU-155	1.160E-01	8.553E-02	1.634E-01	0.000E+00	FAIL ABUN
TB-160	6.077E-02	1.121E-01	2.036E-01	0.000E+00	FAIL ABUN
HO-166M	8.474E-03	5.345E-02	9.080E-02	0.000E+00	NOT IDENT.
TM-171	6.958E+00	2.365E+01	3.744E+01	0.000E+00	NOT IDENT.
LU-176	3.070E-02	1.988E-02	3.631E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.378E+00	1.816E+00	0.000E+00	FAIL ABUN
LU-177M	-1.397E-01	1.442E-01	2.385E-01	0.000E+00	FAIL ABUN
HF-181	-3.481E-03	3.319E-02	5.739E-02	0.000E+00	NOT IDENT.
W-181	-5.882E-02	3.207E-01	4.979E-01	0.000E+00	NOT IDENT.
TA-182	-4.293E-02	1.526E-01	2.487E-01	0.000E+00	FAIL ABUN
RE-183	2.250E-02	9.118E-02	1.613E-01	0.000E+00	FAIL ABUN
RE-184	3.171E-01	1.876E-01	3.461E-01	0.000E+00	NOT IDENT.
OS-185	-4.676E-02	3.448E-02	5.058E-02	0.000E+00	NOT IDENT.
RE-188	2.529E-02	1.344E-01	2.417E-01	0.000E+00	NOT IDENT.
W-188	-6.336E+00	7.238E+00	1.011E+01	0.000E+00	FAIL ABUN
IR-192	1.396E-02	2.887E-02	5.000E-02	0.000E+00	FAIL ABUN
AU-195	2.228E-01	1.712E-01	3.281E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	3.556E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-8.067E-01	5.624E+00	9.918E+00	0.000E+00	NOT IDENT.
TL-202	-1.071E-02	5.350E-02	9.270E-02	0.000E+00	NOT IDENT.
HG-203	-1.080E-03	3.304E-02	5.610E-02	0.000E+00	NOT IDENT.
BI-207	2.563E-02	4.123E-02	7.435E-02	0.000E+00	FAIL ABUN
TL-207	-5.592E-02	5.922E-01	8.749E-01	0.000E+00	FAIL ABUN
PO-209	-1.730E+00	5.507E+00	9.238E+00	0.000E+00	NOT IDENT.
BI-210	-9.443E-01	2.976E+00	5.092E+00	0.000E+00	NOT IDENT.
PB-210	-9.443E-01	2.976E+00	5.092E+00	0.000E+00	NOT IDENT.
PO-210	-9.443E-01	2.975E+00	5.092E+00	0.000E+00	NOT IDENT.
PB-211	3.933E-02	7.767E-01	1.378E+00	0.000E+00	NOT IDENT.
PO-215	-5.592E-02	5.922E-01	8.749E-01	0.000E+00	FAIL ABUN
RN-219	4.355E-02	3.317E-01	5.921E-01	0.000E+00	NOT IDENT.
RN-220	-2.005E+01	2.126E+01	3.369E+01	0.000E+00	NOT IDENT.
RA-223	-5.592E-02	5.922E-01	8.749E-01	0.000E+00	FAIL ABUN
AC-227	-3.468E-01	3.314E-01	5.267E-01	0.000E+00	FAIL ABUN
TH-227	-3.468E-01	3.330E-01	5.267E-01	0.000E+00	FAIL ABUN
TH-229	-2.195E-01	4.167E-01	7.128E-01	0.000E+00	FAIL ABUN
PA-231	3.102E-01	1.199E+00	2.069E+00	0.000E+00	FAIL ABUN
TH-231	-5.592E-02	5.922E-01	8.749E-01	0.000E+00	FAIL ABUN
U-231	-5.713E-01	8.342E-01	1.333E+00	0.000E+00	FAIL ABUN
PA-233	7.345E-02	5.284E-02	9.570E-02	0.000E+00	FAIL ABUN
PA-234	-6.127E-02	2.628E-01	4.310E-01	0.000E+00	FAIL ABUN
PA-234M	-4.267E-02	4.165E+00	7.060E+00	0.000E+00	NOT IDENT.
U-235	1.404E-01	1.728E-01	3.140E-01	0.000E+00	FAIL ABUN
NP-236	-1.976E-02	6.422E-02	1.128E-01	0.000E+00	NOT IDENT.
NP-239	4.892E-02	1.396E-01	2.577E-01	0.000E+00	FAIL ABUN
AM-241	8.002E-02	1.366E-01	2.223E-01	0.000E+00	NOT IDENT.
CM-243	-2.514E-02	7.601E-02	1.378E-01	0.000E+00	FAIL ABUN
AM-246	1.755E-03	1.187E-01	2.021E-01	0.000E+00	NOT IDENT.
CM-247	3.672E-03	3.076E-02	5.484E-02	0.000E+00	NOT IDENT.
CF-249	1.399E-02	3.065E-02	5.592E-02	0.000E+00	NOT IDENT.
CF-251	9.301E-03	1.005E-01	1.784E-01	0.000E+00	NOT IDENT.



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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691007.CNF;1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:24:58.
Sample ID        : G245691007 Sample quantity : 1.44930E+02 GRAM
Detector name    : GAM16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.03 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 947037 Detector SN# :
Matrix Spike ID  : LCS ID : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1133	10.67*	1.208E+00	2.278E+01	2.278E+01	10.86
CD-109	88.03	302	3.72*	6.251E+00	3.361E+00	3.438E+00	28.81
SN-126	64.28	101	9.60	3.545E+00	7.683E-01	7.683E-01	78.68
	86.94	302	8.90	6.251E+00	1.405E+00	1.405E+00	49.66
	87.57	302	37.00*	6.251E+00	3.379E-01	3.379E-01	28.81
CS-135	268.24	138	16.00*	4.791E+00	4.648E-01	4.648E-01	47.80
BA-137M	661.65	66	89.98*	2.406E+00	7.845E-02	7.853E-02	46.75
CS-137	661.65	66	85.12*	2.406E+00	8.293E-02	8.301E-02	46.75
TL-208	277.35	-----	6.80	4.695E+00	-----	Line Not Found	-----
	510.84	137	21.60	2.964E+00	5.559E-01	5.559E-01	53.37
	583.14	373	84.20*	2.668E+00	4.299E-01	4.299E-01	18.93
	860.37	45	12.46	1.918E+00	4.905E-01	4.905E-01	81.63
BI-211	72.87	-----	1.27	4.872E+00	-----	Line Not Found	-----
	351.07	690	12.94*	3.940E+00	3.505E+00	3.505E+00	16.31
BI-212	727.18	97	11.80*	2.221E+00	9.555E-01	9.555E-01	41.95
	785.46	51	1.97	2.077E+00	3.251E+00	3.251E+00	66.68
	1620.62	-----	2.75	1.117E+00	-----	Line Not Found	-----
PB-212	74.81	401	10.70	5.113E+00	1.900E+00	1.900E+00	21.38
	77.11	657	18.00	5.365E+00	1.763E+00	1.763E+00	15.40
	87.30	302	8.00	6.251E+00	1.563E+00	1.563E+00	30.50
	238.63	1354	44.60*	5.225E+00	1.505E+00	1.505E+00	13.44
	300.09	91	3.41	4.431E+00	1.567E+00	1.567E+00	57.48
PO-212	74.81	401	10.70	5.113E+00	1.900E+00	1.900E+00	21.38
	77.11	657	18.00	5.365E+00	1.763E+00	1.763E+00	15.40
	87.30	302	8.00	6.251E+00	1.563E+00	1.563E+00	30.50
	115.19	-----	0.60	7.166E+00	-----	Line Not Found	-----
	238.63	1354	44.60*	5.225E+00	1.505E+00	1.505E+00	13.44
	300.09	91	3.41	4.431E+00	1.567E+00	1.567E+00	57.48
BI-214	609.31	527	46.30*	2.574E+00	1.146E+00	1.146E+00	16.67
	1120.29	86	15.10	1.515E+00	9.716E-01	9.716E-01	52.47
	1764.49	92	15.80	1.056E+00	1.435E+00	1.435E+00	25.45
PB-214	74.81	401	6.21	5.113E+00	3.274E+00	3.274E+00	20.61

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	77.11	657	10.50	5.365E+00	3.023E+00	3.023E+00	17.18
	87.30	302	4.67	6.251E+00	2.677E+00	2.677E+00	29.83
	241.98	312	7.49	5.181E+00	2.080E+00	2.080E+00	30.43
	295.21	483	19.20	4.487E+00	1.451E+00	1.451E+00	20.24
	351.92	690	37.20*	3.940E+00	1.219E+00	1.219E+00	17.12
	74.81	401	6.21	5.113E+00	3.274E+00	3.274E+00	20.61
	77.11	657	10.50	5.365E+00	3.023E+00	3.023E+00	17.18
	87.30	302	4.67	6.251E+00	2.677E+00	2.677E+00	29.83
	241.98	312	7.49	5.181E+00	2.080E+00	2.080E+00	30.43
	295.21	483	19.20	4.487E+00	1.451E+00	1.451E+00	20.24
PO-216	351.92	690	37.20*	3.940E+00	1.219E+00	1.219E+00	17.12
	74.81	401	10.70	5.113E+00	1.900E+00	1.900E+00	21.38
	77.11	657	18.00	5.365E+00	1.763E+00	1.763E+00	15.40
	87.30	302	8.00	6.251E+00	1.563E+00	1.563E+00	30.50
	238.63	1354	44.60*	5.225E+00	1.505E+00	1.505E+00	13.44
	300.09	91	3.41	4.431E+00	1.567E+00	1.567E+00	57.48
	74.81	401	6.21	5.113E+00	3.274E+00	3.274E+00	20.61
	77.11	657	10.50	5.365E+00	3.023E+00	3.023E+00	17.18
	87.30	302	4.67	6.251E+00	2.677E+00	2.677E+00	29.83
	241.98	312	7.49	5.181E+00	2.080E+00	2.080E+00	30.43
RA-224	295.21	483	19.20	4.487E+00	1.451E+00	1.451E+00	20.24
	351.92	690	37.20*	3.940E+00	1.219E+00	1.219E+00	17.12
	240.98	312	3.95*	5.181E+00	3.944E+00	3.944E+00	29.91
	609.31	527	46.30*	2.574E+00	1.146E+00	1.146E+00	16.67
	1120.29	86	15.10	1.515E+00	9.716E-01	9.716E-01	52.47
	1764.49	92	15.80	1.056E+00	1.435E+00	1.435E+00	25.45
	338.32	269	11.40	4.055E+00	1.507E+00	1.507E+00	49.09
	911.07	268	27.70*	1.824E+00	1.376E+00	1.376E+00	24.54
	969.11	84	16.60	1.724E+00	7.634E-01	7.634E-01	86.14
	338.32	269	11.40	4.055E+00	1.507E+00	1.507E+00	49.09
RA-228	911.07	268	27.70*	1.824E+00	1.376E+00	1.376E+00	24.54
	969.11	84	16.60	1.724E+00	7.634E-01	7.634E-01	86.14
	74.81	401	10.70	5.113E+00	1.900E+00	1.929E+00	19.27
	77.11	657	18.00	5.365E+00	1.763E+00	1.790E+00	15.40
	87.30	302	8.00	6.251E+00	1.563E+00	1.587E+00	28.81
	238.63	1354	44.60*	5.225E+00	1.505E+00	1.528E+00	13.44
	300.09	91	3.41	4.431E+00	1.567E+00	1.591E+00	81.91
	609.31	527	46.30*	2.574E+00	1.146E+00	1.146E+00	16.67
	1120.29	86	15.10	1.515E+00	9.716E-01	9.716E-01	52.47
	1764.49	92	15.80	1.056E+00	1.435E+00	1.435E+00	25.45
TH-230	338.32	269	11.40	4.055E+00	1.507E+00	1.507E+00	27.96
	911.07	268	27.70*	1.824E+00	1.376E+00	1.376E+00	24.54
	969.11	84	16.60	1.724E+00	7.634E-01	7.634E-01	86.14
	TH-232	TH-234	TH-234	TH-234	TH-234	TH-234	TH-234
	63.29	101	3.80*	3.545E+00	1.941E+00	1.941E+00	79.27
	92.38	449	5.41	6.591E+00	3.263E+00	3.263E+00	25.93
	609.31	527	46.30*	2.574E+00	1.146E+00	1.146E+00	16.67
	1120.29	86	15.10	1.515E+00	9.716E-01	9.716E-01	52.47
	1764.49	92	15.80	1.056E+00	1.435E+00	1.435E+00	25.45
	86.50	302	12.60*	6.251E+00	9.922E-01	9.922E-01	35.44

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	95.87	-----	2.60	6.742E+00	-----	Line Not Found	-----
U-238	63.29	101	3.80*	3.545E+00	1.941E+00	1.941E+00	79.27
	92.38	449	5.41	6.591E+00	3.263E+00	3.263E+00	20.48
AM-243	74.67	401	66.00*	5.113E+00	3.081E-01	3.081E-01	19.23
	86.72	302	0.34	6.251E+00	3.721E+01	3.721E+01	28.81
	117.66	-----	0.55	7.175E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.968E+00	-----	Line Not Found	-----
ANH-511	511.00	137	100.00*	2.964E+00	1.201E-01	1.201E-01	52.72

Flag: "\*" = Keyline

Total number of lines in spectrum 34  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 31 91.18%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.278E+01	2.278E+01	0.247E+01	10.86	
CD-109	464.00D	1.02	3.361E+00	3.438E+00	0.991E+00	28.81	
SN-126	1.00E+05Y	1.00	3.379E-01	3.379E-01	0.974E-01	28.81	
CS-135	2.30E+06Y	1.00	4.648E-01	4.648E-01	2.222E-01	47.80	
BA-137M	30.17Y	1.00	7.845E-02	7.853E-02	3.671E-02	46.75	
CS-137	30.17Y	1.00	8.293E-02	8.301E-02	3.881E-02	46.75	
TL-208	1.41E+10Y	1.00	4.299E-01	4.299E-01	0.814E-01	18.93	
BI-211	7.04E+08Y	1.00	3.505E+00	3.505E+00	0.572E+00	16.31	
BI-212	1.41E+10Y	1.00	9.555E-01	9.555E-01	4.008E-01	41.95	
PB-212	1.41E+10Y	1.00	1.505E+00	1.505E+00	0.202E+00	13.44	
PO-212	1.41E+10Y	1.00	1.505E+00	1.505E+00	0.202E+00	13.44	
BI-214	1600.00Y	1.00	1.146E+00	1.146E+00	0.191E+00	16.67	
PB-214	1600.00Y	1.00	1.219E+00	1.219E+00	0.209E+00	17.12	
PO-214	1600.00Y	1.00	1.219E+00	1.219E+00	0.209E+00	17.12	
PO-216	1.41E+10Y	1.00	1.505E+00	1.505E+00	0.202E+00	13.44	
PO-218	1600.00Y	1.00	1.219E+00	1.219E+00	0.209E+00	17.12	
RA-224	1.41E+10Y	1.00	3.944E+00	3.944E+00	1.180E+00	29.91	
RA-226	1600.00Y	1.00	1.146E+00	1.146E+00	0.191E+00	16.67	
AC-228	1.41E+10Y	1.00	1.376E+00	1.376E+00	0.338E+00	24.54	
RA-228	1.41E+10Y	1.00	1.376E+00	1.376E+00	0.338E+00	24.54	
TH-228	1.91Y	1.02	1.505E+00	1.528E+00	0.205E+00	13.44	
TH-230	4.47E+09Y	1.00	1.146E+00	1.146E+00	0.191E+00	16.67	
TH-232	1.41E+10Y	1.00	1.376E+00	1.376E+00	0.338E+00	24.54	
TH-234	4.47E+09Y	1.00	1.941E+00	1.941E+00	1.539E+00	79.27	
U-234	4.47E+09Y	1.00	1.146E+00	1.146E+00	0.191E+00	16.67	
NP-237	2.14E+06Y	1.00	9.922E-01	9.922E-01	3.517E-01	35.44	
U-238	4.47E+09Y	1.00	1.941E+00	1.941E+00	1.539E+00	79.27	
AM-243	7380.00Y	1.00	3.081E-01	3.081E-01	0.593E-01	19.23	
ANH-511	1.00E+09Y	1.00	1.201E-01	1.201E-01	0.633E-01	52.72	

Total Activity : 5.963E+01 5.973E+01

Grand Total Activity : 5.963E+01 5.973E+01

Flags: "K" = Keyline not found "M" = Manually accepted  
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	90.01	203	325	1.06	180.21	165	27	2.83E-02	31.2	6.44E+00	T
0	185.99	267	395	1.16	372.17	367	10	3.72E-02	31.6	6.14E+00	T
0	208.97	130	336	0.96	418.14	415	9	1.80E-02	53.9	5.71E+00	T
0	327.87	86	170	1.27	655.92	652	10	1.19E-02	60.6	4.15E+00	T
0	462.76	98	144	1.56	925.69	921	14	1.36E-02	55.4	3.20E+00	T
0	782.81	7	33	1.55	1565.69	1563	6	9.39E-04	****	2.08E+00	T
0	795.18	68	81	1.42	1590.43	1584	15	9.49E-03	61.7	2.06E+00	T
0	1377.90	37	40	1.31	2755.48	2750	13	5.12E-03	77.4	1.27E+00	
0	1588.01	35	9	1.71	3175.50	3171	9	4.86E-03	45.8	1.13E+00	
0	1729.52	23	7	3.04	3458.36	3450	15	3.18E-03	69.7	1.07E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691007.CNF;1
* Acquisition date   : 9-FEB-2010 15:24:58.  Detector SN#      :
* Detector ID        : GAM16                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:02.03          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G245691007           Analyst initials: MJH1
* Batch Number       : 947037               Sample Quantity  : 1.44930E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16.1MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.278E+01	2.473E+00	4.749E-01	4.175E-02	47.953
CD-109	3.438E+00	9.906E-01	8.999E-01	8.671E-02	3.820
SN-126	3.379E-01	9.736E-02	8.884E-02	8.518E-03	3.803
CS-135	4.648E-01	2.222E-01	1.924E-01	2.453E-02	2.416
BA-137M	7.853E-02	3.671E-02	5.197E-02	4.613E-03	1.511
CS-137	8.301E-02	3.881E-02	5.494E-02	4.885E-03	1.511
TL-208	4.299E-01	8.139E-02	4.950E-02	4.907E-03	8.683
BI-211	3.505E+00	5.717E-01	2.437E-01	2.664E-02	14.383
BI-212	9.555E-01	4.008E-01	3.337E-01	3.486E-02	2.864
PB-212	1.505E+00	2.022E-01	7.251E-02	8.585E-03	20.756
PO-212	1.505E+00	2.022E-01	7.251E-02	8.585E-03	20.756
BI-214	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133
PB-214	1.219E+00	2.088E-01	8.495E-02	1.027E-02	14.353
PO-214	1.219E+00	2.088E-01	8.495E-02	1.027E-02	14.353
PO-216	1.505E+00	2.022E-01	7.251E-02	8.585E-03	20.756
PO-218	1.219E+00	2.088E-01	8.495E-02	1.027E-02	14.353
RA-224	3.944E+00	1.180E+00	8.253E-01	9.095E-02	4.779
RA-226	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.376E+00	3.375E-01	1.965E-01	2.334E-02	7.001
RA-228	1.376E+00	3.375E-01	1.965E-01	2.334E-02	7.001
TH-228	1.528E+00	2.053E-01	7.361E-02	8.715E-03	20.756
TH-230	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133
TH-232	1.376E+00	3.375E-01	1.965E-01	2.334E-02	7.001
TH-234	1.941E+00	1.539E+00	1.695E+00	2.956E-01	1.145
U-234	1.146E+00	1.910E-01	9.447E-02	9.988E-03	12.133
NP-237	9.922E-01	3.517E-01	2.638E-01	5.988E-02	3.762
U-238	1.941E+00	1.539E+00	1.695E+00	2.956E-01	1.145
AM-243	3.081E-01	5.925E-02	6.963E-02	5.764E-03	4.425
ANH-511	1.201E-01	6.331E-02	3.702E-02	3.521E-03	3.243

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-8.553E-02		2.642E-01	4.274E-01	4.323E-02	-0.200
NA-22	4.681E-03		3.476E-02	5.725E-02	4.764E-03	0.082
NA-24	6.710E-02		2.787E-01	Half-Life too short		
AL-26	-1.523E-02		2.126E-02	2.842E-02	2.324E-03	-0.536
TI-44	3.254E-01	+	5.012E-02	5.948E-02	5.122E-03	5.470
SC-46	-5.738E-03		3.001E-02	4.918E-02	4.649E-03	-0.117
V-48	-1.484E-02		5.925E-02	9.579E-02	8.817E-03	-0.155
CR-51	3.739E-02		3.178E-01	5.069E-01	5.926E-02	0.074
MN-52	9.449E-02		1.886E-01	3.260E-01	2.781E-02	0.290
MN-54	8.319E-03		3.451E-02	5.892E-02	5.534E-03	0.141
CO-56	8.196E-03		3.217E-02	5.512E-02	5.187E-03	0.149
CO-57	4.066E-04		1.975E-02	3.312E-02	2.752E-03	0.012
CO-58	-1.674E-02		3.095E-02	4.947E-02	4.635E-03	-0.338
FE-59	9.627E-03		7.794E-02	1.295E-01	1.204E-02	0.074
CO-60	-8.287E-03		3.272E-02	5.105E-02	4.306E-03	-0.162
ZN-65	1.562E-02		8.008E-02	1.169E-01	9.927E-03	0.134
GE-68	1.752E-01		1.003E+00	1.680E+00	1.467E-01	0.104
AS-73	9.190E-02		6.919E-01	1.092E+00	8.328E-02	0.084
AS-74	-9.008E-03		7.568E-02	1.222E-01	1.134E-02	-0.074
SE-75	-2.305E-02		4.062E-02	5.517E-02	6.438E-03	-0.418
BR-77	-7.455E-01		8.551E+00	1.399E+01	1.329E+00	-0.053
SR-82	-4.472E-01		3.197E-01	4.300E-01	3.987E-02	-1.040
RB-83	-1.221E-02		5.556E-02	8.990E-02	8.542E-03	-0.136
RB-84	2.243E-02		5.565E-02	9.643E-02	9.111E-03	0.233
KR-85	1.080E+01		6.491E+00	1.072E+01	1.020E+00	1.007
SR-85	5.538E-02		3.329E-02	5.499E-02	5.229E-03	1.007
RB-86	-1.410E-01		6.579E-01	1.059E+00	9.251E-02	-0.133
Y-88	1.158E-02		2.506E-02	4.520E-02	3.670E-03	0.256
ZR-88	-1.323E-02		2.452E-02	3.970E-02	3.672E-03	-0.333
Y-91	2.735E+01		1.728E+01	3.160E+01	2.570E+00	0.866
NB-94	2.159E-02		2.828E-02	4.835E-02	4.370E-03	0.447
NB-95	-2.132E-02		4.092E-02	6.338E-02	5.858E-03	-0.336

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	2.922E-02		1.103E-01	1.616E-01	1.922E-02	0.181
ZR-95	5.476E-02		6.180E-02	1.063E-01	1.067E-02	0.515
NB-97	-1.319E-01		5.249E-02	Half-Life	too short	
ZR-97	2.315E+00		8.410E-01	Half-Life	too short	
MO-99	-7.015E+00		1.039E+01	1.551E+01	2.404E+00	-0.452
TC-99M	-5.321E+09		1.677E+10	Half-Life	too short	
RH-101	-5.434E-03		2.852E-02	4.554E-02	4.496E-03	-0.119
RH-102	6.140E-03		2.467E-02	4.157E-02	3.951E-03	0.148
RU-103	-7.162E-03		3.132E-02	5.078E-02	7.477E-03	-0.141
RH-106	-2.302E-02		2.555E-01	4.119E-01	5.644E-02	-0.056
RU-106	-2.302E-02		2.555E-01	4.119E-01	3.767E-02	-0.056
AG-108M	-1.639E-02		2.746E-02	4.344E-02	4.228E-03	-0.377
AG-110M	-3.504E-02		3.557E-02	4.409E-02	4.035E-03	-0.795
IN-111	8.250E-02		9.682E-01	1.398E+00	1.557E-01	0.059
IN-113M	-2.627E-02		3.539E-02	5.646E-02	5.359E-03	-0.465
SN-113	-2.627E-02		3.539E-02	5.646E-02	5.359E-03	-0.465
IN-114M	2.800E-02		1.660E-01	2.452E-01	2.371E-02	0.114
CD-115	-3.339E+00		8.784E+00	1.400E+01	1.329E+00	-0.238
SN-117M	-3.357E-03		4.419E-02	7.280E-02	6.466E-03	-0.046
SB-122	8.518E-01		1.717E+00	2.914E+00	2.742E-01	0.292
I-123	-7.481E-02		2.409E+00	Half-Life	too short	
TE-123M	-3.579E-04		2.305E-02	3.806E-02	3.404E-03	-0.009
I-124	-4.995E-01		6.048E-01	8.327E-01	7.701E-02	-0.600
SB-124	2.968E-02		6.158E-02	1.105E-01	9.679E-03	0.269
SB-125	-2.943E-02		7.598E-02	1.235E-01	1.180E-02	-0.238
TE-125M	-9.789E-01		7.302E+00	1.205E+01	1.226E+00	-0.081
I-126	6.994E-02		1.688E-01	2.501E-01	2.224E-02	0.280
SB-126	3.866E-02		1.166E-01	1.870E-01	1.702E-02	0.207
SB-127	-9.001E-01		1.137E+00	1.689E+00	1.969E-01	-0.533
XE-127	-2.222E-02		3.834E-02	6.066E-02	6.066E-03	-0.366
I-131	-9.329E-02		9.139E-02	1.412E-01	1.493E-02	-0.661
TE-132	1.059E-01		5.840E-01	9.533E-01	1.615E-01	0.111
BA-133	1.224E-04		3.648E-02	5.444E-02	7.866E-03	0.002
I-133	-6.625E-04		2.495E-03	Half-Life	too short	
CS-134	1.135E-01	+	7.085E-02	7.956E-02	7.459E-03	1.426
I-135	-2.862E+09		2.371E+09	Half-Life	too short	
CS-136	4.041E-02		8.429E-02	1.457E-01	1.349E-02	0.277
CE-139	-1.101E-02		2.479E-02	4.005E-02	3.633E-03	-0.275
BA-140	1.673E-01		2.320E-01	3.897E-01	1.301E-01	0.429
LA-140	-8.466E-02		6.980E-02	9.200E-02	7.836E-03	-0.920
CE-141	-7.393E-03		5.115E-02	8.317E-02	7.275E-03	-0.089
CE-143	4.170E-04		8.573E-05	Half-Life	too short	
CE-144	-2.079E-02		1.603E-01	2.658E-01	4.105E-02	-0.078
PM-144	7.472E-03		3.025E-02	4.971E-02	4.484E-03	0.150
PR-144	5.063E-01		2.050E+00	3.368E+00	3.037E-01	0.150
PM-146	2.020E-02		3.661E-02	6.296E-02	7.190E-03	0.321
ND-147	5.502E-02		4.521E-01	7.505E-01	1.161E-01	0.073
PM-149	-9.483E+01		7.946E+01	1.142E+02	2.010E+01	-0.830



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	5.030E-03		8.023E-02	1.206E-01	1.348E-02	0.042
GD-153	-5.209E-02		6.554E-02	9.539E-02	8.474E-03	-0.546
EU-154	3.341E-02		9.550E-02	1.611E-01	1.784E-02	0.207
EU-155	1.160E-01		8.728E-02	1.533E-01	1.326E-02	0.757
TB-160	6.077E-02		1.144E-01	2.001E-01	1.890E-02	0.304
HO-166M	8.474E-03		5.454E-02	8.883E-02	8.059E-03	0.095
TM-171	6.958E+00		2.414E+01	3.479E+01	2.666E+00	0.200
LU-176	3.070E-02		2.029E-02	3.486E-02	4.044E-03	0.880
LU-177	2.565E+00	+	1.406E+00	1.729E+00	1.755E-01	1.483
LU-177M	-1.397E-01		1.472E-01	2.305E-01	2.154E-02	-0.606
HF-181	-3.481E-03		3.387E-02	5.565E-02	5.293E-03	-0.063
W-181	-5.882E-02		3.272E-01	4.625E-01	3.493E-02	-0.127
TA-182	-4.293E-02		1.557E-01	2.463E-01	2.014E-02	-0.174
RE-183	2.250E-02		9.304E-02	1.527E-01	1.371E-02	0.147
RE-184	3.171E-01		1.915E-01	3.309E-01	3.750E-02	0.958
OS-185	-4.676E-02		3.519E-02	4.937E-02	4.438E-03	-0.947
RE-188	2.529E-02		1.371E-01	2.286E-01	2.011E-02	0.111
W-188	-6.336E+00		7.386E+00	9.694E+00	1.150E+00	-0.654
IR-192	1.396E-02		2.946E-02	4.804E-02	5.490E-03	0.291
AU-195	2.228E-01		1.747E-01	3.075E-01	2.707E-02	0.725
TL-200	7.174E-05		1.814E-04	Half-Life too short		
TL-201	-8.067E-01		5.739E+00	9.398E+00	8.556E-01	-0.086
TL-202	-1.071E-02		5.459E-02	8.970E-02	8.465E-03	-0.119
HG-203	-1.080E-03		3.371E-02	5.375E-02	6.551E-03	-0.020
BI-207	2.563E-02		4.208E-02	7.341E-02	6.471E-03	0.349
TL-207	-5.592E-02		6.042E-01	8.410E-01	1.609E-01	-0.066
PO-209	-1.730E+00		5.619E+00	9.085E+00	8.593E-01	-0.190
BI-210	-9.443E-01		3.036E+00	4.698E+00	4.381E-01	-0.201
PB-210	-9.443E-01		3.036E+00	4.698E+00	4.381E-01	-0.201
PO-210	-9.443E-01		3.036E+00	4.698E+00	3.968E-01	-0.201
PB-211	3.933E-02		7.925E-01	1.331E+00	8.356E-01	0.030
PO-215	-5.592E-02		6.042E-01	8.410E-01	1.609E-01	-0.066
RN-219	4.355E-02		3.385E-01	5.718E-01	8.819E-02	0.076
RN-220	-2.005E+01		2.170E+01	3.276E+01	3.095E+00	-0.612
RA-223	-5.592E-02		6.042E-01	8.410E-01	1.609E-01	-0.066
AC-227	-3.468E-01		3.382E-01	5.037E-01	8.602E-02	-0.689
TH-227	-3.468E-01		3.398E-01	5.037E-01	9.849E-02	-0.689
TH-229	-2.195E-01		4.252E-01	6.775E-01	6.611E-02	-0.324
PA-231	3.102E-01		1.224E+00	1.983E+00	3.430E-01	0.156
TH-231	-5.592E-02		6.042E-01	8.410E-01	1.609E-01	-0.066
U-231	-5.713E-01		8.512E-01	1.249E+00	1.121E-01	-0.458
PA-233	7.345E-02		5.392E-02	9.191E-02	1.074E-02	0.799
PA-234	-6.127E-02		2.682E-01	4.244E-01	8.108E-02	-0.144
PA-234M	-4.267E-02		4.250E+00	6.961E+00	7.247E-01	-0.006
U-235	1.404E-01		1.764E-01	2.965E-01	5.182E-02	0.474
NP-236	-1.976E-02		6.553E-02	1.068E-01	9.533E-03	-0.185
NP-239	4.892E-02		1.424E-01	2.423E-01	2.018E-02	0.202
AM-241	8.002E-02		1.394E-01	2.062E-01	1.618E-02	0.388

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.514E-02		7.756E-02	1.293E-01	1.111E-02	-0.194
AM-246	1.755E-03		1.212E-01	1.996E-01	1.741E-02	0.009
CM-247	3.672E-03		3.138E-02	5.297E-02	4.925E-03	0.069
CF-249	1.399E-02		3.128E-02	5.397E-02	5.063E-03	0.259
CF-251	9.301E-03		1.026E-01	1.692E-01	1.578E-02	0.055

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29414  *
*                                     *
*****
*                                     *
*               DETECTOR DATA        *
*                                     *
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691007 *
* Acquisition date   : 9-FEB-2010 15:24:58 Detector SN#      : *
* Detector ID        : GAM16          Sensitivity            : 5.000 *
* Geometry           : CAN             Energy tolerance:     1.500 *
* Elapsed live time  : 0 02:00:00.00  Abundance limit :     75.000 *
* Elapsed real time  : 0 02:00:02.03  Half life ratio :     8.000 *
*****
*                                     *
*               SAMPLE DATA          *
*                                     *
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID *
* Sample ID          : G245691007     Analyst initials: MJH1 *
* Batch Number       : 947037         Sample Quantity : 1.4493E+02 GRAM *
* Recovery           : 1.00000        Carrier Weight  : 0.00000 *
*****
*                                     *
*               QC DATA              *
*                                     *
* CALIB. DATE/TIME  : 16-NOV-2009 11:22:16 MS Isotope      : *
* MSD DPM            : 0.000          MSD Isotope          : *
* LCS DPM            : 0.000          LCS Isotope          : *
* LCSD DPM           : 0.000          LCSD Isotope         : *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.278E+01	2.424E+00	2.389E-01	1.237E+00
CD-109	3.438E+00	9.708E-01	4.816E-01	4.953E-01
SN-126	3.379E-01	9.542E-02	4.755E-02	4.868E-02
CS-135	4.648E-01	2.177E-01	1.005E-01	1.111E-01
BA-137M	7.853E-02	3.597E-02	2.662E-02	1.835E-02
CS-137	8.301E-02	3.803E-02	2.814E-02	1.940E-02
TL-208	4.299E-01	7.976E-02	2.543E-02	4.069E-02
BI-211	3.505E+00	5.602E-01	1.266E-01	2.858E-01
BI-212	9.555E-01	3.928E-01	1.705E-01	2.004E-01
PB-212	1.505E+00	1.982E-01	3.799E-02	1.011E-01
PO-212	1.505E+00	1.982E-01	3.799E-02	1.011E-01
BI-214	1.146E+00	1.872E-01	4.848E-02	9.551E-02
PB-214	1.219E+00	2.046E-01	4.414E-02	1.044E-01
PO-214	1.219E+00	2.046E-01	4.414E-02	1.044E-01
PO-216	1.505E+00	1.982E-01	3.799E-02	1.011E-01
PO-218	1.219E+00	2.046E-01	4.414E-02	1.044E-01
RA-224	3.944E+00	1.156E+00	4.323E-01	5.898E-01
RA-226	1.146E+00	1.872E-01	4.848E-02	9.551E-02
AC-228	1.376E+00	3.308E-01	9.991E-02	1.688E-01
RA-228	1.376E+00	3.308E-01	9.991E-02	1.688E-01
TH-228	1.528E+00	2.012E-01	3.857E-02	1.026E-01
TH-230	1.146E+00	1.872E-01	4.848E-02	9.551E-02
TH-232	1.376E+00	3.308E-01	9.991E-02	1.688E-01
TH-234	1.941E+00	1.508E+00	9.132E-01	7.693E-01
U-234	1.146E+00	1.872E-01	4.848E-02	9.551E-02
NP-237	9.922E-01	3.446E-01	1.412E-01	1.758E-01
U-238	1.941E+00	1.508E+00	9.132E-01	7.693E-01
AM-243	3.081E-01	5.807E-02	3.739E-02	2.963E-02
ANH-511	1.201E-01	6.204E-02	1.907E-02	3.165E-02

### ---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )	
BE-7	-8.553E-02	2.589E-01	2.205E-01	1.321E-01 NOT IDENT.
NA-22	4.681E-03	3.407E-02	2.889E-02	1.738E-02 NOT IDENT.
NA-24	6.710E+04	5.463E+05	0.000E+00	2.787E+05 SHORT HLIF
AL-26	-1.523E-02	2.083E-02	1.422E-02	1.063E-02 NOT IDENT.
TI-44	3.254E-01	4.912E-02	3.191E-02	2.506E-02 FAIL ABUN
SC-46	-5.738E-03	2.941E-02	2.502E-02	1.501E-02 FAIL ABUN
V-48	-1.484E-02	5.807E-02	4.862E-02	2.963E-02 NOT IDENT.
CR-51	3.739E-02	3.115E-01	2.639E-01	1.589E-01 NOT IDENT.
MN-52	9.449E-02	1.848E-01	1.640E-01	9.430E-02 NOT IDENT.
MN-54	8.319E-03	3.382E-02	3.002E-02	1.726E-02 NOT IDENT.
CO-56	8.196E-03	3.153E-02	2.808E-02	1.608E-02 NOT IDENT.
CO-57	4.066E-04	1.936E-02	1.760E-02	9.877E-03 NOT IDENT.
CO-58	-1.674E-02	3.033E-02	2.522E-02	1.548E-02 NOT IDENT.
FE-59	9.627E-03	7.638E-02	6.557E-02	3.897E-02 NOT IDENT.
CO-60	-8.287E-03	3.207E-02	2.573E-02	1.636E-02 NOT IDENT.
ZN-65	1.562E-02	7.848E-02	5.916E-02	4.004E-02 NOT IDENT.
GE-68	1.752E-01	9.833E-01	8.510E-01	5.017E-01 NOT IDENT.
AS-73	9.190E-02	6.781E-01	5.903E-01	3.460E-01 NOT IDENT.
AS-74	-9.008E-03	7.416E-02	6.273E-02	3.784E-02 NOT IDENT.
SE-75	-2.305E-02	3.981E-02	2.884E-02	2.031E-02 NOT IDENT.
BR-77	-7.455E-01	8.380E+00	7.203E+00	4.276E+00 FAIL ABUN
SR-82	-4.472E-01	3.133E-01	2.195E-01	1.598E-01 NOT IDENT.
RB-83	-1.221E-02	5.445E-02	4.630E-02	2.778E-02 NOT IDENT.
RB-84	2.243E-02	5.454E-02	4.908E-02	2.782E-02 NOT IDENT.
KR-85	1.080E+01	6.361E+00	5.524E+00	3.245E+00 NOT IDENT.
SR-85	5.538E-02	3.262E-02	2.833E-02	1.664E-02 NOT IDENT.
RB-86	-1.410E-01	6.448E-01	5.363E-01	3.290E-01 NOT IDENT.
Y-88	1.158E-02	2.456E-02	2.261E-02	1.253E-02 NOT IDENT.
ZR-88	-1.323E-02	2.403E-02	2.058E-02	1.226E-02 NOT IDENT.
Y-91	2.735E+01	1.693E+01	1.596E+01	8.640E+00 NOT IDENT.
NB-94	2.159E-02	2.772E-02	2.473E-02	1.414E-02 NOT IDENT.
NB-95	-2.132E-02	4.010E-02	3.236E-02	2.046E-02 NOT IDENT.
NB-95M	2.922E-02	1.081E-01	8.469E-02	5.517E-02 NOT IDENT.
ZR-95	5.476E-02	6.056E-02	5.429E-02	3.090E-02 NOT IDENT.
NB-97	-1.319E+05	1.029E+05	0.000E+00	5.249E+04 SHORT HLIF
ZR-97	2.315E+06	1.648E+06	0.000E+00	8.410E+05 SHORT HLIF
MO-99	-7.015E+00	1.018E+01	7.923E+00	5.195E+00 NOT IDENT.
TC-99M	-5.321E+15	3.287E+16	0.000E+00	0.000E+00 SHORT HLIF
RH-101	-5.434E-03	2.795E-02	2.396E-02	1.426E-02 NOT IDENT.
RH-102	6.140E-03	2.417E-02	2.145E-02	1.233E-02 NOT IDENT.
RU-103	-7.162E-03	3.069E-02	2.618E-02	1.566E-02 FAIL ABUN
RH-106	-2.302E-02	2.504E-01	2.113E-01	1.278E-01 FAIL ABUN
RU-106	-2.302E-02	2.504E-01	2.113E-01	1.278E-01 FAIL ABUN
AG-108M	-1.639E-02	2.691E-02	2.246E-02	1.373E-02 NOT IDENT.
AG-110M	-3.504E-02	3.486E-02	2.259E-02	1.779E-02 NOT IDENT.
IN-111	8.250E-02	9.488E-01	7.322E-01	4.841E-01 NOT IDENT.
IN-113M	-2.627E-02	3.468E-02	2.926E-02	1.769E-02 NOT IDENT.
SN-113	-2.627E-02	3.468E-02	2.926E-02	1.769E-02 NOT IDENT.
IN-114M	2.800E-02	1.627E-01	1.291E-01	8.302E-02 NOT IDENT.
CD-115	-3.339E+00	8.609E+00	7.209E+00	4.392E+00 NOT IDENT.
SN-117M	-3.357E-03	4.331E-02	3.848E-02	2.210E-02 NOT IDENT.
SB-122	8.518E-01	1.682E+00	1.498E+00	8.583E-01 NOT IDENT.
I-123	-7.481E+04	4.721E+06	0.000E+00	2.409E+06 SHORT HLIF
TE-123M	-3.579E-04	2.259E-02	2.012E-02	1.152E-02 NOT IDENT.
I-124	-4.995E-01	5.927E-01	4.274E-01	3.024E-01 NOT IDENT.
SB-124	2.968E-02	6.035E-02	5.539E-02	3.079E-02 NOT IDENT.
SB-125	-2.943E-02	7.446E-02	6.390E-02	3.799E-02 FAIL ABUN
TE-125M	-9.789E-01	7.156E+00	6.418E+00	3.651E+00 NOT IDENT.
I-126	6.994E-02	1.654E-01	1.281E-01	8.440E-02 NOT IDENT.
SB-126	3.866E-02	1.143E-01	9.559E-02	5.831E-02 FAIL ABUN
SB-127	-9.001E-01	1.115E+00	8.644E-01	5.686E-01 FAIL ABUN
XE-127	-2.222E-02	3.757E-02	3.189E-02	1.917E-02 NOT IDENT.
I-131	-9.329E-02	8.957E-02	7.328E-02	4.570E-02 NOT IDENT.
TE-132	1.059E-01	5.723E-01	5.000E-01	2.920E-01 NOT IDENT.
BA-133	1.224E-04	3.575E-02	2.827E-02	1.824E-02 NOT IDENT.
I-133	-6.625E+02	4.890E+03	0.000E+00	2.495E+03 SHORT HLIF
CS-134	1.135E-01	6.943E-02	4.058E-02	3.542E-02 FAIL ABUN
I-135	-2.862E+15	4.646E+15	0.000E+00	2.371E+15 SHORT HLIF
CS-136	4.041E-02	8.260E-02	7.385E-02	4.214E-02 FAIL ABUN
CE-139	-1.101E-02	2.429E-02	2.115E-02	1.239E-02 NOT IDENT.
BA-140	1.673E-01	2.274E-01	2.006E-01	1.160E-01 NOT IDENT.
LA-140	-8.466E-02	6.840E-02	4.618E-02	3.490E-02 FAIL ABUN
CE-141	-7.393E-03	5.012E-02	4.404E-02	2.557E-02 NOT IDENT.
CE-143	4.170E+02	1.680E+02	0.000E+00	8.573E+01 SHORT HLIF
CE-144	-2.079E-02	1.571E-01	1.410E-01	8.015E-02 NOT IDENT.
PM-144	7.472E-03	2.965E-02	2.543E-02	1.513E-02 NOT IDENT.

PR-144	5.063E-01	2.009E+00	1.723E+00	1.025E+00	NOT IDENT.
PM-146	2.020E-02	3.588E-02	3.253E-02	1.831E-02	NOT IDENT.
ND-147	5.502E-02	4.431E-01	3.864E-01	2.261E-01	FAIL ABUN
PM-149	-9.483E+01	7.787E+01	5.962E+01	3.973E+01	NOT IDENT.
EU-152	5.030E-03	7.863E-02	6.271E-02	4.012E-02	NOT IDENT.
GD-153	-5.209E-02	6.423E-02	5.094E-02	3.277E-02	NOT IDENT.
EU-154	3.341E-02	9.359E-02	8.128E-02	4.775E-02	NOT IDENT.
EU-155	1.160E-01	8.553E-02	8.175E-02	4.364E-02	FAIL ABUN
TB-160	6.077E-02	1.121E-01	1.018E-01	5.720E-02	FAIL ABUN
HO-166M	8.474E-03	5.345E-02	4.542E-02	2.727E-02	NOT IDENT.
TM-171	6.958E+00	2.365E+01	1.873E+01	1.207E+01	NOT IDENT.
LU-176	3.070E-02	1.988E-02	1.817E-02	1.014E-02	FAIL ABUN
LU-177	2.565E+00	1.378E+00	9.086E-01	7.031E-01	FAIL ABUN
LU-177M	-1.397E-01	1.442E-01	1.193E-01	7.358E-02	FAIL ABUN
HF-181	-3.481E-03	3.319E-02	2.871E-02	1.693E-02	NOT IDENT.
W-181	-5.882E-02	3.207E-01	2.491E-01	1.636E-01	NOT IDENT.
TA-182	-4.293E-02	1.526E-01	1.244E-01	7.787E-02	FAIL ABUN
RE-183	2.250E-02	9.118E-02	8.070E-02	4.652E-02	FAIL ABUN
RE-184	3.171E-01	1.876E-01	1.732E-01	9.574E-02	NOT IDENT.
OS-185	-4.676E-02	3.448E-02	2.530E-02	1.759E-02	NOT IDENT.
RE-188	2.529E-02	1.344E-01	1.209E-01	6.855E-02	NOT IDENT.
W-188	-6.336E+00	7.238E+00	5.058E+00	3.693E+00	FAIL ABUN
IR-192	1.396E-02	2.887E-02	2.502E-02	1.473E-02	FAIL ABUN
AU-195	2.228E-01	1.712E-01	1.642E-01	8.735E-02	FAIL ABUN
TL-200	7.174E+01	3.556E+02	0.000E+00	1.814E+02	SHORT HLIF
TL-201	-8.067E-01	5.624E+00	4.962E+00	2.869E+00	NOT IDENT.
TL-202	-1.071E-02	5.350E-02	4.638E-02	2.729E-02	NOT IDENT.
HG-203	-1.080E-03	3.304E-02	2.807E-02	1.686E-02	NOT IDENT.
BI-207	2.563E-02	4.123E-02	3.720E-02	2.104E-02	FAIL ABUN
TL-207	-5.592E-02	5.922E-01	4.377E-01	3.021E-01	FAIL ABUN
PO-209	-1.730E+00	5.507E+00	4.622E+00	2.809E+00	NOT IDENT.
BI-210	-9.443E-01	2.976E+00	2.547E+00	1.518E+00	NOT IDENT.
PB-210	-9.443E-01	2.976E+00	2.547E+00	1.518E+00	NOT IDENT.
PO-210	-9.443E-01	2.975E+00	2.547E+00	1.518E+00	NOT IDENT.
PB-211	3.933E-02	7.767E-01	6.895E-01	3.963E-01	NOT IDENT.
PO-215	-5.592E-02	5.922E-01	4.377E-01	3.021E-01	FAIL ABUN
RN-219	4.355E-02	3.317E-01	2.962E-01	1.692E-01	NOT IDENT.
RN-220	-2.005E+01	2.126E+01	1.685E+01	1.085E+01	NOT IDENT.
RA-223	-5.592E-02	5.922E-01	4.377E-01	3.021E-01	FAIL ABUN
AC-227	-3.468E-01	3.314E-01	2.635E-01	1.691E-01	FAIL ABUN
TH-227	-3.468E-01	3.330E-01	2.635E-01	1.699E-01	FAIL ABUN
TH-229	-2.195E-01	4.167E-01	3.566E-01	2.126E-01	FAIL ABUN
PA-231	3.102E-01	1.199E+00	1.035E+00	6.120E-01	FAIL ABUN
TH-231	-5.592E-02	5.922E-01	4.377E-01	3.021E-01	FAIL ABUN
U-231	-5.713E-01	8.342E-01	6.671E-01	4.256E-01	FAIL ABUN
PA-233	7.345E-02	5.284E-02	4.788E-02	2.696E-02	FAIL ABUN
PA-234	-6.127E-02	2.628E-01	2.156E-01	1.341E-01	FAIL ABUN
PA-234M	-4.267E-02	4.165E+00	3.532E+00	2.125E+00	NOT IDENT.
U-235	1.404E-01	1.728E-01	1.571E-01	8.818E-02	FAIL ABUN
NP-236	-1.976E-02	6.422E-02	5.645E-02	3.276E-02	NOT IDENT.
NP-239	4.892E-02	1.396E-01	1.289E-01	7.120E-02	FAIL ABUN
AM-241	8.002E-02	1.366E-01	1.112E-01	6.969E-02	NOT IDENT.
CM-243	-2.514E-02	7.601E-02	6.894E-02	3.878E-02	FAIL ABUN
AM-246	1.755E-03	1.187E-01	1.011E-01	6.059E-02	NOT IDENT.
CM-247	3.672E-03	3.076E-02	2.744E-02	1.569E-02	NOT IDENT.
CF-249	1.399E-02	3.065E-02	2.798E-02	1.564E-02	NOT IDENT.
CF-251	9.301E-03	1.005E-01	8.925E-02	5.129E-02	NOT IDENT.

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 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON ,SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY MDA COUNTS

46.50	243.3235
46.50	243.3235
46.50	243.3235
48.70	284.0543
49.72	230.3262
51.35	280.3695
52.39	259.6883
52.97	257.7307
53.15	257.8657
53.44	258.0822
54.07	274.1838
56.28	267.4309
56.28	267.4326
57.37	0.0000
57.53	303.5760
57.53	303.5774
57.60	303.6346
57.98	335.5622
57.98	335.5622
59.32	307.5009
59.32	307.5009
59.40	305.1262
59.54	294.6599
59.72	294.8021
60.01	298.2918
61.10	315.5059
61.14	315.5387
61.30	315.6718
63.00	356.0977
63.29	356.3656
63.29	356.3656
63.58	356.6324
64.28	346.1468
65.12	355.1484
65.20	355.2189
65.20	355.2189
66.05	375.8510
66.72	301.8485
66.83	301.9318
66.91	356.7499
67.20	338.7404
67.20	338.7404
67.75	359.1541
67.85	359.2441
68.90	349.3329
68.90	349.3329
69.30	359.6884
69.67	357.8411
70.82	341.7452
70.82	341.7452
70.83	341.7535
72.80	397.6385
72.87	397.7034
72.87	397.7034
74.67	376.9794
74.81	377.0997
74.81	377.0997
74.81	377.0997
74.81	377.0997
74.81	377.0997
74.81	377.0997
74.81	377.0997
74.97	377.2403
75.28	377.5103
75.70	377.8732
77.11	379.0891
77.11	379.0891

77.11	379.0891
77.11	379.0891
77.11	379.0891
77.11	379.0891
77.11	379.0891
78.38	368.2419
79.62	357.2946
79.80	357.4371
79.80	357.4371
80.11	343.9904
80.18	344.0436
80.30	344.1336
80.30	344.1336
80.57	336.6290
81.00	344.6631
81.07	344.7163
81.07	344.7163
81.07	344.7163
81.07	344.7163
82.60	339.4127
83.37	349.0233
83.78	291.5415
83.78	291.5415
83.78	291.5415
83.78	291.5415
84.21	291.8097
84.90	292.2378
85.43	292.5661
86.29	293.0973
86.50	293.2263
86.54	293.2503
86.59	293.2813
86.72	293.3604
86.79	293.4016
86.94	293.4962
87.30	293.7162
87.30	293.7162
87.30	293.7162
87.30	293.7162
87.30	293.7162
87.30	293.7162
87.57	293.8813
87.88	294.0704
88.03	294.1615
88.36	294.3626
88.47	294.4297
89.95	295.3236
91.11	296.0199
92.29	296.7248
92.38	296.7780
92.38	296.7780
93.35	297.3522
94.00	297.7373
94.67	243.4415
94.67	243.4443
94.90	244.8774
94.90	244.8774
94.90	244.8774
94.90	244.8774
95.87	289.1071
95.87	289.1071
96.73	326.7901
97.43	301.9572
98.44	267.6235
98.44	267.6251
98.88	264.1153
99.55	263.5625
99.55	263.5625
99.86	253.0271
100.00	270.9170
100.10	270.9711
103.18	304.8116
103.76	314.1149
105.00	268.0572
105.31	275.4106
108.00	295.7500
109.28	282.8325

111.00	285.5143
111.00	285.5143
111.76	276.7911
112.95	270.0687
115.19	272.9499
116.30	247.7747
117.00	241.6398
117.00	241.6398
117.66	260.3062
121.11	267.3670
121.62	267.5934
121.78	263.9593
122.06	262.2293
122.32	245.6555
122.32	245.6555
122.32	245.6555
122.32	245.6555
123.07	269.1624
127.23	313.0350
129.76	273.9550
131.20	311.2519
133.02	274.4169
133.54	270.8609
135.34	251.7399
136.00	262.4179
136.25	271.9937
136.48	272.0900
140.51	281.3820
140.51	0.0000
142.18	317.4608
142.65	281.3223
143.76	264.5309
144.24	267.5935
144.24	267.5935
144.24	267.5935
144.24	267.5935
145.22	276.6240
145.44	276.7119
147.16	261.9920
152.43	268.8256
152.70	258.2476
153.22	248.7214
154.21	251.0109
154.21	251.0109
154.21	251.0109
154.21	251.0109
155.03	263.9620
156.02	286.7595
158.56	262.3185
159.00	0.0000
159.00	264.4327
160.31	278.6438
161.27	292.7617
162.32	258.7435
162.64	270.6639
163.35	263.0427
163.89	272.1058
165.85	282.7037
167.43	262.4930
171.28	244.9014
171.86	263.0198
172.10	263.1003
176.55	243.5562
176.60	243.5735
181.06	260.0629
184.41	258.1076
185.71	262.5726
186.00	262.6675
190.27	243.1315
192.34	266.7296
193.63	263.0443
197.04	238.4122
198.01	245.8852
198.60	254.2891
200.40	248.6318
201.83	218.0424
202.84	249.3329
205.31	252.1115



208.36	270.1594
208.81	235.4029
209.75	235.6512
209.75	235.6512
210.97	208.3036
215.65	198.3631
216.55	213.2673
218.09	219.9407
222.10	221.9522
223.80	210.7088
226.40	235.7124
227.00	224.1746
227.08	223.1314
227.20	223.1592
228.16	212.7482
228.18	212.7523
228.18	212.7523
231.56	0.0000
235.69	212.2744
236.00	194.6476
236.00	194.6476
238.63	196.7849
238.63	196.7849
238.63	196.7849
238.63	196.7849
239.00	196.8575
240.98	197.2541
241.98	197.4532
241.98	197.4532
241.98	197.4532
244.69	180.1379
245.39	180.2649
247.94	164.9821
248.90	187.9534
249.79	198.9928
252.40	118.8296
252.85	136.3322
252.85	136.3322
254.15	0.0000
256.20	213.3695
256.20	213.3695
260.50	184.5874
260.90	183.5566
262.80	168.4737
264.65	172.0754
268.24	151.0742
268.79	166.1011
269.46	166.2048
269.46	166.2048
269.46	166.2048
269.46	166.2048
271.23	164.8117
273.65	185.2021
276.40	161.6942
277.35	161.8329
277.60	164.1039
277.60	164.1039
278.00	167.5140
278.60	168.7230
279.20	166.5761
279.53	183.4023
280.46	180.1980
281.68	159.1057
283.67	139.1872
284.30	153.8658
285.00	179.8079
285.90	178.8297
286.10	170.9845
286.10	170.9845
287.40	144.1537
288.45	0.0000
290.67	194.8311
290.80	194.8521
291.72	174.6612
293.26	0.0000
293.70	157.9763
295.21	159.8843
295.21	159.8843

295.21	159.8843
295.96	129.3540
296.50	156.6594
297.23	156.7577
298.57	156.9374
299.80	140.0266
299.80	140.0266
300.09	138.3536
300.09	138.3536
300.09	138.3536
300.09	138.3536
300.12	138.3585
301.29	135.0773
302.84	166.0734
303.76	171.3440
303.91	171.3654
304.40	156.0063
304.40	156.0063
304.84	145.7747
306.84	107.6548
308.46	176.6118
311.98	113.8705
316.51	132.7699
318.01	149.1169
319.02	133.0436
319.41	133.0857
320.08	138.9478
323.87	132.4086
323.87	132.4086
323.87	132.4086
323.87	132.4086
325.23	118.6016
328.77	136.4286
333.44	133.4268
334.20	128.2357
334.20	128.2357
334.30	128.2468
338.28	111.0248
338.28	111.0248
338.28	111.0248
338.28	111.0248
338.32	111.0287
338.32	111.0287
338.32	111.0287
340.50	114.3947
340.57	114.4006
344.27	110.4797
345.85	123.3781
350.59	0.0000
351.07	106.7853
351.92	106.8549
351.92	106.8549
351.92	106.8549
355.39	0.0000
356.01	111.4728
364.48	119.5490
366.43	99.9180
367.43	113.5031
367.94	0.0000
369.80	117.3106
374.96	95.1066
383.85	106.6525
387.95	104.2205
388.63	107.9278
391.69	123.7424
391.69	123.7424
392.90	121.0953
398.62	116.9715
400.65	114.3674
401.10	126.3972
401.81	117.2273
402.60	125.6033
404.84	127.6441
410.95	109.5987
411.60	130.0879
413.65	133.9893
414.70	105.2185
415.30	105.2599

415.76	102.4973
417.63	0.0000
418.52	112.9538
423.70	103.9744
427.08	105.1436
427.89	113.6535
432.53	98.9230
433.93	110.3266
439.47	95.5798
439.56	97.4772
439.89	100.3374
443.98	87.3127
444.90	102.5568
445.03	102.5667
445.03	102.5667
445.03	102.5667
453.90	96.4536
463.38	81.6512
468.07	101.7296
473.00	103.3869
475.06	96.7438
475.35	94.8253
476.78	94.9061
477.59	98.8281
477.96	93.0352
482.03	88.4034
484.57	85.6179
487.03	90.6145
490.36	0.0000
492.35	86.9888
497.08	81.3485
507.63	0.0000
510.53	0.0000
510.84	82.9810
511.00	82.9887
511.85	83.0278
511.85	83.0278
513.99	76.0031
513.99	76.0031
520.41	84.4215
520.65	84.4345
527.90	84.7743
528.96	0.0000
529.64	77.8691
529.87	0.0000
531.02	77.9286
537.32	82.2077
543.00	100.5615
546.56	0.0000
549.76	93.8656
552.65	71.7714
555.20	74.9056
563.23	81.3232
563.90	77.2826
568.70	86.6524
569.32	96.8787
569.50	96.8874
569.67	93.8362
573.80	93.0162
574.00	93.0245
574.64	94.0776
578.91	72.1488
579.30	0.0000
583.14	85.2467
585.48	92.1348
591.81	91.8138
592.07	91.8247
593.00	69.1592
595.88	80.6303
600.56	71.4953
602.52	0.0000
602.71	96.8111
602.71	96.8111
603.60	112.9039
604.41	88.0349
604.70	88.0478
609.31	87.4146

609.31	87.4146
609.31	87.4146
609.31	87.4146
610.33	87.4581
612.46	88.3842
614.37	83.4595
618.01	76.2927
621.84	70.1529
621.84	70.1529
631.29	79.9406
633.02	89.4824
633.10	92.6433
634.78	85.3432
635.90	57.9793
636.97	68.5567
645.85	80.4949
646.12	83.6844
656.30	59.6025
657.75	93.7256
657.90	0.0000
661.65	87.0661
661.65	87.0661
664.57	0.0000
666.33	66.7228
666.33	66.7228
675.00	49.3818
677.61	63.4131
685.20	76.5729
692.80	86.5723
695.00	80.1584
696.49	78.0425
696.49	78.0425
697.00	80.2284
697.49	80.2465
698.33	79.1910
698.50	74.8581
699.00	83.5561
702.63	65.2130
706.10	90.3481
706.58	0.0000
706.67	92.5485
709.31	73.0338
711.68	77.4742
713.82	73.1770
717.42	74.3854
720.50	56.3332
721.93	0.0000
722.20	54.3696
722.78	61.4004
722.78	61.4004
722.89	61.4038
722.95	68.4233
723.30	68.4328
724.18	61.4380
727.18	52.7285
733.00	71.9488
735.90	79.3872
739.58	78.4059
742.81	53.0801
744.21	69.7080
747.13	64.2535
751.79	81.0289
752.31	84.3774
753.82	76.6543
755.35	68.9213
756.15	57.8240
756.87	62.2908
763.93	102.6324
765.79	92.6632
766.42	85.9882
766.84	78.1839
776.49	76.2489
778.00	59.2421
778.57	52.0726
778.89	52.0796
783.80	70.1771
785.46	18.0063
792.07	27.0806

795.84	47.4628
796.30	47.4717
798.80	48.2721
801.93	60.4150
805.60	44.4697
810.29	61.8275
810.76	61.8392
815.85	56.4948
817.79	67.4798
818.51	52.9038
819.60	53.8389
826.30	63.1276
828.27	0.0000
831.60	77.0089
831.96	68.7671
834.83	80.7748
836.80	0.0000
846.75	55.3242
848.13	59.0438
856.28	0.0000
856.80	64.7893
860.37	55.6084
867.32	46.4600
867.82	63.5070
871.10	46.5247
873.19	59.5969
874.81	54.0422
875.33	0.0000
876.40	51.2765
879.36	48.5329
880.27	45.7485
880.51	49.4869
881.50	46.7029
883.24	49.5361
884.67	58.9133
889.25	48.7081
896.60	48.8376
898.02	46.9836
899.00	48.8808
903.28	54.6044
911.07	67.9728
911.07	67.9728
911.07	67.9728
919.63	58.0006
920.93	56.8433
925.00	48.3853
925.24	44.5938
926.50	42.7159
935.52	54.2766
937.48	88.6179
944.10	55.3945
946.00	50.6515
949.00	65.0549
962.29	68.8742
964.01	51.2852
966.15	78.5882
968.20	73.1852
969.11	73.2094
969.11	73.2094
969.11	73.2094
977.42	61.5804
980.50	49.3154
983.50	54.2049
989.30	50.4309
996.32	70.9611
1001.03	62.3094
1001.68	47.7164
1004.76	71.1590
1021.30	0.0000
1024.50	0.0000
1034.80	40.3574
1036.00	41.3581
1037.82	52.2185
1038.57	51.2459
1038.76	0.0000
1045.16	54.3179
1046.59	47.4258
1048.07	39.5391

1050.47	57.3770
1050.47	57.3770
1062.04	58.5794
1063.62	40.7277
1076.63	51.8629
1077.35	44.8923
1078.86	51.8984
1085.78	48.0094
1099.22	52.2234
1112.02	64.9731
1112.84	59.0691
1115.52	47.0996
1120.29	69.0674
1120.29	69.0674
1120.29	69.0674
1120.29	69.0674
1120.51	69.0707
1121.28	72.4575
1124.00	0.0000
1129.67	58.7873
1131.51	0.0000
1147.95	0.0000
1167.94	59.4500
1173.22	71.8594
1175.09	64.7104
1177.93	72.9865
1189.05	70.1250
1204.90	49.7227
1205.75	0.0000
1213.00	55.0289
1221.42	56.1990
1230.97	58.4336
1235.34	85.6676
1236.41	0.0000
1238.25	66.9156
1246.25	62.8740
1260.41	0.0000
1271.85	37.9863
1274.45	34.8466
1274.54	38.0145
1291.56	47.7356
1298.22	0.0000
1312.09	42.6621
1325.50	26.7578
1325.50	26.7578
1332.49	34.3109
1333.61	25.7414
1360.21	21.5977
1362.66	0.0000
1365.15	19.4625
1368.21	20.5595
1368.53	0.0000
1376.25	18.0713
1384.27	23.5403
1394.10	18.5157
1395.20	22.8785
1407.95	21.8584
1434.06	18.6992
1436.60	24.7643
1457.56	0.0000
1460.81	25.8319
1489.15	18.5758
1509.49	11.1987
1596.49	28.5571
1620.62	13.3979
1678.03	0.0000
1691.02	11.6592
1691.02	11.6592
1706.46	0.0000
1750.46	0.0000
1764.49	16.9120
1764.49	16.9120
1764.49	16.9120
1764.49	16.9120
1770.23	71.1123
1771.40	32.6012
1791.20	0.0000
1808.65	10.9490

1836.01

8.0062

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691007

Total Uranium Activity	5.8395E+00	ug/g
Total Uranium Counting Unc.	4.4868E+00	ug/g
Total Uranium Tpu	2.2892E-06	ug/g
Total Uranium Mda	2.7179E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037                          SAMPLE ID : G245691007
*  ANALYST       : MJH1                             DETECTOR  : GAM16
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00          COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 15:24:58.48          SAMPLE ALQT: 144.930 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.078E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.160E+00
GROSS GAMMA MDA (pCi/GRAM ) : 2.970E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.438E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:32:57.70

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691008.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:32:30.
Sample ID          : G245691008      Sample quantity   : 1.22130E+02 GRAM
Detector name      : GAM12           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.62  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MJH1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 947037          Detector SN#      :
Matrix Spike ID    :                 LCS ID            : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.21*	74	479	0.74	125.90	123	7	1.02E-02	52.0	
2	3	74.75*	472	523	1.17	148.99	144	15	6.55E-02	9.3	1.08E+00
3	3	77.03	629	419	0.96	153.55	144	15	8.73E-02	6.6	
4	4	84.22*	122	286	1.21	167.95	165	26	1.70E-02	22.6	2.89E+00
5	4	87.00*	294	432	1.38	173.51	165	26	4.09E-02	13.6	
6	4	89.91	195	403	1.39	179.33	165	26	2.70E-02	20.2	
7	4	92.63*	314	372	1.40	184.77	165	26	4.36E-02	13.4	
8	0	128.79	130	366	1.66	257.13	252	9	1.80E-02	28.1	
9	0	185.74*	173	304	1.42	371.08	367	9	2.40E-02	20.9	
10	0	209.25	99	302	1.23	418.12	413	9	1.37E-02	33.5	
11	3	238.47*	1262	207	1.12	476.60	471	16	1.75E-01	3.4	8.04E-01
12	3	241.34	269	213	1.59	482.34	471	16	3.73E-02	11.6	
13	0	270.07	138	229	1.31	539.83	535	11	1.92E-02	22.8	
14	0	295.01*	413	190	1.17	589.73	585	10	5.74E-02	8.1	
15	0	300.04	123	218	1.80	599.78	595	13	1.71E-02	26.1	
16	0	328.38	112	221	1.39	656.49	649	14	1.56E-02	29.8	
17	0	337.98*	239	190	1.22	675.70	670	10	3.32E-02	12.7	
18	0	351.73*	707	162	1.29	703.20	698	11	9.81E-02	5.2	
19	0	462.49	63	114	1.50	924.81	921	10	8.74E-03	34.0	
20	0	510.52*	183	155	2.40	1020.90	1013	19	2.55E-02	19.5	
21	0	583.01*	407	150	1.47	1165.93	1158	16	5.65E-02	8.4	
22	0	609.01*	474	89	1.44	1217.93	1211	15	6.58E-02	6.5	
23	0	726.81	106	89	1.11	1453.60	1448	12	1.47E-02	20.4	
24	0	767.26	70	66	1.25	1534.51	1529	11	9.68E-03	25.9	
25	0	860.45	64	61	1.04	1720.92	1715	11	8.87E-03	27.1	
26	0	910.86*	288	61	1.51	1821.76	1816	15	4.00E-02	8.5	
27	0	968.57*	157	67	1.98	1937.19	1933	12	2.18E-02	13.2	
28	0	1120.28	83	104	1.64	2240.62	2232	14	1.15E-02	28.5	
29	0	1460.04*	1528	27	1.93	2920.11	2911	17	2.12E-01	2.7	
30	0	1581.41	10	8	1.62	3162.80	3154	11	1.37E-03	64.9	
31	0	1619.84	21	13	1.21	3239.64	3231	12	2.96E-03	39.2	
32	0	1630.68	12	8	1.42	3261.31	3255	9	1.61E-03	54.7	
33	0	1661.22	25	6	1.90	3322.37	3316	13	3.51E-03	28.6	
34	0	1728.40	36	0	1.03	3456.69	3450	14	5.00E-03	16.7	
35	0	1763.65	97	0	2.17	3527.19	3520	17	1.35E-02	10.2	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 17:33:00

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691008.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MJH1  
 Sample date : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:32:30  
 Sample ID : G245691008 Sample quantity : 122.13 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA12 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.62 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.869E+01	3.454E+00	3.162E-01	2.255E-02	122.358
NB-95	+	765.79	*	1.275E-01	6.666E-02	7.631E-02	5.582E-03	1.671
CD-109	+	88.03	*	4.415E+00	1.249E+00	1.234E+00	9.443E-02	3.577
SN-126	+	64.28		7.370E-01	7.736E-01	8.364E-01	1.174E-01	0.881
	+	86.94		1.804E+00	8.904E-01	5.100E-01	2.099E-01	3.537
	+	87.57	*	4.339E-01	1.228E-01	1.219E-01	9.287E-03	3.560
TL-208		277.35		4.191E-01	3.895E-01	6.807E-01	7.129E-02	0.616
	+	510.84		9.335E-01	3.774E-01	2.130E-01	2.199E-02	4.382
	+	583.14	*	5.930E-01	1.088E-01	6.005E-02	4.296E-03	9.875
	+	860.37		8.778E-01	4.815E-01	5.342E-01	4.668E-02	1.643
BI-211		72.87		2.307E+00	3.729E+00	5.763E+00	3.866E-01	0.400
	+	351.07	*	4.461E+00	5.419E-01	3.303E-01	2.077E-02	13.503
BI-212	+	727.18	*	1.323E+00	5.526E-01	5.192E-01	4.495E-02	2.548
		785.46		2.268E+00	1.914E+00	3.425E+00	2.559E-01	0.662
	+	1620.62		2.268E+00	1.786E+00	2.140E+00	1.378E-01	1.060
PB-212	+	74.81		2.952E+00	6.445E-01	5.914E-01	6.836E-02	4.991
	+	77.11		2.228E+00	3.307E-01	3.356E-01	2.323E-02	6.637
	+	87.30		2.007E+00	6.022E-01	5.652E-01	7.099E-02	3.550
	+	238.63	*	1.734E+00	1.714E-01	9.553E-02	6.784E-03	18.148
	+	300.09		2.619E+00	1.384E+00	1.154E+00	9.420E-02	2.270
PO-212	+	74.81		2.952E+00	6.445E-01	5.914E-01	6.836E-02	4.991
	+	77.11		2.228E+00	3.307E-01	3.356E-01	2.323E-02	6.637
	+	87.30		2.007E+00	6.022E-01	5.652E-01	7.099E-02	3.550
		115.19		1.927E+00	3.586E+00	6.023E+00	3.821E-01	0.320
	+	238.63	*	1.734E+00	1.714E-01	9.553E-02	6.784E-03	18.148
	+	300.09		2.619E+00	1.384E+00	1.154E+00	9.420E-02	2.270
BI-214	+	609.31	*	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
	+	1120.29		1.183E+00	6.823E-01	5.714E-01	5.190E-02	2.071
	+	1764.49		1.905E+00	4.030E-01	1.555E-01	9.214E-03	12.252
PB-214	+	74.81		5.086E+00	1.072E+00	1.019E+00	1.025E-01	4.991
	+	77.11		3.819E+00	6.373E-01	5.754E-01	5.923E-02	6.637
	+	87.30		3.438E+00	1.008E+00	9.683E-01	1.048E-01	3.550
	+	241.98		2.216E+00	5.408E-01	5.269E-01	4.146E-02	4.206
	+	295.21		1.537E+00	2.806E-01	2.161E-01	1.824E-02	7.114

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.552E+00	2.052E-01	1.152E-01	9.408E-03	13.473
	+	74.81		5.086E+00	1.072E+00	1.019E+00	1.025E-01	4.991
	+	77.11		3.819E+00	6.373E-01	5.754E-01	5.923E-02	6.637
	+	87.30		3.438E+00	1.008E+00	9.683E-01	1.048E-01	3.550
	+	241.98		2.216E+00	5.408E-01	5.269E-01	4.146E-02	4.206
PO-216	+	295.21		1.537E+00	2.806E-01	2.161E-01	1.824E-02	7.114
	+	351.92	*	1.552E+00	2.052E-01	1.152E-01	9.408E-03	13.473
	+	74.81		2.952E+00	6.445E-01	5.914E-01	6.836E-02	4.991
	+	77.11		2.228E+00	3.307E-01	3.356E-01	2.323E-02	6.637
	+	87.30		2.007E+00	6.022E-01	5.652E-01	7.099E-02	3.550
PO-218	+	238.63	*	1.734E+00	1.714E-01	9.553E-02	6.784E-03	18.148
	+	300.09		2.619E+00	1.384E+00	1.154E+00	9.420E-02	2.270
	+	74.81		5.086E+00	1.072E+00	1.019E+00	1.025E-01	4.991
	+	77.11		3.819E+00	6.373E-01	5.754E-01	5.923E-02	6.637
	+	87.30		3.438E+00	1.008E+00	9.683E-01	1.048E-01	3.550
RA-224	+	241.98		2.216E+00	5.408E-01	5.269E-01	4.146E-02	4.206
	+	295.21		1.537E+00	2.806E-01	2.161E-01	1.824E-02	7.114
	+	351.92	*	1.552E+00	2.052E-01	1.152E-01	9.408E-03	13.473
	+	240.98	*	4.202E+00	9.980E-01	1.087E+00	5.998E-02	3.865
	+	609.31	*	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
AC-228	+	1120.29		1.183E+00	6.823E-01	5.714E-01	5.190E-02	2.071
	+	1764.49		1.905E+00	4.030E-01	1.555E-01	9.214E-03	12.252
	+	338.32		1.659E+00	7.974E-01	4.327E-01	1.763E-01	3.834
	+	911.07	*	1.871E+00	3.801E-01	2.359E-01	2.590E-02	7.932
	+	969.11		1.800E+00	6.321E-01	5.783E-01	1.333E-01	3.113
TH-228	+	338.32		1.659E+00	7.974E-01	4.327E-01	1.763E-01	3.834
	+	911.07	*	1.871E+00	3.801E-01	2.359E-01	2.590E-02	7.932
	+	969.11		1.800E+00	6.321E-01	5.783E-01	1.333E-01	3.113
	+	74.81		2.997E+00	5.923E-01	6.004E-01	4.139E-02	4.991
	+	77.11		2.261E+00	3.358E-01	3.407E-01	2.359E-02	6.637
TH-230	+	87.30		2.037E+00	5.764E-01	5.738E-01	4.361E-02	3.550
	+	238.63	*	1.760E+00	1.740E-01	9.699E-02	6.887E-03	18.148
	+	300.09		2.659E+00	2.093E+00	1.171E+00	6.902E-01	2.270
	+	609.31	*	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
	+	1120.29		1.183E+00	6.823E-01	5.713E-01	5.190E-02	2.071
TH-232	+	1764.49		1.905E+00	4.030E-01	1.555E-01	9.214E-03	12.252
	+	338.32		1.659E+00	4.332E-01	4.327E-01	2.451E-02	3.834
	+	911.07	*	1.871E+00	3.801E-01	2.359E-01	2.590E-02	7.932
	+	969.11		1.800E+00	6.321E-01	5.783E-01	1.333E-01	3.113
	+	63.29	*	1.862E+00	1.963E+00	2.330E+00	3.966E-01	0.799
U-234	+	92.38		2.989E+00	9.538E-01	7.982E-01	1.396E-01	3.744
	+	609.31	*	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
	+	1120.29		1.183E+00	6.823E-01	5.713E-01	5.190E-02	2.071
	+	1764.49		1.905E+00	4.030E-01	1.555E-01	9.214E-03	12.252
	+	86.50	*	1.274E+00	4.462E-01	3.620E-01	7.952E-02	3.520
NP-237	+	95.87		-7.532E-02	1.002E+00	1.482E+00	3.577E-01	-0.051
	+	63.29	*	1.862E+00	1.963E+00	2.330E+00	3.966E-01	0.799
	+	92.38		2.989E+00	8.271E-01	7.982E-01	5.811E-02	3.744
	+	74.67	*	4.785E-01	9.443E-02	9.617E-02	6.535E-03	4.976
	+							

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	86.72		4.778E+01	1.352E+01	1.354E+01	1.023E+00	3.528
		117.66		-3.404E+00	3.884E+00	6.116E+00	3.853E-01	-0.557
		142.18		2.022E+01	1.872E+01	3.140E+01	1.777E+00	0.644
ANH-511	+	511.00	*	2.016E-01	7.976E-02	4.603E-02	2.805E-03	4.381

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-7.274E-02	3.483E-01	5.516E-01	3.796E-02	-0.132
NA-22		1274.54	*	-4.042E-02	5.306E-02	8.075E-02	5.200E-03	-0.501
NA-24		1368.53	*	-4.291E-01	5.306E-02	Half-Life too short		
AL-26		1129.67		-1.836E+00	2.080E+00	3.196E+00	1.948E-01	-0.575
		1808.65	*	1.957E-03	3.202E-02	5.359E-02	3.075E-03	0.037
TI-44		67.85		-6.145E-02	5.292E-02	8.076E-02	5.257E-03	-0.761
	+	78.38	*	4.111E-01	6.103E-02	7.933E-02	5.549E-03	5.182
SC-46		889.25	*	-3.605E-02	4.499E-02	6.698E-02	5.551E-03	-0.538
	+	1120.51		2.026E-01	1.161E-01	1.493E-01	9.277E-03	1.357
V-48		944.10		-1.592E-01	9.968E-01	1.580E+00	1.269E-01	-0.101
		983.50	*	-1.663E-02	8.690E-02	1.214E-01	9.353E-03	-0.137
		1312.09		-7.292E-02	9.577E-02	1.439E-01	9.763E-03	-0.507
CR-51		320.08	*	2.244E-01	3.736E-01	6.403E-01	4.071E-02	0.350
MN-52		744.21		1.707E-01	2.938E-01	5.033E-01	3.595E-02	0.339
		848.13		4.650E+00	7.677E+00	1.314E+01	1.047E+00	0.354
		935.52		8.516E-02	2.847E-01	4.722E-01	3.823E-02	0.180
		1246.25		2.677E+00	8.933E+00	1.507E+01	9.285E-01	0.178
		1333.61		-1.339E+00	5.353E+00	8.488E+00	5.927E-01	-0.158
		1434.06	*	-1.065E-01	2.566E-01	3.917E-01	2.691E-02	-0.272
MN-54		834.83	*	2.789E-02	4.341E-02	7.427E-02	5.839E-03	0.376
CO-56		846.75	*	9.673E-03	4.415E-02	7.323E-02	5.826E-03	0.132
		977.42		-1.435E+00	3.456E+00	5.146E+00	3.992E-01	-0.279
		1037.82		3.495E-02	3.395E-01	5.733E-01	4.428E-02	0.061
		1175.09		-1.019E+00	2.750E+00	4.415E+00	2.434E-01	-0.231
		1238.25		3.953E-02	1.146E-01	1.933E-01	1.244E-02	0.205
		1360.21		-2.102E-01	1.063E+00	1.692E+00	1.178E-01	-0.124
		1771.40		-2.775E-02	2.345E-01	3.190E-01	1.881E-02	-0.087
CO-57		122.06	*	-8.153E-03	2.670E-02	4.314E-02	2.698E-03	-0.189
		136.48		-7.071E-02	2.179E-01	3.494E-01	2.350E-02	-0.202
CO-58		810.76	*	-2.356E-02	4.284E-02	6.629E-02	5.101E-03	-0.355
FE-59		142.65		2.740E+00	2.910E+00	4.853E+00	2.742E-01	0.565
		192.34		6.544E-01	1.012E+00	1.657E+00	1.915E-01	0.395
		1099.22	*	-1.522E-02	1.102E-01	1.813E-01	1.339E-02	-0.084
		1291.56		7.120E-02	1.452E-01	2.495E-01	2.009E-02	0.285
CO-60		1173.22		6.868E-02	5.501E-02	9.956E-02	5.473E-03	0.690
		1332.49	*	-1.238E-02	4.186E-02	6.599E-02	4.609E-03	-0.188
ZN-65		1115.52	*	-5.535E-02	1.378E-01	1.888E-01	1.187E-02	-0.293
GE-68		1077.35	*	2.135E-01	1.456E+00	2.459E+00	1.658E-01	0.087
AS-73		53.44	*	2.004E-02	8.854E-01	1.486E+00	9.594E-02	0.013
AS-74		595.88	*	5.353E-02	1.006E-01	1.744E-01	1.110E-02	0.307

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75	634.78			5.190E-02	3.830E-01	6.444E-01	4.153E-02	0.081
	66.05			-5.004E+00	5.661E+00	8.189E+00	7.149E-01	-0.611
	96.73			-6.217E-01	8.600E-01	1.221E+00	1.546E-01	-0.509
	121.11			-9.961E-02	1.429E-01	2.265E-01	2.157E-02	-0.440
	136.00			-3.309E-02	4.090E-02	6.409E-02	3.784E-03	-0.516
	198.60			-1.516E+00	1.907E+00	2.865E+00	1.925E-01	-0.529
	264.65	*		-1.079E-02	4.757E-02	6.918E-02	3.921E-03	-0.156
	279.53			-5.420E-02	1.154E-01	1.885E-01	1.155E-02	-0.288
	303.91			9.960E-02	2.388E+00	3.505E+00	3.319E-01	0.028
	400.65			4.944E-02	2.698E-01	4.454E-01	3.980E-02	0.111
BR-77	87.88	+		9.623E+02	2.723E+02	3.754E+02	2.870E+01	2.563
	200.40			2.600E+01	1.677E+02	2.687E+02	1.425E+01	0.097
	239.00	+		2.809E+02	2.475E+01	4.083E+01	2.249E+00	6.880
	249.79			-1.974E+01	6.542E+01	1.086E+02	6.029E+00	-0.182
	281.68			6.885E+00	9.504E+01	1.595E+02	9.012E+00	0.043
	297.23			1.883E+02	7.501E+01	1.043E+02	5.923E+00	1.804
	303.76			2.955E+01	2.063E+02	3.051E+02	1.734E+01	0.097
	439.47			1.147E+02	1.610E+02	2.731E+02	1.573E+01	0.420
	484.57			-5.357E+01	2.424E+02	3.828E+02	2.290E+01	-0.140
	520.65	*		4.918E+00	1.099E+01	1.821E+01	1.117E+00	0.270
SR-82	574.64			-1.678E+02	2.397E+02	3.557E+02	2.245E+01	-0.472
	578.91			5.009E+01	1.038E+02	1.587E+02	1.004E+01	0.316
	585.48			9.301E+02	2.433E+02	4.458E+02	2.826E+01	2.086
	755.35			-9.634E+00	2.019E+02	3.269E+02	2.364E+01	-0.029
	817.79			-9.005E+01	1.489E+02	2.288E+02	1.768E+01	-0.394
	698.33			-2.090E+01	4.243E+01	6.512E+01	4.413E+00	-0.321
	776.49	*		-5.287E-01	4.310E-01	6.270E-01	4.639E-02	-0.843
	1395.20			-1.139E+01	1.357E+01	1.975E+01	1.368E+00	-0.577
	520.41	*		-1.885E-03	7.426E-02	1.185E-01	7.265E-03	-0.016
	529.64			-1.200E-02	1.171E-01	1.854E-01	1.143E-02	-0.065
RB-83	552.65			-1.360E-01	2.145E-01	3.446E-01	2.152E-02	-0.395
	881.50	*		3.016E-02	8.391E-02	1.403E-01	1.154E-02	0.215
	513.99	*		1.105E+01	8.270E+00	1.309E+01	7.993E-01	0.844
	513.99	*		5.666E-02	4.242E-02	6.713E-02	4.100E-03	0.844
	1076.63	*		-1.684E-02	9.242E-01	1.539E+00	1.039E-01	-0.011
	898.02			2.612E-02	4.999E-02	8.267E-02	6.945E-03	0.316
	1836.01	*		1.644E-02	3.607E-02	6.459E-02	3.636E-03	0.254
	392.90	*		-2.563E-02	3.309E-02	5.126E-02	2.811E-03	-0.500
	1204.90	*		-2.916E+00	2.178E+01	3.558E+01	2.057E+00	-0.082
	702.63	*		8.349E-03	3.923E-02	6.578E-02	4.480E-03	0.127
NB-94	871.10			1.298E-02	4.024E-02	6.716E-02	5.471E-03	0.193
	235.69	*		6.202E-02	1.395E-01	2.136E-01	1.558E-02	0.290
	724.18			1.540E-01	1.282E-01	2.036E-01	1.605E-02	0.756
	756.15	*		-5.342E-02	8.757E-02	1.354E-01	1.118E-02	-0.395
	657.90	*		7.560E-02	8.757E-02	Half-Life	too short	
	1024.50			8.496E+00	8.757E-02	Half-Life	too short	
	254.15			4.745E-01	8.757E-02	Half-Life	too short	
	355.39			-1.896E+00	8.757E-02	Half-Life	too short	
	507.63	*		6.021E+00	8.757E-02	Half-Life	too short	
						Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	602.52			5.932E-01	8.757E-02	Half-Life	too short	
	1021.30			-5.241E+00	8.757E-02	Half-Life	too short	
	1147.95			-2.408E+00	8.757E-02	Half-Life	too short	
	1362.66			-1.828E+00	8.757E-02	Half-Life	too short	
	1750.46			2.278E+00	8.757E-02	Half-Life	too short	
MO-99	140.51			-2.160E+01	2.979E+01	4.498E+01	1.211E+01	-0.480
	181.06			4.702E+00	1.914E+01	2.766E+01	4.687E+00	0.170
	366.43			5.327E+01	8.512E+01	1.454E+02	8.131E+00	0.366
	739.58	*		-1.071E-01	1.393E+01	2.290E+01	3.293E+00	-0.005
	778.00			-2.790E+01	3.534E+01	5.343E+01	3.960E+00	-0.522
TC-99M	140.51	*		-3.391E+10	3.534E+01	Half-Life	too short	
RH-101	127.23			1.783E-02	3.805E-02	5.694E-02	3.455E-03	0.313
	198.01	*		-1.461E-02	3.442E-02	5.279E-02	2.793E-03	-0.277
	325.23			-1.322E-01	2.646E-01	3.696E-01	2.099E-02	-0.358
RH-102	418.52			-1.355E-01	3.052E-01	4.807E-01	2.712E-02	-0.282
	475.06	*		3.362E-02	3.053E-02	5.314E-02	3.156E-03	0.633
	631.29			1.536E-02	6.181E-02	1.048E-01	6.748E-03	0.147
	697.49			-1.737E-02	9.263E-02	1.511E-01	1.023E-02	-0.115
	+	766.84		3.207E-01	1.677E-01	2.467E-01	1.806E-02	1.300
		1046.59		1.752E-02	1.265E-01	2.141E-01	1.517E-02	0.082
		1112.84		1.914E-01	3.107E-01	4.764E-01	3.007E-02	0.402
RU-103	497.08	*		1.035E-02	4.369E-02	7.106E-02	9.065E-03	0.146
	+	610.33		1.407E+01	2.861E+00	3.119E+00	4.882E-01	4.509
RH-106	+	511.85		1.007E+00	3.984E-01	4.681E-01	2.854E-02	2.152
		621.84	*	5.908E-02	3.651E-01	6.158E-01	7.424E-02	0.096
		1050.47		2.937E-01	2.620E+00	4.422E+00	3.115E-01	0.066
RU-106	+	511.85		1.007E+00	3.984E-01	4.681E-01	2.854E-02	2.152
		621.84	*	5.908E-02	3.650E-01	6.158E-01	3.954E-02	0.096
		1050.47		2.937E-01	2.620E+00	4.422E+00	3.115E-01	0.066
AG-108M	433.93	*		1.987E-02	3.570E-02	5.903E-02	3.678E-03	0.337
	614.37			-1.787E-02	4.698E-02	6.541E-02	4.484E-03	-0.273
	722.95			1.845E-02	5.270E-02	7.816E-02	5.774E-03	0.236
AG-110M	657.75	*		1.353E-02	3.768E-02	6.426E-02	4.380E-03	0.211
	677.61			1.579E-01	3.322E-01	5.705E-01	3.950E-02	0.277
	706.67			-4.534E-02	2.448E-01	3.988E-01	2.847E-02	-0.114
	763.93			9.834E-02	2.296E-01	3.404E-01	2.583E-02	0.289
	884.67			1.982E-03	5.828E-02	9.475E-02	8.094E-03	0.021
	937.48			-1.071E-01	1.294E-01	1.911E-01	1.608E-02	-0.561
	1384.27			-3.079E-02	1.923E-01	3.077E-01	2.226E-02	-0.100
IN-111	171.28			-1.712E-01	1.036E+00	1.649E+00	8.485E-02	-0.104
	245.39	*		6.349E-01	1.135E+00	1.753E+00	9.705E-02	0.362
IN-113M	391.69	*		-3.320E-02	4.743E-02	7.384E-02	4.347E-03	-0.450
SN-113	391.69	*		-3.320E-02	4.743E-02	7.384E-02	4.347E-03	-0.450
IN-114M	190.27	*		-3.960E-03	2.192E-01	3.104E-01	1.628E-02	-0.013
CD-115	260.90			-5.970E+01	1.307E+02	2.145E+02	1.200E+01	-0.278
	492.35			-2.702E+00	3.920E+01	6.260E+01	3.767E+00	-0.043
	527.90	*		4.441E-01	1.181E+01	1.892E+01	1.165E+00	0.023
SN-117M	156.02			-6.188E-01	2.432E+00	3.882E+00	2.073E-01	-0.159
	158.56	*		-1.905E-02	5.829E-02	9.262E-02	4.892E-03	-0.206

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122	563.90	*		4.002E-01	2.183E+00	3.715E+00	2.333E-01	0.108
	692.80			2.481E+01	5.097E+01	8.718E+01	5.869E+00	0.285
I-123	159.00	*		-5.175E+00	5.097E+01	Half-Life too short		
	528.96			-8.364E+01	5.097E+01	Half-Life too short		
TE-123M	159.00	*		-2.460E-02	3.050E-02	4.733E-02	2.536E-03	-0.520
I-124	602.71	*		4.387E-03	8.201E-01	1.193E+00	7.615E-02	0.004
	722.78			1.757E+00	5.520E+00	8.161E+00	5.690E-01	0.215
	1325.50			-2.376E+00	4.027E+01	6.552E+01	4.532E+00	-0.036
	1376.25			4.462E+01	3.872E+01	7.025E+01	4.879E+00	0.635
	1509.49			7.892E+00	1.490E+01	2.617E+01	1.761E+00	0.302
	1691.02			2.536E+00	4.595E+00	8.267E+00	5.131E-01	0.307
SB-124	602.71			2.538E-04	4.744E-02	6.903E-02	4.407E-03	0.004
	645.85			1.386E-01	5.569E-01	9.433E-01	6.732E-02	0.147
	709.31			3.464E-01	3.263E+00	5.428E+00	3.726E-01	0.064
	713.82			-2.821E-01	1.891E+00	3.084E+00	3.354E-01	-0.091
	722.78			1.473E-01	4.629E-01	6.844E-01	4.928E-02	0.215
+	968.20			1.854E+01	5.120E+00	8.284E+00	6.492E-01	2.238
	1045.16			-8.532E-01	2.695E+00	4.375E+00	3.107E-01	-0.195
	1325.50			-2.128E-01	3.606E+00	5.868E+00	4.059E-01	-0.036
	1368.21			-8.418E-01	1.914E+00	2.936E+00	3.663E-01	-0.287
	1436.60			-2.886E+00	4.249E+00	6.224E+00	4.273E-01	-0.464
	1691.02	*		5.016E-02	9.088E-02	1.635E-01	1.091E-02	0.307
SB-125	427.89	*		-4.742E-02	9.613E-02	1.504E-01	8.939E-03	-0.315
+	463.38			6.237E-01	4.263E-01	5.823E-01	3.980E-02	1.071
	600.56			8.947E-02	2.057E-01	3.427E-01	2.472E-02	0.261
	635.90			-3.321E-03	2.935E-01	4.883E-01	3.590E-02	-0.007
TE-125M	109.28	*		7.204E+00	9.647E+00	1.634E+01	1.409E+00	0.441
I-126	388.63			1.288E-01	2.141E-01	3.635E-01	1.997E-02	0.354
	666.33	*		9.687E-02	1.834E-01	3.168E-01	2.066E-02	0.306
	753.82			2.416E+00	1.681E+00	3.023E+00	2.182E-01	0.799
SB-126	223.80			1.102E-01	4.034E+00	6.850E+00	3.722E-01	0.016
	278.60			3.165E+00	2.587E+00	4.566E+00	2.577E-01	0.693
+	296.50			1.533E+01	2.630E+00	3.704E+00	2.102E-01	4.138
	414.70			-1.660E-02	7.833E-02	1.256E-01	7.055E-03	-0.132
	415.30			2.796E+00	6.412E+00	1.075E+01	6.043E-01	0.260
	555.20			5.347E-02	4.146E+00	6.983E+00	4.366E-01	0.008
	573.80			-6.616E-01	1.095E+00	1.756E+00	1.108E-01	-0.377
	593.00			-4.536E-01	9.878E-01	1.597E+00	1.015E-01	-0.284
	656.30			-2.083E+00	3.623E+00	5.742E+00	3.719E-01	-0.363
	666.33			4.048E-02	7.663E-02	1.324E-01	8.633E-03	0.306
	675.00			-2.825E-01	2.128E+00	3.490E+00	2.299E-01	-0.081
	695.00			4.197E-02	9.264E-02	1.579E-01	1.066E-02	0.266
	697.00			-4.466E-02	3.230E-01	5.288E-01	3.578E-02	-0.084
	720.50	*		8.478E-02	1.808E-01	2.720E-01	1.891E-02	0.312
	856.80			5.126E-01	6.263E-01	9.639E-01	7.744E-02	0.532
	989.30			-2.235E-02	1.384E+00	2.217E+00	1.697E-01	-0.010
	1034.80			1.458E+00	9.336E+00	1.585E+01	1.143E+00	0.092
	1213.00			-9.714E-01	6.189E+00	1.010E+01	5.914E-01	-0.096
SB-127	61.10			3.592E+01	6.636E+01	1.038E+02	9.868E+00	0.346



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	252.40			-3.307E-01	4.349E+00	7.291E+00	3.027E+00	-0.045
	290.80			-2.895E+00	2.368E+01	3.444E+01	3.130E+00	-0.084
	411.60			-1.217E+01	1.352E+01	2.052E+01	2.935E+00	-0.593
	444.90			6.872E+00	1.088E+01	1.834E+01	1.979E+00	0.375
	473.00			-5.554E-01	1.806E+00	2.839E+00	3.194E-01	-0.196
	543.00			-7.265E+00	1.623E+01	2.636E+01	3.454E+00	-0.276
	603.60			-1.120E+01	1.453E+01	1.938E+01	2.151E+00	-0.578
	685.20	*		1.118E+00	1.503E+00	2.624E+00	2.624E-01	0.426
	698.50			-9.132E+00	1.904E+01	2.919E+01	4.350E+00	-0.313
	722.20			2.474E+00	3.804E+01	5.474E+01	5.447E+00	0.045
	783.80			5.079E+00	3.863E+00	6.945E+00	8.089E-01	0.731
XE-127	57.60			-2.658E+00	6.180E+00	1.032E+01	6.519E-01	-0.258
	145.22			-7.544E-02	7.340E-01	1.185E+00	6.620E-02	-0.064
	172.10			2.143E-02	1.218E-01	1.972E-01	1.015E-02	0.109
	202.84	*		2.839E-02	4.872E-02	7.959E-02	4.232E-03	0.357
	374.96			4.908E-02	2.013E-01	3.352E-01	1.863E-02	0.146
I-131	80.18			3.075E+00	6.331E+00	7.821E+00	5.607E-01	0.393
	284.30			4.163E-01	1.530E+00	2.593E+00	1.639E-01	0.161
	364.48	*		-8.930E-02	1.227E-01	1.920E-01	1.208E-02	-0.465
	636.97			-1.669E+00	1.732E+00	2.663E+00	1.885E-01	-0.627
	722.89			3.006E+00	8.891E+00	1.317E+01	9.274E-01	0.228
TE-132	49.72			-1.205E+01	1.993E+01	3.319E+01	3.087E+00	-0.363
	111.76			-5.362E+01	3.171E+01	4.725E+01	4.352E+00	-1.135
	116.30			-9.281E+00	2.795E+01	4.521E+01	4.135E+00	-0.205
	228.16	*		-9.098E-02	6.891E-01	1.160E+00	1.652E-01	-0.078
BA-133	53.15			2.409E+00	3.787E+00	6.494E+00	4.198E-01	0.371
	79.62			8.011E-01	1.549E+00	2.185E+00	3.147E-01	0.367
	81.00			6.024E-02	1.330E-01	1.636E-01	2.475E-02	0.368
	276.40			2.512E-01	3.979E-01	6.633E-01	8.552E-02	0.379
	302.84			7.219E-02	1.600E-01	2.420E-01	2.807E-02	0.298
	356.01	*		-1.783E-02	4.789E-02	6.666E-02	7.648E-03	-0.268
	383.85			-8.744E-02	2.917E-01	4.670E-01	5.007E-02	-0.187
I-133	510.53	+		2.102E+00	2.917E-01	Half-Life	too short	
	529.87	*		-3.614E-04	2.917E-01	Half-Life	too short	
	706.58			-8.526E-02	2.917E-01	Half-Life	too short	
	856.28			4.809E-01	2.917E-01	Half-Life	too short	
	875.33			-6.414E-02	2.917E-01	Half-Life	too short	
	1236.41			8.217E-01	2.917E-01	Half-Life	too short	
	1298.22			-2.395E-01	2.917E-01	Half-Life	too short	
CS-134	475.35			2.329E+00	1.958E+00	3.433E+00	2.039E-01	0.678
	563.23			1.110E-01	3.805E-01	6.522E-01	4.167E-02	0.170
	569.32			1.553E-01	2.140E-01	3.729E-01	2.407E-02	0.416
	604.70			-3.192E-02	4.132E-02	5.521E-02	3.542E-03	-0.578
	795.84	*		9.990E-02	5.575E-02	1.023E-01	7.798E-03	0.977
	801.93			5.804E-02	4.358E-01	7.206E-01	5.517E-02	0.081
	1038.57			2.751E+00	4.172E+00	7.382E+00	5.294E-01	0.373
	1167.94			-3.760E+00	3.270E+00	4.915E+00	2.738E-01	-0.765
	1365.15			3.131E-01	1.273E+00	2.148E+00	1.598E-01	0.146
CS-135	268.24	*		3.636E-01	1.770E-01	2.938E-01	2.209E-02	1.238

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135	288.45		-2.492E+10	1.770E-01	Half-Life	too short	
	417.63		-5.765E+09	1.770E-01	Half-Life	too short	
	546.56		-7.695E+09	1.770E-01	Half-Life	too short	
	836.80		3.334E+10	1.770E-01	Half-Life	too short	
	1038.76		1.409E+10	1.770E-01	Half-Life	too short	
	1124.00		4.903E+09	1.770E-01	Half-Life	too short	
	1131.51		8.840E+09	1.770E-01	Half-Life	too short	
	1260.41	*	-1.482E+09	1.770E-01	Half-Life	too short	
	1457.56		1.471E+12	1.770E-01	Half-Life	too short	
	1678.03		-7.530E+09	1.770E-01	Half-Life	too short	
	1706.46		-1.370E+08	1.770E-01	Half-Life	too short	
	1791.20		9.935E+09	1.770E-01	Half-Life	too short	
CS-136	66.91		-1.192E+00	9.403E-01	1.315E+00	1.888E-01	-0.906
	86.29	+	5.671E+00	1.693E+00	2.175E+00	2.641E-01	2.607
	153.22		6.375E-01	7.103E-01	1.190E+00	8.218E-02	0.536
	163.89		-7.413E-01	1.173E+00	1.785E+00	1.206E-01	-0.415
	176.55		2.303E-02	3.743E-01	6.015E-01	3.587E-02	0.038
	273.65		-7.619E-01	5.368E-01	7.108E-01	4.598E-02	-1.072
	340.57		3.179E-01	1.451E-01	2.425E-01	1.463E-02	1.311
	818.51		-1.875E-02	8.309E-02	1.327E-01	1.028E-02	-0.141
	1048.07	*	3.809E-02	1.194E-01	2.051E-01	1.541E-02	0.186
	1235.34		8.363E-01	7.429E-01	1.311E+00	1.329E-01	0.638
	661.65	*	4.756E-03	3.951E-02	6.506E-02	4.217E-03	0.073
CS-137	661.65	*	5.027E-03	4.176E-02	6.877E-02	4.473E-03	0.073
CE-139	165.85	*	9.047E-03	3.140E-02	5.117E-02	2.622E-03	0.177
BA-140	162.64		8.740E-01	7.998E-01	1.316E+00	7.880E-02	0.664
	304.84		-9.116E-01	1.495E+00	2.052E+00	5.594E-01	-0.444
LA-140	423.70		1.460E+00	2.139E+00	3.549E+00	1.127E+00	0.411
	537.32	*	-2.247E-01	2.728E-01	4.152E-01	1.353E-01	-0.541
	328.77	+	9.638E-01	5.786E-01	5.987E-01	3.824E-02	1.610
	432.53		1.830E+00	2.202E+00	3.706E+00	2.348E-01	0.494
	487.03		7.593E-02	1.462E-01	2.444E-01	1.646E-02	0.311
	751.79		-1.407E+00	1.977E+00	3.052E+00	2.528E-01	-0.461
	815.85		-4.294E-03	3.664E-01	5.897E-01	5.194E-02	-0.007
	867.82		2.032E-01	1.709E+00	2.728E+00	2.347E-01	0.074
	919.63		-1.186E-01	3.401E+00	5.150E+00	5.314E-01	-0.023
	925.24		3.487E-01	1.295E+00	2.144E+00	1.874E-01	0.163
	1596.49	*	-2.860E-02	8.621E-02	1.369E-01	8.916E-03	-0.209
CE-141	145.44	*	-3.027E-02	6.640E-02	1.055E-01	6.142E-03	-0.287
CE-143	57.37		-3.569E-04	6.640E-02	Half-Life	too short	
	231.56		-6.352E-04	6.640E-02	Half-Life	too short	
	293.26	*	9.854E-04	6.640E-02	Half-Life	too short	
	350.59	+	3.591E-02	6.640E-02	Half-Life	too short	
	490.36		3.669E-04	6.640E-02	Half-Life	too short	
	664.57		-1.401E-03	6.640E-02	Half-Life	too short	
CE-144	721.93		1.770E-05	6.640E-02	Half-Life	too short	
	80.11		1.461E+00	2.909E+00	3.598E+00	2.554E-01	0.406
	133.54	*	1.513E-01	2.119E-01	3.542E-01	5.042E-02	0.427
PM-144	476.78		-2.619E-02	7.337E-02	1.149E-01	8.116E-03	-0.228

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		1.872E-02	3.612E-02	6.240E-02	4.200E-03	0.300
		696.49	*	3.520E-03	4.148E-02	6.898E-02	4.667E-03	0.051
		778.57		-2.145E+00	2.338E+00	3.479E+00	2.581E-01	-0.617
PR-144		696.49	*	2.385E-01	2.811E+00	4.675E+00	3.161E-01	0.051
		1489.15		-4.423E+00	1.369E+01	2.110E+01	1.429E+00	-0.210
PM-146		453.90	*	8.743E-03	4.408E-02	7.233E-02	6.253E-03	0.121
		633.02		4.848E-01	1.554E+00	2.630E+00	9.712E-01	0.184
		735.90		-9.310E-02	1.678E-01	2.599E-01	7.324E-02	-0.358
		747.13		5.401E-02	1.045E-01	1.785E-01	2.355E-02	0.303
ND-147	+	91.11		9.573E-01	3.946E-01	5.643E-01	4.627E-02	1.696
		319.41		7.778E-01	3.387E+00	5.689E+00	3.235E-01	0.137
		439.89		5.309E+00	6.586E+00	1.123E+01	6.473E-01	0.473
		531.02	*	1.781E-01	6.218E-01	1.015E+00	1.389E-01	0.176
PM-149		285.90	*	8.305E+00	9.527E+01	1.598E+02	2.257E+01	0.052
EU-152		121.78		-4.664E-02	7.756E-02	1.236E-01	9.828E-03	-0.377
		244.69		5.286E-02	3.508E-01	5.275E-01	2.918E-02	0.100
		344.27	*	-8.715E-02	1.017E-01	1.587E-01	1.017E-02	-0.549
		443.98		2.675E-01	1.070E+00	1.762E+00	1.019E-01	0.152
		778.89		-2.548E-01	2.646E-01	3.907E-01	2.898E-02	-0.652
		867.32		3.096E-01	1.039E+00	1.637E+00	1.329E-01	0.189
		964.01		1.249E+00	3.685E-01	6.867E-01	5.405E-02	1.819
		1085.78		2.943E-01	4.525E-01	7.956E-01	5.286E-02	0.370
		1112.02		1.367E-01	4.502E-01	6.674E-01	4.219E-02	0.205
		1407.95		1.625E-01	2.068E-01	3.588E-01	2.478E-02	0.453
GD-153		69.67		3.411E+00	1.950E+00	3.136E+00	2.062E-01	1.088
	+	83.37		3.278E+01	1.501E+01	2.671E+01	1.953E+00	1.227
		97.43	*	-6.012E-02	9.110E-02	1.292E-01	8.987E-03	-0.465
		103.18		-9.277E-02	1.123E-01	1.792E-01	1.197E-02	-0.518
EU-154		123.07		1.111E-02	5.720E-02	9.006E-02	8.703E-03	0.123
		247.94		-6.707E-02	3.538E-01	5.907E-01	5.546E-02	-0.114
		591.81		-1.730E-01	6.451E-01	1.058E+00	1.070E-01	-0.163
		723.30		1.283E-02	2.313E-01	3.323E-01	2.682E-02	0.039
		756.87		-5.379E-01	9.383E-01	1.469E+00	1.620E-01	-0.366
		873.19		-1.575E-01	3.599E-01	5.601E-01	6.680E-02	-0.281
		996.32		-2.384E-01	3.854E-01	6.058E-01	1.047E-01	-0.394
		1004.76		-3.161E-01	2.415E-01	3.534E-01	3.831E-02	-0.894
		1274.45	*	-1.080E-01	1.488E-01	2.271E-01	2.213E-02	-0.475
EU-155		48.70		-7.037E-01	2.467E+00	4.109E+00	2.685E-01	-0.171
		60.01		4.258E+00	5.614E+00	8.891E+00	5.587E-01	0.479
	+	86.54		5.226E-01	1.480E-01	2.039E-01	1.558E-02	2.562
		105.31	*	1.038E-01	1.161E-01	1.980E-01	1.334E-02	0.525
TB-160	+	86.79		1.396E+00	3.951E-01	5.448E-01	4.119E-02	2.563
		197.04		-1.110E-01	5.917E-01	9.196E-01	4.860E-02	-0.121
		215.65		-9.309E-03	7.942E-01	1.255E+00	6.765E-02	-0.007
	+	298.57		3.812E-01	2.001E-01	2.029E-01	1.152E-02	1.878
		879.36	*	4.988E-02	1.661E-01	2.764E-01	2.270E-02	0.180
		962.29		6.278E-01	7.261E-01	1.153E+00	9.089E-02	0.545
		966.15		1.290E+00	3.620E-01	6.284E-01	4.936E-02	2.053
		1177.93		-5.326E-01	4.410E-01	6.538E-01	3.621E-02	-0.815

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		1271.85		-3.493E-01	8.405E-01	1.326E+00	8.488E-02	-0.263
		80.57		1.540E-01	3.711E-01	4.562E-01	3.251E-02	0.338
	+	184.41		1.260E-01	5.295E-02	6.846E-02	3.569E-03	1.840
		280.46		-5.238E-02	9.070E-02	1.473E-01	8.322E-03	-0.356
		410.95		-5.897E-02	2.699E-01	4.333E-01	2.425E-02	-0.136
		711.68	*	4.833E-02	7.016E-02	1.215E-01	8.366E-03	0.398
TM-171		752.31		4.678E-02	3.024E-01	5.033E-01	3.627E-02	0.093
		810.29		-3.967E-02	6.356E-02	9.751E-02	7.476E-03	-0.407
		51.35		-1.102E+01	3.157E+01	5.310E+01	3.460E+00	-0.207
		52.39		6.498E+00	1.694E+01	2.882E+01	1.870E+00	0.225
		59.40		1.668E+01	2.994E+01	4.686E+01	2.939E+00	0.356
		66.72	*	-3.808E+01	3.328E+01	4.752E+01	3.075E+00	-0.801
LU-176	+	88.36		1.029E+00	2.912E-01	3.874E-01	2.952E-02	2.656
		201.83		-7.361E-03	3.003E-02	4.712E-02	2.503E-03	-0.156
		306.84	*	1.987E-02	2.621E-02	4.251E-02	2.416E-03	0.467
		401.10		-5.958E-01	7.140E+00	1.158E+01	6.413E-01	-0.051
LU-177		112.95		-8.517E-01	1.679E+00	2.672E+00	1.707E-01	-0.319
	+	208.36	*	2.418E+00	1.626E+00	2.061E+00	1.102E-01	1.173
LU-177M		52.97		1.233E+00	1.721E+00	2.959E+00	1.915E-01	0.417
		54.07		1.598E-01	9.061E-01	1.528E+00	9.835E-02	0.105
		61.30		1.260E+00	1.715E+00	2.706E+00	1.710E-01	0.466
		121.62		-2.660E-01	3.966E-01	6.300E-01	3.934E-02	-0.422
		147.16		4.492E-01	6.719E-01	1.120E+00	6.205E-02	0.401
		171.86		5.996E-02	4.895E-01	7.904E-01	4.068E-02	0.076
		218.09		-2.723E-01	9.060E-01	1.409E+00	7.611E-02	-0.193
	+	268.79		2.911E+00	1.336E+00	1.576E+00	8.853E-02	1.847
		319.02		5.530E-04	2.590E-01	4.295E-01	2.441E-02	0.001
		367.43		7.074E-01	9.157E-01	1.577E+00	8.810E-02	0.449
		413.65	*	-4.422E-02	1.868E-01	2.992E-01	1.679E-02	-0.148
		56.28		-4.042E-01	9.749E-01	1.630E+00	1.037E-01	-0.248
		57.53		-2.074E-01	5.207E-01	8.703E-01	5.502E-02	-0.238
		65.20		1.831E-02	1.091E+00	1.651E+00	1.061E-01	0.011
HF-181		133.02		5.865E-02	7.410E-02	1.127E-01	6.648E-03	0.520
		136.25		-2.326E-01	4.771E-01	7.593E-01	4.412E-02	-0.306
		345.85		-2.287E-01	2.192E-01	3.078E-01	1.739E-02	-0.743
		482.03	*	8.608E-03	4.419E-02	7.219E-02	4.310E-03	0.119
		56.28		-1.579E-01	3.815E-01	6.378E-01	4.057E-02	-0.248
		57.53		-8.104E-02	2.039E-01	3.409E-01	2.155E-02	-0.238
W-181		65.20	*	7.112E-03	4.238E-01	6.414E-01	4.121E-02	0.011
		67.75		-1.569E-01	1.261E-01	1.917E-01	1.247E-02	-0.819
		100.10		1.278E-01	1.850E-01	3.141E-01	2.141E-02	0.407
		152.43		-1.907E-01	3.559E-01	5.615E-01	3.043E-02	-0.340
TA-182		222.10		-8.682E-02	3.594E-01	5.929E-01	3.216E-02	-0.146
		1001.68		1.591E+00	2.253E+00	3.924E+00	2.958E-01	0.406
	+	1121.28		5.595E-01	3.205E-01	4.020E-01	2.494E-02	1.392
		1189.05		4.780E-02	3.864E-01	6.451E-01	3.637E-02	0.074
		1221.42	*	2.560E-02	2.693E-01	4.472E-01	2.653E-02	0.057
		1230.97		2.982E-01	6.134E-01	1.046E+00	6.296E-02	0.285
RE-183		57.98		-2.007E-01	2.066E-01	3.374E-01	2.129E-02	-0.595

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		4.375E-02	1.238E-01	1.919E-01	1.204E-02	0.228
		67.20		-3.561E-01	2.412E-01	3.387E-01	2.197E-02	-1.051
		162.32	*	7.967E-02	1.180E-01	1.909E-01	9.924E-03	0.417
	+	208.81		2.168E+00	1.457E+00	1.860E+00	9.955E-02	1.165
		291.72		-1.746E-01	1.051E+00	1.524E+00	8.638E-02	-0.115
		57.98		-7.395E-01	7.613E-01	1.243E+00	7.843E-02	-0.595
		59.32		1.611E-01	4.556E-01	7.066E-01	4.433E-02	0.228
		67.20		-1.312E+00	8.885E-01	1.247E+00	8.093E-02	-1.051
		161.27		-2.326E-01	3.760E-01	5.882E-01	3.072E-02	-0.395
		216.55		-1.672E-01	2.848E-01	4.361E-01	2.352E-02	-0.383
OS-185		252.85	*	6.941E-02	2.304E-01	3.936E-01	2.190E-02	0.176
		318.01		-7.385E-01	4.672E-01	6.989E-01	3.973E-02	-1.057
		792.07		2.342E-01	1.137E+00	1.890E+00	1.422E-01	0.124
		903.28		-9.452E-01	1.291E+00	1.807E+00	1.504E-01	-0.523
		920.93		4.673E-01	5.170E-01	9.029E-01	7.406E-02	0.518
		59.72		3.490E-01	3.273E-01	5.234E-01	3.285E-02	0.667
		61.14		1.055E-01	1.877E-01	2.942E-01	1.858E-02	0.359
		69.30		4.830E-01	3.329E-01	5.578E-01	3.660E-02	0.866
		592.07		-6.127E-01	2.626E+00	4.319E+00	2.745E-01	-0.142
		646.12	*	7.081E-03	4.755E-02	7.997E-02	5.168E-03	0.089
RE-188		717.42		-1.105E+00	1.020E+00	1.529E+00	1.060E-01	-0.722
		874.81		-3.873E-01	6.784E-01	1.040E+00	8.499E-02	-0.373
		880.27		5.368E-01	9.415E-01	1.600E+00	1.315E-01	0.335
		155.03	*	2.171E-01	1.869E-01	3.160E-01	1.694E-02	0.687
		477.96		4.682E-01	3.308E+00	5.382E+00	3.203E-01	0.087
W-188	+	633.10		9.218E-01	3.116E+00	5.303E+00	3.416E-01	0.174
		63.58		7.486E+01	7.801E+01	1.039E+02	6.625E+00	0.721
IR-192		227.08		3.144E+00	1.255E+01	2.150E+01	1.172E+00	0.146
		290.67	*	-2.163E+00	8.255E+00	1.188E+01	6.733E-01	-0.182
	+	295.96		1.172E+00	2.015E-01	3.067E-01	1.769E-02	3.823
		308.46		-3.678E-03	9.434E-02	1.564E-01	8.998E-03	-0.024
		316.51	*	-1.275E-02	3.457E-02	5.608E-02	3.205E-03	-0.227
AU-195		468.07		3.739E-02	7.558E-02	1.121E-01	7.599E-03	0.333
		604.41		-5.588E-01	5.673E-01	7.353E-01	8.573E-02	-0.760
		612.46		1.349E-01	8.434E-01	1.245E+00	1.001E-01	0.108
		65.12		8.826E-02	1.935E-01	2.985E-01	1.917E-02	0.296
		66.83		-1.218E-01	1.101E-01	1.575E-01	1.020E-02	-0.773
TL-200	+	75.70		1.549E+00	3.056E-01	4.980E-01	3.410E-02	3.110
		98.88	*	1.012E-01	2.344E-01	3.897E-01	2.680E-02	0.260
	+	129.76		7.847E+00	4.436E+00	5.319E+00	3.187E-01	1.475
TL-201		367.94	*	4.755E-04	4.436E+00	Half-Life	too short	
		579.30		3.045E-03	4.436E+00	Half-Life	too short	
		828.27		-2.736E-03	4.436E+00	Half-Life	too short	
		1205.75		-1.196E-03	4.436E+00	Half-Life	too short	
TL-201		68.90		3.478E+00	5.175E+00	8.825E+00	5.777E-01	0.394
		70.82		2.167E+00	3.225E+00	5.008E+00	3.316E-01	0.433
		80.30		3.163E+00	6.921E+00	8.533E+00	6.067E-01	0.371
		135.34		-1.958E+01	2.656E+01	4.179E+01	2.439E+00	-0.468
		167.43	*	6.378E+00	7.237E+00	1.210E+01	6.204E-01	0.527

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90		3.112E-01	4.630E-01	7.895E-01	5.169E-02	0.394
		70.82		1.933E-01	2.877E-01	4.469E-01	2.959E-02	0.433
		80.30		2.823E-01	6.177E-01	7.616E-01	5.415E-02	0.371
		439.56	*	5.828E-02	7.758E-02	1.319E-01	7.598E-03	0.442
HG-203		70.83		8.348E-01	1.248E+00	1.934E+00	2.405E-01	0.432
		72.87		4.590E-01	7.434E-01	1.147E+00	1.381E-01	0.400
		82.60		3.177E-01	1.237E+00	1.875E+00	2.425E-01	0.169
		279.20	*	4.303E-03	4.262E-02	7.165E-02	4.309E-03	0.060
BI-207		72.80		9.172E-02	2.164E-01	3.321E-01	2.227E-02	0.276
	+	74.97		8.590E-01	1.695E-01	2.518E-01	1.715E-02	3.411
	+	84.90		4.239E-01	1.941E-01	3.467E-01	2.573E-02	1.223
		569.67		2.098E-02	3.376E-02	5.844E-02	3.680E-03	0.359
		1063.62	*	-2.930E-03	5.974E-02	9.933E-02	6.852E-03	-0.029
		1770.23		-1.961E-01	4.782E-01	5.810E-01	3.429E-02	-0.337
TL-207		81.07		1.290E-01	2.927E-01	3.604E-01	2.580E-02	0.358
	+	83.78		2.795E-01	1.280E-01	2.290E-01	1.681E-02	1.220
		94.90		1.757E-01	2.397E-01	3.699E-01	2.628E-02	0.475
		122.32		-3.011E-01	1.857E+00	3.019E+00	2.137E-01	-0.100
		144.24		-8.284E-02	7.335E-01	1.172E+00	8.300E-02	-0.071
		154.21		7.565E-01	4.213E-01	7.278E-01	4.854E-02	1.039
	+	269.46		6.814E-01	3.130E-01	3.804E-01	2.241E-02	1.791
		323.87	*	-6.022E-01	8.055E-01	1.094E+00	1.802E-01	-0.550
	+	338.28		6.928E+00	1.909E+00	2.663E+00	2.785E-01	2.602
		445.03		1.827E+00	2.489E+00	4.223E+00	4.334E-01	0.433
PO-209		260.50		-1.392E+00	9.464E+00	1.578E+01	8.828E-01	-0.088
		262.80		7.158E-01	2.561E+01	4.308E+01	2.413E+00	0.017
		896.60	*	-2.911E+00	9.106E+00	1.396E+01	1.165E+00	-0.209
BI-210		46.50	*	8.805E-01	3.552E+00	6.099E+00	4.595E-01	0.144
PB-210		46.50	*	8.805E-01	3.552E+00	6.099E+00	4.595E-01	0.144
PO-210		46.50	*	8.805E-01	3.552E+00	6.099E+00	3.912E-01	0.144
PB-211		404.84	*	-8.330E-01	1.178E+00	1.639E+00	1.021E+00	-0.508
		427.08		-2.171E-01	2.202E+00	3.544E+00	2.190E+00	-0.061
		831.96		-8.700E-01	1.485E+00	2.126E+00	1.330E+00	-0.409
PO-215		81.07		1.290E-01	2.927E-01	3.604E-01	2.580E-02	0.358
	+	83.78		2.795E-01	1.280E-01	2.290E-01	1.681E-02	1.220
		94.90		1.757E-01	2.397E-01	3.699E-01	2.628E-02	0.475
		122.32		-3.011E-01	1.857E+00	3.019E+00	2.137E-01	-0.100
		144.24		-8.284E-02	7.335E-01	1.172E+00	8.300E-02	-0.071
		154.21		7.565E-01	4.213E-01	7.278E-01	4.854E-02	1.039
	+	269.46		6.814E-01	3.130E-01	3.804E-01	2.241E-02	1.791
		323.87	*	-6.022E-01	8.055E-01	1.094E+00	1.802E-01	-0.550
	+	338.28		6.928E+00	1.909E+00	2.663E+00	2.785E-01	2.602
		445.03		1.827E+00	2.489E+00	4.223E+00	4.334E-01	0.433
RN-219	+	271.23		8.742E-01	4.043E-01	4.860E-01	3.878E-02	1.799
		401.81	*	2.145E-01	4.366E-01	7.334E-01	9.899E-02	0.293
RN-220		549.76	*	2.507E+01	2.723E+01	4.867E+01	3.035E+00	0.515
RA-223		81.07		1.290E-01	2.927E-01	3.604E-01	2.580E-02	0.358
	+	83.78		2.795E-01	1.280E-01	2.290E-01	1.681E-02	1.220
		94.90		1.757E-01	2.397E-01	3.699E-01	2.628E-02	0.475

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		-3.011E-01	1.857E+00	3.019E+00	2.137E-01	-0.100
		144.24		-8.284E-02	7.335E-01	1.172E+00	8.300E-02	-0.071
		154.21		7.565E-01	4.213E-01	7.278E-01	4.854E-02	1.039
	+	269.46		6.814E-01	3.130E-01	3.804E-01	2.241E-02	1.791
		323.87	*	-6.022E-01	8.055E-01	1.094E+00	1.802E-01	-0.550
	+	338.28		6.928E+00	1.909E+00	2.663E+00	2.785E-01	2.602
		445.03		1.827E+00	2.489E+00	4.223E+00	4.334E-01	0.433
		79.80		1.071E+00	1.973E+00	2.777E+00	5.813E-01	0.386
		236.00		4.477E-01	2.824E-01	4.506E-01	4.635E-02	0.993
		256.20	*	1.566E-01	3.857E-01	6.604E-01	9.159E-02	0.237
		286.10		3.398E-01	1.576E+00	2.660E+00	3.057E-01	0.128
	+	299.80		4.853E+00	2.653E+00	2.770E+00	4.500E-01	1.752
TH-227		304.40		-6.264E-01	2.151E+00	3.071E+00	5.300E-01	-0.204
		334.20		1.751E+00	3.575E+00	4.000E+00	7.318E-01	0.438
		79.80		1.071E+00	1.973E+00	2.777E+00	5.891E-01	0.386
	+	94.00		1.155E+01	3.943E+00	3.925E+00	8.337E-01	2.943
		236.00		4.477E-01	2.814E-01	4.506E-01	3.994E-02	0.993
		256.20	*	1.566E-01	3.860E-01	6.604E-01	1.111E-01	0.237
		286.10		3.398E-01	1.611E+00	2.660E+00	2.664E+00	0.128
	+	299.80		4.853E+00	2.653E+00	2.770E+00	4.500E-01	1.752
		304.40		-6.264E-01	2.151E+00	3.071E+00	5.300E-01	-0.204
		334.20		1.751E+00	3.575E+00	4.000E+00	7.318E-01	0.438
	+	85.43		4.184E-01	1.916E-01	3.515E-01	2.622E-02	1.190
	+	88.47		3.792E-01	1.557E-01	2.215E-01	1.685E-02	1.712
TH-229		100.00		1.422E-01	1.921E-01	3.268E-01	2.229E-02	0.435
		193.63	*	1.207E-01	5.387E-01	8.674E-01	4.567E-02	0.139
		210.97		1.548E-01	9.069E-01	1.290E+00	6.918E-02	0.120
		283.67	*	-5.952E-02	1.601E+00	2.671E+00	3.664E-01	-0.022
	+	301.29		1.941E+00	1.033E+00	1.100E+00	1.142E-01	1.765
		81.07		1.290E-01	2.927E-01	3.604E-01	2.580E-02	0.358
	+	83.78		2.795E-01	1.280E-01	2.290E-01	1.681E-02	1.220
		94.90		1.757E-01	2.397E-01	3.699E-01	2.628E-02	0.475
		122.32		-3.011E-01	1.857E+00	3.019E+00	2.137E-01	-0.100
		144.24		-8.284E-02	7.335E-01	1.172E+00	8.300E-02	-0.071
		154.21		7.565E-01	4.213E-01	7.278E-01	4.854E-02	1.039
	+	269.46		6.814E-01	3.130E-01	3.804E-01	2.241E-02	1.791
U-231		323.87	*	-6.022E-01	8.055E-01	1.094E+00	1.802E-01	-0.550
	+	338.28		6.928E+00	1.909E+00	2.663E+00	2.785E-01	2.602
		445.03		1.827E+00	2.489E+00	4.223E+00	4.334E-01	0.433
	+	84.21		1.210E+01	5.539E+00	9.897E+00	7.295E-01	1.222
	+	92.29		1.146E+01	3.172E+00	4.642E+00	3.383E-01	2.469
		95.87	*	-8.578E-02	1.141E+00	1.688E+00	1.189E-01	-0.051
		108.00		5.687E-01	2.225E+00	3.703E+00	2.413E-01	0.154
	+	75.28		2.507E+01	5.882E+00	7.591E+00	1.094E+00	3.302
	+	86.59		8.494E+00	3.229E+00	3.325E+00	8.809E-01	2.555
	+	300.12		1.353E+00	7.291E-01	7.746E-01	1.037E-01	1.747
		311.98	*	-2.426E-02	6.162E-02	9.984E-02	6.042E-03	-0.243
		340.50		1.643E+00	7.963E-01	1.191E+00	2.731E-01	1.380
PA-233		398.62		-2.603E+00	2.340E+00	3.370E+00	8.692E-01	-0.772

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		7.558E-01	1.728E+00	2.884E+00	5.923E-01	0.262
		63.00		2.170E+00	2.279E+00	3.076E+00	4.420E-01	0.706
		94.67		2.898E-01	1.802E-01	2.851E-01	3.253E-02	1.016
		98.44		1.705E-02	1.001E-01	1.570E-01	8.724E-02	0.109
		99.86		2.393E-01	4.960E-01	8.260E-01	5.640E-02	0.290
		111.00		-2.116E-01	1.889E-01	2.936E-01	3.124E-02	-0.721
		131.20		2.161E-02	1.213E-01	1.785E-01	1.062E-02	0.121
		152.70		-1.086E-01	3.517E-01	5.604E-01	8.782E-02	-0.194
		186.00		4.535E+00	2.342E+00	2.657E+00	8.092E-01	1.706
		226.40		1.321E-02	3.942E-01	6.691E-01	7.618E-02	0.020
		227.20		-1.548E-02	4.282E-01	7.245E-01	3.949E-02	-0.021
		248.90		-2.536E-01	7.996E-01	1.323E+00	2.834E-01	-0.192
		293.70		7.378E+00	1.681E+00	1.914E+00	3.070E-01	3.854
		369.80		-1.172E-01	8.635E-01	1.404E+00	2.915E-01	-0.083
		568.70		2.500E-01	1.080E+00	1.824E+00	1.148E-01	0.137
		569.50		2.385E-01	2.979E-01	5.214E-01	3.282E-02	0.458
		574.00		-1.094E+00	1.559E+00	2.479E+00	1.564E-01	-0.441
		699.00		-5.572E-01	9.068E-01	1.372E+00	2.515E-01	-0.406
		706.10		-5.768E-01	1.267E+00	1.981E+00	8.773E-01	-0.291
		733.00		-2.551E-01	4.667E-01	6.155E-01	1.332E-01	-0.415
		742.81		3.290E-01	1.656E+00	2.740E+00	1.837E+00	0.120
		796.30		1.519E+00	1.130E+00	1.912E+00	5.110E-01	0.795
		805.60		-2.860E-01	1.109E+00	1.765E+00	5.363E-01	-0.162
		819.60		2.387E-01	1.364E+00	2.257E+00	8.539E-01	0.106
		826.30		3.177E-02	8.935E-01	1.461E+00	6.516E-01	0.022
		831.60		-2.591E-01	7.093E-01	1.111E+00	3.293E-01	-0.233
		876.40		-4.407E-01	1.085E+00	1.533E+00	1.575E+00	-0.288
		880.51		1.909E-01	3.374E-01	5.736E-01	4.715E-02	0.333
		883.24		1.051E-01	3.604E-01	5.876E-01	3.947E-01	0.179
		899.00		9.920E-01	1.082E+00	1.708E+00	7.458E-01	0.581
		925.00		1.408E-01	1.372E+00	2.236E+00	1.827E-01	0.063
		926.50		-1.001E-01	2.020E-01	3.075E-01	7.726E-02	-0.325
		946.00	*	-2.854E-01	3.671E-01	5.412E-01	1.001E-01	-0.527
		949.00		2.859E-01	5.309E-01	8.964E-01	7.165E-02	0.319
		980.50		-5.464E-02	7.581E-01	1.208E+00	9.337E-02	-0.045
		1394.10		2.629E-01	1.377E+00	2.281E+00	1.480E+00	0.115
PA-234M	+	766.42		3.374E+01	2.441E+01	2.577E+01	1.302E+01	1.309
U-235	+	1001.03	*	3.574E+00	5.073E+00	8.830E+00	7.992E-01	0.405
		89.95		3.806E+00	1.927E+00	2.084E+00	6.367E-01	1.826
		93.35		3.593E+00	1.381E+00	1.407E+00	3.886E-01	2.554
		105.00		7.582E-01	1.159E+00	1.926E+00	5.648E-01	0.394
		143.76	*	-6.875E-02	2.299E-01	3.643E-01	5.917E-02	-0.189
		163.35		2.236E-02	5.065E-01	7.963E-01	1.417E-01	0.028
NP-236	+	185.71		1.680E-01	7.060E-02	9.860E-02	5.147E-03	1.703
		205.31		3.612E-01	6.055E-01	8.825E-01	1.574E-01	0.409
		94.67		2.225E-01	1.354E-01	2.166E-01	1.542E-02	1.027
		98.44		1.287E-02	7.532E-02	1.187E-01	8.191E-03	0.108
		111.00		-1.600E-01	1.422E-01	2.221E-01	1.429E-02	-0.721
		160.31	*	-4.115E-02	8.412E-02	1.325E-01	6.948E-03	-0.311



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		6.540E-02	1.649E-01	2.738E-01	1.874E-02	0.239
		117.00	*	-1.678E-01	1.932E-01	3.043E-01	1.920E-02	-0.551
	+	209.75		1.710E+00	1.149E+00	1.474E+00	7.894E-02	1.160
		228.18		-1.196E-01	2.277E-01	3.768E-01	2.056E-02	-0.317
		277.60		2.056E-01	1.873E-01	3.291E-01	1.857E-02	0.625
		334.30		1.070E+00	2.022E+00	2.281E+00	1.293E-01	0.469
AM-241		59.54	*	1.121E-01	1.744E-01	2.739E-01	1.946E-02	0.409
CM-243		99.55		6.730E-02	1.697E-01	2.818E-01	1.928E-02	0.239
		103.76	*	-8.052E-03	1.033E-01	1.701E-01	1.133E-02	-0.047
		117.00		-1.726E-01	1.987E-01	3.131E-01	1.976E-02	-0.551
	+	209.75		1.685E+00	1.133E+00	1.453E+00	7.782E-02	1.160
		228.18		-1.208E-01	2.301E-01	3.808E-01	2.077E-02	-0.317
		277.60		2.072E-01	1.889E-01	3.318E-01	1.872E-02	0.625
AM-246		798.80		-2.564E-01	1.745E-01	2.495E-01	1.891E-02	-1.027
		1036.00		-4.230E-02	3.256E-01	5.385E-01	3.876E-02	-0.079
		1062.04		2.293E-01	2.575E-01	4.617E-01	3.193E-02	0.497
		1078.86	*	1.822E-02	1.671E-01	2.812E-01	1.891E-02	0.065
CM-247		278.00		7.718E-01	7.809E-01	1.365E+00	7.704E-02	0.565
		287.40		2.030E-01	1.265E+00	2.084E+00	1.180E-01	0.097
		402.60	*	2.983E-02	3.962E-02	6.767E-02	3.753E-03	0.441
CF-249		252.85		2.604E-01	8.645E-01	1.477E+00	8.218E-02	0.176
		333.44		1.623E-01	2.497E-01	2.875E-01	1.631E-02	0.565
		387.95	*	4.386E-02	4.123E-02	7.191E-02	3.953E-03	0.610
CF-251		176.60	*	5.905E-03	1.288E-01	2.068E-01	1.069E-02	0.029
		227.00		9.894E-02	3.767E-01	6.457E-01	3.518E-02	0.153
		285.00		6.741E-01	1.805E+00	3.072E+00	1.738E-01	0.219

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                         *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691008      *
* Acquisition date   : 9-FEB-2010 15:32:30 Detector SN# :                   *
* Detector ID        : GAM12 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.62 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*                                     *                                         *
* Sample date       : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G245691008 Analyst initials: MJH1                  *
* Batch Number      : 947037 Sample Quantity : 1.2213E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                                *
*                                     *                                         *
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME : 10-FEB-2009 09:20:24 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.869E+01	3.385E+00	3.156E-01	0.000E+00
NB-95	1.275E-01	6.532E-02	7.681E-02	0.000E+00
CD-109	4.415E+00	1.224E+00	1.276E+00	0.000E+00
SN-126	4.339E-01	1.203E-01	1.260E-01	0.000E+00
TL-208	5.930E-01	1.067E-01	6.066E-02	0.000E+00
BI-211	4.461E+00	5.311E-01	3.359E-01	0.000E+00
BI-212	1.323E+00	5.415E-01	5.230E-01	0.000E+00
PB-212	1.734E+00	1.680E-01	9.760E-02	0.000E+00
PO-212	1.734E+00	1.680E-01	9.760E-02	0.000E+00
BI-214	1.302E+00	1.962E-01	1.138E-01	0.000E+00
PB-214	1.552E+00	2.011E-01	1.171E-01	0.000E+00
PO-214	1.552E+00	2.011E-01	1.171E-01	0.000E+00
PO-216	1.734E+00	1.680E-01	9.760E-02	0.000E+00
PO-218	1.552E+00	2.011E-01	1.171E-01	0.000E+00
RA-224	4.202E+00	9.781E-01	1.111E+00	0.000E+00
RA-226	1.302E+00	1.962E-01	1.138E-01	0.000E+00
AC-228	1.871E+00	3.725E-01	2.370E-01	0.000E+00
RA-228	1.871E+00	3.725E-01	2.370E-01	0.000E+00
TH-228	1.760E+00	1.705E-01	9.908E-02	0.000E+00
TH-230	1.302E+00	1.962E-01	1.138E-01	0.000E+00
TH-232	1.871E+00	3.725E-01	2.370E-01	0.000E+00
TH-234	1.862E+00	1.923E+00	2.419E+00	0.000E+00
U-234	1.302E+00	1.962E-01	1.138E-01	0.000E+00
NP-237	1.274E+00	4.373E-01	3.745E-01	0.000E+00
U-238	1.862E+00	1.923E+00	2.419E+00	0.000E+00
AM-243	4.785E-01	9.255E-02	9.967E-02	0.000E+00
ANH-511	2.016E-01	7.816E-02	4.657E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	-7.274E-02	3.413E-01	5.587E-01	0.000E+00	NOT IDENT.
NA-22	-4.042E-02	5.200E-02	8.075E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	8.375E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.957E-03	3.138E-02	5.335E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.981E-02	8.216E-02	0.000E+00	FAIL ABUN
SC-46	-3.605E-02	4.409E-02	6.729E-02	0.000E+00	FAIL ABUN
V-48	-1.663E-02	8.516E-02	1.218E-01	0.000E+00	NOT IDENT.
CR-51	2.244E-01	3.661E-01	6.517E-01	0.000E+00	NOT IDENT.
MN-52	-1.065E-01	2.515E-01	3.911E-01	0.000E+00	NOT IDENT.
MN-54	2.789E-02	4.254E-02	7.468E-02	0.000E+00	NOT IDENT.
CO-56	9.673E-03	4.326E-02	7.362E-02	0.000E+00	NOT IDENT.
CO-57	-8.153E-03	2.617E-02	4.444E-02	0.000E+00	NOT IDENT.
CO-58	-2.356E-02	4.198E-02	6.668E-02	0.000E+00	NOT IDENT.
FE-59	-1.522E-02	1.080E-01	1.817E-01	0.000E+00	NOT IDENT.
CO-60	-1.238E-02	4.102E-02	6.596E-02	0.000E+00	NOT IDENT.
ZN-65	-5.535E-02	1.351E-01	1.891E-01	0.000E+00	NOT IDENT.
GE-68	2.135E-01	1.427E+00	2.464E+00	0.000E+00	NOT IDENT.
AS-73	2.004E-02	8.677E-01	1.546E+00	0.000E+00	NOT IDENT.
AS-74	5.353E-02	9.857E-02	1.761E-01	0.000E+00	NOT IDENT.
SE-75	-1.079E-02	4.662E-02	7.058E-02	0.000E+00	NOT IDENT.
BR-77	4.918E+00	1.077E+01	1.843E+01	0.000E+00	FAIL ABUN
SR-82	-5.287E-01	4.224E-01	6.310E-01	0.000E+00	NOT IDENT.
RB-83	-1.885E-03	7.277E-02	1.199E-01	0.000E+00	NOT IDENT.
RB-84	3.016E-02	8.223E-02	1.410E-01	0.000E+00	NOT IDENT.
KR-85	1.105E+01	8.105E+00	1.324E+01	0.000E+00	NOT IDENT.
SR-85	5.666E-02	4.157E-02	6.792E-02	0.000E+00	NOT IDENT.
RB-86	-1.684E-02	9.057E-01	1.543E+00	0.000E+00	NOT IDENT.
Y-88	1.644E-02	3.535E-02	6.428E-02	0.000E+00	NOT IDENT.
ZR-88	-2.563E-02	3.243E-02	5.204E-02	0.000E+00	NOT IDENT.
Y-91	-2.916E+00	2.135E+01	3.561E+01	0.000E+00	NOT IDENT.
NB-94	8.349E-03	3.844E-02	6.629E-02	0.000E+00	NOT IDENT.
NB-95M	6.202E-02	1.368E-01	2.182E-01	0.000E+00	NOT IDENT.
ZR-95	-5.342E-02	8.582E-02	1.363E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.046E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.210E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.071E-01	1.365E+01	2.306E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.593E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.461E-02	3.373E-02	5.405E-02	0.000E+00	NOT IDENT.
RH-102	3.362E-02	2.992E-02	5.382E-02	0.000E+00	FAIL ABUN
RU-103	1.035E-02	4.282E-02	7.193E-02	0.000E+00	FAIL ABUN
RH-106	5.908E-02	3.578E-01	6.215E-01	0.000E+00	FAIL ABUN
RU-106	5.908E-02	3.577E-01	6.215E-01	0.000E+00	FAIL ABUN
AG-108M	1.987E-02	3.499E-02	5.985E-02	0.000E+00	NOT IDENT.
AG-110M	1.353E-02	3.693E-02	6.481E-02	0.000E+00	NOT IDENT.
IN-111	6.349E-01	1.112E+00	1.791E+00	0.000E+00	NOT IDENT.
IN-113M	-3.320E-02	4.648E-02	7.497E-02	0.000E+00	NOT IDENT.
SN-113	-3.320E-02	4.648E-02	7.497E-02	0.000E+00	NOT IDENT.
IN-114M	-3.960E-03	2.148E-01	3.180E-01	0.000E+00	NOT IDENT.
CD-115	4.441E-01	1.157E+01	1.913E+01	0.000E+00	NOT IDENT.
SN-117M	-1.905E-02	5.713E-02	9.510E-02	0.000E+00	NOT IDENT.
SB-122	4.002E-01	2.139E+00	3.754E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.288E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.460E-02	2.989E-02	4.860E-02	0.000E+00	NOT IDENT.
I-124	4.387E-03	8.037E-01	1.205E+00	0.000E+00	NOT IDENT.
SB-124	5.016E-02	8.907E-02	1.629E-01	0.000E+00	FAIL ABUN
SB-125	-4.742E-02	9.420E-02	1.525E-01	0.000E+00	FAIL ABUN
TE-125M	7.204E+00	9.454E+00	1.685E+01	0.000E+00	NOT IDENT.
I-126	9.687E-02	1.797E-01	3.195E-01	0.000E+00	NOT IDENT.
SB-126	8.478E-02	1.772E-01	2.740E-01	0.000E+00	FAIL ABUN
SB-127	1.118E+00	1.473E+00	2.645E+00	0.000E+00	NOT IDENT.
XE-127	2.839E-02	4.774E-02	8.147E-02	0.000E+00	NOT IDENT.
I-131	-8.930E-02	1.203E-01	1.951E-01	0.000E+00	NOT IDENT.
TE-132	-9.098E-02	6.753E-01	1.186E+00	0.000E+00	NOT IDENT.
BA-133	-1.783E-02	4.693E-02	6.776E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.758E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.990E-02	5.464E-02	1.029E-01	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.734E-01	2.997E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.197E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.809E-02	1.170E-01	2.056E-01	0.000E+00	FAIL ABUN
BA-137M	4.756E-03	3.872E-02	6.561E-02	0.000E+00	NOT IDENT.
CS-137	5.027E-03	4.093E-02	6.936E-02	0.000E+00	NOT IDENT.
CE-139	9.047E-03	3.077E-02	5.251E-02	0.000E+00	NOT IDENT.
BA-140	-2.247E-01	2.674E-01	4.199E-01	0.000E+00	NOT IDENT.
LA-140	-2.860E-02	8.449E-02	1.365E-01	0.000E+00	FAIL ABUN
CE-141	-3.027E-02	6.508E-02	1.084E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.777E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.513E-01	2.077E-01	3.645E-01	0.000E+00	NOT IDENT.
PM-144	3.520E-03	4.065E-02	6.952E-02	0.000E+00	NOT IDENT.

PR-144	2.385E-01	2.755E+00	4.711E+00	0.000E+00	NOT IDENT.
PM-146	8.743E-03	4.320E-02	7.329E-02	0.000E+00	NOT IDENT.
ND-147	1.781E-01	6.094E-01	1.026E+00	0.000E+00	FAIL ABUN
PM-149	8.305E+00	9.336E+01	1.629E+02	0.000E+00	NOT IDENT.
EU-152	-8.715E-02	9.964E-02	1.614E-01	0.000E+00	NOT IDENT.
GD-153	-6.012E-02	8.928E-02	1.335E-01	0.000E+00	FAIL ABUN
EU-154	-1.080E-01	1.459E-01	2.271E-01	0.000E+00	NOT IDENT.
EU-155	1.038E-01	1.138E-01	2.043E-01	0.000E+00	FAIL ABUN
TB-160	4.988E-02	1.628E-01	2.777E-01	0.000E+00	FAIL ABUN
HO-166M	4.833E-02	6.876E-02	1.225E-01	0.000E+00	FAIL ABUN
TM-171	-3.808E+01	3.261E+01	4.931E+01	0.000E+00	NOT IDENT.
LU-176	1.987E-02	2.569E-02	4.330E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.593E+00	2.109E+00	0.000E+00	FAIL ABUN
LU-177M	-4.422E-02	1.831E-01	3.035E-01	0.000E+00	FAIL ABUN
HF-181	8.608E-03	4.331E-02	7.310E-02	0.000E+00	NOT IDENT.
W-181	7.112E-03	4.154E-01	6.658E-01	0.000E+00	NOT IDENT.
TA-182	2.560E-02	2.639E-01	4.474E-01	0.000E+00	FAIL ABUN
RE-183	7.967E-02	1.156E-01	1.960E-01	0.000E+00	FAIL ABUN
RE-184	6.941E-02	2.258E-01	4.018E-01	0.000E+00	NOT IDENT.
OS-185	7.081E-03	4.660E-02	8.067E-02	0.000E+00	NOT IDENT.
RE-188	2.171E-01	1.831E-01	3.246E-01	0.000E+00	NOT IDENT.
W-188	-2.163E+00	8.090E+00	1.211E+01	0.000E+00	FAIL ABUN
IR-192	-1.275E-02	3.388E-02	5.709E-02	0.000E+00	FAIL ABUN
AU-195	1.012E-01	2.297E-01	4.025E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.603E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	6.378E+00	7.092E+00	1.242E+01	0.000E+00	NOT IDENT.
TL-202	5.828E-02	7.603E-02	1.337E-01	0.000E+00	NOT IDENT.
HG-203	4.303E-03	4.177E-02	7.305E-02	0.000E+00	NOT IDENT.
BI-207	-2.930E-03	5.855E-02	9.956E-02	0.000E+00	FAIL ABUN
TL-207	-6.022E-01	7.893E-01	1.113E+00	0.000E+00	FAIL ABUN
PO-209	-2.911E+00	8.924E+00	1.402E+01	0.000E+00	NOT IDENT.
BI-210	8.805E-01	3.481E+00	6.357E+00	0.000E+00	NOT IDENT.
PB-210	8.805E-01	3.481E+00	6.357E+00	0.000E+00	NOT IDENT.
PO-210	8.805E-01	3.481E+00	6.357E+00	0.000E+00	NOT IDENT.
PB-211	-8.330E-01	1.155E+00	1.663E+00	0.000E+00	NOT IDENT.
PO-215	-6.022E-01	7.893E-01	1.113E+00	0.000E+00	FAIL ABUN
RN-219	2.145E-01	4.279E-01	7.444E-01	0.000E+00	FAIL ABUN
RN-220	2.507E+01	2.668E+01	4.920E+01	0.000E+00	NOT IDENT.
RA-223	-6.022E-01	7.893E-01	1.113E+00	0.000E+00	FAIL ABUN
AC-227	1.566E-01	3.780E-01	6.740E-01	0.000E+00	FAIL ABUN
TH-227	1.566E-01	3.783E-01	6.740E-01	0.000E+00	FAIL ABUN
TH-229	1.207E-01	5.279E-01	8.884E-01	0.000E+00	FAIL ABUN
PA-231	-5.952E-02	1.569E+00	2.722E+00	0.000E+00	FAIL ABUN
TH-231	-6.022E-01	7.893E-01	1.113E+00	0.000E+00	FAIL ABUN
U-231	-8.578E-02	1.118E+00	1.744E+00	0.000E+00	FAIL ABUN
PA-233	-2.426E-02	6.039E-02	1.017E-01	0.000E+00	FAIL ABUN
PA-234	-2.854E-01	3.597E-01	5.433E-01	0.000E+00	FAIL ABUN
PA-234M	3.574E+00	4.972E+00	8.858E+00	0.000E+00	FAIL ABUN
U-235	-6.875E-02	2.253E-01	3.745E-01	0.000E+00	FAIL ABUN
NP-236	-4.115E-02	8.244E-02	1.360E-01	0.000E+00	NOT IDENT.
NP-239	-1.678E-01	1.893E-01	3.136E-01	0.000E+00	FAIL ABUN
AM-241	1.121E-01	1.709E-01	2.846E-01	0.000E+00	NOT IDENT.
CM-243	-8.052E-03	1.012E-01	1.755E-01	0.000E+00	FAIL ABUN
AM-246	1.822E-02	1.637E-01	2.818E-01	0.000E+00	NOT IDENT.
CM-247	2.983E-02	3.883E-02	6.868E-02	0.000E+00	NOT IDENT.
CF-249	4.386E-02	4.041E-02	7.302E-02	0.000E+00	NOT IDENT.
CF-251	5.905E-03	1.262E-01	2.121E-01	0.000E+00	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691008.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:32:30.
Sample ID          : G245691008          Sample quantity   : 1.22130E+02 GRAM
Detector name      : GAM12              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.62  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MJH1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 947037              Detector SN#       :
Matrix Spike ID    :                    LCS ID            : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1528	10.67*	1.138E+00	3.869E+01	3.869E+01	8.93
NB-95	765.79	70	99.81*	1.983E+00	1.082E-01	1.275E-01	52.27
CD-109	88.03	294	3.72*	5.637E+00	4.316E+00	4.415E+00	28.29
SN-126	64.28	74	9.60	3.195E+00	7.370E-01	7.370E-01	104.97
	86.94	294	8.90	5.637E+00	1.804E+00	1.804E+00	49.36
	87.57	294	37.00*	5.637E+00	4.339E-01	4.339E-01	28.29
TL-208	277.35	-----	6.80	4.505E+00	-----	Line Not Found	-----
	510.84	183	21.60	2.795E+00	9.335E-01	9.335E-01	40.42
	583.14	407	84.20*	2.505E+00	5.930E-01	5.930E-01	18.35
	860.37	64	12.46	1.795E+00	8.778E-01	8.778E-01	54.85
BI-211	72.87	-----	1.27	4.387E+00	-----	Line Not Found	-----
	351.07	707	12.94*	3.763E+00	4.461E+00	4.461E+00	12.15
BI-212	727.18	106	11.80*	2.078E+00	1.323E+00	1.323E+00	41.76
	785.46	-----	1.97	1.943E+00	-----	Line Not Found	-----
	1620.62	21	2.75	1.051E+00	2.268E+00	2.268E+00	78.74
PB-212	74.81	472	10.70	4.589E+00	2.952E+00	2.952E+00	21.84
	77.11	629	18.00	4.819E+00	2.228E+00	2.228E+00	14.85
	87.30	294	8.00	5.637E+00	2.007E+00	2.007E+00	30.01
	238.63	1262	44.60*	5.016E+00	1.734E+00	1.734E+00	9.89
	300.09	123	3.41	4.249E+00	2.619E+00	2.619E+00	52.83
PO-212	74.81	472	10.70	4.589E+00	2.952E+00	2.952E+00	21.84
	77.11	629	18.00	4.819E+00	2.228E+00	2.228E+00	14.85
	87.30	294	8.00	5.637E+00	2.007E+00	2.007E+00	30.01
	115.19	-----	0.60	6.604E+00	-----	Line Not Found	-----
	238.63	1262	44.60*	5.016E+00	1.734E+00	1.734E+00	9.89
	300.09	123	3.41	4.249E+00	2.619E+00	2.619E+00	52.83
BI-214	609.31	474	46.30*	2.415E+00	1.302E+00	1.302E+00	15.38
	1120.29	83	15.10	1.423E+00	1.183E+00	1.183E+00	57.67
	1764.49	97	15.80	9.904E-01	1.905E+00	1.905E+00	21.15
PB-214	74.81	472	6.21	4.589E+00	5.086E+00	5.086E+00	21.08
	77.11	629	10.50	4.819E+00	3.819E+00	3.819E+00	16.69
	87.30	294	4.67	5.637E+00	3.438E+00	3.438E+00	29.33

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	269	7.49	4.975E+00	2.216E+00	2.216E+00	24.40
	295.21	413	19.20	4.303E+00	1.537E+00	1.537E+00	18.26
	351.92	707	37.20*	3.763E+00	1.552E+00	1.552E+00	13.22
	74.81	472	6.21	4.589E+00	5.086E+00	5.086E+00	21.08
	77.11	629	10.50	4.819E+00	3.819E+00	3.819E+00	16.69
	87.30	294	4.67	5.637E+00	3.438E+00	3.438E+00	29.33
	241.98	269	7.49	4.975E+00	2.216E+00	2.216E+00	24.40
	295.21	413	19.20	4.303E+00	1.537E+00	1.537E+00	18.26
PO-216	351.92	707	37.20*	3.763E+00	1.552E+00	1.552E+00	13.22
	74.81	472	10.70	4.589E+00	2.952E+00	2.952E+00	21.84
	77.11	629	18.00	4.819E+00	2.228E+00	2.228E+00	14.85
	87.30	294	8.00	5.637E+00	2.007E+00	2.007E+00	30.01
	238.63	1262	44.60*	5.016E+00	1.734E+00	1.734E+00	9.89
	300.09	123	3.41	4.249E+00	2.619E+00	2.619E+00	52.83
PO-218	74.81	472	6.21	4.589E+00	5.086E+00	5.086E+00	21.08
	77.11	629	10.50	4.819E+00	3.819E+00	3.819E+00	16.69
	87.30	294	4.67	5.637E+00	3.438E+00	3.438E+00	29.33
	241.98	269	7.49	4.975E+00	2.216E+00	2.216E+00	24.40
	295.21	413	19.20	4.303E+00	1.537E+00	1.537E+00	18.26
	351.92	707	37.20*	3.763E+00	1.552E+00	1.552E+00	13.22
RA-224	240.98	269	3.95*	4.975E+00	4.202E+00	4.202E+00	23.75
RA-226	609.31	474	46.30*	2.415E+00	1.302E+00	1.302E+00	15.38
	1120.29	83	15.10	1.423E+00	1.183E+00	1.183E+00	57.67
	1764.49	97	15.80	9.904E-01	1.905E+00	1.905E+00	21.15
AC-228	338.32	239	11.40	3.881E+00	1.659E+00	1.659E+00	48.06
	911.07	288	27.70*	1.707E+00	1.871E+00	1.871E+00	20.31
	969.11	157	16.60	1.617E+00	1.800E+00	1.800E+00	35.12
RA-228	338.32	239	11.40	3.881E+00	1.659E+00	1.659E+00	48.06
	911.07	288	27.70*	1.707E+00	1.871E+00	1.871E+00	20.31
	969.11	157	16.60	1.617E+00	1.800E+00	1.800E+00	35.12
TH-228	74.81	472	10.70	4.589E+00	2.952E+00	2.997E+00	19.77
	77.11	629	18.00	4.819E+00	2.228E+00	2.261E+00	14.85
	87.30	294	8.00	5.637E+00	2.007E+00	2.037E+00	28.29
	238.63	1262	44.60*	5.016E+00	1.734E+00	1.760E+00	9.89
	300.09	123	3.41	4.249E+00	2.619E+00	2.659E+00	78.72
TH-230	609.31	474	46.30*	2.415E+00	1.302E+00	1.302E+00	15.38
	1120.29	83	15.10	1.423E+00	1.183E+00	1.183E+00	57.67
	1764.49	97	15.80	9.904E-01	1.905E+00	1.905E+00	21.15
TH-232	338.32	239	11.40	3.881E+00	1.659E+00	1.659E+00	26.11
	911.07	288	27.70*	1.707E+00	1.871E+00	1.871E+00	20.31
	969.11	157	16.60	1.617E+00	1.800E+00	1.800E+00	35.12
TH-234	63.29	74	3.80*	3.195E+00	1.862E+00	1.862E+00	105.41
	92.38	314	5.41	5.970E+00	2.989E+00	2.989E+00	31.92
U-234	609.31	474	46.30*	2.415E+00	1.302E+00	1.302E+00	15.38
	1120.29	83	15.10	1.423E+00	1.183E+00	1.183E+00	57.67
	1764.49	97	15.80	9.904E-01	1.905E+00	1.905E+00	21.15
NP-237	86.50	294	12.60*	5.637E+00	1.274E+00	1.274E+00	35.02
	95.87	-----	2.60	6.124E+00	-----	Line Not Found	-----
U-238	63.29	74	3.80*	3.195E+00	1.862E+00	1.862E+00	105.41

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	92.38	314	5.41	5.970E+00	2.989E+00	2.989E+00	27.67
AM-243	74.67	472	66.00*	4.589E+00	4.785E-01	4.785E-01	19.73
	86.72	294	0.34	5.637E+00	4.778E+01	4.778E+01	28.29
	117.66	-----	0.55	6.624E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.534E+00	-----	Line Not Found	-----
ANH-511	511.00	183	100.00*	2.795E+00	2.016E-01	2.016E-01	39.56

Flag: "\*" = Keyline

Total number of lines in spectrum 35  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 31 88.57%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.869E+01	3.869E+01	0.345E+01	8.93	
NB-95	64.02D	1.18	1.082E-01	1.275E-01	0.667E-01	52.27	
CD-109	464.00D	1.02	4.316E+00	4.415E+00	1.249E+00	28.29	
SN-126	1.00E+05Y	1.00	4.339E-01	4.339E-01	1.228E-01	28.29	
TL-208	1.41E+10Y	1.00	5.930E-01	5.930E-01	1.088E-01	18.35	
BI-211	7.04E+08Y	1.00	4.461E+00	4.461E+00	0.542E+00	12.15	
BI-212	1.41E+10Y	1.00	1.323E+00	1.323E+00	0.553E+00	41.76	
PB-212	1.41E+10Y	1.00	1.734E+00	1.734E+00	0.171E+00	9.89	
PO-212	1.41E+10Y	1.00	1.734E+00	1.734E+00	0.171E+00	9.89	
BI-214	1600.00Y	1.00	1.302E+00	1.302E+00	0.200E+00	15.38	
PB-214	1600.00Y	1.00	1.552E+00	1.552E+00	0.205E+00	13.22	
PO-214	1600.00Y	1.00	1.552E+00	1.552E+00	0.205E+00	13.22	
PO-216	1.41E+10Y	1.00	1.734E+00	1.734E+00	0.171E+00	9.89	
PO-218	1600.00Y	1.00	1.552E+00	1.552E+00	0.205E+00	13.22	
RA-224	1.41E+10Y	1.00	4.202E+00	4.202E+00	0.998E+00	23.75	
RA-226	1600.00Y	1.00	1.302E+00	1.302E+00	0.200E+00	15.38	
AC-228	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.380E+00	20.31	
RA-228	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.380E+00	20.31	
TH-228	1.91Y	1.02	1.734E+00	1.760E+00	0.174E+00	9.89	
TH-230	4.47E+09Y	1.00	1.302E+00	1.302E+00	0.200E+00	15.38	
TH-232	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.380E+00	20.31	
TH-234	4.47E+09Y	1.00	1.862E+00	1.862E+00	1.963E+00	105.41	
U-234	4.47E+09Y	1.00	1.302E+00	1.302E+00	0.200E+00	15.38	
NP-237	2.14E+06Y	1.00	1.274E+00	1.274E+00	0.446E+00	35.02	
U-238	4.47E+09Y	1.00	1.862E+00	1.862E+00	1.963E+00	105.41	
AM-243	7380.00Y	1.00	4.785E-01	4.785E-01	0.944E-01	19.73	
ANH-511	1.00E+09Y	1.00	2.016E-01	2.016E-01	0.798E-01	39.56	
Total Activity :			8.222E+01	8.236E+01			

Grand Total Activity : 8.222E+01 8.236E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	84.22	122	286	1.21	167.95	165	26	1.70E-02	45.2	5.44E+00	T
4	89.91	195	403	1.39	179.33	165	26	2.70E-02	40.4	5.82E+00	T
0	128.79	130	366	1.66	257.13	252	9	1.80E-02	56.2	6.64E+00	T
0	185.74	173	304	1.42	371.08	367	9	2.40E-02	41.7	5.86E+00	T
0	209.25	99	302	1.23	418.12	413	9	1.37E-02	67.0	5.47E+00	T
0	270.07	138	229	1.31	539.83	535	11	1.92E-02	45.6	4.59E+00	T
0	328.38	112	221	1.39	656.49	649	14	1.56E-02	59.7	3.97E+00	T
0	462.49	63	114	1.50	924.81	921	10	8.74E-03	68.0	3.03E+00	T
0	1581.41	10	8	1.62	3162.80	3154	11	1.37E-03	****	1.07E+00	
0	1630.68	12	8	1.42	3261.31	3255	9	1.61E-03	****	1.05E+00	
0	1661.22	25	6	1.90	3322.37	3316	13	3.51E-03	57.2	1.03E+00	
0	1728.40	36	0	1.03	3456.69	3450	14	5.00E-03	33.3	1.00E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691008.CNF;1
* Acquisition date   : 9-FEB-2010 15:32:30. Detector SN#      :
* Detector ID        : GAM12 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.62 Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245691008 Analyst initials: MJH1
* Batch Number       : 947037 Sample Quantity : 1.22130E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24.5MS Isotope      :
* MSD ID             : MSD Isotope      :
* LCS ID             : 1032-A LCS Isotope :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.869E+01	3.454E+00	3.162E-01	2.255E-02	122.358
NB-95	1.275E-01	6.666E-02	7.631E-02	5.582E-03	1.671
CD-109	4.415E+00	1.249E+00	1.234E+00	9.443E-02	3.577
SN-126	4.339E-01	1.228E-01	1.219E-01	9.287E-03	3.560
TL-208	5.930E-01	1.088E-01	6.005E-02	4.296E-03	9.875
BI-211	4.461E+00	5.419E-01	3.303E-01	2.077E-02	13.503
BI-212	1.323E+00	5.526E-01	5.192E-01	4.495E-02	2.548
PB-212	1.734E+00	1.714E-01	9.553E-02	6.784E-03	18.148
PO-212	1.734E+00	1.714E-01	9.553E-02	6.784E-03	18.148
BI-214	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
PB-214	1.552E+00	2.052E-01	1.152E-01	9.408E-03	13.473
PO-214	1.552E+00	2.052E-01	1.152E-01	9.408E-03	13.473
PO-216	1.734E+00	1.714E-01	9.553E-02	6.784E-03	18.148
PO-218	1.552E+00	2.052E-01	1.152E-01	9.408E-03	13.473
RA-224	4.202E+00	9.980E-01	1.087E+00	5.998E-02	3.865
RA-226	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
AC-228	1.871E+00	3.801E-01	2.359E-01	2.590E-02	7.932
RA-228	1.871E+00	3.801E-01	2.359E-01	2.590E-02	7.932

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.760E+00	1.740E-01	9.699E-02	6.887E-03	18.148
TH-230	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
TH-232	1.871E+00	3.801E-01	2.359E-01	2.590E-02	7.932
TH-234	1.862E+00	1.963E+00	2.330E+00	3.966E-01	0.799
U-234	1.302E+00	2.002E-01	1.127E-01	9.281E-03	11.549
NP-237	1.274E+00	4.462E-01	3.620E-01	7.952E-02	3.520
U-238	1.862E+00	1.963E+00	2.330E+00	3.966E-01	0.799
AM-243	4.785E-01	9.443E-02	9.617E-02	6.535E-03	4.976
ANH-511	2.016E-01	7.976E-02	4.603E-02	2.805E-03	4.381

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-7.274E-02		3.483E-01	5.516E-01	3.796E-02	-0.132
NA-22	-4.042E-02		5.306E-02	8.075E-02	5.200E-03	-0.501
NA-24	-4.291E-01		4.273E-01	Half-Life too short		
AL-26	1.957E-03		3.202E-02	5.359E-02	3.075E-03	0.037
TI-44	4.111E-01	+	6.103E-02	7.933E-02	5.549E-03	5.182
SC-46	-3.605E-02		4.499E-02	6.698E-02	5.551E-03	-0.538
V-48	-1.663E-02		8.690E-02	1.214E-01	9.353E-03	-0.137
CR-51	2.244E-01		3.736E-01	6.403E-01	4.071E-02	0.350
MN-52	-1.065E-01		2.566E-01	3.917E-01	2.691E-02	-0.272
MN-54	2.789E-02		4.341E-02	7.427E-02	5.839E-03	0.376
CO-56	9.673E-03		4.415E-02	7.323E-02	5.826E-03	0.132
CO-57	-8.153E-03		2.670E-02	4.314E-02	2.698E-03	-0.189
CO-58	-2.356E-02		4.284E-02	6.629E-02	5.101E-03	-0.355
FE-59	-1.522E-02		1.102E-01	1.813E-01	1.339E-02	-0.084
CO-60	-1.238E-02		4.186E-02	6.599E-02	4.609E-03	-0.188
ZN-65	-5.535E-02		1.378E-01	1.888E-01	1.187E-02	-0.293
GE-68	2.135E-01		1.456E+00	2.459E+00	1.658E-01	0.087
AS-73	2.004E-02		8.854E-01	1.486E+00	9.594E-02	0.013
AS-74	5.353E-02		1.006E-01	1.744E-01	1.110E-02	0.307
SE-75	-1.079E-02		4.757E-02	6.918E-02	3.921E-03	-0.156
BR-77	4.918E+00		1.099E+01	1.821E+01	1.117E+00	0.270
SR-82	-5.287E-01		4.310E-01	6.270E-01	4.639E-02	-0.843
RB-83	-1.885E-03		7.426E-02	1.185E-01	7.265E-03	-0.016
RB-84	3.016E-02		8.391E-02	1.403E-01	1.154E-02	0.215
KR-85	1.105E+01		8.270E+00	1.309E+01	7.993E-01	0.844
SR-85	5.666E-02		4.242E-02	6.713E-02	4.100E-03	0.844
RB-86	-1.684E-02		9.242E-01	1.539E+00	1.039E-01	-0.011
Y-88	1.644E-02		3.607E-02	6.459E-02	3.636E-03	0.254
ZR-88	-2.563E-02		3.309E-02	5.126E-02	2.811E-03	-0.500
Y-91	-2.916E+00		2.178E+01	3.558E+01	2.057E+00	-0.082
NB-94	8.349E-03		3.923E-02	6.578E-02	4.480E-03	0.127
NB-95M	6.202E-02		1.395E-01	2.136E-01	1.558E-02	0.290
ZR-95	-5.342E-02		8.757E-02	1.354E-01	1.118E-02	-0.395
NB-97	7.560E-02		5.337E-02	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-97	6.021E+00		1.128E+00	Half-Life too short		
MO-99	-1.071E-01		1.393E+01	2.290E+01	3.293E+00	-0.005
TC-99M	-3.391E+10		2.343E+10	Half-Life too short		
RH-101	-1.461E-02		3.442E-02	5.279E-02	2.793E-03	-0.277
RH-102	3.362E-02		3.053E-02	5.314E-02	3.156E-03	0.633
RU-103	1.035E-02		4.369E-02	7.106E-02	9.065E-03	0.146
RH-106	5.908E-02		3.651E-01	6.158E-01	7.424E-02	0.096
RU-106	5.908E-02		3.650E-01	6.158E-01	3.954E-02	0.096
AG-108M	1.987E-02		3.570E-02	5.903E-02	3.678E-03	0.337
AG-110M	1.353E-02		3.768E-02	6.426E-02	4.380E-03	0.211
IN-111	6.349E-01		1.135E+00	1.753E+00	9.705E-02	0.362
IN-113M	-3.320E-02		4.743E-02	7.384E-02	4.347E-03	-0.450
SN-113	-3.320E-02		4.743E-02	7.384E-02	4.347E-03	-0.450
IN-114M	-3.960E-03		2.192E-01	3.104E-01	1.628E-02	-0.013
CD-115	4.441E-01		1.181E+01	1.892E+01	1.165E+00	0.023
SN-117M	-1.905E-02		5.829E-02	9.262E-02	4.892E-03	-0.206
SB-122	4.002E-01		2.183E+00	3.715E+00	2.333E-01	0.108
I-123	-5.175E+00		3.208E+00	Half-Life too short		
TE-123M	-2.460E-02		3.050E-02	4.733E-02	2.536E-03	-0.520
I-124	4.387E-03		8.201E-01	1.193E+00	7.615E-02	0.004
SB-124	5.016E-02		9.088E-02	1.635E-01	1.091E-02	0.307
SB-125	-4.742E-02		9.613E-02	1.504E-01	8.939E-03	-0.315
TE-125M	7.204E+00		9.647E+00	1.634E+01	1.409E+00	0.441
I-126	9.687E-02		1.834E-01	3.168E-01	2.066E-02	0.306
SB-126	8.478E-02		1.808E-01	2.720E-01	1.891E-02	0.312
SB-127	1.118E+00		1.503E+00	2.624E+00	2.624E-01	0.426
XE-127	2.839E-02		4.872E-02	7.959E-02	4.232E-03	0.357
I-131	-8.930E-02		1.227E-01	1.920E-01	1.208E-02	-0.465
TE-132	-9.098E-02		6.891E-01	1.160E+00	1.652E-01	-0.078
BA-133	-1.783E-02		4.789E-02	6.666E-02	7.648E-03	-0.268
I-133	-3.614E-04		3.448E-03	Half-Life too short		
CS-134	9.990E-02		5.575E-02	1.023E-01	7.798E-03	0.977
CS-135	3.636E-01		1.770E-01	2.938E-01	2.209E-02	1.238
I-135	-1.482E+09		3.672E+09	Half-Life too short		
CS-136	3.809E-02		1.194E-01	2.051E-01	1.541E-02	0.186
BA-137M	4.756E-03		3.951E-02	6.506E-02	4.217E-03	0.073
CS-137	5.027E-03		4.176E-02	6.877E-02	4.473E-03	0.073
CE-139	9.047E-03		3.140E-02	5.117E-02	2.622E-03	0.177
BA-140	-2.247E-01		2.728E-01	4.152E-01	1.353E-01	-0.541
LA-140	-2.860E-02		8.621E-02	1.369E-01	8.916E-03	-0.209
CE-141	-3.027E-02		6.640E-02	1.055E-01	6.142E-03	-0.287
CE-143	9.854E-04		1.417E-04	Half-Life too short		
CE-144	1.513E-01		2.119E-01	3.542E-01	5.042E-02	0.427
PM-144	3.520E-03		4.148E-02	6.898E-02	4.667E-03	0.051
PR-144	2.385E-01		2.811E+00	4.675E+00	3.161E-01	0.051
PM-146	8.743E-03		4.408E-02	7.233E-02	6.253E-03	0.121
ND-147	1.781E-01		6.218E-01	1.015E+00	1.389E-01	0.176
PM-149	8.305E+00		9.527E+01	1.598E+02	2.257E+01	0.052

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	-8.715E-02		1.017E-01	1.587E-01	1.017E-02	-0.549
GD-153	-6.012E-02		9.110E-02	1.292E-01	8.987E-03	-0.465
EU-154	-1.080E-01		1.488E-01	2.271E-01	2.213E-02	-0.475
EU-155	1.038E-01		1.161E-01	1.980E-01	1.334E-02	0.525
TB-160	4.988E-02		1.661E-01	2.764E-01	2.270E-02	0.180
HO-166M	4.833E-02		7.016E-02	1.215E-01	8.366E-03	0.398
TM-171	-3.808E+01		3.328E+01	4.752E+01	3.075E+00	-0.801
LU-176	1.987E-02		2.621E-02	4.251E-02	2.416E-03	0.467
LU-177	2.418E+00	+	1.626E+00	2.061E+00	1.102E-01	1.173
LU-177M	-4.422E-02		1.868E-01	2.992E-01	1.679E-02	-0.148
HF-181	8.608E-03		4.419E-02	7.219E-02	4.310E-03	0.119
W-181	7.112E-03		4.238E-01	6.414E-01	4.121E-02	0.011
TA-182	2.560E-02		2.693E-01	4.472E-01	2.653E-02	0.057
RE-183	7.967E-02		1.180E-01	1.909E-01	9.924E-03	0.417
RE-184	6.941E-02		2.304E-01	3.936E-01	2.190E-02	0.176
OS-185	7.081E-03		4.755E-02	7.997E-02	5.168E-03	0.089
RE-188	2.171E-01		1.869E-01	3.160E-01	1.694E-02	0.687
W-188	-2.163E+00		8.255E+00	1.188E+01	6.733E-01	-0.182
IR-192	-1.275E-02		3.457E-02	5.608E-02	3.205E-03	-0.227
AU-195	1.012E-01		2.344E-01	3.897E-01	2.680E-02	0.260
TL-200	4.755E-04		2.349E-04	Half-Life too short		
TL-201	6.378E+00		7.237E+00	1.210E+01	6.204E-01	0.527
TL-202	5.828E-02		7.758E-02	1.319E-01	7.598E-03	0.442
HG-203	4.303E-03		4.262E-02	7.165E-02	4.309E-03	0.060
BI-207	-2.930E-03		5.974E-02	9.933E-02	6.852E-03	-0.029
TL-207	-6.022E-01		8.055E-01	1.094E+00	1.802E-01	-0.550
PO-209	-2.911E+00		9.106E+00	1.396E+01	1.165E+00	-0.209
BI-210	8.805E-01		3.552E+00	6.099E+00	4.595E-01	0.144
PB-210	8.805E-01		3.552E+00	6.099E+00	4.595E-01	0.144
PO-210	8.805E-01		3.552E+00	6.099E+00	3.912E-01	0.144
PB-211	-8.330E-01		1.178E+00	1.639E+00	1.021E+00	-0.508
PO-215	-6.022E-01		8.055E-01	1.094E+00	1.802E-01	-0.550
RN-219	2.145E-01		4.366E-01	7.334E-01	9.899E-02	0.293
RN-220	2.507E+01		2.723E+01	4.867E+01	3.035E+00	0.515
RA-223	-6.022E-01		8.055E-01	1.094E+00	1.802E-01	-0.550
AC-227	1.566E-01		3.857E-01	6.604E-01	9.159E-02	0.237
TH-227	1.566E-01		3.860E-01	6.604E-01	1.111E-01	0.237
TH-229	1.207E-01		5.387E-01	8.674E-01	4.567E-02	0.139
PA-231	-5.952E-02		1.601E+00	2.671E+00	3.664E-01	-0.022
TH-231	-6.022E-01		8.055E-01	1.094E+00	1.802E-01	-0.550
U-231	-8.578E-02		1.141E+00	1.688E+00	1.189E-01	-0.051
PA-233	-2.426E-02		6.162E-02	9.984E-02	6.042E-03	-0.243
PA-234	-2.854E-01		3.671E-01	5.412E-01	1.001E-01	-0.527
PA-234M	3.574E+00		5.073E+00	8.830E+00	7.992E-01	0.405
U-235	-6.875E-02		2.299E-01	3.643E-01	5.917E-02	-0.189
NP-236	-4.115E-02		8.412E-02	1.325E-01	6.948E-03	-0.311
NP-239	-1.678E-01		1.932E-01	3.043E-01	1.920E-02	-0.551
AM-241	1.121E-01		1.744E-01	2.739E-01	1.946E-02	0.409

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-8.052E-03		1.033E-01	1.701E-01	1.133E-02	-0.047
AM-246	1.822E-02		1.671E-01	2.812E-01	1.891E-02	0.065
CM-247	2.983E-02		3.962E-02	6.767E-02	3.753E-03	0.441
CF-249	4.386E-02		4.123E-02	7.191E-02	3.953E-03	0.610
CF-251	5.905E-03		1.288E-01	2.068E-01	1.069E-02	0.029

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691008            *
* Acquisition date   : 9-FEB-2010 15:32:30 Detector SN#      :                *
* Detector ID        : GAM12 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.62 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691008 Analyst initials: MJH1          *
* Batch Number       : 947037 Sample Quantity : 1.2213E+02 GRAM  *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*****
*                                     QC DATA                              *
*
* CALIB. DATE/TIME  : 10-FEB-2009 09:20:24 MS Isotope       :                *
* MSD DPM           : 0.000 MSD Isotope       :                *
* LCS DPM           : 0.000 LCS Isotope       :                *
* LCSD DPM          : 0.000 LCSD Isotope      :                *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.869E+01	3.385E+00	1.579E-01	1.727E+00
NB-95	1.275E-01	6.532E-02	3.843E-02	3.333E-02
CD-109	4.415E+00	1.224E+00	6.385E-01	6.245E-01
SN-126	4.339E-01	1.203E-01	6.306E-02	6.138E-02
TL-208	5.930E-01	1.067E-01	3.035E-02	5.441E-02
BI-211	4.461E+00	5.311E-01	1.680E-01	2.710E-01
BI-212	1.323E+00	5.415E-01	2.617E-01	2.763E-01
PB-212	1.734E+00	1.680E-01	4.883E-02	8.570E-02
PO-212	1.734E+00	1.680E-01	4.883E-02	8.570E-02
BI-214	1.302E+00	1.962E-01	5.694E-02	1.001E-01
PB-214	1.552E+00	2.011E-01	5.858E-02	1.026E-01
PO-214	1.552E+00	2.011E-01	5.858E-02	1.026E-01
PO-216	1.734E+00	1.680E-01	4.883E-02	8.570E-02
PO-218	1.552E+00	2.011E-01	5.858E-02	1.026E-01
RA-224	4.202E+00	9.781E-01	5.557E-01	4.990E-01
RA-226	1.302E+00	1.962E-01	5.694E-02	1.001E-01
AC-228	1.871E+00	3.725E-01	1.186E-01	1.900E-01
RA-228	1.871E+00	3.725E-01	1.186E-01	1.900E-01
TH-228	1.760E+00	1.705E-01	4.957E-02	8.700E-02
TH-230	1.302E+00	1.962E-01	5.694E-02	1.001E-01
TH-232	1.871E+00	3.725E-01	1.186E-01	1.900E-01
TH-234	1.862E+00	1.923E+00	1.210E+00	9.813E-01
U-234	1.302E+00	1.962E-01	5.694E-02	1.001E-01
NP-237	1.274E+00	4.373E-01	1.873E-01	2.231E-01
U-238	1.862E+00	1.923E+00	1.210E+00	9.813E-01
AM-243	4.785E-01	9.255E-02	4.986E-02	4.722E-02
ANH-511	2.016E-01	7.816E-02	2.330E-02	3.988E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-7.274E-02	3.413E-01	2.795E-01	1.741E-01	NOT IDENT.
NA-22	-4.042E-02	5.200E-02	4.040E-02	2.653E-02	NOT IDENT.
NA-24	-4.291E+05	8.375E+05	0.000E+00	4.273E+05	SHORT HLIF
AL-26	1.957E-03	3.138E-02	2.669E-02	1.601E-02	NOT IDENT.
TI-44	4.111E-01	5.981E-02	4.110E-02	3.052E-02	FAIL ABUN
SC-46	-3.605E-02	4.409E-02	3.367E-02	2.249E-02	FAIL ABUN
V-48	-1.663E-02	8.516E-02	6.095E-02	4.345E-02	NOT IDENT.
CR-51	2.244E-01	3.661E-01	3.261E-01	1.868E-01	NOT IDENT.
MN-52	-1.065E-01	2.515E-01	1.956E-01	1.283E-01	NOT IDENT.
MN-54	2.789E-02	4.254E-02	3.736E-02	2.170E-02	NOT IDENT.
CO-56	9.673E-03	4.326E-02	3.683E-02	2.207E-02	NOT IDENT.
CO-57	-8.153E-03	2.617E-02	2.223E-02	1.335E-02	NOT IDENT.
CO-58	-2.356E-02	4.198E-02	3.336E-02	2.142E-02	NOT IDENT.
FE-59	-1.522E-02	1.080E-01	9.090E-02	5.508E-02	NOT IDENT.
CO-60	-1.238E-02	4.102E-02	3.300E-02	2.093E-02	NOT IDENT.
ZN-65	-5.535E-02	1.351E-01	9.460E-02	6.891E-02	NOT IDENT.
GE-68	2.135E-01	1.427E+00	1.233E+00	7.281E-01	NOT IDENT.
AS-73	2.004E-02	8.677E-01	7.736E-01	4.427E-01	NOT IDENT.
AS-74	5.353E-02	9.857E-02	8.810E-02	5.029E-02	NOT IDENT.
SE-75	-1.079E-02	4.662E-02	3.531E-02	2.378E-02	NOT IDENT.
BR-77	4.918E+00	1.077E+01	9.218E+00	5.493E+00	FAIL ABUN
SR-82	-5.287E-01	4.224E-01	3.157E-01	2.155E-01	NOT IDENT.
RB-83	-1.885E-03	7.277E-02	5.997E-02	3.713E-02	NOT IDENT.
RB-84	3.016E-02	8.223E-02	7.052E-02	4.195E-02	NOT IDENT.
KR-85	1.105E+01	8.105E+00	6.625E+00	4.135E+00	NOT IDENT.
SR-85	5.666E-02	4.157E-02	3.398E-02	2.121E-02	NOT IDENT.
RB-86	-1.684E-02	9.057E-01	7.717E-01	4.621E-01	NOT IDENT.
Y-88	1.644E-02	3.535E-02	3.216E-02	1.804E-02	NOT IDENT.
ZR-88	-2.563E-02	3.243E-02	2.603E-02	1.655E-02	NOT IDENT.
Y-91	-2.916E+00	2.135E+01	1.781E+01	1.089E+01	NOT IDENT.
NB-94	8.349E-03	3.844E-02	3.317E-02	1.961E-02	NOT IDENT.
NB-95M	6.202E-02	1.368E-01	1.092E-01	6.977E-02	NOT IDENT.
ZR-95	-5.342E-02	8.582E-02	6.819E-02	4.378E-02	NOT IDENT.
NB-97	7.560E+04	1.046E+05	0.000E+00	5.337E+04	SHORT HLIF
ZR-97	6.021E+06	2.210E+06	0.000E+00	1.128E+06	SHORT HLIF
MO-99	-1.071E-01	1.365E+01	1.154E+01	6.963E+00	NOT IDENT.
TC-99M	-3.391E+16	4.593E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.461E-02	3.373E-02	2.704E-02	1.721E-02	NOT IDENT.
RH-102	3.362E-02	2.992E-02	2.693E-02	1.527E-02	FAIL ABUN
RU-103	1.035E-02	4.282E-02	3.599E-02	2.185E-02	FAIL ABUN
RH-106	5.908E-02	3.578E-01	3.109E-01	1.825E-01	FAIL ABUN
RU-106	5.908E-02	3.577E-01	3.109E-01	1.825E-01	FAIL ABUN
AG-108M	1.987E-02	3.499E-02	2.994E-02	1.785E-02	NOT IDENT.
AG-110M	1.353E-02	3.693E-02	3.243E-02	1.884E-02	NOT IDENT.
IN-111	6.349E-01	1.112E+00	8.958E-01	5.676E-01	NOT IDENT.
IN-113M	-3.320E-02	4.648E-02	3.751E-02	2.371E-02	NOT IDENT.
SN-113	-3.320E-02	4.648E-02	3.751E-02	2.371E-02	NOT IDENT.
IN-114M	-3.960E-03	2.148E-01	1.591E-01	1.096E-01	NOT IDENT.
CD-115	4.441E-01	1.157E+01	9.573E+00	5.905E+00	NOT IDENT.
SN-117M	-1.905E-02	5.713E-02	4.758E-02	2.915E-02	NOT IDENT.
SB-122	4.002E-01	2.139E+00	1.878E+00	1.091E+00	NOT IDENT.
I-123	-5.175E+06	6.288E+06	0.000E+00	3.208E+06	SHORT HLIF
TE-123M	-2.460E-02	2.989E-02	2.431E-02	1.525E-02	NOT IDENT.
I-124	4.387E-03	8.037E-01	6.028E-01	4.100E-01	NOT IDENT.
SB-124	5.016E-02	8.907E-02	8.150E-02	4.544E-02	FAIL ABUN
SB-125	-4.742E-02	9.420E-02	7.629E-02	4.806E-02	FAIL ABUN
TE-125M	7.204E+00	9.454E+00	8.432E+00	4.823E+00	NOT IDENT.
I-126	9.687E-02	1.797E-01	1.598E-01	9.168E-02	NOT IDENT.
SB-126	8.478E-02	1.772E-01	1.371E-01	9.042E-02	FAIL ABUN
SB-127	1.118E+00	1.473E+00	1.323E+00	7.517E-01	NOT IDENT.
XE-127	2.839E-02	4.774E-02	4.076E-02	2.436E-02	NOT IDENT.
I-131	-8.930E-02	1.203E-01	9.759E-02	6.136E-02	NOT IDENT.
TE-132	-9.098E-02	6.753E-01	5.934E-01	3.445E-01	NOT IDENT.
BA-133	-1.783E-02	4.693E-02	3.390E-02	2.394E-02	NOT IDENT.
I-133	-3.614E+02	6.758E+03	0.000E+00	3.448E+03	SHORT HLIF
CS-134	9.990E-02	5.464E-02	5.148E-02	2.788E-02	NOT IDENT.
CS-135	3.636E-01	1.734E-01	1.499E-01	8.849E-02	NOT IDENT.
I-135	-1.482E+15	7.197E+15	0.000E+00	3.672E+15	SHORT HLIF
CS-136	3.809E-02	1.170E-01	1.029E-01	5.968E-02	FAIL ABUN
BA-137M	4.756E-03	3.872E-02	3.282E-02	1.975E-02	NOT IDENT.
CS-137	5.027E-03	4.093E-02	3.470E-02	2.088E-02	NOT IDENT.
CE-139	9.047E-03	3.077E-02	2.627E-02	1.570E-02	NOT IDENT.
BA-140	-2.247E-01	2.674E-01	2.101E-01	1.364E-01	NOT IDENT.
LA-140	-2.860E-02	8.449E-02	6.829E-02	4.311E-02	FAIL ABUN
CE-141	-3.027E-02	6.508E-02	5.425E-02	3.320E-02	NOT IDENT.
CE-143	9.854E+02	2.777E+02	0.000E+00	1.417E+02	SHORT HLIF
CE-144	1.513E-01	2.077E-01	1.823E-01	1.060E-01	NOT IDENT.
PM-144	3.520E-03	4.065E-02	3.478E-02	2.074E-02	NOT IDENT.



PR-144	2.385E-01	2.755E+00	2.357E+00	1.405E+00	NOT IDENT.
PM-146	8.743E-03	4.320E-02	3.667E-02	2.204E-02	NOT IDENT.
ND-147	1.781E-01	6.094E-01	5.134E-01	3.109E-01	FAIL ABUN
PM-149	8.305E+00	9.336E+01	8.151E+01	4.763E+01	NOT IDENT.
EU-152	-8.715E-02	9.964E-02	8.076E-02	5.084E-02	NOT IDENT.
GD-153	-6.012E-02	8.928E-02	6.679E-02	4.555E-02	FAIL ABUN
EU-154	-1.080E-01	1.459E-01	1.136E-01	7.442E-02	NOT IDENT.
EU-155	1.038E-01	1.138E-01	1.022E-01	5.807E-02	FAIL ABUN
TB-160	4.988E-02	1.628E-01	1.390E-01	8.304E-02	FAIL ABUN
HO-166M	4.833E-02	6.876E-02	6.127E-02	3.508E-02	FAIL ABUN
TM-171	-3.808E+01	3.261E+01	2.467E+01	1.664E+01	NOT IDENT.
LU-176	1.987E-02	2.569E-02	2.166E-02	1.311E-02	FAIL ABUN
LU-177	2.418E+00	1.593E+00	1.055E+00	8.128E-01	FAIL ABUN
LU-177M	-4.422E-02	1.831E-01	1.519E-01	9.341E-02	FAIL ABUN
HF-181	8.608E-03	4.331E-02	3.657E-02	2.210E-02	NOT IDENT.
W-181	7.112E-03	4.154E-01	3.331E-01	2.119E-01	NOT IDENT.
TA-182	2.560E-02	2.639E-01	2.238E-01	1.346E-01	FAIL ABUN
RE-183	7.967E-02	1.156E-01	9.804E-02	5.900E-02	FAIL ABUN
RE-184	6.941E-02	2.258E-01	2.010E-01	1.152E-01	NOT IDENT.
OS-185	7.081E-03	4.660E-02	4.036E-02	2.378E-02	NOT IDENT.
RE-188	2.171E-01	1.831E-01	1.624E-01	9.344E-02	NOT IDENT.
W-188	-2.163E+00	8.090E+00	6.057E+00	4.128E+00	FAIL ABUN
IR-192	-1.275E-02	3.388E-02	2.856E-02	1.728E-02	FAIL ABUN
AU-195	1.012E-01	2.297E-01	2.014E-01	1.172E-01	FAIL ABUN
TL-200	4.755E+02	4.603E+02	0.000E+00	2.349E+02	SHORT HLIF
TL-201	6.378E+00	7.092E+00	6.213E+00	3.619E+00	NOT IDENT.
TL-202	5.828E-02	7.603E-02	6.691E-02	3.879E-02	NOT IDENT.
HG-203	4.303E-03	4.177E-02	3.655E-02	2.131E-02	NOT IDENT.
BI-207	-2.930E-03	5.855E-02	4.981E-02	2.987E-02	FAIL ABUN
TL-207	-6.022E-01	7.893E-01	5.570E-01	4.027E-01	FAIL ABUN
PO-209	-2.911E+00	8.924E+00	7.015E+00	4.553E+00	NOT IDENT.
BI-210	8.805E-01	3.481E+00	3.180E+00	1.776E+00	NOT IDENT.
PB-210	8.805E-01	3.481E+00	3.180E+00	1.776E+00	NOT IDENT.
PO-210	8.805E-01	3.481E+00	3.180E+00	1.776E+00	NOT IDENT.
PB-211	-8.330E-01	1.155E+00	8.319E-01	5.891E-01	NOT IDENT.
PO-215	-6.022E-01	7.893E-01	5.570E-01	4.027E-01	FAIL ABUN
RN-219	2.145E-01	4.279E-01	3.724E-01	2.183E-01	FAIL ABUN
RN-220	2.507E+01	2.668E+01	2.461E+01	1.361E+01	NOT IDENT.
RA-223	-6.022E-01	7.893E-01	5.570E-01	4.027E-01	FAIL ABUN
AC-227	1.566E-01	3.780E-01	3.372E-01	1.928E-01	FAIL ABUN
TH-227	1.566E-01	3.783E-01	3.372E-01	1.930E-01	FAIL ABUN
TH-229	1.207E-01	5.279E-01	4.445E-01	2.693E-01	FAIL ABUN
PA-231	-5.952E-02	1.569E+00	1.362E+00	8.005E-01	FAIL ABUN
TH-231	-6.022E-01	7.893E-01	5.570E-01	4.027E-01	FAIL ABUN
U-231	-8.578E-02	1.118E+00	8.726E-01	5.705E-01	FAIL ABUN
PA-233	-2.426E-02	6.039E-02	5.086E-02	3.081E-02	FAIL ABUN
PA-234	-2.854E-01	3.597E-01	2.718E-01	1.835E-01	FAIL ABUN
PA-234M	3.574E+00	4.972E+00	4.432E+00	2.537E+00	FAIL ABUN
U-235	-6.875E-02	2.253E-01	1.874E-01	1.150E-01	FAIL ABUN
NP-236	-4.115E-02	8.244E-02	6.806E-02	4.206E-02	NOT IDENT.
NP-239	-1.678E-01	1.893E-01	1.569E-01	9.658E-02	FAIL ABUN
AM-241	1.121E-01	1.709E-01	1.424E-01	8.722E-02	NOT IDENT.
CM-243	-8.052E-03	1.012E-01	8.782E-02	5.164E-02	FAIL ABUN
AM-246	1.822E-02	1.637E-01	1.410E-01	8.354E-02	NOT IDENT.
CM-247	2.983E-02	3.883E-02	3.436E-02	1.981E-02	NOT IDENT.
CF-249	4.386E-02	4.041E-02	3.653E-02	2.062E-02	NOT IDENT.
CF-251	5.905E-03	1.262E-01	1.061E-01	6.438E-02	NOT IDENT.

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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ENERGY          MDA COUNTS

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46.50	270.9497
46.50	270.9497
46.50	270.9497
48.70	278.9607
49.72	302.1672
51.35	298.6214
52.39	288.3979
52.97	272.4951
53.15	272.6506
53.44	295.4256
54.07	289.9354
56.28	314.6429
56.28	314.6457
57.37	0.0000
57.53	315.8377
57.53	315.8395
57.60	315.9045
57.98	344.3767
57.98	344.3767
59.32	316.2002
59.32	316.2002
59.40	308.3341
59.54	308.4612
59.72	291.4045
60.01	306.2347
61.10	337.7919
61.14	337.8311
61.30	337.9861
63.00	394.0052
63.29	394.3268
63.29	394.3268
63.58	394.6488
64.28	351.5863
65.12	352.4063
65.20	375.3554
65.20	375.3554
66.05	409.9449
66.72	418.7975
66.83	418.9253
66.91	432.5342
67.20	451.8118
67.20	451.8118
67.75	449.7699
67.85	449.8940
68.90	390.4601
68.90	390.4601
69.30	366.7508
69.67	352.6768
70.82	411.1032
70.82	411.1032
70.83	411.1147
72.80	462.6320
72.87	462.7168
72.87	462.7168
74.67	413.7978
74.81	413.9442
74.81	413.9442
74.81	413.9442
74.81	413.9442
74.81	413.9442
74.81	413.9442
74.81	413.9442
74.97	414.1102
75.28	414.4318
75.70	414.8666
77.11	416.3177
77.11	416.3177

77.11	416.3177
77.11	416.3177
77.11	416.3177
77.11	416.3177
77.11	416.3177
78.38	393.9485
79.62	353.7103
79.80	353.8630
79.80	353.8630
80.11	355.0597
80.18	355.1179
80.30	355.2206
80.30	355.2206
80.57	355.4492
81.00	347.4085
81.07	347.4672
81.07	347.4672
81.07	347.4672
81.07	347.4672
82.60	374.0341
83.37	388.7925
83.78	393.3974
83.78	393.3974
83.78	393.3974
83.78	393.3974
84.21	318.0423
84.90	318.5494
85.43	318.9380
86.29	319.5638
86.50	319.7168
86.54	319.7460
86.59	319.7821
86.72	319.8766
86.79	319.9265
86.94	320.0365
87.30	320.2961
87.30	320.2961
87.30	320.2961
87.30	320.2961
87.30	320.2961
87.30	320.2961
87.30	320.2961
87.57	320.4921
87.88	320.7156
88.03	320.8239
88.36	321.0611
88.47	321.1402
89.95	322.1975
91.11	323.0227
92.29	323.8548
92.38	323.9184
92.38	323.9184
93.35	324.5974
94.00	325.0513
94.67	271.5825
94.67	271.5854
94.90	271.7188
94.90	271.7188
94.90	271.7188
94.90	271.7188
95.87	276.6230
95.87	276.6230
96.73	309.0476
97.43	309.4994
98.44	285.3957
98.44	285.3972
98.88	277.8844
99.55	284.1062
99.55	284.1062
99.86	284.2874
100.00	281.4475
100.10	282.4818
103.18	330.3186
103.76	310.0949
105.00	298.0730
105.31	292.3503
108.00	310.7180
109.28	273.7932

111.00	305.5510
111.00	305.5510
111.76	328.9174
112.95	286.7022
115.19	255.8041
116.30	272.4142
117.00	284.8425
117.00	284.8425
117.66	287.2034
121.11	292.0430
121.62	293.3246
121.78	293.4083
122.06	286.4450
122.32	286.5769
122.32	286.5769
122.32	286.5769
122.32	286.5769
123.07	275.9686
127.23	292.1298
129.76	282.5923
131.20	275.5447
133.02	246.8872
133.54	256.9433
135.34	294.0835
136.00	295.4433
136.25	288.2824
136.48	285.2662
140.51	314.3890
140.51	0.0000
142.18	257.4389
142.65	267.0948
143.76	308.6508
144.24	294.1244
144.24	294.1244
144.24	294.1244
144.24	294.1244
145.22	297.7460
145.44	304.1865
147.16	260.5267
152.43	296.8088
152.70	306.5432
153.22	273.6458
154.21	240.8684
154.21	240.8684
154.21	240.8684
154.21	240.8684
155.03	271.1777
156.02	294.1213
158.56	281.2234
159.00	0.0000
159.00	297.5765
160.31	281.9455
161.27	285.5864
162.32	241.6015
162.64	225.4539
163.35	256.0652
163.89	282.3252
165.85	259.1625
167.43	230.2790
171.28	244.6934
171.86	233.9091
172.10	233.9871
176.55	235.4215
176.60	235.4378
181.06	228.5180
184.41	256.3432
185.71	253.9826
186.00	254.0795
190.27	261.6831
192.34	238.1155
193.63	244.1580
197.04	233.8602
198.01	234.1431
198.60	249.1018
200.40	224.5809
201.83	246.6760
202.84	224.1148
205.31	227.0845

208.36	231.3778
208.81	231.5025
209.75	223.1163
209.75	223.1163
210.97	247.6905
215.65	228.7452
216.55	242.9340
218.09	230.5609
222.10	230.7551
223.80	221.5324
226.40	211.6077
227.00	207.3390
227.08	207.3587
227.20	217.9755
228.16	218.2111
228.18	234.1192
228.18	234.1192
231.56	0.0000
235.69	235.1854
236.00	250.9504
236.00	250.9504
238.63	223.4306
238.63	223.4306
238.63	223.4306
238.63	223.4306
239.00	223.5184
240.98	223.9990
241.98	188.0023
241.98	188.0023
241.98	188.0023
244.69	178.4725
245.39	165.6424
247.94	183.2408
248.90	182.5231
249.79	182.6942
252.40	182.2851
252.85	173.2978
252.85	173.2978
254.15	0.0000
256.20	177.5400
256.20	177.5400
260.50	174.6646
260.90	182.9681
262.80	160.4069
264.65	161.6243
268.24	143.0347
268.79	151.9652
269.46	157.7867
269.46	157.7867
269.46	157.7867
269.46	157.7867
271.23	161.2061
273.65	229.7830
276.40	182.6180
277.35	171.0990
277.60	171.1383
277.60	171.1383
278.00	174.9276
278.60	169.4420
279.20	188.1729
279.53	204.0727
280.46	205.1892
281.68	181.1497
283.67	176.8155
284.30	161.9446
285.00	162.9896
285.90	167.8152
286.10	164.0972
286.10	164.0972
287.40	153.0314
288.45	0.0000
290.67	164.2371
290.80	158.2306
291.72	165.9077
293.26	0.0000
293.70	149.5901
295.21	155.8529
295.21	155.8529

295.21	155.8529
295.96	109.7784
296.50	109.8315
297.23	109.9058
298.57	110.0403
299.80	136.7556
299.80	136.7556
300.09	136.7930
300.09	136.7930
300.09	136.7930
300.09	136.7930
300.12	136.7952
301.29	136.9424
302.84	143.2284
303.76	154.0225
303.91	154.0423
304.40	160.2147
304.40	160.2147
304.84	166.3847
306.84	127.4333
308.46	138.7850
311.98	136.3383
316.51	144.5938
318.01	175.6710
319.02	138.1494
319.41	139.1616
320.08	128.6063
323.87	172.2939
323.87	172.2939
323.87	172.2939
323.87	172.2939
325.23	166.2810
328.77	133.4650
333.44	117.3651
334.20	133.0989
334.20	133.0989
334.30	133.1093
338.28	179.1158
338.28	179.1158
338.28	179.1158
338.28	179.1158
338.32	179.1242
338.32	179.1242
338.32	179.1242
340.50	116.4832
340.57	116.4886
344.27	154.9374
345.85	159.4181
350.59	0.0000
351.07	127.0176
351.92	127.1055
351.92	127.1055
351.92	127.1055
355.39	0.0000
356.01	121.1454
364.48	139.4115
366.43	103.4621
367.43	103.5422
367.94	0.0000
369.80	117.8319
374.96	112.2347
383.85	107.9037
387.95	101.0892
388.63	111.3568
391.69	134.1363
391.69	134.1363
392.90	137.3308
398.62	140.9949
400.65	116.4675
401.10	123.7225
401.81	112.4395
402.60	111.4706
404.84	151.9706
410.95	134.9849
411.60	142.3202
413.65	120.6799
414.70	113.4807
415.30	99.9888

415.76	103.1482
417.63	0.0000
418.52	119.0063
423.70	106.8653
427.08	111.3165
427.89	111.3796
432.53	87.4909
433.93	96.0141
439.47	103.7900
439.56	103.7960
439.89	104.8793
443.98	109.4171
444.90	100.9810
445.03	96.7375
445.03	96.7375
445.03	96.7375
445.03	96.7375
453.90	88.7536
463.38	98.1274
468.07	81.1565
473.00	100.6828
475.06	76.9661
475.35	72.6433
476.78	104.1812
477.59	100.9766
477.96	94.4845
482.03	86.0157
484.57	92.6964
487.03	84.1007
490.36	0.0000
492.35	92.0493
497.08	83.5251
507.63	0.0000
510.53	0.0000
510.84	80.8986
511.00	80.9064
511.85	80.9476
511.85	80.9476
513.99	78.1639
513.99	78.1639
520.41	86.9312
520.65	75.7986
527.90	85.0756
528.96	0.0000
529.64	91.8846
529.87	0.0000
531.02	85.2310
537.32	94.5461
543.00	81.3032
546.56	0.0000
549.76	73.4537
552.65	100.8214
555.20	84.5923
563.23	86.7988
563.90	86.8313
568.70	84.3116
569.32	77.9236
569.50	77.9319
569.67	81.6058
573.80	95.5754
574.00	95.5855
574.64	93.0902
578.91	82.9380
579.30	0.0000
583.14	78.5109
585.48	70.9017
591.81	84.4416
592.07	83.5269
593.00	90.0660
595.88	84.6238
600.56	89.0794
602.52	0.0000
602.71	93.3276
602.71	93.3276
603.60	107.3773
604.41	110.5359
604.70	105.8820
609.31	77.7294

609.31	77.7294
609.31	77.7294
609.31	77.7294
610.33	77.7700
612.46	89.1135
614.37	92.3315
618.01	85.6058
621.84	90.4852
621.84	90.4852
631.29	84.2914
633.02	80.5715
633.10	80.5757
634.78	76.8492
635.90	79.7405
636.97	96.8776
645.85	79.1823
646.12	81.1007
656.30	87.2609
657.75	75.8080
657.90	0.0000
661.65	77.8735
661.65	77.8735
664.57	0.0000
666.33	65.5230
666.33	65.5230
675.00	76.4406
677.61	69.7535
685.20	68.0603
692.80	84.8908
695.00	90.8385
696.49	98.7216
696.49	98.7216
697.00	101.6768
697.49	103.6554
698.33	104.6750
698.50	104.6829
699.00	109.6020
702.63	91.1609
706.10	102.1059
706.58	0.0000
706.67	95.2594
709.31	89.4737
711.68	76.7755
713.82	86.7023
717.42	94.7414
720.50	70.8251
721.93	0.0000
722.20	80.7695
722.78	77.4938
722.78	77.4938
722.89	77.4976
722.95	77.4995
723.30	89.0552
724.18	82.4910
727.18	79.2988
733.00	76.1931
735.90	80.6025
739.58	83.7252
742.81	82.8460
744.21	80.8991
747.13	70.0034
751.79	87.1805
752.31	70.1624
753.82	54.1608
755.35	82.2983
756.15	93.3701
756.87	94.4039
763.93	88.9846
765.79	80.6543
766.42	82.3565
766.84	93.8038
776.49	88.1130
778.00	68.9147
778.57	68.9314
778.89	66.9136
783.80	50.7971
785.46	55.9158
792.07	76.4612



795.84	61.2642
796.30	63.3184
798.80	108.3679
801.93	65.5141
805.60	69.7149
810.29	67.7950
810.76	68.8353
815.85	59.7134
817.79	69.0332
818.51	65.9609
819.60	59.8040
826.30	59.9668
828.27	0.0000
831.60	73.5637
831.96	78.7554
834.83	69.5092
836.80	0.0000
846.75	61.5006
848.13	57.3619
856.28	0.0000
856.80	61.0463
860.37	69.8649
867.32	64.3618
867.82	67.7312
871.10	62.0883
873.19	73.7239
874.81	69.5546
875.33	0.0000
876.40	70.6510
879.36	63.3413
880.27	62.3072
880.51	61.2568
881.50	63.3940
883.24	67.6641
884.67	64.5281
889.25	69.9397
896.60	66.9452
898.02	55.2868
899.00	47.8619
903.28	79.8981
911.07	60.8993
911.07	60.8993
911.07	60.8993
919.63	60.2888
920.93	49.3265
925.00	60.1398
925.24	55.8492
926.50	64.4707
935.52	56.0587
937.48	72.2818
944.10	57.3153
946.00	74.6686
949.00	58.4996
962.29	74.6384
964.01	30.8588
966.15	79.9308
968.20	165.4300
969.11	117.8402
969.11	117.8402
969.11	117.8402
977.42	60.7951
980.50	47.1058
983.50	49.3484
989.30	51.6461
996.32	59.6653
1001.03	45.0513
1001.68	45.9808
1004.76	76.4092
1021.30	0.0000
1024.50	0.0000
1034.80	49.2907
1036.00	55.8228
1037.82	53.9950
1038.57	46.5576
1038.76	0.0000
1045.16	58.7933
1046.59	55.0844
1048.07	53.2450

1050.47	58.8959
1050.47	58.8959
1062.04	48.7966
1063.62	61.0274
1076.63	63.1724
1077.35	61.2998
1078.86	62.2725
1085.78	52.0101
1099.22	70.2783
1112.02	70.2919
1112.84	63.7695
1115.52	96.5499
1120.29	73.7496
1120.29	73.7496
1120.29	73.7496
1120.29	73.7496
1120.51	78.6730
1121.28	68.8564
1124.00	0.0000
1129.67	83.4175
1131.51	0.0000
1147.95	0.0000
1167.94	99.9196
1173.22	59.2700
1175.09	79.7211
1177.93	89.5181
1189.05	79.0752
1204.90	72.5818
1205.75	0.0000
1213.00	96.3491
1221.42	101.5122
1230.97	87.9570
1235.34	81.1425
1236.41	0.0000
1238.25	97.0549
1246.25	69.4845
1260.41	0.0000
1271.85	59.9902
1274.45	67.0382
1274.54	67.0409
1291.56	46.2452
1298.22	0.0000
1312.09	54.5955
1325.50	41.6039
1325.50	41.6039
1332.49	36.5991
1333.61	35.5924
1360.21	31.7493
1362.66	0.0000
1365.15	25.6378
1368.21	33.8701
1368.53	0.0000
1376.25	35.9983
1384.27	38.1352
1394.10	30.9998
1395.20	44.4452
1407.95	21.7776
1434.06	29.2305
1436.60	33.4271
1457.56	0.0000
1460.81	7.2065
1489.15	27.5171
1509.49	15.9540
1596.49	22.3334
1620.62	18.7144
1678.03	0.0000
1691.02	16.1593
1691.02	16.1593
1706.46	0.0000
1750.46	0.0000
1764.49	2.8970
1764.49	2.8970
1764.49	2.8970
1764.49	2.8970
1770.23	11.8437
1771.40	10.1543
1791.20	0.0000
1808.65	12.6699

1836.01

10.7813

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691008

Total Uranium Activity	5.5072E+00	ug/g
Total Uranium Counting Unc.	5.7228E+00	ug/g
Total Uranium Tpu	2.9198E-06	ug/g
Total Uranium Mda	3.6015E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037          SAMPLE ID   : G245691008
*  ANALYST       : MJH1            DETECTOR    : GAM12
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 9-FEB-2010 15:32:30.39  SAMPLE ALQT: 122.130 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.123E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.557E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.140E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.007E+00

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## VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:33:53.10

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691009.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:32:51.
Sample ID          : G245691009 Sample quantity : 1.44890E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.52 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.43*	3167	1677	1.00	125.98	120	10	4.40E-01	3.0	
2	2	75.05	379	1481	1.18	149.22	143	15	5.26E-02	17.7	6.77E-01
3	2	77.27	648	1267	0.97	153.65	143	15	9.00E-02	9.6	
4	0	84.27*	357	1624	1.75	167.66	165	7	4.95E-02	19.6	
5	0	87.30	224	1523	1.00	173.71	172	6	3.10E-02	28.3	
6	2	92.78*	9082	1869	1.14	184.67	180	12	1.26E+00	1.3	8.34E+00
7	2	94.75	308	1093	1.02	188.61	180	12	4.28E-02	23.8	
8	0	98.73	764	1297	1.11	196.57	193	10	1.06E-01	9.6	
9	1	111.35	131	1050	1.18	221.79	218	12	1.82E-02	42.0	3.85E+00
10	1	113.04	471	1013	1.19	225.17	218	12	6.54E-02	12.3	
11	0	143.91*	422	827	1.09	286.89	283	9	5.86E-02	13.3	
12	0	163.33*	194	838	1.16	325.72	321	11	2.70E-02	29.9	
13	0	185.86*	2257	678	1.20	370.76	366	10	3.13E-01	3.1	
14	0	204.89*	149	565	1.15	408.81	407	9	2.07E-02	30.2	
15	0	209.47*	211	461	1.29	417.95	415	9	2.93E-02	19.8	
16	3	238.74*	1657	355	1.17	476.48	471	20	2.30E-01	3.1	1.61E+00
17	3	241.84	437	492	1.77	482.69	471	20	6.06E-02	13.1	
18	0	257.86	155	443	0.96	514.71	509	11	2.15E-02	27.6	
19	0	270.13	149	326	1.42	539.24	535	9	2.07E-02	23.3	
20	0	295.29*	534	410	1.28	589.54	584	12	7.42E-02	8.8	
21	0	300.08	97	278	1.22	599.12	596	8	1.35E-02	31.3	
22	0	328.27	119	243	1.19	655.49	651	9	1.65E-02	25.6	
23	0	338.39*	378	330	1.20	675.72	670	12	5.25E-02	11.1	
24	0	351.92*	1008	349	1.35	702.78	695	15	1.40E-01	5.2	
25	0	462.43	132	234	1.61	923.72	917	13	1.83E-02	25.5	
26	0	510.70*	162	302	2.01	1020.23	1011	17	2.26E-02	28.7	
27	0	582.91*	575	293	1.63	1164.61	1156	18	7.99E-02	8.2	
28	0	609.09*	785	207	1.64	1216.96	1208	18	1.09E-01	5.7	
29	0	726.94*	168	133	2.01	1452.60	1446	13	2.33E-02	16.5	
30	0	766.49*	379	235	1.89	1531.67	1522	19	5.26E-02	11.1	
31	0	785.84*	56	202	1.92	1570.38	1564	17	7.73E-03	61.2	
32	0	794.16*	72	125	1.16	1587.01	1582	11	9.95E-03	33.0	
33	0	860.74	29	141	1.34	1720.14	1714	12	4.00E-03	84.5	
34	0	910.88*	444	133	1.98	1820.40	1813	18	6.17E-02	7.9	
35	0	938.04	17	152	1.74	1874.71	1865	16	2.43E-03	161.1	
36	1	964.38	105	103	2.32	1927.38	1916	26	1.46E-02	22.4	9.89E-01
37	1	968.40*	269	82	2.11	1935.42	1916	26	3.74E-02	9.6	
38	0	1000.52*	811	106	1.98	1999.64	1991	20	1.13E-01	4.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1120.11*	205	100	2.15	2238.80	2232	19	2.85E-02	13.6	
40	0	1237.57	56	102	0.93	2473.67	2468	13	7.80E-03	40.1	
41	0	1377.24	36	69	1.23	2752.98	2745	16	4.96E-03	55.5	
42	0	1459.80*	2008	78	2.36	2918.09	2906	24	2.79E-01	2.5	
43	0	1728.74	44	18	1.15	3455.93	3447	15	6.05E-03	26.4	
44	0	1763.57*	158	24	1.78	3525.60	3516	19	2.19E-02	11.2	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691009.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:32:51
Sample ID        : G245691009 Sample quantity : 144.89 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.52 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.575E+01	2.349E+00	3.979E-01	3.019E-02	64.725
NB-95	+	765.79	*	3.623E-01	8.686E-02	5.531E-02	5.059E-03	6.550
CD-109	+	88.03	*	2.470E+00	1.416E+00	2.138E+00	1.976E-01	1.155
SN-126	+	64.28		2.754E+01	4.389E+00	1.193E+00	1.763E-01	23.089
	+	86.94		1.009E+00	7.081E-01	7.884E-01	3.270E-01	1.280
	+	87.57	*	2.428E-01	1.392E-01	2.139E-01	1.971E-02	1.135
LU-177	+	112.95		1.144E+01	2.902E+00	3.366E+00	2.169E-01	3.399
	+	208.36	*	3.285E+00	1.314E+00	1.398E+00	7.581E-02	2.351
TL-208		277.35		3.008E-01	3.256E-01	5.467E-01	5.741E-02	0.550
	+	510.84		4.520E-01	2.636E-01	1.706E-01	1.813E-02	2.650
	+	583.14	*	4.500E-01	8.200E-02	4.655E-02	3.649E-03	9.666
	+	860.37		2.057E-01	3.483E-01	3.700E-01	4.138E-02	0.556
BI-211		72.87		2.496E+00	4.904E+00	7.362E+00	6.078E-01	0.339
	+	351.07	*	3.701E+00	4.525E-01	2.702E-01	1.735E-02	13.697
BI-212	+	727.18	*	1.102E+00	3.806E-01	3.581E-01	3.567E-02	3.077
	+	785.46		2.333E+00	2.866E+00	2.326E+00	2.198E-01	1.003
		1620.62		1.857E-01	1.004E+00	1.695E+00	1.146E-01	0.110
PB-212	+	74.81		1.856E+00	6.979E-01	8.110E-01	1.017E-01	2.288
	+	77.11		1.775E+00	3.722E-01	4.537E-01	3.846E-02	3.913
	+	87.30		1.123E+00	6.533E-01	9.859E-01	1.339E-01	1.139
	+	238.63	*	1.418E+00	1.348E-01	7.838E-02	5.599E-03	18.086
	+	300.09		1.236E+00	7.797E-01	1.044E+00	8.572E-02	1.184
PO-212	+	74.81		1.856E+00	6.979E-01	8.110E-01	1.017E-01	2.288
	+	77.11		1.775E+00	3.722E-01	4.537E-01	3.846E-02	3.913
	+	87.30		1.123E+00	6.533E-01	9.859E-01	1.339E-01	1.139
		115.19		1.111E+01	4.977E+00	7.612E+00	4.795E-01	1.459
	+	238.63	*	1.418E+00	1.348E-01	7.838E-02	5.599E-03	18.086
	+	300.09		1.236E+00	7.797E-01	1.044E+00	8.572E-02	1.184
BI-214	+	609.31	*	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
	+	1120.29		1.510E+00	4.353E-01	3.474E-01	3.326E-02	4.347
	+	1764.49		1.528E+00	3.542E-01	1.988E-01	1.209E-02	7.682
PB-214	+	74.81		3.198E+00	1.189E+00	1.397E+00	1.560E-01	2.288
	+	77.11		3.043E+00	6.789E-01	7.778E-01	8.865E-02	3.913
	+	87.30		1.923E+00	1.113E+00	1.689E+00	2.026E-01	1.139



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	241.98		2.239E+00	6.145E-01	4.711E-01	3.725E-02	4.752
	+	295.21		1.194E+00	2.341E-01	1.766E-01	1.499E-02	6.760
	+	351.92	*	1.288E+00	1.711E-01	9.417E-02	7.791E-03	13.671
	+	74.81		3.198E+00	1.189E+00	1.397E+00	1.560E-01	2.288
	+	77.11		3.043E+00	6.789E-01	7.778E-01	8.865E-02	3.913
	+	87.30		1.923E+00	1.113E+00	1.689E+00	2.026E-01	1.139
PO-216	+	241.98		2.239E+00	6.145E-01	4.711E-01	3.725E-02	4.752
	+	295.21		1.194E+00	2.341E-01	1.766E-01	1.499E-02	6.760
	+	351.92	*	1.288E+00	1.711E-01	9.417E-02	7.791E-03	13.671
	+	74.81		1.856E+00	6.979E-01	8.110E-01	1.017E-01	2.288
	+	77.11		1.775E+00	3.722E-01	4.537E-01	3.846E-02	3.913
	+	87.30		1.123E+00	6.533E-01	9.859E-01	1.339E-01	1.139
PO-218	+	238.63	*	1.418E+00	1.348E-01	7.838E-02	5.599E-03	18.086
	+	300.09		1.236E+00	7.797E-01	1.044E+00	8.572E-02	1.184
	+	74.81		3.198E+00	1.189E+00	1.397E+00	1.560E-01	2.288
	+	77.11		3.043E+00	6.789E-01	7.778E-01	8.865E-02	3.913
	+	87.30		1.923E+00	1.113E+00	1.689E+00	2.026E-01	1.139
	+	241.98		2.239E+00	6.145E-01	4.711E-01	3.725E-02	4.752
RA-224	+	295.21		1.194E+00	2.341E-01	1.766E-01	1.499E-02	6.760
	+	351.92	*	1.288E+00	1.711E-01	9.417E-02	7.791E-03	13.671
	+	240.98	*	4.245E+00	1.141E+00	8.909E-01	4.963E-02	4.765
RA-226	+	609.31	*	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
	+	1120.29		1.510E+00	4.353E-01	3.474E-01	3.326E-02	4.347
	+	1764.49		1.528E+00	3.542E-01	1.988E-01	1.209E-02	7.682
AC-228	+	338.32		1.541E+00	7.146E-01	3.029E-01	1.235E-01	5.087
	+	911.07	*	1.495E+00	3.075E-01	1.645E-01	2.180E-02	9.086
	+	969.11		1.590E+00	4.881E-01	3.075E-01	7.364E-02	5.170
RA-228	+	338.32		1.541E+00	7.146E-01	3.029E-01	1.235E-01	5.087
	+	911.07	*	1.495E+00	3.075E-01	1.645E-01	2.180E-02	9.086
	+	969.11		1.590E+00	4.881E-01	3.075E-01	7.364E-02	5.170
TH-228	+	74.81		1.884E+00	6.866E-01	8.234E-01	6.938E-02	2.288
	+	77.11		1.802E+00	3.779E-01	4.606E-01	3.904E-02	3.913
	+	87.30		1.140E+00	6.534E-01	1.001E+00	9.200E-02	1.139
TH-229	+	238.63	*	1.439E+00	1.369E-01	7.957E-02	5.684E-03	18.086
	+	300.09		1.255E+00	1.078E+00	1.060E+00	6.246E-01	1.184
	+	85.43		9.140E-01	3.669E-01	4.351E-01	3.933E-02	2.101
	+	88.47		3.314E-01	1.900E-01	2.920E-01	2.675E-02	1.135
	+	100.00		2.165E+00	4.486E-01	3.712E-01	2.795E-02	5.831
	+	193.63	*	2.595E-01	4.658E-01	7.916E-01	4.238E-02	0.328
TH-230	+	210.97		1.476E+00	7.727E-01	1.203E+00	6.541E-02	1.227
	+	609.31	*	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
	+	1120.29		1.510E+00	4.353E-01	3.474E-01	3.326E-02	4.347
	+	1764.49		1.528E+00	3.542E-01	1.988E-01	1.209E-02	7.682
U-231	+	84.21		2.643E+01	1.061E+01	1.293E+01	1.157E+00	2.044
	+	92.29		2.402E+02	2.122E+01	4.986E+00	4.245E-01	48.176
	+	95.87	*	4.924E+00	2.375E+00	2.274E+00	1.822E-01	2.165
TH-232	+	108.00		-2.451E+00	2.950E+00	4.126E+00	2.806E-01	-0.594
	+	338.32		1.541E+00	3.522E-01	3.029E-01	1.752E-02	5.087
	+	911.07	*	1.495E+00	3.075E-01	1.645E-01	2.180E-02	9.086

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234M	+	969.11		1.590E+00	4.881E-01	3.075E-01	7.364E-02	5.170
	+	766.42		9.586E+01	5.315E+01	1.465E+01	7.445E+00	6.544
	+	1001.03	*	9.734E+01	1.397E+01	5.232E+00	5.644E-01	18.603
TH-234	+	63.29	*	6.957E+01	1.296E+01	3.235E+00	5.702E-01	21.509
	+	92.38		6.262E+01	1.139E+01	1.299E+00	2.341E-01	48.222
U-234	+	609.31	*	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
	+	1120.29		1.510E+00	4.353E-01	3.474E-01	3.326E-02	4.347
	+	1764.49		1.528E+00	3.542E-01	1.988E-01	1.209E-02	7.682
U-235		89.95		-1.283E+00	2.566E+00	2.872E+00	8.886E-01	-0.447
	+	93.35		7.529E+01	2.115E+01	1.546E+00	4.319E-01	48.710
		105.00		1.182E+00	1.323E+00	2.119E+00	6.236E-01	0.558
	+	143.76	*	1.266E+00	3.948E-01	3.451E-01	5.588E-02	3.670
	+	163.35		1.338E+00	8.347E-01	7.656E-01	1.364E-01	1.748
	+	185.71		1.416E+00	1.148E-01	6.561E-02	3.489E-03	21.578
	+	205.31		1.120E+00	7.050E-01	8.010E-01	1.431E-01	1.398
NP-237	+	86.50	*	7.129E-01	4.343E-01	5.605E-01	1.265E-01	1.272
	+	95.87		4.323E+00	2.312E+00	1.997E+00	4.878E-01	2.165
U-238	+	63.29	*	6.957E+01	1.296E+01	3.235E+00	5.702E-01	21.509
	+	92.38		6.262E+01	5.533E+00	1.299E+00	1.104E-01	48.222
AM-243	+	74.67	*	3.009E-01	1.096E-01	1.320E-01	1.102E-02	2.279
	+	86.72		2.673E+01	1.532E+01	2.095E+01	1.916E+00	1.276
		117.66		-4.044E+00	5.090E+00	7.065E+00	4.346E-01	-0.572
		142.18		4.871E+01	2.252E+01	3.406E+01	1.876E+00	1.430
ANH-511	+	511.00	*	9.763E-02	5.634E-02	3.685E-02	2.434E-03	2.649

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	1.094E-01	2.597E-01	4.373E-01	3.169E-02	0.250
NA-22		1274.54	*	-1.717E-02	3.255E-02	5.119E-02	3.483E-03	-0.335
NA-24		1368.53	*	2.933E-01	3.255E-02	Half-Life too short		
AL-26		1129.67		4.751E-01	1.437E+00	2.110E+00	1.409E-01	0.225
		1808.65	*	-1.739E-02	2.044E-02	2.880E-02	1.682E-03	-0.604
TI-44		67.85		-7.236E-02	7.086E-02	1.090E-01	8.766E-03	-0.664
	+	78.38	*	3.276E-01	6.869E-02	9.572E-02	8.184E-03	3.423
SC-46		889.25	*	-1.058E-02	2.971E-02	4.726E-02	5.271E-03	-0.224
	+	1120.51		2.586E-01	7.255E-02	9.713E-02	6.710E-03	2.663
V-48		944.10		-1.669E-01	9.006E-01	1.230E+00	1.302E-01	-0.136
		983.50	*	9.902E-03	5.441E-02	8.926E-02	8.829E-03	0.111
		1312.09		-6.636E-03	6.402E-02	1.040E-01	7.573E-03	-0.064
CR-51		320.08	*	-1.220E-01	3.074E-01	4.856E-01	3.127E-02	-0.251
MN-52		744.21		3.051E-01	2.189E-01	3.857E-01	3.402E-02	0.791
		848.13		-2.443E+00	5.167E+00	8.194E+00	8.573E-01	-0.298
		935.52		3.401E-01	2.251E-01	3.563E-01	3.822E-02	0.955
		1246.25		3.019E+00	5.865E+00	9.207E+00	5.920E-01	0.328
		1333.61		-4.821E-02	4.104E+00	6.603E+00	4.988E-01	-0.007
		1434.06	*	9.205E-02	1.668E-01	2.868E-01	2.113E-02	0.321
MN-54		834.83	*	-9.120E-03	3.088E-02	4.986E-02	5.107E-03	-0.183

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-56		846.75	*	-3.386E-02	3.092E-02	4.664E-02	4.868E-03	-0.726
		977.42		-1.866E+00	2.414E+00	3.577E+00	3.578E-01	-0.522
		1037.82		-1.783E-01	2.234E-01	3.511E-01	3.253E-02	-0.508
		1175.09		-6.976E-01	1.698E+00	2.732E+00	1.516E-01	-0.255
	+	1238.25		1.156E-01	9.290E-02	1.209E-01	8.061E-03	0.956
		1360.21		-1.678E-01	7.472E-01	1.193E+00	8.962E-02	-0.141
		1771.40		-1.755E-02	1.640E-01	2.227E-01	1.346E-02	-0.079
CO-57		122.06	*	1.043E-02	2.984E-02	4.834E-02	2.863E-03	0.216
		136.48		-4.848E-02	2.329E-01	3.686E-01	2.413E-02	-0.132
CO-58		810.76	*	-2.028E-02	3.052E-02	4.801E-02	4.739E-03	-0.422
FE-59	+	142.65		1.635E+01	4.445E+00	5.675E+00	3.123E-01	2.880
		192.34		5.914E-01	8.661E-01	1.474E+00	1.709E-01	0.401
		1099.22	*	-3.069E-02	6.806E-02	1.097E-01	9.029E-03	-0.280
CO-60		1291.56		-1.120E-02	8.560E-02	1.388E-01	1.166E-02	-0.081
		1173.22		3.566E-04	3.360E-02	5.565E-02	3.075E-03	0.006
		1332.49	*	1.418E-02	3.035E-02	5.156E-02	3.896E-03	0.275
ZN-65		1115.52	*	5.018E-02	7.933E-02	1.194E-01	8.410E-03	0.420
GE-68		1077.35	*	4.769E-01	9.203E-01	1.588E+00	1.262E-01	0.300
AS-73		53.44	*	1.571E+00	1.472E+00	2.528E+00	2.004E-01	0.622
AS-74		595.88	*	3.646E-03	7.618E-02	1.233E-01	8.858E-03	0.030
		634.78		2.268E-02	2.957E-01	4.780E-01	3.559E-02	0.047
SE-75		66.05		-6.702E+00	7.733E+00	1.119E+01	1.109E+00	-0.599
		96.73		2.215E+00	1.503E+00	1.809E+00	2.385E-01	1.224
		121.11		8.198E-02	1.602E-01	2.606E-01	2.433E-02	0.315
		136.00		-4.130E-03	4.375E-02	6.949E-02	3.957E-03	-0.059
		198.60		-6.090E-01	1.672E+00	2.726E+00	1.849E-01	-0.223
		264.65	*	4.029E-02	4.135E-02	6.534E-02	3.737E-03	0.617
		279.53		-3.169E-02	9.338E-02	1.499E-01	9.262E-03	-0.211
BR-77		303.91		7.120E-01	1.958E+00	2.828E+00	2.690E-01	0.252
		400.65		-2.554E-02	2.090E-01	3.477E-01	3.167E-02	-0.073
	+	87.88		5.385E+02	3.087E+02	4.686E+02	4.330E+01	1.149
		200.40		-1.367E+01	1.636E+02	2.525E+02	1.360E+01	-0.054
	+	239.00		2.297E+02	1.927E+01	3.012E+01	1.675E+00	7.627
		249.79		6.980E-01	5.979E+01	9.822E+01	5.506E+00	0.007
		281.68		-5.983E+01	7.787E+01	1.225E+02	6.992E+00	-0.488
		297.23		2.789E+02	7.622E+01	9.997E+01	5.739E+00	2.790
		303.76		5.562E+01	1.680E+02	2.423E+02	1.394E+01	0.230
		439.47		1.356E+01	1.181E+02	1.971E+02	1.202E+01	0.069
		484.57		-3.449E+01	1.777E+02	2.897E+02	1.859E+01	-0.119
		520.65	*	3.105E+00	8.434E+00	1.408E+01	9.395E-01	0.220
		574.64		-1.325E+02	1.997E+02	2.795E+02	1.968E+01	-0.474
		578.91		3.586E+01	8.261E+01	1.195E+02	8.452E+00	0.300
		585.48		1.306E+03	2.173E+02	3.730E+02	2.654E+01	3.500
SR-82		755.35		5.628E+01	1.358E+02	2.304E+02	2.071E+01	0.244
		817.79		1.135E+01	1.041E+02	1.726E+02	1.721E+01	0.066
		698.33		-1.340E+01	2.724E+01	4.426E+01	3.603E+00	-0.303
RB-83		776.49	*	-2.113E-01	3.279E-01	4.942E-01	4.602E-02	-0.428
		1395.20		-1.631E+00	8.318E+00	1.327E+01	9.892E-01	-0.123
		520.41	*	2.394E-02	5.547E-02	9.291E-02	6.197E-03	0.258

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		529.64		6.323E-02	8.375E-02	1.424E-01	9.591E-03	0.444
		552.65		-2.382E-02	1.629E-01	2.632E-01	1.814E-02	-0.091
RB-84		881.50	*	8.627E-02	5.921E-02	1.043E-01	1.149E-02	0.827
KR-85		513.99	*	1.286E+01	6.780E+00	1.074E+01	7.116E-01	1.197
SR-85		513.99	*	6.596E-02	3.477E-02	5.509E-02	3.650E-03	1.197
RB-86		1076.63	*	1.178E-01	5.960E-01	1.007E+00	8.020E-02	0.117
Y-88		898.02		-1.665E-02	3.280E-02	5.159E-02	5.848E-03	-0.323
		1836.01	*	-4.381E-02	2.912E-02	3.789E-02	2.158E-03	-1.156
ZR-88		392.90	*	-2.112E-02	2.463E-02	3.961E-02	2.278E-03	-0.533
Y-91		1204.90	*	6.751E+00	1.406E+01	2.393E+01	1.415E+00	0.282
NB-94		702.63	*	1.620E-02	2.702E-02	4.646E-02	3.811E-03	0.349
		871.10		-2.134E-02	2.771E-02	4.284E-02	4.646E-03	-0.498
NB-95M		235.69	*	7.862E-03	1.222E-01	1.775E-01	1.302E-02	0.044
ZR-95		724.18		1.579E-01	8.749E-02	1.404E-01	1.302E-02	1.125
		756.15	*	4.264E-02	5.999E-02	9.906E-02	9.747E-03	0.430
NB-97		657.90	*	-1.303E-01	5.999E-02	Half-Life	too short	
		1024.50		5.711E+00	5.999E-02	Half-Life	too short	
ZR-97		254.15		-8.320E-01	5.999E-02	Half-Life	too short	
		355.39		2.406E+00	5.999E-02	Half-Life	too short	
		507.63	*	4.437E+00	5.999E-02	Half-Life	too short	
		602.52		1.007E-01	5.999E-02	Half-Life	too short	
		1021.30		-2.237E-01	5.999E-02	Half-Life	too short	
		1147.95		-8.493E-02	5.999E-02	Half-Life	too short	
		1362.66		-4.240E+00	5.999E-02	Half-Life	too short	
		1750.46		3.585E+00	5.999E-02	Half-Life	too short	
MO-99		140.51		-8.078E+00	3.243E+01	4.527E+01	1.217E+01	-0.178
		181.06		8.945E+00	1.815E+01	2.731E+01	4.637E+00	0.328
		366.43		-2.903E+01	6.613E+01	1.092E+02	6.306E+00	-0.266
		739.58	*	1.271E+01	1.108E+01	1.914E+01	2.921E+00	0.664
		778.00		-3.177E+01	3.257E+01	4.436E+01	4.142E+00	-0.716
TC-99M		140.51	*	-1.269E+10	3.257E+01	Half-Life	too short	
RH-101		127.23		-6.995E-02	3.698E-02	5.557E-02	3.210E-03	-1.259
		198.01	*	-1.357E-03	3.056E-02	5.034E-02	2.706E-03	-0.027
		325.23		4.285E-02	2.107E-01	2.995E-01	1.731E-02	0.143
RH-102		418.52		2.353E-02	2.194E-01	3.677E-01	2.185E-02	0.064
		475.06	*	3.398E-03	2.372E-02	3.943E-02	2.504E-03	0.086
		631.29		-4.215E-04	4.511E-02	7.257E-02	5.386E-03	-0.006
		697.49		2.029E-03	6.041E-02	1.011E-01	8.217E-03	0.020
	+	766.84		9.112E-01	2.185E-01	2.538E-01	2.326E-02	3.590
		1046.59		-9.501E-03	8.201E-02	1.360E-01	1.174E-02	-0.070
		1112.84		2.627E-02	1.967E-01	2.835E-01	2.013E-02	0.093
RU-103		497.08	*	-8.424E-04	3.193E-02	5.241E-02	6.805E-03	-0.016
	+	610.33		1.245E+01	2.448E+00	2.227E+00	3.570E-01	5.593
RH-106		511.85	+	4.877E-01	2.815E-01	3.348E-01	2.213E-02	1.457
		621.84	*	-1.333E-02	2.706E-01	4.349E-01	5.471E-02	-0.031
		1050.47		-9.198E-01	1.689E+00	2.713E+00	2.318E-01	-0.339
RU-106		511.85	+	4.877E-01	2.815E-01	3.348E-01	2.213E-02	1.457
		621.84	*	-1.333E-02	2.706E-01	4.349E-01	3.200E-02	-0.031
		1050.47		-9.198E-01	1.689E+00	2.713E+00	2.318E-01	-0.339

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AG-108M		433.93	*	-1.258E-02	2.546E-02	4.124E-02	2.695E-03	-0.305
		614.37		-3.650E-03	3.718E-02	5.131E-02	3.953E-03	-0.071
		722.95		2.204E-02	3.543E-02	5.341E-02	4.723E-03	0.413
AG-110M		657.75	*	-4.940E-02	2.823E-02	4.238E-02	3.342E-03	-1.166
		677.61		-1.800E-01	2.427E-01	3.887E-01	3.153E-02	-0.463
		706.67		-5.241E-02	1.670E-01	2.738E-01	2.330E-02	-0.191
		763.93		1.040E+00	2.222E-01	3.663E-01	3.425E-02	2.839
		884.67		-3.284E-02	4.129E-02	6.366E-02	7.188E-03	-0.516
	+	937.48		5.093E-02	1.642E-01	1.434E-01	1.570E-02	0.355
	1	1384.27		-5.555E-02	1.230E-01	1.569E-01	1.217E-02	-0.354
IN-111		171.28		-2.134E-01	9.992E-01	1.675E+00	8.812E-02	-0.127
		245.39	*	1.787E-01	1.050E+00	1.527E+00	8.536E-02	0.117
IN-113M		391.69	*	-3.127E-02	3.663E-02	5.900E-02	3.619E-03	-0.530
SN-113		391.69	*	-3.127E-02	3.663E-02	5.900E-02	3.619E-03	-0.530
IN-114M		190.27	*	-9.837E-02	1.847E-01	2.660E-01	1.420E-02	-0.370
CD-115		260.90		-6.553E+01	1.341E+02	1.871E+02	1.056E+01	-0.350
		492.35		1.079E+00	2.856E+01	4.709E+01	3.048E+00	0.023
		527.90	*	-1.525E+00	8.746E+00	1.416E+01	9.519E-01	-0.108
SN-117M		156.02		4.965E-01	2.241E+00	3.822E+00	2.041E-01	0.130
		158.56	*	2.073E-02	6.017E-02	9.121E-02	4.848E-03	0.227
SB-122		563.90	*	1.021E+00	1.734E+00	2.906E+00	2.025E-01	0.351
		692.80		8.274E+00	3.435E+01	5.815E+01	4.688E+00	0.142
I-123		159.00	*	1.108E+00	3.435E+01	Half-Life	too short	
		528.96		1.567E+02	3.435E+01	Half-Life	too short	
TE-123M		159.00	*	5.265E-03	3.132E-02	4.716E-02	2.544E-03	0.112
I-124		602.71	*	4.456E-02	6.121E-01	8.567E-01	6.195E-02	0.052
		722.78		2.281E+00	3.718E+00	5.602E+00	4.761E-01	0.407
		1325.50		5.344E+00	2.718E+01	4.519E+01	3.372E+00	0.118
	+	1376.25		3.591E+01	3.993E+01	4.687E+01	3.509E+00	0.766
		1509.49		2.057E+01	1.225E+01	2.325E+01	1.666E+00	0.885
	1	1691.02		2.778E-01	3.157E+00	5.267E+00	3.397E-01	0.053
SB-124		602.71		2.577E-03	3.541E-02	4.955E-02	3.584E-03	0.052
		645.85		-3.743E-01	4.441E-01	6.763E-01	5.482E-02	-0.554
		709.31		-3.810E-01	2.207E+00	3.645E+00	3.026E-01	-0.105
		713.82		-1.387E-01	1.277E+00	2.115E+00	2.508E-01	-0.066
		722.78		1.912E-01	3.118E-01	4.697E-01	4.080E-02	0.407
	+	968.20		1.637E+01	3.559E+00	5.433E+00	5.525E-01	3.013
		1045.16		3.588E-01	1.735E+00	2.944E+00	2.549E-01	0.122
		1325.50		4.786E-01	2.434E+00	4.047E+00	3.020E-01	0.118
		1368.21		3.253E-01	1.484E+00	2.198E+00	2.811E-01	0.148
		1436.60		6.110E-01	2.628E+00	4.375E+00	3.221E-01	0.140
		1691.02	*	5.495E-03	6.244E-02	1.042E-01	7.186E-03	0.053
SB-125		427.89	*	5.033E-02	7.344E-02	1.261E-01	7.877E-03	0.399
	+	463.38		7.237E-01	3.726E-01	4.449E-01	3.190E-02	1.627
		600.56		-1.902E-02	1.620E-01	2.344E-01	1.867E-02	-0.081
		635.90		3.475E-02	2.238E-01	3.633E-01	2.997E-02	0.096
TE-125M		109.28	*	7.299E+00	1.348E+01	1.975E+01	1.736E+00	0.370
I-126		388.63		2.801E-01	1.709E-01	3.046E-01	1.751E-02	0.919
		666.33	*	-1.613E-01	1.536E-01	2.431E-01	1.868E-02	-0.664

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126		753.82		7.319E-01	1.181E+00	2.025E+00	1.815E-01	0.361
		223.80		-2.161E+00	3.628E+00	5.881E+00	3.233E-01	-0.367
		278.60		7.760E-01	2.121E+00	3.503E+00	1.996E-01	0.222
	+	296.50		1.191E+01	2.213E+00	2.926E+00	1.680E-01	4.069
		414.70		-1.993E-02	5.951E-02	9.770E-02	5.778E-03	-0.204
		415.30		1.340E+00	4.854E+00	8.203E+00	4.855E-01	0.163
		555.20		3.145E+00	3.195E+00	5.477E+00	3.784E-01	0.574
		573.80		-4.754E-01	9.481E-01	1.402E+00	9.862E-02	-0.339
		593.00		-2.166E-02	7.548E-01	1.220E+00	8.740E-02	-0.018
		656.30		-6.928E+00	2.775E+00	3.928E+00	2.980E-01	-1.764
		666.33		-6.740E-02	6.419E-02	1.016E-01	7.809E-03	-0.664
		675.00		4.065E-01	1.585E+00	2.691E+00	2.102E-01	0.151
		695.00		2.421E-02	6.064E-02	1.034E-01	8.371E-03	0.234
		697.00		3.906E-02	2.144E-01	3.616E-01	2.937E-02	0.108
		720.50	*	-8.008E-03	1.272E-01	1.815E-01	1.536E-02	-0.044
		856.80		1.841E-01	4.107E-01	6.023E-01	6.388E-02	0.306
		989.30		3.231E-01	9.630E-01	1.597E+00	1.562E-01	0.202
SB-127		1034.80		2.883E+00	6.370E+00	1.063E+01	9.438E-01	0.271
		1213.00		3.531E-01	3.594E+00	5.966E+00	3.587E-01	0.059
		61.10		1.065E+02	1.065E+02	1.632E+02	1.711E+01	0.653
		252.40		1.273E+00	4.447E+00	6.447E+00	2.677E+00	0.198
		290.80		-7.407E+00	2.123E+01	2.951E+01	2.693E+00	-0.251
		411.60		4.889E+00	9.918E+00	1.688E+01	2.433E+00	0.290
		444.90		2.392E+00	7.811E+00	1.315E+01	1.444E+00	0.182
		473.00		-8.186E-01	1.388E+00	2.217E+00	2.543E-01	-0.369
		543.00		4.155E+00	1.434E+01	2.374E+01	3.182E+00	0.175
		603.60		-1.112E+00	1.075E+01	1.483E+01	1.721E+00	-0.075
		685.20	*	5.134E-01	1.097E+00	1.879E+00	2.048E-01	0.273
		698.50		-4.832E+00	1.227E+01	2.002E+01	3.117E+00	-0.241
		722.20		4.016E+00	2.613E+01	3.796E+01	4.202E+00	0.106
		783.80		5.639E+00	3.757E+00	5.833E+00	7.581E-01	0.967
		57.60		1.081E+01	1.089E+01	1.781E+01	1.372E+00	0.607
	+	145.22		4.188E+00	1.139E+00	1.451E+00	7.932E-02	2.886
		172.10		7.159E-02	1.167E-01	1.999E-01	1.052E-02	0.358
XE-127		202.84	*	1.490E-02	4.915E-02	7.299E-02	3.940E-03	0.204
		374.96		-6.522E-02	1.548E-01	2.552E-01	1.472E-02	-0.256
		80.18		-4.529E+00	8.139E+00	1.074E+01	9.362E-01	-0.422
I-131		284.30		-5.002E-01	1.273E+00	2.035E+00	1.296E-01	-0.246
		364.48	*	-2.585E-02	8.870E-02	1.475E-01	9.521E-03	-0.175
		636.97		-1.091E+00	1.312E+00	1.998E+00	1.601E-01	-0.546
TE-132		722.89		3.703E+00	5.982E+00	9.016E+00	7.714E-01	0.411
		49.72		8.436E+00	3.575E+01	6.066E+01	6.195E+00	0.139
	+	111.76		5.843E+01	4.940E+01	7.724E+01	7.175E+00	0.756
BA-133		116.30		2.515E+01	3.756E+01	5.505E+01	5.001E+00	0.457
		228.16	*	-6.795E-02	6.267E-01	1.032E+00	1.472E-01	-0.066
		53.15		5.288E+00	6.368E+00	1.090E+01	8.648E-01	0.485
		79.62		-1.955E+00	2.107E+00	2.998E+00	4.566E-01	-0.652
		81.00		-5.896E-02	1.998E-01	2.295E-01	3.656E-02	-0.257
		276.40		4.156E-01	3.259E-01	5.494E-01	7.096E-02	0.756

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	+	302.84		1.028E-01	1.354E-01	1.995E-01	2.320E-02	0.515
		356.01	*	1.764E-02	4.078E-02	5.836E-02	6.741E-03	0.302
		383.85		-1.383E-01	2.525E-01	4.132E-01	4.482E-02	-0.335
		510.53		1.018E+00	2.525E-01	Half-Life	too short	
		529.87	*	3.515E-03	2.525E-01	Half-Life	too short	
		706.58		-9.406E-02	2.525E-01	Half-Life	too short	
		856.28		-5.560E-03	2.525E-01	Half-Life	too short	
		875.33		-1.459E-01	2.525E-01	Half-Life	too short	
		1236.41	+	8.581E-01	2.525E-01	Half-Life	too short	
		1298.22		8.036E-02	2.525E-01	Half-Life	too short	
CS-134		475.35		7.561E-01	1.551E+00	2.620E+00	1.665E-01	0.289
		563.23		2.447E-01	2.966E-01	5.028E-01	3.553E-02	0.487
		569.32		1.619E-01	1.688E-01	2.837E-01	2.028E-02	0.571
		604.70		-1.766E-02	3.197E-02	4.246E-02	3.087E-03	-0.416
		795.84	*	1.101E-01	4.696E-02	7.575E-02	7.327E-03	1.453
		801.93		-5.291E-01	3.428E-01	4.736E-01	4.620E-02	-1.117
		1038.57		-2.084E+00	2.806E+00	4.435E+00	3.902E-01	-0.470
		1167.94		2.291E-01	1.853E+00	3.094E+00	1.754E-01	0.074
		1365.15		-1.340E-01	9.376E-01	1.508E+00	1.200E-01	-0.089
		268.24	*	1.240E-01	1.577E-01	2.343E-01	1.771E-02	0.529
I-135		288.45		2.311E+10	1.577E-01	Half-Life	too short	
		417.63		-1.104E+10	1.577E-01	Half-Life	too short	
		546.56		7.312E+09	1.577E-01	Half-Life	too short	
		836.80		6.560E+09	1.577E-01	Half-Life	too short	
		1038.76		-6.704E+09	1.577E-01	Half-Life	too short	
		1124.00		4.812E+10	1.577E-01	Half-Life	too short	
		1131.51		-1.728E+09	1.577E-01	Half-Life	too short	
		1260.41	*	-3.468E+09	1.577E-01	Half-Life	too short	
		1457.56		1.171E+12	1.577E-01	Half-Life	too short	
		1678.03		-8.241E+09	1.577E-01	Half-Life	too short	
CS-136		1706.46		-1.082E+10	1.577E-01	Half-Life	too short	
		1791.20		2.943E+08	1.577E-01	Half-Life	too short	
		66.91		-1.156E+00	1.261E+00	1.811E+00	2.735E-01	-0.638
		86.29	+	3.173E+00	1.844E+00	2.788E+00	3.675E-01	1.138
		153.22		4.953E-01	6.526E-01	1.128E+00	7.763E-02	0.439
		163.89	+	3.037E+00	1.827E+00	1.970E+00	1.346E-01	1.542
		176.55		-2.202E-01	3.491E-01	5.763E-01	3.492E-02	-0.382
		273.65		-2.959E-01	4.577E-01	6.304E-01	4.107E-02	-0.469
		340.57		3.885E-01	1.289E-01	2.069E-01	1.273E-02	1.878
		818.51		4.959E-03	5.805E-02	9.613E-02	9.598E-03	0.052
BA-137M		1048.07	*	-6.510E-02	7.769E-02	1.216E-01	1.090E-02	-0.535
		1235.34		1.017E+00	5.300E-01	8.503E-01	8.741E-02	1.196
		661.65	*	4.090E-02	3.020E-02	5.368E-02	4.092E-03	0.762
		661.65	*	4.323E-02	3.193E-02	5.674E-02	4.336E-03	0.762
		165.85	*	8.493E-04	3.268E-02	4.879E-02	2.561E-03	0.017
		162.64	+	2.138E+00	1.285E+00	1.397E+00	8.469E-02	1.531
		304.84		-7.374E-01	1.248E+00	1.676E+00	4.571E-01	-0.440
		423.70		1.051E+00	1.565E+00	2.627E+00	8.359E-01	0.400
		537.32	*	3.343E-02	2.141E-01	3.521E-01	1.152E-01	0.095

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140	+	328.77		6.007E-01	3.097E-01	4.366E-01	2.829E-02	1.376
		432.53		-3.211E-01	1.562E+00	2.569E+00	1.703E-01	-0.125
		487.03		3.265E-02	1.060E-01	1.774E-01	1.265E-02	0.184
		751.79		-2.232E-01	1.367E+00	2.246E+00	2.207E-01	-0.099
		815.85		2.050E-02	2.446E-01	4.051E-01	4.379E-02	0.051
		867.82		3.739E-01	1.235E+00	1.856E+00	2.071E-01	0.201
		919.63		-1.135E+00	2.537E+00	3.366E+00	4.252E-01	-0.337
		925.24		4.008E-01	9.113E-01	1.526E+00	1.729E-01	0.263
		1596.49	*	-3.683E-04	5.998E-02	9.956E-02	6.830E-03	-0.004
CE-141		145.44	*	3.099E-01	8.105E-02	1.274E-01	7.273E-03	2.433
CE-143	+	57.37		9.982E-04	8.105E-02	Half-Life	too short	
		231.56		6.025E-04	8.105E-02	Half-Life	too short	
		293.26	*	5.935E-04	8.105E-02	Half-Life	too short	
		350.59		2.980E-02	8.105E-02	Half-Life	too short	
		490.36		7.731E-04	8.105E-02	Half-Life	too short	
		664.57		5.477E-04	8.105E-02	Half-Life	too short	
		721.93		1.135E-04	8.105E-02	Half-Life	too short	
CE-144	+	80.11		-2.231E+00	3.737E+00	4.924E+00	4.263E-01	-0.453
		133.54	*	-2.488E-01	2.386E-01	3.647E-01	5.157E-02	-0.682
PM-144	+	476.78		1.751E-02	5.381E-02	9.023E-02	6.695E-03	0.194
		618.01		-1.266E-03	2.924E-02	4.425E-02	3.368E-03	-0.029
		696.49	*	3.427E-03	2.765E-02	4.649E-02	3.774E-03	0.074
PR-144	+	778.57		-1.483E+00	2.258E+00	3.025E+00	2.828E-01	-0.490
		696.49	*	2.322E-01	1.874E+00	3.150E+00	2.557E-01	0.074
PM-146	+	1489.15		-4.355E+00	9.120E+00	1.392E+01	1.006E+00	-0.313
		453.90	*	2.473E-02	3.583E-02	5.978E-02	5.318E-03	0.414
		633.02		7.423E-01	1.160E+00	1.886E+00	7.000E-01	0.394
		735.90		1.600E-02	1.297E-01	2.170E-01	6.210E-02	0.074
ND-147	+	747.13		-1.609E-01	8.390E-02	1.192E-01	1.691E-02	-1.350
		91.11		1.262E+01	1.410E+00	1.224E+00	1.151E-01	10.315
		319.41		8.819E-01	2.672E+00	4.372E+00	2.525E-01	0.202
		439.89		-2.539E-01	4.779E+00	7.916E+00	4.830E-01	-0.032
		531.02	*	2.928E-01	4.527E-01	7.631E-01	1.065E-01	0.384
PM-149		285.90	*	-1.984E+01	8.078E+01	1.299E+02	1.837E+01	-0.153
EU-152	+	121.78		1.649E-02	8.690E-02	1.402E-01	1.080E-02	0.118
		244.69		2.429E-01	3.242E-01	4.848E-01	2.708E-02	0.501
		344.27	*	3.954E-02	1.099E-01	1.327E-01	8.661E-03	0.298
		443.98		2.488E-01	7.624E-01	1.285E+00	7.875E-02	0.194
		778.89		-7.503E-02	2.520E-01	3.490E-01	3.263E-02	-0.215
		867.32		7.032E-01	7.437E-01	1.135E+00	1.224E-01	0.620
		964.01		7.136E-01	3.274E-01	4.489E-01	4.599E-02	1.590
		1085.78		-1.799E-01	2.867E-01	4.554E-01	3.529E-02	-0.395
		1112.02		-7.864E-03	2.722E-01	4.005E-01	2.851E-02	-0.020
		1407.95		1.345E-01	1.347E-01	2.394E-01	1.778E-02	0.562
GD-153	+	69.67		1.789E+00	2.641E+00	3.995E+00	3.243E-01	0.448
		83.37		7.161E+01	2.874E+01	3.905E+01	3.469E+00	1.834
		97.43	*	8.958E-01	1.856E-01	2.098E-01	1.641E-02	4.269
EU-154	+	103.18		-5.983E-02	1.442E-01	2.054E-01	1.482E-02	-0.291
		123.07		5.204E-02	6.075E-02	9.946E-02	9.406E-03	0.523



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		247.94		4.399E-02	3.626E-01	5.257E-01	4.952E-02	0.084
		591.81		6.701E-02	5.293E-01	8.136E-01	8.654E-02	0.082
		723.30		9.192E-02	1.517E-01	2.281E-01	2.150E-02	0.403
		756.87		2.010E-01	6.767E-01	1.061E+00	1.301E-01	0.189
		873.19		9.103E-02	2.325E-01	3.902E-01	5.435E-02	0.233
		996.32		1.122E+00	4.212E-01	6.419E-01	1.174E-01	1.748
		1004.76		3.586E-01	2.120E-01	3.324E-01	4.087E-02	1.079
		1274.45	*	-3.615E-02	8.967E-02	1.424E-01	1.422E-02	-0.254
		48.70		2.338E+00	4.511E+00	7.712E+00	5.850E-01	0.303
		60.01		8.081E+00	9.112E+00	1.399E+01	1.067E+00	0.578
	+	86.54		2.924E-01	1.676E-01	2.542E-01	2.342E-02	1.150
		105.31	*	1.053E-01	1.312E-01	2.167E-01	1.549E-02	0.486
	+	86.79		7.812E-01	4.478E-01	6.745E-01	6.171E-02	1.158
		197.04		1.205E-01	5.084E-01	8.551E-01	4.592E-02	0.141
		215.65		9.029E-02	7.292E-01	1.127E+00	6.154E-02	0.080
TB-160		298.57		1.997E-01	1.468E-01	1.689E-01	9.698E-03	1.183
		879.36	*	6.090E-02	1.152E-01	1.946E-01	2.137E-02	0.313
		962.29		8.918E-01	4.509E-01	7.908E-01	8.124E-02	1.128
		966.15		1.351E+00	2.520E-01	4.328E-01	4.417E-02	3.122
		1177.93		-1.820E-01	2.694E-01	4.247E-01	2.371E-02	-0.429
		1271.85		2.324E-01	5.160E-01	8.768E-01	5.925E-02	0.265
		80.57		-1.779E-01	5.514E-01	6.334E-01	5.503E-02	-0.281
	+	184.41		1.062E+00	8.607E-02	1.065E-01	5.661E-03	9.965
		280.46		-1.074E-01	7.391E-02	1.127E-01	6.425E-03	-0.954
		410.95		2.683E-01	1.991E-01	3.506E-01	2.064E-02	0.765
		711.68	*	1.005E-02	4.745E-02	8.004E-02	6.672E-03	0.126
		752.31		7.376E-02	2.168E-01	3.666E-01	3.278E-02	0.201
		810.29		-3.246E-02	4.600E-02	7.213E-02	7.102E-03	-0.450
		51.35		-3.449E+01	5.573E+01	9.240E+01	7.323E+00	-0.373
		52.39		-4.893E+00	2.831E+01	4.746E+01	3.770E+00	-0.103
TM-171		59.40		5.049E+01	4.917E+01	7.578E+01	5.753E+00	0.666
		66.72	*	-3.188E+01	4.511E+01	6.573E+01	5.255E+00	-0.485
	+	88.36		5.758E-01	3.301E-01	5.032E-01	4.620E-02	1.144
		201.83		-3.098E-04	2.990E-02	4.385E-02	2.365E-03	-0.007
		306.84	*	-1.754E-02	2.126E-02	3.305E-02	1.903E-03	-0.531
LU-176		401.10		-1.069E+00	5.441E+00	9.021E+00	5.244E-01	-0.119
		52.97		1.484E+00	2.895E+00	4.925E+00	3.910E-01	0.301
		54.07		8.891E-01	1.512E+00	2.573E+00	2.034E-01	0.346
		61.30		4.094E+00	2.758E+00	4.271E+00	3.300E-01	0.959
		121.62		7.363E-02	4.455E-01	7.183E-01	4.261E-02	0.103
		147.16		-6.576E-01	7.760E-01	1.051E+00	5.719E-02	-0.626
		171.86		-2.884E-02	4.760E-01	8.009E-01	4.216E-02	-0.036
		218.09		2.755E-01	7.797E-01	1.307E+00	7.151E-02	0.211
	+	268.79		1.907E+00	8.957E-01	1.231E+00	6.981E-02	1.549
		319.02		-3.208E-03	2.098E-01	3.378E-01	1.950E-02	-0.009
LU-177M		367.43		-2.181E-01	6.991E-01	1.161E+00	6.703E-02	-0.188
		413.65	*	-1.374E-01	1.442E-01	2.297E-01	1.357E-02	-0.598
		56.28		-1.884E+00	1.660E+00	2.703E+00	2.105E-01	-0.697
		57.53		6.549E-01	9.190E-01	1.495E+00	1.153E-01	0.438
HF-181								

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
W-181		65.20		1.167E+01	1.972E+00	3.009E+00	2.387E-01	3.878
		133.02		3.011E-02	7.579E-02	1.222E-01	6.915E-03	0.246
		136.25		-3.027E-02	5.083E-01	8.081E-01	4.525E-02	-0.037
		345.85		2.012E-02	1.851E-01	2.601E-01	1.505E-02	0.077
		482.03	*	-2.183E-02	3.344E-02	5.313E-02	3.401E-03	-0.411
		56.28		-7.363E-01	6.495E-01	1.058E+00	8.239E-02	-0.696
		57.53		2.556E-01	3.599E-01	5.854E-01	4.514E-02	0.437
		65.20	*	4.533E+00	7.661E-01	1.169E+00	9.273E-02	3.878
		67.75		-8.563E-02	1.665E-01	2.600E-01	2.090E-02	-0.329
	+	100.10		2.087E+00	4.324E-01	4.398E-01	3.306E-02	4.744
TA-182		152.43		-2.131E-01	3.630E-01	5.627E-01	3.027E-02	-0.379
		222.10		-3.849E-02	3.108E-01	5.126E-01	2.813E-02	-0.075
	+	1001.68		4.288E+01	5.769E+00	7.220E+00	6.892E-01	5.939
	+	1121.28		7.143E-01	2.004E-01	2.646E-01	1.823E-02	2.700
		1189.05		-1.454E-01	2.285E-01	3.609E-01	2.064E-02	-0.403
		1221.42	*	-1.252E-01	1.445E-01	2.239E-01	1.369E-02	-0.559
		1230.97		-1.963E-01	4.243E-01	5.698E-01	3.554E-02	-0.344
		57.98		6.262E-01	3.750E-01	5.867E-01	4.507E-02	1.067
		59.32		2.016E-01	2.024E-01	3.118E-01	2.369E-02	0.647
		67.20		-3.298E-01	3.217E-01	4.634E-01	3.714E-02	-0.712
RE-183	+	162.32	*	3.124E-01	1.875E-01	2.013E-01	1.062E-02	1.552
	+	208.81		2.945E+00	1.178E+00	1.581E+00	8.580E-02	1.863
		291.72		-8.564E-02	9.129E-01	1.288E+00	7.382E-02	-0.066
		57.98		2.307E+00	1.381E+00	2.162E+00	1.661E-01	1.067
		59.32		7.423E-01	7.451E-01	1.148E+00	8.720E-02	0.647
		67.20		-1.214E+00	1.185E+00	1.707E+00	1.368E-01	-0.712
		161.27		-1.507E-01	3.987E-01	5.874E-01	3.106E-02	-0.257
		216.55		5.455E-02	2.387E-01	3.990E-01	2.180E-02	0.137
		252.85	*	1.029E-01	2.321E-01	3.415E-01	1.918E-02	0.301
		318.01		1.747E-01	3.617E-01	5.962E-01	3.441E-02	0.293
RE-184		792.07		1.694E+00	1.404E+00	1.503E+00	1.437E-01	1.127
		903.28		7.286E-02	9.226E-01	1.300E+00	1.459E-01	0.056
		920.93		-1.145E-01	3.897E-01	5.717E-01	6.264E-02	-0.200
		59.72		4.258E-01	5.442E-01	8.337E-01	6.341E-02	0.511
		61.14		3.204E-01	3.010E-01	4.627E-01	3.570E-02	0.692
		69.30		1.818E-01	4.695E-01	7.057E-01	5.717E-02	0.258
		592.07		9.274E-01	2.077E+00	3.361E+00	2.406E-01	0.276
		646.12	*	-2.975E-02	3.776E-02	5.773E-02	4.341E-03	-0.515
		717.42		8.359E-02	6.895E-01	1.157E+00	9.740E-02	0.072
		874.81		-5.008E-01	4.895E-01	7.414E-01	8.087E-02	-0.676
OS-185		880.27		3.600E-01	6.624E-01	1.118E+00	1.230E-01	0.322
		155.03	*	-3.267E-03	1.701E-01	2.885E-01	1.544E-02	-0.011
		477.96		2.154E+00	2.457E+00	4.226E+00	2.693E-01	0.510
		633.10		1.959E+00	2.260E+00	3.820E+00	2.840E-01	0.513
	+	63.58		2.797E+03	2.766E+02	2.576E+02	2.024E+01	10.859
		227.08		5.676E+00	1.136E+01	1.910E+01	1.052E+00	0.297
		290.67	*	-2.389E+00	7.317E+00	1.019E+01	5.836E-01	-0.234
	+	295.96		9.107E-01	1.695E-01	2.281E-01	1.330E-02	3.993
		308.46		8.869E-03	8.086E-02	1.313E-01	7.649E-03	0.068
RE-188								
W-188								
IR-192								

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AU-195		316.51	*	4.226E-03	2.781E-02	4.516E-02	2.619E-03	0.094
		468.07		1.065E-02	6.047E-02	8.774E-02	6.252E-03	0.121
		604.41		-1.260E-01	4.205E-01	5.702E-01	6.929E-02	-0.221
		612.46		1.977E+00	7.475E-01	1.195E+00	1.048E-01	1.654
		65.12		2.478E+00	3.758E-01	5.628E-01	4.462E-02	4.403
		66.83		-1.422E-01	1.504E-01	2.173E-01	1.738E-02	-0.654
	+	75.70		9.739E-01	3.547E-01	5.091E-01	4.275E-02	1.913
TL-200	+	98.88	*	2.608E+00	5.405E-01	6.302E-01	4.822E-02	4.139
		129.76		5.894E+00	3.264E+00	5.447E+00	3.117E-01	1.082
		367.94	*	-1.601E-04	3.264E+00	Half-Life	too short	
		579.30		2.690E-03	3.264E+00	Half-Life	too short	
TL-201		828.27		8.446E-06	3.264E+00	Half-Life	too short	
		1205.75		1.248E-03	3.264E+00	Half-Life	too short	
		68.90		-3.040E-01	7.210E+00	1.141E+01	9.227E-01	-0.027
		70.82		3.777E+00	4.362E+00	6.616E+00	5.402E-01	0.571
TL-202		80.30		-4.084E+00	1.028E+01	1.177E+01	1.020E+00	-0.347
		135.34		-1.762E+00	2.874E+01	4.571E+01	2.567E+00	-0.039
		167.43	*	-8.638E-02	7.673E+00	1.143E+01	6.000E-01	-0.008
		68.90		-2.720E-02	6.450E-01	1.021E+00	8.255E-02	-0.027
HG-203		70.82		3.370E-01	3.892E-01	5.902E-01	4.819E-02	0.571
		80.30		-3.645E-01	9.171E-01	1.050E+00	9.105E-02	-0.347
		439.56	*	4.993E-03	5.666E-02	9.449E-02	5.761E-03	0.053
		70.83		1.467E+00	1.692E+00	2.555E+00	3.404E-01	0.574
BI-207		72.87		4.966E-01	9.772E-01	1.465E+00	1.900E-01	0.339
		82.60		3.531E+00	1.877E+00	2.793E+00	3.875E-01	1.264
		279.20	*	-2.690E-03	3.493E-02	5.670E-02	3.438E-03	-0.047
		72.80		1.204E-01	2.860E-01	4.285E-01	3.537E-02	0.281
TL-207	+	74.97		5.401E-01	1.967E-01	2.700E-01	2.257E-02	2.000
	+	84.90		9.261E-01	3.717E-01	4.976E-01	4.477E-02	1.861
		569.67		2.918E-02	2.632E-02	4.453E-02	3.120E-03	0.655
		1063.62	*	-4.943E-03	4.132E-02	6.698E-02	5.529E-03	-0.074
PO-209		1770.23		5.869E-02	3.381E-01	4.906E-01	2.968E-02	0.120
		81.07		-1.245E-01	4.404E-01	5.066E-01	4.418E-02	-0.246
	+	83.78		6.106E-01	2.451E-01	3.369E-01	3.003E-02	1.813
	+	94.90		1.004E+00	4.841E-01	7.805E-01	6.353E-02	1.286
BI-210		122.32		8.870E-01	2.067E+00	3.355E+00	2.278E-01	0.264
	+	144.24		4.104E+00	1.130E+00	1.479E+00	1.032E-01	2.776
		154.21		3.866E-01	3.921E-01	6.806E-01	4.529E-02	0.568
	+	269.46		4.463E-01	2.098E-01	2.930E-01	1.741E-02	1.523
PB-210		323.87	*	2.434E-01	6.134E-01	8.820E-01	1.456E-01	0.276
	+	338.28		6.435E+00	1.576E+00	1.993E+00	2.097E-01	3.229
		445.03		2.521E-02	1.813E+00	3.010E+00	3.149E-01	0.008
		260.50		6.258E-02	9.994E+00	1.434E+01	8.092E-01	0.004
PB-211		262.80		9.131E+00	2.681E+01	3.912E+01	2.211E+00	0.233
		896.60	*	1.817E+00	5.608E+00	9.363E+00	1.056E+00	0.194
		46.50	*	-2.933E+00	6.831E+00	1.131E+01	8.747E-01	-0.259
		46.50	*	-2.933E+00	6.831E+00	1.131E+01	8.747E-01	-0.259
PB-211		46.50	*	-2.933E+00	6.830E+00	1.131E+01	7.520E-01	-0.259
		404.84	*	-7.131E-02	7.808E-01	1.298E+00	8.092E-01	-0.055

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-215		427.08		1.861E+00	1.983E+00	2.834E+00	1.753E+00	0.657
		831.96		3.070E-01	9.769E-01	1.606E+00	1.010E+00	0.191
		81.07		-1.245E-01	4.404E-01	5.066E-01	4.418E-02	-0.246
	+	83.78		6.106E-01	2.451E-01	3.369E-01	3.003E-02	1.813
	+	94.90		1.004E+00	4.841E-01	7.805E-01	6.353E-02	1.286
		122.32		8.870E-01	2.067E+00	3.355E+00	2.278E-01	0.264
	+	144.24		4.104E+00	1.130E+00	1.479E+00	1.032E-01	2.776
		154.21		3.866E-01	3.921E-01	6.806E-01	4.529E-02	0.568
	+	269.46		4.463E-01	2.098E-01	2.930E-01	1.741E-02	1.523
		323.87	*	2.434E-01	6.134E-01	8.820E-01	1.456E-01	0.276
RN-219	+	338.28		6.435E+00	1.576E+00	1.993E+00	2.097E-01	3.229
		445.03		2.521E-02	1.813E+00	3.010E+00	3.149E-01	0.008
	+	271.23		5.726E-01	2.710E-01	3.855E-01	3.091E-02	1.485
		401.81	*	-9.844E-02	3.367E-01	5.555E-01	7.562E-02	-0.177
RN-220		549.76	*	-1.573E+01	2.165E+01	3.380E+01	2.322E+00	-0.465
RA-223		81.07		-1.245E-01	4.404E-01	5.066E-01	4.418E-02	-0.246
	+	83.78		6.106E-01	2.451E-01	3.369E-01	3.003E-02	1.813
	+	94.90		1.004E+00	4.841E-01	7.805E-01	6.353E-02	1.286
		122.32		8.870E-01	2.067E+00	3.355E+00	2.278E-01	0.264
	+	144.24		4.104E+00	1.130E+00	1.479E+00	1.032E-01	2.776
		154.21		3.866E-01	3.921E-01	6.806E-01	4.529E-02	0.568
	+	269.46		4.463E-01	2.098E-01	2.930E-01	1.741E-02	1.523
		323.87	*	2.434E-01	6.134E-01	8.820E-01	1.456E-01	0.276
	+	338.28		6.435E+00	1.576E+00	1.993E+00	2.097E-01	3.229
		445.03		2.521E-02	1.813E+00	3.010E+00	3.149E-01	0.008
AC-227		79.80		-2.248E+00	2.927E+00	3.787E+00	8.146E-01	-0.594
		236.00		4.723E-01	2.384E-01	3.671E-01	3.787E-02	1.287
		256.20	*	2.636E-01	3.971E-01	5.871E-01	8.155E-02	0.449
		286.10		-3.717E-01	1.339E+00	2.150E+00	2.476E-01	-0.173
	+	299.80		2.290E+00	1.480E+00	2.179E+00	3.544E-01	1.051
		304.40		-4.376E-01	1.815E+00	2.524E+00	4.362E-01	-0.173
		334.20		1.281E+00	2.286E+00	3.083E+00	5.651E-01	0.416
	TH-227	79.80		-2.248E+00	2.928E+00	3.787E+00	8.250E-01	-0.594
	+	94.00		8.029E+00	4.192E+00	1.110E+01	2.402E+00	0.723
		236.00		4.723E-01	2.372E-01	3.671E-01	3.267E-02	1.287
TH-227		256.20	*	2.636E-01	3.979E-01	5.871E-01	9.888E-02	0.449
		286.10		-3.717E-01	1.389E+00	2.150E+00	2.153E+00	-0.173
	+	299.80		2.290E+00	1.480E+00	2.179E+00	3.544E-01	1.051
		304.40		-4.376E-01	1.815E+00	2.524E+00	4.362E-01	-0.173
		334.20		1.281E+00	2.286E+00	3.083E+00	5.651E-01	0.416
	PA-231	283.67	*	-9.863E-02	1.300E+00	2.107E+00	2.896E-01	-0.047
	+	301.29		9.162E-01	5.810E-01	8.929E-01	9.308E-02	1.026
	TH-231	81.07		-1.245E-01	4.404E-01	5.066E-01	4.418E-02	-0.246
	+	83.78		6.106E-01	2.451E-01	3.369E-01	3.003E-02	1.813
	+	94.90		1.004E+00	4.841E-01	7.805E-01	6.353E-02	1.286
TH-231		122.32		8.870E-01	2.067E+00	3.355E+00	2.278E-01	0.264
	+	144.24		4.104E+00	1.130E+00	1.479E+00	1.032E-01	2.776
		154.21		3.866E-01	3.921E-01	6.806E-01	4.529E-02	0.568
	+	269.46		4.463E-01	2.098E-01	2.930E-01	1.741E-02	1.523

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233		323.87	*	2.434E-01	6.134E-01	8.820E-01	1.456E-01	0.276
	+	338.28		6.435E+00	1.576E+00	1.993E+00	2.097E-01	3.229
		445.03		2.521E-02	1.813E+00	3.010E+00	3.149E-01	0.008
	+	75.28		1.576E+01	6.080E+00	7.911E+00	1.203E+00	1.992
	+	86.59		4.752E+00	2.980E+00	4.124E+00	1.113E+00	1.152
	+	300.12		6.386E-01	4.085E-01	6.049E-01	8.114E-02	1.056
		311.98	*	-4.248E-03	5.356E-02	8.613E-02	5.276E-03	-0.049
		340.50		2.088E+00	7.839E-01	1.025E+00	2.353E-01	2.038
		398.62		8.805E-01	1.709E+00	2.898E+00	7.494E-01	0.304
		415.76		-6.842E-03	1.280E+00	2.134E+00	4.401E-01	-0.003
PA-234	+	63.00		8.110E+01	1.317E+01	7.715E+00	1.163E+00	10.512
	+	94.67		7.159E-01	3.512E-01	6.570E-01	7.946E-02	1.090
	+	98.44		1.057E+00	6.223E-01	2.569E-01	1.430E-01	4.113
	+	99.86		5.478E+00	1.135E+00	1.229E+00	9.273E-02	4.457
	+	111.00		3.619E-01	3.066E-01	4.328E-01	4.643E-02	0.836
		131.20		1.524E-01	1.229E-01	2.025E-01	1.153E-02	0.752
		152.70		-2.481E-02	3.478E-01	5.483E-01	8.585E-02	-0.045
	+	186.00		3.822E+01	1.188E+01	4.196E+00	1.278E+00	9.110
		226.40		2.272E-01	3.560E-01	5.998E-01	6.848E-02	0.379
		227.20		1.192E-01	3.851E-01	6.433E-01	3.545E-02	0.185
		248.90		-1.522E-01	7.860E-01	1.183E+00	2.536E-01	-0.129
		293.70		4.762E+00	1.085E+00	1.372E+00	2.202E-01	3.472
		369.80		1.502E-02	6.634E-01	1.118E+00	2.327E-01	0.013
		568.70		6.724E-01	8.518E-01	1.421E+00	9.946E-02	0.473
		569.50		2.629E-01	2.338E-01	3.958E-01	2.773E-02	0.664
		574.00		-5.569E-01	1.355E+00	2.016E+00	1.419E-01	-0.276
		699.00		1.432E-02	5.773E-01	9.653E-01	1.822E-01	0.015
		706.10		-1.072E-01	8.413E-01	1.392E+00	6.197E-01	-0.077
		733.00		-1.785E-01	3.659E-01	5.001E-01	1.111E-01	-0.357
		742.81		1.881E+00	1.799E+00	2.275E+00	1.530E+00	0.827
		796.30		2.106E+00	1.047E+00	1.450E+00	3.972E-01	1.452
		805.60		7.264E-01	7.897E-01	1.323E+00	4.102E-01	0.549
		819.60		-2.510E-01	9.639E-01	1.552E+00	5.953E-01	-0.162
		826.30		1.184E-01	6.335E-01	1.051E+00	4.737E-01	0.113
		831.60		1.078E-01	4.993E-01	8.303E-01	2.519E-01	0.130
		876.40		-2.029E-01	7.209E-01	1.107E+00	1.141E+00	-0.183
		880.51		2.193E-01	2.363E-01	4.069E-01	4.478E-02	0.539
		883.24		1.575E-01	2.555E-01	3.967E-01	2.681E-01	0.397
		899.00		-6.624E-01	7.281E-01	1.012E+00	4.485E-01	-0.655
		925.00		4.848E-01	9.457E-01	1.591E+00	1.734E-01	0.305
NP-236		926.50		6.965E-02	1.415E-01	2.362E-01	6.172E-02	0.295
		946.00	*	1.778E-01	2.753E-01	4.314E-01	8.510E-02	0.412
		949.00		3.099E-01	3.652E-01	6.243E-01	6.557E-02	0.496
		980.50		3.223E-01	5.619E-01	9.469E-01	9.418E-02	0.340
		1394.10		-3.503E-01	9.346E-01	1.419E+00	9.214E-01	-0.247
	+	94.67		5.430E-01	2.619E-01	5.007E-01	4.091E-02	1.084
	+	98.44		7.989E-01	1.655E-01	1.942E-01	1.496E-02	4.113
	+	111.00		2.738E-01	2.307E-01	3.273E-01	2.153E-02	0.836
		160.31	*	4.384E-03	8.735E-02	1.309E-01	6.933E-03	0.033

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	99.55		1.826E+00	3.784E-01	4.270E-01	3.235E-02	4.276
		117.00	*	1.138E-01	2.521E-01	3.672E-01	2.273E-02	0.310
	+	209.75		2.323E+00	9.288E-01	1.264E+00	6.867E-02	1.837
		228.18		-2.264E-02	2.036E-01	3.353E-01	1.850E-02	-0.068
		277.60		1.392E-01	1.564E-01	2.631E-01	1.499E-02	0.529
AM-241	+	334.30		7.261E-01	1.289E+00	1.747E+00	1.010E-01	0.416
		59.54	*	3.081E-01	2.854E-01	4.401E-01	3.650E-02	0.700
	+	99.55		1.879E+00	3.894E-01	4.394E-01	3.329E-02	4.276
		103.76	*	-1.399E-02	1.328E-01	1.913E-01	1.369E-02	-0.073
		117.00		1.171E-01	2.594E-01	3.778E-01	2.339E-02	0.310
CM-243	+	209.75		2.290E+00	9.156E-01	1.246E+00	6.769E-02	1.837
		228.18		-2.288E-02	2.057E-01	3.388E-01	1.869E-02	-0.068
	+	277.60		1.404E-01	1.577E-01	2.652E-01	1.511E-02	0.529
		798.80		-2.395E-03	1.243E-01	1.760E-01	1.700E-02	-0.014
		1036.00		1.528E-02	2.090E-01	3.517E-01	3.113E-02	0.043
AM-246	+	1062.04		7.558E-03	1.778E-01	2.914E-01	2.415E-02	0.026
		1078.86	*	5.558E-02	1.058E-01	1.826E-01	1.444E-02	0.304
	+	278.00		5.369E-01	6.456E-01	1.084E+00	6.176E-02	0.495
		287.40		2.259E-01	1.065E+00	1.745E+00	9.982E-02	0.129
		402.60	*	-5.330E-04	2.990E-02	4.996E-02	2.910E-03	-0.011
CM-247	+	252.85		3.859E-01	8.708E-01	1.281E+00	7.196E-02	0.301
		333.44		1.219E-01	2.139E-01	2.285E-01	1.321E-02	0.533
	+	387.95	*	4.826E-02	3.320E-02	5.883E-02	3.382E-03	0.820
CF-249	+	176.60	*	-7.790E-02	1.201E-01	1.982E-01	1.047E-02	-0.393
		227.00		1.790E-01	3.412E-01	5.738E-01	3.162E-02	0.312
	+	285.00		-6.918E-01	1.512E+00	2.410E+00	1.377E-01	-0.287

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691009      *
* Acquisition date   : 9-FEB-2010 15:32:51 Detector SN#      :              *
* Detector ID        : GAM18                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:02.52           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691009              Analyst initials: MJH1         *
* Batch Number       : 947037                  Sample Quantity : 1.4489E+02 GRAM   *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope      :                *
* MSD DPM             : 0.000                      MSD Isotope :                *
* LCS DPM             : 0.000                      LCS Isotope  :                *
* LCSD DPM            : 0.000                      LCSD Isotope :                *
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.575E+01	2.302E+00	4.000E-01	0.000E+00
NB-95	3.623E-01	8.512E-02	5.644E-02	0.000E+00
CD-109	2.470E+00	1.388E+00	2.287E+00	0.000E+00
SN-126	2.428E-01	1.364E-01	2.289E-01	0.000E+00
LU-177	3.285E+00	1.288E+00	1.468E+00	0.000E+00
TL-208	4.500E-01	8.036E-02	4.780E-02	0.000E+00
BI-211	3.701E+00	4.434E-01	2.806E-01	0.000E+00
BI-212	1.102E+00	3.730E-01	3.659E-01	0.000E+00
PB-212	1.418E+00	1.321E-01	8.208E-02	0.000E+00
PO-212	1.418E+00	1.321E-01	8.208E-02	0.000E+00
BI-214	1.153E+00	1.634E-01	9.145E-02	0.000E+00
PB-214	1.288E+00	1.677E-01	9.779E-02	0.000E+00
PO-214	1.288E+00	1.677E-01	9.779E-02	0.000E+00
PO-216	1.418E+00	1.321E-01	8.208E-02	0.000E+00
PO-218	1.288E+00	1.677E-01	9.779E-02	0.000E+00
RA-224	4.245E+00	1.118E+00	9.328E-01	0.000E+00
RA-226	1.153E+00	1.634E-01	9.145E-02	0.000E+00
AC-228	1.495E+00	3.013E-01	1.672E-01	0.000E+00
RA-228	1.495E+00	3.013E-01	1.672E-01	0.000E+00
TH-228	1.439E+00	1.341E-01	8.333E-02	0.000E+00
TH-229	2.595E-01	4.565E-01	8.327E-01	0.000E+00
TH-230	1.153E+00	1.634E-01	9.145E-02	0.000E+00
U-231	4.924E+00	2.327E+00	2.428E+00	0.000E+00
TH-232	1.495E+00	3.013E-01	1.672E-01	0.000E+00
PA-234M	9.734E+01	1.369E+01	5.306E+00	0.000E+00
TH-234	6.957E+01	1.270E+01	3.484E+00	0.000E+00
U-234	1.153E+00	1.634E-01	9.145E-02	0.000E+00
U-235	1.266E+00	3.869E-01	3.653E-01	0.000E+00
NP-237	7.129E-01	4.256E-01	5.998E-01	0.000E+00
U-238	6.957E+01	1.270E+01	3.484E+00	0.000E+00
AM-243	3.009E-01	1.074E-01	1.417E-01	0.000E+00
ANH-511	9.763E-02	5.522E-02	3.795E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	1.094E-01	2.545E-01	4.511E-01	0.000E+00	NOT IDENT.
NA-22	-1.717E-02	3.190E-02	5.163E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	6.554E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.739E-02	2.003E-02	2.881E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.732E-02	1.026E-01	0.000E+00	FAIL ABUN
SC-46	-1.058E-02	2.911E-02	4.806E-02	0.000E+00	FAIL ABUN
V-48	9.902E-03	5.332E-02	9.056E-02	0.000E+00	NOT IDENT.
CR-51	-1.220E-01	3.013E-01	5.054E-01	0.000E+00	NOT IDENT.
MN-52	9.205E-02	1.635E-01	2.884E-01	0.000E+00	NOT IDENT.
MN-54	-9.120E-03	3.026E-02	5.078E-02	0.000E+00	NOT IDENT.
CO-56	-3.386E-02	3.030E-02	4.748E-02	0.000E+00	FAIL ABUN
CO-57	1.043E-02	2.924E-02	5.136E-02	0.000E+00	NOT IDENT.
CO-58	-2.028E-02	2.991E-02	4.893E-02	0.000E+00	NOT IDENT.
FE-59	-3.069E-02	6.670E-02	1.110E-01	0.000E+00	FAIL ABUN
CO-60	1.418E-02	2.975E-02	5.195E-02	0.000E+00	NOT IDENT.
ZN-65	5.018E-02	7.774E-02	1.208E-01	0.000E+00	NOT IDENT.
GE-68	4.769E-01	9.019E-01	1.608E+00	0.000E+00	NOT IDENT.
AS-73	1.571E+00	1.442E+00	2.732E+00	0.000E+00	NOT IDENT.
AS-74	3.646E-03	7.465E-02	1.265E-01	0.000E+00	NOT IDENT.
SE-75	4.029E-02	4.052E-02	6.828E-02	0.000E+00	NOT IDENT.
BR-77	3.105E+00	8.266E+00	1.450E+01	0.000E+00	FAIL ABUN
SR-82	-2.113E-01	3.213E-01	5.041E-01	0.000E+00	NOT IDENT.
RB-83	2.394E-02	5.436E-02	9.565E-02	0.000E+00	NOT IDENT.
RB-84	8.627E-02	5.802E-02	1.061E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	6.644E+00	1.106E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.408E-02	5.673E-02	0.000E+00	NOT IDENT.
RB-86	1.178E-01	5.841E-01	1.020E+00	0.000E+00	NOT IDENT.
Y-88	-4.381E-02	2.854E-02	3.788E-02	0.000E+00	NOT IDENT.
ZR-88	-2.112E-02	2.414E-02	4.103E-02	0.000E+00	NOT IDENT.
Y-91	6.751E+00	1.378E+01	2.417E+01	0.000E+00	NOT IDENT.
NB-94	1.620E-02	2.648E-02	4.750E-02	0.000E+00	NOT IDENT.
NB-95M	7.862E-03	1.198E-01	1.859E-01	0.000E+00	NOT IDENT.
ZR-95	4.264E-02	5.879E-02	1.011E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	7.998E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.698E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.271E+01	1.086E+01	1.955E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.994E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.357E-03	2.995E-02	5.293E-02	0.000E+00	NOT IDENT.
RH-102	3.398E-03	2.325E-02	4.067E-02	0.000E+00	FAIL ABUN
RU-103	-8.424E-04	3.129E-02	5.401E-02	0.000E+00	FAIL ABUN
RH-106	-1.333E-02	2.652E-01	4.459E-01	0.000E+00	FAIL ABUN
RU-106	-1.333E-02	2.652E-01	4.459E-01	0.000E+00	FAIL ABUN
AG-108M	-1.258E-02	2.495E-02	4.263E-02	0.000E+00	NOT IDENT.
AG-110M	-4.940E-02	2.766E-02	4.340E-02	0.000E+00	FAIL ABUN
IN-111	1.787E-01	1.029E+00	1.599E+00	0.000E+00	NOT IDENT.
IN-113M	-3.127E-02	3.590E-02	6.112E-02	0.000E+00	NOT IDENT.
SN-113	-3.127E-02	3.590E-02	6.112E-02	0.000E+00	NOT IDENT.
IN-114M	-9.837E-02	1.810E-01	2.799E-01	0.000E+00	NOT IDENT.
CD-115	-1.525E+00	8.571E+00	1.457E+01	0.000E+00	NOT IDENT.
SN-117M	2.073E-02	5.897E-02	9.636E-02	0.000E+00	NOT IDENT.
SB-122	1.021E+00	1.699E+00	2.986E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.459E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	5.265E-03	3.069E-02	4.982E-02	0.000E+00	NOT IDENT.
I-124	4.456E-02	5.999E-01	8.790E-01	0.000E+00	FAIL ABUN
SB-124	5.495E-03	6.120E-02	1.044E-01	0.000E+00	FAIL ABUN
SB-125	5.033E-02	7.197E-02	1.303E-01	0.000E+00	FAIL ABUN
TE-125M	7.299E+00	1.321E+01	2.103E+01	0.000E+00	NOT IDENT.
I-126	-1.613E-01	1.505E-01	2.488E-01	0.000E+00	NOT IDENT.
SB-126	-8.008E-03	1.246E-01	1.855E-01	0.000E+00	FAIL ABUN
SB-127	5.134E-01	1.075E+00	1.923E+00	0.000E+00	NOT IDENT.
XE-127	1.490E-02	4.816E-02	7.671E-02	0.000E+00	FAIL ABUN
I-131	-2.585E-02	8.693E-02	1.530E-01	0.000E+00	NOT IDENT.
TE-132	-6.795E-02	6.142E-01	1.082E+00	0.000E+00	FAIL ABUN
BA-133	1.764E-02	3.996E-02	6.059E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.821E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.602E-02	7.723E-02	0.000E+00	NOT IDENT.
CS-135	1.240E-01	1.545E-01	2.448E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.097E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.510E-02	7.613E-02	1.232E-01	0.000E+00	FAIL ABUN
BA-137M	4.090E-02	2.960E-02	5.496E-02	0.000E+00	NOT IDENT.
CS-137	4.323E-02	3.129E-02	5.809E-02	0.000E+00	NOT IDENT.
CE-139	8.493E-04	3.203E-02	5.150E-02	0.000E+00	NOT IDENT.
BA-140	3.343E-02	2.098E-01	3.622E-01	0.000E+00	FAIL ABUN



LA-140	-3.683E-04	5.878E-02	9.987E-02	0.000E+00	FAIL ABUN
CE-141	0.000E+00	7.943E-02	1.349E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.924E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.488E-01	2.338E-01	3.867E-01	0.000E+00	NOT IDENT.
PM-144	3.427E-03	2.710E-02	4.754E-02	0.000E+00	NOT IDENT.
PR-144	2.322E-01	1.836E+00	3.222E+00	0.000E+00	NOT IDENT.
PM-146	2.473E-02	3.511E-02	6.173E-02	0.000E+00	NOT IDENT.
ND-147	2.928E-01	4.436E-01	7.852E-01	0.000E+00	NOT IDENT.
PM-149	-1.984E+01	7.916E+01	1.355E+02	0.000E+00	NOT IDENT.
EU-152	3.954E-02	1.077E-01	1.379E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	1.819E-01	2.240E-01	0.000E+00	FAIL ABUN
EU-154	-3.615E-02	8.788E-02	1.436E-01	0.000E+00	NOT IDENT.
EU-155	1.053E-01	1.286E-01	2.309E-01	0.000E+00	FAIL ABUN
TB-160	6.090E-02	1.129E-01	1.979E-01	0.000E+00	FAIL ABUN
HO-166M	1.005E-02	4.650E-02	8.182E-02	0.000E+00	FAIL ABUN
TM-171	-3.188E+01	4.421E+01	7.071E+01	0.000E+00	NOT IDENT.
LU-176	-1.754E-02	2.084E-02	3.442E-02	0.000E+00	FAIL ABUN
LU-177M	-1.374E-01	1.413E-01	2.377E-01	0.000E+00	FAIL ABUN
HF-181	-2.183E-02	3.278E-02	5.478E-02	0.000E+00	NOT IDENT.
W-181	0.000E+00	7.508E-01	1.258E+00	0.000E+00	NOT IDENT.
TA-182	-1.252E-01	1.416E-01	2.260E-01	0.000E+00	FAIL ABUN
RE-183	0.000E+00	1.837E-01	2.125E-01	0.000E+00	FAIL ABUN
RE-184	1.029E-01	2.274E-01	3.572E-01	0.000E+00	NOT IDENT.
OS-185	-2.975E-02	3.700E-02	5.913E-02	0.000E+00	NOT IDENT.
RE-188	-3.267E-03	1.667E-01	3.050E-01	0.000E+00	NOT IDENT.
W-188	-2.389E+00	7.171E+00	1.063E+01	0.000E+00	FAIL ABUN
IR-192	4.226E-03	2.726E-02	4.701E-02	0.000E+00	FAIL ABUN
AU-195	0.000E+00	5.297E-01	6.725E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	3.550E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-8.638E-02	7.519E+00	1.206E+01	0.000E+00	NOT IDENT.
TL-202	4.993E-03	5.553E-02	9.764E-02	0.000E+00	NOT IDENT.
HG-203	-2.690E-03	3.423E-02	5.918E-02	0.000E+00	NOT IDENT.
BI-207	-4.943E-03	4.049E-02	6.783E-02	0.000E+00	FAIL ABUN
TL-207	2.434E-01	6.011E-01	9.176E-01	0.000E+00	FAIL ABUN
PO-209	1.817E+00	5.496E+00	9.520E+00	0.000E+00	NOT IDENT.
BI-210	-2.933E+00	6.694E+00	1.225E+01	0.000E+00	NOT IDENT.
PB-210	-2.933E+00	6.694E+00	1.225E+01	0.000E+00	NOT IDENT.
PO-210	-2.933E+00	6.693E+00	1.225E+01	0.000E+00	NOT IDENT.
PB-211	-7.131E-02	7.652E-01	1.344E+00	0.000E+00	NOT IDENT.
PO-215	2.434E-01	6.011E-01	9.176E-01	0.000E+00	FAIL ABUN
RN-219	-9.844E-02	3.300E-01	5.751E-01	0.000E+00	FAIL ABUN
RN-220	-1.573E+01	2.122E+01	3.475E+01	0.000E+00	NOT IDENT.
RA-223	2.434E-01	6.011E-01	9.176E-01	0.000E+00	FAIL ABUN
AC-227	2.636E-01	3.891E-01	6.139E-01	0.000E+00	FAIL ABUN
TH-227	2.636E-01	3.899E-01	6.139E-01	0.000E+00	FAIL ABUN
PA-231	-9.863E-02	1.274E+00	2.198E+00	0.000E+00	FAIL ABUN
TH-231	2.434E-01	6.011E-01	9.176E-01	0.000E+00	FAIL ABUN
PA-233	-4.248E-03	5.249E-02	8.968E-02	0.000E+00	FAIL ABUN
PA-234	1.778E-01	2.698E-01	4.381E-01	0.000E+00	FAIL ABUN
NP-236	4.384E-03	8.560E-02	1.382E-01	0.000E+00	FAIL ABUN
NP-239	1.138E-01	2.471E-01	3.905E-01	0.000E+00	FAIL ABUN
AM-241	3.081E-01	2.797E-01	4.745E-01	0.000E+00	NOT IDENT.
CM-243	-1.399E-02	1.301E-01	2.040E-01	0.000E+00	FAIL ABUN
AM-246	5.558E-02	1.037E-01	1.848E-01	0.000E+00	NOT IDENT.
CM-247	-5.330E-04	2.930E-02	5.173E-02	0.000E+00	NOT IDENT.
CF-249	4.826E-02	3.253E-02	6.096E-02	0.000E+00	NOT IDENT.
CF-251	-7.790E-02	1.177E-01	2.089E-01	0.000E+00	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691009.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:32:51.
Sample ID          : G245691009          Sample quantity  : 1.44890E+02 GRAM
Detector name      : GAM18              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:02.52  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MJH1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 947037             Detector SN#      :
Matrix Spike ID    :                   LCS ID            : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	2008	10.67*	1.894E+00	2.575E+01	2.575E+01	9.12
NB-95	765.79	379	99.81*	3.202E+00	3.073E-01	3.623E-01	23.98
CD-109	88.03	224	3.72*	6.447E+00	2.415E+00	2.470E+00	57.33
SN-126	64.28	3167	9.60	3.103E+00	2.754E+01	2.754E+01	15.94
	86.94	224	8.90	6.447E+00	1.009E+00	1.009E+00	70.16
	87.57	224	37.00*	6.447E+00	2.428E-01	2.428E-01	57.33
LU-177	112.95	471	6.40	8.002E+00	2.382E+00	1.144E+01	25.37
	208.36	211	11.00*	7.255E+00	6.841E-01	3.285E+00	39.99
TL-208	277.35	-----	6.80	6.258E+00	-----	Line Not Found	-----
	510.84	162	21.60	4.311E+00	4.520E-01	4.520E-01	58.31
	583.14	575	84.20*	3.935E+00	4.500E-01	4.500E-01	18.22
	860.37	29	12.46	2.914E+00	2.057E-01	2.057E-01	169.34
BI-211	72.87	-----	1.27	4.622E+00	-----	Line Not Found	-----
	351.07	1008	12.94*	5.451E+00	3.701E+00	3.701E+00	12.22
BI-212	727.18	168	11.80*	3.338E+00	1.102E+00	1.102E+00	34.53
	785.46	56	1.97	3.138E+00	2.333E+00	2.333E+00	122.82
	1620.62	-----	2.75	1.770E+00	-----	Line Not Found	-----
PB-212	74.81	379	10.70	4.944E+00	1.856E+00	1.856E+00	37.60
	77.11	648	18.00	5.255E+00	1.775E+00	1.775E+00	20.97
	87.30	224	8.00	6.447E+00	1.123E+00	1.123E+00	58.19
	238.63	1657	44.60*	6.792E+00	1.418E+00	1.418E+00	9.51
	300.09	97	3.41	5.985E+00	1.236E+00	1.236E+00	63.09
PO-212	74.81	379	10.70	4.944E+00	1.856E+00	1.856E+00	37.60
	77.11	648	18.00	5.255E+00	1.775E+00	1.775E+00	20.97
	87.30	224	8.00	6.447E+00	1.123E+00	1.123E+00	58.19
	115.19	-----	0.60	8.058E+00	-----	Line Not Found	-----
	238.63	1657	44.60*	6.792E+00	1.418E+00	1.418E+00	9.51
	300.09	97	3.41	5.985E+00	1.236E+00	1.236E+00	63.09
BI-214	609.31	785	46.30*	3.813E+00	1.153E+00	1.153E+00	14.47
	1120.29	205	15.10	2.334E+00	1.510E+00	1.510E+00	28.82
	1764.49	158	15.80	1.695E+00	1.528E+00	1.528E+00	23.18
PB-214	74.81	379	6.21	4.944E+00	3.198E+00	3.198E+00	37.17

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	648	10.50	5.255E+00	3.043E+00	3.043E+00	22.31
	87.30	224	4.67	6.447E+00	1.923E+00	1.923E+00	57.84
	241.98	437	7.49	6.746E+00	2.239E+00	2.239E+00	27.45
	295.21	534	19.20	6.040E+00	1.194E+00	1.194E+00	19.61
	351.92	1008	37.20*	5.451E+00	1.287E+00	1.288E+00	13.29
PO-214	74.81	379	6.21	4.944E+00	3.198E+00	3.198E+00	37.17
	77.11	648	10.50	5.255E+00	3.043E+00	3.043E+00	22.31
	87.30	224	4.67	6.447E+00	1.923E+00	1.923E+00	57.84
	241.98	437	7.49	6.746E+00	2.239E+00	2.239E+00	27.45
	295.21	534	19.20	6.040E+00	1.194E+00	1.194E+00	19.61
	351.92	1008	37.20*	5.451E+00	1.287E+00	1.288E+00	13.29
PO-216	74.81	379	10.70	4.944E+00	1.856E+00	1.856E+00	37.60
	77.11	648	18.00	5.255E+00	1.775E+00	1.775E+00	20.97
	87.30	224	8.00	6.447E+00	1.123E+00	1.123E+00	58.19
	238.63	1657	44.60*	6.792E+00	1.418E+00	1.418E+00	9.51
	300.09	97	3.41	5.985E+00	1.236E+00	1.236E+00	63.09
PO-218	74.81	379	6.21	4.944E+00	3.198E+00	3.198E+00	37.17
	77.11	648	10.50	5.255E+00	3.043E+00	3.043E+00	22.31
	87.30	224	4.67	6.447E+00	1.923E+00	1.923E+00	57.84
	241.98	437	7.49	6.746E+00	2.239E+00	2.239E+00	27.45
	295.21	534	19.20	6.040E+00	1.194E+00	1.194E+00	19.61
	351.92	1008	37.20*	5.451E+00	1.287E+00	1.288E+00	13.29
RA-224	240.98	437	3.95*	6.746E+00	4.245E+00	4.245E+00	26.87
RA-226	609.31	785	46.30*	3.813E+00	1.153E+00	1.153E+00	14.47
	1120.29	205	15.10	2.334E+00	1.510E+00	1.510E+00	28.82
	1764.49	158	15.80	1.695E+00	1.528E+00	1.528E+00	23.18
AC-228	338.32	378	11.40	5.580E+00	1.541E+00	1.541E+00	46.37
	911.07	444	27.70*	2.780E+00	1.495E+00	1.495E+00	20.57
	969.11	269	16.60	2.640E+00	1.590E+00	1.590E+00	30.70
RA-228	338.32	378	11.40	5.580E+00	1.541E+00	1.541E+00	46.37
	911.07	444	27.70*	2.780E+00	1.495E+00	1.495E+00	20.57
	969.11	269	16.60	2.640E+00	1.590E+00	1.590E+00	30.70
TH-228	74.81	379	10.70	4.944E+00	1.856E+00	1.884E+00	36.44
	77.11	648	18.00	5.255E+00	1.775E+00	1.802E+00	20.97
	87.30	224	8.00	6.447E+00	1.123E+00	1.140E+00	57.33
	238.63	1657	44.60*	6.792E+00	1.418E+00	1.439E+00	9.51
	300.09	97	3.41	5.985E+00	1.236E+00	1.255E+00	85.94
TH-229	85.43	357	16.50	6.127E+00	9.140E-01	9.140E-01	40.14
	88.47	224	27.10	6.447E+00	3.314E-01	3.314E-01	57.33
	100.00	764	12.40	7.372E+00	2.165E+00	2.165E+00	20.72
	193.63	-----	4.59*	7.519E+00	-----	Line Not Found	-----
	210.97	-----	3.26	7.230E+00	-----	Line Not Found	-----
TH-230	609.31	785	46.30*	3.813E+00	1.153E+00	1.153E+00	14.47
	1120.29	205	15.10	2.334E+00	1.510E+00	1.510E+00	28.82
	1764.49	158	15.80	1.695E+00	1.528E+00	1.528E+00	23.18
U-231	84.21	357	7.00	6.127E+00	2.155E+00	2.643E+01	40.14
	92.29	9082	17.30	6.945E+00	1.958E+01	2.402E+02	8.84
	95.87	308	28.00*	7.099E+00	4.014E-01	4.924E+00	48.23
	108.00	-----	13.10	7.835E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-232	338.32	378	11.40	5.580E+00	1.541E+00	1.541E+00	22.85
	911.07	444	27.70*	2.780E+00	1.495E+00	1.495E+00	20.57
	969.11	269	16.60	2.640E+00	1.590E+00	1.590E+00	30.70
PA-234M	766.42	379	0.32	3.202E+00	9.586E+01	9.586E+01	55.45
	1001.03	811	0.84*	2.568E+00	9.734E+01	9.734E+01	14.35
TH-234	63.29	3167	3.80*	3.103E+00	6.957E+01	6.957E+01	18.63
	92.38	9082	5.41	6.945E+00	6.262E+01	6.262E+01	18.19
U-234	609.31	785	46.30*	3.813E+00	1.153E+00	1.153E+00	14.47
	1120.29	205	15.10	2.334E+00	1.510E+00	1.510E+00	28.82
	1764.49	158	15.80	1.695E+00	1.528E+00	1.528E+00	23.18
U-235	89.95	-----	2.70	6.701E+00	-----	Line Not Found	-----
	93.35	9082	4.50	6.945E+00	7.529E+01	7.529E+01	28.09
	105.00	-----	2.10	7.709E+00	-----	Line Not Found	-----
	143.76	422	10.50*	8.221E+00	1.266E+00	1.266E+00	31.17
	163.35	194	4.70	8.005E+00	1.338E+00	1.338E+00	62.37
	185.71	2257	54.00	7.650E+00	1.416E+00	1.416E+00	8.11
	205.31	149	4.70	7.330E+00	1.120E+00	1.120E+00	62.96
NP-237	86.50	224	12.60*	6.447E+00	7.129E-01	7.129E-01	60.93
	95.87	308	2.60	7.099E+00	4.323E+00	4.323E+00	53.47
U-238	63.29	3167	3.80*	3.103E+00	6.957E+01	6.957E+01	18.63
	92.38	9082	5.41	6.945E+00	6.262E+01	6.262E+01	8.84
AM-243	74.67	379	66.00*	4.944E+00	3.009E-01	3.009E-01	36.42
	86.72	224	0.34	6.447E+00	2.673E+01	2.673E+01	57.33
	117.66	-----	0.55	8.112E+00	-----	Line Not Found	-----
	142.18	-----	0.13	8.232E+00	-----	Line Not Found	-----
ANH-511	511.00	162	100.00*	4.311E+00	9.763E-02	9.763E-02	57.71

Flag: "\*" = Keyline

Total number of lines in spectrum 44  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 41 93.18%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.575E+01	2.575E+01	0.235E+01	9.12	
NB-95	64.02D	1.18	3.073E-01	3.623E-01	0.869E-01	23.98	
CD-109	464.00D	1.02	2.415E+00	2.470E+00	1.416E+00	57.33	
SN-126	1.00E+05Y	1.00	2.428E-01	2.428E-01	1.392E-01	57.33	
LU-177	6.71D	4.80	6.841E-01	3.285E+00	1.314E+00	39.99	
TL-208	1.41E+10Y	1.00	4.500E-01	4.500E-01	0.820E-01	18.22	
BI-211	7.04E+08Y	1.00	3.701E+00	3.701E+00	0.452E+00	12.22	
BI-212	1.41E+10Y	1.00	1.102E+00	1.102E+00	0.381E+00	34.53	
PB-212	1.41E+10Y	1.00	1.418E+00	1.418E+00	0.135E+00	9.51	
PO-212	1.41E+10Y	1.00	1.418E+00	1.418E+00	0.135E+00	9.51	
BI-214	1600.00Y	1.00	1.153E+00	1.153E+00	0.167E+00	14.47	
PB-214	1600.00Y	1.00	1.287E+00	1.288E+00	0.171E+00	13.29	
PO-214	1600.00Y	1.00	1.287E+00	1.288E+00	0.171E+00	13.29	
PO-216	1.41E+10Y	1.00	1.418E+00	1.418E+00	0.135E+00	9.51	
PO-218	1600.00Y	1.00	1.287E+00	1.288E+00	0.171E+00	13.29	
RA-224	1.41E+10Y	1.00	4.245E+00	4.245E+00	1.141E+00	26.87	
RA-226	1600.00Y	1.00	1.153E+00	1.153E+00	0.167E+00	14.47	
AC-228	1.41E+10Y	1.00	1.495E+00	1.495E+00	0.307E+00	20.57	
RA-228	1.41E+10Y	1.00	1.495E+00	1.495E+00	0.307E+00	20.57	
TH-228	1.91Y	1.02	1.418E+00	1.439E+00	0.137E+00	9.51	
TH-229	7340.00Y	1.00	3.314E-01	3.314E-01	1.900E-01	57.33	K
TH-230	4.47E+09Y	1.00	1.153E+00	1.153E+00	0.167E+00	14.47	
U-231	4.20D	12.3	4.014E-01	4.924E+00	2.375E+00	48.23	
TH-232	1.41E+10Y	1.00	1.495E+00	1.495E+00	0.307E+00	20.57	
PA-234M	4.47E+09Y	1.00	9.734E+01	9.734E+01	1.397E+01	14.35	
TH-234	4.47E+09Y	1.00	6.957E+01	6.957E+01	1.296E+01	18.63	
U-234	4.47E+09Y	1.00	1.153E+00	1.153E+00	0.167E+00	14.47	
U-235	7.04E+08Y	1.00	1.266E+00	1.266E+00	0.395E+00	31.17	
NP-237	2.14E+06Y	1.00	7.129E-01	7.129E-01	4.343E-01	60.93	
U-238	4.47E+09Y	1.00	6.957E+01	6.957E+01	1.296E+01	18.63	
AM-243	7380.00Y	1.00	3.009E-01	3.009E-01	1.096E-01	36.42	
ANH-511	1.00E+09Y	1.00	9.763E-02	9.763E-02	5.634E-02	57.71	

Total Activity : 2.971E+02 3.044E+02

Grand Total Activity : 2.971E+02 3.044E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G245691009

Page : 5  
Acquisition date : 9-FEB-2010 15:32:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	111.35	131	1050	1.18	221.79	218	12	1.82E-02	84.0	7.95E+00	T
0	257.86	155	443	0.96	514.71	509	11	2.15E-02	55.1	6.52E+00	
0	270.13	149	326	1.42	539.24	535	9	2.07E-02	46.6	6.35E+00	T
0	328.27	119	243	1.19	655.49	651	9	1.65E-02	51.1	5.68E+00	T
0	462.43	132	234	1.61	923.72	917	13	1.83E-02	51.0	4.60E+00	T
0	794.16	72	125	1.16	1587.01	1582	11	9.95E-03	66.1	3.11E+00	
0	938.04	17	152	1.74	1874.71	1865	16	2.43E-03	****	2.71E+00	T
1	964.38	105	103	2.32	1927.38	1916	26	1.46E-02	44.7	2.65E+00	T
0	1237.57	56	102	0.93	2473.67	2468	13	7.80E-03	80.1	2.15E+00	T
0	1377.24	36	69	1.23	2752.98	2745	16	4.96E-03	****	1.98E+00	T
0	1728.74	44	18	1.15	3455.93	3447	15	6.05E-03	52.8	1.71E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691009.CNF;1
* Acquisition date   : 9-FEB-2010 15:32:51.  Detector SN#      :
* Detector ID        : GAM18                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:02.52             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G245691009             Analyst initials: MJH1
* Batch Number       : 947037                 Sample Quantity : 1.44890E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23.2MS Isotope       :
* MSD ID              :                      MSD Isotope       :
* LCS ID              : 1032-A                 LCS Isotope     :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.575E+01	2.349E+00	3.979E-01	3.019E-02	64.725
NB-95	3.623E-01	8.686E-02	5.531E-02	5.059E-03	6.550
CD-109	2.470E+00	1.416E+00	2.138E+00	1.976E-01	1.155
SN-126	2.428E-01	1.392E-01	2.139E-01	1.971E-02	1.135
LU-177	3.285E+00	1.314E+00	1.398E+00	7.581E-02	2.351
TL-208	4.500E-01	8.200E-02	4.655E-02	3.649E-03	9.666
BI-211	3.701E+00	4.525E-01	2.702E-01	1.735E-02	13.697
BI-212	1.102E+00	3.806E-01	3.581E-01	3.567E-02	3.077
PB-212	1.418E+00	1.348E-01	7.838E-02	5.599E-03	18.086
PO-212	1.418E+00	1.348E-01	7.838E-02	5.599E-03	18.086
BI-214	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
PB-214	1.288E+00	1.711E-01	9.417E-02	7.791E-03	13.671
PO-214	1.288E+00	1.711E-01	9.417E-02	7.791E-03	13.671
PO-216	1.418E+00	1.348E-01	7.838E-02	5.599E-03	18.086
PO-218	1.288E+00	1.711E-01	9.417E-02	7.791E-03	13.671
RA-224	4.245E+00	1.141E+00	8.909E-01	4.963E-02	4.765
RA-226	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
AC-228	1.495E+00	3.075E-01	1.645E-01	2.180E-02	9.086

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.495E+00	3.075E-01	1.645E-01	2.180E-02	9.086
TH-228	1.439E+00	1.369E-01	7.957E-02	5.684E-03	18.086
TH-229	3.314E-01	1.900E-01	7.916E-01	4.238E-02	0.419
TH-230	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
U-231	4.924E+00	2.375E+00	2.274E+00	1.822E-01	2.165
TH-232	1.495E+00	3.075E-01	1.645E-01	2.180E-02	9.086
PA-234M	9.734E+01	1.397E+01	5.232E+00	5.644E-01	18.603
TH-234	6.957E+01	1.296E+01	3.235E+00	5.702E-01	21.509
U-234	1.153E+00	1.668E-01	8.916E-02	7.964E-03	12.927
U-235	1.266E+00	3.948E-01	3.451E-01	5.588E-02	3.670
NP-237	7.129E-01	4.343E-01	5.605E-01	1.265E-01	1.272
U-238	6.957E+01	1.296E+01	3.235E+00	5.702E-01	21.509
AM-243	3.009E-01	1.096E-01	1.320E-01	1.102E-02	2.279
ANH-511	9.763E-02	5.634E-02	3.685E-02	2.434E-03	2.649

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.094E-01		2.597E-01	4.373E-01	3.169E-02	0.250
NA-22	-1.717E-02		3.255E-02	5.119E-02	3.483E-03	-0.335
NA-24	2.933E-01		3.344E-01	Half-Life	too short	
AL-26	-1.739E-02		2.044E-02	2.880E-02	1.682E-03	-0.604
TI-44	3.276E-01	+	6.869E-02	9.572E-02	8.184E-03	3.423
SC-46	-1.058E-02		2.971E-02	4.726E-02	5.271E-03	-0.224
V-48	9.902E-03		5.441E-02	8.926E-02	8.829E-03	0.111
CR-51	-1.220E-01		3.074E-01	4.856E-01	3.127E-02	-0.251
MN-52	9.205E-02		1.668E-01	2.868E-01	2.113E-02	0.321
MN-54	-9.120E-03		3.088E-02	4.986E-02	5.107E-03	-0.183
CO-56	-3.386E-02		3.092E-02	4.664E-02	4.868E-03	-0.726
CO-57	1.043E-02		2.984E-02	4.834E-02	2.863E-03	0.216
CO-58	-2.028E-02		3.052E-02	4.801E-02	4.739E-03	-0.422
FE-59	-3.069E-02		6.806E-02	1.097E-01	9.029E-03	-0.280
CO-60	1.418E-02		3.035E-02	5.156E-02	3.896E-03	0.275
ZN-65	5.018E-02		7.933E-02	1.194E-01	8.410E-03	0.420
GE-68	4.769E-01		9.203E-01	1.588E+00	1.262E-01	0.300
AS-73	1.571E+00		1.472E+00	2.528E+00	2.004E-01	0.622
AS-74	3.646E-03		7.618E-02	1.233E-01	8.858E-03	0.030
SE-75	4.029E-02		4.135E-02	6.534E-02	3.737E-03	0.617
BR-77	3.105E+00		8.434E+00	1.408E+01	9.395E-01	0.220
SR-82	-2.113E-01		3.279E-01	4.942E-01	4.602E-02	-0.428
RB-83	2.394E-02		5.547E-02	9.291E-02	6.197E-03	0.258
RB-84	8.627E-02		5.921E-02	1.043E-01	1.149E-02	0.827
KR-85	1.286E+01		6.780E+00	1.074E+01	7.116E-01	1.197
SR-85	6.596E-02		3.477E-02	5.509E-02	3.650E-03	1.197
RB-86	1.178E-01		5.960E-01	1.007E+00	8.020E-02	0.117
Y-88	-4.381E-02		2.912E-02	3.789E-02	2.158E-03	-1.156
ZR-88	-2.112E-02		2.463E-02	3.961E-02	2.278E-03	-0.533



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	6.751E+00		1.406E+01	2.393E+01	1.415E+00	0.282
NB-94	1.620E-02		2.702E-02	4.646E-02	3.811E-03	0.349
NB-95M	7.862E-03		1.222E-01	1.775E-01	1.302E-02	0.044
ZR-95	4.264E-02		5.999E-02	9.906E-02	9.747E-03	0.430
NB-97	-1.303E-01		4.081E-02	Half-Life	too short	
ZR-97	4.437E+00		8.665E-01	Half-Life	too short	
MO-99	1.271E+01		1.108E+01	1.914E+01	2.921E+00	0.664
TC-99M	-1.269E+10		2.548E+10	Half-Life	too short	
RH-101	-1.357E-03		3.056E-02	5.034E-02	2.706E-03	-0.027
RH-102	3.398E-03		2.372E-02	3.943E-02	2.504E-03	0.086
RU-103	-8.424E-04		3.193E-02	5.241E-02	6.805E-03	-0.016
RH-106	-1.333E-02		2.706E-01	4.349E-01	5.471E-02	-0.031
RU-106	-1.333E-02		2.706E-01	4.349E-01	3.200E-02	-0.031
AG-108M	-1.258E-02		2.546E-02	4.124E-02	2.695E-03	-0.305
AG-110M	-4.940E-02		2.823E-02	4.238E-02	3.342E-03	-1.166
IN-111	1.787E-01		1.050E+00	1.527E+00	8.536E-02	0.117
IN-113M	-3.127E-02		3.663E-02	5.900E-02	3.619E-03	-0.530
SN-113	-3.127E-02		3.663E-02	5.900E-02	3.619E-03	-0.530
IN-114M	-9.837E-02		1.847E-01	2.660E-01	1.420E-02	-0.370
CD-115	-1.525E+00		8.746E+00	1.416E+01	9.519E-01	-0.108
SN-117M	2.073E-02		6.017E-02	9.121E-02	4.848E-03	0.227
SB-122	1.021E+00		1.734E+00	2.906E+00	2.025E-01	0.351
I-123	1.108E+00		3.296E+00	Half-Life	too short	
TE-123M	5.265E-03		3.132E-02	4.716E-02	2.544E-03	0.112
I-124	4.456E-02		6.121E-01	8.567E-01	6.195E-02	0.052
SB-124	5.495E-03		6.244E-02	1.042E-01	7.186E-03	0.053
SB-125	5.033E-02		7.344E-02	1.261E-01	7.877E-03	0.399
TE-125M	7.299E+00		1.348E+01	1.975E+01	1.736E+00	0.370
I-126	-1.613E-01		1.536E-01	2.431E-01	1.868E-02	-0.664
SB-126	-8.008E-03		1.272E-01	1.815E-01	1.536E-02	-0.044
SB-127	5.134E-01		1.097E+00	1.879E+00	2.048E-01	0.273
XE-127	1.490E-02		4.915E-02	7.299E-02	3.940E-03	0.204
I-131	-2.585E-02		8.870E-02	1.475E-01	9.521E-03	-0.175
TE-132	-6.795E-02		6.267E-01	1.032E+00	1.472E-01	-0.066
BA-133	1.764E-02		4.078E-02	5.836E-02	6.741E-03	0.302
I-133	3.515E-03		2.460E-03	Half-Life	too short	
CS-134	1.101E-01		4.696E-02	7.575E-02	7.327E-03	1.453
CS-135	1.240E-01		1.577E-01	2.343E-01	1.771E-02	0.529
I-135	-3.468E+09		2.090E+09	Half-Life	too short	
CS-136	-6.510E-02		7.769E-02	1.216E-01	1.090E-02	-0.535
BA-137M	4.090E-02		3.020E-02	5.368E-02	4.092E-03	0.762
CS-137	4.323E-02		3.193E-02	5.674E-02	4.336E-03	0.762
CE-139	8.493E-04		3.268E-02	4.879E-02	2.561E-03	0.017
BA-140	3.343E-02		2.141E-01	3.521E-01	1.152E-01	0.095
LA-140	-3.683E-04		5.998E-02	9.956E-02	6.830E-03	-0.004
CE-141	3.099E-01		8.105E-02	1.274E-01	7.273E-03	2.433
CE-143	5.935E-04		9.817E-05	Half-Life	too short	
CE-144	-2.488E-01		2.386E-01	3.647E-01	5.157E-02	-0.682

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-144	3.427E-03		2.765E-02	4.649E-02	3.774E-03	0.074
PR-144	2.322E-01		1.874E+00	3.150E+00	2.557E-01	0.074
PM-146	2.473E-02		3.583E-02	5.978E-02	5.318E-03	0.414
ND-147	2.928E-01		4.527E-01	7.631E-01	1.065E-01	0.384
PM-149	-1.984E+01		8.078E+01	1.299E+02	1.837E+01	-0.153
EU-152	3.954E-02		1.099E-01	1.327E-01	8.661E-03	0.298
GD-153	8.958E-01	+	1.856E-01	2.098E-01	1.641E-02	4.269
EU-154	-3.615E-02		8.967E-02	1.424E-01	1.422E-02	-0.254
EU-155	1.053E-01		1.312E-01	2.167E-01	1.549E-02	0.486
TB-160	6.090E-02		1.152E-01	1.946E-01	2.137E-02	0.313
HO-166M	1.005E-02		4.745E-02	8.004E-02	6.672E-03	0.126
TM-171	-3.188E+01		4.511E+01	6.573E+01	5.255E+00	-0.485
LU-176	-1.754E-02		2.126E-02	3.305E-02	1.903E-03	-0.531
LU-177M	-1.374E-01		1.442E-01	2.297E-01	1.357E-02	-0.598
HF-181	-2.183E-02		3.344E-02	5.313E-02	3.401E-03	-0.411
W-181	4.533E+00		7.661E-01	1.169E+00	9.273E-02	3.878
TA-182	-1.252E-01		1.445E-01	2.239E-01	1.369E-02	-0.559
RE-183	3.124E-01	+	1.875E-01	2.013E-01	1.062E-02	1.552
RE-184	1.029E-01		2.321E-01	3.415E-01	1.918E-02	0.301
OS-185	-2.975E-02		3.776E-02	5.773E-02	4.341E-03	-0.515
RE-188	-3.267E-03		1.701E-01	2.885E-01	1.544E-02	-0.011
W-188	-2.389E+00		7.317E+00	1.019E+01	5.836E-01	-0.234
IR-192	4.226E-03		2.781E-02	4.516E-02	2.619E-03	0.094
AU-195	2.608E+00	+	5.405E-01	6.302E-01	4.822E-02	4.139
TL-200	-1.601E-04		1.811E-04	Half-Life too short		
TL-201	-8.638E-02		7.673E+00	1.143E+01	6.000E-01	-0.008
TL-202	4.993E-03		5.666E-02	9.449E-02	5.761E-03	0.053
HG-203	-2.690E-03		3.493E-02	5.670E-02	3.438E-03	-0.047
BI-207	-4.943E-03		4.132E-02	6.698E-02	5.529E-03	-0.074
TL-207	2.434E-01		6.134E-01	8.820E-01	1.456E-01	0.276
PO-209	1.817E+00		5.608E+00	9.363E+00	1.056E+00	0.194
BI-210	-2.933E+00		6.831E+00	1.131E+01	8.747E-01	-0.259
PB-210	-2.933E+00		6.831E+00	1.131E+01	8.747E-01	-0.259
PO-210	-2.933E+00		6.830E+00	1.131E+01	7.520E-01	-0.259
PB-211	-7.131E-02		7.808E-01	1.298E+00	8.092E-01	-0.055
PO-215	2.434E-01		6.134E-01	8.820E-01	1.456E-01	0.276
RN-219	-9.844E-02		3.367E-01	5.555E-01	7.562E-02	-0.177
RN-220	-1.573E+01		2.165E+01	3.380E+01	2.322E+00	-0.465
RA-223	2.434E-01		6.134E-01	8.820E-01	1.456E-01	0.276
AC-227	2.636E-01		3.971E-01	5.871E-01	8.155E-02	0.449
TH-227	2.636E-01		3.979E-01	5.871E-01	9.888E-02	0.449
PA-231	-9.863E-02		1.300E+00	2.107E+00	2.896E-01	-0.047
TH-231	2.434E-01		6.134E-01	8.820E-01	1.456E-01	0.276
PA-233	-4.248E-03		5.356E-02	8.613E-02	5.276E-03	-0.049
PA-234	1.778E-01		2.753E-01	4.314E-01	8.510E-02	0.412
NP-236	4.384E-03		8.735E-02	1.309E-01	6.933E-03	0.033
NP-239	1.138E-01		2.521E-01	3.672E-01	2.273E-02	0.310
AM-241	3.081E-01		2.854E-01	4.401E-01	3.650E-02	0.700

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.399E-02		1.328E-01	1.913E-01	1.369E-02	-0.073
AM-246	5.558E-02		1.058E-01	1.826E-01	1.444E-02	0.304
CM-247	-5.330E-04		2.990E-02	4.996E-02	2.910E-03	-0.011
CF-249	4.826E-02		3.320E-02	5.883E-02	3.382E-03	0.820
CF-251	-7.790E-02		1.201E-01	1.982E-01	1.047E-02	-0.393

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691009          *
* Acquisition date   : 9-FEB-2010 15:32:51 Detector SN#      :              *
* Detector ID        : GAM18                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:02.52             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691009              Analyst initials: MJH1         *
* Batch Number       : 947037                  Sample Quantity : 1.4489E+02 GRAM  *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope       :              *
* MSD DPM             : 0.000                     MSD Isotope   :              *
* LCS DPM             : 0.000                     LCS Isotope    :              *
* LCSD DPM            : 0.000                     LCSD Isotope   :              *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.575E+01	2.302E+00	2.001E-01	1.174E+00
NB-95	3.623E-01	8.512E-02	2.824E-02	4.343E-02
CD-109	2.470E+00	1.388E+00	1.144E+00	7.079E-01
SN-126	2.428E-01	1.364E-01	1.145E-01	6.958E-02
LU-177	3.285E+00	1.288E+00	7.345E-01	6.569E-01
TL-208	4.500E-01	8.036E-02	2.391E-02	4.100E-02
BI-211	3.701E+00	4.434E-01	1.404E-01	2.262E-01
BI-212	1.102E+00	3.730E-01	1.831E-01	1.903E-01
PB-212	1.418E+00	1.321E-01	4.107E-02	6.742E-02
PO-212	1.418E+00	1.321E-01	4.107E-02	6.742E-02
BI-214	1.153E+00	1.634E-01	4.575E-02	8.338E-02
PB-214	1.288E+00	1.677E-01	4.893E-02	8.557E-02
PO-214	1.288E+00	1.677E-01	4.893E-02	8.557E-02
PO-216	1.418E+00	1.321E-01	4.107E-02	6.742E-02
PO-218	1.288E+00	1.677E-01	4.893E-02	8.557E-02
RA-224	4.245E+00	1.118E+00	4.667E-01	5.703E-01
RA-226	1.153E+00	1.634E-01	4.575E-02	8.338E-02
AC-228	1.495E+00	3.013E-01	8.365E-02	1.537E-01
RA-228	1.495E+00	3.013E-01	8.365E-02	1.537E-01
TH-228	1.439E+00	1.341E-01	4.169E-02	6.844E-02
TH-229	2.595E-01	4.565E-01	4.166E-01	2.329E-01
TH-230	1.153E+00	1.634E-01	4.575E-02	8.338E-02
U-231	4.924E+00	2.327E+00	1.215E+00	1.187E+00
TH-232	1.495E+00	3.013E-01	8.365E-02	1.537E-01
PA-234M	9.734E+01	1.369E+01	2.655E+00	6.985E+00
TH-234	6.957E+01	1.270E+01	1.743E+00	6.481E+00
U-234	1.153E+00	1.634E-01	4.575E-02	8.338E-02
U-235	1.266E+00	3.869E-01	1.828E-01	1.974E-01
NP-237	7.129E-01	4.256E-01	3.001E-01	2.172E-01
U-238	6.957E+01	1.270E+01	1.743E+00	6.481E+00
AM-243	3.009E-01	1.074E-01	7.089E-02	5.480E-02
ANH-511	9.763E-02	5.522E-02	1.899E-02	2.817E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	1.094E-01	2.545E-01	2.257E-01	1.299E-01 NOT IDENT.
NA-22	-1.717E-02	3.190E-02	2.583E-02	1.627E-02 NOT IDENT.
NA-24	2.933E+05	6.554E+05	0.000E+00	3.344E+05 SHORT HLIF
AL-26	-1.739E-02	2.003E-02	1.441E-02	1.022E-02 NOT IDENT.
TI-44	3.276E-01	6.732E-02	5.135E-02	3.434E-02 FAIL ABUN
SC-46	-1.058E-02	2.911E-02	2.405E-02	1.485E-02 FAIL ABUN
V-48	9.902E-03	5.332E-02	4.531E-02	2.720E-02 NOT IDENT.
CR-51	-1.220E-01	3.013E-01	2.528E-01	1.537E-01 NOT IDENT.
MN-52	9.205E-02	1.635E-01	1.443E-01	8.340E-02 NOT IDENT.
MN-54	-9.120E-03	3.026E-02	2.540E-02	1.544E-02 NOT IDENT.
CO-56	-3.386E-02	3.030E-02	2.375E-02	1.546E-02 FAIL ABUN
CO-57	1.043E-02	2.924E-02	2.569E-02	1.492E-02 NOT IDENT.
CO-58	-2.028E-02	2.991E-02	2.448E-02	1.526E-02 NOT IDENT.
FE-59	-3.069E-02	6.670E-02	5.554E-02	3.403E-02 FAIL ABUN
CO-60	1.418E-02	2.975E-02	2.599E-02	1.518E-02 NOT IDENT.
ZN-65	5.018E-02	7.774E-02	6.043E-02	3.967E-02 NOT IDENT.
GE-68	4.769E-01	9.019E-01	8.044E-01	4.601E-01 NOT IDENT.
AS-73	1.571E+00	1.442E+00	1.367E+00	7.359E-01 NOT IDENT.
AS-74	3.646E-03	7.465E-02	6.330E-02	3.809E-02 NOT IDENT.
SE-75	4.029E-02	4.052E-02	3.416E-02	2.068E-02 NOT IDENT.
BR-77	3.105E+00	8.266E+00	7.253E+00	4.217E+00 FAIL ABUN
SR-82	-2.113E-01	3.213E-01	2.522E-01	1.639E-01 NOT IDENT.
RB-83	2.394E-02	5.436E-02	4.785E-02	2.774E-02 NOT IDENT.
RB-84	8.627E-02	5.802E-02	5.307E-02	2.960E-02 NOT IDENT.
KR-85	1.286E+01	6.644E+00	5.533E+00	3.390E+00 NOT IDENT.
SR-85	6.596E-02	3.408E-02	2.838E-02	1.739E-02 NOT IDENT.
RB-86	1.178E-01	5.841E-01	5.103E-01	2.980E-01 NOT IDENT.
Y-88	-4.381E-02	2.854E-02	1.895E-02	1.456E-02 NOT IDENT.
ZR-88	-2.112E-02	2.414E-02	2.053E-02	1.232E-02 NOT IDENT.
Y-91	6.751E+00	1.378E+01	1.209E+01	7.032E+00 NOT IDENT.
NB-94	1.620E-02	2.648E-02	2.376E-02	1.351E-02 NOT IDENT.
NB-95M	7.862E-03	1.198E-01	9.300E-02	6.112E-02 NOT IDENT.
ZR-95	4.264E-02	5.879E-02	5.059E-02	2.999E-02 NOT IDENT.
NB-97	-1.303E+05	7.998E+04	0.000E+00	4.081E+04 SHORT HLIF
ZR-97	4.437E+06	1.698E+06	0.000E+00	8.665E+05 SHORT HLIF
MO-99	1.271E+01	1.086E+01	9.781E+00	5.539E+00 NOT IDENT.
TC-99M	-1.269E+16	4.994E+16	0.000E+00	0.000E+00 SHORT HLIF
RH-101	-1.357E-03	2.995E-02	2.648E-02	1.528E-02 NOT IDENT.
RH-102	3.398E-03	2.325E-02	2.035E-02	1.186E-02 FAIL ABUN
RU-103	-8.424E-04	3.129E-02	2.702E-02	1.596E-02 FAIL ABUN
RH-106	-1.333E-02	2.652E-01	2.231E-01	1.353E-01 FAIL ABUN
RU-106	-1.333E-02	2.652E-01	2.231E-01	1.353E-01 FAIL ABUN
AG-108M	-1.258E-02	2.495E-02	2.133E-02	1.273E-02 NOT IDENT.
AG-110M	-4.940E-02	2.766E-02	2.171E-02	1.411E-02 FAIL ABUN
IN-111	1.787E-01	1.029E+00	7.998E-01	5.250E-01 NOT IDENT.
IN-113M	-3.127E-02	3.590E-02	3.058E-02	1.832E-02 NOT IDENT.
SN-113	-3.127E-02	3.590E-02	3.058E-02	1.832E-02 NOT IDENT.
IN-114M	-9.837E-02	1.810E-01	1.400E-01	9.236E-02 NOT IDENT.
CD-115	-1.525E+00	8.571E+00	7.292E+00	4.373E+00 NOT IDENT.
SN-117M	2.073E-02	5.897E-02	4.821E-02	3.008E-02 NOT IDENT.
SB-122	1.021E+00	1.699E+00	1.494E+00	8.670E-01 NOT IDENT.
I-123	1.108E+06	6.459E+06	0.000E+00	3.296E+06 SHORT HLIF
TE-123M	5.265E-03	3.069E-02	2.492E-02	1.566E-02 NOT IDENT.
I-124	4.456E-02	5.999E-01	4.397E-01	3.060E-01 FAIL ABUN
SB-124	5.495E-03	6.120E-02	5.221E-02	3.122E-02 FAIL ABUN
SB-125	5.033E-02	7.197E-02	6.521E-02	3.672E-02 FAIL ABUN
TE-125M	7.299E+00	1.321E+01	1.052E+01	6.741E+00 NOT IDENT.
I-126	-1.613E-01	1.505E-01	1.245E-01	7.680E-02 NOT IDENT.
SB-126	-8.008E-03	1.246E-01	9.278E-02	6.359E-02 FAIL ABUN
SB-127	5.134E-01	1.075E+00	9.619E-01	5.487E-01 NOT IDENT.
XE-127	1.490E-02	4.816E-02	3.838E-02	2.457E-02 FAIL ABUN
I-131	-2.585E-02	8.693E-02	7.656E-02	4.435E-02 NOT IDENT.
TE-132	-6.795E-02	6.142E-01	5.413E-01	3.134E-01 FAIL ABUN
BA-133	1.764E-02	3.996E-02	3.031E-02	2.039E-02 NOT IDENT.
I-133	3.515E+03	4.821E+03	0.000E+00	2.460E+03 SHORT HLIF
CS-134	1.101E-01	4.602E-02	3.864E-02	2.348E-02 NOT IDENT.
CS-135	1.240E-01	1.545E-01	1.225E-01	7.883E-02 NOT IDENT.
I-135	-3.468E+15	4.097E+15	0.000E+00	2.090E+15 SHORT HLIF
CS-136	-6.510E-02	7.613E-02	6.165E-02	3.884E-02 FAIL ABUN
BA-137M	4.090E-02	2.960E-02	2.749E-02	1.510E-02 NOT IDENT.
CS-137	4.323E-02	3.129E-02	2.906E-02	1.596E-02 NOT IDENT.
CE-139	8.493E-04	3.203E-02	2.576E-02	1.634E-02 NOT IDENT.
BA-140	3.343E-02	2.098E-01	1.812E-01	1.071E-01 FAIL ABUN

LA-140	-3.683E-04	5.878E-02	4.997E-02	2.999E-02	FAIL ABUN
CE-141	3.099E-01	7.943E-02	6.747E-02	4.053E-02	NOT IDENT.
CE-143	5.935E+02	1.924E+02	0.000E+00	9.817E+01	SHORT HLIF
CE-144	-2.488E-01	2.338E-01	1.935E-01	1.193E-01	NOT IDENT.
PM-144	3.427E-03	2.710E-02	2.379E-02	1.383E-02	NOT IDENT.
PR-144	2.322E-01	1.836E+00	1.612E+00	9.369E-01	NOT IDENT.
PM-146	2.473E-02	3.511E-02	3.088E-02	1.791E-02	NOT IDENT.
ND-147	2.928E-01	4.436E-01	3.928E-01	2.263E-01	NOT IDENT.
PM-149	-1.984E+01	7.916E+01	6.778E+01	4.039E+01	NOT IDENT.
EU-152	3.954E-02	1.077E-01	6.898E-02	5.494E-02	FAIL ABUN
GD-153	8.958E-01	1.819E-01	1.121E-01	9.281E-02	FAIL ABUN
EU-154	-3.615E-02	8.788E-02	7.185E-02	4.483E-02	NOT IDENT.
EU-155	1.053E-01	1.286E-01	1.155E-01	6.561E-02	FAIL ABUN
TB-160	6.090E-02	1.129E-01	9.902E-02	5.761E-02	FAIL ABUN
HO-166M	1.005E-02	4.650E-02	4.093E-02	2.373E-02	FAIL ABUN
TM-171	-3.188E+01	4.421E+01	3.538E+01	2.255E+01	NOT IDENT.
LU-176	-1.754E-02	2.084E-02	1.722E-02	1.063E-02	FAIL ABUN
LU-177M	-1.374E-01	1.413E-01	1.189E-01	7.208E-02	FAIL ABUN
HF-181	-2.183E-02	3.278E-02	2.741E-02	1.672E-02	NOT IDENT.
W-181	4.533E+00	7.508E-01	6.296E-01	3.831E-01	NOT IDENT.
TA-182	-1.252E-01	1.416E-01	1.131E-01	7.225E-02	FAIL ABUN
RE-183	3.124E-01	1.837E-01	1.063E-01	9.374E-02	FAIL ABUN
RE-184	1.029E-01	2.274E-01	1.787E-01	1.160E-01	NOT IDENT.
OS-185	-2.975E-02	3.700E-02	2.958E-02	1.888E-02	NOT IDENT.
RE-188	-3.267E-03	1.667E-01	1.526E-01	8.507E-02	NOT IDENT.
W-188	-2.389E+00	7.171E+00	5.316E+00	3.659E+00	FAIL ABUN
IR-192	4.226E-03	2.726E-02	2.352E-02	1.391E-02	FAIL ABUN
AU-195	2.608E+00	5.297E-01	3.364E-01	2.703E-01	FAIL ABUN
TL-200	-1.601E+02	3.550E+02	0.000E+00	1.811E+02	SHORT HLIF
TL-201	-8.638E-02	7.519E+00	6.034E+00	3.836E+00	NOT IDENT.
TL-202	4.993E-03	5.553E-02	4.885E-02	2.833E-02	NOT IDENT.
HG-203	-2.690E-03	3.423E-02	2.961E-02	1.747E-02	NOT IDENT.
BI-207	-4.943E-03	4.049E-02	3.394E-02	2.066E-02	FAIL ABUN
TL-207	2.434E-01	6.011E-01	4.591E-01	3.067E-01	FAIL ABUN
PO-209	1.817E+00	5.496E+00	4.763E+00	2.804E+00	NOT IDENT.
BI-210	-2.933E+00	6.694E+00	6.130E+00	3.415E+00	NOT IDENT.
PB-210	-2.933E+00	6.694E+00	6.130E+00	3.415E+00	NOT IDENT.
PO-210	-2.933E+00	6.693E+00	6.130E+00	3.415E+00	NOT IDENT.
PB-211	-7.131E-02	7.652E-01	6.722E-01	3.904E-01	NOT IDENT.
PO-215	2.434E-01	6.011E-01	4.591E-01	3.067E-01	FAIL ABUN
RN-219	-9.844E-02	3.300E-01	2.877E-01	1.684E-01	FAIL ABUN
RN-220	-1.573E+01	2.122E+01	1.738E+01	1.082E+01	NOT IDENT.
RA-223	2.434E-01	6.011E-01	4.591E-01	3.067E-01	FAIL ABUN
AC-227	2.636E-01	3.891E-01	3.072E-01	1.985E-01	FAIL ABUN
TH-227	2.636E-01	3.899E-01	3.072E-01	1.989E-01	FAIL ABUN
PA-231	-9.863E-02	1.274E+00	1.100E+00	6.500E-01	FAIL ABUN
TH-231	2.434E-01	6.011E-01	4.591E-01	3.067E-01	FAIL ABUN
PA-233	-4.248E-03	5.249E-02	4.487E-02	2.678E-02	FAIL ABUN
PA-234	1.778E-01	2.698E-01	2.192E-01	1.376E-01	FAIL ABUN
NP-236	4.384E-03	8.560E-02	6.916E-02	4.367E-02	FAIL ABUN
NP-239	1.138E-01	2.471E-01	1.954E-01	1.261E-01	FAIL ABUN
AM-241	3.081E-01	2.797E-01	2.374E-01	1.427E-01	NOT IDENT.
CM-243	-1.399E-02	1.301E-01	1.020E-01	6.639E-02	FAIL ABUN
AM-246	5.558E-02	1.037E-01	9.247E-02	5.288E-02	NOT IDENT.
CM-247	-5.330E-04	2.930E-02	2.588E-02	1.495E-02	NOT IDENT.
CF-249	4.826E-02	3.253E-02	3.050E-02	1.660E-02	NOT IDENT.
CF-251	-7.790E-02	1.177E-01	1.045E-01	6.005E-02	NOT IDENT.

\*\*\*\*\*  
 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON, SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
46.50	683.1386
46.50	683.1386
46.50	683.1386
48.70	671.4645
49.72	701.1553
51.35	777.0566
52.39	780.1929
52.97	764.6522
53.15	749.7089
53.44	745.9824
54.07	792.4968
56.28	948.1325
56.28	948.1430
57.37	0.0000
57.53	899.9283
57.53	899.9333
57.60	882.3947
57.98	844.6998
57.98	844.6998
59.32	935.2765
59.32	935.2765
59.40	935.5397
59.54	935.9998
59.72	968.7418
60.01	969.7252
61.10	1047.8474
61.14	1047.9926
61.30	1048.5702
63.00	986.8026
63.29	987.7665
63.29	987.7665
63.58	988.7277
64.28	951.2889
65.12	966.7521
65.20	967.0073
65.20	967.0073
66.05	1008.2659
66.72	1009.0270
66.83	1036.5962
66.91	1036.8613
67.20	1056.4686
67.20	1056.4686
67.75	1038.5186
67.85	1092.8663
68.90	1073.4628
68.90	1073.4628
69.30	1049.1337
69.67	1063.3682
70.82	1106.3302
70.82	1106.3302
70.83	1106.3651
72.80	1229.7888
72.87	1230.0525
72.87	1230.0525
74.67	1249.9449
74.81	1250.4683
74.81	1250.4683
74.81	1250.4683
74.81	1250.4683
74.81	1250.4683
74.81	1250.4683
74.81	1250.4683
74.97	1251.0630
75.28	1252.2201
75.70	1253.7802
77.11	1258.9803
77.11	1258.9803

77.11	1258.9803
77.11	1258.9803
77.11	1258.9803
77.11	1258.9803
77.11	1258.9803
78.38	1287.3580
79.62	1348.5072
79.80	1332.3210
79.80	1332.3210
80.11	1333.4951
80.18	1333.7614
80.30	1327.2524
80.30	1327.2524
80.57	1328.2710
81.00	1338.8457
81.07	1339.1123
81.07	1339.1123
81.07	1339.1123
81.07	1339.1123
82.60	1289.3126
83.37	1325.1431
83.78	1343.2197
83.78	1343.2197
83.78	1343.2197
83.78	1343.2197
84.21	1405.1106
84.90	1386.6093
85.43	1388.6052
86.29	1391.8340
86.50	1392.6184
86.54	1392.7655
86.59	1392.9546
86.72	1393.4379
86.79	1393.6901
86.94	1394.2573
87.30	1781.7490
87.30	1781.7490
87.30	1781.7490
87.30	1781.7490
87.30	1781.7490
87.30	1781.7490
87.57	1809.3979
87.88	1769.2681
88.03	1769.9773
88.36	1856.8943
88.47	1857.4332
89.95	1950.3945
91.11	1943.9907
92.29	1624.4048
92.38	1624.7830
92.38	1624.7830
93.35	1628.7982
94.00	1631.4857
94.67	951.3974
94.67	951.4114
94.90	951.9595
94.90	951.9595
94.90	951.9595
94.90	951.9595
95.87	957.3773
95.87	957.3773
96.73	959.4311
97.43	961.0807
98.44	807.0531
98.44	807.0531
98.88	807.9192
99.55	809.2341
99.55	809.2341
99.86	809.8403
100.00	810.1159
100.10	810.3167
103.18	800.4615
103.76	788.8812
105.00	737.1530
105.31	752.5261
108.00	900.6317
109.28	877.5821



111.00	883.6635
111.00	883.6635
111.76	885.1578
112.95	887.4894
115.19	731.4663
116.30	741.3728
117.00	711.4838
117.00	711.4838
117.66	764.7847
121.11	691.3665
121.62	712.9764
121.78	713.2141
122.06	702.6342
122.32	703.0112
122.32	703.0112
122.32	703.0112
122.32	703.0112
123.07	679.8649
127.23	805.6742
129.76	670.1462
131.20	702.3007
133.02	711.5519
133.54	759.5261
135.34	687.6526
136.00	673.8224
136.25	667.3571
136.48	678.9673
140.51	653.3683
140.51	0.0000
142.18	638.2454
142.65	650.8221
143.76	611.4286
144.24	611.9654
144.24	611.9654
144.24	611.9654
144.24	611.9654
145.22	579.7046
145.44	579.9404
147.16	651.0005
152.43	662.9594
152.70	639.9583
153.22	599.4168
154.21	588.1796
154.21	588.1796
154.21	588.1796
154.21	588.1796
155.03	628.5212
156.02	610.2521
158.56	566.6376
159.00	0.0000
159.00	578.3716
160.31	578.2374
161.27	618.9209
162.32	581.6168
162.64	570.8996
163.35	571.5756
163.89	572.0898
165.85	575.0190
167.43	563.6038
171.28	588.0496
171.86	581.3747
172.10	543.6656
176.55	557.5142
176.60	557.5563
181.06	523.1453
184.41	570.0125
185.71	506.3816
186.00	506.6036
190.27	499.2545
192.34	471.3407
193.63	479.6986
197.04	488.6363
198.01	490.2552
198.60	502.8891
200.40	506.3819
201.83	501.6151
202.84	496.2762
205.31	523.8045

208.36	373.5532
208.81	373.7835
209.75	418.5658
209.75	418.5658
210.97	416.2045
215.65	452.9779
216.55	441.3184
218.09	448.9858
222.10	439.7181
223.80	450.4211
226.40	398.2538
227.00	407.3538
227.08	407.3952
227.20	416.2529
228.16	435.3546
228.18	435.3648
228.18	435.3648
231.56	0.0000
235.69	451.9652
236.00	430.0070
236.00	430.0070
238.63	388.5906
238.63	388.5906
238.63	388.5906
238.63	388.5906
239.00	388.7670
240.98	389.7151
241.98	390.1936
241.98	390.1936
241.98	390.1936
244.69	359.5248
245.39	363.0282
247.94	357.7282
248.90	369.3813
249.79	367.7648
252.40	351.5702
252.85	338.8480
252.85	338.8480
254.15	0.0000
256.20	361.2439
256.20	361.2439
260.50	371.1902
260.90	366.4764
262.80	334.6315
264.65	309.4371
268.24	344.9158
268.79	340.2007
269.46	337.1639
269.46	337.1639
269.46	337.1639
269.46	337.1639
271.23	331.2427
273.65	393.2752
276.40	318.0225
277.35	323.5400
277.60	323.6257
277.60	323.6257
278.00	321.6931
278.60	328.1364
279.20	331.4658
279.53	337.8193
280.46	367.3008
281.68	335.4871
283.67	302.7972
284.30	309.2698
285.00	321.0065
285.90	322.3623
286.10	322.4281
286.10	322.4281
287.40	305.0580
288.45	0.0000
290.67	331.5718
290.80	331.6199
291.72	320.1472
293.26	0.0000
293.70	315.7451
295.21	289.1887
295.21	289.1887

295.21	289.1887
295.96	289.4142
296.50	279.4164
297.23	279.6259
298.57	280.0166
299.80	302.4609
299.80	302.4609
300.09	312.7506
300.09	312.7506
300.09	312.7506
300.09	312.7506
300.12	312.7596
301.29	268.8855
302.84	264.2001
303.76	264.4498
303.91	264.4877
304.40	295.3502
304.40	295.3502
304.84	298.9014
306.84	302.7128
308.46	267.8528
311.98	264.4980
316.51	237.6071
318.01	230.3882
319.02	244.6908
319.41	232.8696
320.08	262.2836
323.87	243.6738
323.87	243.6738
323.87	243.6738
323.87	243.6738
325.23	264.9053
328.77	265.8070
333.44	232.7387
334.20	241.6925
334.20	241.6925
334.30	241.7160
338.28	255.8528
338.28	255.8528
338.28	255.8528
338.28	255.8528
338.32	255.8634
338.32	255.8634
338.32	255.8634
340.50	251.0793
340.57	251.0966
344.27	236.5788
345.85	248.7666
350.59	0.0000
351.07	251.0685
351.92	251.2642
351.92	251.2642
351.92	251.2642
355.39	0.0000
356.01	224.1669
364.48	216.8232
366.43	224.4352
367.43	219.1973
367.94	0.0000
369.80	216.0187
374.96	227.0119
383.85	260.8834
387.95	211.0842
388.63	208.4375
391.69	256.1236
391.69	256.1236
392.90	242.4971
398.62	216.6712
400.65	235.6557
401.10	235.7452
401.81	239.6089
402.60	229.4989
404.84	248.6087
410.95	203.8057
411.60	218.0069
413.65	249.4209
414.70	216.6582
415.30	195.0859

415.76	199.8706
417.63	0.0000
418.52	189.9097
423.70	194.4747
427.08	174.0577
427.89	188.4432
432.53	182.4269
433.93	197.9210
439.47	204.5133
439.56	204.5263
439.89	208.4201
443.98	186.9002
444.90	186.0641
445.03	192.8320
445.03	192.8320
445.03	192.8320
445.03	192.8320
453.90	180.0809
463.38	208.4688
468.07	184.6595
473.00	206.6265
475.06	188.2045
475.35	181.3451
476.78	177.5808
477.59	179.6561
477.96	165.8795
482.03	187.1474
484.57	170.6143
487.03	159.9761
490.36	0.0000
492.35	167.5427
497.08	170.0851
507.63	0.0000
510.53	0.0000
510.84	173.6839
511.00	173.7017
511.85	186.9365
511.85	186.9365
513.99	182.1401
513.99	182.1401
520.41	162.5859
520.65	162.6133
527.90	169.5056
528.96	0.0000
529.64	150.2730
529.87	0.0000
531.02	154.4985
537.32	172.5896
543.00	183.5190
546.56	0.0000
549.76	187.4075
552.65	173.2217
555.20	143.3671
563.23	161.8267
563.90	170.2466
568.70	164.4629
569.32	162.4283
569.50	159.2994
569.67	159.3180
573.80	197.0169
574.00	194.4126
574.64	199.7458
578.91	172.1500
579.30	0.0000
583.14	163.7793
585.48	146.3712
591.81	155.3264
592.07	147.5322
593.00	160.4817
595.88	157.5607
600.56	163.1720
602.52	0.0000
602.71	149.6353
602.71	149.6353
603.60	158.6218
604.41	164.0472
604.70	178.3407
609.31	170.5873

609.31	170.5873
609.31	170.5873
609.31	170.5873
610.33	170.6882
612.46	170.1774
614.37	179.3294
618.01	177.9027
621.84	168.5607
621.84	168.5607
631.29	154.2482
633.02	138.0846
633.10	131.5668
634.78	153.4580
635.90	150.2839
636.97	174.3477
645.85	188.3350
646.12	187.2692
656.30	211.9756
657.75	193.7730
657.90	0.0000
661.65	155.5287
661.65	155.5287
664.57	0.0000
666.33	203.8872
666.33	203.8872
675.00	147.3610
677.61	160.5544
685.20	143.4883
692.80	148.7261
695.00	146.0850
696.49	161.1905
696.49	161.1905
697.00	158.4203
697.49	157.5239
698.33	172.5973
698.50	172.6123
699.00	167.0271
702.63	153.2337
706.10	163.8613
706.58	0.0000
706.67	164.8529
709.31	156.5808
711.68	141.6565
713.82	144.6453
717.42	135.4357
720.50	138.2169
721.93	0.0000
722.20	138.3325
722.78	125.3506
722.78	125.3506
722.89	125.3560
722.95	125.3586
723.30	131.8962
724.18	133.5818
727.18	137.0420
733.00	166.8848
735.90	165.3447
739.58	167.5552
742.81	163.9828
744.21	153.5352
747.13	207.5669
751.79	142.5379
752.31	131.9773
753.82	131.1081
755.35	137.9581
756.15	130.8687
756.87	140.3097
763.93	159.4152
765.79	155.1237
766.42	155.1693
766.84	155.1986
776.49	155.5119
778.00	168.1973
778.57	162.1820
778.89	147.1557
783.80	145.8142
785.46	142.5719
792.07	117.7686

795.84	114.6006
796.30	109.5673
798.80	126.5677
801.93	146.6899
805.60	102.6945
810.29	130.6169
810.76	129.6567
815.85	109.1182
817.79	113.1859
818.51	115.2070
819.60	119.2383
826.30	110.6229
828.27	0.0000
831.60	126.8631
831.96	123.8865
834.83	153.0498
836.80	0.0000
846.75	133.7333
848.13	116.7104
856.28	0.0000
856.80	105.6033
860.37	124.4039
867.32	95.6419
867.82	111.0995
871.10	129.0335
873.19	102.7076
874.81	139.4110
875.33	0.0000
876.40	126.2655
879.36	113.1680
880.27	120.3503
880.51	110.1621
881.50	101.0242
883.24	106.2026
884.67	134.8762
889.25	106.4692
896.60	96.5225
898.02	119.1837
899.00	128.4816
903.28	114.7316
911.07	110.5223
911.07	110.5223
911.07	110.5223
919.63	110.1629
920.93	113.3817
925.00	102.8329
925.24	103.8818
926.50	102.8954
935.52	82.2536
937.48	90.8179
944.10	129.1816
946.00	111.7209
949.00	102.7652
962.29	106.4577
964.01	106.5296
966.15	106.6180
968.20	106.7002
969.11	125.0071
969.11	125.0071
969.11	125.0071
977.42	116.8126
980.50	89.1594
983.50	94.5734
989.30	90.5218
996.32	84.2012
1001.03	87.7122
1001.68	87.7323
1004.76	95.4851
1021.30	0.0000
1024.50	0.0000
1034.80	76.8936
1036.00	83.5840
1037.82	100.3648
1038.57	101.3207
1038.76	0.0000
1045.16	83.8602
1046.59	91.3623
1048.07	101.6705

1050.47	101.7579
1050.47	101.7579
1062.04	95.6143
1063.62	101.2952
1076.63	96.1088
1077.35	87.6481
1078.86	88.6397
1085.78	98.3052
1099.22	105.4097
1112.02	108.3079
1112.84	103.5162
1115.52	105.2820
1120.29	103.2991
1120.29	103.2991
1120.29	103.2991
1120.29	103.2991
1120.51	103.3066
1121.28	103.3330
1124.00	0.0000
1129.67	92.3526
1131.51	0.0000
1147.95	0.0000
1167.94	102.0300
1173.22	106.0994
1175.09	114.9298
1177.93	116.0117
1189.05	116.4268
1204.90	105.2162
1205.75	0.0000
1213.00	119.2908
1221.42	125.5339
1230.97	131.8589
1235.34	105.9793
1236.41	0.0000
1238.25	120.2319
1246.25	93.4369
1260.41	0.0000
1271.85	74.2916
1274.45	87.4096
1274.54	91.4316
1291.56	69.6810
1298.22	0.0000
1312.09	82.2995
1325.50	69.3613
1325.50	69.3613
1332.49	63.3710
1333.61	61.3456
1360.21	59.7559
1362.66	0.0000
1365.15	58.8091
1368.21	53.0073
1368.53	0.0000
1376.25	59.7702
1384.27	45.3827
1394.10	59.2902
1395.20	56.1866
1407.95	42.8103
1434.06	37.8595
1436.60	39.9907
1457.56	0.0000
1460.81	44.4888
1489.15	48.0259
1509.49	35.6749
1596.49	38.3887
1620.62	43.4441
1678.03	0.0000
1691.02	36.3270
1691.02	36.3270
1706.46	0.0000
1750.46	0.0000
1764.49	19.5269
1764.49	19.5269
1764.49	19.5269
1764.49	19.5269
1770.23	19.5520
1771.40	19.5573
1791.20	0.0000
1808.65	27.2274

1836.01

47.6813



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691009

Total Uranium Activity	2.0756E+02	ug/g
Total Uranium Counting Unc.	3.7791E+01	ug/g
Total Uranium Tpu	1.9281E-05	ug/g
Total Uranium Mda	5.1856E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037                          SAMPLE ID   : G245691009
*  ANALYST       : MJH1                             DETECTOR    : GAM18
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 15:32:51.88          SAMPLE ALQT  : 144.890 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.702E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.946E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.249E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.086E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:34:44.95

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691010.CNF;1
Sample date   : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:12.
Sample ID     : G245691010 Sample quantity : 1.36290E+02 GRAM
Detector name : GAM19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.61 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MJH1
Abundance limit: 75.00000 Sensitivity : 5.00000
Batch ID      : 947037 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.03*	56	661	0.78	125.92	124	10	7.75E-03	88.3	
2	2	74.86	496	716	1.62	149.56	142	19	6.88E-02	11.8	2.30E+00
3	2	77.20	708	545	1.29	154.24	142	19	9.84E-02	7.2	
4	1	87.22	281	468	1.22	174.27	171	21	3.91E-02	13.6	3.60E+00
5	1	90.05	246	525	1.46	179.92	171	21	3.41E-02	18.1	
6	1	92.96*	245	462	1.49	185.73	171	21	3.41E-02	18.8	
7	0	185.94*	180	361	1.62	371.56	366	11	2.50E-02	22.5	
8	0	209.27	131	307	1.63	418.17	414	9	1.82E-02	25.7	
9	3	238.60*	1336	242	1.32	476.80	468	20	1.86E-01	3.5	1.11E+00
10	3	241.49	275	276	1.71	482.57	468	20	3.82E-02	16.7	
11	0	269.73	148	231	1.33	539.01	533	12	2.06E-02	22.1	
12	0	277.41	78	224	1.13	554.38	549	11	1.08E-02	39.5	
13	0	294.95	453	235	1.53	589.43	582	13	6.29E-02	8.4	
14	0	300.04	111	165	1.19	599.61	595	10	1.54E-02	23.7	
15	0	327.56	37	157	1.31	654.61	652	8	5.13E-03	60.6	
16	0	338.10	229	253	1.56	675.67	670	11	3.18E-02	15.0	
17	0	351.80*	701	189	1.21	703.06	696	14	9.74E-02	5.7	
18	0	408.89	41	115	1.69	817.18	814	9	5.69E-03	50.3	
19	0	511.02*	171	141	1.91	1021.35	1014	18	2.38E-02	20.4	
20	0	569.22*	177	150	2.25	1137.70	1129	21	2.46E-02	19.3	
21	0	583.22*	457	112	1.55	1165.70	1158	15	6.34E-02	7.0	
22	0	609.38*	485	123	1.61	1217.98	1212	15	6.74E-02	6.9	
23	0	727.57	88	96	1.18	1454.30	1449	11	1.23E-02	24.2	
24	0	795.36	36	74	0.70	1589.87	1584	11	5.00E-03	49.2	
25	0	861.91	60	60	1.51	1722.94	1717	14	8.32E-03	31.9	
26	0	911.71	296	75	1.74	1822.54	1816	17	4.11E-02	8.8	
27	0	965.02	70	72	1.94	1929.15	1921	13	9.65E-03	27.8	
28	0	969.18*	151	47	1.13	1937.49	1933	10	2.10E-02	12.0	
29	0	1120.60	110	64	1.83	2240.35	2232	16	1.53E-02	18.9	
30	0	1461.28*	1276	23	1.86	2921.91	2912	18	1.77E-01	2.9	
31	5	1582.11	36	1	2.95	3163.70	3158	35	5.04E-03	18.7	2.23E+00
32	5	1584.69	12	1	1.42	3168.87	3158	35	1.72E-03	41.1	
33	5	1588.98	33	5	3.24	3177.46	3158	35	4.54E-03	30.7	
34	0	1764.86*	90	20	1.31	3529.45	3521	16	1.25E-02	15.8	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691010.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MJH1  
 Sample date : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:12  
 Sample ID : G245691010 Sample quantity : 136.29 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA19 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.61 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line	Energy	Activity	Act error	MDA	MDA error	Act/MDA
	Ided	(keV) Key	(pCi/GRAM)		(pCi/GRAM)		
K-40	+	1460.81 *	2.819E+01	2.678E+00	4.789E-01	3.567E-02	58.869
CD-109	+	88.03 *	3.495E+00	9.984E-01	1.323E+00	1.185E-01	2.642
SN-126	+	64.28	4.465E-01	7.910E-01	7.929E-01	1.158E-01	0.563
	+	86.94	1.428E+00	7.072E-01	6.015E-01	2.491E-01	2.374
	+	87.57 *	3.435E-01	9.813E-02	1.306E-01	1.165E-02	2.631
CS-135	+	268.24 *	5.541E-01	2.485E-01	2.384E-01	1.819E-02	2.325
TL-208	+	277.35	6.980E-01	5.569E-01	5.756E-01	6.074E-02	1.213
	+	510.84	7.690E-01	3.239E-01	2.159E-01	2.205E-02	3.562
	+	583.14 *	5.848E-01	9.077E-02	5.129E-02	3.488E-03	11.403
		860.37	4.495E-01	3.758E-01	5.883E-01	5.268E-02	0.764
BI-211		72.87	1.345E+01	3.486E+00	6.029E+00	4.724E-01	2.232
	+	351.07 *	3.939E+00	5.132E-01	3.065E-01	1.957E-02	12.853
PB-212	+	74.81	2.514E+00	6.681E-01	5.503E-01	6.748E-02	4.569
	+	77.11	2.042E+00	3.387E-01	3.132E-01	2.530E-02	6.519
	+	87.30	1.589E+00	4.809E-01	6.668E-01	8.924E-02	2.383
	+	238.63 *	1.645E+00	1.642E-01	9.622E-02	6.945E-03	17.094
	+	300.09	2.096E+00	1.010E+00	1.055E+00	8.712E-02	1.987
PO-212	+	74.81	2.514E+00	6.681E-01	5.503E-01	6.748E-02	4.569
	+	77.11	2.042E+00	3.387E-01	3.132E-01	2.530E-02	6.519
	+	87.30	1.589E+00	4.809E-01	6.668E-01	8.924E-02	2.383
		115.19	1.787E+00	3.573E+00	5.931E+00	3.776E-01	0.301
	+	238.63 *	1.645E+00	1.642E-01	9.622E-02	6.945E-03	17.094
	+	300.09	2.096E+00	1.010E+00	1.055E+00	8.712E-02	1.987
BI-214	+	609.31 *	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
	+	1120.29	1.378E+00	5.349E-01	4.752E-01	4.347E-02	2.900
	+	1764.49	1.528E+00	4.910E-01	3.093E-01	1.875E-02	4.940
PB-214	+	74.81	4.332E+00	1.124E+00	9.482E-01	1.030E-01	4.569
	+	77.11	3.500E+00	6.389E-01	5.368E-01	5.961E-02	6.519
	+	87.30	2.722E+00	8.053E-01	1.142E+00	1.344E-01	2.383
	+	241.98	2.033E+00	6.994E-01	5.590E-01	4.458E-02	3.637
	+	295.21	1.505E+00	2.838E-01	1.869E-01	1.595E-02	8.053
	+	351.92 *	1.370E+00	1.923E-01	1.068E-01	8.807E-03	12.828
PO-214	+	74.81	4.332E+00	1.124E+00	9.482E-01	1.030E-01	4.569
	+	77.11	3.500E+00	6.389E-01	5.368E-01	5.961E-02	6.519

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	87.30		2.722E+00	8.053E-01	1.142E+00	1.344E-01	2.383
	+	241.98		2.033E+00	6.994E-01	5.590E-01	4.458E-02	3.637
	+	295.21		1.505E+00	2.838E-01	1.869E-01	1.595E-02	8.053
	+	351.92	*	1.370E+00	1.923E-01	1.068E-01	8.807E-03	12.828
	+	74.81		2.514E+00	6.681E-01	5.503E-01	6.748E-02	4.569
	+	77.11		2.042E+00	3.387E-01	3.132E-01	2.530E-02	6.519
	+	87.30		1.589E+00	4.809E-01	6.668E-01	8.924E-02	2.383
PO-218	+	238.63	*	1.645E+00	1.642E-01	9.622E-02	6.945E-03	17.094
	+	300.09		2.096E+00	1.010E+00	1.055E+00	8.712E-02	1.987
	+	74.81		4.332E+00	1.124E+00	9.482E-01	1.030E-01	4.569
	+	77.11		3.500E+00	6.389E-01	5.368E-01	5.961E-02	6.519
	+	87.30		2.722E+00	8.053E-01	1.142E+00	1.344E-01	2.383
	+	241.98		2.033E+00	6.994E-01	5.590E-01	4.458E-02	3.637
	+	295.21		1.505E+00	2.838E-01	1.869E-01	1.595E-02	8.053
RA-224	+	351.92	*	1.370E+00	1.923E-01	1.068E-01	8.807E-03	12.828
	+	240.98	*	3.855E+00	1.308E+00	1.094E+00	6.201E-02	3.523
	+	609.31	*	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
RA-226	+	1120.29		1.378E+00	5.349E-01	4.752E-01	4.347E-02	2.900
	+	1764.49		1.528E+00	4.910E-01	3.093E-01	1.874E-02	4.940
	+	338.32		1.416E+00	7.169E-01	3.654E-01	1.489E-01	3.877
AC-228	+	911.07	*	1.688E+00	3.528E-01	2.185E-01	2.472E-02	7.723
	+	969.11		1.516E+00	5.057E-01	3.673E-01	8.514E-02	4.127
	+	338.32		1.416E+00	7.169E-01	3.654E-01	1.489E-01	3.877
RA-228	+	911.07	*	1.688E+00	3.528E-01	2.185E-01	2.472E-02	7.723
	+	969.11		1.516E+00	5.057E-01	3.673E-01	8.514E-02	4.127
	+	74.81		2.553E+00	6.356E-01	5.587E-01	4.479E-02	4.569
TH-228	+	77.11		2.073E+00	3.438E-01	3.179E-01	2.568E-02	6.519
	+	87.30		1.613E+00	4.608E-01	6.769E-01	6.021E-02	2.383
	+	238.63	*	1.670E+00	1.667E-01	9.768E-02	7.051E-03	17.094
TH-230	+	300.09		2.128E+00	1.610E+00	1.071E+00	6.311E-01	1.987
	+	609.31	*	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
	+	1120.29		1.378E+00	5.349E-01	4.752E-01	4.347E-02	2.900
TH-232	+	1764.49		1.528E+00	4.910E-01	3.093E-01	1.874E-02	4.940
	+	338.32		1.416E+00	4.328E-01	3.654E-01	2.112E-02	3.877
	+	911.07	*	1.688E+00	3.528E-01	2.185E-01	2.472E-02	7.723
TH-234	+	969.11		1.516E+00	5.057E-01	3.673E-01	8.514E-02	4.127
	+	63.29	*	1.128E+00	2.001E+00	2.007E+00	3.512E-01	0.562
	+	92.38		1.954E+00	8.132E-01	8.589E-01	1.542E-01	2.275
U-234	+	609.31	*	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
	+	1120.29		1.378E+00	5.349E-01	4.752E-01	4.347E-02	2.900
	+	1764.49		1.528E+00	4.910E-01	3.093E-01	1.874E-02	4.940
NP-237	+	86.50	*	1.009E+00	3.555E-01	4.081E-01	9.158E-02	2.472
	+	95.87		5.455E-01	1.088E+00	1.586E+00	3.871E-01	0.344
	+	63.29	*	1.128E+00	2.001E+00	2.007E+00	3.512E-01	0.562
U-238	+	92.38		1.954E+00	7.515E-01	8.589E-01	7.173E-02	2.275
	+	74.67	*	4.076E-01	1.014E-01	8.947E-02	7.096E-03	4.556
	+	86.72		3.783E+01	1.081E+01	1.527E+01	1.350E+00	2.478
AM-243	+	117.66		-5.291E-01	3.831E+00	6.205E+00	3.855E-01	-0.085
	+	142.18		1.042E+01	1.767E+01	2.930E+01	1.631E+00	0.356

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	+	511.00	*	1.661E-01	6.858E-02	4.665E-02	2.753E-03	3.561

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	7.657E-03	3.084E-01	5.113E-01	3.471E-02	0.015
NA-22		1274.54	*	5.763E-03	4.209E-02	7.082E-02	4.724E-03	0.081
NA-24		1368.53	*	-3.869E-01	4.209E-02	Half-Life too short		
AL-26		1129.67		-1.742E+00	1.785E+00	2.652E+00	1.636E-01	-0.657
		1808.65	*	1.274E-02	2.644E-02	4.729E-02	2.761E-03	0.269
TI-44		67.85		-7.366E-02	7.836E-02	7.571E-02	5.780E-03	-0.973
	+	78.38	*	3.767E-01	6.250E-02	8.337E-02	6.805E-03	4.519
SC-46		889.25	*	9.117E-03	4.264E-02	7.008E-02	6.090E-03	0.130
	+	1120.51		2.360E-01	9.025E-02	1.207E-01	7.615E-03	1.954
V-48		944.10		-2.853E-01	9.387E-01	1.466E+00	1.235E-01	-0.195
		983.50	*	2.067E-02	7.188E-02	1.186E-01	9.539E-03	0.174
		1312.09		-2.477E-02	6.900E-02	1.093E-01	7.779E-03	-0.227
CR-51		320.08	*	6.401E-02	3.646E-01	6.169E-01	3.992E-02	0.104
MN-52		744.21		1.370E-01	2.235E-01	3.827E-01	2.602E-02	0.358
		848.13		4.523E+00	6.645E+00	1.140E+01	9.268E-01	0.397
		935.52		1.452E-01	2.826E-01	4.743E-01	4.032E-02	0.306
		1246.25		-2.709E+00	7.008E+00	1.124E+01	7.105E-01	-0.241
		1333.61		-4.983E+00	5.037E+00	7.361E+00	5.424E-01	-0.677
		1434.06	*	3.042E-02	2.261E-01	3.797E-01	2.739E-02	0.080
MN-54		834.83	*	1.563E-02	3.796E-02	6.350E-02	5.051E-03	0.246
CO-56		846.75	*	-6.785E-03	4.087E-02	6.511E-02	5.282E-03	-0.104
		977.42		-9.004E-01	2.810E+00	4.356E+00	3.530E-01	-0.207
		1037.82		-1.157E-01	3.226E-01	5.244E-01	4.172E-02	-0.221
		1175.09		1.241E+00	2.110E+00	3.694E+00	2.032E-01	0.336
		1238.25		1.158E-01	9.386E-02	1.688E-01	1.109E-02	0.686
		1360.21		-3.718E-01	9.568E-01	1.507E+00	1.105E-01	-0.247
		1771.40		9.416E-02	2.307E-01	3.601E-01	2.170E-02	0.262
CO-57		122.06	*	-1.015E-03	2.539E-02	4.127E-02	2.463E-03	-0.025
		136.48		-1.399E-01	2.117E-01	3.342E-01	2.206E-02	-0.419
CO-58		810.76	*	-3.373E-02	3.987E-02	5.943E-02	4.554E-03	-0.568
FE-59		142.65		2.203E+00	2.705E+00	4.522E+00	2.514E-01	0.487
		192.34		-3.975E-01	1.044E+00	1.591E+00	1.848E-01	-0.250
		1099.22	*	2.388E-02	8.692E-02	1.489E-01	1.117E-02	0.160
		1291.56		8.951E-02	1.178E-01	2.097E-01	1.736E-02	0.427
CO-60		1173.22		1.448E-02	4.428E-02	7.583E-02	4.155E-03	0.191
		1332.49	*	-2.666E-02	3.937E-02	6.015E-02	4.433E-03	-0.443
ZN-65		1115.52	*	-6.163E-03	9.980E-02	1.427E-01	9.122E-03	-0.043
GE-68		1077.35	*	7.878E-01	1.271E+00	2.234E+00	1.546E-01	0.353
AS-73		53.44	*	3.476E-01	7.783E-01	1.306E+00	9.657E-02	0.266
AS-74		595.88	*	8.814E-02	9.437E-02	1.646E-01	9.750E-03	0.536
		634.78		-9.824E-02	3.422E-01	5.470E-01	3.215E-02	-0.180
SE-75		66.05		-6.301E-01	5.564E+00	8.001E+00	7.681E-01	-0.079
		96.73		5.817E-01	8.724E-01	1.279E+00	1.682E-01	0.455

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		121.11	6.672E-02	1.370E-01	2.271E-01	2.127E-02	0.294
		136.00	-2.947E-02	3.952E-02	6.215E-02	3.579E-03	-0.474
		198.60	-1.668E+00	1.926E+00	2.915E+00	1.990E-01	-0.572
		264.65 *	-2.138E-02	4.902E-02	6.995E-02	4.067E-03	-0.306
		279.53	4.948E-02	1.190E-01	1.794E-01	1.123E-02	0.276
		303.91	-7.586E-01	2.287E+00	3.263E+00	3.116E-01	-0.232
		400.65	2.196E-01	2.502E-01	4.363E-01	3.918E-02	0.503
BR-77	+	87.88	7.620E+02	2.177E+02	3.697E+02	3.308E+01	2.061
		200.40	-1.196E+02	1.741E+02	2.715E+02	1.477E+01	-0.440
	+	239.00	2.665E+02	2.378E+01	3.853E+01	2.180E+00	6.918
		249.79	-6.036E+01	6.852E+01	1.042E+02	5.941E+00	-0.579
		281.68	-2.991E+01	9.704E+01	1.371E+02	7.943E+00	-0.218
		297.23	3.471E+02	8.752E+01	1.225E+02	7.124E+00	2.832
		303.76	-6.096E+01	1.967E+02	2.812E+02	1.636E+01	-0.217
		439.47	1.780E+02	1.462E+02	2.596E+02	1.491E+01	0.686
		484.57	7.119E+01	2.269E+02	3.831E+02	2.244E+01	0.186
		520.65 *	9.365E-01	1.072E+01	1.733E+01	1.025E+00	0.054
		574.64	-4.900E+01	2.603E+02	3.145E+02	1.866E+01	-0.156
		578.91	2.442E+01	1.146E+02	1.327E+02	7.872E+00	0.184
		585.48	1.626E+03	2.683E+02	5.040E+02	2.989E+01	3.225
		755.35	1.387E+02	1.622E+02	2.822E+02	1.957E+01	0.491
		817.79	1.459E+01	1.339E+02	2.189E+02	1.693E+01	0.067
SR-82		698.33	-9.545E+00	3.524E+01	5.630E+01	3.517E+00	-0.170
		776.49 *	-3.827E-01	4.188E-01	6.282E-01	4.524E-02	-0.609
		1395.20	2.913E+00	9.115E+00	1.575E+01	1.147E+00	0.185
RB-83		520.41 *	1.669E-02	7.233E-02	1.147E-01	6.780E-03	0.146
		529.64	-3.623E-02	1.017E-01	1.632E-01	9.664E-03	-0.222
		552.65	-1.218E-01	1.926E-01	3.018E-01	1.791E-02	-0.404
RB-84		881.50 *	-4.604E-02	6.618E-02	9.881E-02	8.481E-03	-0.466
KR-85		513.99 *	1.311E+01	8.114E+00	1.316E+01	7.771E-01	0.996
SR-85		513.99 *	6.722E-02	4.162E-02	6.750E-02	3.986E-03	0.996
RB-86		1076.63 *	5.176E-01	8.024E-01	1.413E+00	9.793E-02	0.366
Y-88		898.02	-4.816E-05	4.476E-02	7.219E-02	6.390E-03	-0.001
		1836.01 *	-7.909E-03	3.507E-02	5.474E-02	3.125E-03	-0.144
ZR-88		392.90 *	2.145E-03	3.005E-02	5.028E-02	2.800E-03	0.043
Y-91		1204.90 *	-5.274E+00	1.838E+01	2.986E+01	1.743E+00	-0.177
NB-94		702.63 *	2.214E-03	3.362E-02	5.509E-02	3.470E-03	0.040
		871.10	1.714E-02	3.297E-02	5.586E-02	4.715E-03	0.307
NB-95		765.79 *	-1.713E-02	4.403E-02	6.934E-02	4.900E-03	-0.247
NB-95M		235.69 *	4.000E-01	1.646E-01	2.554E-01	1.892E-02	1.566
ZR-95		724.18	-1.087E-02	1.157E-01	1.612E-01	1.211E-02	-0.067
		756.15 *	2.788E-02	6.876E-02	1.156E-01	9.252E-03	0.241
NB-97		657.90 *	-9.697E-02	6.876E-02	Half-Life	too short	
		1024.50	-6.260E+00	6.876E-02	Half-Life	too short	
ZR-97		254.15	-2.447E+00	6.876E-02	Half-Life	too short	
		355.39	3.776E+00	6.876E-02	Half-Life	too short	
		507.63 *	3.798E+00	6.876E-02	Half-Life	too short	
		602.52	-2.138E+00	6.876E-02	Half-Life	too short	
		1021.30	6.470E+00	6.876E-02	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1147.95			-4.650E+00	6.876E-02	Half-Life	too short	
	1362.66			2.782E+00	6.876E-02	Half-Life	too short	
	1750.46			-6.977E+00	6.876E-02	Half-Life	too short	
MO-99	140.51			-7.781E+00	2.674E+01	4.275E+01	1.150E+01	-0.182
	181.06			1.008E+00	2.011E+01	2.839E+01	4.821E+00	0.036
	366.43			2.829E-01	8.108E+01	1.355E+02	7.710E+00	0.002
	739.58	*		4.796E+00	1.161E+01	1.951E+01	2.770E+00	0.246
	778.00			-4.727E+00	3.626E+01	5.823E+01	4.204E+00	-0.081
TC-99M	140.51	*		-1.223E+10	3.626E+01	Half-Life	too short	
RH-101	127.23			3.132E-02	3.285E-02	5.525E-02	3.224E-03	0.567
	198.01	*		-1.513E-02	3.523E-02	5.448E-02	2.955E-03	-0.278
	325.23			2.976E-02	2.510E-01	3.694E-01	2.144E-02	0.081
RH-102	418.52			-2.858E-02	2.769E-01	4.575E-01	2.595E-02	-0.062
	475.06	*		1.645E-03	2.733E-02	4.544E-02	2.652E-03	0.036
	631.29			2.223E-02	5.187E-02	8.782E-02	5.166E-03	0.253
	697.49			-1.134E-02	7.984E-02	1.288E-01	8.036E-03	-0.088
	766.84			-9.737E-02	1.158E-01	1.759E-01	1.245E-02	-0.554
	1046.59			-5.293E-02	1.203E-01	1.941E-01	1.420E-02	-0.273
	1112.84			8.881E-02	2.524E-01	3.795E-01	2.437E-02	0.234
RU-103	497.08	*		-1.623E-02	3.842E-02	6.147E-02	7.796E-03	-0.264
+	610.33			1.266E+01	2.624E+00	2.925E+00	4.523E-01	4.326
RH-106	+	511.85		8.298E-01	3.426E-01	4.489E-01	2.649E-02	1.849
	621.84	*		1.566E-02	3.172E-01	5.218E-01	6.150E-02	0.030
	1050.47			-8.221E-01	2.421E+00	3.942E+00	2.866E-01	-0.209
RU-106	+	511.85		8.298E-01	3.426E-01	4.489E-01	2.649E-02	1.849
	621.84	*		1.566E-02	3.172E-01	5.218E-01	3.077E-02	0.030
	1050.47			-8.221E-01	2.421E+00	3.942E+00	2.866E-01	-0.209
AG-108M	433.93	*		-1.817E-02	3.358E-02	5.390E-02	3.357E-03	-0.337
	614.37			-1.785E-02	4.298E-02	5.817E-02	3.717E-03	-0.307
	722.95			-4.840E-02	5.101E-02	6.393E-02	4.462E-03	-0.757
AG-110M	657.75	*		-3.452E-02	3.622E-02	5.475E-02	3.397E-03	-0.631
	677.61			-2.952E-01	3.067E-01	4.596E-01	2.918E-02	-0.642
	706.67			-5.527E-02	2.149E-01	3.434E-01	2.289E-02	-0.161
	763.93			-1.457E-01	1.676E-01	2.522E-01	1.851E-02	-0.578
	884.67			1.315E-02	5.140E-02	8.487E-02	7.557E-03	0.155
	937.48			-2.640E-02	1.195E-01	1.884E-01	1.658E-02	-0.140
	1384.27			-1.117E-01	1.712E-01	2.614E-01	1.983E-02	-0.427
IN-111	171.28			1.333E-01	1.025E+00	1.663E+00	8.732E-02	0.080
	245.39	*		1.156E+00	1.200E+00	1.783E+00	1.014E-01	0.648
IN-113M	391.69	*		1.075E-02	4.387E-02	7.413E-02	4.423E-03	0.145
SN-113	391.69	*		1.075E-02	4.387E-02	7.413E-02	4.423E-03	0.145
IN-114M	190.27	*		-6.584E-02	2.143E-01	2.955E-01	1.588E-02	-0.223
CD-115	260.90			2.083E+00	1.383E+02	2.208E+02	1.268E+01	0.009
	492.35			-2.969E+00	3.588E+01	5.841E+01	3.430E+00	-0.051
	527.90	*		5.451E-01	1.030E+01	1.706E+01	1.010E+00	0.032
SN-117M	156.02			1.595E+00	2.412E+00	4.000E+00	2.144E-01	0.399
	158.56	*		1.041E-02	5.803E-02	9.454E-02	5.032E-03	0.110
SB-122	563.90	*		2.322E-01	2.386E+00	3.433E+00	2.038E-01	0.068
	692.80			1.542E+01	4.442E+01	7.437E+01	4.598E+00	0.207



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-123	159.00	*		9.434E-01	4.442E+01	Half-Life	too short	
	528.96			2.522E+01	4.442E+01	Half-Life	too short	
TE-123M	159.00	*		4.481E-03	2.993E-02	4.871E-02	2.631E-03	0.092
I-124	602.71	*		-2.864E-01	7.354E-01	9.999E-01	5.918E-02	-0.286
	722.78			-5.307E+00	5.342E+00	6.652E+00	4.350E-01	-0.798
	1325.50			3.199E+01	3.245E+01	5.946E+01	4.330E+00	0.538
	1376.25			4.174E+01	3.027E+01	5.701E+01	4.170E+00	0.732
	1509.49			8.549E+00	1.542E+01	2.718E+01	1.912E+00	0.315
	1691.02			-5.779E-01	3.579E+00	5.679E+00	3.633E-01	-0.102
SB-124	602.71			-1.656E-02	4.254E-02	5.784E-02	3.425E-03	-0.286
	645.85			-2.543E-01	5.110E-01	8.030E-01	5.295E-02	-0.317
	709.31			1.596E+00	2.750E+00	4.684E+00	2.987E-01	0.341
	713.82			-8.210E-01	1.701E+00	2.662E+00	2.817E-01	-0.308
	722.78			-4.449E-01	4.480E-01	5.578E-01	3.783E-02	-0.798
+	968.20			1.561E+01	3.958E+00	7.293E+00	5.976E-01	2.140
	1045.16			-2.240E-01	2.543E+00	4.230E+00	3.103E-01	-0.053
	1325.50			2.865E+00	2.906E+00	5.325E+00	3.878E-01	0.538
	1368.21			-7.507E-01	1.705E+00	2.662E+00	3.377E-01	-0.282
	1436.60			1.634E+00	3.431E+00	6.024E+00	4.342E-01	0.271
	1691.02	*		-1.143E-02	7.078E-02	1.123E-01	7.693E-03	-0.102
SB-125	427.89	*		-1.094E-02	9.042E-02	1.491E-01	8.878E-03	-0.073
	463.38			5.306E-01	3.003E-01	5.418E-01	3.669E-02	0.979
	600.56			5.468E-02	1.723E-01	2.891E-01	1.970E-02	0.189
	635.90			7.594E-02	2.556E-01	4.285E-01	2.938E-02	0.177
TE-125M	109.28	*		-1.694E+00	9.676E+00	1.568E+01	1.386E+00	-0.108
I-126	388.63			-1.359E-01	2.086E-01	3.349E-01	1.869E-02	-0.406
	666.33	*		2.108E-02	1.942E-01	3.198E-01	1.879E-02	0.066
	753.82			1.579E+00	1.384E+00	2.462E+00	1.703E-01	0.641
SB-126	223.80			-8.223E-01	4.321E+00	6.866E+00	3.832E-01	-0.120
+	278.60			4.623E+00	3.666E+00	4.340E+00	2.512E-01	1.065
	296.50			1.350E+01	2.452E+00	3.635E+00	2.113E-01	3.714
	414.70			-1.234E-02	8.425E-02	1.202E-01	6.797E-03	-0.103
	415.30			-4.609E-01	6.751E+00	1.016E+01	5.748E-01	-0.045
	555.20			-1.392E+00	3.897E+00	6.243E+00	3.705E-01	-0.223
	573.80			3.034E-01	1.094E+00	1.606E+00	9.529E-02	0.189
	593.00			2.495E-01	9.510E-01	1.590E+00	9.425E-02	0.157
	656.30			2.064E+00	3.382E+00	5.779E+00	3.372E-01	0.357
	666.33			8.808E-03	8.117E-02	1.337E-01	7.854E-03	0.066
	675.00			-6.134E-01	1.974E+00	3.142E+00	1.877E-01	-0.195
	695.00			3.596E-02	7.902E-02	1.333E-01	8.273E-03	0.270
	697.00			-2.469E-02	2.767E-01	4.482E-01	2.793E-02	-0.055
	720.50	*		-8.667E-02	1.578E-01	2.293E-01	1.493E-02	-0.378
	856.80			2.285E-04	5.449E-01	7.595E-01	6.264E-02	0.000
	989.30			1.369E+00	1.233E+00	2.189E+00	1.747E-01	0.626
	1034.80			4.785E+00	8.766E+00	1.537E+01	1.147E+00	0.311
	1213.00			4.916E+00	4.790E+00	8.579E+00	5.090E-01	0.573
SB-127	61.10			1.475E+01	6.285E+01	9.190E+01	9.509E+00	0.160
	252.40			2.161E+00	4.537E+00	7.283E+00	3.025E+00	0.297
	290.80			-5.203E+00	2.415E+01	3.487E+01	3.200E+00	-0.149

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		411.60		6.707E+00	1.357E+01	2.039E+01	2.919E+00	0.329
		444.90		-3.837E+00	9.619E+00	1.554E+01	1.674E+00	-0.247
		473.00		-3.398E-01	1.578E+00	2.573E+00	2.882E-01	-0.132
		543.00		-9.794E+00	1.585E+01	2.480E+01	3.217E+00	-0.395
		603.60		1.485E+00	1.204E+01	1.734E+01	1.878E+00	0.086
		685.20	*	-1.048E+00	1.349E+00	2.051E+00	1.974E-01	-0.511
		698.50		-5.046E+00	1.573E+01	2.500E+01	3.667E+00	-0.202
		722.20		-3.774E+01	3.674E+01	4.538E+01	4.379E+00	-0.832
		783.80		9.102E-01	3.786E+00	6.259E+00	7.225E-01	0.145
XE-127		57.60		-7.865E-01	5.918E+00	9.723E+00	7.284E-01	-0.081
		145.22		4.400E-02	7.161E-01	1.137E+00	6.278E-02	0.039
		172.10		1.463E-02	1.211E-01	1.965E-01	1.033E-02	0.074
		202.84	*	3.299E-02	5.058E-02	8.079E-02	4.407E-03	0.408
		374.96		-1.146E-01	1.921E-01	3.093E-01	1.748E-02	-0.371
I-131		80.18		-9.786E-01	5.323E+00	7.600E+00	6.345E-01	-0.129
		284.30		-4.988E-01	1.476E+00	2.378E+00	1.533E-01	-0.210
		364.48	*	-3.441E-02	1.088E-01	1.783E-01	1.139E-02	-0.193
		636.97		-2.340E-02	1.436E+00	2.347E+00	1.540E-01	-0.010
		722.89		-8.301E+00	8.606E+00	1.076E+01	7.116E-01	-0.771
TE-132		49.72		-8.490E+00	1.789E+01	2.905E+01	2.829E+00	-0.292
		111.76		1.238E+01	3.035E+01	5.021E+01	4.688E+00	0.247
		116.30		-1.752E+01	2.820E+01	4.476E+01	4.086E+00	-0.392
		228.16	*	3.490E-02	7.411E-01	1.190E+00	1.700E-01	0.029
BA-133		53.15		1.209E+00	3.368E+00	5.635E+00	4.162E-01	0.215
		79.62		2.987E+00	1.599E+00	2.379E+00	3.572E-01	1.256
		81.00		-1.830E-01	1.206E-01	1.573E-01	2.475E-02	-1.163
	+	276.40		6.898E-01	5.528E-01	6.885E-01	8.921E-02	1.002
		302.84		-1.743E-02	1.588E-01	2.305E-01	2.689E-02	-0.076
		356.01	*	1.834E-02	4.347E-02	6.544E-02	7.542E-03	0.280
		383.85		-7.156E-02	3.016E-01	4.960E-01	5.342E-02	-0.144
I-133	+	510.53		1.733E+00	3.016E-01	Half-Life	too short	
		529.87	*	-1.925E-03	3.016E-01	Half-Life	too short	
		706.58		-9.755E-02	3.016E-01	Half-Life	too short	
		856.28		-3.131E-01	3.016E-01	Half-Life	too short	
		875.33		6.450E-02	3.016E-01	Half-Life	too short	
		1236.41		1.081E+00	3.016E-01	Half-Life	too short	
		1298.22		-1.979E-01	3.016E-01	Half-Life	too short	
CS-134		475.35		3.361E-01	1.777E+00	2.980E+00	1.740E-01	0.113
		563.23		-6.654E-03	4.129E-01	5.874E-01	3.557E-02	-0.011
	+	569.32		1.231E+00	4.813E-01	5.097E-01	3.111E-02	2.415
		604.70		-2.441E-02	3.679E-02	4.840E-02	2.879E-03	-0.504
	+	795.84	*	6.654E-02	6.569E-02	9.013E-02	6.777E-03	0.738
		801.93		-3.638E-01	4.639E-01	6.524E-01	4.946E-02	-0.558
		1038.57		2.731E-02	3.977E+00	6.672E+00	4.948E-01	0.004
		1167.94		2.800E-01	2.495E+00	4.199E+00	2.337E-01	0.067
		1365.15		8.566E-01	1.208E+00	2.159E+00	1.682E-01	0.397
I-135		288.45		2.960E+10	1.208E+00	Half-Life	too short	
		417.63		1.364E+09	1.208E+00	Half-Life	too short	
		546.56		1.581E+09	1.208E+00	Half-Life	too short	

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		836.80	-4.930E+09	1.208E+00	Half-Life	too short	
		1038.76	4.767E+08	1.208E+00	Half-Life	too short	
		1124.00	5.828E+10	1.208E+00	Half-Life	too short	
		1131.51	7.570E+09	1.208E+00	Half-Life	too short	
		1260.41 *	-5.977E+09	1.208E+00	Half-Life	too short	
		1457.56	2.441E+11	1.208E+00	Half-Life	too short	
		1678.03	1.365E+09	1.208E+00	Half-Life	too short	
		1706.46	-9.824E+09	1.208E+00	Half-Life	too short	
		1791.20	-7.906E+09	1.208E+00	Half-Life	too short	
CS-136		66.91	-4.952E-01	9.742E-01	1.274E+00	1.897E-01	-0.389
	+	86.29	4.490E+00	1.352E+00	2.200E+00	2.854E-01	2.041
		153.22	3.082E-01	7.016E-01	1.154E+00	7.972E-02	0.267
		163.89	2.776E-02	1.083E+00	1.752E+00	1.195E-01	0.016
		176.55	-2.276E-02	3.813E-01	6.136E-01	3.720E-02	-0.037
		273.65	-7.827E-03	7.199E-01	7.114E-01	4.692E-02	-0.011
		340.57	3.975E-01	1.528E-01	2.555E-01	1.570E-02	1.556
		818.51	1.861E-02	7.382E-02	1.223E-01	9.476E-03	0.152
		1048.07 *	1.080E-02	1.084E-01	1.831E-01	1.415E-02	0.059
		1235.34	4.850E-02	6.294E-01	1.052E+00	1.075E-01	0.046
BA-137M		661.65 *	-1.330E-02	3.738E-02	5.948E-02	3.464E-03	-0.224
CS-137		661.65 *	-1.406E-02	3.952E-02	6.288E-02	3.677E-03	-0.224
CE-139		165.85 *	-5.219E-03	2.953E-02	4.735E-02	2.472E-03	-0.110
BA-140		162.64	8.523E-02	7.645E-01	1.242E+00	7.514E-02	0.069
		304.84	-3.658E-01	1.422E+00	2.037E+00	5.560E-01	-0.180
		423.70	-6.884E-01	1.930E+00	3.070E+00	9.750E-01	-0.224
		537.32 *	6.972E-02	2.550E-01	4.268E-01	1.389E-01	0.163
LA-140	+	328.77	2.831E-01	3.438E-01	5.425E-01	3.524E-02	0.522
		432.53	-1.063E+00	2.073E+00	3.332E+00	2.111E-01	-0.319
		487.03	-3.447E-02	1.386E-01	2.255E-01	1.493E-02	-0.153
		751.79	-1.193E+00	1.630E+00	2.467E+00	1.977E-01	-0.484
		815.85	-8.648E-02	3.128E-01	4.933E-01	4.342E-02	-0.175
		867.82	9.789E-03	1.470E+00	2.049E+00	1.817E-01	0.005
		919.63	1.592E+00	3.231E+00	4.781E+00	5.097E-01	0.333
		925.24	-6.838E-01	1.209E+00	1.840E+00	1.680E-01	-0.372
		1596.49 *	7.258E-02	8.061E-02	1.371E-01	9.275E-03	0.529
CE-141		145.44 *	7.984E-03	6.485E-02	1.033E-01	5.946E-03	0.077
CE-143		57.37	-2.803E-04	6.485E-02	Half-Life	too short	
		231.56	1.418E-03	6.485E-02	Half-Life	too short	
		293.26 *	1.061E-03	6.485E-02	Half-Life	too short	
	+	350.59	3.172E-02	6.485E-02	Half-Life	too short	
		490.36	-1.475E-03	6.485E-02	Half-Life	too short	
		664.57	1.512E-03	6.485E-02	Half-Life	too short	
		721.93	-8.288E-04	6.485E-02	Half-Life	too short	
CE-144		80.11	-1.403E-01	2.452E+00	3.520E+00	2.917E-01	-0.040
		133.54 *	8.009E-02	2.073E-01	3.413E-01	4.835E-02	0.235
PM-144		476.78	1.195E-02	6.379E-02	1.069E-01	7.462E-03	0.112
		618.01	3.670E-03	3.358E-02	5.245E-02	3.275E-03	0.070
		696.49 *	-1.219E-02	3.543E-02	5.626E-02	3.505E-03	-0.217
		778.57	3.793E-01	2.334E+00	3.840E+00	2.777E-01	0.099

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144		696.49	*	-8.259E-01	2.401E+00	3.813E+00	2.374E-01	-0.217
		1489.15		9.641E-01	9.473E+00	1.588E+01	1.125E+00	0.061
PM-146		453.90	*	2.945E-02	4.352E-02	7.505E-02	6.463E-03	0.392
		633.02		1.083E-01	1.333E+00	2.196E+00	8.088E-01	0.049
		735.90		2.047E-03	1.387E-01	2.260E-01	6.346E-02	0.009
		747.13		1.532E-02	8.360E-02	1.382E-01	1.799E-02	0.111
ND-147	+	91.11		1.009E+00	3.771E-01	5.507E-01	5.086E-02	1.832
		319.41		1.476E+00	3.237E+00	5.553E+00	3.228E-01	0.266
		439.89		4.601E+00	5.875E+00	1.020E+01	5.862E-01	0.451
		531.02	*	-3.147E-01	5.484E-01	8.632E-01	1.172E-01	-0.365
PM-149		285.90	*	-2.070E+01	8.977E+01	1.493E+02	2.117E+01	-0.139
EU-152		121.78		3.584E-03	7.359E-02	1.200E-01	9.290E-03	0.030
		244.69		5.562E-01	3.739E-01	5.719E-01	3.250E-02	0.973
		344.27	*	-1.673E-01	1.316E-01	1.454E-01	9.462E-03	-1.151
		443.98		-8.257E-01	9.486E-01	1.484E+00	8.540E-02	-0.557
		778.89		6.420E-02	2.673E-01	4.426E-01	3.201E-02	0.145
		867.32		1.656E-01	8.578E-01	1.229E+00	1.031E-01	0.135
	+	964.01		8.026E-01	4.511E-01	6.209E-01	5.114E-02	1.293
		1085.78		-1.491E-01	3.913E-01	6.322E-01	4.302E-02	-0.236
		1112.02		9.874E-02	3.454E-01	5.347E-01	3.440E-02	0.185
		1407.95		3.672E-02	1.685E-01	2.861E-01	2.078E-02	0.128
GD-153		69.67		-2.106E+00	2.786E+00	2.734E+00	2.104E-01	-0.770
		83.37		-2.848E+00	2.110E+01	2.531E+01	2.162E+00	-0.113
		97.43	*	6.566E-02	8.947E-02	1.318E-01	1.025E-02	0.498
		103.18		-4.305E-02	1.074E-01	1.727E-01	1.251E-02	-0.249
EU-154		123.07		-1.575E-02	5.259E-02	8.453E-02	8.020E-03	-0.186
		247.94		-2.982E-01	3.887E-01	5.709E-01	5.411E-02	-0.522
		591.81		-2.160E-02	6.223E-01	1.019E+00	1.004E-01	-0.021
		723.30		-1.650E-01	2.136E-01	2.741E-01	2.111E-02	-0.602
		756.87		2.041E-01	7.564E-01	1.257E+00	1.363E-01	0.162
		873.19		1.724E-01	2.827E-01	4.825E-01	5.857E-02	0.357
		996.32		-7.656E-02	3.538E-01	5.546E-01	9.665E-02	-0.138
		1004.76		-1.029E-01	2.063E-01	3.307E-01	3.656E-02	-0.311
		1274.45	*	-5.839E-03	1.188E-01	1.962E-01	1.942E-02	-0.030
EU-155		48.70		4.429E-01	2.204E+00	3.673E+00	2.576E-01	0.121
		60.01		1.951E+00	5.394E+00	7.937E+00	5.971E-01	0.246
	+	86.54		4.138E-01	1.183E-01	2.010E-01	1.790E-02	2.059
		105.31	*	3.912E-03	1.124E-01	1.838E-01	1.322E-02	0.021
TB-160	+	86.79		1.106E+00	3.158E-01	5.314E-01	4.701E-02	2.080
		197.04		-2.197E-02	5.848E-01	9.393E-01	5.089E-02	-0.023
		215.65		-2.504E-01	7.768E-01	1.228E+00	6.795E-02	-0.204
	+	298.57		3.051E-01	1.459E-01	1.979E-01	1.151E-02	1.542
		879.36	*	-4.092E-02	1.244E-01	1.935E-01	1.655E-02	-0.211
		962.29		1.214E+00	5.958E-01	1.011E+00	8.343E-02	1.201
	+	966.15		5.513E-01	3.099E-01	4.988E-01	4.098E-02	1.105
		1177.93		-1.730E-01	3.607E-01	5.765E-01	3.190E-02	-0.300
		1271.85		-3.486E-02	6.796E-01	1.123E+00	7.440E-02	-0.031
HO-166M		80.57		-3.839E-01	3.211E-01	4.363E-01	3.630E-02	-0.880
		184.41		1.051E-01	4.167E-02	6.563E-02	3.501E-03	1.601

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		280.46		2.289E-03	8.729E-02	1.283E-01	7.433E-03	0.018
		410.95		1.754E-01	2.776E-01	4.217E-01	2.380E-02	0.416
		711.68	*	-2.765E-02	6.167E-02	9.683E-02	6.202E-03	-0.286
		752.31		1.128E-01	2.537E-01	4.285E-01	2.956E-02	0.263
		810.29		-2.523E-02	5.742E-02	8.914E-02	6.804E-03	-0.283
		51.35		-2.188E+01	2.844E+01	4.562E+01	3.327E+00	-0.480
		52.39		2.382E+00	1.450E+01	2.410E+01	1.772E+00	0.099
		59.40		3.197E+01	2.788E+01	4.243E+01	3.192E+00	0.753
		66.72	*	-1.783E+01	3.285E+01	4.633E+01	3.522E+00	-0.385
		88.36		8.148E-01	2.327E-01	4.073E-01	3.627E-02	2.001
LU-176	+	201.83		1.035E-02	2.964E-02	4.835E-02	2.635E-03	0.214
		306.84	*	-8.931E-03	2.600E-02	4.178E-02	2.430E-03	-0.214
		401.10		6.465E+00	6.550E+00	1.150E+01	6.444E-01	0.562
		112.95		2.363E-02	1.671E+00	2.726E+00	1.775E-01	0.009
LU-177		208.36	*	2.874E+00	1.483E+00	2.098E+00	1.152E-01	1.370
	+	52.97		4.079E-01	1.519E+00	2.534E+00	1.870E-01	0.161
LU-177M		54.07		-2.202E-02	7.976E-01	1.316E+00	9.763E-02	-0.017
		61.30		1.396E-01	1.637E+00	2.377E+00	1.789E-01	0.059
		121.62		6.945E-02	3.794E-01	6.220E-01	3.719E-02	0.112
		147.16		-6.502E-01	6.665E-01	1.036E+00	5.688E-02	-0.627
		171.86		1.670E-01	4.818E-01	7.893E-01	4.146E-02	0.212
		218.09		-1.697E-01	8.938E-01	1.421E+00	7.886E-02	-0.119
	+	268.79		2.785E+00	1.241E+00	1.565E+00	9.022E-02	1.780
		319.02		1.065E-01	2.542E-01	4.352E-01	2.529E-02	0.245
		367.43		-5.487E-02	8.830E-01	1.469E+00	8.356E-02	-0.037
		413.65	*	-2.182E-02	1.978E-01	2.832E-01	1.601E-02	-0.077
HF-181		56.28		-6.329E-01	9.037E-01	1.453E+00	1.085E-01	-0.435
		57.53		-8.577E-02	4.973E-01	8.160E-01	6.112E-02	-0.105
		65.20		9.720E-01	1.110E+00	1.658E+00	1.255E-01	0.586
		133.02		4.875E-03	6.748E-02	1.099E-01	6.290E-03	0.044
		136.25		-3.130E-01	4.622E-01	7.293E-01	4.131E-02	-0.429
		345.85		3.158E-02	2.025E-01	2.985E-01	1.720E-02	0.106
W-181		482.03	*	5.306E-03	4.168E-02	6.955E-02	4.070E-03	0.076
		56.28		-2.910E-01	3.553E-01	5.687E-01	4.247E-02	-0.512
		57.53		-3.381E-02	1.948E-01	3.195E-01	2.393E-02	-0.106
TA-182		65.20	*	3.776E-01	4.314E-01	6.442E-01	4.875E-02	0.586
		67.75		-1.093E-01	1.552E-01	1.807E-01	1.379E-02	-0.605
		100.10		7.184E-02	1.785E-01	2.959E-01	2.224E-02	0.243
		152.43		2.431E-01	3.504E-01	5.822E-01	3.151E-02	0.418
RE-183		222.10		2.277E-01	3.585E-01	5.911E-01	3.293E-02	0.385
		1001.68		7.432E-01	2.084E+00	3.471E+00	2.723E-01	0.214
	+	1121.28		6.516E-01	2.492E-01	3.334E-01	2.099E-02	1.955
		1189.05		-1.085E-01	2.994E-01	4.831E-01	2.734E-02	-0.225
		1221.42	*	8.086E-02	1.978E-01	3.395E-01	2.047E-02	0.238
		1230.97		3.059E-02	4.803E-01	8.028E-01	4.930E-02	0.038
		57.98		4.830E-02	1.996E-01	3.211E-01	2.408E-02	0.150
		59.32		8.146E-02	1.167E-01	1.743E-01	1.311E-02	0.467
		67.20		-1.319E-01	2.485E-01	3.251E-01	2.476E-02	-0.406
		162.32	*	5.074E-02	1.124E-01	1.849E-01	9.743E-03	0.274

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	208.81		2.576E+00	1.329E+00	1.894E+00	1.040E-01	1.360
		291.72		1.611E-01	1.081E+00	1.599E+00	9.291E-02	0.101
		57.98		1.780E-01	7.353E-01	1.183E+00	8.870E-02	0.150
		59.32		2.999E-01	4.296E-01	6.417E-01	4.826E-02	0.467
		67.20		-4.856E-01	9.151E-01	1.197E+00	9.118E-02	-0.406
		161.27		-6.715E-02	3.628E-01	5.822E-01	3.076E-02	-0.115
		216.55		-8.101E-02	2.774E-01	4.390E-01	2.432E-02	-0.185
		252.85	*	-5.409E-02	2.425E-01	3.828E-01	2.188E-02	-0.141
		318.01		2.720E-01	4.292E-01	7.430E-01	4.318E-02	0.366
		792.07		1.958E-01	1.138E+00	1.626E+00	1.203E-01	0.120
OS-185		903.28		3.998E-01	1.046E+00	1.701E+00	1.492E-01	0.235
		920.93		1.399E-01	4.954E-01	7.738E-01	6.676E-02	0.181
		59.72		3.824E-01	3.082E-01	4.704E-01	3.539E-02	0.813
		61.14		4.521E-02	1.779E-01	2.603E-01	1.959E-02	0.174
		69.30		-1.112E-01	4.744E-01	4.852E-01	3.727E-02	-0.229
		592.07		5.609E-02	2.551E+00	4.196E+00	2.487E-01	0.013
		646.12	*	-1.297E-02	4.309E-02	6.884E-02	4.031E-03	-0.188
		717.42		7.981E-01	9.138E-01	1.587E+00	1.027E-01	0.503
		874.81		3.298E-01	5.484E-01	9.371E-01	7.957E-02	0.352
		880.27		-6.956E-01	7.105E-01	1.018E+00	8.722E-02	-0.683
RE-188		155.03	*	5.855E-02	1.805E-01	2.958E-01	1.590E-02	0.198
		477.96		8.421E-02	2.928E+00	4.856E+00	2.838E-01	0.017
		633.10		1.848E-01	2.691E+00	4.430E+00	2.605E-01	0.042
W-188	+	63.58		4.535E+01	8.015E+01	9.157E+01	6.906E+00	0.495
IR-192		227.08		4.647E-02	1.358E+01	2.177E+01	1.219E+00	0.002
		290.67	*	-3.906E-01	8.224E+00	1.201E+01	6.977E-01	-0.033
	+	295.96		1.148E+00	2.046E-01	2.876E-01	1.698E-02	3.992
AU-195		308.46		6.803E-02	9.810E-02	1.700E-01	9.999E-03	0.400
		316.51	*	-1.014E-02	3.298E-02	5.443E-02	3.180E-03	-0.186
		468.07		2.383E-03	6.610E-02	1.097E-01	7.358E-03	0.022
		604.41		-2.183E-01	4.871E-01	6.565E-01	7.491E-02	-0.332
		612.46		2.266E+00	8.775E-01	1.495E+00	1.145E-01	1.516
		65.12		1.782E-01	2.000E-01	2.988E-01	2.261E-02	0.597
		66.83		-6.096E-02	1.085E-01	1.529E-01	1.163E-02	-0.399
TL-200	+	75.70		1.319E+00	3.282E-01	4.862E-01	3.885E-02	2.714
		98.88	*	1.497E-01	2.586E-01	3.783E-01	2.887E-02	0.396
		129.76		2.311E+00	2.948E+00	4.926E+00	2.849E-01	0.469
TL-201		367.94	*	-5.050E-05	2.948E+00	Half-Life too short		
		579.30		3.030E-03	2.948E+00	Half-Life too short		
		828.27		-2.648E-03	2.948E+00	Half-Life too short		
		1205.75		-1.719E-03	2.948E+00	Half-Life too short		
TL-202		68.90		-1.343E+00	7.713E+00	7.927E+00	6.078E-01	-0.169
		70.82		1.208E+00	3.376E+00	4.611E+00	3.570E-01	0.262
		80.30		-2.333E+00	5.794E+00	8.190E+00	6.798E-01	-0.285
		135.34		-2.180E+01	2.595E+01	4.067E+01	2.310E+00	-0.536
TL-202		167.43	*	-3.094E+00	7.037E+00	1.115E+01	5.825E-01	-0.278
		68.90		-1.201E-01	6.900E-01	7.091E-01	5.437E-02	-0.169
		70.82		1.078E-01	3.012E-01	4.114E-01	3.185E-02	0.262
		80.30		-2.082E-01	5.171E-01	7.309E-01	6.066E-02	-0.285

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HG-203		439.56	*	8.232E-02	7.005E-02	1.241E-01	7.128E-03	0.663
		70.83		5.346E-01	1.214E+00	1.781E+00	2.327E-01	0.300
		72.87		2.677E+00	7.437E-01	1.200E+00	1.524E-01	2.232
		82.60		-4.326E-01	1.815E+00	1.846E+00	2.520E-01	-0.234
BI-207		279.20	*	4.139E-02	4.524E-02	7.020E-02	4.317E-03	0.590
		72.80		6.931E-01	2.226E-01	3.477E-01	2.723E-02	1.993
	+	74.97		7.317E-01	1.820E-01	2.469E-01	1.962E-02	2.963
		84.90		3.301E-01	2.277E-01	3.419E-01	2.966E-02	0.966
	+	569.67		1.918E-01	7.495E-02	7.817E-02	4.640E-03	2.454
		1063.62	*	2.016E-02	5.293E-02	9.222E-02	6.549E-03	0.219
TL-207		1770.23		1.949E-01	4.592E-01	7.193E-01	4.339E-02	0.271
		81.07		-4.052E-01	2.605E-01	3.470E-01	2.901E-02	-1.168
		83.78		-3.993E-02	1.787E-01	2.132E-01	1.829E-02	-0.187
		94.90		7.046E-01	2.743E-01	4.288E-01	3.452E-02	1.643
		122.32		9.415E-02	1.748E+00	2.851E+00	1.948E-01	0.033
		144.24		-5.821E-02	7.053E-01	1.114E+00	7.825E-02	-0.052
		154.21		-1.526E-02	4.237E-01	6.850E-01	4.572E-02	-0.022
	+	269.46		6.519E-01	2.908E-01	3.633E-01	2.191E-02	1.794
		323.87	*	6.090E-02	7.431E-01	1.091E+00	1.802E-01	0.056
	+	338.28		5.915E+00	1.881E+00	2.554E+00	2.687E-01	2.316
		445.03		2.186E-01	2.170E+00	3.624E+00	3.713E-01	0.060
		260.50		-2.018E+00	1.029E+01	1.625E+01	9.331E-01	-0.124
PO-209		262.80		-1.871E+01	3.039E+01	4.285E+01	2.464E+00	-0.437
		896.60	*	5.707E+00	7.671E+00	1.318E+01	1.158E+00	0.433
BI-210		46.50	*	-1.108E+00	3.172E+00	5.114E+00	3.898E-01	-0.217
PB-210		46.50	*	-1.108E+00	3.172E+00	5.114E+00	3.898E-01	-0.217
PO-210		46.50	*	-1.108E+00	3.172E+00	5.114E+00	3.333E-01	-0.217
PB-211		404.84	*	-2.359E-01	1.098E+00	1.545E+00	9.631E-01	-0.153
		427.08		-3.823E-01	2.013E+00	3.282E+00	2.028E+00	-0.117
		831.96		-2.408E-02	1.301E+00	2.060E+00	1.289E+00	-0.012
BI-212	+	727.18	*	9.710E-01	4.764E-01	6.921E-01	5.762E-02	1.403
		785.46		2.120E+00	1.773E+00	3.141E+00	2.297E-01	0.675
PO-215		1620.62		6.717E-01	1.194E+00	2.122E+00	1.417E-01	0.317
		81.07		-4.052E-01	2.605E-01	3.470E-01	2.901E-02	-1.168
		83.78		-3.993E-02	1.787E-01	2.132E-01	1.829E-02	-0.187
		94.90		7.046E-01	2.743E-01	4.288E-01	3.452E-02	1.643
		122.32		9.415E-02	1.748E+00	2.851E+00	1.948E-01	0.033
		144.24		-5.821E-02	7.053E-01	1.114E+00	7.825E-02	-0.052
		154.21		-1.526E-02	4.237E-01	6.850E-01	4.572E-02	-0.022
	+	269.46		6.519E-01	2.908E-01	3.633E-01	2.191E-02	1.794
		323.87	*	6.090E-02	7.431E-01	1.091E+00	1.802E-01	0.056
	+	338.28		5.915E+00	1.881E+00	2.554E+00	2.687E-01	2.316
RN-219		445.03		2.186E-01	2.170E+00	3.624E+00	3.713E-01	0.060
		271.23		5.042E-01	4.003E-01	4.539E-01	3.670E-02	1.111
		401.81	*	3.023E-01	4.104E-01	7.084E-01	9.580E-02	0.427
RN-220		549.76	*	1.250E+01	2.479E+01	4.231E+01	2.511E+00	0.295
RA-223		81.07		-4.052E-01	2.605E-01	3.470E-01	2.901E-02	-1.168
		83.78		-3.993E-02	1.787E-01	2.132E-01	1.829E-02	-0.187
		94.90		7.046E-01	2.743E-01	4.288E-01	3.452E-02	1.643

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32	9.415E-02	1.748E+00	2.851E+00	1.948E-01	0.033
		144.24	-5.821E-02	7.053E-01	1.114E+00	7.825E-02	-0.052
		154.21	-1.526E-02	4.237E-01	6.850E-01	4.572E-02	-0.022
	+	269.46	6.519E-01	2.908E-01	3.633E-01	2.191E-02	1.794
		323.87	6.090E-02	7.431E-01	1.091E+00	1.802E-01	0.056
	+	338.28	5.915E+00	1.881E+00	2.554E+00	2.687E-01	2.316
		445.03	2.186E-01	2.170E+00	3.624E+00	3.713E-01	0.060
		79.80	2.040E+00	1.950E+00	2.856E+00	6.102E-01	0.714
		236.00	1.754E+00	3.764E-01	5.713E-01	5.922E-02	3.070
		256.20	-9.208E-02	4.103E-01	6.472E-01	9.016E-02	-0.142
		286.10	-2.655E-01	1.494E+00	2.492E+00	2.881E-01	-0.107
	+	299.80	3.884E+00	1.949E+00	2.650E+00	4.318E-01	1.466
TH-227		304.40	-5.930E-01	2.047E+00	2.928E+00	5.066E-01	-0.203
		334.20	-6.971E-01	3.085E+00	3.853E+00	7.063E-01	-0.181
		79.80	2.040E+00	1.951E+00	2.856E+00	6.181E-01	0.714
	+	94.00	7.550E+00	3.273E+00	3.865E+00	8.348E-01	1.954
		236.00	1.754E+00	3.651E-01	5.713E-01	5.118E-02	3.070
		256.20	-9.208E-02	4.104E-01	6.472E-01	1.092E-01	-0.142
		286.10	-2.655E-01	1.517E+00	2.492E+00	2.496E+00	-0.107
	+	299.80	3.884E+00	1.949E+00	2.650E+00	4.318E-01	1.466
		304.40	-5.930E-01	2.047E+00	2.928E+00	5.066E-01	-0.203
		334.20	-6.971E-01	3.085E+00	3.853E+00	7.063E-01	-0.181
		85.43	5.704E-01	2.357E-01	3.604E-01	3.144E-02	1.583
	+	88.47	4.690E-01	1.340E-01	2.334E-01	2.075E-02	2.010
TH-229		100.00	7.663E-02	1.853E-01	3.073E-01	2.313E-02	0.249
		193.63	2.991E-02	5.408E-01	8.723E-01	4.707E-02	0.034
		210.97	1.766E+00	9.533E-01	1.463E+00	8.058E-02	1.207
		283.67	-7.345E-01	1.646E+00	2.410E+00	3.321E-01	-0.305
	+	301.29	1.554E+00	7.551E-01	1.038E+00	1.086E-01	1.496
		81.07	-4.052E-01	2.605E-01	3.470E-01	2.901E-02	-1.168
		83.78	-3.993E-02	1.787E-01	2.132E-01	1.829E-02	-0.187
		94.90	7.046E-01	2.743E-01	4.288E-01	3.452E-02	1.643
		122.32	9.415E-02	1.748E+00	2.851E+00	1.948E-01	0.033
		144.24	-5.821E-02	7.053E-01	1.114E+00	7.825E-02	-0.052
		154.21	-1.526E-02	4.237E-01	6.850E-01	4.572E-02	-0.022
	+	269.46	6.519E-01	2.908E-01	3.633E-01	2.191E-02	1.794
U-231		323.87	6.090E-02	7.431E-01	1.091E+00	1.802E-01	0.056
	+	338.28	5.915E+00	1.881E+00	2.554E+00	2.687E-01	2.316
		445.03	2.186E-01	2.170E+00	3.624E+00	3.713E-01	0.060
		84.21	-3.878E-02	6.943E+00	9.258E+00	7.975E-01	-0.004
	+	92.29	7.495E+00	2.883E+00	4.130E+00	3.454E-01	1.815
		95.87	6.213E-01	1.231E+00	1.806E+00	1.435E-01	0.344
		108.00	1.174E-01	2.142E+00	3.502E+00	2.402E-01	0.034
	+	75.28	2.135E+01	5.963E+00	7.553E+00	1.132E+00	2.827
	+	86.59	6.725E+00	2.571E+00	3.260E+00	8.765E-01	2.063
	+	300.12	1.083E+00	5.341E-01	7.332E-01	9.857E-02	1.477
		311.98	6.255E-02	6.377E-02	1.119E-01	6.911E-03	0.559
		340.50	2.123E+00	8.851E-01	1.264E+00	2.902E-01	1.680
PA-233		398.62	-5.832E-01	2.030E+00	3.314E+00	8.553E-01	-0.176



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		5.337E-01	1.676E+00	2.686E+00	5.519E-01	0.199
		63.00		1.315E+00	2.330E+00	2.706E+00	4.038E-01	0.486
		94.67		5.714E-01	2.094E-01	3.181E-01	3.827E-02	1.796
		98.44		4.806E-02	1.102E-01	1.555E-01	8.653E-02	0.309
		99.86		1.870E-01	4.858E-01	7.785E-01	5.868E-02	0.240
		111.00		4.257E-02	1.909E-01	3.138E-01	3.379E-02	0.136
		131.20		2.466E-02	1.102E-01	1.805E-01	1.039E-02	0.137
		152.70		1.708E-01	3.424E-01	5.633E-01	8.826E-02	0.303
		186.00		4.210E+00	2.287E+00	2.465E+00	7.512E-01	1.708
		226.40		-1.216E-01	4.298E-01	6.793E-01	7.784E-02	-0.179
		227.20		-6.729E-02	4.604E-01	7.327E-01	4.102E-02	-0.092
		248.90		-1.124E+00	8.872E-01	1.269E+00	2.724E-01	-0.886
	+	293.70		7.224E+00	1.681E+00	1.818E+00	2.925E-01	3.973
		369.80		6.434E-01	8.259E-01	1.422E+00	2.956E-01	0.453
		568.70		6.242E+00	2.439E+00	2.603E+00	1.545E-01	2.398
		569.50		1.702E+00	6.653E-01	7.001E-01	4.155E-02	2.432
		574.00		2.860E-01	1.558E+00	2.264E+00	1.344E-01	0.126
		699.00		-2.534E-01	7.282E-01	1.154E+00	2.092E-01	-0.220
		706.10		-1.372E-01	1.042E+00	1.678E+00	7.417E-01	-0.082
		733.00		4.444E-02	4.003E-01	5.591E-01	1.203E-01	0.079
		742.81		9.239E-01	1.487E+00	2.323E+00	1.557E+00	0.398
		796.30		1.293E+00	1.319E+00	1.741E+00	4.649E-01	0.743
		805.60		1.138E+00	1.060E+00	1.779E+00	5.404E-01	0.639
		819.60		-1.269E-01	1.260E+00	2.020E+00	7.643E-01	-0.063
	826.30		-7.183E-02	8.631E-01	1.386E+00	6.182E-01	-0.052	
	831.60		-1.489E-02	6.479E-01	1.046E+00	3.102E-01	-0.014	
	876.40		-3.861E-01	8.745E-01	1.193E+00	1.226E+00	-0.324	
	880.51		-2.504E-01	2.542E-01	3.635E-01	3.115E-02	-0.689	
	883.24		-1.517E-01	3.028E-01	4.359E-01	2.930E-01	-0.348	
	899.00		-2.256E-01	9.238E-01	1.449E+00	6.340E-01	-0.156	
	925.00		-6.326E-01	1.260E+00	1.931E+00	1.660E-01	-0.328	
	926.50		1.140E-02	1.856E-01	3.005E-01	7.592E-02	0.038	
	946.00	*	1.786E-01	3.106E-01	5.235E-01	9.773E-02	0.341	
	949.00		-3.309E-02	4.535E-01	7.243E-01	6.070E-02	-0.046	
	980.50		0.000E+00	7.214E-01	1.159E+00	9.350E-02	0.000	
	1394.10		3.770E-01	9.807E-01	1.661E+00	1.079E+00	0.227	
PA-234M		766.42		-7.068E+00	1.227E+01	1.817E+01	9.177E+00	-0.389
		1001.03	*	-1.345E+00	4.837E+00	7.650E+00	7.121E-01	-0.176
U-235	+	89.95		4.010E+00	1.907E+00	2.016E+00	6.223E-01	1.989
		93.35		2.349E+00	1.099E+00	1.247E+00	3.479E-01	1.884
	105.00		6.726E-02	1.082E+00	1.771E+00	5.214E-01	0.038	
	143.76	*	2.627E-02	2.165E-01	3.448E-01	5.590E-02	0.076	
	163.35		1.079E-01	4.757E-01	7.756E-01	1.382E-01	0.139	
	185.71	+	1.559E-01	7.060E-02	9.124E-02	4.875E-03	1.709	
NP-236		205.31		-1.258E-01	6.274E-01	8.686E-01	1.553E-01	-0.145
		94.67		4.355E-01	1.542E-01	2.415E-01	1.951E-02	1.804
		98.44		3.636E-02	8.084E-02	1.176E-01	9.022E-03	0.309
		111.00		3.220E-02	1.444E-01	2.374E-01	1.577E-02	0.136
		160.31	*	-1.386E-02	8.171E-02	1.312E-01	6.951E-03	-0.106

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		3.090E-02	1.627E-01	2.588E-01	1.959E-02	0.119
		117.00	*	-1.285E-01	1.943E-01	3.081E-01	1.927E-02	-0.417
	+	209.75		2.032E+00	1.049E+00	1.507E+00	8.285E-02	1.348
		228.18		1.333E-02	2.409E-01	3.869E-01	2.168E-02	0.034
	+	277.60		3.366E-01	2.669E-01	3.211E-01	1.858E-02	1.048
AM-241		334.30		-3.605E-01	1.748E+00	2.189E+00	1.268E-01	-0.165
		59.54	*	1.926E-01	1.623E-01	2.471E-01	2.034E-02	0.779
	CM-243	99.55		3.179E-02	1.675E-01	2.663E-01	2.015E-02	0.119
		103.76	*	2.865E-02	9.829E-02	1.622E-01	1.167E-02	0.177
		117.00		-1.322E-01	1.999E-01	3.170E-01	1.982E-02	-0.417
AM-246	+	209.75		2.003E+00	1.034E+00	1.485E+00	8.167E-02	1.348
		228.18		1.347E-02	2.434E-01	3.909E-01	2.191E-02	0.034
	+	277.60		3.394E-01	2.691E-01	3.237E-01	1.873E-02	1.048
		798.80		-4.744E-03	1.616E-01	2.253E-01	1.687E-02	-0.021
		1036.00		1.860E-02	3.073E-01	5.178E-01	3.857E-02	0.036
CM-247		1062.04		-9.475E-02	2.379E-01	3.850E-01	2.742E-02	-0.246
		1078.86	*	1.134E-01	1.464E-01	2.600E-01	1.794E-02	0.436
	+	278.00		1.396E+00	1.107E+00	1.322E+00	7.650E-02	1.056
		287.40		6.858E-01	1.305E+00	2.065E+00	1.199E-01	0.332
		402.60	*	2.028E-02	3.718E-02	6.231E-02	3.495E-03	0.325
CF-249		252.85		-2.029E-01	9.099E-01	1.436E+00	8.209E-02	-0.141
		333.44		-1.187E-01	2.621E-01	2.864E-01	1.659E-02	-0.415
		387.95	*	-4.882E-03	4.014E-02	6.646E-02	3.712E-03	-0.073
CF-251		176.60	*	-3.477E-02	1.325E-01	2.114E-01	1.117E-02	-0.165
		227.00		8.307E-03	4.078E-01	6.539E-01	3.660E-02	0.013
		285.00		-4.849E-01	1.680E+00	2.787E+00	1.617E-01	-0.174

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691010      *
* Acquisition date   : 9-FEB-2010 15:33:12 Detector SN#      :              *
* Detector ID        : GAM19 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.61 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID          : G245691010 Analyst initials: MJH1          *
* Batch Number       : 947037 Sample Quantity : 1.3629E+02 GRAM   *
* Recovery           : 1.00000 Carrier Weight  : 0.00000         *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope      :          *
* MSD DPM             : 0.000 MSD Isotope      :              *
* LCS DPM             : 0.000 LCS Isotope      :              *
* LCSD DPM            : 0.000 LCSD Isotope     :              *
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.819E+01	2.625E+00	4.802E-01	0.000E+00
CD-109	3.495E+00	9.785E-01	1.397E+00	0.000E+00
SN-126	3.435E-01	9.617E-02	1.380E-01	0.000E+00
CS-135	5.541E-01	2.436E-01	2.468E-01	0.000E+00
TL-208	5.848E-01	8.896E-02	5.234E-02	0.000E+00
BI-211	3.939E+00	5.029E-01	3.158E-01	0.000E+00
PB-212	1.645E+00	1.610E-01	9.984E-02	0.000E+00
PO-212	1.645E+00	1.610E-01	9.984E-02	0.000E+00
BI-214	1.171E+00	1.825E-01	1.003E-01	0.000E+00
PB-214	1.370E+00	1.885E-01	1.101E-01	0.000E+00
PO-214	1.370E+00	1.885E-01	1.101E-01	0.000E+00
PO-216	1.645E+00	1.610E-01	9.984E-02	0.000E+00
PO-218	1.370E+00	1.885E-01	1.101E-01	0.000E+00
RA-224	3.855E+00	1.282E+00	1.135E+00	0.000E+00
RA-226	1.171E+00	1.825E-01	1.003E-01	0.000E+00
AC-228	1.688E+00	3.457E-01	2.211E-01	0.000E+00
RA-228	1.688E+00	3.457E-01	2.211E-01	0.000E+00
TH-228	1.670E+00	1.634E-01	1.014E-01	0.000E+00
TH-230	1.171E+00	1.825E-01	1.003E-01	0.000E+00
TH-232	1.688E+00	3.457E-01	2.211E-01	0.000E+00
TH-234	1.128E+00	1.961E+00	2.133E+00	0.000E+00
U-234	1.171E+00	1.825E-01	1.003E-01	0.000E+00
NP-237	1.009E+00	3.484E-01	4.312E-01	0.000E+00
U-238	1.128E+00	1.961E+00	2.133E+00	0.000E+00
AM-243	4.076E-01	9.937E-02	9.479E-02	0.000E+00
ANH-511	1.661E-01	6.720E-02	4.773E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	7.657E-03	3.022E-01	5.238E-01	0.000E+00 NOT IDENT.

NA-22	5.763E-03	4.125E-02	7.119E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	7.220E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.274E-02	2.591E-02	4.721E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.125E-02	8.825E-02	0.000E+00	FAIL ABUN
SC-46	9.117E-03	4.179E-02	7.095E-02	0.000E+00	FAIL ABUN
V-48	2.067E-02	7.044E-02	1.199E-01	0.000E+00	NOT IDENT.
CR-51	6.401E-02	3.573E-01	6.367E-01	0.000E+00	NOT IDENT.
MN-52	3.042E-02	2.215E-01	3.808E-01	0.000E+00	NOT IDENT.
MN-54	1.563E-02	3.720E-02	6.436E-02	0.000E+00	NOT IDENT.
CO-56	-6.785E-03	4.005E-02	6.597E-02	0.000E+00	NOT IDENT.
CO-57	-1.015E-03	2.489E-02	4.334E-02	0.000E+00	NOT IDENT.
CO-58	-3.373E-02	3.907E-02	6.027E-02	0.000E+00	NOT IDENT.
FE-59	2.388E-02	8.519E-02	1.501E-01	0.000E+00	NOT IDENT.
CO-60	-2.666E-02	3.858E-02	6.042E-02	0.000E+00	NOT IDENT.
ZN-65	-6.163E-03	9.780E-02	1.438E-01	0.000E+00	NOT IDENT.
GE-68	7.878E-01	1.246E+00	2.253E+00	0.000E+00	NOT IDENT.
AS-73	3.476E-01	7.627E-01	1.392E+00	0.000E+00	NOT IDENT.
AS-74	8.814E-02	9.248E-02	1.679E-01	0.000E+00	NOT IDENT.
SE-75	-2.138E-02	4.804E-02	7.244E-02	0.000E+00	NOT IDENT.
BR-77	9.365E-01	1.050E+01	1.772E+01	0.000E+00	FAIL ABUN
SR-82	-3.827E-01	4.105E-01	6.377E-01	0.000E+00	NOT IDENT.
RB-83	1.669E-02	7.089E-02	1.173E-01	0.000E+00	NOT IDENT.
RB-84	-4.604E-02	6.486E-02	1.000E-01	0.000E+00	NOT IDENT.
KR-85	1.311E+01	7.952E+00	1.346E+01	0.000E+00	NOT IDENT.
SR-85	6.722E-02	4.078E-02	6.905E-02	0.000E+00	NOT IDENT.
RB-86	5.176E-01	7.864E-01	1.426E+00	0.000E+00	NOT IDENT.
Y-88	-7.909E-03	3.437E-02	5.463E-02	0.000E+00	NOT IDENT.
ZR-88	2.145E-03	2.945E-02	5.169E-02	0.000E+00	NOT IDENT.
Y-91	-5.274E+00	1.801E+01	3.005E+01	0.000E+00	NOT IDENT.
NB-94	2.214E-03	3.295E-02	5.602E-02	0.000E+00	NOT IDENT.
NB-95	-1.713E-02	4.315E-02	7.040E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.613E-01	2.651E-01	0.000E+00	NOT IDENT.
ZR-95	2.788E-02	6.739E-02	1.174E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.022E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.990E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	4.796E+00	1.138E+01	1.982E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.120E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.513E-02	3.452E-02	5.673E-02	0.000E+00	NOT IDENT.
RH-102	1.645E-03	2.678E-02	4.655E-02	0.000E+00	NOT IDENT.
RU-103	-1.623E-02	3.765E-02	6.292E-02	0.000E+00	FAIL ABUN
RH-106	1.566E-02	3.109E-01	5.319E-01	0.000E+00	FAIL ABUN
RU-106	1.566E-02	3.109E-01	5.319E-01	0.000E+00	FAIL ABUN
AG-108M	-1.817E-02	3.291E-02	5.531E-02	0.000E+00	NOT IDENT.
AG-110M	-3.452E-02	3.549E-02	5.574E-02	0.000E+00	NOT IDENT.
IN-111	1.156E+00	1.176E+00	1.850E+00	0.000E+00	NOT IDENT.
IN-113M	1.075E-02	4.300E-02	7.622E-02	0.000E+00	NOT IDENT.
SN-113	1.075E-02	4.300E-02	7.622E-02	0.000E+00	NOT IDENT.
IN-114M	-6.584E-02	2.100E-01	3.079E-01	0.000E+00	NOT IDENT.
CD-115	5.451E-01	1.010E+01	1.744E+01	0.000E+00	NOT IDENT.
SN-117M	1.041E-02	5.687E-02	9.884E-02	0.000E+00	NOT IDENT.
SB-122	2.322E-01	2.338E+00	3.506E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.176E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	4.481E-03	2.934E-02	5.092E-02	0.000E+00	NOT IDENT.
I-124	-2.864E-01	7.207E-01	1.020E+00	0.000E+00	NOT IDENT.
SB-124	-1.143E-02	6.936E-02	1.123E-01	0.000E+00	FAIL ABUN
SB-125	-1.094E-02	8.861E-02	1.531E-01	0.000E+00	NOT IDENT.
TE-125M	-1.694E+00	9.482E+00	1.650E+01	0.000E+00	NOT IDENT.
I-126	2.108E-02	1.903E-01	3.256E-01	0.000E+00	NOT IDENT.
SB-126	-8.667E-02	1.546E-01	2.331E-01	0.000E+00	FAIL ABUN
SB-127	-1.048E+00	1.322E+00	2.087E+00	0.000E+00	NOT IDENT.
XE-127	3.299E-02	4.957E-02	8.408E-02	0.000E+00	NOT IDENT.
I-131	-3.441E-02	1.066E-01	1.836E-01	0.000E+00	NOT IDENT.
TE-132	3.490E-02	7.263E-01	1.236E+00	0.000E+00	NOT IDENT.
BA-133	1.834E-02	4.260E-02	6.740E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.865E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.654E-02	6.437E-02	9.144E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	5.780E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.080E-02	1.062E-01	1.848E-01	0.000E+00	FAIL ABUN
BA-137M	-1.330E-02	3.663E-02	6.056E-02	0.000E+00	NOT IDENT.
CS-137	-1.406E-02	3.873E-02	6.402E-02	0.000E+00	NOT IDENT.
CE-139	-5.219E-03	2.894E-02	4.946E-02	0.000E+00	NOT IDENT.
BA-140	6.972E-02	2.499E-01	4.362E-01	0.000E+00	NOT IDENT.
LA-140	7.258E-02	7.900E-02	1.372E-01	0.000E+00	FAIL ABUN
CE-141	7.984E-03	6.355E-02	1.081E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.925E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	8.009E-02	2.032E-01	3.579E-01	0.000E+00	NOT IDENT.
PM-144	-1.219E-02	3.473E-02	5.722E-02	0.000E+00	NOT IDENT.
PR-144	-8.259E-01	2.353E+00	3.878E+00	0.000E+00	NOT IDENT.

PM-146	2.945E-02	4.265E-02	7.696E-02	0.000E+00	NOT IDENT.
ND-147	-3.147E-01	5.374E-01	8.825E-01	0.000E+00	FAIL ABUN
PM-149	-2.070E+01	8.798E+01	1.544E+02	0.000E+00	NOT IDENT.
EU-152	-1.673E-01	1.290E-01	1.498E-01	0.000E+00	FAIL ABUN
GD-153	6.566E-02	8.768E-02	1.390E-01	0.000E+00	NOT IDENT.
EU-154	-5.839E-03	1.164E-01	1.973E-01	0.000E+00	NOT IDENT.
EU-155	3.912E-03	1.102E-01	1.936E-01	0.000E+00	FAIL ABUN
TB-160	-4.092E-02	1.219E-01	1.959E-01	0.000E+00	FAIL ABUN
HO-166M	-2.765E-02	6.044E-02	9.844E-02	0.000E+00	NOT IDENT.
TM-171	-1.783E+01	3.219E+01	4.918E+01	0.000E+00	NOT IDENT.
LU-176	-8.931E-03	2.548E-02	4.316E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.453E+00	2.182E+00	0.000E+00	FAIL ABUN
LU-177M	-2.182E-02	1.939E-01	2.908E-01	0.000E+00	FAIL ABUN
HF-181	5.306E-03	4.085E-02	7.124E-02	0.000E+00	NOT IDENT.
W-181	3.776E-01	4.227E-01	6.842E-01	0.000E+00	NOT IDENT.
TA-182	8.086E-02	1.938E-01	3.416E-01	0.000E+00	FAIL ABUN
RE-183	5.074E-02	1.101E-01	1.933E-01	0.000E+00	FAIL ABUN
RE-184	-5.409E-02	2.377E-01	3.968E-01	0.000E+00	NOT IDENT.
OS-185	-1.297E-02	4.223E-02	7.011E-02	0.000E+00	NOT IDENT.
RE-188	5.855E-02	1.769E-01	3.094E-01	0.000E+00	NOT IDENT.
W-188	-3.906E-01	8.060E+00	1.242E+01	0.000E+00	FAIL ABUN
IR-192	-1.014E-02	3.232E-02	5.619E-02	0.000E+00	FAIL ABUN
AU-195	1.497E-01	2.534E-01	3.989E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.437E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.094E+00	6.896E+00	1.164E+01	0.000E+00	NOT IDENT.
TL-202	8.232E-02	6.865E-02	1.273E-01	0.000E+00	NOT IDENT.
HG-203	4.139E-02	4.433E-02	7.264E-02	0.000E+00	NOT IDENT.
BI-207	2.016E-02	5.187E-02	9.304E-02	0.000E+00	FAIL ABUN
TL-207	6.090E-02	7.283E-01	1.126E+00	0.000E+00	FAIL ABUN
PO-209	5.707E+00	7.518E+00	1.334E+01	0.000E+00	NOT IDENT.
BI-210	-1.108E+00	3.109E+00	5.463E+00	0.000E+00	NOT IDENT.
PB-210	-1.108E+00	3.109E+00	5.463E+00	0.000E+00	NOT IDENT.
PO-210	-1.108E+00	3.108E+00	5.463E+00	0.000E+00	NOT IDENT.
PB-211	-2.359E-01	1.076E+00	1.588E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.669E-01	7.034E-01	0.000E+00	FAIL ABUN
PO-215	6.090E-02	7.283E-01	1.126E+00	0.000E+00	FAIL ABUN
RN-219	3.023E-01	4.022E-01	7.280E-01	0.000E+00	NOT IDENT.
RN-220	1.250E+01	2.429E+01	4.323E+01	0.000E+00	NOT IDENT.
RA-223	6.090E-02	7.283E-01	1.126E+00	0.000E+00	FAIL ABUN
AC-227	-9.208E-02	4.021E-01	6.707E-01	0.000E+00	FAIL ABUN
TH-227	-9.208E-02	4.022E-01	6.707E-01	0.000E+00	FAIL ABUN
TH-229	2.991E-02	5.300E-01	9.086E-01	0.000E+00	FAIL ABUN
PA-231	-7.345E-01	1.613E+00	2.493E+00	0.000E+00	FAIL ABUN
TH-231	6.090E-02	7.283E-01	1.126E+00	0.000E+00	FAIL ABUN
U-231	6.213E-01	1.207E+00	1.905E+00	0.000E+00	FAIL ABUN
PA-233	6.255E-02	6.249E-02	1.156E-01	0.000E+00	FAIL ABUN
PA-234	1.786E-01	3.044E-01	5.294E-01	0.000E+00	FAIL ABUN
PA-234M	-1.345E+00	4.740E+00	7.727E+00	0.000E+00	NOT IDENT.
U-235	2.627E-02	2.122E-01	3.611E-01	0.000E+00	FAIL ABUN
NP-236	-1.386E-02	8.007E-02	1.371E-01	0.000E+00	NOT IDENT.
NP-239	-1.285E-01	1.904E-01	3.239E-01	0.000E+00	FAIL ABUN
AM-241	1.926E-01	1.590E-01	2.628E-01	0.000E+00	NOT IDENT.
CM-243	2.865E-02	9.632E-02	1.709E-01	0.000E+00	FAIL ABUN
AM-246	1.134E-01	1.434E-01	2.622E-01	0.000E+00	NOT IDENT.
CM-247	2.028E-02	3.644E-02	6.404E-02	0.000E+00	FAIL ABUN
CF-249	-4.882E-03	3.934E-02	6.835E-02	0.000E+00	NOT IDENT.
CF-251	-3.477E-02	1.298E-01	2.205E-01	0.000E+00	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691010.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:12.
Sample ID          : G245691010 Sample quantity : 1.36290E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.61 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1276	10.67*	1.168E+00	2.819E+01	2.819E+01	9.50
CD-109	88.03	281	3.72*	6.093E+00	3.417E+00	3.495E+00	28.56
SN-126	64.28	56	9.60	3.587E+00	4.465E-01	4.465E-01	177.18
	86.94	281	8.90	6.093E+00	1.428E+00	1.428E+00	49.52
	87.57	281	37.00*	6.093E+00	3.435E-01	3.435E-01	28.56
CS-135	268.24	148	16.00*	4.603E+00	5.541E-01	5.541E-01	44.85
TL-208	277.35	78	6.80	4.511E+00	6.980E-01	6.980E-01	79.79
	510.84	171	21.60	2.841E+00	7.690E-01	7.690E-01	42.12
	583.14	457	84.20*	2.555E+00	5.848E-01	5.848E-01	15.52
	860.37	-----	12.46	1.837E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	4.857E+00	-----	Line Not Found	-----
	351.07	701	12.94*	3.788E+00	3.939E+00	3.939E+00	13.03
PB-212	74.81	496	10.70	5.073E+00	2.514E+00	2.514E+00	26.57
	77.11	708	18.00	5.308E+00	2.042E+00	2.042E+00	16.59
	87.30	281	8.00	6.093E+00	1.589E+00	1.589E+00	30.26
	238.63	1336	44.60*	5.016E+00	1.645E+00	1.645E+00	9.99
	300.09	111	3.41	4.261E+00	2.096E+00	2.096E+00	48.17
PO-212	74.81	496	10.70	5.073E+00	2.514E+00	2.514E+00	26.57
	77.11	708	18.00	5.308E+00	2.042E+00	2.042E+00	16.59
	87.30	281	8.00	6.093E+00	1.589E+00	1.589E+00	30.26
	115.19	-----	0.60	6.866E+00	-----	Line Not Found	-----
	238.63	1336	44.60*	5.016E+00	1.645E+00	1.645E+00	9.99
	300.09	111	3.41	4.261E+00	2.096E+00	2.096E+00	48.17
BI-214	609.31	485	46.30*	2.464E+00	1.171E+00	1.171E+00	15.89
	1120.29	110	15.10	1.455E+00	1.378E+00	1.378E+00	38.82
	1764.49	90	15.80	1.029E+00	1.528E+00	1.528E+00	32.13
PB-214	74.81	496	6.21	5.073E+00	4.332E+00	4.332E+00	25.96
	77.11	708	10.50	5.308E+00	3.500E+00	3.500E+00	18.25
	87.30	281	4.67	6.093E+00	2.722E+00	2.722E+00	29.59
	241.98	275	7.49	4.975E+00	2.033E+00	2.033E+00	34.40
	295.21	453	19.20	4.315E+00	1.505E+00	1.505E+00	18.86
	351.92	701	37.20*	3.788E+00	1.370E+00	1.370E+00	14.03

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	74.81	496	6.21	5.073E+00	4.332E+00	4.332E+00	25.96
	77.11	708	10.50	5.308E+00	3.500E+00	3.500E+00	18.25
	87.30	281	4.67	6.093E+00	2.722E+00	2.722E+00	29.59
	241.98	275	7.49	4.975E+00	2.033E+00	2.033E+00	34.40
	295.21	453	19.20	4.315E+00	1.505E+00	1.505E+00	18.86
PO-216	351.92	701	37.20*	3.788E+00	1.370E+00	1.370E+00	14.03
	74.81	496	10.70	5.073E+00	2.514E+00	2.514E+00	26.57
	77.11	708	18.00	5.308E+00	2.042E+00	2.042E+00	16.59
	87.30	281	8.00	6.093E+00	1.589E+00	1.589E+00	30.26
	238.63	1336	44.60*	5.016E+00	1.645E+00	1.645E+00	9.99
PO-218	300.09	111	3.41	4.261E+00	2.096E+00	2.096E+00	48.17
	74.81	496	6.21	5.073E+00	4.332E+00	4.332E+00	25.96
	77.11	708	10.50	5.308E+00	3.500E+00	3.500E+00	18.25
	87.30	281	4.67	6.093E+00	2.722E+00	2.722E+00	29.59
	241.98	275	7.49	4.975E+00	2.033E+00	2.033E+00	34.40
RA-224	295.21	453	19.20	4.315E+00	1.505E+00	1.505E+00	18.86
	351.92	701	37.20*	3.788E+00	1.370E+00	1.370E+00	14.03
	240.98	275	3.95*	4.975E+00	3.855E+00	3.855E+00	33.94
	609.31	485	46.30*	2.464E+00	1.171E+00	1.171E+00	15.89
	1120.29	110	15.10	1.455E+00	1.378E+00	1.378E+00	38.82
AC-228	1764.49	90	15.80	1.029E+00	1.528E+00	1.528E+00	32.13
	338.32	229	11.40	3.902E+00	1.416E+00	1.416E+00	50.62
	911.07	296	27.70*	1.745E+00	1.688E+00	1.688E+00	20.90
	969.11	151	16.60	1.653E+00	1.516E+00	1.516E+00	33.37
	338.32	229	11.40	3.902E+00	1.416E+00	1.416E+00	50.62
RA-228	911.07	296	27.70*	1.745E+00	1.688E+00	1.688E+00	20.90
	969.11	151	16.60	1.653E+00	1.516E+00	1.516E+00	33.37
	74.81	496	10.70	5.073E+00	2.514E+00	2.553E+00	24.90
	77.11	708	18.00	5.308E+00	2.042E+00	2.073E+00	16.59
	87.30	281	8.00	6.093E+00	1.589E+00	1.613E+00	28.56
TH-228	238.63	1336	44.60*	5.016E+00	1.645E+00	1.670E+00	9.99
	300.09	111	3.41	4.261E+00	2.096E+00	2.128E+00	75.67
	609.31	485	46.30*	2.464E+00	1.171E+00	1.171E+00	15.89
	1120.29	110	15.10	1.455E+00	1.378E+00	1.378E+00	38.82
	1764.49	90	15.80	1.029E+00	1.528E+00	1.528E+00	32.13
TH-232	338.32	229	11.40	3.902E+00	1.416E+00	1.416E+00	30.56
	911.07	296	27.70*	1.745E+00	1.688E+00	1.688E+00	20.90
	969.11	151	16.60	1.653E+00	1.516E+00	1.516E+00	33.37
	63.29	56	3.80*	3.587E+00	1.128E+00	1.128E+00	177.44
	92.38	245	5.41	6.396E+00	1.954E+00	1.954E+00	41.62
U-234	609.31	485	46.30*	2.464E+00	1.171E+00	1.171E+00	15.89
	1120.29	110	15.10	1.455E+00	1.378E+00	1.378E+00	38.82
	1764.49	90	15.80	1.029E+00	1.528E+00	1.528E+00	32.13
	86.50	281	12.60*	6.093E+00	1.009E+00	1.009E+00	35.24
	95.87	-----	2.60	6.515E+00	-----	Line Not Found	-----
U-238	63.29	56	3.80*	3.587E+00	1.128E+00	1.128E+00	177.44
	92.38	245	5.41	6.396E+00	1.954E+00	1.954E+00	38.46
	74.67	496	66.00*	5.073E+00	4.076E-01	4.076E-01	24.88
	86.72	281	0.34	6.093E+00	3.783E+01	3.783E+01	28.56

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	117.66	-----	0.55	6.871E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.659E+00	-----	Line Not Found	-----
ANH-511	511.00	171	100.00*	2.841E+00	1.661E-01	1.661E-01	41.28

Flag: "\*" = Keyline



Total number of lines in spectrum 34  
Number of unidentified lines 5  
Number of lines tentatively identified by NID 29 85.29%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.819E+01	2.819E+01	0.268E+01	9.50	
CD-109	464.00D	1.02	3.417E+00	3.495E+00	0.998E+00	28.56	
SN-126	1.00E+05Y	1.00	3.435E-01	3.435E-01	0.981E-01	28.56	
CS-135	2.30E+06Y	1.00	5.541E-01	5.541E-01	2.485E-01	44.85	
TL-208	1.41E+10Y	1.00	5.848E-01	5.848E-01	0.908E-01	15.52	
BI-211	7.04E+08Y	1.00	3.939E+00	3.939E+00	0.513E+00	13.03	
PB-212	1.41E+10Y	1.00	1.645E+00	1.645E+00	0.164E+00	9.99	
PO-212	1.41E+10Y	1.00	1.645E+00	1.645E+00	0.164E+00	9.99	
BI-214	1600.00Y	1.00	1.171E+00	1.171E+00	0.186E+00	15.89	
PB-214	1600.00Y	1.00	1.370E+00	1.370E+00	0.192E+00	14.03	
PO-214	1600.00Y	1.00	1.370E+00	1.370E+00	0.192E+00	14.03	
PO-216	1.41E+10Y	1.00	1.645E+00	1.645E+00	0.164E+00	9.99	
PO-218	1600.00Y	1.00	1.370E+00	1.370E+00	0.192E+00	14.03	
RA-224	1.41E+10Y	1.00	3.855E+00	3.855E+00	1.308E+00	33.94	
RA-226	1600.00Y	1.00	1.171E+00	1.171E+00	0.186E+00	15.89	
AC-228	1.41E+10Y	1.00	1.688E+00	1.688E+00	0.353E+00	20.90	
RA-228	1.41E+10Y	1.00	1.688E+00	1.688E+00	0.353E+00	20.90	
TH-228	1.91Y	1.02	1.645E+00	1.670E+00	0.167E+00	9.99	
TH-230	4.47E+09Y	1.00	1.171E+00	1.171E+00	0.186E+00	15.89	
TH-232	1.41E+10Y	1.00	1.688E+00	1.688E+00	0.353E+00	20.90	
TH-234	4.47E+09Y	1.00	1.128E+00	1.128E+00	2.001E+00	177.44	
U-234	4.47E+09Y	1.00	1.171E+00	1.171E+00	0.186E+00	15.89	
NP-237	2.14E+06Y	1.00	1.009E+00	1.009E+00	0.355E+00	35.24	
U-238	4.47E+09Y	1.00	1.128E+00	1.128E+00	2.001E+00	177.44	
AM-243	7380.00Y	1.00	4.076E-01	4.076E-01	1.014E-01	24.88	
ANH-511	1.00E+09Y	1.00	1.661E-01	1.661E-01	0.686E-01	41.28	

Total Activity : 6.516E+01 6.527E+01

Grand Total Activity : 6.516E+01 6.527E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	90.05	246	525	1.46	179.92	171	21	3.41E-02	36.2	6.25E+00	T
0	185.94	180	361	1.62	371.56	366	11	2.50E-02	45.0	5.88E+00	T
0	209.27	131	307	1.63	418.17	414	9	1.82E-02	51.3	5.47E+00	T
0	327.56	37	157	1.31	654.61	652	8	5.13E-03	****	3.99E+00	T
0	408.89	41	115	1.69	817.18	814	9	5.69E-03	****	3.38E+00	
0	569.22	177	150	2.25	1137.70	1129	21	2.46E-02	38.6	2.61E+00	T
0	727.57	88	96	1.18	1454.30	1449	11	1.23E-02	48.4	2.12E+00	T
0	795.36	36	74	0.70	1589.87	1584	11	5.00E-03	98.4	1.97E+00	T
0	861.91	60	60	1.51	1722.94	1717	14	8.32E-03	63.8	1.83E+00	
0	965.02	70	72	1.94	1929.15	1921	13	9.65E-03	55.6	1.66E+00	T
5	1582.11	36	1	2.95	3163.70	3158	35	5.04E-03	37.4	1.10E+00	
5	1584.69	12	1	1.42	3168.87	3158	35	1.72E-03	82.1	1.10E+00	
5	1588.98	33	5	3.24	3177.46	3158	35	4.54E-03	61.4	1.10E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691010.CNF;1  *
* Acquisition date   : 9-FEB-2010 15:33:12.  Detector SN#      :              *
* Detector ID        : GAM19                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:01.61             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G245691010             Analyst initials: MJH1          *
* Batch Number       : 947037                 Sample Quantity : 1.36290E+02 GRAM  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope      :              *
* MSD ID              :                      MSD Isotope      :              *
* LCS ID              : 1032-A                LCS Isotope     :              *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.819E+01	2.678E+00	4.789E-01	3.567E-02	58.869
CD-109	3.495E+00	9.984E-01	1.323E+00	1.185E-01	2.642
SN-126	3.435E-01	9.813E-02	1.306E-01	1.165E-02	2.631
CS-135	5.541E-01	2.485E-01	2.384E-01	1.819E-02	2.325
TL-208	5.848E-01	9.077E-02	5.129E-02	3.488E-03	11.403
BI-211	3.939E+00	5.132E-01	3.065E-01	1.957E-02	12.853
PB-212	1.645E+00	1.642E-01	9.622E-02	6.945E-03	17.094
PO-212	1.645E+00	1.642E-01	9.622E-02	6.945E-03	17.094
BI-214	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
PB-214	1.370E+00	1.923E-01	1.068E-01	8.807E-03	12.828
PO-214	1.370E+00	1.923E-01	1.068E-01	8.807E-03	12.828
PO-216	1.645E+00	1.642E-01	9.622E-02	6.945E-03	17.094
PO-218	1.370E+00	1.923E-01	1.068E-01	8.807E-03	12.828
RA-224	3.855E+00	1.308E+00	1.094E+00	6.201E-02	3.523
RA-226	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
AC-228	1.688E+00	3.528E-01	2.185E-01	2.472E-02	7.723
RA-228	1.688E+00	3.528E-01	2.185E-01	2.472E-02	7.723
TH-228	1.670E+00	1.667E-01	9.768E-02	7.051E-03	17.094

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
TH-232	1.688E+00	3.528E-01	2.185E-01	2.472E-02	7.723
TH-234	1.128E+00	2.001E+00	2.007E+00	3.512E-01	0.562
U-234	1.171E+00	1.862E-01	9.832E-02	7.731E-03	11.914
NP-237	1.009E+00	3.555E-01	4.081E-01	9.158E-02	2.472
U-238	1.128E+00	2.001E+00	2.007E+00	3.512E-01	0.562
AM-243	4.076E-01	1.014E-01	8.947E-02	7.096E-03	4.556
ANH-511	1.661E-01	6.858E-02	4.665E-02	2.753E-03	3.561

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.657E-03		3.084E-01	5.113E-01	3.471E-02	0.015
NA-22	5.763E-03		4.209E-02	7.082E-02	4.724E-03	0.081
NA-24	-3.869E-01		3.684E-01	Half-Life too short		
AL-26	1.274E-02		2.644E-02	4.729E-02	2.761E-03	0.269
TI-44	3.767E-01	+	6.250E-02	8.337E-02	6.805E-03	4.519
SC-46	9.117E-03		4.264E-02	7.008E-02	6.090E-03	0.130
V-48	2.067E-02		7.188E-02	1.186E-01	9.539E-03	0.174
CR-51	6.401E-02		3.646E-01	6.169E-01	3.992E-02	0.104
MN-52	3.042E-02		2.261E-01	3.797E-01	2.739E-02	0.080
MN-54	1.563E-02		3.796E-02	6.350E-02	5.051E-03	0.246
CO-56	-6.785E-03		4.087E-02	6.511E-02	5.282E-03	-0.104
CO-57	-1.015E-03		2.539E-02	4.127E-02	2.463E-03	-0.025
CO-58	-3.373E-02		3.987E-02	5.943E-02	4.554E-03	-0.568
FE-59	2.388E-02		8.692E-02	1.489E-01	1.117E-02	0.160
CO-60	-2.666E-02		3.937E-02	6.015E-02	4.433E-03	-0.443
ZN-65	-6.163E-03		9.980E-02	1.427E-01	9.122E-03	-0.043
GE-68	7.878E-01		1.271E+00	2.234E+00	1.546E-01	0.353
AS-73	3.476E-01		7.783E-01	1.306E+00	9.657E-02	0.266
AS-74	8.814E-02		9.437E-02	1.646E-01	9.750E-03	0.536
SE-75	-2.138E-02		4.902E-02	6.995E-02	4.067E-03	-0.306
BR-77	9.365E-01		1.072E+01	1.733E+01	1.025E+00	0.054
SR-82	-3.827E-01		4.188E-01	6.282E-01	4.524E-02	-0.609
RB-83	1.669E-02		7.233E-02	1.147E-01	6.780E-03	0.146
RB-84	-4.604E-02		6.618E-02	9.881E-02	8.481E-03	-0.466
KR-85	1.311E+01		8.114E+00	1.316E+01	7.771E-01	0.996
SR-85	6.722E-02		4.162E-02	6.750E-02	3.986E-03	0.996
RB-86	5.176E-01		8.024E-01	1.413E+00	9.793E-02	0.366
Y-88	-7.909E-03		3.507E-02	5.474E-02	3.125E-03	-0.144
ZR-88	2.145E-03		3.005E-02	5.028E-02	2.800E-03	0.043
Y-91	-5.274E+00		1.838E+01	2.986E+01	1.743E+00	-0.177
NB-94	2.214E-03		3.362E-02	5.509E-02	3.470E-03	0.040
NB-95	-1.713E-02		4.403E-02	6.934E-02	4.900E-03	-0.247
NB-95M	4.000E-01		1.646E-01	2.554E-01	1.892E-02	1.566
ZR-95	2.788E-02		6.876E-02	1.156E-01	9.252E-03	0.241
NB-97	-9.697E-02		5.213E-02	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-97	3.798E+00		1.016E+00	Half-Life too short		
MO-99	4.796E+00		1.161E+01	1.951E+01	2.770E+00	0.246
TC-99M	-1.223E+10		2.102E+10	Half-Life too short		
RH-101	-1.513E-02		3.523E-02	5.448E-02	2.955E-03	-0.278
RH-102	1.645E-03		2.733E-02	4.544E-02	2.652E-03	0.036
RU-103	-1.623E-02		3.842E-02	6.147E-02	7.796E-03	-0.264
RH-106	1.566E-02		3.172E-01	5.218E-01	6.150E-02	0.030
RU-106	1.566E-02		3.172E-01	5.218E-01	3.077E-02	0.030
AG-108M	-1.817E-02		3.358E-02	5.390E-02	3.357E-03	-0.337
AG-110M	-3.452E-02		3.622E-02	5.475E-02	3.397E-03	-0.631
IN-111	1.156E+00		1.200E+00	1.783E+00	1.014E-01	0.648
IN-113M	1.075E-02		4.387E-02	7.413E-02	4.423E-03	0.145
SN-113	1.075E-02		4.387E-02	7.413E-02	4.423E-03	0.145
IN-114M	-6.584E-02		2.143E-01	2.955E-01	1.588E-02	-0.223
CD-115	5.451E-01		1.030E+01	1.706E+01	1.010E+00	0.032
SN-117M	1.041E-02		5.803E-02	9.454E-02	5.032E-03	0.110
SB-122	2.322E-01		2.386E+00	3.433E+00	2.038E-01	0.068
I-123	9.434E-01		3.151E+00	Half-Life too short		
TE-123M	4.481E-03		2.993E-02	4.871E-02	2.631E-03	0.092
I-124	-2.864E-01		7.354E-01	9.999E-01	5.918E-02	-0.286
SB-124	-1.143E-02		7.078E-02	1.123E-01	7.693E-03	-0.102
SB-125	-1.094E-02		9.042E-02	1.491E-01	8.878E-03	-0.073
TE-125M	-1.694E+00		9.676E+00	1.568E+01	1.386E+00	-0.108
I-126	2.108E-02		1.942E-01	3.198E-01	1.879E-02	0.066
SB-126	-8.667E-02		1.578E-01	2.293E-01	1.493E-02	-0.378
SB-127	-1.048E+00		1.349E+00	2.051E+00	1.974E-01	-0.511
XE-127	3.299E-02		5.058E-02	8.079E-02	4.407E-03	0.408
I-131	-3.441E-02		1.088E-01	1.783E-01	1.139E-02	-0.193
TE-132	3.490E-02		7.411E-01	1.190E+00	1.700E-01	0.029
BA-133	1.834E-02		4.347E-02	6.544E-02	7.542E-03	0.280
I-133	-1.925E-03		2.992E-03	Half-Life too short		
CS-134	6.654E-02	+	6.569E-02	9.013E-02	6.777E-03	0.738
I-135	-5.977E+09		2.949E+09	Half-Life too short		
CS-136	1.080E-02		1.084E-01	1.831E-01	1.415E-02	0.059
BA-137M	-1.330E-02		3.738E-02	5.948E-02	3.464E-03	-0.224
CS-137	-1.406E-02		3.952E-02	6.288E-02	3.677E-03	-0.224
CE-139	-5.219E-03		2.953E-02	4.735E-02	2.472E-03	-0.110
BA-140	6.972E-02		2.550E-01	4.268E-01	1.389E-01	0.163
LA-140	7.258E-02		8.061E-02	1.371E-01	9.275E-03	0.529
CE-141	7.984E-03		6.485E-02	1.033E-01	5.946E-03	0.077
CE-143	1.061E-03		1.492E-04	Half-Life too short		
CE-144	8.009E-02		2.073E-01	3.413E-01	4.835E-02	0.235
PM-144	-1.219E-02		3.543E-02	5.626E-02	3.505E-03	-0.217
PR-144	-8.259E-01		2.401E+00	3.813E+00	2.374E-01	-0.217
PM-146	2.945E-02		4.352E-02	7.505E-02	6.463E-03	0.392
ND-147	-3.147E-01		5.484E-01	8.632E-01	1.172E-01	-0.365
PM-149	-2.070E+01		8.977E+01	1.493E+02	2.117E+01	-0.139
EU-152	-1.673E-01		1.316E-01	1.454E-01	9.462E-03	-1.151

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	6.566E-02		8.947E-02	1.318E-01	1.025E-02	0.498
EU-154	-5.839E-03		1.188E-01	1.962E-01	1.942E-02	-0.030
EU-155	3.912E-03		1.124E-01	1.838E-01	1.322E-02	0.021
TB-160	-4.092E-02		1.244E-01	1.935E-01	1.655E-02	-0.211
HO-166M	-2.765E-02		6.167E-02	9.683E-02	6.202E-03	-0.286
TM-171	-1.783E+01		3.285E+01	4.633E+01	3.522E+00	-0.385
LU-176	-8.931E-03		2.600E-02	4.178E-02	2.430E-03	-0.214
LU-177	2.874E+00	+	1.483E+00	2.098E+00	1.152E-01	1.370
LU-177M	-2.182E-02		1.978E-01	3.828E-01	1.601E-02	-0.077
HF-181	5.306E-03		4.168E-02	6.955E-02	4.070E-03	0.076
W-181	3.776E-01		4.314E-01	6.442E-01	4.875E-02	0.586
TA-182	8.086E-02		1.978E-01	3.395E-01	2.047E-02	0.238
RE-183	5.074E-02		1.124E-01	1.849E-01	9.743E-03	0.274
RE-184	-5.409E-02		2.425E-01	3.828E-01	2.188E-02	-0.141
OS-185	-1.297E-02		4.309E-02	6.884E-02	4.031E-03	-0.188
RE-188	5.855E-02		1.805E-01	2.958E-01	1.590E-02	0.198
W-188	-3.906E-01		8.224E+00	1.201E+01	6.977E-01	-0.033
IR-192	-1.014E-02		3.298E-02	5.443E-02	3.180E-03	-0.186
AU-195	1.497E-01		2.586E-01	3.783E-01	2.887E-02	0.396
TL-200	-5.050E-05		2.264E-04	Half-Life too short		
TL-201	-3.094E+00		7.037E+00	1.115E+01	5.825E-01	-0.278
TL-202	8.232E-02		7.005E-02	1.241E-01	7.128E-03	0.663
HG-203	4.139E-02		4.524E-02	7.020E-02	4.317E-03	0.590
BI-207	2.016E-02		5.293E-02	9.222E-02	6.549E-03	0.219
TL-207	6.090E-02		7.431E-01	1.091E+00	1.802E-01	0.056
PO-209	5.707E+00		7.671E+00	1.318E+01	1.158E+00	0.433
BI-210	-1.108E+00		3.172E+00	5.114E+00	3.898E-01	-0.217
PB-210	-1.108E+00		3.172E+00	5.114E+00	3.898E-01	-0.217
PO-210	-1.108E+00		3.172E+00	5.114E+00	3.333E-01	-0.217
PB-211	-2.359E-01		1.098E+00	1.545E+00	9.631E-01	-0.153
BI-212	9.710E-01	+	4.764E-01	6.921E-01	5.762E-02	1.403
PO-215	6.090E-02		7.431E-01	1.091E+00	1.802E-01	0.056
RN-219	3.023E-01		4.104E-01	7.084E-01	9.580E-02	0.427
RN-220	1.250E+01		2.479E+01	4.231E+01	2.511E+00	0.295
RA-223	6.090E-02		7.431E-01	1.091E+00	1.802E-01	0.056
AC-227	-9.208E-02		4.103E-01	6.472E-01	9.016E-02	-0.142
TH-227	-9.208E-02		4.104E-01	6.472E-01	1.092E-01	-0.142
TH-229	2.991E-02		5.408E-01	8.723E-01	4.707E-02	0.034
PA-231	-7.345E-01		1.646E+00	2.410E+00	3.321E-01	-0.305
TH-231	6.090E-02		7.431E-01	1.091E+00	1.802E-01	0.056
U-231	6.213E-01		1.231E+00	1.806E+00	1.435E-01	0.344
PA-233	6.255E-02		6.377E-02	1.119E-01	6.911E-03	0.559
PA-234	1.786E-01		3.106E-01	5.235E-01	9.773E-02	0.341
PA-234M	-1.345E+00		4.837E+00	7.650E+00	7.121E-01	-0.176
U-235	2.627E-02		2.165E-01	3.448E-01	5.590E-02	0.076
NP-236	-1.386E-02		8.171E-02	1.312E-01	6.951E-03	-0.106
NP-239	-1.285E-01		1.943E-01	3.081E-01	1.927E-02	-0.417
AM-241	1.926E-01		1.623E-01	2.471E-01	2.034E-02	0.779

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.865E-02		9.829E-02	1.622E-01	1.167E-02	0.177
AM-246	1.134E-01		1.464E-01	2.600E-01	1.794E-02	0.436
CM-247	2.028E-02		3.718E-02	6.231E-02	3.495E-03	0.325
CF-249	-4.882E-03		4.014E-02	6.646E-02	3.712E-03	-0.073
CF-251	-3.477E-02		1.325E-01	2.114E-01	1.117E-02	-0.165

## VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691010          *
* Acquisition date   : 9-FEB-2010 15:33:12 Detector SN#                   *
* Detector ID        : GAM19 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.61 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G245691010 Analyst initials: MJH1                 *
* Batch Number       : 947037 Sample Quantity : 1.3629E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope                   :
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.819E+01	2.625E+00	2.402E-01	1.339E+00
CD-109	3.495E+00	9.785E-01	6.992E-01	4.992E-01
SN-126	3.435E-01	9.617E-02	6.902E-02	4.907E-02
CS-135	5.541E-01	2.436E-01	1.235E-01	1.243E-01
TL-208	5.848E-01	8.896E-02	2.618E-02	4.539E-02
BI-211	3.939E+00	5.029E-01	1.580E-01	2.566E-01
PB-212	1.645E+00	1.610E-01	4.995E-02	8.212E-02
PO-212	1.645E+00	1.610E-01	4.995E-02	8.212E-02
BI-214	1.171E+00	1.825E-01	5.016E-02	9.309E-02
PB-214	1.370E+00	1.885E-01	5.506E-02	9.615E-02
PO-214	1.370E+00	1.885E-01	5.506E-02	9.615E-02
PO-216	1.645E+00	1.610E-01	4.995E-02	8.212E-02
PO-218	1.370E+00	1.885E-01	5.506E-02	9.615E-02
RA-224	3.855E+00	1.282E+00	5.680E-01	6.542E-01
RA-226	1.171E+00	1.825E-01	5.016E-02	9.309E-02
AC-228	1.688E+00	3.457E-01	1.106E-01	1.764E-01
RA-228	1.688E+00	3.457E-01	1.106E-01	1.764E-01
TH-228	1.670E+00	1.634E-01	5.071E-02	8.337E-02
TH-230	1.171E+00	1.825E-01	5.016E-02	9.309E-02
TH-232	1.688E+00	3.457E-01	1.106E-01	1.764E-01
TH-234	1.128E+00	1.961E+00	1.067E+00	1.001E+00
U-234	1.171E+00	1.825E-01	5.016E-02	9.309E-02
NP-237	1.009E+00	3.484E-01	2.158E-01	1.777E-01
U-238	1.128E+00	1.961E+00	1.067E+00	1.001E+00
AM-243	4.076E-01	9.937E-02	4.742E-02	5.070E-02
ANH-511	1.661E-01	6.720E-02	2.388E-02	3.429E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	7.657E-03	3.022E-01	2.620E-01	1.542E-01 NOT IDENT.



NA-22	5.763E-03	4.125E-02	3.562E-02	2.105E-02	NOT IDENT.
NA-24	-3.869E+05	7.220E+05	0.000E+00	3.684E+05	SHORT HLIF
AL-26	1.274E-02	2.591E-02	2.362E-02	1.322E-02	NOT IDENT.
TI-44	3.767E-01	6.125E-02	4.415E-02	3.125E-02	FAIL ABUN
SC-46	9.117E-03	4.179E-02	3.549E-02	2.132E-02	FAIL ABUN
V-48	2.067E-02	7.044E-02	5.997E-02	3.594E-02	NOT IDENT.
CR-51	6.401E-02	3.573E-01	3.185E-01	1.823E-01	NOT IDENT.
MN-52	3.042E-02	2.215E-01	1.905E-01	1.130E-01	NOT IDENT.
MN-54	1.563E-02	3.720E-02	3.220E-02	1.898E-02	NOT IDENT.
CO-56	-6.785E-03	4.005E-02	3.301E-02	2.043E-02	NOT IDENT.
CO-57	-1.015E-03	2.489E-02	2.168E-02	1.270E-02	NOT IDENT.
CO-58	-3.373E-02	3.907E-02	3.015E-02	1.993E-02	NOT IDENT.
FE-59	2.388E-02	8.519E-02	7.508E-02	4.346E-02	NOT IDENT.
CO-60	-2.666E-02	3.858E-02	3.023E-02	1.969E-02	NOT IDENT.
ZN-65	-6.163E-03	9.780E-02	7.194E-02	4.990E-02	NOT IDENT.
GE-68	7.878E-01	1.246E+00	1.127E+00	6.355E-01	NOT IDENT.
AS-73	3.476E-01	7.627E-01	6.962E-01	3.891E-01	NOT IDENT.
AS-74	8.814E-02	9.248E-02	8.400E-02	4.718E-02	NOT IDENT.
SE-75	-2.138E-02	4.804E-02	3.624E-02	2.451E-02	NOT IDENT.
BR-77	9.365E-01	1.050E+01	8.867E+00	5.359E+00	FAIL ABUN
SR-82	-3.827E-01	4.105E-01	3.190E-01	2.094E-01	NOT IDENT.
RB-83	1.669E-02	7.089E-02	5.868E-02	3.617E-02	NOT IDENT.
RB-84	-4.604E-02	6.486E-02	5.005E-02	3.309E-02	NOT IDENT.
KR-85	1.311E+01	7.952E+00	6.736E+00	4.057E+00	NOT IDENT.
SR-85	6.722E-02	4.078E-02	3.455E-02	2.081E-02	NOT IDENT.
RB-86	5.176E-01	7.864E-01	7.132E-01	4.012E-01	NOT IDENT.
Y-88	-7.909E-03	3.437E-02	2.733E-02	1.753E-02	NOT IDENT.
ZR-88	2.145E-03	2.945E-02	2.586E-02	1.502E-02	NOT IDENT.
Y-91	-5.274E+00	1.801E+01	1.503E+01	9.189E+00	NOT IDENT.
NB-94	2.214E-03	3.295E-02	2.803E-02	1.681E-02	NOT IDENT.
NB-95	-1.713E-02	4.315E-02	3.522E-02	2.201E-02	NOT IDENT.
NB-95M	4.000E-01	1.613E-01	1.326E-01	8.231E-02	NOT IDENT.
ZR-95	2.788E-02	6.739E-02	5.872E-02	3.438E-02	NOT IDENT.
NB-97	-9.697E+04	1.022E+05	0.000E+00	5.213E+04	SHORT HLIF
ZR-97	3.798E+06	1.990E+06	0.000E+00	1.016E+06	SHORT HLIF
MO-99	4.796E+00	1.138E+01	9.914E+00	5.805E+00	NOT IDENT.
TC-99M	-1.223E+16	4.120E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.513E-02	3.452E-02	2.838E-02	1.761E-02	NOT IDENT.
RH-102	1.645E-03	2.678E-02	2.329E-02	1.367E-02	NOT IDENT.
RU-103	-1.623E-02	3.765E-02	3.148E-02	1.921E-02	FAIL ABUN
RH-106	1.566E-02	3.109E-01	2.661E-01	1.586E-01	FAIL ABUN
RU-106	1.566E-02	3.109E-01	2.661E-01	1.586E-01	FAIL ABUN
AG-108M	-1.817E-02	3.291E-02	2.767E-02	1.679E-02	NOT IDENT.
AG-110M	-3.452E-02	3.549E-02	2.789E-02	1.811E-02	NOT IDENT.
IN-111	1.156E+00	1.176E+00	9.254E-01	6.000E-01	NOT IDENT.
IN-113M	1.075E-02	4.300E-02	3.813E-02	2.194E-02	NOT IDENT.
SN-113	1.075E-02	4.300E-02	3.813E-02	2.194E-02	NOT IDENT.
IN-114M	-6.584E-02	2.100E-01	1.541E-01	1.071E-01	NOT IDENT.
CD-115	5.451E-01	1.010E+01	8.725E+00	5.151E+00	NOT IDENT.
SN-117M	1.041E-02	5.687E-02	4.945E-02	2.902E-02	NOT IDENT.
SB-122	2.322E-01	2.338E+00	1.754E+00	1.193E+00	NOT IDENT.
I-123	9.434E+05	6.176E+06	0.000E+00	3.151E+06	SHORT HLIF
TE-123M	4.481E-03	2.934E-02	2.547E-02	1.497E-02	NOT IDENT.
I-124	-2.864E-01	7.207E-01	5.102E-01	3.677E-01	NOT IDENT.
SB-124	-1.143E-02	6.936E-02	5.618E-02	3.539E-02	FAIL ABUN
SB-125	-1.094E-02	8.861E-02	7.658E-02	4.521E-02	NOT IDENT.
TE-125M	-1.694E+00	9.482E+00	8.257E+00	4.838E+00	NOT IDENT.
I-126	2.108E-02	1.903E-01	1.629E-01	9.712E-02	NOT IDENT.
SB-126	-8.667E-02	1.546E-01	1.166E-01	7.889E-02	FAIL ABUN
SB-127	-1.048E+00	1.322E+00	1.044E+00	6.744E-01	NOT IDENT.
XE-127	3.299E-02	4.957E-02	4.206E-02	2.529E-02	NOT IDENT.
I-131	-3.441E-02	1.066E-01	9.185E-02	5.440E-02	NOT IDENT.
TE-132	3.490E-02	7.263E-01	6.181E-01	3.706E-01	NOT IDENT.
BA-133	1.834E-02	4.260E-02	3.372E-02	2.174E-02	FAIL ABUN
I-133	-1.925E+03	5.865E+03	0.000E+00	2.992E+03	SHORT HLIF
CS-134	6.654E-02	6.437E-02	4.575E-02	3.284E-02	FAIL ABUN
I-135	-5.977E+15	5.780E+15	0.000E+00	2.949E+15	SHORT HLIF
CS-136	1.080E-02	1.062E-01	9.245E-02	5.418E-02	FAIL ABUN
BA-137M	-1.330E-02	3.663E-02	3.030E-02	1.869E-02	NOT IDENT.
CS-137	-1.406E-02	3.873E-02	3.203E-02	1.976E-02	NOT IDENT.
CE-139	-5.219E-03	2.894E-02	2.475E-02	1.477E-02	NOT IDENT.
BA-140	6.972E-02	2.499E-01	2.182E-01	1.275E-01	NOT IDENT.
LA-140	7.258E-02	7.900E-02	6.865E-02	4.031E-02	FAIL ABUN
CE-141	7.984E-03	6.355E-02	5.409E-02	3.243E-02	NOT IDENT.
CE-143	1.061E+03	2.925E+02	0.000E+00	1.492E+02	SHORT HLIF
CE-144	8.009E-02	2.032E-01	1.791E-01	1.036E-01	NOT IDENT.
PM-144	-1.219E-02	3.473E-02	2.863E-02	1.772E-02	NOT IDENT.
PR-144	-8.259E-01	2.353E+00	1.940E+00	1.201E+00	NOT IDENT.

PM-146	2.945E-02	4.265E-02	3.850E-02	2.176E-02	NOT IDENT.
ND-147	-3.147E-01	5.374E-01	4.415E-01	2.742E-01	FAIL ABUN
PM-149	-2.070E+01	8.798E+01	7.727E+01	4.489E+01	NOT IDENT.
EU-152	-1.673E-01	1.290E-01	7.496E-02	6.581E-02	FAIL ABUN
GD-153	6.566E-02	8.768E-02	6.956E-02	4.473E-02	NOT IDENT.
EU-154	-5.839E-03	1.164E-01	9.870E-02	5.938E-02	NOT IDENT.
EU-155	3.912E-03	1.102E-01	9.685E-02	5.622E-02	FAIL ABUN
TB-160	-4.092E-02	1.219E-01	9.802E-02	6.219E-02	FAIL ABUN
HO-166M	-2.765E-02	6.044E-02	4.925E-02	3.084E-02	NOT IDENT.
TM-171	-1.783E+01	3.219E+01	2.461E+01	1.643E+01	NOT IDENT.
LU-176	-8.931E-03	2.548E-02	2.159E-02	1.300E-02	FAIL ABUN
LU-177	2.874E+00	1.453E+00	1.092E+00	7.416E-01	FAIL ABUN
LU-177M	-2.182E-02	1.939E-01	1.455E-01	9.892E-02	FAIL ABUN
HF-181	5.306E-03	4.085E-02	3.564E-02	2.084E-02	NOT IDENT.
W-181	3.776E-01	4.227E-01	3.423E-01	2.157E-01	NOT IDENT.
TA-182	8.086E-02	1.938E-01	1.709E-01	9.889E-02	FAIL ABUN
RE-183	5.074E-02	1.101E-01	9.669E-02	5.618E-02	FAIL ABUN
RE-184	-5.409E-02	2.377E-01	1.985E-01	1.213E-01	NOT IDENT.
OS-185	-1.297E-02	4.223E-02	3.508E-02	2.155E-02	NOT IDENT.
RE-188	5.855E-02	1.769E-01	1.548E-01	9.026E-02	NOT IDENT.
W-188	-3.906E-01	8.060E+00	6.214E+00	4.112E+00	FAIL ABUN
IR-192	-1.014E-02	3.232E-02	2.811E-02	1.649E-02	FAIL ABUN
AU-195	1.497E-01	2.534E-01	1.995E-01	1.293E-01	FAIL ABUN
TL-200	-5.050E+01	4.437E+02	0.000E+00	2.264E+02	SHORT HLIF
TL-201	-3.094E+00	6.896E+00	5.825E+00	3.518E+00	NOT IDENT.
TL-202	8.232E-02	6.865E-02	6.371E-02	3.503E-02	NOT IDENT.
HG-203	4.139E-02	4.433E-02	3.634E-02	2.262E-02	NOT IDENT.
BI-207	2.016E-02	5.187E-02	4.655E-02	2.646E-02	FAIL ABUN
TL-207	6.090E-02	7.283E-01	5.632E-01	3.716E-01	FAIL ABUN
PO-209	5.707E+00	7.518E+00	6.672E+00	3.836E+00	NOT IDENT.
BI-210	-1.108E+00	3.109E+00	2.733E+00	1.586E+00	NOT IDENT.
PB-210	-1.108E+00	3.109E+00	2.733E+00	1.586E+00	NOT IDENT.
PO-210	-1.108E+00	3.108E+00	2.733E+00	1.586E+00	NOT IDENT.
PB-211	-2.359E-01	1.076E+00	7.944E-01	5.488E-01	NOT IDENT.
BI-212	9.710E-01	4.669E-01	3.519E-01	2.382E-01	FAIL ABUN
PO-215	6.090E-02	7.283E-01	5.632E-01	3.716E-01	FAIL ABUN
RN-219	3.023E-01	4.022E-01	3.642E-01	2.052E-01	NOT IDENT.
RN-220	1.250E+01	2.429E+01	2.163E+01	1.239E+01	NOT IDENT.
RA-223	6.090E-02	7.283E-01	5.632E-01	3.716E-01	FAIL ABUN
AC-227	-9.208E-02	4.021E-01	3.356E-01	2.051E-01	FAIL ABUN
TH-227	-9.208E-02	4.022E-01	3.356E-01	2.052E-01	FAIL ABUN
TH-229	2.991E-02	5.300E-01	4.546E-01	2.704E-01	FAIL ABUN
PA-231	-7.345E-01	1.613E+00	1.247E+00	8.232E-01	FAIL ABUN
TH-231	6.090E-02	7.283E-01	5.632E-01	3.716E-01	FAIL ABUN
U-231	6.213E-01	1.207E+00	9.533E-01	6.157E-01	FAIL ABUN
PA-233	6.255E-02	6.249E-02	5.783E-02	3.188E-02	FAIL ABUN
PA-234	1.786E-01	3.044E-01	2.648E-01	1.553E-01	FAIL ABUN
PA-234M	-1.345E+00	4.740E+00	3.866E+00	2.418E+00	NOT IDENT.
U-235	2.627E-02	2.122E-01	1.806E-01	1.082E-01	FAIL ABUN
NP-236	-1.386E-02	8.007E-02	6.861E-02	4.085E-02	NOT IDENT.
NP-239	-1.285E-01	1.904E-01	1.620E-01	9.716E-02	FAIL ABUN
AM-241	1.926E-01	1.590E-01	1.315E-01	8.114E-02	NOT IDENT.
CM-243	2.865E-02	9.632E-02	8.549E-02	4.914E-02	FAIL ABUN
AM-246	1.134E-01	1.434E-01	1.312E-01	7.318E-02	NOT IDENT.
CM-247	2.028E-02	3.644E-02	3.204E-02	1.859E-02	FAIL ABUN
CF-249	-4.882E-03	3.934E-02	3.419E-02	2.007E-02	NOT IDENT.
CF-251	-3.477E-02	1.298E-01	1.103E-01	6.624E-02	NOT IDENT.

\*\*\*\*\*  
 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON ,SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
46.50	352.7703
46.50	352.7703
46.50	352.7703
48.70	356.6337
49.72	379.5052
51.35	390.9821
52.39	359.1565
52.97	370.1666
53.15	370.2430
53.44	366.4456
54.07	378.4727
56.28	424.6188
56.28	431.5009
57.37	0.0000
57.53	436.0287
57.53	436.0300
57.60	436.0621
57.98	423.1590
57.98	423.1590
59.32	402.3557
59.32	402.3557
59.40	375.5640
59.54	375.6206
59.72	375.6925
60.01	437.3909
61.10	461.6083
61.14	461.6270
61.30	479.0975
63.00	465.6919
63.29	465.8314
63.29	465.8314
63.58	453.2910
64.28	500.6039
65.12	546.0754
65.20	546.1194
65.20	546.1194
66.05	556.1227
66.72	573.9865
66.83	574.0504
66.91	572.5063
67.20	572.6711
67.20	572.6711
67.75	596.8575
67.85	636.7139
68.90	565.6686
68.90	565.6686
69.30	565.8918
69.67	637.8564
70.82	562.7371
70.82	562.7371
70.83	558.7524
72.80	556.6110
72.87	541.8532
72.87	541.8532
74.67	542.7753
74.81	542.8477
74.81	542.8477
74.81	542.8477
74.81	542.8477
74.81	542.8477
74.81	542.8477
74.81	542.8477
74.97	542.9283
75.28	543.0854
75.70	543.2985
77.11	544.0097
77.11	544.0097

77.11	544.0097
77.11	544.0097
77.11	544.0097
77.11	544.0097
77.11	544.0097
78.38	514.4980
79.62	529.5647
79.80	529.6511
79.80	529.6511
80.11	562.0063
80.18	562.0404
80.30	562.1022
80.30	562.1022
80.57	617.0125
81.00	644.6484
81.07	644.6875
81.07	644.6875
81.07	644.6875
81.07	644.6875
82.60	581.0120
83.37	592.1721
83.78	592.3869
83.78	592.3869
83.78	592.3869
83.78	592.3869
84.21	581.8359
84.90	541.7578
85.43	556.5687
86.29	556.9844
86.50	589.4739
86.54	589.4938
86.59	589.5205
86.72	589.5872
86.79	589.6205
86.94	644.7799
87.30	644.9791
87.30	644.9791
87.30	644.9791
87.30	644.9791
87.30	644.9791
87.30	644.9791
87.57	531.8673
87.88	532.0075
88.03	532.0756
88.36	532.2258
88.47	532.2759
89.95	532.9448
91.11	533.4635
92.29	533.9902
92.38	534.0303
92.38	534.0303
93.35	534.4588
94.00	404.1655
94.67	425.5842
94.67	425.5858
94.90	404.4652
94.90	404.4652
94.90	404.4652
94.90	404.4652
95.87	406.4168
95.87	406.4168
96.73	365.8676
97.43	356.2685
98.44	377.8198
98.44	377.8212
98.88	359.9559
99.55	377.6876
99.55	377.6876
99.86	369.5934
100.00	368.4650
100.10	368.4952
103.18	394.0137
103.76	368.5288
105.00	382.2400
105.31	397.7488
108.00	392.3889
109.28	398.9535

111.00	378.8243
111.00	378.8243
111.76	362.5150
112.95	377.3071
115.19	339.6188
116.30	372.0169
117.00	372.2059
117.00	372.2059
117.66	347.4891
121.11	321.3131
121.62	329.7504
121.78	329.7879
122.06	332.9749
122.32	327.8322
122.32	327.8322
122.32	327.8322
122.32	327.8322
123.07	349.8735
127.23	342.5342
129.76	357.7749
131.20	369.6438
133.02	354.3724
133.54	332.4713
135.34	364.3723
136.00	354.0259
136.25	354.0850
136.48	356.2407
140.51	356.1311
140.51	0.0000
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142.65	321.8054
143.76	336.8177
144.24	345.3718
144.24	345.3718
144.24	345.3718
144.24	345.3718
145.22	336.0772
145.44	332.9524
147.16	374.5829
152.43	335.4800
152.70	349.3391
153.22	359.0115
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154.21	374.1101
154.21	374.1101
155.03	350.9045
156.02	345.7985
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159.00	341.0962
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161.27	328.7539
162.32	314.0079
162.64	318.3416
163.35	309.9260
163.89	316.4399
165.85	305.0325
167.43	312.8164
171.28	298.4865
171.86	284.6235
172.10	297.5522
176.55	315.5419
176.60	326.3205
181.06	316.1307
184.41	313.2590
185.71	314.9977
186.00	315.0487
190.27	314.2666
192.34	330.2618
193.63	319.6200
197.04	313.6685
198.01	314.9185
198.60	325.9180
200.40	330.5925
201.83	292.6241
202.84	288.4096
205.31	323.7839

208.36	303.2589
208.81	315.6021
209.75	292.9492
209.75	292.9492
210.97	298.3986
215.65	288.1096
216.55	288.2396
218.09	285.1604
222.10	253.7366
223.80	288.1769
226.40	287.4377
227.00	277.5703
227.08	277.5818
227.20	283.1270
228.16	276.6209
228.18	276.6228
228.18	276.6228
231.56	0.0000
235.69	302.0551
236.00	302.1007
236.00	302.1007
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238.63	282.4615
238.63	282.4615
238.63	282.4615
239.00	282.5099
240.98	282.7734
241.98	263.7497
241.98	263.7497
241.98	263.7497
244.69	196.2786
245.39	196.3417
247.94	239.9734
248.90	253.6483
249.79	234.7488
252.40	202.5741
252.85	227.2429
252.85	227.2429
254.15	0.0000
256.20	241.0434
256.20	241.0434
260.50	232.5244
260.90	219.0834
262.80	227.8887
264.65	214.5727
268.24	189.3640
268.79	197.4275
269.46	197.4863
269.46	197.4863
269.46	197.4863
269.46	197.4863
271.23	207.6710
273.65	207.8900
276.40	208.1399
277.35	190.1177
277.60	190.1382
277.60	190.1382
278.00	184.1343
278.60	190.2202
279.20	188.7589
279.53	191.8061
280.46	172.2408
281.68	179.8897
283.67	194.5234
284.30	193.7109
285.00	192.5572
285.90	195.3555
286.10	195.3739
286.10	195.3739
287.40	179.2443
288.45	0.0000
290.67	198.7841
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291.72	212.5350
293.26	0.0000
293.70	200.5540
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295.21	145.9492

295.21	145.9492
295.96	145.9941
296.50	146.0273
297.23	146.0723
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299.80	143.1802
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300.09	143.1974
300.09	143.1974
300.09	143.1974
300.12	143.1993
301.29	184.4196
302.84	187.5855
303.76	183.0786
303.91	183.0908
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304.40	181.6014
304.84	186.2118
306.84	200.6205
308.46	177.0078
311.98	158.8909
316.51	167.4591
318.01	150.0667
319.02	163.0206
319.41	159.3608
320.08	166.7732
323.87	173.7899
323.87	173.7899
323.87	173.7899
323.87	173.7899
325.23	178.4982
328.77	182.1336
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334.20	196.8764
334.20	196.8764
334.30	196.8842
338.28	160.8412
338.28	160.8412
338.28	160.8412
338.28	160.8412
338.32	160.8433
338.32	160.8433
338.32	160.8433
340.50	162.5244
340.57	162.5287
344.27	195.3062
345.85	138.0376
350.59	0.0000
351.07	137.9966
351.92	138.0400
351.92	138.0400
351.92	138.0400
355.39	0.0000
356.01	116.7648
364.48	136.8037
366.43	134.0887
367.43	141.6399
367.94	0.0000
369.80	122.0464
374.96	148.6072
383.85	150.0213
387.95	149.2919
388.63	162.5581
391.69	135.2949
391.69	135.2949
392.90	135.3508
398.62	137.5146
400.65	120.5275
401.10	119.5970
401.81	127.2215
402.60	127.6779
404.84	150.4804
410.95	130.1570
411.60	123.8348
413.65	133.4512
414.70	130.3205
415.30	130.8013

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423.70	127.2040
427.08	124.4728
427.89	125.4638
432.53	134.2869
433.93	140.1062
439.47	106.7101
439.56	106.7142
439.89	112.4940
443.98	132.8604
444.90	122.3057
445.03	108.8273
445.03	108.8273
445.03	108.8273
445.03	108.8273
453.90	109.1349
463.38	116.2412
468.07	117.3798
473.00	102.9851
475.06	99.1624
475.35	96.2543
476.78	99.2147
477.59	104.1030
477.96	102.1686
482.03	105.2183
484.57	102.3750
487.03	115.1350
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492.35	98.7056
497.08	101.7821
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511.00	107.1146
511.85	107.1405
511.85	107.1405
513.99	99.9956
513.99	99.9956
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520.65	99.6423
527.90	88.8772
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529.64	98.8013
529.87	0.0000
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552.65	100.4378
555.20	97.5239
563.23	99.7363
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569.32	82.9189
569.50	82.9230
569.67	82.9271
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574.00	78.3563
574.64	87.5406
578.91	80.1289
579.30	0.0000
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591.81	94.4773
592.07	94.4842
593.00	93.5018
595.88	87.5374
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602.71	97.4384
603.60	82.3386
604.41	95.8025
604.70	102.5329
609.31	76.7403



609.31	76.7403
609.31	76.7403
609.31	76.7403
610.33	76.7607
612.46	82.5280
614.37	96.0507
618.01	83.4910
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621.84	87.1191
631.29	72.0990
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661.65	102.3242
664.57	0.0000
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666.33	100.3926
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692.80	83.5115
695.00	83.5560
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696.49	97.0018
697.00	93.9171
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698.33	98.0754
698.50	98.0801
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717.42	71.5555
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722.78	107.2941
722.78	107.2941
722.89	107.2966
722.95	107.2991
723.30	105.5760
724.18	102.1361
727.18	60.2854
733.00	57.2438
735.90	65.6147
739.58	68.7973
742.81	65.7178
744.21	58.4350
747.13	60.5630
751.79	76.3060
752.31	59.5884
753.82	53.3346
755.35	60.6749
756.15	65.9177
756.87	69.0680
763.93	96.4293
765.79	97.5183
766.42	101.7269
766.84	112.2246
776.49	100.9055
778.00	83.0638
778.57	73.6111
778.89	71.5129
783.80	80.0115
785.46	62.1373
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805.60	57.1219
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810.76	79.4257
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817.79	63.6357
818.51	61.5245
819.60	68.9657
826.30	73.3142
828.27	0.0000
831.60	75.5242
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836.80	0.0000
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860.37	73.1280
867.32	48.2267
867.82	51.8038
871.10	51.4816
873.19	48.2849
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876.40	57.9801
879.36	51.5684
880.27	60.1740
880.51	59.1035
881.50	61.2639
883.24	65.5869
884.67	62.3797
889.25	68.8969
896.60	56.0612
898.02	71.1756
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903.28	61.1754
911.07	68.1172
911.07	68.1172
911.07	68.1172
919.63	54.1541
920.93	59.5842
925.00	72.6433
925.24	72.6466
926.50	65.0728
935.52	69.5344
937.48	72.8216
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949.00	62.0919
962.29	47.3250
964.01	71.0112
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968.20	21.8672
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969.11	61.9681
969.11	61.9681
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980.50	54.7961
983.50	54.8267
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1001.68	49.5132
1004.76	65.1382
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1036.00	62.7456
1037.82	69.2291
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1038.76	0.0000
1045.16	65.6236
1046.59	72.1125
1048.07	60.1097

1050.47	71.2382
1050.47	71.2382
1062.04	70.4583
1063.62	52.8600
1076.63	54.8396
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1078.86	54.8636
1085.78	62.3790
1099.22	53.1940
1112.02	58.9241
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1115.52	64.1741
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1120.29	66.5018
1120.29	66.5018
1120.29	66.5018
1120.51	66.5047
1121.28	66.5134
1124.00	0.0000
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1147.95	0.0000
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1173.22	60.4870
1175.09	51.9967
1177.93	71.8840
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1260.41	0.0000
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1274.54	48.0408
1291.56	37.5718
1298.22	0.0000
1312.09	35.7594
1325.50	27.1170
1325.50	27.1170
1332.49	46.5352
1333.61	48.4823
1360.21	36.0229
1362.66	0.0000
1365.15	27.2811
1368.21	36.0666
1368.53	0.0000
1376.25	26.3507
1384.27	44.9462
1394.10	18.5926
1395.20	20.5522
1407.95	27.4554
1434.06	26.5759
1436.60	21.6625
1457.56	0.0000
1460.81	21.7386
1489.15	15.8737
1509.49	23.8789
1596.49	12.0830
1620.62	17.1729
1678.03	0.0000
1691.02	16.3125
1691.02	16.3125
1706.46	0.0000
1750.46	0.0000
1764.49	15.4370
1764.49	15.4370
1764.49	15.4370
1764.49	15.4370
1770.23	10.5929
1771.40	10.5942
1791.20	0.0000
1808.65	9.3131

1836.01

17.6502

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691010

Total Uranium Activity	3.3676E+00	ug/g
Total Uranium Counting Unc.	5.8358E+00	ug/g
Total Uranium Tpu	2.9774E-06	ug/g
Total Uranium Mda	3.1754E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037                      SAMPLE ID   : G245691010
*  ANALYST       : MJH1                        DETECTOR    : GAM19
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 15:33:12.42    SAMPLE ALQT  : 136.290 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.422E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.465E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.777E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.837E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:36:20.89

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691011.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:35.
Sample ID          : G245691011 Sample quantity : 1.34150E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:33.74 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.62*	91	552	0.99	127.23	123	8	1.26E-02	47.4	
2	7	73.49	122	669	2.00	146.94	143	16	1.69E-02	40.4	3.79E+00
3	7	75.01	571	555	1.09	149.96	143	16	7.93E-02	8.3	
4	7	77.22*	892	437	1.08	154.37	143	16	1.24E-01	5.2	
5	3	84.14*	94	577	1.22	168.20	164	29	1.30E-02	41.4	1.94E+00
6	3	87.39	373	514	1.23	174.69	164	29	5.18E-02	11.0	
7	3	90.08	176	319	0.80	180.06	164	29	2.44E-02	17.2	
8	3	93.02*	322	441	1.30	185.93	164	29	4.47E-02	14.2	
9	0	128.46	134	579	1.28	256.70	251	12	1.86E-02	36.8	
10	0	186.37*	291	483	1.63	372.37	366	14	4.04E-02	17.5	
11	0	209.47	153	338	1.07	418.50	414	10	2.12E-02	24.1	
12	5	238.68*	1506	251	1.09	476.85	472	17	2.09E-01	3.2	2.62E+00
13	5	241.50	371	335	1.94	482.49	472	17	5.15E-02	14.7	
14	0	269.85	209	279	1.59	539.12	532	13	2.90E-02	17.9	
15	0	295.30	432	210	1.23	589.96	585	10	6.00E-02	7.9	
16	0	299.89	113	148	1.13	599.12	595	8	1.57E-02	21.0	
17	0	327.92	118	262	1.33	655.13	647	14	1.65E-02	30.4	
18	0	338.50*	277	256	1.24	676.26	671	12	3.85E-02	13.2	
19	0	352.08*	778	191	1.19	703.40	698	12	1.08E-01	5.1	
20	0	462.88	127	99	1.81	924.80	919	12	1.76E-02	18.0	
21	0	511.42*	150	168	1.79	1021.79	1016	15	2.08E-02	23.1	
22	0	583.57*	493	135	1.25	1166.00	1160	13	6.85E-02	6.7	
23	0	609.59*	560	144	1.50	1218.01	1211	16	7.78E-02	6.4	
24	0	727.43	133	87	1.75	1453.59	1447	13	1.84E-02	16.9	
25	0	768.38	83	61	3.40	1535.46	1530	11	1.15E-02	21.3	
26	0	795.69	79	73	1.51	1590.07	1584	14	1.10E-02	25.6	
27	0	861.12	69	72	1.58	1720.91	1715	12	9.53E-03	27.6	
28	0	911.73*	361	59	1.64	1822.13	1817	12	5.01E-02	6.9	
29	0	940.52	68	159	14.80	1879.72	1863	35	9.41E-03	59.1	
30	1	965.13	44	63	1.84	1928.94	1925	21	6.05E-03	31.0	1.41E+00
31	1	969.52*	187	54	1.62	1937.73	1925	21	2.60E-02	10.7	
32	0	1121.37	137	94	1.69	2241.51	2235	15	1.91E-02	18.0	
33	0	1239.40	48	93	1.56	2477.69	2470	12	6.72E-03	42.4	
34	0	1377.97	55	18	1.08	2755.04	2746	14	7.63E-03	21.1	
35	0	1461.47	1707	30	1.97	2922.21	2914	19	2.37E-01	2.5	
36	0	1630.68	26	3	0.84	3261.04	3255	11	3.54E-03	23.4	
37	0	1729.79	34	0	2.00	3459.56	3453	12	4.72E-03	17.1	
38	0	1765.22*	98	7	1.57	3530.53	3525	13	1.36E-02	11.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
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Flag: "\*" = Peak area was modified by background subtraction



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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691011.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:35
Sample ID        : G245691011 Sample quantity : 134.15 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA20 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:33.74 0.5%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.574E+01	3.605E+00	5.246E-01	4.575E-02	68.132
CD-109	+	88.03	*	4.137E+00	9.896E-01	1.030E+00	9.735E-02	4.018
SN-126	+	64.28		5.666E-01	5.433E-01	6.108E-01	8.843E-02	0.928
	+	86.94		1.690E+00	7.943E-01	4.236E-01	1.758E-01	3.990
	+	87.57	*	4.066E-01	9.726E-02	1.015E-01	9.544E-03	4.007
TL-208		277.35		9.748E-02	3.538E-01	5.974E-01	7.944E-02	0.163
	+	510.84		6.482E-01	3.098E-01	2.143E-01	2.679E-02	3.025
	+	583.14	*	6.083E-01	1.029E-01	5.349E-02	5.499E-03	11.373
	+	860.37		7.887E-01	4.426E-01	4.438E-01	4.704E-02	1.777
BI-211	+	72.87		4.543E+00	3.686E+00	3.882E+00	3.066E-01	1.170
	+	351.07	*	4.238E+00	5.925E-01	3.176E-01	3.043E-02	13.340
PB-212	+	74.81		2.463E+00	5.080E-01	4.466E-01	5.511E-02	5.515
	+	77.11		2.215E+00	2.960E-01	2.570E-01	2.125E-02	8.622
	+	87.30		1.880E+00	4.875E-01	4.701E-01	6.443E-02	4.000
	+	238.63	*	1.800E+00	2.229E-01	8.640E-02	9.188E-03	20.832
	+	300.09		2.077E+00	9.028E-01	1.036E+00	1.185E-01	2.004
PO-212	+	74.81		2.463E+00	5.080E-01	4.466E-01	5.511E-02	5.515
	+	77.11		2.215E+00	2.960E-01	2.570E-01	2.125E-02	8.622
	+	87.30		1.880E+00	4.875E-01	4.701E-01	6.443E-02	4.000
		115.19		-8.486E-02	3.245E+00	5.220E+00	4.384E-01	-0.016
	+	238.63	*	1.800E+00	2.229E-01	8.640E-02	9.188E-03	20.832
	+	300.09		2.077E+00	9.028E-01	1.036E+00	1.185E-01	2.004
BI-214	+	609.31	*	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527
	+	1120.29		1.634E+00	6.145E-01	4.316E-01	4.669E-02	3.786
	+	1764.49		1.578E+00	3.978E-01	2.183E-01	1.793E-02	7.228
PB-214	+	74.81		4.244E+00	8.412E-01	7.694E-01	8.424E-02	5.515
	+	77.11		3.798E+00	5.841E-01	4.405E-01	4.954E-02	8.622
	+	87.30		3.221E+00	8.096E-01	8.054E-01	9.774E-02	4.000
	+	241.98		2.659E+00	8.352E-01	5.201E-01	5.817E-02	5.112
	+	295.21		1.394E+00	2.741E-01	1.970E-01	2.299E-02	7.078
	+	351.92	*	1.474E+00	2.200E-01	1.006E-01	1.096E-02	14.658
PO-214	+	74.81		4.244E+00	8.412E-01	7.694E-01	8.424E-02	5.515
	+	77.11		3.798E+00	5.841E-01	4.405E-01	4.954E-02	8.622
	+	87.30		3.221E+00	8.096E-01	8.054E-01	9.774E-02	4.000

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.659E+00	8.352E-01	5.201E-01	5.817E-02	5.112
	+	295.21		1.394E+00	2.741E-01	1.970E-01	2.299E-02	7.078
	+	351.92	*	1.474E+00	2.200E-01	1.006E-01	1.096E-02	14.658
	+	74.81		2.463E+00	5.080E-01	4.466E-01	5.511E-02	5.515
	+	77.11		2.215E+00	2.960E-01	2.570E-01	2.125E-02	8.622
	+	87.30		1.880E+00	4.875E-01	4.701E-01	6.443E-02	4.000
PO-218	+	238.63	*	1.800E+00	2.229E-01	8.640E-02	9.188E-03	20.832
	+	300.09		2.077E+00	9.028E-01	1.036E+00	1.185E-01	2.004
	+	74.81		4.244E+00	8.412E-01	7.694E-01	8.424E-02	5.515
	+	77.11		3.798E+00	5.841E-01	4.405E-01	4.954E-02	8.622
	+	87.30		3.221E+00	8.096E-01	8.054E-01	9.774E-02	4.000
	+	241.98		2.659E+00	8.352E-01	5.201E-01	5.817E-02	5.112
RA-224	+	295.21		1.394E+00	2.741E-01	1.970E-01	2.299E-02	7.078
	+	351.92	*	1.474E+00	2.200E-01	1.006E-01	1.096E-02	14.658
	+	240.98	*	5.042E+00	1.558E+00	9.831E-01	9.502E-02	5.129
RA-226	+	609.31	*	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527
	+	1120.29		1.634E+00	6.145E-01	4.316E-01	4.669E-02	3.786
	+	1764.49		1.578E+00	3.978E-01	2.183E-01	1.793E-02	7.228
AC-228	+	338.32		1.667E+00	8.187E-01	3.429E-01	1.420E-01	4.861
	+	911.07	*	1.961E+00	3.608E-01	2.289E-01	2.804E-02	8.568
	+	969.11		1.791E+00	5.721E-01	3.587E-01	8.511E-02	4.993
RA-228	+	338.32		1.667E+00	8.187E-01	3.429E-01	1.420E-01	4.861
	+	911.07	*	1.961E+00	3.608E-01	2.289E-01	2.804E-02	8.568
	+	969.11		1.791E+00	5.721E-01	3.587E-01	8.511E-02	4.993
TH-228	+	74.81		2.500E+00	4.606E-01	4.533E-01	3.690E-02	5.515
	+	77.11		2.249E+00	3.005E-01	2.609E-01	2.158E-02	8.622
	+	87.30		1.909E+00	4.567E-01	4.773E-01	4.473E-02	4.000
TH-230	+	238.63	*	1.827E+00	2.263E-01	8.772E-02	9.328E-03	20.832
	+	300.09		2.109E+00	1.534E+00	1.052E+00	6.257E-01	2.004
	+	609.31	*	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527
TH-232	+	1120.29		1.634E+00	6.145E-01	4.316E-01	4.669E-02	3.786
	+	1764.49		1.578E+00	3.978E-01	2.183E-01	1.793E-02	7.228
	+	338.32		1.667E+00	4.668E-01	3.429E-01	3.213E-02	4.861
TH-234	+	911.07	*	1.961E+00	3.608E-01	2.289E-01	2.804E-02	8.568
	+	969.11		1.791E+00	5.721E-01	3.587E-01	8.511E-02	4.993
	+	63.29	*	1.431E+00	1.380E+00	1.607E+00	2.793E-01	0.891
U-234	+	92.38		2.318E+00	7.818E-01	6.769E-01	1.241E-01	3.424
	+	609.31	*	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527
	+	1120.29		1.634E+00	6.145E-01	4.316E-01	4.669E-02	3.786
NP-237	+	1764.49		1.578E+00	3.978E-01	2.183E-01	1.793E-02	7.228
	+	86.50	*	1.194E+00	3.772E-01	3.001E-01	6.789E-02	3.978
	+	95.87		-7.254E-01	9.686E-01	1.323E+00	3.275E-01	-0.548
U-238	+	63.29	*	1.431E+00	1.380E+00	1.607E+00	2.793E-01	0.891
	+	92.38		2.318E+00	6.895E-01	6.769E-01	6.187E-02	3.424
AM-243	+	74.67	*	3.993E-01	7.342E-02	7.255E-02	5.840E-03	5.504
	+	86.72		4.477E+01	1.071E+01	1.124E+01	1.045E+00	3.984
	+	117.66		-2.962E+00	3.475E+00	5.368E+00	4.494E-01	-0.552
ANH-511	+	142.18		-4.758E+00	1.670E+01	2.633E+01	2.223E+00	-0.181
	+	511.00	*	1.400E-01	6.590E-02	4.630E-02	4.314E-03	3.024

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-2.436E-02	2.972E-01	4.793E-01	4.659E-02	-0.051
NA-22		1274.54	*	-6.009E-03	4.455E-02	7.084E-02	5.868E-03	-0.085
NA-24		1368.53	*	4.620E-01	4.455E-02	Half-Life too short		
AL-26		1129.67		-2.839E-01	1.842E+00	2.774E+00	2.350E-01	-0.102
		1808.65	*	-2.325E-02	2.377E-02	2.947E-02	2.393E-03	-0.789
TI-44		67.85		-4.182E-03	3.831E-02	5.960E-02	4.484E-03	-0.070
	+	78.38	*	4.088E-01	5.462E-02	7.101E-02	5.960E-03	5.757
SC-46		889.25	*	-3.039E-02	3.606E-02	5.461E-02	5.444E-03	-0.556
	+	1120.51		2.798E-01	1.036E-01	1.335E-01	1.142E-02	2.096
V-48		944.10		-6.907E-01	8.394E-01	1.268E+00	1.237E-01	-0.545
		983.50	*	-1.475E-02	6.762E-02	1.087E-01	1.039E-02	-0.136
		1312.09		-7.542E-02	8.521E-02	1.233E-01	1.029E-02	-0.612
CR-51		320.08	*	1.327E-01	3.418E-01	5.604E-01	5.619E-02	0.237
MN-52		744.21		-1.450E-02	2.272E-01	3.777E-01	3.837E-02	-0.038
		848.13		-3.060E-01	6.206E+00	1.024E+01	1.032E+00	-0.030
		935.52		1.772E-01	2.638E-01	4.565E-01	4.471E-02	0.388
		1246.25		-4.486E+00	7.985E+00	1.186E+01	9.740E-01	-0.378
		1333.61		3.895E+00	4.931E+00	8.621E+00	7.223E-01	0.452
		1434.06	*	1.297E-01	2.021E-01	3.654E-01	3.092E-02	0.355
MN-54		834.83	*	1.092E-02	3.621E-02	6.143E-02	6.205E-03	0.178
CO-56		846.75	*	-1.527E-02	3.625E-02	5.781E-02	5.827E-03	-0.264
		977.42		3.522E+00	3.129E+00	5.220E+00	5.007E-01	0.675
		1037.82		-1.422E-01	2.897E-01	4.502E-01	4.344E-02	-0.316
		1175.09		1.692E+00	2.273E+00	3.911E+00	3.146E-01	0.433
	+	1238.25		1.615E-01	1.375E-01	1.783E-01	1.508E-02	0.906
		1360.21		3.283E-01	8.405E-01	1.472E+00	1.237E-01	0.223
		1771.40		-2.154E-02	1.757E-01	2.371E-01	1.945E-02	-0.091
CO-57		122.06	*	2.102E-02	2.379E-02	3.953E-02	3.299E-03	0.532
		136.48		-3.030E-02	1.979E-01	3.145E-01	2.848E-02	-0.096
CO-58		810.76	*	-1.226E-03	3.440E-02	5.700E-02	5.788E-03	-0.022
FE-59		142.65		-9.982E-01	2.589E+00	4.068E+00	3.436E-01	-0.245
		192.34		2.017E-01	9.580E-01	1.451E+00	1.992E-01	0.139
		1099.22	*	1.857E-02	8.715E-02	1.447E-01	1.365E-02	0.128
		1291.56		6.690E-02	1.131E-01	1.937E-01	1.842E-02	0.345
CO-60		1173.22		-1.077E-02	4.647E-02	7.382E-02	5.935E-03	-0.146
		1332.49	*	2.709E-02	3.732E-02	6.495E-02	5.441E-03	0.417
ZN-65		1115.52	*	-7.508E-02	1.051E-01	1.340E-01	1.153E-02	-0.560
GE-68		1077.35	*	-1.681E-01	1.265E+00	2.038E+00	1.818E-01	-0.082
AS-73		53.44	*	-6.098E-02	5.445E-01	8.934E-01	6.632E-02	-0.068
AS-74		595.88	*	-1.347E-02	8.508E-02	1.344E-01	1.316E-02	-0.100
		634.78		-9.816E-02	3.214E-01	5.296E-01	5.268E-02	-0.185
SE-75		66.05		-2.932E+00	4.128E+00	5.850E+00	5.534E-01	-0.501
		96.73		-9.625E-01	7.861E-01	1.047E+00	1.446E-01	-0.919
		121.11		1.107E-02	1.295E-01	2.089E-01	2.300E-02	0.053
		136.00		-7.885E-03	3.702E-02	5.867E-02	4.957E-03	-0.134
		198.60		1.159E+00	1.660E+00	2.876E+00	2.895E-01	0.403
		264.65	*	-3.482E-02	4.705E-02	6.559E-02	6.494E-03	-0.531
		279.53		2.807E-02	1.015E-01	1.716E-01	1.756E-02	0.164
		303.91		-1.407E-01	2.046E+00	2.973E+00	3.678E-01	-0.047

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	400.65		1.270E-01	2.477E-01	4.176E-01	4.583E-02	0.304
		87.88		9.020E+02	2.158E+02	3.180E+02	3.003E+01	2.837
		200.40		4.243E+01	1.493E+02	2.554E+02	2.349E+01	0.166
	+	239.00		2.917E+02	3.367E+01	3.900E+01	3.762E+00	7.480
		249.79		3.300E+00	5.888E+01	9.898E+01	9.648E+00	0.033
		281.68		-1.534E+01	8.402E+01	1.388E+02	1.380E+01	-0.111
		297.23		2.828E+02	8.479E+01	1.153E+02	1.134E+01	2.453
		303.76		-1.885E+01	1.756E+02	2.543E+02	2.488E+01	-0.074
		439.47		5.458E+01	1.293E+02	2.169E+02	1.905E+01	0.252
		484.57		3.314E+00	2.133E+02	3.462E+02	3.163E+01	0.010
		520.65	*	6.447E-01	1.028E+01	1.668E+01	1.564E+00	0.039
		574.64		7.550E+00	2.032E+02	3.270E+02	3.167E+01	0.023
		578.91		1.043E+01	9.721E+01	1.375E+02	1.335E+01	0.076
		585.48		1.924E+03	3.234E+02	5.325E+02	5.187E+01	3.613
		755.35		1.080E+02	1.629E+02	2.845E+02	2.891E+01	0.380
		817.79		2.163E+01	1.195E+02	2.017E+02	2.043E+01	0.107
SR-82		698.33		-8.404E+00	3.152E+01	5.183E+01	5.240E+00	-0.162
		776.49	*	-6.711E-02	3.609E-01	5.926E-01	6.022E-02	-0.113
		1395.20		-9.027E+00	9.460E+00	1.376E+01	1.161E+00	-0.656
RB-83		520.41	*	2.154E-02	6.607E-02	1.092E-01	1.024E-02	0.197
		529.64		8.868E-02	9.582E-02	1.651E-01	1.558E-02	0.537
		552.65		-8.524E-02	1.957E-01	3.039E-01	2.909E-02	-0.280
RB-84		881.50	*	1.217E-02	6.361E-02	1.070E-01	1.069E-02	0.114
KR-85		513.99	*	1.209E+01	8.447E+00	1.324E+01	1.237E+00	0.913
SR-85		513.99	*	6.201E-02	4.332E-02	6.793E-02	6.343E-03	0.913
RB-86		1076.63	*	-8.073E-01	8.268E-01	1.223E+00	1.092E-01	-0.660
Y-88		898.02		-2.877E-02	4.025E-02	6.225E-02	6.212E-03	-0.462
		1836.01	*	1.449E-02	2.782E-02	5.038E-02	4.065E-03	0.288
ZR-88		392.90	*	-4.266E-03	2.745E-02	4.455E-02	3.726E-03	-0.096
Y-91		1204.90	*	-1.658E+01	1.938E+01	2.894E+01	2.350E+00	-0.573
NB-94		702.63	*	-1.646E-02	2.976E-02	4.770E-02	4.826E-03	-0.345
		871.10		-1.113E-02	3.060E-02	4.887E-02	4.898E-03	-0.228
NB-95		765.79	*	4.093E-02	4.315E-02	6.860E-02	6.972E-03	0.597
NB-95M		235.69	*	6.940E-02	1.284E-01	1.957E-01	2.102E-02	0.355
ZR-95		724.18		6.783E-03	8.758E-02	1.287E-01	1.388E-02	0.053
		756.15	*	4.429E-02	6.983E-02	1.216E-01	1.327E-02	0.364
NB-97		657.90	*	9.242E-02	6.983E-02	Half-Life	too short	
		1024.50		2.790E-01	6.983E-02	Half-Life	too short	
ZR-97		254.15		-1.758E+00	6.983E-02	Half-Life	too short	
		355.39		1.418E+00	6.983E-02	Half-Life	too short	
		507.63	*	-4.285E-01	6.983E-02	Half-Life	too short	
		602.52		1.280E+00	6.983E-02	Half-Life	too short	
		1021.30		4.290E+00	6.983E-02	Half-Life	too short	
		1147.95		-1.882E-01	6.983E-02	Half-Life	too short	
		1362.66		-5.234E+00	6.983E-02	Half-Life	too short	
		1750.46		3.245E+00	6.983E-02	Half-Life	too short	
MO-99		140.51		-9.014E+00	2.540E+01	3.954E+01	1.093E+01	-0.228
		181.06		2.763E-01	1.882E+01	2.644E+01	4.875E+00	0.010
		366.43		-2.097E+01	7.698E+01	1.245E+02	1.107E+01	-0.168

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		739.58	*	-2.191E+00	1.150E+01	1.895E+01	3.052E+00	-0.116
		778.00		-2.404E+01	3.234E+01	5.048E+01	5.130E+00	-0.476
TC-99M		140.51	*	-1.418E+10	3.234E+01	Half-Life too short		
RH-101	+	127.23		7.625E-02	5.655E-02	5.035E-02	4.200E-03	1.514
		198.01	*	9.618E-03	3.029E-02	5.188E-02	4.756E-03	0.185
		325.23		9.288E-02	2.324E-01	3.481E-01	3.324E-02	0.267
RH-102		418.52		1.678E-01	2.658E-01	4.517E-01	3.886E-02	0.372
		475.06	*	-6.832E-03	2.600E-02	4.134E-02	3.748E-03	-0.165
		631.29		-4.481E-03	5.376E-02	8.516E-02	8.460E-03	-0.053
		697.49		-3.169E-02	7.244E-02	1.176E-01	1.189E-02	-0.269
		766.84		1.891E-01	1.178E-01	1.950E-01	1.982E-02	0.969
		1046.59		9.692E-02	1.101E-01	1.936E-01	1.772E-02	0.501
		1112.84		-1.054E-01	2.317E-01	3.503E-01	3.021E-02	-0.301
RU-103		497.08	*	3.314E-02	3.663E-02	6.286E-02	9.139E-03	0.527
	+	610.33		1.405E+01	3.037E+00	2.945E+00	5.111E-01	4.770
RH-106	+	511.85		6.993E-01	3.292E-01	4.365E-01	4.069E-02	1.602
		621.84	*	1.377E-01	3.048E-01	5.040E-01	7.165E-02	0.273
		1050.47		-5.853E-01	2.280E+00	3.636E+00	3.319E-01	-0.161
RU-106	+	511.85		6.993E-01	3.292E-01	4.365E-01	4.069E-02	1.602
		621.84	*	1.377E-01	3.045E-01	5.040E-01	4.989E-02	0.273
		1050.47		-5.853E-01	2.280E+00	3.636E+00	3.319E-01	-0.161
AG-108M		433.93	*	1.652E-03	2.983E-02	4.886E-02	4.434E-03	0.034
		614.37		-4.176E-03	4.222E-02	5.814E-02	5.910E-03	-0.072
		722.95		4.341E-03	3.868E-02	5.708E-02	5.954E-03	0.076
AG-110M		657.75	*	3.517E-02	3.280E-02	5.890E-02	6.034E-03	0.597
		677.61		1.121E-01	2.788E-01	4.820E-01	4.956E-02	0.232
		706.67		3.510E-02	1.861E-01	3.163E-01	3.266E-02	0.111
		763.93		-3.001E-02	1.684E-01	2.392E-01	2.480E-02	-0.125
		884.67		-6.841E-03	4.521E-02	7.272E-02	7.435E-03	-0.094
		937.48		-3.568E-02	1.061E-01	1.693E-01	1.704E-02	-0.211
		1384.27		-1.338E-01	1.559E-01	1.983E-01	1.721E-02	-0.675
IN-111		171.28		-5.453E-01	9.707E-01	1.495E+00	1.316E-01	-0.365
		245.39	*	3.389E-01	1.035E+00	1.563E+00	1.517E-01	0.217
IN-113M		391.69	*	-6.787E-03	3.943E-02	6.394E-02	5.516E-03	-0.106
SN-113		391.69	*	-6.787E-03	3.943E-02	6.394E-02	5.516E-03	-0.106
IN-114M		190.27	*	1.144E-01	1.747E-01	2.710E-01	2.456E-02	0.422
CD-115		260.90		1.367E+02	1.262E+02	2.203E+02	2.167E+01	0.621
		492.35		-1.027E+00	3.264E+01	5.273E+01	4.846E+00	-0.019
		527.90	*	1.513E+00	1.014E+01	1.654E+01	1.559E+00	0.091
SN-117M		156.02		-9.944E-01	2.272E+00	3.545E+00	3.048E-01	-0.280
		158.56	*	4.184E-02	5.378E-02	8.734E-02	7.538E-03	0.479
SB-122		563.90	*	3.678E+00	1.989E+00	3.582E+00	3.450E-01	1.027
		692.80		3.705E+01	4.189E+01	7.426E+01	7.501E+00	0.499
I-123		159.00	*	3.807E+00	4.189E+01	Half-Life too short		
		528.96		2.361E+02	4.189E+01	Half-Life too short		
TE-123M		159.00	*	1.807E-02	2.755E-02	4.454E-02	3.869E-03	0.406
I-124		602.71	*	2.867E-02	7.342E-01	1.028E+00	1.010E-01	0.028
		722.78		2.944E-01	4.049E+00	5.948E+00	6.032E-01	0.050
		1325.50		1.132E+01	3.077E+01	5.173E+01	4.328E+00	0.219

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25		6.183E+01	2.910E+01	5.791E+01	4.878E+00	1.068
		1509.49		1.622E+01	1.385E+01	2.634E+01	2.233E+00	0.616
		1691.02		-2.264E+00	2.962E+00	4.061E+00	3.387E-01	-0.558
		602.71		1.658E-03	4.246E-02	5.948E-02	5.841E-03	0.028
		645.85		1.594E-01	4.756E-01	8.195E-01	8.551E-02	0.195
		709.31		-1.910E-01	2.555E+00	4.258E+00	4.311E-01	-0.045
		713.82		1.421E+00	1.580E+00	2.795E+00	3.680E-01	0.508
		722.78		2.469E-02	3.395E-01	4.987E-01	5.137E-02	0.050
	+	968.20		1.844E+01	4.326E+00	7.141E+00	6.884E-01	2.582
		1045.16		-3.817E-01	2.482E+00	4.001E+00	3.667E-01	-0.095
		1325.50		1.014E+00	2.755E+00	4.633E+00	3.875E-01	0.219
		1368.21		9.544E-01	1.381E+00	2.439E+00	3.255E-01	0.391
		1436.60		5.397E-01	3.313E+00	5.672E+00	4.801E-01	0.095
		1691.02	*	-4.478E-02	5.859E-02	8.032E-02	6.980E-03	-0.558
SB-125		427.89	*	1.947E-02	8.452E-02	1.401E-01	1.240E-02	0.139
	+	463.38		1.073E+00	4.004E-01	5.288E-01	5.092E-02	2.028
		600.56		-6.137E-02	1.779E-01	2.770E-01	2.873E-02	-0.222
		635.90		-1.681E-01	2.432E-01	3.876E-01	4.093E-02	-0.434
TE-125M		109.28	*	-4.972E-01	8.484E+00	1.365E+01	1.396E+00	-0.036
I-126		388.63		-1.016E-01	1.878E-01	2.971E-01	2.502E-02	-0.342
		666.33	*	3.717E-02	1.672E-01	2.856E-01	2.869E-02	0.130
SB-126		753.82		4.103E-01	1.377E+00	2.351E+00	2.389E-01	0.175
		223.80		-3.645E-01	3.801E+00	6.378E+00	6.049E-01	-0.057
		278.60		2.628E+00	2.332E+00	4.067E+00	4.048E-01	0.646
	+	296.50		1.391E+01	2.592E+00	3.574E+00	3.519E-01	3.891
		414.70		-9.966E-03	6.827E-02	1.105E-01	9.471E-03	-0.090
		415.30		1.843E+00	5.695E+00	9.508E+00	8.152E-01	0.194
		555.20		1.946E-01	3.811E+00	6.153E+00	5.897E-01	0.032
		573.80		-3.709E-01	1.010E+00	1.573E+00	1.523E-01	-0.236
		593.00		-3.470E-01	8.589E-01	1.327E+00	1.297E-01	-0.262
		656.30		2.441E+00	3.177E+00	5.611E+00	5.622E-01	0.435
		666.33		1.553E-02	6.989E-02	1.194E-01	1.199E-02	0.130
		675.00		8.380E-01	1.909E+00	3.304E+00	3.326E-01	0.254
		695.00		8.682E-03	7.533E-02	1.274E-01	1.287E-02	0.068
		697.00		-1.553E-01	2.589E-01	4.151E-01	4.196E-02	-0.374
SB-127		720.50	*	-8.195E-02	1.461E-01	2.098E-01	2.127E-02	-0.391
		856.80		-1.272E-01	4.772E-01	6.616E-01	6.654E-02	-0.192
		989.30		3.394E-01	1.214E+00	2.041E+00	1.945E-01	0.166
		1034.80		-1.405E+00	8.146E+00	1.310E+01	1.210E+00	-0.107
		1213.00		-2.860E+00	5.123E+00	7.907E+00	6.436E-01	-0.362
		61.10		3.259E+01	4.646E+01	7.028E+01	7.081E+00	0.464
		252.40		-5.348E-01	3.829E+00	6.361E+00	2.690E+00	-0.084
		290.80		-8.420E+00	2.216E+01	3.154E+01	3.839E+00	-0.267
		411.60		1.213E+00	1.122E+01	1.849E+01	2.900E+00	0.066
		444.90		-2.522E+00	9.041E+00	1.443E+01	1.830E+00	-0.175
		473.00		-1.184E-01	1.470E+00	2.371E+00	3.121E-01	-0.050
		543.00		-4.390E+00	1.612E+01	2.539E+01	3.797E+00	-0.173
		603.60		8.589E-01	1.233E+01	1.734E+01	2.318E+00	0.050
		685.20	*	3.925E-01	1.176E+00	2.025E+00	2.539E-01	0.194

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error (pCi/GRAM)	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		698.50	-3.947E+00	1.410E+01	2.314E+01	3.861E+00	-0.171
		722.20	4.395E+00	2.802E+01	4.156E+01	5.146E+00	0.106
		783.80	2.333E+00	3.431E+00	5.981E+00	8.097E-01	0.390
		57.60	-4.228E+00	4.204E+00	6.647E+00	4.749E-01	-0.636
		145.22	1.305E-01	6.702E-01	1.079E+00	9.141E-02	0.121
		172.10	-5.148E-02	1.150E-01	1.783E-01	1.571E-02	-0.289
I-131		202.84	* -5.094E-02	4.222E-02	6.746E-02	6.226E-03	-0.755
		374.96	-5.676E-03	1.846E-01	3.029E-01	2.641E-02	-0.019
		80.18	-3.085E+00	5.482E+00	6.037E+00	5.209E-01	-0.511
		284.30	-5.011E-01	1.392E+00	2.276E+00	2.349E-01	-0.220
TE-132		364.48	* 7.650E-02	1.065E-01	1.825E-01	1.712E-02	0.419
		636.97	-1.417E+00	1.391E+00	2.149E+00	2.229E-01	-0.659
		722.89	6.415E-01	6.525E+00	9.614E+00	9.796E-01	0.067
		49.72	-5.061E+00	1.156E+01	1.876E+01	1.925E+00	-0.270
BA-133		111.76	-1.311E+01	2.824E+01	4.413E+01	4.735E+00	-0.297
		116.30	-1.224E+01	2.525E+01	3.975E+01	4.245E+00	-0.308
		228.16	* -4.912E-01	6.610E-01	1.070E+00	1.738E-01	-0.459
		53.15	-5.116E-01	2.347E+00	3.835E+00	2.858E-01	-0.133
I-133		79.62	-2.434E+00	1.674E+00	1.685E+00	2.555E-01	-1.444
		81.00	3.349E-02	1.135E-01	1.328E-01	2.111E-02	0.252
		276.40	2.596E-01	3.611E-01	6.004E-01	9.170E-02	0.432
		302.84	-5.268E-02	1.418E-01	2.009E-01	2.828E-02	-0.262
I-133		356.01	* 9.375E-03	4.270E-02	6.294E-02	8.502E-03	0.149
		383.85	5.088E-02	2.728E-01	4.532E-01	5.684E-02	0.112
	+	510.53	1.461E+00	2.728E-01	Half-Life	too short	
		529.87	* 5.399E-03	2.728E-01	Half-Life	too short	
CS-134		706.58	6.839E-02	2.728E-01	Half-Life	too short	
		856.28	-2.537E-01	2.728E-01	Half-Life	too short	
		875.33	-2.116E-02	2.728E-01	Half-Life	too short	
		1236.41	6.005E-01	2.728E-01	Half-Life	too short	
CS-134		1298.22	4.343E-01	2.728E-01	Half-Life	too short	
		475.35	-8.237E-01	1.740E+00	2.721E+00	2.467E-01	-0.303
		563.23	4.103E-01	3.485E-01	6.050E-01	5.869E-02	0.678
		569.32	-3.698E-02	1.889E-01	2.985E-01	2.915E-02	-0.124
I-135		604.70	1.963E-03	3.573E-02	5.013E-02	4.935E-03	0.039
	+	795.84	* 1.395E-01	7.293E-02	9.304E-02	9.493E-03	1.499
		801.93	-4.525E-01	4.097E-01	5.018E-01	5.112E-02	-0.902
		1038.57	1.292E+00	3.529E+00	5.973E+00	5.502E-01	0.216
CS-135		1167.94	1.013E+00	2.538E+00	4.255E+00	3.444E-01	0.238
		1365.15	-3.318E-01	1.034E+00	1.663E+00	1.466E-01	-0.199
		268.24	* 3.278E-01	1.602E-01	2.835E-01	3.142E-02	1.156
		288.45	7.465E+09	1.602E-01	Half-Life	too short	
I-135		417.63	1.721E+10	1.602E-01	Half-Life	too short	
		546.56	-3.548E+09	1.602E-01	Half-Life	too short	
		836.80	9.729E+09	1.602E-01	Half-Life	too short	
		1038.76	8.397E+09	1.602E-01	Half-Life	too short	
I-135		1124.00	5.443E+10	1.602E-01	Half-Life	too short	
		1131.51	5.141E+08	1.602E-01	Half-Life	too short	
		1260.41	* -1.006E+08	1.602E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error (pCi/GRAM)	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1457.56		1.508E+11	1.602E-01	Half-Life too short	
		1678.03		-7.199E+08	1.602E-01	Half-Life too short	
		1706.46		8.049E+09	1.602E-01	Half-Life too short	
		1791.20		-2.607E+09	1.602E-01	Half-Life too short	
		66.91		-1.407E-01	6.816E-01	9.899E-01	-0.142
	+	86.29		5.314E+00	1.369E+00	1.843E+00	2.884
		153.22		8.135E-01	6.461E-01	1.076E+00	0.756
		163.89		1.136E+00	1.007E+00	1.672E+00	0.680
		176.55		7.283E-02	3.581E-01	5.719E-01	0.127
		273.65		6.471E-02	4.661E-01	6.913E-01	0.094
BA-137M		340.57		3.529E-01	1.495E-01	2.428E-01	1.454
		818.51		5.239E-02	6.369E-02	1.132E-01	0.463
		1048.07	*	-1.295E-02	1.073E-01	1.734E-01	-0.075
		1235.34		-8.729E-02	6.689E-01	9.171E-01	-0.095
		661.65	*	-4.475E-02	3.413E-02	5.149E-02	-0.869
		661.65	*	-4.730E-02	3.608E-02	5.443E-02	-0.869
		165.85	*	-6.885E-03	2.889E-02	4.534E-02	-0.152
		162.64		-1.659E-01	7.181E-01	1.128E+00	-0.147
		304.84		2.597E-01	1.217E+00	1.898E+00	0.137
		423.70		-7.678E-01	1.797E+00	2.822E+00	-0.272
LA-140		537.32	*	2.471E-03	2.351E-01	3.792E-01	0.007
	+	328.77		8.808E-01	5.431E-01	5.429E-01	1.622
		432.53		2.494E-01	1.862E+00	3.066E+00	0.081
		487.03		-7.171E-02	1.324E-01	2.058E-01	-0.348
		751.79		-2.585E+00	1.674E+00	2.408E+00	-1.073
		815.85		-2.958E-02	2.787E-01	4.586E-01	-0.065
		867.82		5.470E-01	1.426E+00	2.235E+00	0.245
		919.63		7.473E-01	2.719E+00	4.477E+00	0.167
		925.24		-7.156E-01	1.073E+00	1.653E+00	-0.433
		1596.49	*	-8.825E-03	7.190E-02	1.171E-01	-0.075
CE-141		145.44	*	3.231E-02	5.976E-02	9.744E-02	0.332
CE-143		57.37		-7.204E-04	5.976E-02	Half-Life too short	
		231.56		1.267E-03	5.976E-02	Half-Life too short	
		293.26	*	4.955E-04	5.976E-02	Half-Life too short	
	+	350.59		3.413E-02	5.976E-02	Half-Life too short	
		490.36		1.833E-03	5.976E-02	Half-Life too short	
		664.57		8.571E-04	5.976E-02	Half-Life too short	
		721.93		3.184E-04	5.976E-02	Half-Life too short	
		80.11		-1.529E+00	2.514E+00	2.759E+00	-0.554
		133.54	*	-1.935E-01	2.210E-01	2.960E-01	-0.654
		476.78		-4.130E-02	6.343E-02	9.776E-02	-0.422
PM-144		618.01		-2.155E-02	3.304E-02	4.778E-02	-0.451
		696.49	*	-9.519E-03	3.262E-02	5.356E-02	-0.178
		778.57		-1.846E+00	2.143E+00	3.303E+00	-0.559
		696.49	*	-6.451E-01	2.210E+00	3.630E+00	-0.178
		1489.15		5.496E+00	1.015E+01	1.819E+01	0.302
		453.90	*	-1.007E-03	4.023E-02	6.535E-02	-0.015
		633.02		1.268E+00	1.399E+00	2.265E+00	0.560
		735.90		3.425E-02	1.443E-01	2.449E-01	0.140



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	747.13		2.479E-02	8.529E-02	1.455E-01	2.188E-02	0.170
		91.11		6.493E-01	2.332E-01	4.455E-01	4.407E-02	1.458
		319.41		6.463E-01	2.982E+00	5.002E+00	4.813E-01	0.129
		439.89		9.433E-01	5.269E+00	8.697E+00	7.645E-01	0.108
		531.02	*	1.465E-01	5.255E-01	8.650E-01	1.336E-01	0.169
PM-149		285.90	*	-2.097E+01	8.369E+01	1.375E+02	2.241E+01	-0.153
EU-152		121.78		5.173E-02	6.899E-02	1.140E-01	1.105E-02	0.454
		244.69		1.374E-01	3.173E-01	4.824E-01	4.680E-02	0.285
		344.27	*	2.934E-02	1.043E-01	1.545E-01	1.508E-02	0.190
		443.98		1.363E-01	8.704E-01	1.434E+00	1.265E-01	0.095
		778.89		-2.150E-01	2.456E-01	3.778E-01	3.839E-02	-0.569
		867.32		3.767E-01	8.905E-01	1.344E+00	1.348E-01	0.280
		964.01	+	4.793E-01	3.009E-01	5.814E-01	5.617E-02	0.824
		1085.78		1.979E-02	4.053E-01	6.636E-01	5.875E-02	0.030
		1112.02		4.706E-02	3.079E-01	5.080E-01	4.384E-02	0.093
		1407.95		1.047E-01	1.878E-01	3.318E-01	2.803E-02	0.316
GD-153	+	69.67		-1.292E-02	1.484E+00	2.171E+00	1.661E-01	-0.006
		83.37		1.836E+01	1.530E+01	2.218E+01	1.977E+00	0.828
		97.43	*	4.457E-03	7.755E-02	1.119E-01	9.925E-03	0.040
EU-154		103.18		-5.589E-02	9.522E-02	1.501E-01	1.298E-02	-0.372
		123.07		3.672E-02	5.449E-02	8.064E-02	8.992E-03	0.455
		247.94		-1.412E-01	3.308E-01	5.238E-01	6.459E-02	-0.270
		591.81		5.059E-01	5.527E-01	9.480E-01	1.189E-01	0.534
		723.30		-1.715E-04	1.642E-01	2.390E-01	2.611E-02	-0.001
		756.87		1.104E+00	7.481E-01	1.358E+00	1.784E-01	0.813
		873.19		-1.600E-01	2.576E-01	3.985E-01	5.285E-02	-0.401
		996.32		1.158E-01	3.658E-01	6.153E-01	1.120E-01	0.188
		1004.76		-5.631E-03	2.138E-01	3.496E-01	4.284E-02	-0.016
		1274.45	*	5.251E-02	1.180E-01	1.985E-01	2.193E-02	0.265
EU-155		48.70		-7.381E-01	1.408E+00	2.279E+00	1.824E-01	-0.324
		60.01		1.881E+00	3.963E+00	5.952E+00	4.223E-01	0.316
		86.54	+	4.897E-01	1.173E-01	1.719E-01	1.609E-02	2.849
TB-160	+	105.31	*	1.109E-01	9.958E-02	1.671E-01	1.452E-02	0.664
		86.79		1.308E+00	3.130E-01	4.633E-01	4.314E-02	2.824
		197.04		6.523E-03	5.158E-01	8.739E-01	7.999E-02	0.007
		215.65		6.057E-01	6.945E-01	1.175E+00	1.103E-01	0.515
		298.57		3.024E-01	1.302E-01	1.960E-01	1.926E-02	1.543
		879.36	*	1.909E-02	1.228E-01	2.060E-01	2.060E-02	0.093
		962.29		8.920E-01	5.534E-01	9.219E-01	8.915E-02	0.968
		966.15	+	3.292E-01	2.066E-01	4.137E-01	3.992E-02	0.796
		1177.93		3.171E-02	3.582E-01	5.851E-01	4.712E-02	0.054
		1271.85		3.877E-01	7.304E-01	1.236E+00	1.022E-01	0.314
HO-166M		80.57		-4.442E-01	3.471E-01	3.617E-01	3.115E-02	-1.228
		184.41		4.701E-02	3.791E-02	6.103E-02	5.481E-03	0.770
		280.46		-7.466E-02	8.094E-02	1.284E-01	1.277E-02	-0.582
		410.95		2.196E-01	2.258E-01	3.904E-01	3.332E-02	0.563
		711.68	*	-1.622E-02	6.025E-02	9.900E-02	1.003E-02	-0.164
		752.31		-2.177E-01	2.554E-01	3.954E-01	4.018E-02	-0.551
		810.29		-1.374E-02	5.315E-02	8.632E-02	8.750E-03	-0.159

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35	-4.316E+00	1.873E+01	3.066E+01	2.342E+00	-0.141
		52.39	-1.824E+00	1.018E+01	1.666E+01	1.254E+00	-0.109
		59.40	1.890E+01	2.022E+01	3.102E+01	2.195E+00	0.609
LU-176	+	66.72 *	-6.086E+00	2.460E+01	3.567E+01	2.658E+00	-0.171
		88.36	9.643E-01	2.307E-01	3.416E-01	3.221E-02	2.823
		201.83	-2.383E-02	2.600E-02	4.222E-02	3.891E-03	-0.564
		306.84 *	4.512E-03	2.231E-02	3.746E-02	3.654E-03	0.120
		401.10	3.193E+00	6.507E+00	1.096E+01	9.255E-01	0.291
LU-177	+	112.95	-2.099E-01	1.523E+00	2.414E+00	2.035E-01	-0.087
		208.36 *	3.253E+00	1.594E+00	1.947E+00	1.811E-01	1.670
LU-177M	+	52.97	-2.237E-01	1.060E+00	1.733E+00	1.294E-01	-0.129
		54.07	2.931E-01	5.621E-01	9.431E-01	6.950E-02	0.311
		61.30	7.036E-01	1.206E+00	1.817E+00	1.300E-01	0.387
		121.62	7.993E-02	3.597E-01	5.832E-01	4.864E-02	0.137
		147.16	-2.982E-02	6.282E-01	9.999E-01	8.492E-02	-0.030
		171.86	-1.847E-01	4.642E-01	7.212E-01	6.353E-02	-0.256
		218.09	-7.081E-01	7.718E-01	1.246E+00	1.173E-01	-0.568
		268.79	3.809E+00	1.415E+00	1.542E+00	1.526E-01	2.470
		319.02	4.254E-05	2.298E-01	3.809E-01	3.666E-02	0.000
		367.43	-6.411E-01	8.171E-01	1.273E+00	1.129E-01	-0.504
		413.65 *	-2.747E-01	1.695E-01	2.446E-01	2.093E-02	-1.123
HF-181		56.28	1.635E-01	6.404E-01	1.065E+00	7.681E-02	0.154
		57.53	-3.512E-01	3.537E-01	5.595E-01	3.999E-02	-0.628
		65.20	-2.947E-01	8.125E-01	1.173E+00	8.632E-02	-0.251
		133.02	-4.524E-02	7.131E-02	9.783E-02	8.187E-03	-0.462
		136.25	-8.561E-02	4.331E-01	6.868E-01	5.762E-02	-0.125
W-181		345.85	-9.724E-02	2.003E-01	2.958E-01	2.737E-02	-0.329
		482.03 *	4.041E-03	3.960E-02	6.470E-02	5.899E-03	0.062
		56.28	6.396E-02	2.506E-01	4.166E-01	3.005E-02	0.154
		57.53	-1.375E-01	1.385E-01	2.191E-01	1.566E-02	-0.628
		65.20 *	-1.145E-01	3.157E-01	4.558E-01	3.354E-02	-0.251
TA-182		67.75	-3.807E-02	9.867E-02	1.422E-01	1.069E-02	-0.268
		100.10	6.162E-02	1.612E-01	2.621E-01	2.295E-02	0.235
		152.43	1.681E-01	3.306E-01	5.373E-01	4.596E-02	0.313
		222.10	-9.292E-02	3.172E-01	5.278E-01	4.996E-02	-0.176
		1001.68	2.295E-01	2.206E+00	3.471E+00	3.281E-01	0.066
RE-183	+	1121.28	7.727E-01	2.861E-01	3.707E-01	3.168E-02	2.085
		1189.05	1.514E-01	2.948E-01	4.990E-01	4.033E-02	0.303
		1221.42 *	-9.374E-02	2.075E-01	3.228E-01	2.634E-02	-0.290
		1230.97	4.259E-03	5.375E-01	8.178E-01	6.691E-02	0.005
		57.98	-2.243E-01	1.422E-01	2.191E-01	1.562E-02	-1.024
RE-184		59.32	7.073E-02	8.288E-02	1.267E-01	8.972E-03	0.558
		67.20	-2.027E-02	1.750E-01	2.553E-01	1.910E-02	-0.079
		162.32 *	-5.637E-02	1.056E-01	1.635E-01	1.419E-02	-0.345
		208.81	2.916E+00	1.429E+00	1.760E+00	1.638E-01	1.656
		291.72	-4.783E-01	9.776E-01	1.380E+00	1.363E-01	-0.347
RE-184	+	57.98	-8.263E-01	5.238E-01	8.073E-01	5.755E-02	-1.024
		59.32	2.604E-01	3.051E-01	4.666E-01	3.303E-02	0.558
		67.20	-7.465E-02	6.445E-01	9.401E-01	7.033E-02	-0.079

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		-2.614E-01	3.440E-01	5.264E-01	4.561E-02	-0.497
		216.55		1.711E-01	2.414E-01	4.181E-01	3.930E-02	0.409
		252.85	*	-4.479E-02	2.007E-01	3.324E-01	3.248E-02	-0.135
		318.01		-1.512E-01	4.019E-01	6.515E-01	6.278E-02	-0.232
		792.07		-1.419E-02	1.022E+00	1.476E+00	1.498E-01	-0.010
		903.28		-2.926E-02	1.004E+00	1.654E+00	1.641E-01	-0.018
		920.93		-6.221E-02	4.243E-01	6.900E-01	6.801E-02	-0.090
		59.72		2.835E-01	2.262E-01	3.511E-01	2.487E-02	0.808
		61.14		9.238E-02	1.313E-01	1.989E-01	1.421E-02	0.464
		69.30		-2.296E-03	2.656E-01	3.886E-01	2.963E-02	-0.006
		592.07		9.870E-01	2.273E+00	3.773E+00	3.686E-01	0.262
		646.12	*	1.856E-02	4.002E-02	6.955E-02	6.946E-03	0.267
		717.42		2.539E-01	8.468E-01	1.448E+00	1.468E-01	0.175
		874.81		-1.779E-01	5.041E-01	8.045E-01	8.054E-02	-0.221
		880.27		1.250E-01	6.989E-01	1.174E+00	1.174E-01	0.106
RE-188		155.03	*	-5.865E-02	1.732E-01	2.715E-01	2.331E-02	-0.216
		477.96		5.002E-01	2.824E+00	4.642E+00	4.218E-01	0.108
		633.10		2.609E+00	2.674E+00	4.591E+00	4.563E-01	0.568
W-188	+	63.58		5.755E+01	5.472E+01	7.092E+01	5.154E+00	0.811
		227.08		-2.290E+00	1.198E+01	2.001E+01	1.906E+00	-0.114
IR-192		290.67	*	-2.572E+00	7.645E+00	1.092E+01	1.080E+00	-0.236
	+	295.96		1.064E+00	1.986E-01	2.770E-01	2.744E-02	3.839
		308.46		4.095E-03	8.709E-02	1.450E-01	1.418E-02	0.028
		316.51	*	-2.576E-02	3.134E-02	4.934E-02	4.772E-03	-0.522
		468.07		-3.102E-02	6.633E-02	8.935E-02	8.585E-03	-0.347
AU-195		604.41		-9.402E-02	4.942E-01	6.747E-01	9.342E-02	-0.139
		612.46		2.235E+00	8.932E-01	1.467E+00	1.614E-01	1.523
	+	65.12		1.987E-01	1.889E-01	2.137E-01	1.571E-02	0.930
		66.83		-1.892E-02	8.165E-02	1.185E-01	8.838E-03	-0.160
	+	75.70		1.292E+00	2.376E-01	4.023E-01	3.275E-02	3.212
		98.88	*	2.539E-01	2.262E-01	3.424E-01	3.015E-02	0.741
	+	129.76		6.721E+00	4.985E+00	4.938E+00	4.124E-01	1.361
TL-200		367.94	*	-5.214E-04	4.985E+00	Half-Life	too short	
		579.30		7.318E-05	4.985E+00	Half-Life	too short	
		828.27		3.723E-04	4.985E+00	Half-Life	too short	
		1205.75		-2.081E-03	4.985E+00	Half-Life	too short	
TL-201		68.90		1.999E+00	4.246E+00	6.337E+00	4.813E-01	0.315
		70.82		1.147E+00	2.444E+00	3.643E+00	2.818E-01	0.315
		80.30		-9.163E+00	6.448E+00	6.633E+00	5.695E-01	-1.381
		135.34		-2.563E+00	2.373E+01	3.779E+01	3.168E+00	-0.068
TL-202		167.43	*	1.217E+00	6.668E+00	1.067E+01	9.332E-01	0.114
		68.90		1.788E-01	3.798E-01	5.669E-01	4.305E-02	0.315
		70.82		1.023E-01	2.181E-01	3.250E-01	2.514E-02	0.315
		80.30		-8.177E-01	5.754E-01	5.919E-01	5.082E-02	-1.381
HG-203		439.56	*	2.545E-02	6.206E-02	1.040E-01	9.141E-03	0.245
		70.83		4.483E-01	9.451E-01	1.407E+00	1.838E-01	0.319
	+	72.87		9.040E-01	7.390E-01	9.061E-01	1.155E-01	0.998
		82.60		8.028E-01	1.095E+00	1.633E+00	2.265E-01	0.492
		279.20	*	3.063E-02	3.811E-02	6.577E-02	6.689E-03	0.466

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-207	+	72.80		2.649E-01	2.149E-01	2.620E-01	2.067E-02	1.011
	+	74.97		7.167E-01	1.318E-01	1.981E-01	1.600E-02	3.618
	+	84.90		2.375E-01	1.979E-01	2.833E-01	2.575E-02	0.838
		569.67		4.191E-03	2.896E-02	4.702E-02	4.543E-03	0.089
TL-207		1063.62	*	3.674E-03	5.127E-02	8.426E-02	7.608E-03	0.044
		1770.23		-3.194E-02	3.123E-01	4.230E-01	3.470E-02	-0.076
		81.07		6.994E-02	2.502E-01	2.927E-01	2.536E-02	0.239
	+	83.78		1.566E-01	1.305E-01	1.898E-01	1.701E-02	0.825
		94.90		5.885E-01	2.276E-01	3.597E-01	3.235E-02	1.636
		122.32		1.807E+00	1.710E+00	2.735E+00	2.458E-01	0.661
		144.24		-6.321E-02	6.572E-01	1.046E+00	9.935E-02	-0.060
		154.21		1.184E-01	3.923E-01	6.321E-01	5.966E-02	0.187
	+	269.46		8.917E-01	3.317E-01	3.741E-01	3.762E-02	2.383
		323.87	*	-1.404E-02	6.797E-01	9.876E-01	1.796E-01	-0.014
	+	338.28		6.960E+00	2.043E+00	2.480E+00	3.187E-01	2.806
		445.03		-6.776E-01	2.088E+00	3.320E+00	4.063E-01	-0.204
PO-209		260.50		1.107E+01	9.205E+00	1.613E+01	1.586E+00	0.686
		262.80		-7.834E+00	2.748E+01	4.195E+01	4.133E+00	-0.187
		896.60	*	-6.717E+00	7.138E+00	1.072E+01	1.067E+00	-0.626
BI-210		46.50	*	-2.101E-01	2.014E+00	3.307E+00	3.067E-01	-0.064
PB-210		46.50	*	-2.101E-01	2.014E+00	3.307E+00	3.067E-01	-0.064
PO-210		46.50	*	-2.101E-01	2.014E+00	3.307E+00	2.775E-01	-0.064
PB-211		404.84	*	-1.068E-01	9.134E-01	1.481E+00	9.278E-01	-0.072
		427.08		5.824E-02	1.902E+00	3.112E+00	1.934E+00	0.019
		831.96		-2.159E-01	1.203E+00	1.904E+00	1.197E+00	-0.113
BI-212	+	727.18	*	1.397E+00	4.992E-01	6.806E-01	7.724E-02	2.053
		785.46		1.737E+00	1.706E+00	3.035E+00	3.083E-01	0.572
		1620.62		1.068E+00	1.197E+00	2.215E+00	1.865E-01	0.482
PO-215		81.07		6.994E-02	2.502E-01	2.927E-01	2.536E-02	0.239
	+	83.78		1.566E-01	1.305E-01	1.898E-01	1.701E-02	0.825
		94.90		5.885E-01	2.276E-01	3.597E-01	3.235E-02	1.636
		122.32		1.807E+00	1.710E+00	2.735E+00	2.458E-01	0.661
		144.24		-6.321E-02	6.572E-01	1.046E+00	9.935E-02	-0.060
		154.21		1.184E-01	3.923E-01	6.321E-01	5.966E-02	0.187
	+	269.46		8.917E-01	3.317E-01	3.741E-01	3.762E-02	2.383
		323.87	*	-1.404E-02	6.797E-01	9.876E-01	1.796E-01	-0.014
	+	338.28		6.960E+00	2.043E+00	2.480E+00	3.187E-01	2.806
		445.03		-6.776E-01	2.088E+00	3.320E+00	4.063E-01	-0.204
	+	271.23		1.144E+00	4.300E-01	4.554E-01	5.197E-02	2.512
		401.81	*	3.278E-02	4.113E-01	6.768E-01	1.010E-01	0.048
RN-220		549.76	*	-9.880E+00	2.564E+01	3.999E+01	3.821E+00	-0.247
RA-223		81.07		6.994E-02	2.502E-01	2.927E-01	2.536E-02	0.239
	+	83.78		1.566E-01	1.305E-01	1.898E-01	1.701E-02	0.825
		94.90		5.885E-01	2.276E-01	3.597E-01	3.235E-02	1.636
		122.32		1.807E+00	1.710E+00	2.735E+00	2.458E-01	0.661
		144.24		-6.321E-02	6.572E-01	1.046E+00	9.935E-02	-0.060
		154.21		1.184E-01	3.923E-01	6.321E-01	5.966E-02	0.187
	+	269.46		8.917E-01	3.317E-01	3.741E-01	3.762E-02	2.383
		323.87	*	-1.404E-02	6.797E-01	9.876E-01	1.796E-01	-0.014

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227	+	338.28		6.960E+00	2.043E+00	2.480E+00	3.187E-01	2.806
		445.03		-6.776E-01	2.088E+00	3.320E+00	4.063E-01	-0.204
		79.80		-1.492E+00	1.961E+00	2.100E+00	4.508E-01	-0.710
		236.00		3.523E-01	2.518E-01	3.943E-01	5.111E-02	0.893
		256.20	*	-3.216E-01	3.465E-01	5.474E-01	8.780E-02	-0.588
		286.10		-4.920E-01	1.408E+00	2.301E+00	3.241E-01	-0.214
TH-227	+	299.80		3.850E+00	1.758E+00	2.526E+00	4.574E-01	1.524
		304.40		1.791E-01	1.851E+00	2.723E+00	5.176E-01	0.066
		334.20		-3.028E-01	2.489E+00	3.329E+00	6.585E-01	-0.091
		79.80		-1.492E+00	1.962E+00	2.100E+00	4.566E-01	-0.710
	+	94.00		8.957E+00	3.211E+00	3.552E+00	7.796E-01	2.522
		236.00		3.523E-01	2.511E-01	3.943E-01	4.679E-02	0.893
TH-229		256.20	*	-3.216E-01	3.479E-01	5.474E-01	1.021E-01	-0.588
		286.10		-4.920E-01	1.491E+00	2.301E+00	2.312E+00	-0.214
	+	299.80		3.850E+00	1.758E+00	2.526E+00	4.574E-01	1.524
		304.40		1.791E-01	1.851E+00	2.723E+00	5.176E-01	0.066
		334.20		-3.028E-01	2.489E+00	3.329E+00	6.585E-01	-0.091
	+	85.43		2.344E-01	1.953E-01	2.888E-01	2.643E-02	0.812
PA-231	+	88.47		5.551E-01	1.328E-01	1.959E-01	1.846E-02	2.833
		100.00		8.306E-02	1.680E-01	2.742E-01	2.403E-02	0.303
		193.63	*	1.359E-01	4.705E-01	7.813E-01	7.116E-02	0.174
		210.97		1.403E+00	7.923E-01	1.275E+00	1.190E-01	1.101
		283.67	*	-4.772E-01	1.399E+00	2.287E+00	3.652E-01	-0.209
	+	301.29		1.540E+00	6.765E-01	9.444E-01	1.238E-01	1.631
TH-231		81.07		6.994E-02	2.502E-01	2.927E-01	2.536E-02	0.239
	+	83.78		1.566E-01	1.305E-01	1.898E-01	1.701E-02	0.825
		94.90		5.885E-01	2.276E-01	3.597E-01	3.235E-02	1.636
		122.32		1.807E+00	1.710E+00	2.735E+00	2.458E-01	0.661
		144.24		-6.321E-02	6.572E-01	1.046E+00	9.935E-02	-0.060
		154.21		1.184E-01	3.923E-01	6.321E-01	5.966E-02	0.187
U-231	+	269.46		8.917E-01	3.317E-01	3.741E-01	3.762E-02	2.383
		323.87	*	-1.404E-02	6.797E-01	9.876E-01	1.796E-01	-0.014
	+	338.28		6.960E+00	2.043E+00	2.480E+00	3.187E-01	2.806
		445.03		-6.776E-01	2.088E+00	3.320E+00	4.063E-01	-0.204
	+	84.21		6.778E+00	5.647E+00	8.109E+00	7.305E-01	0.836
	+	92.29		8.892E+00	2.645E+00	3.629E+00	3.319E-01	2.450
PA-233		95.87	*	-8.262E-01	1.087E+00	1.507E+00	1.348E-01	-0.548
		108.00		-1.337E+00	1.934E+00	3.030E+00	2.582E-01	-0.441
	+	75.28		2.091E+01	4.674E+00	5.939E+00	8.947E-01	3.521
	+	86.59		7.959E+00	2.777E+00	2.801E+00	7.574E-01	2.842
	+	300.12		1.073E+00	4.801E-01	7.011E-01	1.094E-01	1.531
		311.98	*	2.223E-02	5.892E-02	9.969E-02	9.891E-03	0.223
PA-234		340.50		1.959E+00	8.575E-01	1.210E+00	2.917E-01	1.619
		398.62		9.026E-02	1.989E+00	3.268E+00	8.682E-01	0.028
		415.76		7.778E-01	1.520E+00	2.553E+00	5.498E-01	0.305
	+	63.00		1.669E+00	1.601E+00	2.112E+00	3.121E-01	0.790
		94.67		4.040E-01	1.642E-01	2.739E-01	3.471E-02	1.475
		98.44		1.731E-01	1.310E-01	1.401E-01	7.818E-02	1.236
		99.86		3.420E-01	4.251E-01	7.011E-01	6.146E-02	0.488

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00	-4.647E-02	1.689E-01	2.691E-01	3.223E-02	-0.173
		131.20	8.358E-02	1.136E-01	1.681E-01	1.405E-02	0.497
		152.70	2.492E-01	3.214E-01	5.240E-01	8.915E-02	0.476
	+	186.00	6.607E+00	3.100E+00	2.475E+00	7.751E-01	2.670
		226.40	3.369E-02	3.794E-01	6.411E-01	8.849E-02	0.053
		227.20	-1.655E-01	4.074E-01	6.739E-01	6.418E-02	-0.246
		248.90	-8.637E-02	7.210E-01	1.202E+00	2.748E-01	-0.072
		293.70	4.792E+00	1.198E+00	1.567E+00	2.813E-01	3.058
		369.80	1.218E-01	7.587E-01	1.260E+00	2.755E-01	0.097
		568.70	-5.929E-01	9.627E-01	1.468E+00	1.417E-01	-0.404
		569.50	-4.120E-02	2.620E-01	4.155E-01	4.014E-02	-0.099
		574.00	-3.473E-01	1.461E+00	2.300E+00	2.227E-01	-0.151
		699.00	6.532E-02	6.512E-01	1.100E+00	2.178E-01	0.059
		706.10	-1.036E-02	9.084E-01	1.521E+00	6.831E-01	-0.007
		733.00	-2.305E-01	4.268E-01	5.801E-01	1.325E-01	-0.397
		742.81	2.435E-01	1.307E+00	2.197E+00	1.482E+00	0.111
	+	796.30	2.710E+00	1.578E+00	1.784E+00	4.920E-01	1.519
		805.60	1.041E+00	9.666E-01	1.653E+00	5.141E-01	0.630
		819.60	-7.151E-02	1.074E+00	1.773E+00	6.808E-01	-0.040
		826.30	5.625E-02	7.469E-01	1.247E+00	5.620E-01	0.045
		831.60	-1.141E-01	6.234E-01	9.912E-01	3.004E-01	-0.115
		876.40	2.664E-01	7.547E-01	1.206E+00	1.241E+00	0.221
		880.51	4.301E-02	2.524E-01	4.238E-01	4.236E-02	0.101
		883.24	1.208E-01	2.694E-01	4.374E-01	2.949E-01	0.276
		899.00	-2.988E-01	8.267E-01	1.308E+00	5.756E-01	-0.228
		925.00	-7.911E-01	1.108E+00	1.699E+00	1.672E-01	-0.466
		926.50	-9.025E-02	1.604E-01	2.471E-01	6.353E-02	-0.365
		946.00	* -2.054E-01	2.856E-01	4.335E-01	8.371E-02	-0.474
		949.00	-1.288E-01	5.234E-01	7.231E-01	7.040E-02	-0.178
		980.50	3.386E-01	7.188E-01	1.228E+00	1.175E-01	0.276
PA-234M		1394.10	-7.802E-01	1.160E+00	1.579E+00	1.028E+00	-0.494
		766.42	2.073E+01	1.571E+01	1.986E+01	1.013E+01	1.044
U-235	+	1001.03	* 1.824E-02	4.995E+00	7.793E+00	8.336E-01	0.002
		89.95	2.581E+00	1.198E+00	1.658E+00	5.149E-01	1.557
	+	93.35	2.787E+00	1.113E+00	1.150E+00	3.239E-01	2.424
		105.00	1.108E+00	1.025E+00	1.638E+00	4.886E-01	0.676
		143.76	* -5.005E-02	2.042E-01	3.226E-01	5.622E-02	-0.155
		163.35	2.772E-01	4.496E-01	7.289E-01	1.393E-01	0.380
	+	185.71	2.447E-01	8.828E-02	9.142E-02	8.228E-03	2.676
NP-236		205.31	3.218E-01	5.115E-01	7.851E-01	1.521E-01	0.410
		94.67	3.094E-01	1.216E-01	2.080E-01	1.874E-02	1.487
		98.44	1.308E-01	6.781E-02	1.059E-01	9.342E-03	1.236
		111.00	-3.515E-02	1.277E-01	2.036E-01	1.723E-02	-0.173
NP-239		160.31	* -9.829E-02	7.956E-02	1.173E-01	1.015E-02	-0.838
		99.55	1.602E-01	1.423E-01	2.370E-01	2.081E-02	0.676
		117.00	* -8.362E-02	1.733E-01	2.728E-01	2.286E-02	-0.306
	+	209.75	2.300E+00	1.127E+00	1.395E+00	1.300E-01	1.648
		228.18	-1.479E-01	2.130E-01	3.474E-01	3.312E-02	-0.426
		277.60	1.989E-02	1.731E-01	2.903E-01	2.888E-02	0.069

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		-1.582E-01	1.411E+00	1.889E+00	1.781E-01	-0.084
AM-241		59.54	*	1.271E-01	1.183E-01	1.823E-01	1.427E-02	0.697
CM-243		99.55		1.648E-01	1.465E-01	2.439E-01	2.141E-02	0.676
		103.76	*	5.733E-02	8.502E-02	1.410E-01	1.217E-02	0.407
		117.00		-8.603E-02	1.783E-01	2.807E-01	2.352E-02	-0.306
	+	209.75		2.267E+00	1.111E+00	1.375E+00	1.281E-01	1.648
		228.18		-1.495E-01	2.153E-01	3.510E-01	3.347E-02	-0.426
		277.60		2.005E-02	1.745E-01	2.927E-01	2.911E-02	0.069
AM-246		798.80		1.051E-01	1.203E-01	1.938E-01	1.966E-02	0.542
		1036.00		-1.285E-01	2.854E-01	4.460E-01	4.116E-02	-0.288
		1062.04		-1.356E-01	2.201E-01	3.374E-01	3.051E-02	-0.402
		1078.86	*	1.077E-01	1.467E-01	2.537E-01	2.261E-02	0.424
CM-247		278.00		4.187E-01	7.097E-01	1.214E+00	1.208E-01	0.345
		287.40		4.978E-01	1.142E+00	1.943E+00	1.925E-01	0.256
		402.60	*	-3.522E-03	3.625E-02	5.902E-02	4.991E-03	-0.060
CF-249		252.85		-1.681E-01	7.528E-01	1.247E+00	1.219E-01	-0.135
		333.44		9.910E-03	2.330E-01	2.462E-01	2.324E-02	0.040
		387.95	*	-4.341E-03	3.624E-02	5.901E-02	4.979E-03	-0.074
CF-251		176.60	*	2.136E-02	1.231E-01	1.964E-01	1.743E-02	0.109
		227.00		-6.201E-02	3.598E-01	6.013E-01	5.725E-02	-0.103
		285.00		-4.945E-01	1.615E+00	2.648E+00	2.628E-01	-0.187

## VAX/VMS Nuclide Identification Report Generated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691011          *
* Acquisition date   : 9-FEB-2010 15:33:35 Detector SN#      :                  *
* Detector ID        : GAM20                               Sensitivity       : 5.000    *
* Geometry           : CAN                               Energy tolerance: 1.500    *
* Elapsed live time  : 0 02:00:00.00                     Abundance limit : 75.000    *
* Elapsed real time  : 0 02:00:33.74                     Half life ratio  : 8.000    *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID              *
* Sample ID          : G245691011                      Analyst initials: MJH1          *
* Batch Number       : 947037                          Sample Quantity : 1.3415E+02 GRAM *
* Recovery           : 1.00000                          Carrier Weight  : 0.00000    *
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 MS Isotope      :
* MSD DPM             : 0.000                          MSD Isotope       :
* LCS DPM             : 0.000                          LCS Isotope        :
* LCSD DPM            : 0.000                          LCSD Isotope       :
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.574E+01	3.533E+00	5.256E-01	0.000E+00
CD-109	4.137E+00	9.698E-01	1.084E+00	0.000E+00
SN-126	4.066E-01	9.531E-02	1.069E-01	0.000E+00
TL-208	6.083E-01	1.008E-01	5.450E-02	0.000E+00
BI-211	4.238E+00	5.806E-01	3.266E-01	0.000E+00
PB-212	1.800E+00	2.184E-01	8.945E-02	0.000E+00
PO-212	1.800E+00	2.184E-01	8.945E-02	0.000E+00
BI-214	1.300E+00	2.170E-01	1.057E-01	0.000E+00
PB-214	1.474E+00	2.156E-01	1.034E-01	0.000E+00
PO-214	1.474E+00	2.156E-01	1.034E-01	0.000E+00
PO-216	1.800E+00	2.184E-01	8.945E-02	0.000E+00
PO-218	1.474E+00	2.156E-01	1.034E-01	0.000E+00
RA-224	5.042E+00	1.527E+00	1.018E+00	0.000E+00
RA-226	1.300E+00	2.170E-01	1.057E-01	0.000E+00
AC-228	1.961E+00	3.536E-01	2.313E-01	0.000E+00
RA-228	1.961E+00	3.536E-01	2.313E-01	0.000E+00
TH-228	1.827E+00	2.218E-01	9.081E-02	0.000E+00
TH-230	1.300E+00	2.170E-01	1.057E-01	0.000E+00
TH-232	1.961E+00	3.536E-01	2.313E-01	0.000E+00
TH-234	1.431E+00	1.352E+00	1.702E+00	0.000E+00
U-234	1.300E+00	2.170E-01	1.057E-01	0.000E+00
NP-237	1.194E+00	3.696E-01	3.161E-01	0.000E+00
U-238	1.431E+00	1.352E+00	1.702E+00	0.000E+00
AM-243	3.993E-01	7.195E-02	7.662E-02	0.000E+00
ANH-511	1.400E-01	6.458E-02	4.729E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-2.436E-02	2.913E-01	4.902E-01	0.000E+00 NOT IDENT.
NA-22	-6.009E-03	4.366E-02	7.116E-02	0.000E+00 NOT IDENT.



NA-24	0.000E+00	6.205E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-2.325E-02	2.330E-02	2.941E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.353E-02	7.493E-02	0.000E+00	FAIL ABUN
SC-46	-3.039E-02	3.534E-02	5.522E-02	0.000E+00	FAIL ABUN
V-48	-1.475E-02	6.627E-02	1.097E-01	0.000E+00	NOT IDENT.
CR-51	1.327E-01	3.350E-01	5.772E-01	0.000E+00	NOT IDENT.
MN-52	1.297E-01	1.981E-01	3.663E-01	0.000E+00	NOT IDENT.
MN-54	1.092E-02	3.549E-02	6.219E-02	0.000E+00	NOT IDENT.
CO-56	-1.527E-02	3.553E-02	5.851E-02	0.000E+00	FAIL ABUN
CO-57	2.102E-02	2.331E-02	4.140E-02	0.000E+00	NOT IDENT.
CO-58	-1.226E-03	3.372E-02	5.774E-02	0.000E+00	NOT IDENT.
FE-59	1.857E-02	8.541E-02	1.458E-01	0.000E+00	NOT IDENT.
CO-60	2.709E-02	3.657E-02	6.519E-02	0.000E+00	NOT IDENT.
ZN-65	-7.508E-02	1.030E-01	1.349E-01	0.000E+00	NOT IDENT.
GE-68	-1.681E-01	1.239E+00	2.053E+00	0.000E+00	NOT IDENT.
AS-73	-6.098E-02	5.336E-01	9.488E-01	0.000E+00	NOT IDENT.
AS-74	-1.347E-02	8.338E-02	1.369E-01	0.000E+00	NOT IDENT.
SE-75	-3.482E-02	4.611E-02	6.778E-02	0.000E+00	NOT IDENT.
BR-77	6.447E-01	1.008E+01	1.703E+01	0.000E+00	FAIL ABUN
SR-82	-6.711E-02	3.537E-01	6.007E-01	0.000E+00	NOT IDENT.
RB-83	2.154E-02	6.474E-02	1.115E-01	0.000E+00	NOT IDENT.
RB-84	1.217E-02	6.234E-02	1.082E-01	0.000E+00	NOT IDENT.
KR-85	1.209E+01	8.278E+00	1.353E+01	0.000E+00	NOT IDENT.
SR-85	6.201E-02	4.246E-02	6.938E-02	0.000E+00	NOT IDENT.
RB-86	-8.073E-01	8.102E-01	1.233E+00	0.000E+00	NOT IDENT.
Y-88	1.449E-02	2.726E-02	5.026E-02	0.000E+00	NOT IDENT.
ZR-88	-4.266E-03	2.690E-02	4.572E-02	0.000E+00	NOT IDENT.
Y-91	-1.658E+01	1.899E+01	2.910E+01	0.000E+00	NOT IDENT.
NB-94	-1.646E-02	2.916E-02	4.845E-02	0.000E+00	NOT IDENT.
NB-95	4.093E-02	4.229E-02	6.956E-02	0.000E+00	NOT IDENT.
NB-95M	6.940E-02	1.258E-01	2.026E-01	0.000E+00	NOT IDENT.
ZR-95	4.429E-02	6.843E-02	1.233E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	9.168E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.907E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-2.191E+00	1.127E+01	1.922E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.919E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.618E-03	2.969E-02	5.389E-02	0.000E+00	FAIL ABUN
RH-102	-6.832E-03	2.548E-02	4.228E-02	0.000E+00	NOT IDENT.
RU-103	3.314E-02	3.590E-02	6.424E-02	0.000E+00	FAIL ABUN
RH-106	1.377E-01	2.988E-01	5.130E-01	0.000E+00	FAIL ABUN
RU-106	1.377E-01	2.984E-01	5.130E-01	0.000E+00	FAIL ABUN
AG-108M	1.652E-03	2.924E-02	5.005E-02	0.000E+00	NOT IDENT.
AG-110M	3.517E-02	3.215E-02	5.988E-02	0.000E+00	NOT IDENT.
IN-111	3.389E-01	1.014E+00	1.617E+00	0.000E+00	NOT IDENT.
IN-113M	-6.787E-03	3.864E-02	6.562E-02	0.000E+00	NOT IDENT.
SN-113	-6.787E-03	3.864E-02	6.562E-02	0.000E+00	NOT IDENT.
IN-114M	1.144E-01	1.712E-01	2.816E-01	0.000E+00	NOT IDENT.
CD-115	1.513E+00	9.936E+00	1.689E+01	0.000E+00	NOT IDENT.
SN-117M	4.184E-02	5.271E-02	9.106E-02	0.000E+00	NOT IDENT.
SB-122	0.000E+00	1.950E+00	3.652E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	5.688E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.807E-02	2.700E-02	4.643E-02	0.000E+00	NOT IDENT.
I-124	2.867E-02	7.195E-01	1.047E+00	0.000E+00	NOT IDENT.
SB-124	-4.478E-02	5.742E-02	8.026E-02	0.000E+00	FAIL ABUN
SB-125	1.947E-02	8.283E-02	1.436E-01	0.000E+00	FAIL ABUN
TE-125M	-4.972E-01	8.315E+00	1.433E+01	0.000E+00	NOT IDENT.
I-126	3.717E-02	1.639E-01	2.903E-01	0.000E+00	NOT IDENT.
SB-126	-8.195E-02	1.432E-01	2.129E-01	0.000E+00	FAIL ABUN
SB-127	3.925E-01	1.153E+00	2.057E+00	0.000E+00	NOT IDENT.
XE-127	-5.094E-02	4.138E-02	7.003E-02	0.000E+00	NOT IDENT.
I-131	7.650E-02	1.044E-01	1.876E-01	0.000E+00	NOT IDENT.
TE-132	-4.912E-01	6.478E-01	1.108E+00	0.000E+00	NOT IDENT.
BA-133	9.375E-03	4.185E-02	6.470E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.563E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.147E-02	9.427E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.570E-01	2.929E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.084E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.295E-02	1.052E-01	1.748E-01	0.000E+00	FAIL ABUN
BA-137M	-4.475E-02	3.344E-02	5.235E-02	0.000E+00	NOT IDENT.
CS-137	-4.730E-02	3.535E-02	5.533E-02	0.000E+00	NOT IDENT.
CE-139	-6.885E-03	2.832E-02	4.724E-02	0.000E+00	NOT IDENT.
BA-140	2.471E-03	2.304E-01	3.869E-01	0.000E+00	NOT IDENT.
LA-140	-8.825E-03	7.046E-02	1.171E-01	0.000E+00	FAIL ABUN
CE-141	3.231E-02	5.856E-02	1.017E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.868E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.935E-01	2.166E-01	3.095E-01	0.000E+00	NOT IDENT.
PM-144	-9.519E-03	3.197E-02	5.440E-02	0.000E+00	NOT IDENT.
PR-144	-6.451E-01	2.166E+00	3.687E+00	0.000E+00	NOT IDENT.

PM-146	-1.007E-03	3.943E-02	6.689E-02	0.000E+00	NOT IDENT.
ND-147	1.465E-01	5.150E-01	8.829E-01	0.000E+00	FAIL ABUN
PM-149	-2.097E+01	8.201E+01	1.419E+02	0.000E+00	NOT IDENT.
EU-152	2.934E-02	1.022E-01	1.589E-01	0.000E+00	FAIL ABUN
GD-153	4.457E-03	7.600E-02	1.177E-01	0.000E+00	FAIL ABUN
EU-154	5.251E-02	1.156E-01	1.994E-01	0.000E+00	NOT IDENT.
EU-155	1.109E-01	9.759E-02	1.754E-01	0.000E+00	FAIL ABUN
TB-160	1.909E-02	1.204E-01	2.084E-01	0.000E+00	FAIL ABUN
HO-166M	-1.622E-02	5.905E-02	1.005E-01	0.000E+00	NOT IDENT.
TM-171	-6.086E+00	2.410E+01	3.774E+01	0.000E+00	NOT IDENT.
LU-176	4.512E-03	2.187E-02	3.861E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.562E+00	2.021E+00	0.000E+00	FAIL ABUN
LU-177M	-2.747E-01	1.661E-01	2.508E-01	0.000E+00	FAIL ABUN
HF-181	4.041E-03	3.881E-02	6.615E-02	0.000E+00	NOT IDENT.
W-181	-1.145E-01	3.094E-01	4.824E-01	0.000E+00	NOT IDENT.
TA-182	-9.374E-02	2.034E-01	3.245E-01	0.000E+00	FAIL ABUN
RE-183	-5.637E-02	1.035E-01	1.704E-01	0.000E+00	FAIL ABUN
RE-184	-4.479E-02	1.966E-01	3.437E-01	0.000E+00	NOT IDENT.
OS-185	1.856E-02	3.922E-02	7.074E-02	0.000E+00	NOT IDENT.
RE-188	-5.865E-02	1.697E-01	2.832E-01	0.000E+00	NOT IDENT.
W-188	-2.572E+00	7.492E+00	1.127E+01	0.000E+00	FAIL ABUN
IR-192	-2.576E-02	3.071E-02	5.083E-02	0.000E+00	FAIL ABUN
AU-195	2.539E-01	2.216E-01	3.599E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.162E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.217E+00	6.535E+00	1.111E+01	0.000E+00	NOT IDENT.
TL-202	2.545E-02	6.082E-02	1.066E-01	0.000E+00	NOT IDENT.
HG-203	3.063E-02	3.735E-02	6.790E-02	0.000E+00	FAIL ABUN
BI-207	3.674E-03	5.025E-02	8.492E-02	0.000E+00	FAIL ABUN
TL-207	-1.404E-02	6.661E-01	1.017E+00	0.000E+00	FAIL ABUN
PO-209	-6.717E+00	6.995E+00	1.084E+01	0.000E+00	NOT IDENT.
BI-210	-2.101E-01	1.974E+00	3.520E+00	0.000E+00	NOT IDENT.
PB-210	-2.101E-01	1.974E+00	3.520E+00	0.000E+00	NOT IDENT.
PO-210	-2.101E-01	1.974E+00	3.520E+00	0.000E+00	NOT IDENT.
PB-211	-1.068E-01	8.951E-01	1.519E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.893E-01	6.907E-01	0.000E+00	FAIL ABUN
PO-215	-1.404E-02	6.661E-01	1.017E+00	0.000E+00	FAIL ABUN
RN-219	3.278E-02	4.030E-01	6.943E-01	0.000E+00	FAIL ABUN
RN-220	-9.880E+00	2.513E+01	4.079E+01	0.000E+00	NOT IDENT.
RA-223	-1.404E-02	6.661E-01	1.017E+00	0.000E+00	FAIL ABUN
AC-227	-3.216E-01	3.396E-01	5.660E-01	0.000E+00	FAIL ABUN
TH-227	-3.216E-01	3.409E-01	5.660E-01	0.000E+00	FAIL ABUN
TH-229	1.359E-01	4.611E-01	8.118E-01	0.000E+00	FAIL ABUN
PA-231	-4.772E-01	1.371E+00	2.361E+00	0.000E+00	FAIL ABUN
TH-231	-1.404E-02	6.661E-01	1.017E+00	0.000E+00	FAIL ABUN
U-231	-8.262E-01	1.065E+00	1.585E+00	0.000E+00	FAIL ABUN
PA-233	2.223E-02	5.774E-02	1.027E-01	0.000E+00	FAIL ABUN
PA-234	-2.054E-01	2.799E-01	4.379E-01	0.000E+00	FAIL ABUN
PA-234M	1.824E-02	4.895E+00	7.863E+00	0.000E+00	NOT IDENT.
U-235	-5.005E-02	2.001E-01	3.369E-01	0.000E+00	FAIL ABUN
NP-236	-9.829E-02	7.797E-02	1.223E-01	0.000E+00	NOT IDENT.
NP-239	-8.362E-02	1.698E-01	2.860E-01	0.000E+00	FAIL ABUN
AM-241	1.271E-01	1.159E-01	1.933E-01	0.000E+00	NOT IDENT.
CM-243	5.733E-02	8.332E-02	1.481E-01	0.000E+00	FAIL ABUN
AM-246	1.077E-01	1.437E-01	2.557E-01	0.000E+00	NOT IDENT.
CM-247	-3.522E-03	3.552E-02	6.054E-02	0.000E+00	NOT IDENT.
CF-249	-4.341E-03	3.551E-02	6.057E-02	0.000E+00	NOT IDENT.
CF-251	2.136E-02	1.207E-01	2.044E-01	0.000E+00	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691011.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:35.
Sample ID          : G245691011 Sample quantity : 1.34150E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:33.74 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1707	10.67*	1.253E+00	3.574E+01	3.574E+01	10.09
CD-109	88.03	373	3.72*	6.944E+00	4.044E+00	4.137E+00	23.92
SN-126	64.28	91	9.60	4.684E+00	5.666E-01	5.666E-01	95.89
	86.94	373	8.90	6.944E+00	1.690E+00	1.690E+00	46.99
	87.57	373	37.00*	6.944E+00	4.066E-01	4.066E-01	23.92
TL-208	277.35	-----	6.80	4.722E+00	-----	Line Not Found	-----
	510.84	150	21.60	2.990E+00	6.482E-01	6.482E-01	47.80
	583.14	493	84.20*	2.695E+00	6.083E-01	6.083E-01	16.92
	860.37	69	12.46	1.953E+00	7.887E-01	7.887E-01	56.11
BI-211	72.87	122	1.27	5.910E+00	4.543E+00	4.543E+00	81.14
	351.07	778	12.94*	3.968E+00	4.238E+00	4.238E+00	13.98
PB-212	74.81	571	10.70	6.060E+00	2.463E+00	2.463E+00	20.63
	77.11	892	18.00	6.261E+00	2.215E+00	2.215E+00	13.36
	87.30	373	8.00	6.944E+00	1.880E+00	1.880E+00	25.93
	238.63	1506	44.60*	5.248E+00	1.800E+00	1.800E+00	12.38
	300.09	113	3.41	4.463E+00	2.077E+00	2.077E+00	43.46
PO-212	74.81	571	10.70	6.060E+00	2.463E+00	2.463E+00	20.63
	77.11	892	18.00	6.261E+00	2.215E+00	2.215E+00	13.36
	87.30	373	8.00	6.944E+00	1.880E+00	1.880E+00	25.93
	115.19	-----	0.60	7.430E+00	-----	Line Not Found	-----
	238.63	1506	44.60*	5.248E+00	1.800E+00	1.800E+00	12.38
	300.09	113	3.41	4.463E+00	2.077E+00	2.077E+00	43.46
BI-214	609.31	560	46.30*	2.602E+00	1.300E+00	1.300E+00	17.03
	1120.29	137	15.10	1.556E+00	1.634E+00	1.634E+00	37.61
	1764.49	98	15.80	1.100E+00	1.578E+00	1.578E+00	25.22
PB-214	74.81	571	6.21	6.060E+00	4.244E+00	4.244E+00	19.82
	77.11	892	10.50	6.261E+00	3.798E+00	3.798E+00	15.38
	87.30	373	4.67	6.944E+00	3.221E+00	3.221E+00	25.13
	241.98	371	7.49	5.206E+00	2.659E+00	2.659E+00	31.41
	295.21	432	19.20	4.513E+00	1.394E+00	1.394E+00	19.66
	351.92	778	37.20*	3.968E+00	1.474E+00	1.474E+00	14.92
PO-214	74.81	571	6.21	6.060E+00	4.244E+00	4.244E+00	19.82

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	892	10.50	6.261E+00	3.798E+00	3.798E+00	15.38
	87.30	373	4.67	6.944E+00	3.221E+00	3.221E+00	25.13
	241.98	371	7.49	5.206E+00	2.659E+00	2.659E+00	31.41
	295.21	432	19.20	4.513E+00	1.394E+00	1.394E+00	19.66
	351.92	778	37.20*	3.968E+00	1.474E+00	1.474E+00	14.92
PO-216	74.81	571	10.70	6.060E+00	2.463E+00	2.463E+00	20.63
	77.11	892	18.00	6.261E+00	2.215E+00	2.215E+00	13.36
	87.30	373	8.00	6.944E+00	1.880E+00	1.880E+00	25.93
	238.63	1506	44.60*	5.248E+00	1.800E+00	1.800E+00	12.38
	300.09	113	3.41	4.463E+00	2.077E+00	2.077E+00	43.46
PO-218	74.81	571	6.21	6.060E+00	4.244E+00	4.244E+00	19.82
	77.11	892	10.50	6.261E+00	3.798E+00	3.798E+00	15.38
	87.30	373	4.67	6.944E+00	3.221E+00	3.221E+00	25.13
	241.98	371	7.49	5.206E+00	2.659E+00	2.659E+00	31.41
	295.21	432	19.20	4.513E+00	1.394E+00	1.394E+00	19.66
	351.92	778	37.20*	3.968E+00	1.474E+00	1.474E+00	14.92
RA-224	240.98	371	3.95*	5.206E+00	5.042E+00	5.042E+00	30.91
RA-226	609.31	560	46.30*	2.602E+00	1.300E+00	1.300E+00	17.03
	1120.29	137	15.10	1.556E+00	1.634E+00	1.634E+00	37.61
	1764.49	98	15.80	1.100E+00	1.578E+00	1.578E+00	25.22
AC-228	338.32	277	11.40	4.085E+00	1.667E+00	1.667E+00	49.12
	911.07	361	27.70*	1.859E+00	1.961E+00	1.961E+00	18.40
	969.11	187	16.60	1.764E+00	1.791E+00	1.791E+00	31.95
RA-228	338.32	277	11.40	4.085E+00	1.667E+00	1.667E+00	49.12
	911.07	361	27.70*	1.859E+00	1.961E+00	1.961E+00	18.40
	969.11	187	16.60	1.764E+00	1.791E+00	1.791E+00	31.95
TH-228	74.81	571	10.70	6.060E+00	2.463E+00	2.500E+00	18.42
	77.11	892	18.00	6.261E+00	2.215E+00	2.249E+00	13.36
	87.30	373	8.00	6.944E+00	1.880E+00	1.909E+00	23.92
	238.63	1506	44.60*	5.248E+00	1.800E+00	1.827E+00	12.38
	300.09	113	3.41	4.463E+00	2.077E+00	2.109E+00	72.76
TH-230	609.31	560	46.30*	2.602E+00	1.300E+00	1.300E+00	17.03
	1120.29	137	15.10	1.556E+00	1.634E+00	1.634E+00	37.61
	1764.49	98	15.80	1.100E+00	1.578E+00	1.578E+00	25.22
TH-232	338.32	277	11.40	4.085E+00	1.667E+00	1.667E+00	28.01
	911.07	361	27.70*	1.859E+00	1.961E+00	1.961E+00	18.40
	969.11	187	16.60	1.764E+00	1.791E+00	1.791E+00	31.95
TH-234	63.29	91	3.80*	4.684E+00	1.431E+00	1.431E+00	96.38
	92.38	322	5.41	7.175E+00	2.318E+00	2.318E+00	33.73
U-234	609.31	560	46.30*	2.602E+00	1.300E+00	1.300E+00	17.03
	1120.29	137	15.10	1.556E+00	1.634E+00	1.634E+00	37.61
	1764.49	98	15.80	1.100E+00	1.578E+00	1.578E+00	25.22
NP-237	86.50	373	12.60*	6.944E+00	1.194E+00	1.194E+00	31.59
	95.87	-----	2.60	7.260E+00	-----	Line Not Found	-----
U-238	63.29	91	3.80*	4.684E+00	1.431E+00	1.431E+00	96.38
	92.38	322	5.41	7.175E+00	2.318E+00	2.318E+00	29.75
AM-243	74.67	571	66.00*	6.060E+00	3.993E-01	3.993E-01	18.39
	86.72	373	0.34	6.944E+00	4.477E+01	4.477E+01	23.92
	117.66	-----	0.55	7.416E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	142.18	-----	0.13	7.067E+00	-----	Line Not Found	-----
ANH-511	511.00	150	100.00*	2.990E+00	1.400E-01	1.400E-01	47.07

Flag: "\*" = Keyline

Summary of Nuclide Activity  
Sample ID : G245691011

Page : 4  
Acquisition date : 9-FEB-2010 15:33:35

Total number of lines in spectrum 38  
Number of unidentified lines 5  
Number of lines tentatively identified by NID 33 86.84%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.574E+01	3.574E+01	0.361E+01	10.09	
CD-109	464.00D	1.02	4.044E+00	4.137E+00	0.990E+00	23.92	
SN-126	1.00E+05Y	1.00	4.066E-01	4.066E-01	0.973E-01	23.92	
TL-208	1.41E+10Y	1.00	6.083E-01	6.083E-01	1.029E-01	16.92	
BI-211	7.04E+08Y	1.00	4.238E+00	4.238E+00	0.592E+00	13.98	
PB-212	1.41E+10Y	1.00	1.800E+00	1.800E+00	0.223E+00	12.38	
PO-212	1.41E+10Y	1.00	1.800E+00	1.800E+00	0.223E+00	12.38	
BI-214	1600.00Y	1.00	1.300E+00	1.300E+00	0.221E+00	17.03	
PB-214	1600.00Y	1.00	1.474E+00	1.474E+00	0.220E+00	14.92	
PO-214	1600.00Y	1.00	1.474E+00	1.474E+00	0.220E+00	14.92	
PO-216	1.41E+10Y	1.00	1.800E+00	1.800E+00	0.223E+00	12.38	
PO-218	1600.00Y	1.00	1.474E+00	1.474E+00	0.220E+00	14.92	
RA-224	1.41E+10Y	1.00	5.042E+00	5.042E+00	1.558E+00	30.91	
RA-226	1600.00Y	1.00	1.300E+00	1.300E+00	0.221E+00	17.03	
AC-228	1.41E+10Y	1.00	1.961E+00	1.961E+00	0.361E+00	18.40	
RA-228	1.41E+10Y	1.00	1.961E+00	1.961E+00	0.361E+00	18.40	
TH-228	1.91Y	1.02	1.800E+00	1.827E+00	0.226E+00	12.38	
TH-230	4.47E+09Y	1.00	1.300E+00	1.300E+00	0.221E+00	17.03	
TH-232	1.41E+10Y	1.00	1.961E+00	1.961E+00	0.361E+00	18.40	
TH-234	4.47E+09Y	1.00	1.431E+00	1.431E+00	1.380E+00	96.38	
U-234	4.47E+09Y	1.00	1.300E+00	1.300E+00	0.221E+00	17.03	
NP-237	2.14E+06Y	1.00	1.194E+00	1.194E+00	0.377E+00	31.59	
U-238	4.47E+09Y	1.00	1.431E+00	1.431E+00	1.380E+00	96.38	
AM-243	7380.00Y	1.00	3.993E-01	3.993E-01	0.734E-01	18.39	
ANH-511	1.00E+09Y	1.00	1.400E-01	1.400E-01	0.659E-01	47.07	

Total Activity : 7.738E+01 7.750E+01

Grand Total Activity : 7.738E+01 7.750E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	84.14	94	577	1.22	168.20	164	29	1.30E-02	82.8	6.77E+00	T
3	90.08	176	319	0.80	180.06	164	29	2.44E-02	34.5	7.07E+00	T
0	128.46	134	579	1.28	256.70	251	12	1.86E-02	73.7	7.30E+00	T
0	186.37	291	483	1.63	372.37	366	14	4.04E-02	34.9	6.17E+00	T
0	209.47	153	338	1.07	418.50	414	10	2.12E-02	48.1	5.73E+00	T
0	269.85	209	279	1.59	539.12	532	13	2.90E-02	35.8	4.81E+00	T
0	327.92	118	262	1.33	655.13	647	14	1.65E-02	60.9	4.18E+00	T
0	462.88	127	99	1.81	924.80	919	12	1.76E-02	36.1	3.23E+00	T
0	727.43	133	87	1.75	1453.59	1447	13	1.84E-02	33.9	2.25E+00	T
0	768.38	83	61	3.40	1535.46	1530	11	1.15E-02	42.6	2.15E+00	
0	795.69	79	73	1.51	1590.07	1584	14	1.10E-02	51.3	2.09E+00	T
0	940.52	68	159	14.80	1879.72	1863	35	9.41E-03	****	1.81E+00	
1	965.13	44	63	1.84	1928.94	1925	21	6.05E-03	62.0	1.77E+00	T
0	1239.40	48	93	1.56	2477.69	2470	12	6.72E-03	84.8	1.43E+00	T
0	1377.97	55	18	1.08	2755.04	2746	14	7.63E-03	42.2	1.31E+00	
0	1630.68	26	3	0.84	3261.04	3255	11	3.54E-03	46.8	1.16E+00	
0	1729.79	34	0	2.00	3459.56	3453	12	4.72E-03	34.3	1.11E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691011.CNF;1
* Acquisition date   : 9-FEB-2010 15:33:35.  Detector SN#      :
* Detector ID        : GAM20                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:33.74          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G245691011           Analyst initials: MJH1
* Batch Number       : 947037               Sample Quantity  : 1.34150E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11.7MS Isotope      :
* MSD ID             :                      MSD Isotope      :
* LCS ID             : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.574E+01	3.605E+00	5.246E-01	4.575E-02	68.132
CD-109	4.137E+00	9.896E-01	1.030E+00	9.735E-02	4.018
SN-126	4.066E-01	9.726E-02	1.015E-01	9.544E-03	4.007
TL-208	6.083E-01	1.029E-01	5.349E-02	5.499E-03	11.373
BI-211	4.238E+00	5.925E-01	3.176E-01	3.043E-02	13.340
PB-212	1.800E+00	2.229E-01	8.640E-02	9.188E-03	20.832
PO-212	1.800E+00	2.229E-01	8.640E-02	9.188E-03	20.832
BI-214	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527
PB-214	1.474E+00	2.200E-01	1.006E-01	1.096E-02	14.658
PO-214	1.474E+00	2.200E-01	1.006E-01	1.096E-02	14.658
PO-216	1.800E+00	2.229E-01	8.640E-02	9.188E-03	20.832
PO-218	1.474E+00	2.200E-01	1.006E-01	1.096E-02	14.658
RA-224	5.042E+00	1.558E+00	9.831E-01	9.502E-02	5.129
RA-226	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527
AC-228	1.961E+00	3.608E-01	2.289E-01	2.804E-02	8.568
RA-228	1.961E+00	3.608E-01	2.289E-01	2.804E-02	8.568
TH-228	1.827E+00	2.263E-01	8.772E-02	9.328E-03	20.832
TH-230	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.961E+00	3.608E-01	2.289E-01	2.804E-02	8.568
TH-234	1.431E+00	1.380E+00	1.607E+00	2.793E-01	0.891
U-234	1.300E+00	2.214E-01	1.038E-01	1.155E-02	12.527
NP-237	1.194E+00	3.772E-01	3.001E-01	6.789E-02	3.978
U-238	1.431E+00	1.380E+00	1.607E+00	2.793E-01	0.891
AM-243	3.993E-01	7.342E-02	7.255E-02	5.840E-03	5.504
ANH-511	1.400E-01	6.590E-02	4.630E-02	4.314E-03	3.024

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.436E-02		2.972E-01	4.793E-01	4.659E-02	-0.051
NA-22	-6.009E-03		4.455E-02	7.084E-02	5.868E-03	-0.085
NA-24	4.620E-01		3.166E-01	Half-Life too short		
AL-26	-2.325E-02		2.377E-02	2.947E-02	2.393E-03	-0.789
TI-44	4.088E-01	+	5.462E-02	7.101E-02	5.960E-03	5.757
SC-46	-3.039E-02		3.606E-02	5.461E-02	5.444E-03	-0.556
V-48	-1.475E-02		6.762E-02	1.087E-01	1.039E-02	-0.136
CR-51	1.327E-01		3.418E-01	5.604E-01	5.619E-02	0.237
MN-52	1.297E-01		2.021E-01	3.654E-01	3.092E-02	0.355
MN-54	1.092E-02		3.621E-02	6.143E-02	6.205E-03	0.178
CO-56	-1.527E-02		3.625E-02	5.781E-02	5.827E-03	-0.264
CO-57	2.102E-02		2.379E-02	3.953E-02	3.299E-03	0.532
CO-58	-1.226E-03		3.440E-02	5.700E-02	5.788E-03	-0.022
FE-59	1.857E-02		8.715E-02	1.447E-01	1.365E-02	0.128
CO-60	2.709E-02		3.732E-02	6.495E-02	5.441E-03	0.417
ZN-65	-7.508E-02		1.051E-01	1.340E-01	1.153E-02	-0.560
GE-68	-1.681E-01		1.265E+00	2.038E+00	1.818E-01	-0.082
AS-73	-6.098E-02		5.445E-01	8.934E-01	6.632E-02	-0.068
AS-74	-1.347E-02		8.508E-02	1.344E-01	1.316E-02	-0.100
SE-75	-3.482E-02		4.705E-02	6.559E-02	6.494E-03	-0.531
BR-77	6.447E-01		1.028E+01	1.668E+01	1.564E+00	0.039
SR-82	-6.711E-02		3.609E-01	5.926E-01	6.022E-02	-0.113
RB-83	2.154E-02		6.607E-02	1.092E-01	1.024E-02	0.197
RB-84	1.217E-02		6.361E-02	1.070E-01	1.069E-02	0.114
KR-85	1.209E+01		8.447E+00	1.324E+01	1.237E+00	0.913
SR-85	6.201E-02		4.332E-02	6.793E-02	6.343E-03	0.913
RB-86	-8.073E-01		8.268E-01	1.223E+00	1.092E-01	-0.660
Y-88	1.449E-02		2.782E-02	5.038E-02	4.065E-03	0.288
ZR-88	-4.266E-03		2.745E-02	4.455E-02	3.726E-03	-0.096
Y-91	-1.658E+01		1.938E+01	2.894E+01	2.350E+00	-0.573
NB-94	-1.646E-02		2.976E-02	4.770E-02	4.826E-03	-0.345
NB-95	4.093E-02		4.315E-02	6.860E-02	6.972E-03	0.597
NB-95M	6.940E-02		1.284E-01	1.957E-01	2.102E-02	0.355
ZR-95	4.429E-02		6.983E-02	1.216E-01	1.327E-02	0.364
NB-97	9.242E-02		4.678E-02	Half-Life too short		
ZR-97	-4.285E-01		9.729E-01	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99	-2.191E+00		1.150E+01	1.895E+01	3.052E+00	-0.116
TC-99M	-1.418E+10		1.999E+10	Half-Life too short		
RH-101	9.618E-03		3.029E-02	5.188E-02	4.756E-03	0.185
RH-102	-6.832E-03		2.600E-02	4.134E-02	3.748E-03	-0.165
RU-103	3.314E-02		3.663E-02	6.286E-02	9.139E-03	0.527
RH-106	1.377E-01		3.048E-01	5.040E-01	7.165E-02	0.273
RU-106	1.377E-01		3.045E-01	5.040E-01	4.989E-02	0.273
AG-108M	1.652E-03		2.983E-02	4.886E-02	4.434E-03	0.034
AG-110M	3.517E-02		3.280E-02	5.890E-02	6.034E-03	0.597
IN-111	3.389E-01		1.035E+00	1.563E+00	1.517E-01	0.217
IN-113M	-6.787E-03		3.943E-02	6.394E-02	5.516E-03	-0.106
SN-113	-6.787E-03		3.943E-02	6.394E-02	5.516E-03	-0.106
IN-114M	1.144E-01		1.747E-01	2.710E-01	2.456E-02	0.422
CD-115	1.513E+00		1.014E+01	1.654E+01	1.559E+00	0.091
SN-117M	4.184E-02		5.378E-02	8.734E-02	7.538E-03	0.479
SB-122	3.678E+00		1.989E+00	3.582E+00	3.450E-01	1.027
I-123	3.807E+00		2.902E+00	Half-Life too short		
TE-123M	1.807E-02		2.755E-02	4.454E-02	3.869E-03	0.406
I-124	2.867E-02		7.342E-01	1.028E+00	1.010E-01	0.028
SB-124	-4.478E-02		5.859E-02	8.032E-02	6.980E-03	-0.558
SB-125	1.947E-02		8.452E-02	1.401E-01	1.240E-02	0.139
TE-125M	-4.972E-01		8.484E+00	1.365E+01	1.396E+00	-0.036
I-126	3.717E-02		1.672E-01	2.856E-01	2.869E-02	0.130
SB-126	-8.195E-02		1.461E-01	2.098E-01	2.127E-02	-0.391
SB-127	3.925E-01		1.176E+00	2.025E+00	2.539E-01	0.194
XE-127	-5.094E-02		4.222E-02	6.746E-02	6.226E-03	-0.755
I-131	7.650E-02		1.065E-01	1.825E-01	1.712E-02	0.419
TE-132	-4.912E-01		6.610E-01	1.070E+00	1.738E-01	-0.459
BA-133	9.375E-03		4.270E-02	6.294E-02	8.502E-03	0.149
I-133	5.399E-03		2.838E-03	Half-Life too short		
CS-134	1.395E-01	+	7.293E-02	9.304E-02	9.493E-03	1.499
CS-135	3.278E-01		1.602E-01	2.835E-01	3.142E-02	1.156
I-135	-1.006E+08		3.104E+09	Half-Life too short		
CS-136	-1.295E-02		1.073E-01	1.734E-01	1.646E-02	-0.075
BA-137M	-4.475E-02		3.413E-02	5.149E-02	5.167E-03	-0.869
CS-137	-4.730E-02		3.608E-02	5.443E-02	5.470E-03	-0.869
CE-139	-6.885E-03		2.889E-02	4.534E-02	3.958E-03	-0.152
BA-140	2.471E-03		2.351E-01	3.792E-01	1.265E-01	0.007
LA-140	-8.825E-03		7.190E-02	1.171E-01	9.884E-03	-0.075
CE-141	3.231E-02		5.976E-02	9.744E-02	8.413E-03	0.332
CE-143	4.955E-04		9.532E-05	Half-Life too short		
CE-144	-1.935E-01		2.210E-01	2.960E-01	4.567E-02	-0.654
PM-144	-9.519E-03		3.262E-02	5.356E-02	5.415E-03	-0.178
PR-144	-6.451E-01		2.210E+00	3.630E+00	3.669E-01	-0.178
PM-146	-1.007E-03		4.023E-02	6.535E-02	7.158E-03	-0.015
ND-147	1.465E-01		5.255E-01	8.650E-01	1.336E-01	0.169
PM-149	-2.097E+01		8.369E+01	1.375E+02	2.241E+01	-0.153
EU-152	2.934E-02		1.043E-01	1.545E-01	1.508E-02	0.190

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	4.457E-03		7.755E-02	1.119E-01	9.925E-03	0.040
EU-154	5.251E-02		1.180E-01	1.985E-01	2.193E-02	0.265
EU-155	1.109E-01		9.958E-02	1.671E-01	1.452E-02	0.664
TB-160	1.909E-02		1.228E-01	2.060E-01	2.060E-02	0.093
HO-166M	-1.622E-02		6.025E-02	9.900E-02	1.003E-02	-0.164
TM-171	-6.086E+00		2.460E+01	3.567E+01	2.658E+00	-0.171
LU-176	4.512E-03		2.231E-02	3.746E-02	3.654E-03	0.120
LU-177	3.253E+00	+	1.594E+00	1.947E+00	1.811E-01	1.670
LU-177M	-2.747E-01		1.695E-01	2.446E-01	2.093E-02	-1.123
HF-181	4.041E-03		3.960E-02	6.470E-02	5.899E-03	0.062
W-181	-1.145E-01		3.157E-01	4.558E-01	3.354E-02	-0.251
TA-182	-9.374E-02		2.075E-01	3.228E-01	2.634E-02	-0.290
RE-183	-5.637E-02		1.056E-01	1.635E-01	1.419E-02	-0.345
RE-184	-4.479E-02		2.007E-01	3.324E-01	3.248E-02	-0.135
OS-185	1.856E-02		4.002E-02	6.955E-02	6.946E-03	0.267
RE-188	-5.865E-02		1.732E-01	2.715E-01	2.331E-02	-0.216
W-188	-2.572E+00		7.645E+00	1.092E+01	1.080E+00	-0.232
IR-192	-2.576E-02		3.134E-02	4.934E-02	4.772E-03	-0.522
AU-195	2.539E-01		2.262E-01	3.424E-01	3.015E-02	0.741
TL-200	-5.214E-04		2.124E-04	Half-Life too short		
TL-201	1.217E+00		6.668E+00	1.067E+01	9.332E-01	0.114
TL-202	2.545E-02		6.206E-02	1.040E-01	9.141E-03	0.245
HG-203	3.063E-02		3.811E-02	6.577E-02	6.689E-03	0.466
BI-207	3.674E-03		5.127E-02	8.426E-02	7.608E-03	0.044
TL-207	-1.404E-02		6.797E-01	9.876E-01	1.796E-01	-0.014
PO-209	-6.717E+00		7.138E+00	1.072E+01	1.067E+00	-0.626
BI-210	-2.101E-01		2.014E+00	3.307E+00	3.067E-01	-0.064
PB-210	-2.101E-01		2.014E+00	3.307E+00	3.067E-01	-0.064
PO-210	-2.101E-01		2.014E+00	3.307E+00	2.775E-01	-0.064
PB-211	-1.068E-01		9.134E-01	1.481E+00	9.278E-01	-0.072
BI-212	1.397E+00	+	4.992E-01	6.806E-01	7.724E-02	2.053
PO-215	-1.404E-02		6.797E-01	9.876E-01	1.796E-01	-0.014
RN-219	3.278E-02		4.113E-01	6.768E-01	1.010E-01	0.048
RN-220	-9.880E+00		2.564E+01	3.999E+01	3.821E+00	-0.247
RA-223	-1.404E-02		6.797E-01	9.876E-01	1.796E-01	-0.014
AC-227	-3.216E-01		3.465E-01	5.474E-01	8.780E-02	-0.588
TH-227	-3.216E-01		3.479E-01	5.474E-01	1.021E-01	-0.588
TH-229	1.359E-01		4.705E-01	7.813E-01	7.116E-02	0.174
PA-231	-4.772E-01		1.399E+00	2.287E+00	3.652E-01	-0.209
TH-231	-1.404E-02		6.797E-01	9.876E-01	1.796E-01	-0.014
U-231	-8.262E-01		1.087E+00	1.507E+00	1.348E-01	-0.548
PA-233	2.223E-02		5.892E-02	9.969E-02	9.891E-03	0.223
PA-234	-2.054E-01		2.856E-01	4.335E-01	8.371E-02	-0.474
PA-234M	1.824E-02		4.995E+00	7.793E+00	8.336E-01	0.002
U-235	-5.005E-02		2.042E-01	3.226E-01	5.622E-02	-0.155
NP-236	-9.829E-02		7.956E-02	1.173E-01	1.015E-02	-0.838
NP-239	-8.362E-02		1.733E-01	2.728E-01	2.286E-02	-0.306
AM-241	1.271E-01		1.183E-01	1.823E-01	1.427E-02	0.697

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	5.733E-02		8.502E-02	1.410E-01	1.217E-02	0.407
AM-246	1.077E-01		1.467E-01	2.537E-01	2.261E-02	0.424
CM-247	-3.522E-03		3.625E-02	5.902E-02	4.991E-03	-0.060
CF-249	-4.341E-03		3.624E-02	5.901E-02	4.979E-03	-0.074
CF-251	2.136E-02		1.231E-01	1.964E-01	1.743E-02	0.109

## VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691011          *
* Acquisition date   : 9-FEB-2010 15:33:35 Detector SN#      :              *
* Detector ID        : GAM20                                           Sensitivity      : 5.000          *
* Geometry           : CAN                                           Energy tolerance : 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit        : 75.000          *
* Elapsed real time  : 0 02:00:33.74 Half life ratio       : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library   : SOLID          *
* Sample ID          : G245691011 Analyst initials        : MJH1              *
* Batch Number       : 947037 Sample Quantity             : 1.3415E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight             : 0.00000          *
*****
*
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope                   :              *
* LCS DPM             : 0.000 LCS Isotope                   :              *
* LCSD DPM            : 0.000 LCSD Isotope                  :              *
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.574E+01	3.533E+00	2.630E-01	1.803E+00
CD-109	4.137E+00	9.698E-01	5.424E-01	4.948E-01
SN-126	4.066E-01	9.531E-02	5.347E-02	4.863E-02
TL-208	6.083E-01	1.008E-01	2.727E-02	5.145E-02
BI-211	4.238E+00	5.806E-01	1.634E-01	2.962E-01
PB-212	1.800E+00	2.184E-01	4.475E-02	1.114E-01
PO-212	1.800E+00	2.184E-01	4.475E-02	1.114E-01
BI-214	1.300E+00	2.170E-01	5.288E-02	1.107E-01
PB-214	1.474E+00	2.156E-01	5.173E-02	1.100E-01
PO-214	1.474E+00	2.156E-01	5.173E-02	1.100E-01
PO-216	1.800E+00	2.184E-01	4.475E-02	1.114E-01
PO-218	1.474E+00	2.156E-01	5.173E-02	1.100E-01
RA-224	5.042E+00	1.527E+00	5.091E-01	7.791E-01
RA-226	1.300E+00	2.170E-01	5.288E-02	1.107E-01
AC-228	1.961E+00	3.536E-01	1.157E-01	1.804E-01
RA-228	1.961E+00	3.536E-01	1.157E-01	1.804E-01
TH-228	1.827E+00	2.218E-01	4.543E-02	1.131E-01
TH-230	1.300E+00	2.170E-01	5.288E-02	1.107E-01
TH-232	1.961E+00	3.536E-01	1.157E-01	1.804E-01
TH-234	1.431E+00	1.352E+00	8.516E-01	6.898E-01
U-234	1.300E+00	2.170E-01	5.288E-02	1.107E-01
NP-237	1.194E+00	3.696E-01	1.581E-01	1.886E-01
U-238	1.431E+00	1.352E+00	8.516E-01	6.898E-01
AM-243	3.993E-01	7.195E-02	3.833E-02	3.671E-02
ANH-511	1.400E-01	6.458E-02	2.366E-02	3.295E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-2.436E-02	2.913E-01	2.452E-01	1.486E-01 NOT IDENT.
NA-22	-6.009E-03	4.366E-02	3.560E-02	2.228E-02 NOT IDENT.

NA-24	4.620E+05	6.205E+05	0.000E+00	3.166E+05	SHORT HLIF
AL-26	-2.325E-02	2.330E-02	1.471E-02	1.189E-02	NOT IDENT.
TI-44	4.088E-01	5.353E-02	3.749E-02	2.731E-02	FAIL ABUN
SC-46	-3.039E-02	3.534E-02	2.763E-02	1.803E-02	FAIL ABUN
V-48	-1.475E-02	6.627E-02	5.489E-02	3.381E-02	NOT IDENT.
CR-51	1.327E-01	3.350E-01	2.888E-01	1.709E-01	NOT IDENT.
MN-52	1.297E-01	1.981E-01	1.832E-01	1.011E-01	NOT IDENT.
MN-54	1.092E-02	3.549E-02	3.111E-02	1.811E-02	NOT IDENT.
CO-56	-1.527E-02	3.553E-02	2.927E-02	1.813E-02	FAIL ABUN
CO-57	2.102E-02	2.331E-02	2.071E-02	1.189E-02	NOT IDENT.
CO-58	-1.226E-03	3.372E-02	2.889E-02	1.720E-02	NOT IDENT.
FE-59	1.857E-02	8.541E-02	7.294E-02	4.357E-02	NOT IDENT.
CO-60	2.709E-02	3.657E-02	3.261E-02	1.866E-02	NOT IDENT.
ZN-65	-7.508E-02	1.030E-01	6.750E-02	5.256E-02	NOT IDENT.
GE-68	-1.681E-01	1.239E+00	1.027E+00	6.323E-01	NOT IDENT.
AS-73	-6.098E-02	5.336E-01	4.747E-01	2.722E-01	NOT IDENT.
AS-74	-1.347E-02	8.338E-02	6.850E-02	4.254E-02	NOT IDENT.
SE-75	-3.482E-02	4.611E-02	3.391E-02	2.352E-02	NOT IDENT.
BR-77	6.447E-01	1.008E+01	8.518E+00	5.141E+00	FAIL ABUN
SR-82	-6.711E-02	3.537E-01	3.006E-01	1.805E-01	NOT IDENT.
RB-83	2.154E-02	6.474E-02	5.579E-02	3.303E-02	NOT IDENT.
RB-84	1.217E-02	6.234E-02	5.412E-02	3.180E-02	NOT IDENT.
KR-85	1.209E+01	8.278E+00	6.767E+00	4.223E+00	NOT IDENT.
SR-85	6.201E-02	4.246E-02	3.471E-02	2.166E-02	NOT IDENT.
RB-86	-8.073E-01	8.102E-01	6.168E-01	4.134E-01	NOT IDENT.
Y-88	1.449E-02	2.726E-02	2.515E-02	1.391E-02	NOT IDENT.
ZR-88	-4.266E-03	2.690E-02	2.287E-02	1.372E-02	NOT IDENT.
Y-91	-1.658E+01	1.899E+01	1.456E+01	9.690E+00	NOT IDENT.
NB-94	-1.646E-02	2.916E-02	2.424E-02	1.488E-02	NOT IDENT.
NB-95	4.093E-02	4.229E-02	3.480E-02	2.158E-02	NOT IDENT.
NB-95M	6.940E-02	1.258E-01	1.014E-01	6.418E-02	NOT IDENT.
ZR-95	4.429E-02	6.843E-02	6.171E-02	3.491E-02	NOT IDENT.
NB-97	9.242E+04	9.168E+04	0.000E+00	4.678E+04	SHORT HLIF
ZR-97	-4.285E+05	1.907E+06	0.000E+00	9.729E+05	SHORT HLIF
MO-99	-2.191E+00	1.127E+01	9.617E+00	5.751E+00	NOT IDENT.
TC-99M	-1.418E+16	3.919E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.618E-03	2.969E-02	2.696E-02	1.515E-02	FAIL ABUN
RH-102	-6.832E-03	2.548E-02	2.115E-02	1.300E-02	NOT IDENT.
RU-103	3.314E-02	3.590E-02	3.214E-02	1.832E-02	FAIL ABUN
RH-106	1.377E-01	2.988E-01	2.567E-01	1.524E-01	FAIL ABUN
RU-106	1.377E-01	2.984E-01	2.567E-01	1.523E-01	FAIL ABUN
AG-108M	1.652E-03	2.924E-02	2.504E-02	1.492E-02	NOT IDENT.
AG-110M	3.517E-02	3.215E-02	2.996E-02	1.640E-02	NOT IDENT.
IN-111	3.389E-01	1.014E+00	8.090E-01	5.173E-01	NOT IDENT.
IN-113M	-6.787E-03	3.864E-02	3.283E-02	1.972E-02	NOT IDENT.
SN-113	-6.787E-03	3.864E-02	3.283E-02	1.972E-02	NOT IDENT.
IN-114M	1.144E-01	1.712E-01	1.409E-01	8.733E-02	NOT IDENT.
CD-115	1.513E+00	9.936E+00	8.449E+00	5.069E+00	NOT IDENT.
SN-117M	4.184E-02	5.271E-02	4.556E-02	2.689E-02	NOT IDENT.
SB-122	3.678E+00	1.950E+00	1.827E+00	9.947E-01	NOT IDENT.
I-123	3.807E+06	5.688E+06	0.000E+00	2.902E+06	SHORT HLIF
TE-123M	1.807E-02	2.700E-02	2.323E-02	1.378E-02	NOT IDENT.
I-124	2.867E-02	7.195E-01	5.239E-01	3.671E-01	NOT IDENT.
SB-124	-4.478E-02	5.742E-02	4.015E-02	2.930E-02	FAIL ABUN
SB-125	1.947E-02	8.283E-02	7.183E-02	4.226E-02	FAIL ABUN
TE-125M	-4.972E-01	8.315E+00	7.168E+00	4.242E+00	NOT IDENT.
I-126	3.717E-02	1.639E-01	1.452E-01	8.362E-02	NOT IDENT.
SB-126	-8.195E-02	1.432E-01	1.065E-01	7.304E-02	FAIL ABUN
SB-127	3.925E-01	1.153E+00	1.029E+00	5.881E-01	NOT IDENT.
XE-127	-5.094E-02	4.138E-02	3.504E-02	2.111E-02	NOT IDENT.
I-131	7.650E-02	1.044E-01	9.385E-02	5.324E-02	NOT IDENT.
TE-132	-4.912E-01	6.478E-01	5.546E-01	3.305E-01	NOT IDENT.
BA-133	9.375E-03	4.185E-02	3.237E-02	2.135E-02	NOT IDENT.
I-133	5.399E+03	5.563E+03	0.000E+00	2.838E+03	SHORT HLIF
CS-134	1.395E-01	7.147E-02	4.716E-02	3.646E-02	FAIL ABUN
CS-135	3.278E-01	1.570E-01	1.466E-01	8.011E-02	NOT IDENT.
I-135	-1.006E+14	6.084E+15	0.000E+00	3.104E+15	SHORT HLIF
CS-136	-1.295E-02	1.052E-01	8.747E-02	5.365E-02	FAIL ABUN
BA-137M	-4.475E-02	3.344E-02	2.619E-02	1.706E-02	NOT IDENT.
CS-137	-4.730E-02	3.535E-02	2.768E-02	1.804E-02	NOT IDENT.
CE-139	-6.885E-03	2.832E-02	2.363E-02	1.445E-02	NOT IDENT.
BA-140	2.471E-03	2.304E-01	1.936E-01	1.176E-01	NOT IDENT.
LA-140	-8.825E-03	7.046E-02	5.859E-02	3.595E-02	FAIL ABUN
CE-141	3.231E-02	5.856E-02	5.090E-02	2.988E-02	NOT IDENT.
CE-143	4.955E+02	1.868E+02	0.000E+00	9.532E+01	SHORT HLIF
CE-144	-1.935E-01	2.166E-01	1.548E-01	1.105E-01	NOT IDENT.
PM-144	-9.519E-03	3.197E-02	2.722E-02	1.631E-02	NOT IDENT.
PR-144	-6.451E-01	2.166E+00	1.844E+00	1.105E+00	NOT IDENT.

PM-146	-1.007E-03	3.943E-02	3.347E-02	2.012E-02	NOT IDENT.
ND-147	1.465E-01	5.150E-01	4.417E-01	2.627E-01	FAIL ABUN
PM-149	-2.097E+01	8.201E+01	7.100E+01	4.184E+01	NOT IDENT.
EU-152	2.934E-02	1.022E-01	7.951E-02	5.216E-02	FAIL ABUN
GD-153	4.457E-03	7.600E-02	5.886E-02	3.877E-02	FAIL ABUN
EU-154	5.251E-02	1.156E-01	9.974E-02	5.898E-02	NOT IDENT.
EU-155	1.109E-01	9.759E-02	8.775E-02	4.979E-02	FAIL ABUN
TB-160	1.909E-02	1.204E-01	1.043E-01	6.142E-02	FAIL ABUN
HO-166M	-1.622E-02	5.905E-02	5.029E-02	3.013E-02	NOT IDENT.
TM-171	-6.086E+00	2.410E+01	1.888E+01	1.230E+01	NOT IDENT.
LU-176	4.512E-03	2.187E-02	1.932E-02	1.116E-02	FAIL ABUN
LU-177	3.253E+00	1.562E+00	1.011E+00	7.972E-01	FAIL ABUN
LU-177M	-2.747E-01	1.661E-01	1.255E-01	8.475E-02	FAIL ABUN
HF-181	4.041E-03	3.881E-02	3.309E-02	1.980E-02	NOT IDENT.
W-181	-1.145E-01	3.094E-01	2.413E-01	1.578E-01	NOT IDENT.
TA-182	-9.374E-02	2.034E-01	1.624E-01	1.038E-01	FAIL ABUN
RE-183	-5.637E-02	1.035E-01	8.525E-02	5.282E-02	FAIL ABUN
RE-184	-4.479E-02	1.966E-01	1.720E-01	1.003E-01	NOT IDENT.
OS-185	1.856E-02	3.922E-02	3.539E-02	2.001E-02	NOT IDENT.
RE-188	-5.865E-02	1.697E-01	1.417E-01	8.658E-02	NOT IDENT.
W-188	-2.572E+00	7.492E+00	5.636E+00	3.823E+00	FAIL ABUN
IR-192	-2.576E-02	3.071E-02	2.543E-02	1.567E-02	FAIL ABUN
AU-195	2.539E-01	2.216E-01	1.801E-01	1.131E-01	FAIL ABUN
TL-200	-5.214E+02	4.162E+02	0.000E+00	2.124E+02	SHORT HLIF
TL-201	1.217E+00	6.535E+00	5.558E+00	3.334E+00	NOT IDENT.
TL-202	2.545E-02	6.082E-02	5.331E-02	3.103E-02	NOT IDENT.
HG-203	3.063E-02	3.735E-02	3.397E-02	1.906E-02	FAIL ABUN
BI-207	3.674E-03	5.025E-02	4.249E-02	2.564E-02	FAIL ABUN
TL-207	-1.404E-02	6.661E-01	5.088E-01	3.399E-01	FAIL ABUN
PO-209	-6.717E+00	6.995E+00	5.425E+00	3.569E+00	NOT IDENT.
BI-210	-2.101E-01	1.974E+00	1.761E+00	1.007E+00	NOT IDENT.
PB-210	-2.101E-01	1.974E+00	1.761E+00	1.007E+00	NOT IDENT.
PO-210	-2.101E-01	1.974E+00	1.761E+00	1.007E+00	NOT IDENT.
PB-211	-1.068E-01	8.951E-01	7.600E-01	4.567E-01	NOT IDENT.
BI-212	1.397E+00	4.893E-01	3.456E-01	2.496E-01	FAIL ABUN
PO-215	-1.404E-02	6.661E-01	5.088E-01	3.399E-01	FAIL ABUN
RN-219	3.278E-02	4.030E-01	3.473E-01	2.056E-01	FAIL ABUN
RN-220	-9.880E+00	2.513E+01	2.041E+01	1.282E+01	NOT IDENT.
RA-223	-1.404E-02	6.661E-01	5.088E-01	3.399E-01	FAIL ABUN
AC-227	-3.216E-01	3.396E-01	2.831E-01	1.733E-01	FAIL ABUN
TH-227	-3.216E-01	3.409E-01	2.831E-01	1.739E-01	FAIL ABUN
TH-229	1.359E-01	4.611E-01	4.061E-01	2.353E-01	FAIL ABUN
PA-231	-4.772E-01	1.371E+00	1.181E+00	6.993E-01	FAIL ABUN
TH-231	-1.404E-02	6.661E-01	5.088E-01	3.399E-01	FAIL ABUN
U-231	-8.262E-01	1.065E+00	7.929E-01	5.434E-01	FAIL ABUN
PA-233	2.223E-02	5.774E-02	5.139E-02	2.946E-02	FAIL ABUN
PA-234	-2.054E-01	2.799E-01	2.191E-01	1.428E-01	FAIL ABUN
PA-234M	1.824E-02	4.895E+00	3.934E+00	2.497E+00	NOT IDENT.
U-235	-5.005E-02	2.001E-01	1.685E-01	1.021E-01	FAIL ABUN
NP-236	-9.829E-02	7.797E-02	6.119E-02	3.978E-02	NOT IDENT.
NP-239	-8.362E-02	1.698E-01	1.431E-01	8.665E-02	FAIL ABUN
AM-241	1.271E-01	1.159E-01	9.669E-02	5.915E-02	NOT IDENT.
CM-243	5.733E-02	8.332E-02	7.407E-02	4.251E-02	FAIL ABUN
AM-246	1.077E-01	1.437E-01	1.279E-01	7.334E-02	NOT IDENT.
CM-247	-3.522E-03	3.552E-02	3.029E-02	1.812E-02	NOT IDENT.
CF-249	-4.341E-03	3.551E-02	3.030E-02	1.812E-02	NOT IDENT.
CF-251	2.136E-02	1.207E-01	1.023E-01	6.156E-02	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT          *
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ENERGY	MDA COUNTS
46.50	324.8222
46.50	324.8222
46.50	324.8222
48.70	340.0314
49.72	338.7996
51.35	334.0451
52.39	351.4872
52.97	355.8405
53.15	355.9680
53.44	352.2281
54.07	332.9111
56.28	359.1534
56.28	359.1553
57.37	0.0000
57.53	406.7595
57.53	406.7606
57.60	406.8136
57.98	444.9311
57.98	444.9311
59.32	350.2582
59.32	350.2582
59.40	350.3100
59.54	350.4019
59.72	350.5198
60.01	404.6632
61.10	412.9878
61.14	413.0172
61.30	425.1574
63.00	473.1890
63.29	473.4352
63.29	473.4352
63.58	473.6813
64.28	463.7018
65.12	473.4683
65.20	473.5351
65.20	473.5351
66.05	469.6971
66.72	468.7289
66.83	471.8529
66.91	471.9193
67.20	472.1566
67.20	472.1566
67.75	492.3603
67.85	497.3080
68.90	479.6281
68.90	479.6281
69.30	507.3809
69.67	507.7010
70.82	496.4636
70.82	496.4636
70.83	496.4710
72.80	518.0241
72.87	490.4932
72.87	490.4932
74.67	491.9385
74.81	492.0508
74.81	492.0508
74.81	492.0508
74.81	492.0508
74.81	492.0508
74.81	492.0508
74.97	492.1777
75.28	492.4243
75.70	492.7563
77.11	493.8696
77.11	493.8696



77.11	493.8696
77.11	493.8696
77.11	493.8696
77.11	493.8696
77.11	493.8696
78.38	502.5955
79.62	594.9902
79.80	505.2637
79.80	505.2637
80.11	505.5074
80.18	505.5622
80.30	595.6201
80.30	595.6201
80.57	595.8691
81.00	459.6207
81.07	459.6703
81.07	459.6703
81.07	459.6703
81.07	459.6703
82.60	507.4474
83.37	399.9881
83.78	400.2388
83.78	400.2388
83.78	400.2388
83.78	400.2388
84.21	400.4973
84.90	400.9124
85.43	401.2316
86.29	401.7447
86.50	401.8700
86.54	401.8935
86.59	401.9229
86.72	401.9992
86.79	402.0403
86.94	402.1304
87.30	402.3439
87.30	402.3439
87.30	402.3439
87.30	402.3439
87.30	402.3439
87.30	402.3439
87.30	402.3439
87.57	402.5025
87.88	402.6866
88.03	402.7747
88.36	402.9685
88.47	403.0331
89.95	403.9006
91.11	404.5742
92.29	405.2557
92.38	405.3086
92.38	405.3086
93.35	405.8647
94.00	406.2368
94.67	406.6147
94.67	406.6186
94.90	331.2090
94.90	331.2090
94.90	331.2090
94.90	331.2090
95.87	417.3484
95.87	417.3484
96.73	413.0797
97.43	337.1423
98.44	272.3160
98.44	272.3160
98.88	312.3152
99.55	311.5360
99.55	311.5360
99.86	319.1132
100.00	328.7494
100.10	328.7950
103.18	360.0663
103.76	304.7404
105.00	322.3738
105.31	323.5754
108.00	379.5403
109.28	342.4701

111.00	344.2975
111.00	344.2975
111.76	353.2704
112.95	333.2405
115.19	323.3184
116.30	327.0203
117.00	322.9510
117.00	322.9510
117.66	330.8286
121.11	324.5583
121.62	322.5677
121.78	297.4751
122.06	294.2926
122.32	283.6582
122.32	283.6582
122.32	283.6582
122.32	283.6582
123.07	300.6700
127.23	312.5924
129.76	326.1971
131.20	321.7565
133.02	350.6729
133.54	344.2241
135.34	308.8163
136.00	319.0475
136.25	320.2471
136.48	320.3291
140.51	328.4471
140.51	0.0000
142.18	334.6382
142.65	321.3685
143.76	327.3564
144.24	318.5524
144.24	318.5524
144.24	318.5524
144.24	318.5524
145.22	308.7791
145.44	308.8519
147.16	328.5416
152.43	316.7717
152.70	311.2003
153.22	293.2509
154.21	326.4170
154.21	326.4170
154.21	326.4170
154.21	326.4170
155.03	353.9136
156.02	347.4562
158.56	282.3200
159.00	0.0000
159.00	279.0269
160.31	340.9739
161.27	319.6114
162.32	310.8006
162.64	299.4701
163.35	274.5142
163.89	255.2055
165.85	303.8507
167.43	276.7563
171.28	291.6125
171.86	289.4655
172.10	289.5319
176.55	280.3221
176.60	280.3369
181.06	294.8732
184.41	305.2266
185.71	272.4691
186.00	272.5402
190.27	233.6442
192.34	263.6855
193.63	262.1695
197.04	286.7160
198.01	278.9872
198.60	270.2654
200.40	265.3616
201.83	293.2315
202.84	293.4858
205.31	239.5579

208.36	278.7700
208.81	269.9365
209.75	270.1484
209.75	270.1484
210.97	239.2614
215.65	226.0060
216.55	232.9838
218.09	264.7979
222.10	253.0045
223.80	259.6821
226.40	254.7785
227.00	257.6198
227.08	257.6350
227.20	265.8263
228.16	272.3808
228.18	269.6616
228.18	269.6616
231.56	0.0000
235.69	257.1766
236.00	263.0830
236.00	263.0830
238.63	241.6448
238.63	241.6448
238.63	241.6448
238.63	241.6448
239.00	241.7133
240.98	242.0779
241.98	242.2592
241.98	242.2592
241.98	242.2592
244.69	185.3763
245.39	184.0012
247.94	200.1521
248.90	190.9387
249.79	186.4499
252.40	185.8827
252.85	182.2436
252.85	182.2436
254.15	0.0000
256.20	211.4373
256.20	211.4373
260.50	185.1171
260.90	187.9633
262.80	214.9301
264.65	214.9629
268.24	193.6235
268.79	193.6961
269.46	193.7877
269.46	193.7877
269.46	193.7877
269.46	193.7877
271.23	229.4589
273.65	201.3042
276.40	195.6665
277.35	206.1479
277.60	215.5995
277.60	215.5995
278.00	199.6493
278.60	182.7719
279.20	182.8459
279.53	193.2573
280.46	220.7372
281.68	191.6537
283.67	183.4025
284.30	189.1571
285.00	185.4607
285.90	177.0531
286.10	183.7044
286.10	183.7044
287.40	172.4912
288.45	0.0000
290.67	186.9264
290.80	186.9444
291.72	194.6625
293.26	0.0000
293.70	165.9828
295.21	172.2450
295.21	172.2450

295.21	172.2450
295.96	163.9427
296.50	164.0005
297.23	164.0792
298.57	164.2236
299.80	154.4171
299.80	154.4171
300.09	146.8008
300.09	146.8008
300.09	146.8008
300.09	146.8008
300.12	146.8031
301.29	156.0979
302.84	162.3824
303.76	151.7484
303.91	151.7629
304.40	151.8113
304.40	151.8113
304.84	153.3887
306.84	152.6265
308.46	155.6669
311.98	151.2002
316.51	165.1553
318.01	153.7086
319.02	145.0996
319.41	144.1664
320.08	138.2817
323.87	155.2393
323.87	155.2393
323.87	155.2393
323.87	155.2393
325.23	156.9223
328.77	160.3793
333.44	144.4387
334.20	152.3152
334.20	152.3152
334.30	152.3247
338.28	150.7314
338.28	150.7314
338.28	150.7314
338.28	150.7314
338.32	150.7361
338.32	150.7361
338.32	150.7361
340.50	147.4028
340.57	147.4097
344.27	149.3049
345.85	169.1078
350.59	0.0000
351.07	157.7930
351.92	130.2437
351.92	130.2437
351.92	130.2437
355.39	0.0000
356.01	121.8484
364.48	118.2664
366.43	129.3414
367.43	136.3833
367.94	0.0000
369.80	118.6223
374.96	132.9614
383.85	120.5548
387.95	125.8602
388.63	134.9712
391.69	119.0533
391.69	119.0533
392.90	120.1403
398.62	131.6484
400.65	128.7480
401.10	130.8070
401.81	145.0576
402.60	143.0891
404.84	143.2591
410.95	110.0814
411.60	121.3351
413.65	156.1680
414.70	117.4461
415.30	110.3318

415.76	108.3145
417.63	0.0000
418.52	107.4449
423.70	124.1461
427.08	113.0548
427.89	107.9608
432.53	103.0609
433.93	106.2266
439.47	96.1787
439.56	96.1830
439.89	101.3705
443.98	101.5769
444.90	109.9190
445.03	109.9255
445.03	109.9255
445.03	109.9255
445.03	109.9255
453.90	106.2365
463.38	98.3532
468.07	98.9921
473.00	90.3947
475.06	96.7954
475.35	104.1739
476.78	112.6671
477.59	101.1226
477.96	95.8724
482.03	98.1668
484.57	97.2250
487.03	112.1479
490.36	0.0000
492.35	89.0898
497.08	76.5275
507.63	0.0000
510.53	0.0000
510.84	113.3658
511.00	113.3731
511.85	113.4167
511.85	113.4167
513.99	116.5230
513.99	116.5230
520.41	92.3671
520.65	99.8938
527.90	87.2812
528.96	0.0000
529.64	73.3291
529.87	0.0000
531.02	86.3208
537.32	84.3913
543.00	98.6981
546.56	0.0000
549.76	102.2445
552.65	103.4569
555.20	90.4849
563.23	79.8504
563.90	66.7430
568.70	104.1498
569.32	97.5991
569.50	97.6045
569.67	89.9352
573.80	99.9756
574.00	99.9839
574.64	93.4149
578.91	98.6426
579.30	0.0000
583.14	87.1223
585.48	77.7111
591.81	64.1862
592.07	71.9408
593.00	86.3599
595.88	86.4598
600.56	107.7219
602.52	0.0000
602.71	96.0319
602.71	96.0319
603.60	90.7267
604.41	99.6543
604.70	92.5463
609.31	92.4910

609.31	92.4910
609.31	92.4910
609.31	92.4910
610.33	92.5290
612.46	87.4727
614.37	92.8992
618.01	100.9515
621.84	77.2670
621.84	77.2670
631.29	86.5381
633.02	67.4762
633.10	67.4780
634.78	83.7272
635.90	87.3663
636.97	91.0060
645.85	82.2688
646.12	78.6611
656.30	78.0530
657.75	72.6465
657.90	0.0000
661.65	110.0344
661.65	110.0344
664.57	0.0000
666.33	83.8085
666.33	83.8085
675.00	81.3320
677.61	72.2611
685.20	65.1220
692.80	77.2550
695.00	92.0435
696.49	93.9341
696.49	93.9341
697.00	101.3176
697.49	95.8090
698.33	90.3079
698.50	90.3126
699.00	82.9556
702.63	85.8297
706.10	74.8479
706.58	0.0000
706.67	75.7859
709.31	82.3315
711.68	96.2889
713.82	73.1965
717.42	77.9256
720.50	86.2352
721.93	0.0000
722.20	63.4969
722.78	63.5103
722.78	63.5103
722.89	63.5120
722.95	63.5136
723.30	66.6206
724.18	66.6398
727.18	77.2593
733.00	93.2690
735.90	78.4219
739.58	85.9984
742.81	75.7991
744.21	78.6434
747.13	71.2240
751.79	100.4327
752.31	85.4303
753.82	72.3229
755.35	73.3002
756.15	75.1992
756.87	59.2332
763.93	76.9653
765.79	66.0112
766.42	59.7368
766.84	69.1779
776.49	78.5460
778.00	83.3186
778.57	83.3336
778.89	82.3951
783.80	69.2466
785.46	68.3350
792.07	71.3342

795.84	53.3271
796.30	53.3354
798.80	39.7156
801.93	76.3301
805.60	53.4939
810.29	66.0099
810.76	60.2791
815.85	57.5010
817.79	57.5361
818.51	46.0395
819.60	57.5684
826.30	61.5359
828.27	0.0000
831.60	77.0469
831.96	76.0915
834.83	76.1590
836.80	0.0000
846.75	68.6998
848.13	62.9196
856.28	0.0000
856.80	63.0862
860.37	68.9841
867.32	58.4194
867.82	58.4282
871.10	60.4349
873.19	58.5220
874.81	55.6223
875.33	0.0000
876.40	45.8858
879.36	52.7673
880.27	54.7354
880.51	54.7395
881.50	55.7336
883.24	47.9365
884.67	56.7652
889.25	67.6220
896.60	74.6437
898.02	68.7781
899.00	65.8501
903.28	73.8043
911.07	82.1920
911.07	82.1920
911.07	82.1920
919.63	58.2261
920.93	61.3249
925.00	67.3376
925.24	67.3426
926.50	61.4218
935.52	67.5401
937.48	67.5767
944.10	67.7045
946.00	67.7394
949.00	73.1149
962.29	51.7045
964.01	68.4151
966.15	65.1158
968.20	65.1539
969.11	65.1698
969.11	65.1698
969.11	65.1698
977.42	48.8098
980.50	57.3284
983.50	61.4021
989.30	56.4580
996.32	62.6267
1001.03	67.7623
1001.68	66.7622
1004.76	67.8310
1021.30	0.0000
1024.50	0.0000
1034.80	55.1074
1036.00	62.2703
1037.82	60.2561
1038.57	49.0336
1038.76	0.0000
1045.16	66.5139
1046.59	49.1344
1048.07	64.5166

1050.47	65.5813
1050.47	65.5813
1062.04	65.7750
1063.62	60.6623
1076.63	80.4642
1077.35	67.0662
1078.86	58.8341
1085.78	65.1410
1099.22	57.0625
1112.02	62.4492
1112.84	74.0278
1115.52	81.6036
1120.29	60.8398
1120.29	60.8398
1120.29	60.8398
1120.29	60.8398
1120.51	60.4950
1121.28	60.5064
1124.00	0.0000
1129.67	71.8686
1131.51	0.0000
1147.95	0.0000
1167.94	66.4699
1173.22	77.1205
1175.09	62.3562
1177.93	67.6875
1189.05	59.3824
1204.90	88.3415
1205.75	0.0000
1213.00	97.0385
1221.42	90.8188
1230.97	89.6796
1235.34	83.9635
1236.41	0.0000
1238.25	86.8773
1246.25	83.5731
1260.41	0.0000
1271.85	52.9573
1274.45	47.5814
1274.54	59.4768
1291.56	37.9924
1298.22	0.0000
1312.09	61.0613
1325.50	30.6209
1325.50	30.6209
1332.49	31.7612
1333.61	32.8652
1360.21	22.9533
1362.66	0.0000
1365.15	30.3292
1368.21	17.6578
1368.53	0.0000
1376.25	20.2669
1384.27	35.9880
1394.10	35.1379
1395.20	35.1457
1407.95	36.1658
1434.06	20.5113
1436.60	22.3867
1457.56	0.0000
1460.81	29.0587
1489.15	17.9107
1509.49	17.0361
1596.49	21.1702
1620.62	17.3994
1678.03	0.0000
1691.02	15.6647
1691.02	15.6647
1706.46	0.0000
1750.46	0.0000
1764.49	8.5006
1764.49	8.5006
1764.49	8.5006
1764.49	8.5006
1770.23	6.8072
1771.40	8.5107
1791.20	0.0000
1808.65	14.9890



1836.01

9.0348

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691011

Total Uranium Activity	4.2353E+00	ug/g
Total Uranium Counting Unc.	4.0232E+00	ug/g
Total Uranium Tpu	2.0527E-06	ug/g
Total Uranium Mda	2.5346E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 947037                SAMPLE ID   : G245691011                *
*  ANALYST       : MJH1                  DETECTOR    : GAM20                  *
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00        *
*  ANALYSIS DATE : 9-FEB-2010 15:33:35.10  SAMPLE ALQT: 134.150 GRAM          *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.122E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.633E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.969E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.930E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 17:35:33.13

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691012.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:57.
Sample ID          : G245691012 Sample quantity : 1.37640E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.75 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.17*	171	423	1.15	126.33	122	8	2.37E-02	22.7	
2	3	74.73*	383	568	1.42	149.47	145	14	5.32E-02	12.8	2.69E+00
3	3	76.94	567	438	1.13	153.87	145	14	7.88E-02	7.7	
4	0	83.80	123	386	1.28	167.60	165	7	1.70E-02	28.0	
5	3	87.05*	197	288	1.25	174.10	171	20	2.74E-02	15.0	2.91E+00
6	3	89.83	100	334	1.01	179.66	171	20	1.39E-02	30.6	
7	3	92.53*	612	375	1.23	185.05	171	20	8.49E-02	6.9	
8	0	128.78	67	275	0.85	257.56	255	7	9.29E-03	42.8	
9	0	185.58*	341	360	1.42	371.16	366	11	4.74E-02	12.4	
10	0	208.92	108	227	0.81	417.85	414	8	1.50E-02	26.0	
11	2	238.33*	1117	206	1.28	476.67	469	20	1.55E-01	3.8	4.48E+00
12	2	241.40	288	274	1.73	482.81	469	20	4.00E-02	13.0	
13	0	269.55	61	237	1.03	539.10	534	11	8.43E-03	50.7	
14	2	294.80*	414	144	1.69	589.60	583	23	5.75E-02	7.4	2.35E+00
15	2	299.37	125	152	1.84	598.74	583	23	1.73E-02	21.6	
16	0	327.63	73	117	1.57	655.26	652	8	1.01E-02	28.2	
17	0	338.00	161	230	1.42	676.01	670	14	2.23E-02	21.9	
18	0	351.51*	694	184	1.36	703.03	696	15	9.64E-02	5.7	
19	0	462.73*	76	89	1.53	925.46	921	10	1.06E-02	26.5	
20	0	510.32*	77	151	1.28	1020.64	1014	13	1.07E-02	39.1	
21	0	582.63*	317	107	1.41	1165.27	1157	16	4.41E-02	9.3	
22	0	608.67*	419	106	1.57	1217.34	1211	13	5.83E-02	7.2	
23	0	726.69	112	64	1.92	1453.38	1447	14	1.55E-02	18.1	
24	0	785.32	48	42	2.26	1570.65	1565	13	6.71E-03	31.2	
25	0	860.93	52	56	1.86	1721.85	1715	17	7.19E-03	38.5	
26	0	910.37*	213	43	2.12	1820.75	1814	18	2.96E-02	10.3	
27	0	967.44	141	81	1.80	1934.88	1925	18	1.96E-02	17.1	
28	0	1119.91	79	86	2.18	2239.82	2228	18	1.10E-02	29.6	
29	0	1459.41*	767	33	2.41	2918.83	2909	18	1.07E-01	4.0	
30	0	1763.37*	60	23	3.25	3526.74	3519	13	8.35E-03	21.2	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 17:35:35

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691012.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:57
Sample ID        : G245691012 Sample quantity : 137.64 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.75 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.966E+01	2.163E+00	6.669E-01	4.989E-02	29.484
CD-109	+	88.03	*	2.836E+00	8.958E-01	1.354E+00	1.322E-01	2.094
SN-126	+	64.28		1.885E+00	9.009E-01	1.011E+00	1.539E-01	1.864
	+	86.94		1.159E+00	5.947E-01	5.522E-01	2.297E-01	2.098
	+	87.57	*	2.787E-01	8.804E-02	1.339E-01	1.303E-02	2.081
CS-135	+	268.24	*	2.445E-01	2.489E-01	2.571E-01	1.964E-02	0.951
TL-208		277.35		2.773E-01	4.150E-01	6.832E-01	7.218E-02	0.406
	+	510.84		3.807E-01	3.001E-01	2.354E-01	2.391E-02	1.618
	+	583.14	*	4.514E-01	8.905E-02	5.829E-02	3.785E-03	7.743
	+	860.37		7.045E-01	5.461E-01	4.506E-01	4.073E-02	1.563
BI-211		72.87		1.051E+01	4.285E+00	6.694E+00	5.905E-01	1.571
	+	351.07	*	4.249E+00	5.614E-01	3.294E-01	2.146E-02	12.900
BI-212	+	727.18	*	1.374E+00	5.096E-01	4.957E-01	3.935E-02	2.772
	+	785.46		3.819E+00	2.401E+00	3.016E+00	2.126E-01	1.266
		1620.62		7.552E-01	1.395E+00	2.500E+00	1.696E-01	0.302
PB-212	+	74.81		2.412E+00	6.901E-01	6.452E-01	8.323E-02	3.738
	+	77.11		2.003E+00	3.587E-01	3.615E-01	3.253E-02	5.540
	+	87.30		1.289E+00	4.271E-01	6.216E-01	8.663E-02	2.074
	+	238.63	*	1.472E+00	1.530E-01	9.813E-02	7.055E-03	15.005
	+	300.09		2.557E+00	1.125E+00	1.167E+00	9.695E-02	2.190
PO-212	+	74.81		2.412E+00	6.901E-01	6.452E-01	8.323E-02	3.738
	+	77.11		2.003E+00	3.587E-01	3.615E-01	3.253E-02	5.540
	+	87.30		1.289E+00	4.271E-01	6.216E-01	8.663E-02	2.074
		115.19		-2.609E+00	3.872E+00	6.213E+00	3.964E-01	-0.420
	+	238.63	*	1.472E+00	1.530E-01	9.813E-02	7.055E-03	15.005
	+	300.09		2.557E+00	1.125E+00	1.167E+00	9.695E-02	2.190
BI-214	+	609.31	*	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661
	+	1120.29		1.136E+00	6.814E-01	4.873E-01	4.528E-02	2.331
	+	1764.49		1.187E+00	5.085E-01	3.382E-01	2.103E-02	3.510
PB-214	+	74.81		4.156E+00	1.165E+00	1.112E+00	1.287E-01	3.738
	+	77.11		3.433E+00	6.683E-01	6.197E-01	7.306E-02	5.540
	+	87.30		2.208E+00	7.180E-01	1.065E+00	1.320E-01	2.074
	+	241.98		2.285E+00	6.212E-01	5.910E-01	4.700E-02	3.866
	+	295.21		1.489E+00	2.543E-01	2.044E-01	1.753E-02	7.281

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.478E+00	2.100E-01	1.148E-01	9.584E-03	12.873
	+	74.81		4.156E+00	1.165E+00	1.112E+00	1.287E-01	3.738
	+	77.11		3.433E+00	6.683E-01	6.197E-01	7.306E-02	5.540
	+	87.30		2.208E+00	7.180E-01	1.065E+00	1.320E-01	2.074
	+	241.98		2.285E+00	6.212E-01	5.910E-01	4.700E-02	3.866
PO-216	+	295.21		1.489E+00	2.543E-01	2.044E-01	1.753E-02	7.281
	+	351.92	*	1.478E+00	2.100E-01	1.148E-01	9.584E-03	12.873
	+	74.81		2.412E+00	6.901E-01	6.452E-01	8.323E-02	3.738
	+	77.11		2.003E+00	3.587E-01	3.615E-01	3.253E-02	5.540
	+	87.30		1.289E+00	4.271E-01	6.216E-01	8.663E-02	2.074
PO-218	+	238.63	*	1.472E+00	1.530E-01	9.813E-02	7.055E-03	15.005
	+	300.09		2.557E+00	1.125E+00	1.167E+00	9.695E-02	2.190
	+	74.81		4.156E+00	1.165E+00	1.112E+00	1.287E-01	3.738
	+	77.11		3.433E+00	6.683E-01	6.197E-01	7.306E-02	5.540
	+	87.30		2.208E+00	7.180E-01	1.065E+00	1.320E-01	2.074
RA-224	+	241.98		2.285E+00	6.212E-01	5.910E-01	4.700E-02	3.866
	+	295.21		1.489E+00	2.543E-01	2.044E-01	1.753E-02	7.281
	+	351.92	*	1.478E+00	2.100E-01	1.148E-01	9.584E-03	12.873
	+	240.98	*	4.333E+00	1.153E+00	1.117E+00	6.293E-02	3.880
	+	609.31	*	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661
TH-228	+	1120.29		1.136E+00	6.814E-01	4.873E-01	4.528E-02	2.331
	+	1764.49		1.187E+00	5.085E-01	3.382E-01	2.103E-02	3.510
	+	74.81		2.449E+00	6.627E-01	6.550E-01	5.871E-02	3.738
	+	77.11		2.033E+00	3.642E-01	3.670E-01	3.302E-02	5.540
	+	87.30		1.309E+00	4.134E-01	6.311E-01	6.126E-02	2.074
TH-230	+	238.63	*	1.495E+00	1.553E-01	9.962E-02	7.162E-03	15.005
	+	300.09		2.596E+00	1.897E+00	1.185E+00	6.986E-01	2.190
	+	609.31	*	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661
	+	1120.29		1.136E+00	6.814E-01	4.873E-01	4.528E-02	2.331
	+	1764.49		1.187E+00	5.085E-01	3.382E-01	2.103E-02	3.510
TH-234	+	63.29	*	4.762E+00	2.322E+00	2.713E+00	4.888E-01	1.756
	+	92.38		5.528E+00	1.265E+00	8.663E-01	1.580E-01	6.381
	+	609.31	*	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661
	+	1120.29		1.136E+00	6.814E-01	4.873E-01	4.528E-02	2.331
	+	1764.49		1.187E+00	5.085E-01	3.382E-01	2.103E-02	3.510
U-234	+	86.50	*	8.185E-01	3.088E-01	3.925E-01	8.939E-02	2.085
	+	95.87		-5.712E-01	1.213E+00	1.715E+00	4.210E-01	-0.333
	+	63.29	*	4.762E+00	2.322E+00	2.713E+00	4.888E-01	1.756
	+	92.38		5.528E+00	9.105E-01	8.663E-01	7.741E-02	6.381
	+	74.67	*	3.910E-01	1.057E-01	1.050E-01	9.331E-03	3.724
AM-243	+	86.72		3.069E+01	9.695E+00	1.467E+01	1.417E+00	2.092
	+	117.66		1.945E-01	4.061E+00	6.699E+00	4.148E-01	0.029
	+	142.18		5.816E+00	1.951E+01	3.173E+01	1.728E+00	0.183
	+	511.00	*	8.224E-02	6.447E-02	5.086E-02	2.954E-03	1.617

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	1.762E-01	3.460E-01	5.889E-01	4.002E-02	0.299

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		-3.063E-03	4.827E-02	7.812E-02	5.247E-03	-0.039
NA-24	1368.53	*		1.806E-01	4.827E-02	Half-Life too short		
AL-26	1129.67			2.644E-01	1.848E+00	3.075E+00	1.959E-01	0.086
	1808.65	*		-6.741E-03	2.626E-02	4.072E-02	2.447E-03	-0.166
TI-44	67.85			-5.722E-02	5.989E-02	8.905E-02	7.755E-03	-0.643
	78.38	*		3.696E-01	6.620E-02	8.983E-02	8.143E-03	4.114
SC-46	889.25	*		-1.325E-02	4.453E-02	7.228E-02	6.458E-03	-0.183
	1120.51			1.945E-01	1.160E-01	1.366E-01	8.898E-03	1.424
V-48	944.10			2.948E-01	9.066E-01	1.552E+00	1.352E-01	0.190
	983.50	*		-2.699E-03	6.935E-02	1.144E-01	9.517E-03	-0.024
	1312.09			-8.537E-02	8.206E-02	1.142E-01	8.125E-03	-0.748
CR-51	320.08	*		1.855E-01	3.866E-01	6.640E-01	4.354E-02	0.279
MN-52	744.21			6.885E-02	2.616E-01	4.305E-01	2.741E-02	0.160
	848.13			2.223E+00	6.955E+00	1.194E+01	9.745E-01	0.186
	935.52			1.218E-01	2.450E-01	4.264E-01	3.749E-02	0.286
	1246.25			6.409E-02	7.278E+00	1.187E+01	7.596E-01	0.005
	1333.61			1.193E+00	4.789E+00	8.054E+00	5.912E-01	0.148
	1434.06	*		4.459E-02	2.181E-01	3.649E-01	2.640E-02	0.122
MN-54	834.83	*		-1.345E-03	3.766E-02	6.278E-02	4.971E-03	-0.021
CO-56	846.75	*		-1.819E-03	3.865E-02	6.430E-02	5.231E-03	-0.028
	977.42			-9.072E-01	3.231E+00	5.212E+00	4.370E-01	-0.174
	1037.82			-3.412E-01	3.038E-01	4.351E-01	3.567E-02	-0.784
	1175.09			-1.039E-01	2.376E+00	3.876E+00	2.194E-01	-0.027
	1238.25			1.844E-01	9.857E-02	1.836E-01	1.221E-02	1.005
	1360.21			4.720E-01	1.015E+00	1.752E+00	1.283E-01	0.269
	1771.40			-3.065E-01	2.636E-01	3.385E-01	2.094E-02	-0.905
CO-57	122.06	*		-1.932E-02	2.783E-02	4.453E-02	2.625E-03	-0.434
	136.48			-7.306E-02	2.307E-01	3.735E-01	2.429E-02	-0.196
CO-58	810.76	*		-4.649E-03	3.898E-02	6.459E-02	4.853E-03	-0.072
FE-59	142.65			1.615E+00	3.000E+00	4.921E+00	2.676E-01	0.328
	192.34			2.358E-01	1.022E+00	1.614E+00	1.867E-01	0.146
	1099.22	*		-3.277E-02	8.794E-02	1.387E-01	1.068E-02	-0.236
	1291.56			-1.202E-01	1.198E-01	1.679E-01	1.393E-02	-0.716
CO-60	1173.22			1.302E-03	4.833E-02	7.939E-02	4.479E-03	0.016
	1332.49	*		-1.116E-02	3.730E-02	5.795E-02	4.254E-03	-0.193
ZN-65	1115.52	*		1.210E-01	1.051E-01	1.709E-01	1.129E-02	0.708
GE-68	1077.35	*		-1.295E+00	1.354E+00	2.007E+00	1.437E-01	-0.645
AS-73	53.44	*		-3.232E-01	1.186E+00	1.973E+00	1.742E-01	-0.164
AS-74	595.88	*		-1.091E-02	9.575E-02	1.545E-01	8.518E-03	-0.071
	634.78			-2.571E-01	3.970E-01	5.689E-01	3.011E-02	-0.452
SE-75	66.05			-2.040E-01	6.537E+00	9.613E+00	1.009E+00	-0.021
	96.73			8.890E-02	9.796E-01	1.431E+00	1.919E-01	0.062
	121.11			6.505E-03	1.467E-01	2.417E-01	2.254E-02	0.027
	136.00			-1.395E-02	4.345E-02	7.034E-02	3.972E-03	-0.198
	198.60			1.397E+00	1.900E+00	3.166E+00	2.138E-01	0.441
	264.65	*		-1.566E-03	5.374E-02	7.469E-02	4.348E-03	-0.021
	279.53			-5.733E-02	1.146E-01	1.888E-01	1.187E-02	-0.304
	303.91			1.850E-01	2.314E+00	3.407E+00	3.269E-01	0.054
	400.65			-6.063E-02	2.786E-01	4.566E-01	4.155E-02	-0.133

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	87.88		6.184E+02	1.953E+02	3.787E+02	3.695E+01	1.633
		200.40		8.707E+01	1.799E+02	2.967E+02	1.587E+01	0.293
	+	239.00		2.386E+02	2.237E+01	3.736E+01	2.100E+00	6.388
		249.79		1.896E+01	7.378E+01	1.198E+02	6.808E+00	0.158
		281.68		-9.511E+01	9.498E+01	1.522E+02	8.871E+00	-0.625
		297.23		2.859E+02	6.426E+01	1.225E+02	7.197E+00	2.333
		303.76		1.289E+01	1.987E+02	2.923E+02	1.721E+01	0.044
		439.47		1.814E+01	1.526E+02	2.542E+02	1.487E+01	0.071
		484.57		-1.528E+01	2.443E+02	4.003E+02	2.340E+01	-0.038
		520.65	*	-4.963E+00	1.035E+01	1.630E+01	9.434E-01	-0.305
		574.64		-5.235E+01	2.283E+02	3.290E+02	1.847E+01	-0.159
		578.91		1.396E+02	1.055E+02	1.687E+02	9.437E+00	0.827
		585.48		5.544E+02	2.134E+02	3.704E+02	2.061E+01	1.497
		755.35		3.335E+01	1.758E+02	2.874E+02	1.882E+01	0.116
		817.79		-1.106E+01	1.308E+02	2.173E+02	1.654E+01	-0.051
	SR-82	698.33		1.695E+01	3.744E+01	6.260E+01	3.536E+00	0.271
		776.49	*	-4.101E-01	3.696E-01	5.558E-01	3.834E-02	-0.738
		1395.20		8.234E+00	1.184E+01	2.095E+01	1.526E+00	0.393
	RB-83	520.41	*	-3.251E-02	6.779E-02	1.068E-01	6.181E-03	-0.305
		529.64		-1.703E-01	1.076E-01	1.522E-01	8.776E-03	-1.119
		552.65		-1.070E-01	2.087E-01	3.271E-01	1.864E-02	-0.327
RB-84		881.50	*	7.110E-03	7.834E-02	1.316E-01	1.156E-02	0.054
KR-85		513.99	*	6.812E+00	7.991E+00	1.231E+01	7.142E-01	0.553
SR-85		513.99	*	3.494E-02	4.099E-02	6.312E-02	3.663E-03	0.553
RB-86		1076.63	*	-4.025E-01	8.336E-01	1.305E+00	9.350E-02	-0.309
Y-88		898.02		8.352E-03	4.251E-02	7.206E-02	6.589E-03	0.116
		1836.01	*	1.142E-02	3.509E-02	6.160E-02	3.627E-03	0.185
ZR-88		392.90	*	1.129E-02	3.338E-02	5.655E-02	3.265E-03	0.200
Y-91		1204.90	*	-1.896E+01	1.902E+01	2.780E+01	1.658E+00	-0.682
NB-94		702.63	*	-8.023E-03	3.615E-02	5.721E-02	3.269E-03	-0.140
		871.10		2.054E-02	3.497E-02	6.031E-02	5.180E-03	0.341
NB-95		765.79	*	6.439E-02	4.676E-02	8.243E-02	5.539E-03	0.781
NB-95M		235.69	*	4.549E-01	1.708E-01	2.689E-01	1.984E-02	1.691
ZR-95		724.18		3.200E-01	1.229E-01	2.134E-01	1.508E-02	1.500
		756.15	*	-2.823E-02	7.669E-02	1.189E-01	9.123E-03	-0.237
NB-97		657.90	*	-2.387E-01	7.669E-02	Half-Life	too short	
		1024.50		5.512E-01	7.669E-02	Half-Life	too short	
ZR-97		254.15		-2.613E+00	7.669E-02	Half-Life	too short	
		355.39		4.120E+00	7.669E-02	Half-Life	too short	
		507.63	*	5.936E+00	7.669E-02	Half-Life	too short	
		602.52		-3.962E+00	7.669E-02	Half-Life	too short	
		1021.30		4.732E+00	7.669E-02	Half-Life	too short	
		1147.95		2.364E+00	7.669E-02	Half-Life	too short	
		1362.66		2.022E+00	7.669E-02	Half-Life	too short	
MO-99		1750.46		-1.754E+00	7.669E-02	Half-Life	too short	
		140.51		-2.166E+01	3.013E+01	4.643E+01	1.248E+01	-0.467
		181.06		-4.028E-02	2.011E+01	2.853E+01	4.836E+00	-0.001
		366.43		-4.739E+01	9.112E+01	1.473E+02	8.631E+00	-0.322
		739.58	*	1.094E+01	1.259E+01	2.166E+01	3.032E+00	0.505



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	778.00			-2.114E+01	3.830E+01	5.397E+01	3.737E+00	-0.392
TC-99M	140.51	*		-3.408E+10	3.830E+01	Half-Life too short		
RH-101	127.23			3.801E-02	3.825E-02	5.786E-02	3.323E-03	0.657
	198.01	*		9.479E-03	3.519E-02	5.757E-02	3.069E-03	0.165
	325.23			2.130E-02	2.679E-01	3.931E-01	2.322E-02	0.054
RH-102	418.52			-2.337E-01	3.160E-01	4.993E-01	2.909E-02	-0.468
	475.06	*		2.822E-02	3.146E-02	5.480E-02	3.208E-03	0.515
	631.29			-5.019E-02	5.735E-02	8.577E-02	4.559E-03	-0.585
	697.49			1.555E-02	8.328E-02	1.365E-01	7.691E-03	0.114
	766.84			2.204E-01	1.137E-01	2.098E-01	1.413E-02	1.051
	1046.59			-4.133E-02	1.154E-01	1.831E-01	1.387E-02	-0.226
	1112.84			-1.793E-01	2.739E-01	3.479E-01	2.308E-02	-0.515
RU-103	497.08	*		-5.691E-03	3.949E-02	6.416E-02	8.123E-03	-0.089
	610.33			1.104E+01	2.236E+00	2.954E+00	4.515E-01	3.736
RH-106	511.85			4.056E-01	2.311E-01	4.146E-01	2.407E-02	0.978
	621.84	*		-1.105E-01	3.359E-01	5.301E-01	6.113E-02	-0.208
	1050.47			1.869E+00	2.307E+00	4.107E+00	3.089E-01	0.455
RU-106	511.85			4.056E-01	2.311E-01	4.146E-01	2.407E-02	0.978
	621.84	*		-1.105E-01	3.357E-01	5.301E-01	2.848E-02	-0.208
	1050.47			1.869E+00	2.307E+00	4.107E+00	3.089E-01	0.455
AG-108M	433.93	*		-6.870E-03	3.332E-02	5.435E-02	3.446E-03	-0.126
	614.37			-1.112E-03	4.577E-02	6.407E-02	3.806E-03	-0.017
	722.95			3.179E-02	5.181E-02	7.708E-02	5.012E-03	0.412
AG-110M	657.75	*		-1.042E-01	5.331E-02	7.524E-02	4.181E-03	-1.385
	677.61			1.824E-01	3.251E-01	5.505E-01	3.151E-02	0.331
	706.67			5.796E-02	2.203E-01	3.632E-01	2.225E-02	0.160
	763.93			-7.056E-02	1.856E-01	2.854E-01	1.998E-02	-0.247
	884.67			3.250E-02	5.684E-02	9.901E-02	9.027E-03	0.328
	937.48			-9.451E-02	1.111E-01	1.680E-01	1.526E-02	-0.563
	1384.27			2.007E-01	1.607E-01	3.039E-01	2.305E-02	0.660
IN-111	171.28			-9.422E-01	1.068E+00	1.669E+00	8.561E-02	-0.565
	245.39	*		-1.794E-01	1.337E+00	1.852E+00	1.048E-01	-0.097
IN-113M	391.69	*		3.077E-02	4.779E-02	8.231E-02	5.070E-03	0.374
SN-113	391.69	*		3.077E-02	4.779E-02	8.231E-02	5.070E-03	0.374
IN-114M	190.27	*		-5.985E-02	2.173E-01	3.024E-01	1.594E-02	-0.198
CD-115	260.90			-3.608E+01	1.429E+02	2.255E+02	1.295E+01	-0.160
	492.35			-2.235E+01	3.494E+01	5.442E+01	3.177E+00	-0.411
	527.90	*		-4.236E+00	1.094E+01	1.736E+01	1.002E+00	-0.244
SN-117M	156.02			-5.553E-01	2.413E+00	3.900E+00	2.041E-01	-0.142
	158.56	*		1.690E-02	5.790E-02	9.552E-02	4.964E-03	0.177
SB-122	563.90	*		-5.595E-01	2.227E+00	3.567E+00	2.018E-01	-0.157
	692.80			-3.928E-02	4.738E+01	7.649E+01	4.257E+00	-0.001
I-123	159.00	*		1.479E+00	4.738E+01	Half-Life too short		
	528.96			-5.891E+02	4.738E+01	Half-Life too short		
TE-123M	159.00	*		7.023E-03	3.007E-02	4.949E-02	2.612E-03	0.142
I-124	602.71	*		-3.038E-01	8.040E-01	1.081E+00	5.924E-02	-0.281
	722.78			2.394E+00	5.373E+00	7.857E+00	4.735E-01	0.305
	1325.50			-2.523E+01	3.261E+01	4.665E+01	3.389E+00	-0.541
	1376.25			4.005E+01	3.355E+01	6.184E+01	4.519E+00	0.648

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1509.49		1.419E+01	1.582E+01	2.894E+01	2.052E+00	0.490
		1691.02		-5.720E-01	3.266E+00	5.216E+00	3.405E-01	-0.110
		602.71		-1.757E-02	4.650E-02	6.252E-02	3.428E-03	-0.281
		645.85		-1.635E-01	5.048E-01	7.940E-01	4.793E-02	-0.206
		709.31		-5.608E-01	3.113E+00	4.944E+00	2.876E-01	-0.113
		713.82		-9.687E-01	1.934E+00	2.985E+00	3.063E-01	-0.324
		722.78		2.007E-01	4.505E-01	6.588E-01	4.143E-02	0.305
	+	968.20		1.657E+01	5.853E+00	6.950E+00	5.893E-01	2.384
		1045.16		-2.312E+00	2.552E+00	3.798E+00	2.883E-01	-0.609
		1325.50		-2.259E+00	2.920E+00	4.178E+00	3.034E-01	-0.541
		1368.21		5.498E-01	1.703E+00	2.893E+00	3.668E-01	0.190
		1436.60		-6.368E-01	3.557E+00	5.572E+00	4.029E-01	-0.114
SB-125		1691.02	*	-1.131E-02	6.460E-02	1.031E-01	7.191E-03	-0.110
		427.89	*	4.054E-03	1.015E-01	1.685E-01	1.025E-02	0.024
	+	463.38		7.358E-01	3.925E-01	5.815E-01	3.962E-02	1.265
		600.56		-5.544E-02	1.868E-01	2.880E-01	1.856E-02	-0.193
		635.90		-2.173E-02	2.758E-01	4.443E-01	2.825E-02	-0.049
TE-125M		109.28	*	-3.260E+00	1.028E+01	1.676E+01	1.495E+00	-0.195
I-126		388.63		6.082E-02	2.121E-01	3.587E-01	2.075E-02	0.170
		666.33	*	-1.004E+00	2.621E-01	2.971E-01	1.538E-02	-3.378
SB-126		753.82		4.238E-01	1.543E+00	2.542E+00	1.658E-01	0.167
		223.80		-6.401E-01	4.326E+00	6.913E+00	3.818E-01	-0.093
		278.60		8.125E-01	2.563E+00	4.383E+00	2.550E-01	0.185
		296.50		1.200E+01	1.954E+00	3.697E+00	2.171E-01	3.245
		414.70		5.319E-02	8.225E-02	1.414E-01	8.232E-03	0.376
		415.30		4.902E+00	6.841E+00	1.181E+01	6.874E-01	0.415
		555.20		-2.853E+00	4.029E+00	6.191E+00	3.521E-01	-0.461
		573.80		-8.074E-01	1.111E+00	1.582E+00	8.885E-02	-0.510
		593.00		1.297E-01	9.774E-01	1.609E+00	8.895E-02	0.081
		656.30		-2.482E+01	5.450E+00	5.873E+00	3.023E-01	-4.225
SB-127		666.33		-4.194E-01	1.095E-01	1.242E-01	6.426E-03	-3.378
		675.00		-1.950E+00	2.210E+00	3.297E+00	1.748E-01	-0.592
		695.00		1.486E-02	8.643E-02	1.415E-01	7.919E-03	0.105
		697.00		2.820E-02	2.941E-01	4.783E-01	2.692E-02	0.059
		720.50	*	-8.704E-03	1.777E-01	2.451E-01	1.468E-02	-0.036
		856.80		1.834E-01	6.301E-01	9.363E-01	7.790E-02	0.196
		989.30		5.873E-02	1.197E+00	1.993E+00	1.646E-01	0.029
		1034.80		-1.222E+00	8.977E+00	1.461E+01	1.129E+00	-0.084
		1213.00		4.671E+00	4.780E+00	8.515E+00	5.151E-01	0.549
		61.10		7.830E+01	8.146E+01	1.249E+02	1.401E+01	0.627
		252.40		-1.547E+00	4.923E+00	7.690E+00	3.194E+00	-0.201
		290.80		-1.273E+01	2.484E+01	3.506E+01	3.228E+00	-0.363
		411.60		-7.889E-01	1.384E+01	2.288E+01	3.292E+00	-0.034
		444.90		-2.195E-02	1.009E+01	1.667E+01	1.805E+00	-0.001
		473.00		-1.373E+00	1.881E+00	2.937E+00	3.293E-01	-0.467
		543.00		2.787E+00	1.691E+01	2.801E+01	3.609E+00	0.099
		603.60		4.575E-01	1.355E+01	1.911E+01	2.026E+00	0.024
		685.20	*	-3.353E-01	1.412E+00	2.231E+00	2.060E-01	-0.150
		698.50		1.151E+01	1.648E+01	2.797E+01	4.034E+00	0.412

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127	722.20			-2.407E+01	3.902E+01	4.997E+01	4.652E+00	-0.482
	783.80			3.950E+00	4.332E+00	6.890E+00	7.837E-01	0.573
	57.60			7.287E+00	8.602E+00	1.368E+01	1.198E+00	0.533
	145.22			3.870E-01	7.362E-01	1.228E+00	6.623E-02	0.315
	172.10			-1.289E-01	1.270E-01	1.972E-01	1.013E-02	-0.654
I-131	202.84	*		-2.344E-03	5.276E-02	8.209E-02	4.407E-03	-0.029
	374.96			-2.125E-02	2.024E-01	3.350E-01	1.954E-02	-0.063
	80.18			5.896E+00	7.633E+00	8.581E+00	7.913E-01	0.687
	284.30			-8.584E-02	1.551E+00	2.606E+00	1.689E-01	-0.033
	364.48	*		6.032E-02	1.188E-01	2.039E-01	1.332E-02	0.296
TE-132	636.97			2.070E-01	1.571E+00	2.578E+00	1.556E-01	0.080
	722.89			4.832E+00	8.712E+00	1.288E+01	7.867E-01	0.375
	49.72			-3.300E+00	3.009E+01	5.043E+01	5.389E+00	-0.065
	111.76			-4.712E+00	3.272E+01	5.367E+01	5.035E+00	-0.088
	116.30			-8.407E+00	3.024E+01	4.928E+01	4.499E+00	-0.171
BA-133	228.16	*		-2.355E-01	7.521E-01	1.190E+00	1.699E-01	-0.198
	53.15			-5.756E-01	5.118E+00	8.566E+00	7.556E-01	-0.067
	79.62			2.453E+00	2.192E+00	2.496E+00	3.875E-01	0.983
	81.00			1.056E-01	1.615E-01	1.794E-01	2.908E-02	0.589
	276.40			5.380E-01	4.288E-01	6.971E-01	9.040E-02	0.772
I-133	302.84			-1.069E-01	1.630E-01	2.259E-01	2.643E-02	-0.473
	356.01	*		4.376E-02	4.708E-02	7.340E-02	8.516E-03	0.596
	383.85			-7.002E-02	3.038E-01	4.980E-01	5.415E-02	-0.141
	510.53	+		8.581E-01	3.038E-01	Half-Life	too short	
	529.87	*		-8.860E-03	3.038E-01	Half-Life	too short	
CS-134	706.58			1.271E-01	3.038E-01	Half-Life	too short	
	856.28			2.283E-01	3.038E-01	Half-Life	too short	
	875.33			1.097E-02	3.038E-01	Half-Life	too short	
	1236.41			1.319E+00	3.038E-01	Half-Life	too short	
	1298.22			-4.142E-02	3.038E-01	Half-Life	too short	
I-135	475.35			1.788E+00	2.071E+00	3.600E+00	2.107E-01	0.497
	563.23			-2.224E-02	3.860E-01	6.276E-01	3.629E-02	-0.035
	569.32			-4.952E-02	2.042E-01	3.185E-01	1.851E-02	-0.155
	604.70			2.995E-02	3.961E-02	6.017E-02	3.312E-03	0.498
	795.84	*		6.003E-02	4.799E-02	8.785E-02	6.416E-03	0.683
I-135	801.93			-2.735E-01	3.952E-01	6.140E-01	4.538E-02	-0.446
	1038.57			-3.019E+00	3.823E+00	5.749E+00	4.413E-01	-0.525
	1167.94			-5.368E-01	2.612E+00	4.193E+00	2.404E-01	-0.128
	1365.15			4.980E-01	1.322E+00	2.222E+00	1.728E-01	0.224
	288.45			-9.578E+09	1.322E+00	Half-Life	too short	
I-135	417.63			7.141E+08	1.322E+00	Half-Life	too short	
	546.56			2.613E+09	1.322E+00	Half-Life	too short	
	836.80			2.496E+10	1.322E+00	Half-Life	too short	
	1038.76			-1.383E+10	1.322E+00	Half-Life	too short	
	1124.00			2.934E+10	1.322E+00	Half-Life	too short	
I-135	1131.51			3.583E+08	1.322E+00	Half-Life	too short	
	1260.41	*		1.721E+09	1.322E+00	Half-Life	too short	
	1457.56			8.946E+11	1.322E+00	Half-Life	too short	
	1678.03			6.934E+09	1.322E+00	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1706.46		-1.291E+10	1.322E+00	Half-Life	too short	
		1791.20		3.567E+08	1.322E+00	Half-Life	too short	
		66.91		-2.494E-01	1.060E+00	1.543E+00	2.388E-01	-0.162
	+	86.29		3.643E+00	1.202E+00	2.229E+00	3.019E-01	1.634
		153.22		4.558E-01	7.249E-01	1.192E+00	8.113E-02	0.382
		163.89		5.208E-01	1.155E+00	1.915E+00	1.287E-01	0.272
		176.55		5.864E-01	3.931E-01	6.752E-01	4.025E-02	0.869
		273.65		-5.901E-01	6.063E-01	7.836E-01	5.183E-02	-0.753
		340.57		8.077E-02	1.412E-01	2.143E-01	1.343E-02	0.377
		818.51		4.601E-02	7.256E-02	1.283E-01	9.791E-03	0.359
BA-137M		1048.07	*	5.349E-02	1.080E-01	1.870E-01	1.490E-02	0.286
		1235.34		8.463E-01	6.891E-01	1.222E+00	1.256E-01	0.692
		661.65	*	2.676E-01	5.600E-02	1.103E-01	5.634E-03	2.426
		661.65	*	2.829E-01	5.922E-02	1.166E-01	5.988E-03	2.426
CE-139		165.85	*	6.077E-03	3.279E-02	5.324E-02	2.715E-03	0.114
BA-140		162.64		6.791E-02	8.071E-01	1.319E+00	7.842E-02	0.051
		304.84		5.772E-01	1.403E+00	2.106E+00	5.750E-01	0.274
LA-140		423.70		1.998E-01	2.102E+00	3.500E+00	1.113E+00	0.057
		537.32	*	-1.762E-01	2.806E-01	4.274E-01	1.389E-01	-0.412
	+	328.77		6.077E-01	3.446E-01	5.707E-01	3.763E-02	1.065
		432.53		-5.974E-01	2.144E+00	3.481E+00	2.245E-01	-0.172
		487.03		1.376E-01	1.410E-01	2.475E-01	1.635E-02	0.556
		751.79		8.645E-01	1.817E+00	3.045E+00	2.336E-01	0.284
		815.85		-7.376E-02	3.059E-01	5.001E-01	4.347E-02	-0.147
		867.82		-4.970E-01	1.538E+00	2.104E+00	1.891E-01	-0.236
		919.63		1.555E+00	3.115E+00	4.932E+00	5.376E-01	0.315
		925.24		-5.363E-01	1.205E+00	1.900E+00	1.788E-01	-0.282
CE-141		1596.49	*	-1.387E-01	8.530E-02	9.922E-02	6.807E-03	-1.398
CE-143		145.44	*	1.040E-02	6.733E-02	1.108E-01	6.246E-03	0.094
		57.37		6.288E-04	6.733E-02	Half-Life	too short	
		231.56		1.127E-03	6.733E-02	Half-Life	too short	
		293.26	*	1.132E-03	6.733E-02	Half-Life	too short	
	+	350.59		3.422E-02	6.733E-02	Half-Life	too short	
		490.36		-3.744E-04	6.733E-02	Half-Life	too short	
		664.57		-9.895E-03	6.733E-02	Half-Life	too short	
CE-144		721.93		-8.956E-04	6.733E-02	Half-Life	too short	
		80.11		2.842E+00	3.510E+00	3.955E+00	3.626E-01	0.718
		133.54	*	7.182E-02	2.530E-01	3.688E-01	5.208E-02	0.195
PM-144		476.78		1.177E-03	7.332E-02	1.209E-01	8.446E-03	0.010
		618.01		-8.830E-03	3.399E-02	5.405E-02	3.118E-03	-0.163
		696.49	*	8.965E-04	3.800E-02	6.146E-02	3.457E-03	0.015
PR-144		778.57		-5.786E-01	2.570E+00	3.614E+00	2.507E-01	-0.160
		696.49	*	6.075E-02	2.575E+00	4.165E+00	2.341E-01	0.015
		1489.15		2.166E+00	1.255E+01	2.080E+01	1.484E+00	0.104
PM-146		453.90	*	2.153E-02	4.636E-02	7.879E-02	6.824E-03	0.273
		633.02		-9.165E-01	1.563E+00	2.195E+00	8.066E-01	-0.418
		735.90		1.860E-02	1.598E-01	2.596E-01	7.263E-02	0.072
ND-147		747.13		3.945E-02	9.977E-02	1.658E-01	2.123E-02	0.238
	+	91.11		4.712E-01	2.919E-01	6.971E-01	6.853E-02	0.676

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149 EU-152		319.41		3.319E+00	3.382E+00	5.953E+00	3.517E-01	0.557
		439.89		1.141E+00	6.118E+00	1.024E+01	5.993E-01	0.111
		531.02	*	-5.970E-01	5.793E-01	8.599E-01	1.161E-01	-0.694
		285.90	*	5.591E+01	9.762E+01	1.683E+02	2.389E+01	0.332
		121.78		-5.605E-02	8.082E-02	1.292E-01	9.935E-03	-0.434
		244.69		1.106E-01	4.112E-01	5.856E-01	3.312E-02	0.189
		344.27	*	-1.075E-02	1.395E-01	1.583E-01	1.049E-02	-0.068
		443.98		-3.285E-01	9.953E-01	1.608E+00	9.411E-02	-0.204
		778.89		-5.124E-02	2.979E-01	4.220E-01	2.928E-02	-0.121
		867.32		-5.406E-01	9.251E-01	1.212E+00	1.032E-01	-0.446
GD-153		964.01		4.400E-01	3.776E-01	6.024E-01	5.133E-02	0.730
		1085.78		-2.809E-01	4.344E-01	6.682E-01	4.702E-02	-0.420
		1112.02		-1.700E-01	3.820E-01	5.027E-01	3.341E-02	-0.338
		1407.95		1.053E-01	1.970E-01	3.415E-01	2.484E-02	0.308
		69.67		6.165E-01	2.163E+00	3.220E+00	2.813E-01	0.191
	+	83.37		3.208E+01	1.821E+01	2.883E+01	2.706E+00	1.113
		97.43	*	1.291E-01	9.795E-02	1.507E-01	1.231E-02	0.857
		103.18		-1.492E-01	1.178E-01	1.830E-01	1.368E-02	-0.815
		123.07		1.777E-03	5.583E-02	9.191E-02	8.676E-03	0.019
		247.94		-1.657E-01	4.375E-01	6.312E-01	5.975E-02	-0.262
EU-154		591.81		2.059E-02	6.323E-01	1.033E+00	9.933E-02	0.020
		723.30		2.601E-01	2.158E-01	3.401E-01	2.473E-02	0.765
		756.87		-1.232E-01	8.021E-01	1.269E+00	1.345E-01	-0.097
		873.19		1.758E-01	3.109E-01	5.434E-01	6.657E-02	0.323
		996.32		-1.678E-01	4.156E-01	6.609E-01	1.160E-01	-0.254
		1004.76		-3.833E-01	2.512E-01	3.501E-01	3.938E-02	-1.095
		1274.45	*	-1.476E-02	1.342E-01	2.161E-01	2.145E-02	-0.068
		48.70		-3.832E+00	3.829E+00	6.187E+00	4.991E-01	-0.619
		60.01		4.487E+00	6.912E+00	1.040E+01	9.037E-01	0.431
	+	86.54		3.357E-01	1.061E-01	2.034E-01	1.977E-02	1.650
TB-160		105.31	*	8.137E-02	1.176E-01	1.988E-01	1.466E-02	0.409
	+	86.79		8.970E-01	2.833E-01	5.389E-01	5.207E-02	1.665
		197.04		-3.269E-01	6.021E-01	9.505E-01	5.060E-02	-0.344
		215.65		7.357E-01	7.793E-01	1.310E+00	7.156E-02	0.562
	+	298.57		3.721E-01	1.623E-01	2.263E-01	1.330E-02	1.644
		879.36	*	-6.327E-02	1.560E-01	2.508E-01	2.193E-02	-0.252
		962.29		7.424E-01	6.599E-01	1.058E+00	9.038E-02	0.701
	+	966.15		1.277E+00	4.510E-01	5.605E-01	4.764E-02	2.278
		1177.93		-1.773E-01	4.050E-01	6.361E-01	3.619E-02	-0.279
		1271.85		-6.514E-01	7.903E-01	1.154E+00	7.702E-02	-0.564
HO-166M		80.57		3.112E-01	4.466E-01	4.994E-01	4.592E-02	0.623
	+	184.41		2.351E-01	5.973E-02	8.076E-02	4.221E-03	2.912
		280.46		-1.224E-01	8.867E-02	1.392E-01	8.106E-03	-0.880
		410.95		6.427E-02	2.785E-01	4.678E-01	2.720E-02	0.137
		711.68	*	-1.176E-02	6.935E-02	1.102E-01	6.451E-03	-0.107
		752.31		1.103E-01	2.902E-01	4.824E-01	3.135E-02	0.229
		810.29		-1.253E-02	5.813E-02	9.544E-02	7.139E-03	-0.131
		51.35		3.110E+01	4.521E+01	7.777E+01	6.760E+00	0.400
		52.39		1.310E+01	2.287E+01	3.918E+01	3.442E+00	0.334

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	59.40		4.145E+01	3.768E+01	5.778E+01	5.020E+00	0.717
		66.72	*	-2.940E+00	3.826E+01	5.613E+01	4.881E+00	-0.052
		88.36		6.611E-01	2.088E-01	4.080E-01	3.955E-02	1.620
		201.83		-2.892E-03	3.157E-02	5.082E-02	2.724E-03	-0.057
		306.84	*	9.523E-03	2.588E-02	4.202E-02	2.476E-03	0.227
LU-177	+	401.10		2.494E-01	7.238E+00	1.204E+01	6.976E-01	0.021
		112.95		1.724E+00	1.761E+00	3.000E+00	1.967E-01	0.575
LU-177M	+	208.36	*	2.534E+00	1.323E+00	2.053E+00	1.111E-01	1.234
		52.97		5.602E-01	2.301E+00	3.901E+00	3.439E-01	0.144
		54.07		-4.212E-01	1.215E+00	2.015E+00	1.781E-01	-0.209
		61.30		2.572E+00	2.138E+00	3.308E+00	2.873E-01	0.777
		121.62		-1.734E-01	4.102E-01	6.635E-01	3.922E-02	-0.261
HF-181	+	147.16		-8.142E-01	7.103E-01	1.107E+00	5.939E-02	-0.735
		171.86		-5.290E-01	5.113E-01	7.928E-01	4.070E-02	-0.667
		218.09		-8.912E-01	9.014E-01	1.381E+00	7.569E-02	-0.646
		268.79		1.229E+00	1.249E+00	1.500E+00	8.670E-02	0.819
		319.02		2.432E-01	2.638E-01	4.631E-01	2.735E-02	0.525
		367.43		-3.558E-01	9.653E-01	1.575E+00	9.222E-02	-0.226
		413.65	*	-2.035E-01	2.025E-01	3.157E-01	1.837E-02	-0.645
		56.28		-9.528E-01	1.295E+00	2.112E+00	1.860E-01	-0.451
		57.53		5.112E-01	7.266E-01	1.150E+00	1.007E-01	0.445
		65.20		1.362E+00	1.329E+00	2.037E+00	1.769E-01	0.668
		133.02		-6.639E-03	8.166E-02	1.169E-01	6.562E-03	-0.057
		136.25		-1.201E-01	5.022E-01	8.155E-01	4.526E-02	-0.147
		345.85		2.330E-01	2.310E-01	3.266E-01	1.927E-02	0.713
		482.03	*	-3.813E-02	4.592E-02	7.106E-02	4.156E-03	-0.537
W-181	+	56.28		-3.720E-01	5.067E-01	8.265E-01	7.278E-02	-0.450
		57.53		1.999E-01	2.846E-01	4.502E-01	3.945E-02	0.444
		65.20	*	5.290E-01	5.165E-01	7.913E-01	6.874E-02	0.668
TA-182	+	67.75		-1.336E-01	1.432E-01	2.132E-01	1.856E-02	-0.627
		100.10		5.508E-02	1.969E-01	3.288E-01	2.573E-02	0.168
		152.43		4.320E-01	3.692E-01	6.188E-01	3.270E-02	0.698
		222.10		-7.544E-02	3.645E-01	5.810E-01	3.202E-02	-0.130
		1001.68		1.897E+00	2.319E+00	4.089E+00	3.320E-01	0.464
RE-183	+	1121.28		5.371E-01	3.203E-01	3.650E-01	2.373E-02	1.472
		1189.05		-1.035E-02	3.015E-01	4.917E-01	2.853E-02	-0.021
		1221.42	*	-1.799E-02	1.915E-01	3.100E-01	1.903E-02	-0.058
		1230.97		-3.407E-01	5.545E-01	8.573E-01	5.348E-02	-0.397
		57.98		3.313E-01	2.939E-01	4.514E-01	3.948E-02	0.734
		59.32		1.691E-01	1.552E-01	2.379E-01	2.067E-02	0.711
		67.20		-8.350E-02	2.708E-01	3.930E-01	3.419E-02	-0.212
RE-184	+	162.32	*	-2.195E-02	1.177E-01	1.903E-01	9.787E-03	-0.115
		208.81		2.271E+00	1.186E+00	1.838E+00	9.952E-02	1.235
		291.72		5.835E-01	1.122E+00	1.701E+00	9.969E-02	0.343
		57.98		1.221E+00	1.083E+00	1.663E+00	1.454E-01	0.734
		59.32		6.225E-01	5.713E-01	8.757E-01	7.610E-02	0.711
		67.20		-3.075E-01	9.975E-01	1.447E+00	1.259E-01	-0.212
		161.27		5.292E-03	3.818E-01	6.225E-01	3.211E-02	0.009
		216.55		-1.399E-02	2.799E-01	4.501E-01	2.462E-02	-0.031

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		252.85	*	-7.631E-02	2.577E-01	4.062E-01	2.316E-02	-0.188
		318.01		-6.435E-03	4.538E-01	7.607E-01	4.492E-02	-0.008
		792.07		1.308E+00	1.208E+00	1.951E+00	1.398E-01	0.670
		903.28		-3.962E-01	1.213E+00	1.661E+00	1.506E-01	-0.239
		920.93		-2.079E-01	5.001E-01	7.573E-01	6.754E-02	-0.275
		59.72		2.953E-01	4.149E-01	6.263E-01	5.439E-02	0.472
		61.14		1.949E-01	2.326E-01	3.555E-01	3.088E-02	0.548
		69.30		-2.703E-02	3.731E-01	5.768E-01	5.035E-02	-0.047
		592.07		-6.211E-01	2.664E+00	4.256E+00	2.355E-01	-0.146
		646.12	*	-9.844E-03	4.158E-02	6.590E-02	3.439E-03	-0.149
		717.42		-1.513E-01	1.012E+00	1.611E+00	9.570E-02	-0.094
		874.81		1.043E-01	6.279E-01	1.062E+00	9.198E-02	0.098
		880.27		-3.194E-01	8.598E-01	1.386E+00	1.214E-01	-0.230
		155.03	*	-3.508E-02	1.843E-01	2.985E-01	1.566E-02	-0.118
RE-188		477.96		1.554E+00	3.321E+00	5.638E+00	3.299E-01	0.276
		633.10		-1.796E+00	3.092E+00	4.454E+00	2.363E-01	-0.403
	+	63.58		1.915E+02	8.832E+01	1.253E+02	1.089E+01	1.527
W-188		227.08		4.103E+00	1.359E+01	2.218E+01	1.230E+00	0.185
		290.67	*	-4.332E+00	8.553E+00	1.209E+01	7.078E-01	-0.358
	+	295.96		1.135E+00	1.809E-01	2.952E-01	1.759E-02	3.846
IR-192		308.46		-1.389E-02	9.461E-02	1.576E-01	9.394E-03	-0.088
		316.51	*	-3.083E-02	3.502E-02	5.585E-02	3.313E-03	-0.552
		468.07		6.566E-02	7.962E-02	1.225E-01	8.252E-03	0.536
AU-195		604.41		2.389E-01	5.251E-01	7.746E-01	8.664E-02	0.308
		612.46		9.126E-01	7.948E-01	1.255E+00	9.150E-02	0.727
		65.12		2.767E-01	2.407E-01	3.702E-01	3.216E-02	0.747
		66.83		-1.013E-02	1.263E-01	1.853E-01	1.611E-02	-0.055
	+	75.70		1.266E+00	3.422E-01	5.386E-01	4.810E-02	2.350
		98.88	*	2.923E-01	2.597E-01	4.314E-01	3.442E-02	0.678
	+	129.76		3.770E+00	3.236E+00	5.208E+00	2.960E-01	0.724
TL-200		367.94	*	-1.044E-04	3.236E+00	Half-Life	too short	
		579.30		1.040E-02	3.236E+00	Half-Life	too short	
		828.27		2.486E-03	3.236E+00	Half-Life	too short	
		1205.75		-1.958E-03	3.236E+00	Half-Life	too short	
TL-201		68.90		-1.351E+00	6.065E+00	9.318E+00	8.128E-01	-0.145
		70.82		1.271E+00	3.521E+00	5.254E+00	4.604E-01	0.242
		80.30		6.250E+00	8.342E+00	9.363E+00	8.593E-01	0.668
		135.34		3.788E-01	2.816E+01	4.619E+01	2.572E+00	0.008
TL-202		167.43	*	1.122E+00	7.678E+00	1.244E+01	6.349E-01	0.090
		68.90		-1.209E-01	5.425E-01	8.335E-01	7.271E-02	-0.145
		70.82		1.134E-01	3.141E-01	4.687E-01	4.107E-02	0.242
		80.30		5.577E-01	7.444E-01	8.355E-01	7.668E-02	0.668
HG-203		439.56	*	6.949E-03	7.319E-02	1.218E-01	7.124E-03	0.057
		70.83		4.910E-01	1.360E+00	2.028E+00	2.778E-01	0.242
		72.87		2.092E+00	8.781E-01	1.332E+00	1.776E-01	1.571
	+	82.60		2.386E+00	1.378E+00	2.152E+00	3.057E-01	1.109
BI-207		279.20	*	-7.781E-03	4.269E-02	7.139E-02	4.410E-03	-0.109
		72.80		5.604E-01	2.480E-01	3.862E-01	3.406E-02	1.451
	+	74.97		7.019E-01	1.898E-01	2.740E-01	2.438E-02	2.562

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207	+	84.90		4.149E-01	2.355E-01	3.820E-01	3.631E-02	1.086
		569.67		-8.574E-03	3.177E-02	4.944E-02	2.785E-03	-0.173
		1063.62	*	-5.775E-03	5.307E-02	8.649E-02	6.354E-03	-0.067
		1770.23		-1.591E+00	6.737E-01	6.668E-01	4.128E-02	-2.385
		81.07		2.384E-01	3.551E-01	3.963E-01	3.657E-02	0.602
	+	83.78		2.736E-01	1.553E-01	2.415E-01	2.275E-02	1.133
		94.90		6.824E-01	3.093E-01	4.835E-01	4.125E-02	1.411
		122.32		-8.977E-01	1.907E+00	3.078E+00	2.083E-01	-0.292
		144.24		7.031E-01	7.522E-01	1.249E+00	8.650E-02	0.563
		154.21		3.299E-02	4.283E-01	7.010E-01	4.608E-02	0.047
PO-209	+	269.46		2.877E-01	2.925E-01	3.550E-01	2.146E-02	0.810
		323.87	*	-8.475E-01	8.127E-01	1.073E+00	1.776E-01	-0.790
	+	338.28		4.517E+00	2.036E+00	2.315E+00	2.451E-01	1.952
		445.03		-6.881E-02	2.333E+00	3.847E+00	3.962E-01	-0.018
		260.50		-4.074E+00	1.052E+01	1.647E+01	9.456E-01	-0.247
		262.80		-1.724E+00	2.990E+01	4.594E+01	2.642E+00	-0.038
		896.60	*	4.169E+00	7.708E+00	1.345E+01	1.221E+00	0.310
	BI-210	46.50	*	2.126E+00	5.802E+00	9.830E+00	7.654E-01	0.216
	PB-210	46.50	*	2.126E+00	5.802E+00	9.830E+00	7.654E-01	0.216
	PO-210	46.50	*	2.126E+00	5.801E+00	9.830E+00	6.595E-01	0.216
PO-215	PB-211	404.84	*	-5.169E-01	1.120E+00	1.733E+00	1.081E+00	-0.298
		427.08		7.267E-01	2.270E+00	3.758E+00	2.323E+00	0.193
		831.96		2.065E-01	1.195E+00	2.018E+00	1.263E+00	0.102
		81.07		2.384E-01	3.551E-01	3.963E-01	3.657E-02	0.602
	+	83.78		2.736E-01	1.553E-01	2.415E-01	2.275E-02	1.133
		94.90		6.824E-01	3.093E-01	4.835E-01	4.125E-02	1.411
		122.32		-8.977E-01	1.907E+00	3.078E+00	2.083E-01	-0.292
		144.24		7.031E-01	7.522E-01	1.249E+00	8.650E-02	0.563
		154.21		3.299E-02	4.283E-01	7.010E-01	4.608E-02	0.047
	+	269.46		2.877E-01	2.925E-01	3.550E-01	2.146E-02	0.810
RN-219		323.87	*	-8.475E-01	8.127E-01	1.073E+00	1.776E-01	-0.790
	+	338.28		4.517E+00	2.036E+00	2.315E+00	2.451E-01	1.952
		445.03		-6.881E-02	2.333E+00	3.847E+00	3.962E-01	-0.018
		271.23		1.830E-01	3.109E-01	4.497E-01	3.641E-02	0.407
		401.81	*	-1.738E-01	4.569E-01	7.409E-01	1.008E-01	-0.235
	RN-220	549.76	*	2.755E+01	2.860E+01	4.992E+01	2.849E+00	0.552
	RA-223	81.07		2.384E-01	3.551E-01	3.963E-01	3.657E-02	0.602
	+	83.78		2.736E-01	1.553E-01	2.415E-01	2.275E-02	1.133
		94.90		6.824E-01	3.093E-01	4.835E-01	4.125E-02	1.411
		122.32		-8.977E-01	1.907E+00	3.078E+00	2.083E-01	-0.292
AC-227		144.24		7.031E-01	7.522E-01	1.249E+00	8.650E-02	0.563
		154.21		3.299E-02	4.283E-01	7.010E-01	4.608E-02	0.047
	+	269.46		2.877E-01	2.925E-01	3.550E-01	2.146E-02	0.810
		323.87	*	-8.475E-01	8.127E-01	1.073E+00	1.776E-01	-0.790
	+	338.28		4.517E+00	2.036E+00	2.315E+00	2.451E-01	1.952
		445.03		-6.881E-02	2.333E+00	3.847E+00	3.962E-01	-0.018
		79.80		2.789E+00	2.794E+00	3.130E+00	6.797E-01	0.891
		236.00		1.976E+00	3.963E-01	6.037E-01	6.245E-02	3.274
		256.20	*	2.711E-01	4.180E-01	6.887E-01	9.592E-02	0.394



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		286.10		1.415E+00	1.607E+00	2.804E+00	3.248E-01	0.505
	+	299.80		4.738E+00	2.189E+00	2.845E+00	4.641E-01	1.666
		304.40		8.519E-01	2.033E+00	3.064E+00	5.309E-01	0.278
		334.20		3.773E-01	2.961E+00	4.114E+00	7.557E-01	0.092
		79.80		2.789E+00	2.796E+00	3.130E+00	6.883E-01	0.891
	+	94.00		2.136E+01	5.535E+00	4.993E+00	1.088E+00	4.278
		236.00		1.976E+00	3.827E-01	6.037E-01	5.393E-02	3.274
		256.20	*	2.711E-01	4.188E-01	6.887E-01	1.162E-01	0.394
AC-228		286.10		1.415E+00	2.136E+00	2.804E+00	2.809E+00	0.505
	+	299.80		4.738E+00	2.189E+00	2.845E+00	4.641E-01	1.666
		304.40		8.519E-01	2.033E+00	3.064E+00	5.309E-01	0.278
		334.20		3.773E-01	2.961E+00	4.114E+00	7.557E-01	0.092
	+	338.32		1.082E+00	6.475E-01	5.540E-01	2.259E-01	1.953
	+	911.07	*	1.376E+00	3.245E-01	4.633E-01	5.345E-02	2.971
		969.11		1.273E+00	4.659E-01	6.772E-01	1.577E-01	1.880
	+	338.32		1.082E+00	6.475E-01	5.540E-01	2.259E-01	1.953
RA-228	+	911.07	*	1.376E+00	3.245E-01	4.633E-01	5.345E-02	2.971
		969.11		1.273E+00	4.659E-01	6.772E-01	1.577E-01	1.880
	+	85.43		8.034E-01	3.207E-01	3.892E-01	3.716E-02	2.065
TH-229		88.47		1.866E-01	1.154E-01	2.331E-01	2.254E-02	0.800
		100.00		7.954E-02	2.052E-01	3.439E-01	2.696E-02	0.231
		193.63	*	-2.340E-01	5.420E-01	8.605E-01	4.558E-02	-0.272
PA-231		210.97		3.288E-01	9.638E-01	1.385E+00	7.519E-02	0.237
		283.67	*	6.155E-02	1.603E+00	2.706E+00	3.733E-01	0.023
		301.29		1.235E+00	6.679E-01	1.080E+00	1.134E-01	1.144
TH-231		81.07		2.384E-01	3.551E-01	3.963E-01	3.657E-02	0.602
	+	83.78		2.736E-01	1.553E-01	2.415E-01	2.275E-02	1.133
		94.90		6.824E-01	3.093E-01	4.835E-01	4.125E-02	1.411
		122.32		-8.977E-01	1.907E+00	3.078E+00	2.083E-01	-0.292
		144.24		7.031E-01	7.522E-01	1.249E+00	8.650E-02	0.563
		154.21		3.299E-02	4.283E-01	7.010E-01	4.608E-02	0.047
	+	269.46		2.877E-01	2.925E-01	3.550E-01	2.146E-02	0.810
		323.87	*	-8.475E-01	8.127E-01	1.073E+00	1.776E-01	-0.790
U-231	+	338.28		4.517E+00	2.036E+00	2.315E+00	2.451E-01	1.952
		445.03		-6.881E-02	2.333E+00	3.847E+00	3.962E-01	-0.018
	+	84.21		1.184E+01	6.722E+00	1.045E+01	9.880E-01	1.133
	+	92.29		2.121E+01	3.493E+00	5.412E+00	4.844E-01	3.918
		95.87	*	-6.506E-01	1.374E+00	1.953E+00	1.638E-01	-0.333
		108.00		-1.301E-01	2.270E+00	3.740E+00	2.613E-01	-0.035
	+	338.32		1.082E+00	4.782E-01	5.540E-01	3.272E-02	1.953
	+	911.07	*	1.376E+00	3.245E-01	4.633E-01	5.345E-02	2.971
PA-233		969.11		1.273E+00	4.659E-01	6.772E-01	1.577E-01	1.880
	+	75.28		2.048E+01	6.119E+00	8.447E+00	1.310E+00	2.425
	+	86.59		5.457E+00	2.212E+00	3.299E+00	8.963E-01	1.654
	+	300.12		1.321E+00	5.981E-01	7.914E-01	1.066E-01	1.669
		311.98	*	3.619E-02	6.299E-02	1.089E-01	6.811E-03	0.332
		340.50		5.377E-01	7.016E-01	1.063E+00	2.445E-01	0.506
		398.62		-9.420E-01	2.304E+00	3.714E+00	9.601E-01	-0.254
		415.76		1.718E+00	1.821E+00	3.130E+00	6.445E-01	0.549

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	63.00		5.551E+00	2.659E+00	3.680E+00	5.717E-01	1.509
		94.67		7.646E-01	2.426E-01	3.694E-01	4.568E-02	2.070
		98.44		1.547E-01	1.387E-01	1.767E-01	9.843E-02	0.875
		99.86		2.777E-01	5.227E-01	8.799E-01	6.913E-02	0.316
		111.00		3.409E-02	2.031E-01	3.369E-01	3.644E-02	0.101
		131.20		1.217E-02	1.291E-01	1.866E-01	1.054E-02	0.065
		152.70		4.150E-01	3.606E-01	5.956E-01	9.306E-02	0.697
	+	186.00		8.465E+00	3.328E+00	2.958E+00	9.007E-01	2.862
		226.40		1.898E-01	4.304E-01	7.060E-01	8.071E-02	0.269
		227.20		1.314E-01	4.588E-01	7.480E-01	4.148E-02	0.176
		248.90		5.914E-02	9.036E-01	1.453E+00	3.117E-01	0.041
	+	293.70		7.145E+00	1.562E+00	1.842E+00	2.966E-01	3.879
		369.80		4.908E-01	8.943E-01	1.528E+00	3.184E-01	0.321
		568.70		1.009E-01	1.036E+00	1.663E+00	9.374E-02	0.061
		569.50		-7.245E-02	2.822E-01	4.396E-01	2.477E-02	-0.165
		574.00		-4.803E-01	1.537E+00	2.287E+00	1.284E-01	-0.210
		699.00		-6.705E-02	7.831E-01	1.255E+00	2.250E-01	-0.053
		706.10		5.685E-01	1.142E+00	1.874E+00	8.269E-01	0.303
		733.00		3.745E-02	4.597E-01	6.440E-01	1.376E-01	0.058
		742.81		4.354E-01	1.509E+00	2.444E+00	1.637E+00	0.178
		796.30		5.090E-01	9.320E-01	1.614E+00	4.299E-01	0.315
		805.60		8.643E-01	1.008E+00	1.755E+00	5.322E-01	0.492
		819.60		5.812E-01	1.184E+00	2.039E+00	7.711E-01	0.285
		826.30		-1.953E-01	8.059E-01	1.310E+00	5.840E-01	-0.149
		831.60		-1.359E-01	6.185E-01	1.012E+00	2.998E-01	-0.134
		876.40		-1.855E-01	9.144E-01	1.463E+00	1.505E+00	-0.127
		880.51		-1.008E-01	3.097E-01	5.014E-01	4.396E-02	-0.201
		883.24		1.452E-01	3.392E-01	5.615E-01	3.776E-01	0.259
		899.00		4.013E-01	8.752E-01	1.488E+00	6.521E-01	0.270
		925.00		7.834E-02	1.211E+00	2.009E+00	1.784E-01	0.039
		926.50		9.382E-03	1.865E-01	3.091E-01	7.840E-02	0.030
		946.00	*	-1.685E-01	3.248E-01	5.104E-01	9.595E-02	-0.330
		949.00		2.434E-01	4.753E-01	8.246E-01	7.147E-02	0.295
		980.50		4.177E-01	7.545E-01	1.315E+00	1.098E-01	0.318
		1394.10		1.179E+00	1.390E+00	2.156E+00	1.400E+00	0.547
PA-234M		766.42		1.847E+01	1.554E+01	2.216E+01	1.118E+01	0.833
		1001.03	*	4.902E+00	5.282E+00	9.376E+00	8.946E-01	0.523
U-235	+	89.95		1.873E+00	1.284E+00	2.137E+00	6.641E-01	0.877
	+	93.35		6.646E+00	2.083E+00	1.656E+00	4.648E-01	4.014
		105.00		6.551E-01	1.190E+00	1.960E+00	5.778E-01	0.334
		143.76	*	2.413E-01	2.382E-01	3.924E-01	6.346E-02	0.615
		163.35		-5.943E-02	5.122E-01	8.303E-01	1.476E-01	-0.072
	+	185.71		3.135E-01	7.964E-02	1.094E-01	5.729E-03	2.865
NP-236		205.31		-1.432E-01	6.296E-01	8.750E-01	1.562E-01	-0.164
		94.67		5.854E-01	1.769E-01	2.807E-01	2.405E-02	2.086
		98.44		1.170E-01	8.268E-02	1.336E-01	1.074E-02	0.876
		111.00		2.578E-02	1.536E-01	2.549E-01	1.713E-02	0.101
NP-239		160.31	*	-3.153E-02	8.450E-02	1.356E-01	7.013E-03	-0.233
		99.55		1.559E-01	1.751E-01	2.979E-01	2.352E-02	0.523

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.00	*	-6.593E-02	2.040E-01	3.318E-01	2.071E-02	-0.199
	+	209.75		1.791E+00	9.352E-01	1.452E+00	7.870E-02	1.234
		228.18		-7.695E-02	2.441E-01	3.867E-01	2.147E-02	-0.199
		277.60		1.019E-02	2.034E-01	3.252E-01	1.891E-02	0.031
		334.30		2.589E-01	1.680E+00	2.339E+00	1.382E-01	0.111
AM-241		59.54	*	2.272E-01	2.179E-01	3.332E-01	3.100E-02	0.682
CM-243		99.55		1.605E-01	1.802E-01	3.066E-01	2.420E-02	0.523
		103.76	*	1.922E-02	1.069E-01	1.761E-01	1.305E-02	0.109
		117.00		-6.783E-02	2.099E-01	3.413E-01	2.130E-02	-0.199
	+	209.75		1.766E+00	9.219E-01	1.431E+00	7.758E-02	1.234
		228.18		-7.775E-02	2.467E-01	3.907E-01	2.169E-02	-0.199
		277.60		1.027E-02	2.051E-01	3.279E-01	1.906E-02	0.031
AM-246		798.80		-2.591E-01	1.448E-01	2.019E-01	1.470E-02	-1.283
		1036.00		-3.082E-01	3.112E-01	4.584E-01	3.534E-02	-0.672
		1062.04		2.335E-01	2.089E-01	3.848E-01	2.835E-02	0.607
		1078.86	*	5.404E-02	1.523E-01	2.593E-01	1.850E-02	0.208
CM-247		278.00		2.406E-01	7.887E-01	1.348E+00	7.839E-02	0.178
		287.40		2.703E-01	1.336E+00	2.151E+00	1.258E-01	0.126
		402.60	*	8.391E-03	4.072E-02	6.839E-02	3.964E-03	0.123
CF-249		252.85		-2.863E-01	9.667E-01	1.524E+00	8.691E-02	-0.188
		333.44		1.403E-01	2.526E-01	3.089E-01	1.825E-02	0.454
		387.95	*	1.205E-03	4.115E-02	6.855E-02	3.966E-03	0.018
CF-251		176.60	*	1.989E-01	1.351E-01	2.321E-01	1.199E-02	0.857
		227.00		1.471E-01	4.071E-01	6.660E-01	3.692E-02	0.221
		285.00		6.385E-01	1.839E+00	3.149E+00	1.839E-01	0.203

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691012      *
* Acquisition date   : 9-FEB-2010 15:33:57 Detector SN#      :              *
* Detector ID        : GAM23                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.75             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691012              Analyst initials: MJH1         *
* Batch Number       : 947037                  Sample Quantity : 1.3764E+02 GRAM   *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00 MS Isotope      :                *
* MSD DPM             : 0.000                      MSD Isotope :                *
* LCS DPM             : 0.000                      LCS Isotope  :                *
* LCSD DPM            : 0.000                      LCSD Isotope :                *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	1.966E+01	2.120E+00	6.690E-01	0.000E+00
CD-109	2.836E+00	8.778E-01	1.434E+00	0.000E+00
SN-126	2.787E-01	8.628E-02	1.418E-01	0.000E+00
CS-135	2.445E-01	2.439E-01	2.666E-01	0.000E+00
TL-208	4.514E-01	8.727E-02	5.955E-02	0.000E+00
BI-211	4.249E+00	5.502E-01	3.398E-01	0.000E+00
BI-212	1.374E+00	4.994E-01	5.042E-01	0.000E+00
PB-212	1.472E+00	1.499E-01	1.020E-01	0.000E+00
PO-212	1.472E+00	1.499E-01	1.020E-01	0.000E+00
BI-214	1.126E+00	1.786E-01	1.190E-01	0.000E+00
PB-214	1.478E+00	2.058E-01	1.184E-01	0.000E+00
PO-214	1.478E+00	2.058E-01	1.184E-01	0.000E+00
PO-216	1.472E+00	1.499E-01	1.020E-01	0.000E+00
PO-218	1.478E+00	2.058E-01	1.184E-01	0.000E+00
RA-224	4.333E+00	1.130E+00	1.160E+00	0.000E+00
RA-226	1.126E+00	1.786E-01	1.190E-01	0.000E+00
TH-228	1.495E+00	1.522E-01	1.035E-01	0.000E+00
TH-230	1.126E+00	1.786E-01	1.190E-01	0.000E+00
TH-234	4.762E+00	2.275E+00	2.889E+00	0.000E+00
U-234	1.126E+00	1.786E-01	1.190E-01	0.000E+00
NP-237	8.185E-01	3.026E-01	4.156E-01	0.000E+00
U-238	4.762E+00	2.275E+00	2.889E+00	0.000E+00
AM-243	3.910E-01	1.036E-01	1.115E-01	0.000E+00
ANH-511	8.224E-02	6.318E-02	5.209E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	1.762E-01	3.391E-01	6.039E-01	0.000E+00 NOT IDENT.
NA-22	-3.063E-03	4.730E-02	7.858E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.363E+05	0.000E+00	0.000E+00 SHORT HLIF

AL-26	-6.741E-03	2.573E-02	4.067E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.488E-02	9.529E-02	0.000E+00	FAIL ABUN
SC-46	-1.325E-02	4.364E-02	7.323E-02	0.000E+00	FAIL ABUN
V-48	-2.699E-03	6.796E-02	1.157E-01	0.000E+00	NOT IDENT.
CR-51	1.855E-01	3.788E-01	6.862E-01	0.000E+00	NOT IDENT.
MN-52	4.459E-02	2.138E-01	3.662E-01	0.000E+00	NOT IDENT.
MN-54	-1.345E-03	3.691E-02	6.368E-02	0.000E+00	NOT IDENT.
CO-56	-1.819E-03	3.788E-02	6.520E-02	0.000E+00	NOT IDENT.
CO-57	-1.932E-02	2.728E-02	4.685E-02	0.000E+00	NOT IDENT.
CO-58	-4.649E-03	3.821E-02	6.556E-02	0.000E+00	NOT IDENT.
FE-59	-3.277E-02	8.618E-02	1.399E-01	0.000E+00	NOT IDENT.
CO-60	-1.116E-02	3.656E-02	5.823E-02	0.000E+00	NOT IDENT.
ZN-65	1.210E-01	1.030E-01	1.723E-01	0.000E+00	NOT IDENT.
GE-68	-1.295E+00	1.327E+00	2.026E+00	0.000E+00	NOT IDENT.
AS-73	-3.232E-01	1.162E+00	2.107E+00	0.000E+00	NOT IDENT.
AS-74	-1.091E-02	9.383E-02	1.577E-01	0.000E+00	NOT IDENT.
SE-75	-1.566E-03	5.267E-02	7.747E-02	0.000E+00	NOT IDENT.
BR-77	-4.963E+00	1.014E+01	1.669E+01	0.000E+00	FAIL ABUN
SR-82	-4.101E-01	3.622E-01	5.645E-01	0.000E+00	NOT IDENT.
RB-83	-3.251E-02	6.644E-02	1.093E-01	0.000E+00	NOT IDENT.
RB-84	7.110E-03	7.678E-02	1.333E-01	0.000E+00	NOT IDENT.
KR-85	6.812E+00	7.831E+00	1.260E+01	0.000E+00	NOT IDENT.
SR-85	3.494E-02	4.017E-02	6.464E-02	0.000E+00	NOT IDENT.
RB-86	-4.025E-01	8.169E-01	1.317E+00	0.000E+00	NOT IDENT.
Y-88	1.142E-02	3.439E-02	6.150E-02	0.000E+00	NOT IDENT.
ZR-88	1.129E-02	3.271E-02	5.821E-02	0.000E+00	NOT IDENT.
Y-91	-1.896E+01	1.864E+01	2.799E+01	0.000E+00	NOT IDENT.
NB-94	-8.023E-03	3.542E-02	5.823E-02	0.000E+00	NOT IDENT.
NB-95	6.439E-02	4.582E-02	8.375E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.674E-01	2.795E-01	0.000E+00	NOT IDENT.
ZR-95	-2.823E-02	7.515E-02	1.208E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.531E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.507E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.094E+01	1.234E+01	2.203E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.658E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.479E-03	3.448E-02	6.003E-02	0.000E+00	NOT IDENT.
RH-102	2.822E-02	3.083E-02	5.620E-02	0.000E+00	NOT IDENT.
RU-103	-5.691E-03	3.870E-02	6.575E-02	0.000E+00	NOT IDENT.
RH-106	-1.105E-01	3.292E-01	5.408E-01	0.000E+00	NOT IDENT.
RU-106	-1.105E-01	3.290E-01	5.408E-01	0.000E+00	NOT IDENT.
AG-108M	-6.870E-03	3.265E-02	5.584E-02	0.000E+00	NOT IDENT.
AG-110M	-1.042E-01	5.225E-02	7.667E-02	0.000E+00	NOT IDENT.
IN-111	-1.794E-01	1.310E+00	1.923E+00	0.000E+00	NOT IDENT.
IN-113M	3.077E-02	4.683E-02	8.473E-02	0.000E+00	NOT IDENT.
SN-113	3.077E-02	4.683E-02	8.473E-02	0.000E+00	NOT IDENT.
IN-114M	-5.985E-02	2.129E-01	3.156E-01	0.000E+00	NOT IDENT.
CD-115	-4.236E+00	1.072E+01	1.777E+01	0.000E+00	NOT IDENT.
SN-117M	1.690E-02	5.674E-02	1.000E-01	0.000E+00	NOT IDENT.
SB-122	-5.595E-01	2.183E+00	3.646E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.209E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	7.023E-03	2.947E-02	5.182E-02	0.000E+00	NOT IDENT.
I-124	-3.038E-01	7.880E-01	1.103E+00	0.000E+00	NOT IDENT.
SB-124	-1.131E-02	6.330E-02	1.031E-01	0.000E+00	FAIL ABUN
SB-125	4.054E-03	9.949E-02	1.731E-01	0.000E+00	FAIL ABUN
TE-125M	-3.260E+00	1.007E+01	1.767E+01	0.000E+00	NOT IDENT.
I-126	-1.004E+00	2.569E-01	3.027E-01	0.000E+00	NOT IDENT.
SB-126	-8.704E-03	1.741E-01	2.494E-01	0.000E+00	NOT IDENT.
SB-127	-3.353E-01	1.384E+00	2.272E+00	0.000E+00	NOT IDENT.
XE-127	-2.344E-03	5.171E-02	8.557E-02	0.000E+00	NOT IDENT.
I-131	6.032E-02	1.164E-01	2.102E-01	0.000E+00	NOT IDENT.
TE-132	-2.355E-01	7.371E-01	1.238E+00	0.000E+00	NOT IDENT.
BA-133	4.376E-02	4.614E-02	7.569E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.205E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.003E-02	4.703E-02	8.919E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.792E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.349E-02	1.058E-01	1.888E-01	0.000E+00	FAIL ABUN
BA-137M	0.000E+00	5.488E-02	1.124E-01	0.000E+00	NOT IDENT.
CS-137	0.000E+00	5.803E-02	1.188E-01	0.000E+00	NOT IDENT.
CE-139	6.077E-03	3.214E-02	5.571E-02	0.000E+00	NOT IDENT.
BA-140	-1.762E-01	2.750E-01	4.372E-01	0.000E+00	NOT IDENT.
LA-140	-1.387E-01	8.359E-02	9.934E-02	0.000E+00	FAIL ABUN
CE-141	1.040E-02	6.599E-02	1.162E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.070E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	7.182E-02	2.479E-01	3.874E-01	0.000E+00	NOT IDENT.
PM-144	8.965E-04	3.724E-02	6.256E-02	0.000E+00	NOT IDENT.
PR-144	6.075E-02	2.524E+00	4.240E+00	0.000E+00	NOT IDENT.
PM-146	2.153E-02	4.543E-02	8.088E-02	0.000E+00	NOT IDENT.
ND-147	-5.970E-01	5.677E-01	8.800E-01	0.000E+00	FAIL ABUN

PM-149	5.591E+01	9.567E+01	1.743E+02	0.000E+00	NOT IDENT.
EU-152	-1.075E-02	1.367E-01	1.634E-01	0.000E+00	NOT IDENT.
GD-153	1.291E-01	9.599E-02	1.592E-01	0.000E+00	FAIL ABUN
EU-154	-1.476E-02	1.315E-01	2.173E-01	0.000E+00	NOT IDENT.
EU-155	8.137E-02	1.152E-01	2.097E-01	0.000E+00	FAIL ABUN
TB-160	-6.327E-02	1.529E-01	2.541E-01	0.000E+00	FAIL ABUN
HO-166M	-1.176E-02	6.796E-02	1.122E-01	0.000E+00	FAIL ABUN
TM-171	-2.940E+00	3.750E+01	5.972E+01	0.000E+00	NOT IDENT.
LU-176	9.523E-03	2.536E-02	4.346E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.296E+00	2.139E+00	0.000E+00	FAIL ABUN
LU-177M	-2.035E-01	1.984E-01	3.246E-01	0.000E+00	FAIL ABUN
HF-181	-3.813E-02	4.501E-02	7.286E-02	0.000E+00	NOT IDENT.
W-181	5.290E-01	5.061E-01	8.422E-01	0.000E+00	NOT IDENT.
TA-182	-1.799E-02	1.877E-01	3.120E-01	0.000E+00	FAIL ABUN
RE-183	-2.195E-02	1.153E-01	1.992E-01	0.000E+00	FAIL ABUN
RE-184	-7.631E-02	2.525E-01	4.217E-01	0.000E+00	NOT IDENT.
OS-185	-9.844E-03	4.075E-02	6.718E-02	0.000E+00	NOT IDENT.
RE-188	-3.508E-02	1.806E-01	3.127E-01	0.000E+00	NOT IDENT.
W-188	-4.332E+00	8.382E+00	1.251E+01	0.000E+00	FAIL ABUN
IR-192	-3.083E-02	3.432E-02	5.772E-02	0.000E+00	FAIL ABUN
AU-195	2.923E-01	2.545E-01	4.556E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.848E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.122E+00	7.525E+00	1.301E+01	0.000E+00	NOT IDENT.
TL-202	6.949E-03	7.173E-02	1.251E-01	0.000E+00	NOT IDENT.
HG-203	-7.781E-03	4.184E-02	7.397E-02	0.000E+00	FAIL ABUN
BI-207	-5.775E-03	5.201E-02	8.731E-02	0.000E+00	FAIL ABUN
TL-207	-8.475E-01	7.964E-01	1.108E+00	0.000E+00	FAIL ABUN
PO-209	4.169E+00	7.554E+00	1.362E+01	0.000E+00	NOT IDENT.
BI-210	2.126E+00	5.686E+00	1.053E+01	0.000E+00	NOT IDENT.
PB-210	2.126E+00	5.686E+00	1.053E+01	0.000E+00	NOT IDENT.
PO-210	2.126E+00	5.685E+00	1.053E+01	0.000E+00	NOT IDENT.
PB-211	-5.169E-01	1.098E+00	1.783E+00	0.000E+00	NOT IDENT.
PO-215	-8.475E-01	7.964E-01	1.108E+00	0.000E+00	FAIL ABUN
RN-219	-1.738E-01	4.477E-01	7.623E-01	0.000E+00	NOT IDENT.
RN-220	2.755E+01	2.803E+01	5.105E+01	0.000E+00	NOT IDENT.
RA-223	-8.475E-01	7.964E-01	1.108E+00	0.000E+00	FAIL ABUN
AC-227	2.711E-01	4.097E-01	7.148E-01	0.000E+00	FAIL ABUN
TH-227	2.711E-01	4.104E-01	7.148E-01	0.000E+00	FAIL ABUN
AC-228	0.000E+00	3.180E-01	4.691E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	3.180E-01	4.691E-01	0.000E+00	FAIL ABUN
TH-229	-2.340E-01	5.312E-01	8.977E-01	0.000E+00	FAIL ABUN
PA-231	6.155E-02	1.571E+00	2.803E+00	0.000E+00	NOT IDENT.
TH-231	-8.475E-01	7.964E-01	1.108E+00	0.000E+00	FAIL ABUN
U-231	-6.506E-01	1.347E+00	2.064E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	3.180E-01	4.691E-01	0.000E+00	FAIL ABUN
PA-233	3.619E-02	6.173E-02	1.126E-01	0.000E+00	FAIL ABUN
PA-234	-1.685E-01	3.183E-01	5.164E-01	0.000E+00	FAIL ABUN
PA-234M	4.902E+00	5.177E+00	9.476E+00	0.000E+00	NOT IDENT.
U-235	2.413E-01	2.335E-01	4.116E-01	0.000E+00	FAIL ABUN
NP-236	-3.153E-02	8.281E-02	1.420E-01	0.000E+00	NOT IDENT.
NP-239	-6.593E-02	2.000E-01	3.494E-01	0.000E+00	FAIL ABUN
AM-241	2.272E-01	2.135E-01	3.552E-01	0.000E+00	NOT IDENT.
CM-243	1.922E-02	1.048E-01	1.859E-01	0.000E+00	FAIL ABUN
AM-246	5.404E-02	1.492E-01	2.617E-01	0.000E+00	NOT IDENT.
CM-247	8.391E-03	3.990E-02	7.037E-02	0.000E+00	NOT IDENT.
CF-249	1.205E-03	4.032E-02	7.058E-02	0.000E+00	NOT IDENT.
CF-251	1.989E-01	1.324E-01	2.425E-01	0.000E+00	NOT IDENT.

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691012.CNF;1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 15:33:57.
Sample ID        : G245691012 Sample quantity : 1.37640E+02 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.75 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 947037 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	767	10.67*	9.974E-01	1.966E+01	1.966E+01	11.00
CD-109	88.03	197	3.72*	5.213E+00	2.772E+00	2.836E+00	31.59
SN-126	64.28	171	9.60	2.572E+00	1.885E+00	1.885E+00	47.79
	86.94	197	8.90	5.213E+00	1.159E+00	1.159E+00	51.32
	87.57	197	37.00*	5.213E+00	2.787E-01	2.787E-01	31.59
CS-135	268.24	61	16.00*	4.231E+00	2.445E-01	2.445E-01	101.78
TL-208	277.35	-----	6.80	4.140E+00	-----	Line Not Found	-----
	510.84	77	21.60	2.546E+00	3.807E-01	3.807E-01	78.83
	583.14	317	84.20*	2.278E+00	4.514E-01	4.514E-01	19.73
	860.37	52	12.46	1.608E+00	7.045E-01	7.045E-01	77.52
BI-211	72.87	-----	1.27	3.829E+00	-----	Line Not Found	-----
	351.07	694	12.94*	3.441E+00	4.249E+00	4.249E+00	13.21
BI-212	727.18	112	11.80*	1.877E+00	1.374E+00	1.374E+00	37.08
	785.46	48	1.97	1.750E+00	3.819E+00	3.819E+00	62.86
	1620.62	-----	2.75	9.223E-01	-----	Line Not Found	-----
PB-212	74.81	383	10.70	4.047E+00	2.412E+00	2.412E+00	28.61
	77.11	567	18.00	4.291E+00	2.003E+00	2.003E+00	17.91
	87.30	197	8.00	5.213E+00	1.289E+00	1.289E+00	33.13
	238.63	1117	44.60*	4.638E+00	1.472E+00	1.472E+00	10.39
	300.09	125	3.41	3.903E+00	2.557E+00	2.557E+00	44.01
PO-212	74.81	383	10.70	4.047E+00	2.412E+00	2.412E+00	28.61
	77.11	567	18.00	4.291E+00	2.003E+00	2.003E+00	17.91
	87.30	197	8.00	5.213E+00	1.289E+00	1.289E+00	33.13
	115.19	-----	0.60	6.293E+00	-----	Line Not Found	-----
	238.63	1117	44.60*	4.638E+00	1.472E+00	1.472E+00	10.39
	300.09	125	3.41	3.903E+00	2.557E+00	2.557E+00	44.01
BI-214	609.31	419	46.30*	2.194E+00	1.126E+00	1.126E+00	16.18
	1120.29	79	15.10	1.258E+00	1.136E+00	1.136E+00	59.99
	1764.49	60	15.80	8.743E-01	1.187E+00	1.187E+00	42.83
PB-214	74.81	383	6.21	4.047E+00	4.156E+00	4.156E+00	28.04
	77.11	567	10.50	4.291E+00	3.433E+00	3.433E+00	19.47
	87.30	197	4.67	5.213E+00	2.208E+00	2.208E+00	32.51

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	288	7.49	4.595E+00	2.285E+00	2.285E+00	27.19
	295.21	414	19.20	3.950E+00	1.489E+00	1.489E+00	17.08
	351.92	694	37.20*	3.441E+00	1.478E+00	1.478E+00	14.21
	74.81	383	6.21	4.047E+00	4.156E+00	4.156E+00	28.04
	77.11	567	10.50	4.291E+00	3.433E+00	3.433E+00	19.47
PO-216	87.30	197	4.67	5.213E+00	2.208E+00	2.208E+00	32.51
	241.98	288	7.49	4.595E+00	2.285E+00	2.285E+00	27.19
	295.21	414	19.20	3.950E+00	1.489E+00	1.489E+00	17.08
	351.92	694	37.20*	3.441E+00	1.478E+00	1.478E+00	14.21
	74.81	383	10.70	4.047E+00	2.412E+00	2.412E+00	28.61
PO-218	77.11	567	18.00	4.291E+00	2.003E+00	2.003E+00	17.91
	87.30	197	8.00	5.213E+00	1.289E+00	1.289E+00	33.13
	238.63	1117	44.60*	4.638E+00	1.472E+00	1.472E+00	10.39
	300.09	125	3.41	3.903E+00	2.557E+00	2.557E+00	44.01
	74.81	383	6.21	4.047E+00	4.156E+00	4.156E+00	28.04
RA-224	77.11	567	10.50	4.291E+00	3.433E+00	3.433E+00	19.47
	87.30	197	4.67	5.213E+00	2.208E+00	2.208E+00	32.51
	241.98	288	7.49	4.595E+00	2.285E+00	2.285E+00	27.19
	295.21	414	19.20	3.950E+00	1.489E+00	1.489E+00	17.08
	351.92	694	37.20*	3.441E+00	1.478E+00	1.478E+00	14.21
RA-226	240.98	288	3.95*	4.595E+00	4.333E+00	4.333E+00	26.60
	609.31	419	46.30*	2.194E+00	1.126E+00	1.126E+00	16.18
	1120.29	79	15.10	1.258E+00	1.136E+00	1.136E+00	59.99
TH-228	1764.49	60	15.80	8.743E-01	1.187E+00	1.187E+00	42.83
	74.81	383	10.70	4.047E+00	2.412E+00	2.449E+00	27.06
	77.11	567	18.00	4.291E+00	2.003E+00	2.033E+00	17.91
	87.30	197	8.00	5.213E+00	1.289E+00	1.309E+00	31.59
	238.63	1117	44.60*	4.638E+00	1.472E+00	1.495E+00	10.39
TH-230	300.09	125	3.41	3.903E+00	2.557E+00	2.596E+00	73.09
	609.31	419	46.30*	2.194E+00	1.126E+00	1.126E+00	16.18
	1120.29	79	15.10	1.258E+00	1.136E+00	1.136E+00	59.99
	1764.49	60	15.80	8.743E-01	1.187E+00	1.187E+00	42.83
	63.29	171	3.80*	2.572E+00	4.762E+00	4.762E+00	48.76
TH-234	92.38	612	5.41	5.578E+00	5.528E+00	5.528E+00	22.89
	609.31	419	46.30*	2.194E+00	1.126E+00	1.126E+00	16.18
U-234	1120.29	79	15.10	1.258E+00	1.136E+00	1.136E+00	59.99
	1764.49	60	15.80	8.743E-01	1.187E+00	1.187E+00	42.83
	86.50	197	12.60*	5.213E+00	8.185E-01	8.185E-01	37.73
U-238	95.87	-----	2.60	5.757E+00	-----	Line Not Found	-----
	63.29	171	3.80*	2.572E+00	4.762E+00	4.762E+00	48.76
	92.38	612	5.41	5.578E+00	5.528E+00	5.528E+00	16.47
AM-243	74.67	383	66.00*	4.047E+00	3.910E-01	3.910E-01	27.04
	86.72	197	0.34	5.213E+00	3.069E+01	3.069E+01	31.59
	117.66	-----	0.55	6.314E+00	-----	Line Not Found	-----
ANH-511	142.18	-----	0.13	6.209E+00	-----	Line Not Found	-----
	511.00	77	100.00*	2.546E+00	8.224E-02	8.224E-02	78.39

Flag: "\*" = Keyline



Total number of lines in spectrum 30  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 30 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.966E+01	1.966E+01	0.216E+01	11.00	
CD-109	464.00D	1.02	2.772E+00	2.836E+00	0.896E+00	31.59	
SN-126	1.00E+05Y	1.00	2.787E-01	2.787E-01	0.880E-01	31.59	
CS-135	2.30E+06Y	1.00	2.445E-01	2.445E-01	2.489E-01	101.78	
TL-208	1.41E+10Y	1.00	4.514E-01	4.514E-01	0.890E-01	19.73	
BI-211	7.04E+08Y	1.00	4.249E+00	4.249E+00	0.561E+00	13.21	
BI-212	1.41E+10Y	1.00	1.374E+00	1.374E+00	0.510E+00	37.08	
PB-212	1.41E+10Y	1.00	1.472E+00	1.472E+00	0.153E+00	10.39	
PO-212	1.41E+10Y	1.00	1.472E+00	1.472E+00	0.153E+00	10.39	
BI-214	1600.00Y	1.00	1.126E+00	1.126E+00	0.182E+00	16.18	
PB-214	1600.00Y	1.00	1.478E+00	1.478E+00	0.210E+00	14.21	
PO-214	1600.00Y	1.00	1.478E+00	1.478E+00	0.210E+00	14.21	
PO-216	1.41E+10Y	1.00	1.472E+00	1.472E+00	0.153E+00	10.39	
PO-218	1600.00Y	1.00	1.478E+00	1.478E+00	0.210E+00	14.21	
RA-224	1.41E+10Y	1.00	4.333E+00	4.333E+00	1.153E+00	26.60	
RA-226	1600.00Y	1.00	1.126E+00	1.126E+00	0.182E+00	16.18	
TH-228	1.91Y	1.02	1.472E+00	1.495E+00	0.155E+00	10.39	
TH-230	4.47E+09Y	1.00	1.126E+00	1.126E+00	0.182E+00	16.18	
TH-234	4.47E+09Y	1.00	4.762E+00	4.762E+00	2.322E+00	48.76	
U-234	4.47E+09Y	1.00	1.126E+00	1.126E+00	0.182E+00	16.18	
NP-237	2.14E+06Y	1.00	8.185E-01	8.185E-01	3.088E-01	37.73	
U-238	4.47E+09Y	1.00	4.762E+00	4.762E+00	2.322E+00	48.76	
AM-243	7380.00Y	1.00	3.910E-01	3.910E-01	1.057E-01	27.04	
ANH-511	1.00E+09Y	1.00	8.224E-02	8.224E-02	6.447E-02	78.39	
Total Activity :			5.901E+01	5.910E+01			

Grand Total Activity : 5.901E+01 5.910E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G245691012

Page : 4  
Acquisition date : 9-FEB-2010 15:33:57

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.80	123	386	1.28	167.60	165	7	1.70E-02	56.0	4.95E+00	T
3	89.83	100	334	1.01	179.66	171	20	1.39E-02	61.1	5.41E+00	T
0	128.78	67	275	0.85	257.56	255	7	9.29E-03	85.6	6.32E+00	T
0	185.58	341	360	1.42	371.16	366	11	4.74E-02	24.9	5.49E+00	T
0	208.92	108	227	0.81	417.85	414	8	1.50E-02	51.9	5.09E+00	T
0	327.63	73	117	1.57	655.26	652	8	1.01E-02	56.3	3.64E+00	T
0	338.00	161	230	1.42	676.01	670	14	2.23E-02	43.8	3.55E+00	T
0	462.73	76	89	1.53	925.46	921	10	1.06E-02	52.9	2.76E+00	T
0	910.37	213	43	2.12	1820.75	1814	18	2.96E-02	20.6	1.53E+00	T
0	967.44	141	81	1.80	1934.88	1925	18	1.96E-02	34.3	1.44E+00	T

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691012.CNF;1
* Acquisition date   : 9-FEB-2010 15:33:57.   Detector SN#      :
* Detector ID        : GAM23                  Sensitivity         : 5.00000
* Geometry           : CAN                    Energy tolerance   : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:01.75          Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00   Nuclide Library    : SOLID
* Sample ID          : G245691012             Analyst initials   : MJH1
* Batch Number       : 947037                 Sample Quantity    : 1.37640E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00.62MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                   LCS Isotope        :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.966E+01	2.163E+00	6.669E-01	4.989E-02	29.484
CD-109	2.836E+00	8.958E-01	1.354E+00	1.322E-01	2.094
SN-126	2.787E-01	8.804E-02	1.339E-01	1.303E-02	2.081
CS-135	2.445E-01	2.489E-01	2.571E-01	1.964E-02	0.951
TL-208	4.514E-01	8.905E-02	5.829E-02	3.785E-03	7.743
BI-211	4.249E+00	5.614E-01	3.294E-01	2.146E-02	12.900
BI-212	1.374E+00	5.096E-01	4.957E-01	3.935E-02	2.772
PB-212	1.472E+00	1.530E-01	9.813E-02	7.055E-03	15.005
PO-212	1.472E+00	1.530E-01	9.813E-02	7.055E-03	15.005
BI-214	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661
PB-214	1.478E+00	2.100E-01	1.148E-01	9.584E-03	12.873
PO-214	1.478E+00	2.100E-01	1.148E-01	9.584E-03	12.873
PO-216	1.472E+00	1.530E-01	9.813E-02	7.055E-03	15.005
PO-218	1.478E+00	2.100E-01	1.148E-01	9.584E-03	12.873
RA-224	4.333E+00	1.153E+00	1.117E+00	6.293E-02	3.880
RA-226	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661
TH-228	1.495E+00	1.553E-01	9.962E-02	7.162E-03	15.005
TH-230	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	4.762E+00	2.322E+00	2.713E+00	4.888E-01	1.756
U-234	1.126E+00	1.822E-01	1.166E-01	8.764E-03	9.661
NP-237	8.185E-01	3.088E-01	3.925E-01	8.939E-02	2.085
U-238	4.762E+00	2.322E+00	2.713E+00	4.888E-01	1.756
AM-243	3.910E-01	1.057E-01	1.050E-01	9.331E-03	3.724
ANH-511	8.224E-02	6.447E-02	5.086E-02	2.954E-03	1.617

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.762E-01		3.460E-01	5.889E-01	4.002E-02	0.299
NA-22	-3.063E-03		4.827E-02	7.812E-02	5.247E-03	-0.039
NA-24	1.806E-01		3.757E-01	Half-Life	too short	
AL-26	-6.741E-03		2.626E-02	4.072E-02	2.447E-03	-0.166
TI-44	3.696E-01	+	6.620E-02	8.983E-02	8.143E-03	4.114
SC-46	-1.325E-02		4.453E-02	7.228E-02	6.458E-03	-0.183
V-48	-2.699E-03		6.935E-02	1.144E-01	9.517E-03	-0.024
CR-51	1.855E-01		3.866E-01	6.640E-01	4.354E-02	0.279
MN-52	4.459E-02		2.181E-01	3.649E-01	2.640E-02	0.122
MN-54	-1.345E-03		3.766E-02	6.278E-02	4.971E-03	-0.021
CO-56	-1.819E-03		3.865E-02	6.430E-02	5.231E-03	-0.028
CO-57	-1.932E-02		2.783E-02	4.453E-02	2.625E-03	-0.434
CO-58	-4.649E-03		3.898E-02	6.459E-02	4.853E-03	-0.072
FE-59	-3.277E-02		8.794E-02	1.387E-01	1.068E-02	-0.236
CO-60	-1.116E-02		3.730E-02	5.795E-02	4.254E-03	-0.193
ZN-65	1.210E-01		1.051E-01	1.709E-01	1.129E-02	0.708
GE-68	-1.295E+00		1.354E+00	2.007E+00	1.437E-01	-0.645
AS-73	-3.232E-01		1.186E+00	1.973E+00	1.742E-01	-0.164
AS-74	-1.091E-02		9.575E-02	1.545E-01	8.518E-03	-0.071
SE-75	-1.566E-03		5.374E-02	7.469E-02	4.348E-03	-0.021
BR-77	-4.963E+00		1.035E+01	1.630E+01	9.434E-01	-0.305
SR-82	-4.101E-01		3.696E-01	5.558E-01	3.834E-02	-0.738
RB-83	-3.251E-02		6.779E-02	1.068E-01	6.181E-03	-0.305
RB-84	7.110E-03		7.834E-02	1.316E-01	1.156E-02	0.054
KR-85	6.812E+00		7.991E+00	1.231E+01	7.142E-01	0.553
SR-85	3.494E-02		4.099E-02	6.312E-02	3.663E-03	0.553
RB-86	-4.025E-01		8.336E-01	1.305E+00	9.350E-02	-0.309
Y-88	1.142E-02		3.509E-02	6.160E-02	3.627E-03	0.185
ZR-88	1.129E-02		3.338E-02	5.655E-02	3.265E-03	0.200
Y-91	-1.896E+01		1.902E+01	2.780E+01	1.658E+00	-0.682
NB-94	-8.023E-03		3.615E-02	5.721E-02	3.269E-03	-0.140
NB-95	6.439E-02		4.676E-02	8.243E-02	5.539E-03	0.781
NB-95M	4.549E-01		1.708E-01	2.689E-01	1.984E-02	1.691
ZR-95	-2.823E-02		7.669E-02	1.189E-01	9.123E-03	-0.237
NB-97	-2.387E-01		7.813E-02	Half-Life	too short	
ZR-97	5.936E+00		1.279E+00	Half-Life	too short	
MO-99	1.094E+01		1.259E+01	2.166E+01	3.032E+00	0.505

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	-3.408E+10		2.376E+10	Half-Life too short		
RH-101	9.479E-03		3.519E-02	5.757E-02	3.069E-03	0.165
RH-102	2.822E-02		3.146E-02	5.480E-02	3.208E-03	0.515
RU-103	-5.691E-03		3.949E-02	6.416E-02	8.123E-03	-0.089
RH-106	-1.105E-01		3.359E-01	5.301E-01	6.113E-02	-0.208
RU-106	-1.105E-01		3.357E-01	5.301E-01	2.848E-02	-0.208
AG-108M	-6.870E-03		3.332E-02	5.435E-02	3.446E-03	-0.126
AG-110M	-1.042E-01		5.331E-02	7.524E-02	4.181E-03	-1.385
IN-111	-1.794E-01		1.337E+00	1.852E+00	1.048E-01	-0.097
IN-113M	3.077E-02		4.779E-02	8.231E-02	5.070E-03	0.374
SN-113	3.077E-02		4.779E-02	8.231E-02	5.070E-03	0.374
IN-114M	-5.985E-02		2.173E-01	3.024E-01	1.594E-02	-0.198
CD-115	-4.236E+00		1.094E+01	1.736E+01	1.002E+00	-0.244
SN-117M	1.690E-02		5.790E-02	9.552E-02	4.964E-03	0.177
SB-122	-5.595E-01		2.227E+00	3.567E+00	2.018E-01	-0.157
I-123	1.479E+00		3.168E+00	Half-Life too short		
TE-123M	7.023E-03		3.007E-02	4.949E-02	2.612E-03	0.142
I-124	-3.038E-01		8.040E-01	1.081E+00	5.924E-02	-0.281
SB-124	-1.131E-02		6.460E-02	1.031E-01	7.191E-03	-0.110
SB-125	4.054E-03		1.015E-01	1.685E-01	1.025E-02	0.024
TE-125M	-3.260E+00		1.028E+01	1.676E+01	1.495E+00	-0.195
I-126	-1.004E+00		2.621E-01	2.971E-01	1.538E-02	-3.378
SB-126	-8.704E-03		1.777E-01	2.451E-01	1.468E-02	-0.036
SB-127	-3.353E-01		1.412E+00	2.231E+00	2.060E-01	-0.150
XE-127	-2.344E-03		5.276E-02	8.209E-02	4.407E-03	-0.029
I-131	6.032E-02		1.188E-01	2.039E-01	1.332E-02	0.296
TE-132	-2.355E-01		7.521E-01	1.190E+00	1.699E-01	-0.198
BA-133	4.376E-02		4.708E-02	7.340E-02	8.516E-03	0.596
I-133	-8.860E-03		3.166E-03	Half-Life too short		
CS-134	6.003E-02		4.799E-02	8.785E-02	6.416E-03	0.683
I-135	1.721E+09		2.955E+09	Half-Life too short		
CS-136	5.349E-02		1.080E-01	1.870E-01	1.490E-02	0.286
BA-137M	2.676E-01		5.600E-02	1.103E-01	5.634E-03	2.426
CS-137	2.829E-01		5.922E-02	1.166E-01	5.988E-03	2.426
CE-139	6.077E-03		3.279E-02	5.324E-02	2.715E-03	0.114
BA-140	-1.762E-01		2.806E-01	4.274E-01	1.389E-01	-0.412
LA-140	-1.387E-01		8.530E-02	9.922E-02	6.807E-03	-1.398
CE-141	1.040E-02		6.733E-02	1.108E-01	6.246E-03	0.094
CE-143	1.132E-03		1.566E-04	Half-Life too short		
CE-144	7.182E-02		2.530E-01	3.688E-01	5.208E-02	0.195
PM-144	8.965E-04		3.800E-02	6.146E-02	3.457E-03	0.015
PR-144	6.075E-02		2.575E+00	4.165E+00	2.341E-01	0.015
PM-146	2.153E-02		4.636E-02	7.879E-02	6.824E-03	0.273
ND-147	-5.970E-01		5.793E-01	8.599E-01	1.161E-01	-0.694
PM-149	5.591E+01		9.762E+01	1.683E+02	2.389E+01	0.332
EU-152	-1.075E-02		1.395E-01	1.583E-01	1.049E-02	-0.068
GD-153	1.291E-01		9.795E-02	1.507E-01	1.231E-02	0.857
EU-154	-1.476E-02		1.342E-01	2.161E-01	2.145E-02	-0.068

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	8.137E-02		1.176E-01	1.988E-01	1.466E-02	0.409
TB-160	-6.327E-02		1.560E-01	2.508E-01	2.193E-02	-0.252
HO-166M	-1.176E-02		6.935E-02	1.102E-01	6.451E-03	-0.107
TM-171	-2.940E+00		3.826E+01	5.613E+01	4.881E+00	-0.052
LU-176	9.523E-03		2.588E-02	4.202E-02	2.476E-03	0.227
LU-177	2.534E+00	+	1.323E+00	2.053E+00	1.111E-01	1.234
LU-177M	-2.035E-01		2.025E-01	3.157E-01	1.837E-02	-0.645
HF-181	-3.813E-02		4.592E-02	7.106E-02	4.156E-03	-0.537
W-181	5.290E-01		5.165E-01	7.913E-01	6.874E-02	0.668
TA-182	-1.799E-02		1.915E-01	3.100E-01	1.903E-02	-0.058
RE-183	-2.195E-02		1.177E-01	1.903E-01	9.787E-03	-0.115
RE-184	-7.631E-02		2.577E-01	4.062E-01	2.316E-02	-0.188
OS-185	-9.844E-03		4.158E-02	6.590E-02	3.439E-03	-0.149
RE-188	-3.508E-02		1.843E-01	2.985E-01	1.566E-02	-0.118
W-188	-4.332E+00		8.553E+00	1.209E+01	7.078E-01	-0.358
IR-192	-3.083E-02		3.502E-02	5.585E-02	3.313E-03	-0.552
AU-195	2.923E-01		2.597E-01	4.314E-01	3.442E-02	0.678
TL-200	-1.044E-04		2.473E-04	Half-Life	too short	
TL-201	1.122E+00		7.678E+00	1.244E+01	6.349E-01	0.090
TL-202	6.949E-03		7.319E-02	1.218E-01	7.124E-03	0.057
HG-203	-7.781E-03		4.269E-02	7.139E-02	4.410E-03	-0.109
BI-207	-5.775E-03		5.307E-02	8.649E-02	6.354E-03	-0.067
TL-207	-8.475E-01		8.127E-01	1.073E+00	1.776E-01	-0.790
PO-209	4.169E+00		7.708E+00	1.345E+01	1.221E+00	0.310
BI-210	2.126E+00		5.802E+00	9.830E+00	7.654E-01	0.216
PB-210	2.126E+00		5.802E+00	9.830E+00	7.654E-01	0.216
PO-210	2.126E+00		5.801E+00	9.830E+00	6.595E-01	0.216
PB-211	-5.169E-01		1.120E+00	1.733E+00	1.081E+00	-0.298
PO-215	-8.475E-01		8.127E-01	1.073E+00	1.776E-01	-0.790
RN-219	-1.738E-01		4.569E-01	7.409E-01	1.008E-01	-0.235
RN-220	2.755E+01		2.860E+01	4.992E+01	2.849E+00	0.552
RA-223	-8.475E-01		8.127E-01	1.073E+00	1.776E-01	-0.790
AC-227	2.711E-01		4.180E-01	6.887E-01	9.592E-02	0.394
TH-227	2.711E-01		4.188E-01	6.887E-01	1.162E-01	0.394
AC-228	1.376E+00	+	3.245E-01	4.633E-01	5.345E-02	2.971
RA-228	1.376E+00	+	3.245E-01	4.633E-01	5.345E-02	2.971
TH-229	-2.340E-01		5.420E-01	8.605E-01	4.558E-02	-0.272
PA-231	6.155E-02		1.603E+00	2.706E+00	3.733E-01	0.023
TH-231	-8.475E-01		8.127E-01	1.073E+00	1.776E-01	-0.790
U-231	-6.506E-01		1.374E+00	1.953E+00	1.638E-01	-0.333
TH-232	1.376E+00	+	3.245E-01	4.633E-01	5.345E-02	2.971
PA-233	3.619E-02		6.299E-02	1.089E-01	6.811E-03	0.332
PA-234	-1.685E-01		3.248E-01	5.104E-01	9.595E-02	-0.330
PA-234M	4.902E+00		5.282E+00	9.376E+00	8.946E-01	0.523
U-235	2.413E-01		2.382E-01	3.924E-01	6.346E-02	0.615
NP-236	-3.153E-02		8.450E-02	1.356E-01	7.013E-03	-0.233
NP-239	-6.593E-02		2.040E-01	3.318E-01	2.071E-02	-0.199
AM-241	2.272E-01		2.179E-01	3.332E-01	3.100E-02	0.682

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.922E-02		1.069E-01	1.761E-01	1.305E-02	0.109
AM-246	5.404E-02		1.523E-01	2.593E-01	1.850E-02	0.208
CM-247	8.391E-03		4.072E-02	6.839E-02	3.964E-03	0.123
CF-249	1.205E-03		4.115E-02	6.855E-02	3.966E-03	0.018
CF-251	1.989E-01		1.351E-01	2.321E-01	1.199E-02	0.857

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691012          *
* Acquisition date   : 9-FEB-2010 15:33:57 Detector SN#      :              *
* Detector ID        : GAM23                                           Sensitivity      : 5.000          *
* Geometry           : CAN                                           Energy tolerance : 1.500          *
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000          *
* Elapsed real time  : 0 02:00:01.75                               Half life ratio  : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691012                               Analyst initials: MJH1          *
* Batch Number       : 947037                                   Sample Quantity : 1.3764E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight  : 0.00000          *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00 MS Isotope           :              *
* MSD DPM             : 0.000                                       MSD Isotope      :              *
* LCS DPM             : 0.000                                       LCS Isotope      :              *
* LCSD DPM            : 0.000                                       LCSD Isotope     :              *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	1.966E+01	2.120E+00	3.347E-01	1.082E+00
CD-109	2.836E+00	8.778E-01	7.172E-01	4.479E-01
SN-126	2.787E-01	8.628E-02	7.093E-02	4.402E-02
CS-135	2.445E-01	2.439E-01	1.334E-01	1.244E-01
TL-208	4.514E-01	8.727E-02	2.979E-02	4.452E-02
BI-211	4.249E+00	5.502E-01	1.700E-01	2.807E-01
BI-212	1.374E+00	4.994E-01	2.523E-01	2.548E-01
PB-212	1.472E+00	1.499E-01	5.102E-02	7.650E-02
PO-212	1.472E+00	1.499E-01	5.102E-02	7.650E-02
BI-214	1.126E+00	1.786E-01	5.953E-02	9.111E-02
PB-214	1.478E+00	2.058E-01	5.925E-02	1.050E-01
PO-214	1.478E+00	2.058E-01	5.925E-02	1.050E-01
PO-216	1.472E+00	1.499E-01	5.102E-02	7.650E-02
PO-218	1.478E+00	2.058E-01	5.925E-02	1.050E-01
RA-224	4.333E+00	1.130E+00	5.805E-01	5.763E-01
RA-226	1.126E+00	1.786E-01	5.953E-02	9.111E-02
TH-228	1.495E+00	1.522E-01	5.179E-02	7.766E-02
TH-230	1.126E+00	1.786E-01	5.952E-02	9.111E-02
TH-234	4.762E+00	2.275E+00	1.445E+00	1.161E+00
U-234	1.126E+00	1.786E-01	5.952E-02	9.111E-02
NP-237	8.185E-01	3.026E-01	2.079E-01	1.544E-01
U-238	4.762E+00	2.275E+00	1.445E+00	1.161E+00
AM-243	3.910E-01	1.036E-01	5.577E-02	5.287E-02
ANH-511	8.224E-02	6.318E-02	2.606E-02	3.223E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	1.762E-01	3.391E-01	3.021E-01	1.730E-01 NOT IDENT.
NA-22	-3.063E-03	4.730E-02	3.931E-02	2.413E-02 NOT IDENT.
NA-24	1.806E+05	7.363E+05	0.000E+00	3.757E+05 SHORT HLIF



AL-26	-6.741E-03	2.573E-02	2.035E-02	1.313E-02	NOT IDENT.
TI-44	3.696E-01	6.488E-02	4.767E-02	3.310E-02	FAIL ABUN
SC-46	-1.325E-02	4.364E-02	3.664E-02	2.227E-02	FAIL ABUN
V-48	-2.699E-03	6.796E-02	5.786E-02	3.467E-02	NOT IDENT.
CR-51	1.855E-01	3.788E-01	3.433E-01	1.933E-01	NOT IDENT.
MN-52	4.459E-02	2.138E-01	1.832E-01	1.091E-01	NOT IDENT.
MN-54	-1.345E-03	3.691E-02	3.186E-02	1.883E-02	NOT IDENT.
CO-56	-1.819E-03	3.788E-02	3.262E-02	1.933E-02	NOT IDENT.
CO-57	-1.932E-02	2.728E-02	2.344E-02	1.392E-02	NOT IDENT.
CO-58	-4.649E-03	3.821E-02	3.280E-02	1.949E-02	NOT IDENT.
FE-59	-3.277E-02	8.618E-02	6.998E-02	4.397E-02	NOT IDENT.
CO-60	-1.116E-02	3.656E-02	2.913E-02	1.865E-02	NOT IDENT.
ZN-65	1.210E-01	1.030E-01	8.622E-02	5.255E-02	NOT IDENT.
GE-68	-1.295E+00	1.327E+00	1.013E+00	6.768E-01	NOT IDENT.
AS-73	-3.232E-01	1.162E+00	1.054E+00	5.931E-01	NOT IDENT.
AS-74	-1.091E-02	9.383E-02	7.890E-02	4.787E-02	NOT IDENT.
SE-75	-1.566E-03	5.267E-02	3.876E-02	2.687E-02	NOT IDENT.
BR-77	-4.963E+00	1.014E+01	8.348E+00	5.174E+00	FAIL ABUN
SR-82	-4.101E-01	3.622E-01	2.824E-01	1.848E-01	NOT IDENT.
RB-83	-3.251E-02	6.644E-02	5.469E-02	3.390E-02	NOT IDENT.
RB-84	7.110E-03	7.678E-02	6.671E-02	3.917E-02	NOT IDENT.
KR-85	6.812E+00	7.831E+00	6.305E+00	3.996E+00	NOT IDENT.
SR-85	3.494E-02	4.017E-02	3.234E-02	2.049E-02	NOT IDENT.
RB-86	-4.025E-01	8.169E-01	6.587E-01	4.168E-01	NOT IDENT.
Y-88	1.142E-02	3.439E-02	3.077E-02	1.755E-02	NOT IDENT.
ZR-88	1.129E-02	3.271E-02	2.912E-02	1.669E-02	NOT IDENT.
Y-91	-1.896E+01	1.864E+01	1.400E+01	9.510E+00	NOT IDENT.
NB-94	-8.023E-03	3.542E-02	2.913E-02	1.807E-02	NOT IDENT.
NB-95	6.439E-02	4.582E-02	4.190E-02	2.338E-02	NOT IDENT.
NB-95M	4.549E-01	1.674E-01	1.399E-01	8.542E-02	NOT IDENT.
ZR-95	-2.823E-02	7.515E-02	6.046E-02	3.834E-02	NOT IDENT.
NB-97	-2.387E+05	1.531E+05	0.000E+00	7.813E+04	SHORT HLIF
ZR-97	5.936E+06	2.507E+06	0.000E+00	1.279E+06	SHORT HLIF
MO-99	1.094E+01	1.234E+01	1.102E+01	6.294E+00	NOT IDENT.
TC-99M	-3.408E+16	4.658E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.479E-03	3.448E-02	3.003E-02	1.759E-02	NOT IDENT.
RH-102	2.822E-02	3.083E-02	2.812E-02	1.573E-02	NOT IDENT.
RU-103	-5.691E-03	3.870E-02	3.289E-02	1.975E-02	NOT IDENT.
RH-106	-1.105E-01	3.292E-01	2.706E-01	1.679E-01	NOT IDENT.
RU-106	-1.105E-01	3.290E-01	2.706E-01	1.678E-01	NOT IDENT.
AG-108M	-6.870E-03	3.265E-02	2.794E-02	1.666E-02	NOT IDENT.
AG-110M	-1.042E-01	5.225E-02	3.836E-02	2.666E-02	NOT IDENT.
IN-111	-1.794E-01	1.310E+00	9.622E-01	6.684E-01	NOT IDENT.
IN-113M	3.077E-02	4.683E-02	4.239E-02	2.389E-02	NOT IDENT.
SN-113	3.077E-02	4.683E-02	4.239E-02	2.389E-02	NOT IDENT.
IN-114M	-5.985E-02	2.129E-01	1.579E-01	1.086E-01	NOT IDENT.
CD-115	-4.236E+00	1.072E+01	8.890E+00	5.470E+00	NOT IDENT.
SN-117M	1.690E-02	5.674E-02	5.004E-02	2.895E-02	NOT IDENT.
SB-122	-5.595E-01	2.183E+00	1.824E+00	1.114E+00	NOT IDENT.
I-123	1.479E+06	6.209E+06	0.000E+00	3.168E+06	SHORT HLIF
TE-123M	7.023E-03	2.947E-02	2.593E-02	1.504E-02	NOT IDENT.
I-124	-3.038E-01	7.880E-01	5.521E-01	4.020E-01	NOT IDENT.
SB-124	-1.131E-02	6.330E-02	5.160E-02	3.230E-02	FAIL ABUN
SB-125	4.054E-03	9.949E-02	8.662E-02	5.076E-02	FAIL ABUN
TE-125M	-3.260E+00	1.007E+01	8.841E+00	5.139E+00	NOT IDENT.
I-126	-1.004E+00	2.569E-01	1.514E-01	1.311E-01	NOT IDENT.
SB-126	-8.704E-03	1.741E-01	1.248E-01	8.885E-02	NOT IDENT.
SB-127	-3.353E-01	1.384E+00	1.137E+00	7.061E-01	NOT IDENT.
XE-127	-2.344E-03	5.171E-02	4.281E-02	2.638E-02	NOT IDENT.
I-131	6.032E-02	1.164E-01	1.052E-01	5.941E-02	NOT IDENT.
TE-132	-2.355E-01	7.371E-01	6.194E-01	3.761E-01	NOT IDENT.
BA-133	4.376E-02	4.614E-02	3.787E-02	2.354E-02	NOT IDENT.
I-133	-8.860E+03	6.205E+03	0.000E+00	3.166E+03	SHORT HLIF
CS-134	6.003E-02	4.703E-02	4.462E-02	2.400E-02	NOT IDENT.
I-135	1.721E+15	5.792E+15	0.000E+00	2.955E+15	SHORT HLIF
CS-136	5.349E-02	1.058E-01	9.446E-02	5.399E-02	FAIL ABUN
BA-137M	2.676E-01	5.488E-02	5.622E-02	2.800E-02	NOT IDENT.
CS-137	2.829E-01	5.803E-02	5.943E-02	2.961E-02	NOT IDENT.
CE-139	6.077E-03	3.214E-02	2.787E-02	1.640E-02	NOT IDENT.
BA-140	-1.762E-01	2.750E-01	2.187E-01	1.403E-01	NOT IDENT.
LA-140	-1.387E-01	8.359E-02	4.970E-02	4.265E-02	FAIL ABUN
CE-141	1.040E-02	6.599E-02	5.812E-02	3.367E-02	NOT IDENT.
CE-143	1.132E+03	3.070E+02	0.000E+00	1.566E+02	SHORT HLIF
CE-144	7.182E-02	2.479E-01	1.938E-01	1.265E-01	NOT IDENT.
PM-144	8.965E-04	3.724E-02	3.130E-02	1.900E-02	NOT IDENT.
PR-144	6.075E-02	2.524E+00	2.121E+00	1.288E+00	NOT IDENT.
PM-146	2.153E-02	4.543E-02	4.046E-02	2.318E-02	NOT IDENT.
ND-147	-5.970E-01	5.677E-01	4.403E-01	2.896E-01	FAIL ABUN

PM-149	5.591E+01	9.567E+01	8.721E+01	4.881E+01	NOT IDENT.
EU-152	-1.075E-02	1.367E-01	8.172E-02	6.975E-02	NOT IDENT.
GD-153	1.291E-01	9.599E-02	7.966E-02	4.897E-02	FAIL ABUN
EU-154	-1.476E-02	1.315E-01	1.087E-01	6.709E-02	NOT IDENT.
EU-155	8.137E-02	1.152E-01	1.049E-01	5.878E-02	FAIL ABUN
TB-160	-6.327E-02	1.529E-01	1.271E-01	7.800E-02	FAIL ABUN
HO-166M	-1.176E-02	6.796E-02	5.611E-02	3.467E-02	FAIL ABUN
TM-171	-2.940E+00	3.750E+01	2.988E+01	1.913E+01	NOT IDENT.
LU-176	9.523E-03	2.536E-02	2.174E-02	1.294E-02	FAIL ABUN
LU-177	2.534E+00	1.296E+00	1.070E+00	6.615E-01	FAIL ABUN
LU-177M	-2.035E-01	1.984E-01	1.624E-01	1.012E-01	FAIL ABUN
HF-181	-3.813E-02	4.501E-02	3.645E-02	2.296E-02	NOT IDENT.
W-181	5.290E-01	5.061E-01	4.213E-01	2.582E-01	NOT IDENT.
TA-182	-1.799E-02	1.877E-01	1.561E-01	9.576E-02	FAIL ABUN
RE-183	-2.195E-02	1.153E-01	9.963E-02	5.884E-02	FAIL ABUN
RE-184	-7.631E-02	2.525E-01	2.110E-01	1.288E-01	NOT IDENT.
OS-185	-9.844E-03	4.075E-02	3.361E-02	2.079E-02	NOT IDENT.
RE-188	-3.508E-02	1.806E-01	1.564E-01	9.216E-02	NOT IDENT.
W-188	-4.332E+00	8.382E+00	6.260E+00	4.276E+00	FAIL ABUN
IR-192	-3.083E-02	3.432E-02	2.888E-02	1.751E-02	FAIL ABUN
AU-195	2.923E-01	2.545E-01	2.280E-01	1.298E-01	FAIL ABUN
TL-200	-1.044E+02	4.848E+02	0.000E+00	2.473E+02	SHORT HLIF
TL-201	1.122E+00	7.525E+00	6.511E+00	3.839E+00	NOT IDENT.
TL-202	6.949E-03	7.173E-02	6.257E-02	3.660E-02	NOT IDENT.
HG-203	-7.781E-03	4.184E-02	3.701E-02	2.135E-02	FAIL ABUN
BI-207	-5.775E-03	5.201E-02	4.368E-02	2.653E-02	FAIL ABUN
TL-207	-8.475E-01	7.964E-01	5.545E-01	4.063E-01	FAIL ABUN
PO-209	4.169E+00	7.554E+00	6.814E+00	3.854E+00	NOT IDENT.
BI-210	2.126E+00	5.686E+00	5.266E+00	2.901E+00	NOT IDENT.
PB-210	2.126E+00	5.686E+00	5.266E+00	2.901E+00	NOT IDENT.
PO-210	2.126E+00	5.685E+00	5.266E+00	2.901E+00	NOT IDENT.
PB-211	-5.169E-01	1.098E+00	8.922E-01	5.602E-01	NOT IDENT.
PO-215	-8.475E-01	7.964E-01	5.545E-01	4.063E-01	FAIL ABUN
RN-219	-1.738E-01	4.477E-01	3.814E-01	2.284E-01	NOT IDENT.
RN-220	2.755E+01	2.803E+01	2.554E+01	1.430E+01	NOT IDENT.
RA-223	-8.475E-01	7.964E-01	5.545E-01	4.063E-01	FAIL ABUN
AC-227	2.711E-01	4.097E-01	3.576E-01	2.090E-01	FAIL ABUN
TH-227	2.711E-01	4.104E-01	3.576E-01	2.094E-01	FAIL ABUN
AC-228	1.376E+00	3.180E-01	2.347E-01	1.622E-01	FAIL ABUN
RA-228	1.376E+00	3.180E-01	2.347E-01	1.622E-01	FAIL ABUN
TH-229	-2.340E-01	5.312E-01	4.491E-01	2.710E-01	FAIL ABUN
PA-231	6.155E-02	1.571E+00	1.402E+00	8.013E-01	NOT IDENT.
TH-231	-8.475E-01	7.964E-01	5.545E-01	4.063E-01	FAIL ABUN
U-231	-6.506E-01	1.347E+00	1.033E+00	6.870E-01	FAIL ABUN
TH-232	1.376E+00	3.180E-01	2.347E-01	1.622E-01	FAIL ABUN
PA-233	3.619E-02	6.173E-02	5.635E-02	3.149E-02	FAIL ABUN
PA-234	-1.685E-01	3.183E-01	2.584E-01	1.624E-01	FAIL ABUN
PA-234M	4.902E+00	5.177E+00	4.741E+00	2.641E+00	NOT IDENT.
U-235	2.413E-01	2.335E-01	2.059E-01	1.191E-01	FAIL ABUN
NP-236	-3.153E-02	8.281E-02	7.102E-02	4.225E-02	NOT IDENT.
NP-239	-6.593E-02	2.000E-01	1.748E-01	1.020E-01	FAIL ABUN
AM-241	2.272E-01	2.135E-01	1.777E-01	1.090E-01	NOT IDENT.
CM-243	1.922E-02	1.048E-01	9.298E-02	5.346E-02	FAIL ABUN
AM-246	5.404E-02	1.492E-01	1.309E-01	7.613E-02	NOT IDENT.
CM-247	8.391E-03	3.990E-02	3.520E-02	2.036E-02	NOT IDENT.
CF-249	1.205E-03	4.032E-02	3.531E-02	2.057E-02	NOT IDENT.
CF-251	1.989E-01	1.324E-01	1.213E-01	6.754E-02	NOT IDENT.

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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON ,SC 29417   *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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ENERGY	MDA COUNTS
46.50	308.9727
46.50	308.9727
46.50	308.9727
48.70	356.4576
49.72	337.1104
51.35	308.9077
52.39	316.7614
52.97	320.7281
53.15	337.2785
53.44	346.5880
54.07	356.1090
56.28	378.5418
56.28	378.5434
57.37	0.0000
57.53	326.5274
57.53	326.5281
57.60	320.4255
57.98	313.9878
57.98	313.9878
59.32	319.0904
59.32	319.0904
59.40	319.1306
59.54	319.2012
59.72	334.0742
60.01	334.2266
61.10	371.8313
61.14	385.1877
61.30	385.2837
63.00	412.2935
63.29	442.9462
63.29	442.9462
63.58	425.2976
64.28	434.6797
65.12	435.2286
65.20	435.2803
65.20	435.2803
66.05	441.8031
66.72	446.7207
66.83	446.7955
66.91	457.3098
67.20	461.9893
67.20	461.9893
67.75	487.5488
67.85	487.6204
68.90	460.8878
68.90	460.8878
69.30	459.9045
69.67	441.1454
70.82	446.3774
70.82	446.3774
70.83	446.3846
72.80	467.2213
72.87	467.2667
72.87	467.2667
74.67	487.3246
74.81	487.4191
74.81	487.4191
74.81	487.4191
74.81	487.4191
74.81	487.4191
74.81	487.4191
74.81	487.4191
74.97	487.5254
75.28	487.7340
75.70	488.0135
77.11	488.9505
77.11	488.9505

77.11	488.9505
77.11	488.9505
77.11	488.9505
77.11	488.9505
77.11	488.9505
78.38	451.8191
79.62	418.3377
79.80	418.4367
79.80	418.4367
80.11	418.6096
80.18	418.6482
80.30	418.7137
80.30	418.7137
80.57	418.8631
81.00	419.0997
81.07	419.1383
81.07	419.1383
81.07	419.1383
81.07	419.1383
82.60	460.7008
83.37	489.1836
83.78	512.3860
83.78	512.3860
83.78	512.3860
83.78	512.3860
84.21	486.6541
84.90	405.9026
85.43	406.1759
86.29	406.6191
86.50	406.7274
86.54	406.7469
86.59	406.7727
86.72	406.8407
86.79	406.8746
86.94	406.9523
87.30	420.9639
87.30	420.9639
87.30	420.9639
87.30	420.9639
87.30	420.9639
87.30	420.9639
87.30	420.9639
87.57	421.1061
87.88	421.2700
88.03	421.3486
88.36	421.5208
88.47	421.5794
89.95	422.3520
91.11	422.9540
92.29	423.5611
92.38	423.6079
92.38	423.6079
93.35	403.9829
94.00	412.0435
94.67	427.8733
94.67	427.8758
94.90	434.1965
94.90	434.1965
94.90	434.1965
94.90	434.1965
95.87	440.9072
95.87	440.9072
96.73	411.8288
97.43	348.3976
98.44	347.7697
98.44	347.7711
98.88	360.5605
99.55	368.3591
99.55	368.3591
99.86	377.2639
100.00	377.3244
100.10	377.3702
103.18	410.9910
103.76	361.3214
105.00	357.9031
105.31	351.1608
108.00	381.7244
109.28	392.1122

111.00	373.1060
111.00	373.1060
111.76	381.3146
112.95	337.2914
115.19	380.7305
116.30	367.2787
117.00	352.6477
117.00	352.6477
117.66	338.9746
121.11	338.1905
121.62	357.3322
121.78	371.3657
122.06	371.4721
122.32	359.5839
122.32	359.5839
122.32	359.5839
122.32	359.5839
123.07	341.8656
127.23	319.6067
129.76	351.1994
131.20	353.1054
133.02	361.8043
133.54	345.8273
135.34	363.2207
136.00	373.5720
136.25	364.5483
136.48	371.7180
140.51	386.3492
140.51	0.0000
142.18	355.3824
142.65	348.4057
143.76	341.6248
144.24	332.5935
144.24	332.5935
144.24	332.5935
144.24	332.5935
145.22	331.8708
145.44	347.2580
147.16	388.7207
152.43	301.1436
152.70	301.2151
153.22	318.8384
154.21	342.7914
154.21	342.7914
154.21	342.7914
154.21	342.7914
155.03	344.0706
156.02	335.0893
158.56	305.8643
159.00	0.0000
159.00	309.0806
160.31	325.9877
161.27	324.1854
162.32	327.5843
162.64	321.4519
163.35	334.0966
163.89	314.5273
165.85	316.0884
167.43	307.1356
171.28	316.4726
171.86	321.8500
172.10	321.9135
176.55	262.2414
176.60	262.2509
181.06	286.3500
184.41	300.6183
185.71	290.5699
186.00	290.6370
190.27	290.1155
192.34	270.6691
193.63	298.7276
197.04	309.0919
198.01	286.9187
198.60	268.9036
200.40	287.4318
201.83	306.9892
202.84	296.0558
205.31	291.6915

208.36	286.9672
208.81	267.7084
209.75	289.1909
209.75	289.1909
210.97	304.9512
215.65	229.0477
216.55	255.1397
218.09	273.8157
222.10	249.6235
223.80	254.2647
226.40	238.3917
227.00	236.3123
227.08	238.5037
227.20	238.5237
228.16	258.2966
228.18	258.3002
228.18	258.3002
231.56	0.0000
235.69	276.9224
236.00	264.7090
236.00	264.7090
238.63	255.7344
238.63	255.7344
238.63	255.7344
238.63	255.7344
239.00	255.7966
240.98	256.1325
241.98	256.3014
241.98	256.3014
241.98	256.3014
244.69	232.7338
245.39	234.6041
247.94	235.5811
248.90	219.8896
249.79	214.4876
252.40	229.2442
252.85	224.8794
252.85	224.8794
254.15	0.0000
256.20	198.7147
256.20	198.7147
260.50	214.8368
260.90	208.2121
262.80	200.0173
264.65	192.8496
268.24	189.6976
268.79	191.5525
269.46	194.7650
269.46	194.7650
269.46	194.7650
269.46	194.7650
271.23	220.5262
273.65	267.5343
276.40	190.1283
277.35	201.3231
277.60	221.6010
277.60	221.6010
278.00	210.6286
278.60	201.6984
279.20	211.6807
279.53	219.8293
280.46	228.9659
281.68	218.3081
283.67	191.4703
284.30	187.9287
285.00	185.2933
285.90	180.8716
286.10	170.9421
286.10	170.9421
287.40	178.7674
288.45	0.0000
290.67	191.9573
290.80	191.9702
291.72	189.0488
293.26	0.0000
293.70	148.9913
295.21	149.1195
295.21	149.1195

295.21	149.1195
295.96	149.1855
296.50	149.2316
297.23	149.2937
298.57	149.4078
299.80	149.5139
299.80	149.5139
300.09	149.5379
300.09	149.5379
300.09	149.5379
300.09	149.5379
300.12	149.5399
301.29	150.5524
302.84	176.5606
303.76	153.8097
303.91	153.8220
304.40	141.6778
304.40	141.6778
304.84	143.2356
306.84	147.5934
308.46	153.9111
311.98	137.6898
316.51	170.2420
318.01	153.8064
319.02	139.1460
319.41	137.3321
320.08	153.0576
323.87	189.4073
323.87	189.4073
323.87	189.4073
323.87	189.4073
325.23	172.5938
328.77	176.0121
333.44	154.7811
334.20	172.8061
334.20	172.8061
334.30	172.8152
338.28	150.8328
338.28	150.8328
338.28	150.8328
338.28	150.8328
338.32	150.8348
338.32	150.8348
338.32	150.8348
340.50	146.0374
340.57	146.0412
344.27	136.9844
345.85	105.1584
350.59	0.0000
351.07	134.0293
351.92	134.0869
351.92	134.0869
351.92	134.0869
355.39	0.0000
356.01	106.4907
364.48	122.6732
366.43	150.1863
367.43	146.4799
367.94	0.0000
369.80	124.8908
374.96	129.9510
383.85	126.7039
387.95	127.9085
388.63	125.0849
391.69	126.2234
391.69	126.2234
392.90	133.9502
398.62	147.7437
400.65	143.0833
401.10	137.3512
401.81	150.8480
402.60	139.3696
404.84	165.4933
410.95	149.5583
411.60	150.5690
413.65	168.0995
414.70	122.7522
415.30	120.8527

415.76	114.1094
417.63	0.0000
418.52	144.2673
423.70	129.0775
427.08	118.5822
427.89	127.3764
432.53	114.9737
433.93	109.1945
439.47	111.4172
439.56	111.4214
439.89	108.5055
443.98	112.6163
444.90	104.8240
445.03	104.8305
445.03	104.8305
445.03	104.8305
453.90	104.2493
463.38	116.8513
468.07	93.9957
473.00	125.9179
475.06	94.2706
475.35	96.2671
476.78	109.2333
477.59	99.3372
477.96	100.3453
482.03	117.4325
484.57	101.6153
487.03	79.7793
490.36	0.0000
492.35	87.9474
497.08	84.1107
507.63	0.0000
510.53	0.0000
510.84	104.0391
511.00	104.0454
511.85	77.2216
511.85	77.2216
513.99	85.6869
513.99	85.6869
520.41	85.9027
520.65	85.9110
527.90	86.1538
528.96	0.0000
529.64	104.4686
529.87	0.0000
531.02	97.4203
537.32	98.6719
543.00	79.5158
546.56	0.0000
549.76	80.7416
552.65	93.1062
555.20	88.0744
563.23	93.4727
563.90	95.5521
568.70	78.2228
569.32	82.3594
569.50	82.3652
569.67	82.3691
573.80	87.6500
574.00	77.3438
574.64	78.0988
578.91	74.0375
579.30	0.0000
583.14	77.6001
585.48	67.3105
591.81	76.8039
592.07	85.1150
593.00	79.9514
595.88	84.1898
600.56	86.7594
602.52	0.0000
602.71	92.0340
602.71	92.0340
603.60	83.3789
604.41	78.1897
604.70	78.1970
609.31	87.0260



609.31	87.0260
609.31	87.0260
609.31	87.0260
610.33	83.5742
612.46	66.2124
614.37	81.9498
618.01	84.8463
621.84	81.8105
621.84	81.8105
631.29	85.2339
633.02	76.8603
633.10	76.8621
634.78	79.0137
635.90	70.6117
636.97	67.4750
645.85	70.8489
646.12	65.5677
656.30	254.6719
657.75	192.1578
657.90	0.0000
661.65	74.4109
661.65	74.4109
664.57	0.0000
666.33	204.4125
666.33	204.4125
675.00	90.7504
677.61	65.1818
685.20	70.6970
692.80	78.3859
695.00	81.6647
696.49	82.7788
696.49	82.7788
697.00	80.6415
697.49	78.5035
698.33	77.4475
698.50	70.9983
699.00	83.9205
702.63	81.8614
706.10	70.0892
706.58	0.0000
706.67	71.1804
709.31	84.1928
711.68	85.3358
713.82	94.0390
717.42	81.1597
720.50	72.2103
721.93	0.0000
722.20	90.3107
722.78	70.4542
722.78	70.4542
722.89	70.4574
722.95	70.4590
723.30	63.2395
724.18	56.0273
727.18	74.8926
733.00	67.0520
735.90	66.3866
739.58	56.6541
742.81	65.4346
744.21	66.5534
747.13	64.4290
751.79	60.1442
752.31	61.2473
753.82	61.2760
755.35	62.3980
756.15	72.2681
756.87	64.6177
763.93	81.2157
765.79	58.2004
766.42	58.2107
766.84	50.5292
776.49	70.6852
778.00	67.5021
778.57	59.8362
778.89	59.8415
783.80	58.3506
785.46	67.1885
792.07	60.0721

795.84	53.5431
796.30	60.9364
798.80	86.8513
801.93	61.9606
805.60	46.2870
810.29	57.4729
810.76	57.4804
815.85	51.9930
817.79	52.9504
818.51	45.5278
819.60	43.6829
826.30	54.9392
828.27	0.0000
831.60	59.6836
831.96	55.0268
834.83	63.4719
836.80	0.0000
846.75	53.3795
848.13	53.4004
856.28	0.0000
856.80	72.4423
860.37	50.7590
867.32	53.2763
867.82	50.0539
871.10	45.2500
873.19	49.0483
874.81	56.6199
875.33	0.0000
876.40	60.4193
879.36	68.0259
880.27	66.1534
880.51	65.2125
881.50	62.3933
883.24	59.5842
884.67	59.6072
889.25	68.2061
896.60	48.4070
898.02	51.2732
899.00	48.4371
903.28	60.3095
911.07	51.4490
911.07	51.4490
911.07	51.4490
919.63	44.4017
920.93	58.4583
925.00	47.8099
925.24	56.4192
926.50	51.6555
935.52	42.1873
937.48	58.5154
944.10	46.1230
946.00	61.5273
949.00	50.0291
962.29	57.9187
964.01	62.9097
966.15	60.8736
968.20	60.9044
969.11	51.3870
969.11	51.3870
969.11	51.3870
977.42	59.1062
980.50	43.6359
983.50	44.6392
989.30	40.8157
996.32	65.2225
1001.03	49.7040
1001.68	50.6860
1004.76	81.9390
1021.30	0.0000
1024.50	0.0000
1034.80	47.1621
1036.00	57.9845
1037.82	53.0947
1038.57	51.1367
1038.76	0.0000
1045.16	57.1268
1046.59	49.2635
1048.07	40.4094

1050.47	37.4743
1050.47	37.4743
1062.04	27.6878
1063.62	47.4824
1076.63	54.5703
1077.35	62.5181
1078.86	47.6484
1085.78	59.6558
1099.22	45.8765
1112.02	54.8683
1112.84	58.3094
1115.52	41.1830
1120.29	53.2531
1120.29	53.2531
1120.29	53.2531
1120.29	53.2531
1120.51	53.2553
1121.28	48.1094
1124.00	0.0000
1129.67	54.2241
1131.51	0.0000
1147.95	0.0000
1167.94	54.6812
1173.22	55.7587
1175.09	54.7668
1177.93	65.9627
1189.05	47.8109
1204.90	62.2609
1205.75	0.0000
1213.00	43.9641
1221.42	51.2126
1230.97	82.1029
1235.34	64.7150
1236.41	0.0000
1238.25	49.3359
1246.25	43.2407
1260.41	0.0000
1271.85	52.7826
1274.45	47.6322
1274.54	47.6340
1291.56	41.5625
1298.22	0.0000
1312.09	41.7334
1325.50	31.3831
1325.50	31.3831
1332.49	28.2843
1333.61	24.0987
1360.21	23.1709
1362.66	0.0000
1365.15	24.2466
1368.21	21.0970
1368.53	0.0000
1376.25	24.2990
1384.27	15.8716
1394.10	15.9009
1395.20	22.2664
1407.95	24.4450
1434.06	17.0885
1436.60	20.3019
1457.56	0.0000
1460.81	31.2797
1489.15	19.4194
1509.49	15.1587
1596.49	29.2106
1620.62	17.9768
1678.03	0.0000
1691.02	10.5300
1691.02	10.5300
1706.46	0.0000
1750.46	0.0000
1764.49	13.5610
1764.49	13.5610
1764.49	13.5610
1764.49	13.5610
1770.23	44.5978
1771.40	23.2726
1791.20	0.0000
1808.65	9.7538

1836.01

10.7744

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691012

Total Uranium Activity	1.4279E+01	ug/g
Total Uranium Counting Unc.	6.7703E+00	ug/g
Total Uranium Tpu	3.4542E-06	ug/g
Total Uranium Mda	4.3005E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037          SAMPLE ID   : G245691012
*  ANALYST       : MJH1            DETECTOR    : GAM23
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 9-FEB-2010 15:33:57.35  SAMPLE ALQT: 137.640 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.034E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.177E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.860E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.387E+00

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## VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 19:37:58.53

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691013.CNF;1
Sample date   : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:37:24.
Sample ID     : G245691013 Sample quantity : 1.27760E+02 GRAM
Detector name : GAM18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.85 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 947037 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.37*	108	549	1.17	125.86	121	8	1.49E-02	39.6	
2	3	75.01	366	516	0.96	149.14	145	14	5.09E-02	11.0	9.54E-01
3	3	77.32	667	403	0.91	153.77	145	14	9.26E-02	6.0	
4	0	87.33	209	544	1.23	173.77	171	7	2.90E-02	19.8	
5	0	93.67*	202	875	1.50	186.45	180	10	2.80E-02	29.3	
6	0	129.06	100	425	1.10	257.20	254	8	1.38E-02	37.1	
7	0	186.20*	265	560	1.29	371.43	365	12	3.68E-02	19.3	
8	0	209.75*	60	433	0.95	418.51	413	9	8.38E-03	64.2	
9	3	238.72*	1843	222	1.21	476.44	469	19	2.56E-01	2.7	1.15E+00
10	3	241.65	432	317	1.77	482.31	469	19	6.00E-02	11.9	
11	0	270.66	138	314	1.87	540.31	535	11	1.92E-02	26.5	
12	0	277.84	95	312	2.02	554.65	548	12	1.32E-02	38.8	
13	0	295.22*	563	293	1.32	589.41	583	12	7.82E-02	7.5	
14	0	300.29	147	294	1.37	599.55	595	12	2.04E-02	24.8	
15	0	328.17	146	227	1.79	655.28	650	11	2.02E-02	21.7	
16	0	338.34*	386	261	1.26	675.61	670	11	5.37E-02	9.7	
17	0	351.93*	951	315	1.25	702.79	696	13	1.32E-01	5.1	
18	0	409.59	42	136	1.05	818.06	814	7	5.80E-03	48.9	
19	0	462.84	121	152	1.74	924.55	919	12	1.68E-02	22.4	
20	0	510.73*	178	264	2.19	1020.30	1012	16	2.48E-02	24.6	
21	0	583.08*	599	169	1.67	1164.95	1158	13	8.32E-02	6.2	
22	0	609.15*	697	181	1.37	1217.07	1210	15	9.68E-02	5.8	
23	0	727.01*	156	104	1.35	1452.75	1448	13	2.17E-02	16.0	
24	0	768.33	77	117	3.03	1535.35	1529	11	1.07E-02	29.6	
25	0	860.50	117	82	1.25	1719.66	1713	14	1.62E-02	19.0	
26	0	910.94*	412	111	2.08	1820.52	1813	16	5.73E-02	7.7	
27	0	933.50*	65	127	1.06	1865.63	1856	17	9.08E-03	41.9	
28	1	964.53	121	96	2.32	1927.69	1917	26	1.67E-02	20.1	6.49E-01
29	1	968.60*	269	74	2.10	1935.81	1917	26	3.74E-02	9.5	
30	0	1119.92*	217	112	2.30	2238.42	2231	17	3.01E-02	13.2	
31	0	1459.94*	2541	67	2.40	2918.36	2906	22	3.53E-01	2.2	
32	0	1505.30	12	16	0.79	3009.09	3000	11	1.69E-03	70.5	
33	0	1587.57	31	32	2.21	3173.61	3166	14	4.35E-03	42.0	
34	0	1729.34	30	34	2.14	3457.14	3446	15	4.13E-03	46.5	
35	0	1763.46*	146	5	2.68	3525.37	3516	16	2.03E-02	9.3	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 19:38:01

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691013.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MJH1  
 Sample date : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:37:24  
 Sample ID : G245691013 Sample quantity : 127.76 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA18 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.85 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.695E+01	3.225E+00	4.605E-01	3.495E-02	80.244
CD-109	+	88.03	*	2.612E+00	1.059E+00	1.472E+00	1.360E-01	1.775
SN-126	+	64.28		1.064E+00	8.575E-01	8.760E-01	1.295E-01	1.214
	+	86.94		1.067E+00	6.113E-01	5.465E-01	2.267E-01	1.953
	+	87.57	*	2.567E-01	1.041E-01	1.351E-01	1.245E-02	1.900
HG-203		70.83		1.471E-01	1.249E+00	1.865E+00	2.484E-01	0.079
		72.87		1.746E-01	7.061E-01	1.057E+00	1.371E-01	0.165
		82.60		4.090E-01	1.137E+00	1.803E+00	2.501E-01	0.227
	+	279.20	*	7.237E-02	5.628E-02	5.350E-02	3.244E-03	1.353
TL-208	+	277.35		6.554E-01	5.128E-01	4.864E-01	5.108E-02	1.348
	+	510.84		5.631E-01	2.830E-01	1.806E-01	1.920E-02	3.118
	+	583.14	*	5.316E-01	7.783E-02	4.963E-02	3.891E-03	10.710
	+	860.37		9.433E-01	3.745E-01	3.629E-01	4.059E-02	2.600
BI-211		72.87		8.765E-01	3.543E+00	5.305E+00	4.380E-01	0.165
	+	351.07	*	3.962E+00	4.790E-01	2.764E-01	1.774E-02	14.335
PB-212	+	74.81		2.037E+00	5.149E-01	5.695E-01	7.138E-02	3.577
	+	77.11		2.067E+00	3.045E-01	3.186E-01	2.701E-02	6.488
	+	87.30		1.187E+00	4.959E-01	6.272E-01	8.519E-02	1.893
	+	238.63	*	1.787E+00	1.610E-01	7.815E-02	5.583E-03	22.871
	+	300.09		2.120E+00	1.066E+00	9.836E-01	8.077E-02	2.156
PO-212	+	74.81		2.037E+00	5.149E-01	5.695E-01	7.138E-02	3.577
	+	77.11		2.067E+00	3.045E-01	3.186E-01	2.701E-02	6.488
	+	87.30		1.187E+00	4.959E-01	6.272E-01	8.519E-02	1.893
		115.19		4.203E+00	3.266E+00	5.509E+00	3.470E-01	0.763
	+	238.63	*	1.787E+00	1.610E-01	7.815E-02	5.583E-03	22.871
	+	300.09		2.120E+00	1.066E+00	9.836E-01	8.077E-02	2.156
BI-214	+	609.31	*	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
	+	1120.29		1.809E+00	5.082E-01	4.405E-01	4.218E-02	4.106
	+	1764.49		1.601E+00	3.133E-01	2.040E-01	1.240E-02	7.850
PB-214	+	74.81		3.510E+00	8.643E-01	9.813E-01	1.096E-01	3.577
	+	77.11		3.544E+00	5.876E-01	5.462E-01	6.225E-02	6.488
	+	87.30		2.034E+00	8.397E-01	1.074E+00	1.289E-01	1.893
	+	241.98		2.509E+00	6.272E-01	4.698E-01	3.714E-02	5.342
	+	295.21		1.426E+00	2.463E-01	1.706E-01	1.447E-02	8.359



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.378E+00	1.815E-01	9.632E-02	7.968E-03	14.308
	+	74.81		3.510E+00	8.643E-01	9.813E-01	1.096E-01	3.577
	+	77.11		3.544E+00	5.876E-01	5.462E-01	6.225E-02	6.488
	+	87.30		2.034E+00	8.397E-01	1.074E+00	1.289E-01	1.893
	+	241.98		2.509E+00	6.272E-01	4.698E-01	3.714E-02	5.342
PO-216	+	295.21		1.426E+00	2.463E-01	1.706E-01	1.447E-02	8.359
	+	351.92	*	1.378E+00	1.815E-01	9.632E-02	7.968E-03	14.308
	+	74.81		2.037E+00	5.149E-01	5.695E-01	7.138E-02	3.577
	+	77.11		2.067E+00	3.045E-01	3.186E-01	2.701E-02	6.488
	+	87.30		1.187E+00	4.959E-01	6.272E-01	8.519E-02	1.893
PO-218	+	238.63	*	1.787E+00	1.610E-01	7.815E-02	5.583E-03	22.871
	+	300.09		2.120E+00	1.066E+00	9.836E-01	8.077E-02	2.156
	+	74.81		3.510E+00	8.643E-01	9.813E-01	1.096E-01	3.577
	+	77.11		3.544E+00	5.876E-01	5.462E-01	6.225E-02	6.488
	+	87.30		2.034E+00	8.397E-01	1.074E+00	1.289E-01	1.893
RA-224	+	241.98		2.509E+00	6.272E-01	4.698E-01	3.714E-02	5.342
	+	295.21		1.426E+00	2.463E-01	1.706E-01	1.447E-02	8.359
	+	351.92	*	1.378E+00	1.815E-01	9.632E-02	7.968E-03	14.308
	+	240.98	*	4.758E+00	1.159E+00	8.882E-01	4.948E-02	5.357
	+	609.31	*	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
AC-228	+	1120.29		1.809E+00	5.082E-01	4.405E-01	4.218E-02	4.106
	+	1764.49		1.601E+00	3.133E-01	2.040E-01	1.240E-02	7.850
	+	338.32		1.785E+00	8.058E-01	3.133E-01	1.277E-01	5.695
	+	911.07	*	1.574E+00	3.197E-01	1.874E-01	2.483E-02	8.395
	+	969.11		1.805E+00	5.515E-01	2.969E-01	7.109E-02	6.079
TH-228	+	338.32		1.785E+00	8.058E-01	3.133E-01	1.277E-01	5.695
	+	911.07	*	1.574E+00	3.197E-01	1.874E-01	2.483E-02	8.395
	+	969.11		1.805E+00	5.515E-01	2.969E-01	7.109E-02	6.079
	+	74.81		2.068E+00	4.863E-01	5.782E-01	4.873E-02	3.577
	+	77.11		2.099E+00	3.091E-01	3.235E-01	2.742E-02	6.488
TH-230	+	87.30		1.205E+00	4.889E-01	6.368E-01	5.853E-02	1.893
	+	238.63	*	1.815E+00	1.635E-01	7.934E-02	5.668E-03	22.871
	+	300.09		2.153E+00	1.658E+00	9.987E-01	5.885E-01	2.156
	+	609.31	*	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
	+	1120.29		1.809E+00	5.082E-01	4.405E-01	4.218E-02	4.106
TH-232	+	1764.49		1.601E+00	3.133E-01	2.040E-01	1.240E-02	7.850
	+	338.32		1.785E+00	3.616E-01	3.133E-01	1.813E-02	5.695
	+	911.07	*	1.574E+00	3.197E-01	1.874E-01	2.483E-02	8.395
	+	969.11		1.805E+00	5.515E-01	2.969E-01	7.109E-02	6.079
	+	63.29	*	2.688E+00	2.182E+00	2.389E+00	4.211E-01	1.125
U-234	+	92.38		1.563E+00	9.567E-01	8.062E-01	1.453E-01	1.939
	+	609.31	*	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
	+	1120.29		1.809E+00	5.082E-01	4.405E-01	4.218E-02	4.106
	+	1764.49		1.601E+00	3.133E-01	2.040E-01	1.240E-02	7.850
	+	86.50	*	7.538E-01	3.430E-01	3.925E-01	8.856E-02	1.921
NP-237	+	95.87		4.297E-02	9.649E-01	1.407E+00	3.437E-01	0.031
	+	63.29	*	2.688E+00	2.182E+00	2.389E+00	4.211E-01	1.125
	+	92.38		1.563E+00	9.239E-01	8.062E-01	6.852E-02	1.939
	+	74.67	*	3.303E-01	7.756E-02	9.270E-02	7.735E-03	3.563
	+							

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	86.72		2.827E+01	1.146E+01	1.452E+01	1.328E+00	1.946
		117.66		-2.060E+00	3.565E+00	5.596E+00	3.442E-01	-0.368
		142.18		-1.133E+01	1.644E+01	2.512E+01	1.384E+00	-0.451
ANH-511	+	511.00	*	1.216E-01	6.027E-02	3.903E-02	2.577E-03	3.117

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-5.581E-02	2.731E-01	4.452E-01	3.226E-02	-0.125
NA-22		1274.54	*	1.438E-02	4.023E-02	6.769E-02	4.606E-03	0.212
NA-24		1368.53	*	-3.063E-01	4.023E-02	Half-Life too short		
AL-26		1129.67		-7.969E-01	1.650E+00	2.403E+00	1.605E-01	-0.332
		1808.65	*	-2.501E-03	2.360E-02	3.810E-02	2.225E-03	-0.066
TI-44		67.85		-4.312E-02	5.036E-02	8.060E-02	6.482E-03	-0.535
	+	78.38	*	3.815E-01	5.619E-02	8.255E-02	7.058E-03	4.621
SC-46		889.25	*	-3.421E-02	3.250E-02	4.840E-02	5.399E-03	-0.707
	+	1120.51		3.099E-01	8.463E-02	1.188E-01	8.207E-03	2.609
V-48		944.10		-9.113E-01	8.203E-01	1.216E+00	1.287E-01	-0.750
		983.50	*	-1.938E-02	6.283E-02	9.932E-02	9.824E-03	-0.195
		1312.09		3.865E-02	7.104E-02	1.213E-01	8.835E-03	0.319
CR-51		320.08	*	-8.046E-02	3.184E-01	5.060E-01	3.258E-02	-0.159
MN-52		744.21		-1.674E-01	1.999E-01	3.128E-01	2.759E-02	-0.535
		848.13		1.622E+00	5.863E+00	9.801E+00	1.025E+00	0.166
		935.52		4.373E-01	2.704E-01	4.284E-01	4.595E-02	1.021
		1246.25		3.469E+00	6.765E+00	1.149E+01	7.386E-01	0.302
		1333.61		-5.048E+00	4.569E+00	6.569E+00	4.962E-01	-0.768
		1434.06	*	-1.751E-02	1.943E-01	3.122E-01	2.301E-02	-0.056
MN-54		834.83	*	-1.527E-02	3.428E-02	5.478E-02	5.611E-03	-0.279
CO-56		846.75	*	2.032E-03	3.327E-02	5.485E-02	5.726E-03	0.037
		977.42		1.911E+00	2.565E+00	4.202E+00	4.203E-01	0.455
		1037.82		2.781E-01	2.654E-01	4.727E-01	4.379E-02	0.588
		1175.09		1.601E+00	2.062E+00	3.569E+00	1.981E-01	0.448
		1238.25		1.442E-01	8.219E-02	1.473E-01	9.816E-03	0.979
		1360.21		2.010E-01	7.828E-01	1.311E+00	9.849E-02	0.153
		1771.40		-1.236E+00	3.159E-01	2.888E-01	1.745E-02	-4.281
CO-57		122.06	*	3.898E-03	2.263E-02	3.657E-02	2.166E-03	0.107
		136.48		7.079E-02	1.942E-01	3.137E-01	2.053E-02	0.226
CO-58		810.76	*	-3.261E-02	3.306E-02	5.048E-02	4.983E-03	-0.646
FE-59		142.65		1.713E-01	2.518E+00	3.973E+00	2.186E-01	0.043
		192.34		5.468E-01	8.457E-01	1.400E+00	1.623E-01	0.391
		1099.22	*	3.166E-03	7.811E-02	1.304E-01	1.074E-02	0.024
		1291.56		-1.111E-01	1.138E-01	1.719E-01	1.445E-02	-0.647
CO-60		1173.22		2.527E-02	4.145E-02	7.110E-02	3.929E-03	0.355
		1332.49	*	-2.192E-02	3.428E-02	5.278E-02	3.988E-03	-0.415
ZN-65		1115.52	*	8.595E-02	9.741E-02	1.488E-01	1.048E-02	0.578
GE-68		1077.35	*	-3.655E-02	1.031E+00	1.716E+00	1.364E-01	-0.021
AS-73		53.44	*	1.322E-01	1.063E+00	1.796E+00	1.424E-01	0.074
AS-74		595.88	*	-5.950E-02	7.637E-02	1.166E-01	8.379E-03	-0.510

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75		634.78		1.097E-02	3.033E-01	4.891E-01	3.641E-02	0.022
		66.05		-5.549E+00	5.906E+00	8.398E+00	8.318E-01	-0.661
		96.73		-8.392E-01	8.259E-01	1.128E+00	1.488E-01	-0.744
		121.11		2.570E-02	1.200E-01	1.944E-01	1.815E-02	0.132
		136.00		2.997E-02	3.650E-02	5.999E-02	3.416E-03	0.500
		198.60		7.109E-02	1.619E+00	2.661E+00	1.806E-01	0.027
		264.65	*	-2.119E-02	4.104E-02	6.024E-02	3.445E-03	-0.352
		279.53		7.144E-02	1.033E-01	1.536E-01	9.490E-03	0.465
		303.91		1.358E+00	1.980E+00	2.925E+00	2.783E-01	0.464
		400.65		1.048E-02	2.067E-01	3.466E-01	3.158E-02	0.030
BR-77	+	87.88		5.839E+02	2.368E+02	3.392E+02	3.134E+01	1.722
		200.40		1.340E+02	1.484E+02	2.552E+02	1.375E+01	0.525
	+	239.00		2.970E+02	2.321E+01	3.537E+01	1.967E+00	8.398
		249.79		-5.564E+01	5.894E+01	9.257E+01	5.189E+00	-0.601
		281.68		-5.696E+01	8.944E+01	1.218E+02	6.948E+00	-0.468
		297.23		3.542E+02	8.288E+01	1.138E+02	6.534E+00	3.112
		303.76		1.191E+02	1.742E+02	2.576E+02	1.482E+01	0.462
		439.47		1.078E+02	1.221E+02	2.118E+02	1.291E+01	0.509
		484.57		-1.099E+02	1.934E+02	3.076E+02	1.974E+01	-0.357
		520.65	*	4.480E+00	8.969E+00	1.511E+01	1.008E+00	0.296
SR-82		574.64		6.953E+01	1.912E+02	3.089E+02	2.175E+01	0.225
		578.91		1.910E+00	9.278E+01	1.301E+02	9.201E+00	0.015
		585.48		1.637E+03	2.486E+02	4.326E+02	3.078E+01	3.784
		755.35		-3.037E+01	1.488E+02	2.437E+02	2.190E+01	-0.125
		817.79		3.670E+01	1.113E+02	1.874E+02	1.868E+01	0.196
		698.33		3.235E+00	2.870E+01	4.824E+01	3.927E+00	0.067
		776.49	*	-1.030E-01	3.344E-01	5.425E-01	5.052E-02	-0.190
		1395.20		-5.258E+00	9.503E+00	1.459E+01	1.087E+00	-0.360
		520.41	*	3.354E-02	5.765E-02	9.756E-02	6.507E-03	0.344
		529.64		1.957E-02	8.667E-02	1.436E-01	9.672E-03	0.136
RB-83		552.65		-7.724E-02	1.623E-01	2.562E-01	1.766E-02	-0.301
		881.50	*	1.766E-02	5.779E-02	9.659E-02	1.065E-02	0.183
		513.99	*	1.996E+01	7.336E+00	1.215E+01	8.049E-01	1.643
		513.99	*	1.025E-01	3.766E-02	6.237E-02	4.132E-03	1.643
		1076.63	*	3.880E-02	6.512E-01	1.091E+00	8.685E-02	0.036
		898.02		-1.719E-04	3.687E-02	6.018E-02	6.822E-03	-0.003
		1836.01	*	-1.794E-02	2.992E-02	4.490E-02	2.558E-03	-0.400
		392.90	*	7.250E-03	2.481E-02	4.217E-02	2.425E-03	0.172
		1204.90	*	2.362E+00	1.793E+01	2.982E+01	1.763E+00	0.079
		702.63	*	6.803E-03	2.714E-02	4.597E-02	3.771E-03	0.148
RB-84		871.10		2.506E-02	2.913E-02	5.034E-02	5.459E-03	0.498
		765.79	*	5.718E-02	4.495E-02	7.024E-02	6.425E-03	0.814
		235.69	*	1.104E-01	1.193E-01	1.807E-01	1.326E-02	0.611
		724.18		1.603E-01	9.411E-02	1.511E-01	1.402E-02	1.060
		756.15	*	-2.007E-02	6.168E-02	1.002E-01	9.861E-03	-0.200
		657.90	*	6.410E-02	6.168E-02	Half-Life too short		
		1024.50		7.056E+00	6.168E-02	Half-Life too short		
		254.15		2.001E+00	6.168E-02	Half-Life too short		
		355.39		2.579E+00	6.168E-02	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	507.63	*		6.022E+00	6.168E-02	Half-Life	too short	
	602.52			2.356E+00	6.168E-02	Half-Life	too short	
	1021.30			-1.640E+00	6.168E-02	Half-Life	too short	
	1147.95			-5.701E+00	6.168E-02	Half-Life	too short	
	1362.66			-6.288E+00	6.168E-02	Half-Life	too short	
	1750.46			-1.357E+00	6.168E-02	Half-Life	too short	
MO-99	140.51			-2.581E+01	2.623E+01	3.825E+01	1.029E+01	-0.675
	181.06			-5.124E+00	1.757E+01	2.562E+01	4.349E+00	-0.200
	366.43			1.213E+00	7.036E+01	1.186E+02	6.852E+00	0.010
	739.58	*		9.704E+00	9.549E+00	1.671E+01	2.550E+00	0.581
	778.00			-6.322E+00	3.039E+01	4.961E+01	4.632E+00	-0.127
TC-99M	140.51	*		-5.037E+10	3.039E+01	Half-Life	too short	
RH-101	127.23			3.214E-02	3.183E-02	4.771E-02	2.756E-03	0.674
	198.01	*		-1.672E-02	2.965E-02	4.766E-02	2.562E-03	-0.351
	325.23			3.878E-02	2.183E-01	3.103E-01	1.793E-02	0.125
RH-102	418.52			4.213E-02	2.313E-01	3.893E-01	2.313E-02	0.108
	475.06	*		9.733E-03	2.447E-02	4.124E-02	2.620E-03	0.236
	631.29			-3.463E-02	4.757E-02	7.273E-02	5.398E-03	-0.476
	697.49			-1.117E-03	6.540E-02	1.091E-01	8.872E-03	-0.010
+	766.84			2.100E-01	1.260E-01	1.835E-01	1.681E-02	1.145
	1046.59			-7.188E-02	9.810E-02	1.555E-01	1.341E-02	-0.462
	1112.84			-1.669E-02	2.375E-01	3.357E-01	2.383E-02	-0.050
RU-103	497.08	*		-1.378E-02	3.193E-02	5.099E-02	6.620E-03	-0.270
+	610.33			1.256E+01	2.483E+00	2.460E+00	3.944E-01	5.105
RH-106	511.85	+		6.077E-01	3.011E-01	3.885E-01	2.568E-02	1.564
	621.84	*		8.669E-02	2.753E-01	4.524E-01	5.691E-02	0.192
	1050.47			1.095E+00	1.979E+00	3.425E+00	2.927E-01	0.320
RU-106	511.85	+		6.077E-01	3.011E-01	3.885E-01	2.568E-02	1.564
	621.84	*		8.669E-02	2.752E-01	4.524E-01	3.329E-02	0.192
	1050.47			1.095E+00	1.979E+00	3.425E+00	2.927E-01	0.320
AG-108M	433.93	*		-2.037E-02	2.665E-02	4.238E-02	2.769E-03	-0.481
	614.37			2.975E-02	3.481E-02	5.220E-02	4.023E-03	0.570
	722.95			-9.535E-03	3.825E-02	5.359E-02	4.739E-03	-0.178
AG-110M	657.75	*		2.049E-02	2.731E-02	4.781E-02	3.771E-03	0.429
	677.61			2.370E-01	2.523E-01	4.445E-01	3.605E-02	0.533
	706.67			6.174E-02	1.592E-01	2.720E-01	2.314E-02	0.227
	763.93			9.244E-02	1.592E-01	2.381E-01	2.227E-02	0.388
	884.67			3.391E-02	3.926E-02	6.805E-02	7.685E-03	0.498
	937.48			5.937E-02	1.103E-01	1.618E-01	1.772E-02	0.367
	1384.27			-1.043E-01	1.440E-01	2.178E-01	1.689E-02	-0.479
IN-111	171.28			-4.733E-01	8.744E-01	1.445E+00	7.601E-02	-0.328
	245.39	*		4.434E-01	9.882E-01	1.465E+00	8.186E-02	0.303
IN-113M	391.69	*		2.741E-02	3.604E-02	6.258E-02	3.839E-03	0.438
SN-113	391.69	*		2.741E-02	3.604E-02	6.258E-02	3.839E-03	0.438
IN-114M	190.27	*		-5.891E-02	1.787E-01	2.590E-01	1.383E-02	-0.227
CD-115	260.90			5.889E+01	1.157E+02	1.935E+02	1.093E+01	0.304
	492.35			2.093E+01	3.178E+01	5.416E+01	3.506E+00	0.386
	527.90	*		7.203E+00	9.099E+00	1.558E+01	1.047E+00	0.462
SN-117M	156.02			-1.629E+00	1.997E+00	3.292E+00	1.758E-01	-0.495

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122	158.56	*		3.128E-02	4.670E-02	8.089E-02	4.299E-03	0.387
	563.90	*		1.220E+00	1.753E+00	2.969E+00	2.069E-01	0.411
	692.80			2.707E+01	3.894E+01	6.745E+01	5.438E+00	0.401
I-123	159.00	*		1.233E+00	3.894E+01	Half-Life	too short	
	528.96			3.793E+00	3.894E+01	Half-Life	too short	
TE-123M	159.00	*		5.255E-03	2.433E-02	4.152E-02	2.240E-03	0.127
I-124	602.71	*		-1.382E-01	6.954E-01	9.511E-01	6.877E-02	-0.145
	722.78			-1.132E+00	4.068E+00	5.683E+00	4.829E-01	-0.199
	1325.50			1.625E+01	3.255E+01	5.533E+01	4.129E+00	0.294
SB-124	1376.25			3.831E+01	2.775E+01	5.010E+01	3.752E+00	0.765
	1509.49			1.953E+01	1.348E+01	2.336E+01	1.673E+00	0.836
	1691.02			2.585E+00	2.976E+00	5.472E+00	3.529E-01	0.472
	602.71			-7.885E-03	3.969E-02	5.428E-02	3.926E-03	-0.145
	645.85			1.198E-01	3.921E-01	6.437E-01	5.218E-02	0.186
	709.31			-1.714E+00	2.201E+00	3.480E+00	2.889E-01	-0.493
	713.82			-9.776E-02	1.364E+00	2.264E+00	2.684E-01	-0.043
	722.78			-9.363E-02	3.366E-01	4.702E-01	4.085E-02	-0.199
	968.20			1.860E+01	4.005E+00	6.371E+00	6.478E-01	2.920
	1045.16			-2.565E+00	2.127E+00	3.238E+00	2.803E-01	-0.792
SB-125	1325.50			1.436E+00	2.876E+00	4.890E+00	3.649E-01	0.294
	1368.21			-6.066E-01	1.525E+00	2.387E+00	3.053E-01	-0.254
	1436.60			-1.908E+00	2.967E+00	4.443E+00	3.271E-01	-0.429
	1691.02			5.045E-02	5.808E-02	1.068E-01	7.367E-03	0.472
	427.89	*		3.218E-02	7.383E-02	1.257E-01	7.853E-03	0.256
	463.38			7.537E-01	3.418E-01	4.495E-01	3.222E-02	1.677
	600.56			-1.076E-01	1.623E-01	2.409E-01	1.919E-02	-0.447
	635.90			-9.801E-02	2.327E-01	3.635E-01	2.998E-02	-0.270
	109.28	*		1.026E+01	8.974E+00	1.505E+01	1.323E+00	0.682
	388.63			2.729E-02	1.635E-01	2.765E-01	1.589E-02	0.099
I-126	666.33	*		2.020E-01	1.575E-01	2.808E-01	2.159E-02	0.719
	753.82			8.542E-01	1.296E+00	2.229E+00	1.998E-01	0.383
	223.80			1.302E-01	3.542E+00	5.872E+00	3.227E-01	0.022
	278.60			4.362E+00	3.391E+00	3.666E+00	2.089E-01	1.190
	296.50			1.429E+01	2.301E+00	3.269E+00	1.876E-01	4.372
	414.70			-7.781E-03	6.483E-02	1.014E-01	5.996E-03	-0.077
	415.30			1.984E+00	5.199E+00	8.627E+00	5.106E-01	0.230
	555.20			1.844E+00	3.183E+00	5.372E+00	3.711E-01	0.343
	573.80			5.672E-02	9.090E-01	1.481E+00	1.042E-01	0.038
	593.00			-3.970E-01	7.535E-01	1.175E+00	8.420E-02	-0.338
SB-126	656.30			3.263E-01	2.643E+00	4.470E+00	3.391E-01	0.073
	666.33			8.443E-02	6.585E-02	1.174E-01	9.023E-03	0.719
	675.00			2.528E-01	1.703E+00	2.876E+00	2.246E-01	0.088
	695.00			4.187E-02	6.721E-02	1.160E-01	9.388E-03	0.361
	697.00			-9.376E-02	2.328E-01	3.799E-01	3.086E-02	-0.247
	720.50	*		-2.833E-02	1.328E-01	1.949E-01	1.650E-02	-0.145
	856.80			4.676E-01	4.594E-01	7.063E-01	7.491E-02	0.662
	989.30			2.195E-01	1.147E+00	1.881E+00	1.840E-01	0.117
	1034.80			2.812E+00	7.729E+00	1.279E+01	1.136E+00	0.220
	1213.00			-1.845E+00	4.392E+00	7.061E+00	4.245E-01	-0.261

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error (pCi/GRAM)	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	61.10		3.518E+00	7.169E+01	1.077E+02	1.133E+01	0.033
	252.40		1.270E+00	3.802E+00	6.270E+00	2.604E+00	0.203
	290.80		-1.277E+01	2.045E+01	2.770E+01	2.537E+00	-0.461
	411.60		4.341E+00	1.180E+01	1.755E+01	2.534E+00	0.247
	444.90		-1.502E+00	7.793E+00	1.278E+01	1.407E+00	-0.118
	473.00		4.900E-01	1.399E+00	2.353E+00	2.705E-01	0.208
	543.00		-1.135E+00	1.431E+01	2.322E+01	3.118E+00	-0.049
	603.60		-9.881E-02	1.165E+01	1.620E+01	1.884E+00	-0.006
	685.20	*	-6.529E-02	1.106E+00	1.843E+00	2.013E-01	-0.035
	698.50		1.332E+00	1.301E+01	2.184E+01	3.405E+00	0.061
XE-127	722.20		-6.931E+00	2.766E+01	3.874E+01	4.298E+00	-0.179
	783.80		4.608E+00	3.406E+00	5.968E+00	7.770E-01	0.772
	57.60		1.780E+00	7.353E+00	1.242E+01	9.575E-01	0.143
	145.22		5.673E-01	6.411E-01	1.051E+00	5.746E-02	0.540
	172.10		-7.961E-02	1.009E-01	1.650E-01	8.686E-03	-0.482
I-131	202.84	*	-3.082E-02	4.129E-02	6.689E-02	3.611E-03	-0.461
	374.96		-4.318E-03	1.641E-01	2.756E-01	1.589E-02	-0.016
	80.18		1.622E+00	4.997E+00	7.463E+00	6.506E-01	0.217
	284.30		5.072E-01	1.350E+00	2.160E+00	1.376E-01	0.235
	364.48	*	3.376E-02	9.381E-02	1.608E-01	1.038E-02	0.210
TE-132	636.97		4.514E-01	1.277E+00	2.104E+00	1.686E-01	0.215
	722.89		-1.688E+00	6.504E+00	9.103E+00	7.789E-01	-0.185
	49.72		-7.580E+00	2.778E+01	4.640E+01	4.750E+00	-0.163
	111.76		-1.346E+01	2.870E+01	4.542E+01	4.231E+00	-0.296
	116.30		2.012E+01	2.662E+01	4.400E+01	4.010E+00	0.457
BA-133	228.16	*	-1.164E-01	6.194E-01	1.016E+00	1.450E-01	-0.115
	53.15		-1.180E-01	4.616E+00	7.759E+00	6.157E-01	-0.015
	79.62		-1.248E-01	1.416E+00	2.079E+00	3.166E-01	-0.060
	81.00		-4.265E-02	1.081E-01	1.560E-01	2.486E-02	-0.273
	276.40	+	6.477E-01	5.091E-01	5.461E-01	7.054E-02	1.186
I-133	302.84		4.891E-02	1.403E-01	2.028E-01	2.359E-02	0.241
	356.01	*	-1.980E-04	4.199E-02	5.839E-02	6.746E-03	-0.003
	383.85		-4.290E-02	2.354E-01	3.913E-01	4.245E-02	-0.110
	510.53	+	1.359E+00	2.354E-01	Half-Life	too short	
	529.87	*	3.404E-04	2.354E-01	Half-Life	too short	
CS-134	706.58		1.466E-01	2.354E-01	Half-Life	too short	
	856.28		4.311E-01	2.354E-01	Half-Life	too short	
	875.33		3.674E-02	2.354E-01	Half-Life	too short	
	1236.41		1.231E+00	2.354E-01	Half-Life	too short	
	1298.22		5.133E-02	2.354E-01	Half-Life	too short	
	475.35		1.052E+00	1.589E+00	2.715E+00	1.725E-01	0.388
	563.23		2.734E-01	2.928E-01	5.024E-01	3.550E-02	0.544
	569.32		-7.412E-03	1.685E-01	2.682E-01	1.918E-02	-0.028
	604.70		-6.199E-03	3.324E-02	4.547E-02	3.306E-03	-0.136
	795.84	*	7.660E-02	4.302E-02	7.525E-02	7.278E-03	1.018
	801.93		-2.380E-01	3.474E-01	5.429E-01	5.297E-02	-0.438
	1038.57		3.385E+00	3.343E+00	5.940E+00	5.227E-01	0.570
	1167.94		-2.497E+00	2.298E+00	3.531E+00	2.002E-01	-0.707
	1365.15		2.260E-01	1.011E+00	1.686E+00	1.341E-01	0.134

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135	268.24	*		1.612E-01	1.573E-01	2.379E-01	1.798E-02	0.678
I-135	288.45			4.017E+08	1.573E-01	Half-Life	too short	
	417.63			8.617E+09	1.573E-01	Half-Life	too short	
	546.56			8.411E+09	1.573E-01	Half-Life	too short	
	836.80			1.974E+10	1.573E-01	Half-Life	too short	
	1038.76			2.696E+10	1.573E-01	Half-Life	too short	
	1124.00			5.145E+10	1.573E-01	Half-Life	too short	
	1131.51			-6.588E+09	1.573E-01	Half-Life	too short	
	1260.41	*		1.323E+08	1.573E-01	Half-Life	too short	
	1457.56			2.032E+12	1.573E-01	Half-Life	too short	
	1678.03			3.556E+09	1.573E-01	Half-Life	too short	
	1706.46			-1.571E+10	1.573E-01	Half-Life	too short	
	1791.20			-3.516E+08	1.573E-01	Half-Life	too short	
CS-136	66.91			-6.895E-01	9.477E-01	1.357E+00	2.050E-01	-0.508
	86.29	+		3.371E+00	1.404E+00	1.906E+00	2.512E-01	1.769
	153.22			4.844E-01	5.835E-01	1.016E+00	6.990E-02	0.477
	163.89			-1.665E-01	9.317E-01	1.546E+00	1.056E-01	-0.108
	176.55			6.563E-02	3.277E-01	5.552E-01	3.364E-02	0.118
	273.65			-1.540E-01	6.020E-01	5.997E-01	3.907E-02	-0.257
	340.57			5.158E-01	1.426E-01	2.347E-01	1.444E-02	2.197
	818.51			3.217E-02	5.975E-02	1.020E-01	1.019E-02	0.315
	1048.07	*		6.547E-02	9.210E-02	1.610E-01	1.443E-02	0.407
	1235.34			7.079E-01	5.425E-01	9.497E-01	9.764E-02	0.745
BA-137M	661.65	*		-1.979E-02	2.948E-02	4.747E-02	3.618E-03	-0.417
CS-137	661.65	*		-2.092E-02	3.116E-02	5.018E-02	3.834E-03	-0.417
CE-139	165.85	*		-2.377E-03	2.512E-02	4.229E-02	2.220E-03	-0.056
BA-140	162.64			6.394E-03	6.471E-01	1.081E+00	6.555E-02	0.006
	304.84			2.411E-01	1.247E+00	1.783E+00	4.864E-01	0.135
	423.70			-5.459E-01	1.542E+00	2.502E+00	7.961E-01	-0.218
	537.32	*		-3.310E-02	2.007E-01	3.236E-01	1.058E-01	-0.102
LA-140	328.77	+		8.400E-01	3.691E-01	4.817E-01	3.121E-02	1.744
	432.53			1.398E-01	1.644E+00	2.746E+00	1.821E-01	0.051
	487.03			-5.490E-02	1.163E-01	1.863E-01	1.329E-02	-0.295
	751.79			1.518E+00	1.532E+00	2.675E+00	2.628E-01	0.567
	815.85			-1.603E-01	2.692E-01	4.238E-01	4.580E-02	-0.378
	867.82			-1.196E+00	1.435E+00	1.831E+00	2.043E-01	-0.653
	919.63			-1.877E+00	2.549E+00	3.554E+00	4.489E-01	-0.528
	925.24			1.140E+00	1.103E+00	1.696E+00	1.921E-01	0.672
	1596.49	*		-3.816E-03	6.412E-02	9.781E-02	6.711E-03	-0.039
CE-141	145.44	*		5.151E-02	5.820E-02	9.540E-02	5.446E-03	0.540
CE-143	57.37			-4.580E-06	5.820E-02	Half-Life	too short	
	231.56			-2.459E-04	5.820E-02	Half-Life	too short	
	293.26	*		7.994E-04	5.820E-02	Half-Life	too short	
	350.59	+		3.332E-02	5.820E-02	Half-Life	too short	
	490.36			1.898E-03	5.820E-02	Half-Life	too short	
	664.57			5.773E-04	5.820E-02	Half-Life	too short	
	721.93			-3.595E-04	5.820E-02	Half-Life	too short	
CE-144	80.11			6.684E-01	2.276E+00	3.396E+00	2.940E-01	0.197
	133.54	*		1.494E-02	2.165E-01	3.082E-01	4.358E-02	0.048

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-144		476.78		3.732E-02	5.607E-02	9.577E-02	7.107E-03	0.390
		618.01		-1.092E-02	2.781E-02	4.237E-02	3.225E-03	-0.258
		696.49	*	-1.517E-02	3.011E-02	4.885E-02	3.966E-03	-0.311
		778.57		9.671E-03	1.991E+00	3.294E+00	3.079E-01	0.003
PR-144		696.49	*	-1.028E+00	2.041E+00	3.310E+00	2.686E-01	-0.311
		1489.15		-5.393E+00	8.939E+00	1.326E+01	9.579E-01	-0.407
PM-146		453.90	*	2.049E-02	3.539E-02	6.039E-02	5.372E-03	0.339
		633.02		5.319E-01	1.189E+00	1.944E+00	7.214E-01	0.274
		735.90		7.877E-04	1.256E-01	1.993E-01	5.706E-02	0.004
		747.13		-3.488E-02	7.782E-02	1.253E-01	1.778E-02	-0.278
ND-147		91.11		2.973E-01	4.003E-01	4.810E-01	4.524E-02	0.618
		319.41		-2.254E-01	2.810E+00	4.508E+00	2.604E-01	-0.050
		439.89		4.206E+00	4.836E+00	8.387E+00	5.117E-01	0.502
		531.02	*	-2.172E-01	4.634E-01	7.335E-01	1.023E-01	-0.296
PM-149		285.90	*	3.052E+01	8.372E+01	1.382E+02	1.954E+01	0.221
EU-152		121.78		1.688E-02	6.554E-02	1.063E-01	8.192E-03	0.159
		244.69		-1.850E-03	3.115E-01	4.492E-01	2.509E-02	-0.004
		344.27	*	2.578E-03	9.831E-02	1.375E-01	8.972E-03	0.019
		443.98		-5.164E-01	7.741E-01	1.235E+00	7.570E-02	-0.418
		778.89		2.361E-02	2.312E-01	3.848E-01	3.598E-02	0.061
		867.32		-4.117E-01	7.958E-01	1.053E+00	1.135E-01	-0.391
	+	964.01		9.304E-01	3.854E-01	5.371E-01	5.501E-02	1.732
		1085.78		3.131E-02	3.388E-01	5.684E-01	4.404E-02	0.055
		1112.02		-2.172E-02	3.365E-01	4.759E-01	3.388E-02	-0.046
		1407.95		6.943E-02	1.564E-01	2.650E-01	1.968E-02	0.262
GD-153		69.67		3.101E-01	1.755E+00	2.928E+00	2.376E-01	0.106
		83.37		6.341E+00	1.630E+01	2.418E+01	2.148E+00	0.262
		97.43	*	-8.665E-02	8.513E-02	1.169E-01	9.141E-03	-0.741
		103.18		-1.099E-01	1.021E-01	1.582E-01	1.141E-02	-0.695
EU-154		123.07		-2.593E-02	4.651E-02	7.272E-02	6.877E-03	-0.357
		247.94		7.115E-02	3.152E-01	5.057E-01	4.763E-02	0.141
		591.81		-1.741E-01	5.000E-01	7.900E-01	8.403E-02	-0.220
		723.30		4.162E-02	1.592E-01	2.336E-01	2.202E-02	0.178
		756.87		-7.851E-02	6.538E-01	1.076E+00	1.319E-01	-0.073
		873.19		2.428E-01	2.525E-01	4.374E-01	6.093E-02	0.555
		996.32		-3.089E-01	3.574E-01	5.361E-01	9.803E-02	-0.576
		1004.76		-5.767E-02	2.083E-01	3.301E-01	4.059E-02	-0.175
		1274.45	*	3.033E-02	1.128E-01	1.886E-01	1.884E-02	0.161
EU-155		48.70		-3.987E-01	3.477E+00	5.849E+00	4.437E-01	-0.068
		60.01		-7.502E-01	6.211E+00	9.269E+00	7.073E-01	-0.081
	+	86.54		3.092E-01	1.255E-01	1.778E-01	1.638E-02	1.739
		105.31	*	8.572E-02	1.029E-01	1.715E-01	1.226E-02	0.500
TB-160	+	86.79		8.268E-01	3.353E-01	4.808E-01	4.399E-02	1.719
		197.04		-6.359E-02	4.846E-01	8.055E-01	4.326E-02	-0.079
		215.65		2.842E-01	6.514E-01	1.099E+00	5.997E-02	0.259
		298.57		2.141E-01	1.502E-01	1.759E-01	1.010E-02	1.217
		879.36	*	-4.324E-02	1.185E-01	1.886E-01	2.072E-02	-0.229
		962.29		1.270E+00	5.099E-01	9.082E-01	9.330E-02	1.398
		966.15		1.709E+00	2.972E-01	5.031E-01	5.134E-02	3.398



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1177.93			-1.018E-01	3.327E-01	5.399E-01	3.014E-02	-0.189
	1271.85			2.505E-01	6.440E-01	1.087E+00	7.344E-02	0.231
	80.57			2.902E-02	2.930E-01	4.334E-01	3.765E-02	0.067
	184.41			1.009E-01	3.580E-02	5.857E-02	3.112E-03	1.723
	280.46			6.470E-03	7.902E-02	1.132E-01	6.455E-03	0.057
	410.95		+	2.205E-01	2.159E-01	3.607E-01	2.123E-02	0.611
TM-171	711.68		*	6.247E-04	4.716E-02	7.870E-02	6.560E-03	0.008
	752.31			2.825E-01	2.445E-01	4.304E-01	3.848E-02	0.656
	810.29			-5.360E-02	5.011E-02	7.599E-02	7.482E-03	-0.705
	51.35			-8.907E+00	4.086E+01	6.829E+01	5.412E+00	-0.130
	52.39			-1.542E+01	2.112E+01	3.455E+01	2.745E+00	-0.446
	59.40			-5.080E+00	3.417E+01	5.096E+01	3.869E+00	-0.100
LU-176	66.72		*	-2.358E+01	3.410E+01	4.916E+01	3.930E+00	-0.480
	88.36		+	6.089E-01	2.469E-01	3.519E-01	3.231E-02	1.730
	201.83			-1.267E-02	2.520E-02	4.125E-02	2.224E-03	-0.307
	306.84		*	2.310E-02	2.370E-02	3.568E-02	2.054E-03	0.647
LU-177	401.10			5.935E-01	5.357E+00	9.012E+00	5.238E-01	0.066
	112.95			-2.214E+00	1.578E+00	2.395E+00	1.543E-01	-0.924
LU-177M	208.36		+	1.078E+00	1.385E+00	1.730E+00	9.385E-02	0.623
	52.97			-5.515E-01	2.111E+00	3.518E+00	2.793E-01	-0.157
	54.07			-6.315E-02	1.095E+00	1.836E+00	1.452E-01	-0.034
	61.30			2.665E-01	1.814E+00	2.738E+00	2.115E-01	0.097
	121.62			1.012E-01	3.369E-01	5.475E-01	3.247E-02	0.185
	147.16			-2.850E-01	6.053E-01	9.401E-01	5.115E-02	-0.303
	171.86			-3.830E-01	4.064E-01	6.604E-01	3.476E-02	-0.580
	218.09			-3.316E-02	7.449E-01	1.233E+00	6.746E-02	-0.027
	268.79			1.390E+00	8.125E-01	1.268E+00	7.191E-02	1.096
	319.02			2.345E-02	2.161E-01	3.501E-01	2.021E-02	0.067
HF-181	367.43			-2.284E-01	7.363E-01	1.221E+00	7.052E-02	-0.187
	413.65		*	1.744E-02	1.603E-01	2.344E-01	1.384E-02	0.074
	56.28			2.353E-01	1.181E+00	1.994E+00	1.553E-01	0.118
	57.53			6.266E-02	6.207E-01	1.044E+00	8.049E-02	0.060
	65.20			3.615E-02	1.151E+00	1.719E+00	1.363E-01	0.021
	133.02			-2.900E-02	7.121E-02	9.884E-02	5.591E-03	-0.293
	136.25			2.423E-01	4.268E-01	6.949E-01	3.891E-02	0.349
	345.85			-5.713E-02	1.971E-01	2.691E-01	1.557E-02	-0.212
	482.03		*	1.654E-03	3.483E-02	5.757E-02	3.685E-03	0.029
	56.28			9.181E-02	4.615E-01	7.795E-01	6.073E-02	0.118
W-181	57.53			2.420E-02	2.428E-01	4.084E-01	3.149E-02	0.059
	65.20		*	1.403E-02	4.466E-01	6.671E-01	5.291E-02	0.021
TA-182	67.75			-7.198E-02	1.192E-01	1.926E-01	1.548E-02	-0.374
	100.10			2.681E-01	1.712E-01	2.923E-01	2.197E-02	0.917
	152.43			3.628E-01	3.157E-01	5.207E-01	2.801E-02	0.697
	222.10			4.486E-02	3.026E-01	5.041E-01	2.767E-02	0.089
	1001.68			2.321E+00	2.033E+00	3.471E+00	3.314E-01	0.669
	1121.28		+	8.557E-01	2.337E-01	3.228E-01	2.224E-02	2.651
	1189.05			-1.920E-01	2.725E-01	4.293E-01	2.455E-02	-0.447
	1221.42		*	7.079E-02	1.846E-01	3.111E-01	1.903E-02	0.228
	1230.97			-8.354E-01	4.578E-01	6.669E-01	4.159E-02	-1.253

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		57.98		3.020E-02	2.510E-01	4.036E-01	3.100E-02	0.075
		59.32		-2.168E-02	1.409E-01	2.100E-01	1.596E-02	-0.103
		67.20		-1.717E-01	2.251E-01	3.447E-01	2.763E-02	-0.498
		162.32	*	-1.482E-02	9.444E-02	1.569E-01	8.283E-03	-0.094
	+	208.81		9.582E-01	1.232E+00	1.547E+00	8.395E-02	0.619
RE-184		291.72		-7.635E-01	8.756E-01	1.165E+00	6.673E-02	-0.656
		57.98		1.112E-01	9.244E-01	1.486E+00	1.142E-01	0.075
		59.32		-7.978E-02	5.183E-01	7.728E-01	5.872E-02	-0.103
		67.20		-6.322E-01	8.286E-01	1.269E+00	1.017E-01	-0.498
		161.27		-1.917E-01	3.015E-01	4.987E-01	2.637E-02	-0.384
OS-185		216.55		1.744E-01	2.270E-01	3.874E-01	2.116E-02	0.450
		252.85	*	-5.368E-02	1.996E-01	3.235E-01	1.817E-02	-0.166
		318.01		-2.816E-01	3.787E-01	5.854E-01	3.379E-02	-0.481
		792.07		7.345E-01	9.091E-01	1.565E+00	1.496E-01	0.469
		903.28		-3.253E-01	1.056E+00	1.431E+00	1.606E-01	-0.227
RE-188		920.93		-2.182E-01	3.911E-01	5.935E-01	6.503E-02	-0.368
		59.72		-2.983E-02	3.726E-01	5.574E-01	4.239E-02	-0.054
		61.14		1.299E-02	1.998E-01	3.004E-01	2.318E-02	0.043
		69.30		8.206E-02	3.131E-01	5.239E-01	4.244E-02	0.157
		592.07		-5.613E-01	2.025E+00	3.216E+00	2.302E-01	-0.175
W-188		646.12	*	8.325E-03	3.374E-02	5.515E-02	4.148E-03	0.151
		717.42		4.133E-01	7.423E-01	1.277E+00	1.075E-01	0.324
		874.81		5.790E-02	5.005E-01	8.259E-01	9.009E-02	0.070
		880.27		1.191E-01	6.347E-01	1.053E+00	1.158E-01	0.113
		155.03	*	2.546E-02	1.505E-01	2.568E-01	1.374E-02	0.099
IR-192		477.96		-4.454E-01	2.605E+00	4.255E+00	2.711E-01	-0.105
		633.10		1.543E+00	2.353E+00	3.946E+00	2.934E-01	0.391
	+	63.58		1.081E+02	8.611E+01	1.057E+02	8.308E+00	1.023
		227.08		-4.358E+00	1.127E+01	1.835E+01	1.011E+00	-0.237
		290.67	*	-3.818E+00	6.953E+00	9.488E+00	5.434E-01	-0.402
AU-195		295.96		1.088E+00	1.756E-01	2.524E-01	1.472E-02	4.313
		308.46		-4.825E-02	8.333E-02	1.306E-01	7.609E-03	-0.369
		316.51	*	-1.216E-03	2.846E-02	4.577E-02	2.654E-03	-0.027
		468.07		-1.300E-02	5.802E-02	8.147E-02	5.806E-03	-0.160
		604.41		-1.002E-01	4.492E-01	6.124E-01	7.441E-02	-0.164
TL-200		612.46		2.445E+00	7.679E-01	1.273E+00	1.116E-01	1.921
		65.12		2.217E-02	2.076E-01	3.111E-01	2.466E-02	0.071
		66.83		-8.220E-02	1.129E-01	1.624E-01	1.299E-02	-0.506
	+	75.70		1.069E+00	2.511E-01	4.401E-01	3.696E-02	2.430
		98.88	*	8.150E-02	2.178E-01	3.589E-01	2.746E-02	0.227
TL-201		129.76		4.643E+00	3.454E+00	4.714E+00	2.697E-01	0.985
		367.94	*	8.687E-06	3.454E+00	Half-Life	too short	
		579.30		3.177E-03	3.454E+00	Half-Life	too short	
		828.27		3.995E-03	3.454E+00	Half-Life	too short	
		1205.75		3.092E-04	3.454E+00	Half-Life	too short	
TL-201		68.90		-7.565E-01	5.196E+00	8.587E+00	6.942E-01	-0.088
		70.82		3.767E-01	3.296E+00	4.919E+00	4.016E-01	0.077
		80.30		6.853E-01	5.578E+00	8.260E+00	7.161E-01	0.083
		135.34		1.254E+01	2.426E+01	3.944E+01	2.215E+00	0.318

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202	167.43	*		-7.433E-01	6.070E+00	1.020E+01	5.356E-01	-0.073
	68.90			-6.669E-02	4.581E-01	7.569E-01	6.119E-02	-0.088
	70.82			3.311E-02	2.897E-01	4.324E-01	3.530E-02	0.077
	80.30			6.026E-02	4.905E-01	7.263E-01	6.297E-02	0.083
BI-207	439.56	*		5.045E-02	5.747E-02	9.969E-02	6.078E-03	0.506
	72.80			1.954E-02	2.061E-01	3.067E-01	2.532E-02	0.064
	74.97		+	5.928E-01	1.392E-01	2.229E-01	1.864E-02	2.659
	84.90			1.624E-01	2.026E-01	3.049E-01	2.744E-02	0.533
TL-207	569.67			-4.427E-03	2.655E-02	4.195E-02	2.940E-03	-0.106
	1063.62	*		2.582E-03	4.840E-02	7.949E-02	6.562E-03	0.032
	1770.23			-2.698E-01	4.205E-01	4.988E-01	3.017E-02	-0.541
	81.07			-9.457E-02	2.380E-01	3.441E-01	3.001E-02	-0.275
	83.78			1.333E-02	1.397E-01	2.047E-01	1.825E-02	0.065
	94.90		+	7.551E-01	4.463E-01	3.936E-01	3.203E-02	1.919
	122.32			3.782E-01	1.568E+00	2.540E+00	1.725E-01	0.149
	144.24			3.273E-01	6.438E-01	1.032E+00	7.203E-02	0.317
	154.21			1.846E-01	3.467E-01	5.983E-01	3.981E-02	0.309
	269.46		+	4.706E-01	2.506E-01	3.078E-01	1.828E-02	1.529
	323.87	*		2.099E-01	6.241E-01	8.966E-01	1.480E-01	0.234
	338.28		+	7.452E+00	1.646E+00	2.232E+00	2.349E-01	3.338
PO-209	445.03			-2.402E-01	1.777E+00	2.925E+00	3.061E-01	-0.082
	260.50			4.822E+00	8.190E+00	1.375E+01	7.760E-01	0.351
	262.80			-1.452E+01	2.273E+01	3.606E+01	2.038E+00	-0.403
	896.60	*		4.113E+00	6.355E+00	1.082E+01	1.221E+00	0.380
BI-210	46.50	*		1.576E+00	5.548E+00	9.280E+00	7.180E-01	0.170
PB-210	46.50	*		1.576E+00	5.548E+00	9.280E+00	7.180E-01	0.170
PO-210	46.50	*		1.576E+00	5.548E+00	9.280E+00	6.172E-01	0.170
PB-211	404.84	*		-7.320E-02	8.717E-01	1.258E+00	7.842E-01	-0.058
BI-212	427.08			9.532E-01	1.751E+00	2.828E+00	1.749E+00	0.337
	831.96			-2.255E-01	1.110E+00	1.787E+00	1.124E+00	-0.126
	727.18	*	+	1.164E+00	3.894E-01	5.596E-01	5.573E-02	2.081
	785.46			1.399E+00	1.647E+00	2.800E+00	2.647E-01	0.500
PO-215	1620.62			3.099E-01	1.061E+00	1.815E+00	1.227E-01	0.171
	81.07			-9.457E-02	2.380E-01	3.441E-01	3.001E-02	-0.275
	83.78			1.333E-02	1.397E-01	2.047E-01	1.825E-02	0.065
	94.90		+	7.551E-01	4.463E-01	3.936E-01	3.203E-02	1.919
	122.32			3.782E-01	1.568E+00	2.540E+00	1.725E-01	0.149
	144.24			3.273E-01	6.438E-01	1.032E+00	7.203E-02	0.317
	154.21			1.846E-01	3.467E-01	5.983E-01	3.981E-02	0.309
	269.46		+	4.706E-01	2.506E-01	3.078E-01	1.828E-02	1.529
	323.87	*		2.099E-01	6.241E-01	8.966E-01	1.480E-01	0.234
	338.28		+	7.452E+00	1.646E+00	2.232E+00	2.349E-01	3.338
	445.03			-2.402E-01	1.777E+00	2.925E+00	3.061E-01	-0.082
	271.23		+	6.038E-01	3.231E-01	3.858E-01	3.093E-02	1.565
RN-219	401.81	*		1.387E-01	3.310E-01	5.643E-01	7.682E-02	0.246
RN-220	549.76	*		-1.014E+01	2.220E+01	3.515E+01	2.415E+00	-0.289
RA-223	81.07			-9.457E-02	2.380E-01	3.441E-01	3.001E-02	-0.275
	83.78			1.333E-02	1.397E-01	2.047E-01	1.825E-02	0.065
	94.90		+	7.551E-01	4.463E-01	3.936E-01	3.203E-02	1.919

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		3.782E-01	1.568E+00	2.540E+00	1.725E-01	0.149
		144.24		3.273E-01	6.438E-01	1.032E+00	7.203E-02	0.317
		154.21		1.846E-01	3.467E-01	5.983E-01	3.981E-02	0.309
	+	269.46		4.706E-01	2.506E-01	3.078E-01	1.828E-02	1.529
		323.87	*	2.099E-01	6.241E-01	8.966E-01	1.480E-01	0.234
	+	338.28		7.452E+00	1.646E+00	2.232E+00	2.349E-01	3.338
		445.03		-2.402E-01	1.777E+00	2.925E+00	3.061E-01	-0.082
		79.80		2.736E-01	1.759E+00	2.608E+00	5.611E-01	0.105
		236.00		6.983E-01	2.443E-01	3.856E-01	3.978E-02	1.811
		256.20	*	-2.659E-01	3.345E-01	5.257E-01	7.301E-02	-0.506
TH-227		286.10		4.332E-01	1.349E+00	2.223E+00	2.561E-01	0.195
	+	299.80		3.930E+00	2.051E+00	2.300E+00	3.742E-01	1.708
		304.40		6.384E-01	1.820E+00	2.628E+00	4.542E-01	0.243
		334.20		-4.176E-01	2.567E+00	2.958E+00	5.422E-01	-0.141
		79.80		2.736E-01	1.759E+00	2.608E+00	5.682E-01	0.105
	+	94.00		6.041E+00	3.769E+00	3.832E+00	8.292E-01	1.577
		236.00		6.983E-01	2.415E-01	3.856E-01	3.431E-02	1.811
		256.20	*	-2.659E-01	3.355E-01	5.257E-01	8.853E-02	-0.506
		286.10		4.332E-01	1.416E+00	2.223E+00	2.227E+00	0.195
	+	299.80		3.930E+00	2.051E+00	2.300E+00	3.742E-01	1.708
TH-229		304.40		6.384E-01	1.820E+00	2.628E+00	4.542E-01	0.243
		334.20		-4.176E-01	2.567E+00	2.958E+00	5.422E-01	-0.141
		85.43		1.768E-01	2.017E-01	3.042E-01	2.750E-02	0.581
	+	88.47		3.505E-01	1.421E-01	2.020E-01	1.851E-02	1.735
		100.00		2.755E-01	1.775E-01	3.029E-01	2.281E-02	0.909
		193.63	*	2.470E-01	4.360E-01	7.436E-01	3.982E-02	0.332
	+	210.97		7.495E-01	9.635E-01	1.180E+00	6.414E-02	0.635
		283.67	*	-1.778E-01	1.440E+00	2.149E+00	2.953E-01	-0.083
	+	301.29		1.572E+00	7.964E-01	9.072E-01	9.456E-02	1.733
		81.07		-9.457E-02	2.380E-01	3.441E-01	3.001E-02	-0.275
PA-231		83.78		1.333E-02	1.397E-01	2.047E-01	1.825E-02	0.065
	+	94.90		7.551E-01	4.463E-01	3.936E-01	3.203E-02	1.919
		122.32		3.782E-01	1.568E+00	2.540E+00	1.725E-01	0.149
		144.24		3.273E-01	6.438E-01	1.032E+00	7.203E-02	0.317
		154.21		1.846E-01	3.467E-01	5.983E-01	3.981E-02	0.309
	+	269.46		4.706E-01	2.506E-01	3.078E-01	1.828E-02	1.529
		323.87	*	2.099E-01	6.241E-01	8.966E-01	1.480E-01	0.234
	+	338.28		7.452E+00	1.646E+00	2.232E+00	2.349E-01	3.338
		445.03		-2.402E-01	1.777E+00	2.925E+00	3.061E-01	-0.082
		84.21		2.226E+00	6.001E+00	8.893E+00	7.955E-01	0.250
U-231	+	92.29		6.082E+00	3.595E+00	4.074E+00	3.468E-01	1.493
		95.87	*	4.964E-02	1.115E+00	1.625E+00	1.302E-01	0.031
		108.00		-6.327E-01	2.048E+00	3.273E+00	2.226E-01	-0.193
	+	75.28		1.730E+01	4.618E+00	6.597E+00	1.004E+00	2.622
	+	86.59		5.026E+00	2.405E+00	2.900E+00	7.827E-01	1.733
	+	300.12		1.096E+00	5.627E-01	6.371E-01	8.546E-02	1.720
		311.98	*	-2.609E-02	5.387E-02	8.469E-02	5.188E-03	-0.308
		340.50		2.724E+00	9.228E-01	1.158E+00	2.659E-01	2.353
		398.62		-1.079E+00	1.682E+00	2.681E+00	6.933E-01	-0.402

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234		415.76		5.581E-01	1.347E+00	2.287E+00	4.716E-01	0.244
	+	63.00		3.133E+00	2.527E+00	3.160E+00	4.763E-01	0.992
	+	94.67		5.387E-01	3.220E-01	2.986E-01	3.611E-02	1.804
		98.44		-1.179E-02	8.874E-02	1.433E-01	7.972E-02	-0.082
		99.86		6.886E-01	4.492E-01	7.663E-01	5.781E-02	0.899
		111.00		3.110E-02	1.755E-01	2.852E-01	3.059E-02	0.109
		131.20		5.666E-02	1.126E-01	1.641E-01	9.338E-03	0.345
		152.70		3.816E-01	3.078E-01	5.012E-01	7.847E-02	0.761
	+	186.00		5.099E+00	2.509E+00	2.333E+00	7.107E-01	2.186
		226.40		2.270E-03	3.519E-01	5.821E-01	6.646E-02	0.004
		227.20		-1.118E-01	3.781E-01	6.179E-01	3.406E-02	-0.181
		248.90		3.280E-01	7.033E-01	1.173E+00	2.514E-01	0.280
		293.70		5.938E+00	1.227E+00	1.474E+00	2.368E-01	4.028
		369.80		-5.206E-01	7.037E-01	1.127E+00	2.347E-01	-0.462
		568.70		-2.195E-01	8.584E-01	1.349E+00	9.441E-02	-0.163
		569.50		-3.929E-02	2.356E-01	3.723E-01	2.608E-02	-0.106
		574.00		2.673E-01	1.289E+00	2.119E+00	1.491E-01	0.126
		699.00		6.477E-02	5.962E-01	1.002E+00	1.890E-01	0.065
		706.10		2.934E-01	8.170E-01	1.376E+00	6.127E-01	0.213
		733.00		-2.165E-01	3.507E-01	4.671E-01	1.037E-01	-0.463
		742.81		-3.337E-01	1.130E+00	1.803E+00	1.212E+00	-0.185
		796.30		1.305E+00	8.908E-01	1.434E+00	3.928E-01	0.910
		805.60		7.147E-01	8.725E-01	1.467E+00	4.547E-01	0.487
		819.60		-3.862E-02	1.032E+00	1.695E+00	6.503E-01	-0.023
		826.30		-3.193E-01	7.345E-01	1.150E+00	5.181E-01	-0.278
		831.60		-1.342E-01	5.593E-01	9.034E-01	2.740E-01	-0.149
		876.40		-3.469E-01	8.039E-01	1.138E+00	1.172E+00	-0.305
		880.51		5.915E-02	2.305E-01	3.841E-01	4.226E-02	0.154
		883.24		1.552E-01	2.537E-01	3.967E-01	2.681E-01	0.391
		899.00		-5.911E-01	8.000E-01	1.167E+00	5.172E-01	-0.507
		925.00		1.524E+00	1.097E+00	1.743E+00	1.899E-01	0.874
		926.50		1.067E-01	1.791E-01	2.621E-01	6.848E-02	0.407
		946.00	*	1.300E-01	2.723E-01	4.552E-01	8.979E-02	0.286
		949.00		3.457E-01	4.157E-01	7.097E-01	7.454E-02	0.487
		980.50		-4.393E-01	6.400E-01	9.793E-01	9.741E-02	-0.449
		1394.10		-4.549E-01	1.064E+00	1.590E+00	1.033E+00	-0.286
PA-234M		766.42		2.125E+01	1.595E+01	1.912E+01	9.718E+00	1.111
		1001.03	*	6.202E+00	4.579E+00	7.882E+00	8.503E-01	0.787
U-235		89.95		-1.572E+00	1.715E+00	1.785E+00	5.521E-01	-0.881
	+	93.35		1.879E+00	1.219E+00	1.270E+00	3.550E-01	1.479
		105.00		6.069E-01	1.020E+00	1.665E+00	4.900E-01	0.364
		143.76	*	1.223E-01	1.969E-01	3.158E-01	5.114E-02	0.387
		163.35		6.859E-02	4.046E-01	6.794E-01	1.211E-01	0.101
	+	185.71		1.888E-01	7.366E-02	8.602E-02	4.575E-03	2.195
NP-236		205.31		-1.414E-01	5.196E-01	7.441E-01	1.329E-01	-0.190
	+	94.67		4.086E-01	2.415E-01	2.268E-01	1.853E-02	1.802
		98.44		-8.971E-03	6.690E-02	1.083E-01	8.339E-03	-0.083
		111.00		2.352E-02	1.327E-01	2.157E-01	1.419E-02	0.109
		160.31	*	-5.721E-02	6.779E-02	1.113E-01	5.894E-03	-0.514

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		2.000E-01	1.495E-01	2.539E-01	1.924E-02	0.788
		117.00	*	5.012E-02	1.765E-01	2.871E-01	1.777E-02	0.175
	+	209.75		7.550E-01	9.706E-01	1.242E+00	6.745E-02	0.608
		228.18		-3.793E-02	1.975E-01	3.240E-01	1.787E-02	-0.117
	+	277.60		3.161E-01	2.458E-01	2.711E-01	1.544E-02	1.166
AM-241		334.30		-2.470E-01	1.454E+00	1.675E+00	9.685E-02	-0.147
		59.54	*	-2.762E-02	1.980E-01	2.954E-01	2.450E-02	-0.093
CM-243		99.55		2.059E-01	1.539E-01	2.612E-01	1.979E-02	0.788
		103.76	*	-7.302E-02	9.320E-02	1.463E-01	1.047E-02	-0.499
		117.00		5.157E-02	1.815E-01	2.954E-01	1.828E-02	0.175
	+	209.75		7.443E-01	9.568E-01	1.224E+00	6.650E-02	0.608
		228.18		-3.833E-02	1.996E-01	3.274E-01	1.806E-02	-0.117
AM-246	+	277.60		3.187E-01	2.478E-01	2.733E-01	1.557E-02	1.166
		798.80		-2.872E-01	1.293E-01	1.780E-01	1.720E-02	-1.613
		1036.00		8.223E-02	2.533E-01	4.332E-01	3.835E-02	0.190
		1062.04		-7.817E-02	2.141E-01	3.421E-01	2.836E-02	-0.228
		1078.86	*	2.459E-02	1.194E-01	2.019E-01	1.597E-02	0.122
CM-247	+	278.00		1.311E+00	1.019E+00	1.115E+00	6.351E-02	1.176
		287.40		1.636E+00	1.066E+00	1.846E+00	1.056E-01	0.886
		402.60	*	2.989E-02	3.072E-02	5.255E-02	3.061E-03	0.569
CF-249		252.85		-2.013E-01	7.485E-01	1.213E+00	6.815E-02	-0.166
		333.44		1.643E-01	2.024E-01	2.253E-01	1.303E-02	0.729
		387.95	*	-3.026E-02	3.236E-02	5.162E-02	2.967E-03	-0.586
CF-251		176.60	*	2.100E-02	1.123E-01	1.901E-01	1.004E-02	0.110
		227.00		-1.251E-01	3.380E-01	5.507E-01	3.035E-02	-0.227
		285.00		7.004E-01	1.536E+00	2.548E+00	1.456E-01	0.275

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691013      *
* Acquisition date   : 9-FEB-2010 17:37:24 Detector SN#      :              *
* Detector ID        : GAM18                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.85             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245691013              Analyst initials: MJH1          *
* Batch Number       : 947037                  Sample Quantity : 1.2776E+02 GRAM      *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope      :                *
* MSD DPM             : 0.000                      MSD Isotope :                *
* LCS DPM             : 0.000                      LCS Isotope  :                *
* LCSD DPM            : 0.000                      LCSD Isotope :                *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.695E+01	3.161E+00	4.605E-01	0.000E+00
CD-109	2.612E+00	1.038E+00	1.535E+00	0.000E+00
SN-126	2.567E-01	1.020E-01	1.409E-01	0.000E+00
HG-203	7.237E-02	5.516E-02	5.487E-02	0.000E+00
TL-208	5.316E-01	7.628E-02	5.034E-02	0.000E+00
BI-211	3.962E+00	4.695E-01	2.825E-01	0.000E+00
PB-212	1.787E+00	1.578E-01	8.034E-02	0.000E+00
PO-212	1.787E+00	1.578E-01	8.034E-02	0.000E+00
BI-214	1.161E+00	1.663E-01	9.719E-02	0.000E+00
PB-214	1.378E+00	1.779E-01	9.844E-02	0.000E+00
PO-214	1.378E+00	1.779E-01	9.844E-02	0.000E+00
PO-216	1.787E+00	1.578E-01	8.034E-02	0.000E+00
PO-218	1.378E+00	1.779E-01	9.844E-02	0.000E+00
RA-224	4.758E+00	1.136E+00	9.130E-01	0.000E+00
RA-226	1.161E+00	1.663E-01	9.719E-02	0.000E+00
AC-228	1.574E+00	3.133E-01	1.888E-01	0.000E+00
RA-228	1.574E+00	3.133E-01	1.888E-01	0.000E+00
TH-228	1.815E+00	1.602E-01	8.157E-02	0.000E+00
TH-230	1.161E+00	1.663E-01	9.719E-02	0.000E+00
TH-232	1.574E+00	3.133E-01	1.888E-01	0.000E+00
TH-234	2.688E+00	2.138E+00	2.504E+00	0.000E+00
U-234	1.161E+00	1.663E-01	9.719E-02	0.000E+00
NP-237	7.538E-01	3.362E-01	4.095E-01	0.000E+00
U-238	2.688E+00	2.138E+00	2.504E+00	0.000E+00
AM-243	3.303E-01	7.601E-02	9.693E-02	0.000E+00
ANH-511	1.216E-01	5.907E-02	3.966E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-5.581E-02	2.676E-01	4.529E-01	0.000E+00 NOT IDENT.

NA-22	1.438E-02	3.943E-02	6.784E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	7.151E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-2.501E-03	2.313E-02	3.797E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.506E-02	8.625E-02	0.000E+00	FAIL ABUN
SC-46	-3.421E-02	3.185E-02	4.878E-02	0.000E+00	FAIL ABUN
V-48	-1.938E-02	6.157E-02	9.993E-02	0.000E+00	NOT IDENT.
CR-51	-8.046E-02	3.120E-01	5.179E-01	0.000E+00	NOT IDENT.
MN-52	-1.751E-02	1.904E-01	3.123E-01	0.000E+00	NOT IDENT.
MN-54	-1.527E-02	3.359E-02	5.525E-02	0.000E+00	NOT IDENT.
CO-56	2.032E-03	3.261E-02	5.532E-02	0.000E+00	NOT IDENT.
CO-57	3.898E-03	2.217E-02	3.796E-02	0.000E+00	NOT IDENT.
CO-58	-3.261E-02	3.240E-02	5.094E-02	0.000E+00	NOT IDENT.
FE-59	3.166E-03	7.655E-02	1.310E-01	0.000E+00	NOT IDENT.
CO-60	-2.192E-02	3.360E-02	5.285E-02	0.000E+00	NOT IDENT.
ZN-65	8.595E-02	9.546E-02	1.494E-01	0.000E+00	NOT IDENT.
GE-68	-3.655E-02	1.011E+00	1.725E+00	0.000E+00	NOT IDENT.
AS-73	1.322E-01	1.042E+00	1.887E+00	0.000E+00	NOT IDENT.
AS-74	-5.950E-02	7.484E-02	1.182E-01	0.000E+00	NOT IDENT.
SE-75	-2.119E-02	4.022E-02	6.184E-02	0.000E+00	NOT IDENT.
BR-77	4.480E+00	8.790E+00	1.535E+01	0.000E+00	FAIL ABUN
SR-82	-1.030E-01	3.277E-01	5.478E-01	0.000E+00	NOT IDENT.
RB-83	3.354E-02	5.650E-02	9.913E-02	0.000E+00	NOT IDENT.
RB-84	1.766E-02	5.664E-02	9.735E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	7.189E+00	1.235E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.691E-02	6.339E-02	0.000E+00	NOT IDENT.
RB-86	3.880E-02	6.382E-01	1.096E+00	0.000E+00	NOT IDENT.
Y-88	-1.794E-02	2.932E-02	4.474E-02	0.000E+00	NOT IDENT.
ZR-88	7.250E-03	2.432E-02	4.303E-02	0.000E+00	NOT IDENT.
Y-91	2.362E+00	1.757E+01	2.991E+01	0.000E+00	NOT IDENT.
NB-94	6.803E-03	2.660E-02	4.649E-02	0.000E+00	NOT IDENT.
NB-95	5.718E-02	4.405E-02	7.094E-02	0.000E+00	NOT IDENT.
NB-95M	1.104E-01	1.170E-01	1.858E-01	0.000E+00	NOT IDENT.
ZR-95	-2.007E-02	6.045E-02	1.012E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	8.374E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.940E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	9.704E+00	9.358E+00	1.689E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.040E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.672E-02	2.905E-02	4.913E-02	0.000E+00	NOT IDENT.
RH-102	9.733E-03	2.398E-02	4.196E-02	0.000E+00	FAIL ABUN
RU-103	-1.378E-02	3.129E-02	5.184E-02	0.000E+00	FAIL ABUN
RH-106	8.669E-02	2.698E-01	4.584E-01	0.000E+00	FAIL ABUN
RU-106	8.669E-02	2.697E-01	4.584E-01	0.000E+00	FAIL ABUN
AG-108M	-2.037E-02	2.612E-02	4.318E-02	0.000E+00	NOT IDENT.
AG-110M	2.049E-02	2.677E-02	4.841E-02	0.000E+00	NOT IDENT.
IN-111	4.434E-01	9.684E-01	1.505E+00	0.000E+00	NOT IDENT.
IN-113M	2.741E-02	3.532E-02	6.386E-02	0.000E+00	NOT IDENT.
SN-113	2.741E-02	3.532E-02	6.386E-02	0.000E+00	NOT IDENT.
IN-114M	-5.891E-02	1.751E-01	2.672E-01	0.000E+00	NOT IDENT.
CD-115	7.203E+00	8.917E+00	1.582E+01	0.000E+00	NOT IDENT.
SN-117M	3.128E-02	4.576E-02	8.366E-02	0.000E+00	NOT IDENT.
SB-122	1.220E+00	1.718E+00	3.012E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	5.596E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	5.255E-03	2.384E-02	4.293E-02	0.000E+00	NOT IDENT.
I-124	-1.382E-01	6.815E-01	9.642E-01	0.000E+00	NOT IDENT.
SB-124	5.045E-02	5.692E-02	1.065E-01	0.000E+00	FAIL ABUN
SB-125	3.218E-02	7.235E-02	1.281E-01	0.000E+00	FAIL ABUN
TE-125M	1.026E+01	8.795E+00	1.565E+01	0.000E+00	NOT IDENT.
I-126	2.020E-01	1.544E-01	2.842E-01	0.000E+00	NOT IDENT.
SB-126	-2.833E-02	1.302E-01	1.970E-01	0.000E+00	FAIL ABUN
SB-127	-6.529E-02	1.084E+00	1.865E+00	0.000E+00	NOT IDENT.
XE-127	-3.082E-02	4.046E-02	6.893E-02	0.000E+00	NOT IDENT.
I-131	3.376E-02	9.193E-02	1.643E-01	0.000E+00	NOT IDENT.
TE-132	-1.164E-01	6.070E-01	1.045E+00	0.000E+00	NOT IDENT.
BA-133	-1.980E-04	4.115E-02	5.967E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.364E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.216E-02	7.596E-02	0.000E+00	NOT IDENT.
CS-135	1.612E-01	1.542E-01	2.441E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.239E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	6.547E-02	9.026E-02	1.618E-01	0.000E+00	FAIL ABUN
BA-137M	-1.979E-02	2.889E-02	4.805E-02	0.000E+00	NOT IDENT.
CS-137	-2.092E-02	3.054E-02	5.080E-02	0.000E+00	NOT IDENT.
CE-139	-2.377E-03	2.461E-02	4.371E-02	0.000E+00	NOT IDENT.
BA-140	-3.310E-02	1.966E-01	3.286E-01	0.000E+00	NOT IDENT.
LA-140	-3.816E-03	6.284E-02	9.767E-02	0.000E+00	FAIL ABUN
CE-141	5.151E-02	5.703E-02	9.879E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.272E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.494E-02	2.122E-01	3.196E-01	0.000E+00	NOT IDENT.
PM-144	-1.517E-02	2.951E-02	4.941E-02	0.000E+00	NOT IDENT.



PR-144	-1.028E+00	2.000E+00	3.348E+00	0.000E+00	NOT IDENT.
PM-146	2.049E-02	3.468E-02	6.148E-02	0.000E+00	NOT IDENT.
ND-147	-2.172E-01	4.542E-01	7.451E-01	0.000E+00	NOT IDENT.
PM-149	3.052E+01	8.205E+01	1.416E+02	0.000E+00	NOT IDENT.
EU-152	2.578E-03	9.634E-02	1.406E-01	0.000E+00	FAIL ABUN
GD-153	-8.665E-02	8.343E-02	1.218E-01	0.000E+00	NOT IDENT.
EU-154	3.033E-02	1.105E-01	1.890E-01	0.000E+00	NOT IDENT.
EU-155	8.572E-02	1.008E-01	1.785E-01	0.000E+00	FAIL ABUN
TB-160	-4.324E-02	1.162E-01	1.901E-01	0.000E+00	FAIL ABUN
HO-166M	6.247E-04	4.622E-02	7.958E-02	0.000E+00	FAIL ABUN
TM-171	-2.358E+01	3.342E+01	5.148E+01	0.000E+00	NOT IDENT.
LU-176	2.310E-02	2.323E-02	3.655E-02	0.000E+00	FAIL ABUN
LU-177	1.078E+00	1.358E+00	1.782E+00	0.000E+00	FAIL ABUN
LU-177M	1.744E-02	1.571E-01	2.390E-01	0.000E+00	NOT IDENT.
HF-181	1.654E-03	3.414E-02	5.856E-02	0.000E+00	NOT IDENT.
W-181	1.403E-02	4.377E-01	6.989E-01	0.000E+00	NOT IDENT.
TA-182	7.079E-02	1.809E-01	3.119E-01	0.000E+00	FAIL ABUN
RE-183	-1.482E-02	9.255E-02	1.622E-01	0.000E+00	FAIL ABUN
RE-184	-5.368E-02	1.956E-01	3.323E-01	0.000E+00	NOT IDENT.
OS-185	8.325E-03	3.307E-02	5.585E-02	0.000E+00	NOT IDENT.
RE-188	2.546E-02	1.475E-01	2.657E-01	0.000E+00	NOT IDENT.
W-188	-3.818E+00	6.814E+00	9.725E+00	0.000E+00	FAIL ABUN
IR-192	-1.216E-03	2.789E-02	4.685E-02	0.000E+00	FAIL ABUN
AU-195	8.150E-02	2.134E-01	3.738E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	3.934E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-7.433E-01	5.948E+00	1.054E+01	0.000E+00	NOT IDENT.
TL-202	5.045E-02	5.632E-02	1.016E-01	0.000E+00	NOT IDENT.
BI-207	2.582E-03	4.743E-02	7.988E-02	0.000E+00	FAIL ABUN
TL-207	2.099E-01	6.116E-01	9.176E-01	0.000E+00	FAIL ABUN
PO-209	4.113E+00	6.228E+00	1.091E+01	0.000E+00	NOT IDENT.
BI-210	1.576E+00	5.437E+00	9.769E+00	0.000E+00	NOT IDENT.
PB-210	1.576E+00	5.437E+00	9.769E+00	0.000E+00	NOT IDENT.
PO-210	1.576E+00	5.437E+00	9.769E+00	0.000E+00	NOT IDENT.
PB-211	-7.320E-02	8.543E-01	1.283E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	3.816E-01	5.656E-01	0.000E+00	FAIL ABUN
PO-215	2.099E-01	6.116E-01	9.176E-01	0.000E+00	FAIL ABUN
RN-219	1.387E-01	3.244E-01	5.756E-01	0.000E+00	FAIL ABUN
RN-220	-1.014E+01	2.176E+01	3.568E+01	0.000E+00	NOT IDENT.
RA-223	2.099E-01	6.116E-01	9.176E-01	0.000E+00	FAIL ABUN
AC-227	-2.659E-01	3.278E-01	5.398E-01	0.000E+00	FAIL ABUN
TH-227	-2.659E-01	3.288E-01	5.398E-01	0.000E+00	FAIL ABUN
TH-229	2.470E-01	4.273E-01	7.668E-01	0.000E+00	FAIL ABUN
PA-231	-1.778E-01	1.411E+00	2.203E+00	0.000E+00	FAIL ABUN
TH-231	2.099E-01	6.116E-01	9.176E-01	0.000E+00	FAIL ABUN
U-231	4.964E-02	1.092E+00	1.693E+00	0.000E+00	FAIL ABUN
PA-233	-2.609E-02	5.279E-02	8.672E-02	0.000E+00	FAIL ABUN
PA-234	1.300E-01	2.669E-01	4.582E-01	0.000E+00	FAIL ABUN
PA-234M	6.202E+00	4.488E+00	7.929E+00	0.000E+00	NOT IDENT.
U-235	1.223E-01	1.929E-01	3.270E-01	0.000E+00	FAIL ABUN
NP-236	-5.721E-02	6.643E-02	1.150E-01	0.000E+00	FAIL ABUN
NP-239	5.012E-02	1.729E-01	2.983E-01	0.000E+00	FAIL ABUN
AM-241	-2.762E-02	1.940E-01	3.099E-01	0.000E+00	NOT IDENT.
CM-243	-7.302E-02	9.134E-02	1.523E-01	0.000E+00	FAIL ABUN
AM-246	2.459E-02	1.170E-01	2.029E-01	0.000E+00	NOT IDENT.
CM-247	2.989E-02	3.010E-02	5.360E-02	0.000E+00	FAIL ABUN
CF-249	-3.026E-02	3.171E-02	5.268E-02	0.000E+00	NOT IDENT.
CF-251	2.100E-02	1.100E-01	1.963E-01	0.000E+00	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691013.CNF;1
Sample date     : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:37:24.
Sample ID       : G245691013           Sample quantity : 1.27760E+02 GRAM
Detector name   : GAM18                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.85 0.0%
Energy tolerance: 1.50000 keV           Analyst Initials : MJH1
Abundance limit : 75.00000              Sensitivity      : 5.00000
Batch ID        : 947037                Detector SN#     :
Matrix Spike ID :                        LCS ID          : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	2541	10.67*	1.894E+00	3.695E+01	3.695E+01	8.73
CD-109	88.03	209	3.72*	6.450E+00	2.553E+00	2.612E+00	40.56
SN-126	64.28	108	9.60	3.093E+00	1.064E+00	1.064E+00	80.60
	86.94	209	8.90	6.450E+00	1.067E+00	1.067E+00	57.28
	87.57	209	37.00*	6.450E+00	2.567E-01	2.567E-01	40.56
HG-203	70.83	-----	4.75	4.309E+00	-----	Line Not Found	-----
	72.87	-----	8.00	4.622E+00	-----	Line Not Found	-----
	82.60	-----	3.55	5.935E+00	-----	Line Not Found	-----
	279.20	95	77.30*	6.252E+00	5.766E-02	7.237E-02	77.77
TL-208	277.35	95	6.80	6.252E+00	6.554E-01	6.554E-01	78.25
	510.84	178	21.60	4.310E+00	5.631E-01	5.631E-01	50.25
	583.14	599	84.20*	3.934E+00	5.316E-01	5.316E-01	14.64
	860.37	117	12.46	2.915E+00	9.433E-01	9.433E-01	39.70
BI-211	72.87	-----	1.27	4.622E+00	-----	Line Not Found	-----
	351.07	951	12.94*	5.451E+00	3.962E+00	3.962E+00	12.09
PB-212	74.81	366	10.70	4.938E+00	2.037E+00	2.037E+00	25.27
	77.11	667	18.00	5.263E+00	2.067E+00	2.067E+00	14.73
	87.30	209	8.00	6.450E+00	1.187E+00	1.187E+00	41.77
	238.63	1843	44.60*	6.792E+00	1.787E+00	1.787E+00	9.01
	300.09	147	3.41	5.982E+00	2.120E+00	2.120E+00	50.26
PO-212	74.81	366	10.70	4.938E+00	2.037E+00	2.037E+00	25.27
	77.11	667	18.00	5.263E+00	2.067E+00	2.067E+00	14.73
	87.30	209	8.00	6.450E+00	1.187E+00	1.187E+00	41.77
	115.19	-----	0.60	8.058E+00	-----	Line Not Found	-----
	238.63	1843	44.60*	6.792E+00	1.787E+00	1.787E+00	9.01
	300.09	147	3.41	5.982E+00	2.120E+00	2.120E+00	50.26
BI-214	609.31	697	46.30*	3.812E+00	1.161E+00	1.161E+00	14.62
	1120.29	217	15.10	2.335E+00	1.809E+00	1.809E+00	28.10
	1764.49	146	15.80	1.695E+00	1.601E+00	1.601E+00	19.57
PB-214	74.81	366	6.21	4.938E+00	3.510E+00	3.510E+00	24.62
	77.11	667	10.50	5.263E+00	3.544E+00	3.544E+00	16.58
	87.30	209	4.67	6.450E+00	2.034E+00	2.034E+00	41.28

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	432	7.49	6.748E+00	2.509E+00	2.509E+00	25.00
	295.21	563	19.20	6.041E+00	1.426E+00	1.426E+00	17.27
	351.92	951	37.20*	5.451E+00	1.378E+00	1.378E+00	13.17
	74.81	366	6.21	4.938E+00	3.510E+00	3.510E+00	24.62
	77.11	667	10.50	5.263E+00	3.544E+00	3.544E+00	16.58
	87.30	209	4.67	6.450E+00	2.034E+00	2.034E+00	41.28
PO-216	241.98	432	7.49	6.748E+00	2.509E+00	2.509E+00	25.00
	295.21	563	19.20	6.041E+00	1.426E+00	1.426E+00	17.27
	351.92	951	37.20*	5.451E+00	1.378E+00	1.378E+00	13.17
	74.81	366	10.70	4.938E+00	2.037E+00	2.037E+00	25.27
	77.11	667	18.00	5.263E+00	2.067E+00	2.067E+00	14.73
	87.30	209	8.00	6.450E+00	1.187E+00	1.187E+00	41.77
PO-218	238.63	1843	44.60*	6.792E+00	1.787E+00	1.787E+00	9.01
	300.09	147	3.41	5.982E+00	2.120E+00	2.120E+00	50.26
	74.81	366	6.21	4.938E+00	3.510E+00	3.510E+00	24.62
	77.11	667	10.50	5.263E+00	3.544E+00	3.544E+00	16.58
	87.30	209	4.67	6.450E+00	2.034E+00	2.034E+00	41.28
	241.98	432	7.49	6.748E+00	2.509E+00	2.509E+00	25.00
RA-224	295.21	563	19.20	6.041E+00	1.426E+00	1.426E+00	17.27
	351.92	951	37.20*	5.451E+00	1.378E+00	1.378E+00	13.17
	240.98	432	3.95*	6.748E+00	4.758E+00	4.758E+00	24.36
RA-226	609.31	697	46.30*	3.812E+00	1.161E+00	1.161E+00	14.62
	1120.29	217	15.10	2.335E+00	1.809E+00	1.809E+00	28.10
	1764.49	146	15.80	1.695E+00	1.601E+00	1.601E+00	19.57
AC-228	338.32	386	11.40	5.580E+00	1.785E+00	1.785E+00	45.15
	911.07	412	27.70*	2.780E+00	1.574E+00	1.574E+00	20.31
	969.11	269	16.60	2.640E+00	1.805E+00	1.805E+00	30.56
RA-228	338.32	386	11.40	5.580E+00	1.785E+00	1.785E+00	45.15
	911.07	412	27.70*	2.780E+00	1.574E+00	1.574E+00	20.31
	969.11	269	16.60	2.640E+00	1.805E+00	1.805E+00	30.56
TH-228	74.81	366	10.70	4.938E+00	2.037E+00	2.068E+00	23.51
	77.11	667	18.00	5.263E+00	2.067E+00	2.099E+00	14.73
	87.30	209	8.00	6.450E+00	1.187E+00	1.205E+00	40.56
TH-230	238.63	1843	44.60*	6.792E+00	1.787E+00	1.815E+00	9.01
	300.09	147	3.41	5.982E+00	2.120E+00	2.153E+00	77.02
	609.31	697	46.30*	3.812E+00	1.161E+00	1.161E+00	14.62
	1120.29	217	15.10	2.335E+00	1.809E+00	1.809E+00	28.10
	1764.49	146	15.80	1.695E+00	1.601E+00	1.601E+00	19.57
	338.32	386	11.40	5.580E+00	1.785E+00	1.785E+00	20.27
TH-232	911.07	412	27.70*	2.780E+00	1.574E+00	1.574E+00	20.31
	969.11	269	16.60	2.640E+00	1.805E+00	1.805E+00	30.56
	63.29	108	3.80*	3.093E+00	2.688E+00	2.688E+00	81.17
TH-234	92.38	202	5.41	7.016E+00	1.563E+00	1.563E+00	61.20
	609.31	697	46.30*	3.812E+00	1.161E+00	1.161E+00	14.62
	1120.29	217	15.10	2.335E+00	1.809E+00	1.809E+00	28.10
U-234	1764.49	146	15.80	1.695E+00	1.601E+00	1.601E+00	19.57
	86.50	209	12.60*	6.450E+00	7.538E-01	7.538E-01	45.50
	95.87	----	2.60	7.180E+00	-----	Line Not Found	-----
U-238	63.29	108	3.80*	3.093E+00	2.688E+00	2.688E+00	81.17

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	92.38	202	5.41	7.016E+00	1.563E+00	1.563E+00	59.10
	74.67	366	66.00*	4.938E+00	3.303E-01	3.303E-01	23.48
	86.72	209	0.34	6.450E+00	2.827E+01	2.827E+01	40.56
	117.66	-----	0.55	8.112E+00	-----	Line Not Found	-----
	142.18	-----	0.13	8.232E+00	-----	Line Not Found	-----
ANH-511	511.00	178	100.00*	4.310E+00	1.216E-01	1.216E-01	49.55

Flag: "\*" = Keyline

Summary of Nuclide Activity  
Sample ID : G245691013

Page : 4  
Acquisition date : 9-FEB-2010 17:37:24

Total number of lines in spectrum 35  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 31 88.57%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.695E+01	3.695E+01	0.323E+01	8.73	
CD-109	464.00D	1.02	2.553E+00	2.612E+00	1.059E+00	40.56	
SN-126	1.00E+05Y	1.00	2.567E-01	2.567E-01	1.041E-01	40.56	
HG-203	46.60D	1.26	5.766E-02	7.237E-02	5.628E-02	77.77	
TL-208	1.41E+10Y	1.00	5.316E-01	5.316E-01	0.778E-01	14.64	
BI-211	7.04E+08Y	1.00	3.962E+00	3.962E+00	0.479E+00	12.09	
PB-212	1.41E+10Y	1.00	1.787E+00	1.787E+00	0.161E+00	9.01	
PO-212	1.41E+10Y	1.00	1.787E+00	1.787E+00	0.161E+00	9.01	
BI-214	1600.00Y	1.00	1.161E+00	1.161E+00	0.170E+00	14.62	
PB-214	1600.00Y	1.00	1.378E+00	1.378E+00	0.181E+00	13.17	
PO-214	1600.00Y	1.00	1.378E+00	1.378E+00	0.181E+00	13.17	
PO-216	1.41E+10Y	1.00	1.787E+00	1.787E+00	0.161E+00	9.01	
PO-218	1600.00Y	1.00	1.378E+00	1.378E+00	0.181E+00	13.17	
RA-224	1.41E+10Y	1.00	4.758E+00	4.758E+00	1.159E+00	24.36	
RA-226	1600.00Y	1.00	1.161E+00	1.161E+00	0.170E+00	14.62	
AC-228	1.41E+10Y	1.00	1.574E+00	1.574E+00	0.320E+00	20.31	
RA-228	1.41E+10Y	1.00	1.574E+00	1.574E+00	0.320E+00	20.31	
TH-228	1.91Y	1.02	1.787E+00	1.815E+00	0.164E+00	9.01	
TH-230	4.47E+09Y	1.00	1.161E+00	1.161E+00	0.170E+00	14.62	
TH-232	1.41E+10Y	1.00	1.574E+00	1.574E+00	0.320E+00	20.31	
TH-234	4.47E+09Y	1.00	2.688E+00	2.688E+00	2.182E+00	81.17	
U-234	4.47E+09Y	1.00	1.161E+00	1.161E+00	0.170E+00	14.62	
NP-237	2.14E+06Y	1.00	7.538E-01	7.538E-01	3.430E-01	45.50	
U-238	4.47E+09Y	1.00	2.688E+00	2.688E+00	2.182E+00	81.17	
AM-243	7380.00Y	1.00	3.303E-01	3.303E-01	0.776E-01	23.48	
ANH-511	1.00E+09Y	1.00	1.216E-01	1.216E-01	0.603E-01	49.55	

Total Activity : 7.630E+01 7.640E+01

Grand Total Activity : 7.630E+01 7.640E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G245691013

Page : 5  
Acquisition date : 9-FEB-2010 17:37:24

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.06	100	425	1.10	257.20	254	8	1.38E-02	74.2	8.25E+00	T
0	186.20	265	560	1.29	371.43	365	12	3.68E-02	38.6	7.64E+00	T
0	209.75	60	433	0.95	418.51	413	9	8.38E-03	****	7.25E+00	T
0	270.66	138	314	1.87	540.31	535	11	1.92E-02	52.9	6.34E+00	T
0	328.17	146	227	1.79	655.28	650	11	2.02E-02	43.5	5.68E+00	T
0	409.59	42	136	1.05	818.06	814	7	5.80E-03	97.7	4.97E+00	T
0	462.84	121	152	1.74	924.55	919	12	1.68E-02	44.8	4.60E+00	T
0	727.01	156	104	1.35	1452.75	1448	13	2.17E-02	31.9	3.34E+00	T
0	768.33	77	117	3.03	1535.35	1529	11	1.07E-02	59.3	3.20E+00	T
0	933.50	65	127	1.06	1865.63	1856	17	9.08E-03	83.7	2.72E+00	
1	964.53	121	96	2.32	1927.69	1917	26	1.67E-02	40.1	2.65E+00	T
0	1505.30	12	16	0.79	3009.09	3000	11	1.69E-03	****	1.85E+00	
0	1587.57	31	32	2.21	3173.61	3166	14	4.35E-03	84.1	1.79E+00	
0	1729.34	30	34	2.14	3457.14	3446	15	4.13E-03	92.9	1.71E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691013.CNF;1
* Acquisition date   : 9-FEB-2010 17:37:24. Detector SN#      :
* Detector ID        : GAM18 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.85 Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245691013 Analyst initials: MJH1
* Batch Number       : 947037 Sample Quantity : 1.27760E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23.2MS Isotope      :
* MSD ID             : MSD Isotope      :
* LCS ID             : 1032-A LCS Isotope :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.695E+01	3.225E+00	4.605E-01	3.495E-02	80.244
CD-109	2.612E+00	1.059E+00	1.472E+00	1.360E-01	1.775
SN-126	2.567E-01	1.041E-01	1.351E-01	1.245E-02	1.900
HG-203	7.237E-02	5.628E-02	5.350E-02	3.244E-03	1.353
TL-208	5.316E-01	7.783E-02	4.963E-02	3.891E-03	10.710
BI-211	3.962E+00	4.790E-01	2.764E-01	1.774E-02	14.335
PB-212	1.787E+00	1.610E-01	7.815E-02	5.583E-03	22.871
PO-212	1.787E+00	1.610E-01	7.815E-02	5.583E-03	22.871
BI-214	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
PB-214	1.378E+00	1.815E-01	9.632E-02	7.968E-03	14.308
PO-214	1.378E+00	1.815E-01	9.632E-02	7.968E-03	14.308
PO-216	1.787E+00	1.610E-01	7.815E-02	5.583E-03	22.871
PO-218	1.378E+00	1.815E-01	9.632E-02	7.968E-03	14.308
RA-224	4.758E+00	1.159E+00	8.882E-01	4.948E-02	5.357
RA-226	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
AC-228	1.574E+00	3.197E-01	1.874E-01	2.483E-02	8.395
RA-228	1.574E+00	3.197E-01	1.874E-01	2.483E-02	8.395
TH-228	1.815E+00	1.635E-01	7.934E-02	5.668E-03	22.871

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
TH-232	1.574E+00	3.197E-01	1.874E-01	2.483E-02	8.395
TH-234	2.688E+00	2.182E+00	2.389E+00	4.211E-01	1.125
U-234	1.161E+00	1.696E-01	9.589E-02	8.566E-03	12.103
NP-237	7.538E-01	3.430E-01	3.925E-01	8.856E-02	1.921
U-238	2.688E+00	2.182E+00	2.389E+00	4.211E-01	1.125
AM-243	3.303E-01	7.756E-02	9.270E-02	7.735E-03	3.563
ANH-511	1.216E-01	6.027E-02	3.903E-02	2.577E-03	3.117

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-5.581E-02		2.731E-01	4.452E-01	3.226E-02	-0.125
NA-22	1.438E-02		4.023E-02	6.769E-02	4.606E-03	0.212
NA-24	-3.063E-01		3.649E-01	Half-Life too short		
AL-26	-2.501E-03		2.360E-02	3.810E-02	2.225E-03	-0.066
TI-44	3.815E-01	+	5.619E-02	8.255E-02	7.058E-03	4.621
SC-46	-3.421E-02		3.250E-02	4.840E-02	5.399E-03	-0.707
V-48	-1.938E-02		6.283E-02	9.932E-02	9.824E-03	-0.195
CR-51	-8.046E-02		3.184E-01	5.060E-01	3.258E-02	-0.159
MN-52	-1.751E-02		1.943E-01	3.122E-01	2.301E-02	-0.056
MN-54	-1.527E-02		3.428E-02	5.478E-02	5.611E-03	-0.279
CO-56	2.032E-03		3.327E-02	5.485E-02	5.726E-03	0.037
CO-57	3.898E-03		2.263E-02	3.657E-02	2.166E-03	0.107
CO-58	-3.261E-02		3.306E-02	5.048E-02	4.983E-03	-0.646
FE-59	3.166E-03		7.811E-02	1.304E-01	1.074E-02	0.024
CO-60	-2.192E-02		3.428E-02	5.278E-02	3.988E-03	-0.415
ZN-65	8.595E-02		9.741E-02	1.488E-01	1.048E-02	0.578
GE-68	-3.655E-02		1.031E+00	1.716E+00	1.364E-01	-0.021
AS-73	1.322E-01		1.063E+00	1.796E+00	1.424E-01	0.074
AS-74	-5.950E-02		7.637E-02	1.166E-01	8.379E-03	-0.510
SE-75	-2.119E-02		4.104E-02	6.024E-02	3.445E-03	-0.352
BR-77	4.480E+00		8.969E+00	1.511E+01	1.008E+00	0.296
SR-82	-1.030E-01		3.344E-01	5.425E-01	5.052E-02	-0.190
RB-83	3.354E-02		5.765E-02	9.756E-02	6.507E-03	0.344
RB-84	1.766E-02		5.779E-02	9.659E-02	1.065E-02	0.183
KR-85	1.996E+01		7.336E+00	1.215E+01	8.049E-01	1.643
SR-85	1.025E-01		3.766E-02	6.237E-02	4.132E-03	1.643
RB-86	3.880E-02		6.512E-01	1.091E+00	8.685E-02	0.036
Y-88	-1.794E-02		2.992E-02	4.490E-02	2.558E-03	-0.400
ZR-88	7.250E-03		2.481E-02	4.217E-02	2.425E-03	0.172
Y-91	2.362E+00		1.793E+01	2.982E+01	1.763E+00	0.079
NB-94	6.803E-03		2.714E-02	4.597E-02	3.771E-03	0.148
NB-95	5.718E-02		4.495E-02	7.024E-02	6.425E-03	0.814
NB-95M	1.104E-01		1.193E-01	1.807E-01	1.326E-02	0.611
ZR-95	-2.007E-02		6.168E-02	1.002E-01	9.861E-03	-0.200
NB-97	6.410E-02		4.273E-02	Half-Life too short		



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-97	6.022E+00		9.899E-01	Half-Life too short		
MO-99	9.704E+00		9.549E+00	1.671E+01	2.550E+00	0.581
TC-99M	-5.037E+10		2.571E+10	Half-Life too short		
RH-101	-1.672E-02		2.965E-02	4.766E-02	2.562E-03	-0.351
RH-102	9.733E-03		2.447E-02	4.124E-02	2.620E-03	0.236
RU-103	-1.378E-02		3.193E-02	5.099E-02	6.620E-03	-0.270
RH-106	8.669E-02		2.753E-01	4.524E-01	5.691E-02	0.192
RU-106	8.669E-02		2.752E-01	4.524E-01	3.329E-02	0.192
AG-108M	-2.037E-02		2.665E-02	4.238E-02	2.769E-03	-0.481
AG-110M	2.049E-02		2.731E-02	4.781E-02	3.771E-03	0.429
IN-111	4.434E-01		9.882E-01	1.465E+00	8.186E-02	0.303
IN-113M	2.741E-02		3.604E-02	6.258E-02	3.839E-03	0.438
SN-113	2.741E-02		3.604E-02	6.258E-02	3.839E-03	0.438
IN-114M	-5.891E-02		1.787E-01	2.590E-01	1.383E-02	-0.227
CD-115	7.203E+00		9.099E+00	1.558E+01	1.047E+00	0.462
SN-117M	3.128E-02		4.670E-02	8.089E-02	4.299E-03	0.387
SB-122	1.220E+00		1.753E+00	2.969E+00	2.069E-01	0.411
I-123	1.233E+00		2.855E+00	Half-Life too short		
TE-123M	5.255E-03		2.433E-02	4.152E-02	2.240E-03	0.127
I-124	-1.382E-01		6.954E-01	9.511E-01	6.877E-02	-0.145
SB-124	5.045E-02		5.808E-02	1.068E-01	7.367E-03	0.472
SB-125	3.218E-02		7.383E-02	1.257E-01	7.853E-03	0.256
TE-125M	1.026E+01		8.974E+00	1.505E+01	1.323E+00	0.682
I-126	2.020E-01		1.575E-01	2.808E-01	2.159E-02	0.719
SB-126	-2.833E-02		1.328E-01	1.949E-01	1.650E-02	-0.145
SB-127	-6.529E-02		1.106E+00	1.843E+00	2.013E-01	-0.035
XE-127	-3.082E-02		4.129E-02	6.689E-02	3.611E-03	-0.461
I-131	3.376E-02		9.381E-02	1.608E-01	1.038E-02	0.210
TE-132	-1.164E-01		6.194E-01	1.016E+00	1.450E-01	-0.115
BA-133	-1.980E-04		4.199E-02	5.839E-02	6.746E-03	-0.003
I-133	3.404E-04		2.737E-03	Half-Life too short		
CS-134	7.660E-02		4.302E-02	7.525E-02	7.278E-03	1.018
CS-135	1.612E-01		1.573E-01	2.379E-01	1.798E-02	0.678
I-135	1.323E+08		3.183E+09	Half-Life too short		
CS-136	6.547E-02		9.210E-02	1.610E-01	1.443E-02	0.407
BA-137M	-1.979E-02		2.948E-02	4.747E-02	3.618E-03	-0.417
CS-137	-2.092E-02		3.116E-02	5.018E-02	3.834E-03	-0.417
CE-139	-2.377E-03		2.512E-02	4.229E-02	2.220E-03	-0.056
BA-140	-3.310E-02		2.007E-01	3.236E-01	1.058E-01	-0.102
LA-140	-3.816E-03		6.412E-02	9.781E-02	6.711E-03	-0.039
CE-141	5.151E-02		5.820E-02	9.540E-02	5.446E-03	0.540
CE-143	7.994E-04		1.159E-04	Half-Life too short		
CE-144	1.494E-02		2.165E-01	3.082E-01	4.358E-02	0.048
PM-144	-1.517E-02		3.011E-02	4.885E-02	3.966E-03	-0.311
PR-144	-1.028E+00		2.041E+00	3.310E+00	2.686E-01	-0.311
PM-146	2.049E-02		3.539E-02	6.039E-02	5.372E-03	0.339
ND-147	-2.172E-01		4.634E-01	7.335E-01	1.023E-01	-0.296
PM-149	3.052E+01		8.372E+01	1.382E+02	1.954E+01	0.221

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	2.578E-03		9.831E-02	1.375E-01	8.972E-03	0.019
GD-153	-8.665E-02		8.513E-02	1.169E-01	9.141E-03	-0.741
EU-154	3.033E-02		1.128E-01	1.886E-01	1.884E-02	0.161
EU-155	8.572E-02		1.029E-01	1.715E-01	1.226E-02	0.500
TB-160	-4.324E-02		1.185E-01	1.886E-01	2.072E-02	-0.229
HO-166M	6.247E-04		4.716E-02	7.870E-02	6.560E-03	0.008
TM-171	-2.358E+01		3.410E+01	4.916E+01	3.930E+00	-0.480
LU-176	2.310E-02		2.370E-02	3.568E-02	2.054E-03	0.647
LU-177	1.078E+00	+	1.385E+00	1.730E+00	9.385E-02	0.623
LU-177M	1.744E-02		1.603E-01	2.344E-01	1.384E-02	0.074
HF-181	1.654E-03		3.483E-02	5.757E-02	3.685E-03	0.029
W-181	1.403E-02		4.466E-01	6.671E-01	5.291E-02	0.021
TA-182	7.079E-02		1.846E-01	3.111E-01	1.903E-02	0.228
RE-183	-1.482E-02		9.444E-02	1.569E-01	8.283E-03	-0.094
RE-184	-5.368E-02		1.996E-01	3.235E-01	1.817E-02	-0.166
OS-185	8.325E-03		3.374E-02	5.515E-02	4.148E-03	0.151
RE-188	2.546E-02		1.505E-01	2.568E-01	1.374E-02	0.099
W-188	-3.818E+00		6.953E+00	9.488E+00	5.434E-01	-0.402
IR-192	-1.216E-03		2.846E-02	4.577E-02	2.654E-03	-0.027
AU-195	8.150E-02		2.178E-01	3.589E-01	2.746E-02	0.227
TL-200	8.687E-06		2.007E-04	Half-Life too short		
TL-201	-7.433E-01		6.070E+00	1.020E+01	5.356E-01	-0.073
TL-202	5.045E-02		5.747E-02	9.969E-02	6.078E-03	0.506
BI-207	2.582E-03		4.840E-02	7.949E-02	6.562E-03	0.032
TL-207	2.099E-01		6.241E-01	8.966E-01	1.480E-01	0.234
PO-209	4.113E+00		6.355E+00	1.082E+01	1.221E+00	0.380
BI-210	1.576E+00		5.548E+00	9.280E+00	7.180E-01	0.170
PB-210	1.576E+00		5.548E+00	9.280E+00	7.180E-01	0.170
PO-210	1.576E+00		5.548E+00	9.280E+00	6.172E-01	0.170
PB-211	-7.320E-02		8.717E-01	1.258E+00	7.842E-01	-0.058
BI-212	1.164E+00	+	3.894E-01	5.596E-01	5.573E-02	2.081
PO-215	2.099E-01		6.241E-01	8.966E-01	1.480E-01	0.234
RN-219	1.387E-01		3.310E-01	5.643E-01	7.682E-02	0.246
RN-220	-1.014E+01		2.220E+01	3.515E+01	2.415E+00	-0.289
RA-223	2.099E-01		6.241E-01	8.966E-01	1.480E-01	0.234
AC-227	-2.659E-01		3.345E-01	5.257E-01	7.301E-02	-0.506
TH-227	-2.659E-01		3.355E-01	5.257E-01	8.853E-02	-0.506
TH-229	2.470E-01		4.360E-01	7.436E-01	3.982E-02	0.332
PA-231	-1.778E-01		1.440E+00	2.149E+00	2.953E-01	-0.083
TH-231	2.099E-01		6.241E-01	8.966E-01	1.480E-01	0.234
U-231	4.964E-02		1.115E+00	1.625E+00	1.302E-01	0.031
PA-233	-2.609E-02		5.387E-02	8.469E-02	5.188E-03	-0.308
PA-234	1.300E-01		2.723E-01	4.552E-01	8.979E-02	0.286
PA-234M	6.202E+00		4.579E+00	7.882E+00	8.503E-01	0.787
U-235	1.223E-01		1.969E-01	3.158E-01	5.114E-02	0.387
NP-236	-5.721E-02		6.779E-02	1.113E-01	5.894E-03	-0.514
NP-239	5.012E-02		1.765E-01	2.871E-01	1.777E-02	0.175
AM-241	-2.762E-02		1.980E-01	2.954E-01	2.450E-02	-0.093

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-7.302E-02		9.320E-02	1.463E-01	1.047E-02	-0.499
AM-246	2.459E-02		1.194E-01	2.019E-01	1.597E-02	0.122
CM-247	2.989E-02		3.072E-02	5.255E-02	3.061E-03	0.569
CF-249	-3.026E-02		3.236E-02	5.162E-02	2.967E-03	-0.586
CF-251	2.100E-02		1.123E-01	1.901E-01	1.004E-02	0.110

# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691013
* Acquisition date   : 9-FEB-2010 17:37:24 Detector SN#      :
* Detector ID        : GAM18                               Sensitivity      : 5.000
* Geometry           : CAN                                 Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.85                      Half life ratio  : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245691013           Analyst initials: MJH1
* Batch Number       : 947037              Sample Quantity : 1.2776E+02 GRAM
* Recovery           : 1.00000             Carrier Weight  : 0.00000
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope      :
* MSD DPM             : 0.000               MSD Isotope     :
* LCS DPM             : 0.000               LCS Isotope     :
* LCSD DPM            : 0.000               LCSD Isotope    :
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.695E+01	3.161E+00	2.304E-01	1.613E+00
CD-109	2.612E+00	1.038E+00	7.680E-01	5.297E-01
SN-126	2.567E-01	1.020E-01	7.051E-02	5.206E-02
HG-203	7.237E-02	5.516E-02	2.745E-02	2.814E-02
TL-208	5.316E-01	7.628E-02	2.519E-02	3.892E-02
BI-211	3.962E+00	4.695E-01	1.413E-01	2.395E-01
PB-212	1.787E+00	1.578E-01	4.019E-02	8.052E-02
PO-212	1.787E+00	1.578E-01	4.019E-02	8.052E-02
BI-214	1.161E+00	1.663E-01	4.863E-02	8.482E-02
PB-214	1.378E+00	1.779E-01	4.925E-02	9.075E-02
PO-214	1.378E+00	1.779E-01	4.925E-02	9.075E-02
PO-216	1.787E+00	1.578E-01	4.019E-02	8.052E-02
PO-218	1.378E+00	1.779E-01	4.925E-02	9.075E-02
RA-224	4.758E+00	1.136E+00	4.568E-01	5.795E-01
RA-226	1.161E+00	1.663E-01	4.863E-02	8.482E-02
AC-228	1.574E+00	3.133E-01	9.446E-02	1.598E-01
RA-228	1.574E+00	3.133E-01	9.446E-02	1.598E-01
TH-228	1.815E+00	1.602E-01	4.081E-02	8.175E-02
TH-230	1.161E+00	1.663E-01	4.863E-02	8.482E-02
TH-232	1.574E+00	3.133E-01	9.446E-02	1.598E-01
TH-234	2.688E+00	2.138E+00	1.253E+00	1.091E+00
U-234	1.161E+00	1.663E-01	4.863E-02	8.482E-02
NP-237	7.538E-01	3.362E-01	2.049E-01	1.715E-01
U-238	2.688E+00	2.138E+00	1.253E+00	1.091E+00
AM-243	3.303E-01	7.601E-02	4.849E-02	3.878E-02
ANH-511	1.216E-01	5.907E-02	1.984E-02	3.014E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-5.581E-02	2.676E-01	2.266E-01	1.365E-01 NOT IDENT.

NA-22	1.438E-02	3.943E-02	3.394E-02	2.012E-02	NOT IDENT.
NA-24	-3.063E+05	7.151E+05	0.000E+00	3.649E+05	SHORT HLIF
AL-26	-2.501E-03	2.313E-02	1.900E-02	1.180E-02	NOT IDENT.
TI-44	3.815E-01	5.506E-02	4.315E-02	2.809E-02	FAIL ABUN
SC-46	-3.421E-02	3.185E-02	2.440E-02	1.625E-02	FAIL ABUN
V-48	-1.938E-02	6.157E-02	4.999E-02	3.142E-02	NOT IDENT.
CR-51	-8.046E-02	3.120E-01	2.591E-01	1.592E-01	NOT IDENT.
MN-52	-1.751E-02	1.904E-01	1.562E-01	9.715E-02	NOT IDENT.
MN-54	-1.527E-02	3.359E-02	2.764E-02	1.714E-02	NOT IDENT.
CO-56	2.032E-03	3.261E-02	2.767E-02	1.664E-02	NOT IDENT.
CO-57	3.898E-03	2.217E-02	1.899E-02	1.131E-02	NOT IDENT.
CO-58	-3.261E-02	3.240E-02	2.549E-02	1.653E-02	NOT IDENT.
FE-59	3.166E-03	7.655E-02	6.554E-02	3.906E-02	NOT IDENT.
CO-60	-2.192E-02	3.360E-02	2.644E-02	1.714E-02	NOT IDENT.
ZN-65	8.595E-02	9.546E-02	7.474E-02	4.871E-02	NOT IDENT.
GE-68	-3.655E-02	1.011E+00	8.628E-01	5.157E-01	NOT IDENT.
AS-73	1.322E-01	1.042E+00	9.440E-01	5.315E-01	NOT IDENT.
AS-74	-5.950E-02	7.484E-02	5.916E-02	3.819E-02	NOT IDENT.
SE-75	-2.119E-02	4.022E-02	3.094E-02	2.052E-02	NOT IDENT.
BR-77	4.480E+00	8.790E+00	7.682E+00	4.485E+00	FAIL ABUN
SR-82	-1.030E-01	3.277E-01	2.741E-01	1.672E-01	NOT IDENT.
RB-83	3.354E-02	5.650E-02	4.959E-02	2.883E-02	NOT IDENT.
RB-84	1.766E-02	5.664E-02	4.870E-02	2.890E-02	NOT IDENT.
KR-85	1.996E+01	7.189E+00	6.177E+00	3.668E+00	NOT IDENT.
SR-85	1.025E-01	3.691E-02	3.171E-02	1.883E-02	NOT IDENT.
RB-86	3.880E-02	6.382E-01	5.484E-01	3.256E-01	NOT IDENT.
Y-88	-1.794E-02	2.932E-02	2.238E-02	1.496E-02	NOT IDENT.
ZR-88	7.250E-03	2.432E-02	2.153E-02	1.241E-02	NOT IDENT.
Y-91	2.362E+00	1.757E+01	1.496E+01	8.963E+00	NOT IDENT.
NB-94	6.803E-03	2.660E-02	2.326E-02	1.357E-02	NOT IDENT.
NB-95	5.718E-02	4.405E-02	3.549E-02	2.247E-02	NOT IDENT.
NB-95M	1.104E-01	1.170E-01	9.297E-02	5.967E-02	NOT IDENT.
ZR-95	-2.007E-02	6.045E-02	5.065E-02	3.084E-02	NOT IDENT.
NB-97	6.410E+04	8.374E+04	0.000E+00	4.273E+04	SHORT HLIF
ZR-97	6.022E+06	1.940E+06	0.000E+00	9.899E+05	SHORT HLIF
MO-99	9.704E+00	9.358E+00	8.450E+00	4.774E+00	NOT IDENT.
TC-99M	-5.037E+16	5.040E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.672E-02	2.905E-02	2.458E-02	1.482E-02	NOT IDENT.
RH-102	9.733E-03	2.398E-02	2.099E-02	1.223E-02	FAIL ABUN
RU-103	-1.378E-02	3.129E-02	2.594E-02	1.597E-02	FAIL ABUN
RH-106	8.669E-02	2.698E-01	2.293E-01	1.377E-01	FAIL ABUN
RU-106	8.669E-02	2.697E-01	2.293E-01	1.376E-01	FAIL ABUN
AG-108M	-2.037E-02	2.612E-02	2.160E-02	1.333E-02	NOT IDENT.
AG-110M	2.049E-02	2.677E-02	2.422E-02	1.366E-02	NOT IDENT.
IN-111	4.434E-01	9.684E-01	7.531E-01	4.941E-01	NOT IDENT.
IN-113M	2.741E-02	3.532E-02	3.195E-02	1.802E-02	NOT IDENT.
SN-113	2.741E-02	3.532E-02	3.195E-02	1.802E-02	NOT IDENT.
IN-114M	-5.891E-02	1.751E-01	1.337E-01	8.934E-02	NOT IDENT.
CD-115	7.203E+00	8.917E+00	7.917E+00	4.550E+00	NOT IDENT.
SN-117M	3.128E-02	4.576E-02	4.185E-02	2.335E-02	NOT IDENT.
SB-122	1.220E+00	1.718E+00	1.507E+00	8.767E-01	NOT IDENT.
I-123	1.233E+06	5.596E+06	0.000E+00	2.855E+06	SHORT HLIF
TE-123M	5.255E-03	2.384E-02	2.148E-02	1.216E-02	NOT IDENT.
I-124	-1.382E-01	6.815E-01	4.824E-01	3.477E-01	NOT IDENT.
SB-124	5.045E-02	5.692E-02	5.330E-02	2.904E-02	FAIL ABUN
SB-125	3.218E-02	7.235E-02	6.408E-02	3.691E-02	FAIL ABUN
TE-125M	1.026E+01	8.795E+00	7.827E+00	4.487E+00	NOT IDENT.
I-126	2.020E-01	1.544E-01	1.422E-01	7.877E-02	NOT IDENT.
SB-126	-2.833E-02	1.302E-01	9.858E-02	6.642E-02	FAIL ABUN
SB-127	-6.529E-02	1.084E+00	9.329E-01	5.529E-01	NOT IDENT.
XE-127	-3.082E-02	4.046E-02	3.449E-02	2.064E-02	NOT IDENT.
I-131	3.376E-02	9.193E-02	8.218E-02	4.690E-02	NOT IDENT.
TE-132	-1.164E-01	6.070E-01	5.228E-01	3.097E-01	NOT IDENT.
BA-133	-1.980E-04	4.115E-02	2.985E-02	2.100E-02	FAIL ABUN
I-133	3.404E+02	5.364E+03	0.000E+00	2.737E+03	SHORT HLIF
CS-134	7.660E-02	4.216E-02	3.800E-02	2.151E-02	NOT IDENT.
CS-135	1.612E-01	1.542E-01	1.221E-01	7.867E-02	NOT IDENT.
I-135	1.323E+14	6.239E+15	0.000E+00	3.183E+15	SHORT HLIF
CS-136	6.547E-02	9.026E-02	8.095E-02	4.605E-02	FAIL ABUN
BA-137M	-1.979E-02	2.889E-02	2.404E-02	1.474E-02	NOT IDENT.
CS-137	-2.092E-02	3.054E-02	2.541E-02	1.558E-02	NOT IDENT.
CE-139	-2.377E-03	2.461E-02	2.187E-02	1.256E-02	NOT IDENT.
BA-140	-3.310E-02	1.966E-01	1.644E-01	1.003E-01	NOT IDENT.
LA-140	-3.816E-03	6.284E-02	4.887E-02	3.206E-02	FAIL ABUN
CE-141	5.151E-02	5.703E-02	4.943E-02	2.910E-02	NOT IDENT.
CE-143	7.994E+02	2.272E+02	0.000E+00	1.159E+02	SHORT HLIF
CE-144	1.494E-02	2.122E-01	1.599E-01	1.083E-01	NOT IDENT.
PM-144	-1.517E-02	2.951E-02	2.472E-02	1.506E-02	NOT IDENT.

PR-144	-1.028E+00	2.000E+00	1.675E+00	1.020E+00	NOT IDENT.
PM-146	2.049E-02	3.468E-02	3.076E-02	1.769E-02	NOT IDENT.
ND-147	-2.172E-01	4.542E-01	3.728E-01	2.317E-01	NOT IDENT.
PM-149	3.052E+01	8.205E+01	7.087E+01	4.186E+01	NOT IDENT.
EU-152	2.578E-03	9.634E-02	7.032E-02	4.915E-02	FAIL ABUN
GD-153	-8.665E-02	8.343E-02	6.093E-02	4.257E-02	NOT IDENT.
EU-154	3.033E-02	1.105E-01	9.458E-02	5.640E-02	NOT IDENT.
EU-155	8.572E-02	1.008E-01	8.929E-02	5.143E-02	FAIL ABUN
TB-160	-4.324E-02	1.162E-01	9.511E-02	5.926E-02	FAIL ABUN
HO-166M	6.247E-04	4.622E-02	3.981E-02	2.358E-02	FAIL ABUN
TM-171	-2.358E+01	3.342E+01	2.576E+01	1.705E+01	NOT IDENT.
LU-176	2.310E-02	2.323E-02	1.828E-02	1.185E-02	FAIL ABUN
LU-177	1.078E+00	1.358E+00	8.916E-01	6.926E-01	FAIL ABUN
LU-177M	1.744E-02	1.571E-01	1.196E-01	8.013E-02	NOT IDENT.
HF-181	1.654E-03	3.414E-02	2.930E-02	1.742E-02	NOT IDENT.
W-181	1.403E-02	4.377E-01	3.496E-01	2.233E-01	NOT IDENT.
TA-182	7.079E-02	1.809E-01	1.561E-01	9.230E-02	FAIL ABUN
RE-183	-1.482E-02	9.255E-02	8.116E-02	4.722E-02	FAIL ABUN
RE-184	-5.368E-02	1.956E-01	1.662E-01	9.979E-02	NOT IDENT.
OS-185	8.325E-03	3.307E-02	2.794E-02	1.687E-02	NOT IDENT.
RE-188	2.546E-02	1.475E-01	1.329E-01	7.526E-02	NOT IDENT.
W-188	-3.818E+00	6.814E+00	4.865E+00	3.477E+00	FAIL ABUN
IR-192	-1.216E-03	2.789E-02	2.344E-02	1.423E-02	FAIL ABUN
AU-195	8.150E-02	2.134E-01	1.870E-01	1.089E-01	FAIL ABUN
TL-200	8.687E+00	3.934E+02	0.000E+00	2.007E+02	SHORT HLIF
TL-201	-7.433E-01	5.948E+00	5.275E+00	3.035E+00	NOT IDENT.
TL-202	5.045E-02	5.632E-02	5.081E-02	2.873E-02	NOT IDENT.
BI-207	2.582E-03	4.743E-02	3.996E-02	2.420E-02	FAIL ABUN
TL-207	2.099E-01	6.116E-01	4.590E-01	3.120E-01	FAIL ABUN
PO-209	4.113E+00	6.228E+00	5.456E+00	3.177E+00	NOT IDENT.
BI-210	1.576E+00	5.437E+00	4.887E+00	2.774E+00	NOT IDENT.
PB-210	1.576E+00	5.437E+00	4.887E+00	2.774E+00	NOT IDENT.
PO-210	1.576E+00	5.437E+00	4.887E+00	2.774E+00	NOT IDENT.
PB-211	-7.320E-02	8.543E-01	6.418E-01	4.359E-01	NOT IDENT.
BI-212	1.164E+00	3.816E-01	2.830E-01	1.947E-01	FAIL ABUN
PO-215	2.099E-01	6.116E-01	4.590E-01	3.120E-01	FAIL ABUN
RN-219	1.387E-01	3.244E-01	2.880E-01	1.655E-01	FAIL ABUN
RN-220	-1.014E+01	2.176E+01	1.785E+01	1.110E+01	NOT IDENT.
RA-223	2.099E-01	6.116E-01	4.590E-01	3.120E-01	FAIL ABUN
AC-227	-2.659E-01	3.278E-01	2.701E-01	1.673E-01	FAIL ABUN
TH-227	-2.659E-01	3.288E-01	2.701E-01	1.677E-01	FAIL ABUN
TH-229	2.470E-01	4.273E-01	3.836E-01	2.180E-01	FAIL ABUN
PA-231	-1.778E-01	1.411E+00	1.102E+00	7.200E-01	FAIL ABUN
TH-231	2.099E-01	6.116E-01	4.590E-01	3.120E-01	FAIL ABUN
U-231	4.964E-02	1.092E+00	8.471E-01	5.573E-01	FAIL ABUN
PA-233	-2.609E-02	5.279E-02	4.339E-02	2.694E-02	FAIL ABUN
PA-234	1.300E-01	2.669E-01	2.293E-01	1.362E-01	FAIL ABUN
PA-234M	6.202E+00	4.488E+00	3.967E+00	2.290E+00	NOT IDENT.
U-235	1.223E-01	1.929E-01	1.636E-01	9.843E-02	FAIL ABUN
NP-236	-5.721E-02	6.643E-02	5.755E-02	3.389E-02	FAIL ABUN
NP-239	5.012E-02	1.729E-01	1.492E-01	8.823E-02	FAIL ABUN
AM-241	-2.762E-02	1.940E-01	1.550E-01	9.900E-02	NOT IDENT.
CM-243	-7.302E-02	9.134E-02	7.618E-02	4.660E-02	FAIL ABUN
AM-246	2.459E-02	1.170E-01	1.015E-01	5.970E-02	NOT IDENT.
CM-247	2.989E-02	3.010E-02	2.682E-02	1.536E-02	FAIL ABUN
CF-249	-3.026E-02	3.171E-02	2.635E-02	1.618E-02	NOT IDENT.
CF-251	2.100E-02	1.100E-01	9.820E-02	5.613E-02	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
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ENERGY	MDA COUNTS
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46.50	321.6334
46.50	321.6334
46.50	321.6334
48.70	322.7679
49.72	328.5824
51.35	320.7618
52.39	352.9012
52.97	331.8645
53.15	322.0837
53.44	318.7959
54.07	335.0764
56.28	349.7964
56.28	349.8003
57.37	0.0000
57.53	358.7877
57.53	358.7897
57.60	353.3279
57.98	361.2203
57.98	361.2203
59.32	372.7147
59.32	372.7147
59.40	372.8196
59.54	373.0029
59.72	367.6466
60.01	368.0198
61.10	375.0338
61.14	375.0858
61.30	375.2925
63.00	389.2545
63.29	418.8809
63.29	418.8809
63.58	419.2885
64.28	398.9734
65.12	417.1699
65.20	417.2800
65.20	417.2800
66.05	454.1481
66.72	442.2544
66.83	445.2782
66.91	445.3921
67.20	444.9496
67.20	444.9496
67.75	446.1188
67.85	462.5434
68.90	461.2085
68.90	461.2085
69.30	450.2472
69.67	462.3340
70.82	487.1913
70.82	487.1913
70.83	487.2067
72.80	501.8355
72.87	501.9431
72.87	501.9431
74.67	479.2433
74.81	479.4440
74.81	479.4440
74.81	479.4440
74.81	479.4440
74.81	479.4440
74.81	479.4440
74.81	479.4440
74.97	479.6720
75.28	480.1157
75.70	480.7138
77.11	482.7076
77.11	482.7076

77.11	482.7076
77.11	482.7076
77.11	482.7076
77.11	482.7076
77.11	482.7076
78.38	470.1526
79.62	470.3403
79.80	445.2653
79.80	445.2653
80.11	445.6577
80.18	445.7466
80.30	459.3188
80.30	459.3188
80.57	459.6713
81.00	493.1017
81.07	493.1999
81.07	493.1999
81.07	493.1999
81.07	493.1999
82.60	467.0944
83.37	466.2819
83.78	487.8960
83.78	487.8960
83.78	487.8960
83.78	487.8960
84.21	465.8575
84.90	441.0565
85.43	455.3052
86.29	530.6557
86.50	530.9548
86.54	531.0108
86.59	531.0829
86.72	520.6418
86.79	520.7360
86.94	520.9480
87.30	560.6732
87.30	560.6732
87.30	560.6732
87.30	560.6732
87.30	560.6732
87.30	560.6732
87.57	561.0756
87.88	651.6754
88.03	651.9366
88.36	652.5048
88.47	652.6942
89.95	655.2346
91.11	580.4333
92.29	486.7054
92.38	486.8187
92.38	486.8187
93.35	488.0217
94.00	349.6041
94.67	323.8470
94.67	323.8518
94.90	324.0383
94.90	324.0383
94.90	324.0383
94.90	324.0383
95.87	366.7874
95.87	366.7874
96.73	412.7423
97.43	413.4519
98.44	391.0141
98.44	391.0141
98.88	376.8202
99.55	336.6581
99.55	336.6581
99.86	332.7251
100.00	332.8383
100.10	332.9208
103.18	412.3589
103.76	398.1368
105.00	355.8669
105.31	351.8854
108.00	408.4570
109.28	354.0276



111.00	372.5774
111.00	372.5774
111.76	387.1893
112.95	422.7167
115.19	313.1759
116.30	342.1721
117.00	341.5992
117.00	341.5992
117.66	370.4085
121.11	305.0791
121.62	311.9958
121.78	312.0998
122.06	315.5806
122.32	315.7499
122.32	315.7499
122.32	315.7499
122.32	315.7499
123.07	339.3815
127.23	315.0464
129.76	392.0355
131.20	376.3525
133.02	402.9879
133.54	371.3239
135.34	351.1658
136.00	340.3029
136.25	348.3830
136.48	353.0630
140.51	383.1270
140.51	0.0000
142.18	383.1760
142.65	359.4691
143.76	347.5851
144.24	360.5199
144.24	360.5199
144.24	360.5199
144.24	360.5199
145.22	350.8133
145.44	350.9560
147.16	387.8301
152.43	346.0438
152.70	340.3785
153.22	362.2753
154.21	365.5304
154.21	365.5304
154.21	365.5304
154.21	365.5304
155.03	376.5860
156.02	400.9726
158.56	325.0042
159.00	0.0000
159.00	344.6896
160.31	370.2562
161.27	362.8708
162.32	337.7359
162.64	330.8016
163.35	327.6321
163.89	343.9668
165.85	341.5069
167.43	341.4966
171.28	345.4340
171.86	352.0747
172.10	347.6931
176.55	359.2465
176.60	359.2737
181.06	383.9330
184.41	371.1709
185.71	355.1128
186.00	355.2685
190.27	359.5821
192.34	324.6954
193.63	323.8432
197.04	353.5813
198.01	364.4042
198.60	347.7924
200.40	330.7817
201.83	371.1120
202.84	376.3680
205.31	355.2761

208.36	378.1273
208.81	351.8523
209.75	290.2463
209.75	290.2463
210.97	338.1662
215.65	317.5978
216.55	294.8546
218.09	327.3252
222.10	317.4124
223.80	317.1432
226.40	318.2126
227.00	332.1350
227.08	332.1687
227.20	326.3579
228.16	320.8906
228.18	320.8981
228.18	320.8981
231.56	0.0000
235.69	312.8990
236.00	305.1153
236.00	305.1153
238.63	300.3647
238.63	300.3647
238.63	300.3647
238.63	300.3647
239.00	300.5010
240.98	301.2339
241.98	301.6037
241.98	301.6037
241.98	301.6037
244.69	271.6410
245.39	233.4895
247.94	252.0827
248.90	251.9422
249.79	285.3694
252.40	247.9538
252.85	267.2462
252.85	267.2462
254.15	0.0000
256.20	288.5497
256.20	288.5497
260.50	239.1165
260.90	242.2816
262.80	263.2162
264.65	265.8160
268.24	259.5081
268.79	258.0266
269.46	263.1523
269.46	263.1523
269.46	263.1523
269.46	263.1523
271.23	263.6758
273.65	264.3867
276.40	229.2801
277.35	229.5199
277.60	229.5806
277.60	229.5806
278.00	229.6820
278.60	215.9885
279.20	226.1033
279.53	226.1830
280.46	224.7506
281.68	248.3855
283.67	247.8065
284.30	232.8479
285.00	238.4022
285.90	241.7717
286.10	241.8211
286.10	241.8211
287.40	206.5169
288.45	0.0000
290.67	237.3179
290.80	237.3523
291.72	242.6379
293.26	0.0000
293.70	194.1748
295.21	209.7041
295.21	209.7041

295.21	209.7041
295.96	224.2537
296.50	224.3798
297.23	224.5480
298.57	224.8618
299.80	225.1465
299.80	225.1465
300.09	215.8659
300.09	215.8659
300.09	215.8659
300.09	215.8659
300.12	215.8721
301.29	216.1294
302.84	228.4052
303.76	203.0292
303.91	203.0583
304.40	220.2322
304.40	220.2322
304.84	222.0410
306.84	191.6824
308.46	234.6390
311.98	216.1143
316.51	196.5659
318.01	219.5718
319.02	199.2173
319.41	205.7918
320.08	215.6795
323.87	196.6796
323.87	196.6796
323.87	196.6796
323.87	196.6796
325.23	221.3353
328.77	222.0888
333.44	158.0867
334.20	205.0724
334.20	205.0724
334.30	205.0924
338.28	212.8430
338.28	212.8430
338.28	212.8430
338.28	212.8430
338.32	212.8519
338.32	212.8519
338.32	212.8519
340.50	217.4842
340.57	217.4992
344.27	214.6953
345.85	225.6668
350.59	0.0000
351.07	204.2024
351.92	204.3615
351.92	204.3615
351.92	204.3615
355.39	0.0000
356.01	191.8868
364.48	173.4586
366.43	180.9961
367.43	189.3067
367.94	0.0000
369.80	199.6812
374.96	190.5441
383.85	171.7789
387.95	199.1013
388.63	171.5459
391.69	163.6602
391.69	163.6602
392.90	171.2289
398.62	182.2642
400.65	176.0432
401.10	172.3829
401.81	166.8871
402.60	159.6334
404.84	182.2507
410.95	173.7514
411.60	178.5402
413.65	164.7119
414.70	173.0911
415.30	161.2626

415.76	163.1019
417.63	0.0000
418.52	162.5098
423.70	167.9123
427.08	149.3282
427.89	151.3256
432.53	150.9081
433.93	174.0175
439.47	146.9039
439.56	146.9133
439.89	146.9506
443.98	166.6688
444.90	147.5016
445.03	146.5523
445.03	146.5523
445.03	146.5523
445.03	146.5523
453.90	144.6038
463.38	130.2930
468.07	137.2690
473.00	143.6546
475.06	150.7607
475.35	143.8934
476.78	143.0512
477.59	164.8493
477.96	162.9174
482.03	146.5493
484.57	155.7351
487.03	161.9633
490.36	0.0000
492.35	141.6134
497.08	138.0691
507.63	0.0000
510.53	0.0000
510.84	151.4685
511.00	151.4841
511.85	159.9907
511.85	159.9907
513.99	146.7240
513.99	146.7240
520.41	133.1172
520.65	133.1396
527.90	119.4708
528.96	0.0000
529.64	132.8945
529.87	0.0000
531.02	142.2205
537.32	121.2237
543.00	143.3098
546.56	0.0000
549.76	150.1331
552.65	138.9923
555.20	114.2781
563.23	119.0209
563.90	126.3794
568.70	144.5597
569.32	139.3740
569.50	144.6271
569.67	144.6440
573.80	149.2075
574.00	145.0213
574.64	141.3406
578.91	166.8801
579.30	0.0000
583.14	144.7598
585.48	114.6281
591.81	128.5093
592.07	125.3433
593.00	130.7235
595.88	132.0103
600.56	151.8194
602.52	0.0000
602.71	149.6353
602.71	149.6353
603.60	137.2346
604.41	142.6497
604.70	142.6725
609.31	153.4213

609.31	153.4213
609.31	153.4213
609.31	153.4213
610.33	146.7131
612.46	121.8112
614.37	109.3910
618.01	138.9678
621.84	129.6621
621.84	129.6621
631.29	144.4719
633.02	118.5135
633.10	113.0822
634.78	125.1608
635.90	135.0377
636.97	111.1466
645.85	100.7373
646.12	104.0385
656.30	117.4583
657.75	107.4476
657.90	0.0000
661.65	147.2461
661.65	147.2461
664.57	0.0000
666.33	125.4691
666.33	125.4691
675.00	132.5322
677.61	108.5830
685.20	117.3995
692.80	133.7599
695.00	133.9112
696.49	159.3162
696.49	159.3162
697.00	153.7333
697.49	144.3969
698.33	138.8283
698.50	138.8403
699.00	136.9998
702.63	125.0311
706.10	110.1826
706.58	0.0000
706.67	106.4479
709.31	130.1696
711.68	111.4364
713.82	127.6282
717.42	114.5994
720.50	128.0539
721.93	0.0000
722.20	122.0581
722.78	125.3506
722.78	125.3506
722.89	125.3560
722.95	125.3586
723.30	117.2411
724.18	120.5494
727.18	107.6759
733.00	121.0733
735.90	111.2492
739.58	90.9586
742.81	116.9936
744.21	128.5857
747.13	129.7293
751.79	117.4975
752.31	115.6006
753.82	120.5037
755.35	132.1697
756.15	134.1500
756.87	124.5410
763.93	121.2220
765.79	131.3011
766.42	121.3645
766.84	126.3760
776.49	133.4908
778.00	127.7325
778.57	124.8411
778.89	124.8594
783.80	120.2548
785.46	126.2180
792.07	132.4896

795.84	102.2417
796.30	103.2462
798.80	175.2260
801.93	116.3267
805.60	100.7196
810.29	125.6693
810.76	122.7285
815.85	111.1022
817.79	92.3359
818.51	87.3984
819.60	104.3335
826.30	121.5855
828.27	0.0000
831.60	130.8587
831.96	135.8755
834.83	149.0485
836.80	0.0000
846.75	105.5789
848.13	103.6308
856.28	0.0000
856.80	93.4849
860.37	93.0500
867.32	102.5977
867.82	120.0136
871.10	88.3930
873.19	84.4033
874.81	99.7247
875.33	0.0000
876.40	109.9731
879.36	105.0117
880.27	89.7528
880.51	89.7617
881.50	89.7993
883.24	80.6732
884.67	74.5906
889.25	107.4930
896.60	91.3883
898.02	109.9367
899.00	125.3980
903.28	121.7920
911.07	111.5552
911.07	111.5552
911.07	111.5552
919.63	103.6479
920.93	102.9486
925.00	67.6650
925.24	78.3566
926.50	92.6504
935.52	89.4060
937.48	93.0548
944.10	125.5933
946.00	101.5962
949.00	103.8138
962.29	92.7552
964.01	92.8179
966.15	92.8949
968.20	92.9665
969.11	90.5849
969.11	90.5849
969.11	90.5849
977.42	78.8774
980.50	107.2036
983.50	104.1370
989.30	101.1714
996.32	135.6067
1001.03	98.4089
1001.68	104.8508
1004.76	130.6799
1021.30	0.0000
1024.50	0.0000
1034.80	88.8066
1036.00	91.9424
1037.82	82.7080
1038.57	85.5184
1038.76	0.0000
1045.16	117.4043
1046.59	110.0077
1048.07	87.6791

1050.47	92.4223
1050.47	92.4223
1062.04	115.2996
1063.62	105.9848
1076.63	90.4554
1077.35	93.3028
1078.86	92.4116
1085.78	96.4148
1099.22	100.6616
1112.02	120.1772
1112.84	120.2124
1115.52	120.3223
1120.29	129.1239
1120.29	129.1239
1120.29	129.1239
1120.29	129.1239
1120.51	129.1333
1121.28	127.2527
1124.00	0.0000
1129.67	119.5546
1131.51	0.0000
1147.95	0.0000
1167.94	140.8986
1173.22	115.8333
1175.09	112.0079
1177.93	130.6350
1189.05	129.1456
1204.90	139.6327
1205.75	0.0000
1213.00	145.9095
1221.42	136.4069
1230.97	186.3870
1235.34	128.0687
1236.41	0.0000
1238.25	122.2192
1246.25	113.5587
1260.41	0.0000
1271.85	91.3586
1274.45	97.4567
1274.54	95.4506
1291.56	106.0364
1298.22	0.0000
1312.09	70.1070
1325.50	71.4014
1325.50	71.4014
1332.49	75.6363
1333.61	69.5250
1360.21	46.3623
1362.66	0.0000
1365.15	49.5234
1368.21	61.9566
1368.53	0.0000
1376.25	53.8191
1384.27	69.5003
1394.10	59.2902
1395.20	60.3486
1407.95	51.1636
1434.06	45.2211
1436.60	47.3573
1457.56	0.0000
1460.81	46.3425
1489.15	37.3535
1509.49	25.0350
1596.49	29.4313
1620.62	36.6861
1678.03	0.0000
1691.02	18.6544
1691.02	18.6544
1706.46	0.0000
1750.46	0.0000
1764.49	15.9766
1764.49	15.9766
1764.49	15.9766
1764.49	15.9766
1770.23	28.4392
1771.40	120.0110
1791.20	0.0000
1808.65	23.1937

1836.01

33.4784



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691013

Total Uranium Activity	8.0523E+00	ug/g
Total Uranium Counting Unc.	6.3613E+00	ug/g
Total Uranium Tpu	3.2456E-06	ug/g
Total Uranium Mda	3.7271E+00	ug/g

```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 947037          SAMPLE ID   : G245691013
*  ANALYST       : MJH1            DETECTOR    : GAM18
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 17:37:24.94  SAMPLE ALQT: 127.760 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.033E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.449E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.608E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.266E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 19:27:43.03

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691014.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:27:05.
Sample ID          : G245691014      Sample quantity   : 1.30090E+02 GRAM
Detector name      : GAM17            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:09.61  0.1%
Energy tolerance   : 1.50000 keV      Analyst Initials : MJH1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 947037            Detector SN#       :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.47*	144	440	0.97	92.58	89	9	2.00E-02	28.7	
2	0	63.20*	320	690	0.83	126.04	121	10	4.44E-02	16.7	
3	4	74.85*	568	411	1.05	149.35	143	18	7.88E-02	7.0	1.57E+00
4	4	77.15*	852	389	0.92	153.95	143	18	1.18E-01	5.1	
5	3	83.98*	148	405	1.21	167.61	164	28	2.05E-02	23.8	2.20E+00
6	3	87.23	322	382	1.17	174.12	164	28	4.47E-02	11.3	
7	3	89.84	176	310	0.93	179.33	164	28	2.44E-02	17.8	
8	3	92.65*	526	342	1.24	184.96	164	28	7.30E-02	7.8	
9	0	128.84	81	229	0.85	257.36	254	7	1.12E-02	33.1	
10	0	185.92*	234	314	1.16	371.58	367	11	3.25E-02	16.6	
11	0	208.99	148	276	0.95	417.72	412	12	2.06E-02	23.8	
12	0	238.50*	833	276	1.06	476.76	473	8	1.16E-01	5.0	
13	0	241.61	166	176	1.23	483.00	481	7	2.30E-02	15.9	
14	0	269.67	123	129	1.06	539.14	533	11	1.71E-02	20.0	
15	0	295.18*	337	180	1.19	590.18	585	12	4.68E-02	9.8	
16	0	299.85	62	163	1.04	599.53	596	10	8.63E-03	40.4	
17	0	327.48	112	117	0.96	654.80	649	12	1.55E-02	21.6	
18	0	338.03*	139	108	1.26	675.91	671	9	1.93E-02	16.2	
19	0	351.62*	516	164	1.22	703.10	696	13	7.17E-02	6.9	
20	0	510.77*	106	144	2.03	1021.57	1014	19	1.47E-02	31.3	
21	0	582.73*	237	69	1.43	1165.56	1158	12	3.29E-02	9.7	
22	0	608.98*	325	104	1.43	1218.09	1211	13	4.51E-02	8.7	
23	0	661.24*	43	47	1.45	1322.66	1319	9	5.93E-03	33.3	
24	0	726.35	89	38	2.42	1452.96	1447	15	1.23E-02	18.5	
25	0	910.57*	175	51	1.54	1821.65	1816	13	2.43E-02	11.4	
26	0	968.86*	107	37	1.95	1938.30	1933	13	1.48E-02	16.0	
27	0	1119.65	73	59	1.59	2240.10	2231	18	1.02E-02	27.1	
28	0	1459.58*	698	13	2.01	2920.53	2911	18	9.69E-02	4.0	
29	0	1763.02*	63	7	2.46	3527.97	3521	14	8.77E-03	15.8	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691014.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:27:05
Sample ID        : G245691014 Sample quantity : 130.09 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:09.61 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.425E+01	2.901E+00	7.167E-01	6.363E-02	33.839
CD-109	+	88.03	*	3.825E+00	9.449E-01	9.736E-01	9.505E-02	3.928
SN-126	+	64.28		1.419E+00	5.244E-01	4.056E-01	6.475E-02	3.499
	+	86.94		1.563E+00	7.406E-01	3.965E-01	1.650E-01	3.942
	+	87.57	*	3.759E-01	9.286E-02	9.555E-02	9.324E-03	3.934
CS-135	+	268.24	*	6.095E-01	2.517E-01	2.513E-01	2.622E-02	2.426
BA-137M	+	661.65	*	8.541E-02	5.734E-02	7.277E-02	6.130E-03	1.174
CS-137	+	661.65	*	9.028E-02	6.062E-02	7.693E-02	6.493E-03	1.174
TL-208		277.35		3.581E-01	3.975E-01	7.014E-01	8.930E-02	0.511
	+	510.84		6.855E-01	4.368E-01	2.414E-01	2.949E-02	2.839
	+	583.14	*	4.485E-01	9.676E-02	7.004E-02	6.625E-03	6.404
		860.37		7.223E-01	3.800E-01	7.261E-01	6.832E-02	0.995
BI-210	+	46.50	*	1.629E+00	9.514E-01	7.965E-01	8.641E-02	2.045
PB-210	+	46.50	*	1.629E+00	9.514E-01	7.965E-01	8.641E-02	2.045
PO-210	+	46.50	*	1.629E+00	9.492E-01	7.965E-01	8.047E-02	2.045
BI-211		72.87		2.677E+00	1.881E+00	3.291E+00	3.218E-01	0.813
	+	351.07	*	3.957E+00	6.580E-01	3.519E-01	3.284E-02	11.246
PB-212	+	74.81		2.253E+00	4.398E-01	3.552E-01	4.801E-02	6.342
	+	77.11		2.013E+00	2.852E-01	2.121E-01	2.068E-02	9.490
	+	87.30		1.738E+00	4.633E-01	4.415E-01	6.169E-02	3.937
	+	238.63	*	1.340E+00	1.903E-01	1.088E-01	1.097E-02	12.315
	+	300.09		1.573E+00	1.284E+00	1.229E+00	1.338E-01	1.280
PO-212	+	74.81		2.253E+00	4.398E-01	3.552E-01	4.801E-02	6.342
	+	77.11		2.013E+00	2.852E-01	2.121E-01	2.068E-02	9.490
	+	87.30		1.738E+00	4.633E-01	4.415E-01	6.169E-02	3.937
		115.19		-6.196E-01	3.273E+00	5.377E+00	6.054E-01	-0.115
	+	238.63	*	1.340E+00	1.903E-01	1.088E-01	1.097E-02	12.315
	+	300.09		1.573E+00	1.284E+00	1.229E+00	1.338E-01	1.280
BI-214	+	609.31	*	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
	+	1120.29		1.433E+00	7.924E-01	5.431E-01	5.806E-02	2.639
	+	1764.49		1.716E+00	5.618E-01	3.345E-01	2.829E-02	5.128
PB-214	+	74.81		3.882E+00	7.248E-01	6.121E-01	7.500E-02	6.342
	+	77.11		3.451E+00	5.552E-01	3.636E-01	4.499E-02	9.490
	+	87.30		2.978E+00	7.707E-01	7.564E-01	9.406E-02	3.937

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	241.98		1.601E+00	5.363E-01	5.504E-01	5.860E-02	2.909
	+	295.21		1.495E+00	3.358E-01	2.148E-01	2.386E-02	6.961
	+	351.92	*	1.377E+00	2.399E-01	1.227E-01	1.311E-02	11.218
	+	74.81		3.882E+00	7.248E-01	6.121E-01	7.500E-02	6.342
	+	77.11		3.451E+00	5.552E-01	3.636E-01	4.499E-02	9.490
	+	87.30		2.978E+00	7.707E-01	7.564E-01	9.406E-02	3.937
PO-216	+	241.98		1.601E+00	5.363E-01	5.504E-01	5.860E-02	2.909
	+	295.21		1.495E+00	3.358E-01	2.148E-01	2.386E-02	6.961
	+	351.92	*	1.377E+00	2.399E-01	1.227E-01	1.311E-02	11.218
	+	74.81		2.253E+00	4.398E-01	3.552E-01	4.801E-02	6.342
	+	77.11		2.013E+00	2.852E-01	2.121E-01	2.068E-02	9.490
	+	87.30		1.738E+00	4.633E-01	4.415E-01	6.169E-02	3.937
PO-218	+	238.63	*	1.340E+00	1.903E-01	1.088E-01	1.097E-02	12.315
	+	300.09		1.573E+00	1.284E+00	1.229E+00	1.338E-01	1.280
	+	74.81		3.882E+00	7.248E-01	6.121E-01	7.500E-02	6.342
	+	77.11		3.451E+00	5.552E-01	3.636E-01	4.499E-02	9.490
	+	87.30		2.978E+00	7.707E-01	7.564E-01	9.406E-02	3.937
	+	241.98		1.601E+00	5.363E-01	5.504E-01	5.860E-02	2.909
RA-224	+	295.21		1.495E+00	3.358E-01	2.148E-01	2.386E-02	6.961
	+	351.92	*	1.377E+00	2.399E-01	1.227E-01	1.311E-02	11.218
	+	240.98	*	3.036E+00	1.003E+00	1.367E+00	1.236E-01	2.222
	+	609.31	*	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
	+	1120.29		1.433E+00	7.924E-01	5.431E-01	5.806E-02	2.639
	+	1764.49		1.716E+00	5.618E-01	3.345E-01	2.829E-02	5.128
AC-228	+	338.32		1.168E+00	6.137E-01	4.085E-01	1.689E-01	2.860
	+	911.07	*	1.545E+00	3.937E-01	2.928E-01	3.322E-02	5.275
	+	969.11		1.665E+00	6.601E-01	5.177E-01	1.210E-01	3.216
	+	338.32		1.168E+00	6.137E-01	4.085E-01	1.689E-01	2.860
	+	911.07	*	1.545E+00	3.937E-01	2.928E-01	3.322E-02	5.275
	+	969.11		1.665E+00	6.601E-01	5.177E-01	1.210E-01	3.216
TH-228	+	74.81		2.287E+00	3.929E-01	3.607E-01	3.544E-02	6.342
	+	77.11		2.044E+00	2.896E-01	2.154E-01	2.099E-02	9.490
	+	87.30		1.765E+00	4.360E-01	4.483E-01	4.374E-02	3.937
	+	238.63	*	1.361E+00	1.932E-01	1.105E-01	1.114E-02	12.315
	+	300.09		1.597E+00	1.602E+00	1.247E+00	7.405E-01	1.280
	+	609.31	*	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
TH-230	+	1120.29		1.433E+00	7.924E-01	5.431E-01	5.806E-02	2.639
	+	1764.49		1.716E+00	5.618E-01	3.345E-01	2.829E-02	5.128
	+	338.32		1.168E+00	3.929E-01	4.085E-01	3.681E-02	2.860
	+	911.07	*	1.545E+00	3.937E-01	2.928E-01	3.322E-02	5.275
	+	969.11		1.665E+00	6.601E-01	5.177E-01	1.210E-01	3.216
	+	63.29	*	3.585E+00	1.369E+00	9.836E-01	1.836E-01	3.645
TH-234	+	92.38		4.250E+00	1.036E+00	6.636E-01	1.245E-01	6.405
	+	609.31	*	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
	+	1120.29		1.433E+00	7.924E-01	5.431E-01	5.806E-02	2.639
	+	1764.49		1.716E+00	5.618E-01	3.345E-01	2.829E-02	5.128
	+	86.50	*	1.104E+00	3.553E-01	2.797E-01	6.383E-02	3.947
	+	95.87		3.412E-01	8.576E-01	1.308E+00	3.298E-01	0.261
U-238	+	63.29	*	3.585E+00	1.369E+00	9.836E-01	1.836E-01	3.645

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	+	92.38		4.250E+00	7.857E-01	6.636E-01	6.614E-02	6.405
	+	74.67	*	3.652E-01	6.260E-02	5.758E-02	5.621E-03	6.344
	+	86.72		4.139E+01	1.023E+01	1.049E+01	1.024E+00	3.944
		117.66		-2.318E+00	3.597E+00	5.762E+00	6.579E-01	-0.402
ANH-511		142.18		4.558E-01	1.811E+01	2.975E+01	3.068E+00	0.015
	+	511.00	*	1.481E-01	9.354E-02	5.217E-02	4.659E-03	2.838

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	1.212E-01	3.699E-01	6.226E-01	5.924E-02	0.195
NA-22		1274.54	*	1.925E-02	5.638E-02	9.562E-02	8.056E-03	0.201
NA-24		1368.53	*	-2.936E-01	5.638E-02	Half-Life too short		
AL-26		1129.67		2.667E+00	2.392E+00	4.297E+00	3.590E-01	0.621
		1808.65	*	3.071E-02	2.335E-02	5.397E-02	4.523E-03	0.569
TI-44		67.85		1.837E-03	2.554E-02	4.151E-02	4.088E-03	0.044
	+	78.38	*	3.715E-01	5.263E-02	6.085E-02	5.929E-03	6.105
SC-46		889.25	*	-3.692E-02	4.987E-02	7.561E-02	6.619E-03	-0.488
	+	1120.51		2.456E-01	1.348E-01	1.604E-01	1.346E-02	1.531
V-48		944.10		-4.088E-01	1.119E+00	1.766E+00	1.545E-01	-0.231
		983.50	*	-5.212E-02	9.253E-02	1.420E-01	1.238E-02	-0.367
		1312.09		1.783E-02	1.099E-01	1.878E-01	1.594E-02	0.095
CR-51		320.08	*	2.253E-01	3.585E-01	6.277E-01	5.995E-02	0.359
MN-52		744.21		1.681E-01	3.051E-01	5.360E-01	4.659E-02	0.314
		848.13		9.858E-01	8.951E+00	1.503E+01	1.321E+00	0.066
		935.52		-2.050E-02	3.137E-01	5.134E-01	4.493E-02	-0.040
		1246.25		2.181E+00	9.608E+00	1.586E+01	1.325E+00	0.137
MN-54		1333.61		5.853E+00	6.529E+00	1.210E+01	1.031E+00	0.484
		1434.06	*	-6.662E-02	2.600E-01	4.128E-01	3.559E-02	-0.161
		834.83	*	3.496E-02	5.097E-02	8.954E-02	7.873E-03	0.390
		846.75	*	9.679E-03	4.741E-02	8.043E-02	7.070E-03	0.120
CO-56		977.42		1.082E+00	3.881E+00	6.409E+00	5.594E-01	0.169
		1037.82		-1.558E-01	3.522E-01	5.410E-01	4.920E-02	-0.288
		1175.09		-3.696E-01	2.710E+00	4.311E+00	3.524E-01	-0.086
		1238.25		2.099E-01	1.315E-01	2.388E-01	2.052E-02	0.879
CO-57		1360.21		5.773E-01	1.263E+00	2.240E+00	1.917E-01	0.258
		1771.40		-1.036E-01	2.951E-01	4.434E-01	3.745E-02	-0.234
		122.06	*	-2.464E-03	2.363E-02	3.888E-02	4.555E-03	-0.063
		136.48		-1.751E-01	2.021E-01	3.163E-01	3.561E-02	-0.554
CO-58		810.76	*	-2.466E-02	4.431E-02	6.914E-02	6.088E-03	-0.357
FE-59		142.65		2.032E+00	2.892E+00	4.787E+00	4.920E-01	0.424
		192.34		1.543E+00	9.895E-01	1.695E+00	2.277E-01	0.911
		1099.22	*	3.806E-02	1.243E-01	2.088E-01	1.916E-02	0.182
CO-60		1291.56		-4.910E-02	1.575E-01	2.415E-01	2.327E-02	-0.203
		1173.22		1.049E-02	5.471E-02	9.054E-02	7.396E-03	0.116
		1332.49	*	3.836E-02	5.000E-02	9.146E-02	7.795E-03	0.419
ZN-65		1115.52	*	2.787E-02	1.242E-01	1.808E-01	1.522E-02	0.154
GE-68		1077.35	*	-1.180E+00	1.564E+00	2.303E+00	1.966E-01	-0.512

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-73		53.44	*	1.093E-01	2.332E-01	3.982E-01	3.984E-02	0.274
AS-74		595.88	*	4.583E-03	1.015E-01	1.645E-01	1.449E-02	0.028
		634.78		-6.111E-02	4.735E-01	7.508E-01	6.466E-02	-0.081
SE-75		66.05		2.438E+00	2.674E+00	4.227E+00	4.861E-01	0.577
		96.73		-4.223E-01	7.143E-01	1.031E+00	1.513E-01	-0.410
		121.11		-2.357E-02	1.285E-01	2.105E-01	2.881E-02	-0.112
		136.00		-4.128E-02	3.823E-02	5.905E-02	6.386E-03	-0.699
		198.60		-5.753E-01	1.823E+00	2.836E+00	2.732E-01	-0.203
		264.65	*	2.688E-02	5.038E-02	7.436E-02	6.832E-03	0.362
		279.53		-3.638E-02	1.129E-01	1.880E-01	1.783E-02	-0.194
		303.91		-7.957E-01	2.417E+00	3.495E+00	4.156E-01	-0.228
		400.65		2.143E-01	2.991E-01	5.187E-01	5.710E-02	0.413
BR-77	+	87.88		8.533E+02	2.108E+02	3.056E+02	2.982E+01	2.792
		200.40		9.616E+00	1.715E+02	2.771E+02	2.416E+01	0.035
	+	239.00		2.222E+02	2.995E+01	4.189E+01	3.784E+00	5.304
		249.79		-3.949E+01	6.621E+01	1.003E+02	9.119E+00	-0.394
		281.68		7.468E+00	9.206E+01	1.568E+02	1.440E+01	0.048
		297.23		5.919E+01	9.797E+01	1.152E+02	1.057E+01	0.514
		303.76		-7.377E+01	2.122E+02	3.064E+02	2.809E+01	-0.241
		439.47		4.594E+01	1.696E+02	2.854E+02	2.487E+01	0.161
		484.57		2.303E+02	2.565E+02	4.518E+02	4.014E+01	0.510
		520.65	*	-6.662E+00	1.277E+01	1.979E+01	1.769E+00	-0.337
		574.64		-2.180E+02	2.842E+02	4.082E+02	3.624E+01	-0.534
		578.91		4.165E+01	1.169E+02	1.727E+02	1.532E+01	0.241
		585.48		2.377E+02	2.480E+02	3.873E+02	3.426E+01	0.614
		755.35		7.991E+01	2.030E+02	3.526E+02	3.073E+01	0.227
		817.79		-9.029E+01	1.656E+02	2.593E+02	2.279E+01	-0.348
SR-82		698.33		-1.680E+01	4.499E+01	7.356E+01	6.299E+00	-0.228
		776.49	*	-1.818E-01	4.456E-01	7.138E-01	6.247E-02	-0.255
		1395.20		-1.907E+00	1.120E+01	1.811E+01	1.556E+00	-0.105
RB-83		520.41	*	-3.762E-02	8.222E-02	1.283E-01	1.147E-02	-0.293
		529.64		4.238E-02	1.190E-01	2.000E-01	1.788E-02	0.212
		552.65		-9.038E-02	2.150E-01	3.332E-01	2.973E-02	-0.271
RB-84		881.50	*	-5.143E-02	8.286E-02	1.270E-01	1.113E-02	-0.405
KR-85		513.99	*	6.771E+00	8.032E+00	1.396E+01	1.247E+00	0.485
SR-85		513.99	*	3.476E-02	4.123E-02	7.166E-02	6.402E-03	0.485
RB-86		1076.63	*	-5.857E-01	9.430E-01	1.410E+00	1.203E-01	-0.416
Y-88		898.02		-2.176E-02	5.612E-02	8.870E-02	7.791E-03	-0.245
		1836.01	*	-5.247E-03	3.906E-02	6.139E-02	5.119E-03	-0.085
ZR-88		392.90	*	-1.733E-02	3.289E-02	5.239E-02	4.414E-03	-0.331
Y-91		1204.90	*	1.076E+01	2.489E+01	4.200E+01	3.467E+00	0.256
NB-94		702.63	*	3.252E-02	4.343E-02	7.724E-02	6.626E-03	0.421
		871.10		-5.458E-03	4.022E-02	6.565E-02	5.761E-03	-0.083
NB-95		765.79	*	3.704E-02	5.550E-02	9.772E-02	8.535E-03	0.379
NB-95M		235.69	*	-5.208E-02	1.434E-01	1.973E-01	2.014E-02	-0.264
ZR-95		724.18		9.902E-02	1.331E-01	2.113E-01	1.983E-02	0.469
		756.15	*	5.565E-02	8.272E-02	1.472E-01	1.410E-02	0.378
NB-97		657.90	*	-7.401E-02	8.272E-02	Half-Life too short		
		1024.50		-7.786E+00	8.272E-02	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-97		254.15		2.812E+00	8.272E-02	Half-Life	too short	
		355.39		-5.366E-01	8.272E-02	Half-Life	too short	
		507.63	*	3.340E+00	8.272E-02	Half-Life	too short	
		602.52		-8.429E+00	8.272E-02	Half-Life	too short	
		1021.30		2.836E+00	8.272E-02	Half-Life	too short	
		1147.95		-5.232E+00	8.272E-02	Half-Life	too short	
		1362.66		7.962E+00	8.272E-02	Half-Life	too short	
		1750.46		-2.680E+00	8.272E-02	Half-Life	too short	
MO-99		140.51		-2.163E+01	2.868E+01	4.379E+01	1.240E+01	-0.494
		181.06		-3.902E+00	2.073E+01	2.954E+01	5.387E+00	-0.132
		366.43		-6.173E+00	9.134E+01	1.517E+02	1.327E+01	-0.041
		739.58	*	-8.351E+00	1.559E+01	2.482E+01	3.778E+00	-0.336
		778.00		-6.067E+00	4.140E+01	6.821E+01	5.971E+00	-0.089
TC-99M		140.51	*	-4.147E+10	4.140E+01	Half-Life	too short	
RH-101		127.23		1.427E-02	3.290E-02	4.988E-02	5.673E-03	0.286
		198.01	*	-1.032E-02	3.296E-02	5.126E-02	4.457E-03	-0.201
		325.23		4.057E-02	2.428E-01	3.655E-01	3.322E-02	0.111
RH-102		418.52		-2.047E-01	3.267E-01	5.137E-01	4.417E-02	-0.398
		475.06	*	8.921E-03	3.323E-02	5.571E-02	4.935E-03	0.160
		631.29		-5.652E-03	6.793E-02	1.082E-01	9.340E-03	-0.052
		697.49		-4.362E-02	1.027E-01	1.673E-01	1.432E-02	-0.261
		766.84		7.693E-02	1.421E-01	2.477E-01	2.164E-02	0.311
		1046.59		-2.768E-02	1.548E-01	2.479E-01	2.136E-02	-0.112
		1112.84		2.721E-01	2.877E-01	4.695E-01	3.953E-02	0.580
RU-103		497.08	*	-1.068E-02	4.854E-02	7.783E-02	1.116E-02	-0.137
+		610.33		1.260E+01	3.043E+00	3.534E+00	5.920E-01	3.565
RH-106	+	511.85		7.397E-01	4.673E-01	5.066E-01	4.525E-02	1.460
		621.84	*	-3.553E-01	3.765E-01	5.378E-01	7.207E-02	-0.661
		1050.47		1.245E+00	3.087E+00	5.258E+00	4.525E-01	0.237
RU-106	+	511.85		7.397E-01	4.673E-01	5.066E-01	4.525E-02	1.460
		621.84	*	-3.553E-01	3.747E-01	5.378E-01	4.672E-02	-0.661
		1050.47		1.245E+00	3.087E+00	5.258E+00	4.525E-01	0.237
AG-108M		433.93	*	-4.122E-03	3.702E-02	6.056E-02	5.466E-03	-0.068
		614.37		-2.481E-02	5.748E-02	7.625E-02	6.910E-03	-0.325
		722.95		-1.849E-02	5.692E-02	7.978E-02	7.161E-03	-0.232
AG-110M		657.75	*	-7.607E-03	4.662E-02	6.345E-02	5.530E-03	-0.120
		677.61		3.227E-01	3.791E-01	6.564E-01	5.733E-02	0.492
		706.67		-2.580E-01	2.659E-01	4.088E-01	3.609E-02	-0.631
		763.93		5.582E-04	2.152E-01	3.603E-01	3.233E-02	0.002
		884.67		4.584E-02	6.140E-02	1.094E-01	9.879E-03	0.419
		937.48		-3.053E-02	1.341E-01	2.153E-01	1.950E-02	-0.142
		1384.27		3.873E-02	1.506E-01	2.635E-01	2.326E-02	0.147
IN-111		171.28		-3.160E-01	1.061E+00	1.696E+00	1.424E-01	-0.186
		245.39	*	3.054E-01	1.154E+00	1.673E+00	1.517E-01	0.183
IN-113M		391.69	*	1.003E-02	4.772E-02	8.050E-02	6.995E-03	0.125
SN-113		391.69	*	1.003E-02	4.772E-02	8.050E-02	6.995E-03	0.125
IN-114M		190.27	*	-1.116E-01	2.126E-01	2.941E-01	2.533E-02	-0.380
CD-115		260.90		-7.655E+01	1.436E+02	2.187E+02	1.998E+01	-0.350
		492.35		-7.190E+00	4.370E+01	7.046E+01	6.272E+00	-0.102



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	527.90	*		1.185E+01	1.343E+01	2.346E+01	2.097E+00	0.505
SN-117M	156.02			-2.185E+00	2.397E+00	3.726E+00	3.430E-01	-0.587
	158.56	*		-1.036E-02	5.688E-02	9.196E-02	8.266E-03	-0.113
SB-122	563.90	*		5.198E-01	2.607E+00	4.297E+00	3.826E-01	0.121
	692.80			-4.284E+00	5.367E+01	8.987E+01	7.679E+00	-0.048
I-123	159.00	*		3.057E+00	5.367E+01	Half-Life	too short	
	528.96			5.411E+02	5.367E+01	Half-Life	too short	
TE-123M	159.00	*		1.314E-02	2.885E-02	4.811E-02	4.330E-03	0.273
I-124	602.71	*		-5.481E-01	9.848E-01	1.286E+00	1.129E-01	-0.426
	722.78			-2.076E+00	5.964E+00	8.325E+00	7.191E-01	-0.249
	1325.50			-1.670E+01	4.708E+01	7.541E+01	6.418E+00	-0.221
	1376.25			6.067E+01	3.815E+01	7.568E+01	6.489E+00	0.802
	1509.49			2.454E+01	2.083E+01	4.012E+01	3.470E+00	0.612
	1691.02			1.230E+00	4.922E+00	8.497E+00	7.268E-01	0.145
SB-124	602.71			-3.132E-02	5.627E-02	7.347E-02	6.452E-03	-0.426
	645.85			-3.472E-04	6.219E-01	9.969E-01	9.034E-02	0.000
	709.31			2.876E+00	3.558E+00	6.197E+00	5.329E-01	0.464
	713.82			3.307E-01	2.076E+00	3.540E+00	4.260E-01	0.093
	722.78			-1.720E-01	4.940E-01	6.896E-01	6.085E-02	-0.249
+	968.20			1.716E+01	5.696E+00	8.767E+00	7.659E-01	1.958
	1045.16			1.271E+00	3.137E+00	5.358E+00	4.618E-01	0.237
	1325.50			-1.477E+00	4.165E+00	6.672E+00	5.678E-01	-0.221
	1368.21			-9.320E-01	1.955E+00	3.003E+00	4.036E-01	-0.310
	1436.60			7.152E-01	4.168E+00	7.144E+00	6.161E-01	0.100
	1691.02	*		2.403E-02	9.617E-02	1.660E-01	1.477E-02	0.145
SB-125	427.89	*		3.492E-02	1.029E-01	1.743E-01	1.538E-02	0.200
	463.38			5.595E-01	3.386E-01	6.144E-01	5.825E-02	0.911
	600.56			1.690E-01	2.203E-01	3.783E-01	3.562E-02	0.447
	635.90			1.155E-01	3.490E-01	5.777E-01	5.374E-02	0.200
TE-125M	109.28	*		-3.123E+00	7.909E+00	1.288E+01	1.583E+00	-0.242
I-126	388.63			7.958E-02	2.209E-01	3.765E-01	3.186E-02	0.211
	666.33	*		-3.184E-03	2.611E-01	3.634E-01	3.068E-02	-0.009
	753.82			5.638E-01	1.737E+00	3.000E+00	2.614E-01	0.188
SB-126	223.80			-2.732E+00	4.368E+00	6.715E+00	5.994E-01	-0.407
	278.60			2.005E+00	2.590E+00	4.562E+00	4.188E-01	0.439
+	296.50			1.498E+01	3.231E+00	4.056E+00	3.724E-01	3.693
	414.70			3.304E-02	8.122E-02	1.385E-01	1.188E-02	0.238
	415.30			3.976E-01	6.792E+00	1.129E+01	9.687E-01	0.035
	555.20			-1.026E+00	4.115E+00	6.488E+00	5.788E-01	-0.158
	573.80			-2.105E-02	1.313E+00	2.121E+00	1.884E-01	-0.010
	593.00			-1.059E+00	9.702E-01	1.352E+00	1.192E-01	-0.783
	656.30			1.585E+00	4.628E+00	6.775E+00	5.735E-01	0.234
	666.33			-1.331E-03	1.091E-01	1.519E-01	1.282E-02	-0.009
	675.00			1.921E-01	2.448E+00	3.943E+00	3.343E-01	0.049
	695.00			4.172E-02	9.578E-02	1.672E-01	1.430E-02	0.250
	697.00			-1.017E-01	3.596E-01	5.926E-01	5.072E-02	-0.172
	720.50	*		5.663E-02	2.023E-01	3.067E-01	2.647E-02	0.185
	856.80			-6.473E-01	6.284E-01	9.316E-01	8.185E-02	-0.695
	989.30			4.130E-01	1.602E+00	2.704E+00	2.357E-01	0.153

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		1034.80		-3.051E+00	1.028E+01	1.616E+01	1.396E+00	-0.189
		1213.00		-4.554E+00	6.219E+00	9.188E+00	7.602E-01	-0.496
		61.10		-4.405E+00	2.721E+01	4.141E+01	5.095E+00	-0.106
		252.40		-1.660E+00	4.473E+00	6.823E+00	2.875E+00	-0.243
		290.80		-3.104E+01	2.545E+01	3.367E+01	3.917E+00	-0.922
		411.60		-9.812E+00	1.401E+01	2.185E+01	3.433E+00	-0.449
		444.90		1.278E+01	1.095E+01	1.953E+01	2.469E+00	0.654
		473.00		-7.838E-01	1.947E+00	3.080E+00	4.019E-01	-0.255
		543.00		1.643E+01	1.992E+01	3.452E+01	5.043E+00	0.476
		603.60		-9.128E+00	1.685E+01	2.200E+01	2.782E+00	-0.415
		685.20	*	-2.405E-01	1.586E+00	2.487E+00	2.819E-01	-0.097
		698.50		1.278E+00	1.997E+01	3.382E+01	5.346E+00	0.038
XE-127		722.20		1.045E+01	3.848E+01	5.841E+01	6.545E+00	0.179
		783.80		3.042E+00	4.529E+00	8.003E+00	1.004E+00	0.380
		57.60		2.471E+00	2.191E+00	3.856E+00	3.872E-01	0.641
		145.22		3.606E-01	7.371E-01	1.209E+00	1.219E-01	0.298
		172.10		1.365E-01	1.204E-01	2.063E-01	1.734E-02	0.661
		202.84	*	2.087E-02	5.015E-02	7.881E-02	6.890E-03	0.265
I-131		374.96		1.143E-01	2.103E-01	3.636E-01	3.145E-02	0.314
		80.18		3.303E-01	4.346E+00	5.272E+00	5.161E-01	0.063
		284.30		-1.510E+00	1.515E+00	2.399E+00	2.305E-01	-0.629
		364.48	*	-2.751E-02	1.263E-01	2.076E-01	1.917E-02	-0.133
TE-132		636.97		3.117E-01	1.999E+00	3.256E+00	2.957E-01	0.096
		722.89		-2.924E+00	9.565E+00	1.343E+01	1.168E+00	-0.218
		49.72		-4.252E+00	4.345E+00	6.326E+00	7.610E-01	-0.672
		111.76		6.352E+00	2.621E+01	4.399E+01	5.670E+00	0.144
		116.30		7.720E+00	2.553E+01	4.287E+01	5.632E+00	0.180
BA-133		228.16	*	1.995E-01	7.014E-01	1.140E+00	1.815E-01	0.175
		53.15		5.547E-01	9.823E-01	1.682E+00	1.683E-01	0.330
		79.62		-3.277E-01	1.230E+00	1.453E+00	2.308E-01	-0.225
		81.00		-3.236E-02	9.535E-02	1.118E-01	1.846E-02	-0.289
		276.40		3.212E-01	3.991E-01	7.002E-01	1.035E-01	0.459
		302.84		4.187E-02	1.625E-01	2.473E-01	3.376E-02	0.169
I-133		356.01	*	6.416E-03	5.571E-02	8.283E-02	1.107E-02	0.077
		383.85		-2.633E-01	3.086E-01	4.755E-01	5.965E-02	-0.554
	+	510.53		1.645E+00	3.086E-01	Half-Life	too short	
		529.87	*	-6.900E-04	3.086E-01	Half-Life	too short	
		706.58		-5.754E-01	3.086E-01	Half-Life	too short	
		856.28		-1.398E+00	3.086E-01	Half-Life	too short	
		875.33		-6.166E-02	3.086E-01	Half-Life	too short	
		1236.41		1.929E+00	3.086E-01	Half-Life	too short	
		1298.22		5.937E-02	3.086E-01	Half-Life	too short	
		475.35		1.637E+00	2.125E+00	3.703E+00	3.280E-01	0.442
CS-134		563.23		2.195E-01	4.322E-01	7.312E-01	6.570E-02	0.300
		569.32		1.788E-02	2.495E-01	4.064E-01	3.660E-02	0.044
		604.70		-3.544E-02	4.877E-02	6.210E-02	5.461E-03	-0.571
		795.84	*	8.487E-02	6.097E-02	1.128E-01	9.967E-03	0.752
		801.93		-2.864E-01	5.099E-01	8.002E-01	7.063E-02	-0.358
		1038.57		-3.063E+00	4.539E+00	6.745E+00	5.823E-01	-0.454

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135		1167.94		-4.341E+00	3.276E+00	4.409E+00	3.613E-01	-0.984
		1365.15		-2.234E-01	1.439E+00	2.348E+00	2.104E-01	-0.095
		288.45		9.351E+09	1.439E+00	Half-Life	too short	
		417.63		-1.639E+10	1.439E+00	Half-Life	too short	
		546.56		-1.417E+10	1.439E+00	Half-Life	too short	
		836.80		1.513E+10	1.439E+00	Half-Life	too short	
		1038.76		-1.800E+10	1.439E+00	Half-Life	too short	
		1124.00		-4.357E+10	1.439E+00	Half-Life	too short	
		1131.51		5.140E+09	1.439E+00	Half-Life	too short	
		1260.41	*	-5.810E+09	1.439E+00	Half-Life	too short	
		1457.56		1.200E+12	1.439E+00	Half-Life	too short	
		1678.03		-1.985E+10	1.439E+00	Half-Life	too short	
		1706.46		-1.150E+10	1.439E+00	Half-Life	too short	
		1791.20		2.398E+09	1.439E+00	Half-Life	too short	
CS-136		66.91		-1.469E-01	4.560E-01	6.854E-01	1.108E-01	-0.214
	+	86.29		4.934E+00	1.306E+00	1.665E+00	2.270E-01	2.964
		153.22		6.971E-01	6.912E-01	1.177E+00	1.221E-01	0.592
		163.89		-2.537E-01	1.074E+00	1.728E+00	1.653E-01	-0.147
		176.55		-6.759E-02	3.881E-01	6.237E-01	5.592E-02	-0.108
		273.65		-2.915E-02	5.455E-01	7.611E-01	7.389E-02	-0.038
		340.57		8.443E-02	1.427E-01	2.216E-01	2.046E-02	0.381
		818.51		-3.037E-02	8.996E-02	1.444E-01	1.270E-02	-0.210
		1048.07	*	-7.169E-02	1.470E-01	2.268E-01	2.037E-02	-0.316
		1235.34		2.199E-01	9.247E-01	1.460E+00	1.699E-01	0.151
CE-139		165.85	*	-2.821E-02	2.964E-02	4.560E-02	3.803E-03	-0.619
BA-140		162.64		4.293E-01	7.616E-01	1.275E+00	1.164E-01	0.337
		304.84		5.948E-02	1.446E+00	2.162E+00	6.096E-01	0.028
LA-140		423.70		-8.460E-01	2.262E+00	3.552E+00	1.152E+00	-0.238
		537.32	*	-1.980E-01	3.101E-01	4.617E-01	1.534E-01	-0.429
	+	328.77		1.160E+00	5.127E-01	6.205E-01	5.914E-02	1.870
		432.53		-1.602E-01	2.319E+00	3.806E+00	3.462E-01	-0.042
		487.03		-1.326E-01	1.566E-01	2.358E-01	2.218E-02	-0.562
		751.79		-3.229E-01	2.020E+00	3.334E+00	3.207E-01	-0.097
		815.85		8.566E-02	3.689E-01	6.300E-01	6.151E-02	0.136
		867.82		6.569E-01	1.625E+00	2.814E+00	2.596E-01	0.233
		919.63		-3.533E+00	3.381E+00	4.832E+00	5.196E-01	-0.731
		925.24		1.224E+00	1.416E+00	2.545E+00	2.363E-01	0.481
CE-141		1596.49	*	-6.736E-02	1.082E-01	1.577E-01	1.361E-02	-0.427
CE-143		145.44	*	-9.617E-03	6.594E-02	1.073E-01	1.095E-02	-0.090
		57.37		3.703E-04	6.594E-02	Half-Life	too short	
		231.56		-5.782E-04	6.594E-02	Half-Life	too short	
		293.26	*	6.350E-04	6.594E-02	Half-Life	too short	
	+	350.59		3.316E-02	6.594E-02	Half-Life	too short	
		490.36		2.477E-03	6.594E-02	Half-Life	too short	
CE-144		664.57		7.830E-04	6.594E-02	Half-Life	too short	
		721.93		6.870E-04	6.594E-02	Half-Life	too short	
		80.11		1.505E-01	1.980E+00	2.402E+00	2.339E-01	0.063
PM-144		133.54	*	1.217E-01	2.021E-01	3.404E-01	5.773E-02	0.358
		476.78		2.863E-02	7.709E-02	1.302E-01	1.257E-02	0.220

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		1.110E-02	3.929E-02	6.490E-02	5.805E-03	0.171
		696.49	*	-3.655E-03	4.469E-02	7.483E-02	6.406E-03	-0.049
		778.57		1.665E-01	2.662E+00	4.479E+00	3.922E-01	0.037
PR-144		696.49	*	-2.477E-01	3.028E+00	5.071E+00	4.340E-01	-0.049
		1489.15		2.005E+00	1.378E+01	2.348E+01	2.030E+00	0.085
PM-146		453.90	*	-2.729E-02	4.521E-02	7.011E-02	7.610E-03	-0.389
		633.02		5.479E-01	1.768E+00	2.905E+00	1.086E+00	0.189
		735.90		-7.005E-02	1.877E-01	3.027E-01	8.662E-02	-0.231
		747.13		-6.401E-02	1.142E-01	1.808E-01	2.547E-02	-0.354
ND-147	+	91.11		7.146E-01	2.649E-01	4.666E-01	4.914E-02	1.531
		319.41		1.578E-01	3.302E+00	5.575E+00	5.084E-01	0.028
		439.89		1.371E+00	6.783E+00	1.136E+01	9.901E-01	0.121
		531.02	*	-5.504E-01	6.752E-01	1.006E+00	1.522E-01	-0.547
PM-149		285.90	*	2.039E+00	9.184E+01	1.558E+02	2.471E+01	0.013
EU-152		121.78		-2.715E-02	6.966E-02	1.129E-01	1.432E-02	-0.240
		244.69		-1.705E-01	3.645E-01	4.925E-01	4.464E-02	-0.346
		344.27	*	-6.389E-02	1.044E-01	1.610E-01	1.523E-02	-0.397
		443.98		4.892E-01	1.106E+00	1.884E+00	1.646E-01	0.260
		778.89		1.941E-02	3.040E-01	5.116E-01	4.479E-02	0.038
		867.32		2.033E-01	9.781E-01	1.659E+00	1.456E-01	0.123
		964.01		5.600E-01	4.300E-01	7.112E-01	6.216E-02	0.787
		1085.78		-1.287E-01	4.873E-01	7.674E-01	6.531E-02	-0.168
		1112.02		2.694E-01	4.281E-01	6.648E-01	5.599E-02	0.405
		1407.95		2.839E-01	2.413E-01	4.607E-01	3.963E-02	0.616
GD-153		69.67		6.956E-02	1.003E+00	1.534E+00	1.506E-01	0.045
	+	83.37		3.015E+01	1.464E+01	2.033E+01	1.980E+00	1.483
		97.43	*	-2.577E-02	7.395E-02	1.086E-01	1.110E-02	-0.237
		103.18		-5.160E-02	9.496E-02	1.543E-01	1.626E-02	-0.334
EU-154		123.07		3.057E-03	4.921E-02	8.157E-02	1.126E-02	0.037
		247.94		1.790E-01	3.416E-01	5.630E-01	6.659E-02	0.318
		591.81		-6.184E-01	6.596E-01	9.418E-01	1.113E-01	-0.657
		723.30		-2.130E-02	2.426E-01	3.513E-01	3.353E-02	-0.061
		756.87		2.982E-01	8.744E-01	1.513E+00	1.823E-01	0.197
		873.19		3.128E-02	3.428E-01	5.742E-01	7.093E-02	0.054
		996.32		-5.910E-01	4.982E-01	6.871E-01	1.224E-01	-0.860
		1004.76		-1.548E-01	3.089E-01	4.799E-01	5.612E-02	-0.323
		1274.45	*	3.552E-02	1.604E-01	2.679E-01	2.989E-02	0.133
EU-155		48.70		-5.749E-01	4.781E-01	6.867E-01	6.898E-02	-0.837
		60.01		-1.331E+00	2.247E+00	3.333E+00	3.353E-01	-0.400
	+	86.54		4.527E-01	1.120E-01	1.582E-01	1.555E-02	2.863
		105.31	*	8.822E-02	9.939E-02	1.708E-01	1.835E-02	0.517
TB-160	+	86.79		1.211E+00	2.990E-01	4.277E-01	4.172E-02	2.831
		197.04		-4.245E-01	5.733E-01	8.682E-01	7.540E-02	-0.489
		215.65		-3.418E-02	7.748E-01	1.239E+00	1.098E-01	-0.028
	+	298.57		2.291E-01	1.865E-01	2.211E-01	2.029E-02	1.036
		879.36	*	7.525E-02	1.551E-01	2.712E-01	2.378E-02	0.277
		962.29		3.771E-01	8.015E-01	1.264E+00	1.105E-01	0.298
		966.15		4.480E-01	3.813E-01	6.054E-01	5.290E-02	0.740
		1177.93		-8.748E-02	4.508E-01	7.122E-01	5.827E-02	-0.123

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85			-1.196E-01	9.210E-01	1.455E+00	1.223E-01	-0.082
	80.57			-6.418E-02	2.621E-01	3.101E-01	3.021E-02	-0.207
	184.41			8.235E-02	4.554E-02	7.201E-02	6.156E-03	1.144
	280.46			-5.650E-02	8.910E-02	1.455E-01	1.336E-02	-0.388
	410.95			-1.338E-02	2.697E-01	4.451E-01	3.806E-02	-0.030
	711.68	*		-1.801E-03	8.014E-02	1.346E-01	1.159E-02	-0.013
TM-171	752.31			4.636E-02	3.254E-01	5.527E-01	4.814E-02	0.084
	810.29			-4.875E-02	6.776E-02	1.036E-01	9.104E-03	-0.470
	51.35			1.484E-01	7.382E+00	1.211E+01	1.212E+00	0.012
	52.39			5.887E+00	4.107E+00	7.191E+00	7.195E-01	0.819
	59.40			-2.389E+00	1.167E+01	1.766E+01	1.779E+00	-0.135
	66.72	*		2.007E+00	1.590E+01	2.442E+01	2.411E+00	0.082
LU-176	88.36	+		8.915E-01	2.202E-01	3.155E-01	3.084E-02	2.826
	201.83			7.961E-03	2.907E-02	4.751E-02	4.149E-03	0.168
	306.84	*		1.654E-03	2.512E-02	4.255E-02	3.898E-03	0.039
LU-177	401.10			4.314E+00	7.820E+00	1.344E+01	1.141E+00	0.321
	112.95			-8.719E-01	1.472E+00	2.370E+00	2.635E-01	-0.368
	208.36	+	*	4.250E+00	2.060E+00	2.195E+00	1.931E-01	1.936
LU-177M	52.97			3.078E-01	4.422E-01	7.604E-01	7.608E-02	0.405
	54.07			4.564E-02	2.480E-01	4.194E-01	4.197E-02	0.109
	61.30			3.018E-01	6.914E-01	1.080E+00	1.081E-01	0.280
	121.62			-1.281E-01	3.576E-01	5.808E-01	6.783E-02	-0.221
	147.16			-1.895E-01	6.607E-01	1.067E+00	1.059E-01	-0.178
	171.86			3.719E-01	4.794E-01	8.094E-01	6.802E-02	0.459
	218.09			-4.985E-01	9.024E-01	1.397E+00	1.240E-01	-0.357
	268.79	+		3.064E+00	1.256E+00	1.540E+00	1.411E-01	1.990
	319.02			-9.909E-02	2.633E-01	4.318E-01	3.938E-02	-0.229
	367.43			1.727E-01	9.565E-01	1.616E+00	1.413E-01	0.107
	413.65	*		2.971E-02	1.891E-01	3.168E-01	2.714E-02	0.094
	56.28			-2.048E-01	3.097E-01	5.148E-01	5.160E-02	-0.398
HF-181	57.53			1.961E-01	1.831E-01	3.219E-01	3.232E-02	0.609
	65.20			2.499E-01	5.148E-01	8.028E-01	7.951E-02	0.311
	133.02			5.891E-02	6.751E-02	1.104E-01	1.212E-02	0.534
	136.25			-4.715E-01	4.471E-01	6.918E-01	7.436E-02	-0.682
	345.85			1.122E-01	2.120E-01	3.289E-01	2.944E-02	0.341
	482.03	*		7.460E-03	4.734E-02	7.862E-02	6.980E-03	0.095
W-181	56.28			-7.968E-02	1.211E-01	2.013E-01	2.018E-02	-0.396
	57.53			7.658E-02	7.163E-02	1.259E-01	1.264E-02	0.608
	65.20	*		9.700E-02	1.998E-01	3.116E-01	3.086E-02	0.311
TA-182	67.75			1.161E-02	6.449E-02	9.920E-02	9.771E-03	0.117
	100.10			-1.098E-02	1.545E-01	2.571E-01	2.665E-02	-0.043
	152.43			2.971E-02	3.510E-01	5.761E-01	5.477E-02	0.052
	222.10			3.828E-01	3.724E-01	6.286E-01	5.602E-02	0.609
	1001.68			3.424E+00	2.839E+00	5.161E+00	4.490E-01	0.663
	1121.28			6.333E-01	2.330E-01	4.266E-01	3.578E-02	1.485
RE-183	1189.05			1.320E-01	4.176E-01	6.972E-01	5.726E-02	0.189
	1221.42	*		-4.137E-02	2.431E-01	3.843E-01	3.188E-02	-0.108
	1230.97			-4.599E-01	5.990E-01	8.773E-01	7.298E-02	-0.524
	57.98			1.087E-01	7.719E-02	1.306E-01	1.312E-02	0.832

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		-7.783E-03	4.794E-02	7.268E-02	7.323E-03	-0.107
		67.20		-1.224E-02	1.172E-01	1.781E-01	1.756E-02	-0.069
		162.32	*	9.569E-02	1.105E-01	1.875E-01	1.623E-02	0.510
	+	208.81		3.781E+00	1.833E+00	1.978E+00	1.740E-01	1.912
		291.72		6.722E-02	1.018E+00	1.530E+00	1.405E-01	0.044
		57.98		4.003E-01	2.843E-01	4.808E-01	4.832E-02	0.832
		59.32		-2.864E-02	1.764E-01	2.674E-01	2.694E-02	-0.107
		67.20		-4.505E-02	4.314E-01	6.556E-01	6.464E-02	-0.069
		161.27		-1.337E-01	3.718E-01	5.950E-01	5.207E-02	-0.225
		216.55		2.474E-02	2.756E-01	4.442E-01	3.939E-02	0.056
OS-185		252.85	*	-1.828E-01	2.423E-01	3.632E-01	3.307E-02	-0.503
		318.01		-3.704E-01	4.635E-01	7.370E-01	6.724E-02	-0.503
		792.07		2.024E-01	1.272E+00	2.153E+00	1.888E-01	0.094
		903.28		-3.071E-01	1.361E+00	2.062E+00	1.804E-01	-0.149
		920.93		-5.699E-01	5.459E-01	7.822E-01	6.845E-02	-0.729
		59.72		-4.104E-02	1.301E-01	1.956E-01	1.970E-02	-0.210
		61.14		-1.014E-02	7.613E-02	1.160E-01	1.162E-02	-0.087
		69.30		-3.327E-02	1.824E-01	2.757E-01	2.709E-02	-0.121
		592.07		-2.269E+00	2.681E+00	3.890E+00	3.432E-01	-0.583
		646.12	*	-8.261E-03	5.372E-02	8.476E-02	7.237E-03	-0.097
RE-188		717.42		2.157E-01	1.130E+00	1.931E+00	1.665E-01	0.112
		874.81		-6.214E-02	6.593E-01	1.080E+00	9.477E-02	-0.058
		880.27		4.821E-01	8.726E-01	1.536E+00	1.346E-01	0.314
		155.03	*	7.489E-02	1.784E-01	2.970E-01	2.760E-02	0.252
		477.96		2.396E+00	3.450E+00	5.976E+00	5.298E-01	0.401
W-188	+	633.10		8.280E-01	3.529E+00	5.796E+00	4.997E-01	0.143
		63.58		1.443E+02	5.016E+01	5.639E+01	5.608E+00	2.558
IR-192		227.08		4.821E+00	1.250E+01	2.047E+01	1.832E+00	0.236
	+	290.67	*	-1.061E+01	8.614E+00	1.143E+01	1.050E+00	-0.929
		295.96		1.141E+00	2.465E-01	3.301E-01	3.050E-02	3.457
		308.46		4.485E-02	9.599E-02	1.665E-01	1.532E-02	0.269
		316.51	*	-1.726E-02	3.647E-02	5.949E-02	5.443E-03	-0.290
AU-195		468.07		-4.242E-02	7.588E-02	1.185E-01	1.119E-02	-0.358
		604.41		-5.305E-01	6.588E-01	8.251E-01	1.083E-01	-0.643
		612.46		-1.090E-02	9.695E-01	1.360E+00	1.361E-01	-0.008
		65.12		7.130E-02	9.336E-02	1.470E-01	1.456E-02	0.485
		66.83		-2.041E-02	5.423E-02	8.137E-02	8.029E-03	-0.251
	+	75.70		1.182E+00	2.027E-01	3.344E-01	3.262E-02	3.537
		98.88	*	1.360E-01	1.916E-01	3.285E-01	3.384E-02	0.414
TL-200	+	129.76		5.156E+00	3.463E+00	4.904E+00	5.494E-01	1.051
		367.94	*	-1.104E-04	3.463E+00	Half-Life	too short	
		579.30		3.152E-03	3.463E+00	Half-Life	too short	
		828.27		-2.330E-03	3.463E+00	Half-Life	too short	
TL-201		1205.75		2.677E-03	3.463E+00	Half-Life	too short	
		68.90		-1.859E+00	2.832E+00	4.463E+00	4.387E-01	-0.417
		70.82		-2.560E-01	1.767E+00	2.673E+00	2.620E-01	-0.096
		80.30		3.709E-01	4.820E+00	5.846E+00	5.694E-01	0.063
		135.34		-2.268E+01	2.521E+01	3.942E+01	4.262E+00	-0.575
		167.43	*	5.499E+00	6.917E+00	1.171E+01	9.778E-01	0.470

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90		-1.641E-01	2.499E-01	3.939E-01	3.872E-02	-0.417
		70.82		-2.253E-02	1.555E-01	2.352E-01	2.306E-02	-0.096
		80.30		3.265E-02	4.244E-01	5.147E-01	5.013E-02	0.063
		439.56	*	2.280E-02	8.009E-02	1.349E-01	1.176E-02	0.169
HG-203		70.83		-9.834E-02	6.709E-01	1.015E+00	1.460E-01	-0.097
		72.87		5.333E-01	3.786E-01	6.557E-01	9.170E-02	0.813
	+	82.60		2.244E+00	1.116E+00	1.393E+00	2.016E-01	1.611
		279.20	*	1.976E-03	4.317E-02	7.341E-02	6.909E-03	0.027
BI-207		72.80		1.304E-01	1.084E-01	1.890E-01	1.849E-02	0.690
	+	74.97		6.556E-01	1.124E-01	1.658E-01	1.618E-02	3.954
	+	84.90		3.898E-01	1.893E-01	2.573E-01	2.507E-02	1.515
		569.67		1.429E-02	3.873E-02	6.465E-02	5.749E-03	0.221
		1063.62	*	-8.726E-02	7.503E-02	1.060E-01	9.085E-03	-0.823
		1770.23		-1.215E+00	7.894E-01	8.954E-01	7.563E-02	-1.357
TL-207		81.07		-7.457E-02	2.103E-01	2.466E-01	2.402E-02	-0.302
	+	83.78		2.570E-01	1.248E-01	1.760E-01	1.715E-02	1.460
		94.90		4.526E-01	2.097E-01	3.418E-01	3.450E-02	1.324
		122.32		-6.570E-02	1.640E+00	2.706E+00	3.294E-01	-0.024
		144.24		3.942E-01	7.374E-01	1.212E+00	1.338E-01	0.325
		154.21		2.942E-01	4.148E-01	6.985E-01	7.094E-02	0.421
	+	269.46		7.171E-01	2.942E-01	3.693E-01	3.446E-02	1.942
		323.87	*	9.929E-02	6.989E-01	1.050E+00	1.884E-01	0.095
	+	338.28		4.878E+00	1.696E+00	2.506E+00	3.154E-01	1.947
		445.03		2.946E+00	2.502E+00	4.467E+00	5.438E-01	0.660
PO-209		260.50		-8.074E-02	1.001E+01	1.586E+01	1.449E+00	-0.005
		262.80		7.332E+00	2.761E+01	4.455E+01	4.073E+00	0.165
		896.60	*	1.320E+00	9.888E+00	1.657E+01	1.449E+00	0.080
PB-211		404.84	*	-3.545E-01	1.058E+00	1.672E+00	1.048E+00	-0.212
		427.08		1.689E+00	2.535E+00	4.023E+00	2.500E+00	0.420
		831.96		-3.148E-01	1.684E+00	2.735E+00	1.715E+00	-0.115
BI-212	+	727.18	*	1.477E+00	5.647E-01	7.753E-01	7.779E-02	1.905
		785.46		1.191E+00	2.156E+00	3.780E+00	3.312E-01	0.315
		1620.62		1.071E+00	1.469E+00	2.744E+00	2.364E-01	0.390
PO-215		81.07		-7.457E-02	2.103E-01	2.466E-01	2.402E-02	-0.302
	+	83.78		2.570E-01	1.248E-01	1.760E-01	1.715E-02	1.460
		94.90		4.526E-01	2.097E-01	3.418E-01	3.450E-02	1.324
		122.32		-6.570E-02	1.640E+00	2.706E+00	3.294E-01	-0.024
		144.24		3.942E-01	7.374E-01	1.212E+00	1.338E-01	0.325
		154.21		2.942E-01	4.148E-01	6.985E-01	7.094E-02	0.421
	+	269.46		7.171E-01	2.942E-01	3.693E-01	3.446E-02	1.942
		323.87	*	9.929E-02	6.989E-01	1.050E+00	1.884E-01	0.095
	+	338.28		4.878E+00	1.696E+00	2.506E+00	3.154E-01	1.947
		445.03		2.946E+00	2.502E+00	4.467E+00	5.438E-01	0.660
RN-219		271.23		4.586E-01	2.897E-01	4.558E-01	4.910E-02	1.006
		401.81	*	-1.719E-01	4.883E-01	7.892E-01	1.180E-01	-0.218
RN-220		549.76	*	3.798E+01	2.803E+01	5.114E+01	4.565E+00	0.743
RA-223		81.07		-7.457E-02	2.103E-01	2.466E-01	2.402E-02	-0.302
	+	83.78		2.570E-01	1.248E-01	1.760E-01	1.715E-02	1.460
		94.90		4.526E-01	2.097E-01	3.418E-01	3.450E-02	1.324

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32	-6.570E-02	1.640E+00	2.706E+00	3.294E-01	-0.024
		144.24	3.942E-01	7.374E-01	1.212E+00	1.338E-01	0.325
		154.21	2.942E-01	4.148E-01	6.985E-01	7.094E-02	0.421
	+	269.46	7.171E-01	2.942E-01	3.693E-01	3.446E-02	1.942
		323.87	* 9.929E-02	6.989E-01	1.050E+00	1.884E-01	0.095
	+	338.28	4.878E+00	1.696E+00	2.506E+00	3.154E-01	1.947
		445.03	2.946E+00	2.502E+00	4.467E+00	5.438E-01	0.660
		79.80	-4.740E-01	1.565E+00	1.841E+00	4.046E-01	-0.257
		236.00	1.268E-01	2.750E-01	4.028E-01	5.045E-02	0.315
		256.20	* 1.213E-01	4.112E-01	6.645E-01	1.039E-01	0.182
		286.10	4.969E-01	1.461E+00	2.524E+00	3.427E-01	0.197
	+	299.80	2.915E+00	2.414E+00	2.922E+00	5.192E-01	0.998
TH-227		304.40	-2.260E-01	2.141E+00	3.159E+00	5.906E-01	-0.072
		334.20	1.686E-01	2.447E+00	3.643E+00	7.140E-01	0.046
		79.80	-4.740E-01	1.565E+00	1.841E+00	4.096E-01	-0.257
	+	94.00	1.642E+01	4.473E+00	3.747E+00	8.387E-01	4.383
		236.00	1.268E-01	2.750E-01	4.028E-01	4.586E-02	0.315
		256.20	* 1.213E-01	4.114E-01	6.645E-01	1.216E-01	0.182
		286.10	4.969E-01	1.542E+00	2.524E+00	2.534E+00	0.197
	+	299.80	2.915E+00	2.414E+00	2.922E+00	5.192E-01	0.998
		304.40	-2.260E-01	2.141E+00	3.159E+00	5.906E-01	-0.072
		334.20	1.686E-01	2.447E+00	3.643E+00	7.140E-01	0.046
	+	85.43	3.848E-01	1.869E-01	2.555E-01	2.490E-02	1.506
	+	88.47	5.132E-01	1.268E-01	1.800E-01	1.761E-02	2.851
TH-229		100.00	4.304E-02	1.582E-01	2.670E-01	2.766E-02	0.161
		193.63	* 4.789E-01	5.329E-01	8.984E-01	7.770E-02	0.533
		210.97	6.551E-01	9.014E-01	1.353E+00	1.193E-01	0.484
	PA-231	283.67	* -8.914E-01	1.517E+00	2.468E+00	3.828E-01	-0.361
	+	301.29	1.166E+00	9.544E-01	1.156E+00	1.461E-01	1.009
	TH-231	81.07	-7.457E-02	2.103E-01	2.466E-01	2.402E-02	-0.302
	+	83.78	2.570E-01	1.248E-01	1.760E-01	1.715E-02	1.460
		94.90	4.526E-01	2.097E-01	3.418E-01	3.450E-02	1.324
		122.32	-6.570E-02	1.640E+00	2.706E+00	3.294E-01	-0.024
		144.24	3.942E-01	7.374E-01	1.212E+00	1.338E-01	0.325
		154.21	2.942E-01	4.148E-01	6.985E-01	7.094E-02	0.421
	+	269.46	7.171E-01	2.942E-01	3.693E-01	3.446E-02	1.942
U-231		323.87	* 9.929E-02	6.989E-01	1.050E+00	1.884E-01	0.095
	+	338.28	4.878E+00	1.696E+00	2.506E+00	3.154E-01	1.947
		445.03	2.946E+00	2.502E+00	4.467E+00	5.438E-01	0.660
	+	84.21	1.127E+01	5.474E+00	7.630E+00	7.435E-01	1.477
	+	92.29	1.652E+01	3.053E+00	4.309E+00	4.293E-01	3.833
		95.87	* 3.938E-01	9.855E-01	1.510E+00	1.531E-01	0.261
		108.00	-2.514E+00	1.891E+00	2.921E+00	3.159E-01	-0.861
	PA-233	75.28	1.913E+01	4.081E+00	5.030E+00	8.056E-01	3.803
	+	86.59	7.359E+00	2.607E+00	2.578E+00	7.012E-01	2.855
	+	300.12	8.126E-01	6.687E-01	8.085E-01	1.229E-01	1.005
		311.98	* -4.280E-02	6.802E-02	1.099E-01	1.031E-02	-0.389
		340.50	5.150E-01	7.044E-01	1.092E+00	2.617E-01	0.472
		398.62	4.525E-01	2.441E+00	4.098E+00	1.089E+00	0.110



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		-5.067E-02	1.797E+00	2.968E+00	6.392E-01	-0.017
		63.00		4.179E+00	1.550E+00	1.643E+00	2.676E-01	2.544
		94.67		4.633E-01	1.636E-01	2.606E-01	3.507E-02	1.778
		98.44		6.352E-02	8.801E-02	1.332E-01	7.467E-02	0.477
		99.86		1.139E-01	4.004E-01	6.760E-01	6.998E-02	0.169
		111.00		-5.038E-02	1.577E-01	2.576E-01	3.576E-02	-0.196
		131.20		-1.384E-02	1.164E-01	1.703E-01	1.891E-02	-0.081
		152.70		9.690E-02	3.422E-01	5.661E-01	9.907E-02	0.171
		186.00		7.020E+00	3.198E+00	2.940E+00	9.174E-01	2.388
		226.40		2.242E-02	3.990E-01	6.401E-01	8.589E-02	0.035
		227.20		8.293E-02	4.289E-01	6.940E-01	6.213E-02	0.119
		248.90		4.212E-03	7.744E-01	1.231E+00	2.782E-01	0.003
		293.70		7.176E+00	1.886E+00	1.888E+00	3.320E-01	3.802
		369.80		1.823E-01	9.087E-01	1.536E+00	3.350E-01	0.119
		568.70		-4.567E-01	1.266E+00	1.983E+00	1.764E-01	-0.230
		569.50		7.490E-02	3.443E-01	5.678E-01	5.049E-02	0.132
		574.00		1.698E-02	1.849E+00	2.994E+00	2.659E-01	0.006
		699.00		3.327E-01	9.481E-01	1.637E+00	3.119E-01	0.203
		706.10		-8.986E-01	1.361E+00	2.061E+00	9.188E-01	-0.436
		733.00		2.701E-01	4.983E-01	7.766E-01	1.725E-01	0.348
		742.81		1.042E+00	1.864E+00	3.050E+00	2.050E+00	0.342
		796.30		1.231E+00	1.231E+00	2.150E+00	5.825E-01	0.573
		805.60		6.695E-02	1.195E+00	2.004E+00	6.150E-01	0.033
		819.60		9.338E-03	1.511E+00	2.518E+00	9.585E-01	0.004
		826.30		-7.618E-01	1.125E+00	1.657E+00	7.421E-01	-0.460
		831.60		9.098E-03	8.606E-01	1.433E+00	4.284E-01	0.006
		876.40		-2.037E-01	9.636E-01	1.518E+00	1.561E+00	-0.134
		880.51		2.122E-01	3.156E-01	5.621E-01	4.927E-02	0.377
		883.24		-3.488E-01	4.279E-01	5.270E-01	3.544E-01	-0.662
		899.00		-4.961E-01	1.146E+00	1.768E+00	7.734E-01	-0.281
		925.00		1.296E+00	1.466E+00	2.639E+00	2.310E-01	0.491
		926.50		3.569E-02	2.216E-01	3.717E-01	9.413E-02	0.096
		946.00	*	2.297E-01	3.845E-01	6.695E-01	1.260E-01	0.343
		949.00		2.140E-01	5.708E-01	9.769E-01	8.545E-02	0.219
		980.50		4.154E-01	9.269E-01	1.597E+00	1.393E-01	0.260
		1394.10		7.248E-01	1.234E+00	2.121E+00	1.381E+00	0.342
PA-234M	+	766.42		5.911E+00	1.533E+01	2.594E+01	1.317E+01	0.228
		1001.03	*	7.304E+00	6.269E+00	1.138E+01	1.142E+00	0.642
U-235	+	89.95		2.827E+00	1.337E+00	1.636E+00	5.108E-01	1.728
		93.35		5.110E+00	1.658E+00	1.339E+00	3.814E-01	3.816
		105.00		8.776E-01	1.005E+00	1.674E+00	5.103E-01	0.524
		143.76	*	1.462E-01	2.276E-01	3.741E-01	6.858E-02	0.391
		163.35		9.702E-02	4.686E-01	7.710E-01	1.469E-01	0.126
		185.71		2.600E-01	8.912E-02	1.096E-01	9.382E-03	2.373
NP-236	+	205.31		-2.908E-02	5.942E-01	8.465E-01	1.621E-01	-0.034
		94.67		3.543E-01	1.202E-01	1.980E-01	1.995E-02	1.790
		98.44		4.801E-02	6.104E-02	1.007E-01	1.035E-02	0.477
		111.00		-3.811E-02	1.192E-01	1.948E-01	2.143E-02	-0.196
		160.31	*	3.254E-02	8.094E-02	1.346E-01	1.189E-02	0.242

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		9.341E-02	1.326E-01	2.273E-01	2.350E-02	0.411
		117.00	*	-5.299E-02	1.766E-01	2.882E-01	3.279E-02	-0.184
	+	209.75		2.980E+00	1.445E+00	1.561E+00	1.375E-01	1.909
		228.18		6.270E-02	2.239E-01	3.641E-01	3.262E-02	0.172
		277.60		1.633E-01	1.895E-01	3.349E-01	3.074E-02	0.487
		334.30		5.824E-02	1.384E+00	2.055E+00	1.857E-01	0.028
AM-241		59.54	*	-1.898E-02	6.804E-02	1.025E-01	1.089E-02	-0.185
CM-243		99.55		9.612E-02	1.364E-01	2.339E-01	2.418E-02	0.411
		103.76	*	2.401E-02	8.693E-02	1.465E-01	1.548E-02	0.164
		117.00		-5.452E-02	1.817E-01	2.965E-01	3.373E-02	-0.184
	+	209.75		2.938E+00	1.424E+00	1.539E+00	1.356E-01	1.909
		228.18		6.335E-02	2.262E-01	3.679E-01	3.296E-02	0.172
		277.60		1.646E-01	1.910E-01	3.377E-01	3.099E-02	0.487
AM-246		798.80		-2.756E-01	1.847E-01	2.612E-01	2.293E-02	-1.055
		1036.00		1.957E-03	3.357E-01	5.493E-01	4.746E-02	0.004
		1062.04		1.047E-01	3.197E-01	5.392E-01	4.625E-02	0.194
		1078.86	*	-5.880E-02	1.721E-01	2.683E-01	2.288E-02	-0.219
CM-247		278.00		6.258E-01	7.999E-01	1.408E+00	1.293E-01	0.444
		287.40		9.370E-01	1.213E+00	2.144E+00	1.969E-01	0.437
		402.60	*	-4.401E-03	4.223E-02	6.952E-02	5.906E-03	-0.063
CF-249		252.85		-6.856E-01	9.089E-01	1.362E+00	1.240E-01	-0.503
		333.44		-4.323E-02	2.164E-01	2.633E-01	2.381E-02	-0.164
		387.95	*	2.716E-02	4.192E-02	7.289E-02	6.176E-03	0.373
CF-251		176.60	*	-2.252E-02	1.331E-01	2.140E-01	1.810E-02	-0.105
		227.00		1.872E-01	3.713E-01	6.124E-01	5.481E-02	0.306
		285.00		-1.867E+00	1.740E+00	2.735E+00	2.512E-01	-0.683

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691014      *
* Acquisition date   : 9-FEB-2010 17:27:05 Detector SN#                   *
* Detector ID        : GAM17 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time  : 0 02:00:09.61 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G245691014 Analyst initials: MJH1                  *
* Batch Number      : 947037 Sample Quantity : 1.3009E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 6-JAN-2010 11:41:36 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.425E+01	2.843E+00	7.172E-01	0.000E+00
CD-109	3.825E+00	9.260E-01	1.019E+00	0.000E+00
SN-126	3.759E-01	9.100E-02	1.000E-01	0.000E+00
CS-135	6.095E-01	2.466E-01	2.585E-01	0.000E+00
BA-137M	8.541E-02	5.619E-02	7.378E-02	0.000E+00
CS-137	9.028E-02	5.940E-02	7.799E-02	0.000E+00
TL-208	4.485E-01	9.483E-02	7.116E-02	0.000E+00
BI-210	1.629E+00	9.324E-01	8.419E-01	0.000E+00
PB-210	1.629E+00	9.324E-01	8.419E-01	0.000E+00
PO-210	1.629E+00	9.302E-01	8.419E-01	0.000E+00
BI-211	3.957E+00	6.448E-01	3.605E-01	0.000E+00
PB-212	1.340E+00	1.865E-01	1.121E-01	0.000E+00
PO-212	1.340E+00	1.865E-01	1.121E-01	0.000E+00
BI-214	1.165E+00	2.300E-01	1.332E-01	0.000E+00
PB-214	1.377E+00	2.351E-01	1.257E-01	0.000E+00
PO-214	1.377E+00	2.351E-01	1.257E-01	0.000E+00
PO-216	1.340E+00	1.865E-01	1.121E-01	0.000E+00
PO-218	1.377E+00	2.351E-01	1.257E-01	0.000E+00
RA-224	3.036E+00	9.825E-01	1.408E+00	0.000E+00
RA-226	1.165E+00	2.300E-01	1.332E-01	0.000E+00
AC-228	1.545E+00	3.858E-01	2.954E-01	0.000E+00
RA-228	1.545E+00	3.858E-01	2.954E-01	0.000E+00
TH-228	1.361E+00	1.894E-01	1.139E-01	0.000E+00
TH-230	1.165E+00	2.300E-01	1.332E-01	0.000E+00
TH-232	1.545E+00	3.858E-01	2.954E-01	0.000E+00
TH-234	3.585E+00	1.342E+00	1.035E+00	0.000E+00
U-234	1.165E+00	2.300E-01	1.332E-01	0.000E+00
NP-237	1.104E+00	3.482E-01	2.928E-01	0.000E+00
U-238	3.585E+00	1.342E+00	1.035E+00	0.000E+00
AM-243	3.652E-01	6.135E-02	6.042E-02	0.000E+00
ANH-511	1.481E-01	9.167E-02	5.312E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	1.212E-01	3.625E-01	6.346E-01	0.000E+00	NOT IDENT.
NA-22	1.925E-02	5.526E-02	9.591E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	8.624E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	3.071E-02	2.289E-02	5.381E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.158E-02	6.381E-02	0.000E+00	FAIL ABUN
SC-46	-3.692E-02	4.887E-02	7.629E-02	0.000E+00	FAIL ABUN
V-48	-5.212E-02	9.068E-02	1.430E-01	0.000E+00	NOT IDENT.
CR-51	2.253E-01	3.513E-01	6.440E-01	0.000E+00	NOT IDENT.
MN-52	-6.662E-02	2.548E-01	4.132E-01	0.000E+00	NOT IDENT.
MN-54	3.496E-02	4.995E-02	9.044E-02	0.000E+00	NOT IDENT.
CO-56	9.679E-03	4.646E-02	8.122E-02	0.000E+00	NOT IDENT.
CO-57	-2.464E-03	2.316E-02	4.049E-02	0.000E+00	NOT IDENT.
CO-58	-2.466E-02	4.342E-02	6.986E-02	0.000E+00	NOT IDENT.
FE-59	3.806E-02	1.218E-01	2.100E-01	0.000E+00	NOT IDENT.
CO-60	3.836E-02	4.900E-02	9.166E-02	0.000E+00	NOT IDENT.
ZN-65	2.787E-02	1.217E-01	1.818E-01	0.000E+00	NOT IDENT.
GE-68	-1.180E+00	1.533E+00	2.317E+00	0.000E+00	NOT IDENT.
AS-73	1.093E-01	2.286E-01	4.201E-01	0.000E+00	NOT IDENT.
AS-74	4.583E-03	9.946E-02	1.671E-01	0.000E+00	NOT IDENT.
SE-75	2.688E-02	4.938E-02	7.652E-02	0.000E+00	NOT IDENT.
BR-77	-6.662E+00	1.251E+01	2.015E+01	0.000E+00	FAIL ABUN
SR-82	-1.818E-01	4.367E-01	7.218E-01	0.000E+00	NOT IDENT.
RB-83	-3.762E-02	8.058E-02	1.306E-01	0.000E+00	NOT IDENT.
RB-84	-5.143E-02	8.120E-02	1.282E-01	0.000E+00	NOT IDENT.
KR-85	6.771E+00	7.872E+00	1.421E+01	0.000E+00	NOT IDENT.
SR-85	3.476E-02	4.041E-02	7.295E-02	0.000E+00	NOT IDENT.
RB-86	-5.857E-01	9.242E-01	1.418E+00	0.000E+00	NOT IDENT.
Y-88	-5.247E-03	3.828E-02	6.119E-02	0.000E+00	NOT IDENT.
ZR-88	-1.733E-02	3.223E-02	5.357E-02	0.000E+00	NOT IDENT.
Y-91	1.076E+01	2.439E+01	4.217E+01	0.000E+00	NOT IDENT.
NB-94	3.252E-02	4.256E-02	7.824E-02	0.000E+00	NOT IDENT.
NB-95	3.704E-02	5.439E-02	9.884E-02	0.000E+00	NOT IDENT.
NB-95M	-5.208E-02	1.405E-01	2.034E-01	0.000E+00	NOT IDENT.
ZR-95	5.565E-02	8.106E-02	1.489E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.478E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.466E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-8.351E+00	1.527E+01	2.512E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.403E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.032E-02	3.230E-02	5.299E-02	0.000E+00	NOT IDENT.
RH-102	8.921E-03	3.257E-02	5.679E-02	0.000E+00	NOT IDENT.
RU-103	-1.068E-02	4.757E-02	7.928E-02	0.000E+00	FAIL ABUN
RH-106	-3.553E-01	3.689E-01	5.458E-01	0.000E+00	FAIL ABUN
RU-106	-3.553E-01	3.672E-01	5.458E-01	0.000E+00	FAIL ABUN
AG-108M	-4.122E-03	3.628E-02	6.182E-02	0.000E+00	NOT IDENT.
AG-110M	-7.607E-03	4.569E-02	6.434E-02	0.000E+00	NOT IDENT.
IN-111	3.054E-01	1.131E+00	1.723E+00	0.000E+00	NOT IDENT.
IN-113M	1.003E-02	4.677E-02	8.232E-02	0.000E+00	NOT IDENT.
SN-113	1.003E-02	4.677E-02	8.232E-02	0.000E+00	NOT IDENT.
IN-114M	-1.116E-01	2.084E-01	3.042E-01	0.000E+00	NOT IDENT.
CD-115	1.185E+01	1.316E+01	2.387E+01	0.000E+00	NOT IDENT.
SN-117M	-1.036E-02	5.575E-02	9.539E-02	0.000E+00	NOT IDENT.
SB-122	5.198E-01	2.555E+00	4.368E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.578E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.314E-02	2.828E-02	4.990E-02	0.000E+00	NOT IDENT.
I-124	-5.481E-01	9.651E-01	1.306E+00	0.000E+00	NOT IDENT.
SB-124	2.403E-02	9.424E-02	1.657E-01	0.000E+00	FAIL ABUN
SB-125	3.492E-02	1.008E-01	1.780E-01	0.000E+00	NOT IDENT.
TE-125M	-3.123E+00	7.751E+00	1.344E+01	0.000E+00	NOT IDENT.
I-126	-3.184E-03	2.559E-01	3.684E-01	0.000E+00	NOT IDENT.
SB-126	5.663E-02	1.983E-01	3.105E-01	0.000E+00	FAIL ABUN
SB-127	-2.405E-01	1.555E+00	2.520E+00	0.000E+00	NOT IDENT.
XE-127	2.087E-02	4.915E-02	8.144E-02	0.000E+00	NOT IDENT.
I-131	-2.751E-02	1.238E-01	2.125E-01	0.000E+00	NOT IDENT.
TE-132	1.995E-01	6.873E-01	1.176E+00	0.000E+00	NOT IDENT.
BA-133	6.416E-03	5.460E-02	8.483E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.561E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.487E-02	5.975E-02	1.140E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.736E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.169E-02	1.441E-01	2.283E-01	0.000E+00	FAIL ABUN
CE-139	-2.821E-02	2.905E-02	4.727E-02	0.000E+00	NOT IDENT.
BA-140	-1.980E-01	3.039E-01	4.698E-01	0.000E+00	NOT IDENT.
LA-140	-6.736E-02	1.060E-01	1.576E-01	0.000E+00	FAIL ABUN
CE-141	-9.617E-03	6.462E-02	1.115E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.273E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	1.217E-01	1.981E-01	3.540E-01	0.000E+00	NOT IDENT.
PM-144	-3.655E-03	4.379E-02	7.581E-02	0.000E+00	NOT IDENT.
PR-144	-2.477E-01	2.968E+00	5.137E+00	0.000E+00	NOT IDENT.
PM-146	-2.729E-02	4.431E-02	7.153E-02	0.000E+00	NOT IDENT.
ND-147	-5.504E-01	6.617E-01	1.023E+00	0.000E+00	FAIL ABUN
PM-149	2.039E+00	9.000E+01	1.601E+02	0.000E+00	NOT IDENT.
EU-152	-6.389E-02	1.023E-01	1.650E-01	0.000E+00	NOT IDENT.
GD-153	-2.577E-02	7.247E-02	1.135E-01	0.000E+00	FAIL ABUN
EU-154	3.552E-02	1.572E-01	2.687E-01	0.000E+00	NOT IDENT.
EU-155	8.822E-02	9.741E-02	1.783E-01	0.000E+00	FAIL ABUN
TB-160	7.525E-02	1.520E-01	2.737E-01	0.000E+00	FAIL ABUN
HO-166M	-1.801E-03	7.854E-02	1.363E-01	0.000E+00	NOT IDENT.
TM-171	2.007E+00	1.559E+01	2.567E+01	0.000E+00	NOT IDENT.
LU-176	1.654E-03	2.462E-02	4.368E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	2.019E+00	2.268E+00	0.000E+00	FAIL ABUN
LU-177M	2.971E-02	1.853E-01	3.237E-01	0.000E+00	FAIL ABUN
HF-181	7.460E-03	4.640E-02	8.013E-02	0.000E+00	NOT IDENT.
W-181	9.700E-02	1.959E-01	3.277E-01	0.000E+00	NOT IDENT.
TA-182	-4.137E-02	2.383E-01	3.857E-01	0.000E+00	NOT IDENT.
RE-183	9.569E-02	1.083E-01	1.944E-01	0.000E+00	FAIL ABUN
RE-184	-1.828E-01	2.375E-01	3.740E-01	0.000E+00	NOT IDENT.
OS-185	-8.261E-03	5.264E-02	8.598E-02	0.000E+00	NOT IDENT.
RE-188	7.489E-02	1.748E-01	3.082E-01	0.000E+00	NOT IDENT.
W-188	-1.061E+01	8.442E+00	1.174E+01	0.000E+00	FAIL ABUN
IR-192	-1.726E-02	3.574E-02	6.104E-02	0.000E+00	FAIL ABUN
AU-195	1.360E-01	1.878E-01	3.433E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	5.180E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	5.499E+00	6.779E+00	1.214E+01	0.000E+00	NOT IDENT.
TL-202	2.280E-02	7.849E-02	1.377E-01	0.000E+00	NOT IDENT.
HG-203	1.976E-03	4.231E-02	7.547E-02	0.000E+00	FAIL ABUN
BI-207	-8.726E-02	7.353E-02	1.066E-01	0.000E+00	FAIL ABUN
TL-207	9.929E-02	6.849E-01	1.077E+00	0.000E+00	FAIL ABUN
PO-209	1.320E+00	9.691E+00	1.672E+01	0.000E+00	NOT IDENT.
PB-211	-3.545E-01	1.037E+00	1.709E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.534E-01	7.848E-01	0.000E+00	FAIL ABUN
PO-215	9.929E-02	6.849E-01	1.077E+00	0.000E+00	FAIL ABUN
RN-219	-1.719E-01	4.785E-01	8.066E-01	0.000E+00	NOT IDENT.
RN-220	3.798E+01	2.747E+01	5.200E+01	0.000E+00	NOT IDENT.
RA-223	9.929E-02	6.849E-01	1.077E+00	0.000E+00	FAIL ABUN
AC-227	1.213E-01	4.030E-01	6.841E-01	0.000E+00	FAIL ABUN
TH-227	1.213E-01	4.032E-01	6.841E-01	0.000E+00	FAIL ABUN
TH-229	4.789E-01	5.222E-01	9.290E-01	0.000E+00	FAIL ABUN
PA-231	-8.914E-01	1.487E+00	2.537E+00	0.000E+00	FAIL ABUN
TH-231	9.929E-02	6.849E-01	1.077E+00	0.000E+00	FAIL ABUN
U-231	3.938E-01	9.657E-01	1.578E+00	0.000E+00	FAIL ABUN
PA-233	-4.280E-02	6.666E-02	1.128E-01	0.000E+00	FAIL ABUN
PA-234	2.297E-01	3.768E-01	6.748E-01	0.000E+00	FAIL ABUN
PA-234M	7.304E+00	6.143E+00	1.146E+01	0.000E+00	NOT IDENT.
U-235	1.462E-01	2.230E-01	3.886E-01	0.000E+00	FAIL ABUN
NP-236	3.254E-02	7.932E-02	1.396E-01	0.000E+00	NOT IDENT.
NP-239	-5.299E-02	1.730E-01	3.004E-01	0.000E+00	FAIL ABUN
AM-241	-1.898E-02	6.668E-02	1.080E-01	0.000E+00	NOT IDENT.
CM-243	2.401E-02	8.519E-02	1.529E-01	0.000E+00	FAIL ABUN
AM-246	-5.880E-02	1.687E-01	2.698E-01	0.000E+00	NOT IDENT.
CM-247	-4.401E-03	4.139E-02	7.106E-02	0.000E+00	NOT IDENT.
CF-249	2.716E-02	4.108E-02	7.455E-02	0.000E+00	NOT IDENT.
CF-251	-2.252E-02	1.304E-01	2.216E-01	0.000E+00	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691014.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:27:05.
Sample ID          : G245691014 Sample quantity : 1.30090E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:09.61 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	698	10.67*	7.783E-01	2.425E+01	2.425E+01	11.96
CD-109	88.03	322	3.72*	6.675E+00	3.739E+00	3.825E+00	24.70
SN-126	64.28	320	9.60	6.776E+00	1.419E+00	1.419E+00	36.95
	86.94	322	8.90	6.675E+00	1.563E+00	1.563E+00	47.40
	87.57	322	37.00*	6.675E+00	3.759E-01	3.759E-01	24.70
CS-135	268.24	123	16.00*	3.651E+00	6.095E-01	6.095E-01	41.29
BA-137M	661.65	43	89.98*	1.604E+00	8.533E-02	8.541E-02	67.14
CS-137	661.65	43	85.12*	1.604E+00	9.020E-02	9.028E-02	67.14
TL-208	277.35	-----	6.80	3.568E+00	-----	Line Not Found	-----
	510.84	106	21.60	2.057E+00	6.855E-01	6.855E-01	63.72
	583.14	237	84.20*	1.812E+00	4.485E-01	4.485E-01	21.57
	860.37	-----	12.46	1.247E+00	-----	Line Not Found	-----
BI-210	46.50	144	4.05*	6.311E+00	1.627E+00	1.629E+00	58.40
PB-210	46.50	144	4.05*	6.311E+00	1.627E+00	1.629E+00	58.40
PO-210	46.50	144	4.05*	6.311E+00	1.627E+00	1.629E+00	58.26
BI-211	72.87	-----	1.27	6.803E+00	-----	Line Not Found	-----
	351.07	516	12.94*	2.910E+00	3.957E+00	3.957E+00	16.63
PB-212	74.81	568	10.70	6.795E+00	2.253E+00	2.253E+00	19.52
	77.11	852	18.00	6.782E+00	2.013E+00	2.013E+00	14.17
	87.30	322	8.00	6.675E+00	1.738E+00	1.738E+00	26.65
	238.63	833	44.60*	4.023E+00	1.340E+00	1.340E+00	14.20
	300.09	62	3.41	3.343E+00	1.573E+00	1.573E+00	81.61
PO-212	74.81	568	10.70	6.795E+00	2.253E+00	2.253E+00	19.52
	77.11	852	18.00	6.782E+00	2.013E+00	2.013E+00	14.17
	87.30	322	8.00	6.675E+00	1.738E+00	1.738E+00	26.65
	115.19	-----	0.60	6.177E+00	-----	Line Not Found	-----
	238.63	833	44.60*	4.023E+00	1.340E+00	1.340E+00	14.20
	300.09	62	3.41	3.343E+00	1.573E+00	1.573E+00	81.61
BI-214	609.31	325	46.30*	1.737E+00	1.165E+00	1.165E+00	20.15
	1120.29	73	15.10	9.774E-01	1.433E+00	1.433E+00	55.29
	1764.49	63	15.80	6.718E-01	1.716E+00	1.716E+00	32.75
PB-214	74.81	568	6.21	6.795E+00	3.882E+00	3.882E+00	18.67

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	77.11	852	10.50	6.782E+00	3.451E+00	3.451E+00	16.09
	87.30	322	4.67	6.675E+00	2.978E+00	2.978E+00	25.88
	241.98	166	7.49	3.983E+00	1.601E+00	1.601E+00	33.50
	295.21	337	19.20	3.387E+00	1.495E+00	1.495E+00	22.46
	351.92	516	37.20*	2.910E+00	1.377E+00	1.377E+00	17.43
	74.81	568	6.21	6.795E+00	3.882E+00	3.882E+00	18.67
	77.11	852	10.50	6.782E+00	3.451E+00	3.451E+00	16.09
	87.30	322	4.67	6.675E+00	2.978E+00	2.978E+00	25.88
	241.98	166	7.49	3.983E+00	1.601E+00	1.601E+00	33.50
	295.21	337	19.20	3.387E+00	1.495E+00	1.495E+00	22.46
PO-216	351.92	516	37.20*	2.910E+00	1.377E+00	1.377E+00	17.43
	74.81	568	10.70	6.795E+00	2.253E+00	2.253E+00	19.52
	77.11	852	18.00	6.782E+00	2.013E+00	2.013E+00	14.17
	87.30	322	8.00	6.675E+00	1.738E+00	1.738E+00	26.65
	238.63	833	44.60*	4.023E+00	1.340E+00	1.340E+00	14.20
PO-218	300.09	62	3.41	3.343E+00	1.573E+00	1.573E+00	81.61
	74.81	568	6.21	6.795E+00	3.882E+00	3.882E+00	18.67
	77.11	852	10.50	6.782E+00	3.451E+00	3.451E+00	16.09
	87.30	322	4.67	6.675E+00	2.978E+00	2.978E+00	25.88
	241.98	166	7.49	3.983E+00	1.601E+00	1.601E+00	33.50
RA-224	295.21	337	19.20	3.387E+00	1.495E+00	1.495E+00	22.46
	351.92	516	37.20*	2.910E+00	1.377E+00	1.377E+00	17.43
RA-226	240.98	166	3.95*	3.983E+00	3.036E+00	3.036E+00	33.02
	609.31	325	46.30*	1.737E+00	1.165E+00	1.165E+00	20.15
AC-228	1120.29	73	15.10	9.774E-01	1.433E+00	1.433E+00	55.29
	1764.49	63	15.80	6.718E-01	1.716E+00	1.716E+00	32.75
	338.32	139	11.40	3.013E+00	1.168E+00	1.168E+00	52.53
	911.07	175	27.70*	1.182E+00	1.545E+00	1.545E+00	25.48
	969.11	107	16.60	1.115E+00	1.665E+00	1.665E+00	39.65
RA-228	338.32	139	11.40	3.013E+00	1.168E+00	1.168E+00	52.53
	911.07	175	27.70*	1.182E+00	1.545E+00	1.545E+00	25.48
TH-228	969.11	107	16.60	1.115E+00	1.665E+00	1.665E+00	39.65
	74.81	568	10.70	6.795E+00	2.253E+00	2.287E+00	17.18
	77.11	852	18.00	6.782E+00	2.013E+00	2.044E+00	14.17
	87.30	322	8.00	6.675E+00	1.738E+00	1.765E+00	24.70
	238.63	833	44.60*	4.023E+00	1.340E+00	1.361E+00	14.20
TH-230	300.09	62	3.41	3.343E+00	1.573E+00	1.597E+00	100.33
	609.31	325	46.30*	1.737E+00	1.165E+00	1.165E+00	20.15
	1120.29	73	15.10	9.774E-01	1.433E+00	1.433E+00	55.29
TH-232	1764.49	63	15.80	6.718E-01	1.716E+00	1.716E+00	32.75
	338.32	139	11.40	3.013E+00	1.168E+00	1.168E+00	33.63
	911.07	175	27.70*	1.182E+00	1.545E+00	1.545E+00	25.48
TH-234	969.11	107	16.60	1.115E+00	1.665E+00	1.665E+00	39.65
	63.29	320	3.80*	6.776E+00	3.585E+00	3.585E+00	38.19
	92.38	526	5.41	6.596E+00	4.250E+00	4.250E+00	24.38
U-234	609.31	325	46.30*	1.737E+00	1.165E+00	1.165E+00	20.15
	1120.29	73	15.10	9.774E-01	1.433E+00	1.433E+00	55.29
NP-237	1764.49	63	15.80	6.718E-01	1.716E+00	1.716E+00	32.75
	86.50	322	12.60*	6.675E+00	1.104E+00	1.104E+00	32.19

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	95.87	-----	2.60	6.543E+00	-----	Line Not Found	-----
U-238	63.29	320	3.80*	6.776E+00	3.585E+00	3.585E+00	38.19
	92.38	526	5.41	6.596E+00	4.250E+00	4.250E+00	18.49
AM-243	74.67	568	66.00*	6.795E+00	3.652E-01	3.652E-01	17.14
	86.72	322	0.34	6.675E+00	4.139E+01	4.139E+01	24.70
	117.66	-----	0.55	6.127E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.624E+00	-----	Line Not Found	-----
ANH-511	511.00	106	100.00*	2.057E+00	1.481E-01	1.481E-01	63.18

Flag: "\*" = Keyline



Total number of lines in spectrum 29  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 29 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.425E+01	2.425E+01	0.290E+01	11.96	
CD-109	464.00D	1.02	3.739E+00	3.825E+00	0.945E+00	24.70	
SN-126	1.00E+05Y	1.00	3.759E-01	3.759E-01	0.929E-01	24.70	
CS-135	2.30E+06Y	1.00	6.095E-01	6.095E-01	2.517E-01	41.29	
BA-137M	30.17Y	1.00	8.533E-02	8.541E-02	5.734E-02	67.14	
CS-137	30.17Y	1.00	9.020E-02	9.028E-02	6.062E-02	67.14	
TL-208	1.41E+10Y	1.00	4.485E-01	4.485E-01	0.968E-01	21.57	
BI-210	22.26Y	1.00	1.627E+00	1.629E+00	0.951E+00	58.40	
PB-210	22.26Y	1.00	1.627E+00	1.629E+00	0.951E+00	58.40	
PO-210	22.26Y	1.00	1.627E+00	1.629E+00	0.949E+00	58.26	
BI-211	7.04E+08Y	1.00	3.957E+00	3.957E+00	0.658E+00	16.63	
PB-212	1.41E+10Y	1.00	1.340E+00	1.340E+00	0.190E+00	14.20	
PO-212	1.41E+10Y	1.00	1.340E+00	1.340E+00	0.190E+00	14.20	
BI-214	1600.00Y	1.00	1.165E+00	1.165E+00	0.235E+00	20.15	
PB-214	1600.00Y	1.00	1.377E+00	1.377E+00	0.240E+00	17.43	
PO-214	1600.00Y	1.00	1.377E+00	1.377E+00	0.240E+00	17.43	
PO-216	1.41E+10Y	1.00	1.340E+00	1.340E+00	0.190E+00	14.20	
PO-218	1600.00Y	1.00	1.377E+00	1.377E+00	0.240E+00	17.43	
RA-224	1.41E+10Y	1.00	3.036E+00	3.036E+00	1.003E+00	33.02	
RA-226	1600.00Y	1.00	1.165E+00	1.165E+00	0.235E+00	20.15	
AC-228	1.41E+10Y	1.00	1.545E+00	1.545E+00	0.394E+00	25.48	
RA-228	1.41E+10Y	1.00	1.545E+00	1.545E+00	0.394E+00	25.48	
TH-228	1.91Y	1.02	1.340E+00	1.361E+00	0.193E+00	14.20	
TH-230	4.47E+09Y	1.00	1.165E+00	1.165E+00	0.235E+00	20.15	
TH-232	1.41E+10Y	1.00	1.545E+00	1.545E+00	0.394E+00	25.48	
TH-234	4.47E+09Y	1.00	3.585E+00	3.585E+00	1.369E+00	38.19	
U-234	4.47E+09Y	1.00	1.165E+00	1.165E+00	0.235E+00	20.15	
NP-237	2.14E+06Y	1.00	1.104E+00	1.104E+00	0.355E+00	32.19	
U-238	4.47E+09Y	1.00	3.585E+00	3.585E+00	1.369E+00	38.19	
AM-243	7380.00Y	1.00	3.652E-01	3.652E-01	0.626E-01	17.14	
ANH-511	1.00E+09Y	1.00	1.481E-01	1.481E-01	0.935E-01	63.18	

Total Activity : 6.905E+01 6.916E+01

Grand Total Activity : 6.905E+01 6.916E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G245691014

Page : 5  
Acquisition date : 9-FEB-2010 17:27:05

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	83.98	148	405	1.21	167.61	164	28	2.05E-02	47.6	6.72E+00	T
3	89.84	176	310	0.93	179.33	164	28	2.44E-02	35.6	6.64E+00	T
0	128.84	81	229	0.85	257.36	254	7	1.12E-02	66.2	5.90E+00	T
0	185.92	234	314	1.16	371.58	367	11	3.25E-02	33.2	4.81E+00	T
0	208.99	148	276	0.95	417.72	412	12	2.06E-02	47.7	4.44E+00	T
0	327.48	112	117	0.96	654.80	649	12	1.55E-02	43.1	3.10E+00	T
0	726.35	89	38	2.42	1452.96	1447	15	1.23E-02	36.9	1.47E+00	T

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245691014.CNF;1
* Acquisition date   : 9-FEB-2010 17:27:05.   Detector SN#      :
* Detector ID        : GAM17                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:09.61           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 25-JAN-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G245691014             Analyst initials: MJH1
* Batch Number       : 947037                 Sample Quantity : 1.30090E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36.18MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.425E+01	2.901E+00	7.167E-01	6.363E-02	33.839
CD-109	3.825E+00	9.449E-01	9.736E-01	9.505E-02	3.928
SN-126	3.759E-01	9.286E-02	9.555E-02	9.324E-03	3.934
CS-135	6.095E-01	2.517E-01	2.513E-01	2.622E-02	2.426
BA-137M	8.541E-02	5.734E-02	7.277E-02	6.130E-03	1.174
CS-137	9.028E-02	6.062E-02	7.693E-02	6.493E-03	1.174
TL-208	4.485E-01	9.676E-02	7.004E-02	6.625E-03	6.404
BI-210	1.629E+00	9.514E-01	7.965E-01	8.641E-02	2.045
PB-210	1.629E+00	9.514E-01	7.965E-01	8.641E-02	2.045
PO-210	1.629E+00	9.492E-01	7.965E-01	8.047E-02	2.045
BI-211	3.957E+00	6.580E-01	3.519E-01	3.284E-02	11.246
PB-212	1.340E+00	1.903E-01	1.088E-01	1.097E-02	12.315
PO-212	1.340E+00	1.903E-01	1.088E-01	1.097E-02	12.315
BI-214	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
PB-214	1.377E+00	2.399E-01	1.227E-01	1.311E-02	11.218
PO-214	1.377E+00	2.399E-01	1.227E-01	1.311E-02	11.218
PO-216	1.340E+00	1.903E-01	1.088E-01	1.097E-02	12.315
PO-218	1.377E+00	2.399E-01	1.227E-01	1.311E-02	11.218

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	3.036E+00	1.003E+00	1.367E+00	1.236E-01	2.222
RA-226	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
AC-228	1.545E+00	3.937E-01	2.928E-01	3.322E-02	5.275
RA-228	1.545E+00	3.937E-01	2.928E-01	3.322E-02	5.275
TH-228	1.361E+00	1.932E-01	1.105E-01	1.114E-02	12.315
TH-230	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
TH-232	1.545E+00	3.937E-01	2.928E-01	3.322E-02	5.275
TH-234	3.585E+00	1.369E+00	9.836E-01	1.836E-01	3.645
U-234	1.165E+00	2.347E-01	1.312E-01	1.335E-02	8.875
NP-237	1.104E+00	3.553E-01	2.797E-01	6.383E-02	3.947
U-238	3.585E+00	1.369E+00	9.836E-01	1.836E-01	3.645
AM-243	3.652E-01	6.260E-02	5.758E-02	5.621E-03	6.344
ANH-511	1.481E-01	9.354E-02	5.217E-02	4.659E-03	2.838

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.212E-01		3.699E-01	6.226E-01	5.924E-02	0.195
NA-22	1.925E-02		5.638E-02	9.562E-02	8.056E-03	0.201
NA-24	-2.936E-01		4.400E-01	Half-Life too short		
AL-26	3.071E-02		2.335E-02	5.397E-02	4.523E-03	0.569
TI-44	3.715E-01	+	5.263E-02	6.085E-02	5.929E-03	6.105
SC-46	-3.692E-02		4.987E-02	7.561E-02	6.619E-03	-0.488
V-48	-5.212E-02		9.253E-02	1.420E-01	1.238E-02	-0.367
CR-51	2.253E-01		3.585E-01	6.277E-01	5.995E-02	0.359
MN-52	-6.662E-02		2.600E-01	4.128E-01	3.559E-02	-0.161
MN-54	3.496E-02		5.097E-02	8.954E-02	7.873E-03	0.390
CO-56	9.679E-03		4.741E-02	8.043E-02	7.070E-03	0.120
CO-57	-2.464E-03		2.363E-02	3.888E-02	4.555E-03	-0.063
CO-58	-2.466E-02		4.431E-02	6.914E-02	6.088E-03	-0.357
FE-59	3.806E-02		1.243E-01	2.088E-01	1.916E-02	0.182
CO-60	3.836E-02		5.000E-02	9.146E-02	7.795E-03	0.419
ZN-65	2.787E-02		1.242E-01	1.808E-01	1.522E-02	0.154
GE-68	-1.180E+00		1.564E+00	2.303E+00	1.966E-01	-0.512
AS-73	1.093E-01		2.332E-01	3.982E-01	3.984E-02	0.274
AS-74	4.583E-03		1.015E-01	1.645E-01	1.449E-02	0.028
SE-75	2.688E-02		5.038E-02	7.436E-02	6.832E-03	0.362
BR-77	-6.662E+00		1.277E+01	1.979E+01	1.769E+00	-0.337
SR-82	-1.818E-01		4.456E-01	7.138E-01	6.247E-02	-0.255
RB-83	-3.762E-02		8.222E-02	1.283E-01	1.147E-02	-0.293
RB-84	-5.143E-02		8.286E-02	1.270E-01	1.113E-02	-0.405
KR-85	6.771E+00		8.032E+00	1.396E+01	1.247E+00	0.485
SR-85	3.476E-02		4.123E-02	7.166E-02	6.402E-03	0.485
RB-86	-5.857E-01		9.430E-01	1.410E+00	1.203E-01	-0.416
Y-88	-5.247E-03		3.906E-02	6.139E-02	5.119E-03	-0.085
ZR-88	-1.733E-02		3.289E-02	5.239E-02	4.414E-03	-0.331
Y-91	1.076E+01		2.489E+01	4.200E+01	3.467E+00	0.256

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94	3.252E-02		4.343E-02	7.724E-02	6.626E-03	0.421
NB-95	3.704E-02		5.550E-02	9.772E-02	8.535E-03	0.379
NB-95M	-5.208E-02		1.434E-01	1.973E-01	2.014E-02	-0.264
ZR-95	5.565E-02		8.272E-02	1.472E-01	1.410E-02	0.378
NB-97	-7.401E-02		7.543E-02	Half-Life too short		
ZR-97	3.340E+00		1.258E+00	Half-Life too short		
MO-99	-8.351E+00		1.559E+01	2.482E+01	3.778E+00	-0.336
TC-99M	-4.147E+10		2.756E+10	Half-Life too short		
RH-101	-1.032E-02		3.296E-02	5.126E-02	4.457E-03	-0.201
RH-102	8.921E-03		3.323E-02	5.571E-02	4.935E-03	0.160
RU-103	-1.068E-02		4.854E-02	7.783E-02	1.116E-02	-0.137
RH-106	-3.553E-01		3.765E-01	5.378E-01	7.207E-02	-0.661
RU-106	-3.553E-01		3.747E-01	5.378E-01	4.672E-02	-0.661
AG-108M	-4.122E-03		3.702E-02	6.056E-02	5.466E-03	-0.068
AG-110M	-7.607E-03		4.662E-02	6.345E-02	5.530E-03	-0.120
IN-111	3.054E-01		1.154E+00	1.673E+00	1.517E-01	0.183
IN-113M	1.003E-02		4.772E-02	8.050E-02	6.995E-03	0.125
SN-113	1.003E-02		4.772E-02	8.050E-02	6.995E-03	0.125
IN-114M	-1.116E-01		2.126E-01	2.941E-01	2.533E-02	-0.380
CD-115	1.185E+01		1.343E+01	2.346E+01	2.097E+00	0.505
SN-117M	-1.036E-02		5.688E-02	9.196E-02	8.266E-03	-0.113
SB-122	5.198E-01		2.607E+00	4.297E+00	3.826E-01	0.121
I-123	3.057E+00		3.356E+00	Half-Life too short		
TE-123M	1.314E-02		2.885E-02	4.811E-02	4.330E-03	0.273
I-124	-5.481E-01		9.848E-01	1.286E+00	1.129E-01	-0.426
SB-124	2.403E-02		9.617E-02	1.660E-01	1.477E-02	0.145
SB-125	3.492E-02		1.029E-01	1.743E-01	1.538E-02	0.200
TE-125M	-3.123E+00		7.909E+00	1.288E+01	1.583E+00	-0.242
I-126	-3.184E-03		2.611E-01	3.634E-01	3.068E-02	-0.009
SB-126	5.663E-02		2.023E-01	3.067E-01	2.647E-02	0.185
SB-127	-2.405E-01		1.586E+00	2.487E+00	2.819E-01	-0.097
XE-127	2.087E-02		5.015E-02	7.881E-02	6.890E-03	0.265
I-131	-2.751E-02		1.263E-01	2.076E-01	1.917E-02	-0.133
TE-132	1.995E-01		7.014E-01	1.140E+00	1.815E-01	0.175
BA-133	6.416E-03		5.571E-02	8.283E-02	1.107E-02	0.077
I-133	-6.900E-04		3.857E-03	Half-Life too short		
CS-134	8.487E-02		6.097E-02	1.128E-01	9.967E-03	0.752
I-135	-5.810E+09		4.967E+09	Half-Life too short		
CS-136	-7.169E-02		1.470E-01	2.268E-01	2.037E-02	-0.316
CE-139	-2.821E-02		2.964E-02	4.560E-02	3.803E-03	-0.619
BA-140	-1.980E-01		3.101E-01	4.617E-01	1.534E-01	-0.429
LA-140	-6.736E-02		1.082E-01	1.577E-01	1.361E-02	-0.427
CE-141	-9.617E-03		6.594E-02	1.073E-01	1.095E-02	-0.090
CE-143	6.350E-04		1.160E-04	Half-Life too short		
CE-144	1.217E-01		2.021E-01	3.404E-01	5.773E-02	0.358
PM-144	-3.655E-03		4.469E-02	7.483E-02	6.406E-03	-0.049
PR-144	-2.477E-01		3.028E+00	5.071E+00	4.340E-01	-0.049
PM-146	-2.729E-02		4.521E-02	7.011E-02	7.610E-03	-0.389

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-5.504E-01		6.752E-01	1.006E+00	1.522E-01	-0.547
PM-149	2.039E+00		9.184E+01	1.558E+02	2.471E+01	0.013
EU-152	-6.389E-02		1.044E-01	1.610E-01	1.523E-02	-0.397
GD-153	-2.577E-02		7.395E-02	1.086E-01	1.110E-02	-0.237
EU-154	3.552E-02		1.604E-01	2.679E-01	2.989E-02	0.133
EU-155	8.822E-02		9.939E-02	1.708E-01	1.835E-02	0.517
TB-160	7.525E-02		1.551E-01	2.712E-01	2.378E-02	0.277
HO-166M	-1.801E-03		8.014E-02	1.346E-01	1.159E-02	-0.013
TM-171	2.007E+00		1.590E+01	2.442E+01	2.411E+00	0.082
LU-176	1.654E-03		2.512E-02	4.255E-02	3.898E-03	0.039
LU-177	4.250E+00	+	2.060E+00	2.195E+00	1.931E-01	1.936
LU-177M	2.971E-02		1.891E-01	3.168E-01	2.714E-02	0.094
HF-181	7.460E-03		4.734E-02	7.862E-02	6.980E-03	0.095
W-181	9.700E-02		1.998E-01	3.116E-01	3.086E-02	0.311
TA-182	-4.137E-02		2.431E-01	3.843E-01	3.188E-02	-0.108
RE-183	9.569E-02		1.105E-01	1.875E-01	1.623E-02	0.510
RE-184	-1.828E-01		2.423E-01	3.632E-01	3.307E-02	-0.503
OS-185	-8.261E-03		5.372E-02	8.476E-02	7.237E-03	-0.097
RE-188	7.489E-02		1.784E-01	2.970E-01	2.760E-02	0.252
W-188	-1.061E+01		8.614E+00	1.143E+01	1.050E+00	-0.929
IR-192	-1.726E-02		3.647E-02	5.949E-02	5.443E-03	-0.290
AU-195	1.360E-01		1.916E-01	3.285E-01	3.384E-02	0.414
TL-200	-1.104E-04		2.643E-04	Half-Life too short		
TL-201	5.499E+00		6.917E+00	1.171E+01	9.778E-01	0.470
TL-202	2.280E-02		8.009E-02	1.349E-01	1.176E-02	0.169
HG-203	1.976E-03		4.317E-02	7.341E-02	6.909E-03	0.027
BI-207	-8.726E-02		7.503E-02	1.060E-01	9.085E-03	-0.823
TL-207	9.929E-02		6.989E-01	1.050E+00	1.884E-01	0.095
PO-209	1.320E+00		9.888E+00	1.657E+01	1.449E+00	0.080
PB-211	-3.545E-01		1.058E+00	1.672E+00	1.048E+00	-0.212
BI-212	1.477E+00	+	5.647E-01	7.753E-01	7.779E-02	1.905
PO-215	9.929E-02		6.989E-01	1.050E+00	1.884E-01	0.095
RN-219	-1.719E-01		4.883E-01	7.892E-01	1.180E-01	-0.218
RN-220	3.798E+01		2.803E+01	5.114E+01	4.565E+00	0.743
RA-223	9.929E-02		6.989E-01	1.050E+00	1.884E-01	0.095
AC-227	1.213E-01		4.112E-01	6.645E-01	1.039E-01	0.182
TH-227	1.213E-01		4.114E-01	6.645E-01	1.216E-01	0.182
TH-229	4.789E-01		5.329E-01	8.984E-01	7.770E-02	0.533
PA-231	-8.914E-01		1.517E+00	2.468E+00	3.828E-01	-0.361
TH-231	9.929E-02		6.989E-01	1.050E+00	1.884E-01	0.095
U-231	3.938E-01		9.855E-01	1.510E+00	1.531E-01	0.261
PA-233	-4.280E-02		6.802E-02	1.099E-01	1.031E-02	-0.389
PA-234	2.297E-01		3.845E-01	6.695E-01	1.260E-01	0.343
PA-234M	7.304E+00		6.269E+00	1.138E+01	1.142E+00	0.642
U-235	1.462E-01		2.276E-01	3.741E-01	6.858E-02	0.391
NP-236	3.254E-02		8.094E-02	1.346E-01	1.189E-02	0.242
NP-239	-5.299E-02		1.766E-01	2.882E-01	3.279E-02	-0.184
AM-241	-1.898E-02		6.804E-02	1.025E-01	1.089E-02	-0.185

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.401E-02		8.693E-02	1.465E-01	1.548E-02	0.164
AM-246	-5.880E-02		1.721E-01	2.683E-01	2.288E-02	-0.219
CM-247	-4.401E-03		4.223E-02	6.952E-02	5.906E-03	-0.063
CF-249	2.716E-02		4.192E-02	7.289E-02	6.176E-03	0.373
CF-251	-2.252E-02		1.331E-01	2.140E-01	1.810E-02	-0.105

# VAX/VMS Nuclide Identification Report Generated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*
*                               DETECTOR DATA                                *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G245691014             *
* Acquisition date   : 9-FEB-2010 17:27:05 Detector SN#      :                 *
* Detector ID        : GAM17 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000  *
* Elapsed real time  : 0 02:00:09.61 Half life ratio : 8.000  *
*****
*
*                               SAMPLE DATA                                *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G245691014 Analyst initials: MJH1       *
* Batch Number       : 947037 Sample Quantity : 1.3009E+02 GRAM *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*****
*
*                               QC DATA                                    *
*
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36 MS Isotope        :                 *
* MSD DPM             : 0.000 MSD Isotope                    :                 *
* LCS DPM             : 0.000 LCS Isotope                     :                 *
* LCSD DPM            : 0.000 LCSD Isotope                    :                 *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.425E+01	2.843E+00	3.588E-01	1.451E+00
CD-109	3.825E+00	9.260E-01	5.099E-01	4.724E-01
SN-126	3.759E-01	9.100E-02	5.004E-02	4.643E-02
CS-135	6.095E-01	2.466E-01	1.293E-01	1.258E-01
BA-137M	8.541E-02	5.619E-02	3.691E-02	2.867E-02
CS-137	9.028E-02	5.940E-02	3.902E-02	3.031E-02
TL-208	4.485E-01	9.483E-02	3.560E-02	4.838E-02
BI-210	1.629E+00	9.324E-01	4.212E-01	4.757E-01
PB-210	1.629E+00	9.324E-01	4.212E-01	4.757E-01
PO-210	1.629E+00	9.302E-01	4.212E-01	4.746E-01
BI-211	3.957E+00	6.448E-01	1.803E-01	3.290E-01
PB-212	1.340E+00	1.865E-01	5.611E-02	9.516E-02
PO-212	1.340E+00	1.865E-01	5.611E-02	9.516E-02
BI-214	1.165E+00	2.300E-01	6.666E-02	1.174E-01
PB-214	1.377E+00	2.351E-01	6.288E-02	1.199E-01
PO-214	1.377E+00	2.351E-01	6.288E-02	1.199E-01
PO-216	1.340E+00	1.865E-01	5.611E-02	9.516E-02
PO-218	1.377E+00	2.351E-01	6.288E-02	1.199E-01
RA-224	3.036E+00	9.825E-01	7.046E-01	5.013E-01
RA-226	1.165E+00	2.300E-01	6.666E-02	1.174E-01
AC-228	1.545E+00	3.858E-01	1.478E-01	1.968E-01
RA-228	1.545E+00	3.858E-01	1.478E-01	1.968E-01
TH-228	1.361E+00	1.894E-01	5.697E-02	9.661E-02
TH-230	1.165E+00	2.300E-01	6.665E-02	1.173E-01
TH-232	1.545E+00	3.858E-01	1.478E-01	1.968E-01
TH-234	3.585E+00	1.342E+00	5.177E-01	6.845E-01
U-234	1.165E+00	2.300E-01	6.665E-02	1.173E-01
NP-237	1.104E+00	3.482E-01	1.465E-01	1.776E-01
U-238	3.585E+00	1.342E+00	5.177E-01	6.845E-01
AM-243	3.652E-01	6.135E-02	3.023E-02	3.130E-02
ANH-511	1.481E-01	9.167E-02	2.657E-02	4.677E-02

---- Non-Identified Nuclides ----



Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	1.212E-01	3.625E-01	3.175E-01	1.849E-01 NOT IDENT.
NA-22	1.925E-02	5.526E-02	4.798E-02	2.819E-02 NOT IDENT.
NA-24	-2.936E+05	8.624E+05	0.000E+00	4.400E+05 SHORT HLIF
AL-26	3.071E-02	2.289E-02	2.692E-02	1.168E-02 NOT IDENT.
TI-44	3.715E-01	5.158E-02	3.192E-02	2.632E-02 FAIL ABUN
SC-46	-3.692E-02	4.887E-02	3.817E-02	2.493E-02 FAIL ABUN
V-48	-5.212E-02	9.068E-02	7.154E-02	4.627E-02 NOT IDENT.
CR-51	2.253E-01	3.513E-01	3.222E-01	1.792E-01 NOT IDENT.
MN-52	-6.662E-02	2.548E-01	2.067E-01	1.300E-01 NOT IDENT.
MN-54	3.496E-02	4.995E-02	4.525E-02	2.548E-02 NOT IDENT.
CO-56	9.679E-03	4.646E-02	4.063E-02	2.370E-02 NOT IDENT.
CO-57	-2.464E-03	2.316E-02	2.026E-02	1.182E-02 NOT IDENT.
CO-58	-2.466E-02	4.342E-02	3.495E-02	2.215E-02 NOT IDENT.
FE-59	3.806E-02	1.218E-01	1.050E-01	6.215E-02 NOT IDENT.
CO-60	3.836E-02	4.900E-02	4.586E-02	2.500E-02 NOT IDENT.
ZN-65	2.787E-02	1.217E-01	9.093E-02	6.211E-02 NOT IDENT.
GE-68	-1.180E+00	1.533E+00	1.159E+00	7.822E-01 NOT IDENT.
AS-73	1.093E-01	2.286E-01	2.102E-01	1.166E-01 NOT IDENT.
AS-74	4.583E-03	9.946E-02	8.358E-02	5.074E-02 NOT IDENT.
SE-75	2.688E-02	4.938E-02	3.828E-02	2.519E-02 NOT IDENT.
BR-77	-6.662E+00	1.251E+01	1.008E+01	6.385E+00 FAIL ABUN
SR-82	-1.818E-01	4.367E-01	3.611E-01	2.228E-01 NOT IDENT.
RB-83	-3.762E-02	8.058E-02	6.535E-02	4.111E-02 NOT IDENT.
RB-84	-5.143E-02	8.120E-02	6.413E-02	4.143E-02 NOT IDENT.
KR-85	6.771E+00	7.872E+00	7.110E+00	4.016E+00 NOT IDENT.
SR-85	3.476E-02	4.041E-02	3.650E-02	2.062E-02 NOT IDENT.
RB-86	-5.857E-01	9.242E-01	7.093E-01	4.715E-01 NOT IDENT.
Y-88	-5.247E-03	3.828E-02	3.062E-02	1.953E-02 NOT IDENT.
ZR-88	-1.733E-02	3.223E-02	2.680E-02	1.645E-02 NOT IDENT.
Y-91	1.076E+01	2.439E+01	2.110E+01	1.244E+01 NOT IDENT.
NB-94	3.252E-02	4.256E-02	3.914E-02	2.171E-02 NOT IDENT.
NB-95	3.704E-02	5.439E-02	4.945E-02	2.775E-02 NOT IDENT.
NB-95M	-5.208E-02	1.405E-01	1.017E-01	7.169E-02 NOT IDENT.
ZR-95	5.565E-02	8.106E-02	7.448E-02	4.136E-02 NOT IDENT.
NB-97	-7.401E+04	1.478E+05	0.000E+00	7.543E+04 SHORT HLIF
ZR-97	3.340E+06	2.466E+06	0.000E+00	1.258E+06 SHORT HLIF
MO-99	-8.351E+00	1.527E+01	1.257E+01	7.793E+00 NOT IDENT.
TC-99M	-4.147E+16	5.403E+16	0.000E+00	0.000E+00 SHORT HLIF
RH-101	-1.032E-02	3.230E-02	2.651E-02	1.648E-02 NOT IDENT.
RH-102	8.921E-03	3.257E-02	2.841E-02	1.662E-02 NOT IDENT.
RU-103	-1.068E-02	4.757E-02	3.966E-02	2.427E-02 FAIL ABUN
RH-106	-3.553E-01	3.689E-01	2.731E-01	1.882E-01 FAIL ABUN
RU-106	-3.553E-01	3.672E-01	2.731E-01	1.874E-01 FAIL ABUN
AG-108M	-4.122E-03	3.628E-02	3.093E-02	1.851E-02 NOT IDENT.
AG-110M	-7.607E-03	4.569E-02	3.219E-02	2.331E-02 NOT IDENT.
IN-111	3.054E-01	1.131E+00	8.620E-01	5.770E-01 NOT IDENT.
IN-113M	1.003E-02	4.677E-02	4.118E-02	2.386E-02 NOT IDENT.
SN-113	1.003E-02	4.677E-02	4.118E-02	2.386E-02 NOT IDENT.
IN-114M	-1.116E-01	2.084E-01	1.522E-01	1.063E-01 NOT IDENT.
CD-115	1.185E+01	1.316E+01	1.194E+01	6.716E+00 NOT IDENT.
SN-117M	-1.036E-02	5.575E-02	4.772E-02	2.844E-02 NOT IDENT.
SB-122	5.198E-01	2.555E+00	2.185E+00	1.303E+00 NOT IDENT.
I-123	3.057E+06	6.578E+06	0.000E+00	3.356E+06 SHORT HLIF
TE-123M	1.314E-02	2.828E-02	2.496E-02	1.443E-02 NOT IDENT.
I-124	-5.481E-01	9.651E-01	6.532E-01	4.924E-01 NOT IDENT.
SB-124	2.403E-02	9.424E-02	8.291E-02	4.808E-02 FAIL ABUN
SB-125	3.492E-02	1.008E-01	8.906E-02	5.145E-02 NOT IDENT.
TE-125M	-3.123E+00	7.751E+00	6.724E+00	3.955E+00 NOT IDENT.
I-126	-3.184E-03	2.559E-01	1.843E-01	1.305E-01 NOT IDENT.
SB-126	5.663E-02	1.983E-01	1.553E-01	1.012E-01 FAIL ABUN
SB-127	-2.405E-01	1.555E+00	1.261E+00	7.932E-01 NOT IDENT.
XE-127	2.087E-02	4.915E-02	4.074E-02	2.508E-02 NOT IDENT.
I-131	-2.751E-02	1.238E-01	1.063E-01	6.317E-02 NOT IDENT.
TE-132	1.995E-01	6.873E-01	5.883E-01	3.507E-01 NOT IDENT.
BA-133	6.416E-03	5.460E-02	4.244E-02	2.786E-02 NOT IDENT.
I-133	-6.900E+02	7.561E+03	0.000E+00	3.857E+03 SHORT HLIF
CS-134	8.487E-02	5.975E-02	5.704E-02	3.049E-02 NOT IDENT.
I-135	-5.810E+15	9.736E+15	0.000E+00	4.967E+15 SHORT HLIF
CS-136	-7.169E-02	1.441E-01	1.142E-01	7.352E-02 FAIL ABUN
CE-139	-2.821E-02	2.905E-02	2.365E-02	1.482E-02 NOT IDENT.
BA-140	-1.980E-01	3.039E-01	2.350E-01	1.550E-01 NOT IDENT.
LA-140	-6.736E-02	1.060E-01	7.885E-02	5.409E-02 FAIL ABUN
CE-141	-9.617E-03	6.462E-02	5.578E-02	3.297E-02 NOT IDENT.
CE-143	6.350E+02	2.273E+02	0.000E+00	1.160E+02 SHORT HLIF

CE-144	1.217E-01	1.981E-01	1.771E-01	1.011E-01	NOT IDENT.
PM-144	-3.655E-03	4.379E-02	3.793E-02	2.234E-02	NOT IDENT.
PR-144	-2.477E-01	2.968E+00	2.570E+00	1.514E+00	NOT IDENT.
PM-146	-2.729E-02	4.431E-02	3.578E-02	2.261E-02	NOT IDENT.
ND-147	-5.504E-01	6.617E-01	5.120E-01	3.376E-01	FAIL ABUN
PM-149	2.039E+00	9.000E+01	8.009E+01	4.592E+01	NOT IDENT.
EU-152	-6.389E-02	1.023E-01	8.255E-02	5.222E-02	NOT IDENT.
GD-153	-2.577E-02	7.247E-02	5.678E-02	3.698E-02	FAIL ABUN
EU-154	3.552E-02	1.572E-01	1.344E-01	8.018E-02	NOT IDENT.
EU-155	8.822E-02	9.741E-02	8.921E-02	4.970E-02	FAIL ABUN
TB-160	7.525E-02	1.520E-01	1.369E-01	7.754E-02	FAIL ABUN
HO-166M	-1.801E-03	7.854E-02	6.821E-02	4.007E-02	NOT IDENT.
TM-171	2.007E+00	1.559E+01	1.284E+01	7.952E+00	NOT IDENT.
LU-176	1.654E-03	2.462E-02	2.185E-02	1.256E-02	FAIL ABUN
LU-177	4.250E+00	2.019E+00	1.134E+00	1.030E+00	FAIL ABUN
LU-177M	2.971E-02	1.853E-01	1.619E-01	9.455E-02	FAIL ABUN
HF-181	7.460E-03	4.640E-02	4.009E-02	2.367E-02	NOT IDENT.
W-181	9.700E-02	1.959E-01	1.640E-01	9.992E-02	NOT IDENT.
TA-182	-4.137E-02	2.383E-01	1.930E-01	1.216E-01	NOT IDENT.
RE-183	9.569E-02	1.083E-01	9.726E-02	5.527E-02	FAIL ABUN
RE-184	-1.828E-01	2.375E-01	1.871E-01	1.212E-01	NOT IDENT.
OS-185	-8.261E-03	5.264E-02	4.301E-02	2.686E-02	NOT IDENT.
RE-188	7.489E-02	1.748E-01	1.542E-01	8.921E-02	NOT IDENT.
W-188	-1.061E+01	8.442E+00	5.874E+00	4.307E+00	FAIL ABUN
IR-192	-1.726E-02	3.574E-02	3.054E-02	1.823E-02	FAIL ABUN
AU-195	1.360E-01	1.878E-01	1.717E-01	9.580E-02	FAIL ABUN
TL-200	-1.104E+02	5.180E+02	0.000E+00	2.643E+02	SHORT HLIF
TL-201	5.499E+00	6.779E+00	6.071E+00	3.458E+00	NOT IDENT.
TL-202	2.280E-02	7.849E-02	6.889E-02	4.005E-02	NOT IDENT.
HG-203	1.976E-03	4.231E-02	3.776E-02	2.159E-02	FAIL ABUN
BI-207	-8.726E-02	7.353E-02	5.334E-02	3.752E-02	FAIL ABUN
TL-207	9.929E-02	6.849E-01	5.389E-01	3.494E-01	FAIL ABUN
PO-209	1.320E+00	9.691E+00	8.366E+00	4.944E+00	NOT IDENT.
PB-211	-3.545E-01	1.037E+00	8.551E-01	5.292E-01	NOT IDENT.
BI-212	1.477E+00	5.534E-01	3.927E-01	2.824E-01	FAIL ABUN
PO-215	9.929E-02	6.849E-01	5.389E-01	3.494E-01	FAIL ABUN
RN-219	-1.719E-01	4.785E-01	4.035E-01	2.442E-01	NOT IDENT.
RN-220	3.798E+01	2.747E+01	2.602E+01	1.401E+01	NOT IDENT.
RA-223	9.929E-02	6.849E-01	5.389E-01	3.494E-01	FAIL ABUN
AC-227	1.213E-01	4.030E-01	3.423E-01	2.056E-01	FAIL ABUN
TH-227	1.213E-01	4.032E-01	3.423E-01	2.057E-01	FAIL ABUN
TH-229	4.789E-01	5.222E-01	4.648E-01	2.664E-01	FAIL ABUN
PA-231	-8.914E-01	1.487E+00	1.269E+00	7.586E-01	FAIL ABUN
TH-231	9.929E-02	6.849E-01	5.389E-01	3.494E-01	FAIL ABUN
U-231	3.938E-01	9.657E-01	7.897E-01	4.927E-01	FAIL ABUN
PA-233	-4.280E-02	6.666E-02	5.643E-02	3.401E-02	FAIL ABUN
PA-234	2.297E-01	3.768E-01	3.376E-01	1.923E-01	FAIL ABUN
PA-234M	7.304E+00	6.143E+00	5.731E+00	3.134E+00	NOT IDENT.
U-235	1.462E-01	2.230E-01	1.944E-01	1.138E-01	FAIL ABUN
NP-236	3.254E-02	7.932E-02	6.982E-02	4.047E-02	NOT IDENT.
NP-239	-5.299E-02	1.730E-01	1.503E-01	8.828E-02	FAIL ABUN
AM-241	-1.898E-02	6.668E-02	5.402E-02	3.402E-02	NOT IDENT.
CM-243	2.401E-02	8.519E-02	7.651E-02	4.347E-02	FAIL ABUN
AM-246	-5.880E-02	1.687E-01	1.350E-01	8.606E-02	NOT IDENT.
CM-247	-4.401E-03	4.139E-02	3.555E-02	2.112E-02	NOT IDENT.
CF-249	2.716E-02	4.108E-02	3.730E-02	2.096E-02	NOT IDENT.
CF-251	-2.252E-02	1.304E-01	1.109E-01	6.655E-02	NOT IDENT.

\*\*\*\*\*  
 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON , SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
--------	------------

46.50	229.7010
46.50	229.7010
46.50	229.7010
48.70	283.9889
49.72	288.6156
51.35	281.6107
52.39	242.9846
52.97	270.5151
53.15	270.6498
53.44	276.8118
54.07	281.5456
56.28	325.1631
56.28	325.1651
57.37	0.0000
57.53	298.7731
57.53	298.7749
57.60	298.8280
57.98	283.6550
57.98	283.6550
59.32	346.7508
59.32	346.7508
59.40	346.8223
59.54	346.9481
59.72	347.1086
60.01	365.5133
61.10	367.8307
61.14	367.8674
61.30	348.5102
63.00	356.0938
63.29	356.3496
63.29	356.3496
63.58	356.6055
64.28	387.7886
65.12	368.8934
65.20	368.9647
65.20	368.9647
66.05	346.0403
66.72	363.7282
66.83	396.7802
66.91	396.8560
67.20	391.8541
67.20	391.8541
67.75	365.9421
67.85	369.9951
68.90	404.8211
68.90	404.8211
69.30	385.8427
69.67	362.2907
70.82	388.5343
70.82	388.5343
70.83	388.5432
72.80	368.9062
72.87	368.9630
72.87	368.9630
74.67	370.4539
74.81	370.5676
74.81	370.5676
74.81	370.5676
74.81	370.5676
74.81	370.5676
74.81	370.5676
74.97	370.7002
75.28	370.9529
75.70	371.2982
77.11	372.4438
77.11	372.4438

77.11	372.4438
77.11	372.4438
77.11	372.4438
77.11	372.4438
77.11	372.4438
78.38	373.4671
79.62	366.3185
79.80	366.4586
79.80	366.4586
80.11	342.2530
80.18	342.3049
80.30	342.3914
80.30	342.3914
80.57	367.0560
81.00	367.3897
81.07	367.4432
81.07	367.4432
81.07	367.4432
81.07	367.4432
82.60	368.6195
83.37	306.3030
83.78	306.5645
83.78	306.5645
83.78	306.5645
83.78	306.5645
84.21	306.8345
84.90	307.2668
85.43	307.5984
86.29	308.1350
86.50	308.2649
86.54	308.2888
86.59	308.3213
86.72	308.4016
86.79	308.4426
86.94	308.5366
87.30	308.7605
87.30	308.7605
87.30	308.7605
87.30	308.7605
87.30	308.7605
87.30	308.7605
87.57	308.9263
87.88	309.1177
88.03	309.2100
88.36	309.4116
88.47	309.4800
89.95	310.3840
91.11	311.0864
92.29	311.7974
92.38	311.8521
92.38	311.8521
93.35	312.4331
94.00	312.8193
94.67	234.9106
94.67	234.9131
94.90	235.0157
94.90	235.0157
94.90	235.0157
94.90	235.0157
95.87	255.0655
95.87	255.0655
96.73	275.1300
97.43	267.0541
98.44	232.0668
98.44	232.0668
98.88	235.8257
99.55	229.5306
99.55	229.5306
99.86	242.8382
100.00	242.8999
100.10	257.0706
103.18	269.8634
103.76	245.4973
105.00	238.4377
105.31	238.5680
108.00	268.3383
109.28	219.1648

111.00	214.0497
111.00	214.0497
111.76	206.6366
112.95	235.9418
115.19	230.0577
116.30	207.2374
117.00	226.8660
117.00	226.8660
117.66	239.7285
121.11	218.6190
121.62	223.6817
121.78	223.7388
122.06	211.1309
122.32	211.2177
122.32	211.2177
122.32	211.2177
122.32	211.2177
123.07	215.3853
127.23	201.0231
129.76	241.8686
131.20	234.9628
133.02	202.8005
133.54	208.9276
135.34	229.4385
136.00	232.6587
136.25	232.7440
136.48	225.8276
140.51	253.2894
140.51	0.0000
142.18	241.8091
142.65	219.7896
143.76	225.1868
144.24	229.3807
144.24	229.3807
144.24	229.3807
144.24	229.3807
145.22	217.5567
145.44	247.9882
147.16	231.3375
152.43	227.9135
152.70	229.0199
153.22	206.6727
154.21	214.1217
154.21	214.1217
154.21	214.1217
154.21	214.1217
155.03	216.4090
156.02	246.4795
158.56	215.3697
159.00	0.0000
159.00	194.8736
160.31	196.2429
161.27	223.3762
162.32	181.2253
162.64	188.5521
163.35	189.7631
163.89	200.2721
165.85	208.0607
167.43	161.5719
171.28	200.0697
171.86	165.6216
172.10	161.4772
176.55	203.4879
176.60	203.5017
181.06	211.4959
184.41	210.7496
185.71	176.9610
186.00	177.0217
190.27	200.9506
192.34	150.4034
193.63	171.0693
197.04	177.1345
198.01	162.1918
198.60	166.6265
200.40	174.5542
201.83	169.4031
202.84	166.9844
205.31	170.0561

208.36	177.1859
208.81	177.2732
209.75	177.4545
209.75	177.4545
210.97	177.6885
215.65	166.4527
216.55	163.3022
218.09	179.0398
222.10	150.9373
223.80	180.1077
226.40	141.5740
227.00	127.1599
227.08	131.6325
227.20	139.4590
228.16	136.2448
228.18	136.2472
228.18	136.2472
231.56	0.0000
235.69	175.5381
236.00	175.5936
236.00	175.5936
238.63	211.5993
238.63	211.5993
238.63	211.5993
238.63	211.5993
239.00	257.3976
240.98	257.8986
241.98	149.4547
241.98	149.4547
241.98	149.4547
244.69	134.5240
245.39	110.7587
247.94	100.2121
248.90	107.1432
249.79	119.7827
252.40	122.3669
252.85	138.4366
252.85	138.4366
254.15	0.0000
256.20	130.8384
256.20	130.8384
260.50	123.2964
260.90	136.0222
262.80	115.4744
264.65	107.5729
268.24	120.6901
268.79	120.7494
269.46	120.8213
269.46	120.8213
269.46	120.8213
269.46	120.8213
271.23	109.9597
273.65	136.4357
276.40	137.6457
277.35	130.7410
277.60	129.0153
277.60	129.0153
278.00	135.2059
278.60	127.3706
279.20	141.5014
279.53	141.5408
280.46	146.9353
281.68	118.0270
283.67	123.5233
284.30	132.4196
285.00	130.7330
285.90	108.7342
286.10	99.9113
286.10	99.9113
287.40	100.0233
288.45	0.0000
290.67	143.4417
290.80	143.4565
291.72	110.8758
293.26	0.0000
293.70	112.4863
295.21	108.3520
295.21	108.3520

295.21	108.3520
295.96	108.4206
296.50	108.4688
297.23	157.0911
298.57	157.2683
299.80	105.9053
299.80	105.9053
300.09	108.7954
300.09	108.7954
300.09	108.7954
300.09	108.7954
300.12	108.7973
301.29	107.4701
302.84	109.0422
303.76	119.1767
303.91	119.1909
304.40	113.4931
304.40	113.4931
304.84	107.7850
306.84	106.1633
308.46	95.4915
311.98	122.8682
316.51	116.9692
318.01	116.2012
319.02	107.2094
319.41	95.4270
320.08	81.8372
323.87	86.0959
323.87	86.0959
323.87	86.0959
323.87	86.0959
325.23	93.4922
328.77	92.2852
333.44	93.1074
334.20	88.2583
334.20	88.2583
334.30	88.2656
338.28	109.1916
338.28	109.1916
338.28	109.1916
338.28	109.1916
338.32	109.1952
338.32	109.1952
338.32	109.1952
340.50	96.0734
340.57	96.0781
344.27	105.8751
345.85	78.6525
350.59	0.0000
351.07	97.7662
351.92	97.8271
351.92	97.8271
351.92	97.8271
355.39	0.0000
356.01	109.1471
364.48	95.9036
366.43	87.5636
367.43	84.7993
367.94	0.0000
369.80	85.8860
374.96	79.5690
383.85	89.5938
387.95	74.5532
388.63	82.2378
391.69	82.4097
391.69	82.4097
392.90	91.1093
398.62	96.2738
400.65	88.6926
401.10	91.6123
401.81	107.0926
402.60	96.5302
404.84	94.7401
410.95	89.2977
411.60	100.0170
413.65	78.7604
414.70	73.9485
415.30	78.8445

415.76	80.8153
417.63	0.0000
418.52	94.6156
423.70	87.1015
427.08	71.5965
427.89	75.5584
432.53	78.7329
433.93	80.7726
439.47	77.0990
439.56	77.1026
439.89	79.0967
443.98	74.3408
444.90	56.5312
445.03	56.5356
445.03	56.5356
445.03	56.5356
453.90	69.8067
463.38	67.1963
468.07	81.4647
473.00	75.6500
475.06	67.6615
475.35	58.5832
476.78	66.7191
477.59	67.7616
477.96	59.6833
482.03	63.8806
484.57	51.7891
487.03	76.2680
490.36	0.0000
492.35	71.4003
497.08	74.6597
507.63	0.0000
510.53	0.0000
510.84	63.8992
511.00	63.9049
511.85	63.9351
511.85	63.9351
513.99	64.0099
513.99	64.0099
520.41	72.5250
520.65	72.5336
527.90	56.1753
528.96	0.0000
529.64	55.1868
529.87	0.0000
531.02	73.9836
537.32	69.0051
543.00	52.4338
546.56	0.0000
549.76	36.8340
552.65	55.8612
555.20	48.5479
563.23	59.3462
563.90	65.7274
568.70	76.5154
569.32	71.2243
569.50	69.1042
569.67	66.9836
573.80	69.2549
574.00	67.1298
574.64	79.1825
578.91	56.4013
579.30	0.0000
583.14	63.3715
585.48	63.4456
591.81	54.8287
592.07	53.7598
593.00	53.7842
595.88	50.6288
600.56	58.3028
602.52	0.0000
602.71	77.8184
602.71	77.8184
603.60	76.1213
604.41	81.3435
604.70	81.3550
609.31	61.8028



609.31	61.8028
609.31	61.8028
609.31	61.8028
610.33	76.3684
612.46	66.0231
614.37	76.5166
618.01	56.6163
621.84	62.1733
621.84	62.1733
631.29	58.0674
633.02	55.9213
633.10	55.9244
634.78	65.8447
635.90	57.0956
636.97	58.2227
645.85	55.1529
646.12	58.4685
656.30	49.6521
657.75	51.4594
657.90	0.0000
661.65	61.1046
661.65	61.1046
664.57	0.0000
666.33	58.7845
666.33	58.7845
675.00	51.4117
677.61	43.6382
685.20	46.0299
692.80	58.5730
695.00	55.9241
696.49	69.4974
696.49	69.4974
697.00	75.8338
697.49	78.5570
698.33	75.8769
698.50	67.7527
699.00	67.7655
702.63	58.8221
706.10	69.7869
706.58	0.0000
706.67	75.2431
709.31	49.9149
711.68	66.3184
713.82	58.1953
717.42	56.4630
720.50	53.1921
721.93	0.0000
722.20	45.6262
722.78	57.8071
722.78	57.8071
722.89	57.8102
722.95	59.3315
723.30	59.3411
724.18	54.7969
727.18	53.0369
733.00	42.7770
735.90	58.7359
739.58	64.3398
742.81	48.7792
744.21	48.8076
747.13	59.0078
751.79	48.9590
752.31	47.1215
753.82	44.3766
755.35	44.4035
756.15	39.7918
756.87	40.7290
763.93	64.0524
765.79	58.5257
766.42	65.0457
766.84	62.2678
776.49	49.4468
778.00	47.6095
778.57	43.8846
778.89	42.9565
783.80	44.9109
785.46	45.8765
792.07	55.3816

795.84	43.2429
796.30	47.9520
798.80	73.4087
801.93	51.8257
805.60	44.3494
810.29	46.3203
810.76	43.4922
815.85	35.9979
817.79	47.4011
818.51	45.5180
819.60	43.6394
826.30	57.0645
828.27	0.0000
831.60	59.0847
831.96	61.9515
834.83	53.4311
836.80	0.0000
846.75	40.2507
848.13	47.9419
856.28	0.0000
856.80	63.4863
860.37	31.7843
867.32	36.6928
867.82	33.8020
871.10	38.6768
873.19	34.8354
874.81	34.8557
875.33	0.0000
876.40	35.8447
879.36	29.0940
880.27	29.1035
880.51	28.1355
881.50	42.7034
883.24	50.4994
884.67	34.0071
889.25	49.6341
896.60	45.8606
898.02	48.8123
899.00	48.8293
903.28	47.6800
911.07	50.9971
911.07	50.9971
911.07	50.9971
919.63	46.2301
920.93	46.2507
925.00	31.5344
925.24	31.5367
926.50	39.4385
935.52	40.5496
937.48	40.5766
944.10	42.6515
946.00	35.7311
949.00	38.7477
962.29	49.8975
964.01	41.6056
966.15	74.9432
968.20	84.9917
969.11	51.0112
969.11	51.0112
969.11	51.0112
977.42	37.8894
980.50	35.1393
983.50	46.2280
989.30	36.2470
996.32	55.5035
1001.03	36.3850
1001.68	38.4147
1004.76	57.6791
1021.30	0.0000
1024.50	0.0000
1034.80	33.7122
1036.00	29.6372
1037.82	33.7444
1038.57	37.8437
1038.76	0.0000
1045.16	34.8467
1046.59	45.1150
1048.07	48.2140

1050.47	39.0112
1050.47	39.0112
1062.04	43.2715
1063.62	59.7842
1076.63	38.2899
1077.35	43.4745
1078.86	37.2797
1085.78	37.3588
1099.22	41.6758
1112.02	29.6338
1112.84	24.4100
1115.52	36.6440
1120.29	35.6469
1120.29	35.6469
1120.29	35.6469
1120.29	35.6469
1120.51	35.6485
1121.28	29.7140
1124.00	0.0000
1129.67	37.8475
1131.51	0.0000
1147.95	0.0000
1167.94	55.2729
1173.22	36.1947
1175.09	38.3432
1177.93	41.5727
1189.05	44.9101
1204.90	42.9590
1205.75	0.0000
1213.00	54.8972
1221.42	44.2332
1230.97	53.0028
1235.34	59.5627
1236.41	0.0000
1238.25	48.7727
1246.25	40.1887
1260.41	0.0000
1271.85	34.9953
1274.45	30.6414
1274.54	28.4540
1291.56	32.9780
1298.22	0.0000
1312.09	33.1538
1325.50	33.2681
1325.50	33.2681
1332.49	21.2920
1333.61	20.3726
1360.21	20.5095
1362.66	0.0000
1365.15	20.5346
1368.21	20.5498
1368.53	0.0000
1376.25	13.1034
1384.27	11.2539
1394.10	9.4006
1395.20	15.0456
1407.95	16.0350
1434.06	16.1367
1436.60	14.2468
1457.56	0.0000
1460.81	19.6507
1489.15	13.4622
1509.49	12.5588
1596.49	19.7005
1620.62	8.9117
1678.03	0.0000
1691.02	10.0505
1691.02	10.0505
1706.46	0.0000
1750.46	0.0000
1764.49	6.9958
1764.49	6.9958
1764.49	6.9958
1764.49	6.9958
1770.23	28.5993
1771.40	12.2598
1791.20	0.0000
1808.65	0.0000

1836.01

8.2777

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G245691014

Total Uranium Activity	1.0734E+01	ug/g
Total Uranium Counting Unc.	3.9929E+00	ug/g
Total Uranium Tpu	2.0372E-06	ug/g
Total Uranium Mda	1.5428E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*   BATCH ID      : 947037                        SAMPLE ID   : G245691014
*   ANALYST       : MJH1                          DETECTOR    : GAM17
*   SAMPLE DATE   : 25-JAN-2010 12:00:00.00      COUNT TIME   : 0 02:00:00.00
*   ANALYSIS DATE : 9-FEB-2010 17:27:05.19      SAMPLE ALQT  : 130.090 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.591E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.167E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.117E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.510E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 19:29:13.13

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028548.CNF;1
Sample date        : 1-FEB-2010 00:00:00. Acquisition date : 9-FEB-2010 17:28:19.
Sample ID          : G1202028548      Sample quantity   : 1.48710E+02 GRAM
Detector name      : GAM21            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:24.91  0.3%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MJH1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 947037            Detector SN#       :
Matrix Spike ID    :                   LCS ID            : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	186.47*	17	51	1.42	372.79	367	11	2.30E-03	95.2	
2	0	239.55*	12	57	0.90	478.91	473	12	1.70E-03	134.6	
3	0	353.08*	6	20	1.27	705.91	699	8	8.05E-04	159.5	
4	0	511.15*	5	23	2.96	1022.00	1016	14	6.49E-04	335.9	
5	0	609.72*	12	6	1.15	1219.13	1214	12	1.70E-03	62.6	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 9-FEB-2010 19:29:15

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028548.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 1-FEB-2010 00:00:00   Acquisition date : 9-FEB-2010 17:28:19
Sample ID        : G1202028548           Sample quantity  : 148.71 GRAM
Sample type      : SOLID                 Sample geometry   :
Detector name    : GAMMA21               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:24.91   0.3%
Peak Width (FWHM): 3.00                  Confidence level  : 5.00 %
Energy tolerance : 1.50 keV              Half life ratio   : 8.00
Errors propagated: Yes                    Systematic Error  : 0.00 %
Efficiency type  : Empirical              Efficiencies at   : Peak Energy
Abundance limit  : 75.00                 WTM error limit   : 3.00
  
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	+	240.98	*	1.786E-01	4.811E-01	3.079E-01	2.736E-02	0.580
ANH-511	+	511.00	*	5.797E-03	3.895E-02	2.443E-02	2.342E-03	0.237

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-6.779E-02	1.144E-01	1.672E-01	1.638E-02	-0.405
NA-22		1274.54	*	-2.060E-02	2.299E-02	2.540E-02	2.083E-03	-0.811
NA-24		1368.53	*	6.658E-05	2.299E-02	Half-Life too short		
AL-26		1129.67		8.788E-02	8.018E-01	1.347E+00	1.134E-01	0.065
		1808.65	*	-4.097E-04	1.776E-02	2.852E-02	2.360E-03	-0.014
K-40		1460.81	*	2.684E-01	2.610E-01	5.291E-01	4.517E-02	0.507
TI-44		67.85		2.736E-04	4.620E-03	7.677E-03	6.226E-04	0.036
		78.38	*	4.487E-03	4.775E-03	8.572E-03	7.465E-04	0.523
SC-46		889.25	*	1.244E-03	2.019E-02	3.417E-02	3.039E-03	0.036
		1120.51		1.134E-02	2.046E-02	3.842E-02	3.246E-03	0.295
V-48		944.10		1.143E-02	3.601E-01	6.023E-01	5.280E-02	0.019
		983.50	*	-1.165E-02	2.967E-02	4.438E-02	3.882E-03	-0.263
		1312.09		3.561E-02	4.149E-02	7.952E-02	6.479E-03	0.448
CR-51		320.08	*	1.438E-02	1.307E-01	2.151E-01	2.000E-02	0.067
MN-52		744.21		-3.442E-02	6.670E-02	9.554E-02	1.015E-02	-0.360
		848.13		-9.750E-01	1.910E+00	2.893E+00	2.752E-01	-0.337
		935.52		2.295E-02	5.788E-02	1.048E-01	9.185E-03	0.219
		1246.25		-1.171E+00	1.851E+00	2.474E+00	2.033E-01	-0.473
		1333.61		4.527E-01	1.685E+00	2.978E+00	2.417E-01	0.152
		1434.06	*	-5.056E-02	6.428E-02	7.725E-02	6.379E-03	-0.654
MN-54		834.83	*	2.762E-03	1.806E-02	3.131E-02	3.035E-03	0.088
CO-56		846.75	*	3.912E-03	2.223E-02	3.849E-02	3.668E-03	0.102
		977.42		7.635E-01	1.439E+00	2.671E+00	2.338E-01	0.286
		1037.82		1.909E-02	1.690E-01	2.851E-01	2.603E-02	0.067
		1175.09		-5.505E-01	1.086E+00	1.534E+00	1.264E-01	-0.359
		1238.25		8.268E-03	3.741E-02	6.399E-02	5.429E-03	0.129
		1360.21		2.470E-01	5.258E-01	9.926E-01	8.101E-02	0.249



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	1771.40			1.162E-01	1.455E-01	3.060E-01	2.543E-02	0.380
	122.06	*		1.219E-06	5.800E-03	9.160E-03	1.052E-03	0.000
	136.48			1.834E-02	5.735E-02	9.395E-02	1.041E-02	0.195
CO-58	810.76	*		3.642E-03	1.801E-02	3.164E-02	3.167E-03	0.115
FE-59	142.65			7.473E-01	7.525E-01	1.320E+00	1.333E-01	0.566
	192.34			-4.593E-04	2.547E-01	4.300E-01	5.732E-02	-0.001
	1099.22	*		-6.623E-04	3.621E-02	5.623E-02	5.189E-03	-0.012
	1291.56			-2.262E-03	4.234E-02	6.650E-02	6.248E-03	-0.034
	1173.22			1.069E-02	2.171E-02	3.973E-02	3.274E-03	0.269
CO-60	1332.49	*		2.136E-02	2.539E-02	5.017E-02	4.072E-03	0.426
ZN-65	1115.52	*		-3.414E-02	3.875E-02	4.400E-02	3.730E-03	-0.776
GE-68	1077.35	*		7.480E-02	5.891E-01	9.989E-01	8.574E-02	0.075
AS-73	53.44	*		-6.506E-03	5.126E-02	8.439E-02	6.834E-03	-0.077
AS-74	595.88	*		-1.749E-02	3.927E-02	5.923E-02	6.216E-03	-0.295
	634.78			5.692E-02	1.290E-01	2.304E-01	2.497E-02	0.247
SE-75	66.05			4.091E-02	4.299E-01	7.194E-01	7.160E-02	0.057
	96.73			1.184E-01	1.441E-01	2.570E-01	3.709E-02	0.461
	121.11			-3.474E-02	3.565E-02	4.724E-02	6.370E-03	-0.735
	136.00			7.131E-03	1.036E-02	1.782E-02	1.894E-03	0.400
	198.60			6.720E-01	5.857E-01	1.099E+00	1.043E-01	0.612
	264.65	*		-8.928E-03	1.445E-02	2.135E-02	1.917E-03	-0.418
	279.53			5.000E-03	3.985E-02	6.643E-02	6.130E-03	0.075
	303.91			-4.536E-01	8.369E-01	1.247E+00	1.458E-01	-0.364
	400.65			-6.243E-02	1.128E-01	1.594E-01	1.706E-02	-0.392
	87.88			2.764E+00	4.364E+00	7.652E+00	7.192E-01	0.361
	200.40			-7.109E+00	8.907E+00	1.361E+01	1.166E+00	-0.522
	239.00	+		3.941E-01	1.062E+00	1.009E+00	8.960E-02	0.390
	249.79			1.396E-01	4.044E+00	6.716E+00	5.989E-01	0.021
	281.68			-7.280E-01	5.230E+00	8.382E+00	7.477E-01	-0.087
	297.23			-7.273E-01	3.311E+00	4.598E+00	4.103E-01	-0.158
BR-77	303.76			-5.635E+00	1.155E+01	1.739E+01	1.550E+00	-0.324
	439.47			-1.102E+01	9.060E+00	1.153E+01	9.976E-01	-0.956
	484.57			7.983E+00	1.668E+01	3.008E+01	2.785E+00	0.265
	520.65	*		-9.873E-02	7.502E-01	1.217E+00	1.181E-01	-0.081
	574.64			7.678E-01	1.662E+01	2.763E+01	2.843E+00	0.028
	578.91			-8.533E+00	6.742E+00	8.050E+00	8.318E-01	-1.060
	585.48			3.173E+00	1.338E+01	2.290E+01	2.381E+00	0.139
	755.35			-4.267E+00	1.280E+01	1.877E+01	1.978E+00	-0.227
	817.79			-5.713E+00	1.147E+01	1.730E+01	1.714E+00	-0.330
	698.33			-1.629E+00	1.695E+01	2.693E+01	2.939E+00	-0.060
	776.49	*		-5.776E-02	1.705E-01	2.502E-01	2.590E-02	-0.231
	1395.20			-6.538E-01	6.226E+00	1.011E+01	8.305E-01	-0.065
RB-83	520.41	*		3.032E-03	2.958E-02	5.017E-02	4.866E-03	0.060
	529.64			-7.795E-03	4.687E-02	7.539E-02	7.393E-03	-0.103
	552.65			-1.703E-02	1.006E-01	1.615E-01	1.625E-02	-0.105
RB-84	881.50	*		9.152E-03	2.968E-02	5.315E-02	4.793E-03	0.172
KR-85	513.99	*		4.082E+00	4.475E+00	7.615E+00	7.327E-01	0.536
SR-85	513.99	*		1.957E-02	2.145E-02	3.651E-02	3.513E-03	0.536
RB-86	1076.63	*		4.921E-02	2.783E-01	4.797E-01	4.118E-02	0.103

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-88	898.02			-1.271E-02	2.041E-02	2.873E-02	2.525E-03	-0.442
	1836.01	*		-1.062E-02	2.738E-02	3.768E-02	3.111E-03	-0.282
ZR-88	392.90	*		-8.056E-03	1.218E-02	1.662E-02	1.324E-03	-0.485
Y-91	1204.90	*		5.753E+00	8.098E+00	1.550E+01	1.277E+00	0.371
NB-94	702.63	*		-5.301E-03	2.203E-02	3.414E-02	3.718E-03	-0.155
	871.10			1.533E-03	1.442E-02	2.483E-02	2.279E-03	0.062
NB-95	765.79	*		-7.859E-04	1.520E-02	2.398E-02	2.506E-03	-0.033
NB-95M	235.69	*		1.826E-03	3.998E-02	6.003E-02	6.049E-03	0.030
ZR-95	724.18			-1.482E-02	4.917E-02	7.437E-02	8.458E-03	-0.199
	756.15	*		-1.511E-02	3.207E-02	4.485E-02	5.050E-03	-0.337
NB-97	657.90	*		7.199E-05	3.207E-02	Half-Life	too short	
	1024.50			4.241E-03	3.207E-02	Half-Life	too short	
ZR-97	254.15			-4.441E-03	3.207E-02	Half-Life	too short	
	355.39			-2.701E-04	3.207E-02	Half-Life	too short	
	507.63	*		5.870E-04	3.207E-02	Half-Life	too short	
	602.52			-2.222E-03	3.207E-02	Half-Life	too short	
	1021.30			9.174E-03	3.207E-02	Half-Life	too short	
	1147.95			8.184E-04	3.207E-02	Half-Life	too short	
	1362.66			-3.224E-03	3.207E-02	Half-Life	too short	
	1750.46			4.877E-03	3.207E-02	Half-Life	too short	
MO-99	140.51			-2.051E-01	1.830E+00	2.594E+00	7.328E-01	-0.079
	181.06			-5.985E-01	1.076E+00	1.476E+00	2.680E-01	-0.405
	366.43			-4.118E+00	7.632E+00	1.100E+01	9.224E-01	-0.374
	739.58	*		-5.624E-01	1.237E+00	1.767E+00	2.903E-01	-0.318
	778.00			2.184E+00	3.222E+00	6.002E+00	6.205E-01	0.364
TC-99M	140.51	*		-3.208E+01	3.222E+00	Half-Life	too short	
RH-101	127.23			-9.130E-04	8.871E-03	1.376E-02	1.536E-03	-0.066
	198.01	*		1.527E-02	1.153E-02	2.186E-02	1.867E-03	0.698
	325.23			1.130E-02	8.768E-02	1.446E-01	1.275E-02	0.078
RH-102	418.52			-3.287E-02	9.659E-02	1.524E-01	1.273E-02	-0.216
	475.06	*		5.503E-03	1.148E-02	2.096E-02	1.915E-03	0.263
	631.29			1.018E-02	2.364E-02	4.239E-02	4.582E-03	0.240
	697.49			7.521E-03	4.459E-02	7.437E-02	8.117E-03	0.101
	766.84			-3.913E-02	4.486E-02	5.158E-02	5.385E-03	-0.759
	1046.59			-2.264E-02	4.999E-02	6.997E-02	6.057E-03	-0.324
	1112.84			1.276E-02	8.673E-02	1.485E-01	1.259E-02	0.086
RU-103	497.08	*		1.028E-02	1.888E-02	3.404E-02	4.991E-03	0.302
	610.33	+		3.795E-01	4.801E-01	7.368E-01	1.312E-01	0.515
RH-106	511.85	+		2.861E-02	1.922E-01	2.810E-01	2.697E-02	0.102
	621.84	*		-1.146E-01	1.969E-01	2.675E-01	3.960E-02	-0.429
	1050.47			2.536E-01	8.336E-01	1.512E+00	1.308E-01	0.168
RU-106	511.85	+		2.861E-02	1.922E-01	2.810E-01	2.697E-02	0.102
	621.84	*		-1.146E-01	1.966E-01	2.675E-01	2.869E-02	-0.429
	1050.47			2.536E-01	8.336E-01	1.512E+00	1.308E-01	0.168
AG-108M	433.93	*		-4.130E-03	1.492E-02	2.413E-02	2.152E-03	-0.171
	614.37			-2.006E-02	2.445E-02	2.705E-02	2.959E-03	-0.742
	722.95			-1.461E-02	2.332E-02	3.245E-02	3.585E-03	-0.450
CD-109	88.03	*		7.408E-02	1.280E-01	2.231E-01	2.099E-02	0.332
AG-110M	657.75	*		1.342E-02	2.015E-02	3.643E-02	4.086E-03	0.368

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	677.61			-1.440E-01	1.865E-01	2.559E-01	2.863E-02	-0.563
	706.67			-2.122E-02	1.228E-01	1.919E-01	2.123E-02	-0.111
	763.93			3.079E-02	6.173E-02	1.130E-01	1.205E-02	0.273
	884.67			-1.329E-02	2.265E-02	3.169E-02	2.926E-03	-0.419
	937.48			-6.843E-03	5.458E-02	8.791E-02	7.976E-03	-0.078
	1384.27			4.737E-02	9.918E-02	1.854E-01	1.567E-02	0.255
IN-111	171.28			2.003E-02	5.834E-02	1.034E-01	8.479E-03	0.194
	245.39	*		6.324E-02	7.782E-02	1.419E-01	1.264E-02	0.446
IN-113M	391.69	*		-1.229E-02	1.838E-02	2.516E-02	2.072E-03	-0.489
SN-113	391.69	*		-1.229E-02	1.838E-02	2.516E-02	2.072E-03	-0.489
IN-114M	190.27	*		1.984E-02	4.888E-02	7.962E-02	6.727E-03	0.249
CD-115	260.90			3.418E-03	6.136E+00	1.011E+01	9.036E-01	0.000
	492.35			-1.176E+00	2.449E+00	3.754E+00	3.513E-01	-0.313
	527.90	*		-2.020E-01	7.014E-01	1.101E+00	1.078E-01	-0.183
SN-117M	156.02			5.694E-01	4.651E-01	8.928E-01	8.058E-02	0.638
	158.56	*		-6.713E-03	1.116E-02	1.774E-02	1.562E-03	-0.378
SB-122	563.90	*		-1.960E-02	1.498E-01	2.394E-01	2.437E-02	-0.082
	692.80			6.034E-02	4.652E+00	7.551E+00	8.259E-01	0.008
I-123	159.00	*		-4.441E-04	4.652E+00	Half-Life	too short	
	528.96			1.514E-02	4.652E+00	Half-Life	too short	
TE-123M	159.00	*		-6.928E-03	7.868E-03	1.205E-02	1.062E-03	-0.575
I-124	602.71	*		-3.590E-02	1.188E-01	1.838E-01	1.941E-02	-0.195
	722.78			-5.025E-01	8.490E-01	1.194E+00	1.287E-01	-0.421
	1325.50			4.657E+00	6.204E+00	1.245E+01	1.012E+00	0.374
	1376.25			1.537E+00	6.207E+00	1.103E+01	9.028E-01	0.139
	1509.49			-2.091E+00	2.929E+00	3.405E+00	2.834E-01	-0.614
	1691.02			3.429E-01	4.857E-01	1.127E+00	9.417E-02	0.304
SB-124	602.71			-5.593E-03	1.850E-02	2.864E-02	3.024E-03	-0.195
	645.85			-7.967E-02	2.141E-01	3.172E-01	3.596E-02	-0.251
	709.31			3.566E-03	1.560E+00	2.521E+00	2.737E-01	0.001
	713.82			-3.548E-01	8.064E-01	1.169E+00	1.602E-01	-0.304
	722.78			-1.135E-01	1.917E-01	2.696E-01	2.946E-02	-0.421
	968.20			3.375E-01	1.083E+00	1.925E+00	1.686E-01	0.175
	1045.16			1.044E-01	9.885E-01	1.676E+00	1.452E-01	0.062
	1325.50			1.123E+00	1.496E+00	3.003E+00	2.441E-01	0.374
	1368.21			4.748E-01	9.405E-01	1.784E+00	2.354E-01	0.266
	1436.60			7.024E-01	1.614E+00	3.112E+00	2.571E-01	0.226
	1691.02	*		1.826E-02	2.587E-02	6.004E-02	5.227E-03	0.304
SB-125	427.89	*		1.656E-02	3.749E-02	6.796E-02	5.882E-03	0.244
	463.38			8.512E-02	1.205E-01	2.245E-01	2.162E-02	0.379
	600.56			4.074E-02	9.539E-02	1.677E-01	1.856E-02	0.243
	635.90			2.297E-02	1.425E-01	2.400E-01	2.738E-02	0.096
TE-125M	109.28	*		6.730E-01	1.905E+00	3.195E+00	3.837E-01	0.211
I-126	388.63			2.515E-02	5.786E-02	9.965E-02	7.980E-03	0.252
	666.33	*		-3.634E-02	6.410E-02	9.060E-02	9.995E-03	-0.401
	753.82			-5.672E-02	5.432E-01	8.504E-01	8.974E-02	-0.067
SB-126	223.80			2.601E-01	1.024E+00	1.758E+00	1.544E-01	0.148
	278.60			-2.997E-01	6.960E-01	1.072E+00	9.564E-02	-0.279
	296.50			1.648E-01	3.834E-01	5.935E-01	5.297E-02	0.278

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		414.70		-6.351E-03	2.007E-02	3.217E-02	2.668E-03	-0.197
		415.30		-1.872E+00	1.682E+00	2.235E+00	1.856E-01	-0.837
		555.20		8.263E-01	1.634E+00	2.904E+00	2.930E-01	0.284
		573.80		-1.400E-01	4.041E-01	6.263E-01	6.439E-02	-0.224
		593.00		-6.918E-02	3.198E-01	5.027E-01	5.263E-02	-0.138
		656.30		8.505E-01	1.368E+00	2.460E+00	2.707E-01	0.346
		666.33		-1.496E-02	2.640E-02	3.731E-02	4.116E-03	-0.401
		675.00		3.121E-01	7.410E-01	1.302E+00	1.433E-01	0.240
		695.00		4.346E-03	3.165E-02	5.252E-02	5.739E-03	0.083
		697.00		1.247E-03	1.067E-01	1.729E-01	1.888E-02	0.007
		720.50	*	1.952E-02	5.693E-02	9.792E-02	1.057E-02	0.199
		856.80		-1.721E-01	1.875E-01	2.516E-01	2.363E-02	-0.684
		989.30		1.095E-01	3.937E-01	7.006E-01	6.126E-02	0.156
		1034.80		3.244E+00	3.482E+00	6.855E+00	5.950E-01	0.473
		1213.00		-3.885E-01	1.583E+00	2.386E+00	1.965E-01	-0.163
SN-126		64.28		-2.251E-02	4.500E-02	6.882E-02	1.020E-02	-0.327
		86.94		7.563E-03	5.548E-02	9.138E-02	3.793E-02	0.083
		87.57	*	5.823E-03	1.318E-02	2.257E-02	2.116E-03	0.258
SB-127		61.10		-1.349E+00	1.530E+00	2.209E+00	1.955E-01	-0.610
		252.40		1.507E-01	4.750E-01	8.134E-01	3.392E-01	0.185
		290.80		-1.362E+00	2.653E+00	3.993E+00	3.923E-01	-0.341
		411.60		1.277E+00	1.709E+00	3.049E+00	4.392E-01	0.419
		444.90		2.386E-01	1.297E+00	2.257E+00	2.528E-01	0.106
		473.00		-2.203E-02	2.652E-01	4.172E-01	4.950E-02	-0.053
		543.00		-2.643E+00	2.278E+00	2.656E+00	3.743E-01	-0.995
		603.60		-6.899E-01	2.125E+00	2.993E+00	3.791E-01	-0.230
		685.20	*	-1.007E-01	2.122E-01	3.041E-01	3.626E-02	-0.331
		698.50		-3.574E-01	2.839E+00	4.484E+00	7.251E-01	-0.080
		722.20		-1.040E+00	5.300E+00	8.201E+00	9.459E-01	-0.127
		783.80		4.867E-02	6.240E-01	1.015E+00	1.252E-01	0.048
XE-127		57.60		-2.319E-01	3.917E-01	5.959E-01	4.692E-02	-0.389
		145.22		-6.348E-03	2.045E-01	3.171E-01	3.141E-02	-0.020
		172.10		1.293E-02	2.897E-02	5.197E-02	4.267E-03	0.249
		202.84	*	-9.529E-05	1.406E-02	2.362E-02	2.030E-03	-0.004
		374.96		1.114E-02	6.199E-02	1.027E-01	8.476E-03	0.108
I-131		80.18		-3.203E-01	3.157E-01	4.181E-01	3.699E-02	-0.766
		284.30		-7.199E-02	3.194E-01	5.039E-01	4.699E-02	-0.143
		364.48	*	-1.088E-02	2.724E-02	4.014E-02	3.555E-03	-0.271
		636.97		1.820E-01	4.357E-01	7.719E-01	8.656E-02	0.236
		722.89		-1.393E+00	2.268E+00	3.169E+00	3.419E-01	-0.440
TE-132		49.72		2.863E-02	2.257E-01	3.853E-01	3.545E-02	0.074
		111.76		-1.242E+00	1.818E+00	2.577E+00	2.940E-01	-0.482
		116.30		2.290E-01	1.746E+00	2.822E+00	3.303E-01	0.081
		228.16	*	-9.235E-03	6.310E-02	1.032E-01	1.536E-02	-0.089
BA-133		53.15		1.914E-02	2.174E-01	3.679E-01	2.986E-02	0.052
		79.62		-1.067E-01	1.672E-01	2.440E-01	3.739E-02	-0.437
		81.00		-1.647E-02	1.288E-02	1.588E-02	2.545E-03	-1.037
		276.40		3.830E-02	1.521E-01	2.543E-01	3.720E-02	0.151
		302.84		2.019E-02	5.754E-02	9.821E-02	1.324E-02	0.206

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	+	356.01	*	1.027E-02	1.953E-02	3.114E-02	4.092E-03	0.330
		383.85		-5.236E-02	1.191E-01	1.715E-01	2.101E-02	-0.305
		510.53		3.561E-04	1.191E-01	Half-Life	too short	
		529.87	*	1.727E-07	1.191E-01	Half-Life	too short	
		706.58		-2.578E-04	1.191E-01	Half-Life	too short	
		856.28		-1.282E-03	1.191E-01	Half-Life	too short	
		875.33		2.477E-04	1.191E-01	Half-Life	too short	
CS-134		1236.41		-6.155E-04	1.191E-01	Half-Life	too short	
		1298.22		-3.824E-04	1.191E-01	Half-Life	too short	
		475.35		2.505E-01	7.553E-01	1.345E+00	1.230E-01	0.186
		563.23		-1.022E-01	1.369E-01	1.811E-01	1.855E-02	-0.564
		569.32		9.014E-02	1.081E-01	2.009E-01	2.076E-02	0.449
		604.70		2.522E-03	1.700E-02	2.548E-02	2.700E-03	0.099
		795.84	*	-1.538E-02	2.552E-02	3.471E-02	3.543E-03	-0.443
CS-135		801.93		2.355E-03	2.494E-01	4.133E-01	4.187E-02	0.006
		1038.57		-6.368E-01	2.245E+00	3.446E+00	2.989E-01	-0.185
		1167.94		-1.039E+00	1.388E+00	1.803E+00	1.490E-01	-0.576
		1365.15		-4.763E-01	7.489E-01	1.013E+00	8.689E-02	-0.470
		268.24	*	-1.162E-02	5.971E-02	9.551E-02	9.781E-03	-0.122
		288.45		3.070E+02	5.971E-02	Half-Life	too short	
		417.63		6.575E+02	5.971E-02	Half-Life	too short	
I-135		546.56		6.230E+02	5.971E-02	Half-Life	too short	
		836.80		4.020E+02	5.971E-02	Half-Life	too short	
		1038.76		-2.605E+02	5.971E-02	Half-Life	too short	
		1124.00		-1.627E+03	5.971E-02	Half-Life	too short	
		1131.51		2.034E+01	5.971E-02	Half-Life	too short	
		1260.41	*	1.756E+01	5.971E-02	Half-Life	too short	
		1457.56		6.227E+02	5.971E-02	Half-Life	too short	
CS-136		1678.03		-6.940E+02	5.971E-02	Half-Life	too short	
		1706.46		-1.575E+03	5.971E-02	Half-Life	too short	
		1791.20		-1.356E+03	5.971E-02	Half-Life	too short	
		66.91		-5.380E-03	5.143E-02	8.349E-02	1.263E-02	-0.064
		86.29		-4.073E-02	1.231E-01	1.903E-01	2.530E-02	-0.214
		153.22		-1.305E-01	1.272E-01	1.904E-01	1.945E-02	-0.685
		163.89		6.203E-03	2.336E-01	4.002E-01	3.754E-02	0.016
BA-137M		176.55		6.244E-02	7.103E-02	1.333E-01	1.171E-02	0.469
		273.65		-8.647E-02	1.167E-01	1.696E-01	1.607E-02	-0.510
		340.57		-1.459E-02	3.988E-02	6.062E-02	5.420E-03	-0.241
		818.51		-8.062E-03	2.721E-02	4.281E-02	4.238E-03	-0.188
		1048.07	*	-2.015E-02	3.228E-02	4.121E-02	3.714E-03	-0.489
		1235.34		1.716E-02	1.489E-01	2.499E-01	2.889E-02	0.069
		661.65	*	1.013E-02	1.795E-02	3.240E-02	3.578E-03	0.313
CS-137		661.65	*	1.071E-02	1.897E-02	3.424E-02	3.786E-03	0.313
CE-139		165.85	*	-7.753E-03	9.252E-03	1.434E-02	1.166E-03	-0.541
BA-140		162.64		1.439E-01	1.559E-01	2.914E-01	2.607E-02	0.494
LA-140		304.84		-2.601E-02	3.852E-01	6.200E-01	1.743E-01	-0.042
		423.70		-4.401E-01	4.946E-01	6.446E-01	2.086E-01	-0.683
		537.32	*	-3.385E-02	9.367E-02	1.430E-01	4.789E-02	-0.237
		328.77		-2.040E-02	8.139E-02	1.259E-01	1.167E-02	-0.162

---- Non-Identified Nuclides ----

	Line Nuclide	Energy Ided (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		432.53	-1.205E-01	6.401E-01	1.050E+00	9.422E-02	-0.115
		487.03	2.339E-02	5.136E-02	9.160E-02	8.964E-03	0.255
		751.79	1.951E-01	6.533E-01	1.117E+00	1.266E-01	0.175
		815.85	4.570E-02	1.132E-01	2.066E-01	2.232E-02	0.221
		867.82	1.841E-01	3.517E-01	6.796E-01	6.562E-02	0.271
		919.63	-3.805E-01	1.045E+00	1.587E+00	1.708E-01	-0.240
		925.24	1.486E-01	4.321E-01	7.724E-01	7.181E-02	0.192
		1596.49	* 1.254E-02	4.045E-02	7.283E-02	6.090E-03	0.172
CE-141		145.44	* -4.810E-03	1.786E-02	2.677E-02	2.684E-03	-0.180
CE-143		57.37	-2.016E+00	3.035E+00	4.552E+00	4.340E-01	-0.443
		231.56	-6.184E+00	3.685E+01	5.997E+01	1.903E+01	-0.103
		293.26	* 5.214E-01	1.965E+00	3.322E+00	7.211E-01	0.157
		350.59	5.413E+00	3.561E+01	5.306E+01	1.650E+01	0.102
		490.36	-2.375E+01	5.721E+01	8.819E+01	2.811E+01	-0.269
		664.57	5.032E-01	2.529E+01	4.128E+01	1.368E+01	0.012
		721.93	-1.458E+00	3.083E+01	4.923E+01	1.476E+01	-0.030
CE-144		80.11	-2.379E-01	2.500E-01	3.370E-01	2.974E-02	-0.706
		133.54	* -5.736E-02	5.468E-02	6.906E-02	1.163E-02	-0.831
PM-144		476.78	-1.091E-02	2.661E-02	4.090E-02	4.057E-03	-0.267
		618.01	6.315E-03	1.725E-02	3.005E-02	3.272E-03	0.210
		696.49	* -3.859E-03	1.930E-02	3.000E-02	3.277E-03	-0.129
		778.57	4.493E-01	1.077E+00	1.902E+00	1.965E-01	0.236
PR-144		696.49	* -2.606E-01	1.304E+00	2.026E+00	2.213E-01	-0.129
		1489.15	-7.383E-01	8.654E+00	1.402E+01	1.165E+00	-0.053
PM-146		453.90	* -7.126E-03	2.042E-02	3.245E-02	3.541E-03	-0.220
		633.02	-3.978E-01	7.277E-01	1.022E+00	3.879E-01	-0.389
		735.90	5.658E-02	8.736E-02	1.558E-01	4.564E-02	0.363
		747.13	7.110E-03	5.875E-02	9.650E-02	1.480E-02	0.074
ND-147		91.11	-4.239E-02	3.349E-02	4.173E-02	4.256E-03	-1.016
		319.41	1.641E-01	9.225E-01	1.534E+00	1.358E-01	0.107
		439.89	-2.048E+00	1.619E+00	2.042E+00	1.768E-01	-1.003
		531.02	* -3.972E-03	1.750E-01	2.894E-01	4.535E-02	-0.014
PM-149		285.90	* 7.607E-01	4.660E+00	7.800E+00	1.224E+00	0.098
EU-152		121.78	-8.986E-03	1.759E-02	2.531E-02	3.157E-03	-0.355
		244.69	-3.888E-02	1.352E-01	1.906E-01	1.696E-02	-0.204
		344.27	* -1.942E-02	4.444E-02	6.643E-02	6.092E-03	-0.292
		443.98	1.176E-01	4.086E-01	7.219E-01	6.291E-02	0.163
		778.89	-1.681E-02	1.416E-01	2.201E-01	2.273E-02	-0.076
		867.32	-2.911E-02	3.252E-01	5.301E-01	4.896E-02	-0.055
		964.01	5.685E-02	1.485E-01	2.652E-01	2.324E-02	0.214
		1085.78	-5.411E-02	1.690E-01	2.468E-01	2.113E-02	-0.219
		1112.02	-1.887E-02	1.249E-01	1.935E-01	1.641E-02	-0.098
		1407.95	-5.564E-02	1.339E-01	2.008E-01	1.652E-02	-0.277
GD-153		69.67	-2.415E-02	1.754E-01	2.830E-01	2.320E-02	-0.085
		83.37	7.750E-01	2.693E+00	4.050E+00	3.667E-01	0.191
		97.43	* -4.118E-03	1.681E-02	2.610E-02	2.578E-03	-0.158
		103.18	7.007E-03	2.057E-02	3.467E-02	3.540E-03	0.202
EU-154		123.07	-2.574E-03	1.234E-02	1.878E-02	2.557E-03	-0.137
		247.94	3.430E-03	1.403E-01	2.329E-01	2.724E-02	0.015

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Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		591.81	-5.419E-02	3.062E-01	4.856E-01	6.355E-02	-0.112
		723.30	-6.285E-02	1.008E-01	1.411E-01	1.624E-02	-0.446
		756.87	1.757E-01	3.137E-01	5.806E-01	7.789E-02	0.303
		873.19	-4.292E-02	1.472E-01	2.285E-01	2.884E-02	-0.188
		996.32	4.655E-02	1.616E-01	2.877E-01	5.128E-02	0.162
		1004.76	-1.069E-01	1.074E-01	1.238E-01	1.451E-02	-0.864
		1274.45 *	-5.929E-02	6.415E-02	6.908E-02	7.591E-03	-0.858
		48.70	-9.095E-03	1.010E-01	1.677E-01	1.419E-02	-0.054
		60.01	7.653E-02	3.822E-01	6.525E-01	5.096E-02	0.117
		86.54	-1.947E-03	1.601E-02	2.553E-02	2.393E-03	-0.076
		105.31 *	-3.392E-03	2.190E-02	3.409E-02	3.555E-03	-0.099
		86.79	2.049E-03	4.055E-02	6.615E-02	6.161E-03	0.031
TB-160		197.04	9.562E-02	1.795E-01	3.192E-01	2.723E-02	0.300
		215.65	-5.618E-02	2.370E-01	3.851E-01	3.357E-02	-0.146
		298.57	-2.832E-02	3.579E-02	4.986E-02	4.449E-03	-0.568
		879.36 *	4.300E-03	6.341E-02	1.077E-01	9.751E-03	0.040
		962.29	-3.968E-01	3.120E-01	4.542E-01	3.980E-02	-0.874
		966.15	-8.064E-03	9.060E-02	1.470E-01	1.288E-02	-0.055
HO-166M		1177.93	-6.394E-02	1.794E-01	2.672E-01	2.202E-02	-0.239
		1271.85	-1.610E-02	2.812E-01	4.433E-01	3.633E-02	-0.036
		80.57	-3.370E-02	3.239E-02	4.255E-02	3.768E-03	-0.792
		184.41	3.187E-03	1.259E-02	1.944E-02	1.628E-03	0.164
		280.46	8.814E-04	3.219E-02	5.292E-02	4.720E-03	0.017
		410.95	3.964E-02	1.148E-01	1.923E-01	1.584E-02	0.206
		711.68 *	1.521E-02	3.345E-02	5.880E-02	6.376E-03	0.259
		752.31	4.413E-02	1.478E-01	2.527E-01	2.670E-02	0.175
		810.29	-1.109E-02	2.911E-02	4.479E-02	4.477E-03	-0.248
		51.35	2.452E-02	1.722E+00	2.892E+00	2.383E-01	0.008
TM-171		52.39	2.768E-01	9.001E-01	1.566E+00	1.279E-01	0.177
		59.40	1.165E+00	2.036E+00	3.640E+00	2.839E-01	0.320
		66.72 *	-4.679E-01	2.555E+00	4.097E+00	3.301E-01	-0.114
LU-176		88.36	1.978E-02	2.931E-02	5.178E-02	4.880E-03	0.382
		201.83	-8.573E-04	9.445E-03	1.572E-02	1.349E-03	-0.055
		306.84 *	-2.470E-04	1.114E-02	1.804E-02	1.607E-03	-0.014
		401.10	2.848E-01	2.989E+00	4.818E+00	3.898E-01	0.059
LU-177		112.95	6.470E-02	2.079E-01	3.446E-01	3.733E-02	0.188
		208.36 *	-9.103E-03	1.570E-01	2.614E-01	2.261E-02	-0.035
LU-177M		52.97	1.543E-02	9.567E-02	1.634E-01	1.328E-02	0.094
		54.07	1.973E-02	5.276E-02	9.237E-02	7.445E-03	0.214
		61.30	-4.978E-02	1.167E-01	1.814E-01	1.424E-02	-0.274
		121.62	-8.076E-02	9.165E-02	1.224E-01	1.401E-02	-0.660
		147.16	-2.387E-02	1.988E-01	3.039E-01	2.965E-02	-0.079
		171.86	1.269E-01	1.212E-01	2.325E-01	1.908E-02	0.546
		218.09	5.673E-02	2.780E-01	4.764E-01	4.163E-02	0.119
		268.79	1.483E-01	2.886E-01	5.060E-01	4.522E-02	0.293
		319.02	4.094E-02	1.055E-01	1.807E-01	1.600E-02	0.227
		367.43	1.396E-01	3.627E-01	6.197E-01	5.187E-02	0.225
HF-181		413.65 *	-1.373E-03	7.202E-02	1.133E-01	9.381E-03	-0.012
		56.28	-2.880E-02	5.454E-02	8.347E-02	6.626E-03	-0.345

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Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
W-181		57.53		-2.044E-02	3.332E-02	5.050E-02	3.978E-03	-0.405
		65.20		-6.510E-02	8.172E-02	1.193E-01	9.536E-03	-0.546
		133.02		-4.836E-03	1.516E-02	2.252E-02	2.428E-03	-0.215
		136.25		4.672E-02	1.162E-01	1.924E-01	2.032E-02	0.243
		345.85		3.271E-02	7.630E-02	1.306E-01	1.129E-02	0.250
		482.03	*	-4.947E-03	1.584E-02	2.490E-02	2.297E-03	-0.199
		56.28		-1.211E-02	2.284E-02	3.495E-02	2.774E-03	-0.346
		57.53		-8.576E-03	1.397E-02	2.116E-02	1.667E-03	-0.405
TA-182		65.20	*	-2.708E-02	3.399E-02	4.962E-02	3.966E-03	-0.546
		67.75		-1.455E-03	1.092E-02	1.767E-02	1.432E-03	-0.082
		100.10		2.682E-02	3.507E-02	6.225E-02	6.243E-03	0.431
		152.43		1.913E-02	8.842E-02	1.419E-01	1.324E-02	0.135
RE-183		222.10		1.385E-02	1.125E-01	1.906E-01	1.672E-02	0.073
		1001.68		-1.130E-01	7.313E-01	1.144E+00	9.986E-02	-0.099
		1121.28		4.142E-02	5.523E-02	1.087E-01	9.181E-03	0.381
		1189.05		7.831E-02	1.337E-01	2.511E-01	2.069E-02	0.312
		1221.42	*	-6.634E-02	9.882E-02	1.303E-01	1.072E-02	-0.509
		1230.97		-4.498E-02	1.674E-01	2.438E-01	2.006E-02	-0.185
		57.98		4.106E-03	1.317E-02	2.288E-02	1.798E-03	0.179
		59.32		4.510E-03	7.882E-03	1.409E-02	1.100E-03	0.320
RE-184		67.20		2.772E-03	1.815E-02	3.058E-02	2.471E-03	0.091
		162.32	*	2.498E-02	2.981E-02	5.539E-02	4.687E-03	0.451
		208.81		6.964E-02	2.597E-01	4.509E-01	3.902E-02	0.154
		291.72		1.841E-01	3.310E-01	5.827E-01	5.202E-02	0.316
OS-185		57.98		1.570E-02	5.036E-02	8.749E-02	6.875E-03	0.179
		59.32		1.723E-02	3.012E-02	5.384E-02	4.201E-03	0.320
		67.20		1.060E-02	6.939E-02	1.169E-01	9.445E-03	0.091
		161.27		-1.739E-02	9.841E-02	1.650E-01	1.412E-02	-0.105
		216.55		2.651E-02	8.587E-02	1.490E-01	1.300E-02	0.178
		252.85	*	-2.224E-02	7.563E-02	1.193E-01	1.064E-02	-0.187
		318.01		3.150E-02	1.771E-01	2.949E-01	2.613E-02	0.107
		792.07		-9.836E-02	4.705E-01	7.102E-01	7.241E-02	-0.138
RE-188		903.28		5.842E-01	4.415E-01	9.495E-01	8.310E-02	0.615
		920.93		6.493E-02	2.058E-01	3.695E-01	3.237E-02	0.176
		59.72		1.249E-02	2.184E-02	3.903E-02	3.045E-03	0.320
		61.14		-1.136E-02	1.315E-02	1.908E-02	1.496E-03	-0.595
		69.30		-4.148E-03	3.024E-02	4.881E-02	3.993E-03	-0.085
		592.07		3.112E-01	1.061E+00	1.853E+00	1.938E-01	0.168
		646.12	*	-4.740E-05	1.721E-02	2.804E-02	3.063E-03	-0.002
		717.42		-8.579E-02	4.586E-01	7.092E-01	7.666E-02	-0.121
W-188		874.81		1.624E-01	2.580E-01	4.947E-01	4.513E-02	0.328
		880.27		-1.145E-01	3.661E-01	5.646E-01	5.102E-02	-0.203
		155.03	*	-2.390E-04	4.373E-02	7.497E-02	6.830E-03	-0.003
		477.96		-3.265E-01	1.047E+00	1.634E+00	1.499E-01	-0.200
IR-192		633.10		-7.988E-01	1.347E+00	1.911E+00	2.068E-01	-0.418
		63.58		2.165E+00	4.386E+00	7.724E+00	6.124E-01	0.280
		227.08		-1.549E+00	4.252E+00	6.763E+00	5.956E-01	-0.229
	290.67	*	-1.497E+00	2.709E+00	4.047E+00	3.613E-01	-0.370	
	295.96		4.173E-03	4.280E-02	6.400E-02	5.750E-03	0.065	



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AU-195		308.46		-9.021E-03	4.223E-02	6.657E-02	5.953E-03	-0.136
		316.51	*	-4.707E-03	1.401E-02	2.150E-02	1.911E-03	-0.219
		468.07		-2.741E-03	2.566E-02	4.225E-02	4.071E-03	-0.065
		604.41		5.412E-02	2.218E-01	3.402E-01	4.895E-02	0.159
		612.46		1.450E-01	3.102E-01	5.068E-01	5.933E-02	0.286
		65.12		-1.249E-02	1.592E-02	2.330E-02	1.862E-03	-0.536
		66.83		-1.494E-03	8.332E-03	1.336E-02	1.078E-03	-0.112
		75.70		-7.298E-03	2.415E-02	3.501E-02	2.989E-03	-0.208
		98.88	*	-1.292E-02	4.807E-02	7.420E-02	7.390E-03	-0.174
		129.76		1.722E-01	7.936E-01	1.284E+00	1.412E-01	0.134
TL-200		367.94	*	2.707E-06	7.936E-01	Half-Life	too short	
		579.30		-4.073E-05	7.936E-01	Half-Life	too short	
		828.27		-1.962E-05	7.936E-01	Half-Life	too short	
		1205.75		-4.031E-06	7.936E-01	Half-Life	too short	
TL-201		68.90		5.673E-02	1.146E-01	2.013E-01	1.643E-02	0.282
		70.82		-2.809E-02	7.260E-02	1.129E-01	9.324E-03	-0.249
		80.30		-1.434E-01	1.356E-01	1.762E-01	1.557E-02	-0.813
		135.34		9.860E-01	1.526E+00	2.624E+00	2.787E-01	0.376
TL-202		167.43	*	8.650E-01	5.088E-01	1.005E+00	8.188E-02	0.860
		68.90		1.522E-02	3.073E-02	5.400E-02	4.407E-03	0.282
		70.82		-7.514E-03	1.942E-02	3.020E-02	2.494E-03	-0.249
		80.30		-3.835E-02	3.629E-02	4.715E-02	4.166E-03	-0.813
HG-203		439.56	*	-2.395E-02	1.968E-02	2.505E-02	2.167E-03	-0.956
		70.83		-4.225E-02	1.101E-01	1.711E-01	2.289E-02	-0.247
		72.87		2.344E-02	6.856E-02	1.172E-01	1.528E-02	0.200
		82.60		2.260E-02	1.444E-01	2.400E-01	3.356E-02	0.094
BI-207		279.20	*	-2.813E-03	1.453E-02	2.316E-02	2.119E-03	-0.121
		72.80		8.143E-03	2.215E-02	3.799E-02	3.178E-03	0.214
		74.97		-5.143E-03	1.398E-02	2.017E-02	1.713E-03	-0.255
		84.90		-9.793E-03	3.739E-02	5.277E-02	4.838E-03	-0.186
TL-207		569.67		9.263E-03	1.749E-02	3.117E-02	3.192E-03	0.297
		1063.62	*	-2.303E-02	2.732E-02	3.371E-02	2.905E-03	-0.683
		1770.23		3.073E-01	3.304E-01	7.053E-01	5.861E-02	0.436
		81.07		-3.644E-02	2.807E-02	3.513E-02	3.123E-03	-1.037
TL-208		83.78		1.895E-02	2.307E-02	3.685E-02	3.348E-03	0.514
		94.90		-1.203E-02	3.999E-02	6.132E-02	5.975E-03	-0.196
		122.32		-2.043E-01	4.424E-01	6.454E-01	7.714E-02	-0.317
		144.24		3.933E-02	2.232E-01	3.555E-01	3.867E-02	0.111
PO-209		154.21		-8.913E-02	1.090E-01	1.686E-01	1.685E-02	-0.529
		269.46		4.528E-02	7.099E-02	1.260E-01	1.148E-02	0.359
		323.87	*	-2.938E-03	2.650E-01	4.276E-01	7.614E-02	-0.007
		338.28		1.409E-01	4.382E-01	7.376E-01	9.132E-02	0.191
TL-208		445.03		2.233E-01	9.641E-01	1.689E+00	2.055E-01	0.132
		277.35		-2.195E-02	1.618E-01	2.579E-01	3.236E-02	-0.085
	+	510.84		2.684E-02	1.803E-01	2.764E-01	3.511E-02	0.097
		583.14	*	-9.895E-03	2.199E-02	3.464E-02	3.774E-03	-0.286
PO-209		860.37		6.675E-02	1.293E-01	2.419E-01	2.401E-02	0.276
		260.50		-1.359E+00	3.389E+00	5.243E+00	4.686E-01	-0.259
		262.80		-1.401E-02	9.249E+00	1.522E+01	1.361E+00	-0.001

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	896.60	*		-1.834E+00	4.334E+00	6.580E+00	5.772E-01	-0.279
BI-210	46.50	*		3.003E-02	1.441E-01	2.182E-01	2.081E-02	0.138
PB-210	46.50	*		3.003E-02	1.441E-01	2.182E-01	2.081E-02	0.138
PO-210	46.50	*		3.003E-02	1.441E-01	2.182E-01	1.894E-02	0.138
BI-211	72.87			1.296E-01	3.789E-01	6.478E-01	5.422E-02	0.200
	351.07	*		4.685E-02	1.023E-01	1.713E-01	1.546E-02	0.273
PB-211	404.84	*		-4.613E-01	5.186E-01	5.342E-01	3.344E-01	-0.863
	427.08			4.243E-01	8.882E-01	1.550E+00	9.631E-01	0.274
	831.96			-5.696E-02	5.426E-01	8.872E-01	5.574E-01	-0.064
BI-212	727.18	*		6.806E-02	1.634E-01	2.839E-01	3.376E-02	0.240
	785.46			5.188E-01	9.608E-01	1.711E+00	1.756E-01	0.303
	1620.62			1.956E-01	8.641E-01	1.522E+00	1.273E-01	0.129
PB-212	74.81			-1.766E-02	4.807E-02	6.930E-02	8.747E-03	-0.255
	77.11			-2.608E-02	2.876E-02	4.052E-02	3.495E-03	-0.644
	87.30			1.631E-03	6.402E-02	1.041E-01	1.425E-02	0.016
+	238.63	*		1.582E-02	4.261E-02	4.085E-02	4.062E-03	0.387
	300.09			-1.275E-01	2.615E-01	3.888E-01	4.151E-02	-0.328
PO-212	74.81			-1.766E-02	4.807E-02	6.930E-02	8.747E-03	-0.255
	77.11			-2.608E-02	2.876E-02	4.052E-02	3.495E-03	-0.644
	87.30			1.631E-03	6.402E-02	1.041E-01	1.425E-02	0.016
	115.19			-3.871E-01	9.429E-01	1.407E+00	1.546E-01	-0.275
+	238.63	*		1.582E-02	4.261E-02	4.085E-02	4.062E-03	0.387
	300.09			-1.275E-01	2.615E-01	3.888E-01	4.151E-02	-0.328
BI-214	609.31	*		3.933E-02	4.948E-02	7.440E-02	8.791E-03	0.529
	1120.29			6.983E-02	1.261E-01	2.365E-01	2.540E-02	0.295
	1764.49			-7.495E-02	1.690E-01	2.674E-01	2.223E-02	-0.280
PB-214	74.81			-3.043E-02	8.281E-02	1.194E-01	1.345E-02	-0.255
	77.11			-4.471E-02	4.941E-02	6.947E-02	7.995E-03	-0.644
	87.30			2.794E-03	1.097E-01	1.782E-01	2.160E-02	0.016
	241.98			-6.697E-02	1.540E-01	2.066E-01	2.171E-02	-0.324
	295.21			-6.992E-03	6.070E-02	8.823E-02	9.614E-03	-0.079
+	351.92	*		1.318E-02	4.206E-02	5.864E-02	6.109E-03	0.225
PO-214	74.81			-3.043E-02	8.281E-02	1.194E-01	1.345E-02	-0.255
	77.11			-4.471E-02	4.941E-02	6.947E-02	7.995E-03	-0.644
	87.30			2.794E-03	1.097E-01	1.782E-01	2.160E-02	0.016
	241.98			-6.697E-02	1.540E-01	2.066E-01	2.171E-02	-0.324
	295.21			-6.992E-03	6.070E-02	8.823E-02	9.614E-03	-0.079
+	351.92	*		1.318E-02	4.206E-02	5.864E-02	6.109E-03	0.225
PO-215	81.07			-3.644E-02	2.807E-02	3.513E-02	3.123E-03	-1.037
	83.78			1.895E-02	2.307E-02	3.685E-02	3.348E-03	0.514
	94.90			-1.203E-02	3.999E-02	6.132E-02	5.975E-03	-0.196
	122.32			-2.043E-01	4.424E-01	6.454E-01	7.714E-02	-0.317
	144.24			3.933E-02	2.232E-01	3.555E-01	3.867E-02	0.111
	154.21			-8.913E-02	1.090E-01	1.686E-01	1.685E-02	-0.529
	269.46			4.528E-02	7.099E-02	1.260E-01	1.148E-02	0.359
	323.87	*		-2.938E-03	2.650E-01	4.276E-01	7.614E-02	-0.007
	338.28			1.409E-01	4.382E-01	7.376E-01	9.132E-02	0.191
	445.03			2.233E-01	9.641E-01	1.689E+00	2.055E-01	0.132
PO-216	74.81			-1.766E-02	4.807E-02	6.930E-02	8.747E-03	-0.255

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-218		77.11		-2.608E-02	2.876E-02	4.052E-02	3.495E-03	-0.644
		87.30		1.631E-03	6.402E-02	1.041E-01	1.425E-02	0.016
	+	238.63	*	1.582E-02	4.261E-02	4.085E-02	4.062E-03	0.387
		300.09		-1.275E-01	2.615E-01	3.888E-01	4.151E-02	-0.328
		74.81		-3.043E-02	8.281E-02	1.194E-01	1.345E-02	-0.255
		77.11		-4.471E-02	4.941E-02	6.947E-02	7.995E-03	-0.644
		87.30		2.794E-03	1.097E-01	1.782E-01	2.160E-02	0.016
		241.98		-6.697E-02	1.540E-01	2.066E-01	2.171E-02	-0.324
		295.21		-6.992E-03	6.070E-02	8.823E-02	9.614E-03	-0.079
	+	351.92	*	1.318E-02	4.206E-02	5.864E-02	6.109E-03	0.225
RN-219		271.23		1.106E-01	8.771E-02	1.665E-01	1.761E-02	0.664
		401.81	*	1.304E-01	1.670E-01	3.024E-01	4.456E-02	0.431
RN-220		549.76	*	-6.138E+00	1.277E+01	1.914E+01	1.920E+00	-0.321
RA-223		81.07		-3.644E-02	2.807E-02	3.513E-02	3.123E-03	-1.037
		83.78		1.895E-02	2.307E-02	3.685E-02	3.348E-03	0.514
		94.90		-1.203E-02	3.999E-02	6.132E-02	5.975E-03	-0.196
		122.32		-2.043E-01	4.424E-01	6.454E-01	7.714E-02	-0.317
		144.24		3.933E-02	2.232E-01	3.555E-01	3.867E-02	0.111
		154.21		-8.913E-02	1.090E-01	1.686E-01	1.685E-02	-0.529
		269.46		4.528E-02	7.099E-02	1.260E-01	1.148E-02	0.359
		323.87	*	-2.938E-03	2.650E-01	4.276E-01	7.614E-02	-0.007
		338.28		1.409E-01	4.382E-01	7.376E-01	9.132E-02	0.191
RA-226		445.03		2.233E-01	9.641E-01	1.689E+00	2.055E-01	0.132
	+	609.31	*	3.933E-02	4.948E-02	7.440E-02	8.791E-03	0.529
		1120.29		6.983E-02	1.261E-01	2.365E-01	2.540E-02	0.295
AC-227		1764.49		-7.495E-02	1.690E-01	2.674E-01	2.223E-02	-0.280
		79.80		-1.395E-01	2.042E-01	2.914E-01	6.288E-02	-0.479
		236.00		1.061E-02	7.786E-02	1.188E-01	1.475E-02	0.089
		256.20	*	9.336E-03	1.266E-01	2.113E-01	3.280E-02	0.044
		286.10		9.453E-02	5.785E-01	9.684E-01	1.298E-01	0.098
		299.80		-4.800E-01	5.170E-01	6.950E-01	1.226E-01	-0.691
		304.40		-2.850E-01	7.827E-01	1.201E+00	2.230E-01	-0.237
TH-227		334.20		1.529E-01	1.083E+00	1.779E+00	3.464E-01	0.086
		79.80		-1.395E-01	2.043E-01	2.914E-01	6.368E-02	-0.479
		94.00		-4.421E-01	3.877E-01	4.747E-01	1.055E-01	-0.931
		236.00		1.061E-02	7.786E-02	1.188E-01	1.338E-02	0.089
		256.20	*	9.336E-03	1.266E-01	2.113E-01	3.848E-02	0.044
		286.10		9.453E-02	5.861E-01	9.684E-01	9.723E-01	0.098
		299.80		-4.800E-01	5.170E-01	6.950E-01	1.226E-01	-0.691
		304.40		-2.850E-01	7.827E-01	1.201E+00	2.230E-01	-0.237
AC-228		334.20		1.529E-01	1.083E+00	1.779E+00	3.464E-01	0.086
		338.32		3.433E-02	1.059E-01	1.769E-01	7.303E-02	0.194
		911.07	*	-3.799E-03	6.064E-02	9.945E-02	1.129E-02	-0.038
RA-228		969.11		5.480E-02	1.050E-01	1.951E-01	4.564E-02	0.281
		338.32		3.433E-02	1.059E-01	1.769E-01	7.303E-02	0.194
		911.07	*	-3.799E-03	6.064E-02	9.945E-02	1.129E-02	-0.038
TH-228		969.11		5.480E-02	1.050E-01	1.951E-01	4.564E-02	0.281
		74.81		-1.782E-02	4.846E-02	6.991E-02	5.982E-03	-0.255
		77.11		-2.631E-02	2.901E-02	4.088E-02	3.526E-03	-0.644

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229		87.30		1.645E-03	6.458E-02	1.050E-01	9.816E-03	0.016
	+	238.63	*	1.595E-02	4.299E-02	4.120E-02	4.097E-03	0.387
		300.09		-1.286E-01	2.743E-01	3.922E-01	2.327E-01	-0.328
		85.43		-2.885E-02	3.678E-02	4.763E-02	4.386E-03	-0.606
		88.47		1.064E-02	1.678E-02	2.951E-02	2.782E-03	0.361
		100.00		2.998E-02	3.795E-02	6.755E-02	6.770E-03	0.444
TH-230		193.63	*	6.880E-02	1.490E-01	2.656E-01	2.255E-02	0.259
		210.97		-9.559E-02	2.367E-01	3.763E-01	3.264E-02	-0.254
	+	609.31	*	3.933E-02	4.948E-02	7.440E-02	8.791E-03	0.529
		1120.29		6.983E-02	1.261E-01	2.365E-01	2.540E-02	0.295
PA-231		1764.49		-7.495E-02	1.690E-01	2.674E-01	2.223E-02	-0.280
	*	283.67		-2.266E-01	5.904E-01	9.080E-01	1.395E-01	-0.250
TH-231		301.29		8.529E-02	2.074E-01	3.582E-01	4.462E-02	0.238
		81.07		-3.644E-02	2.807E-02	3.513E-02	3.123E-03	-1.037
		83.78		1.895E-02	2.307E-02	3.685E-02	3.348E-03	0.514
U-231		94.90		-1.203E-02	3.999E-02	6.132E-02	5.975E-03	-0.196
		122.32		-2.043E-01	4.424E-01	6.454E-01	7.714E-02	-0.317
		144.24		3.933E-02	2.232E-01	3.555E-01	3.867E-02	0.111
		154.21		-8.913E-02	1.090E-01	1.686E-01	1.685E-02	-0.529
		269.46		4.528E-02	7.099E-02	1.260E-01	1.148E-02	0.359
		323.87	*	-2.938E-03	2.650E-01	4.276E-01	7.614E-02	-0.007
		338.28		1.409E-01	4.382E-01	7.376E-01	9.132E-02	0.191
		445.03		2.233E-01	9.641E-01	1.689E+00	2.055E-01	0.132
		84.21		2.723E-01	3.407E-01	5.417E-01	4.938E-02	0.503
		92.29		2.913E-02	1.269E-01	2.027E-01	1.948E-02	0.144
	*	95.87		6.021E-04	6.976E-02	1.124E-01	1.101E-02	0.005
		108.00		-8.976E-02	1.790E-01	2.472E-01	2.597E-02	-0.363
TH-232		338.32		3.433E-02	1.050E-01	1.769E-01	1.542E-02	0.194
		911.07	*	-3.799E-03	6.064E-02	9.945E-02	1.129E-02	-0.038
		969.11		5.480E-02	1.050E-01	1.951E-01	4.564E-02	0.281
PA-233		75.28		-2.243E-01	4.185E-01	5.890E-01	9.004E-02	-0.381
		86.59		-2.351E-02	2.621E-01	4.196E-01	1.135E-01	-0.056
		300.12		-6.520E-02	1.354E-01	2.013E-01	3.029E-02	-0.324
		311.98	*	-1.908E-02	3.092E-02	4.580E-02	4.180E-03	-0.417
		340.50		-8.429E-02	2.678E-01	4.092E-01	9.765E-02	-0.206
PA-234		398.62		-1.964E-01	9.190E-01	1.394E+00	3.689E-01	-0.141
		415.76		-6.574E-01	6.200E-01	8.001E-01	1.714E-01	-0.822
		63.00		1.452E-01	1.303E-01	2.447E-01	3.699E-02	0.593
		94.67		-2.831E-02	3.038E-02	4.142E-02	5.468E-03	-0.683
		98.44		-1.011E-03	1.935E-02	3.083E-02	1.726E-02	-0.033
		99.86		3.335E-02	1.022E-01	1.712E-01	1.714E-02	0.195
		111.00		-1.180E-02	4.169E-02	6.332E-02	8.644E-03	-0.186
		131.20		1.362E-02	2.939E-02	4.909E-02	5.353E-03	0.277
		152.70		-6.357E-02	9.953E-02	1.379E-01	2.400E-02	-0.461
	+	186.00		3.853E-01	7.432E-01	7.765E-01	2.419E-01	0.496
		226.40		-1.526E-02	1.469E-01	2.419E-01	3.222E-02	-0.063
		227.20		-5.344E-02	1.534E-01	2.445E-01	2.154E-02	-0.219
		248.90		-6.269E-02	3.217E-01	5.184E-01	1.168E-01	-0.121
		293.70		9.389E-02	2.577E-01	4.404E-01	7.688E-02	0.213

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		369.80		1.762E-01	3.720E-01	6.393E-01	1.385E-01	0.276
		568.70		5.048E-01	5.437E-01	1.024E+00	1.047E-01	0.493
		569.50		8.652E-02	1.560E-01	2.788E-01	2.854E-02	0.310
		574.00		1.150E-01	7.547E-01	1.278E+00	1.315E-01	0.090
		699.00		-1.502E-01	4.343E-01	6.559E-01	1.326E-01	-0.229
		706.10		-2.811E-01	6.674E-01	9.754E-01	4.397E-01	-0.288
		733.00		-6.495E-02	2.265E-01	3.428E-01	7.914E-02	-0.189
		742.81		-3.903E-01	8.268E-01	1.120E+00	7.560E-01	-0.349
		796.30		-2.974E-01	5.058E-01	6.817E-01	1.880E-01	-0.436
		805.60		-4.552E-02	5.155E-01	8.531E-01	2.652E-01	-0.053
		819.60		-6.345E-02	6.335E-01	1.042E+00	3.996E-01	-0.061
		826.30		-1.390E-01	4.233E-01	6.521E-01	2.934E-01	-0.213
		831.60		-4.106E-02	2.936E-01	4.773E-01	1.441E-01	-0.086
		876.40		5.967E-02	4.163E-01	7.118E-01	7.321E-01	0.084
		880.51		-5.186E-02	1.367E-01	2.064E-01	1.865E-02	-0.251
		883.24		5.852E-02	1.321E-01	2.354E-01	1.583E-01	0.249
		899.00		-5.727E-02	4.103E-01	6.600E-01	2.887E-01	-0.087
		925.00		2.901E-01	6.185E-01	1.135E+00	9.944E-02	0.256
		926.50		6.506E-03	9.318E-02	1.574E-01	3.988E-02	0.041
		946.00	*	6.974E-03	1.600E-01	2.683E-01	5.052E-02	0.026
		949.00		5.245E-02	2.059E-01	3.640E-01	3.191E-02	0.144
		980.50		2.988E-01	4.040E-01	7.727E-01	6.762E-02	0.387
		1394.10		1.332E-01	7.584E-01	1.317E+00	8.563E-01	0.101
PA-234M		766.42		-3.269E+00	4.884E+00	5.689E+00	2.906E+00	-0.575
		1001.03	*	-5.130E-01	1.640E+00	2.393E+00	2.408E-01	-0.214
TH-234		63.29	*	8.909E-02	1.129E-01	2.049E-01	3.619E-02	0.435
		92.38		1.259E-02	9.591E-02	1.513E-01	2.810E-02	0.083
U-234	+	609.31	*	3.933E-02	4.948E-02	7.440E-02	8.791E-03	0.529
		1120.29		6.983E-02	1.261E-01	2.365E-01	2.540E-02	0.295
		1764.49		-7.495E-02	1.690E-01	2.674E-01	2.223E-02	-0.280
U-235		89.95		-7.966E-02	1.664E-01	2.459E-01	7.650E-02	-0.324
		93.35		-2.858E-02	1.145E-01	1.702E-01	4.828E-02	-0.168
		105.00		-5.877E-02	2.063E-01	3.121E-01	9.480E-02	-0.188
		143.76	*	-1.307E-02	7.430E-02	1.132E-01	2.065E-02	-0.115
		163.35		9.171E-02	1.401E-01	2.542E-01	4.820E-02	0.361
	+	185.71		1.427E-02	2.719E-02	2.872E-02	2.411E-03	0.497
		205.31		9.410E-02	1.688E-01	2.998E-01	5.720E-02	0.314
NP-236		94.67		-2.150E-02	2.296E-02	3.140E-02	3.056E-03	-0.685
		98.44		-7.683E-04	1.462E-02	2.330E-02	2.315E-03	-0.033
		111.00		-8.929E-03	3.152E-02	4.790E-02	5.126E-03	-0.186
		160.31	*	6.667E-04	2.129E-02	3.657E-02	3.161E-03	0.018
NP-237		86.50	*	-5.744E-03	3.902E-02	6.197E-02	1.402E-02	-0.093
		95.87		1.525E-03	1.767E-01	2.847E-01	7.137E-02	0.005
U-238		63.29	*	8.909E-02	1.129E-01	2.049E-01	3.619E-02	0.435
		92.38		1.259E-02	9.589E-02	1.513E-01	1.454E-02	0.083
NP-239		99.55		5.984E-04	3.327E-02	5.352E-02	5.350E-03	0.011
		117.00	*	-3.222E-02	5.137E-02	7.379E-02	8.201E-03	-0.437
		209.75		-2.431E-02	2.234E-01	3.694E-01	3.200E-02	-0.066
		228.18		-1.197E-02	8.030E-02	1.313E-01	1.157E-02	-0.091

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		277.60		-2.201E-02	7.791E-02	1.218E-01	1.086E-02	-0.181
		334.30		1.177E-01	6.062E-01	1.003E+00	8.782E-02	0.117
AM-241		59.54	*	6.850E-03	1.198E-02	2.140E-02	1.816E-03	0.320
AM-243		74.67	*	-1.723E-03	7.694E-03	1.132E-02	9.594E-04	-0.152
		86.72		-1.212E-02	1.489E+00	2.411E+00	2.244E-01	-0.005
		117.66		-1.951E-01	9.922E-01	1.526E+00	1.703E-01	-0.128
		142.18		-3.548E-01	6.002E+00	9.292E+00	9.418E-01	-0.038
CM-243		99.55		6.155E-04	3.422E-02	5.505E-02	5.503E-03	0.011
		103.76	*	-3.144E-03	1.946E-02	3.030E-02	3.104E-03	-0.104
		117.00		-3.313E-02	5.283E-02	7.588E-02	8.433E-03	-0.437
		209.75		-2.396E-02	2.202E-01	3.640E-01	3.153E-02	-0.066
		228.18		-1.209E-02	8.110E-02	1.326E-01	1.169E-02	-0.091
		277.60		-2.218E-02	7.852E-02	1.227E-01	1.095E-02	-0.181
AM-246		798.80		-1.011E-02	8.587E-02	1.336E-01	1.353E-02	-0.076
		1036.00		-2.006E-03	1.852E-01	3.040E-01	2.638E-02	-0.007
		1062.04		-2.878E-02	1.056E-01	1.591E-01	1.372E-02	-0.181
		1078.86	*	4.672E-02	6.286E-02	1.239E-01	1.063E-02	0.377
CM-247		278.00		-1.254E-01	3.196E-01	4.914E-01	4.383E-02	-0.255
		287.40		3.458E-01	4.533E-01	8.222E-01	7.340E-02	0.421
		402.60	*	1.296E-02	1.455E-02	2.699E-02	2.190E-03	0.480
CF-249		252.85		-8.567E-02	2.913E-01	4.593E-01	4.100E-02	-0.187
		333.44		5.279E-02	7.962E-02	1.395E-01	1.222E-02	0.378
		387.95	*	-1.023E-03	1.631E-02	2.561E-02	2.054E-03	-0.040
CF-251		176.60	*	2.940E-02	3.417E-02	6.403E-02	5.297E-03	0.459
		227.00		-5.096E-02	1.358E-01	2.156E-01	1.899E-02	-0.236
		285.00		5.686E-02	6.194E-01	1.028E+00	9.171E-02	0.055

# VAX/VMS Nuclide Identification Report Generated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028548
* Acquisition date   : 9-FEB-2010 17:28:19 Detector SN#      :
* Detector ID        : GAM21                               Sensitivity      : 5.000
* Geometry           : CAN                               Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit : 75.000
* Elapsed real time  : 0 02:00:24.91                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202028548 Analyst initials: MJH1
* Batch Number       : 947037 Sample Quantity : 1.4871E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                    :
* LCS DPM            : 0.000 LCS Isotope                     :
* LCSD DPM           : 0.000 LCSD Isotope                    :
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
RA-224	1.786E-01	4.715E-01	3.237E-01	0.000E+00
ANH-511	5.797E-03	3.817E-02	2.523E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-6.779E-02	1.122E-01	1.730E-01	0.000E+00 NOT IDENT.
NA-22	-2.060E-02	2.253E-02	2.565E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.742E+02	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-4.097E-04	1.740E-02	2.854E-02	0.000E+00 NOT IDENT.
K-40	2.684E-01	2.558E-01	5.325E-01	0.000E+00 NOT IDENT.
TI-44	4.487E-03	4.680E-03	9.244E-03	0.000E+00 NOT IDENT.
SC-46	1.244E-03	1.979E-02	3.482E-02	0.000E+00 NOT IDENT.
V-48	-1.165E-02	2.908E-02	4.511E-02	0.000E+00 NOT IDENT.
CR-51	1.438E-02	1.281E-01	2.247E-01	0.000E+00 NOT IDENT.
MN-52	-5.056E-02	6.299E-02	7.779E-02	0.000E+00 NOT IDENT.
MN-54	2.762E-03	1.770E-02	3.195E-02	0.000E+00 NOT IDENT.
CO-56	3.912E-03	2.178E-02	3.926E-02	0.000E+00 NOT IDENT.
CO-57	1.219E-06	5.684E-03	9.781E-03	0.000E+00 NOT IDENT.
CO-58	3.642E-03	1.765E-02	3.232E-02	0.000E+00 NOT IDENT.
FE-59	-6.623E-04	3.549E-02	5.700E-02	0.000E+00 NOT IDENT.
CO-60	2.136E-02	2.488E-02	5.061E-02	0.000E+00 NOT IDENT.
ZN-65	-3.414E-02	3.797E-02	4.459E-02	0.000E+00 NOT IDENT.
GE-68	7.480E-02	5.773E-01	1.013E+00	0.000E+00 NOT IDENT.
AS-73	-6.506E-03	5.024E-02	9.176E-02	0.000E+00 NOT IDENT.
AS-74	-1.749E-02	3.849E-02	6.094E-02	0.000E+00 NOT IDENT.
SE-75	-8.928E-03	1.416E-02	2.239E-02	0.000E+00 NOT IDENT.
BR-77	-9.873E-02	7.352E-01	1.257E+00	0.000E+00 FAIL ABUN
SR-82	-5.776E-02	1.671E-01	2.558E-01	0.000E+00 NOT IDENT.
RB-83	3.032E-03	2.899E-02	5.179E-02	0.000E+00 NOT IDENT.
RB-84	9.152E-03	2.909E-02	5.418E-02	0.000E+00 NOT IDENT.

KR-85	4.082E+00	4.385E+00	7.863E+00	0.000E+00	NOT IDENT.
SR-85	1.957E-02	2.102E-02	3.770E-02	0.000E+00	NOT IDENT.
RB-86	4.921E-02	2.728E-01	4.865E-01	0.000E+00	NOT IDENT.
Y-88	-1.062E-02	2.683E-02	3.771E-02	0.000E+00	NOT IDENT.
ZR-88	-8.056E-03	1.194E-02	1.727E-02	0.000E+00	NOT IDENT.
Y-91	5.753E+00	7.936E+00	1.568E+01	0.000E+00	NOT IDENT.
NB-94	-5.301E-03	2.159E-02	3.499E-02	0.000E+00	NOT IDENT.
NB-95	-7.859E-04	1.490E-02	2.452E-02	0.000E+00	NOT IDENT.
NB-95M	1.826E-03	3.918E-02	6.314E-02	0.000E+00	NOT IDENT.
ZR-95	-1.511E-02	3.143E-02	4.589E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.043E+02	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.001E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-5.624E-01	1.213E+00	1.809E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.804E+08	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.527E-02	1.130E-02	2.309E-02	0.000E+00	NOT IDENT.
RH-102	5.503E-03	1.125E-02	2.169E-02	0.000E+00	NOT IDENT.
RU-103	1.028E-02	1.851E-02	3.518E-02	0.000E+00	FAIL ABUN
RH-106	-1.146E-01	1.930E-01	2.749E-01	0.000E+00	FAIL ABUN
RU-106	-1.146E-01	1.926E-01	2.749E-01	0.000E+00	FAIL ABUN
AG-108M	-4.130E-03	1.462E-02	2.502E-02	0.000E+00	NOT IDENT.
CD-109	7.408E-02	1.254E-01	2.400E-01	0.000E+00	NOT IDENT.
AG-110M	1.342E-02	1.975E-02	3.740E-02	0.000E+00	NOT IDENT.
IN-111	6.324E-02	7.626E-02	1.492E-01	0.000E+00	NOT IDENT.
IN-113M	-1.229E-02	1.802E-02	2.615E-02	0.000E+00	NOT IDENT.
SN-113	-1.229E-02	1.802E-02	2.615E-02	0.000E+00	NOT IDENT.
IN-114M	1.984E-02	4.790E-02	8.416E-02	0.000E+00	NOT IDENT.
CD-115	-2.020E-01	6.874E-01	1.137E+00	0.000E+00	NOT IDENT.
SN-117M	-6.713E-03	1.093E-02	1.883E-02	0.000E+00	NOT IDENT.
SB-122	-1.960E-02	1.468E-01	2.467E-01	0.000E+00	NOT IDENT.
I-123	0.000E+00	4.943E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-6.928E-03	7.710E-03	1.279E-02	0.000E+00	NOT IDENT.
I-124	-3.590E-02	1.164E-01	1.891E-01	0.000E+00	NOT IDENT.
SB-124	1.826E-02	2.536E-02	6.021E-02	0.000E+00	NOT IDENT.
SB-125	1.656E-02	3.674E-02	7.048E-02	0.000E+00	NOT IDENT.
TE-125M	6.730E-01	1.867E+00	3.419E+00	0.000E+00	NOT IDENT.
I-126	-3.634E-02	6.282E-02	9.298E-02	0.000E+00	NOT IDENT.
SB-126	1.952E-02	5.579E-02	1.003E-01	0.000E+00	NOT IDENT.
SN-126	5.823E-03	1.292E-02	2.428E-02	0.000E+00	NOT IDENT.
SB-127	-1.007E-01	2.080E-01	3.119E-01	0.000E+00	NOT IDENT.
XE-127	-9.529E-05	1.378E-02	2.493E-02	0.000E+00	NOT IDENT.
I-131	-1.088E-02	2.670E-02	4.179E-02	0.000E+00	NOT IDENT.
TE-132	-9.235E-03	6.183E-02	1.086E-01	0.000E+00	NOT IDENT.
BA-133	1.027E-02	1.914E-02	3.244E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.609E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-1.538E-02	2.501E-02	3.546E-02	0.000E+00	NOT IDENT.
CS-135	-1.162E-02	5.851E-02	1.002E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.219E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.015E-02	3.164E-02	4.182E-02	0.000E+00	NOT IDENT.
BA-137M	1.013E-02	1.759E-02	3.325E-02	0.000E+00	NOT IDENT.
CS-137	1.071E-02	1.859E-02	3.515E-02	0.000E+00	NOT IDENT.
CE-139	-7.753E-03	9.067E-03	1.521E-02	0.000E+00	NOT IDENT.
BA-140	-3.385E-02	9.179E-02	1.475E-01	0.000E+00	NOT IDENT.
LA-140	1.254E-02	3.964E-02	7.314E-02	0.000E+00	NOT IDENT.
CE-141	-4.810E-03	1.750E-02	2.847E-02	0.000E+00	NOT IDENT.
CE-143	5.214E-01	1.926E+00	3.476E+00	0.000E+00	NOT IDENT.
CE-144	-5.736E-02	5.358E-02	7.359E-02	0.000E+00	NOT IDENT.
PM-144	-3.859E-03	1.892E-02	3.076E-02	0.000E+00	NOT IDENT.
PR-144	-2.606E-01	1.278E+00	2.077E+00	0.000E+00	NOT IDENT.
PM-146	-7.126E-03	2.001E-02	3.362E-02	0.000E+00	NOT IDENT.
ND-147	-3.972E-03	1.715E-01	2.986E-01	0.000E+00	NOT IDENT.
PM-149	7.607E-01	4.566E+00	8.168E+00	0.000E+00	NOT IDENT.
EU-152	-1.942E-02	4.355E-02	6.925E-02	0.000E+00	NOT IDENT.
GD-153	-4.118E-03	1.648E-02	2.800E-02	0.000E+00	NOT IDENT.
EU-154	-5.929E-02	6.287E-02	6.976E-02	0.000E+00	NOT IDENT.
EU-155	-3.392E-03	2.146E-02	3.652E-02	0.000E+00	NOT IDENT.
TB-160	4.300E-03	6.214E-02	1.098E-01	0.000E+00	NOT IDENT.
HO-166M	1.521E-02	3.279E-02	6.025E-02	0.000E+00	NOT IDENT.
TM-171	-4.679E-01	2.504E+00	4.433E+00	0.000E+00	NOT IDENT.
LU-176	-2.470E-04	1.092E-02	1.886E-02	0.000E+00	NOT IDENT.
LU-177	-9.103E-03	1.539E-01	2.758E-01	0.000E+00	NOT IDENT.
LU-177M	-1.373E-03	7.058E-02	1.176E-01	0.000E+00	NOT IDENT.
HF-181	-4.947E-03	1.552E-02	2.575E-02	0.000E+00	NOT IDENT.
W-181	-2.708E-02	3.331E-02	5.372E-02	0.000E+00	NOT IDENT.
TA-182	-6.634E-02	9.684E-02	1.317E-01	0.000E+00	NOT IDENT.
RE-183	2.498E-02	2.922E-02	5.877E-02	0.000E+00	NOT IDENT.
RE-184	-2.224E-02	7.411E-02	1.252E-01	0.000E+00	NOT IDENT.
OS-185	-4.740E-05	1.687E-02	2.879E-02	0.000E+00	NOT IDENT.
RE-188	-2.390E-04	4.285E-02	7.962E-02	0.000E+00	NOT IDENT.



W-188	-1.497E+00	2.654E+00	4.236E+00	0.000E+00	NOT IDENT.
IR-192	-4.707E-03	1.373E-02	2.246E-02	0.000E+00	NOT IDENT.
AU-195	-1.292E-02	4.711E-02	7.960E-02	0.000E+00	NOT IDENT.
TL-200	0.000E+00	3.190E+00	0.000E+00	0.000E+00	SHORT HLIF
TL-201	8.650E-01	4.986E-01	1.066E+00	0.000E+00	NOT IDENT.
TL-202	-2.395E-02	1.929E-02	2.596E-02	0.000E+00	NOT IDENT.
HG-203	-2.813E-03	1.424E-02	2.426E-02	0.000E+00	NOT IDENT.
BI-207	-2.303E-02	2.677E-02	3.420E-02	0.000E+00	NOT IDENT.
TL-207	-2.938E-03	2.597E-01	4.464E-01	0.000E+00	NOT IDENT.
TL-208	-9.895E-03	2.155E-02	3.567E-02	0.000E+00	FAIL ABUN
PO-209	-1.834E+00	4.248E+00	6.704E+00	0.000E+00	NOT IDENT.
BI-210	3.003E-02	1.413E-01	2.380E-01	0.000E+00	NOT IDENT.
PB-210	3.003E-02	1.413E-01	2.380E-01	0.000E+00	NOT IDENT.
PO-210	3.003E-02	1.412E-01	2.380E-01	0.000E+00	NOT IDENT.
BI-211	4.685E-02	1.002E-01	1.785E-01	0.000E+00	NOT IDENT.
PB-211	-4.613E-01	5.082E-01	5.549E-01	0.000E+00	NOT IDENT.
BI-212	6.806E-02	1.601E-01	2.908E-01	0.000E+00	NOT IDENT.
PB-212	1.582E-02	4.176E-02	4.295E-02	0.000E+00	FAIL ABUN
PO-212	1.582E-02	4.176E-02	4.295E-02	0.000E+00	FAIL ABUN
BI-214	3.933E-02	4.849E-02	7.651E-02	0.000E+00	FAIL ABUN
PB-214	1.318E-02	4.122E-02	6.110E-02	0.000E+00	FAIL ABUN
PO-214	1.318E-02	4.122E-02	6.110E-02	0.000E+00	FAIL ABUN
PO-215	-2.938E-03	2.597E-01	4.464E-01	0.000E+00	NOT IDENT.
PO-216	1.582E-02	4.176E-02	4.295E-02	0.000E+00	FAIL ABUN
PO-218	1.318E-02	4.122E-02	6.110E-02	0.000E+00	FAIL ABUN
RN-219	1.304E-01	1.636E-01	3.142E-01	0.000E+00	NOT IDENT.
RN-220	-6.138E+00	1.252E+01	1.974E+01	0.000E+00	NOT IDENT.
RA-223	-2.938E-03	2.597E-01	4.464E-01	0.000E+00	NOT IDENT.
RA-226	3.933E-02	4.849E-02	7.651E-02	0.000E+00	FAIL ABUN
AC-227	9.336E-03	1.241E-01	2.218E-01	0.000E+00	NOT IDENT.
TH-227	9.336E-03	1.241E-01	2.218E-01	0.000E+00	NOT IDENT.
AC-228	-3.799E-03	5.943E-02	1.013E-01	0.000E+00	NOT IDENT.
RA-228	-3.799E-03	5.943E-02	1.013E-01	0.000E+00	NOT IDENT.
TH-228	1.595E-02	4.213E-02	4.333E-02	0.000E+00	FAIL ABUN
TH-229	6.880E-02	1.461E-01	2.806E-01	0.000E+00	NOT IDENT.
TH-230	3.933E-02	4.849E-02	7.651E-02	0.000E+00	FAIL ABUN
PA-231	-2.266E-01	5.786E-01	9.510E-01	0.000E+00	NOT IDENT.
TH-231	-2.938E-03	2.597E-01	4.464E-01	0.000E+00	NOT IDENT.
U-231	6.021E-04	6.837E-02	1.207E-01	0.000E+00	NOT IDENT.
TH-232	-3.799E-03	5.943E-02	1.013E-01	0.000E+00	NOT IDENT.
PA-233	-1.908E-02	3.030E-02	4.786E-02	0.000E+00	NOT IDENT.
PA-234	6.974E-03	1.568E-01	2.730E-01	0.000E+00	FAIL ABUN
PA-234M	-5.130E-01	1.607E+00	2.431E+00	0.000E+00	NOT IDENT.
TH-234	8.909E-02	1.107E-01	2.220E-01	0.000E+00	NOT IDENT.
U-234	3.933E-02	4.849E-02	7.651E-02	0.000E+00	FAIL ABUN
U-235	-1.307E-02	7.281E-02	1.205E-01	0.000E+00	FAIL ABUN
NP-236	6.667E-04	2.086E-02	3.881E-02	0.000E+00	NOT IDENT.
NP-237	-5.744E-03	3.824E-02	6.667E-02	0.000E+00	NOT IDENT.
U-238	8.909E-02	1.107E-01	2.220E-01	0.000E+00	NOT IDENT.
NP-239	-3.222E-02	5.035E-02	7.886E-02	0.000E+00	NOT IDENT.
AM-241	6.850E-03	1.174E-02	2.322E-02	0.000E+00	NOT IDENT.
AM-243	-1.723E-03	7.540E-03	1.222E-02	0.000E+00	NOT IDENT.
CM-243	-3.144E-03	1.907E-02	3.247E-02	0.000E+00	NOT IDENT.
AM-246	4.672E-02	6.160E-02	1.257E-01	0.000E+00	NOT IDENT.
CM-247	1.296E-02	1.426E-02	2.804E-02	0.000E+00	NOT IDENT.
CF-249	-1.023E-03	1.599E-02	2.662E-02	0.000E+00	NOT IDENT.
CF-251	2.940E-02	3.349E-02	6.779E-02	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                             *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028548.CNF;1
Sample date        : 1-FEB-2010 00:00:00. Acquisition date : 9-FEB-2010 17:28:19.
Sample ID          : G1202028548           Sample quantity : 1.48710E+02 GRAM
Detector name      : GAM21                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time: 0 02:00:24.91 0.3%
Energy tolerance   : 1.50000 keV           Analyst Initials : MJH1
Abundance limit    : 75.00000              Sensitivity        : 5.00000
Batch ID           : 947037                Detector SN#       :
Matrix Spike ID    :                      LCS ID           : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	12	3.95*	4.369E+00	1.786E-01	1.786E-01	269.40
ANH-511	511.00	5	100.00*	2.036E+00	5.797E-03	5.797E-03	671.89

Flag: "\*" = Keyline

Summary of Nuclide Activity  
Sample ID : G1202028548

Page : 2  
Acquisition date : 9-FEB-2010 17:28:19

Total number of lines in spectrum 5  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 5 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.41E+10Y	1.00	1.786E-01	1.786E-01	4.811E-01	269.40	
ANH-511	1.00E+09Y	1.00	5.797E-03	5.797E-03	38.95E-03	671.89	

Total Activity : 1.844E-01 1.844E-01

Grand Total Activity : 1.844E-01 1.844E-01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G1202028548

Page : 3  
Acquisition date : 9-FEB-2010 17:28:19

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.47	17	51	1.42	372.79	367	11	2.30E-03	****	5.43E+00	T
0	353.08	6	20	1.27	705.91	699	8	8.05E-04	****	2.99E+00	T
0	609.72	12	6	1.15	1219.13	1214	12	1.70E-03	****	1.70E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028548.CNF;1
* Acquisition date   : 9-FEB-2010 17:28:19. Detector SN#      :
* Detector ID        : GAM21 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:24.91 Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 1-FEB-2010 00:00:00. Nuclide Library : SOLID
* Sample ID          : G1202028548 Analyst initials: MJH1
* Batch Number       : 947037 Sample Quantity : 1.48710E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51.9MS Isotope      :
* MSD ID              : MSD Isotope      :
* LCS ID              : 1032-A LCS Isotope :
*****

```

## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	1.786E-01	4.811E-01	3.079E-01	2.736E-02	0.580
ANH-511	5.797E-03	3.895E-02	2.443E-02	2.342E-03	0.237

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/GRAM) Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.779E-02	1.144E-01	1.672E-01	1.638E-02	-0.405
NA-22	-2.060E-02	2.299E-02	2.540E-02	2.083E-03	-0.811
NA-24	6.658E-05	1.909E-04	Half-Life too short		
AL-26	-4.097E-04	1.776E-02	2.852E-02	2.360E-03	-0.014
K-40	2.684E-01	2.610E-01	5.291E-01	4.517E-02	0.507
TI-44	4.487E-03	4.775E-03	8.572E-03	7.465E-04	0.523
SC-46	1.244E-03	2.019E-02	3.417E-02	3.039E-03	0.036
V-48	-1.165E-02	2.967E-02	4.438E-02	3.882E-03	-0.263
CR-51	1.438E-02	1.307E-01	2.151E-01	2.000E-02	0.067
MN-52	-5.056E-02	6.428E-02	7.725E-02	6.379E-03	-0.654

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MN-54	2.762E-03		1.806E-02	3.131E-02	3.035E-03	0.088
CO-56	3.912E-03		2.223E-02	3.849E-02	3.668E-03	0.102
CO-57	1.219E-06		5.800E-03	9.160E-03	1.052E-03	0.000
CO-58	3.642E-03		1.801E-02	3.164E-02	3.167E-03	0.115
FE-59	-6.623E-04		3.621E-02	5.623E-02	5.189E-03	-0.012
CO-60	2.136E-02		2.539E-02	5.017E-02	4.072E-03	0.426
ZN-65	-3.414E-02		3.875E-02	4.400E-02	3.730E-03	-0.776
GE-68	7.480E-02		5.891E-01	9.989E-01	8.574E-02	0.075
AS-73	-6.506E-03		5.126E-02	8.439E-02	6.834E-03	-0.077
AS-74	-1.749E-02		3.927E-02	5.923E-02	6.216E-03	-0.295
SE-75	-8.928E-03		1.445E-02	2.135E-02	1.917E-03	-0.418
BR-77	-9.873E-02		7.502E-01	1.217E+00	1.181E-01	-0.081
SR-82	-5.776E-02		1.705E-01	2.502E-01	2.590E-02	-0.231
RB-83	3.032E-03		2.958E-02	5.017E-02	4.866E-03	0.060
RB-84	9.152E-03		2.968E-02	5.315E-02	4.793E-03	0.172
KR-85	4.082E+00		4.475E+00	7.615E+00	7.327E-01	0.536
SR-85	1.957E-02		2.145E-02	3.651E-02	3.513E-03	0.536
RB-86	4.921E-02		2.783E-01	4.797E-01	4.118E-02	0.103
Y-88	-1.062E-02		2.738E-02	3.768E-02	3.111E-03	-0.282
ZR-88	-8.056E-03		1.218E-02	1.662E-02	1.324E-03	-0.485
Y-91	5.753E+00		8.098E+00	1.550E+01	1.277E+00	0.371
NB-94	-5.301E-03		2.203E-02	3.414E-02	3.718E-03	-0.155
NB-95	-7.859E-04		1.520E-02	2.398E-02	2.506E-03	-0.033
NB-95M	1.826E-03		3.998E-02	6.003E-02	6.049E-03	0.030
ZR-95	-1.511E-02		3.207E-02	4.485E-02	5.050E-03	-0.337
NB-97	7.199E-05		5.321E-05	Half-Life too short		
ZR-97	5.870E-04		1.021E-03	Half-Life too short		
MO-99	-5.624E-01		1.237E+00	1.767E+00	2.903E-01	-0.318
TC-99M	-3.208E+01		1.431E+02	Half-Life too short		
RH-101	1.527E-02		1.153E-02	2.186E-02	1.867E-03	0.698
RH-102	5.503E-03		1.148E-02	2.096E-02	1.915E-03	0.263
RU-103	1.028E-02		1.888E-02	3.404E-02	4.991E-03	0.302
RH-106	-1.146E-01		1.969E-01	2.675E-01	3.960E-02	-0.429
RU-106	-1.146E-01		1.966E-01	2.675E-01	2.869E-02	-0.429
AG-108M	-4.130E-03		1.492E-02	2.413E-02	2.152E-03	-0.171
CD-109	7.408E-02		1.280E-01	2.231E-01	2.099E-02	0.332
AG-110M	1.342E-02		2.015E-02	3.643E-02	4.086E-03	0.368
IN-111	6.324E-02		7.782E-02	1.419E-01	1.264E-02	0.446
IN-113M	-1.229E-02		1.838E-02	2.516E-02	2.072E-03	-0.489
SN-113	-1.229E-02		1.838E-02	2.516E-02	2.072E-03	-0.489
IN-114M	1.984E-02		4.888E-02	7.962E-02	6.727E-03	0.249
CD-115	-2.020E-01		7.014E-01	1.101E+00	1.078E-01	-0.183
SN-117M	-6.713E-03		1.116E-02	1.774E-02	1.562E-03	-0.378
SB-122	-1.960E-02		1.498E-01	2.394E-01	2.437E-02	-0.082
I-123	-4.441E-04		2.522E-04	Half-Life too short		
TE-123M	-6.928E-03		7.868E-03	1.205E-02	1.062E-03	-0.575
I-124	-3.590E-02		1.188E-01	1.838E-01	1.941E-02	-0.195
SB-124	1.826E-02		2.587E-02	6.004E-02	5.227E-03	0.304

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	1.656E-02		3.749E-02	6.796E-02	5.882E-03	0.244
TE-125M	6.730E-01		1.905E+00	3.195E+00	3.837E-01	0.211
I-126	-3.634E-02		6.410E-02	9.060E-02	9.995E-03	-0.401
SB-126	1.952E-02		5.693E-02	9.792E-02	1.057E-02	0.199
SN-126	5.823E-03		1.318E-02	2.257E-02	2.116E-03	0.258
SB-127	-1.007E-01		2.122E-01	3.041E-01	3.626E-02	-0.331
XE-127	-9.529E-05		1.406E-02	2.362E-02	2.030E-03	-0.004
I-131	-1.088E-02		2.724E-02	4.014E-02	3.555E-03	-0.271
TE-132	-9.235E-03		6.310E-02	1.032E-01	1.536E-02	-0.089
BA-133	1.027E-02		1.953E-02	3.114E-02	4.092E-03	0.330
I-133	1.727E-07		8.210E-06	Half-Life	too short	
CS-134	-1.538E-02		2.552E-02	3.471E-02	3.543E-03	-0.443
CS-135	-1.162E-02		5.971E-02	9.551E-02	9.781E-03	-0.122
I-135	1.756E+01		1.642E+02	Half-Life	too short	
CS-136	-2.015E-02		3.228E-02	4.121E-02	3.714E-03	-0.489
BA-137M	1.013E-02		1.795E-02	3.240E-02	3.578E-03	0.313
CS-137	1.071E-02		1.897E-02	3.424E-02	3.786E-03	0.313
CE-139	-7.753E-03		9.252E-03	1.434E-02	1.166E-03	-0.541
BA-140	-3.385E-02		9.367E-02	1.430E-01	4.789E-02	-0.237
LA-140	1.254E-02		4.045E-02	7.283E-02	6.090E-03	0.172
CE-141	-4.810E-03		1.786E-02	2.677E-02	2.684E-03	-0.180
CE-143	5.214E-01		1.965E+00	3.322E+00	7.211E-01	0.157
CE-144	-5.736E-02		5.468E-02	6.906E-02	1.163E-02	-0.831
PM-144	-3.859E-03		1.930E-02	3.000E-02	3.277E-03	-0.129
PR-144	-2.606E-01		1.304E+00	2.026E+00	2.213E-01	-0.129
PM-146	-7.126E-03		2.042E-02	3.245E-02	3.541E-03	-0.220
ND-147	-3.972E-03		1.750E-01	2.894E-01	4.535E-02	-0.014
PM-149	7.607E-01		4.660E+00	7.800E+00	1.224E+00	0.098
EU-152	-1.942E-02		4.444E-02	6.643E-02	6.092E-03	-0.292
GD-153	-4.118E-03		1.681E-02	2.610E-02	2.578E-03	-0.158
EU-154	-5.929E-02		6.415E-02	6.908E-02	7.591E-03	-0.858
EU-155	-3.392E-03		2.190E-02	3.409E-02	3.555E-03	-0.099
TB-160	4.300E-03		6.341E-02	1.077E-01	9.751E-03	0.040
HO-166M	1.521E-02		3.345E-02	5.880E-02	6.376E-03	0.259
TM-171	-4.679E-01		2.555E+00	4.097E+00	3.301E-01	-0.114
LU-176	-2.470E-04		1.114E-02	1.804E-02	1.607E-03	-0.014
LU-177	-9.103E-03		1.570E-01	2.614E-01	2.261E-02	-0.035
LU-177M	-1.373E-03		7.202E-02	1.133E-01	9.381E-03	-0.012
HF-181	-4.947E-03		1.584E-02	2.490E-02	2.297E-03	-0.199
W-181	-2.708E-02		3.399E-02	4.962E-02	3.966E-03	-0.546
TA-182	-6.634E-02		9.882E-02	1.303E-01	1.072E-02	-0.509
RE-183	2.498E-02		2.981E-02	5.539E-02	4.687E-03	0.451
RE-184	-2.224E-02		7.563E-02	1.193E-01	1.064E-02	-0.187
OS-185	-4.740E-05		1.721E-02	2.804E-02	3.063E-03	-0.002
RE-188	-2.390E-04		4.373E-02	7.497E-02	6.830E-03	-0.003
W-188	-1.497E+00		2.709E+00	4.047E+00	3.613E-01	-0.370
IR-192	-4.707E-03		1.401E-02	2.150E-02	1.911E-03	-0.219
AU-195	-1.292E-02		4.807E-02	7.420E-02	7.390E-03	-0.174

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-200	2.707E-06		1.628E-06	Half-Life too short		
TL-201	8.650E-01		5.088E-01	1.005E+00	8.188E-02	0.860
TL-202	-2.395E-02		1.968E-02	2.505E-02	2.167E-03	-0.956
HG-203	-2.813E-03		1.453E-02	2.316E-02	2.119E-03	-0.121
BI-207	-2.303E-02		2.732E-02	3.371E-02	2.905E-03	-0.683
TL-207	-2.938E-03		2.650E-01	4.276E-01	7.614E-02	-0.007
TL-208	-9.895E-03		2.199E-02	3.464E-02	3.774E-03	-0.286
PO-209	-1.834E+00		4.334E+00	6.580E+00	5.772E-01	-0.279
BI-210	3.003E-02		1.441E-01	2.182E-01	2.081E-02	0.138
PB-210	3.003E-02		1.441E-01	2.182E-01	2.081E-02	0.138
PO-210	3.003E-02		1.441E-01	2.182E-01	1.894E-02	0.138
BI-211	4.685E-02		1.023E-01	1.713E-01	1.546E-02	0.273
PB-211	-4.613E-01		5.186E-01	5.342E-01	3.344E-01	-0.863
BI-212	6.806E-02		1.634E-01	2.839E-01	3.376E-02	0.240
PB-212	1.582E-02	+	4.261E-02	4.085E-02	4.062E-03	0.387
PO-212	1.582E-02	+	4.261E-02	4.085E-02	4.062E-03	0.387
BI-214	3.933E-02	+	4.948E-02	7.440E-02	8.791E-03	0.529
PB-214	1.318E-02	+	4.206E-02	5.864E-02	6.109E-03	0.225
PO-214	1.318E-02	+	4.206E-02	5.864E-02	6.109E-03	0.225
PO-215	-2.938E-03		2.650E-01	4.276E-01	7.614E-02	-0.007
PO-216	1.582E-02	+	4.261E-02	4.085E-02	4.062E-03	0.387
PO-218	1.318E-02	+	4.206E-02	5.864E-02	6.109E-03	0.225
RN-219	1.304E-01		1.670E-01	3.024E-01	4.456E-02	0.431
RN-220	-6.138E+00		1.277E+01	1.914E+01	1.920E+00	-0.321
RA-223	-2.938E-03		2.650E-01	4.276E-01	7.614E-02	-0.007
RA-226	3.933E-02	+	4.948E-02	7.440E-02	8.791E-03	0.529
AC-227	9.336E-03		1.266E-01	2.113E-01	3.280E-02	0.044
TH-227	9.336E-03		1.266E-01	2.113E-01	3.848E-02	0.044
AC-228	-3.799E-03		6.064E-02	9.945E-02	1.129E-02	-0.038
RA-228	-3.799E-03		6.064E-02	9.945E-02	1.129E-02	-0.038
TH-228	1.595E-02	+	4.299E-02	4.120E-02	4.097E-03	0.387
TH-229	6.880E-02		1.490E-01	2.656E-01	2.255E-02	0.259
TH-230	3.933E-02	+	4.948E-02	7.440E-02	8.791E-03	0.529
PA-231	-2.266E-01		5.904E-01	9.080E-01	1.395E-01	-0.250
TH-231	-2.938E-03		2.650E-01	4.276E-01	7.614E-02	-0.007
U-231	6.021E-04		6.976E-02	1.124E-01	1.101E-02	0.005
TH-232	-3.799E-03		6.064E-02	9.945E-02	1.129E-02	-0.038
PA-233	-1.908E-02		3.092E-02	4.580E-02	4.180E-03	-0.417
PA-234	6.974E-03		1.600E-01	2.683E-01	5.052E-02	0.026
PA-234M	-5.130E-01		1.640E+00	2.393E+00	2.408E-01	-0.214
TH-234	8.909E-02		1.129E-01	2.049E-01	3.619E-02	0.435
U-234	3.933E-02	+	4.948E-02	7.440E-02	8.791E-03	0.529
U-235	-1.307E-02		7.430E-02	1.132E-01	2.065E-02	-0.115
NP-236	6.667E-04		2.129E-02	3.657E-02	3.161E-03	0.018
NP-237	-5.744E-03		3.902E-02	6.197E-02	1.402E-02	-0.093
U-238	8.909E-02		1.129E-01	2.049E-01	3.619E-02	0.435
NP-239	-3.222E-02		5.137E-02	7.379E-02	8.201E-03	-0.437
AM-241	6.850E-03		1.198E-02	2.140E-02	1.816E-03	0.320



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	-1.723E-03		7.694E-03	1.132E-02	9.594E-04	-0.152
CM-243	-3.144E-03		1.946E-02	3.030E-02	3.104E-03	-0.104
AM-246	4.672E-02		6.286E-02	1.239E-01	1.063E-02	0.377
CM-247	1.296E-02		1.455E-02	2.699E-02	2.190E-03	0.480
CF-249	-1.023E-03		1.631E-02	2.561E-02	2.054E-03	-0.040
CF-251	2.940E-02		3.417E-02	6.403E-02	5.297E-03	0.459

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202028548          *
* Acquisition date   : 9-FEB-2010 17:28:19 Detector SN#      :              *
* Detector ID        : GAM21 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000 *
* Elapsed real time  : 0 02:00:24.91 Half life ratio : 8.000 *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 1-FEB-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID           : G1202028548 Analyst initials: MJH1          *
* Batch Number        : 947037 Sample Quantity : 1.4871E+02 GRAM        *
* Recovery             : 1.00000 Carrier Weight : 0.00000          *
*****
*                                     QC DATA                               *
*                                     *                                       *
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51 MS Isotope      :              *
* MSD DPM              : 0.000 MSD Isotope      :              *
* LCS DPM              : 0.000 LCS Isotope      :              *
* LCSD DPM             : 0.000 LCSD Isotope     :              *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
RA-224	1.786E-01	4.715E-01	1.619E-01	2.405E-01
ANH-511	5.797E-03	3.817E-02	1.262E-02	1.947E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU	
BE-7	-6.779E-02	1.122E-01	8.655E-02	5.722E-02	NOT IDENT.
NA-22	-2.060E-02	2.253E-02	1.283E-02	1.149E-02	NOT IDENT.
NA-24	6.658E+01	3.742E+02	0.000E+00	1.909E+02	SHORT HLIF
AL-26	-4.097E-04	1.740E-02	1.428E-02	8.880E-03	NOT IDENT.
K-40	2.684E-01	2.558E-01	2.664E-01	1.305E-01	NOT IDENT.
TI-44	4.487E-03	4.680E-03	4.625E-03	2.388E-03	NOT IDENT.
SC-46	1.244E-03	1.979E-02	1.742E-02	1.010E-02	NOT IDENT.
V-48	-1.165E-02	2.908E-02	2.257E-02	1.484E-02	NOT IDENT.
CR-51	1.438E-02	1.281E-01	1.124E-01	6.534E-02	NOT IDENT.
MN-52	-5.056E-02	6.299E-02	3.892E-02	3.214E-02	NOT IDENT.
MN-54	2.762E-03	1.770E-02	1.599E-02	9.031E-03	NOT IDENT.
CO-56	3.912E-03	2.178E-02	1.964E-02	1.111E-02	NOT IDENT.
CO-57	1.219E-06	5.684E-03	4.893E-03	2.900E-03	NOT IDENT.
CO-58	3.642E-03	1.765E-02	1.617E-02	9.003E-03	NOT IDENT.
FE-59	-6.623E-04	3.549E-02	2.852E-02	1.811E-02	NOT IDENT.
CO-60	2.136E-02	2.488E-02	2.532E-02	1.269E-02	NOT IDENT.
ZN-65	-3.414E-02	3.797E-02	2.231E-02	1.937E-02	NOT IDENT.
GE-68	7.480E-02	5.773E-01	5.068E-01	2.946E-01	NOT IDENT.
AS-73	-6.506E-03	5.024E-02	4.590E-02	2.563E-02	NOT IDENT.
AS-74	-1.749E-02	3.849E-02	3.049E-02	1.964E-02	NOT IDENT.
SE-75	-8.928E-03	1.416E-02	1.120E-02	7.223E-03	NOT IDENT.
BR-77	-9.873E-02	7.352E-01	6.288E-01	3.751E-01	FAIL ABUN
SR-82	-5.776E-02	1.671E-01	1.280E-01	8.526E-02	NOT IDENT.
RB-83	3.032E-03	2.899E-02	2.591E-02	1.479E-02	NOT IDENT.
RB-84	9.152E-03	2.909E-02	2.710E-02	1.484E-02	NOT IDENT.

KR-85	4.082E+00	4.385E+00	3.934E+00	2.237E+00	NOT IDENT.
SR-85	1.957E-02	2.102E-02	1.886E-02	1.073E-02	NOT IDENT.
RB-86	4.921E-02	2.728E-01	2.434E-01	1.392E-01	NOT IDENT.
Y-88	-1.062E-02	2.683E-02	1.887E-02	1.369E-02	NOT IDENT.
ZR-88	-8.056E-03	1.194E-02	8.640E-03	6.092E-03	NOT IDENT.
Y-91	5.753E+00	7.936E+00	7.845E+00	4.049E+00	NOT IDENT.
NB-94	-5.301E-03	2.159E-02	1.751E-02	1.101E-02	NOT IDENT.
NB-95	-7.859E-04	1.490E-02	1.227E-02	7.600E-03	NOT IDENT.
NB-95M	1.826E-03	3.918E-02	3.159E-02	1.999E-02	NOT IDENT.
ZR-95	-1.511E-02	3.143E-02	2.296E-02	1.603E-02	NOT IDENT.
NB-97	7.199E+01	1.043E+02	0.000E+00	5.321E+01	SHORT HLIF
ZR-97	5.870E+02	2.001E+03	0.000E+00	1.021E+03	SHORT HLIF
MO-99	-5.624E-01	1.213E+00	9.049E-01	6.187E-01	NOT IDENT.
TC-99M	-3.208E+07	2.804E+08	0.000E+00	1.431E+08	SHORT HLIF
RH-101	1.527E-02	1.130E-02	1.155E-02	5.766E-03	NOT IDENT.
RH-102	5.503E-03	1.125E-02	1.085E-02	5.738E-03	NOT IDENT.
RU-103	1.028E-02	1.851E-02	1.760E-02	9.441E-03	FAIL ABUN
RH-106	-1.146E-01	1.930E-01	1.375E-01	9.845E-02	FAIL ABUN
RU-106	-1.146E-01	1.926E-01	1.375E-01	9.828E-02	FAIL ABUN
AG-108M	-4.130E-03	1.462E-02	1.252E-02	7.461E-03	NOT IDENT.
CD-109	7.408E-02	1.254E-01	1.201E-01	6.398E-02	NOT IDENT.
AG-110M	1.342E-02	1.975E-02	1.871E-02	1.007E-02	NOT IDENT.
IN-111	6.324E-02	7.626E-02	7.462E-02	3.891E-02	NOT IDENT.
IN-113M	-1.229E-02	1.802E-02	1.308E-02	9.192E-03	NOT IDENT.
SN-113	-1.229E-02	1.802E-02	1.308E-02	9.192E-03	NOT IDENT.
IN-114M	1.984E-02	4.790E-02	4.210E-02	2.444E-02	NOT IDENT.
CD-115	-2.020E-01	6.874E-01	5.687E-01	3.507E-01	NOT IDENT.
SN-117M	-6.713E-03	1.093E-02	9.422E-03	5.578E-03	NOT IDENT.
SB-122	-1.960E-02	1.468E-01	1.234E-01	7.490E-02	NOT IDENT.
I-123	-4.441E+02	4.943E+02	0.000E+00	2.522E+02	SHORT HLIF
TE-123M	-6.928E-03	7.710E-03	6.398E-03	3.934E-03	NOT IDENT.
I-124	-3.590E-02	1.164E-01	9.462E-02	5.938E-02	NOT IDENT.
SB-124	1.826E-02	2.536E-02	3.012E-02	1.294E-02	NOT IDENT.
SB-125	1.656E-02	3.674E-02	3.526E-02	1.875E-02	NOT IDENT.
TE-125M	6.730E-01	1.867E+00	1.711E+00	9.527E-01	NOT IDENT.
I-126	-3.634E-02	6.282E-02	4.652E-02	3.205E-02	NOT IDENT.
SB-126	1.952E-02	5.579E-02	5.018E-02	2.847E-02	NOT IDENT.
SN-126	5.823E-03	1.292E-02	1.215E-02	6.592E-03	NOT IDENT.
SB-127	-1.007E-01	2.080E-01	1.560E-01	1.061E-01	NOT IDENT.
XE-127	-9.529E-05	1.378E-02	1.247E-02	7.029E-03	NOT IDENT.
I-131	-1.088E-02	2.670E-02	2.091E-02	1.362E-02	NOT IDENT.
TE-132	-9.235E-03	6.183E-02	5.435E-02	3.155E-02	NOT IDENT.
BA-133	1.027E-02	1.914E-02	1.623E-02	9.767E-03	NOT IDENT.
I-133	1.727E-01	1.609E+01	0.000E+00	8.210E+00	SHORT HLIF
CS-134	-1.538E-02	2.501E-02	1.774E-02	1.276E-02	NOT IDENT.
CS-135	-1.162E-02	5.851E-02	5.011E-02	2.985E-02	NOT IDENT.
I-135	1.756E+07	3.219E+08	0.000E+00	1.642E+08	SHORT HLIF
CS-136	-2.015E-02	3.164E-02	2.092E-02	1.614E-02	NOT IDENT.
BA-137M	1.013E-02	1.759E-02	1.664E-02	8.973E-03	NOT IDENT.
CS-137	1.071E-02	1.859E-02	1.758E-02	9.485E-03	NOT IDENT.
CE-139	-7.753E-03	9.067E-03	7.609E-03	4.626E-03	NOT IDENT.
BA-140	-3.385E-02	9.179E-02	7.380E-02	4.683E-02	NOT IDENT.
LA-140	1.254E-02	3.964E-02	3.659E-02	2.023E-02	NOT IDENT.
CE-141	-4.810E-03	1.750E-02	1.425E-02	8.928E-03	NOT IDENT.
CE-143	5.214E-01	1.926E+00	1.739E+00	9.826E-01	NOT IDENT.
CE-144	-5.736E-02	5.358E-02	3.682E-02	2.734E-02	NOT IDENT.
PM-144	-3.859E-03	1.892E-02	1.539E-02	9.651E-03	NOT IDENT.
PR-144	-2.606E-01	1.278E+00	1.039E+00	6.518E-01	NOT IDENT.
PM-146	-7.126E-03	2.001E-02	1.682E-02	1.021E-02	NOT IDENT.
ND-147	-3.972E-03	1.715E-01	1.494E-01	8.749E-02	NOT IDENT.
PM-149	7.607E-01	4.566E+00	4.086E+00	2.330E+00	NOT IDENT.
EU-152	-1.942E-02	4.355E-02	3.465E-02	2.222E-02	NOT IDENT.
GD-153	-4.118E-03	1.648E-02	1.401E-02	8.407E-03	NOT IDENT.
EU-154	-5.929E-02	6.287E-02	3.490E-02	3.208E-02	NOT IDENT.
EU-155	-3.392E-03	2.146E-02	1.827E-02	1.095E-02	NOT IDENT.
TB-160	4.300E-03	6.214E-02	5.494E-02	3.170E-02	NOT IDENT.
HO-166M	1.521E-02	3.279E-02	3.014E-02	1.673E-02	NOT IDENT.
TM-171	-4.679E-01	2.504E+00	2.218E+00	1.278E+00	NOT IDENT.
LU-176	-2.470E-04	1.092E-02	9.436E-03	5.570E-03	NOT IDENT.
LU-177	-9.103E-03	1.539E-01	1.380E-01	7.851E-02	NOT IDENT.
LU-177M	-1.373E-03	7.058E-02	5.885E-02	3.601E-02	NOT IDENT.
HF-181	-4.947E-03	1.552E-02	1.288E-02	7.918E-03	NOT IDENT.
W-181	-2.708E-02	3.331E-02	2.688E-02	1.700E-02	NOT IDENT.
TA-182	-6.634E-02	9.684E-02	6.588E-02	4.941E-02	NOT IDENT.
RE-183	2.498E-02	2.922E-02	2.940E-02	1.491E-02	NOT IDENT.
RE-184	-2.224E-02	7.411E-02	6.265E-02	3.781E-02	NOT IDENT.
OS-185	-4.740E-05	1.687E-02	1.440E-02	8.605E-03	NOT IDENT.
RE-188	-2.390E-04	4.285E-02	3.983E-02	2.186E-02	NOT IDENT.

W-188	-1.497E+00	2.654E+00	2.119E+00	1.354E+00	NOT IDENT.
IR-192	-4.707E-03	1.373E-02	1.124E-02	7.003E-03	NOT IDENT.
AU-195	-1.292E-02	4.711E-02	3.982E-02	2.403E-02	NOT IDENT.
TL-200	2.707E+00	3.190E+00	0.000E+00	1.628E+00	SHORT HLIF
TL-201	8.650E-01	4.986E-01	5.332E-01	2.544E-01	NOT IDENT.
TL-202	-2.395E-02	1.929E-02	1.299E-02	9.840E-03	NOT IDENT.
HG-203	-2.813E-03	1.424E-02	1.214E-02	7.266E-03	NOT IDENT.
BI-207	-2.303E-02	2.677E-02	1.711E-02	1.366E-02	NOT IDENT.
TL-207	-2.938E-03	2.597E-01	2.233E-01	1.325E-01	NOT IDENT.
TL-208	-9.895E-03	2.155E-02	1.784E-02	1.100E-02	FAIL ABUN
PO-209	-1.834E+00	4.248E+00	3.354E+00	2.167E+00	NOT IDENT.
BI-210	3.003E-02	1.413E-01	1.191E-01	7.207E-02	NOT IDENT.
PB-210	3.003E-02	1.413E-01	1.191E-01	7.207E-02	NOT IDENT.
PO-210	3.003E-02	1.412E-01	1.191E-01	7.206E-02	NOT IDENT.
BI-211	4.685E-02	1.002E-01	8.932E-02	5.113E-02	NOT IDENT.
PB-211	-4.613E-01	5.082E-01	2.776E-01	2.593E-01	NOT IDENT.
BI-212	6.806E-02	1.601E-01	1.455E-01	8.168E-02	NOT IDENT.
PB-212	1.582E-02	4.176E-02	2.149E-02	2.131E-02	FAIL ABUN
PO-212	1.582E-02	4.176E-02	2.149E-02	2.131E-02	FAIL ABUN
BI-214	3.933E-02	4.849E-02	3.828E-02	2.474E-02	FAIL ABUN
PB-214	1.318E-02	4.122E-02	3.057E-02	2.103E-02	FAIL ABUN
PO-214	1.318E-02	4.122E-02	3.057E-02	2.103E-02	FAIL ABUN
PO-215	-2.938E-03	2.597E-01	2.233E-01	1.325E-01	NOT IDENT.
PO-216	1.582E-02	4.176E-02	2.149E-02	2.131E-02	FAIL ABUN
PO-218	1.318E-02	4.122E-02	3.057E-02	2.103E-02	FAIL ABUN
RN-219	1.304E-01	1.636E-01	1.572E-01	8.348E-02	NOT IDENT.
RN-220	-6.138E+00	1.252E+01	9.875E+00	6.386E+00	NOT IDENT.
RA-223	-2.938E-03	2.597E-01	2.233E-01	1.325E-01	NOT IDENT.
RA-226	3.933E-02	4.849E-02	3.828E-02	2.474E-02	FAIL ABUN
AC-227	9.336E-03	1.241E-01	1.110E-01	6.332E-02	NOT IDENT.
TH-227	9.336E-03	1.241E-01	1.110E-01	6.332E-02	NOT IDENT.
AC-228	-3.799E-03	5.943E-02	5.067E-02	3.032E-02	NOT IDENT.
RA-228	-3.799E-03	5.943E-02	5.067E-02	3.032E-02	NOT IDENT.
TH-228	1.595E-02	4.213E-02	2.168E-02	2.149E-02	FAIL ABUN
TH-229	6.880E-02	1.461E-01	1.404E-01	7.452E-02	NOT IDENT.
TH-230	3.933E-02	4.849E-02	3.828E-02	2.474E-02	FAIL ABUN
PA-231	-2.266E-01	5.786E-01	4.758E-01	2.952E-01	NOT IDENT.
TH-231	-2.938E-03	2.597E-01	2.233E-01	1.325E-01	NOT IDENT.
U-231	6.021E-04	6.837E-02	6.036E-02	3.488E-02	NOT IDENT.
TH-232	-3.799E-03	5.943E-02	5.067E-02	3.032E-02	NOT IDENT.
PA-233	-1.908E-02	3.030E-02	2.394E-02	1.546E-02	NOT IDENT.
PA-234	6.974E-03	1.568E-01	1.366E-01	8.001E-02	FAIL ABUN
PA-234M	-5.130E-01	1.607E+00	1.216E+00	8.199E-01	NOT IDENT.
TH-234	8.909E-02	1.107E-01	1.111E-01	5.647E-02	NOT IDENT.
U-234	3.933E-02	4.849E-02	3.828E-02	2.474E-02	FAIL ABUN
U-235	-1.307E-02	7.281E-02	6.027E-02	3.715E-02	FAIL ABUN
NP-236	6.667E-04	2.086E-02	1.941E-02	1.064E-02	NOT IDENT.
NP-237	-5.744E-03	3.824E-02	3.336E-02	1.951E-02	NOT IDENT.
U-238	8.909E-02	1.107E-01	1.111E-01	5.647E-02	NOT IDENT.
NP-239	-3.222E-02	5.035E-02	3.945E-02	2.569E-02	NOT IDENT.
AM-241	6.850E-03	1.174E-02	1.162E-02	5.988E-03	NOT IDENT.
AM-243	-1.723E-03	7.540E-03	6.114E-03	3.847E-03	NOT IDENT.
CM-243	-3.144E-03	1.907E-02	1.625E-02	9.732E-03	NOT IDENT.
AM-246	4.672E-02	6.160E-02	6.287E-02	3.143E-02	NOT IDENT.
CM-247	1.296E-02	1.426E-02	1.403E-02	7.276E-03	NOT IDENT.
CF-249	-1.023E-03	1.599E-02	1.332E-02	8.157E-03	NOT IDENT.
CF-251	2.940E-02	3.349E-02	3.392E-02	1.709E-02	NOT IDENT.

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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ENERGY	MDA COUNTS
46.50	18.0332
46.50	18.0332
46.50	18.0332
48.70	25.5266
49.72	23.8219
51.35	29.5493
52.39	24.1265
52.97	26.0526
53.15	26.0743
53.44	30.7716
54.07	23.3792
56.28	24.5567
56.28	24.5570
57.37	28.4711
57.53	28.4909
57.53	28.4912
57.60	28.4996
57.98	19.9826
57.98	19.9826
59.32	20.0979
59.32	20.0979
59.40	20.1047
59.54	20.1167
59.72	20.1320
60.01	22.0764
61.10	32.7841
61.14	32.7895
61.30	27.0211
63.00	15.5488
63.29	18.4860
63.29	18.4860
63.58	22.4040
64.28	28.3283
65.12	32.3436
65.20	32.3540
65.20	32.3540
66.05	22.6254
66.72	22.6845
66.83	22.6945
66.91	22.7015
67.20	22.7270
67.20	22.7270
67.75	26.7361
67.85	23.7748
68.90	20.8866
68.90	20.8866
69.30	26.8949
69.67	26.9326
70.82	31.0558
70.82	31.0558
70.83	31.0570
72.80	28.2557
72.87	28.2628
72.87	28.2628
74.67	27.4309
74.81	29.4777
74.81	29.4777
74.81	29.4777
74.81	29.4777
74.81	29.4777
74.81	29.4777
74.97	29.4945
75.28	32.5815
75.70	27.5315
77.11	34.8412
77.11	34.8412

77.11	34.8412
77.11	34.8412
77.11	34.8412
77.11	34.8412
77.11	34.8412
78.38	13.3805
79.62	27.9082
79.80	25.8568
79.80	25.8568
80.11	25.8841
80.18	25.8902
80.30	24.8646
80.30	24.8646
80.57	25.9243
81.00	31.1540
81.07	31.1613
81.07	31.1613
81.07	31.1613
81.07	31.1613
82.60	25.0565
83.37	26.1663
83.78	19.9134
83.78	19.9134
83.78	19.9134
83.78	19.9134
84.21	18.8918
84.90	35.7647
85.43	40.0407
86.29	32.7549
86.50	31.7196
86.54	31.7237
86.59	31.7287
86.72	31.7418
86.79	30.6904
86.94	29.6466
87.30	32.8604
87.30	32.8604
87.30	32.8604
87.30	32.8604
87.30	32.8604
87.30	32.8604
87.30	32.8604
87.57	26.5230
87.88	23.3631
88.03	23.3742
88.36	21.2712
88.47	21.2785
89.95	27.7898
91.11	33.2528
92.29	18.3010
92.38	19.3829
92.38	19.3829
93.35	21.5996
94.00	30.2986
94.67	33.6113
94.67	33.6118
94.90	26.0398
94.90	26.0398
94.90	26.0398
94.90	26.0398
95.87	25.0266
95.87	25.0266
96.73	19.6356
97.43	32.7926
98.44	28.5034
98.44	28.5035
98.88	31.8327
99.55	27.4946
99.55	27.4946
99.86	26.4183
100.00	19.8215
100.10	19.8274
103.18	19.9996
103.76	23.3706
105.00	22.3338
105.31	23.4704
108.00	28.1452
109.28	22.5932

111.00	27.2353
111.00	27.2353
111.76	32.9748
112.95	27.3739
115.19	35.5618
116.30	26.4592
117.00	36.8777
117.00	36.8777
117.66	31.1670
121.11	37.2559
121.62	31.4738
121.78	26.8214
122.06	22.1720
122.32	29.1920
122.32	29.1920
122.32	29.1920
122.32	29.1920
123.07	24.5660
127.23	33.0812
129.76	32.0889
131.20	27.4259
133.02	27.5399
133.54	34.7654
135.34	20.4625
136.00	22.9034
136.25	26.5345
136.48	26.5483
140.51	36.5245
140.51	0.0000
142.18	43.9882
142.65	26.9085
143.76	47.8151
144.24	38.0457
144.24	38.0457
144.24	38.0457
144.24	38.0457
145.22	40.5848
145.44	40.6035
147.16	35.8115
152.43	23.7193
152.70	36.2230
153.22	38.3450
154.21	37.5865
154.21	37.5865
154.21	37.5865
154.21	37.5865
155.03	30.1190
156.02	21.7957
158.56	35.3867
159.00	0.0000
159.00	38.7900
160.31	27.0537
161.27	32.1866
162.32	24.6133
162.64	24.6286
163.35	27.2135
163.89	34.9036
165.85	45.2886
167.43	19.7125
171.28	24.1710
171.86	15.5552
172.10	22.4784
176.55	18.3036
176.60	18.3054
181.06	31.6315
184.41	26.5152
185.71	26.5750
186.00	26.5884
190.27	20.0878
192.34	27.7734
193.63	23.3443
197.04	31.6038
198.01	26.2279
198.60	25.3477
200.40	44.4895
201.83	33.6720
202.84	34.6385
205.31	27.4545

208.36	24.8288
208.81	23.0059
209.75	26.7264
209.75	26.7264
210.97	32.3176
215.65	32.5522
216.55	27.0087
218.09	28.0057
222.10	28.1754
223.80	31.0714
226.40	34.0265
227.00	34.0565
227.08	34.0605
227.20	34.0664
228.16	32.2191
228.18	32.2202
228.18	32.2202
231.56	33.3309
235.69	25.8648
236.00	24.4388
236.00	24.4388
238.63	22.1250
238.63	22.1250
238.63	22.1250
238.63	22.1250
239.00	22.1364
240.98	20.2677
241.98	34.7930
241.98	34.7930
241.98	34.7930
244.69	32.0134
245.39	20.3918
247.94	30.2075
248.90	32.1984
249.79	30.2835
252.40	20.5869
252.85	23.5422
252.85	23.5422
254.15	0.0000
256.20	20.6915
256.20	20.6915
260.50	25.7635
260.90	21.8116
262.80	21.8653
264.65	24.9064
268.24	29.0248
268.79	23.0360
269.46	23.0557
269.46	23.0557
269.46	23.0557
269.46	23.0557
271.23	16.0745
273.65	30.2319
276.40	22.2466
277.35	28.3469
277.60	29.3688
277.60	29.3688
278.00	29.3829
278.60	32.4466
279.20	28.4119
279.53	24.3628
280.46	24.3911
281.68	24.4272
283.67	26.5274
284.30	23.4843
285.00	19.4167
285.90	21.4841
286.10	21.4892
286.10	21.4892
287.40	16.3984
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290.80	28.8140
291.72	19.5740
293.26	22.7059
293.70	23.7506
295.21	24.8271
295.21	24.8271



295.21	24.8271
295.96	21.7430
296.50	14.5044
297.23	19.7016
298.57	23.8867
299.80	27.0410
299.80	27.0410
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300.09	21.8481
300.09	21.8481
300.09	21.8481
300.12	21.8489
301.29	18.7529
302.84	21.9177
303.76	29.2544
303.91	29.2595
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304.40	28.2305
304.84	27.1987
306.84	28.3090
308.46	31.5125
311.98	35.8566
316.51	26.4984
318.01	20.1724
319.02	20.1948
319.41	21.2667
320.08	21.2826
323.87	21.3708
323.87	21.3708
323.87	21.3708
323.87	21.3708
325.23	20.3321
328.77	22.5586
333.44	23.7505
334.20	28.0916
334.20	28.0916
334.30	27.0142
338.28	23.8723
338.28	23.8723
338.28	23.8723
338.28	23.8723
338.32	23.8732
338.32	23.8732
338.32	23.8732
340.50	28.2783
340.57	29.3681
344.27	27.2970
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351.07	16.4926
351.92	16.5070
351.92	16.5070
351.92	16.5070
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366.43	23.4456
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369.80	15.6819
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383.85	17.0291
387.95	15.9548
388.63	12.5440
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391.69	20.5847
392.90	19.4629
398.62	18.4141
400.65	21.9073
401.10	17.3022
401.81	10.3879
402.60	9.2404
404.84	25.4621
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413.65	15.1643
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423.70	15.8862
427.08	12.3918
427.89	12.4004
432.53	17.7850
433.93	19.5867
439.47	20.5728
439.56	20.5742
439.89	21.4750
443.98	13.4675
444.90	13.4777
445.03	13.4793
445.03	13.4793
445.03	13.4793
445.03	13.4793
453.90	19.9140
463.38	11.8576
468.07	13.7329
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475.06	9.2058
475.35	10.1287
476.78	13.8272
477.59	13.8359
477.96	11.0718
482.03	13.8835
484.57	12.9834
487.03	16.7245
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492.35	19.5910
497.08	14.9797
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510.53	0.0000
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511.00	17.9734
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511.85	17.9846
513.99	18.2021
513.99	18.2021
520.41	12.3819
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527.90	15.3213
528.96	0.0000
529.64	14.3816
529.87	0.0000
531.02	13.4360
537.32	14.4598
543.00	16.4532
546.56	0.0000
549.76	16.5300
552.65	17.5375
555.20	16.5917
563.23	11.7759
563.90	8.8358
568.70	11.8191
569.32	12.8092
569.50	15.7671
569.67	15.7690
573.80	19.7656
574.00	13.8376
574.64	14.8325
578.91	21.8154
579.30	0.0000
583.14	12.9266
585.48	14.9382
591.81	13.9996
592.07	9.0011
593.00	14.0103
595.88	19.0493
600.56	14.0782
602.52	0.0000
602.71	17.1183
602.71	17.1183
603.60	18.8074
604.41	11.2902
604.70	11.2923
609.31	12.1340

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609.31	12.1340
609.31	12.1340
610.33	12.1417
612.46	8.1052
614.37	21.0990
618.01	13.2166
621.84	17.3242
621.84	17.3242
631.29	7.1750
633.02	15.3914
633.10	15.3918
634.78	8.2175
635.90	12.3347
636.97	9.2568
645.85	11.3746
646.12	8.2737
656.30	12.4856
657.75	12.4962
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661.65	9.3936
664.57	11.5005
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666.33	14.6520
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685.20	12.6954
692.80	13.8125
695.00	14.8934
696.49	15.9705
696.49	15.9705
697.00	14.9100
697.49	14.9143
698.33	17.0527
698.50	17.0542
699.00	19.1915
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706.58	0.0000
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711.68	10.7367
713.82	13.9744
717.42	12.9247
720.50	11.8674
721.93	14.0359
722.20	15.1177
722.78	17.2827
722.78	17.2827
722.89	17.2839
722.95	17.2847
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724.18	16.2149
727.18	11.9101
733.00	16.2918
735.90	9.7902
739.58	13.0792
742.81	15.2852
744.21	17.4814
747.13	15.3198
751.79	9.8723
752.31	9.8751
753.82	10.9808
755.35	10.9897
756.15	10.9943
756.87	4.3994
763.93	4.4154
765.79	6.6295
766.42	9.9473
766.84	11.0550
776.49	12.2206
778.00	5.5589
778.57	6.6727
778.89	11.1230
783.80	11.1505
785.46	8.9280
792.07	10.0772

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796.30	14.5865
798.80	14.6044
801.93	10.8015
805.60	10.8211
810.29	10.8457
810.76	8.1363
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836.80	0.0000
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848.13	16.5656
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867.82	2.7862
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874.81	4.6586
875.33	0.0000
876.40	7.4590
879.36	7.4691
880.27	9.3401
880.51	9.3413
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883.24	4.6764
884.67	9.3589
889.25	9.3782
896.60	13.1725
898.02	11.2978
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903.28	1.8874
911.07	7.5754
911.07	7.5754
911.07	7.5754
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920.93	5.7062
925.00	6.6690
925.24	7.6225
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935.52	6.6992
937.48	8.6205
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946.00	8.6517
949.00	5.7753
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964.01	8.7177
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968.20	6.7922
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969.11	4.8534
969.11	4.8534
977.42	5.8441
980.50	5.8516
983.50	10.7411
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996.32	4.9078
1001.03	4.9172
1001.68	4.9185
1004.76	7.8793
1021.30	0.0000
1024.50	0.0000
1034.80	4.9836
1036.00	10.9688
1037.82	8.9811
1038.57	10.9801
1038.76	0.0000
1045.16	5.0037
1046.59	7.0092
1048.07	7.0133

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1050.47	3.0085
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1077.35	6.0788
1078.86	3.0412
1085.78	6.0981
1099.22	3.0645
1112.02	5.1316
1112.84	4.1064
1115.52	9.2487
1120.29	4.1176
1120.29	4.1176
1120.29	4.1176
1120.29	4.1176
1120.51	4.1180
1121.28	3.0894
1124.00	0.0000
1129.67	6.1975
1131.51	0.0000
1147.95	0.0000
1167.94	12.5648
1173.22	5.2451
1175.09	8.3977
1177.93	8.4059
1189.05	4.2191
1204.90	4.2422
1205.75	0.0000
1213.00	8.5078
1221.42	11.7315
1230.97	5.3496
1235.34	4.2859
1236.41	0.0000
1238.25	6.4351
1246.25	11.8288
1260.41	0.0000
1271.85	4.3377
1274.45	9.7682
1274.54	9.7682
1291.56	3.2739
1298.22	0.0000
1312.09	5.4922
1325.50	2.7577
1325.50	2.7577
1332.49	4.6063
1333.61	9.2155
1360.21	3.7166
1362.66	0.0000
1365.15	8.3749
1368.21	3.7256
1368.53	0.0000
1376.25	5.6021
1384.27	4.6798
1394.10	5.6321
1395.20	7.5120
1407.95	10.3680
1434.06	7.5983
1436.60	1.9010
1457.56	0.0000
1460.81	3.8286
1489.15	6.7542
1509.49	5.8223
1596.49	3.9738
1620.62	3.9990
1678.03	0.0000
1691.02	0.0000
1691.02	0.0000
1706.46	0.0000
1750.46	0.0000
1764.49	4.1452
1764.49	4.1452
1764.49	4.1452
1764.49	4.1452
1770.23	1.0377
1771.40	1.0380
1791.20	0.0000
1808.65	2.0945

1836.01

5.2696

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202028548

Total Uranium Activity	2.5900E-01	ug/g
Total Uranium Counting Unc.	3.3102E-01	ug/g
Total Uranium Tpu	1.6889E-07	ug/g
Total Uranium Mda	3.3158E-01	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON, SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 947037                      SAMPLE ID : G1202028548
*  ANALYST       : MJH1                        DETECTOR  : GAM21
*  SAMPLE DATE   : 1-FEB-2010 00:00:00.00    COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 17:28:19.87    SAMPLE ALQT: 148.710 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 4.367E-02
GROSS GAMMA ERROR   (pCi/GRAM ) : 6.366E-02
GROSS GAMMA MDA     (pCi/GRAM ) : 1.126E-01
GROSS GAMMA DLC     (pCi/GRAM ) : 5.010E-02

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VAX/VMS Nuclide Identification Report Generated 10-FEB-2010 15:05:23.49

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028549.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:44:16.
Sample ID          : G1202028549      Sample quantity   : 1.48150E+02 GRAM
Detector name      : GAM10            Detector geometry: CAN
Elapsed live time   : 0 02:00:00.00    Elapsed real time: 0 02:00:01.08  0.0%
Energy tolerance    : 1.55000 keV      Analyst Initials : MJH1
Abundance limit     : 75.00000         Sensitivity      : 5.00000
Batch ID           : 947037            Detector SN#     :
Matrix Spike ID     :                  LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.03*	185	480	0.75	126.22	122	9	2.57E-02	22.8	
2	2	74.55*	332	401	1.05	149.23	144	15	4.61E-02	11.1	5.50E-01
3	2	76.82	475	394	0.93	153.78	144	15	6.60E-02	8.1	
4	5	84.24*	130	418	1.60	168.60	165	27	1.80E-02	28.8	2.00E+00
5	5	86.80*	300	398	1.36	173.72	165	27	4.17E-02	12.9	
6	5	89.62	180	376	1.26	179.35	165	27	2.50E-02	20.6	
7	5	92.43*	657	348	1.38	184.96	165	27	9.13E-02	6.6	
8	0	185.26*	389	356	1.02	370.46	364	11	5.40E-02	11.0	
9	0	208.88	127	273	1.10	417.66	414	9	1.77E-02	25.0	
10	6	238.25*	1234	182	1.19	476.37	469	20	1.71E-01	3.4	1.86E+00
11	6	241.27	325	270	1.81	482.41	469	20	4.51E-02	13.5	
12	0	269.76	137	172	2.01	539.33	535	9	1.90E-02	19.3	
13	2	294.81	446	135	1.24	589.39	584	20	6.20E-02	6.4	9.78E-01
14	2	299.69*	78	161	1.54	599.16	584	20	1.08E-02	32.4	
15	0	327.38	65	178	1.09	654.50	650	10	9.06E-03	40.2	
16	0	337.85	213	193	1.30	675.43	671	11	2.95E-02	14.4	
17	0	351.55*	689	233	1.15	702.80	697	13	9.56E-02	6.0	
18	0	408.67	64	152	1.06	816.98	811	12	8.84E-03	40.8	
19	0	462.64	64	114	1.05	924.84	920	9	8.89E-03	32.8	
20	0	510.13*	66	157	1.69	1019.78	1013	14	9.20E-03	47.6	
21	0	582.48*	397	102	1.47	1164.41	1157	14	5.51E-02	7.5	
22	0	608.68*	495	117	1.27	1216.78	1211	12	6.88E-02	6.4	
23	0	660.92	236	67	1.65	1321.21	1316	10	3.27E-02	9.2	
24	0	726.74*	122	61	1.96	1452.82	1446	15	1.69E-02	17.0	
25	0	794.02	33	83	1.57	1587.32	1581	12	4.59E-03	58.0	
26	0	860.02	54	71	0.80	1719.29	1713	15	7.53E-03	36.5	
27	0	910.31*	266	53	1.51	1819.86	1815	14	3.70E-02	8.5	
28	1	963.82*	58	55	1.92	1926.86	1917	24	8.10E-03	29.5	1.03E+00
29	1	967.91*	133	48	1.62	1935.05	1917	24	1.85E-02	13.6	
30	0	1000.70	27	43	1.88	2000.61	1996	10	3.73E-03	49.4	
31	0	1119.20*	71	76	1.37	2237.60	2230	16	9.85E-03	30.3	
32	0	1376.38	26	20	1.56	2752.03	2747	11	3.68E-03	37.6	
33	0	1459.27	978	46	2.24	2917.85	2910	20	1.36E-01	3.6	
34	0	1587.11	49	12	1.46	3173.61	3168	14	6.85E-03	20.0	
35	0	1763.01*	101	12	2.48	3525.60	3517	18	1.40E-02	13.8	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 10-FEB-2010 15:05:26

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028549.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:44:16
Sample ID         : G1202028549 Sample quantity : 148.15 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA10 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.08 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.55 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.096E+01	2.357E+00	4.775E-01	4.112E-02	43.894
CD-109	+	88.03	*	3.995E+00	1.126E+00	1.075E+00	1.219E-01	3.717
SN-126	+	64.28		2.180E+00	1.064E+00	9.287E-01	1.588E-01	2.347
	+	86.94		1.632E+00	8.047E-01	4.469E-01	1.877E-01	3.652
	+	87.57	*	3.926E-01	1.106E-01	1.064E-01	1.204E-02	3.690
CS-135	+	268.24	*	4.609E-01	1.820E-01	2.155E-01	1.742E-02	2.138
BA-137M	+	661.65	*	2.817E-01	5.378E-02	4.871E-02	2.403E-03	5.783
CS-137	+	661.65	*	2.978E-01	5.687E-02	5.149E-02	2.555E-03	5.783
TL-208	+	277.35		5.389E-01	3.299E-01	5.827E-01	6.355E-02	0.925
	+	510.84		2.650E-01	2.537E-01	1.804E-01	1.897E-02	1.469
	+	583.14	*	4.539E-01	7.479E-02	4.589E-02	3.084E-03	9.890
	+	860.37		5.984E-01	4.412E-01	3.543E-01	3.460E-02	1.689
BI-211	+	72.87		5.087E+00	3.721E+00	5.774E+00	6.350E-01	0.881
	+	351.07	*	3.466E+00	4.885E-01	2.604E-01	1.899E-02	13.310
PB-212	+	74.81		2.040E+00	5.414E-01	5.751E-01	8.279E-02	3.548
	+	77.11		1.613E+00	3.153E-01	3.187E-01	3.484E-02	5.060
	+	87.30		1.816E+00	5.429E-01	4.943E-01	7.458E-02	3.674
	+	238.63	*	1.370E+00	1.400E-01	7.560E-02	5.735E-03	18.117
	+	300.09		1.330E+00	8.685E-01	1.069E+00	9.396E-02	1.244
PO-212	+	74.81		2.040E+00	5.414E-01	5.751E-01	8.279E-02	3.548
	+	77.11		1.613E+00	3.153E-01	3.187E-01	3.484E-02	5.060
	+	87.30		1.816E+00	5.429E-01	4.943E-01	7.458E-02	3.674
	+	115.19		-1.289E+00	3.273E+00	5.196E+00	3.718E-01	-0.248
	+	238.63	*	1.370E+00	1.400E-01	7.560E-02	5.735E-03	18.117
	+	300.09		1.330E+00	8.685E-01	1.069E+00	9.396E-02	1.244
BI-214	+	609.31	*	1.070E+00	1.594E-01	8.699E-02	6.620E-03	12.299
	+	1120.29		8.400E-01	5.154E-01	4.126E-01	4.032E-02	2.036
	+	1764.49		1.657E+00	4.692E-01	2.060E-01	1.376E-02	8.041
PB-214	+	74.81		3.515E+00	9.111E-01	9.910E-01	1.310E-01	3.548
	+	77.11		2.764E+00	5.801E-01	5.463E-01	7.280E-02	5.060
	+	87.30		3.111E+00	9.088E-01	8.467E-01	1.158E-01	3.674
	+	241.98		2.164E+00	6.110E-01	4.551E-01	3.787E-02	4.754
	+	295.21		1.333E+00	2.084E-01	1.837E-01	1.659E-02	7.260
	+	351.92	*	1.206E+00	1.812E-01	9.078E-02	8.141E-03	13.282

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		3.515E+00	9.111E-01	9.910E-01	1.310E-01	3.548
	+	77.11		2.764E+00	5.801E-01	5.463E-01	7.280E-02	5.060
	+	87.30		3.111E+00	9.088E-01	8.467E-01	1.158E-01	3.674
	+	241.98		2.164E+00	6.110E-01	4.551E-01	3.787E-02	4.754
	+	295.21		1.333E+00	2.084E-01	1.837E-01	1.659E-02	7.260
	+	351.92	*	1.206E+00	1.812E-01	9.078E-02	8.141E-03	13.282
PO-216	+	74.81		2.040E+00	5.414E-01	5.751E-01	8.279E-02	3.548
	+	77.11		1.613E+00	3.153E-01	3.187E-01	3.484E-02	5.060
	+	87.30		1.816E+00	5.429E-01	4.943E-01	7.458E-02	3.674
	+	238.63	*	1.370E+00	1.400E-01	7.560E-02	5.735E-03	18.117
	+	300.09		1.330E+00	8.685E-01	1.069E+00	9.396E-02	1.244
PO-218	+	74.81		3.515E+00	9.111E-01	9.910E-01	1.310E-01	3.548
	+	77.11		2.764E+00	5.801E-01	5.463E-01	7.280E-02	5.060
	+	87.30		3.111E+00	9.088E-01	8.467E-01	1.158E-01	3.674
	+	241.98		2.164E+00	6.110E-01	4.551E-01	3.787E-02	4.754
	+	295.21		1.333E+00	2.084E-01	1.837E-01	1.659E-02	7.260
	+	351.92	*	1.206E+00	1.812E-01	9.078E-02	8.141E-03	13.282
RA-224	+	240.98	*	4.103E+00	1.135E+00	8.602E-01	5.280E-02	4.770
RA-226	+	609.31	*	1.070E+00	1.594E-01	8.699E-02	6.620E-03	12.299
	+	1120.29		8.400E-01	5.154E-01	4.126E-01	4.032E-02	2.036
	+	1764.49		1.657E+00	4.692E-01	2.060E-01	1.376E-02	8.041
AC-228	+	338.32		1.181E+00	5.904E-01	3.241E-01	1.326E-01	3.643
	+	911.07	*	1.399E+00	2.930E-01	1.701E-01	2.099E-02	8.226
	+	969.11		1.242E+00	4.482E-01	3.296E-01	7.793E-02	3.768
RA-228	+	338.32		1.181E+00	5.904E-01	3.241E-01	1.326E-01	3.643
	+	911.07	*	1.399E+00	2.930E-01	1.701E-01	2.099E-02	8.226
	+	969.11		1.242E+00	4.482E-01	3.296E-01	7.793E-02	3.768
TH-228	+	74.81		2.071E+00	5.150E-01	5.839E-01	6.427E-02	3.548
	+	77.11		1.637E+00	3.201E-01	3.236E-01	3.538E-02	5.060
	+	87.30		1.844E+00	5.195E-01	5.018E-01	5.670E-02	3.674
	+	238.63	*	1.391E+00	1.421E-01	7.676E-02	5.823E-03	18.117
	+	300.09		1.350E+00	1.183E+00	1.086E+00	6.406E-01	1.244
TH-230	+	609.31	*	1.070E+00	1.594E-01	8.699E-02	6.619E-03	12.299
	+	1120.29		8.400E-01	5.154E-01	4.126E-01	4.032E-02	2.036
	+	1764.49		1.657E+00	4.692E-01	2.060E-01	1.376E-02	8.041
TH-232	+	338.32		1.181E+00	3.487E-01	3.241E-01	2.173E-02	3.643
	+	911.07	*	1.399E+00	2.930E-01	1.701E-01	2.099E-02	8.226
	+	969.11		1.242E+00	4.482E-01	3.296E-01	7.793E-02	3.768
TH-234	+	63.29	*	5.506E+00	2.741E+00	2.479E+00	4.886E-01	2.221
	+	92.38		5.399E+00	1.247E+00	6.807E-01	1.288E-01	7.932
U-234	+	609.31	*	1.070E+00	1.594E-01	8.699E-02	6.619E-03	12.299
	+	1120.29		8.400E-01	5.154E-01	4.126E-01	4.032E-02	2.036
	+	1764.49		1.657E+00	4.692E-01	2.060E-01	1.376E-02	8.041
NP-237	+	86.50	*	1.153E+00	4.027E-01	3.180E-01	7.474E-02	3.626
		95.87		-7.231E-01	9.606E-01	1.324E+00	3.307E-01	-0.546
U-238	+	63.29	*	5.506E+00	2.741E+00	2.479E+00	4.886E-01	2.221
	+	92.38		5.399E+00	9.049E-01	6.807E-01	6.994E-02	7.932
AM-243	+	74.67	*	3.308E-01	8.215E-02	9.367E-02	1.026E-02	3.531
	+	86.72		4.324E+01	1.218E+01	1.188E+01	1.338E+00	3.639

Sample ID : G1202028549

Acquisition date : 9-FEB-2010 17:44:16

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-1.696E+00	3.340E+00	5.298E+00	3.676E-01	-0.320
		142.18		1.008E+01	1.615E+01	2.634E+01	1.572E+00	0.382
ANH-511	+	511.00	*	5.725E-02	5.459E-02	3.899E-02	2.498E-03	1.468

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-5.328E-02	2.797E-01	4.452E-01	3.311E-02	-0.120
NA-22		1274.54	*	-3.918E-02	4.080E-02	6.110E-02	4.733E-03	-0.641
NA-24		1368.53	*	-7.539E-01	4.080E-02	Half-Life too short		
AL-26		1129.67		-3.526E-01	1.410E+00	2.312E+00	1.622E-01	-0.153
		1808.65	*	1.634E-02	2.693E-02	4.869E-02	3.087E-03	0.336
TI-44		67.85		-1.464E-02	5.408E-02	8.468E-02	9.559E-03	-0.173
		78.38	*	1.210E-01	4.279E-02	6.745E-02	7.381E-03	1.794
SC-46		889.25	*	-1.078E-02	3.404E-02	5.389E-02	5.333E-03	-0.200
	+	1120.51		1.439E-01	8.781E-02	1.052E-01	7.554E-03	1.369
V-48		944.10		-2.384E-01	7.708E-01	1.214E+00	1.176E-01	-0.196
		983.50	*	-7.005E-03	6.020E-02	9.643E-02	8.917E-03	-0.073
		1312.09		-2.218E-02	6.266E-02	9.916E-02	8.280E-03	-0.224
CR-51		320.08	*	-2.842E-01	3.108E-01	4.862E-01	3.511E-02	-0.584
MN-52		744.21		9.336E-02	2.099E-01	3.599E-01	2.348E-02	0.259
		848.13		1.920E+00	5.867E+00	9.912E+00	8.786E-01	0.194
		935.52		1.814E-01	2.238E-01	3.912E-01	3.825E-02	0.464
		1246.25		-2.861E+00	6.264E+00	9.970E+00	7.262E-01	-0.287
		1333.61		-1.719E+00	3.961E+00	6.163E+00	5.354E-01	-0.279
		1434.06	*	4.276E-02	1.856E-01	3.169E-01	2.678E-02	0.135
MN-54		834.83	*	-1.852E-02	3.430E-02	5.376E-02	4.593E-03	-0.345
CO-56		846.75	*	2.475E-02	3.305E-02	5.783E-02	5.107E-03	0.428
		977.42		7.821E-01	2.533E+00	4.240E+00	3.952E-01	0.184
		1037.82		-9.996E-02	2.755E-01	4.275E-01	3.844E-02	-0.234
		1175.09		3.647E-01	1.971E+00	3.354E+00	2.077E-01	0.109
		1238.25		1.479E-01	8.827E-02	1.630E-01	1.215E-02	0.908
		1360.21		6.161E-01	8.962E-01	1.603E+00	1.385E-01	0.384
		1771.40		-1.127E-01	1.912E-01	2.675E-01	1.772E-02	-0.422
CO-57		122.06	*	4.582E-03	2.278E-02	3.723E-02	2.456E-03	0.123
		136.48		-1.466E-02	1.842E-01	2.959E-01	2.069E-02	-0.050
CO-58		810.76	*	-9.148E-03	3.171E-02	5.074E-02	4.059E-03	-0.180
FE-59		142.65		2.106E+00	2.490E+00	4.094E+00	2.440E-01	0.514
		192.34		-2.260E-01	8.156E-01	1.273E+00	1.497E-01	-0.178
		1099.22	*	3.059E-02	7.576E-02	1.272E-01	1.062E-02	0.241
		1291.56		2.541E-02	1.086E-01	1.848E-01	1.710E-02	0.137
CO-60		1173.22		4.640E-03	4.076E-02	6.882E-02	4.244E-03	0.067
		1332.49	*	-3.881E-03	2.992E-02	4.871E-02	4.233E-03	-0.080
ZN-65		1115.52	*	-8.271E-03	1.008E-01	1.379E-01	1.004E-02	-0.060
GE-68		1077.35	*	4.154E-01	1.025E+00	1.725E+00	1.367E-01	0.241
AS-73		53.44	*	1.103E+00	1.317E+00	2.263E+00	2.995E-01	0.488
AS-74		595.88	*	1.107E-02	7.538E-02	1.281E-01	7.319E-03	0.086
		634.78		-4.541E-02	3.150E-01	5.221E-01	2.756E-02	-0.087

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75		66.05		-3.119E+00	6.061E+00	8.779E+00	1.131E+00	-0.355
		96.73		-1.261E-01	7.486E-01	1.085E+00	1.535E-01	-0.116
		121.11		1.112E-02	1.218E-01	1.982E-01	1.941E-02	0.056
		136.00		-2.022E-02	3.500E-02	5.497E-02	3.414E-03	-0.368
		198.60		1.054E+00	1.688E+00	2.709E+00	1.919E-01	0.389
		264.65	*	3.070E-03	4.110E-02	6.058E-02	3.864E-03	0.051
		279.53		-6.538E-02	9.459E-02	1.524E-01	1.044E-02	-0.429
		303.91		1.304E+00	1.955E+00	2.991E+00	2.998E-01	0.436
		400.65		1.709E-02	2.269E-01	3.724E-01	3.637E-02	0.046
BR-77	+	87.88		8.944E+02	2.520E+02	3.272E+02	3.710E+01	2.733
		200.40		7.757E+01	1.543E+02	2.494E+02	1.438E+01	0.311
	+	239.00		2.279E+02	2.093E+01	3.339E+01	2.044E+00	6.826
		249.79		1.204E+01	5.689E+01	9.648E+01	5.992E+00	0.125
		281.68		-4.840E+00	7.690E+01	1.279E+02	8.233E+00	-0.038
		297.23		7.125E+01	4.810E+01	8.509E+01	5.556E+00	0.837
		303.76		9.346E+01	1.736E+02	2.636E+02	1.730E+01	0.355
		439.47		6.909E+01	1.329E+02	2.231E+02	1.500E+01	0.310
		484.57		-1.759E+02	2.020E+02	3.030E+02	1.985E+01	-0.581
		520.65	*	-5.884E+00	9.148E+00	1.389E+01	8.810E-01	-0.424
		574.64		-1.281E+02	1.892E+02	2.840E+02	1.681E+01	-0.451
		578.91		5.592E+01	8.428E+01	1.316E+02	7.738E+00	0.425
		585.48		1.995E+02	1.592E+02	2.609E+02	1.518E+01	0.765
		755.35		-1.045E+01	1.517E+02	2.497E+02	1.687E+01	-0.042
		817.79		7.907E+00	1.204E+02	1.992E+02	1.622E+01	0.040
SR-82		698.33		-1.258E+01	2.946E+01	4.742E+01	2.660E+00	-0.265
		776.49	*	-6.734E-02	3.237E-01	5.211E-01	3.757E-02	-0.129
		1395.20		8.232E-01	8.754E+00	1.466E+01	1.255E+00	0.056
RB-83		520.41	*	-3.964E-02	5.827E-02	8.812E-02	5.592E-03	-0.450
		529.64		5.223E-02	9.158E-02	1.533E-01	9.633E-03	0.341
		552.65		2.801E-02	1.679E-01	2.721E-01	1.662E-02	0.103
RB-84		881.50	*	2.820E-03	6.030E-02	9.910E-02	9.609E-03	0.028
KR-85		513.99	*	1.173E+00	6.548E+00	9.354E+00	5.975E-01	0.125
SR-85		513.99	*	6.022E-03	3.362E-02	4.802E-02	3.068E-03	0.125
RB-86		1076.63	*	1.796E-01	6.435E-01	1.069E+00	8.483E-02	0.168
Y-88		898.02		-3.298E-02	3.533E-02	5.184E-02	5.267E-03	-0.636
		1836.01	*	1.476E-02	2.809E-02	5.038E-02	3.091E-03	0.293
ZR-88		392.90	*	-6.810E-03	2.637E-02	4.242E-02	2.883E-03	-0.161
Y-91		1204.90	*	1.505E+01	1.668E+01	2.992E+01	1.987E+00	0.503
NB-94		702.63	*	3.148E-02	2.846E-02	5.109E-02	2.908E-03	0.616
		871.10		-3.050E-03	2.732E-02	4.422E-02	4.171E-03	-0.069
NB-95		765.79	*	5.610E-02	3.921E-02	7.093E-02	4.950E-03	0.791
NB-95M		235.69	*	2.469E-01	1.228E-01	1.996E-01	1.548E-02	1.237
ZR-95		724.18		1.253E-01	9.204E-02	1.506E-01	1.074E-02	0.832
		756.15	*	-1.946E-02	6.198E-02	9.985E-02	7.843E-03	-0.195
NB-97		657.90	*	1.243E-01	6.198E-02	Half-Life	too short	
		1024.50		-4.122E-01	6.198E-02	Half-Life	too short	
ZR-97		254.15		7.332E-01	6.198E-02	Half-Life	too short	
		355.39		-1.265E+00	6.198E-02	Half-Life	too short	
		507.63	*	4.638E+00	6.198E-02	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	602.52		-1.431E+00	6.198E-02	Half-Life	too short	
	1021.30		5.188E+00	6.198E-02	Half-Life	too short	
	1147.95		-5.467E+00	6.198E-02	Half-Life	too short	
	1362.66		5.860E+00	6.198E-02	Half-Life	too short	
	1750.46		6.609E-01	6.198E-02	Half-Life	too short	
MO-99	140.51		-2.146E+01	2.564E+01	3.846E+01	1.038E+01	-0.558
	181.06		9.607E+00	1.733E+01	2.519E+01	4.299E+00	0.381
	366.43		-4.503E-02	7.359E+01	1.209E+02	8.186E+00	0.000
	739.58	*	3.746E-01	1.021E+01	1.697E+01	2.385E+00	0.022
	778.00		-6.841E+00	2.946E+01	4.727E+01	3.424E+00	-0.145
TC-99M	140.51	*	-4.239E+10	2.946E+01	Half-Life	too short	
RH-101	127.23		1.458E-02	2.848E-02	4.701E-02	3.005E-03	0.310
	198.01	*	2.122E-02	3.036E-02	4.890E-02	2.809E-03	0.434
	325.23		4.995E-02	2.158E-01	3.192E-01	2.125E-02	0.156
RH-102	418.52		1.771E-02	2.417E-01	3.957E-01	2.679E-02	0.045
	475.06	*	4.833E-03	2.488E-02	4.077E-02	2.689E-03	0.119
	631.29		1.126E-02	4.541E-02	7.749E-02	4.122E-03	0.145
	697.49		-2.945E-02	6.735E-02	1.084E-01	6.064E-03	-0.272
	766.84		1.831E-01	1.021E-01	1.876E-01	1.313E-02	0.976
	1046.59		-6.229E-02	9.731E-02	1.469E-01	1.234E-02	-0.424
	1112.84		2.245E-02	2.371E-01	3.324E-01	2.433E-02	0.068
RU-103	497.08	*	2.464E-03	3.528E-02	5.711E-02	7.410E-03	0.043
	610.33		1.033E+01	2.017E+00	2.563E+00	3.928E-01	4.029
RH-106	511.85		4.460E-03	1.932E-01	3.238E-01	2.073E-02	0.014
	621.84	*	2.803E-01	2.565E-01	4.617E-01	5.337E-02	0.607
	1050.47		3.188E-01	1.945E+00	3.195E+00	2.665E-01	0.100
RU-106	511.85		4.460E-03	1.932E-01	3.238E-01	2.073E-02	0.014
	621.84	*	2.803E-01	2.549E-01	4.617E-01	2.507E-02	0.607
	1050.47		3.188E-01	1.945E+00	3.195E+00	2.665E-01	0.100
AG-108M	433.93	*	1.715E-02	2.980E-02	5.019E-02	3.599E-03	0.342
	614.37		3.547E-02	3.307E-02	5.382E-02	3.246E-03	0.659
	722.95		1.107E-03	3.726E-02	5.389E-02	3.535E-03	0.021
AG-110M	657.75	*	2.392E-02	3.544E-02	5.495E-02	2.977E-03	0.435
	677.61		-3.614E-02	2.556E-01	4.214E-01	2.366E-02	-0.086
	706.67		-1.049E-01	1.792E-01	2.842E-01	1.739E-02	-0.369
	763.93		-1.812E-01	1.601E-01	2.419E-01	1.751E-02	-0.749
	884.67		-1.680E-02	4.173E-02	6.541E-02	6.556E-03	-0.257
	937.48		-1.310E-01	1.034E-01	1.460E-01	1.465E-02	-0.897
	1384.27		5.536E-02	1.483E-01	2.464E-01	2.176E-02	0.225
IN-111	171.28		-2.521E-01	8.987E-01	1.413E+00	7.770E-02	-0.178
	245.39	*	2.433E-02	9.549E-01	1.418E+00	8.754E-02	0.017
IN-113M	391.69	*	5.442E-04	3.765E-02	6.165E-02	4.396E-03	0.009
SN-113	391.69	*	5.442E-04	3.765E-02	6.165E-02	4.396E-03	0.009
IN-114M	190.27	*	-8.068E-03	1.622E-01	2.436E-01	1.382E-02	-0.033
CD-115	260.90		1.103E+01	1.076E+02	1.812E+02	1.141E+01	0.061
	492.35		1.731E+00	3.225E+01	5.219E+01	3.399E+00	0.033
	527.90	*	3.452E+00	9.844E+00	1.622E+01	1.021E+00	0.213
SN-117M	156.02		-2.278E+00	2.002E+00	3.031E+00	1.716E-01	-0.752
	158.56	*	8.067E-03	4.774E-02	7.697E-02	4.317E-03	0.105

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122	563.90	*		1.101E+00	1.757E+00	2.950E+00	1.774E-01	0.373
	692.80			1.202E+01	4.071E+01	6.918E+01	3.809E+00	0.174
I-123	159.00	*		1.214E+00	4.071E+01	Half-Life	too short	
	528.96			3.034E+02	4.071E+01	Half-Life	too short	
TE-123M	159.00	*		5.141E-03	2.492E-02	4.023E-02	2.285E-03	0.128
I-124	602.71	*		-1.650E-01	5.931E-01	8.413E-01	4.746E-02	-0.196
	722.78			-8.814E-02	3.956E+00	5.685E+00	3.461E-01	-0.016
	1325.50			-1.994E+01	2.931E+01	4.420E+01	3.789E+00	-0.451
+	1376.25			4.481E+01	3.390E+01	5.395E+01	4.643E+00	0.830
	1509.49			1.429E+01	1.421E+01	2.641E+01	2.159E+00	0.541
	1691.02			2.679E-01	2.840E+00	4.716E+00	3.392E-01	0.057
SB-124	602.71			-9.409E-03	3.383E-02	4.798E-02	2.708E-03	-0.196
	645.85			-1.398E-02	4.216E-01	7.036E-01	4.198E-02	-0.020
	709.31			-8.225E-01	2.272E+00	3.663E+00	2.133E-01	-0.225
	713.82			1.983E-01	1.313E+00	2.208E+00	2.269E-01	0.090
	722.78			-7.287E-03	3.271E-01	4.700E-01	2.984E-02	-0.016
+	968.20			1.280E+01	3.693E+00	6.360E+00	5.995E-01	2.013
	1045.16			-6.467E-01	2.055E+00	3.197E+00	2.693E-01	-0.202
	1325.50			-1.760E+00	2.588E+00	3.903E+00	3.346E-01	-0.451
	1368.21			-1.498E+00	1.594E+00	2.105E+00	2.837E-01	-0.712
	1436.60			2.768E-01	2.936E+00	4.910E+00	4.145E-01	0.056
	1691.02	*		5.225E-03	5.538E-02	9.197E-02	6.987E-03	0.057
SB-125	427.89	*		-2.745E-02	7.768E-02	1.232E-01	8.578E-03	-0.223
+	463.38			4.999E-01	3.303E-01	4.667E-01	3.501E-02	1.071
	600.56			1.498E-02	1.396E-01	2.365E-01	1.559E-02	0.063
	635.90			-2.998E-02	2.368E-01	3.930E-01	2.492E-02	-0.076
TE-125M	109.28	*		4.545E+00	8.312E+00	1.382E+01	1.327E+00	0.329
I-126	388.63			1.106E-01	1.752E-01	2.978E-01	2.023E-02	0.372
	666.33	*		-1.219E-01	1.785E-01	2.392E-01	1.200E-02	-0.510
	753.82			1.702E+00	1.224E+00	2.246E+00	1.510E-01	0.758
SB-126	223.80			-2.337E+00	3.293E+00	5.382E+00	3.223E-01	-0.434
	278.60			1.822E+00	2.143E+00	3.713E+00	2.383E-01	0.491
	296.50			7.867E+00	1.563E+00	2.921E+00	1.906E-01	2.693
	414.70			2.455E-02	6.795E-02	1.055E-01	7.146E-03	0.233
	415.30			2.221E+00	5.451E+00	8.833E+00	5.984E-01	0.251
	555.20			1.305E+00	3.365E+00	5.552E+00	3.380E-01	0.235
	573.80			-2.497E-01	8.877E-01	1.427E+00	8.459E-02	-0.175
	593.00			-1.328E-01	7.642E-01	1.269E+00	7.288E-02	-0.105
	656.30			7.332E-01	3.193E+00	4.758E+00	2.381E-01	0.154
	666.33			-5.097E-02	7.463E-02	1.000E-01	5.016E-03	-0.510
	675.00			5.405E-01	1.666E+00	2.849E+00	1.474E-01	0.190
	695.00			3.565E-02	6.907E-02	1.192E-01	6.611E-03	0.299
	697.00			-8.119E-02	2.392E-01	3.881E-01	2.167E-02	-0.209
	720.50	*		7.284E-02	1.286E-01	1.981E-01	1.197E-02	0.368
	856.80			1.159E-01	4.633E-01	6.787E-01	6.161E-02	0.171
	989.30			-2.676E-01	1.124E+00	1.777E+00	1.631E-01	-0.151
	1034.80			4.743E-01	8.310E+00	1.350E+01	1.157E+00	0.035
	1213.00			-1.309E+00	4.016E+00	6.508E+00	4.403E-01	-0.201
SB-127	61.10			2.237E+01	8.160E+01	1.235E+02	1.738E+01	0.181

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		252.40		-1.774E+00	3.793E+00	6.101E+00	2.539E+00	-0.291
		290.80		-6.345E+00	2.012E+01	2.877E+01	2.778E+00	-0.221
		411.60		1.289E+00	1.135E+01	1.639E+01	2.429E+00	0.079
		444.90		-2.211E+00	8.765E+00	1.397E+01	1.583E+00	-0.158
		473.00		1.534E-02	1.480E+00	2.394E+00	2.788E-01	0.006
		543.00		2.357E+00	1.475E+01	2.391E+01	3.135E+00	0.099
		603.60		-7.063E+00	1.067E+01	1.445E+01	1.547E+00	-0.489
		685.20	*	-1.518E-01	1.141E+00	1.880E+00	1.731E-01	-0.081
		698.50		-7.258E+00	1.358E+01	2.163E+01	3.121E+00	-0.336
		722.20		2.808E+00	2.715E+01	3.962E+01	3.716E+00	0.071
		783.80		1.200E+00	3.408E+00	5.771E+00	6.705E-01	0.208
XE-127		57.60		4.059E+00	8.379E+00	1.422E+01	1.808E+00	0.285
		145.22		3.508E-01	5.973E-01	9.838E-01	5.802E-02	0.357
		172.10		-1.774E-02	1.039E-01	1.642E-01	9.041E-03	-0.108
		202.84	*	-2.052E-02	4.027E-02	6.697E-02	3.878E-03	-0.306
I-131		374.96		-4.018E-02	1.672E-01	2.701E-01	1.832E-02	-0.149
		80.18		2.752E+00	6.034E+00	7.286E+00	8.029E-01	0.378
		284.30		-1.624E-01	1.249E+00	2.069E+00	1.457E-01	-0.079
		364.48	*	-3.738E-02	9.967E-02	1.599E-01	1.176E-02	-0.234
		636.97		-3.951E-01	1.365E+00	2.236E+00	1.344E-01	-0.177
		722.89		7.232E-02	6.333E+00	9.138E+00	5.637E-01	0.008
TE-132		49.72		-1.980E+01	3.689E+01	6.035E+01	8.631E+00	-0.328
		111.76		1.790E+01	2.774E+01	4.620E+01	4.623E+00	0.387
		116.30		-6.419E+00	2.517E+01	4.014E+01	3.892E+00	-0.160
		228.16	*	6.780E-02	5.742E-01	9.737E-01	1.410E-01	0.070
BA-133		53.15		4.976E+00	5.769E+00	9.920E+00	1.314E+00	0.502
		79.62		6.276E-01	1.481E+00	2.042E+00	3.403E-01	0.307
		81.00		3.880E-02	1.247E-01	1.490E-01	2.575E-02	0.260
		276.40		5.550E-01	3.266E-01	5.734E-01	7.594E-02	0.968
		302.84		8.425E-02	1.326E-01	2.023E-01	2.438E-02	0.416
		356.01	*	-2.328E-02	4.051E-02	5.536E-02	6.679E-03	-0.420
		383.85		-1.687E-01	2.491E-01	3.884E-01	4.440E-02	-0.434
I-133	+	510.53		6.422E-01	2.491E-01	Half-Life	too short	
		529.87	*	2.812E-03	2.491E-01	Half-Life	too short	
		706.58		-2.118E-01	2.491E-01	Half-Life	too short	
		856.28		-1.726E-02	2.491E-01	Half-Life	too short	
		875.33		-1.631E-02	2.491E-01	Half-Life	too short	
		1236.41		1.165E+00	2.491E-01	Half-Life	too short	
		1298.22		1.267E-01	2.491E-01	Half-Life	too short	
CS-134		475.35		-3.357E-02	1.655E+00	2.669E+00	1.760E-01	-0.013
		563.23		1.429E-01	2.995E-01	4.969E-01	3.049E-02	0.288
		569.32		-5.951E-04	1.618E-01	2.580E-01	1.582E-02	-0.002
		604.70		-1.132E-02	2.844E-02	3.972E-02	2.246E-03	-0.285
		795.84	*	2.841E-02	4.823E-02	7.336E-02	5.656E-03	0.387
		801.93		1.092E-01	3.569E-01	5.916E-01	4.633E-02	0.185
		1038.57		-3.249E+00	3.499E+00	5.062E+00	4.311E-01	-0.642
		1167.94		-8.023E-01	2.135E+00	3.451E+00	2.165E-01	-0.233
		1365.15		-4.810E-01	1.050E+00	1.626E+00	1.467E-01	-0.296
I-135		288.45		-1.597E+09	1.050E+00	Half-Life	too short	



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		417.63		3.490E+08	1.050E+00	Half-Life	too short	
		546.56		-6.706E+09	1.050E+00	Half-Life	too short	
		836.80		2.944E+10	1.050E+00	Half-Life	too short	
		1038.76		-1.997E+10	1.050E+00	Half-Life	too short	
		1124.00		-1.444E+10	1.050E+00	Half-Life	too short	
		1131.51		5.702E+08	1.050E+00	Half-Life	too short	
		1260.41	*	4.071E+09	1.050E+00	Half-Life	too short	
		1457.56		1.213E+12	1.050E+00	Half-Life	too short	
		1678.03		-1.975E+09	1.050E+00	Half-Life	too short	
		1706.46		1.835E+10	1.050E+00	Half-Life	too short	
		1791.20		-1.368E+10	1.050E+00	Half-Life	too short	
CS-136		66.91		2.981E-01	9.530E-01	1.438E+00	2.463E-01	0.207
	+	86.29		5.157E+00	1.534E+00	2.009E+00	2.960E-01	2.567
		153.22		9.963E-01	5.845E-01	9.979E-01	7.144E-02	0.998
		163.89		2.146E-01	9.677E-01	1.561E+00	1.095E-01	0.138
		176.55		-2.482E-01	3.278E-01	5.020E-01	3.158E-02	-0.495
		273.65		-8.061E-01	4.555E-01	5.844E-01	4.169E-02	-1.379
		340.57		1.351E-02	1.201E-01	1.755E-01	1.234E-02	0.077
		818.51		-7.610E-03	6.522E-02	1.062E-01	8.669E-03	-0.072
		1048.07	*	-3.836E-02	9.208E-02	1.429E-01	1.251E-02	-0.268
		1235.34		8.306E-01	5.886E-01	1.066E+00	1.151E-01	0.779
CE-139		165.85	*	-5.996E-03	2.652E-02	4.189E-02	2.288E-03	-0.143
BA-140		162.64		3.137E-01	6.788E-01	1.106E+00	6.947E-02	0.284
		304.84		-2.368E-02	1.163E+00	1.789E+00	4.912E-01	-0.013
		423.70		-1.408E+00	1.671E+00	2.456E+00	7.852E-01	-0.573
		537.32	*	5.958E-02	2.148E-01	3.508E-01	1.143E-01	0.170
LA-140	+	328.77		4.508E-01	3.635E-01	4.442E-01	3.236E-02	1.015
		432.53		3.392E+00	1.830E+00	3.302E+00	2.401E-01	1.027
		487.03		1.090E-01	1.101E-01	1.910E-01	1.380E-02	0.571
		751.79		4.313E-02	1.483E+00	2.460E+00	1.927E-01	0.018
		815.85		2.229E-01	2.808E-01	4.929E-01	4.509E-02	0.452
		867.82		-1.546E-01	1.208E+00	1.763E+00	1.723E-01	-0.088
		919.63		-1.164E+00	2.408E+00	3.602E+00	4.227E-01	-0.323
		925.24		6.867E-01	1.019E+00	1.762E+00	1.825E-01	0.390
		1596.49	*	3.556E-02	8.071E-02	1.351E-01	1.048E-02	0.263
CE-141		145.44	*	-1.500E-02	5.591E-02	8.879E-02	5.434E-03	-0.169
CE-143		57.37		7.213E-04	5.591E-02	Half-Life	too short	
		231.56		8.151E-04	5.591E-02	Half-Life	too short	
	+	293.26	*	1.350E-03	5.591E-02	Half-Life	too short	
	+	350.59		2.922E-02	5.591E-02	Half-Life	too short	
		490.36		-2.615E-03	5.591E-02	Half-Life	too short	
		664.57		-4.031E-04	5.591E-02	Half-Life	too short	
		721.93		1.872E-04	5.591E-02	Half-Life	too short	
CE-144		80.11		1.255E+00	2.751E+00	3.323E+00	3.646E-01	0.378
		133.54	*	-9.352E-02	1.806E-01	2.841E-01	4.082E-02	-0.329
PM-144		476.78		-4.160E-03	5.867E-02	9.426E-02	7.177E-03	-0.044
		618.01		-2.666E-02	2.625E-02	4.050E-02	2.366E-03	-0.658
		696.49	*	3.281E-03	3.024E-02	5.073E-02	2.831E-03	0.065
		778.57		-1.018E+00	1.934E+00	3.017E+00	2.190E-01	-0.338

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144		696.49	*	2.223E-01	2.049E+00	3.438E+00	1.917E-01	0.065
		1489.15		-3.921E+00	9.559E+00	1.457E+01	1.203E+00	-0.269
PM-146		453.90	*	-6.859E-03	3.685E-02	5.890E-02	5.440E-03	-0.116
		633.02		1.737E-01	1.174E+00	1.985E+00	7.294E-01	0.088
		735.90		2.576E-02	1.183E-01	1.995E-01	5.588E-02	0.129
		747.13		1.406E-03	7.763E-02	1.287E-01	1.659E-02	0.011
ND-147	+	91.11		2.737E+00	4.691E-01	5.692E-01	6.346E-02	4.809
		319.41		-1.654E+00	2.751E+00	4.394E+00	2.916E-01	-0.376
		439.89		6.799E+00	5.099E+00	8.982E+00	6.040E-01	0.757
		531.02	*	-9.441E-02	4.925E-01	7.771E-01	1.067E-01	-0.121
PM-149		285.90	*	5.391E+01	7.904E+01	1.357E+02	1.963E+01	0.397
EU-152		121.78		2.082E-02	6.526E-02	1.072E-01	8.832E-03	0.194
		244.69		7.039E-02	2.834E-01	4.272E-01	2.636E-02	0.165
		344.27	*	5.068E-02	8.931E-02	1.417E-01	1.044E-02	0.358
		443.98		-1.725E-01	8.527E-01	1.364E+00	9.157E-02	-0.126
		778.89		-6.471E-02	2.156E-01	3.462E-01	2.514E-02	-0.187
		867.32		-2.059E-01	7.767E-01	1.057E+00	9.871E-02	-0.195
	+	964.01		6.249E-01	3.730E-01	5.152E-01	4.881E-02	1.213
		1085.78		5.984E-02	3.417E-01	5.604E-01	4.362E-02	0.107
		1112.02		2.907E-01	3.121E-01	4.898E-01	3.592E-02	0.593
		1407.95		2.721E-01	1.936E-01	3.633E-01	3.098E-02	0.749
GD-153		69.67		4.665E-01	1.981E+00	2.975E+00	3.317E-01	0.157
	+	83.37		3.130E+01	1.835E+01	2.419E+01	2.681E+00	1.294
		97.43	*	5.007E-02	7.876E-02	1.189E-01	1.107E-02	0.421
		103.18		-7.726E-03	9.114E-02	1.482E-01	1.253E-02	-0.052
EU-154		123.07		-1.520E-02	4.636E-02	7.399E-02	7.312E-03	-0.205
		247.94		-1.208E-01	3.034E-01	4.822E-01	4.719E-02	-0.250
		591.81		-2.950E-03	5.011E-01	8.429E-01	8.216E-02	-0.003
		723.30		2.759E-02	1.576E-01	2.318E-01	1.698E-02	0.119
		756.87		-4.872E-01	6.707E-01	1.038E+00	1.114E-01	-0.469
		873.19		5.040E-02	2.444E-01	4.083E-01	5.254E-02	0.123
		996.32		-1.122E-01	3.851E-01	5.150E-01	9.268E-02	-0.218
		1004.76		-2.483E-02	2.087E-01	2.862E-01	3.409E-02	-0.087
		1274.45	*	-8.649E-02	1.120E-01	1.710E-01	1.822E-02	-0.506
EU-155		48.70		-5.883E-02	4.764E+00	7.991E+00	9.599E-01	-0.007
		60.01		5.132E-01	6.989E+00	1.049E+01	1.292E+00	0.049
	+	86.54		4.729E-01	1.334E-01	1.825E-01	2.065E-02	2.592
		105.31	*	3.151E-02	9.638E-02	1.593E-01	1.321E-02	0.198
TB-160	+	86.79		1.265E+00	3.563E-01	4.837E-01	5.450E-02	2.614
		197.04		-1.276E-01	5.264E-01	8.126E-01	4.660E-02	-0.157
		215.65		2.301E-01	6.218E-01	1.068E+00	6.313E-02	0.215
	+	298.57		1.938E-01	1.260E-01	1.678E-01	1.097E-02	1.154
		879.36	*	1.130E-02	1.181E-01	1.951E-01	1.881E-02	0.058
	+	962.29		1.155E+00	6.896E-01	9.181E-01	8.716E-02	1.258
		966.15		1.257E+00	2.699E-01	5.077E-01	4.798E-02	2.477
		1177.93		-3.878E-02	3.204E-01	5.306E-01	3.309E-02	-0.073
		1271.85		8.140E-02	6.415E-01	1.081E+00	8.313E-02	0.075
HO-166M		80.57		1.262E-01	3.495E-01	4.192E-01	4.605E-02	0.301
	+	184.41		2.286E-01	5.194E-02	6.751E-02	3.791E-03	3.386

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		280.46		-7.546E-02	7.232E-02	1.140E-01	7.333E-03	-0.662
		410.95		1.617E-01	2.330E-01	3.531E-01	2.395E-02	0.458
		711.68	*	2.780E-02	4.869E-02	8.464E-02	4.967E-03	0.328
		752.31		2.071E-01	2.352E-01	4.161E-01	2.785E-02	0.498
		810.29		-3.859E-02	4.883E-02	7.408E-02	5.902E-03	-0.521
		51.35		-3.054E+01	5.334E+01	8.707E+01	1.145E+01	-0.351
		52.39		2.785E+01	2.616E+01	4.520E+01	5.987E+00	0.616
		59.40		3.188E+00	3.874E+01	5.819E+01	7.229E+00	0.055
		66.72	*	3.193E+00	3.453E+01	5.163E+01	5.882E+00	0.062
		88.36		5.332E-01	2.277E-01	3.282E-01	3.691E-02	1.625
LU-176	+	201.83		-2.402E-02	2.465E-02	4.021E-02	2.324E-03	-0.597
		306.84	*	-2.822E-03	2.079E-02	3.426E-02	2.254E-03	-0.082
		401.10		4.232E+00	5.799E+00	9.891E+00	6.717E-01	0.428
LU-177		112.95		6.010E-01	1.517E+00	2.504E+00	1.843E-01	0.240
	+	208.36	*	2.551E+00	1.283E+00	1.709E+00	9.984E-02	1.493
LU-177M		52.97		2.830E+00	2.639E+00	4.558E+00	6.038E-01	0.621
		54.07		1.599E-01	1.337E+00	2.246E+00	2.962E-01	0.071
		61.30		5.004E-01	2.103E+00	3.168E+00	3.832E-01	0.158
		121.62		7.839E-02	3.349E-01	5.481E-01	3.627E-02	0.143
		147.16		-3.927E-01	5.643E-01	8.771E-01	5.134E-02	-0.448
		171.86		-1.382E-01	4.215E-01	6.609E-01	3.638E-02	-0.209
		218.09		6.106E-03	7.296E-01	1.234E+00	7.326E-02	0.005
	+	268.79		2.317E+00	9.077E-01	1.293E+00	8.215E-02	1.792
		319.02		-1.858E-01	2.147E-01	3.371E-01	2.236E-02	-0.551
		367.43		-2.626E-01	7.705E-01	1.238E+00	8.385E-02	-0.212
HF-181		413.65	*	-2.197E-02	1.653E-01	2.329E-01	1.578E-02	-0.094
		56.28		-1.053E+00	1.386E+00	2.235E+00	2.888E-01	-0.471
		57.53		3.857E-01	7.031E-01	1.196E+00	1.521E-01	0.323
		65.20		-1.563E-02	1.184E+00	1.763E+00	2.037E-01	-0.009
		133.02		-3.496E-02	5.791E-02	9.093E-02	5.647E-03	-0.384
		136.25		-1.949E-01	4.089E-01	6.452E-01	3.949E-02	-0.302
		345.85		-1.034E-01	1.921E-01	2.657E-01	1.787E-02	-0.389
		482.03	*	1.114E-02	3.629E-02	5.991E-02	3.932E-03	0.186
		56.28		-4.118E-01	5.418E-01	8.737E-01	1.129E-01	-0.471
		57.53		1.506E-01	2.751E-01	4.678E-01	5.952E-02	0.322
W-181		65.20	*	-6.068E-03	4.595E-01	6.841E-01	7.905E-02	-0.009
		67.75		-3.092E-02	1.295E-01	2.032E-01	2.295E-02	-0.152
TA-182		100.10		8.375E-02	1.587E-01	2.647E-01	2.352E-02	0.316
		152.43		4.543E-01	2.998E-01	5.096E-01	2.924E-02	0.892
		222.10		3.937E-02	2.840E-01	4.827E-01	2.882E-02	0.082
	+	1001.68		2.253E+00	2.238E+00	3.523E+00	3.178E-01	0.640
		1121.28		3.092E-01	1.606E-01	2.729E-01	1.956E-02	1.133
RE-183		1189.05		3.201E-02	2.505E-01	4.241E-01	2.715E-02	0.075
		1221.42	*	2.329E-01	1.792E-01	3.286E-01	2.266E-02	0.709
		1230.97		-5.085E-01	4.465E-01	6.719E-01	4.733E-02	-0.757
		57.98		1.746E-01	2.839E-01	4.632E-01	5.860E-02	0.377
		59.32		1.273E-02	1.599E-01	2.401E-01	2.986E-02	0.053
		67.20		1.228E-01	2.421E-01	3.686E-01	4.182E-02	0.333
		162.32	*	5.698E-02	9.726E-02	1.594E-01	8.817E-03	0.357

---- Non-Identified Nuclides ----

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RE-184	+	208.81		2.268E+00	1.140E+00	1.536E+00	8.982E-02	1.476
		291.72		1.998E-01	8.561E-01	1.275E+00	8.288E-02	0.157
		57.98		6.431E-01	1.045E+00	1.706E+00	2.158E-01	0.377
		59.32		4.685E-02	5.883E-01	8.835E-01	1.099E-01	0.053
		67.20		4.519E-01	8.914E-01	1.357E+00	1.539E-01	0.333
		161.27		3.573E-02	3.240E-01	5.204E-01	2.889E-02	0.069
		216.55		1.468E-01	2.220E-01	3.854E-01	2.282E-02	0.381
		252.85	*	-2.654E-02	1.924E-01	3.208E-01	2.000E-02	-0.083
		318.01		7.824E-02	3.621E-01	6.075E-01	4.027E-02	0.129
		792.07		2.730E-01	1.158E+00	1.694E+00	1.280E-01	0.161
OS-185		903.28		1.112E-01	8.603E-01	1.344E+00	1.354E-01	0.083
		920.93		-3.116E-02	3.761E-01	6.080E-01	6.030E-02	-0.051
		59.72		3.438E-02	4.203E-01	6.312E-01	7.806E-02	0.054
		61.14		6.760E-02	2.272E-01	3.442E-01	4.173E-02	0.196
		69.30		1.787E-01	3.538E-01	5.374E-01	6.007E-02	0.333
		592.07		1.170E-01	2.058E+00	3.477E+00	2.000E-01	0.034
		646.12	*	-4.626E-04	3.526E-02	5.893E-02	3.027E-03	-0.008
		717.42		1.256E-01	7.351E-01	1.238E+00	7.404E-02	0.101
		874.81		6.105E-02	4.817E-01	7.985E-01	7.607E-02	0.076
		880.27		1.218E-02	6.601E-01	1.082E+00	1.046E-01	0.011
RE-188		155.03	*	-1.223E-01	1.529E-01	2.360E-01	1.341E-02	-0.518
		477.96		-1.682E+00	2.768E+00	4.268E+00	2.810E-01	-0.394
		633.10		3.209E-01	2.369E+00	4.008E+00	2.124E-01	0.080
W-188	+	63.58		2.216E+02	1.046E+02	1.185E+02	1.394E+01	1.869
		227.08		2.951E+00	1.033E+01	1.764E+01	1.062E+00	0.167
IR-192		290.67	*	-1.248E+00	6.774E+00	9.787E+00	6.354E-01	-0.128
	+	295.96		1.018E+00	1.462E-01	2.502E-01	1.652E-02	4.068
		308.46		5.293E-02	7.767E-02	1.337E-01	8.884E-03	0.396
		316.51	*	3.152E-03	2.814E-02	4.694E-02	3.120E-03	0.067
		468.07		1.677E-02	6.125E-02	9.369E-02	6.947E-03	0.179
		604.41		-1.532E-01	3.851E-01	5.376E-01	6.054E-02	-0.285
AU-195		612.46		-9.597E-02	6.332E-01	9.107E-01	6.715E-02	-0.105
		65.12		6.811E-04	2.133E-01	3.179E-01	3.676E-02	0.002
		66.83		2.977E-02	1.137E-01	1.713E-01	1.950E-02	0.174
	+	75.70		1.424E+00	2.784E-01	4.677E-01	5.116E-02	3.044
		98.88	*	2.873E-01	2.052E-01	3.513E-01	3.188E-02	0.818
TL-200		129.76		3.674E+00	2.569E+00	4.371E+00	2.758E-01	0.840
		367.94	*	-2.550E-05	2.569E+00	Half-Life	too short	
		579.30		3.940E-03	2.569E+00	Half-Life	too short	
		828.27		4.919E-03	2.569E+00	Half-Life	too short	
		1205.75		1.115E-03	2.569E+00	Half-Life	too short	
TL-201		68.90		-1.256E+00	5.597E+00	8.777E+00	9.835E-01	-0.143
		70.82		-3.439E-01	3.309E+00	4.888E+00	5.418E-01	-0.070
		80.30		2.880E+00	6.676E+00	8.048E+00	8.834E-01	0.358
		135.34		-1.131E+01	2.314E+01	3.651E+01	2.243E+00	-0.310
TL-202		167.43	*	-2.851E-01	6.332E+00	1.008E+01	5.513E-01	-0.028
		68.90		-1.106E-01	4.930E-01	7.730E-01	8.663E-02	-0.143
		70.82		-3.020E-02	2.906E-01	4.293E-01	4.759E-02	-0.070
		80.30		2.531E-01	5.865E-01	7.071E-01	7.762E-02	0.358

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HG-203		439.56	*	5.687E-02	6.140E-02	1.056E-01	7.103E-03	0.538
		70.83		-1.206E-01	1.253E+00	1.852E+00	2.831E-01	-0.065
		72.87		1.014E+00	7.484E-01	1.151E+00	1.710E-01	0.881
		82.60		4.175E-01	1.164E+00	1.743E+00	2.681E-01	0.240
BI-207		279.20	*	8.175E-04	3.464E-02	5.788E-02	3.906E-03	0.014
		72.80		2.303E-01	2.145E-01	3.305E-01	3.636E-02	0.697
	+	74.97		5.937E-01	1.475E-01	2.353E-01	2.575E-02	2.524
	+	84.90		4.046E-01	2.373E-01	3.239E-01	3.614E-02	1.249
TL-207		569.67		5.331E-03	2.564E-02	4.161E-02	2.481E-03	0.128
		1063.62	*	-4.554E-04	4.564E-02	7.350E-02	5.983E-03	-0.006
		1770.23		-1.145E-01	4.013E-01	4.976E-01	3.302E-02	-0.230
		81.07		7.942E-02	2.747E-01	3.278E-01	3.605E-02	0.242
PO-209	+	83.78		2.668E-01	1.565E-01	2.061E-01	2.288E-02	1.295
		94.90		1.525E-01	2.167E-01	3.285E-01	3.208E-02	0.464
		122.32		8.889E-01	1.560E+00	2.586E+00	1.909E-01	0.344
		144.24		1.566E-01	6.263E-01	1.006E+00	7.374E-02	0.156
BI-210		154.21		1.327E-01	3.514E-01	5.721E-01	3.965E-02	0.232
	+	269.46		5.422E-01	2.126E-01	3.131E-01	2.066E-02	1.732
		323.87	*	3.341E-01	6.157E-01	9.297E-01	1.565E-01	0.359
	+	338.28		4.931E+00	1.519E+00	2.025E+00	2.238E-01	2.435
PB-210		445.03		-4.178E-01	2.003E+00	3.202E+00	3.461E-01	-0.130
		260.50		2.323E+00	7.670E+00	1.305E+01	8.210E-01	0.178
		262.80		-9.049E+00	2.160E+01	3.538E+01	2.233E+00	-0.256
		896.60	*	-5.014E+00	6.484E+00	9.737E+00	9.821E-01	-0.515
PO-210		46.50	*	-1.354E+00	7.681E+00	1.282E+01	1.257E+00	-0.106
		46.50	*	-1.354E+00	7.681E+00	1.282E+01	1.257E+00	-0.106
		46.50	*	-1.354E+00	7.681E+00	1.282E+01	1.151E+00	-0.106
		404.84	*	2.089E-02	9.541E-01	1.366E+00	8.532E-01	0.015
PB-211		427.08		1.775E-02	1.740E+00	2.833E+00	1.754E+00	0.006
		831.96		-3.481E-01	1.105E+00	1.730E+00	1.084E+00	-0.201
	+	727.18	*	1.209E+00	4.218E-01	5.811E-01	4.648E-02	2.080
		785.46		1.324E+00	1.639E+00	2.863E+00	2.121E-01	0.462
PO-215		1620.62		6.766E-01	1.123E+00	2.004E+00	1.528E-01	0.338
		81.07		7.942E-02	2.747E-01	3.278E-01	3.605E-02	0.242
	+	83.78		2.668E-01	1.565E-01	2.061E-01	2.288E-02	1.295
		94.90		1.525E-01	2.167E-01	3.285E-01	3.208E-02	0.464
RN-219		122.32		8.889E-01	1.560E+00	2.586E+00	1.909E-01	0.344
		144.24		1.566E-01	6.263E-01	1.006E+00	7.374E-02	0.156
		154.21		1.327E-01	3.514E-01	5.721E-01	3.965E-02	0.232
	+	269.46		5.422E-01	2.126E-01	3.131E-01	2.066E-02	1.732
RA-223		323.87	*	3.341E-01	6.157E-01	9.297E-01	1.565E-01	0.359
	+	338.28		4.931E+00	1.519E+00	2.025E+00	2.238E-01	2.435
		445.03		-4.178E-01	2.003E+00	3.202E+00	3.461E-01	-0.130
	+	271.23		6.957E-01	2.753E-01	3.754E-01	3.199E-02	1.853
RN-220		401.81	*	1.962E-01	3.712E-01	6.052E-01	8.507E-02	0.324
		549.76	*	-4.660E+00	2.257E+01	3.547E+01	2.175E+00	-0.131
		81.07		7.942E-02	2.747E-01	3.278E-01	3.605E-02	0.242
	+	83.78		2.668E-01	1.565E-01	2.061E-01	2.288E-02	1.295
RA-223		94.90		1.525E-01	2.167E-01	3.285E-01	3.208E-02	0.464

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		8.889E-01	1.560E+00	2.586E+00	1.909E-01	0.344
		144.24		1.566E-01	6.263E-01	1.006E+00	7.374E-02	0.156
		154.21		1.327E-01	3.514E-01	5.721E-01	3.965E-02	0.232
	+	269.46		5.422E-01	2.126E-01	3.131E-01	2.066E-02	1.732
		323.87	*	3.341E-01	6.157E-01	9.297E-01	1.565E-01	0.359
	+	338.28		4.931E+00	1.519E+00	2.025E+00	2.238E-01	2.435
		445.03		-4.178E-01	2.003E+00	3.202E+00	3.461E-01	-0.130
		79.80		9.745E-01	2.145E+00	2.580E+00	5.818E-01	0.378
		236.00		9.118E-01	2.594E-01	4.215E-01	4.476E-02	2.163
		256.20	*	2.786E-02	3.108E-01	5.234E-01	7.411E-02	0.053
		286.10		6.328E-01	1.300E+00	2.217E+00	2.640E-01	0.285
	+	299.80		2.465E+00	1.646E+00	2.169E+00	3.593E-01	1.136
TH-227		304.40		3.336E-01	1.792E+00	2.651E+00	4.658E-01	0.126
		334.20		3.606E-01	2.134E+00	3.135E+00	5.842E-01	0.115
		79.80		9.745E-01	2.145E+00	2.580E+00	5.886E-01	0.378
		94.00		9.678E+00	2.891E+00	3.631E+00	8.110E-01	2.665
		236.00		9.118E-01	2.550E-01	4.215E-01	3.899E-02	2.163
		256.20	*	2.786E-02	3.108E-01	5.234E-01	8.932E-02	0.053
		286.10		6.328E-01	1.445E+00	2.217E+00	2.222E+00	0.285
	+	299.80		2.465E+00	1.646E+00	2.169E+00	3.593E-01	1.136
		304.40		3.336E-01	1.792E+00	2.651E+00	4.658E-01	0.126
		334.20		3.606E-01	2.134E+00	3.135E+00	5.842E-01	0.115
	+	85.43		3.994E-01	2.342E-01	3.346E-01	3.743E-02	1.194
	+	88.47		3.069E-01	1.311E-01	1.868E-01	2.096E-02	1.643
PA-231		100.00		1.020E-01	1.653E-01	2.767E-01	2.463E-02	0.369
		193.63	*	-7.044E-02	4.380E-01	6.877E-01	3.922E-02	-0.102
		210.97		1.439E-01	6.807E-01	1.031E+00	6.050E-02	0.140
		283.67	*	-1.252E+00	1.292E+00	2.025E+00	2.848E-01	-0.618
		301.29		3.153E-01	5.485E-01	8.320E-01	9.058E-02	0.379
	TH-231	81.07		7.942E-02	2.747E-01	3.278E-01	3.605E-02	0.242
	+	83.78		2.668E-01	1.565E-01	2.061E-01	2.288E-02	1.295
		94.90		1.525E-01	2.167E-01	3.285E-01	3.208E-02	0.464
		122.32		8.889E-01	1.560E+00	2.586E+00	1.909E-01	0.344
		144.24		1.566E-01	6.263E-01	1.006E+00	7.374E-02	0.156
		154.21		1.327E-01	3.514E-01	5.721E-01	3.965E-02	0.232
	+	269.46		5.422E-01	2.126E-01	3.131E-01	2.066E-02	1.732
U-231		323.87	*	3.341E-01	6.157E-01	9.297E-01	1.565E-01	0.359
	+	338.28		4.931E+00	1.519E+00	2.025E+00	2.238E-01	2.435
		445.03		-4.178E-01	2.003E+00	3.202E+00	3.461E-01	-0.130
	+	84.21		1.172E+01	6.875E+00	9.071E+00	1.009E+00	1.292
	+	92.29		2.102E+01	3.524E+00	4.677E+00	4.815E-01	4.495
		95.87	*	-8.361E-01	1.094E+00	1.530E+00	1.467E-01	-0.546
		108.00		-1.320E+00	1.890E+00	2.986E+00	2.350E-01	-0.442
	PA-233	75.28		1.733E+01	4.833E+00	7.128E+00	1.195E+00	2.431
	+	86.59		7.687E+00	2.916E+00	2.960E+00	8.222E-01	2.597
	+	300.12		6.871E-01	4.546E-01	6.075E-01	8.368E-02	1.131
		311.98	*	-1.397E-02	5.138E-02	8.385E-02	5.802E-03	-0.167
		340.50		1.244E-01	5.824E-01	8.563E-01	1.988E-01	0.145
		398.62		-8.134E-01	1.809E+00	2.850E+00	7.437E-01	-0.285

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error (pCi/GRAM)	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76	-3.208E-02	1.396E+00	2.272E+00	4.744E-01	-0.014
		63.00	6.418E+00	3.141E+00	3.595E+00	6.289E-01	1.785
		94.67	2.130E-01	1.582E-01	2.442E-01	3.237E-02	0.872
		98.44	1.033E-01	1.044E-01	1.428E-01	7.978E-02	0.724
		99.86	3.100E-01	4.212E-01	7.075E-01	6.313E-02	0.438
		111.00	-6.147E-02	1.709E-01	2.739E-01	3.109E-02	-0.224
		131.20	-6.208E-02	9.570E-02	1.502E-01	9.410E-03	-0.413
		152.70	5.058E-01	2.973E-01	4.934E-01	7.787E-02	1.025
		186.00	8.228E+00	3.097E+00	2.427E+00	7.409E-01	3.390
		226.40	-1.071E-01	3.246E-01	5.395E-01	6.295E-02	-0.199
		227.20	1.111E-01	3.461E-01	5.923E-01	3.564E-02	0.188
		248.90	1.043E-02	6.692E-01	1.125E+00	2.430E-01	0.009
		293.70	6.400E+00	1.327E+00	1.573E+00	2.572E-01	4.068
		369.80	-8.012E-03	7.232E-01	1.187E+00	2.506E-01	-0.007
		568.70	-5.378E-01	8.533E-01	1.287E+00	7.687E-02	-0.418
		569.50	2.393E-02	2.257E-01	3.633E-01	2.167E-02	0.066
		574.00	-5.274E-01	1.253E+00	1.992E+00	1.180E-01	-0.265
		699.00	-4.783E-01	6.295E-01	9.773E-01	1.752E-01	-0.489
		706.10	-1.234E-01	8.852E-01	1.453E+00	6.412E-01	-0.085
		733.00	-1.876E-01	3.445E-01	4.570E-01	9.781E-02	-0.410
		742.81	1.481E-01	1.193E+00	1.990E+00	1.333E+00	0.074
		796.30	-1.081E-02	9.376E-01	1.338E+00	3.579E-01	-0.008
		805.60	-1.152E-01	8.315E-01	1.351E+00	4.113E-01	-0.085
		819.60	-4.802E-01	1.062E+00	1.646E+00	6.243E-01	-0.292
		826.30	-5.849E-01	7.425E-01	1.049E+00	4.690E-01	-0.557
		831.60	-1.446E-01	5.529E-01	8.850E-01	2.637E-01	-0.163
		876.40	-7.309E-02	7.035E-01	1.133E+00	1.166E+00	-0.065
		880.51	-6.642E-03	2.374E-01	3.873E-01	3.746E-02	-0.017
		883.24	1.001E-01	2.463E-01	4.037E-01	2.720E-01	0.248
		899.00	-3.376E-01	6.872E-01	1.037E+00	4.565E-01	-0.326
		925.00	4.915E-01	1.059E+00	1.800E+00	1.778E-01	0.273
		926.50	1.778E-01	1.623E-01	2.806E-01	7.218E-02	0.634
		946.00	* -2.415E-01	2.614E-01	3.763E-01	7.250E-02	-0.642
		949.00	2.454E-01	3.735E-01	6.465E-01	6.231E-02	0.380
		980.50	-5.605E-01	6.389E-01	9.342E-01	8.673E-02	-0.600
		1394.10	-8.438E-01	1.112E+00	1.383E+00	8.999E-01	-0.610
PA-234M		766.42	1.741E+01	1.378E+01	1.949E+01	9.839E+00	0.893
	+	1001.03	* 5.112E+00	5.083E+00	7.799E+00	8.049E-01	0.655
U-235	+	89.95	3.081E+00	1.601E+00	1.774E+00	5.597E-01	1.736
	+	93.35	6.491E+00	2.044E+00	1.357E+00	3.867E-01	4.785
		105.00	7.087E-01	9.549E-01	1.567E+00	4.659E-01	0.452
		143.76	* 4.837E-02	1.978E-01	3.175E-01	5.192E-02	0.152
		163.35	1.718E-01	4.294E-01	6.961E-01	1.245E-01	0.247
	+	185.71	3.047E-01	6.926E-02	9.072E-02	5.106E-03	3.359
		205.31	-5.242E-02	4.917E-01	7.325E-01	1.318E-01	-0.072
NP-236		94.67	1.652E-01	1.193E-01	1.857E-01	1.821E-02	0.890
		98.44	7.809E-02	6.611E-02	1.079E-01	9.871E-03	0.724
		111.00	-4.650E-02	1.292E-01	2.072E-01	1.565E-02	-0.224
		160.31	* -1.823E-02	7.095E-02	1.121E-01	6.248E-03	-0.163

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		1.337E-01	1.419E-01	2.399E-01	2.152E-02	0.557
		117.00	*	-6.735E-02	1.681E-01	2.680E-01	1.875E-02	-0.251
	+	209.75		1.787E+00	8.983E-01	1.195E+00	6.999E-02	1.495
		228.18		2.304E-02	1.830E-01	3.105E-01	1.872E-02	0.074
		277.60		2.205E-01	1.568E-01	2.775E-01	1.779E-02	0.795
AM-241		334.30		1.735E-01	1.207E+00	1.771E+00	1.185E-01	0.098
		59.54	*	1.948E-02	2.241E-01	3.366E-01	4.323E-02	0.058
CM-243		99.55		1.376E-01	1.460E-01	2.468E-01	2.214E-02	0.557
		103.76	*	3.260E-02	8.481E-02	1.406E-01	1.178E-02	0.232
		117.00		-6.929E-02	1.729E-01	2.758E-01	1.929E-02	-0.251
	+	209.75		1.761E+00	8.855E-01	1.178E+00	6.899E-02	1.495
		228.18		2.329E-02	1.850E-01	3.138E-01	1.891E-02	0.074
AM-246		277.60		2.223E-01	1.581E-01	2.797E-01	1.794E-02	0.795
		798.80		1.929E-02	1.347E-01	1.958E-01	1.509E-02	0.099
		1036.00		5.036E-02	2.712E-01	4.464E-01	3.819E-02	0.113
		1062.04		9.937E-05	1.996E-01	3.218E-01	2.628E-02	0.000
		1078.86	*	-1.094E-02	1.154E-01	1.837E-01	1.451E-02	-0.060
CM-247		278.00		8.195E-01	6.442E-01	1.135E+00	7.280E-02	0.722
		287.40		5.069E-01	1.035E+00	1.766E+00	1.143E-01	0.287
		402.60	*	2.883E-02	3.693E-02	5.627E-02	3.821E-03	0.512
CF-249		252.85		-9.953E-02	7.217E-01	1.203E+00	7.501E-02	-0.083
		333.44		9.347E-02	1.688E-01	2.396E-01	1.602E-02	0.390
		387.95	*	2.738E-02	3.425E-02	5.874E-02	3.991E-03	0.466
CF-251		176.60	*	-1.030E-01	1.132E-01	1.721E-01	9.543E-03	-0.598
		227.00		1.373E-01	3.075E-01	5.290E-01	3.182E-02	0.260
		285.00		2.261E-01	1.456E+00	2.447E+00	1.580E-01	0.092



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028549      *
* Acquisition date   : 9-FEB-2010 17:44:16 Detector SN#      :              *
* Detector ID        : GAM10                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.550        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.08             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202028549             Analyst initials: MJH1          *
* Batch Number       : 947037                  Sample Quantity : 1.4815E+02 GRAM  *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08 MS Isotope      :                *
* MSD DPM             : 0.000                      MSD Isotope :                *
* LCS DPM             : 0.000                      LCS Isotope  :                *
* LCSD DPM            : 0.000                      LCSD Isotope :                *
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.096E+01	2.310E+00	4.805E-01	0.000E+00
CD-109	3.995E+00	1.103E+00	1.155E+00	0.000E+00
SN-126	3.926E-01	1.084E-01	1.144E-01	0.000E+00
CS-135	4.609E-01	1.784E-01	2.259E-01	0.000E+00
BA-137M	2.817E-01	5.270E-02	4.998E-02	0.000E+00
CS-137	2.978E-01	5.573E-02	5.283E-02	0.000E+00
TL-208	4.539E-01	7.330E-02	4.723E-02	0.000E+00
BI-211	3.466E+00	4.787E-01	2.713E-01	0.000E+00
PB-212	1.370E+00	1.372E-01	7.945E-02	0.000E+00
PO-212	1.370E+00	1.372E-01	7.945E-02	0.000E+00
BI-214	1.070E+00	1.562E-01	8.943E-02	0.000E+00
PB-214	1.206E+00	1.776E-01	9.455E-02	0.000E+00
PO-214	1.206E+00	1.776E-01	9.455E-02	0.000E+00
PO-216	1.370E+00	1.372E-01	7.945E-02	0.000E+00
PO-218	1.206E+00	1.776E-01	9.455E-02	0.000E+00
RA-224	4.103E+00	1.113E+00	9.038E-01	0.000E+00
RA-226	1.070E+00	1.562E-01	8.943E-02	0.000E+00
AC-228	1.399E+00	2.872E-01	1.732E-01	0.000E+00
RA-228	1.399E+00	2.872E-01	1.732E-01	0.000E+00
TH-228	1.391E+00	1.393E-01	8.067E-02	0.000E+00
TH-230	1.070E+00	1.562E-01	8.943E-02	0.000E+00
TH-232	1.399E+00	2.872E-01	1.732E-01	0.000E+00
TH-234	5.506E+00	2.686E+00	2.683E+00	0.000E+00
U-234	1.070E+00	1.562E-01	8.943E-02	0.000E+00
NP-237	1.153E+00	3.946E-01	3.419E-01	0.000E+00
U-238	5.506E+00	2.686E+00	2.683E+00	0.000E+00
AM-243	3.308E-01	8.051E-02	1.010E-01	0.000E+00
ANH-511	5.725E-02	5.350E-02	4.025E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	-5.328E-02	2.741E-01	4.604E-01	0.000E+00	NOT IDENT.
NA-22	-3.918E-02	3.999E-02	6.170E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	7.487E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.634E-02	2.639E-02	4.873E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.194E-02	7.267E-02	0.000E+00	NOT IDENT.
SC-46	-1.078E-02	3.336E-02	5.490E-02	0.000E+00	FAIL ABUN
V-48	-7.005E-03	5.900E-02	9.799E-02	0.000E+00	NOT IDENT.
CR-51	-2.842E-01	3.046E-01	5.075E-01	0.000E+00	NOT IDENT.
MN-52	4.276E-02	1.819E-01	3.190E-01	0.000E+00	NOT IDENT.
MN-54	-1.852E-02	3.361E-02	5.485E-02	0.000E+00	NOT IDENT.
CO-56	2.475E-02	3.239E-02	5.899E-02	0.000E+00	NOT IDENT.
CO-57	4.582E-03	2.233E-02	3.972E-02	0.000E+00	NOT IDENT.
CO-58	-9.148E-03	3.108E-02	5.180E-02	0.000E+00	NOT IDENT.
FE-59	3.059E-02	7.424E-02	1.289E-01	0.000E+00	NOT IDENT.
CO-60	-3.881E-03	2.932E-02	4.913E-02	0.000E+00	NOT IDENT.
ZN-65	-8.271E-03	9.882E-02	1.397E-01	0.000E+00	NOT IDENT.
GE-68	4.154E-01	1.005E+00	1.749E+00	0.000E+00	NOT IDENT.
AS-73	1.103E+00	1.291E+00	2.459E+00	0.000E+00	NOT IDENT.
AS-74	1.107E-02	7.387E-02	1.318E-01	0.000E+00	NOT IDENT.
SE-75	3.070E-03	4.028E-02	6.351E-02	0.000E+00	NOT IDENT.
BR-77	-5.884E+00	8.965E+00	1.433E+01	0.000E+00	FAIL ABUN
SR-82	-6.734E-02	3.172E-01	5.326E-01	0.000E+00	NOT IDENT.
RB-83	-3.964E-02	5.710E-02	9.094E-02	0.000E+00	NOT IDENT.
RB-84	2.820E-03	5.909E-02	1.010E-01	0.000E+00	NOT IDENT.
KR-85	1.173E+00	6.417E+00	9.656E+00	0.000E+00	NOT IDENT.
SR-85	6.022E-03	3.294E-02	4.957E-02	0.000E+00	NOT IDENT.
RB-86	1.796E-01	6.306E-01	1.084E+00	0.000E+00	NOT IDENT.
Y-88	1.476E-02	2.753E-02	5.041E-02	0.000E+00	NOT IDENT.
ZR-88	-6.810E-03	2.585E-02	4.406E-02	0.000E+00	NOT IDENT.
Y-91	1.505E+01	1.635E+01	3.025E+01	0.000E+00	NOT IDENT.
NB-94	3.148E-02	2.789E-02	5.234E-02	0.000E+00	NOT IDENT.
NB-95	5.610E-02	3.842E-02	7.252E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.204E-01	2.098E-01	0.000E+00	NOT IDENT.
ZR-95	-1.946E-02	6.074E-02	1.021E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.124E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.027E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	3.746E-01	1.000E+01	1.736E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.981E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.122E-02	2.976E-02	5.161E-02	0.000E+00	NOT IDENT.
RH-102	4.833E-03	2.438E-02	4.217E-02	0.000E+00	NOT IDENT.
RU-103	2.464E-03	3.457E-02	5.900E-02	0.000E+00	NOT IDENT.
RH-106	2.803E-01	2.513E-01	4.744E-01	0.000E+00	NOT IDENT.
RU-106	2.803E-01	2.498E-01	4.744E-01	0.000E+00	NOT IDENT.
AG-108M	1.715E-02	2.920E-02	5.201E-02	0.000E+00	NOT IDENT.
AG-110M	2.392E-02	3.473E-02	5.639E-02	0.000E+00	NOT IDENT.
IN-111	2.433E-02	9.358E-01	1.489E+00	0.000E+00	NOT IDENT.
IN-113M	5.442E-04	3.689E-02	6.404E-02	0.000E+00	NOT IDENT.
SN-113	5.442E-04	3.689E-02	6.404E-02	0.000E+00	NOT IDENT.
IN-114M	-8.068E-03	1.590E-01	2.574E-01	0.000E+00	NOT IDENT.
CD-115	3.452E+00	9.647E+00	1.673E+01	0.000E+00	NOT IDENT.
SN-117M	8.067E-03	4.679E-02	8.165E-02	0.000E+00	NOT IDENT.
SB-122	1.101E+00	1.722E+00	3.038E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	5.767E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	5.141E-03	2.442E-02	4.267E-02	0.000E+00	NOT IDENT.
I-124	-1.650E-01	5.812E-01	8.651E-01	0.000E+00	FAIL ABUN
SB-124	5.225E-03	5.427E-02	9.221E-02	0.000E+00	FAIL ABUN
SB-125	-2.745E-02	7.613E-02	1.277E-01	0.000E+00	FAIL ABUN
TE-125M	4.545E+00	8.146E+00	1.478E+01	0.000E+00	NOT IDENT.
I-126	-1.219E-01	1.750E-01	2.454E-01	0.000E+00	NOT IDENT.
SB-126	7.284E-02	1.260E-01	2.028E-01	0.000E+00	NOT IDENT.
SB-127	-1.518E-01	1.118E+00	1.927E+00	0.000E+00	NOT IDENT.
XE-127	-2.052E-02	3.946E-02	7.064E-02	0.000E+00	NOT IDENT.
I-131	-3.738E-02	9.768E-02	1.664E-01	0.000E+00	NOT IDENT.
TE-132	6.780E-02	5.627E-01	1.024E+00	0.000E+00	NOT IDENT.
BA-133	-2.328E-02	3.970E-02	5.764E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.634E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.841E-02	4.727E-02	7.494E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.558E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.836E-02	9.024E-02	1.450E-01	0.000E+00	FAIL ABUN
CE-139	-5.996E-03	2.599E-02	4.438E-02	0.000E+00	NOT IDENT.
BA-140	5.958E-02	2.105E-01	3.617E-01	0.000E+00	NOT IDENT.
LA-140	3.556E-02	7.909E-02	1.356E-01	0.000E+00	FAIL ABUN
CE-141	-1.500E-02	5.479E-02	9.436E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.387E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.352E-02	1.770E-01	3.025E-01	0.000E+00	NOT IDENT.
PM-144	3.281E-03	2.964E-02	5.199E-02	0.000E+00	NOT IDENT.
PR-144	2.223E-01	2.008E+00	3.523E+00	0.000E+00	NOT IDENT.

PM-146	-6.859E-03	3.612E-02	6.098E-02	0.000E+00	NOT IDENT.
ND-147	-9.441E-02	4.827E-01	8.015E-01	0.000E+00	FAIL ABUN
PM-149	5.391E+01	7.746E+01	1.421E+02	0.000E+00	NOT IDENT.
EU-152	5.068E-02	8.752E-02	1.477E-01	0.000E+00	FAIL ABUN
GD-153	5.007E-02	7.719E-02	1.275E-01	0.000E+00	FAIL ABUN
EU-154	-8.649E-02	1.098E-01	1.727E-01	0.000E+00	NOT IDENT.
EU-155	3.151E-02	9.446E-02	1.705E-01	0.000E+00	FAIL ABUN
TB-160	1.130E-02	1.158E-01	1.988E-01	0.000E+00	FAIL ABUN
HO-166M	2.780E-02	4.772E-02	8.669E-02	0.000E+00	FAIL ABUN
TM-171	3.193E+00	3.384E+01	5.582E+01	0.000E+00	NOT IDENT.
LU-176	-2.822E-03	2.037E-02	3.580E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.257E+00	1.801E+00	0.000E+00	FAIL ABUN
LU-177M	-2.197E-02	1.620E-01	2.416E-01	0.000E+00	FAIL ABUN
HF-181	1.114E-02	3.556E-02	6.193E-02	0.000E+00	NOT IDENT.
W-181	-6.068E-03	4.503E-01	7.401E-01	0.000E+00	NOT IDENT.
TA-182	2.329E-01	1.756E-01	3.321E-01	0.000E+00	FAIL ABUN
RE-183	5.698E-02	9.532E-02	1.690E-01	0.000E+00	FAIL ABUN
RE-184	-2.654E-02	1.886E-01	3.367E-01	0.000E+00	NOT IDENT.
OS-185	-4.626E-04	3.456E-02	6.050E-02	0.000E+00	NOT IDENT.
RE-188	-1.223E-01	1.499E-01	2.504E-01	0.000E+00	NOT IDENT.
W-188	-1.248E+00	6.638E+00	1.024E+01	0.000E+00	FAIL ABUN
IR-192	3.152E-03	2.758E-02	4.900E-02	0.000E+00	FAIL ABUN
AU-195	2.873E-01	2.011E-01	3.766E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	4.086E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-2.851E-01	6.205E+00	1.068E+01	0.000E+00	NOT IDENT.
TL-202	5.687E-02	6.017E-02	1.095E-01	0.000E+00	NOT IDENT.
HG-203	8.175E-04	3.394E-02	6.061E-02	0.000E+00	NOT IDENT.
BI-207	-4.554E-04	4.473E-02	7.454E-02	0.000E+00	FAIL ABUN
TL-207	3.341E-01	6.034E-01	9.701E-01	0.000E+00	FAIL ABUN
PO-209	-5.014E+00	6.354E+00	9.917E+00	0.000E+00	NOT IDENT.
BI-210	-1.354E+00	7.527E+00	1.397E+01	0.000E+00	NOT IDENT.
PB-210	-1.354E+00	7.527E+00	1.397E+01	0.000E+00	NOT IDENT.
PO-210	-1.354E+00	7.527E+00	1.397E+01	0.000E+00	NOT IDENT.
PB-211	2.089E-02	9.350E-01	1.419E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.134E-01	5.948E-01	0.000E+00	FAIL ABUN
PO-215	3.341E-01	6.034E-01	9.701E-01	0.000E+00	FAIL ABUN
RN-219	1.962E-01	3.638E-01	6.284E-01	0.000E+00	FAIL ABUN
RN-220	-4.660E+00	2.212E+01	3.655E+01	0.000E+00	NOT IDENT.
RA-223	3.341E-01	6.034E-01	9.701E-01	0.000E+00	FAIL ABUN
AC-227	2.786E-02	3.046E-01	5.492E-01	0.000E+00	FAIL ABUN
TH-227	2.786E-02	3.046E-01	5.492E-01	0.000E+00	FAIL ABUN
TH-229	-7.044E-02	4.292E-01	7.262E-01	0.000E+00	FAIL ABUN
PA-231	-1.252E+00	1.267E+00	2.120E+00	0.000E+00	NOT IDENT.
TH-231	3.341E-01	6.034E-01	9.701E-01	0.000E+00	FAIL ABUN
U-231	-8.361E-01	1.072E+00	1.641E+00	0.000E+00	FAIL ABUN
PA-233	-1.397E-02	5.035E-02	8.757E-02	0.000E+00	FAIL ABUN
PA-234	-2.415E-01	2.562E-01	3.827E-01	0.000E+00	FAIL ABUN
PA-234M	5.112E+00	4.981E+00	7.922E+00	0.000E+00	FAIL ABUN
U-235	4.837E-02	1.938E-01	3.376E-01	0.000E+00	FAIL ABUN
NP-236	-1.823E-02	6.953E-02	1.189E-01	0.000E+00	NOT IDENT.
NP-239	-6.735E-02	1.647E-01	2.863E-01	0.000E+00	FAIL ABUN
AM-241	1.948E-02	2.196E-01	3.649E-01	0.000E+00	NOT IDENT.
CM-243	3.260E-02	8.311E-02	1.505E-01	0.000E+00	FAIL ABUN
AM-246	-1.094E-02	1.130E-01	1.862E-01	0.000E+00	NOT IDENT.
CM-247	2.883E-02	3.619E-02	5.842E-02	0.000E+00	NOT IDENT.
CF-249	2.738E-02	3.356E-02	6.104E-02	0.000E+00	NOT IDENT.
CF-251	-1.030E-01	1.110E-01	1.821E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028549.CNF;1
Sample date        : 25-JAN-2010 12:00:00 Acquisition date : 9-FEB-2010 17:44:16.
Sample ID          : G1202028549 Sample quantity : 1.48150E+02 GRAM
Detector name      : GAM10 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.08 0.0%
Energy tolerance   : 1.55000 keV Analyst Initials : MJH1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 947037 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	978	10.67*	1.108E+00	2.096E+01	2.096E+01	11.25
CD-109	88.03	300	3.72*	5.235E+00	3.905E+00	3.995E+00	28.18
SN-126	64.28	185	9.60	2.241E+00	2.180E+00	2.180E+00	48.83
	86.94	300	8.90	5.235E+00	1.632E+00	1.632E+00	49.30
	87.57	300	37.00*	5.235E+00	3.926E-01	3.926E-01	28.18
CS-135	268.24	137	16.00*	4.700E+00	4.609E-01	4.609E-01	39.49
BA-137M	661.65	236	89.98*	2.357E+00	2.814E-01	2.817E-01	19.09
CS-137	661.65	236	85.12*	2.357E+00	2.975E-01	2.978E-01	19.10
TL-208	277.35	-----	6.80	4.610E+00	-----	Line Not Found	-----
	510.84	66	21.60	2.933E+00	2.650E-01	2.650E-01	95.72
	583.14	397	84.20*	2.630E+00	4.539E-01	4.539E-01	16.48
	860.37	54	12.46	1.842E+00	5.984E-01	5.984E-01	73.73
BI-211	72.87	-----	1.27	3.633E+00	-----	Line Not Found	-----
	351.07	689	12.94*	3.890E+00	3.466E+00	3.466E+00	14.09
PB-212	74.81	332	10.70	3.856E+00	2.040E+00	2.040E+00	26.54
	77.11	475	18.00	4.148E+00	1.613E+00	1.613E+00	19.55
	87.30	300	8.00	5.235E+00	1.816E+00	1.816E+00	29.90
	238.63	1234	44.60*	5.119E+00	1.370E+00	1.370E+00	10.22
	300.09	78	3.41	4.364E+00	1.330E+00	1.330E+00	65.30
PO-212	74.81	332	10.70	3.856E+00	2.040E+00	2.040E+00	26.54
	77.11	475	18.00	4.148E+00	1.613E+00	1.613E+00	19.55
	87.30	300	8.00	5.235E+00	1.816E+00	1.816E+00	29.90
	115.19	-----	0.60	6.657E+00	-----	Line Not Found	-----
	238.63	1234	44.60*	5.119E+00	1.370E+00	1.370E+00	10.22
	300.09	78	3.41	4.364E+00	1.330E+00	1.330E+00	65.30
BI-214	609.31	495	46.30*	2.533E+00	1.070E+00	1.070E+00	14.90
	1120.29	71	15.10	1.416E+00	8.400E-01	8.400E-01	61.36
	1764.49	101	15.80	9.768E-01	1.657E+00	1.657E+00	28.32
PB-214	74.81	332	6.21	3.856E+00	3.515E+00	3.515E+00	25.92
	77.11	475	10.50	4.148E+00	2.764E+00	2.764E+00	20.98
	87.30	300	4.67	5.235E+00	3.111E+00	3.111E+00	29.21
	241.98	325	7.49	5.076E+00	2.164E+00	2.164E+00	28.24

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	446	19.20	4.415E+00	1.333E+00	1.333E+00	15.63
	351.92	689	37.20*	3.890E+00	1.206E+00	1.206E+00	15.03
	74.81	332	6.21	3.856E+00	3.515E+00	3.515E+00	25.92
	77.11	475	10.50	4.148E+00	2.764E+00	2.764E+00	20.98
	87.30	300	4.67	5.235E+00	3.111E+00	3.111E+00	29.21
PO-216	241.98	325	7.49	5.076E+00	2.164E+00	2.164E+00	28.24
	295.21	446	19.20	4.415E+00	1.333E+00	1.333E+00	15.63
	351.92	689	37.20*	3.890E+00	1.206E+00	1.206E+00	15.03
	74.81	332	10.70	3.856E+00	2.040E+00	2.040E+00	26.54
	77.11	475	18.00	4.148E+00	1.613E+00	1.613E+00	19.55
PO-218	87.30	300	8.00	5.235E+00	1.816E+00	1.816E+00	29.90
	238.63	1234	44.60*	5.119E+00	1.370E+00	1.370E+00	10.22
	300.09	78	3.41	4.364E+00	1.330E+00	1.330E+00	65.30
	74.81	332	6.21	3.856E+00	3.515E+00	3.515E+00	25.92
	77.11	475	10.50	4.148E+00	2.764E+00	2.764E+00	20.98
RA-224	87.30	300	4.67	5.235E+00	3.111E+00	3.111E+00	29.21
	241.98	325	7.49	5.076E+00	2.164E+00	2.164E+00	28.24
	295.21	446	19.20	4.415E+00	1.333E+00	1.333E+00	15.63
	351.92	689	37.20*	3.890E+00	1.206E+00	1.206E+00	15.03
	240.98	325	3.95*	5.076E+00	4.103E+00	4.103E+00	27.67
RA-226	609.31	495	46.30*	2.533E+00	1.070E+00	1.070E+00	14.90
	1120.29	71	15.10	1.416E+00	8.400E-01	8.400E-01	61.36
	1764.49	101	15.80	9.768E-01	1.657E+00	1.657E+00	28.32
	338.32	213	11.40	4.004E+00	1.181E+00	1.181E+00	50.00
	911.07	266	27.70*	1.741E+00	1.399E+00	1.399E+00	20.94
AC-228	969.11	133	16.60	1.638E+00	1.242E+00	1.242E+00	36.09
	338.32	213	11.40	4.004E+00	1.181E+00	1.181E+00	50.00
	911.07	266	27.70*	1.741E+00	1.399E+00	1.399E+00	20.94
	969.11	133	16.60	1.638E+00	1.242E+00	1.242E+00	36.09
	74.81	332	10.70	3.856E+00	2.040E+00	2.071E+00	24.86
TH-228	77.11	475	18.00	4.148E+00	1.613E+00	1.637E+00	19.55
	87.30	300	8.00	5.235E+00	1.816E+00	1.844E+00	28.18
	238.63	1234	44.60*	5.119E+00	1.370E+00	1.391E+00	10.22
	300.09	78	3.41	4.364E+00	1.330E+00	1.350E+00	87.58
	609.31	495	46.30*	2.533E+00	1.070E+00	1.070E+00	14.90
TH-230	1120.29	71	15.10	1.416E+00	8.400E-01	8.400E-01	61.36
	1764.49	101	15.80	9.768E-01	1.657E+00	1.657E+00	28.32
	338.32	213	11.40	4.004E+00	1.181E+00	1.181E+00	29.52
	911.07	266	27.70*	1.741E+00	1.399E+00	1.399E+00	20.94
	969.11	133	16.60	1.638E+00	1.242E+00	1.242E+00	36.09
TH-234	63.29	185	3.80*	2.241E+00	5.506E+00	5.506E+00	49.78
	92.38	657	5.41	5.700E+00	5.399E+00	5.399E+00	23.10
	609.31	495	46.30*	2.533E+00	1.070E+00	1.070E+00	14.90
	1120.29	71	15.10	1.416E+00	8.400E-01	8.400E-01	61.36
	1764.49	101	15.80	9.768E-01	1.657E+00	1.657E+00	28.32
NP-237	86.50	300	12.60*	5.235E+00	1.153E+00	1.153E+00	34.92
	95.87	---	2.60	5.933E+00	---	Line Not Found	---
	63.29	185	3.80*	2.241E+00	5.506E+00	5.506E+00	49.78
	92.38	657	5.41	5.700E+00	5.399E+00	5.399E+00	16.76

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	332	66.00*	3.856E+00	3.308E-01	3.308E-01	24.84
	86.72	300	0.34	5.235E+00	4.324E+01	4.324E+01	28.18
	117.66	-----	0.55	6.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.676E+00	-----	Line Not Found	-----
ANH-511	511.00	66	100.00*	2.933E+00	5.725E-02	5.725E-02	95.36

Flag: "\*" = Keyline

Summary of Nuclide Activity  
Sample ID : G1202028549

Page : 4  
Acquisition date : 9-FEB-2010 17:44:16

Total number of lines in spectrum 35  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 32 91.43%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.096E+01	2.096E+01	0.236E+01	11.25	
CD-109	464.00D	1.02	3.905E+00	3.995E+00	1.126E+00	28.18	
SN-126	1.00E+05Y	1.00	3.926E-01	3.926E-01	1.106E-01	28.18	
CS-135	2.30E+06Y	1.00	4.609E-01	4.609E-01	1.820E-01	39.49	
BA-137M	30.17Y	1.00	2.814E-01	2.817E-01	0.538E-01	19.09	
CS-137	30.17Y	1.00	2.975E-01	2.978E-01	0.569E-01	19.10	
TL-208	1.41E+10Y	1.00	4.539E-01	4.539E-01	0.748E-01	16.48	
BI-211	7.04E+08Y	1.00	3.466E+00	3.466E+00	0.488E+00	14.09	
PB-212	1.41E+10Y	1.00	1.370E+00	1.370E+00	0.140E+00	10.22	
PO-212	1.41E+10Y	1.00	1.370E+00	1.370E+00	0.140E+00	10.22	
BI-214	1600.00Y	1.00	1.070E+00	1.070E+00	0.159E+00	14.90	
PB-214	1600.00Y	1.00	1.206E+00	1.206E+00	0.181E+00	15.03	
PO-214	1600.00Y	1.00	1.206E+00	1.206E+00	0.181E+00	15.03	
PO-216	1.41E+10Y	1.00	1.370E+00	1.370E+00	0.140E+00	10.22	
PO-218	1600.00Y	1.00	1.206E+00	1.206E+00	0.181E+00	15.03	
RA-224	1.41E+10Y	1.00	4.103E+00	4.103E+00	1.135E+00	27.67	
RA-226	1600.00Y	1.00	1.070E+00	1.070E+00	0.159E+00	14.90	
AC-228	1.41E+10Y	1.00	1.399E+00	1.399E+00	0.293E+00	20.94	
RA-228	1.41E+10Y	1.00	1.399E+00	1.399E+00	0.293E+00	20.94	
TH-228	1.91Y	1.02	1.370E+00	1.391E+00	0.142E+00	10.22	
TH-230	4.47E+09Y	1.00	1.070E+00	1.070E+00	0.159E+00	14.90	
TH-232	1.41E+10Y	1.00	1.399E+00	1.399E+00	0.293E+00	20.94	
TH-234	4.47E+09Y	1.00	5.506E+00	5.506E+00	2.741E+00	49.78	
U-234	4.47E+09Y	1.00	1.070E+00	1.070E+00	0.159E+00	14.90	
NP-237	2.14E+06Y	1.00	1.153E+00	1.153E+00	0.403E+00	34.92	
U-238	4.47E+09Y	1.00	5.506E+00	5.506E+00	2.741E+00	49.78	
AM-243	7380.00Y	1.00	3.308E-01	3.308E-01	0.821E-01	24.84	
ANH-511	1.00E+09Y	1.00	5.725E-02	5.725E-02	5.459E-02	95.36	

Total Activity : 6.445E+01 6.456E+01

Grand Total Activity : 6.445E+01 6.456E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G1202028549

Page : 5  
Acquisition date : 9-FEB-2010 17:44:16

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	84.24	130	418	1.60	168.60	165	27	1.80E-02	57.6	4.99E+00	T
5	89.62	180	376	1.26	179.35	165	27	2.50E-02	41.3	5.48E+00	T
0	185.26	389	356	1.02	370.46	364	11	5.40E-02	22.0	5.99E+00	T
0	208.88	127	273	1.10	417.66	414	9	1.77E-02	49.9	5.58E+00	T
0	327.38	65	178	1.09	654.50	650	10	9.06E-03	80.3	4.10E+00	T
0	408.67	64	152	1.06	816.98	811	12	8.84E-03	81.6	3.48E+00	
0	462.64	64	114	1.05	924.84	920	9	8.89E-03	65.6	3.17E+00	T
0	726.74	122	61	1.96	1452.82	1446	15	1.69E-02	34.0	2.16E+00	T
0	794.02	33	83	1.57	1587.32	1581	12	4.59E-03	****	1.99E+00	
1	963.82	58	55	1.92	1926.86	1917	24	8.10E-03	58.9	1.64E+00	T
0	1000.70	27	43	1.88	2000.61	1996	10	3.73E-03	98.9	1.58E+00	T
0	1376.38	26	20	1.56	2752.03	2747	11	3.68E-03	75.2	1.16E+00	T
0	1587.11	49	12	1.46	3173.61	3168	14	6.85E-03	40.1	1.04E+00	

Flags: "T" = Tentatively associated



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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028549.CNF;1
* Acquisition date   : 9-FEB-2010 17:44:16.   Detector SN#      :
* Detector ID        : GAM10                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance  : 1.55000
* Elapsed live time  : 0 02:00:00.00           Abundance limit      : 75.00000
* Elapsed real time  : 0 02:00:01.08           Half life ratio     : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-JAN-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G1202028549           Analyst initials    : MJH1
* Batch Number       : 947037                Sample Quantity    : 1.48150E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08.8MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.096E+01	2.357E+00	4.775E-01	4.112E-02	43.894
CD-109	3.995E+00	1.126E+00	1.075E+00	1.219E-01	3.717
SN-126	3.926E-01	1.106E-01	1.064E-01	1.204E-02	3.690
CS-135	4.609E-01	1.820E-01	2.155E-01	1.742E-02	2.138
BA-137M	2.817E-01	5.378E-02	4.871E-02	2.403E-03	5.783
CS-137	2.978E-01	5.687E-02	5.149E-02	2.555E-03	5.783
TL-208	4.539E-01	7.479E-02	4.589E-02	3.084E-03	9.890
BI-211	3.466E+00	4.885E-01	2.604E-01	1.899E-02	13.310
PB-212	1.370E+00	1.400E-01	7.560E-02	5.735E-03	18.117
PO-212	1.370E+00	1.400E-01	7.560E-02	5.735E-03	18.117
BI-214	1.070E+00	1.594E-01	8.699E-02	6.620E-03	12.299
PB-214	1.206E+00	1.812E-01	9.078E-02	8.141E-03	13.282
PO-214	1.206E+00	1.812E-01	9.078E-02	8.141E-03	13.282
PO-216	1.370E+00	1.400E-01	7.560E-02	5.735E-03	18.117
PO-218	1.206E+00	1.812E-01	9.078E-02	8.141E-03	13.282
RA-224	4.103E+00	1.135E+00	8.602E-01	5.280E-02	4.770
RA-226	1.070E+00	1.594E-01	8.699E-02	6.620E-03	12.299
AC-228	1.399E+00	2.930E-01	1.701E-01	2.099E-02	8.226

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.399E+00	2.930E-01	1.701E-01	2.099E-02	8.226
TH-228	1.391E+00	1.421E-01	7.676E-02	5.823E-03	18.117
TH-230	1.070E+00	1.594E-01	8.699E-02	6.619E-03	12.299
TH-232	1.399E+00	2.930E-01	1.701E-01	2.099E-02	8.226
TH-234	5.506E+00	2.741E+00	2.479E+00	4.886E-01	2.221
U-234	1.070E+00	1.594E-01	8.699E-02	6.619E-03	12.299
NP-237	1.153E+00	4.027E-01	3.180E-01	7.474E-02	3.626
U-238	5.506E+00	2.741E+00	2.479E+00	4.886E-01	2.221
AM-243	3.308E-01	8.215E-02	9.367E-02	1.026E-02	3.531
ANH-511	5.725E-02	5.459E-02	3.899E-02	2.498E-03	1.468

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-5.328E-02		2.797E-01	4.452E-01	3.311E-02	-0.120
NA-22	-3.918E-02		4.080E-02	6.110E-02	4.733E-03	-0.641
NA-24	-7.539E-01		3.820E-01	Half-Life too short		
AL-26	1.634E-02		2.693E-02	4.869E-02	3.087E-03	0.336
TI-44	1.210E-01		4.279E-02	6.745E-02	7.381E-03	1.794
SC-46	-1.078E-02		3.404E-02	5.389E-02	5.333E-03	-0.200
V-48	-7.005E-03		6.020E-02	9.643E-02	8.917E-03	-0.073
CR-51	-2.842E-01		3.108E-01	4.862E-01	3.511E-02	-0.584
MN-52	4.276E-02		1.856E-01	3.169E-01	2.678E-02	0.135
MN-54	-1.852E-02		3.430E-02	5.376E-02	4.593E-03	-0.345
CO-56	2.475E-02		3.305E-02	5.783E-02	5.107E-03	0.428
CO-57	4.582E-03		2.278E-02	3.723E-02	2.456E-03	0.123
CO-58	-9.148E-03		3.171E-02	5.074E-02	4.059E-03	-0.180
FE-59	3.059E-02		7.576E-02	1.272E-01	1.062E-02	0.241
CO-60	-3.881E-03		2.992E-02	4.871E-02	4.233E-03	-0.080
ZN-65	-8.271E-03		1.008E-01	1.379E-01	1.004E-02	-0.060
GE-68	4.154E-01		1.025E+00	1.725E+00	1.367E-01	0.241
AS-73	1.103E+00		1.317E+00	2.263E+00	2.995E-01	0.488
AS-74	1.107E-02		7.538E-02	1.281E-01	7.319E-03	0.086
SE-75	3.070E-03		4.110E-02	6.058E-02	3.864E-03	0.051
BR-77	-5.884E+00		9.148E+00	1.389E+01	8.810E-01	-0.424
SR-82	-6.734E-02		3.237E-01	5.211E-01	3.757E-02	-0.129
RB-83	-3.964E-02		5.827E-02	8.812E-02	5.592E-03	-0.450
RB-84	2.820E-03		6.030E-02	9.910E-02	9.609E-03	0.028
KR-85	1.173E+00		6.548E+00	9.354E+00	5.975E-01	0.125
SR-85	6.022E-03		3.362E-02	4.802E-02	3.068E-03	0.125
RB-86	1.796E-01		6.435E-01	1.069E+00	8.483E-02	0.168
Y-88	1.476E-02		2.809E-02	5.038E-02	3.091E-03	0.293
ZR-88	-6.810E-03		2.637E-02	4.242E-02	2.883E-03	-0.161
Y-91	1.505E+01		1.668E+01	2.992E+01	1.987E+00	0.503
NB-94	3.148E-02		2.846E-02	5.109E-02	2.908E-03	0.616
NB-95	5.610E-02		3.921E-02	7.093E-02	4.950E-03	0.791
NB-95M	2.469E-01		1.228E-01	1.996E-01	1.548E-02	1.237

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	-1.946E-02		6.198E-02	9.985E-02	7.843E-03	-0.195
NB-97	1.243E-01		5.736E-02	Half-Life too short		
ZR-97	4.638E+00		1.034E+00	Half-Life too short		
MO-99	3.746E-01		1.021E+01	1.697E+01	2.385E+00	0.022
TC-99M	-4.239E+10		2.541E+10	Half-Life too short		
RH-101	2.122E-02		3.036E-02	4.890E-02	2.809E-03	0.434
RH-102	4.833E-03		2.488E-02	4.077E-02	2.689E-03	0.119
RU-103	2.464E-03		3.528E-02	5.711E-02	7.410E-03	0.043
RH-106	2.803E-01		2.565E-01	4.617E-01	5.337E-02	0.607
RU-106	2.803E-01		2.549E-01	4.617E-01	2.507E-02	0.607
AG-108M	1.715E-02		2.980E-02	5.019E-02	3.599E-03	0.342
AG-110M	2.392E-02		3.544E-02	5.495E-02	2.977E-03	0.435
IN-111	2.433E-02		9.549E-01	1.418E+00	8.754E-02	0.017
IN-113M	5.442E-04		3.765E-02	6.165E-02	4.396E-03	0.009
SN-113	5.442E-04		3.765E-02	6.165E-02	4.396E-03	0.009
IN-114M	-8.068E-03		1.622E-01	2.436E-01	1.382E-02	-0.033
CD-115	3.452E+00		9.844E+00	1.622E+01	1.021E+00	0.213
SN-117M	8.067E-03		4.774E-02	7.697E-02	4.317E-03	0.105
SB-122	1.101E+00		1.757E+00	2.950E+00	1.774E-01	0.373
I-123	1.214E+00		2.942E+00	Half-Life too short		
TE-123M	5.141E-03		2.492E-02	4.023E-02	2.285E-03	0.128
I-124	-1.650E-01		5.931E-01	8.413E-01	4.746E-02	-0.196
SB-124	5.225E-03		5.538E-02	9.197E-02	6.987E-03	0.057
SB-125	-2.745E-02		7.768E-02	1.232E-01	8.578E-03	-0.223
TE-125M	4.545E+00		8.312E+00	1.382E+01	1.327E+00	0.329
I-126	-1.219E-01		1.785E-01	2.392E-01	1.200E-02	-0.510
SB-126	7.284E-02		1.286E-01	1.981E-01	1.197E-02	0.368
SB-127	-1.518E-01		1.141E+00	1.880E+00	1.731E-01	-0.081
XE-127	-2.052E-02		4.027E-02	6.697E-02	3.878E-03	-0.306
I-131	-3.738E-02		9.967E-02	1.599E-01	1.176E-02	-0.234
TE-132	6.780E-02		5.742E-01	9.737E-01	1.410E-01	0.070
BA-133	-2.328E-02		4.051E-02	5.536E-02	6.679E-03	-0.420
I-133	2.812E-03		2.875E-03	Half-Life too short		
CS-134	2.841E-02		4.823E-02	7.336E-02	5.656E-03	0.387
I-135	4.071E+09		3.346E+09	Half-Life too short		
CS-136	-3.836E-02		9.208E-02	1.429E-01	1.251E-02	-0.268
CE-139	-5.996E-03		2.652E-02	4.189E-02	2.288E-03	-0.143
BA-140	5.958E-02		2.148E-01	3.508E-01	1.143E-01	0.170
LA-140	3.556E-02		8.071E-02	1.351E-01	1.048E-02	0.263
CE-141	-1.500E-02		5.591E-02	8.879E-02	5.434E-03	-0.169
CE-143	1.350E-03	+	1.728E-04	Half-Life too short		
CE-144	-9.352E-02		1.806E-01	2.841E-01	4.082E-02	-0.329
PM-144	3.281E-03		3.024E-02	5.073E-02	2.831E-03	0.065
PR-144	2.223E-01		2.049E+00	3.438E+00	1.917E-01	0.065
PM-146	-6.859E-03		3.685E-02	5.890E-02	5.440E-03	-0.116
ND-147	-9.441E-02		4.925E-01	7.771E-01	1.067E-01	-0.121
PM-149	5.391E+01		7.904E+01	1.357E+02	1.963E+01	0.397
EU-152	5.068E-02		8.931E-02	1.417E-01	1.044E-02	0.358

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	5.007E-02		7.876E-02	1.189E-01	1.107E-02	0.421
EU-154	-8.649E-02		1.120E-01	1.710E-01	1.822E-02	-0.506
EU-155	3.151E-02		9.638E-02	1.593E-01	1.321E-02	0.198
TB-160	1.130E-02		1.181E-01	1.951E-01	1.881E-02	0.058
HO-166M	2.780E-02		4.869E-02	8.464E-02	4.967E-03	0.328
TM-171	3.193E+00		3.453E+01	5.163E+01	5.882E+00	0.062
LU-176	-2.822E-03		2.079E-02	3.426E-02	2.254E-03	-0.082
LU-177	2.551E+00	+	1.283E+00	1.709E+00	9.984E-02	1.493
LU-177M	-2.197E-02		1.653E-01	2.329E-01	1.578E-02	-0.094
HF-181	1.114E-02		3.629E-02	5.991E-02	3.932E-03	0.186
W-181	-6.068E-03		4.595E-01	6.841E-01	7.905E-02	-0.009
TA-182	2.329E-01		1.792E-01	3.286E-01	2.266E-02	0.709
RE-183	5.698E-02		9.726E-02	1.594E-01	8.817E-03	0.357
RE-184	-2.654E-02		1.924E-01	3.208E-01	2.000E-02	-0.083
OS-185	-4.626E-04		3.526E-02	5.893E-02	3.027E-03	-0.008
RE-188	-1.223E-01		1.529E-01	2.360E-01	1.341E-02	-0.518
W-188	-1.248E+00		6.774E+00	9.787E+00	6.354E-01	-0.128
IR-192	3.152E-03		2.814E-02	4.694E-02	3.120E-03	0.067
AU-195	2.873E-01		2.052E-01	3.513E-01	3.188E-02	0.818
TL-200	-2.550E-05		2.085E-04	Half-Life too short		
TL-201	-2.851E-01		6.332E+00	1.008E+01	5.513E-01	-0.028
TL-202	5.687E-02		6.140E-02	1.056E-01	7.103E-03	0.538
HG-203	8.175E-04		3.464E-02	5.788E-02	3.906E-03	0.014
BI-207	-4.554E-04		4.564E-02	7.350E-02	5.983E-03	-0.006
TL-207	3.341E-01		6.157E-01	9.297E-01	1.565E-01	0.359
PO-209	-5.014E+00		6.484E+00	9.737E+00	9.821E-01	-0.515
BI-210	-1.354E+00		7.681E+00	1.282E+01	1.257E+00	-0.106
PB-210	-1.354E+00		7.681E+00	1.282E+01	1.257E+00	-0.106
PO-210	-1.354E+00		7.681E+00	1.282E+01	1.151E+00	-0.106
PB-211	2.089E-02		9.541E-01	1.366E+00	8.532E-01	0.015
BI-212	1.209E+00	+	4.218E-01	5.811E-01	4.648E-02	2.080
PO-215	3.341E-01		6.157E-01	9.297E-01	1.565E-01	0.359
RN-219	1.962E-01		3.712E-01	6.052E-01	8.507E-02	0.324
RN-220	-4.660E+00		2.257E+01	3.547E+01	2.175E+00	-0.131
RA-223	3.341E-01		6.157E-01	9.297E-01	1.565E-01	0.359
AC-227	2.786E-02		3.108E-01	5.234E-01	7.411E-02	0.053
TH-227	2.786E-02		3.108E-01	5.234E-01	8.932E-02	0.053
TH-229	-7.044E-02		4.380E-01	6.877E-01	3.922E-02	-0.102
PA-231	-1.252E+00		1.292E+00	2.025E+00	2.848E-01	-0.618
TH-231	3.341E-01		6.157E-01	9.297E-01	1.565E-01	0.359
U-231	-8.361E-01		1.094E+00	1.530E+00	1.467E-01	-0.546
PA-233	-1.397E-02		5.138E-02	8.385E-02	5.802E-03	-0.167
PA-234	-2.415E-01		2.614E-01	3.763E-01	7.250E-02	-0.642
PA-234M	5.112E+00	+	5.083E+00	7.799E+00	8.049E-01	0.655
U-235	4.837E-02		1.978E-01	3.175E-01	5.192E-02	0.152
NP-236	-1.823E-02		7.095E-02	1.121E-01	6.248E-03	-0.163
NP-239	-6.735E-02		1.681E-01	2.680E-01	1.875E-02	-0.251
AM-241	1.948E-02		2.241E-01	3.366E-01	4.323E-02	0.058

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	3.260E-02		8.481E-02	1.406E-01	1.178E-02	0.232
AM-246	-1.094E-02		1.154E-01	1.837E-01	1.451E-02	-0.060
CM-247	2.883E-02		3.693E-02	5.627E-02	3.821E-03	0.512
CF-249	2.738E-02		3.425E-02	5.874E-02	3.991E-03	0.466
CF-251	-1.030E-01		1.132E-01	1.721E-01	9.543E-03	-0.598

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202028549          *
* Acquisition date   : 9-FEB-2010 17:44:16 Detector SN#      :              *
* Detector ID        : GAM10 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.550          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.08 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202028549 Analyst initials: MJH1          *
* Batch Number       : 947037 Sample Quantity : 1.4815E+02 GRAM   *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08 MS Isotope      :          *
* MSD DPM             : 0.000 MSD Isotope                   :          *
* LCS DPM             : 0.000 LCS Isotope                    :          *
* LCSD DPM            : 0.000 LCSD Isotope                   :          *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.096E+01	2.310E+00	2.404E-01	1.179E+00
CD-109	3.995E+00	1.103E+00	5.780E-01	5.629E-01
SN-126	3.926E-01	1.084E-01	5.722E-02	5.532E-02
CS-135	4.609E-01	1.784E-01	1.130E-01	9.100E-02
BA-137M	2.817E-01	5.270E-02	2.501E-02	2.689E-02
CS-137	2.978E-01	5.573E-02	2.643E-02	2.844E-02
TL-208	4.539E-01	7.330E-02	2.363E-02	3.740E-02
BI-211	3.466E+00	4.787E-01	1.357E-01	2.442E-01
PB-212	1.370E+00	1.372E-01	3.975E-02	6.998E-02
PO-212	1.370E+00	1.372E-01	3.975E-02	6.998E-02
BI-214	1.070E+00	1.562E-01	4.474E-02	7.971E-02
PB-214	1.206E+00	1.776E-01	4.730E-02	9.060E-02
PO-214	1.206E+00	1.776E-01	4.730E-02	9.060E-02
PO-216	1.370E+00	1.372E-01	3.975E-02	6.998E-02
PO-218	1.206E+00	1.776E-01	4.730E-02	9.060E-02
RA-224	4.103E+00	1.113E+00	4.522E-01	5.677E-01
RA-226	1.070E+00	1.562E-01	4.474E-02	7.971E-02
AC-228	1.399E+00	2.872E-01	8.664E-02	1.465E-01
RA-228	1.399E+00	2.872E-01	8.664E-02	1.465E-01
TH-228	1.391E+00	1.393E-01	4.036E-02	7.105E-02
TH-230	1.070E+00	1.562E-01	4.474E-02	7.971E-02
TH-232	1.399E+00	2.872E-01	8.664E-02	1.465E-01
TH-234	5.506E+00	2.686E+00	1.342E+00	1.370E+00
U-234	1.070E+00	1.562E-01	4.474E-02	7.971E-02
NP-237	1.153E+00	3.946E-01	1.710E-01	2.013E-01
U-238	5.506E+00	2.686E+00	1.342E+00	1.370E+00
AM-243	3.308E-01	8.051E-02	5.054E-02	4.107E-02
ANH-511	5.725E-02	5.350E-02	2.014E-02	2.730E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-5.328E-02	2.741E-01	2.303E-01	1.398E-01	NOT IDENT.
NA-22	-3.918E-02	3.999E-02	3.087E-02	2.040E-02	NOT IDENT.
NA-24	-7.539E+05	7.487E+05	0.000E+00	3.820E+05	SHORT HLIF
AL-26	1.634E-02	2.639E-02	2.438E-02	1.346E-02	NOT IDENT.
TI-44	1.210E-01	4.194E-02	3.636E-02	2.140E-02	NOT IDENT.
SC-46	-1.078E-02	3.336E-02	2.747E-02	1.702E-02	FAIL ABUN
V-48	-7.005E-03	5.900E-02	4.902E-02	3.010E-02	NOT IDENT.
CR-51	-2.842E-01	3.046E-01	2.539E-01	1.554E-01	NOT IDENT.
MN-52	4.276E-02	1.819E-01	1.596E-01	9.281E-02	NOT IDENT.
MN-54	-1.852E-02	3.361E-02	2.744E-02	1.715E-02	NOT IDENT.
CO-56	2.475E-02	3.239E-02	2.951E-02	1.652E-02	NOT IDENT.
CO-57	4.582E-03	2.233E-02	1.987E-02	1.139E-02	NOT IDENT.
CO-58	-9.148E-03	3.108E-02	2.592E-02	1.586E-02	NOT IDENT.
FE-59	3.059E-02	7.424E-02	6.449E-02	3.788E-02	NOT IDENT.
CO-60	-3.881E-03	2.932E-02	2.458E-02	1.496E-02	NOT IDENT.
ZN-65	-8.271E-03	9.882E-02	6.989E-02	5.042E-02	NOT IDENT.
GE-68	4.154E-01	1.005E+00	8.752E-01	5.126E-01	NOT IDENT.
AS-73	1.103E+00	1.291E+00	1.230E+00	6.585E-01	NOT IDENT.
AS-74	1.107E-02	7.387E-02	6.593E-02	3.769E-02	NOT IDENT.
SE-75	3.070E-03	4.028E-02	3.178E-02	2.055E-02	NOT IDENT.
BR-77	-5.884E+00	8.965E+00	7.169E+00	4.574E+00	FAIL ABUN
SR-82	-6.734E-02	3.172E-01	2.665E-01	1.619E-01	NOT IDENT.
RB-83	-3.964E-02	5.710E-02	4.550E-02	2.913E-02	NOT IDENT.
RB-84	2.820E-03	5.909E-02	5.052E-02	3.015E-02	NOT IDENT.
KR-85	1.173E+00	6.417E+00	4.831E+00	3.274E+00	NOT IDENT.
SR-85	6.022E-03	3.294E-02	2.480E-02	1.681E-02	NOT IDENT.
RB-86	1.796E-01	6.306E-01	5.424E-01	3.217E-01	NOT IDENT.
Y-88	1.476E-02	2.753E-02	2.522E-02	1.405E-02	NOT IDENT.
ZR-88	-6.810E-03	2.585E-02	2.204E-02	1.319E-02	NOT IDENT.
Y-91	1.505E+01	1.635E+01	1.514E+01	8.342E+00	NOT IDENT.
NB-94	3.148E-02	2.789E-02	2.619E-02	1.423E-02	NOT IDENT.
NB-95	5.610E-02	3.842E-02	3.628E-02	1.960E-02	NOT IDENT.
NB-95M	2.469E-01	1.204E-01	1.050E-01	6.142E-02	NOT IDENT.
ZR-95	-1.946E-02	6.074E-02	5.109E-02	3.099E-02	NOT IDENT.
NB-97	1.243E+05	1.124E+05	0.000E+00	5.736E+04	SHORT HLIF
ZR-97	4.638E+06	2.027E+06	0.000E+00	1.034E+06	SHORT HLIF
MO-99	3.746E-01	1.000E+01	8.687E+00	5.104E+00	NOT IDENT.
TC-99M	-4.239E+16	4.981E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.122E-02	2.976E-02	2.582E-02	1.518E-02	NOT IDENT.
RH-102	4.833E-03	2.438E-02	2.110E-02	1.244E-02	NOT IDENT.
RU-103	2.464E-03	3.457E-02	2.952E-02	1.764E-02	NOT IDENT.
RH-106	2.803E-01	2.513E-01	2.374E-01	1.282E-01	NOT IDENT.
RU-106	2.803E-01	2.498E-01	2.374E-01	1.274E-01	NOT IDENT.
AG-108M	1.715E-02	2.920E-02	2.602E-02	1.490E-02	NOT IDENT.
AG-110M	2.392E-02	3.473E-02	2.821E-02	1.772E-02	NOT IDENT.
IN-111	2.433E-02	9.358E-01	7.449E-01	4.774E-01	NOT IDENT.
IN-113M	5.442E-04	3.689E-02	3.204E-02	1.882E-02	NOT IDENT.
SN-113	5.442E-04	3.689E-02	3.204E-02	1.882E-02	NOT IDENT.
IN-114M	-8.068E-03	1.590E-01	1.288E-01	8.112E-02	NOT IDENT.
CD-115	3.452E+00	9.647E+00	8.370E+00	4.922E+00	NOT IDENT.
SN-117M	8.067E-03	4.679E-02	4.085E-02	2.387E-02	NOT IDENT.
SB-122	1.101E+00	1.722E+00	1.520E+00	8.786E-01	NOT IDENT.
I-123	1.214E+06	5.767E+06	0.000E+00	2.942E+06	SHORT HLIF
TE-123M	5.141E-03	2.442E-02	2.135E-02	1.246E-02	NOT IDENT.
I-124	-1.650E-01	5.812E-01	4.328E-01	2.965E-01	FAIL ABUN
SB-124	5.225E-03	5.427E-02	4.613E-02	2.769E-02	FAIL ABUN
SB-125	-2.745E-02	7.613E-02	6.389E-02	3.884E-02	FAIL ABUN
TE-125M	4.545E+00	8.146E+00	7.395E+00	4.156E+00	NOT IDENT.
I-126	-1.219E-01	1.750E-01	1.228E-01	8.927E-02	NOT IDENT.
SB-126	7.284E-02	1.260E-01	1.015E-01	6.429E-02	NOT IDENT.
SB-127	-1.518E-01	1.118E+00	9.640E-01	5.703E-01	NOT IDENT.
XE-127	-2.052E-02	3.946E-02	3.534E-02	2.013E-02	NOT IDENT.
I-131	-3.738E-02	9.768E-02	8.325E-02	4.984E-02	NOT IDENT.
TE-132	6.780E-02	5.627E-01	5.125E-01	2.871E-01	NOT IDENT.
BA-133	-2.328E-02	3.970E-02	2.884E-02	2.025E-02	NOT IDENT.
I-133	2.812E+03	5.634E+03	0.000E+00	2.875E+03	SHORT HLIF
CS-134	2.841E-02	4.727E-02	3.749E-02	2.412E-02	NOT IDENT.
I-135	4.071E+15	6.558E+15	0.000E+00	3.346E+15	SHORT HLIF
CS-136	-3.836E-02	9.024E-02	7.254E-02	4.604E-02	FAIL ABUN
CE-139	-5.996E-03	2.599E-02	2.220E-02	1.326E-02	NOT IDENT.
BA-140	5.958E-02	2.105E-01	1.810E-01	1.074E-01	NOT IDENT.
LA-140	3.556E-02	7.909E-02	6.786E-02	4.035E-02	FAIL ABUN
CE-141	-1.500E-02	5.479E-02	4.721E-02	2.795E-02	NOT IDENT.
CE-143	1.350E+03	3.387E+02	0.000E+00	1.728E+02	SHORT HLIF
CE-144	-9.352E-02	1.770E-01	1.513E-01	9.032E-02	NOT IDENT.
PM-144	3.281E-03	2.964E-02	2.601E-02	1.512E-02	NOT IDENT.
PR-144	2.223E-01	2.008E+00	1.763E+00	1.025E+00	NOT IDENT.

PM-146	-6.859E-03	3.612E-02	3.051E-02	1.843E-02	NOT IDENT.
ND-147	-9.441E-02	4.827E-01	4.010E-01	2.463E-01	FAIL ABUN
PM-149	5.391E+01	7.746E+01	7.107E+01	3.952E+01	NOT IDENT.
EU-152	5.068E-02	8.752E-02	7.389E-02	4.465E-02	FAIL ABUN
GD-153	5.007E-02	7.719E-02	6.379E-02	3.938E-02	FAIL ABUN
EU-154	-8.649E-02	1.098E-01	8.641E-02	5.601E-02	NOT IDENT.
EU-155	3.151E-02	9.446E-02	8.529E-02	4.819E-02	FAIL ABUN
TB-160	1.130E-02	1.158E-01	9.946E-02	5.907E-02	FAIL ABUN
HO-166M	2.780E-02	4.772E-02	4.337E-02	2.435E-02	FAIL ABUN
TM-171	3.193E+00	3.384E+01	2.793E+01	1.727E+01	NOT IDENT.
LU-176	-2.822E-03	2.037E-02	1.791E-02	1.040E-02	FAIL ABUN
LU-177	2.551E+00	1.257E+00	9.011E-01	6.413E-01	FAIL ABUN
LU-177M	-2.197E-02	1.620E-01	1.209E-01	8.265E-02	FAIL ABUN
HF-181	1.114E-02	3.556E-02	3.099E-02	1.815E-02	NOT IDENT.
W-181	-6.068E-03	4.503E-01	3.702E-01	2.297E-01	NOT IDENT.
TA-182	2.329E-01	1.756E-01	1.662E-01	8.959E-02	FAIL ABUN
RE-183	5.698E-02	9.532E-02	8.455E-02	4.863E-02	FAIL ABUN
RE-184	-2.654E-02	1.886E-01	1.684E-01	9.621E-02	NOT IDENT.
OS-185	-4.626E-04	3.456E-02	3.027E-02	1.763E-02	NOT IDENT.
RE-188	-1.223E-01	1.499E-01	1.253E-01	7.647E-02	NOT IDENT.
W-188	-1.248E+00	6.638E+00	5.122E+00	3.387E+00	FAIL ABUN
IR-192	3.152E-03	2.758E-02	2.452E-02	1.407E-02	FAIL ABUN
AU-195	2.873E-01	2.011E-01	1.884E-01	1.026E-01	FAIL ABUN
TL-200	-2.550E+01	4.086E+02	0.000E+00	2.085E+02	SHORT HLIF
TL-201	-2.851E-01	6.205E+00	5.343E+00	3.166E+00	NOT IDENT.
TL-202	5.687E-02	6.017E-02	5.476E-02	3.070E-02	NOT IDENT.
HG-203	8.175E-04	3.394E-02	3.032E-02	1.732E-02	NOT IDENT.
BI-207	-4.554E-04	4.473E-02	3.729E-02	2.282E-02	FAIL ABUN
TL-207	3.341E-01	6.034E-01	4.853E-01	3.079E-01	FAIL ABUN
PO-209	-5.014E+00	6.354E+00	4.961E+00	3.242E+00	NOT IDENT.
BI-210	-1.354E+00	7.527E+00	6.988E+00	3.840E+00	NOT IDENT.
PB-210	-1.354E+00	7.527E+00	6.988E+00	3.840E+00	NOT IDENT.
PO-210	-1.354E+00	7.527E+00	6.988E+00	3.840E+00	NOT IDENT.
PB-211	2.089E-02	9.350E-01	7.097E-01	4.771E-01	NOT IDENT.
BI-212	1.209E+00	4.134E-01	2.976E-01	2.109E-01	FAIL ABUN
PO-215	3.341E-01	6.034E-01	4.853E-01	3.079E-01	FAIL ABUN
RN-219	1.962E-01	3.638E-01	3.144E-01	1.856E-01	FAIL ABUN
RN-220	-4.660E+00	2.212E+01	1.829E+01	1.128E+01	NOT IDENT.
RA-223	3.341E-01	6.034E-01	4.853E-01	3.079E-01	FAIL ABUN
AC-227	2.786E-02	3.046E-01	2.748E-01	1.554E-01	FAIL ABUN
TH-227	2.786E-02	3.046E-01	2.748E-01	1.554E-01	FAIL ABUN
TH-229	-7.044E-02	4.292E-01	3.633E-01	2.190E-01	FAIL ABUN
PA-231	-1.252E+00	1.267E+00	1.060E+00	6.462E-01	NOT IDENT.
TH-231	3.341E-01	6.034E-01	4.853E-01	3.079E-01	FAIL ABUN
U-231	-8.361E-01	1.072E+00	8.212E-01	5.469E-01	FAIL ABUN
PA-233	-1.397E-02	5.035E-02	4.381E-02	2.569E-02	FAIL ABUN
PA-234	-2.415E-01	2.562E-01	1.915E-01	1.307E-01	FAIL ABUN
PA-234M	5.112E+00	4.981E+00	3.963E+00	2.541E+00	FAIL ABUN
U-235	4.837E-02	1.938E-01	1.689E-01	9.888E-02	FAIL ABUN
NP-236	-1.823E-02	6.953E-02	5.948E-02	3.548E-02	NOT IDENT.
NP-239	-6.735E-02	1.647E-01	1.432E-01	8.404E-02	FAIL ABUN
AM-241	1.948E-02	2.196E-01	1.825E-01	1.120E-01	NOT IDENT.
CM-243	3.260E-02	8.311E-02	7.531E-02	4.240E-02	FAIL ABUN
AM-246	-1.094E-02	1.130E-01	9.317E-02	5.768E-02	NOT IDENT.
CM-247	2.883E-02	3.619E-02	2.923E-02	1.847E-02	NOT IDENT.
CF-249	2.738E-02	3.356E-02	3.054E-02	1.712E-02	NOT IDENT.
CF-251	-1.030E-01	1.110E-01	9.110E-02	5.662E-02	NOT IDENT.



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 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON , SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
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46.50	295.0508
46.50	295.0508
46.50	295.0508
48.70	285.7936
49.72	293.0212
51.35	297.9755
52.39	252.3811
52.97	254.6131
53.15	260.3075
53.44	259.5680
54.07	287.9351
56.28	322.3058
56.28	322.3084
57.37	0.0000
57.53	284.7568
57.53	284.7579
57.60	289.5043
57.98	287.8875
57.98	287.8875
59.32	318.5374
59.32	318.5374
59.40	318.5975
59.54	318.7031
59.72	314.5875
60.01	314.8018
61.10	334.0851
61.14	334.1155
61.30	334.2392
63.00	331.2623
63.29	331.4804
63.29	331.4804
63.58	331.6981
64.28	335.0860
65.12	351.4978
65.20	351.5599
65.20	351.5599
66.05	376.6630
66.72	351.3010
66.83	345.6262
66.91	345.6866
67.20	343.0238
67.20	343.0238
67.75	390.1874
67.85	390.2720
68.90	388.8425
68.90	388.8425
69.30	361.9576
69.67	378.1844
70.82	403.7970
70.82	403.7970
70.83	403.8055
72.80	418.5993
72.87	418.6606
72.87	418.6606
74.67	412.8902
74.81	413.0085
74.81	413.0085
74.81	413.0085
74.81	413.0085
74.81	413.0085
74.81	413.0085
74.97	413.1419
75.28	413.4022
75.70	413.7529
77.11	414.9255
77.11	414.9255

77.11	414.9255
77.11	414.9255
77.11	414.9255
77.11	414.9255
77.11	414.9255
78.38	384.9965
79.62	362.7685
79.80	355.0067
79.80	355.0067
80.11	355.2228
80.18	355.2704
80.30	355.3528
80.30	355.3528
80.57	355.5396
81.00	349.9056
81.07	349.9524
81.07	349.9524
81.07	349.9524
81.07	349.9524
82.60	383.6990
83.37	370.8556
83.78	312.0212
83.78	312.0212
83.78	312.0212
83.78	312.0212
84.21	312.2735
84.90	312.6792
85.43	312.9890
86.29	313.4889
86.50	313.6119
86.54	313.6342
86.59	313.6630
86.72	313.7397
86.79	313.7780
86.94	313.8658
87.30	314.0750
87.30	314.0750
87.30	314.0750
87.30	314.0750
87.30	314.0750
87.30	314.0750
87.57	314.2300
87.88	314.4088
88.03	314.4951
88.36	314.6852
88.47	314.7474
89.95	315.5939
91.11	316.2519
92.29	316.9163
92.38	316.9674
92.38	316.9674
93.35	317.5104
94.00	317.8729
94.67	285.8096
94.67	285.8124
94.90	296.5734
94.90	296.5734
94.90	296.5734
94.90	296.5734
95.87	344.2986
95.87	344.2986
96.73	305.1422
97.43	296.3417
98.44	287.6713
98.44	287.6713
98.88	279.7195
99.55	290.2561
99.55	290.2561
99.86	291.4304
100.00	291.4999
100.10	291.5507
103.18	288.9308
103.76	283.0315
105.00	280.5110
105.31	300.2581
108.00	334.7218
109.28	298.0211

111.00	343.6006
111.00	343.6006
111.76	309.6092
112.95	323.7587
115.19	323.8286
116.30	296.0320
117.00	304.7531
117.00	304.7531
117.66	302.9531
121.11	295.0000
121.62	287.8157
121.78	285.7668
122.06	296.4718
122.32	281.7550
122.32	281.7550
122.32	281.7550
122.32	281.7550
123.07	308.5762
127.23	304.0352
129.76	292.2814
131.20	342.2215
133.02	316.2001
133.54	312.1223
135.34	315.0531
136.00	318.5780
136.25	316.5255
136.48	300.4172
140.51	350.9451
140.51	0.0000
142.18	297.2802
142.65	292.0154
143.76	324.0884
144.24	307.9125
144.24	307.9125
144.24	307.9125
144.24	307.9125
145.22	279.8828
145.44	319.3334
147.16	310.1819
152.43	265.9326
152.70	258.2964
153.22	255.1518
154.21	293.0678
154.21	293.0678
154.21	293.0678
154.21	293.0678
155.03	322.1532
156.02	318.1162
158.56	271.3031
159.00	0.0000
159.00	277.0120
160.31	297.5123
161.27	302.3223
162.32	273.6661
162.64	284.9451
163.35	293.0176
163.89	290.9686
165.85	291.6510
167.43	278.7124
171.28	268.6845
171.86	272.2552
172.10	264.4211
176.55	288.4914
176.60	296.4579
181.06	261.9952
184.41	246.3585
185.71	258.1856
186.00	258.2680
190.27	247.7092
192.34	254.2721
193.63	252.3086
197.04	288.0694
198.01	255.8051
198.60	267.5987
200.40	264.6047
201.83	307.3178
202.84	293.6157
205.31	276.9639

208.36	276.4146
208.81	254.8484
209.75	217.4893
209.75	217.4893
210.97	240.3802
215.65	236.1757
216.55	230.1660
218.09	254.5442
222.10	226.0558
223.80	237.1660
226.40	225.1976
227.00	205.5762
227.08	211.8764
227.20	208.3101
228.16	215.6891
228.18	215.6927
228.18	215.6927
231.56	0.0000
235.69	236.0436
236.00	236.1132
236.00	236.1132
238.63	214.1793
238.63	214.1793
238.63	214.1793
238.63	214.1793
239.00	214.2513
240.98	214.6402
241.98	214.8365
241.98	214.8365
241.98	214.8365
244.69	175.2129
245.39	179.7058
247.94	195.5977
248.90	188.6992
249.79	188.8501
252.40	204.9078
252.85	193.0394
252.85	193.0394
254.15	0.0000
256.20	182.5433
256.20	182.5433
260.50	166.5692
260.90	168.4783
262.80	182.6615
264.65	167.9082
268.24	190.7750
268.79	181.9188
269.46	169.7113
269.46	169.7113
269.46	169.7113
269.46	169.7113
271.23	173.3260
273.65	254.5269
276.40	169.7593
277.35	173.6464
277.60	177.4384
277.60	177.4384
278.00	176.5569
278.60	185.1023
279.20	191.7729
279.53	214.3936
280.46	208.9109
281.68	175.2066
283.67	191.5298
284.30	170.8613
285.00	167.1799
285.90	155.0137
286.10	166.3831
286.10	166.3831
287.40	163.7159
288.45	0.0000
290.67	168.5108
290.80	173.0818
291.72	162.5742
293.26	0.0000
293.70	164.3520
295.21	174.2599
295.21	174.2599

295.21	174.2599
295.96	174.3632
296.50	174.4358
297.23	174.5364
298.57	174.7207
299.80	174.8882
299.80	174.8882
300.09	182.0009
300.09	182.0009
300.09	182.0009
300.09	182.0009
300.12	182.0038
301.29	174.5152
302.84	148.6710
303.76	153.3765
303.91	148.7941
304.40	164.1938
304.40	164.1938
304.84	166.2980
306.84	160.4664
308.46	132.7652
311.98	144.6968
316.51	140.3515
318.01	135.6635
319.02	161.9494
319.41	155.2051
320.08	164.0179
323.87	138.5888
323.87	138.5888
323.87	138.5888
323.87	138.5888
325.23	160.5502
328.77	145.3398
333.44	139.1659
334.20	145.9119
334.20	145.9119
334.30	145.9210
338.28	157.3511
338.28	157.3511
338.28	157.3511
338.28	157.3511
338.32	157.3560
338.32	157.3560
338.32	157.3560
340.50	160.7521
340.57	160.7596
344.27	136.9507
345.85	162.9417
350.59	0.0000
351.07	124.0406
351.92	124.1150
351.92	124.1150
351.92	124.1150
355.39	0.0000
356.01	138.6031
364.48	137.2007
366.43	127.3546
367.43	134.4641
367.94	0.0000
369.80	128.6465
374.96	130.0964
383.85	129.8398
387.95	115.9465
388.63	117.0145
391.69	123.3614
391.69	123.3614
392.90	130.5977
398.62	133.1203
400.65	133.2909
401.10	116.9189
401.81	120.7822
402.60	119.9029
404.84	138.1632
410.95	110.6203
411.60	107.3611
413.65	114.1111
414.70	107.5658
415.30	107.6055

415.76	115.9153
417.63	0.0000
418.52	111.9633
423.70	123.7538
427.08	110.4576
427.89	114.6829
432.53	86.7728
433.93	115.0941
439.47	111.2712
439.56	100.7798
439.89	91.3489
443.98	118.9331
444.90	115.8360
445.03	115.8461
445.03	115.8461
445.03	115.8461
445.03	115.8461
453.90	105.8533
463.38	102.1670
468.07	99.5911
473.00	101.6478
475.06	96.4078
475.35	102.8511
476.78	104.0038
477.59	105.1224
477.96	118.0197
482.03	92.4760
484.57	107.6782
487.03	70.0851
490.36	0.0000
492.35	94.0757
497.08	95.3973
507.63	0.0000
510.53	0.0000
510.84	93.9096
511.00	93.9175
511.85	101.3874
511.85	101.3874
513.99	94.5007
513.99	94.5007
520.41	95.4749
520.65	95.4855
527.90	87.0283
528.96	0.0000
529.64	82.6950
529.87	0.0000
531.02	92.6825
537.32	76.3742
543.00	86.5812
546.56	0.0000
549.76	89.1003
552.65	80.3035
555.20	75.9376
563.23	76.2365
563.90	72.8969
568.70	94.4231
569.32	79.8338
569.50	79.8403
569.67	79.8468
573.80	92.1497
574.00	92.1572
574.64	96.9468
578.91	82.8357
579.30	0.0000
583.14	74.2484
585.48	74.0284
591.81	80.0057
592.07	80.0164
593.00	83.6895
595.88	81.9800
600.56	79.4172
602.52	0.0000
602.71	80.7141
602.71	80.7141
603.60	91.4136
604.41	79.2547
604.70	79.2653
609.31	74.8498

609.31	74.8498
609.31	74.8498
609.31	74.8498
610.33	90.1661
612.46	85.6634
614.37	59.7108
618.01	92.9343
621.84	59.9124
621.84	59.9124
631.29	74.0488
633.02	77.8107
633.10	77.8148
634.78	88.0698
635.90	86.2589
636.97	88.1556
645.85	77.3201
646.12	74.5332
656.30	73.3036
657.75	79.5920
657.90	0.0000
661.65	76.5984
661.65	76.5984
664.57	0.0000
666.33	90.8468
666.33	90.8468
675.00	69.8014
677.61	74.5987
685.20	71.9940
692.80	86.4744
695.00	79.8964
696.49	84.7021
696.49	84.7021
697.00	92.3371
697.49	92.3537
698.33	89.5295
698.50	93.3464
699.00	96.2237
702.63	65.8347
706.10	80.2594
706.58	0.0000
706.67	87.9233
709.31	75.5804
711.68	60.3299
713.82	64.2160
717.42	66.2289
720.50	56.0597
721.93	0.0000
722.20	64.1113
722.78	65.7291
722.78	65.7291
722.89	65.7325
722.95	65.7341
723.30	65.7441
724.18	65.7658
727.18	56.8509
733.00	67.6057
735.90	58.0151
739.58	68.7500
742.81	70.7758
744.21	65.9647
747.13	67.9817
751.79	70.0506
752.31	59.3603
753.82	48.6841
755.35	75.0167
756.15	76.0157
756.87	79.9360
763.93	113.3860
765.79	71.4049
766.42	73.3795
766.84	71.4334
776.49	64.8205
778.00	62.8922
778.57	66.8379
778.89	63.8955
783.80	76.8174
785.46	71.9378
792.07	95.4937

795.84	70.8968
796.30	77.5033
798.80	62.7210
801.93	62.4632
805.60	61.5535
810.29	65.6375
810.76	57.6913
815.85	51.8185
817.79	60.8302
818.51	62.8416
819.60	62.8662
826.30	67.0180
828.27	0.0000
831.60	70.1521
831.96	73.1675
834.83	83.2756
836.80	0.0000
846.75	48.3633
848.13	54.4351
856.28	0.0000
856.80	57.2961
860.37	47.5818
867.32	52.4323
867.82	47.8495
871.10	48.7746
873.19	47.7929
874.81	48.8367
875.33	0.0000
876.40	52.9356
879.36	51.9699
880.27	53.0055
880.51	53.0093
881.50	54.0468
883.24	45.9163
884.67	56.1467
889.25	58.2789
896.60	63.5485
898.02	62.5533
899.00	52.3161
903.28	48.7953
911.07	48.4068
911.07	48.4068
911.07	48.4068
919.63	53.9383
920.93	49.5984
925.00	51.7346
925.24	48.6340
926.50	43.4776
935.52	46.7205
937.48	75.8391
944.10	54.1392
946.00	60.4228
949.00	42.7537
962.29	48.1708
964.01	48.1978
966.15	48.2304
968.20	54.2071
969.11	57.7205
969.11	57.7205
969.11	57.7205
977.42	46.2978
980.50	58.9805
983.50	48.4943
989.30	53.8625
996.32	58.2133
1001.03	47.6982
1001.68	53.0078
1004.76	49.5207
1021.30	0.0000
1024.50	0.0000
1034.80	54.6133
1036.00	50.3483
1037.82	53.5913
1038.57	61.1080
1038.76	0.0000
1045.16	47.2635
1046.59	49.4343
1048.07	47.3043



1050.47	44.1110
1050.47	44.1110
1062.04	48.5793
1063.62	48.6013
1076.63	39.0287
1077.35	39.0375
1078.86	42.3097
1085.78	44.5675
1099.22	40.3748
1112.02	40.1561
1112.84	54.7705
1115.52	67.6015
1120.29	55.9830
1120.29	55.9830
1120.29	55.9830
1120.29	55.9830
1120.51	53.0605
1121.28	47.5820
1124.00	0.0000
1129.67	52.2790
1131.51	0.0000
1147.95	0.0000
1167.94	57.4666
1173.22	53.8369
1175.09	54.7915
1177.93	59.4818
1189.05	48.4728
1204.90	50.5503
1205.75	0.0000
1213.00	60.9772
1221.42	50.7700
1230.97	86.7104
1235.34	67.9395
1236.41	0.0000
1238.25	64.2121
1246.25	55.8287
1260.41	0.0000
1271.85	45.7168
1274.45	56.2320
1274.54	60.0443
1291.56	39.2450
1298.22	0.0000
1312.09	31.7485
1325.50	35.7143
1325.50	35.7143
1332.49	26.1057
1333.61	29.0149
1360.21	25.3081
1362.66	0.0000
1365.15	30.2104
1368.21	33.9391
1368.53	0.0000
1376.25	28.3357
1384.27	25.8446
1394.10	29.4373
1395.20	21.5927
1407.95	27.5636
1434.06	17.8264
1436.60	18.8276
1457.56	0.0000
1460.81	22.9176
1489.15	20.0545
1509.49	17.1231
1596.49	18.4724
1620.62	15.4712
1678.03	0.0000
1691.02	9.4164
1691.02	9.4164
1706.46	0.0000
1750.46	0.0000
1764.49	7.2785
1764.49	7.2785
1764.49	7.2785
1764.49	7.2785
1770.23	10.9298
1771.40	14.8801
1791.20	0.0000
1808.65	9.6339

1836.01

8.6074

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202028549

Total Uranium Activity	1.6403E+01	ug/g
Total Uranium Counting Unc.	7.9912E+00	ug/g
Total Uranium Tpu	4.0771E-06	ug/g
Total Uranium Mda	3.9941E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 947037          SAMPLE ID   : G1202028549
*  ANALYST       : MJH1            DETECTOR    : GAM10
*  SAMPLE DATE   : 25-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 9-FEB-2010 17:44:16.82  SAMPLE ALQT: 148.150 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.372E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.196E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.076E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.490E+00

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VAX/VMS Nuclide Identification Report Generated 9-FEB-2010 18:46:17.24

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028550.CNF;1
Sample date        : 1-FEB-2010 00:00:00. Acquisition date : 9-FEB-2010 17:44:57.
Sample ID          : G1202028550      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM19            Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:01.50  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MJH1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 947037            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.51	3014	1111	1.25	118.89	112	14	8.37E-01	3.0	
2	2	74.86	225	307	1.54	149.56	146	15	6.24E-02	14.4	2.52E+00
3	2	77.12	276	427	1.62	154.07	146	15	7.66E-02	16.1	
4	0	88.09	1459	602	1.40	176.00	170	12	4.05E-01	4.3	
5	0	92.78*	99	275	1.36	185.38	182	9	2.75E-02	33.5	
6	0	122.22	284	357	1.24	244.21	238	13	7.90E-02	14.9	
7	0	185.73*	78	252	1.28	371.13	367	9	2.17E-02	39.2	
8	0	208.95	106	238	1.53	417.54	413	9	2.94E-02	28.0	
9	0	238.40*	425	391	1.22	476.39	469	12	1.18E-01	10.6	
10	0	338.37	81	162	1.56	676.21	672	9	2.24E-02	30.7	
11	0	351.73*	221	195	1.42	702.92	697	12	6.14E-02	14.4	
12	0	510.79*	56	213	1.84	1020.88	1012	17	1.56E-02	63.8	
13	0	583.64*	150	160	2.14	1166.52	1161	18	4.17E-02	22.0	
14	0	609.51*	127	111	1.67	1218.25	1211	11	3.52E-02	18.6	
15	0	661.74	2243	145	1.59	1322.68	1316	16	6.23E-01	2.4	
16	0	912.01	99	124	1.43	1823.15	1817	13	2.75E-02	25.5	
17	0	969.47*	60	82	1.32	1938.06	1934	10	1.66E-02	31.5	
18	0	1173.66	1859	86	1.84	2346.49	2339	15	5.16E-01	2.6	
19	0	1332.93	1741	5	1.94	2665.10	2654	22	4.83E-01	2.4	
20	0	1765.18*	35	3	1.91	3530.08	3523	14	9.77E-03	21.2	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028550.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MJH1
Sample date       : 1-FEB-2010 00:00:00   Acquisition date : 9-FEB-2010 17:44:57
Sample ID        : G1202028550           Sample quantity  : 155.44 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA19               Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:00:01.50   0.0%
Peak Width (FWHM): 3.00                  Confidence level  : 5.00 %
Energy tolerance : 1.50 keV              Half life ratio   : 8.00
Errors propagated: Yes                   Systematic Error  : 0.00 %
Efficiency type  : Empirical              Efficiencies at   : Peak Energy
Abundance limit  : 75.00                 WTM error limit   : 3.00

```

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	+	122.06	*	2.394E-01	7.288E-02	6.324E-02	3.774E-03	3.785
		136.48		1.302E-01	3.292E-01	5.436E-01	3.588E-02	0.239
CO-60	+	1173.22		6.444E+00	4.837E-01	1.151E-01	6.307E-03	55.986
	+	1332.49	*	6.714E+00	5.920E-01	7.896E-02	5.819E-03	85.029
CD-109	+	88.03	*	3.123E+01	3.864E+00	2.178E+00	1.951E-01	14.333
SN-126		64.28		-5.334E-01	8.826E-01	1.238E+00	1.807E-01	-0.431
	+	86.94		1.288E+01	5.449E+00	9.081E-01	3.760E-01	14.186
	+	87.57	*	3.099E+00	3.835E-01	2.171E-01	1.937E-02	14.272
BA-137M	+	661.65	*	5.234E+00	3.968E-01	1.098E-01	6.392E-03	47.685
CS-137	+	661.65	*	5.533E+00	4.205E-01	1.160E-01	6.785E-03	47.685
TL-208		277.35		3.162E-01	6.543E-01	1.124E+00	1.186E-01	0.281
	+	510.84		4.407E-01	5.641E-01	4.135E-01	4.222E-02	1.066
	+	583.14	*	3.375E-01	1.501E-01	1.051E-01	7.145E-03	3.212
		860.37		9.942E-01	6.197E-01	1.103E+00	9.877E-02	0.901
BI-211		72.87		3.863E+00	5.274E+00	7.853E+00	6.153E-01	0.492
	+	351.07	*	2.176E+00	6.419E-01	6.041E-01	3.857E-02	3.602
PB-212	+	74.81		1.998E+00	6.245E-01	8.373E-01	1.027E-01	2.386
	+	77.11		1.396E+00	4.638E-01	4.914E-01	3.970E-02	2.841
	+	87.30		1.433E+01	2.280E+00	1.007E+00	1.347E-01	14.236
	+	238.63	*	9.169E-01	2.057E-01	1.977E-01	1.427E-02	4.637
		300.09		2.695E-02	1.441E+00	2.423E+00	2.001E-01	0.011
PO-212	+	74.81		1.998E+00	6.245E-01	8.373E-01	1.027E-01	2.386
	+	77.11		1.396E+00	4.638E-01	4.914E-01	3.970E-02	2.841
	+	87.30		1.433E+01	2.280E+00	1.007E+00	1.347E-01	14.236
		115.19		-1.684E+00	5.703E+00	8.842E+00	5.630E-01	-0.190
	+	238.63	*	9.169E-01	2.057E-01	1.977E-01	1.427E-02	4.637
		300.09		2.695E-02	1.441E+00	2.423E+00	2.001E-01	0.011
BI-214	+	609.31	*	5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
		1120.29		3.632E-01	5.566E-01	9.722E-01	8.894E-02	0.374
	+	1764.49		1.045E+00	4.477E-01	3.132E-01	1.898E-02	3.336
PO-216	+	74.81		1.998E+00	6.245E-01	8.373E-01	1.027E-01	2.386
	+	77.11		1.396E+00	4.638E-01	4.914E-01	3.970E-02	2.841
	+	87.30		1.433E+01	2.280E+00	1.007E+00	1.347E-01	14.236
	+	238.63	*	9.169E-01	2.057E-01	1.977E-01	1.427E-02	4.637

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	+	300.09	*	2.695E-02	1.441E+00	2.423E+00	2.001E-01	0.011
		609.31		5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
		1120.29		3.632E-01	5.566E-01	9.722E-01	8.894E-02	0.374
AC-228	+	1764.49	*	1.045E+00	4.477E-01	3.132E-01	1.898E-02	3.336
		338.32		8.761E-01	6.456E-01	6.743E-01	2.749E-01	1.299
		911.07		9.877E-01	5.159E-01	5.252E-01	5.941E-02	1.881
RA-228	+	969.11	*	1.050E+00	7.045E-01	8.892E-01	2.061E-01	1.181
		338.32		8.761E-01	6.456E-01	6.743E-01	2.749E-01	1.299
		911.07		9.877E-01	5.159E-01	5.252E-01	5.941E-02	1.881
TH-228	+	969.11	*	1.050E+00	7.045E-01	8.892E-01	2.061E-01	1.181
		74.81		2.015E+00	6.015E-01	8.446E-01	6.772E-02	2.386
		77.11		1.408E+00	4.679E-01	4.957E-01	4.004E-02	2.841
TH-230	+	87.30	*	1.446E+01	1.789E+00	1.015E+00	9.032E-02	14.236
		238.63		9.249E-01	2.075E-01	1.995E-01	1.440E-02	4.637
		300.09		2.718E-02	1.454E+00	2.444E+00	1.441E+00	0.011
TH-232	+	609.31	*	5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
		1120.29		3.632E-01	5.566E-01	9.722E-01	8.894E-02	0.374
		1764.49		1.045E+00	4.477E-01	3.132E-01	1.898E-02	3.336
U-234	+	338.32	*	8.761E-01	5.402E-01	6.743E-01	3.898E-02	1.299
		911.07		9.877E-01	5.159E-01	5.252E-01	5.941E-02	1.881
		969.11		1.050E+00	7.045E-01	8.892E-01	2.061E-01	1.181
AM-241	+	609.31	*	5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
		1120.29		3.632E-01	5.566E-01	9.722E-01	8.894E-02	0.374
		1764.49		1.045E+00	4.477E-01	3.132E-01	1.898E-02	3.336
AM-243	+	59.54	*	1.322E+01	1.344E+00	4.946E-01	4.072E-02	26.722
ANH-511	+	74.67	*	3.239E-01	9.661E-02	1.361E-01	1.080E-02	2.379
		86.72		3.412E+02	4.223E+01	2.398E+01	2.120E+00	14.228
		117.66		2.897E+00	6.601E+00	9.667E+00	6.006E-01	0.300
ANH-511	+	142.18	*	5.712E+00	2.800E+01	4.581E+01	2.550E+00	0.125
		511.00		9.520E-02	1.216E-01	8.934E-02	5.272E-03	1.066

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-1.295E-01	6.151E-01	1.006E+00	6.830E-02	-0.129
NA-22		1274.54	*	1.469E-02	4.924E-02	8.521E-02	5.684E-03	0.172
NA-24		1368.53	*	4.147E-04	4.924E-02	Half-Life too short		
AL-26		1129.67	*	-1.063E+00	2.899E+00	4.685E+00	2.890E-01	-0.227
		1808.65		-1.707E-02	4.219E-02	6.190E-02	3.614E-03	-0.276
K-40		1460.81	*	5.971E-01	5.680E-01	1.085E+00	8.078E-02	0.551
TI-44	+	67.85	*	2.965E-02	7.011E-02	1.170E-01	8.935E-03	0.253
		78.38		2.576E-01	8.557E-02	1.066E-01	8.702E-03	2.416
SC-46	+	889.25	*	-7.034E-02	8.778E-02	1.329E-01	1.155E-02	-0.529
		1120.51		6.864E-02	9.008E-02	1.586E-01	1.000E-02	0.433
V-48		944.10	*	2.971E-01	1.712E+00	2.787E+00	2.348E-01	0.107
		983.50		9.007E-02	1.275E-01	2.149E-01	1.728E-02	0.419
		1312.09		4.499E-02	7.562E-02	1.357E-01	9.657E-03	0.332
CR-51		320.08	*	-5.383E-01	5.631E-01	8.970E-01	5.805E-02	-0.600

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MN-52		744.21		6.897E-03	2.072E-01	3.379E-01	2.297E-02	0.020
		848.13		-2.207E+00	6.413E+00	1.009E+01	8.202E-01	-0.219
		935.52		2.835E-01	2.975E-01	5.061E-01	4.303E-02	0.560
		1246.25		3.994E+00	3.244E+00	6.301E+00	3.983E-01	0.634
	+	1333.61		3.911E+02	3.449E+01	4.328E+01	3.189E+00	9.036
		1434.06	*	9.644E-03	1.281E-01	2.144E-01	1.546E-02	0.045
MN-54		834.83	*	7.404E-03	7.795E-02	1.270E-01	1.010E-02	0.058
CO-56		846.75	*	-7.267E-03	7.667E-02	1.231E-01	9.984E-03	-0.059
		977.42		-6.314E-01	6.738E+00	1.044E+01	8.460E-01	-0.060
		1037.82		-2.432E-01	6.183E-01	1.007E+00	8.008E-02	-0.242
	+	1175.09		3.043E+02	2.284E+01	3.277E+01	1.803E+00	9.287
		1238.25		9.419E-02	9.128E-02	1.695E-01	1.113E-02	0.556
		1360.21		3.212E-01	9.335E-01	1.650E+00	1.211E-01	0.195
		1771.40		-2.089E-01	3.137E-01	3.125E-01	1.883E-02	-0.668
CO-58		810.76	*	-4.955E-02	7.791E-02	1.200E-01	9.193E-03	-0.413
FE-59		142.65		6.331E-01	3.906E+00	6.379E+00	3.546E-01	0.099
		192.34		-9.706E-01	1.420E+00	2.203E+00	2.559E-01	-0.441
		1099.22	*	-3.282E-02	1.689E-01	2.784E-01	2.089E-02	-0.118
		1291.56		-2.024E-02	1.280E-01	2.073E-01	1.716E-02	-0.098
		1115.52	*	-1.288E-02	1.742E-01	2.896E-01	1.852E-02	-0.044
ZN-65		1077.35	*	-4.662E-01	2.507E+00	4.138E+00	2.863E-01	-0.113
GE-68		53.44	*	4.475E-01	2.036E+00	2.977E+00	2.202E-01	0.150
AS-73		595.88	*	1.596E-02	1.302E-01	2.156E-01	1.277E-02	0.074
AS-74		634.78		1.034E-01	5.163E-01	8.575E-01	5.040E-02	0.121
		66.05		-2.753E+00	7.677E+00	1.152E+01	1.106E+00	-0.239
		96.73		-5.525E-01	1.196E+00	1.659E+00	2.183E-01	-0.333
	+	121.11		1.261E+00	3.944E-01	4.526E-01	4.239E-02	2.786
		136.00		2.978E-03	6.128E-02	9.971E-02	5.742E-03	0.030
		198.60		2.365E+00	2.888E+00	4.798E+00	3.275E-01	0.493
		264.65	*	-9.221E-02	7.468E-02	1.186E-01	6.895E-03	-0.778
		279.53		-4.783E-02	1.879E-01	3.128E-01	1.959E-02	-0.153
		303.91		-2.924E+00	3.566E+00	5.737E+00	5.479E-01	-0.510
		400.65		2.580E-01	4.427E-01	7.599E-01	6.823E-02	0.339
BR-77	+	87.88		1.054E+03	1.304E+02	1.455E+02	1.302E+01	7.242
		200.40		7.788E+00	4.317E+01	6.998E+01	3.807E+00	0.111
	+	239.00		2.278E+01	5.009E+00	6.846E+00	3.873E-01	3.328
		249.79		-1.193E+00	1.863E+01	2.966E+01	1.692E+00	-0.040
		281.68		-4.121E+00	2.508E+01	4.176E+01	2.420E+00	-0.099
		297.23		1.713E+01	1.566E+01	2.741E+01	1.594E+00	0.625
		303.76		-5.110E+01	4.971E+01	7.932E+01	4.613E+00	-0.644
		439.47		6.237E+00	4.311E+01	7.214E+01	4.142E+00	0.086
		484.57		3.202E+01	7.155E+01	1.213E+02	7.106E+00	0.264
		520.65	*	-1.134E+00	3.128E+00	5.042E+00	2.981E-01	-0.225
		574.64		-3.063E+01	5.760E+01	9.103E+01	5.402E+00	-0.336
		578.91		5.143E+00	2.659E+01	3.858E+01	2.289E+00	0.133
		585.48		1.365E+02	5.364E+01	9.943E+01	5.897E+00	1.373
		755.35		8.631E+00	4.832E+01	7.962E+01	5.523E+00	0.108
		817.79		-1.265E+01	4.517E+01	7.163E+01	5.538E+00	-0.177
SR-82		698.33		-6.716E+00	5.052E+01	8.156E+01	5.095E+00	-0.082



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	776.49	*		-4.542E-01	6.075E-01	9.250E-01	6.660E-02	-0.491
	1395.20			8.799E+00	9.456E+00	1.836E+01	1.337E+00	0.479
RB-83	520.41	*		-2.668E-02	1.256E-01	2.045E-01	1.209E-02	-0.130
	529.64			3.077E-04	2.017E-01	3.327E-01	1.970E-02	0.001
	552.65			-1.081E-01	3.630E-01	5.858E-01	3.476E-02	-0.185
RB-84	881.50	*		4.094E-02	1.374E-01	2.266E-01	1.945E-02	0.181
KR-85	513.99	*		1.226E+01	1.524E+01	2.322E+01	1.371E+00	0.528
SR-85	513.99	*		5.877E-02	7.305E-02	1.113E-01	6.574E-03	0.528
RB-86	1076.63	*		-1.923E-01	1.283E+00	2.124E+00	1.472E-01	-0.091
Y-88	898.02			-8.254E-02	9.393E-02	1.412E-01	1.250E-02	-0.584
	1836.01	*		-6.666E-03	4.035E-02	6.280E-02	3.585E-03	-0.106
ZR-88	392.90	*		1.089E-02	5.420E-02	9.128E-02	5.083E-03	0.119
Y-91	1204.90	*		1.346E+01	1.869E+01	3.394E+01	1.982E+00	0.397
NB-94	702.63	*		5.481E-02	5.870E-02	1.023E-01	6.441E-03	0.536
	871.10			3.741E-02	7.458E-02	1.249E-01	1.054E-02	0.300
NB-95	765.79	*		4.154E-02	7.578E-02	1.278E-01	9.032E-03	0.325
NB-95M	235.69	*		2.547E-01	2.295E-01	3.415E-01	2.530E-02	0.746
ZR-95	724.18			7.614E-04	1.634E-01	2.662E-01	1.999E-02	0.003
	756.15	*		1.831E-02	1.252E-01	2.058E-01	1.648E-02	0.089
NB-97	657.90	*		1.182E-03	1.252E-01	Half-Life	too short	
	1024.50			-1.620E-02	1.252E-01	Half-Life	too short	
ZR-97	254.15			-3.677E-03	1.252E-01	Half-Life	too short	
	355.39			-1.113E-02	1.252E-01	Half-Life	too short	
	507.63	*		3.796E-03	1.252E-01	Half-Life	too short	
	602.52			1.024E-04	1.252E-01	Half-Life	too short	
	1021.30			-1.197E-02	1.252E-01	Half-Life	too short	
	1147.95			-1.340E-03	1.252E-01	Half-Life	too short	
	1362.66			1.489E-04	1.252E-01	Half-Life	too short	
	1750.46			5.612E-03	1.252E-01	Half-Life	too short	
MO-99	140.51			8.440E-01	8.534E+00	1.390E+01	3.739E+00	0.061
	181.06			5.465E+00	6.136E+00	9.044E+00	1.536E+00	0.604
	366.43			-6.152E+00	3.014E+01	4.977E+01	2.833E+00	-0.124
	739.58	*		-1.783E+00	4.412E+00	6.937E+00	9.853E-01	-0.257
	778.00			-4.984E+00	1.233E+01	1.931E+01	1.395E+00	-0.258
TC-99M	140.51	*		1.291E+02	1.233E+01	Half-Life	too short	
RH-101	127.23			-1.040E-02	5.665E-02	7.968E-02	4.649E-03	-0.131
	198.01	*		4.018E-02	5.559E-02	9.200E-02	4.991E-03	0.437
	325.23			2.434E-01	3.944E-01	6.800E-01	3.947E-02	0.358
RH-102	418.52			-4.070E-01	5.757E-01	9.210E-01	5.223E-02	-0.442
	475.06	*		2.778E-02	6.218E-02	1.053E-01	6.148E-03	0.264
	631.29			-3.499E-02	1.054E-01	1.685E-01	9.915E-03	-0.208
	697.49			-1.771E-02	1.326E-01	2.140E-01	1.335E-02	-0.083
	766.84			8.584E-02	2.132E-01	3.557E-01	2.518E-02	0.241
	1046.59			-1.309E-01	2.277E-01	3.644E-01	2.667E-02	-0.359
	1112.84			-3.498E-01	4.487E-01	7.050E-01	4.527E-02	-0.496
RU-103	497.08	*		-1.570E-02	6.849E-02	1.115E-01	1.414E-02	-0.141
	610.33	+		5.182E+00	2.089E+00	2.967E+00	4.587E-01	1.746
RH-106	511.85	+		4.698E-01	6.001E-01	6.265E-01	3.698E-02	0.750
	621.84	*		-6.985E-02	5.945E-01	9.659E-01	1.138E-01	-0.072

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RU-106	+	1050.47		-3.745E+00	4.612E+00	7.235E+00	5.259E-01	-0.518
		511.85		4.698E-01	6.001E-01	6.265E-01	3.698E-02	0.750
		621.84	*	-6.985E-02	5.944E-01	9.659E-01	5.696E-02	-0.072
AG-108M		1050.47		-3.745E+00	4.612E+00	7.235E+00	5.259E-01	-0.518
		433.93	*	-1.345E-02	6.505E-02	1.068E-01	6.652E-03	-0.126
		614.37		6.084E-02	7.644E-02	1.171E-01	7.485E-03	0.519
AG-110M		722.95		-6.314E-02	8.038E-02	1.232E-01	8.596E-03	-0.513
		657.75	*	1.732E-01	8.128E-02	1.354E-01	8.400E-03	1.279
		677.61		1.131E-01	5.550E-01	9.202E-01	5.842E-02	0.123
		706.67		-2.549E-01	3.715E-01	5.725E-01	3.816E-02	-0.445
		763.93		-1.549E-01	3.267E-01	5.125E-01	3.762E-02	-0.302
		884.67		2.603E-02	1.114E-01	1.828E-01	1.628E-02	0.142
		937.48		-1.427E-01	2.928E-01	4.560E-01	4.013E-02	-0.313
		1384.27		5.303E-02	1.655E-01	2.904E-01	2.203E-02	0.183
		171.28		-1.097E-01	3.348E-01	5.319E-01	2.792E-02	-0.206
IN-111		245.39	*	-7.138E-01	4.313E-01	6.313E-01	3.589E-02	-1.131
IN-113M		391.69	*	2.914E-02	8.113E-02	1.377E-01	8.216E-03	0.212
SN-113		391.69	*	2.914E-02	8.113E-02	1.377E-01	8.216E-03	0.212
IN-114M		190.27	*	3.966E-02	3.023E-01	4.287E-01	2.304E-02	0.093
CD-115		260.90		2.861E+01	3.263E+01	5.433E+01	3.120E+00	0.526
		492.35		-1.070E+00	9.630E+00	1.582E+01	9.289E-01	-0.068
		527.90	*	3.750E-01	3.015E+00	5.008E+00	2.965E-01	0.075
		156.02		1.646E+00	2.531E+00	4.216E+00	2.260E-01	0.390
SN-117M		158.56	*	-1.481E-02	6.184E-02	9.890E-02	5.264E-03	-0.150
SB-122		563.90	*	-1.462E+00	8.186E-01	1.185E+00	7.032E-02	-1.234
		692.80		9.671E+00	1.555E+01	2.649E+01	1.638E+00	0.365
		159.00	*	-7.948E-04	1.555E+01	Half-Life too short		
		528.96		1.067E-01	1.555E+01	Half-Life too short		
TE-123M		159.00	*	-1.254E-02	4.236E-02	6.754E-02	3.647E-03	-0.186
I-124		602.71	*	-2.026E-01	4.846E-01	6.593E-01	3.902E-02	-0.307
		722.78		-2.452E+00	2.895E+00	4.412E+00	2.885E-01	-0.556
		1325.50		-3.079E+00	1.659E+01	2.260E+01	1.646E+00	-0.136
		1376.25		2.003E-01	1.296E+01	2.149E+01	1.572E+00	0.009
		1509.49		-1.046E+00	5.587E+00	8.805E+00	6.194E-01	-0.119
		1691.02		-1.013E+00	1.710E+00	2.382E+00	1.524E-01	-0.425
		602.71		-3.160E-02	7.559E-02	1.028E-01	6.089E-03	-0.307
SB-124		645.85		-2.858E-01	8.558E-01	1.365E+00	8.998E-02	-0.209
		709.31		2.628E+00	4.675E+00	7.936E+00	5.061E-01	0.331
		713.82		-2.043E+00	2.948E+00	4.539E+00	4.803E-01	-0.450
		722.78		-5.545E-01	6.547E-01	9.977E-01	6.767E-02	-0.556
	+	968.20		1.004E+01	6.376E+00	9.906E+00	8.118E-01	1.014
		1045.16		1.033E+00	4.461E+00	7.609E+00	5.581E-01	0.136
		1325.50		-7.435E-01	4.007E+00	5.458E+00	3.974E-01	-0.136
		1368.21		1.102E+00	1.822E+00	3.327E+00	4.221E-01	0.331
		1436.60		1.097E+00	4.204E+00	7.266E+00	5.237E-01	0.151
		1691.02	*	-5.405E-02	9.122E-02	1.270E-01	8.701E-03	-0.425
SB-125		427.89	*	3.014E-02	1.866E-01	3.126E-01	1.861E-02	0.096
		463.38		4.500E-01	6.252E-01	1.070E+00	7.243E-02	0.421
		600.56		2.458E-02	3.146E-01	5.190E-01	3.536E-02	0.047

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	635.90			1.350E-01	4.920E-01	8.217E-01	5.634E-02	0.164
	109.28	*		-2.491E+00	1.249E+01	2.019E+01	1.782E+00	-0.123
	388.63			-5.157E-03	2.776E-01	4.624E-01	2.580E-02	-0.011
I-126	666.33	*		-3.354E-02	2.583E-01	3.596E-01	2.113E-02	-0.093
	753.82			1.403E-01	1.922E+00	3.143E+00	2.174E-01	0.045
	223.80			-9.186E-01	5.073E+00	8.061E+00	4.499E-01	-0.114
SB-126	278.60			2.800E+00	3.034E+00	5.304E+00	3.070E-01	0.528
	296.50			2.350E+00	1.892E+00	3.324E+00	1.932E-01	0.707
	414.70			4.535E-02	1.035E-01	1.761E-01	9.961E-03	0.258
	415.30			5.919E+00	8.443E+00	1.455E+01	8.233E-01	0.407
	555.20			1.548E+00	5.381E+00	9.019E+00	5.353E-01	0.172
	573.80			-8.339E-01	1.311E+00	2.056E+00	1.220E-01	-0.406
	593.00			-5.433E-01	1.403E+00	1.915E+00	1.135E-01	-0.284
	656.30			-5.387E-01	5.300E+00	7.419E+00	4.329E-01	-0.073
	666.33			-1.381E-02	1.064E-01	1.481E-01	8.702E-03	-0.093
	675.00			6.156E-02	2.580E+00	4.222E+00	2.523E-01	0.015
	695.00			-7.292E-02	9.924E-02	1.526E-01	9.473E-03	-0.478
	697.00			-6.671E-02	3.322E-01	5.334E-01	3.324E-02	-0.125
	720.50	*		-4.585E-02	1.886E-01	3.015E-01	1.963E-02	-0.152
	856.80			-6.901E-01	7.256E-01	1.086E+00	8.958E-02	-0.635
	989.30			1.128E-01	2.108E+00	3.397E+00	2.711E-01	0.033
	1034.80			-2.432E+00	1.285E+01	2.125E+01	1.586E+00	-0.114
	1213.00			1.145E+00	3.407E+00	5.923E+00	3.514E-01	0.193
SB-127	61.10			1.207E+03	1.186E+02	1.227E+02	1.051E+01	9.832
	252.40			3.344E-01	2.517E+00	4.041E+00	1.662E+00	0.083
	290.80			-2.825E+01	1.321E+01	1.991E+01	1.415E+00	-1.419
	411.60			-4.819E+00	7.450E+00	1.193E+01	1.561E+00	-0.404
	444.90			-2.823E+00	5.882E+00	9.478E+00	8.606E-01	-0.298
	473.00			6.086E-01	1.143E+00	1.942E+00	1.861E-01	0.313
	543.00			7.815E-01	1.017E+01	1.683E+01	1.953E+00	0.046
	603.60			4.695E-01	7.312E+00	1.045E+01	9.561E-01	0.045
	685.20	*		-6.091E-01	7.917E-01	1.212E+00	9.302E-02	-0.503
	698.50			-7.023E-01	8.523E+00	1.381E+01	1.861E+00	-0.051
XE-127	722.20			-1.884E+01	1.823E+01	2.731E+01	2.105E+00	-0.690
	783.80			1.102E+00	2.095E+00	3.535E+00	3.528E-01	0.312
	57.60			2.337E+02	2.564E+01	3.495E+01	2.618E+00	6.686
	145.22			-2.784E-01	9.925E-01	1.581E+00	8.725E-02	-0.176
	172.10			-2.513E-02	1.682E-01	2.695E-01	1.416E-02	-0.093
	202.84	*		-4.992E-02	7.723E-02	1.102E-01	6.013E-03	-0.453
	374.96			1.557E-01	3.388E-01	5.783E-01	3.269E-02	0.269
	80.18			4.407E-01	4.761E+00	6.881E+00	5.718E-01	0.064
	284.30			-1.983E-01	1.541E+00	2.578E+00	1.649E-01	-0.077
	364.48	*		-6.114E-02	1.171E-01	1.898E-01	1.203E-02	-0.322
I-131	636.97			5.619E-01	1.580E+00	2.655E+00	1.729E-01	0.212
	722.89			-6.286E+00	7.787E+00	1.191E+01	7.818E-01	-0.528
	49.72			7.819E+00	1.048E+01	1.766E+01	1.431E+00	0.443
	111.76			4.786E+00	1.116E+01	1.854E+01	1.412E+00	0.258
TE-132	116.30			6.844E+00	1.217E+01	1.795E+01	1.321E+00	0.381
	228.16	*		-4.330E-02	3.171E-01	5.046E-01	6.676E-02	-0.086

---- Non-Identified Nuclides ----

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BA-133	53.15			3.306E+00	9.187E+00	1.350E+01	9.971E-01	0.245
	79.62			1.469E+00	2.356E+00	3.474E+00	5.217E-01	0.423
	81.00			-7.629E-02	1.919E-01	2.509E-01	3.947E-02	-0.304
	276.40			2.653E-01	6.547E-01	1.120E+00	1.452E-01	0.237
	302.84			-1.597E-01	2.533E-01	4.117E-01	4.803E-02	-0.388
	356.01	*		2.362E-03	8.582E-02	1.251E-01	1.441E-02	0.019
I-133	383.85			4.759E-01	5.838E-01	1.009E+00	1.087E-01	0.471
	510.53	+		5.805E-03	5.838E-01	Half-Life	too short	
	529.87	*		-9.194E-07	5.838E-01	Half-Life	too short	
	706.58			-3.103E-03	5.838E-01	Half-Life	too short	
	856.28			-5.279E-03	5.838E-01	Half-Life	too short	
	875.33			-1.419E-04	5.838E-01	Half-Life	too short	
	1236.41			4.607E-03	5.838E-01	Half-Life	too short	
	1298.22			-2.693E-04	5.838E-01	Half-Life	too short	
	475.35			2.527E+00	4.028E+00	6.885E+00	4.019E-01	0.367
	563.23			-9.959E-01	7.179E-01	1.071E+00	6.485E-02	-0.930
CS-134	569.32			6.564E-01	4.007E-01	7.258E-01	4.431E-02	0.904
	604.70			3.921E-03	6.472E-02	9.248E-02	5.501E-03	0.042
	795.84	*		6.648E-02	9.243E-02	1.574E-01	1.184E-02	0.422
	801.93			-2.327E-01	7.878E-01	1.251E+00	9.485E-02	-0.186
	1038.57			-1.707E+00	8.042E+00	1.327E+01	9.845E-01	-0.129
	1167.94			-1.960E-02	4.625E+00	6.641E+00	3.697E-01	-0.003
	1365.15			-1.166E+00	1.369E+00	1.868E+00	1.455E-01	-0.624
	268.24	*		2.068E-01	2.745E-01	4.767E-01	3.638E-02	0.434
	288.45			-1.602E+03	2.745E-01	Half-Life	too short	
	417.63			2.528E+01	2.745E-01	Half-Life	too short	
I-135	546.56			-5.277E+02	2.745E-01	Half-Life	too short	
	836.80			4.681E+03	2.745E-01	Half-Life	too short	
	1038.76			-9.177E+02	2.745E-01	Half-Life	too short	
	1124.00			-7.206E+03	2.745E-01	Half-Life	too short	
	1131.51			-2.102E+02	2.745E-01	Half-Life	too short	
	1260.41	*		-3.403E+02	2.745E-01	Half-Life	too short	
	1457.56			-2.566E+03	2.745E-01	Half-Life	too short	
	1678.03			1.618E+01	2.745E-01	Half-Life	too short	
	1706.46			6.858E+01	2.745E-01	Half-Life	too short	
	1791.20			-4.217E+02	2.745E-01	Half-Life	too short	
CS-136	66.91			4.230E-01	8.478E-01	1.416E+00	2.109E-01	0.299
	86.29			1.910E+01	3.109E+00	3.526E+00	4.573E-01	5.416
	153.22			-2.724E-01	7.362E-01	1.171E+00	8.081E-02	-0.233
	163.89			6.403E-01	1.185E+00	1.963E+00	1.337E-01	0.326
	176.55			5.389E-02	4.266E-01	6.922E-01	4.191E-02	0.078
	273.65			-7.204E-01	5.847E-01	9.305E-01	6.131E-02	-0.774
	340.57			-6.087E-02	1.935E-01	2.760E-01	1.694E-02	-0.221
	818.51			-2.010E-02	1.159E-01	1.853E-01	1.435E-02	-0.108
	1048.07	*		-1.378E-01	1.507E-01	2.335E-01	1.804E-02	-0.590
	1235.34			5.577E-02	4.565E-01	7.702E-01	7.868E-02	0.072
CE-139	165.85	*		3.729E-02	4.557E-02	7.636E-02	3.986E-03	0.488
BA-140	162.64			-6.288E-01	8.348E-01	1.300E+00	7.864E-02	-0.484
	304.84			-1.581E+00	1.605E+00	2.465E+00	6.728E-01	-0.642

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140		423.70		2.672E-01	2.722E+00	4.544E+00	1.443E+00	0.059
		537.32	*	-8.031E-02	3.530E-01	5.716E-01	1.860E-01	-0.140
		328.77		2.707E-01	3.681E-01	6.383E-01	4.146E-02	0.424
		432.53		3.776E-01	2.903E+00	4.856E+00	3.076E-01	0.078
		487.03		1.702E-01	1.991E-01	3.444E-01	2.280E-02	0.494
		751.79		-3.897E-01	2.205E+00	3.533E+00	2.832E-01	-0.110
		815.85		4.664E-01	4.791E-01	8.289E-01	7.296E-02	0.563
		867.82		-1.414E+00	2.162E+00	3.310E+00	2.934E-01	-0.427
		919.63		-5.265E+00	5.045E+00	6.895E+00	7.351E-01	-0.764
		925.24		1.617E+00	1.929E+00	3.279E+00	2.995E-01	0.493
CE-141	1596.49	*		-3.774E-04	7.598E-02	1.246E-01	8.428E-03	-0.003
	145.44	*		-3.450E-02	8.903E-02	1.411E-01	8.125E-03	-0.245
	57.37			1.204E+03	1.758E+02	2.425E+02	2.232E+01	4.967
	231.56			9.643E+01	2.056E+02	2.931E+02	9.082E+01	0.329
CE-143	293.26	*		2.325E+01	1.085E+01	1.791E+01	3.693E+00	1.298
	350.59			6.857E+02	2.873E+02	2.819E+02	8.581E+01	2.433
	490.36			-1.241E+02	2.341E+02	3.699E+02	1.148E+02	-0.335
	664.57			2.614E+03	8.565E+02	4.545E+02	1.444E+02	5.752
CE-144	721.93			-9.271E+01	1.074E+02	1.579E+02	4.536E+01	-0.587
	80.11			4.470E-01	3.749E+00	5.426E+00	4.496E-01	0.082
	133.54	*		-4.599E-01	3.304E-01	4.924E-01	6.975E-02	-0.934
	476.78			6.522E-02	1.382E-01	2.345E-01	1.636E-02	0.278
PM-144	618.01			-4.071E-02	5.784E-02	9.006E-02	5.621E-03	-0.452
	696.49	*		-3.025E-02	6.175E-02	9.691E-02	6.035E-03	-0.312
	778.57			-3.296E+00	4.125E+00	6.226E+00	4.500E-01	-0.529
	696.49	*		-2.043E+00	4.170E+00	6.545E+00	4.075E-01	-0.312
PR-144	1489.15			-5.982E+00	1.549E+01	2.364E+01	1.676E+00	-0.253
	453.90	*		-8.257E-02	9.764E-02	1.546E-01	1.332E-02	-0.534
	633.02			8.164E-02	2.578E+00	4.232E+00	1.559E+00	0.019
	735.90			6.966E-02	2.618E-01	4.342E-01	1.219E-01	0.160
ND-147	747.13			1.123E-01	1.697E-01	2.892E-01	3.765E-02	0.388
	91.11			7.622E-01	4.102E-01	4.871E-01	4.498E-02	1.565
	319.41			-2.338E+00	3.938E+00	6.405E+00	3.723E-01	-0.365
	439.89			3.169E+00	7.531E+00	1.279E+01	7.347E-01	0.248
PM-149	531.02	*		2.913E-01	7.514E-01	1.266E+00	1.719E-01	0.230
	285.90	*		8.644E+00	2.166E+01	3.706E+01	5.246E+00	0.233
	121.78			7.056E-01	2.176E-01	2.569E-01	1.988E-02	2.747
	244.69			-1.088E+00	6.439E-01	9.419E-01	5.352E-02	-1.155
EU-152	344.27	*		1.601E-01	2.226E-01	3.226E-01	2.100E-02	0.496
	443.98			-9.243E-01	1.839E+00	2.963E+00	1.705E-01	-0.312
	778.89			-3.492E-01	4.746E-01	7.200E-01	5.206E-02	-0.485
	867.32			-1.239E+00	1.827E+00	2.793E+00	2.344E-01	-0.444
GD-153	964.01			-8.299E-02	7.622E-01	1.044E+00	8.598E-02	-0.080
	1085.78			-2.701E-01	8.196E-01	1.337E+00	9.100E-02	-0.202
	1112.02			-3.399E-01	6.459E-01	1.037E+00	6.672E-02	-0.328
	1407.95			-1.341E-01	1.988E-01	2.824E-01	2.051E-02	-0.475
GD-153	69.67			2.477E-01	2.673E+00	4.088E+00	3.146E-01	0.061
	83.37			1.107E+01	3.176E+01	3.934E+01	3.361E+00	0.281
	97.43	*		1.328E-01	1.213E-01	1.850E-01	1.439E-02	0.718

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	+	103.18	-2.352E-03	1.523E-01	2.486E-01	1.800E-02	-0.009
		123.07	4.951E-01	1.551E-01	1.802E-01	1.709E-02	2.748
		247.94	-2.369E-01	6.586E-01	1.032E+00	9.785E-02	-0.229
		591.81	-6.342E-01	1.340E+00	1.811E+00	1.784E-01	-0.350
		723.30	-1.748E-01	3.348E-01	5.241E-01	4.037E-02	-0.334
		756.87	-4.204E-01	1.499E+00	2.382E+00	2.582E-01	-0.176
		873.19	1.684E-01	6.653E-01	1.094E+00	1.328E-01	0.154
		996.32	-1.105E+00	8.634E-01	1.208E+00	2.106E-01	-0.915
EU-155	+	1004.76	-2.501E-01	4.521E-01	7.283E-01	8.050E-02	-0.343
		1274.45 *	6.229E-02	1.353E-01	2.393E-01	2.368E-02	0.260
		48.70	4.292E+00	4.928E+00	8.340E+00	5.849E-01	0.515
		60.01	4.288E+02	4.120E+01	3.833E+01	2.883E+00	11.189
		86.54	2.909E+00	3.614E-01	4.814E-01	4.288E-02	6.042
		105.31 *	3.101E-02	1.532E-01	2.525E-01	1.816E-02	0.123
		86.79	9.375E+00	1.160E+00	1.273E+00	1.126E-01	7.364
		197.04	3.585E-01	9.006E-01	1.474E+00	7.989E-02	0.243
TB-160	+	215.65	-1.607E-01	1.258E+00	2.007E+00	1.111E-01	-0.080
		298.57	-2.252E-01	2.075E-01	3.326E-01	1.934E-02	-0.677
		879.36 *	-3.369E-02	2.874E-01	4.597E-01	3.933E-02	-0.073
		962.29	3.227E-01	1.152E+00	1.837E+00	1.516E-01	0.176
		966.15	1.350E-01	5.003E-01	7.099E-01	5.832E-02	0.190
		1177.93	1.516E+00	7.339E-01	1.276E+00	7.057E-02	1.189
		1271.85	-4.780E-01	7.666E-01	1.152E+00	7.632E-02	-0.415
		80.57	-2.757E-01	4.975E-01	6.964E-01	5.794E-02	-0.396
HO-166M	+	184.41	8.886E-02	6.979E-02	9.808E-02	5.232E-03	0.906
		280.46	-5.143E-02	1.500E-01	2.487E-01	1.441E-02	-0.207
		410.95	-1.279E-01	4.682E-01	7.678E-01	4.332E-02	-0.167
		711.68 *	7.881E-02	1.138E-01	1.947E-01	1.247E-02	0.405
		752.31	-1.643E-01	4.998E-01	7.904E-01	5.453E-02	-0.208
		810.29	-8.893E-03	1.216E-01	1.958E-01	1.495E-02	-0.045
		51.35	-3.243E+01	6.746E+01	1.100E+02	8.025E+00	-0.295
		52.39	-1.416E+01	3.831E+01	5.795E+01	4.261E+00	-0.244
TM-171	+	59.40	2.247E+03	2.159E+02	2.101E+02	1.580E+01	10.696
		66.72 *	-4.810E-01	4.487E+01	7.135E+01	5.424E+00	-0.007
		88.36	7.349E+00	9.095E-01	1.008E+00	8.975E-02	7.293
LU-176	+	201.83	-4.534E-02	4.883E-02	7.494E-02	4.084E-03	-0.605
		306.84 *	-3.937E-02	4.288E-02	6.857E-02	3.989E-03	-0.574
		401.10	3.758E+00	1.214E+01	2.056E+01	1.152E+00	0.183
LU-177	+	112.95	1.368E-01	1.251E+00	2.050E+00	1.335E-01	0.067
		208.36 *	2.097E+00	1.181E+00	1.693E+00	9.293E-02	1.239
LU-177M	+	52.97	1.048E+00	4.039E+00	5.915E+00	4.364E-01	0.177
		54.07	1.452E+00	2.140E+00	3.177E+00	2.356E-01	0.457
		61.30	8.464E+01	7.758E+00	9.245E+00	6.956E-01	9.155
		121.62	3.524E+00	1.073E+00	1.281E+00	7.657E-02	2.751
		147.16	2.601E-01	9.972E-01	1.635E+00	8.974E-02	0.159
		171.86	-2.125E-01	7.518E-01	1.197E+00	6.288E-02	-0.178
		218.09	-2.810E-01	1.473E+00	2.341E+00	1.299E-01	-0.120
		268.79	1.842E+00	1.362E+00	2.417E+00	1.394E-01	0.762
		319.02	-2.140E-01	4.442E-01	7.268E-01	4.224E-02	-0.294

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HF-181		367.43		-1.178E-01	1.588E+00	2.641E+00	1.502E-01	-0.045
		413.65	*	1.105E-02	3.321E-01	5.535E-01	3.129E-02	0.020
		56.28		4.527E+00	2.280E+00	3.490E+00	2.607E-01	1.297
		57.53		1.796E+01	2.067E+00	2.891E+00	2.166E-01	6.212
		65.20		-5.048E-01	1.476E+00	2.097E+00	1.587E-01	-0.241
		133.02		-1.387E-01	9.568E-02	1.448E-01	8.285E-03	-0.958
W-181		136.25		-2.310E-03	6.667E-01	1.082E+00	6.130E-02	-0.002
		345.85		3.485E-01	3.769E-01	5.821E-01	3.354E-02	0.599
		482.03	*	-7.295E-02	7.755E-02	1.211E-01	7.084E-03	-0.603
		56.28		1.602E+00	9.624E-01	1.463E+00	1.092E-01	1.095
TA-182		57.53		7.506E+00	8.652E-01	1.211E+00	9.072E-02	6.198
		65.20	*	-2.100E-01	6.140E-01	8.722E-01	6.601E-02	-0.241
		67.75		3.926E-02	1.622E-01	2.692E-01	2.054E-02	0.146
		100.10		1.734E-01	2.491E-01	4.191E-01	3.150E-02	0.414
RE-183		152.43		-2.010E-01	5.134E-01	8.163E-01	4.417E-02	-0.246
		222.10		1.859E-01	5.998E-01	9.754E-01	5.434E-02	0.191
		1001.68		8.877E-01	4.206E+00	7.163E+00	5.619E-01	0.124
		1121.28		3.481E-02	2.541E-01	4.288E-01	2.700E-02	0.081
		1189.05		1.297E-01	4.170E-01	7.165E-01	4.054E-02	0.181
		1221.42	*	-1.400E-01	2.168E-01	3.307E-01	1.994E-02	-0.423
		1230.97		-2.184E-01	5.442E-01	8.617E-01	5.292E-02	-0.253
		57.98		1.328E+01	1.191E+00	1.391E+00	1.043E-01	9.547
	+	59.32		8.696E+00	8.355E-01	8.176E-01	6.149E-02	10.637
		67.20		1.366E-01	2.846E-01	4.760E-01	3.625E-02	0.287
		162.32	*	-1.091E-01	1.614E-01	2.524E-01	1.330E-02	-0.432
	+	208.81		3.427E+00	1.931E+00	2.763E+00	1.517E-01	1.240
RE-184		291.72		-3.425E+00	1.724E+00	2.635E+00	1.531E-01	-1.300
		57.98		5.078E+01	4.553E+00	5.319E+00	3.988E-01	9.547
	+	59.32		3.323E+01	3.193E+00	3.124E+00	2.350E-01	10.637
		67.20		5.222E-01	1.088E+00	1.820E+00	1.386E-01	0.287
OS-185		161.27		-2.600E-01	5.338E-01	8.424E-01	4.451E-02	-0.309
		216.55		-1.292E-01	4.685E-01	7.421E-01	4.111E-02	-0.174
		252.85	*	8.555E-02	4.162E-01	6.716E-01	3.838E-02	0.127
		318.01		-2.810E-01	7.567E-01	1.245E+00	7.237E-02	-0.226
		792.07		2.736E-01	1.888E+00	3.096E+00	2.290E-01	0.088
		903.28		2.033E-02	2.332E+00	3.762E+00	3.299E-01	0.005
		920.93		-6.346E-01	1.044E+00	1.603E+00	1.383E-01	-0.396
	+	59.72		2.411E+01	2.316E+00	2.204E+00	1.658E-01	10.938
		61.14		1.012E+01	9.084E-01	1.043E+00	7.845E-02	9.703
		69.30		-2.222E-02	4.470E-01	7.094E-01	5.449E-02	-0.031
RE-188		592.07		-2.473E+00	5.220E+00	7.059E+00	4.184E-01	-0.350
		646.12	*	-1.591E-02	7.333E-02	1.180E-01	6.909E-03	-0.135
		717.42		4.434E-01	1.590E+00	2.644E+00	1.712E-01	0.168
		874.81		6.678E-02	1.223E+00	1.984E+00	1.684E-01	0.034
		880.27		1.882E-01	1.652E+00	2.689E+00	2.304E-01	0.070
		155.03	*	8.870E-02	2.488E-01	4.092E-01	2.199E-02	0.217
W-188		477.96		-2.202E+00	5.974E+00	9.684E+00	5.659E-01	-0.227
		633.10		7.118E-02	4.893E+00	8.021E+00	4.716E-01	0.009
		63.58		-7.314E+01	8.582E+01	1.191E+02	8.979E+00	-0.614

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IR-192		227.08		-1.073E+01	2.167E+01	3.388E+01	1.897E+00	-0.317
		290.67	*	-2.357E+01	1.328E+01	2.050E+01	1.190E+00	-1.150
		295.96		2.231E-01	1.958E-01	3.429E-01	2.025E-02	0.651
		308.46		-8.838E-02	1.588E-01	2.591E-01	1.524E-02	-0.341
		316.51	*	-2.988E-02	5.781E-02	9.445E-02	5.518E-03	-0.316
		468.07		-6.496E-02	1.345E-01	2.171E-01	1.455E-02	-0.299
AU-195		604.41		5.893E-02	8.369E-01	1.197E+00	1.366E-01	0.049
		612.46		2.331E+00	1.339E+00	2.194E+00	1.680E-01	1.062
		65.12		-9.783E-02	2.881E-01	4.093E-01	3.097E-02	-0.239
		66.83		6.298E-02	1.393E-01	2.328E-01	1.770E-02	0.271
	+	75.70		1.023E+00	3.052E-01	5.740E-01	4.587E-02	1.782
		98.88	*	9.522E-02	3.502E-01	5.367E-01	4.096E-02	0.177
TL-200		129.76		2.534E+00	4.272E+00	7.120E+00	4.118E-01	0.356
		367.94	*	-3.246E-06	4.272E+00	Half-Life	too short	
		579.30		1.127E-05	4.272E+00	Half-Life	too short	
		828.27		1.474E-04	4.272E+00	Half-Life	too short	
TL-201		1205.75		2.552E-05	4.272E+00	Half-Life	too short	
		68.90		7.782E-02	1.767E+00	2.814E+00	2.158E-01	0.028
		70.82		3.099E-01	1.068E+00	1.562E+00	1.209E-01	0.198
		80.30		9.806E-02	2.095E+00	3.021E+00	2.508E-01	0.032
TL-202		135.34		6.539E-02	9.622E+00	1.563E+01	8.878E-01	0.004
		167.43	*	5.073E-01	2.549E+00	4.156E+00	2.172E-01	0.122
		68.90		2.090E-02	4.747E-01	7.560E-01	5.797E-02	0.028
		70.82		8.303E-02	2.860E-01	4.184E-01	3.239E-02	0.198
HG-203		80.30		2.628E-02	5.614E-01	8.096E-01	6.720E-02	0.032
		439.56	*	1.357E-02	9.384E-02	1.570E-01	9.018E-03	0.086
		70.83		-2.908E-01	1.657E+00	2.369E+00	3.096E-01	-0.123
		72.87		6.986E-01	9.563E-01	1.420E+00	1.804E-01	0.492
BI-207		82.60		1.726E+00	2.481E+00	2.711E+00	3.702E-01	0.637
		279.20	*	2.195E-02	6.576E-02	1.123E-01	6.907E-03	0.195
		72.80		1.585E-01	3.079E-01	4.544E-01	3.559E-02	0.349
	+	74.97		5.812E-01	1.734E-01	3.053E-01	2.427E-02	1.904
TL-207		84.90		3.774E-01	3.634E-01	5.439E-01	4.718E-02	0.694
		569.67		8.353E-02	6.269E-02	1.120E-01	6.648E-03	0.746
		1063.62	*	-3.666E-02	1.146E-01	1.887E-01	1.340E-02	-0.194
		1770.23		-2.385E-01	6.293E-01	7.399E-01	4.463E-02	-0.322
PO-209		81.07		-1.653E-01	4.235E-01	5.546E-01	4.635E-02	-0.298
		83.78		6.253E-02	2.736E-01	3.365E-01	2.886E-02	0.186
		94.90		-7.352E-02	3.705E-01	5.248E-01	4.225E-02	-0.140
	+	122.32		1.682E+01	5.152E+00	6.151E+00	4.201E-01	2.734
PO-209		144.24		-7.119E-02	1.084E+00	1.743E+00	1.224E-01	-0.041
		154.21		2.807E-02	6.169E-01	1.001E+00	6.679E-02	0.028
		269.46		4.321E-01	3.322E-01	5.880E-01	3.547E-02	0.735
	+	323.87	*	-6.569E-01	1.218E+00	1.981E+00	3.272E-01	-0.332
PO-209		338.28		3.658E+00	2.279E+00	3.325E+00	3.498E-01	1.100
		445.03		-2.600E+00	4.352E+00	6.957E+00	7.128E-01	-0.374
		260.50		2.026E+01	1.728E+01	2.918E+01	1.676E+00	0.694
		262.80		-2.789E+01	4.878E+01	7.538E+01	4.334E+00	-0.370
		896.60	*	-6.937E+00	1.700E+01	2.657E+01	2.336E+00	-0.261



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-210		46.50	*	-7.093E+00	6.741E+00	1.078E+01	8.216E-01	-0.658
PB-210		46.50	*	-7.093E+00	6.741E+00	1.078E+01	8.216E-01	-0.658
PO-210		46.50	*	-7.093E+00	6.735E+00	1.078E+01	7.025E-01	-0.658
PB-211		404.84	*	2.244E-02	1.748E+00	2.911E+00	1.814E+00	0.008
		427.08		-4.489E-01	4.160E+00	6.858E+00	4.238E+00	-0.065
		831.96		-5.821E+00	4.528E+00	3.625E+00	2.268E+00	-1.606
BI-212		727.18	*	6.294E-01	5.561E-01	9.727E-01	8.097E-02	0.647
		785.46		3.096E+00	3.363E+00	5.820E+00	4.257E-01	0.532
		1620.62		6.858E-01	1.537E+00	2.748E+00	1.835E-01	0.250
PB-214	+	74.81		3.442E+00	1.058E+00	1.773E+00	1.925E-01	1.942
	+	77.11		2.393E+00	8.157E-01	1.075E+00	1.194E-01	2.225
	+	87.30		2.455E+01	3.579E+00	3.388E+00	3.987E-01	7.247
		241.98		1.213E+00	7.440E-01	1.129E+00	9.007E-02	1.074
		295.21		3.416E-01	2.736E-01	4.793E-01	4.090E-02	0.713
PO-214	+	351.92	*	7.571E-01	2.268E-01	3.082E-01	2.541E-02	2.457
	+	74.81		3.442E+00	1.058E+00	1.773E+00	1.925E-01	1.942
	+	77.11		2.393E+00	8.157E-01	1.075E+00	1.194E-01	2.225
	+	87.30		2.455E+01	3.579E+00	3.388E+00	3.987E-01	7.247
		241.98		1.213E+00	7.440E-01	1.129E+00	9.007E-02	1.074
		295.21		3.416E-01	2.736E-01	4.793E-01	4.090E-02	0.713
PO-215	+	351.92	*	7.571E-01	2.268E-01	3.082E-01	2.541E-02	2.457
		81.07		-1.653E-01	4.235E-01	5.546E-01	4.635E-02	-0.298
		83.78		6.253E-02	2.736E-01	3.365E-01	2.886E-02	0.186
		94.90		-7.352E-02	3.705E-01	5.248E-01	4.225E-02	-0.140
	+	122.32		1.682E+01	5.152E+00	6.151E+00	4.201E-01	2.734
		144.24		-7.119E-02	1.084E+00	1.743E+00	1.224E-01	-0.041
		154.21		2.807E-02	6.169E-01	1.001E+00	6.679E-02	0.028
		269.46		4.321E-01	3.322E-01	5.880E-01	3.547E-02	0.735
		323.87	*	-6.569E-01	1.218E+00	1.981E+00	3.272E-01	-0.332
	+	338.28		3.658E+00	2.279E+00	3.325E+00	3.498E-01	1.100
		445.03		-2.600E+00	4.352E+00	6.957E+00	7.128E-01	-0.374
PO-218	+	74.81		3.442E+00	1.058E+00	1.773E+00	1.925E-01	1.942
	+	77.11		2.393E+00	8.157E-01	1.075E+00	1.194E-01	2.225
	+	87.30		2.455E+01	3.579E+00	3.388E+00	3.987E-01	7.247
		241.98		1.213E+00	7.440E-01	1.129E+00	9.007E-02	1.074
		295.21		3.416E-01	2.736E-01	4.793E-01	4.090E-02	0.713
	+	351.92	*	7.571E-01	2.268E-01	3.082E-01	2.541E-02	2.457
RN-219		271.23		6.552E-01	4.372E-01	7.757E-01	6.272E-02	0.845
		401.81	*	-1.259E-01	7.534E-01	1.243E+00	1.681E-01	-0.101
RN-220		549.76	*	-8.558E+00	5.018E+01	8.170E+01	4.848E+00	-0.105
RA-223		81.07		-1.653E-01	4.235E-01	5.546E-01	4.635E-02	-0.298
		83.78		6.253E-02	2.736E-01	3.365E-01	2.886E-02	0.186
		94.90		-7.352E-02	3.705E-01	5.248E-01	4.225E-02	-0.140
	+	122.32		1.682E+01	5.152E+00	6.151E+00	4.201E-01	2.734
		144.24		-7.119E-02	1.084E+00	1.743E+00	1.224E-01	-0.041
		154.21		2.807E-02	6.169E-01	1.001E+00	6.679E-02	0.028
		269.46		4.321E-01	3.322E-01	5.880E-01	3.547E-02	0.735
		323.87	*	-6.569E-01	1.218E+00	1.981E+00	3.272E-01	-0.332
	+	338.28		3.658E+00	2.279E+00	3.325E+00	3.498E-01	1.100

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224		445.03		-2.600E+00	4.352E+00	6.957E+00	7.128E-01	-0.374
		240.98	*	5.862E+00	1.585E+00	2.581E+00	1.462E-01	2.271
		79.80		1.052E+00	2.962E+00	4.322E+00	9.233E-01	0.243
		236.00		1.151E+00	4.906E-01	7.570E-01	7.847E-02	1.521
AC-227		256.20	*	-4.051E-01	6.911E-01	1.065E+00	1.484E-01	-0.380
		286.10		8.850E-01	2.684E+00	4.582E+00	5.298E-01	0.193
		299.80		-2.128E-02	2.665E+00	4.477E+00	7.293E-01	-0.005
		304.40		-2.996E+00	3.274E+00	5.183E+00	8.967E-01	-0.578
		334.20		4.914E-01	4.501E+00	6.612E+00	1.212E+00	0.074
		79.80		1.052E+00	2.962E+00	4.322E+00	9.353E-01	0.243
	+	94.00		5.338E+00	3.756E+00	4.726E+00	1.021E+00	1.129
		236.00		1.151E+00	4.869E-01	7.570E-01	6.781E-02	1.521
		256.20	*	-4.051E-01	6.922E-01	1.065E+00	1.798E-01	-0.380
		286.10		8.850E-01	2.825E+00	4.582E+00	4.590E+00	0.193
		299.80		-2.128E-02	2.665E+00	4.477E+00	7.293E-01	-0.005
		304.40		-2.996E+00	3.274E+00	5.183E+00	8.967E-01	-0.578
TH-227		334.20		4.914E-01	4.501E+00	6.612E+00	1.212E+00	0.074
		85.43		1.180E+00	3.924E-01	6.109E-01	5.329E-02	1.931
	+	88.47		4.231E+00	5.235E-01	5.773E-01	5.132E-02	7.329
		100.00		1.870E-01	2.688E-01	4.522E-01	3.402E-02	0.414
		193.63	*	-1.549E-01	8.321E-01	1.327E+00	7.160E-02	-0.117
		210.97		1.669E+00	1.523E+00	2.271E+00	1.250E-01	0.735
PA-231		283.67	*	-1.272E+00	2.759E+00	4.520E+00	6.229E-01	-0.281
		301.29		1.238E+00	1.006E+00	1.768E+00	1.849E-01	0.700
TH-231		81.07		-1.653E-01	4.235E-01	5.546E-01	4.635E-02	-0.298
		83.78		6.253E-02	2.736E-01	3.365E-01	2.886E-02	0.186
		94.90		-7.352E-02	3.705E-01	5.248E-01	4.225E-02	-0.140
	+	122.32		1.682E+01	5.152E+00	6.151E+00	4.201E-01	2.734
		144.24		-7.119E-02	1.084E+00	1.743E+00	1.224E-01	-0.041
		154.21		2.807E-02	6.169E-01	1.001E+00	6.679E-02	0.028
		269.46		4.321E-01	3.322E-01	5.880E-01	3.547E-02	0.735
		323.87	*	-6.569E-01	1.218E+00	1.981E+00	3.272E-01	-0.332
	+	338.28		3.658E+00	2.279E+00	3.325E+00	3.498E-01	1.100
		445.03		-2.600E+00	4.352E+00	6.957E+00	7.128E-01	-0.374
U-231		84.21		3.235E-01	3.717E+00	4.999E+00	4.307E-01	0.065
	+	92.29		1.834E+00	1.237E+00	1.766E+00	1.477E-01	1.038
		95.87	*	-5.101E-01	5.971E-01	8.074E-01	6.413E-02	-0.632
PA-233		108.00		-9.968E-01	1.039E+00	1.616E+00	1.108E-01	-0.617
	+	75.28		1.697E+01	5.500E+00	9.257E+00	1.388E+00	1.833
		86.59		4.884E+01	1.377E+01	7.925E+00	2.131E+00	6.163
		300.12		1.598E-02	7.446E-01	1.252E+00	1.684E-01	0.013
		311.98	*	7.532E-02	1.147E-01	1.984E-01	1.225E-02	0.380
		340.50		-3.323E-01	1.320E+00	1.888E+00	4.335E-01	-0.176
		398.62		-2.190E+00	3.851E+00	6.142E+00	1.585E+00	-0.356
		415.76		1.426E+00	3.245E+00	5.500E+00	1.130E+00	0.259
PA-234		63.00		-2.125E+00	2.727E+00	3.779E+00	5.641E-01	-0.562
		94.67		1.659E-01	2.622E-01	3.886E-01	4.676E-02	0.427
		98.44		8.972E-02	1.516E-01	2.236E-01	1.245E-01	0.401
		99.86		4.782E-01	6.794E-01	1.143E+00	8.619E-02	0.418

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00	9.132E-02	2.710E-01	4.485E-01	4.829E-02	0.204
		131.20	6.312E-02	1.627E-01	2.689E-01	1.548E-02	0.235
		152.70	-1.121E-01	5.097E-01	8.164E-01	1.279E-01	-0.137
	+	186.00	3.199E+00	2.689E+00	3.557E+00	1.084E+00	0.899
		226.40	-1.954E-01	7.163E-01	1.132E+00	1.297E-01	-0.173
		227.20	-2.947E-01	7.774E-01	1.223E+00	6.845E-02	-0.241
		248.90	-9.760E-02	1.468E+00	2.337E+00	5.016E-01	-0.042
		293.70	3.370E+00	1.365E+00	2.325E+00	3.741E-01	1.449
		369.80	-1.734E-01	1.584E+00	2.629E+00	5.465E-01	-0.066
		568.70	3.713E+00	2.037E+00	3.721E+00	2.209E-01	0.998
		569.50	8.711E-01	5.548E-01	1.003E+00	5.951E-02	0.869
		574.00	-1.750E+00	2.689E+00	4.213E+00	2.500E-01	-0.415
		699.00	-2.776E-01	1.295E+00	2.076E+00	3.764E-01	-0.134
		706.10	-1.570E+00	2.021E+00	2.895E+00	1.280E+00	-0.542
		733.00	-8.990E-01	7.213E-01	1.006E+00	2.163E-01	-0.894
		742.81	1.186E+00	2.727E+00	4.389E+00	2.941E+00	0.270
		796.30	1.383E+00	1.830E+00	3.068E+00	8.192E-01	0.451
		805.60	-4.605E-01	1.993E+00	3.163E+00	9.608E-01	-0.146
		819.60	2.609E-01	2.654E+00	4.327E+00	1.637E+00	0.060
		826.30	3.563E-01	1.855E+00	3.033E+00	1.352E+00	0.118
		831.60	-2.739E+00	1.614E+00	1.925E+00	5.706E-01	-1.423
		876.40	-1.727E+00	2.569E+00	2.780E+00	2.858E+00	-0.621
		880.51	1.732E-01	6.198E-01	1.021E+00	8.751E-02	0.170
		883.24	1.342E-01	6.683E-01	1.084E+00	7.289E-01	0.124
		899.00	-1.652E+00	2.103E+00	2.990E+00	1.308E+00	-0.552
		925.00	2.063E+00	2.812E+00	4.753E+00	4.084E-01	0.434
		926.50	4.670E-01	4.279E-01	7.153E-01	1.807E-01	0.653
		946.00	* 1.074E-01	7.674E-01	1.246E+00	2.326E-01	0.086
		949.00	-9.371E-01	1.151E+00	1.743E+00	1.461E-01	-0.538
		980.50	-9.389E-01	1.755E+00	2.703E+00	2.181E-01	-0.347
PA-234M		1394.10	1.507E+00	1.540E+00	2.437E+00	1.582E+00	0.618
		766.42	7.692E+00	2.274E+01	3.726E+01	1.882E+01	0.206
		1001.03	* 4.859E+00	9.718E+00	1.685E+01	1.569E+00	0.288
TH-234		63.29	* -2.025E+00	2.318E+00	3.179E+00	5.562E-01	-0.637
	+	92.38	1.381E+00	9.573E-01	1.323E+00	2.376E-01	1.044
U-235		89.95	2.647E+01	8.672E+00	4.705E+00	1.453E+00	5.625
	+	93.35	1.661E+00	1.205E+00	1.523E+00	4.251E-01	1.090
		105.00	4.205E-01	1.519E+00	2.504E+00	7.372E-01	0.168
		143.76	* 6.613E-02	3.365E-01	5.473E-01	8.873E-02	0.121
		163.35	-1.788E-01	7.428E-01	1.186E+00	2.113E-01	-0.151
	+	185.71	1.185E-01	9.305E-02	1.314E-01	7.019E-03	0.902
		205.31	8.605E-01	9.637E-01	1.414E+00	2.528E-01	0.609
NP-236		94.67	1.276E-01	1.986E-01	2.950E-01	2.383E-02	0.432
		98.44	6.783E-02	1.084E-01	1.691E-01	1.298E-02	0.401
		111.00	6.908E-02	2.049E-01	3.392E-01	2.254E-02	0.204
		160.31	* -4.815E-02	1.222E-01	1.937E-01	1.026E-02	-0.249
NP-237		86.50	* 6.936E+00	1.672E+00	1.167E+00	2.618E-01	5.944
		95.87	-1.294E+00	1.544E+00	2.048E+00	4.999E-01	-0.632
U-238		63.29	* -2.025E+00	2.318E+00	3.179E+00	5.562E-01	-0.637

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.38		1.381E+00	9.318E-01	1.323E+00	1.105E-01	1.044
		99.55		9.296E-02	2.294E-01	3.815E-01	2.887E-02	0.244
		117.00	*	2.890E-01	3.256E-01	4.894E-01	3.061E-02	0.590
	+	209.75		2.880E+00	1.623E+00	2.339E+00	1.286E-01	1.231
		228.18		-5.210E-02	4.046E-01	6.442E-01	3.610E-02	-0.081
CM-243		277.60		1.716E-01	3.164E-01	5.451E-01	3.155E-02	0.315
		334.30		2.664E-01	2.550E+00	3.745E+00	2.168E-01	0.071
		99.55		9.562E-02	2.360E-01	3.924E-01	2.969E-02	0.244
		103.76	*	8.257E-02	1.408E-01	2.359E-01	1.696E-02	0.350
		117.00		2.972E-01	3.348E-01	5.033E-01	3.147E-02	0.590
AM-246	+	209.75		2.838E+00	1.599E+00	2.305E+00	1.267E-01	1.231
		228.18		-5.262E-02	4.087E-01	6.506E-01	3.646E-02	-0.081
		277.60		1.729E-01	3.189E-01	5.493E-01	3.179E-02	0.315
		798.80		6.455E-02	2.840E-01	4.681E-01	3.504E-02	0.138
		1036.00		-7.575E-02	6.309E-01	1.049E+00	7.811E-02	-0.072
CM-247		1062.04		-1.716E-01	4.847E-01	7.909E-01	5.633E-02	-0.217
		1078.86	*	-6.070E-02	2.904E-01	4.784E-01	3.301E-02	-0.127
		278.00		9.656E-01	1.316E+00	2.284E+00	1.322E-01	0.423
		287.40		-5.429E-01	2.225E+00	3.702E+00	2.149E-01	-0.147
		402.60	*	-1.183E-02	6.773E-02	1.117E-01	6.265E-03	-0.106
CF-249		252.85		3.295E-01	1.603E+00	2.587E+00	1.478E-01	0.127
		333.44		6.669E-02	3.318E-01	4.907E-01	2.842E-02	0.136
		387.95	*	1.223E-02	7.592E-02	1.276E-01	7.127E-03	0.096
CF-251		176.60	*	4.375E-02	2.055E-01	3.348E-01	1.769E-02	0.131
		227.00		-3.503E-01	6.928E-01	1.083E+00	6.061E-02	-0.324
		285.00		8.174E-01	3.081E+00	5.248E+00	3.044E-01	0.156

# VAX/VMS Nuclide Identification Report Generated

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*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028550
* Acquisition date   : 9-FEB-2010 17:44:57 Detector SN#      :
* Detector ID        : GAM19 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit        : 75.000
* Elapsed real time  : 0 01:00:01.50 Half life ratio        : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 00:00:00 Nuclide Library   : SOLID
* Sample ID          : G1202028550 Analyst initials        : MJH1
* Batch Number       : 947037 Sample Quantity              : 1.5544E+02 GRAM
* Recovery           : 1.00000 Carrier Weight              : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope                   :
* LCS DPM             : 0.000 LCS Isotope                    :
* LCSD DPM            : 0.000 LCSD Isotope                   :
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
CO-57	2.394E-01	7.143E-02	6.811E-02	0.000E+00
CO-60	6.714E+00	5.802E-01	7.984E-02	0.000E+00
CD-109	3.123E+01	3.787E+00	2.365E+00	0.000E+00
SN-126	3.099E+00	3.758E-01	2.357E-01	0.000E+00
BA-137M	5.234E+00	3.889E-01	1.132E-01	0.000E+00
CS-137	5.533E+00	4.121E-01	1.196E-01	0.000E+00
TL-208	3.375E-01	1.471E-01	1.087E-01	0.000E+00
BI-211	2.176E+00	6.291E-01	6.334E-01	0.000E+00
PB-212	9.169E-01	2.016E-01	2.094E-01	0.000E+00
PO-212	9.169E-01	2.016E-01	2.094E-01	0.000E+00
BI-214	5.371E-01	2.003E-01	2.191E-01	0.000E+00
PO-216	9.169E-01	2.016E-01	2.094E-01	0.000E+00
RA-226	5.371E-01	2.003E-01	2.191E-01	0.000E+00
AC-228	9.877E-01	5.056E-01	5.367E-01	0.000E+00
RA-228	9.877E-01	5.056E-01	5.367E-01	0.000E+00
TH-228	9.249E-01	2.034E-01	2.112E-01	0.000E+00
TH-230	5.371E-01	2.003E-01	2.191E-01	0.000E+00
TH-232	9.877E-01	5.056E-01	5.367E-01	0.000E+00
U-234	5.371E-01	2.003E-01	2.191E-01	0.000E+00
AM-241	1.322E+01	1.318E+00	5.421E-01	0.000E+00
AM-243	3.239E-01	9.468E-02	1.484E-01	0.000E+00
ANH-511	9.520E-02	1.192E-01	9.274E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-1.295E-01	6.028E-01	1.046E+00	0.000E+00 NOT IDENT.
NA-22	1.469E-02	4.825E-02	8.627E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	6.707E+02	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-1.707E-02	4.135E-02	6.205E-02	0.000E+00 NOT IDENT.
K-40	5.971E-01	5.567E-01	1.094E+00	0.000E+00 NOT IDENT.

TI-44	0.000E+00	8.386E-02	1.161E-01	0.000E+00	FAIL ABUN
SC-46	-7.034E-02	8.603E-02	1.359E-01	0.000E+00	NOT IDENT.
V-48	9.007E-02	1.249E-01	2.191E-01	0.000E+00	NOT IDENT.
CR-51	-5.383E-01	5.518E-01	9.427E-01	0.000E+00	NOT IDENT.
MN-52	9.644E-03	1.255E-01	2.163E-01	0.000E+00	FAIL ABUN
MN-54	7.404E-03	7.639E-02	1.301E-01	0.000E+00	NOT IDENT.
CO-56	-7.267E-03	7.514E-02	1.260E-01	0.000E+00	FAIL ABUN
CO-58	-4.955E-02	7.636E-02	1.230E-01	0.000E+00	NOT IDENT.
FE-59	-3.282E-02	1.655E-01	2.830E-01	0.000E+00	NOT IDENT.
ZN-65	-1.288E-02	1.708E-01	2.943E-01	0.000E+00	NOT IDENT.
GE-68	-4.662E-01	2.457E+00	4.209E+00	0.000E+00	NOT IDENT.
AS-73	4.475E-01	1.995E+00	3.272E+00	0.000E+00	NOT IDENT.
AS-74	1.596E-02	1.276E-01	2.229E-01	0.000E+00	NOT IDENT.
SE-75	-9.221E-02	7.318E-02	1.252E-01	0.000E+00	FAIL ABUN
BR-77	-1.134E+00	3.065E+00	5.231E+00	0.000E+00	FAIL ABUN
SR-82	-4.542E-01	5.954E-01	9.494E-01	0.000E+00	NOT IDENT.
RB-83	-2.668E-02	1.231E-01	2.122E-01	0.000E+00	NOT IDENT.
RB-84	4.094E-02	1.346E-01	2.318E-01	0.000E+00	NOT IDENT.
KR-85	1.226E+01	1.493E+01	2.411E+01	0.000E+00	NOT IDENT.
SR-85	5.877E-02	7.159E-02	1.156E-01	0.000E+00	NOT IDENT.
RB-86	-1.923E-01	1.258E+00	2.161E+00	0.000E+00	NOT IDENT.
Y-88	-6.666E-03	3.955E-02	6.292E-02	0.000E+00	NOT IDENT.
ZR-88	1.089E-02	5.312E-02	9.542E-02	0.000E+00	NOT IDENT.
Y-91	1.346E+01	1.832E+01	3.442E+01	0.000E+00	NOT IDENT.
NB-94	5.481E-02	5.752E-02	1.052E-01	0.000E+00	NOT IDENT.
NB-95	4.154E-02	7.427E-02	1.312E-01	0.000E+00	NOT IDENT.
NB-95M	2.547E-01	2.249E-01	3.617E-01	0.000E+00	NOT IDENT.
ZR-95	1.831E-02	1.227E-01	2.114E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	4.327E+02	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.659E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.783E+00	4.324E+00	7.130E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.279E+09	0.000E+00	0.000E+00	SHORT HLIF
RH-101	4.018E-02	5.448E-02	9.790E-02	0.000E+00	NOT IDENT.
RH-102	2.778E-02	6.094E-02	1.095E-01	0.000E+00	NOT IDENT.
RU-103	-1.570E-02	6.712E-02	1.159E-01	0.000E+00	FAIL ABUN
RH-106	-6.985E-02	5.826E-01	9.975E-01	0.000E+00	FAIL ABUN
RU-106	-6.985E-02	5.825E-01	9.975E-01	0.000E+00	FAIL ABUN
AG-108M	-1.345E-02	6.375E-02	1.114E-01	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	7.966E-02	1.396E-01	0.000E+00	NOT IDENT.
IN-111	-7.138E-01	4.227E-01	6.680E-01	0.000E+00	NOT IDENT.
IN-113M	2.914E-02	7.951E-02	1.440E-01	0.000E+00	NOT IDENT.
SN-113	2.914E-02	7.951E-02	1.440E-01	0.000E+00	NOT IDENT.
IN-114M	3.966E-02	2.963E-01	4.566E-01	0.000E+00	NOT IDENT.
CD-115	3.750E-01	2.954E+00	5.195E+00	0.000E+00	NOT IDENT.
SN-117M	-1.481E-02	6.060E-02	1.058E-01	0.000E+00	NOT IDENT.
SB-122	-1.462E+00	8.022E-01	1.226E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.631E+03	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.254E-02	4.151E-02	7.226E-02	0.000E+00	NOT IDENT.
I-124	-2.026E-01	4.749E-01	6.814E-01	0.000E+00	NOT IDENT.
SB-124	-5.405E-02	8.939E-02	1.276E-01	0.000E+00	FAIL ABUN
SB-125	3.014E-02	1.828E-01	3.260E-01	0.000E+00	NOT IDENT.
TE-125M	-2.491E+00	1.224E+01	2.181E+01	0.000E+00	NOT IDENT.
I-126	-3.354E-02	2.531E-01	3.707E-01	0.000E+00	NOT IDENT.
SB-126	-4.585E-02	1.848E-01	3.100E-01	0.000E+00	NOT IDENT.
SB-127	-6.091E-01	7.759E-01	1.248E+00	0.000E+00	NOT IDENT.
XE-127	-4.992E-02	7.568E-02	1.172E-01	0.000E+00	NOT IDENT.
I-131	-6.114E-02	1.148E-01	1.988E-01	0.000E+00	NOT IDENT.
TE-132	-4.330E-02	3.108E-01	5.349E-01	0.000E+00	NOT IDENT.
BA-133	2.362E-03	8.410E-02	1.311E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.137E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.648E-02	9.058E-02	1.615E-01	0.000E+00	NOT IDENT.
CS-135	2.068E-01	2.690E-01	5.033E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.118E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.378E-01	1.477E-01	2.377E-01	0.000E+00	NOT IDENT.
CE-139	3.729E-02	4.466E-02	8.161E-02	0.000E+00	NOT IDENT.
BA-140	-8.031E-02	3.459E-01	5.926E-01	0.000E+00	NOT IDENT.
LA-140	-3.774E-04	7.446E-02	1.253E-01	0.000E+00	NOT IDENT.
CE-141	-3.450E-02	8.725E-02	1.513E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.063E+01	1.886E+01	0.000E+00	FAIL ABUN
CE-144	-4.599E-01	3.238E-01	5.291E-01	0.000E+00	NOT IDENT.
PM-144	-3.025E-02	6.052E-02	9.976E-02	0.000E+00	NOT IDENT.
PR-144	-2.043E+00	4.087E+00	6.738E+00	0.000E+00	NOT IDENT.
PM-146	-8.257E-02	9.569E-02	1.610E-01	0.000E+00	NOT IDENT.
ND-147	2.913E-01	7.364E-01	1.313E+00	0.000E+00	NOT IDENT.
PM-149	8.644E+00	2.123E+01	3.906E+01	0.000E+00	NOT IDENT.
EU-152	1.601E-01	2.181E-01	3.384E-01	0.000E+00	FAIL ABUN
GD-153	1.328E-01	1.189E-01	2.004E-01	0.000E+00	NOT IDENT.
EU-154	6.229E-02	1.326E-01	2.422E-01	0.000E+00	FAIL ABUN

EU-155	3.101E-02	1.501E-01	2.729E-01	0.000E+00	FAIL	ABUN
TB-160	-3.369E-02	2.817E-01	4.703E-01	0.000E+00	FAIL	ABUN
HO-166M	7.881E-02	1.115E-01	2.003E-01	0.000E+00	FAIL	ABUN
TM-171	-4.810E-01	4.397E+01	7.799E+01	0.000E+00	FAIL	ABUN
LU-176	-3.937E-02	4.202E-02	7.214E-02	0.000E+00	FAIL	ABUN
LU-177	0.000E+00	1.158E+00	1.799E+00	0.000E+00	FAIL	ABUN
LU-177M	1.105E-02	3.255E-01	5.778E-01	0.000E+00	FAIL	ABUN
HF-181	-7.295E-02	7.600E-02	1.259E-01	0.000E+00	NOT	IDENT.
W-181	-2.100E-01	6.017E-01	9.539E-01	0.000E+00	NOT	IDENT.
TA-182	-1.400E-01	2.124E-01	3.352E-01	0.000E+00	NOT	IDENT.
RE-183	-1.091E-01	1.582E-01	2.699E-01	0.000E+00	FAIL	ABUN
RE-184	8.555E-02	4.078E-01	7.101E-01	0.000E+00	FAIL	ABUN
OS-185	-1.591E-02	7.187E-02	1.217E-01	0.000E+00	FAIL	ABUN
RE-188	8.870E-02	2.438E-01	4.381E-01	0.000E+00	NOT	IDENT.
W-188	-2.357E+01	1.301E+01	2.160E+01	0.000E+00	NOT	IDENT.
IR-192	-2.988E-02	5.665E-02	9.929E-02	0.000E+00	NOT	IDENT.
AU-195	9.522E-02	3.432E-01	5.811E-01	0.000E+00	FAIL	ABUN
TL-200	0.000E+00	1.400E+01	0.000E+00	0.000E+00	SHORT	HLIF
TL-201	5.073E-01	2.498E+00	4.441E+00	0.000E+00	NOT	IDENT.
TL-202	1.357E-02	9.196E-02	1.637E-01	0.000E+00	NOT	IDENT.
HG-203	2.195E-02	6.445E-02	1.185E-01	0.000E+00	NOT	IDENT.
BI-207	-3.666E-02	1.123E-01	1.920E-01	0.000E+00	FAIL	ABUN
TL-207	-6.569E-01	1.193E+00	2.081E+00	0.000E+00	FAIL	ABUN
PO-209	-6.937E+00	1.666E+01	2.716E+01	0.000E+00	NOT	IDENT.
BI-210	-7.093E+00	6.606E+00	1.188E+01	0.000E+00	NOT	IDENT.
PB-210	-7.093E+00	6.606E+00	1.188E+01	0.000E+00	NOT	IDENT.
PO-210	-7.093E+00	6.601E+00	1.188E+01	0.000E+00	NOT	IDENT.
PB-211	2.244E-02	1.713E+00	3.041E+00	0.000E+00	NOT	IDENT.
BI-212	6.294E-01	5.450E-01	1.000E+00	0.000E+00	NOT	IDENT.
PB-214	0.000E+00	2.222E-01	3.231E-01	0.000E+00	FAIL	ABUN
PO-214	0.000E+00	2.222E-01	3.231E-01	0.000E+00	FAIL	ABUN
PO-215	-6.569E-01	1.193E+00	2.081E+00	0.000E+00	FAIL	ABUN
PO-218	0.000E+00	2.222E-01	3.231E-01	0.000E+00	FAIL	ABUN
RN-219	-1.259E-01	7.384E-01	1.298E+00	0.000E+00	NOT	IDENT.
RN-220	-8.558E+00	4.918E+01	8.465E+01	0.000E+00	NOT	IDENT.
RA-223	-6.569E-01	1.193E+00	2.081E+00	0.000E+00	FAIL	ABUN
RA-224	0.000E+00	1.553E+00	2.732E+00	0.000E+00	NOT	IDENT.
AC-227	-4.051E-01	6.773E-01	1.126E+00	0.000E+00	NOT	IDENT.
TH-227	-4.051E-01	6.783E-01	1.126E+00	0.000E+00	FAIL	ABUN
TH-229	-1.549E-01	8.154E-01	1.413E+00	0.000E+00	FAIL	ABUN
PA-231	-1.272E+00	2.704E+00	4.765E+00	0.000E+00	NOT	IDENT.
TH-231	-6.569E-01	1.193E+00	2.081E+00	0.000E+00	FAIL	ABUN
U-231	-5.101E-01	5.851E-01	8.748E-01	0.000E+00	FAIL	ABUN
PA-233	7.532E-02	1.124E-01	2.087E-01	0.000E+00	FAIL	ABUN
PA-234	1.074E-01	7.521E-01	1.272E+00	0.000E+00	FAIL	ABUN
PA-234M	4.859E+00	9.524E+00	1.717E+01	0.000E+00	NOT	IDENT.
TH-234	-2.025E+00	2.271E+00	3.479E+00	0.000E+00	FAIL	ABUN
U-235	6.613E-02	3.298E-01	5.870E-01	0.000E+00	FAIL	ABUN
NP-236	-4.815E-02	1.197E-01	2.072E-01	0.000E+00	NOT	IDENT.
NP-237	0.000E+00	1.639E+00	1.267E+00	0.000E+00	NOT	IDENT.
U-238	-2.025E+00	2.271E+00	3.479E+00	0.000E+00	FAIL	ABUN
NP-239	2.890E-01	3.191E-01	5.277E-01	0.000E+00	FAIL	ABUN
CM-243	8.257E-02	1.380E-01	2.550E-01	0.000E+00	FAIL	ABUN
AM-246	-6.070E-02	2.846E-01	4.866E-01	0.000E+00	NOT	IDENT.
CM-247	-1.183E-02	6.638E-02	1.167E-01	0.000E+00	NOT	IDENT.
CF-249	1.223E-02	7.440E-02	1.334E-01	0.000E+00	NOT	IDENT.
CF-251	4.375E-02	2.014E-01	3.573E-01	0.000E+00	NOT	IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028550.CNF;1
Sample date        : 1-FEB-2010 00:00:00. Acquisition date : 9-FEB-2010 17:44:57.
Sample ID          : G1202028550      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM19             Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00     Elapsed real time: 0 01:00:01.50  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MJH1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 947037            Detector SN#      :
Matrix Spike ID    :                   LCS ID            : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	284	85.51*	6.863E+00	2.341E-01	2.394E-01	30.45
	136.48	-----	10.60	6.738E+00	-----	Line Not Found	-----
CO-60	1173.22	1859	100.00	1.398E+00	6.424E+00	6.444E+00	7.51
	1332.49	1741	100.00*	1.256E+00	6.693E+00	6.714E+00	8.82
CD-109	88.03	1459	3.72*	6.145E+00	3.082E+01	3.123E+01	12.38
SN-126	64.28	-----	9.60	3.765E+00	-----	Line Not Found	-----
	86.94	1459	8.90	6.145E+00	1.288E+01	1.288E+01	42.30
	87.57	1459	37.00*	6.145E+00	3.099E+00	3.099E+00	12.38
BA-137M	661.65	2243	89.98*	2.301E+00	5.231E+00	5.234E+00	7.58
CS-137	661.65	2243	85.12*	2.301E+00	5.530E+00	5.533E+00	7.60
TL-208	277.35	-----	6.80	4.511E+00	-----	Line Not Found	-----
	510.84	56	21.60	2.842E+00	4.407E-01	4.407E-01	127.99
	583.14	150	84.20*	2.553E+00	3.375E-01	3.375E-01	44.47
	860.37	-----	12.46	1.837E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	4.857E+00	-----	Line Not Found	-----
	351.07	221	12.94*	3.788E+00	2.176E+00	2.176E+00	29.49
PB-212	74.81	225	10.70	5.073E+00	1.998E+00	1.998E+00	31.26
	77.11	276	18.00	5.300E+00	1.396E+00	1.396E+00	33.22
	87.30	1459	8.00	6.145E+00	1.433E+01	1.433E+01	15.91
	238.63	425	44.60*	5.019E+00	9.169E-01	9.169E-01	22.44
	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
PO-212	74.81	225	10.70	5.073E+00	1.998E+00	1.998E+00	31.26
	77.11	276	18.00	5.300E+00	1.396E+00	1.396E+00	33.22
	87.30	1459	8.00	6.145E+00	1.433E+01	1.433E+01	15.91
	115.19	-----	0.60	6.866E+00	-----	Line Not Found	-----
	238.63	425	44.60*	5.019E+00	9.169E-01	9.169E-01	22.44
	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
BI-214	609.31	127	46.30*	2.464E+00	5.371E-01	5.371E-01	38.06
	1120.29	-----	15.10	1.456E+00	-----	Line Not Found	-----
	1764.49	35	15.80	1.029E+00	1.045E+00	1.045E+00	42.85
PO-216	74.81	225	10.70	5.073E+00	1.998E+00	1.998E+00	31.26
	77.11	276	18.00	5.300E+00	1.396E+00	1.396E+00	33.22



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	87.30	1459	8.00	6.145E+00	1.433E+01	1.433E+01	15.91
	238.63	425	44.60*	5.019E+00	9.169E-01	9.169E-01	22.44
	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
RA-226	609.31	127	46.30*	2.464E+00	5.371E-01	5.371E-01	38.06
	1120.29	-----	15.10	1.456E+00	-----	Line Not Found	-----
	1764.49	35	15.80	1.029E+00	1.045E+00	1.045E+00	42.85
AC-228	338.32	81	11.40	3.899E+00	8.761E-01	8.761E-01	73.69
	911.07	99	27.70*	1.745E+00	9.877E-01	9.877E-01	52.23
	969.11	60	16.60	1.653E+00	1.050E+00	1.050E+00	67.09
RA-228	338.32	81	11.40	3.899E+00	8.761E-01	8.761E-01	73.69
	911.07	99	27.70*	1.745E+00	9.877E-01	9.877E-01	52.23
	969.11	60	16.60	1.653E+00	1.050E+00	1.050E+00	67.09
TH-228	74.81	225	10.70	5.073E+00	1.998E+00	2.015E+00	29.85
	77.11	276	18.00	5.300E+00	1.396E+00	1.408E+00	33.22
	87.30	1459	8.00	6.145E+00	1.433E+01	1.446E+01	12.38
	238.63	425	44.60*	5.019E+00	9.169E-01	9.249E-01	22.44
	300.09	-----	3.41	4.261E+00	-----	Line Not Found	-----
TH-230	609.31	127	46.30*	2.464E+00	5.371E-01	5.371E-01	38.06
	1120.29	-----	15.10	1.456E+00	-----	Line Not Found	-----
	1764.49	35	15.80	1.029E+00	1.045E+00	1.045E+00	42.85
TH-232	338.32	81	11.40	3.899E+00	8.761E-01	8.761E-01	61.66
	911.07	99	27.70*	1.745E+00	9.877E-01	9.877E-01	52.23
	969.11	60	16.60	1.653E+00	1.050E+00	1.050E+00	67.09
U-234	609.31	127	46.30*	2.464E+00	5.371E-01	5.371E-01	38.06
	1120.29	-----	15.10	1.456E+00	-----	Line Not Found	-----
	1764.49	35	15.80	1.029E+00	1.045E+00	1.045E+00	42.85
AM-241	59.54	3014	35.90*	3.068E+00	1.322E+01	1.322E+01	10.17
AM-243	74.67	225	66.00*	5.073E+00	3.239E-01	3.239E-01	29.83
	86.72	1459	0.34	6.145E+00	3.412E+02	3.412E+02	12.38
	117.66	-----	0.55	6.871E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.659E+00	-----	Line Not Found	-----
ANH-511	511.00	56	100.00*	2.842E+00	9.520E-02	9.520E-02	127.72

Flag: "\*" = Keyline

Total number of lines in spectrum 20  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 20 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.02	2.341E-01	2.394E-01	0.729E-01	30.45	
CO-60	5.27Y	1.00	6.693E+00	6.714E+00	0.592E+00	8.82	
CD-109	464.00D	1.01	3.082E+01	3.123E+01	0.386E+01	12.38	
SN-126	1.00E+05Y	1.00	3.099E+00	3.099E+00	0.383E+00	12.38	
BA-137M	30.17Y	1.00	5.231E+00	5.234E+00	0.397E+00	7.58	
CS-137	30.17Y	1.00	5.530E+00	5.533E+00	0.421E+00	7.60	
TL-208	1.41E+10Y	1.00	3.375E-01	3.375E-01	1.501E-01	44.47	
BI-211	7.04E+08Y	1.00	2.176E+00	2.176E+00	0.642E+00	29.49	
PB-212	1.41E+10Y	1.00	9.169E-01	9.169E-01	2.057E-01	22.44	
PO-212	1.41E+10Y	1.00	9.169E-01	9.169E-01	2.057E-01	22.44	
BI-214	1600.00Y	1.00	5.371E-01	5.371E-01	2.044E-01	38.06	
PO-216	1.41E+10Y	1.00	9.169E-01	9.169E-01	2.057E-01	22.44	
RA-226	1600.00Y	1.00	5.371E-01	5.371E-01	2.044E-01	38.06	
AC-228	1.41E+10Y	1.00	9.877E-01	9.877E-01	5.159E-01	52.23	
RA-228	1.41E+10Y	1.00	9.877E-01	9.877E-01	5.159E-01	52.23	
TH-228	1.91Y	1.01	9.169E-01	9.249E-01	2.075E-01	22.44	
TH-230	4.47E+09Y	1.00	5.371E-01	5.371E-01	2.044E-01	38.06	
TH-232	1.41E+10Y	1.00	9.877E-01	9.877E-01	5.159E-01	52.23	
U-234	4.47E+09Y	1.00	5.371E-01	5.371E-01	2.044E-01	38.06	
AM-241	432.20Y	1.00	1.322E+01	1.322E+01	0.134E+01	10.17	
AM-243	7380.00Y	1.00	3.239E-01	3.239E-01	0.966E-01	29.83	
ANH-511	1.00E+09Y	1.00	9.520E-02	9.520E-02	12.16E-02	127.72	
Total Activity :			7.653E+01	7.698E+01			

Grand Total Activity : 7.653E+01 7.698E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G1202028550

Page : 4  
Acquisition date : 9-FEB-2010 17:44:57

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.78	99	275	1.36	185.38	182	9	2.75E-02	66.9	6.39E+00	T
0	185.73	78	252	1.28	371.13	367	9	2.17E-02	78.4	5.89E+00	T
0	208.95	106	238	1.53	417.54	413	9	2.94E-02	56.1	5.48E+00	T

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202028550.CNF;1
* Acquisition date   : 9-FEB-2010 17:44:57.  Detector SN#      :
* Detector ID        : GAM19                      Sensitivity      : 5.00000
* Geometry           : CAN                        Energy tolerance: 1.50000
* Elapsed live time  : 0 01:00:00.00             Abundance limit  : 75.00000
* Elapsed real time  : 0 01:00:01.50             Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 1-FEB-2010 00:00:00.  Nuclide Library : SOLID
* Sample ID          : G1202028550           Analyst initials: MJH1
* Batch Number       : 947037                Sample Quantity  : 1.55440E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	2.394E-01	7.288E-02	6.324E-02	3.774E-03	3.785
CO-60	6.714E+00	5.920E-01	7.896E-02	5.819E-03	85.029
CD-109	3.123E+01	3.864E+00	2.178E+00	1.951E-01	14.333
SN-126	3.099E+00	3.835E-01	2.171E-01	1.937E-02	14.272
BA-137M	5.234E+00	3.968E-01	1.098E-01	6.392E-03	47.685
CS-137	5.533E+00	4.205E-01	1.160E-01	6.785E-03	47.685
TL-208	3.375E-01	1.501E-01	1.051E-01	7.145E-03	3.212
BI-211	2.176E+00	6.419E-01	6.041E-01	3.857E-02	3.602
PB-212	9.169E-01	2.057E-01	1.977E-01	1.427E-02	4.637
PO-212	9.169E-01	2.057E-01	1.977E-01	1.427E-02	4.637
BI-214	5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
PO-216	9.169E-01	2.057E-01	1.977E-01	1.427E-02	4.637
RA-226	5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
AC-228	9.877E-01	5.159E-01	5.252E-01	5.941E-02	1.881
RA-228	9.877E-01	5.159E-01	5.252E-01	5.941E-02	1.881
TH-228	9.249E-01	2.075E-01	1.995E-01	1.440E-02	4.637
TH-230	5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
TH-232	9.877E-01	5.159E-01	5.252E-01	5.941E-02	1.881

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-234	5.371E-01	2.044E-01	2.121E-01	1.668E-02	2.532
AM-241	1.322E+01	1.344E+00	4.946E-01	4.072E-02	26.722
AM-243	3.239E-01	9.661E-02	1.361E-01	1.080E-02	2.379
ANH-511	9.520E-02	1.216E-01	8.934E-02	5.272E-03	1.066

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.295E-01		6.151E-01	1.006E+00	6.830E-02	-0.129
NA-22	1.469E-02		4.924E-02	8.521E-02	5.684E-03	0.172
NA-24	4.147E-04		3.422E-04	Half-Life too short		
AL-26	-1.707E-02		4.219E-02	6.190E-02	3.614E-03	-0.276
K-40	5.971E-01		5.680E-01	1.085E+00	8.078E-02	0.551
TI-44	2.576E-01	+	8.557E-02	1.066E-01	8.702E-03	2.416
SC-46	-7.034E-02		8.778E-02	1.329E-01	1.155E-02	-0.529
V-48	9.007E-02		1.275E-01	2.149E-01	1.728E-02	0.419
CR-51	-5.383E-01		5.631E-01	8.970E-01	5.805E-02	-0.600
MN-52	9.644E-03		1.281E-01	2.144E-01	1.546E-02	0.045
MN-54	7.404E-03		7.795E-02	1.270E-01	1.010E-02	0.058
CO-56	-7.267E-03		7.667E-02	1.231E-01	9.984E-03	-0.059
CO-58	-4.955E-02		7.791E-02	1.200E-01	9.193E-03	-0.413
FE-59	-3.282E-02		1.689E-01	2.784E-01	2.089E-02	-0.118
ZN-65	-1.288E-02		1.742E-01	2.896E-01	1.852E-02	-0.044
GE-68	-4.662E-01		2.507E+00	4.138E+00	2.863E-01	-0.113
AS-73	4.475E-01		2.036E+00	2.977E+00	2.202E-01	0.150
AS-74	1.596E-02		1.302E-01	2.156E-01	1.277E-02	0.074
SE-75	-9.221E-02		7.468E-02	1.186E-01	6.895E-03	-0.778
BR-77	-1.134E+00		3.128E+00	5.042E+00	2.981E-01	-0.225
SR-82	-4.542E-01		6.075E-01	9.250E-01	6.660E-02	-0.491
RB-83	-2.668E-02		1.256E-01	2.045E-01	1.209E-02	-0.130
RB-84	4.094E-02		1.374E-01	2.266E-01	1.945E-02	0.181
KR-85	1.226E+01		1.524E+01	2.322E+01	1.371E+00	0.528
SR-85	5.877E-02		7.305E-02	1.113E-01	6.574E-03	0.528
RB-86	-1.923E-01		1.283E+00	2.124E+00	1.472E-01	-0.091
Y-88	-6.666E-03		4.035E-02	6.280E-02	3.585E-03	-0.106
ZR-88	1.089E-02		5.420E-02	9.128E-02	5.083E-03	0.119
Y-91	1.346E+01		1.869E+01	3.394E+01	1.982E+00	0.397
NB-94	5.481E-02		5.870E-02	1.023E-01	6.441E-03	0.536
NB-95	4.154E-02		7.578E-02	1.278E-01	9.032E-03	0.325
NB-95M	2.547E-01		2.295E-01	3.415E-01	2.530E-02	0.746
ZR-95	1.831E-02		1.252E-01	2.058E-01	1.648E-02	0.089
NB-97	1.182E-03		2.208E-04	Half-Life too short		
ZR-97	3.796E-03		3.397E-03	Half-Life too short		
MO-99	-1.783E+00		4.412E+00	6.937E+00	9.853E-01	-0.257
TC-99M	1.291E+02		6.527E+02	Half-Life too short		
RH-101	4.018E-02		5.559E-02	9.200E-02	4.991E-03	0.437
RH-102	2.778E-02		6.218E-02	1.053E-01	6.148E-03	0.264

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RU-103	-1.570E-02		6.849E-02	1.115E-01	1.414E-02	-0.141
RH-106	-6.985E-02		5.945E-01	9.659E-01	1.138E-01	-0.072
RU-106	-6.985E-02		5.944E-01	9.659E-01	5.696E-02	-0.072
AG-108M	-1.345E-02		6.505E-02	1.068E-01	6.652E-03	-0.126
AG-110M	1.732E-01		8.128E-02	1.354E-01	8.400E-03	1.279
IN-111	-7.138E-01		4.313E-01	6.313E-01	3.589E-02	-1.131
IN-113M	2.914E-02		8.113E-02	1.377E-01	8.216E-03	0.212
SN-113	2.914E-02		8.113E-02	1.377E-01	8.216E-03	0.212
IN-114M	3.966E-02		3.023E-01	4.287E-01	2.304E-02	0.093
CD-115	3.750E-01		3.015E+00	5.008E+00	2.965E-01	0.075
SN-117M	-1.481E-02		6.184E-02	9.890E-02	5.264E-03	-0.150
SB-122	-1.462E+00		8.186E-01	1.185E+00	7.032E-02	-1.234
I-123	-7.948E-04		1.342E-03	Half-Life too short		
TE-123M	-1.254E-02		4.236E-02	6.754E-02	3.647E-03	-0.186
I-124	-2.026E-01		4.846E-01	6.593E-01	3.902E-02	-0.307
SB-124	-5.405E-02		9.122E-02	1.270E-01	8.701E-03	-0.425
SB-125	3.014E-02		1.866E-01	3.126E-01	1.861E-02	0.096
TE-125M	-2.491E+00		1.249E+01	2.019E+01	1.782E+00	-0.123
I-126	-3.354E-02		2.583E-01	3.596E-01	2.113E-02	-0.093
SB-126	-4.585E-02		1.886E-01	3.015E-01	1.963E-02	-0.152
SB-127	-6.091E-01		7.917E-01	1.212E+00	9.302E-02	-0.503
XE-127	-4.992E-02		7.723E-02	1.102E-01	6.013E-03	-0.453
I-131	-6.114E-02		1.171E-01	1.898E-01	1.203E-02	-0.322
TE-132	-4.330E-02		3.171E-01	5.046E-01	6.676E-02	-0.086
BA-133	2.362E-03		8.582E-02	1.251E-01	1.441E-02	0.019
I-133	-9.194E-07		3.641E-05	Half-Life too short		
CS-134	6.648E-02		9.243E-02	1.574E-01	1.184E-02	0.422
CS-135	2.068E-01		2.745E-01	4.767E-01	3.638E-02	0.434
I-135	-3.403E+02		3.122E+02	Half-Life too short		
CS-136	-1.378E-01		1.507E-01	2.335E-01	1.804E-02	-0.590
CE-139	3.729E-02		4.557E-02	7.636E-02	3.986E-03	0.488
BA-140	-8.031E-02		3.530E-01	5.716E-01	1.860E-01	-0.140
LA-140	-3.774E-04		7.598E-02	1.246E-01	8.428E-03	-0.003
CE-141	-3.450E-02		8.903E-02	1.411E-01	8.125E-03	-0.245
CE-143	2.325E+01		1.085E+01	1.791E+01	3.693E+00	1.298
CE-144	-4.599E-01		3.304E-01	4.924E-01	6.975E-02	-0.934
PM-144	-3.025E-02		6.175E-02	9.691E-02	6.035E-03	-0.312
PR-144	-2.043E+00		4.170E+00	6.545E+00	4.075E-01	-0.312
PM-146	-8.257E-02		9.764E-02	1.546E-01	1.332E-02	-0.534
ND-147	2.913E-01		7.514E-01	1.266E+00	1.719E-01	0.230
PM-149	8.644E+00		2.166E+01	3.706E+01	5.246E+00	0.233
EU-152	1.601E-01		2.226E-01	3.226E-01	2.100E-02	0.496
GD-153	1.328E-01		1.213E-01	1.850E-01	1.439E-02	0.718
EU-154	6.229E-02		1.353E-01	2.393E-01	2.368E-02	0.260
EU-155	3.101E-02		1.532E-01	2.525E-01	1.816E-02	0.123
TB-160	-3.369E-02		2.874E-01	4.597E-01	3.933E-02	-0.073
HO-166M	7.881E-02		1.138E-01	1.947E-01	1.247E-02	0.405
TM-171	-4.810E-01		4.487E+01	7.135E+01	5.424E+00	-0.007

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	-3.937E-02		4.288E-02	6.857E-02	3.989E-03	-0.574
LU-177	2.097E+00	+	1.181E+00	1.693E+00	9.293E-02	1.239
LU-177M	1.105E-02		3.321E-01	5.535E-01	3.129E-02	0.020
HF-181	-7.295E-02		7.755E-02	1.211E-01	7.084E-03	-0.603
W-181	-2.100E-01		6.140E-01	8.722E-01	6.601E-02	-0.241
TA-182	-1.400E-01		2.168E-01	3.307E-01	1.994E-02	-0.423
RE-183	-1.091E-01		1.614E-01	2.524E-01	1.330E-02	-0.432
RE-184	8.555E-02		4.162E-01	6.716E-01	3.838E-02	0.127
OS-185	-1.591E-02		7.333E-02	1.180E-01	6.909E-03	-0.135
RE-188	8.870E-02		2.488E-01	4.092E-01	2.199E-02	0.217
W-188	-2.357E+01		1.328E+01	2.050E+01	1.190E+00	-1.150
IR-192	-2.988E-02		5.781E-02	9.445E-02	5.518E-03	-0.316
AU-195	9.522E-02		3.502E-01	5.367E-01	4.096E-02	0.177
TL-200	-3.246E-06		7.141E-06	Half-Life too short		
TL-201	5.073E-01		2.549E+00	4.156E+00	2.172E-01	0.122
TL-202	1.357E-02		9.384E-02	1.570E-01	9.018E-03	0.086
HG-203	2.195E-02		6.576E-02	1.123E-01	6.907E-03	0.195
BI-207	-3.666E-02		1.146E-01	1.887E-01	1.340E-02	-0.194
TL-207	-6.569E-01		1.218E+00	1.981E+00	3.272E-01	-0.332
PO-209	-6.937E+00		1.700E+01	2.657E+01	2.336E+00	-0.261
BI-210	-7.093E+00		6.741E+00	1.078E+01	8.216E-01	-0.658
PB-210	-7.093E+00		6.741E+00	1.078E+01	8.216E-01	-0.658
PO-210	-7.093E+00		6.735E+00	1.078E+01	7.025E-01	-0.658
PB-211	2.244E-02		1.748E+00	2.911E+00	1.814E+00	0.008
BI-212	6.294E-01		5.561E-01	9.727E-01	8.097E-02	0.647
PB-214	7.571E-01	+	2.268E-01	3.082E-01	2.541E-02	2.457
PO-214	7.571E-01	+	2.268E-01	3.082E-01	2.541E-02	2.457
PO-215	-6.569E-01		1.218E+00	1.981E+00	3.272E-01	-0.332
PO-218	7.571E-01	+	2.268E-01	3.082E-01	2.541E-02	2.457
RN-219	-1.259E-01		7.534E-01	1.243E+00	1.681E-01	-0.101
RN-220	-8.558E+00		5.018E+01	8.170E+01	4.848E+00	-0.105
RA-223	-6.569E-01		1.218E+00	1.981E+00	3.272E-01	-0.332
RA-224	5.862E+00		1.585E+00	2.581E+00	1.462E-01	2.271
AC-227	-4.051E-01		6.911E-01	1.065E+00	1.484E-01	-0.380
TH-227	-4.051E-01		6.922E-01	1.065E+00	1.798E-01	-0.380
TH-229	-1.549E-01		8.321E-01	1.327E+00	7.160E-02	-0.117
PA-231	-1.272E+00		2.759E+00	4.520E+00	6.229E-01	-0.281
TH-231	-6.569E-01		1.218E+00	1.981E+00	3.272E-01	-0.332
U-231	-5.101E-01		5.971E-01	8.074E-01	6.413E-02	-0.632
PA-233	7.532E-02		1.147E-01	1.984E-01	1.225E-02	0.380
PA-234	1.074E-01		7.674E-01	1.246E+00	2.326E-01	0.086
PA-234M	4.859E+00		9.718E+00	1.685E+01	1.569E+00	0.288
TH-234	-2.025E+00		2.318E+00	3.179E+00	5.562E-01	-0.637
U-235	6.613E-02		3.365E-01	5.473E-01	8.873E-02	0.121
NP-236	-4.815E-02		1.222E-01	1.937E-01	1.026E-02	-0.249
NP-237	6.936E+00		1.672E+00	1.167E+00	2.618E-01	5.944
U-238	-2.025E+00		2.318E+00	3.179E+00	5.562E-01	-0.637
NP-239	2.890E-01		3.256E-01	4.894E-01	3.061E-02	0.590

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	8.257E-02		1.408E-01	2.359E-01	1.696E-02	0.350
AM-246	-6.070E-02		2.904E-01	4.784E-01	3.301E-02	-0.127
CM-247	-1.183E-02		6.773E-02	1.117E-01	6.265E-03	-0.106
CF-249	1.223E-02		7.592E-02	1.276E-01	7.127E-03	0.096
CF-251	4.375E-02		2.055E-01	3.348E-01	1.769E-02	0.131



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202028550          *
* Acquisition date   : 9-FEB-2010 17:44:57 Detector SN#      :              *
* Detector ID        : GAM19 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 01:00:01.50 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202028550 Analyst initials: MJH1          *
* Batch Number       : 947037 Sample Quantity : 1.5544E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight  : 0.00000          *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope      :              *
* LCS DPM             : 0.000 LCS Isotope      :              *
* LCSD DPM            : 0.000 LCSD Isotope     :              *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
CO-57	2.394E-01	7.143E-02	3.408E-02	3.644E-02
CO-60	6.714E+00	5.802E-01	3.995E-02	2.960E-01
CD-109	3.123E+01	3.787E+00	1.183E+00	1.932E+00
SN-126	3.099E+00	3.758E-01	1.179E-01	1.917E-01
BA-137M	5.234E+00	3.889E-01	5.661E-02	1.984E-01
CS-137	5.533E+00	4.121E-01	5.984E-02	2.103E-01
TL-208	3.375E-01	1.471E-01	5.437E-02	7.504E-02
BI-211	2.176E+00	6.291E-01	3.169E-01	3.210E-01
PB-212	9.169E-01	2.016E-01	1.048E-01	1.029E-01
PO-212	9.169E-01	2.016E-01	1.048E-01	1.029E-01
BI-214	5.371E-01	2.003E-01	1.096E-01	1.022E-01
PO-216	9.169E-01	2.016E-01	1.048E-01	1.029E-01
RA-226	5.371E-01	2.003E-01	1.096E-01	1.022E-01
AC-228	9.877E-01	5.056E-01	2.685E-01	2.579E-01
RA-228	9.877E-01	5.056E-01	2.685E-01	2.579E-01
TH-228	9.249E-01	2.034E-01	1.057E-01	1.038E-01
TH-230	5.371E-01	2.003E-01	1.096E-01	1.022E-01
TH-232	9.877E-01	5.056E-01	2.685E-01	2.579E-01
U-234	5.371E-01	2.003E-01	1.096E-01	1.022E-01
AM-241	1.322E+01	1.318E+00	2.712E-01	6.722E-01
AM-243	3.239E-01	9.468E-02	7.424E-02	4.830E-02
ANH-511	9.520E-02	1.192E-01	4.640E-02	6.079E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-1.295E-01	6.028E-01	5.235E-01	3.076E-01 NOT IDENT.
NA-22	1.469E-02	4.825E-02	4.316E-02	2.462E-02 NOT IDENT.
NA-24	4.147E+02	6.707E+02	0.000E+00	3.422E+02 SHORT HLIF
AL-26	-1.707E-02	4.135E-02	3.104E-02	2.110E-02 NOT IDENT.
K-40	5.971E-01	5.567E-01	5.473E-01	2.840E-01 NOT IDENT.

TI-44	2.576E-01	8.386E-02	5.807E-02	4.278E-02	FAIL ABUN
SC-46	-7.034E-02	8.603E-02	6.800E-02	4.389E-02	NOT IDENT.
V-48	9.007E-02	1.249E-01	1.096E-01	6.374E-02	NOT IDENT.
CR-51	-5.383E-01	5.518E-01	4.716E-01	2.816E-01	NOT IDENT.
MN-52	9.644E-03	1.255E-01	1.082E-01	6.405E-02	FAIL ABUN
MN-54	7.404E-03	7.639E-02	6.508E-02	3.898E-02	NOT IDENT.
CO-56	-7.267E-03	7.514E-02	6.304E-02	3.833E-02	FAIL ABUN
CO-58	-4.955E-02	7.636E-02	6.153E-02	3.896E-02	NOT IDENT.
FE-59	-3.282E-02	1.655E-01	1.416E-01	8.446E-02	NOT IDENT.
ZN-65	-1.288E-02	1.708E-01	1.472E-01	8.712E-02	NOT IDENT.
GE-68	-4.662E-01	2.457E+00	2.106E+00	1.254E+00	NOT IDENT.
AS-73	4.475E-01	1.995E+00	1.637E+00	1.018E+00	NOT IDENT.
AS-74	1.596E-02	1.276E-01	1.115E-01	6.511E-02	NOT IDENT.
SE-75	-9.221E-02	7.318E-02	6.266E-02	3.734E-02	FAIL ABUN
BR-77	-1.134E+00	3.065E+00	2.617E+00	1.564E+00	FAIL ABUN
SR-82	-4.542E-01	5.954E-01	4.750E-01	3.038E-01	NOT IDENT.
RB-83	-2.668E-02	1.231E-01	1.062E-01	6.282E-02	NOT IDENT.
RB-84	4.094E-02	1.346E-01	1.159E-01	6.870E-02	NOT IDENT.
KR-85	1.226E+01	1.493E+01	1.206E+01	7.619E+00	NOT IDENT.
SR-85	5.877E-02	7.159E-02	5.781E-02	3.652E-02	NOT IDENT.
RB-86	-1.923E-01	1.258E+00	1.081E+00	6.417E-01	NOT IDENT.
Y-88	-6.666E-03	3.955E-02	3.148E-02	2.018E-02	NOT IDENT.
ZR-88	1.089E-02	5.312E-02	4.774E-02	2.710E-02	NOT IDENT.
Y-91	1.346E+01	1.832E+01	1.722E+01	9.346E+00	NOT IDENT.
NB-94	5.481E-02	5.752E-02	5.266E-02	2.935E-02	NOT IDENT.
NB-95	4.154E-02	7.427E-02	6.566E-02	3.789E-02	NOT IDENT.
NB-95M	2.547E-01	2.249E-01	1.810E-01	1.147E-01	NOT IDENT.
ZR-95	1.831E-02	1.227E-01	1.058E-01	6.262E-02	NOT IDENT.
NB-97	1.182E+03	4.327E+02	0.000E+00	2.208E+02	SHORT HLIF
ZR-97	3.796E+03	6.659E+03	0.000E+00	3.397E+03	SHORT HLIF
MO-99	-1.783E+00	4.324E+00	3.567E+00	2.206E+00	NOT IDENT.
TC-99M	1.291E+08	1.279E+09	0.000E+00	6.527E+08	SHORT HLIF
RH-101	4.018E-02	5.448E-02	4.898E-02	2.780E-02	NOT IDENT.
RH-102	2.778E-02	6.094E-02	5.481E-02	3.109E-02	NOT IDENT.
RU-103	-1.570E-02	6.712E-02	5.797E-02	3.425E-02	FAIL ABUN
RH-106	-6.985E-02	5.826E-01	4.990E-01	2.972E-01	FAIL ABUN
RU-106	-6.985E-02	5.825E-01	4.990E-01	2.972E-01	FAIL ABUN
AG-108M	-1.345E-02	6.375E-02	5.571E-02	3.252E-02	NOT IDENT.
AG-110M	1.732E-01	7.966E-02	6.983E-02	4.064E-02	NOT IDENT.
IN-111	-7.138E-01	4.227E-01	3.342E-01	2.157E-01	NOT IDENT.
IN-113M	2.914E-02	7.951E-02	7.202E-02	4.056E-02	NOT IDENT.
SN-113	2.914E-02	7.951E-02	7.202E-02	4.056E-02	NOT IDENT.
IN-114M	3.966E-02	2.963E-01	2.284E-01	1.512E-01	NOT IDENT.
CD-115	3.750E-01	2.954E+00	2.599E+00	1.507E+00	NOT IDENT.
SN-117M	-1.481E-02	6.060E-02	5.294E-02	3.092E-02	NOT IDENT.
SB-122	-1.462E+00	8.022E-01	6.136E-01	4.093E-01	NOT IDENT.
I-123	-7.948E+02	2.631E+03	0.000E+00	1.342E+03	SHORT HLIF
TE-123M	-1.254E-02	4.151E-02	3.615E-02	2.118E-02	NOT IDENT.
I-124	-2.026E-01	4.749E-01	3.409E-01	2.423E-01	NOT IDENT.
SB-124	-5.405E-02	8.939E-02	6.384E-02	4.561E-02	FAIL ABUN
SB-125	3.014E-02	1.828E-01	1.631E-01	9.328E-02	NOT IDENT.
TE-125M	-2.491E+00	1.224E+01	1.091E+01	6.247E+00	NOT IDENT.
I-126	-3.354E-02	2.531E-01	1.854E-01	1.291E-01	NOT IDENT.
SB-126	-4.585E-02	1.848E-01	1.551E-01	9.430E-02	NOT IDENT.
SB-127	-6.091E-01	7.759E-01	6.243E-01	3.958E-01	NOT IDENT.
XE-127	-4.992E-02	7.568E-02	5.863E-02	3.861E-02	NOT IDENT.
I-131	-6.114E-02	1.148E-01	9.947E-02	5.855E-02	NOT IDENT.
TE-132	-4.330E-02	3.108E-01	2.676E-01	1.586E-01	NOT IDENT.
BA-133	2.362E-03	8.410E-02	6.557E-02	4.291E-02	NOT IDENT.
I-133	-9.194E-01	7.137E+01	0.000E+00	3.641E+01	SHORT HLIF
CS-134	6.648E-02	9.058E-02	8.078E-02	4.621E-02	NOT IDENT.
CS-135	2.068E-01	2.690E-01	2.518E-01	1.372E-01	NOT IDENT.
I-135	-3.403E+08	6.118E+08	0.000E+00	3.122E+08	SHORT HLIF
CS-136	-1.378E-01	1.477E-01	1.189E-01	7.535E-02	NOT IDENT.
CE-139	3.729E-02	4.466E-02	4.083E-02	2.278E-02	NOT IDENT.
BA-140	-8.031E-02	3.459E-01	2.965E-01	1.765E-01	NOT IDENT.
LA-140	-3.774E-04	7.446E-02	6.270E-02	3.799E-02	NOT IDENT.
CE-141	-3.450E-02	8.725E-02	7.570E-02	4.452E-02	NOT IDENT.
CE-143	2.325E+01	1.063E+01	9.437E+00	5.426E+00	FAIL ABUN
CE-144	-4.599E-01	3.238E-01	2.647E-01	1.652E-01	NOT IDENT.
PM-144	-3.025E-02	6.052E-02	4.991E-02	3.088E-02	NOT IDENT.
PR-144	-2.043E+00	4.087E+00	3.371E+00	2.085E+00	NOT IDENT.
PM-146	-8.257E-02	9.569E-02	8.055E-02	4.882E-02	NOT IDENT.
ND-147	2.913E-01	7.364E-01	6.570E-01	3.757E-01	NOT IDENT.
PM-149	8.644E+00	2.123E+01	1.954E+01	1.083E+01	NOT IDENT.
EU-152	1.601E-01	2.181E-01	1.693E-01	1.113E-01	FAIL ABUN
GD-153	1.328E-01	1.189E-01	1.003E-01	6.064E-02	NOT IDENT.
EU-154	6.229E-02	1.326E-01	1.212E-01	6.764E-02	FAIL ABUN

EU-155	3.101E-02	1.501E-01	1.365E-01	7.661E-02	FAIL ABUN
TB-160	-3.369E-02	2.817E-01	2.353E-01	1.437E-01	FAIL ABUN
HO-166M	7.881E-02	1.115E-01	1.002E-01	5.690E-02	FAIL ABUN
TM-171	-4.810E-01	4.397E+01	3.902E+01	2.243E+01	FAIL ABUN
LU-176	-3.937E-02	4.202E-02	3.609E-02	2.144E-02	FAIL ABUN
LU-177	2.097E+00	1.158E+00	8.999E-01	5.907E-01	FAIL ABUN
LU-177M	1.105E-02	3.255E-01	2.890E-01	1.661E-01	FAIL ABUN
HF-181	-7.295E-02	7.600E-02	6.297E-02	3.877E-02	NOT IDENT.
W-181	-2.100E-01	6.017E-01	4.772E-01	3.070E-01	NOT IDENT.
TA-182	-1.400E-01	2.124E-01	1.677E-01	1.084E-01	NOT IDENT.
RE-183	-1.091E-01	1.582E-01	1.350E-01	8.072E-02	FAIL ABUN
RE-184	8.555E-02	4.078E-01	3.553E-01	2.081E-01	FAIL ABUN
OS-185	-1.591E-02	7.187E-02	6.089E-02	3.667E-02	FAIL ABUN
RE-188	8.870E-02	2.438E-01	2.192E-01	1.244E-01	NOT IDENT.
W-188	-2.357E+01	1.301E+01	1.080E+01	6.640E+00	NOT IDENT.
IR-192	-2.988E-02	5.665E-02	4.967E-02	2.890E-02	NOT IDENT.
AU-195	9.522E-02	3.432E-01	2.907E-01	1.751E-01	FAIL ABUN
TL-200	-3.246E+00	1.400E+01	0.000E+00	7.141E+00	SHORT HLIF
TL-201	5.073E-01	2.498E+00	2.222E+00	1.274E+00	NOT IDENT.
TL-202	1.357E-02	9.196E-02	8.188E-02	4.692E-02	NOT IDENT.
HG-203	2.195E-02	6.445E-02	5.927E-02	3.288E-02	NOT IDENT.
BI-207	-3.666E-02	1.123E-01	9.607E-02	5.731E-02	FAIL ABUN
TL-207	-6.569E-01	1.193E+00	1.041E+00	6.088E-01	FAIL ABUN
PO-209	-6.937E+00	1.666E+01	1.359E+01	8.501E+00	NOT IDENT.
BI-210	-7.093E+00	6.606E+00	5.946E+00	3.371E+00	NOT IDENT.
PB-210	-7.093E+00	6.606E+00	5.946E+00	3.371E+00	NOT IDENT.
PO-210	-7.093E+00	6.601E+00	5.946E+00	3.368E+00	NOT IDENT.
PB-211	2.244E-02	1.713E+00	1.521E+00	8.738E-01	NOT IDENT.
BI-212	6.294E-01	5.450E-01	5.004E-01	2.781E-01	NOT IDENT.
PB-214	7.571E-01	2.222E-01	1.616E-01	1.134E-01	FAIL ABUN
PO-214	7.571E-01	2.222E-01	1.616E-01	1.134E-01	FAIL ABUN
PO-215	-6.569E-01	1.193E+00	1.041E+00	6.088E-01	FAIL ABUN
PO-218	7.571E-01	2.222E-01	1.616E-01	1.134E-01	FAIL ABUN
RN-219	-1.259E-01	7.384E-01	6.496E-01	3.767E-01	NOT IDENT.
RN-220	-8.558E+00	4.918E+01	4.235E+01	2.509E+01	NOT IDENT.
RA-223	-6.569E-01	1.193E+00	1.041E+00	6.088E-01	FAIL ABUN
RA-224	5.862E+00	1.553E+00	1.367E+00	7.925E-01	NOT IDENT.
AC-227	-4.051E-01	6.773E-01	5.633E-01	3.456E-01	NOT IDENT.
TH-227	-4.051E-01	6.783E-01	5.633E-01	3.461E-01	FAIL ABUN
TH-229	-1.549E-01	8.154E-01	7.068E-01	4.160E-01	FAIL ABUN
PA-231	-1.272E+00	2.704E+00	2.384E+00	1.380E+00	NOT IDENT.
TH-231	-6.569E-01	1.193E+00	1.041E+00	6.088E-01	FAIL ABUN
U-231	-5.101E-01	5.851E-01	4.376E-01	2.985E-01	FAIL ABUN
PA-233	7.532E-02	1.124E-01	1.044E-01	5.735E-02	FAIL ABUN
PA-234	1.074E-01	7.521E-01	6.363E-01	3.837E-01	FAIL ABUN
PA-234M	4.859E+00	9.524E+00	8.592E+00	4.859E+00	NOT IDENT.
TH-234	-2.025E+00	2.271E+00	1.741E+00	1.159E+00	FAIL ABUN
U-235	6.613E-02	3.298E-01	2.937E-01	1.683E-01	FAIL ABUN
NP-236	-4.815E-02	1.197E-01	1.037E-01	6.108E-02	NOT IDENT.
NP-237	6.936E+00	1.639E+00	6.340E-01	8.362E-01	NOT IDENT.
U-238	-2.025E+00	2.271E+00	1.741E+00	1.159E+00	FAIL ABUN
NP-239	2.890E-01	3.191E-01	2.640E-01	1.628E-01	FAIL ABUN
CM-243	8.257E-02	1.380E-01	1.276E-01	7.042E-02	FAIL ABUN
AM-246	-6.070E-02	2.846E-01	2.435E-01	1.452E-01	NOT IDENT.
CM-247	-1.183E-02	6.638E-02	5.838E-02	3.387E-02	NOT IDENT.
CF-249	1.223E-02	7.440E-02	6.676E-02	3.796E-02	NOT IDENT.
CF-251	4.375E-02	2.014E-01	1.788E-01	1.027E-01	NOT IDENT.

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*                               *
*      GEL Laboratories LLC      *
*      2040 SAVAGE ROAD         *
*      CHARLESTON ,SC 29417     *
*      GAMMA SPECTROSCOPY BACKGROUND REPORT *
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ENERGY	MDA COUNTS
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46.50	575.3168
46.50	575.3168
46.50	575.3168
48.70	559.3109
49.72	602.9156
51.35	704.7452
52.39	730.7090
52.97	698.8118
53.15	698.9561
53.44	719.5660
54.07	696.5467
56.28	710.8434
56.28	739.1542
57.37	807.7425
57.53	807.8834
57.53	807.8857
57.60	807.9453
57.98	588.8775
57.98	588.8775
59.32	589.7273
59.32	589.7273
59.40	589.7775
59.54	589.8664
59.72	589.9794
60.01	590.1619
61.10	384.1466
61.14	384.1622
61.30	384.2267
63.00	424.5082
63.29	424.6354
63.29	424.6354
63.58	426.3471
64.28	423.4812
65.12	415.9062
65.20	415.9398
65.20	415.9398
66.05	419.7403
66.72	416.8046
66.83	394.5602
66.91	391.6103
67.20	391.7230
67.20	391.7230
67.75	400.8893
67.85	389.9872
68.90	416.5688
68.90	416.5688
69.30	416.7332
69.67	411.9490
70.82	394.3151
70.82	394.3151
70.83	424.6519
72.80	422.2566
72.87	415.8873
72.87	415.8873
74.67	408.5836
74.81	408.6381
74.81	408.6381
74.81	408.6381
74.81	408.6381
74.81	408.6381
74.81	408.6381
74.97	434.7433
75.28	434.8692
75.70	435.0397
77.11	435.6092
77.11	435.6092

77.11	435.6092
77.11	435.6092
77.11	435.6092
77.11	435.6092
77.11	435.6092
78.38	432.4999
79.62	431.3779
79.80	431.4482
79.80	431.4482
80.11	436.4003
80.18	436.4268
80.30	436.4748
80.30	436.4748
80.57	472.0226
81.00	461.3265
81.07	461.3545
81.07	461.3545
81.07	461.3545
81.07	461.3545
82.60	407.5154
83.37	446.8207
83.78	446.9828
83.78	446.9828
83.78	446.9828
83.78	446.9828
84.21	456.5796
84.90	468.9844
85.43	474.0541
86.29	467.9316
86.50	472.8746
86.54	472.8907
86.59	472.9120
86.72	472.9655
86.79	472.9922
86.94	477.9148
87.30	478.0624
87.30	478.0624
87.30	478.0624
87.30	478.0624
87.30	478.0624
87.30	478.0624
87.57	478.1740
87.88	478.3001
88.03	478.3613
88.36	478.4963
88.47	478.5414
89.95	324.8425
91.11	325.1587
92.29	325.4797
92.38	325.5042
92.38	325.5042
93.35	244.3240
94.00	257.4926
94.67	273.9392
94.67	273.9403
94.90	298.4562
94.90	298.4562
94.90	298.4562
94.90	298.4562
95.87	284.0021
95.87	284.0021
96.73	266.2340
97.43	214.0879
98.44	243.9745
98.44	243.9754
98.88	260.4227
99.55	255.7869
99.55	255.7869
99.86	242.5457
100.00	243.5963
100.10	243.6163
103.18	260.6236
103.76	238.1579
105.00	238.3862
105.31	237.4160
108.00	271.8915
109.28	253.5984

111.00	244.6359
111.00	244.6359
111.76	243.7423
112.95	257.3958
115.19	279.2685
116.30	243.7280
117.00	230.5810
117.00	230.5810
117.66	245.6282
121.11	261.0019
121.62	261.0958
121.78	261.1255
122.06	261.1772
122.32	261.2250
122.32	261.2250
122.32	261.2250
122.32	261.2250
123.07	261.3639
127.23	279.0400
129.76	258.3930
131.20	257.5988
133.02	319.7739
133.54	314.6416
135.34	286.6675
136.00	281.5399
136.25	281.5869
136.48	266.9178
140.51	293.9662
140.51	0.0000
142.18	278.4617
142.65	280.6565
143.76	274.5222
144.24	276.7199
144.24	276.7199
144.24	276.7199
144.24	276.7199
145.22	288.5191
145.44	292.7867
147.16	263.4778
152.43	276.0278
152.70	267.5789
153.22	269.7897
154.21	256.1379
154.21	256.1379
154.21	256.1379
154.21	256.1379
155.03	244.5698
156.02	236.2070
158.56	252.5575
159.00	0.0000
159.00	248.3607
160.31	246.4227
161.27	250.8350
162.32	262.7413
162.64	265.9968
163.35	255.4218
163.89	230.9156
165.85	230.1123
167.43	236.7549
171.28	251.2440
171.86	251.3279
172.10	243.8425
176.55	248.7719
176.60	245.5481
181.06	222.8462
184.41	254.4148
185.71	255.4620
186.00	260.9166
190.27	236.1340
192.34	267.2514
193.63	251.1300
197.04	263.5686
198.01	244.0891
198.60	233.2657
200.40	262.9465
201.83	286.0728
202.84	282.5831
205.31	222.2733

208.36	283.7575
208.81	272.8643
209.75	256.1113
209.75	256.1113
210.97	261.5376
215.65	273.8141
216.55	281.6387
218.09	266.4434
222.10	257.0463
223.80	264.9902
226.40	259.7995
227.00	272.0410
227.08	272.0523
227.20	267.6435
228.16	257.8106
228.18	257.8124
228.18	257.8124
231.56	235.8461
235.69	245.1976
236.00	245.2347
236.00	245.2347
238.63	387.8840
238.63	387.8840
238.63	387.8840
238.63	387.8840
239.00	373.7139
240.98	272.5313
241.98	256.6213
241.98	256.6213
241.98	256.6213
244.69	322.2983
245.39	311.2462
247.94	234.5485
248.90	219.0091
249.79	223.5703
252.40	220.4812
252.85	220.5263
252.85	220.5263
254.15	0.0000
256.20	228.7109
256.20	228.7109
260.50	185.3455
260.90	198.8603
262.80	224.8901
264.65	246.6836
268.24	214.6125
268.79	206.5473
269.46	212.9243
269.46	212.9243
269.46	212.9243
269.46	212.9243
271.23	215.7973
273.65	281.1035
276.40	224.4291
277.35	215.4667
277.60	215.4899
277.60	215.4899
278.00	211.9054
278.60	205.6190
279.20	218.3562
279.53	234.6982
280.46	225.7262
281.68	223.1237
283.67	221.4973
284.30	214.2927
285.00	198.9152
285.90	194.4469
286.10	194.4652
286.10	194.4652
287.40	220.0289
288.45	0.0000
290.67	289.5267
290.80	306.8419
291.72	309.6938
293.26	201.4305
293.70	200.5540
295.21	253.5868
295.21	253.5868

295.21	253.5868
295.96	255.4897
296.50	250.0718
297.23	237.3674
298.57	298.6989
299.80	244.9295
299.80	244.9295
300.09	244.9589
300.09	244.9589
300.09	244.9589
300.09	244.9589
300.12	244.9622
301.29	186.5534
302.84	215.0370
303.76	227.9329
303.91	215.1317
304.40	207.8497
304.40	207.8497
304.84	206.0541
306.84	197.9728
308.46	194.4334
311.98	174.5045
316.51	192.3019
318.01	179.5276
319.02	188.8092
319.41	193.4438
320.08	199.9436
323.87	211.3162
323.87	211.3162
323.87	211.3162
323.87	211.3162
325.23	180.0370
328.77	176.5864
333.44	169.8049
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334.20	172.9424
334.30	172.9492
338.28	178.1625
338.28	178.1625
338.28	178.1625
338.28	178.1625
338.32	178.1649
338.32	178.1649
338.32	178.1649
340.50	227.5342
340.57	227.5402
344.27	180.4257
345.85	178.3632
350.59	201.9851
351.07	174.3606
351.92	174.4154
351.92	174.4154
351.92	174.4154
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356.01	155.6864
364.48	159.2920
366.43	157.5308
367.43	157.5861
367.94	0.0000
369.80	168.0485
374.96	170.2399
383.85	161.3437
387.95	168.1896
388.63	173.8993
391.69	160.8401
391.69	160.8401
392.90	157.1205
398.62	163.1208
400.65	138.5592
401.10	147.1232
401.81	157.6027
402.60	158.5950
404.84	163.4693
410.95	176.1881
411.60	183.8471
413.65	168.7204
414.70	163.0595
415.30	150.6940



415.76	159.3024
417.63	0.0000
418.52	188.0927
423.70	168.3301
427.08	172.3469
427.89	169.5199
432.53	159.2259
433.93	164.0970
439.47	149.9710
439.56	149.9767
439.89	143.2615
443.98	155.0038
444.90	151.1968
445.03	154.0918
445.03	154.0918
445.03	154.0918
445.03	154.0918
453.90	213.4409
463.38	196.6414
468.07	188.1956
473.00	162.2501
475.06	161.3819
475.35	155.5625
476.78	150.7674
477.59	163.4514
477.96	164.4429
482.03	164.6471
484.57	139.4250
487.03	134.6494
490.36	152.3666
492.35	132.9104
497.08	128.2063
507.63	0.0000
510.53	0.0000
510.84	127.7458
511.00	127.7513
511.85	127.7823
511.85	127.7823
513.99	129.5025
513.99	129.5025
520.41	126.1312
520.65	131.0680
527.90	134.3033
528.96	0.0000
529.64	133.3817
529.87	0.0000
531.02	124.5388
537.32	123.7732
543.00	120.0045
546.56	0.0000
549.76	120.2319
552.65	122.3153
555.20	113.4461
563.23	153.5939
563.90	165.5907
568.70	95.8898
569.32	99.9023
569.50	99.9072
569.67	104.9077
573.80	113.0276
574.00	113.0331
574.64	109.0506
578.91	96.8224
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583.14	101.2786
585.48	101.3428
591.81	112.2337
592.07	112.2419
593.00	110.5935
595.88	101.6239
600.56	101.7496
602.52	0.0000
602.71	115.9181
602.71	115.9181
603.60	100.8228
604.41	97.4832
604.70	95.8094
609.31	116.1202

609.31	116.1202
609.31	116.1202
609.31	116.1202
610.33	112.7844
612.46	80.8438
614.37	84.2550
618.01	107.2732
621.84	104.3403
621.84	104.3403
631.29	109.6717
633.02	96.5122
633.10	96.5145
634.78	93.5049
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645.85	96.8253
646.12	91.7358
656.30	109.0000
657.75	88.5942
657.90	0.0000
661.65	102.3242
661.65	102.3242
664.57	69.9716
666.33	88.7826
666.33	88.7826
675.00	92.3928
677.61	87.3159
685.20	99.8252
692.80	86.6045
695.00	104.1871
696.49	100.0976
696.49	100.0976
697.00	91.8530
697.49	87.7351
698.33	91.8812
698.50	91.8855
699.00	97.0591
702.63	74.4064
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706.58	0.0000
706.67	100.3391
709.31	81.7696
711.68	83.8872
713.82	107.7603
717.42	86.0740
720.50	96.5147
721.93	111.0804
722.20	118.3557
722.78	115.2546
722.78	115.2546
722.89	115.2574
722.95	115.2601
723.30	111.1144
724.18	100.7512
727.18	85.2311
733.00	100.9572
735.90	72.9053
739.58	93.8145
742.81	83.4512
744.21	89.7394
747.13	75.1816
751.79	83.6230
752.31	85.7236
753.82	82.6163
755.35	84.7356
756.15	85.7977
756.87	96.2766
763.93	116.3440
765.79	94.3726
766.42	105.9218
766.84	105.9316
776.49	96.7011
778.00	83.0638
778.57	88.3333
778.89	85.1845
783.80	76.8532
785.46	77.9349
792.07	93.8694

795.84	89.7252
796.30	87.6221
798.80	96.1188
801.93	94.0714
805.60	93.0875
810.29	94.2409
810.76	106.9599
815.85	80.5719
817.79	106.0596
818.51	103.9551
819.60	96.5520
826.30	105.1899
828.27	0.0000
831.60	142.5386
831.96	143.6155
834.83	106.4453
836.80	0.0000
846.75	91.7739
848.13	97.1363
856.28	0.0000
856.80	120.8377
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867.32	108.2421
867.82	107.1802
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873.19	95.4968
874.81	94.4539
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876.40	110.5917
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880.27	96.7083
880.51	92.4164
881.50	95.6576
883.24	102.1436
884.67	100.0227
889.25	120.5695
896.60	108.8882
898.02	122.9396
899.00	122.9647
903.28	117.6726
911.07	127.9450
911.07	127.9450
911.07	127.9450
919.63	124.5543
920.93	115.9184
925.00	97.5806
925.24	97.5850
926.50	88.9328
935.52	118.4257
937.48	149.9908
944.10	118.6227
946.00	121.9340
949.00	140.5237
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964.01	127.4561
966.15	125.6858
968.20	112.9805
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969.11	118.1039
969.11	118.1039
977.42	103.4416
980.50	112.8801
983.50	93.2053
989.30	103.1866
996.32	117.6138
1001.03	83.4278
1001.68	91.6911
1004.76	100.9184
1021.30	0.0000
1024.50	0.0000
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1036.00	88.5820
1037.82	92.3055
1038.57	88.6250
1038.76	0.0000
1045.16	72.0935
1046.59	85.9803
1048.07	86.9278

1050.47	91.5919
1050.47	91.5919
1062.04	93.6354
1063.62	97.3737
1076.63	85.5125
1077.35	84.5942
1078.86	84.6201
1085.78	87.5168
1099.22	86.7902
1112.02	94.4656
1112.84	95.4133
1115.52	88.9079
1120.29	73.9950
1120.29	73.9950
1120.29	73.9950
1120.29	73.9950
1120.51	72.1248
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1124.00	0.0000
1129.67	64.7324
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1147.95	0.0000
1167.94	55.0366
1173.22	51.0359
1175.09	40.5169
1177.93	51.8862
1189.05	40.7464
1204.90	20.9016
1205.75	0.0000
1213.00	22.8320
1221.42	36.2002
1230.97	38.1657
1235.34	30.5534
1236.41	0.0000
1238.25	22.9258
1246.25	12.4345
1260.41	0.0000
1271.85	26.8914
1274.45	18.2547
1274.54	20.1771
1291.56	22.1577
1298.22	0.0000
1312.09	18.3630
1325.50	19.9227
1325.50	19.9227
1332.49	19.3896
1333.61	19.3929
1360.21	9.7359
1362.66	0.0000
1365.15	18.5122
1368.21	10.7225
1368.53	0.0000
1376.25	19.5190
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1394.10	4.8928
1395.20	6.8507
1407.95	16.6694
1434.06	13.7801
1436.60	12.8006
1457.56	0.0000
1460.81	15.8099
1489.15	16.8658
1509.49	10.9445
1596.49	13.0899
1620.62	9.0916
1678.03	0.0000
1691.02	12.2344
1691.02	12.2344
1706.46	0.0000
1750.46	0.0000
1764.49	5.1457
1764.49	5.1457
1764.49	5.1457
1764.49	5.1457
1770.23	8.8274
1771.40	10.5942
1791.20	0.0000
1808.65	11.3827

1836.01

8.3060

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202028550

Total Uranium Activity	-5.9943E+00	ug/g
Total Uranium Counting Unc.	6.7592E+00	ug/g
Total Uranium Tpu	3.4486E-06	ug/g
Total Uranium Mda	5.1802E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 947037                          SAMPLE ID   : G1202028550
*  ANALYST       : MJH1                             DETECTOR    : GAM19
*  SAMPLE DATE   : 1-FEB-2010 00:00:00.00          COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 9-FEB-2010 17:44:57.42          SAMPLE ALQT  : 155.440 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.664E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.637E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.474E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.189E+00

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## Radiochemistry Batch Checklist, Rev10

Batch#

948402

Product:

Tritium

Date:

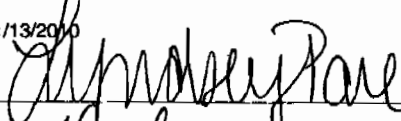
2/17/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.			NA
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			NA
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly stated.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:



Secondary Review Performed By:

 2/17/10

LANL 2/25/10



# Tritium Que Sheet

03-FEB-10

Batch #: 948402 Analyst: KKK2 First Client Due Date 25-FEB-10 Internal Due Date: 14-FEB-10

Spike Isotope: Hydrogen-3 Spike Code: 0134-K Expiration Date: 3/27/10 Vol: 0.1  
LCS Isotope: Hydrogen-3 LCS Code: 0134-K Expiration Date: 3/27/10 Vol: 0.1

Prep Date: 2/11/10 Initials: *[Signature]* Pipet ID: 2910968 Witness: *[Signature]*

Sample ID	Client Samp ID	Type	Hazard Code	Min CRDL	Matrix	Client	Sample Date	Aliquot in vial (g/mL)	LSC Rack #	Dist Rig #	Vol added for Dist (mL)	Initial Sample Aliquot (g/mL)	Final Wt (g)	Dist Vol (mL)
245691001-1	RE15-10-7883	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	60-2	1		413.90	285.59	128.31
245691002-1	RE15-10-7884	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	60-3	2		433.91	408.79	25.17
245691003-1	RE15-10-7932	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	60-4	3		468.87	426.20	42.67
245691004-1	RE15-10-7931	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	7-2	4		355.21	294.89	60.39
245691005-1	RE15-10-7938	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	60-5	5		42.01	397.59	14.42
245691006-1	RE15-10-7933	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	7-3	6		291.57	231.51	60.06
245691007-1	RE15-10-7939	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	7-4	7		178.15	135.75	42.40
245691008-1	RE15-10-7936	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	35-1	8		394.60	380.39	14.21
245691009-1	RE15-10-7935	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	35-2	9		259.33	198.13	61.20
245691010-1	RE15-10-7934	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	35-3	10		496.01	448.29	47.62
245691011-1	RE15-10-7940	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	35-4	11		409.41	389.76	19.65
245691012-1	RE15-10-7937	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	7-5	12		263.23	200.84	62.39
245691013-1	RE15-10-8056	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	35-5	13		371.18	356.19	12.99
245691014-1	RE15-10-8057	SAMPLE		.25 pCi/mL SOIL		LANL010	25-JAN-10	10	7-6	14		273.64	192.37	81.27
1202031682-1	MB for batch 948402	MB		.25 pCi/mL SOIL		QC ACCOUNT		10	7-7	15		20.00	0	20.00
1202031683-1	RE15-10-7883(245691001DUP)	DUP		.25 pCi/mL SOIL		QC ACCOUNT	25-JAN-10	10	7-8	1		413.90	285.59	128.31
1202031684-1	LCS for batch 948402	LCS		.25 pCi/mL SOIL		QC ACCOUNT		10	35-6	16		20.00	0	20.00

Bkg Rack #: 10-17-1

Comments:

Bkg prepared with dead water? ☒ Yes ☐ No

Instrument Used (circle as appropriate): LS6000 (Red) 7065155, LS6500 (Blue) 7067083, LS6500 (Gold) 7070506, LS6500 (Green) 7067404, Wallac (Yellow) 4140127, LS6000 (Brown) 7060655, Wallac (Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG06095168

Calibration Used: Ecosci Ultra 10 mL sample/13 mL Ecosci Ultra  
Data Reviewed By: *[Signature]*

GEL Laboratories LLC, Radiochemistry Division

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DATE	2/8/2010	INITIALS	KXK2	BATCH NUMBER	948402	
Sample #	Sample Wet (g)	% Moisture of Sample (Balance Interface using % Moisture Batch)	Total Moisture in Sample (mL)	Sample Dry (g)	mLs aliquoted into LSC vial	Collection Tube Number
245691001	413.90	0.310	128.31	285.59	10	
245691002	433.96	0.058	25.17	408.79	10	
245691003	468.87	0.091	42.67	426.20	10	
245691004	355.21	0.170	60.39	294.82	10	
245691005	412.01	0.035	14.42	397.59	10	
245691006	291.57	0.206	60.06	231.51	10	
245691007	178.15	0.238	42.40	135.75	10	
245691008	394.60	0.036	14.21	380.39	10	
245691009	259.33	0.236	61.20	198.13	10	
245691010	496.01	0.096	47.62	448.39	10	
245691011	409.41	0.048	19.65	389.76	10	
245691012	263.23	0.237	62.39	200.84	10	
245691013	371.18	0.035	12.99	358.19	10	
245691014	273.64	0.297	81.27	192.37	10	
MB	20.00	1.000	20.00	0.00	10	
DUP	413.90	0.310	128.31	285.59	10	
LCS	20.00	1.000	20.00	0.00	10	

TS9402RR

## Tritium Solid

Filename : H3VAC.XLS  
File type : Excel  
Version # : 1.2.6

Spike S/N :  
Spike Exp Date :  
Spike Activity (dpm/ml):  
Spike Volume Added:

LCS S/N : 0134-K  
LCS Exp Date : 3/27/2010  
LCS Activity (dpm/ml): 2468.20  
LCS Volume Added: 0.10

Batch : 948402  
Analyst : KKK2  
Prep Date : 2/11/2010

Procedure Code : LSC\_VH3S  
Paramname : Tritium  
Required MDC : 250 pCi/L  
Half-life of Tritium : 12.32 years

Pipet, 0.1 ml Sidev : +/- 0.000701 ml  
Pipet, 0.5 ml Sidev : +/- 0.002564 ml  
Pipet, 1.0 ml Sidev : +/- 0.005480 ml  
Pipet, 5.0 ml Sidev : +/- 0.025728 ml

H-3 Abundance : 1  
Method Uncertainty : 0.0691  
Geometry: 10mL DW/13mL  
Eosicint Ultra

Sample Characteristics			Total Moisture		Sample Aliquot In Vial		Sample Aliquot Sidev.		Dry Sample Weight (g)		% Moisture of Sample		Rig number		Sample Date/Time	
Pos.	Sample ID	Wet Sample Weight (g)	L		L		L		L		%		number		Date/Time	
1	245691001.1	413.90	0.1283		0.0100		2.5728E-05		285.59		31.00%		1		1/25/2010 12:00	
2	245691002.1	433.96	0.0252		0.0100		2.5728E-05		408.79		5.80%		2		1/25/2010 12:00	
3	245691003.1	469.87	0.0427		0.0100		2.5728E-05		426.20		9.10%		3		1/25/2010 12:00	
4	245691004.1	355.21	0.0604		0.0100		2.5728E-05		284.82		17.00%		4		1/25/2010 12:00	
5	245691005.1	412.01	0.0144		0.0100		2.5728E-05		397.59		3.50%		5		1/25/2010 12:00	
6	245691006.1	291.57	0.0601		0.0100		2.5728E-05		231.51		20.60%		6		1/25/2010 12:00	
7	245691007.1	178.15	0.0424		0.0100		2.5728E-05		135.75		23.80%		7		1/25/2010 12:00	
8	245691008.1	394.60	0.0142		0.0100		2.5728E-05		380.39		3.60%		8		1/25/2010 12:00	
9	245691009.1	258.33	0.0612		0.0100		2.5728E-05		198.13		23.60%		9		1/25/2010 12:00	
10	245691010.1	496.01	0.0476		0.0100		2.5728E-05		448.39		9.60%		10		1/25/2010 12:00	
11	245691011.1	406.41	0.0197		0.0100		2.5728E-05		389.76		4.80%		11		1/25/2010 12:00	
12	245691012.1	263.23	0.0624		0.0100		2.5728E-05		200.84		23.70%		12		1/25/2010 12:00	
13	245691013.1	371.18	0.0130		0.0100		2.5728E-05		358.19		3.50%		13		1/25/2010 12:00	
14	245691014.1	273.64	0.0813		0.0100		2.5728E-05		192.37		28.70%		14		1/25/2010 12:00	
15	1202031682.1	20.00	0.0200		0.0100		2.5728E-05		0.00		100.00%		15		2/11/2010 0:00	
16	1202031683.1	413.90	0.1283		0.0100		2.5728E-05		285.59		31.00%		1		1/25/2010 12:00	
17	1202031684.1	20.00	0.0200		0.0100		2.5728E-05		0.00		100.00%		16		2/11/2010 0:00	

Count raw Data				Background				Calibration Data				Backgrounds			
Pos.	Rack Position #	Counting Time (min.)	Quench#	Gross cpm	cpm	Count Time (min.)	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Rack Position #	Count Start Date/Time
1	60-2	95	119	3.38	2.75	95	2/16/2010 17:43	0.997	LSCGREEN	8/20/2009	8/31/2010	0.1833	0.00792	60-1	2/16/2010 18:05
2	60-3	95	118.1	3.52	2.75	95	2/16/2010 19:21	0.997	LSCGREEN	8/20/2009	8/31/2010	0.1840	0.00792	60-1	2/16/2010 18:05
3	60-4	95	119	3.61	2.75	95	2/16/2010 20:59	0.997	LSCGREEN	8/20/2009	8/31/2010	0.1833	0.00792	60-1	2/16/2010 18:05
4	7-2	95	111	5.12	3.67	95	2/14/2010 20:01	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2360	0.00792	7-1	2/14/2010 18:23
5	60-5	95	118.1	3.22	2.75	95	2/16/2010 22:37	0.997	LSCGREEN	8/20/2009	8/31/2010	0.1840	0.00792	60-1	2/16/2010 18:05
6	7-3	95	110.8	4.63	3.67	95	2/14/2010 21:39	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2361	0.00792	7-1	2/14/2010 18:23
7	7-4	95	109	4.47	3.67	95	2/14/2010 23:17	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2371	0.00792	7-1	2/14/2010 18:23
8	35-1	15	103.4	31.27	3.67	95	2/15/2010 8:39	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2390	0.00792	7-1	2/14/2010 18:23
9	35-2	15	102.9	76.07	3.67	95	2/15/2010 8:55	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2391	0.00792	7-1	2/14/2010 18:23
10	35-3	15	102.9	8.13	3.67	95	2/15/2010 9:11	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2390	0.00792	7-1	2/14/2010 18:23
11	35-4	15	103.5	7.87	3.67	95	2/15/2010 9:28	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2390	0.00792	7-1	2/14/2010 18:23
12	7-5	95	111	4.64	3.67	95	2/15/2010 0:55	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2360	0.00792	7-1	2/14/2010 18:23
13	35-5	15	103.5	25.27	3.67	95	2/15/2010 9:44	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2390	0.00792	7-1	2/14/2010 18:23
14	7-6	95	110.4	4.14	3.67	95	2/15/2010 2:33	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2364	0.00792	7-1	2/14/2010 18:23
15	7-7	95	108.8	3.49	3.67	95	2/15/2010 4:11	0.999	LSCBROWN	9/9/2009	9/30/2010	0.2372	0.00792	7-1	2/14/2010 18:23
16	7-8	95	111	4.26	3.67	95	2/15/2010 5:49	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2360	0.00792	7-1	2/14/2010 18:23
17	35-6	15	102.6	33.53	3.67	95	2/15/2010 10:00	0.999	LSCBROWN	9/9/2009	9/30/2010	0.2391	0.00792	7-1	2/14/2010 18:23

## Notes:

- 1 - Results are decay corrected to Sample Date/Time  
 2 - Reference date for Spikes Activity (dpm/mi) is the batch Prep Date  
 3 - Spike Nominals are decay corrected to Sample Date/Time

\* - RPD changed to 0% due to activity below MDC for 1202031683.1

Pos.	Results		Critical Level	Required MDC	MDC	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	1 SIGMA		Sample QC	Sample Type	RPD	RER	Nominal pC/L	Recovery
	Decision Level	pC/L				pC/L	pC/L	CPM	CPM	Counting Uncertainty	Total Prop. Uncertainty						
1	138.2383	97.5982	250	202.9830	202.9830	155.3448	0.403	0.630	0.254	62.6361	63.5637		SAMPLE				
2	137.7251	97.2351	250	202.2280	202.2280	188.1596	0.334	0.770	0.257	63.1117	64.4721		SAMPLE				
3	138.2422	97.6002	250	202.9873	202.9873	212.0624	0.301	0.860	0.259	63.8017	65.4889		SAMPLE				
4	123.9863	87.5425	250	181.1309	181.1309	277.6097	0.210	1.450	0.304	58.2370	61.3628		SAMPLE				
5	137.7280	97.2371	250	202.2322	202.2322	115.4635	0.533	0.470	0.251	61.5846	62.1074		SAMPLE				
6	123.9375	87.5009	250	181.0449	181.0449	183.7095	0.308	0.960	0.296	56.5637	57.9828		SAMPLE				
7	123.4438	87.1524	250	180.3238	180.3238	152.4815	0.366	0.800	0.293	55.7927	56.7945		SAMPLE				
8	234.5050	165.5825	250	368.9435	368.9435	5218.9514	0.054	27.800	1.457	275.5368	456.1177		SAMPLE				
9	234.4190	165.5018	250	368.8083	368.8083	13685.2744	0.032	72.400	2.261	427.2812	1044.5400		SAMPLE				
10	234.4194	165.5021	250	368.8089	368.8089	843.0446	0.171	4.460	0.762	144.0343	155.5424		SAMPLE				
11	234.5251	165.5768	250	368.9752	368.9752	794.2565	0.179	4.200	0.751	141.9321	152.3312		SAMPLE				
12	124.0002	87.5452	250	181.1366	181.1366	185.7171	0.305	0.970	0.296	56.6264	58.0649		SAMPLE				
13	234.5255	165.5770	250	368.9759	368.9759	4084.7651	0.061	21.600	1.313	248.2518	377.5782		SAMPLE				
14	123.8241	87.4209	250	180.8793	180.8793	89.8589	0.610	0.470	0.287	54.8185	55.1746		SAMPLE				
15	123.0847	86.8988	250	179.7992	179.7992	-34.2085	1.525	-0.180	0.275	52.1743	52.1745		MB				
16	124.0041	87.5480	250	181.1423	181.1423	112.9655	0.490	0.590	0.289	55.3183	55.8750	245891001.1	DUP	0.0%	0.1774	5559.0122	101.3%
17	233.7806	165.0511	250	367.8039	367.8039	5628.8592	0.051	29.860	1.508	284.2644	484.2505		LCS				

ID = TRIT LUM

16 FEB 2010 16:08

USER: 2

COMPEN: GREEN

PRESET TIME : 95.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : EDIT

TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUME: YES LOW SAMPLE REJ: 0 RWM LIST : OFF

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 10.0 - 230.0 ZERROR: 2.00 FACTOR: 1.000000 BKS SUP: 0

CHAN: 0.0 - 900.0 ZERROR: 2.00 FACTOR: 1.000000 BKS. SUB: 0

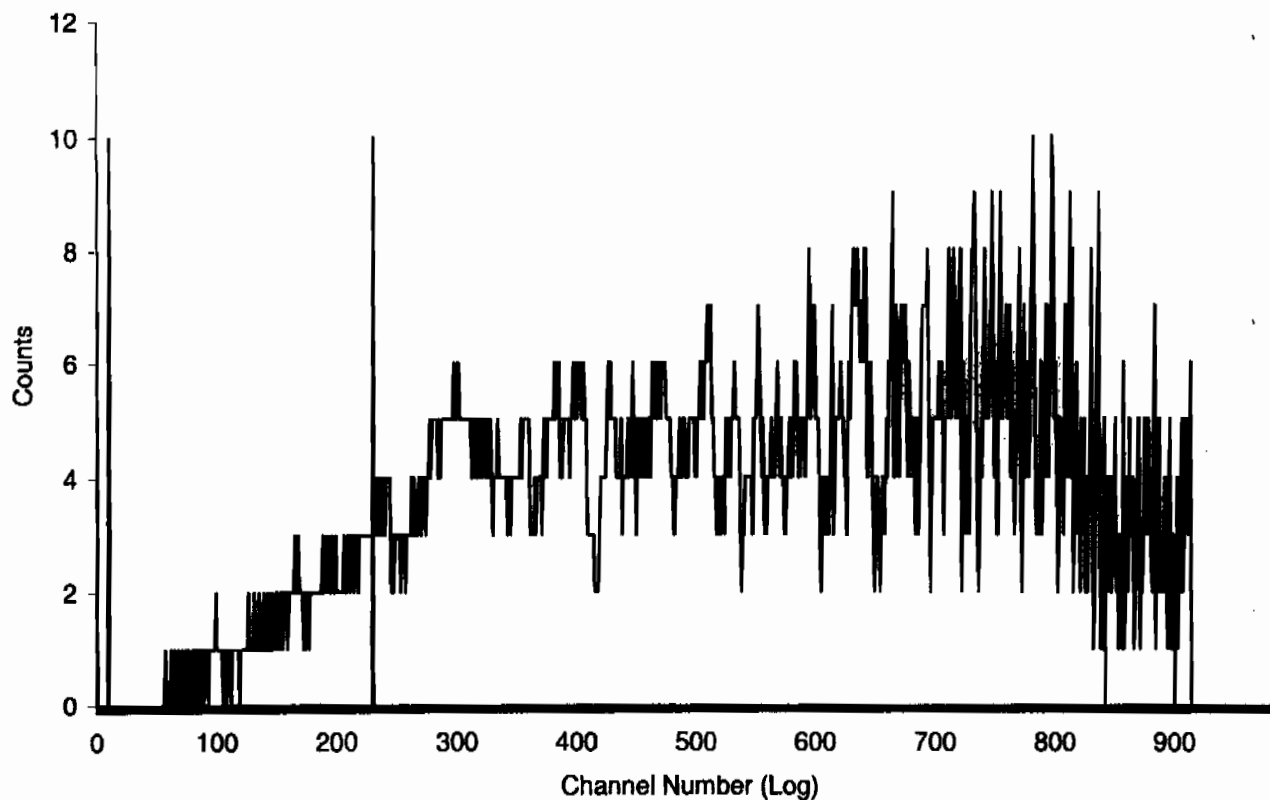
ALPHA-BETA DISCRIMINATION: NO

SAM NO	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	60-1	95.00	118.8	2.75	12.73	34.74	3.49	0.41	97.54
2	60-2	95.00	119.0	3.38	11.42	35.64	3.44	0.42	195.56
3	60-3	95.00	118.1	3.52	11.19	36.03	3.43	0.39	293.62
4	60-4	95.00	119.0	3.61	11.08	36.38	3.41	0.47	391.66
5	60-5	95.00	118.1	3.22	11.75	35.92	3.45	0.47	489.74

Sample Count Start Time:	16 Feb 2010 16:05:31		
Data Capture Date	16 Feb 2010 17:40:35		
User Filename	S02021660-1A.XLS		
	U02021660-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	GREEN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	60-1	95.00
H#, Total Counts:	118.8	3344	
Win1: Tritium - Start, End, Counts:	10	230	261
Win2: - Start, End, Counts:	0	990	3344

# SPECTRUM PLOT

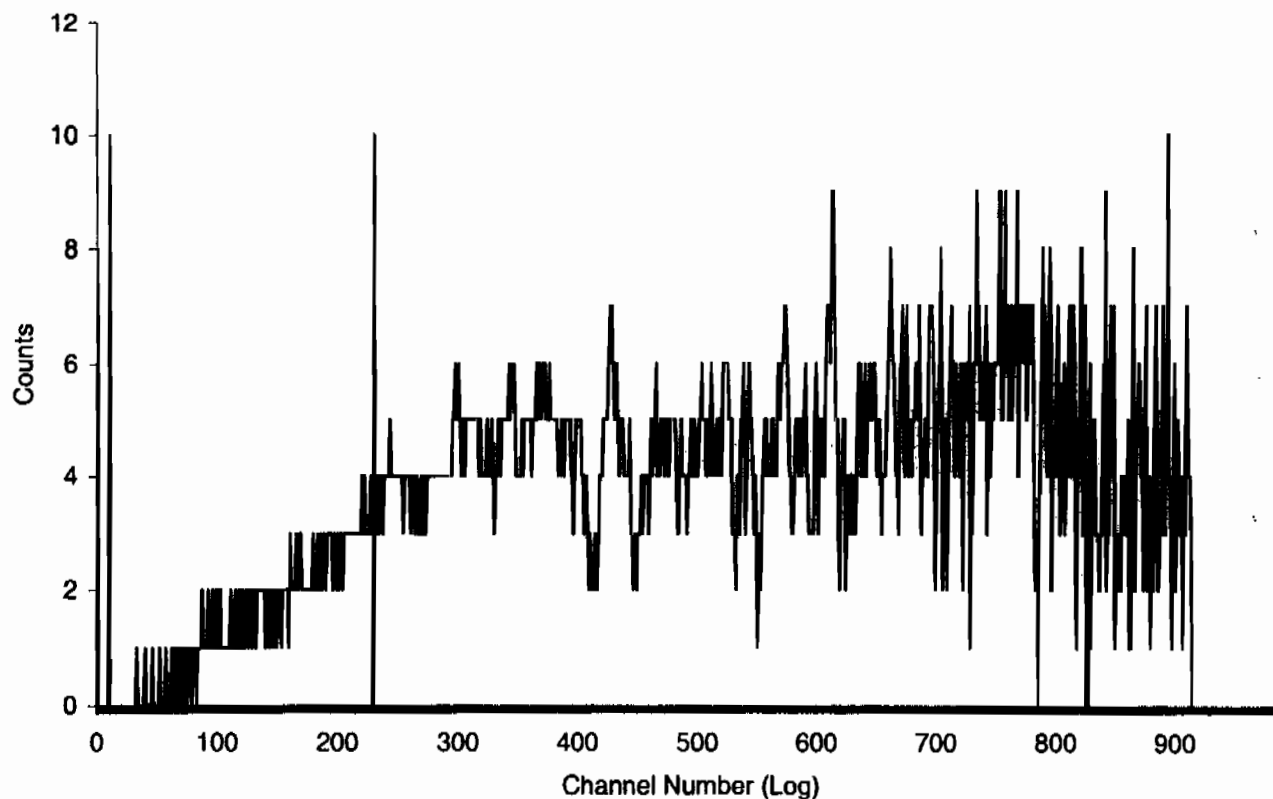
USER 02 - TRITIUM



Sample Count Start Time:	16 Feb 2010 17:43:34		
Data Capture Date	16 Feb 2010 19:18:38		
User Filename	S02021660-2A.XLS		
	U02021660-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	GREEN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	60-2	95.00
H#, Total Counts:	119.0	3434	
Win1: Tritium - Start, End, Counts:	10	230	321
Win2: - Start, End, Counts:	0	990	3434

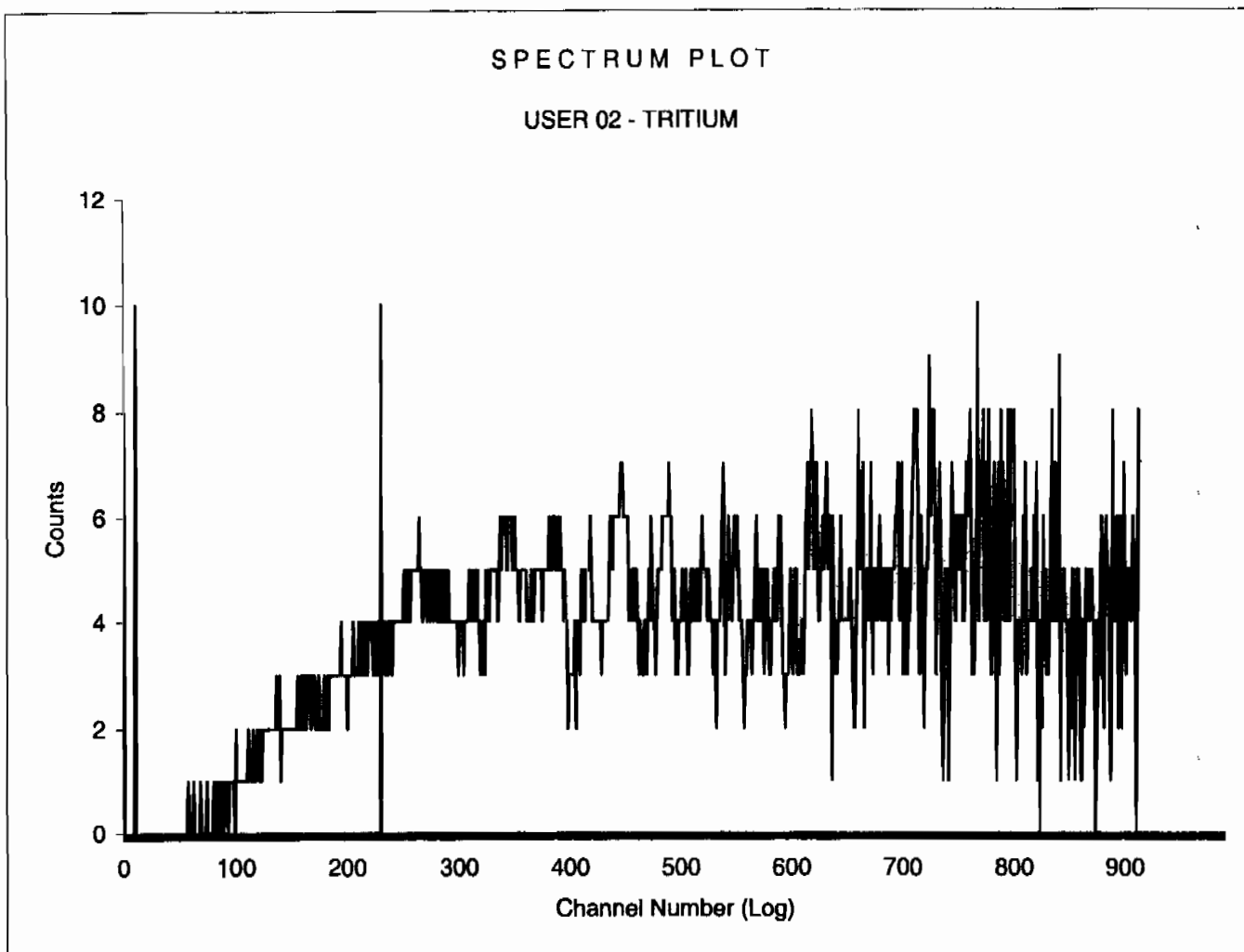
# SPECTRUM PLOT

USER 02 - TRITIUM





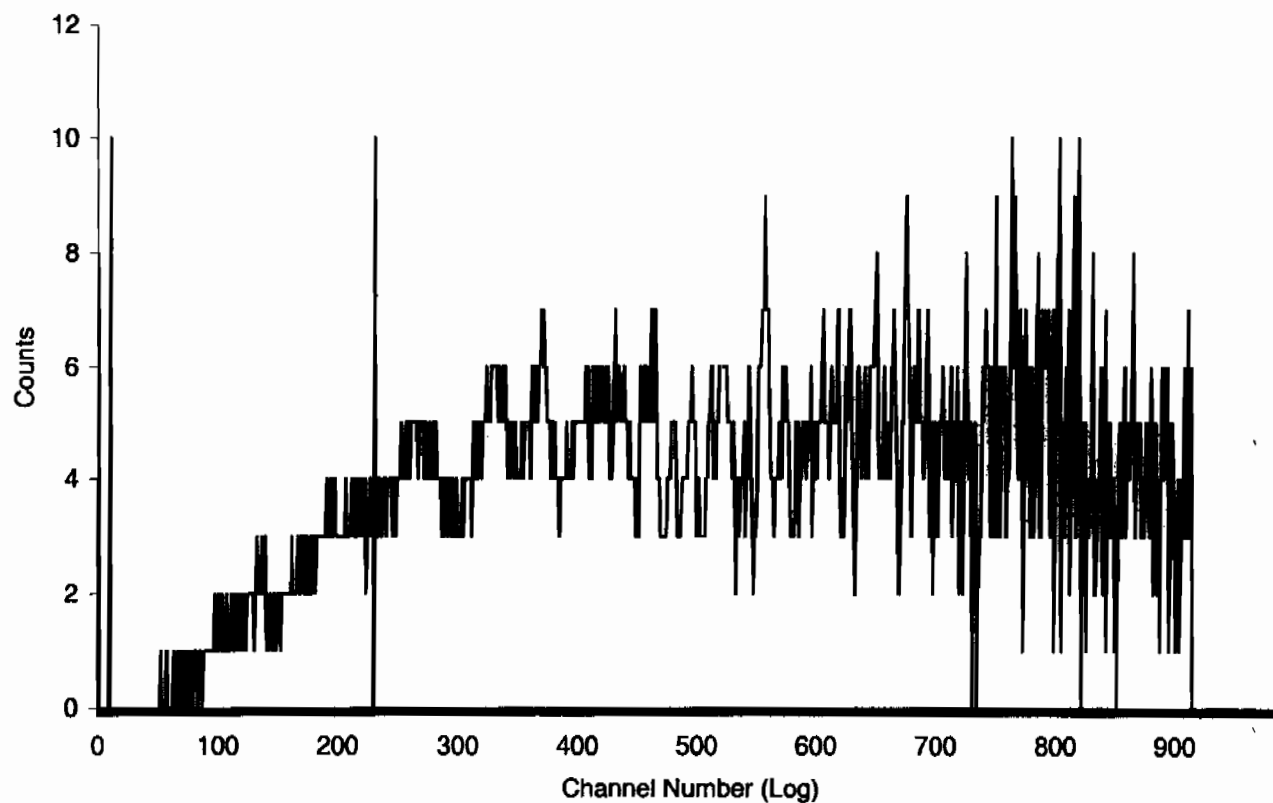
Sample Count Start Time:	16 Feb 2010 19:21:36		
Data Capture Date	16 Feb 2010 20:56:41		
User Filename	S02021660-3A.XLS		
	U02021660-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	GREEN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	60-3	95.00
H#, Total Counts:	118.1	3487	
Win1: Tritium - Start, End, Counts:	10	230	334
Win2: - Start, End, Counts:	0	990	3487



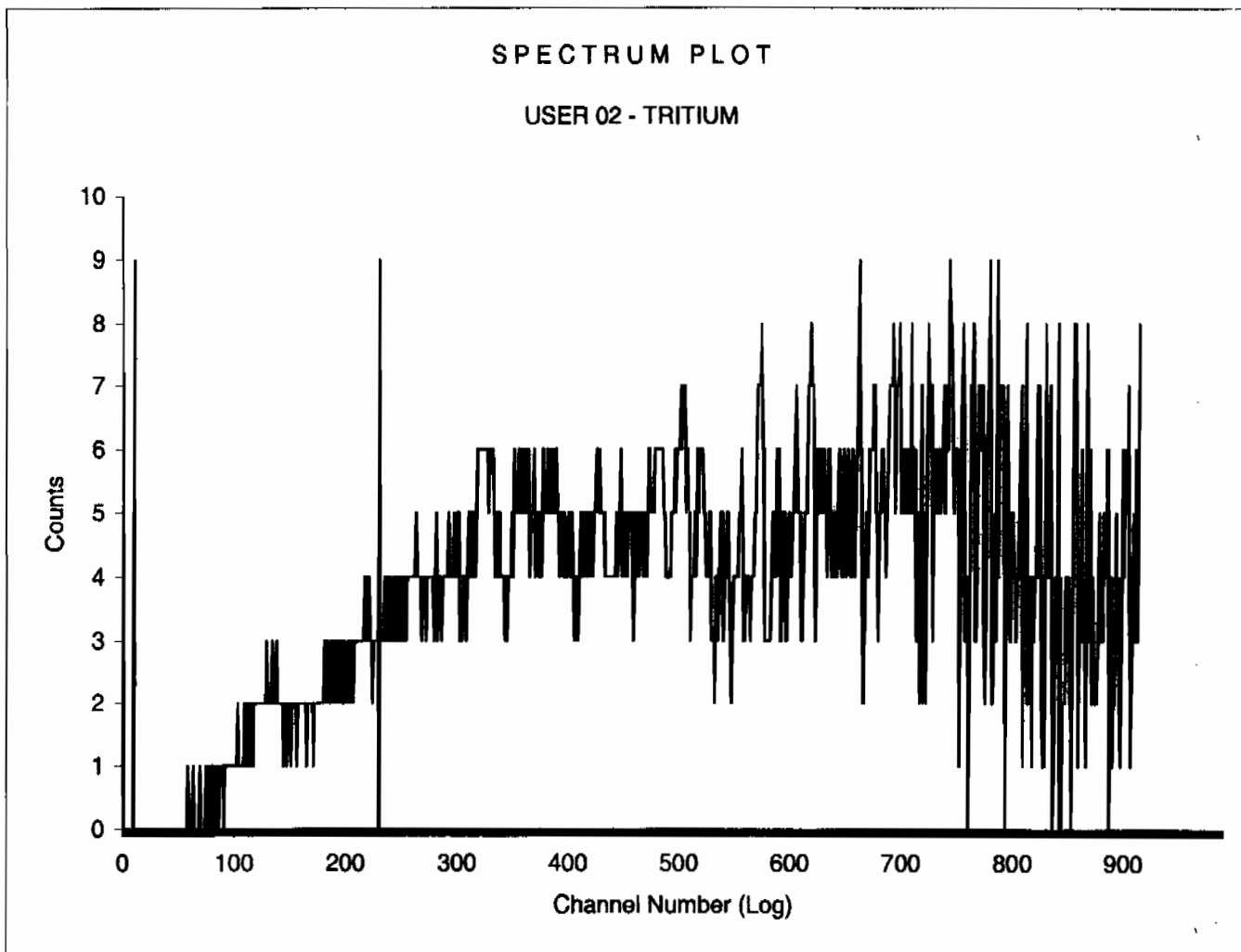
Sample Count Start Time:	16 Feb 2010 20:59:40		
Data Capture Date	16 Feb 2010 22:34:45		
User Filename	S02021660-4A.XLS		
	U02021660-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	GREEN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	60-4	95.00
H#, Total Counts:	119.0	3504	
Win1: Tritium - Start, End, Counts:	10	230	343
Win2: - Start, End, Counts:	0	990	3504

# SPECTRUM PLOT

USER 02 - TRITIUM



Sample Count Start Time:	16 Feb 2010 22:37:43		
Data Capture Date	17 Feb 2010 00:12:49		
User Filename	S02021760-5A.XLS		
	U02021660-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	GREEN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	60-5	95.00
H#, Total Counts:	118.1	3473	
Win1: Tritium - Start, End, Counts:	10	230	306
Win2: - Start, End, Counts:	0	990	3473



PAGE: 1

14 FEB 2010 18:29

# ID: TRITIUM

USER: 7

COMMENT: BROWN

PRESET TIME : 95.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : EDIT

TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX: YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 0.0 - 240.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 900.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
Bkg 1	7-1	95.00	110.7	3.67	11.05	37.88	3.34	0.53	97.56
4 2	7-2	95.00	111.0	5.12	9.21	39.36	3.28	0.36	195.56
6 3	7-3	95.00	110.8	4.63	9.72	40.42	3.23	0.40	293.59
7 4	7-4	95.00	109.0	4.47	9.89	41.51	3.19	0.39	391.60
12 5	7-5	95.00	111.0	4.64	9.68	39.22	3.28	0.36	489.61
14 6	7-6	95.00	110.4	4.14	10.25	37.95	3.34	0.34	587.59
15 7	7-7	95.00	108.8	3.49	11.19	39.43	3.27	0.31	685.57
16 8	7-8	95.00	111.0	4.26	10.10	39.68	3.26	0.31	783.54

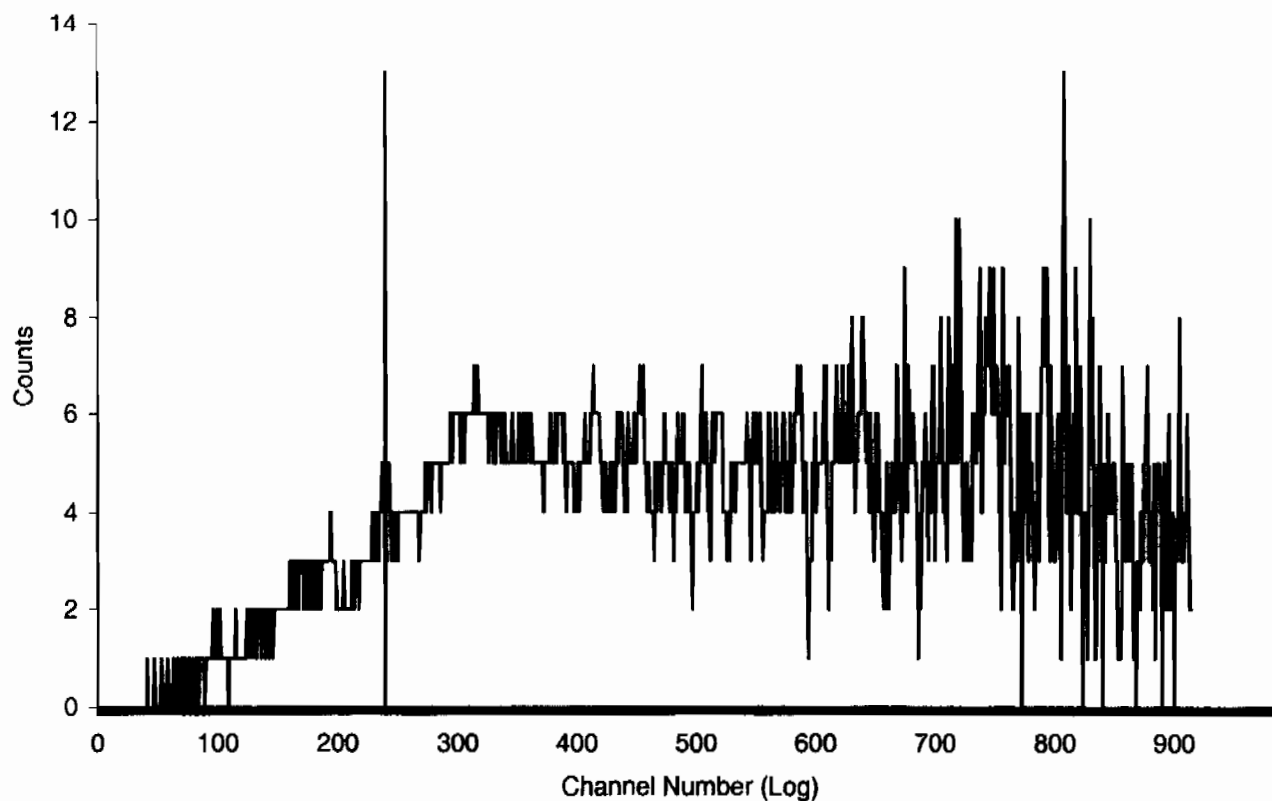
INSTRUMENT CALIBRATION: Mini 15 FEB 2010 07:38

Calibration successful

Sample Count Start Time:	14 Feb 2010 18:23:21		
Data Capture Date	14 Feb 2010 19:58:45		
User Filename	S07021407-1A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	7-1	95.00
H#, Total Counts:	110.7	3654	
Win1: Tritium - Start, End, Counts:	0	240	349
Win2: - Start, End, Counts:	0	990	3654

# SPECTRUM PLOT

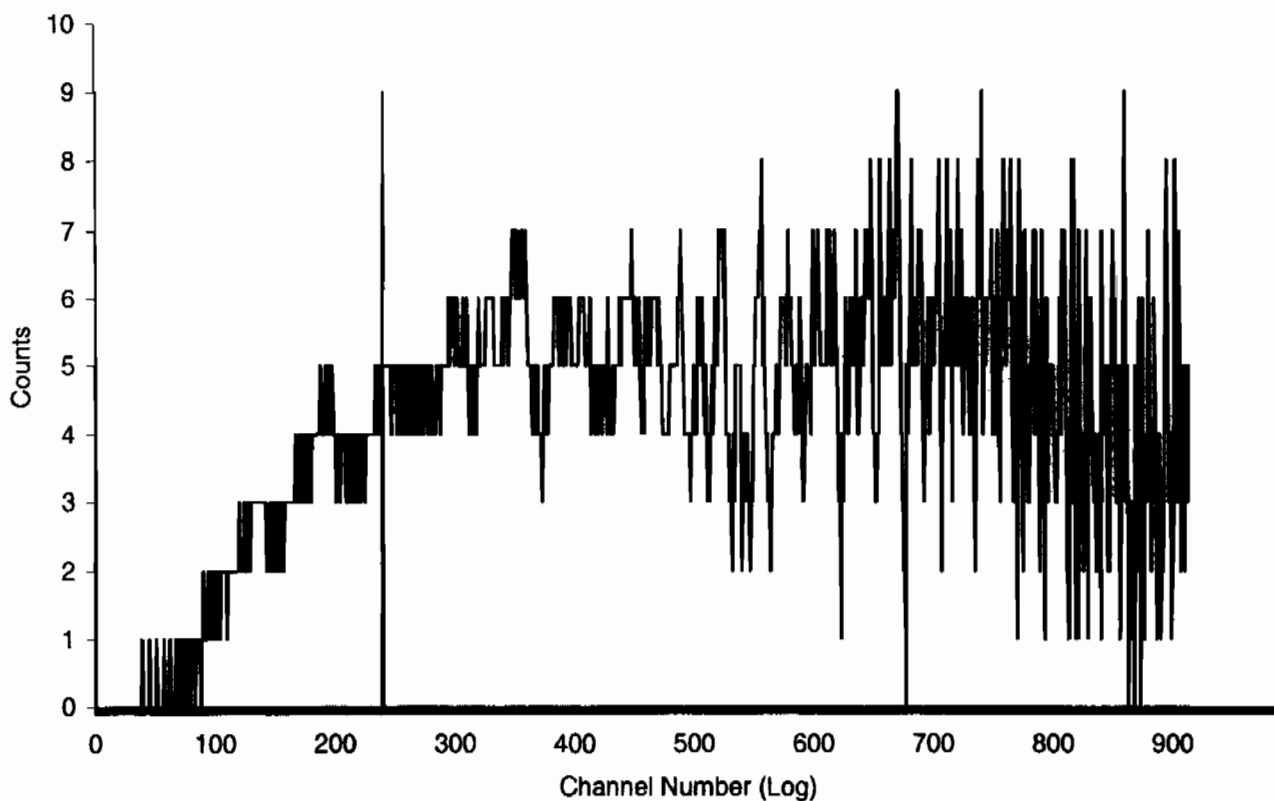
USER 07 - TRITIUM



Sample Count Start Time:	14 Feb 2010 20:01:21		
Data Capture Date	14 Feb 2010 21:36:45		
User Filename	S07021407-2A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	7-2	95.00
H#, Total Counts:	111.0	3799	
Win1: Tritium - Start, End, Counts:	0	240	486
Win2: - Start, End, Counts:	0	990	3799

# SPECTRUM PLOT

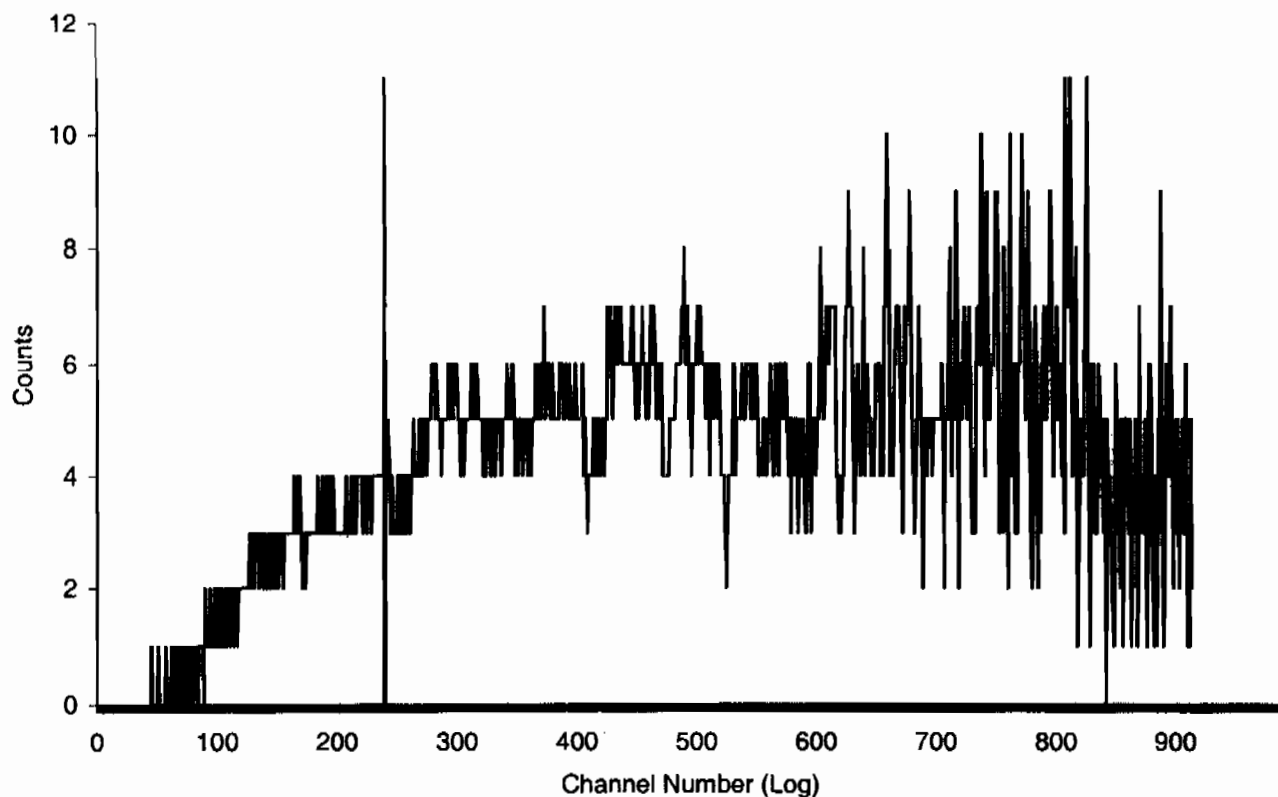
USER 07 - TRITIUM



Sample Count Start Time:	14 Feb 2010 21:39:22		
Data Capture Date	14 Feb 2010 23:14:46		
User Filename	S07021407-3A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	7-3	95.00
H#, Total Counts:	110.8	3887	
Win1: Tritium - Start, End, Counts:	0	240	440
Win2: - Start, End, Counts:	0	990	3887

# SPECTRUM PLOT

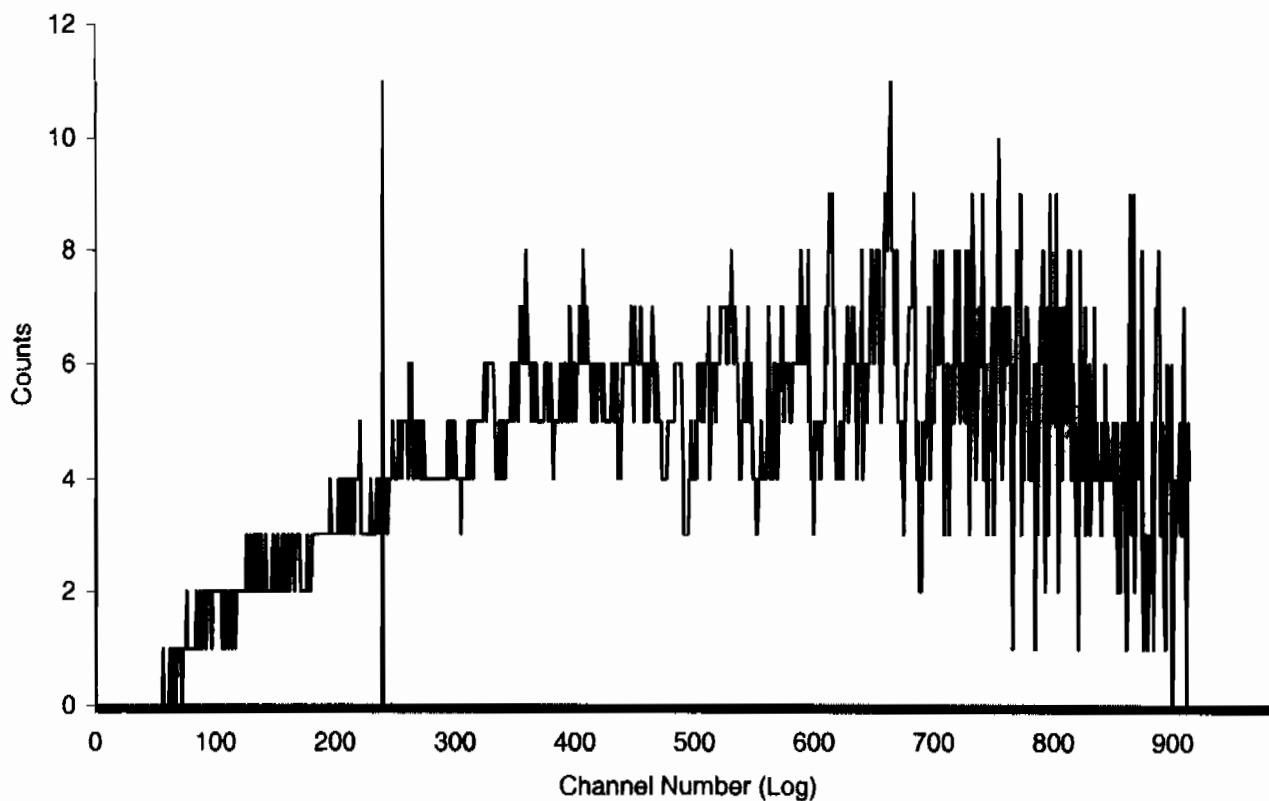
USER 07 - TRITIUM



Sample Count Start Time:	14 Feb 2010 23:17:23		
Data Capture Date	15 Feb 2010 00:52:48		
User Filename	S07021507-4A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	7-4	95.00
H#, Total Counts:	109.0	3994	
Win1: Tritium - Start, End, Counts:	0	240	425
Win2: - Start, End, Counts:	0	990	3994

### SPECTRUM PLOT

USER 07 - TRITIUM

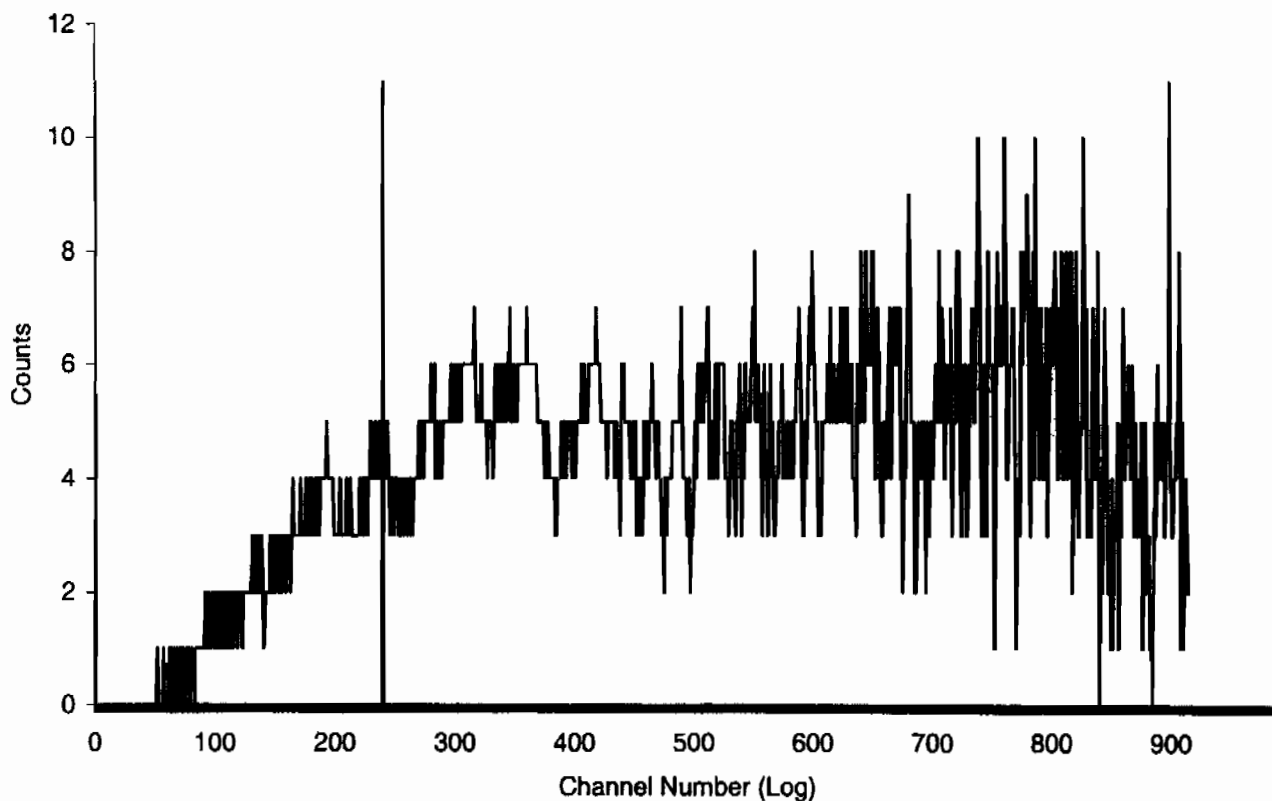




Sample Count Start Time:	15 Feb 2010 00:55:24		
Data Capture Date	15 Feb 2010 02:30:48		
User Filename	S07021507-5A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	7-5	95.00
H#, Total Counts:	111.0	3780	
Win1: Tritium - Start, End, Counts:	0	240	441
Win2: - Start, End, Counts:	0	990	3780

# SPECTRUM PLOT

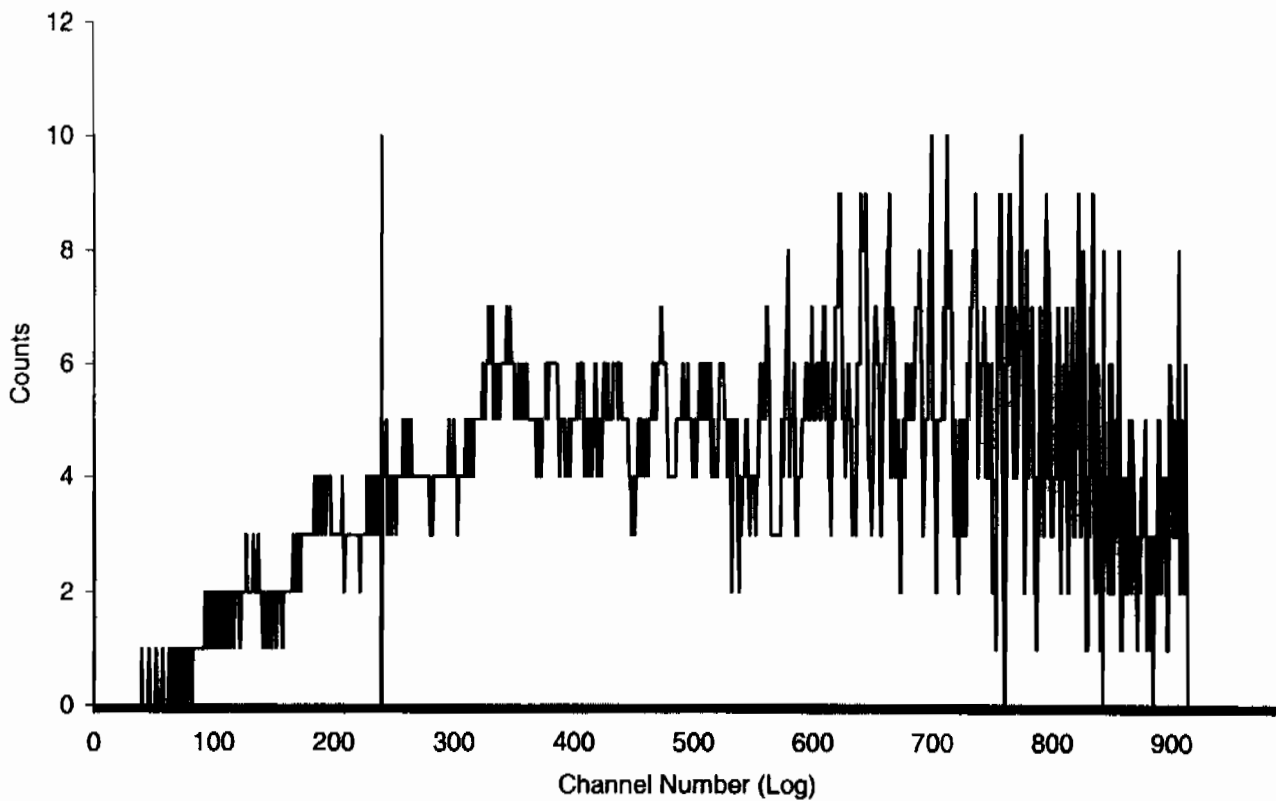
USER 07 - TRITIUM



Sample Count Start Time:	15 Feb 2010 02:33:22		
Data Capture Date	15 Feb 2010 04:08:47		
User Filename	S07021507-6A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	7-6	95.00
H#, Total Counts:	110.4	3656	
Win1: Tritium - Start, End, Counts:	0	240	393
Win2: - Start, End, Counts:	0	990	3656

# SPECTRUM PLOT

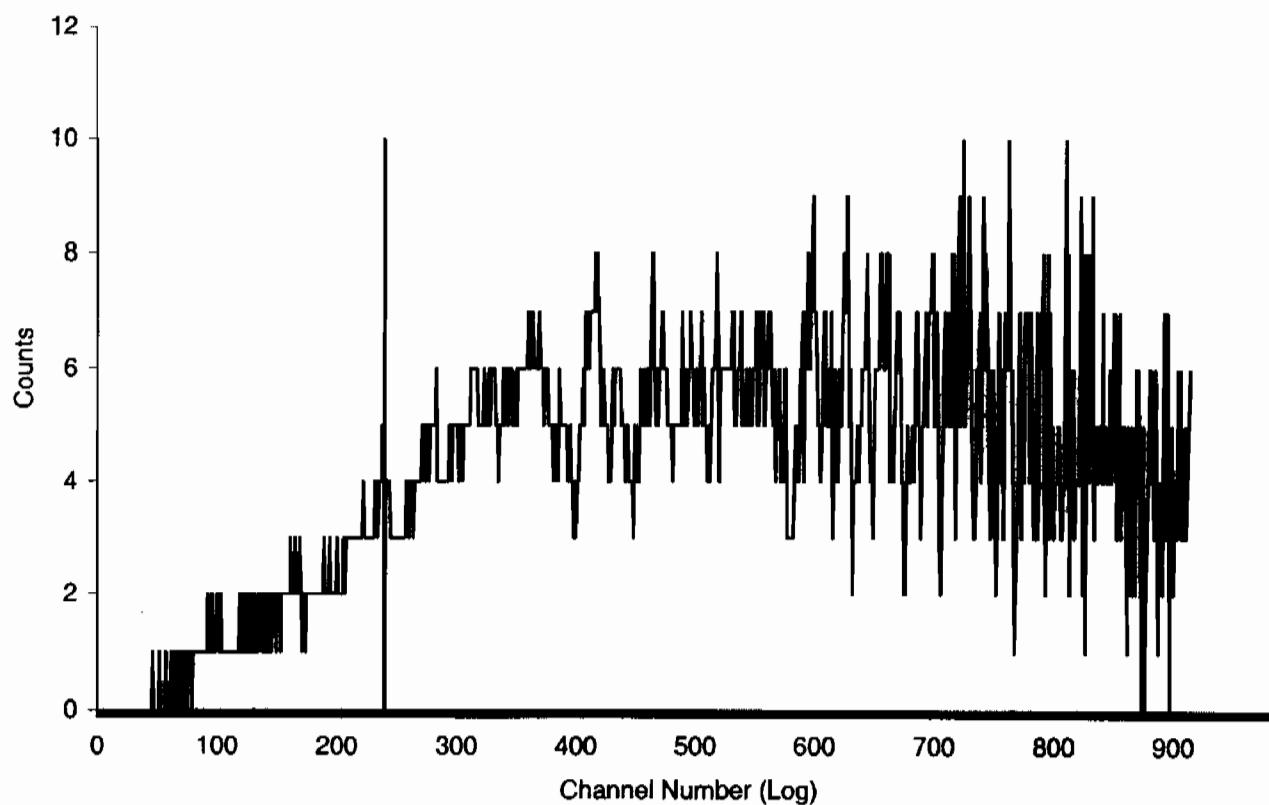
USER 07 - TRITIUM



Sample Count Start Time:	15 Feb 2010 04:11:21		
Data Capture Date	15 Feb 2010 05:46:46		
User Filename	S07021507-7A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	7-7	95.00
H#, Total Counts:	108.8	3804	
Win1: Tritium - Start, End, Counts:	0	240	332
Win2: - Start, End, Counts:	0	990	3804

# SPECTRUM PLOT

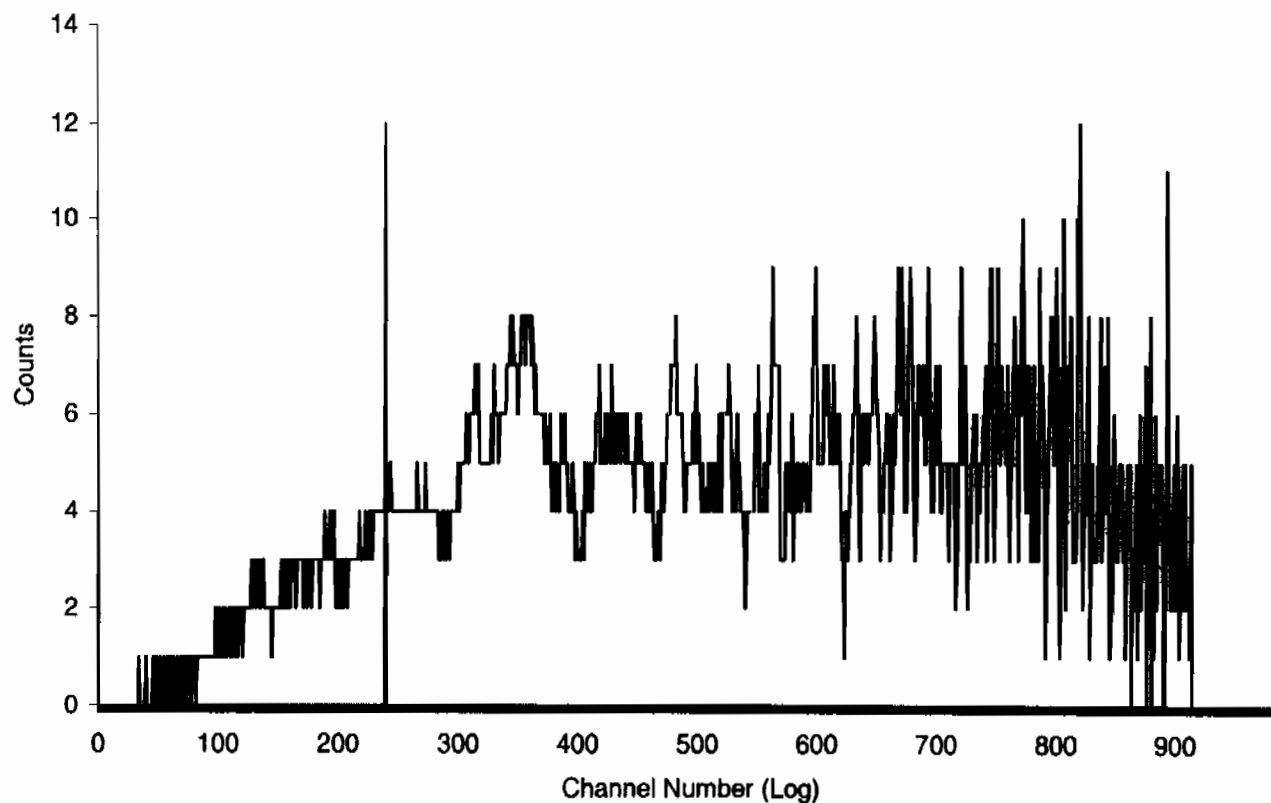
USER 07 - TRITIUM



Sample Count Start Time:	15 Feb 2010 05:49:19		
Data Capture Date	15 Feb 2010 07:24:44		
User Filename	S07021507-8A.XLS		
	U07021407-1A.XLS		
Spectrum Type	Log Counts		
User Number	07		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	7-8	95.00
H#, Total Counts:	111.0	3812	
Win1: Tritium - Start, End, Counts:	0	240	405
Win2: - Start, End, Counts:	0	990	3812

# SPECTRUM PLOT

USER 07 - TRITIUM



15 FEB 2010 08:47

## ID: TRITIUM

USER: 6

COMMENT: BROWN

PRESET TIME : 15.00

DATA CALC :	CPM	H# :	YES	SAMPLE REPEATS :	1	PRINTER :	STD
COUNT BLANK :	NO	IC# :	NO	REPLICATES :	1	RS232 :	EDIT
TWO PHASE :	NO	AQC :	NO	CYCLE REPEATS :	1	DISK :	OFF
SCINTILLATOR:	LIQUID	LUMEX:	YES	LOW SAMPLE REJ:	0		
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:				none	

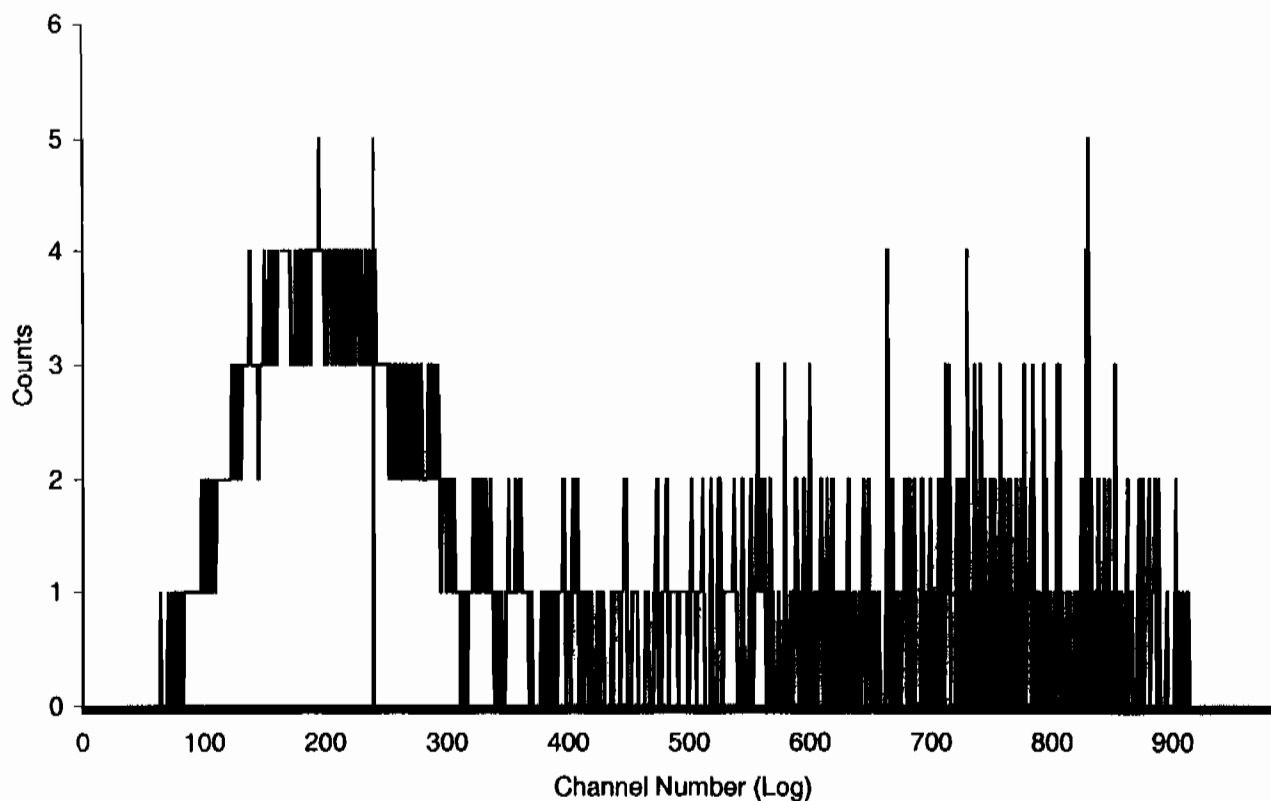
CHAN:	0.0 - 240.0	%ERROR:	2.00	FACTOR:	1.000000	BKG. SUB:	0
CHAN:	0.0 - 900.0	%ERROR:	2.00	FACTOR:	1.000000	BKG. SUB:	0

SAM NO	POS	TIME MIN	H#	WIND1		LUMEX %	ELAPSED TIME
				CPM	%ERROR		
8	1 35-1	15.00	103.4	31.27	9.24	0.26	15.79
9	2 35-2	15.00	102.9	76.07	5.92	0.13	32.04
10	3 35-3	15.00	102.9	8.13	18.18	0.34	48.30
11	4 35-4	15.00	103.5	7.87	18.49	0.38	64.55
13	5 35-5	15.00	103.5	25.27	10.29	0.25	80.81
17	6 35-6	15.00	102.6	33.53	8.93	0.21	97.07

Sample Count Start Time:	15 Feb 2010 08:39:19		
Data Capture Date	15 Feb 2010 08:54:37		
User Filename	S06021535-1A.XLS		
	U06021535-1A.XLS		
Spectrum Type	Log Counts		
User Number	06		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	35-1	15.00
H#, Total Counts:	103.4	1089	
Win1: Tritium - Start, End, Counts:	0	240	469
Win2: - Start, End, Counts:	0	990	1089

# SPECTRUM PLOT

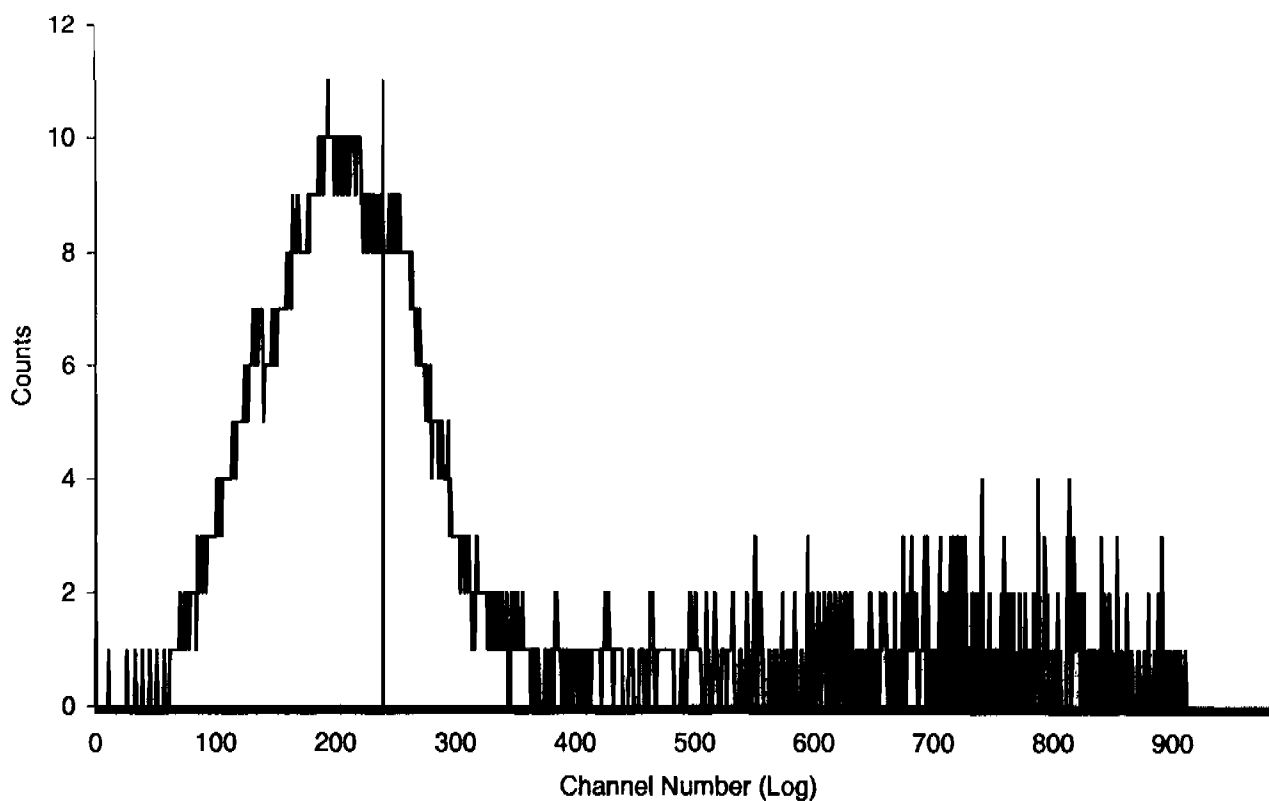
USER 06 - TRITIUM



Sample Count Start Time:	15 Feb 2010 08:55:34		
Data Capture Date	15 Feb 2010 09:10:53		
User Filename	S06021535-2A.XLS		
	U06021535-1A.XLS		
Spectrum Type	Log Counts		
User Number	06		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	35-2	15.00
H#, Total Counts:	102.9	2035	
Win1: Tritium - Start, End, Counts:	0	240	1141
Win2: - Start, End, Counts:	0	990	2035

# SPECTRUM PLOT

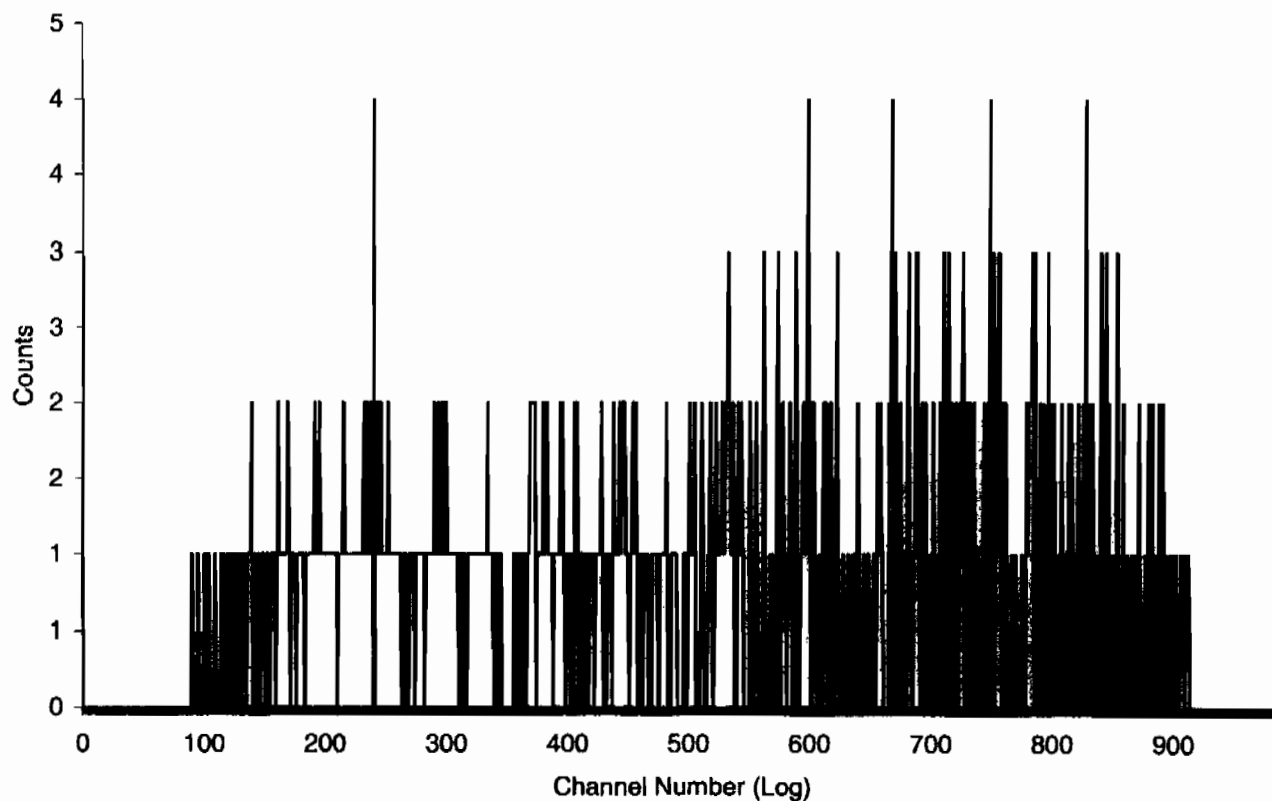
USER 06 - TRITIUM



Sample Count Start Time:	15 Feb 2010 09:11:50		
Data Capture Date	15 Feb 2010 09:27:06		
User Filename	S06021535-3A.XLS		
	U06021535-1A.XLS		
Spectrum Type	Log Counts		
User Number	06		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	35-3	15.00
H#, Total Counts:	102.9	708	
Win1: Tritium - Start, End, Counts:	0	240	122
Win2: - Start, End, Counts:	0	990	708

# SPECTRUM PLOT

USER 06 - TRITIUM

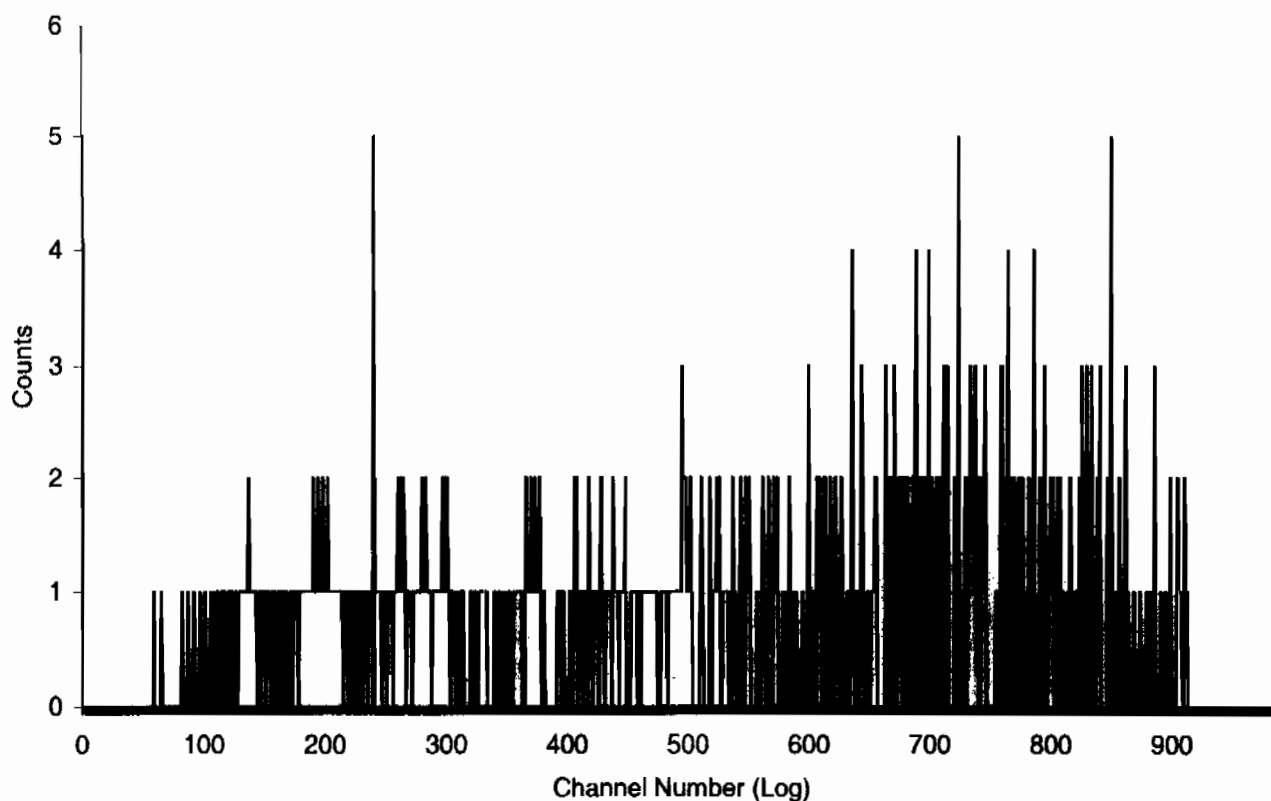




Sample Count Start Time:	15 Feb 2010 09:28:05		
Data Capture Date	15 Feb 2010 09:43:17		
User Filename	S06021535-4A.XLS		
	U06021535-1A.XLS		
Spectrum Type	Log Counts		
User Number	06		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	35-4	15.00
H#, Total Counts:	103.5	655	
Win1: Tritium - Start, End, Counts:	0	240	118
Win2: - Start, End, Counts:	0	990	655

# SPECTRUM PLOT

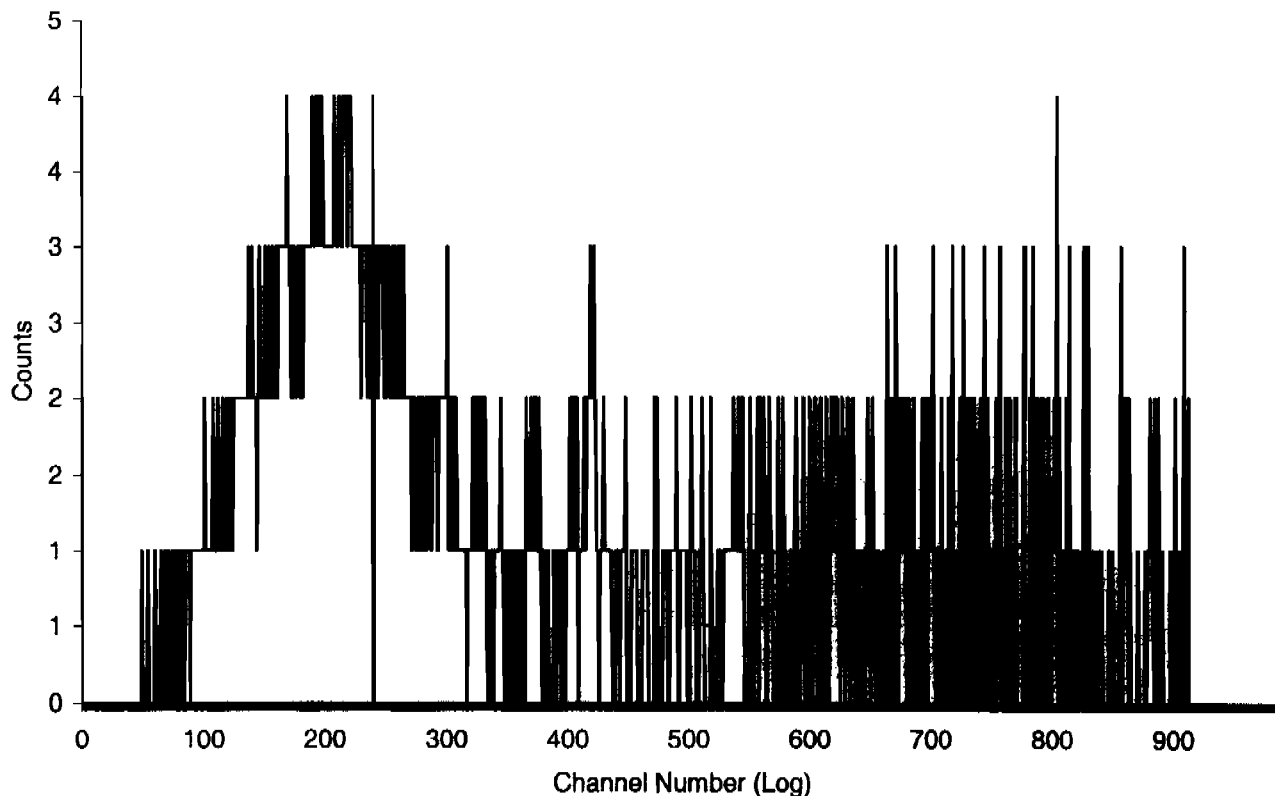
USER 06 - TRITIUM



Sample Count Start Time:	15 Feb 2010 09:44:21		
Data Capture Date	15 Feb 2010 09:59:33		
User Filename	S06021535-5A.XLS		
	U06021535-1A.XLS		
Spectrum Type	Log Counts		
User Number	06		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	35-5	15.00
H#, Total Counts:	103.5	1014	
Win1: Tritium - Start, End, Counts:	0	240	379
Win2: - Start, End, Counts:	0	990	1014

# SPECTRUM PLOT

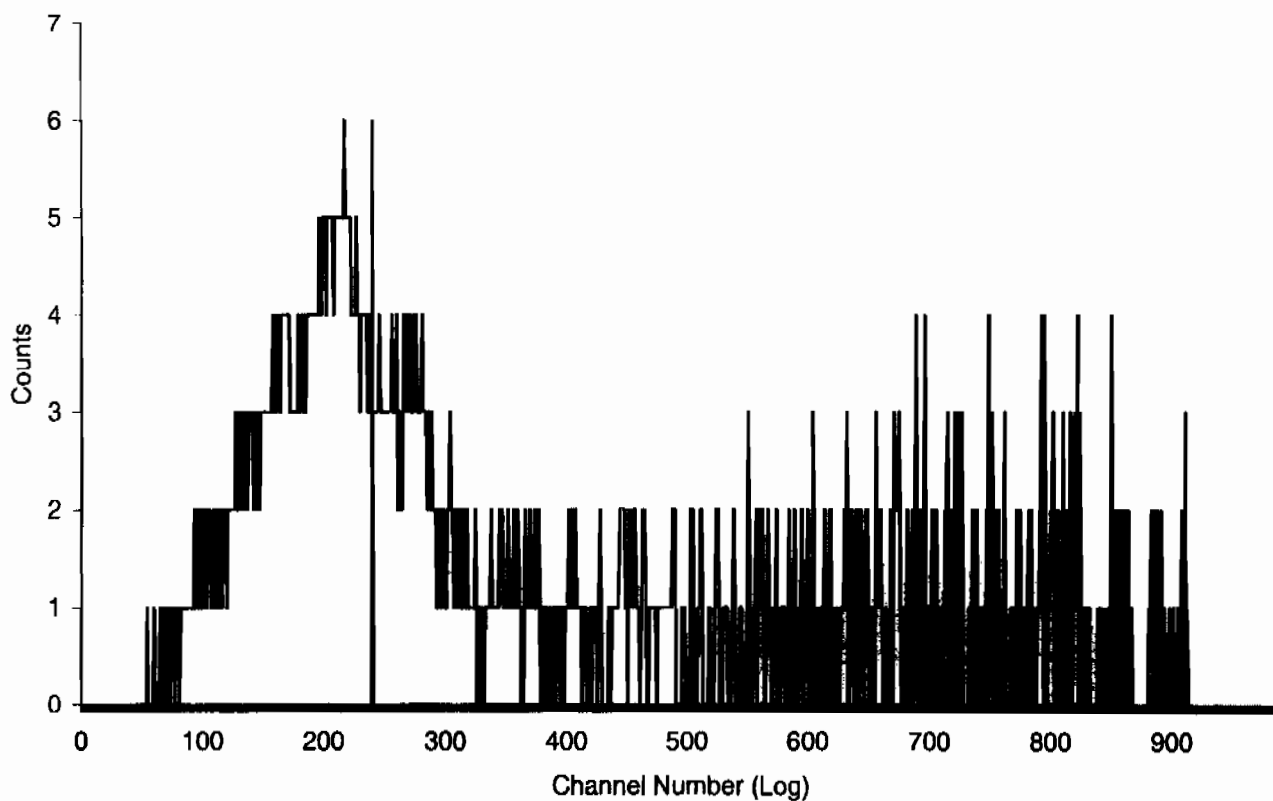
USER 06 - TRITIUM



Sample Count Start Time:	15 Feb 2010 10:00:36		
Data Capture Date	15 Feb 2010 10:15:48		
User Filename	S06021535-6A.XLS		
	U06021535-1A.XLS		
Spectrum Type	Log Counts		
User Number	06		
User Id	TRITIUM		
User Comment	BROWN		
Isotope Name	14C		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	35-6	15.00
H#, Total Counts:	102.6	1225	
Win1: Tritium - Start, End, Counts:	0	240	503
Win2: - Start, End, Counts:	0	990	1225

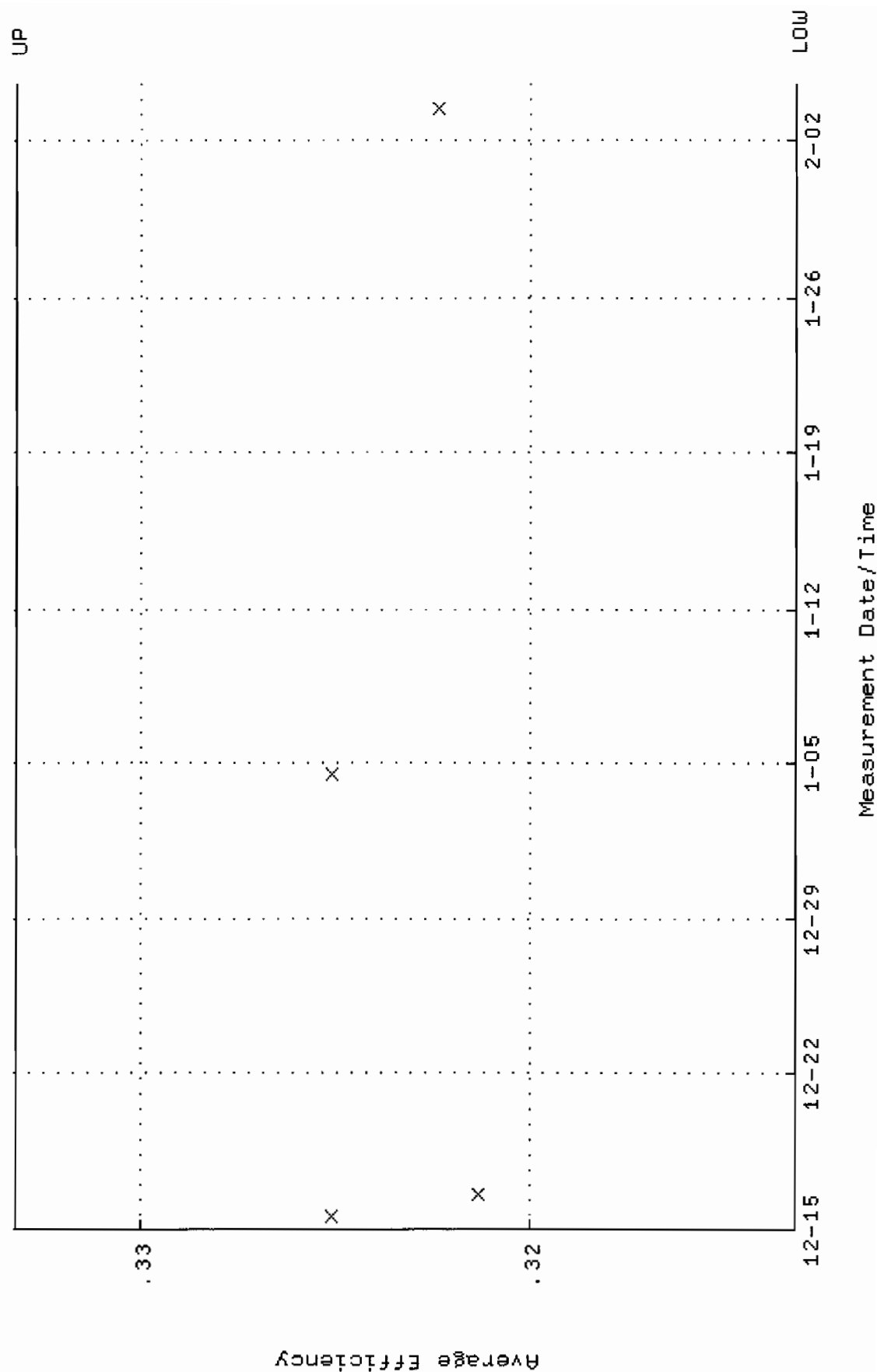
# SPECTRUM PLOT

USER 06 - TRITIUM

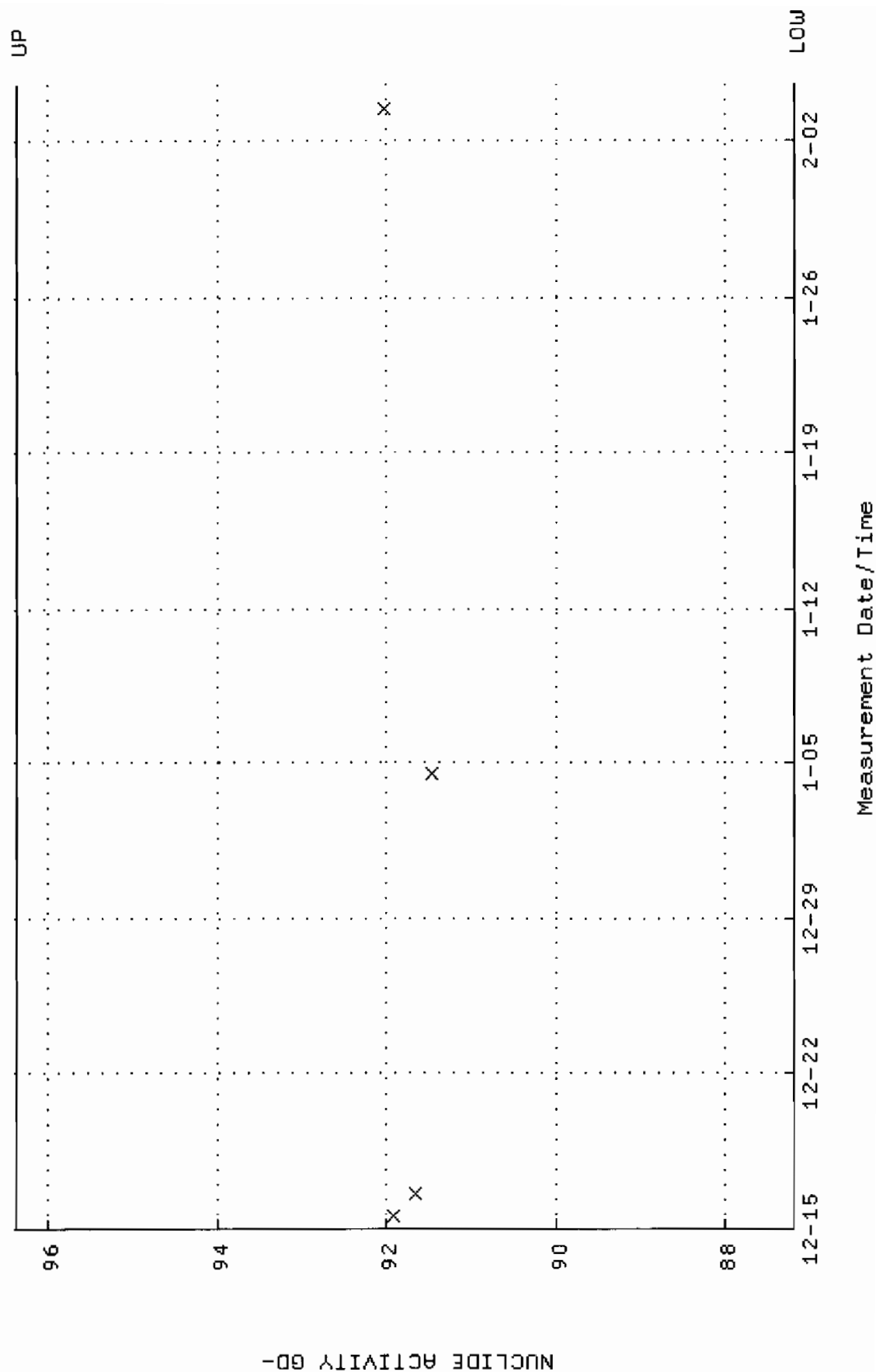


# BACKGROUND AND EFFICIENCY DATA

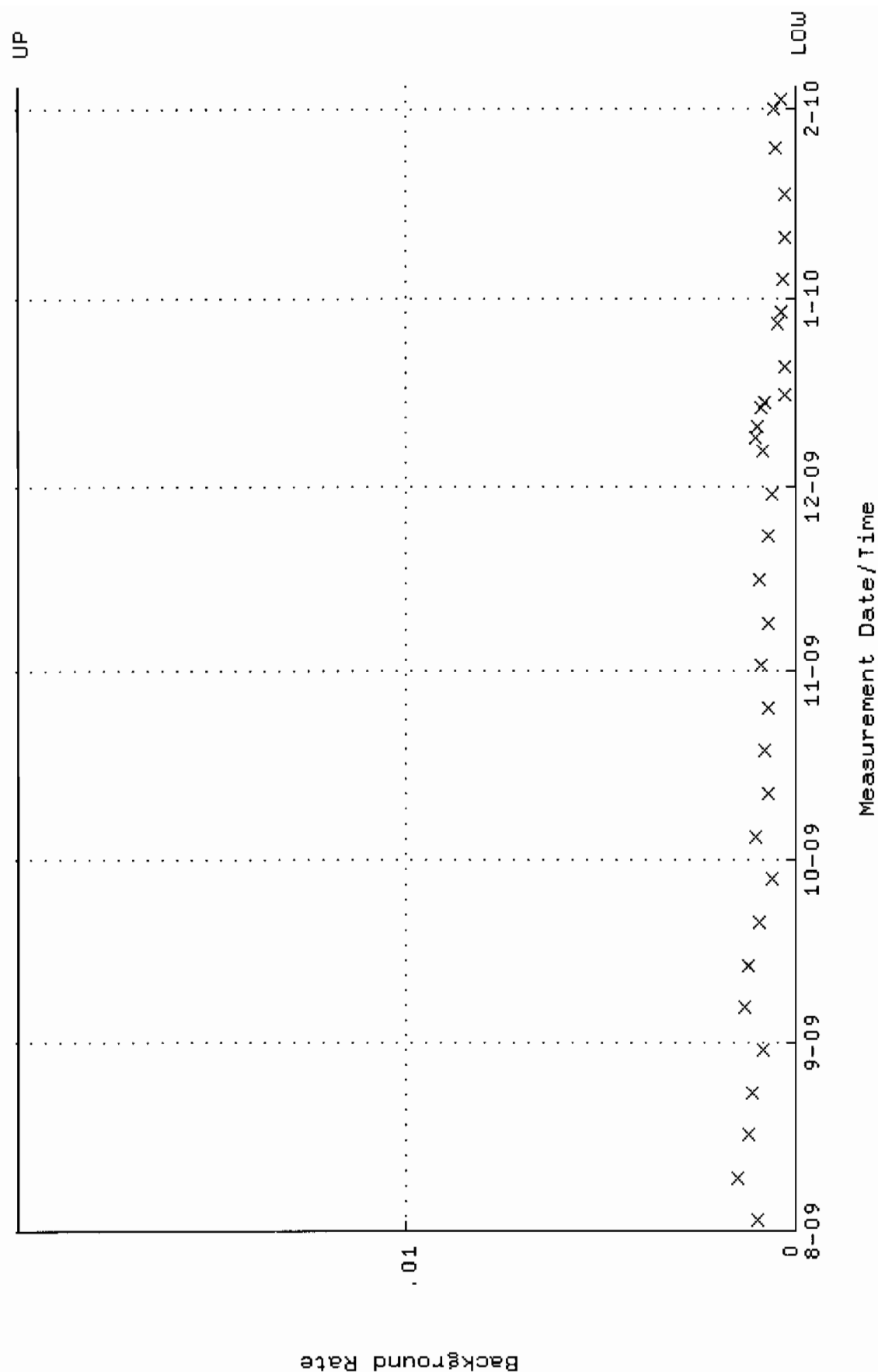
QA filename : DKA100:[ENV\_ALPHA.QA.W]W001.QAF;7  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.313195 through 0.333195



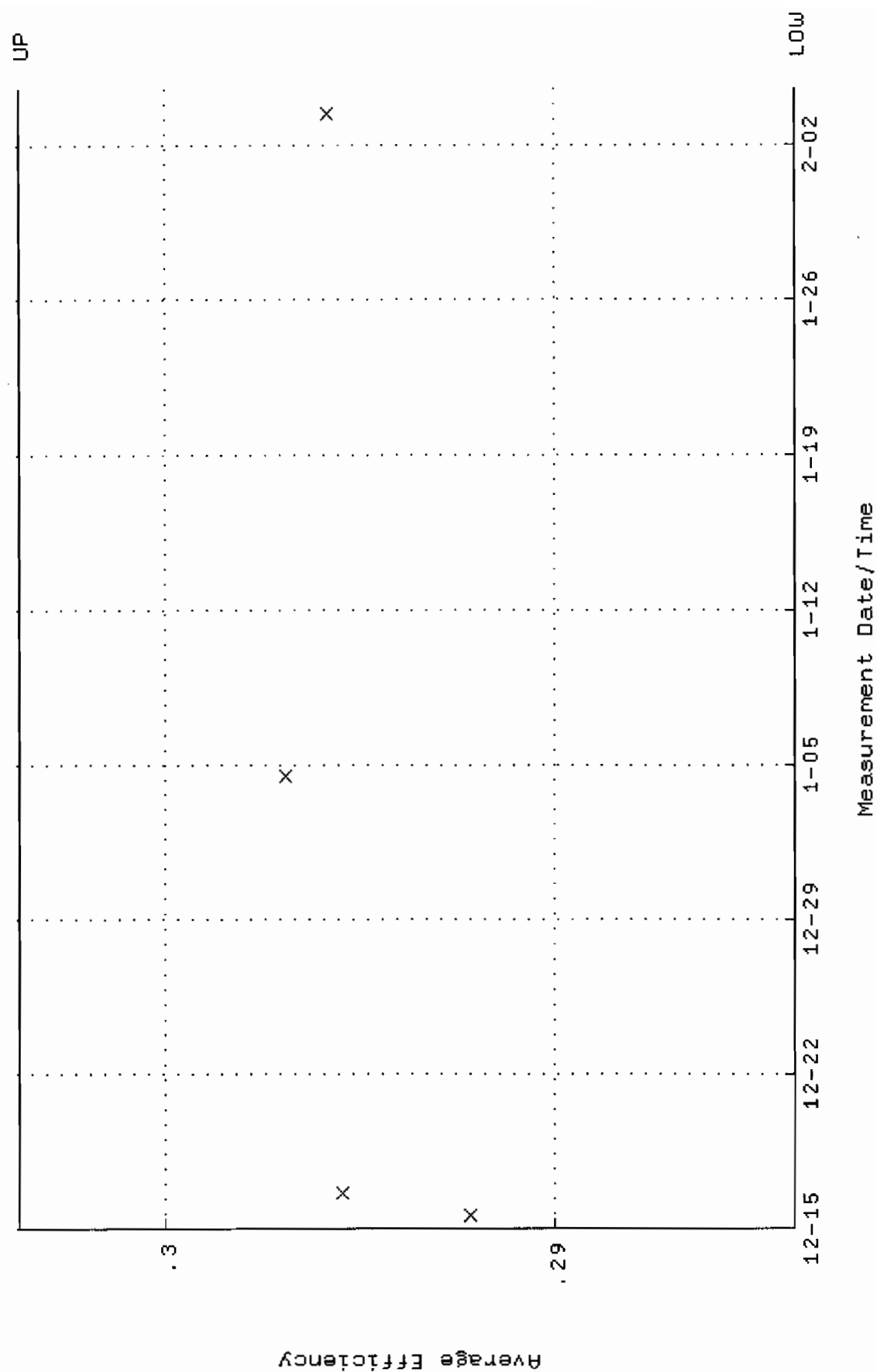
QA filename : DKA100:[ENV\_ALPHA.QA.W]W001.QAF;7  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.1884 through 96.3662



QA filename : DKA100:[ENV\_ALPHA.QA.B]B001.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

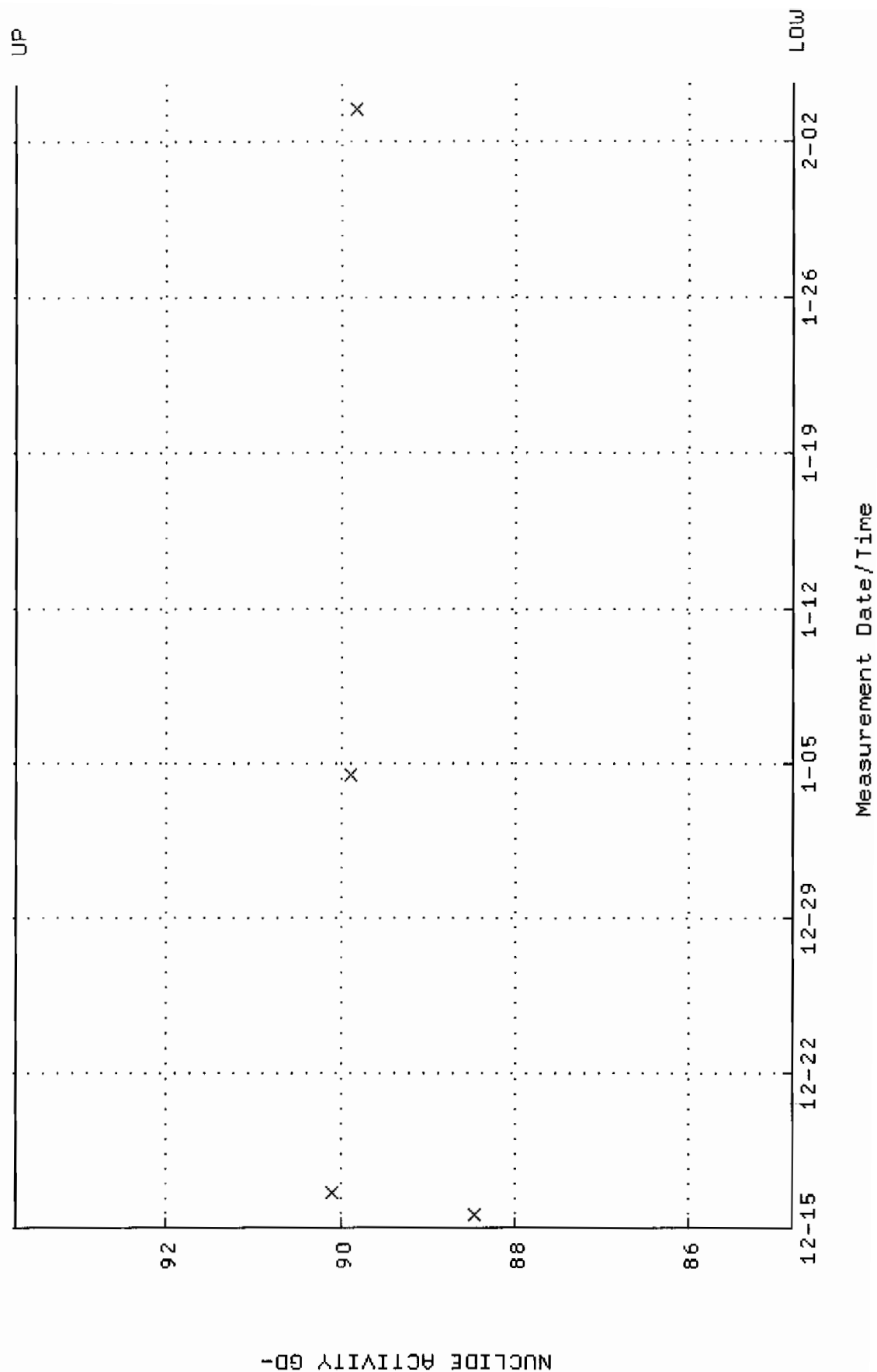


QA filename : DKA100:[ENV\_ALPHA.QA.W]W002.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.283765 through 0.303765

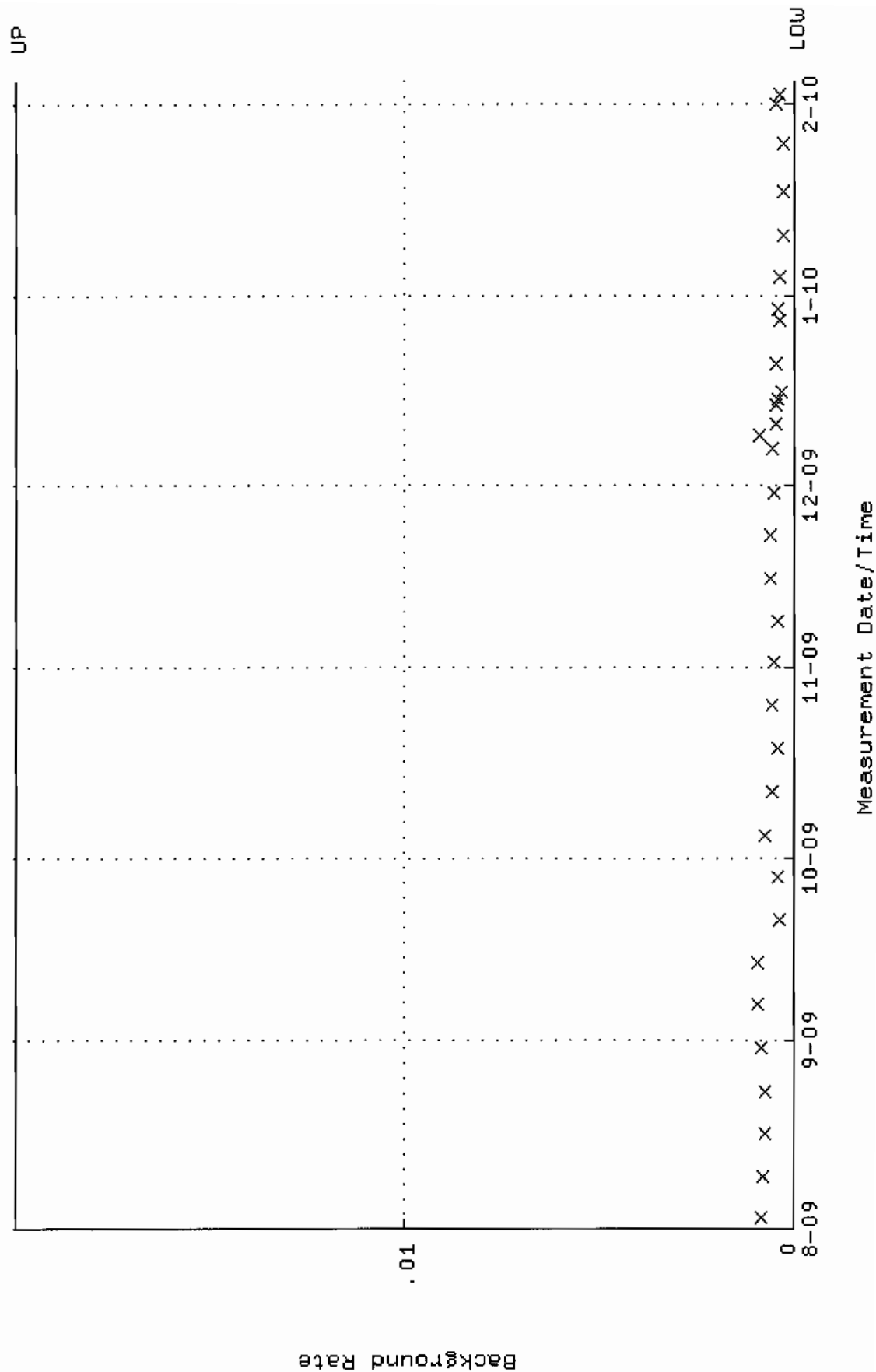




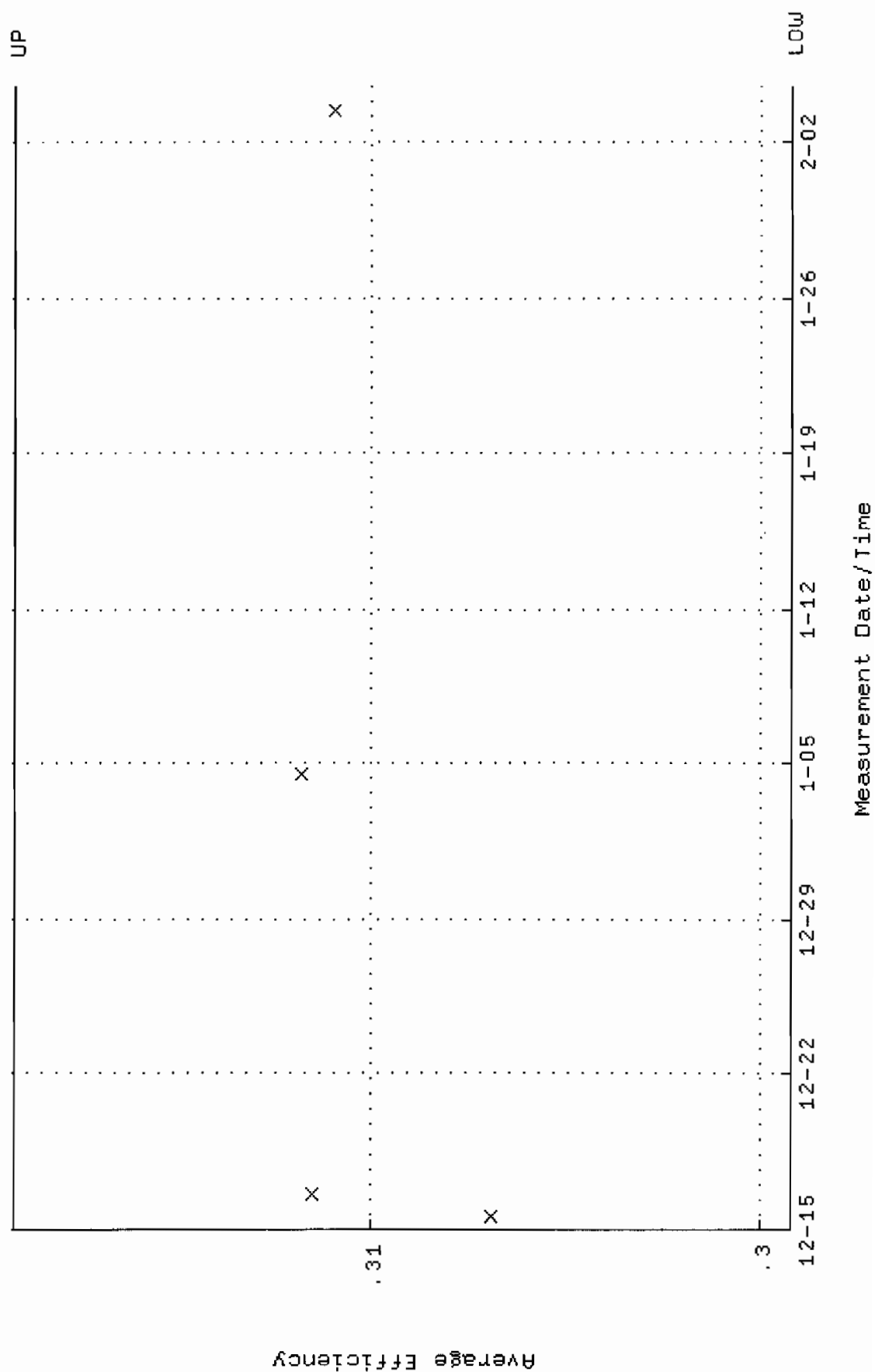
QA filename : DKA100:[ENV\_ALPHA.QA.W]W002.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 84.8037 through 93.7305



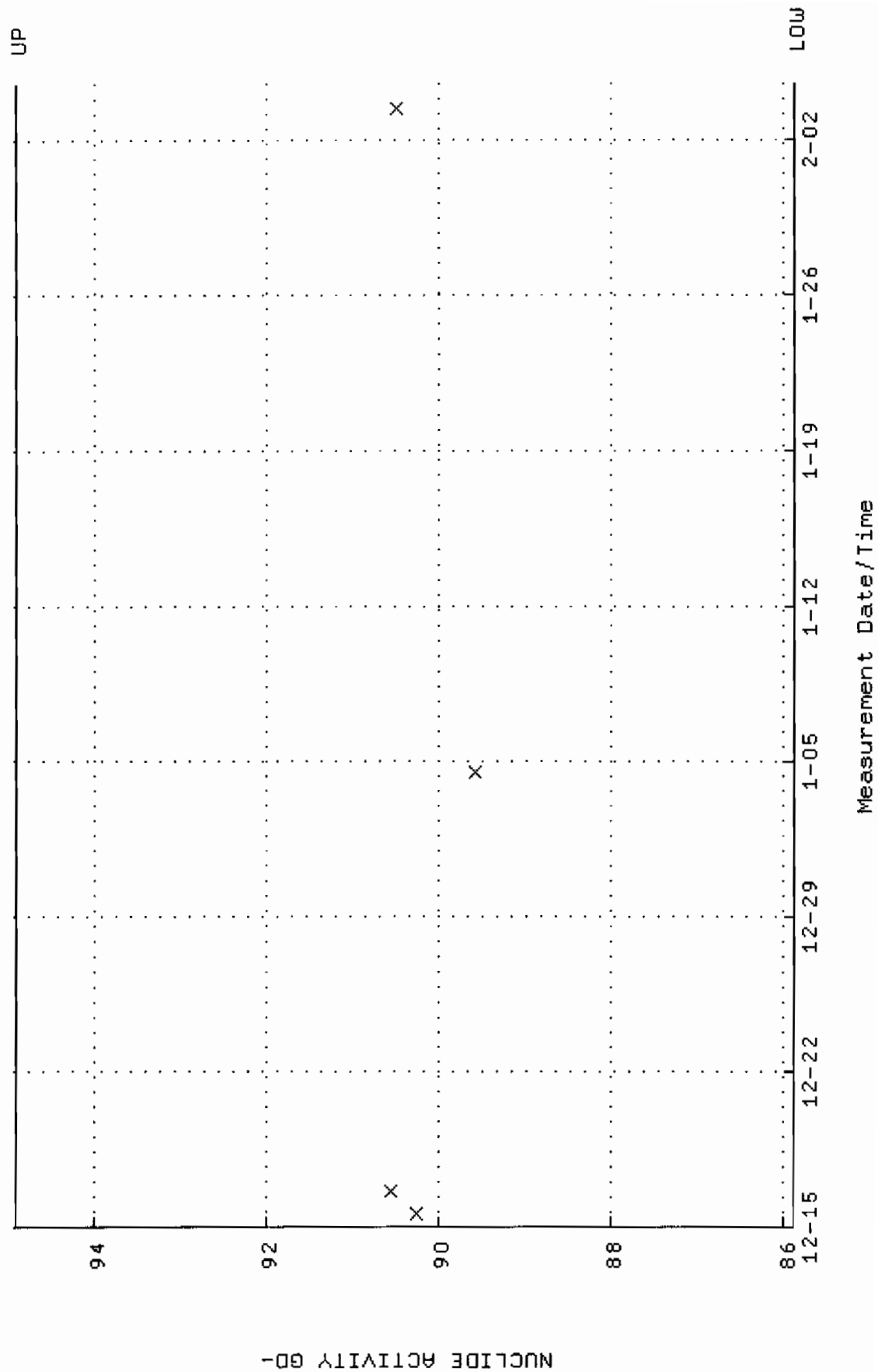
QA filename : DKA100:[ENV\_ALPHA.QA.B]B002.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W003.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.299193 through 0.319193

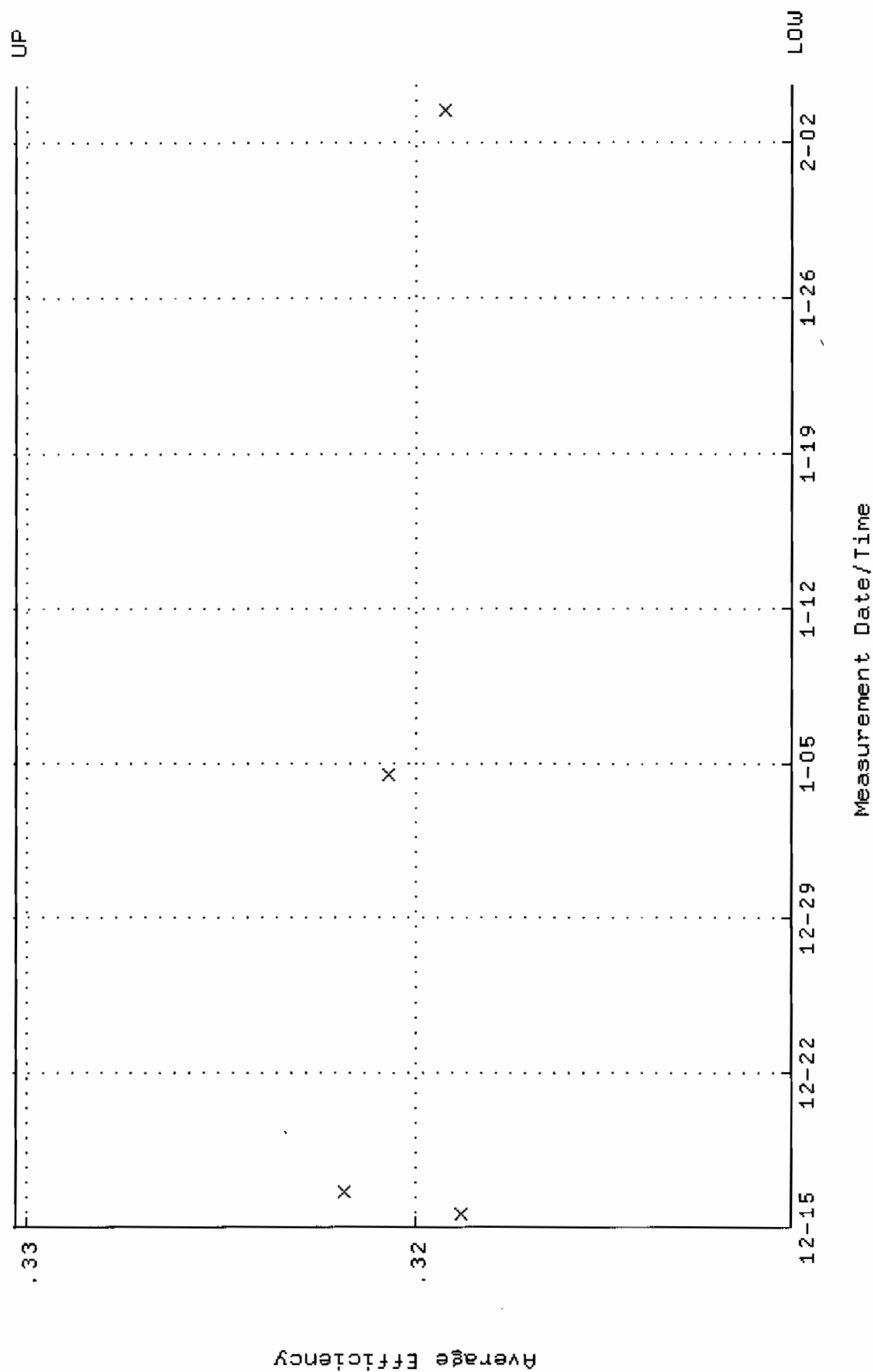


QA filename : DKA100:[ENV\_ALPHA.QA.W]W003.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 85.8745 through 94.9139

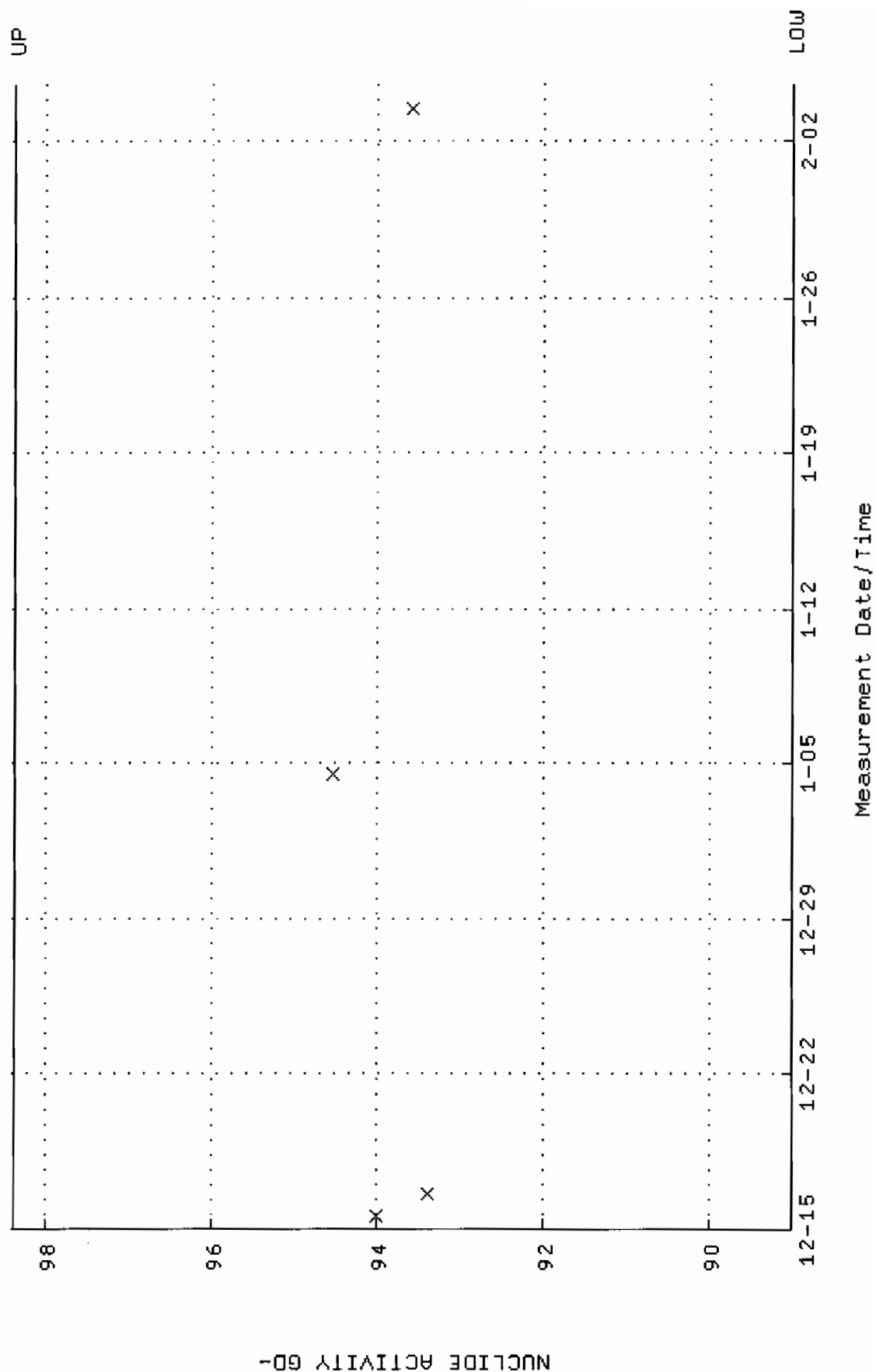




QA filename : DKA100:[ENV\_ALPHA.QA.W]W005.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.310305 through 0.330305



QA filename : DKA100:[ENV\_ALPHA.QA.W]W005.QAF;6  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 89.0042 through 98.3730

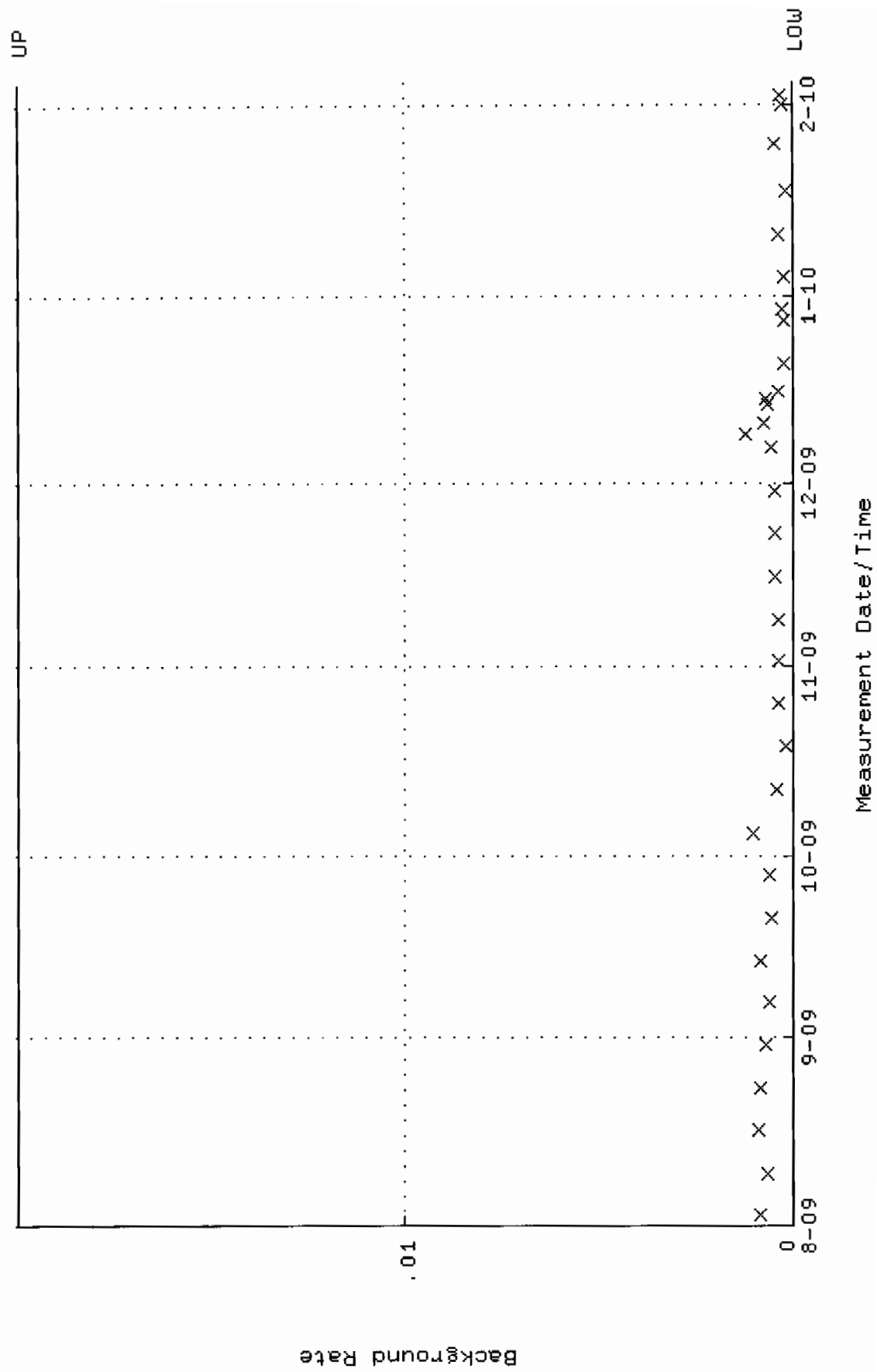


QA filename : DKA100:[ENV\_ALPHA.QA.B]B005.QAF;2

Parameter Name : BACKRATE (Background Rate)

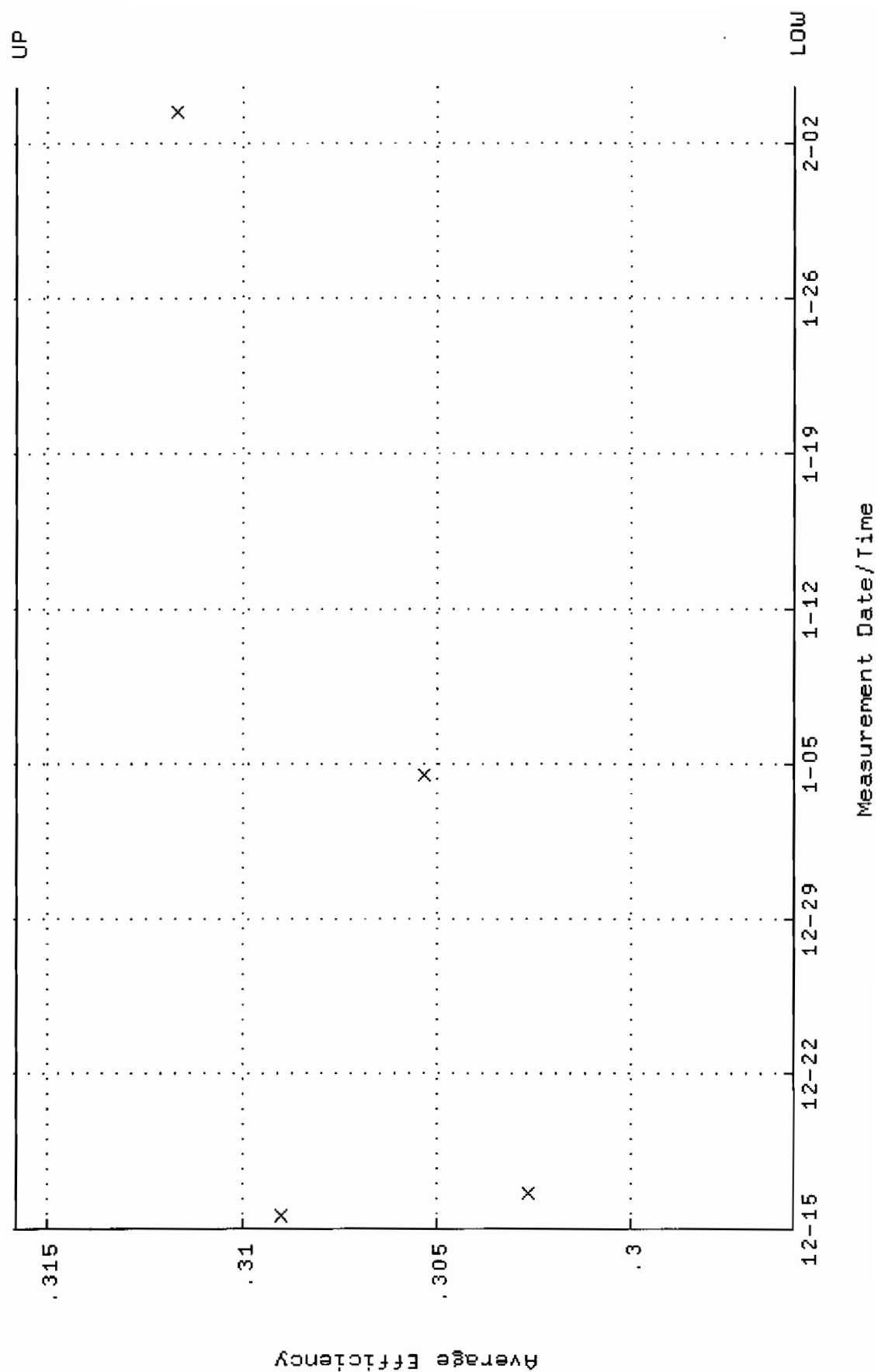
Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

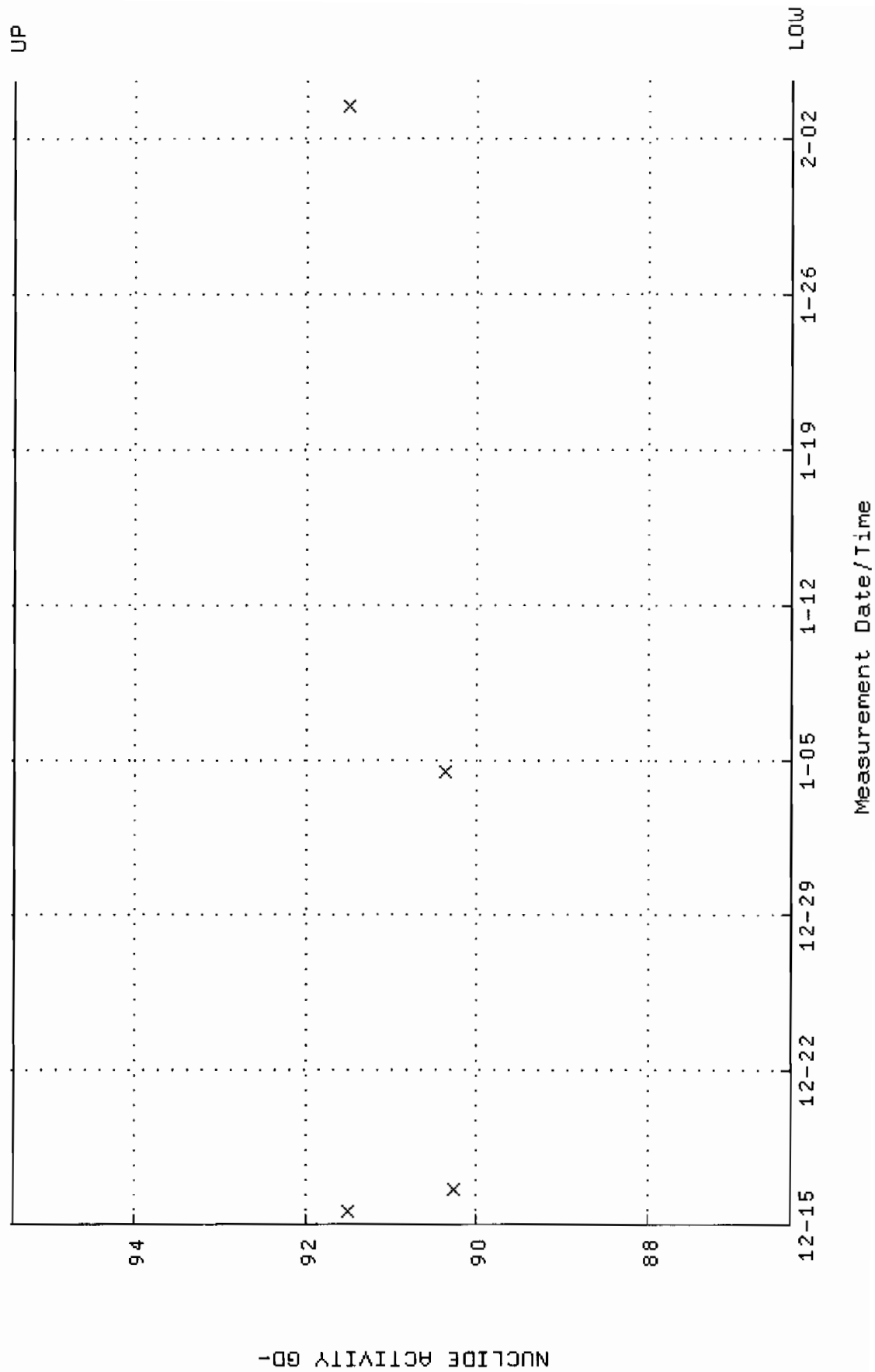




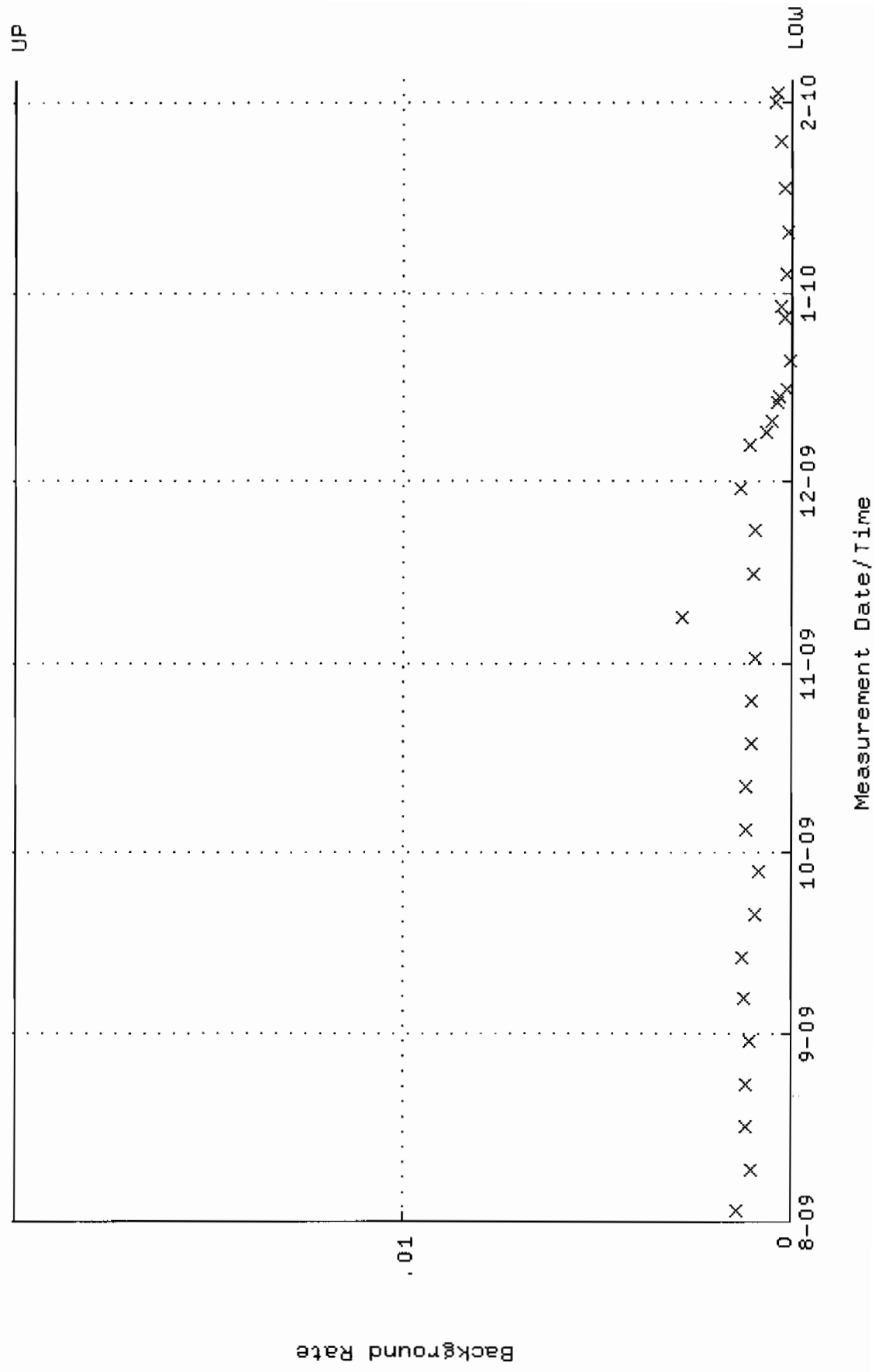
QA filename : DKA100:[ENV\_ALPHA.QA.W]W006.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.295821 through 0.315821



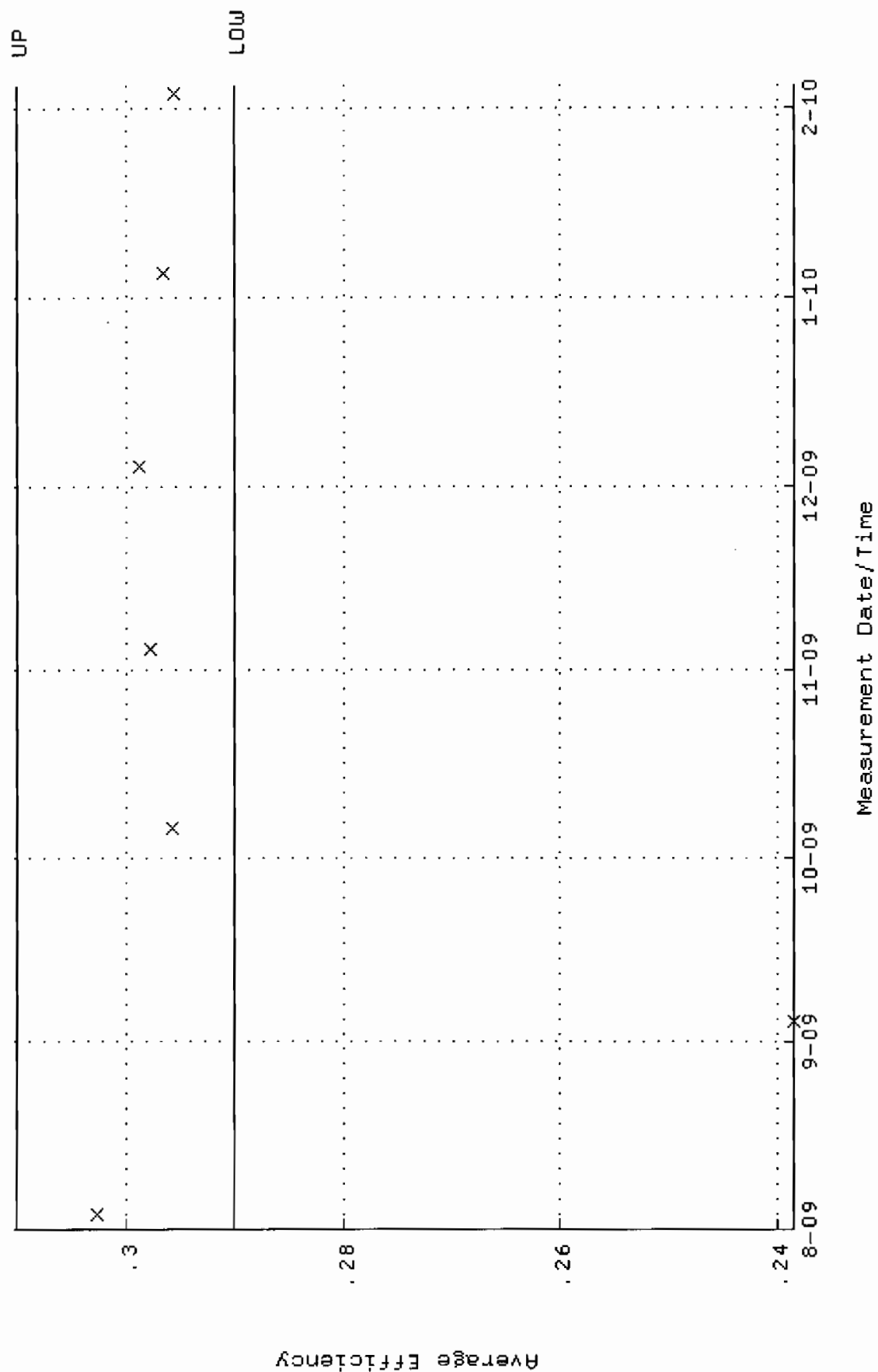
QA filename : DKA100:[ENV\_ALPHA.QA.W]W006.QAF;6  
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00  
Lower/Upper Lmts: 86.3237 through 95.4105



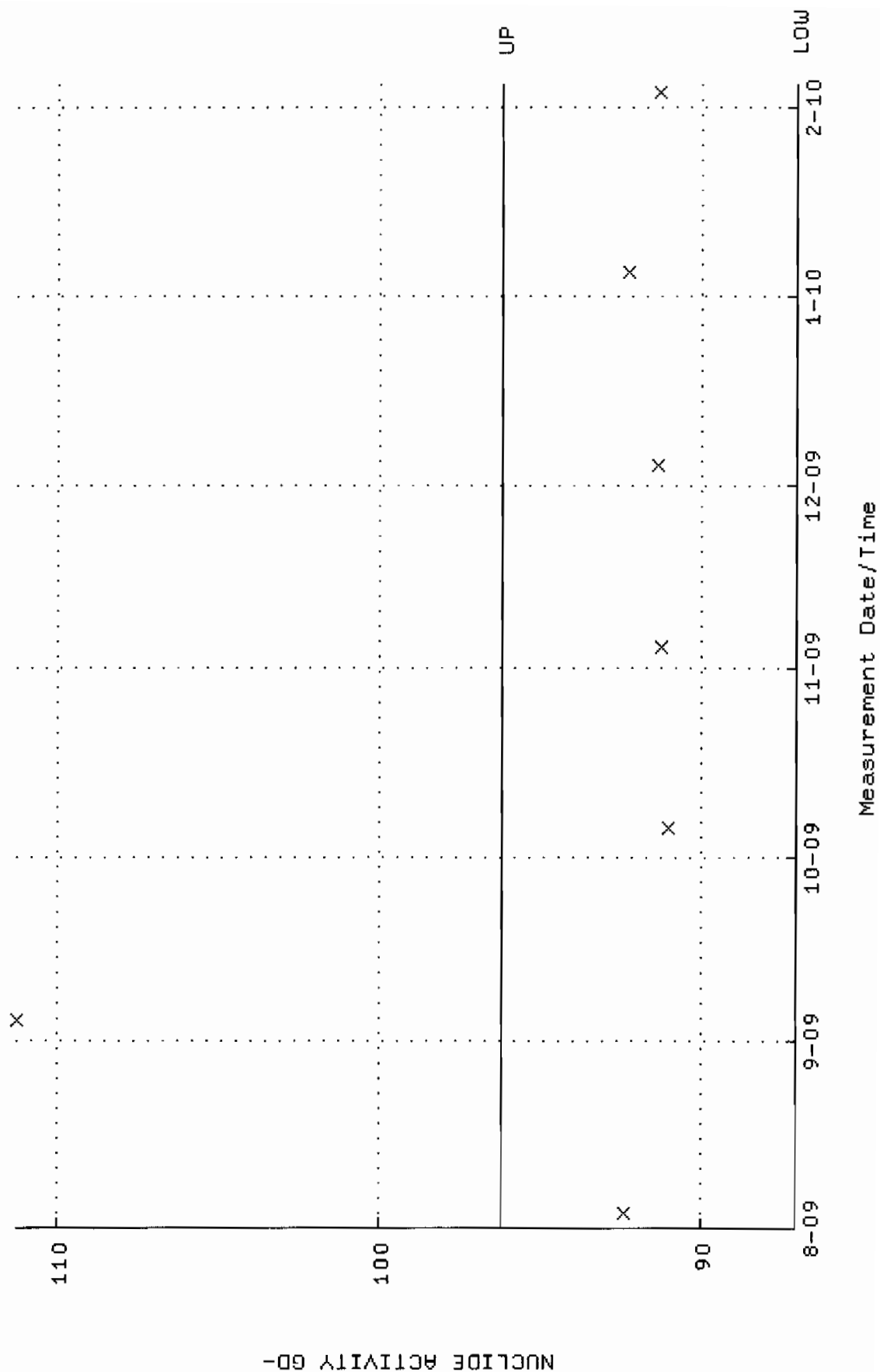
QA filename : DKA100:[ENV\_ALPHA.QA.B]B006.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



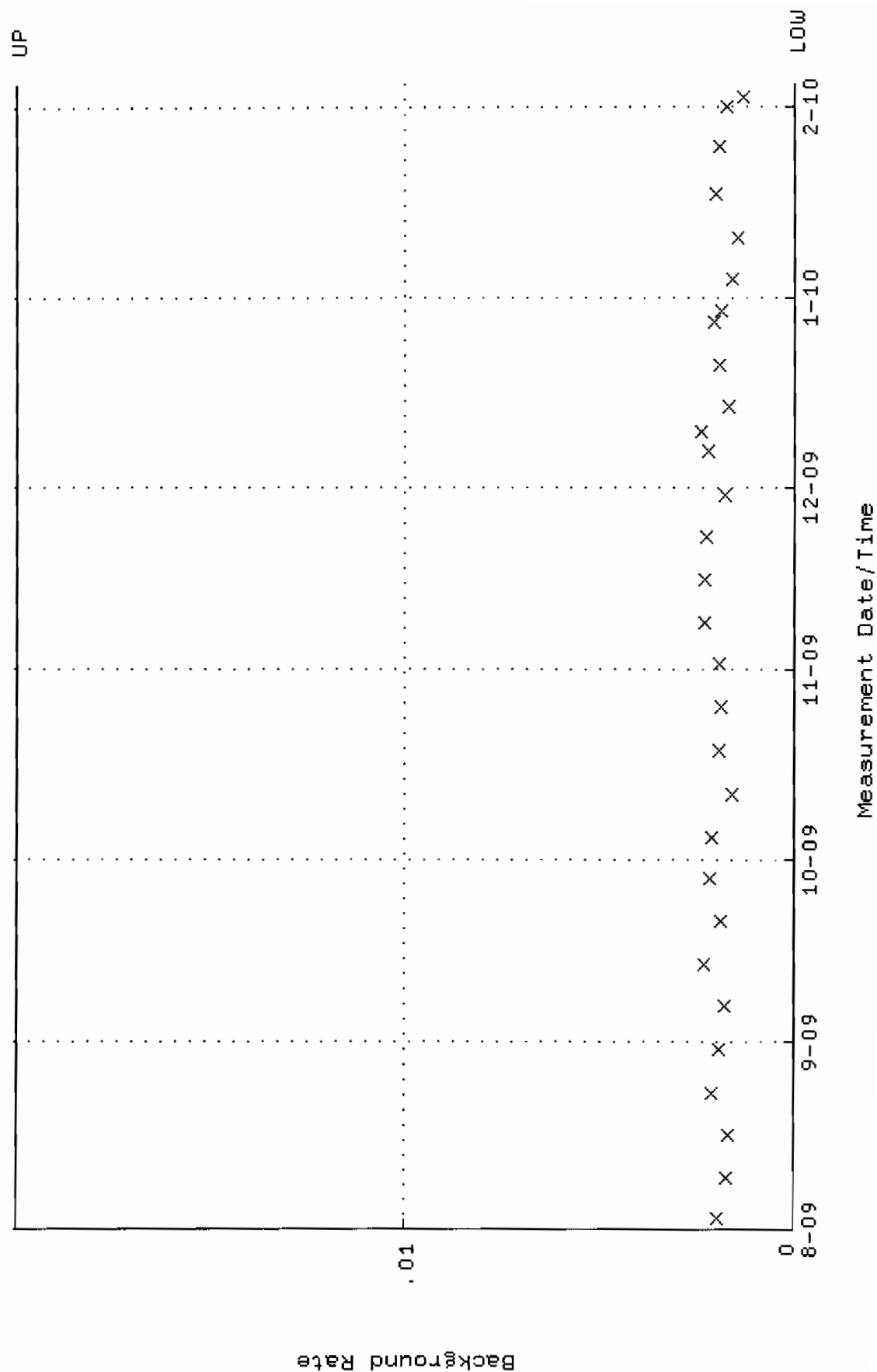
QA filename : DKA100:[ENV\_ALPHA.QA.W]W007.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.290108 through 0.310108



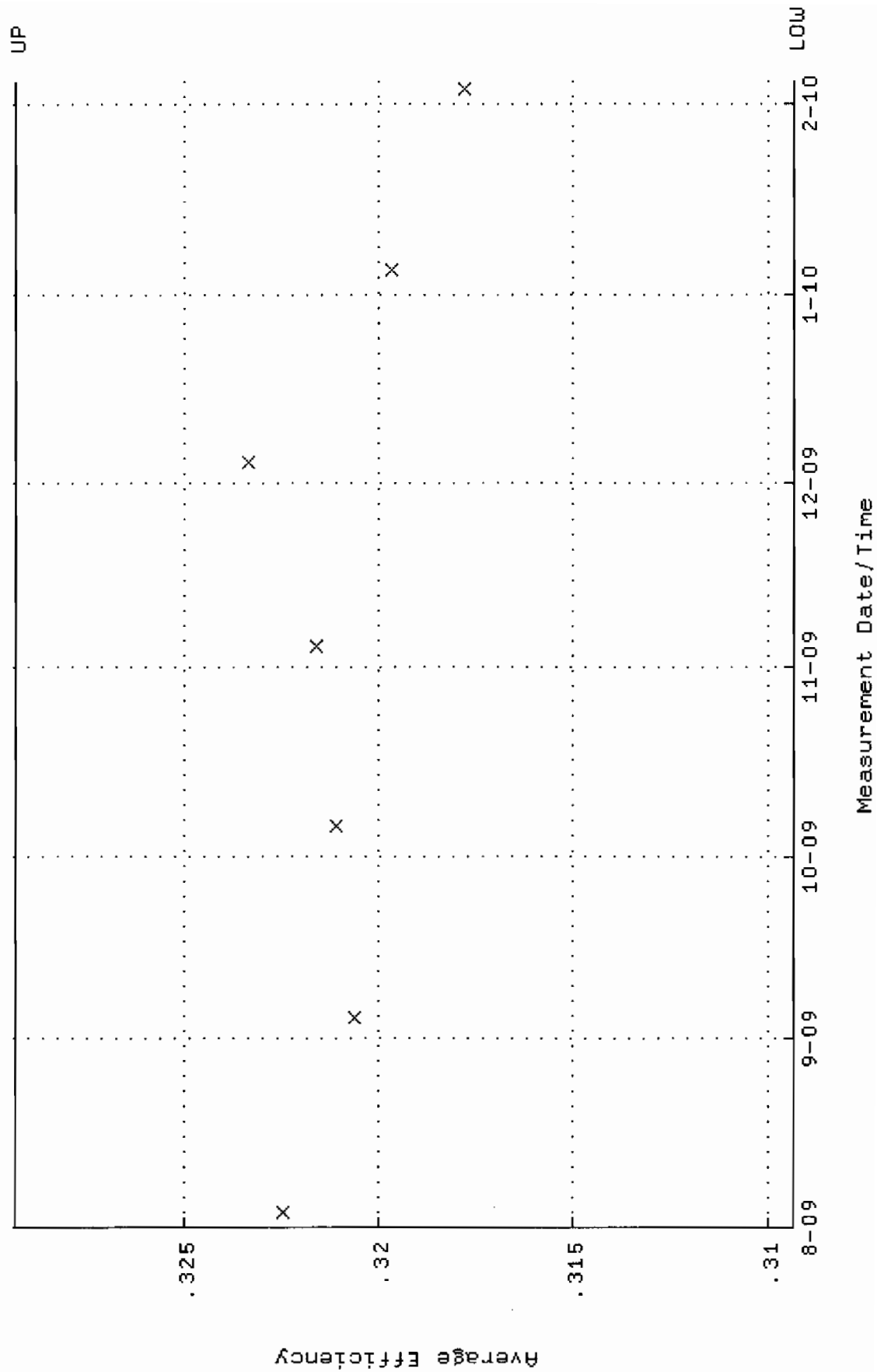
QA filename : DKA100:[ENV\_ALPHA.QA.W]W007.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.0687 through 96.2339



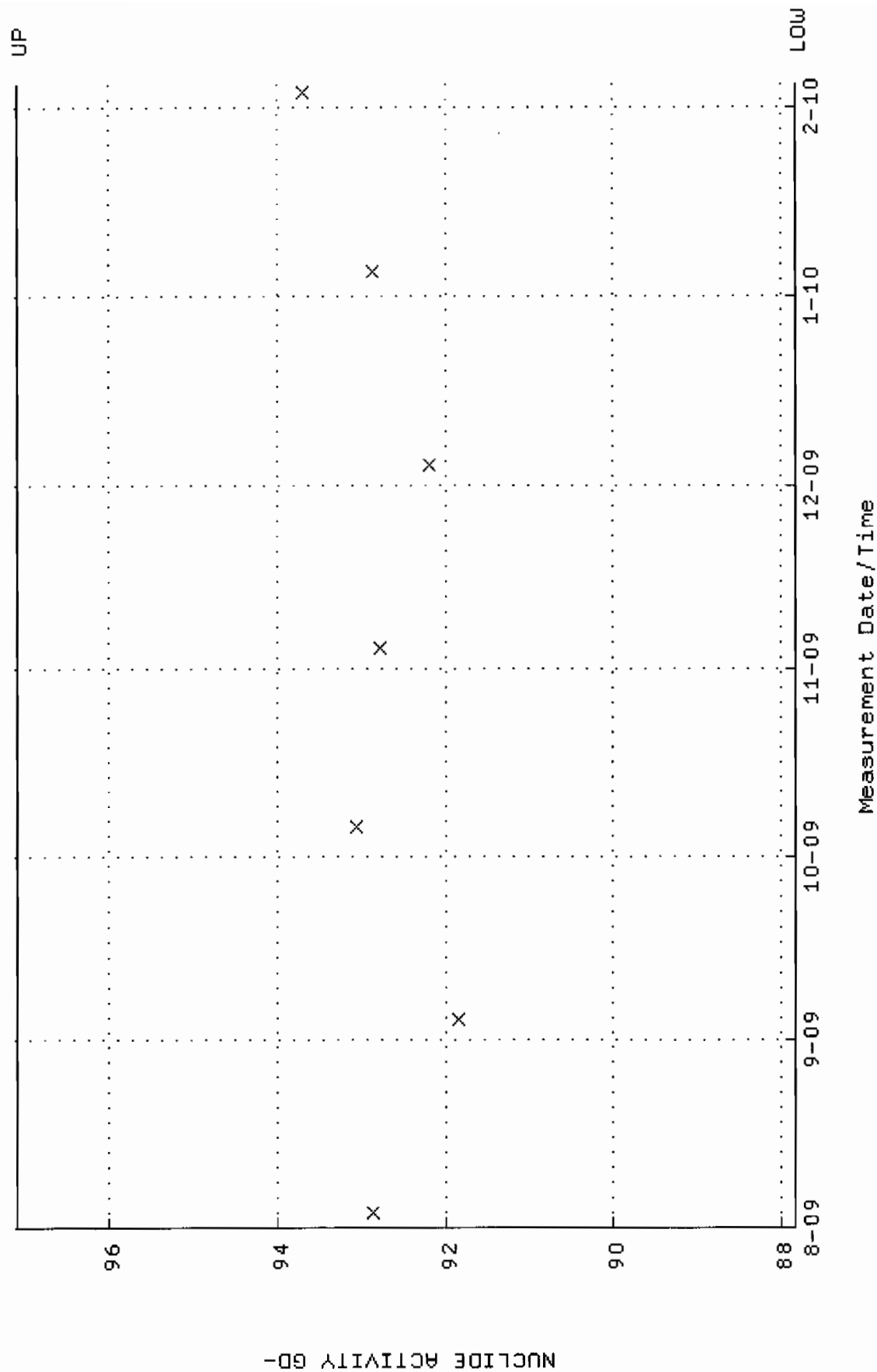
QA filename : DKA100:[ENV\_ALPHA.QA.B]B007.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:32 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W008.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.309318 through 0.329318



QA filename : DKA100:[ENV\_ALPHA.QA.W]W008.QAF;4  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.8346 through 97.0804



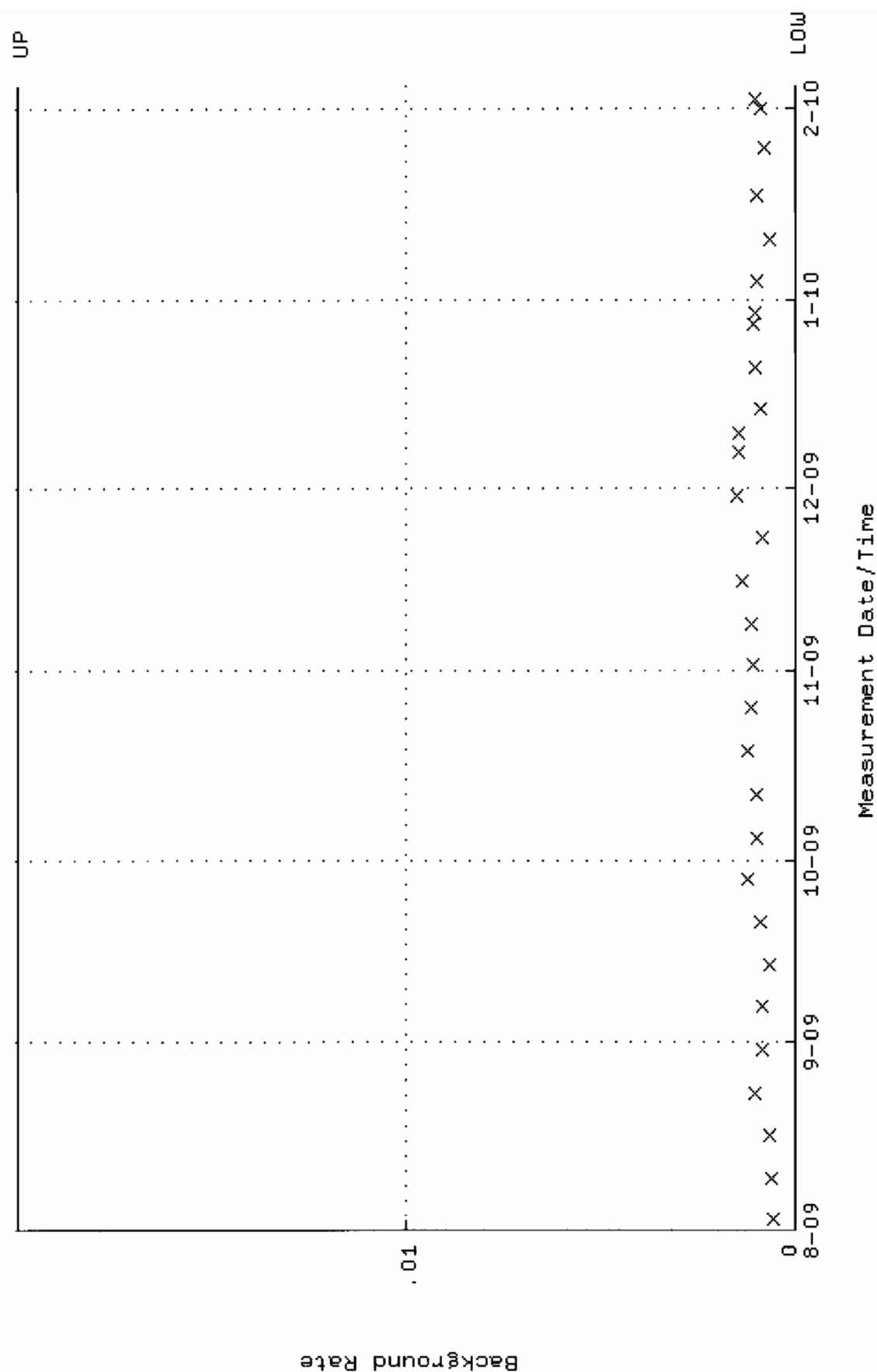


QA filename : DKA100:[ENV\_ALPHA.QA.B]B008.QAF;1

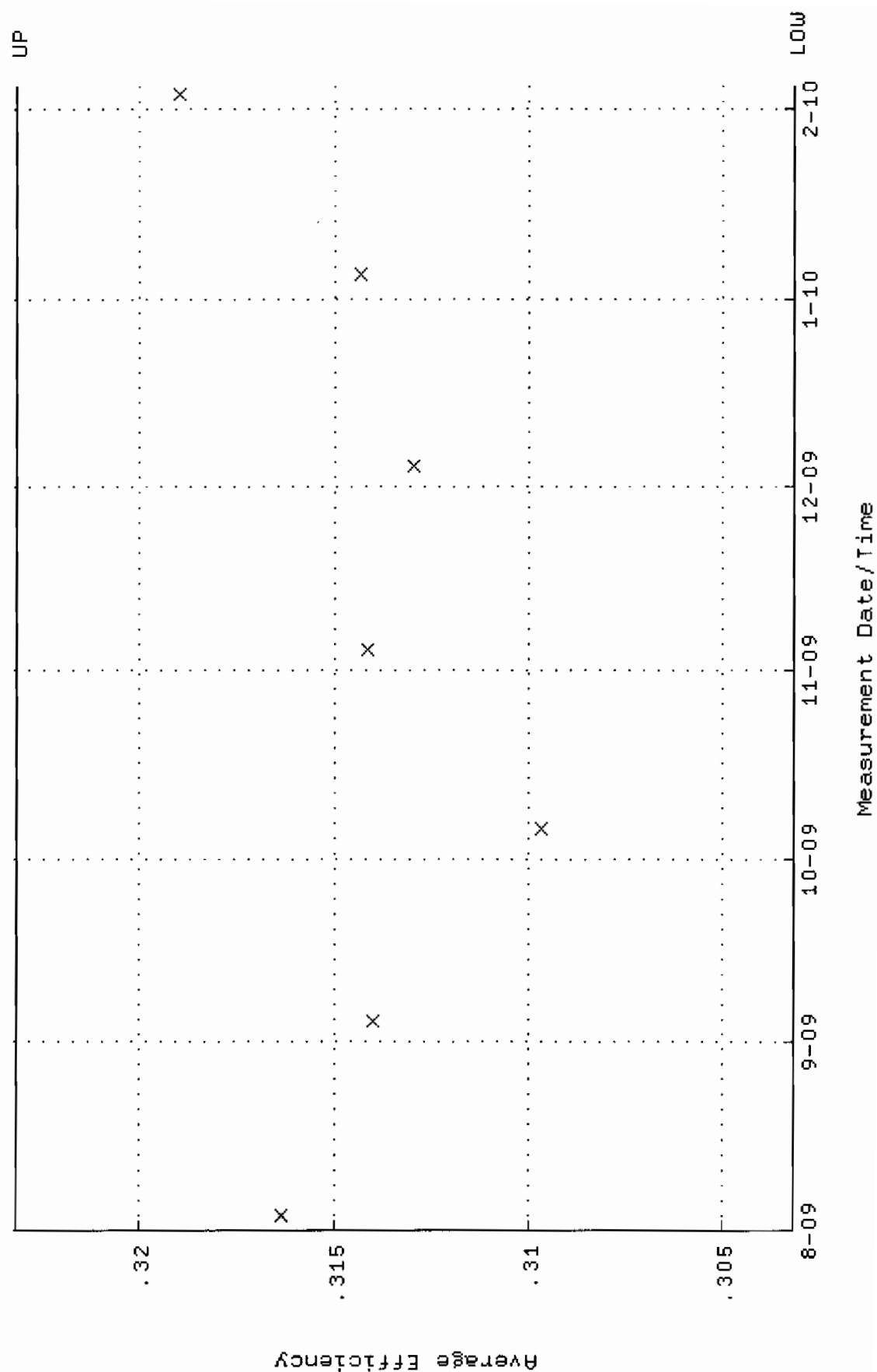
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:32 through 4-FEB-2010 12:00:00

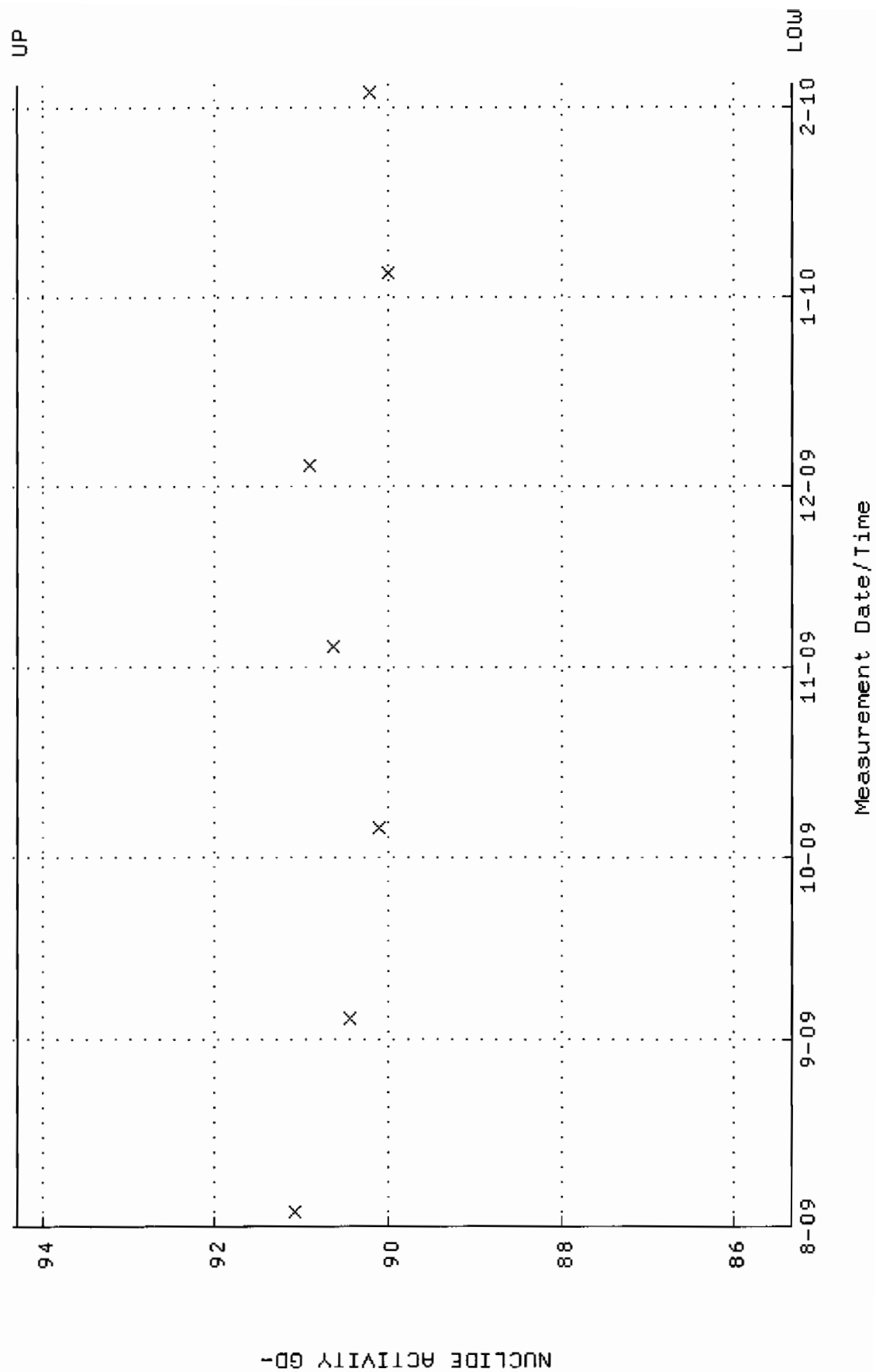
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W010.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.303169 through 0.323169



QA filename : DKA100:[ENV\_ALPHA.QA.W]W010.QAF;5  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 85.3273 through 94.3091

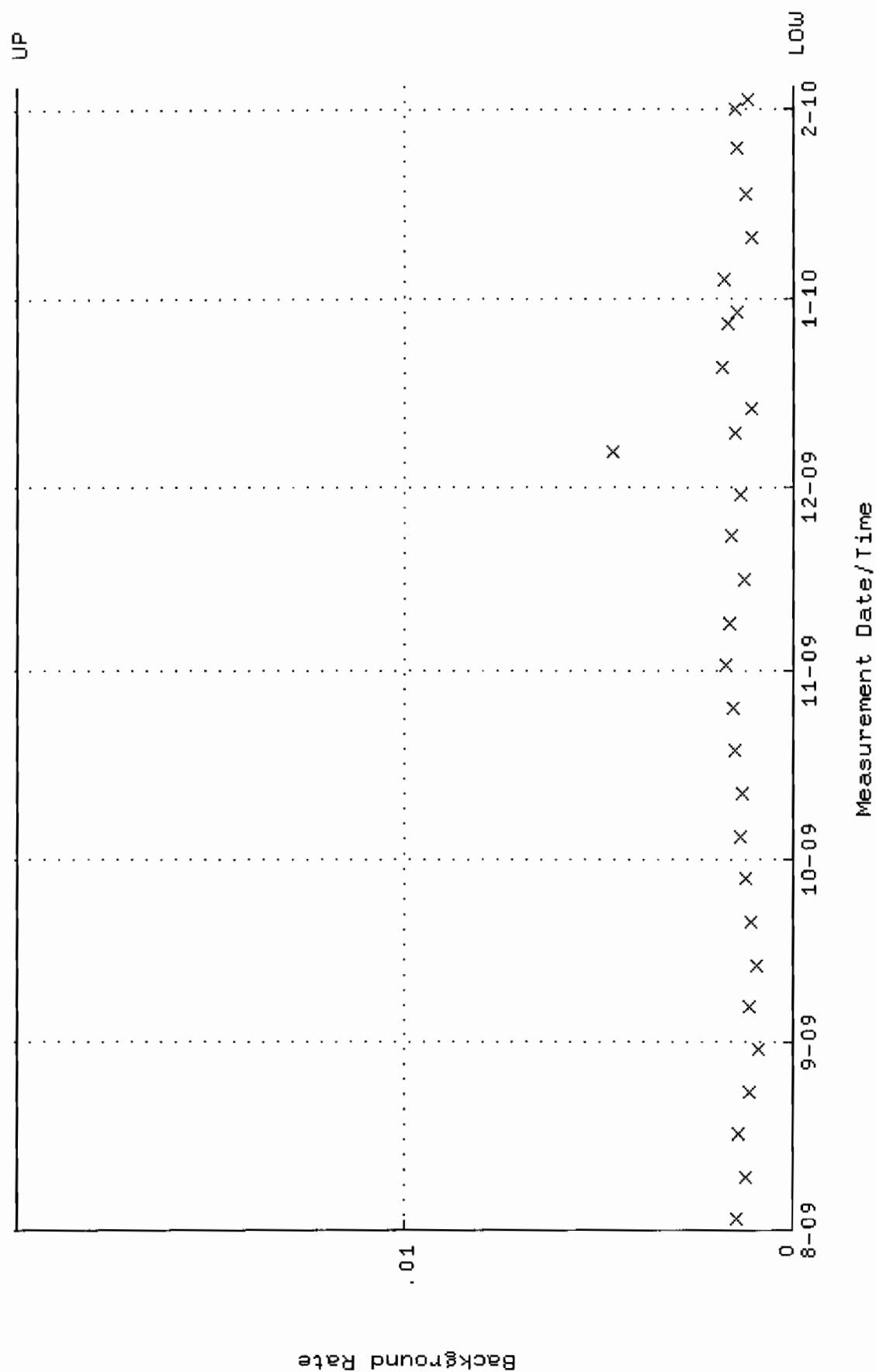


QA filename : DKA100:[ENV\_ALPHA.QA.B]B010.QAF;2

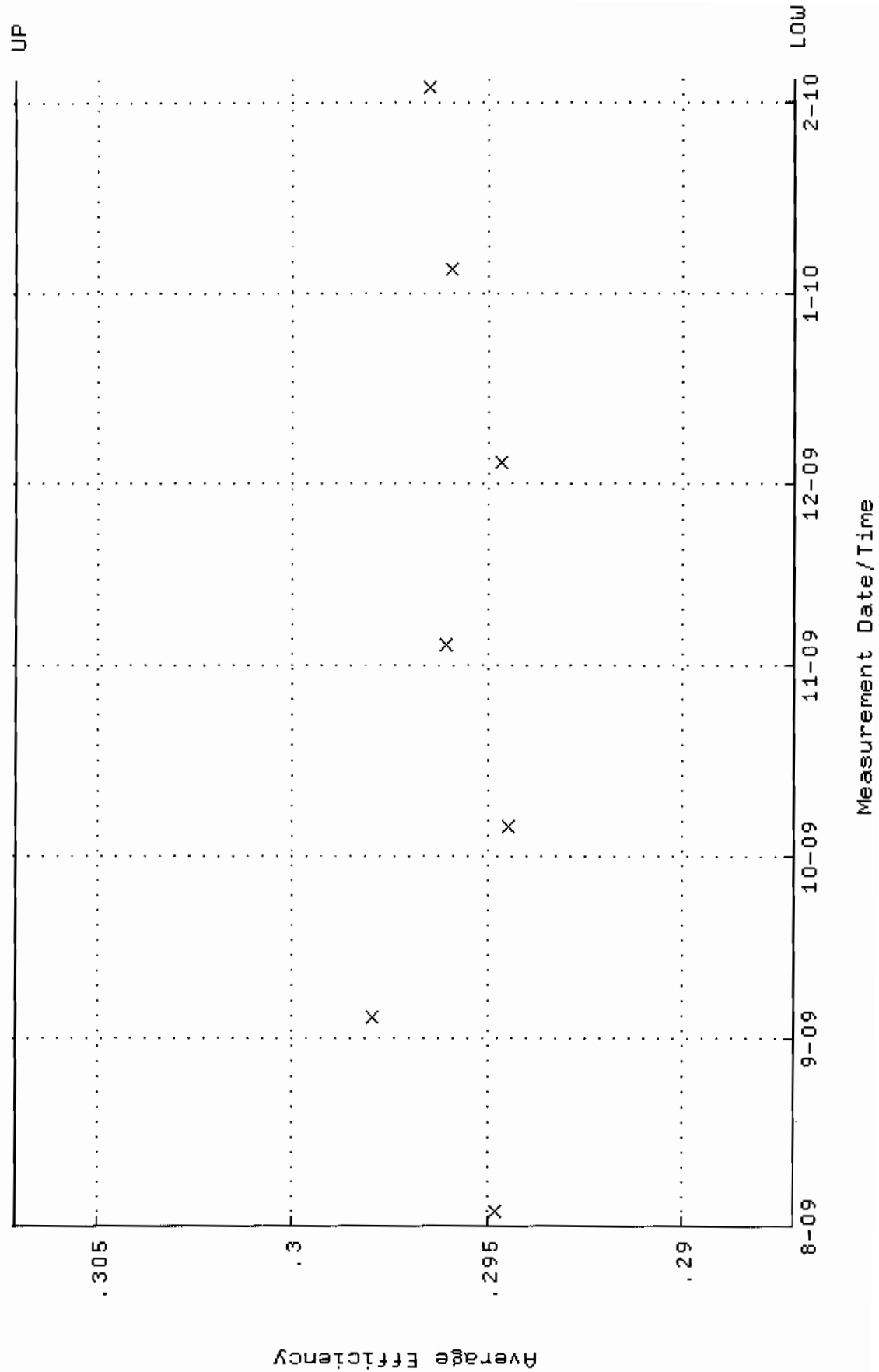
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:32 through 4-FEB-2010 12:00:00

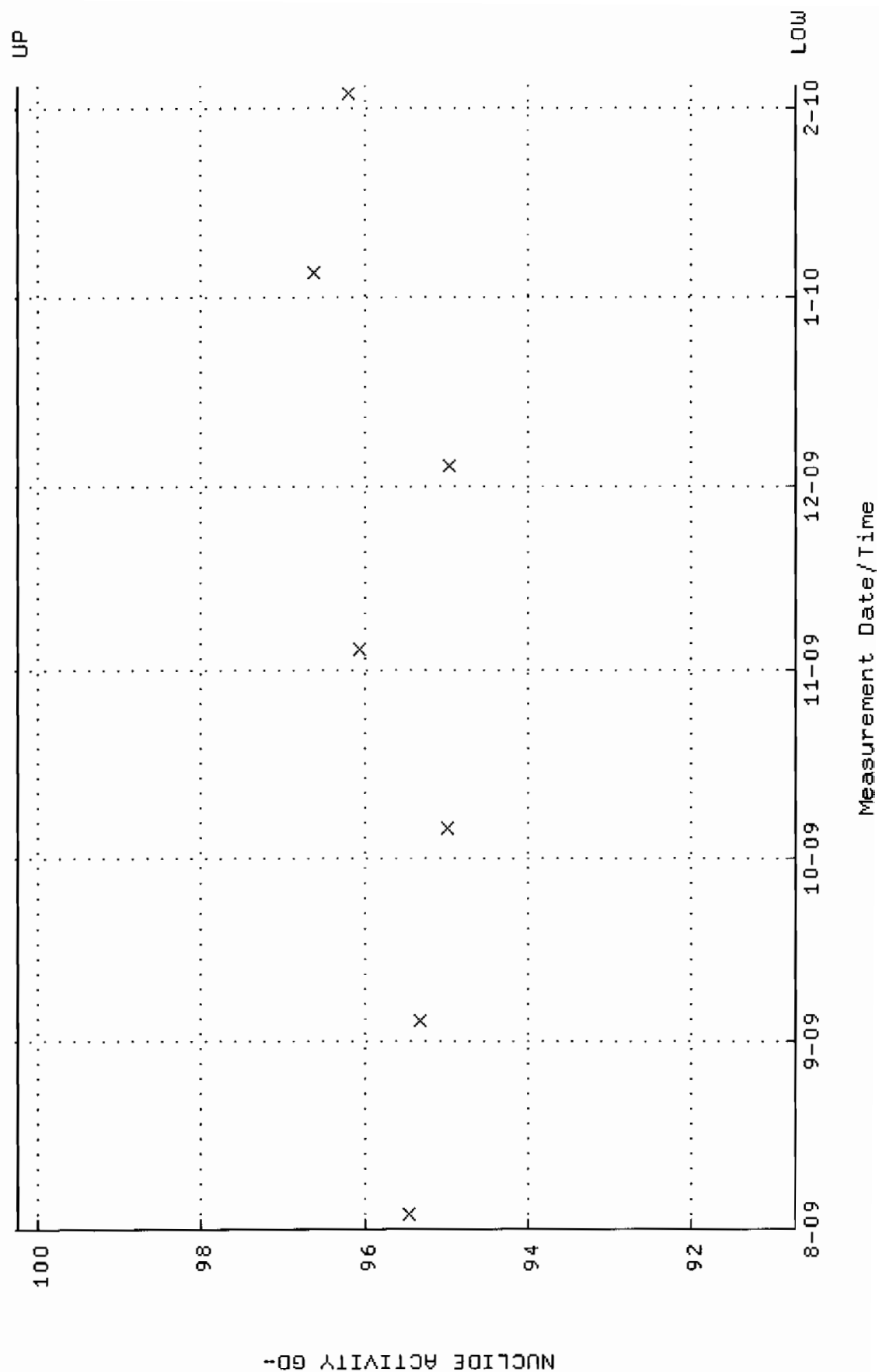
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W011.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.287129 through 0.307129



QA filename : DKA100:[ENV\_ALPHA.QA.W]W011.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 90.7092 through 100.258

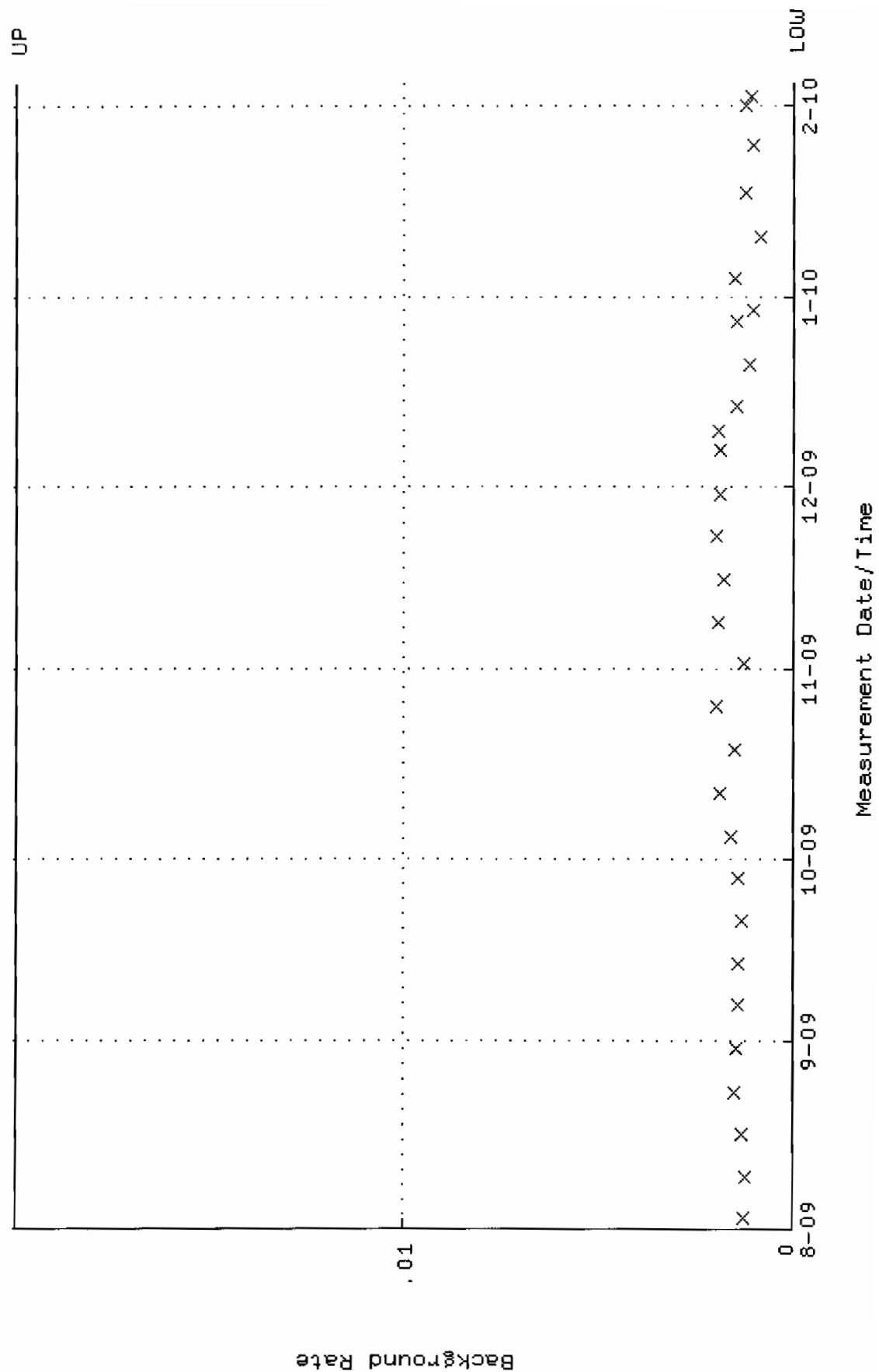


QA filename : DKA100:[ENV\_ALPHA.QA.B]B011.QAF;2

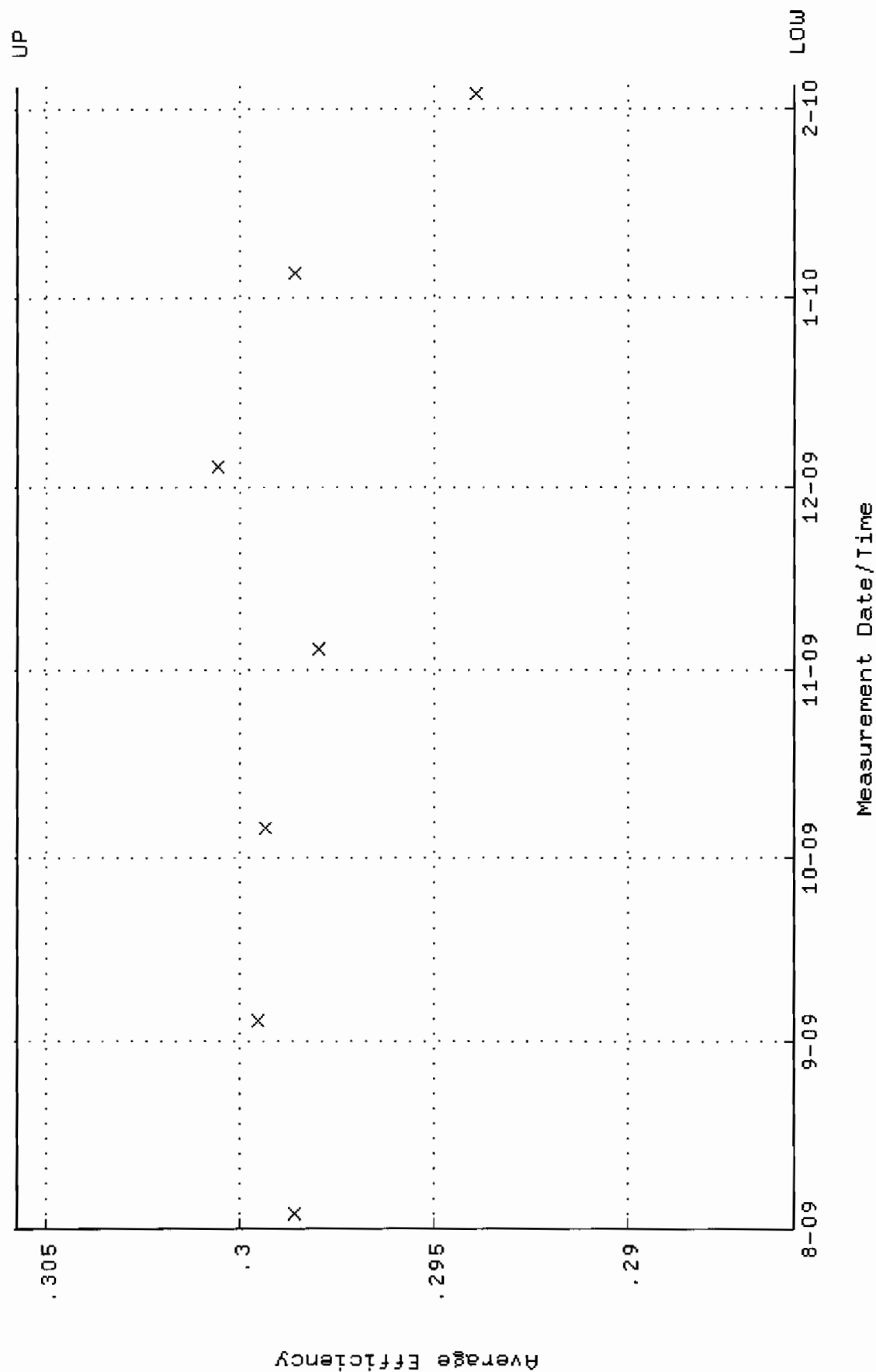
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:32 through 4-FEB-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

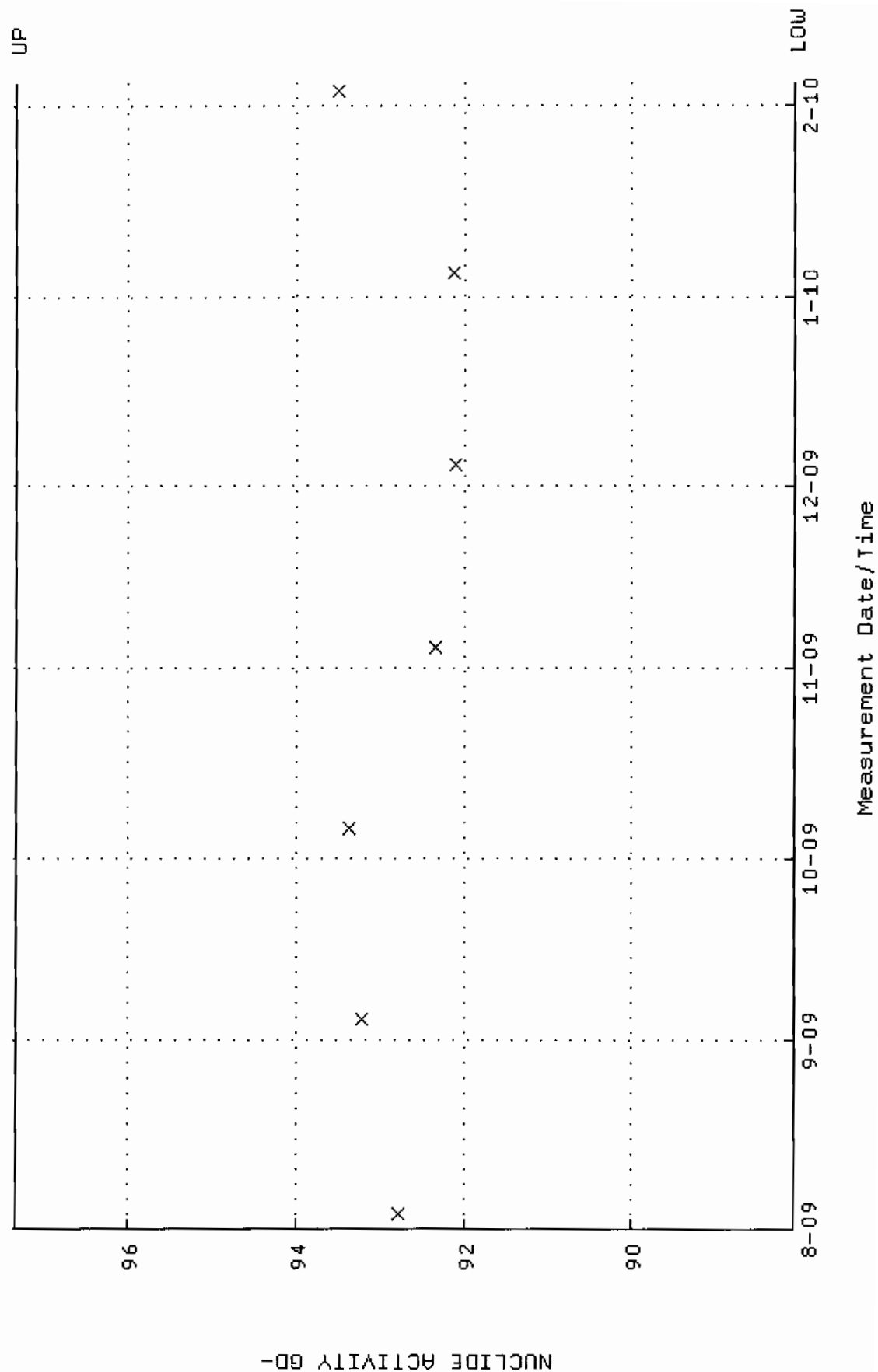


QA filename : DKA100:[ENV\_ALPHA.QA.W]W012.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.285730 through 0.305730

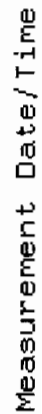




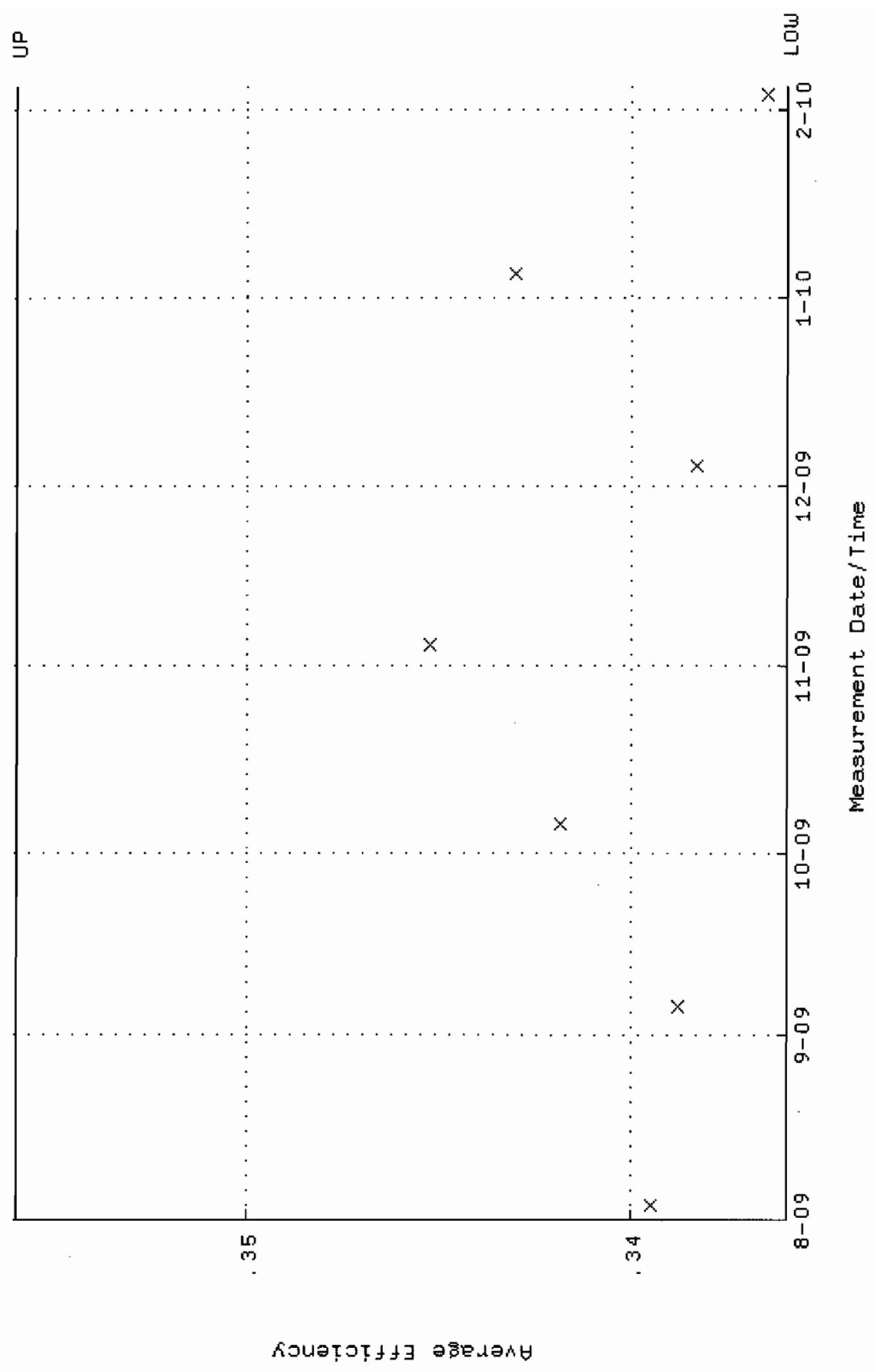
QA filename : DKA100:[ENV\_ALPHA.QA.W]W012.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 88.0678 through 97.3382



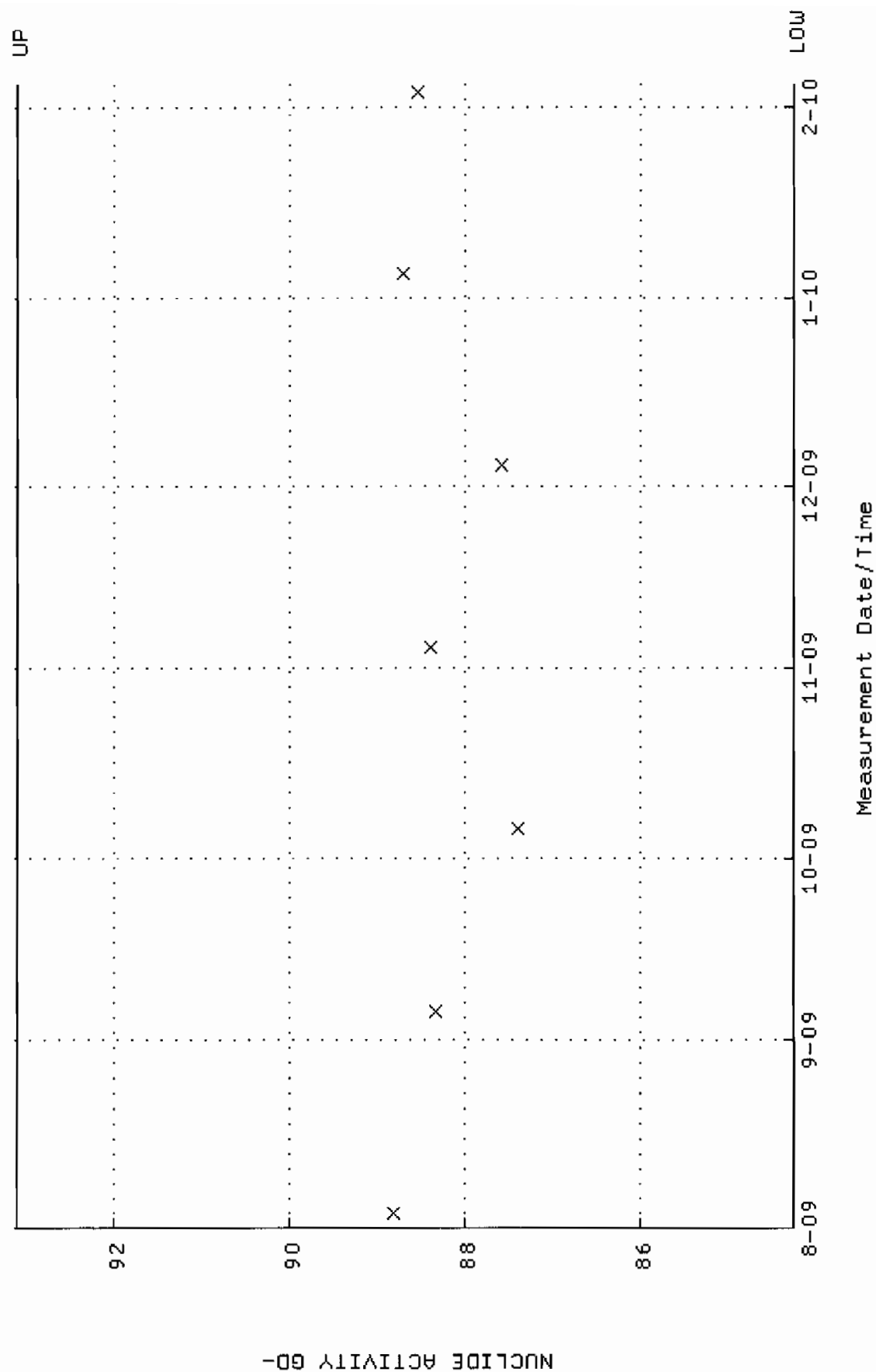
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



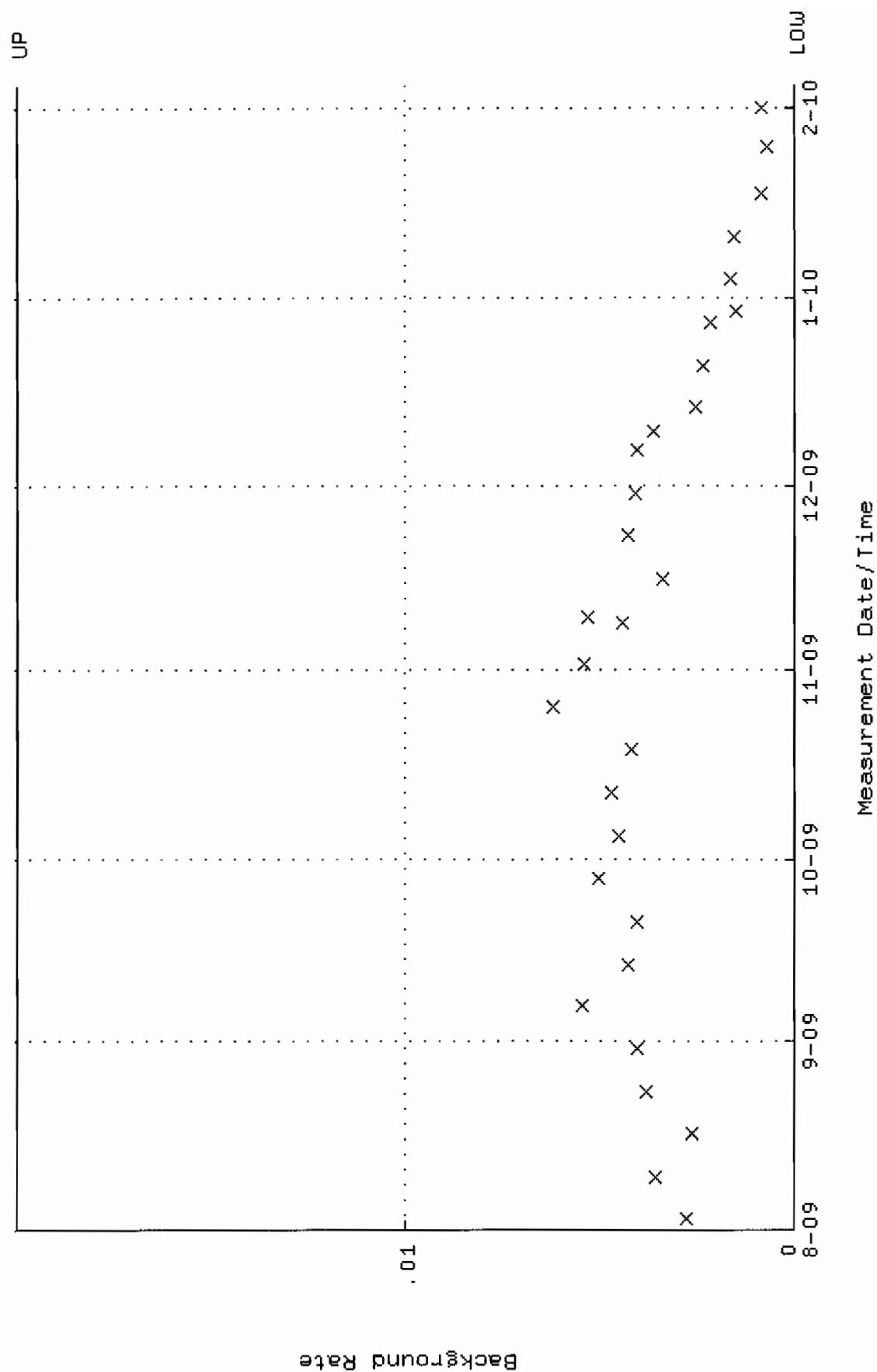
QA filename : DKA100:[ENV\_ALPHA.QA.W]W043.QAF;102  
Parameter Name : AVRGEFF (Average Efficiency)  
Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
Lower/Upper Lmts: 0.335973 through 0.355973



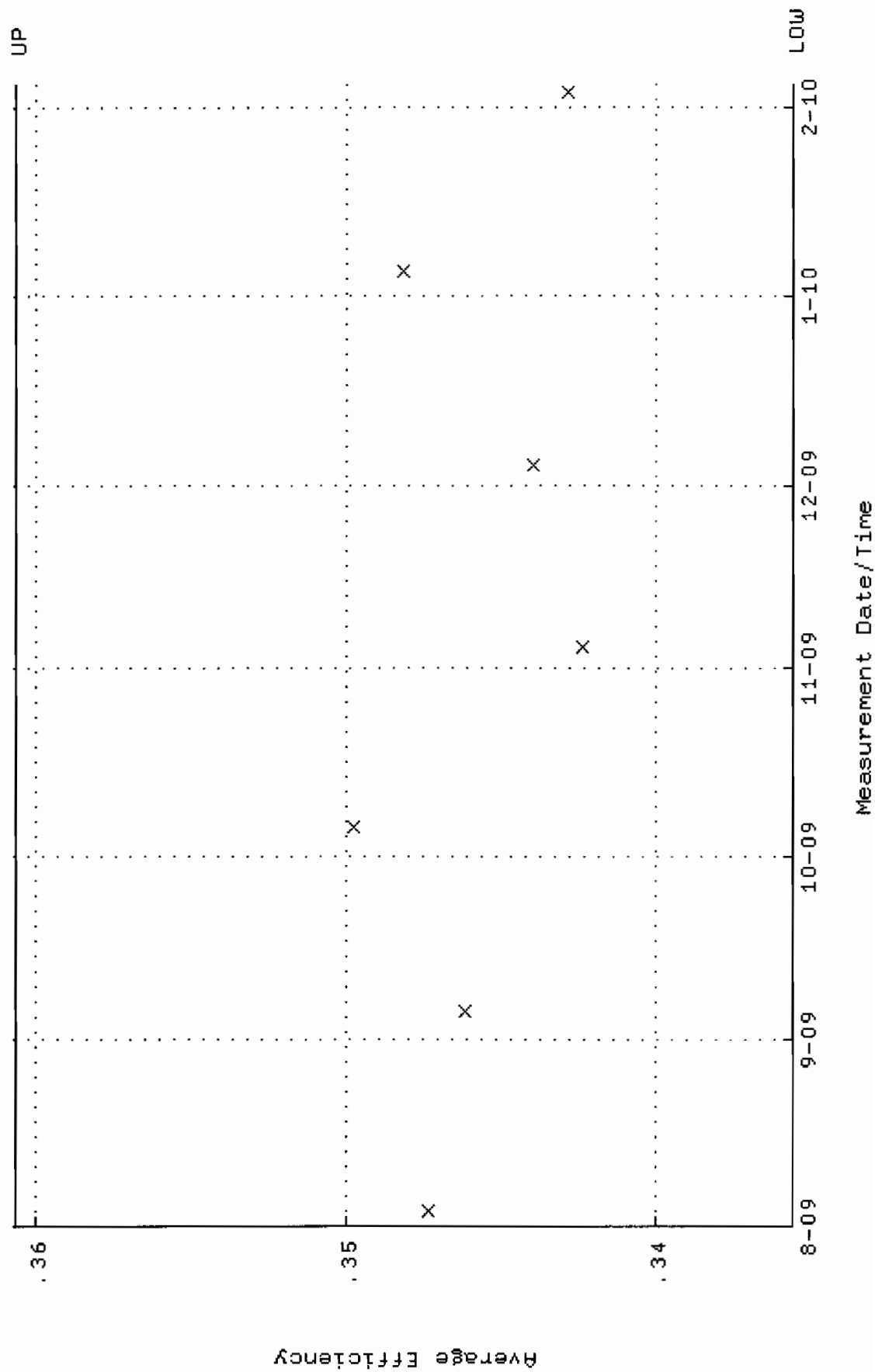
QA filename : DKA100:[ENV\_ALPHA.QA.W]W043.QAF;102  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 84.2440 through 93.1118



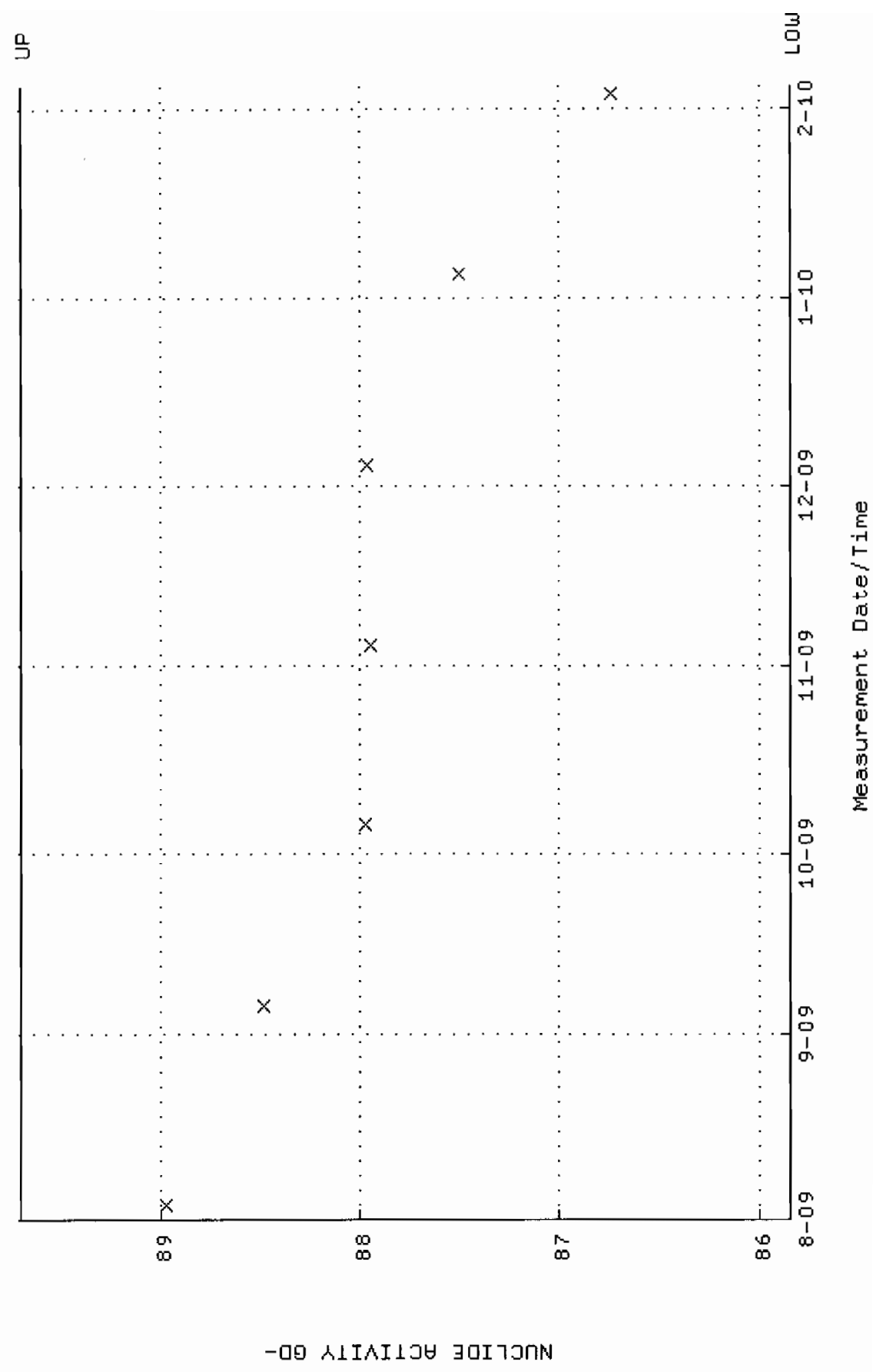
QA filename : DKA100:[ENV\_ALPHA.QA.B]B043.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:37 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



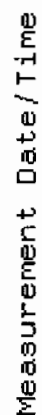
QA filename : DKA100:[ENV\_ALPHA.QA.W]W044.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.335557 through 0.360677



QA filename : DKA100:[ENV\_ALPHA.QA.W]W044.QAF;5  
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
Lower/Upper Lmts: 85.8425 through 89.6949

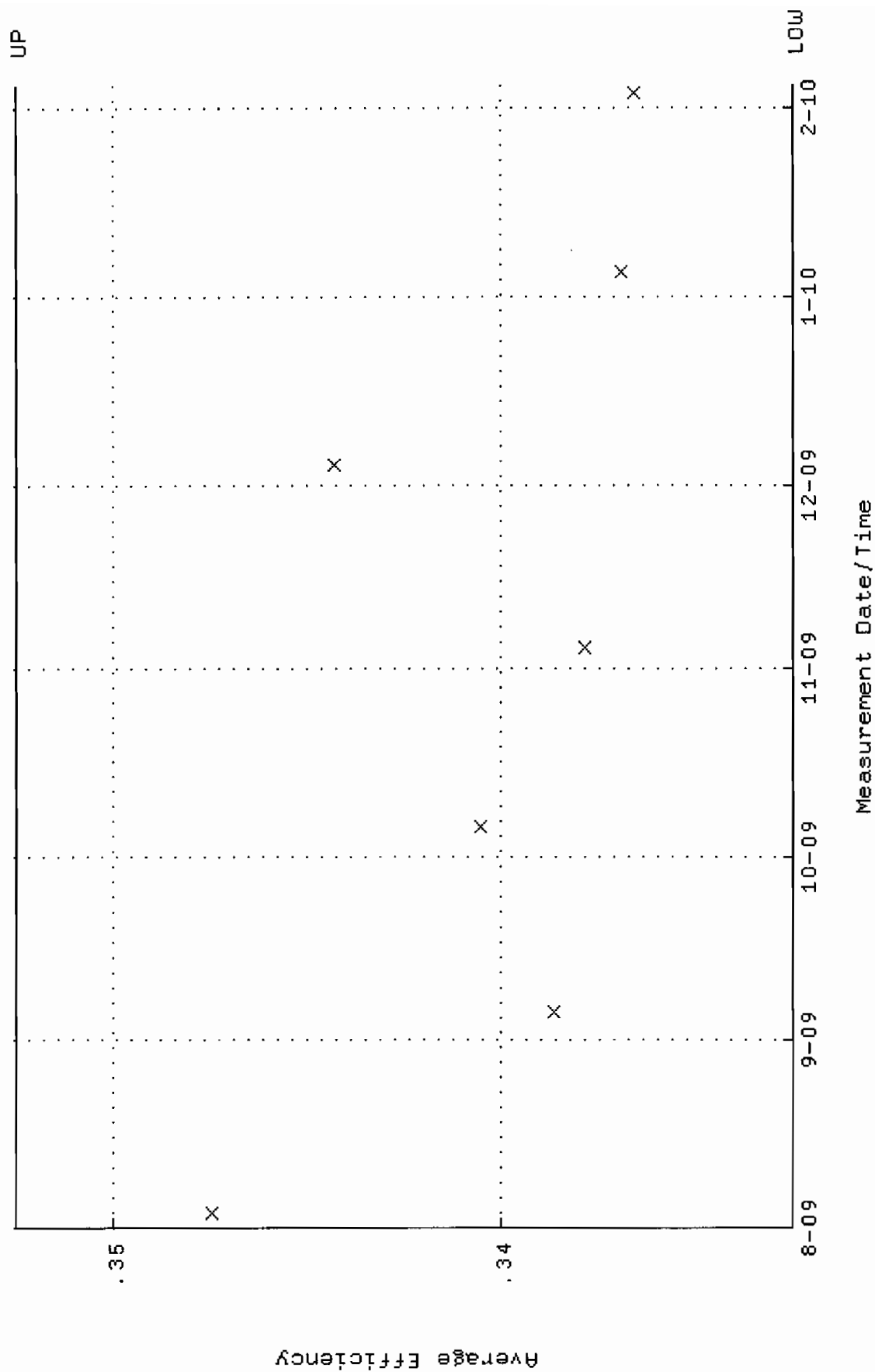


Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

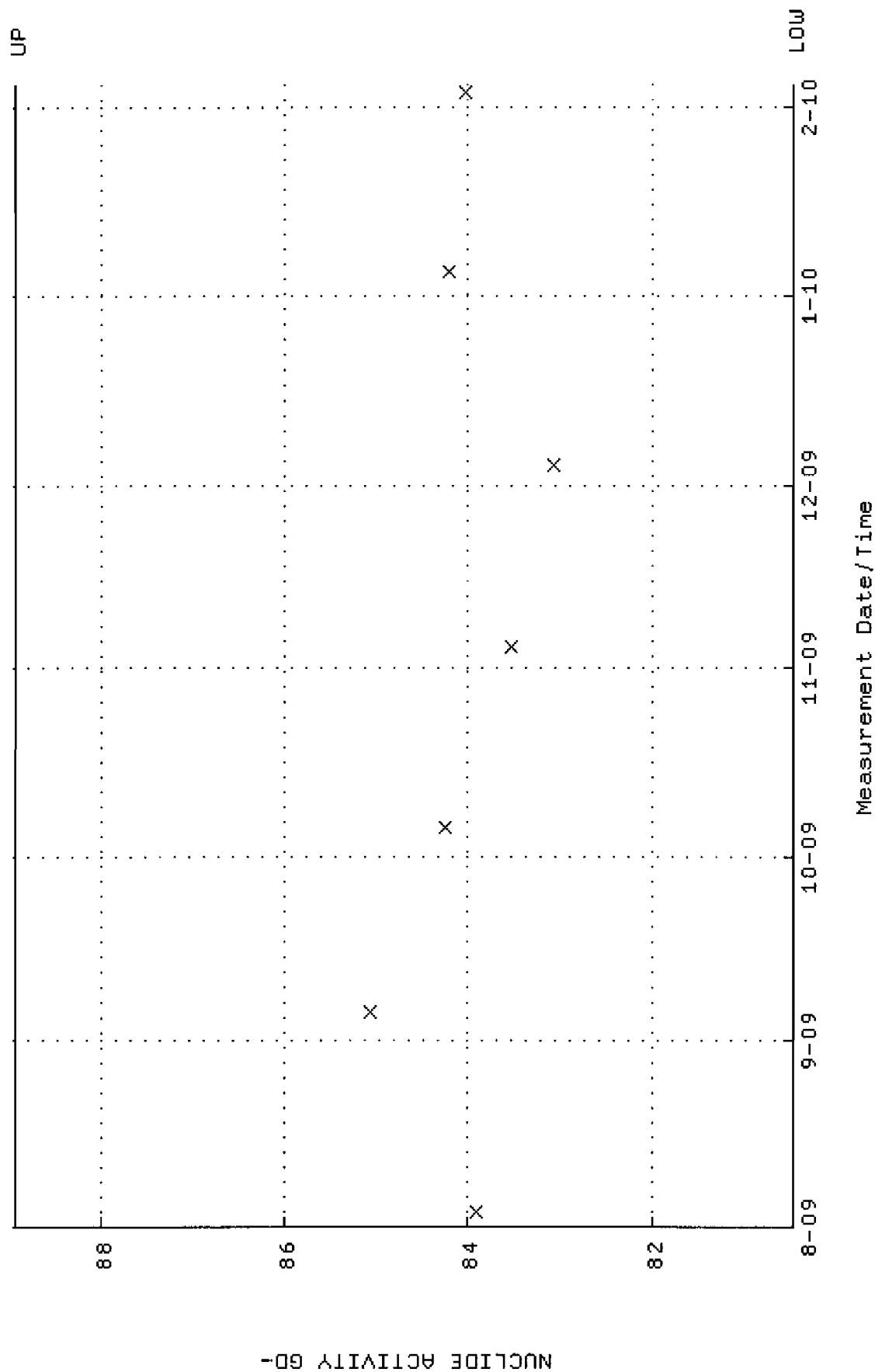




QA filename : DKA100:[ENV\_ALPHA.QA.W]U045.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.332472 through 0.352472



QA filename : DKA100:[ENV\_ALPHA.QA.W]W045.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 80.4622 through 88.9320

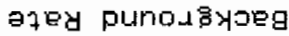


DKA100:[ENV\_ALPHA.QA.B]B045.QAF;1

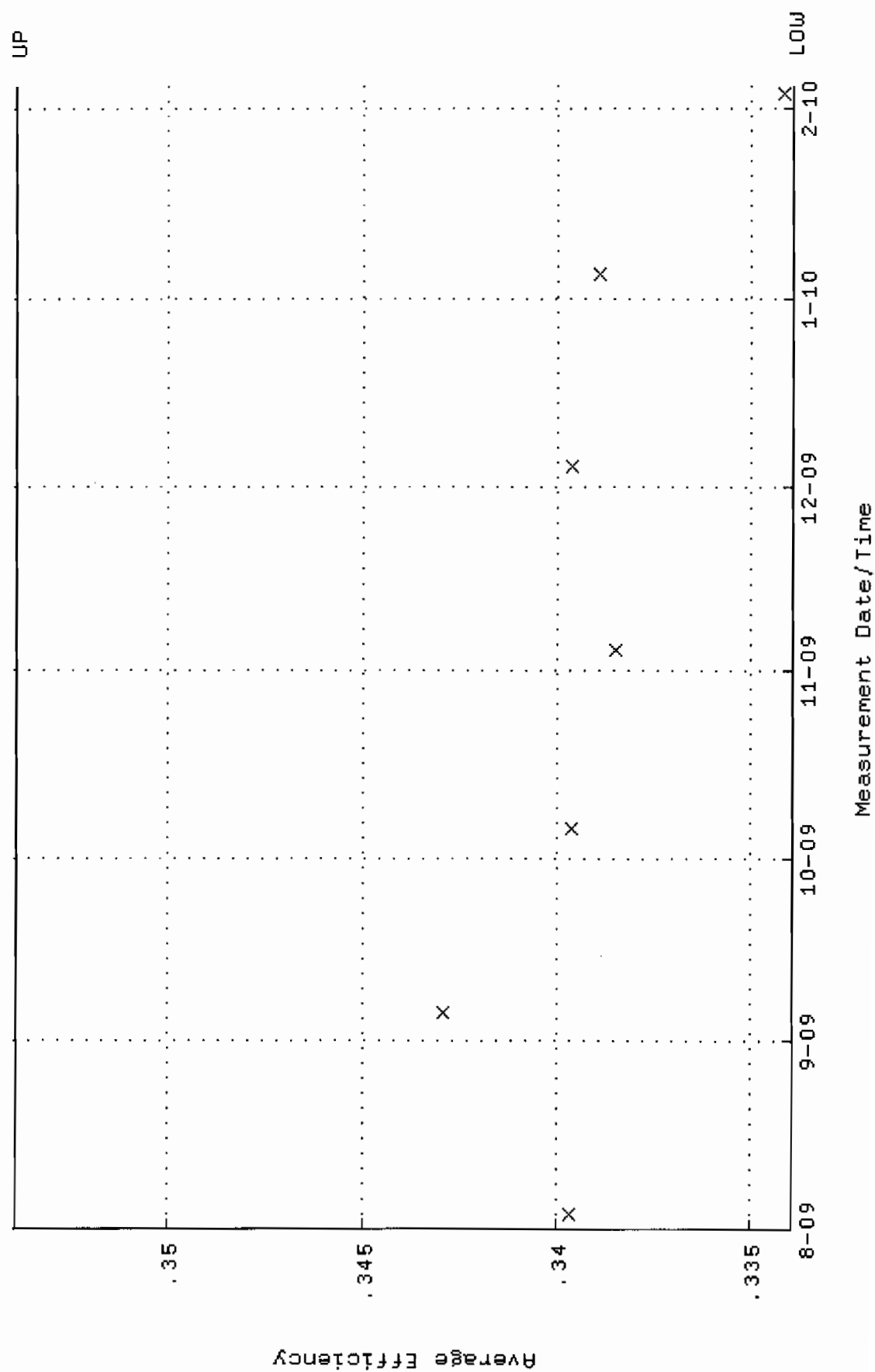
: BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:37 through 4-FEB-2010 12:00:00

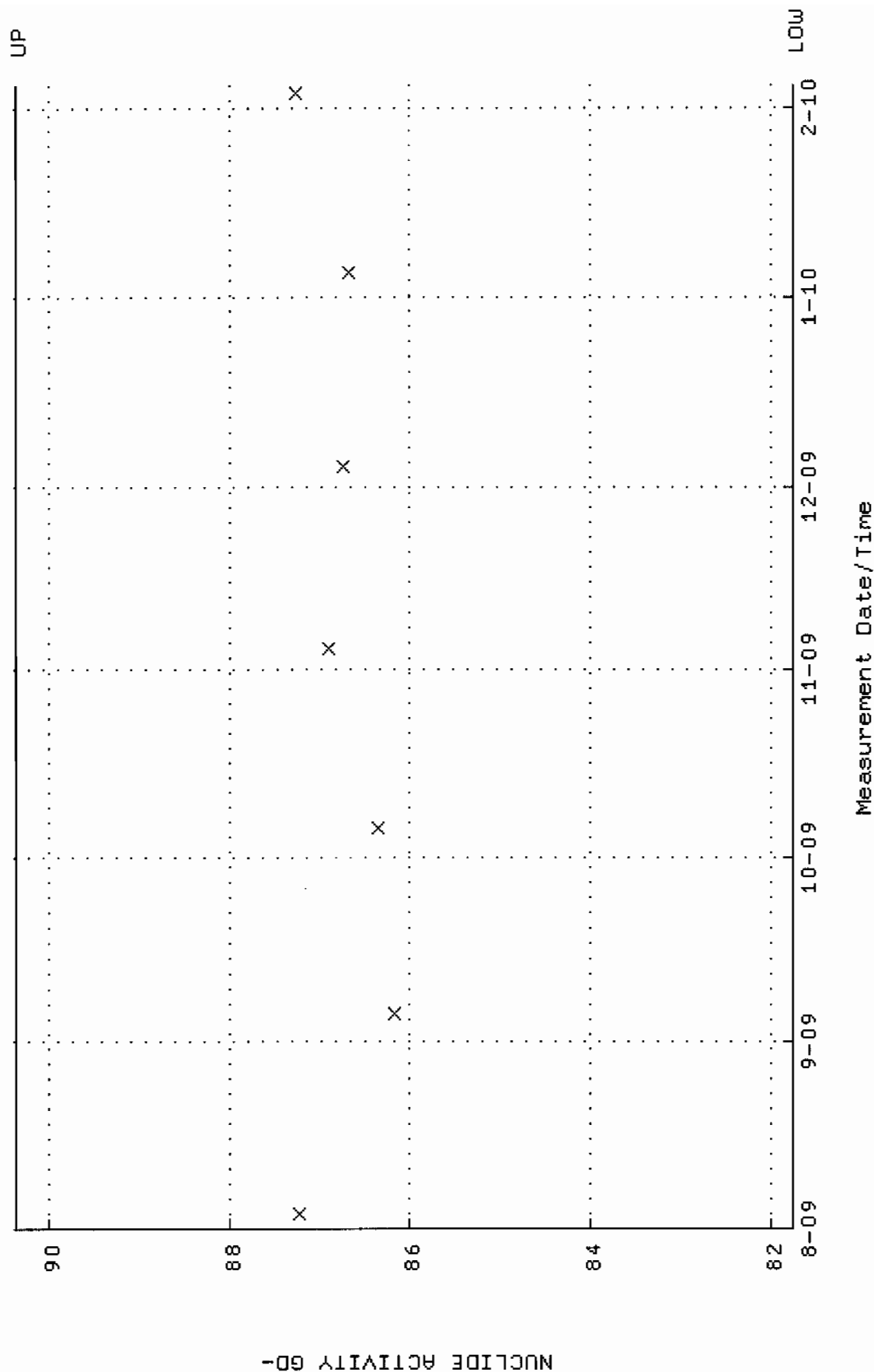
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



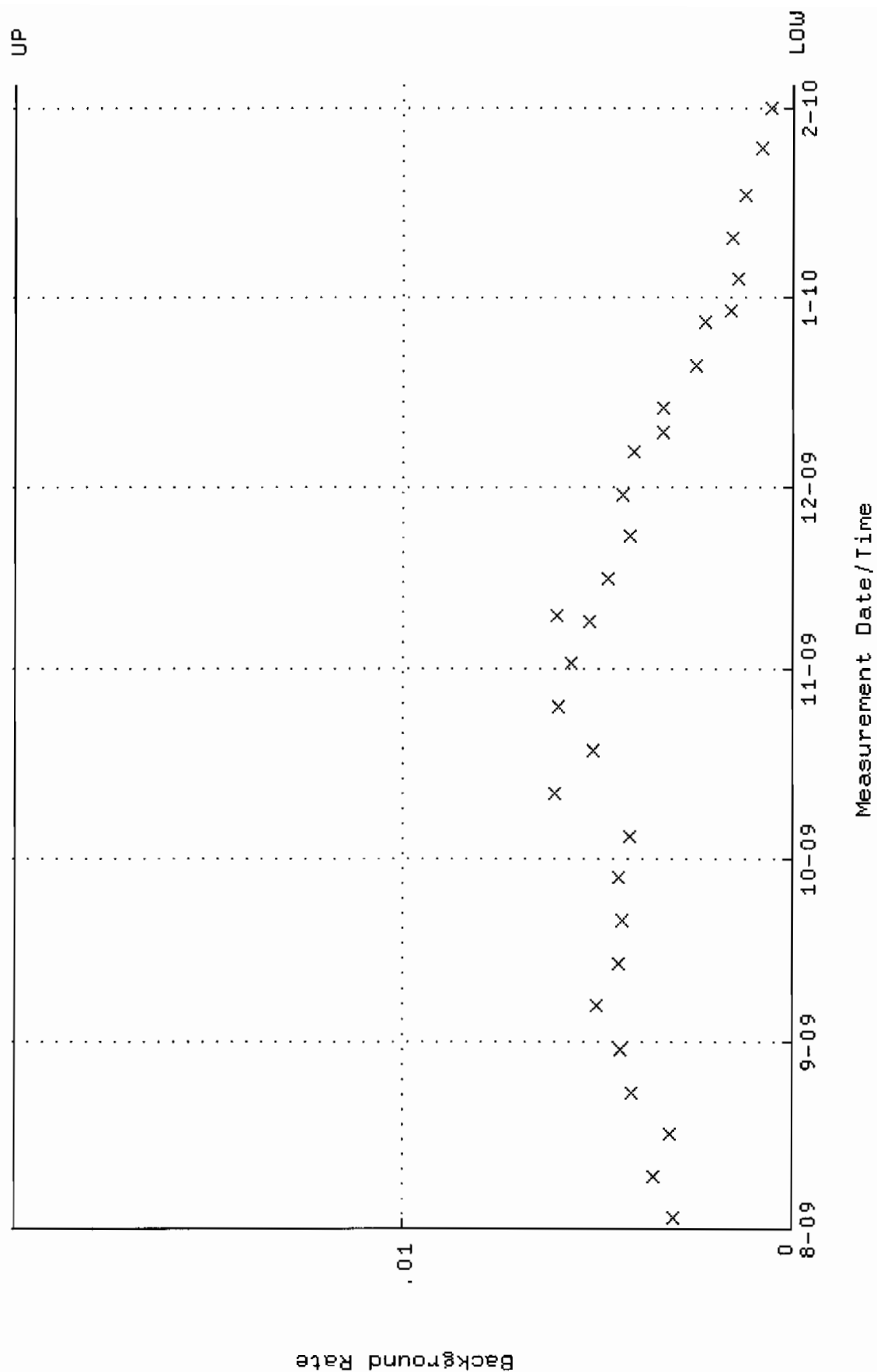
QA filename : DKA100:[ENV\_ALPHA.QA.W]W046.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.333927 through 0.353927



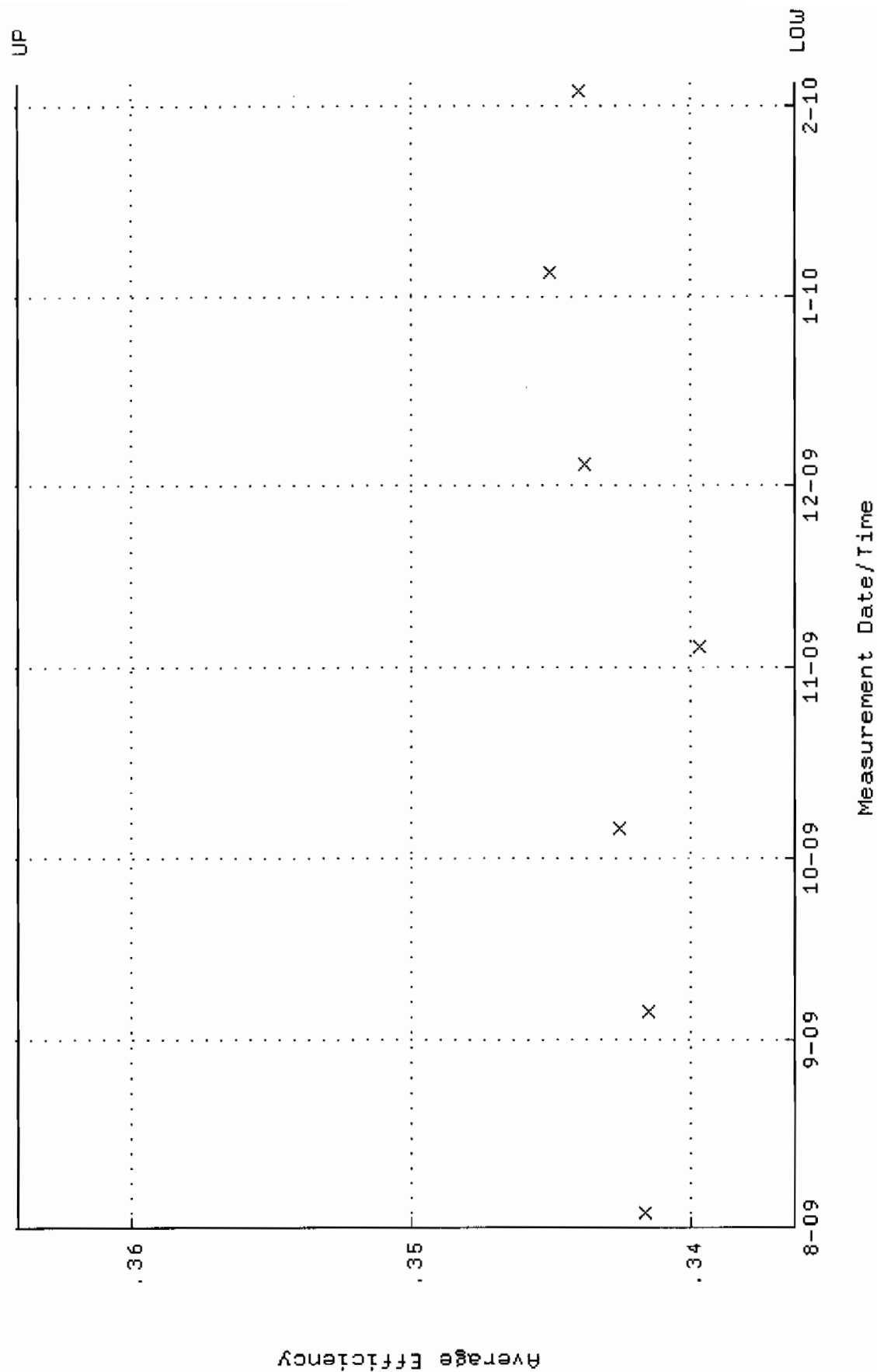
QA filename : DKA100:[ENV\_ALPHA.QA.W]W046.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 81.7568 through 90.3628



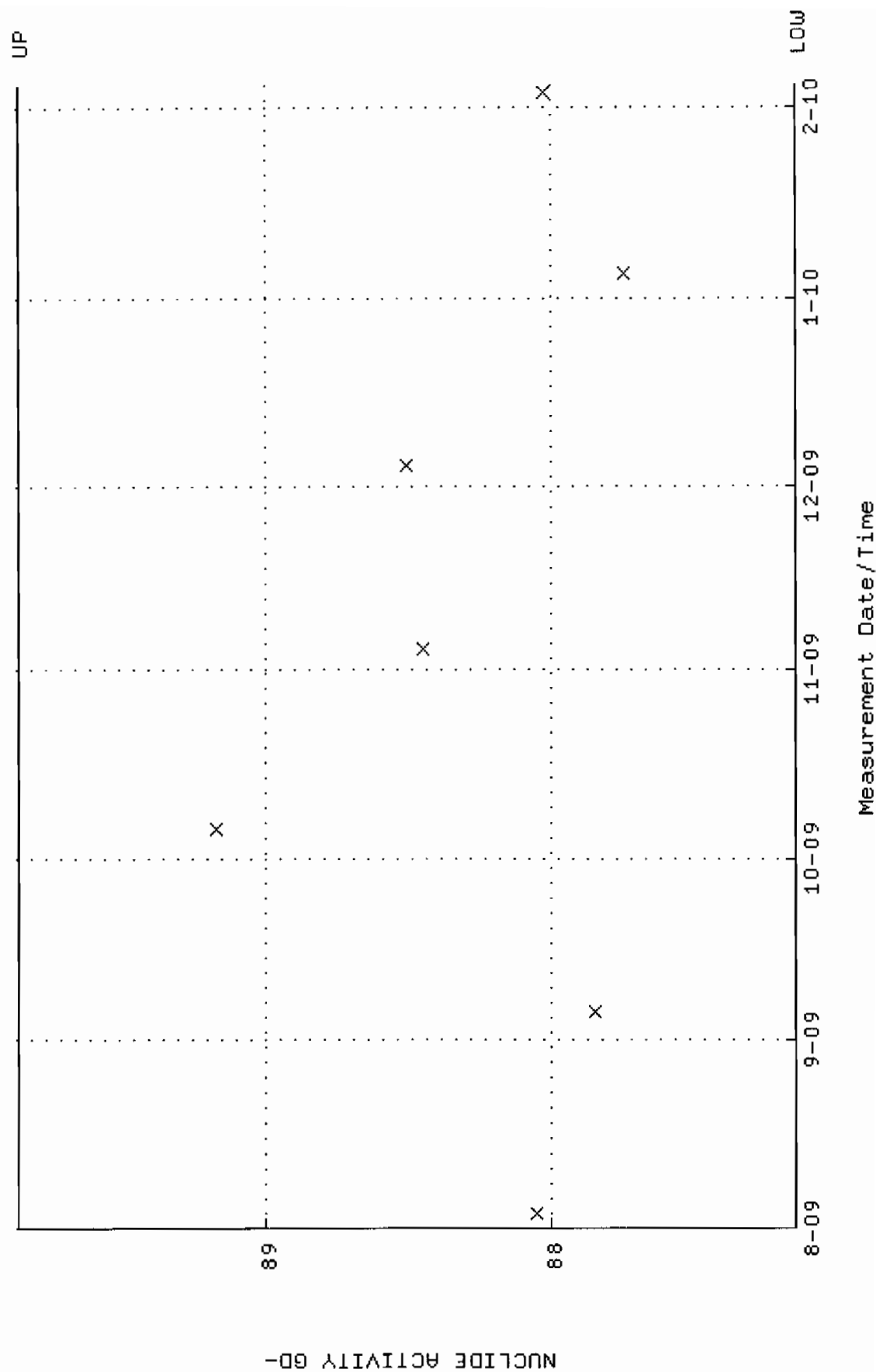
QA filename : DKA100:[ENV\_ALPHA.QA.B]B046.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:37 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W047.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.336276 through 0.364038

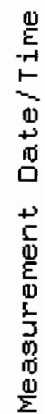


QA filename : DKA100:[ENV\_ALPHA.QA.W]W047.QAF;5  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.1403 through 89.8631

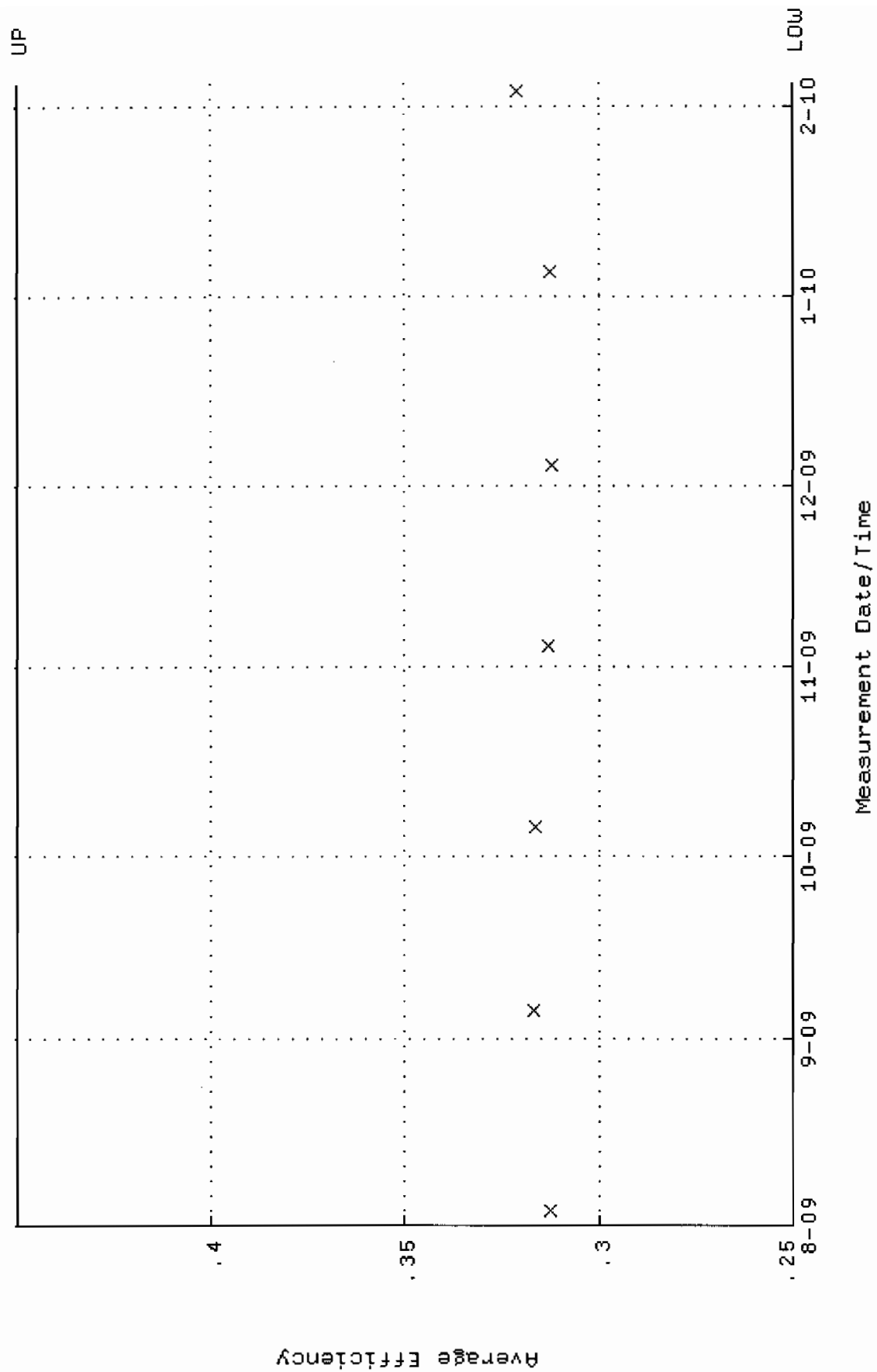




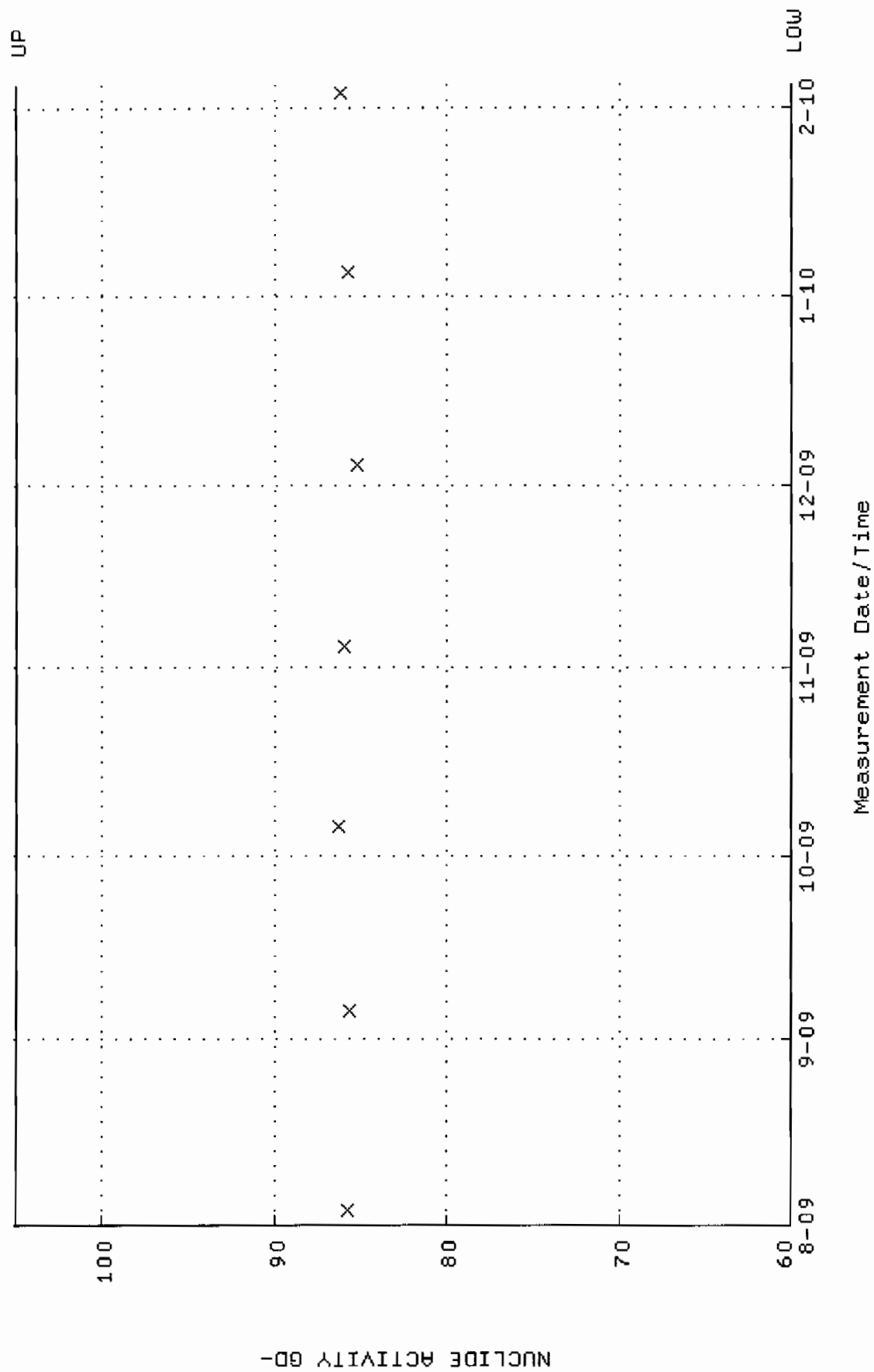
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



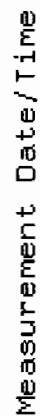
QA filename : DKA100:[ENV\_ALPHA.QA.W]W048.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



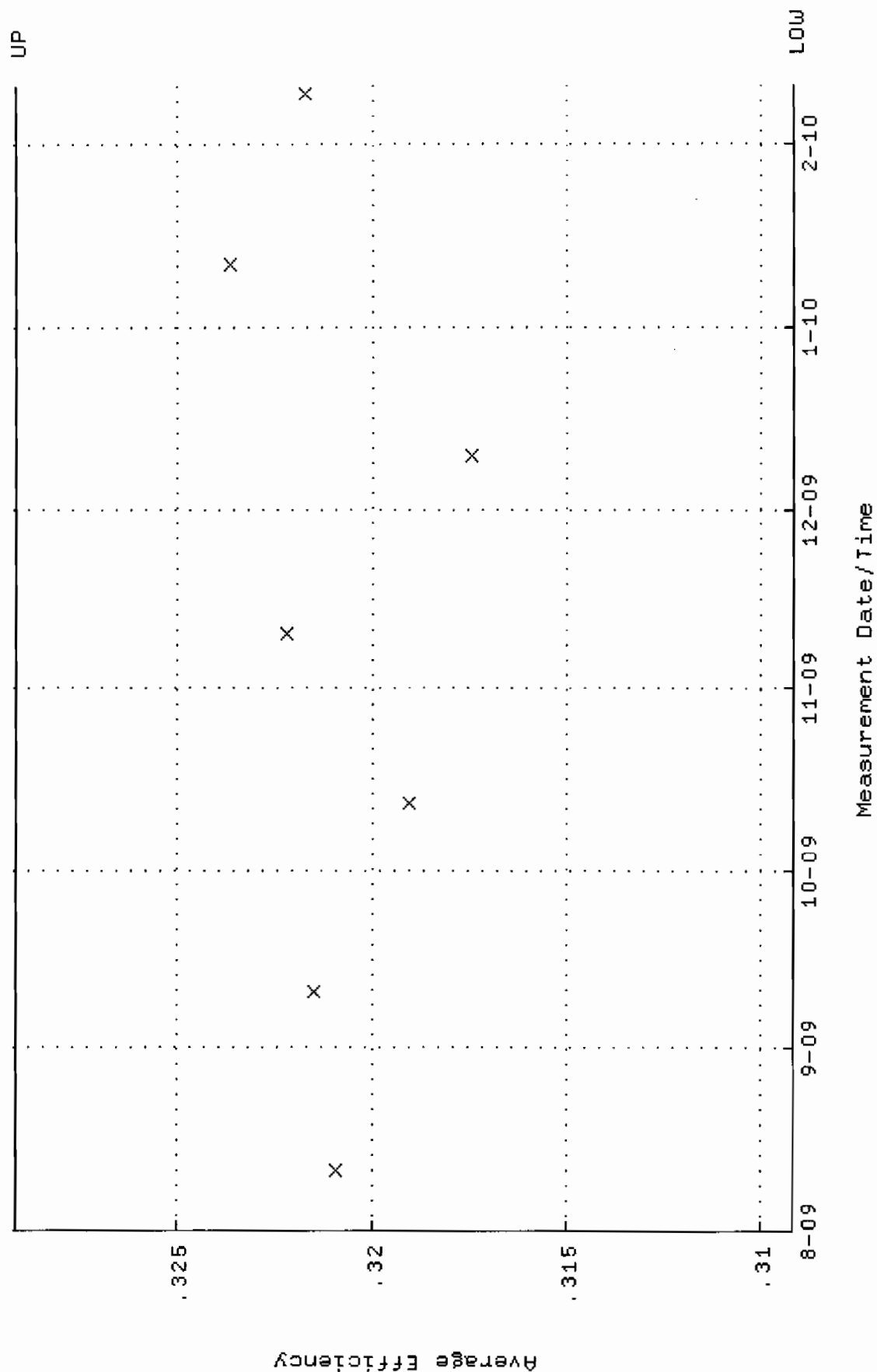
QA filename : DKA100:[ENV\_ALPHA.QA.W]W048.QAF;6  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.000



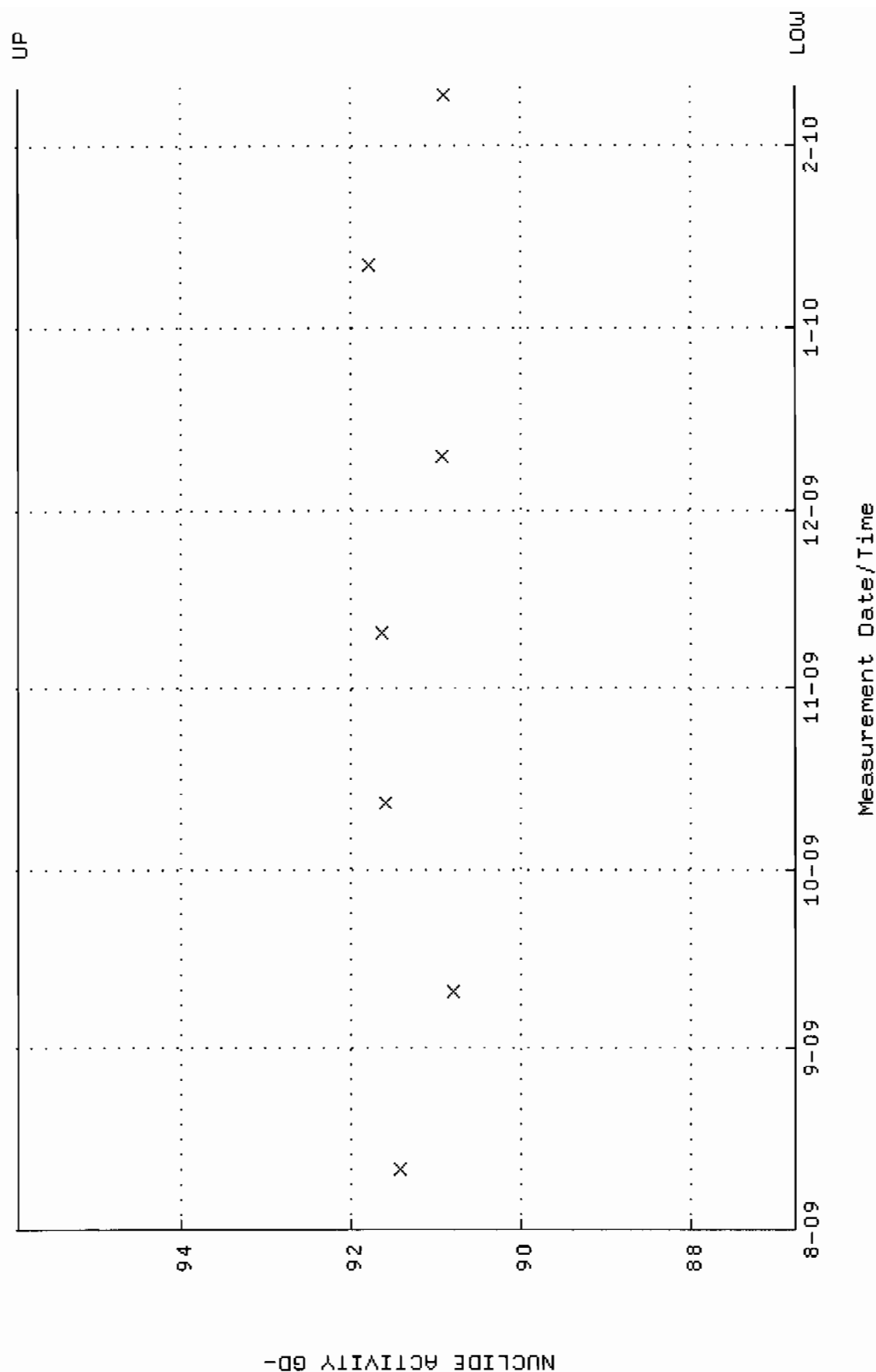
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W071.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.309161 through 0.329161



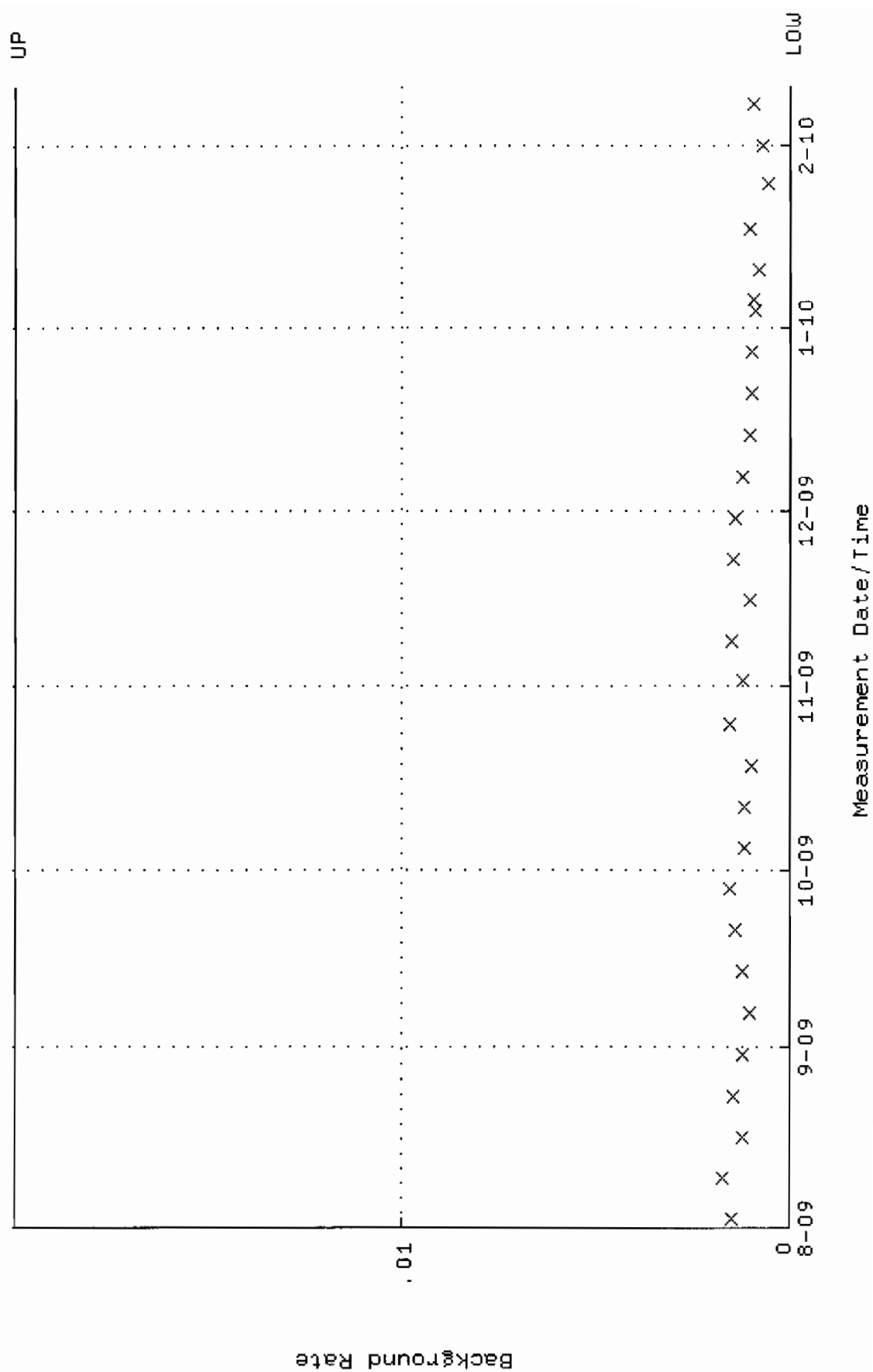
QA filename : DKA100:[ENV-ALPHA.QA.W]W071.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 86.7769 through 95.9113



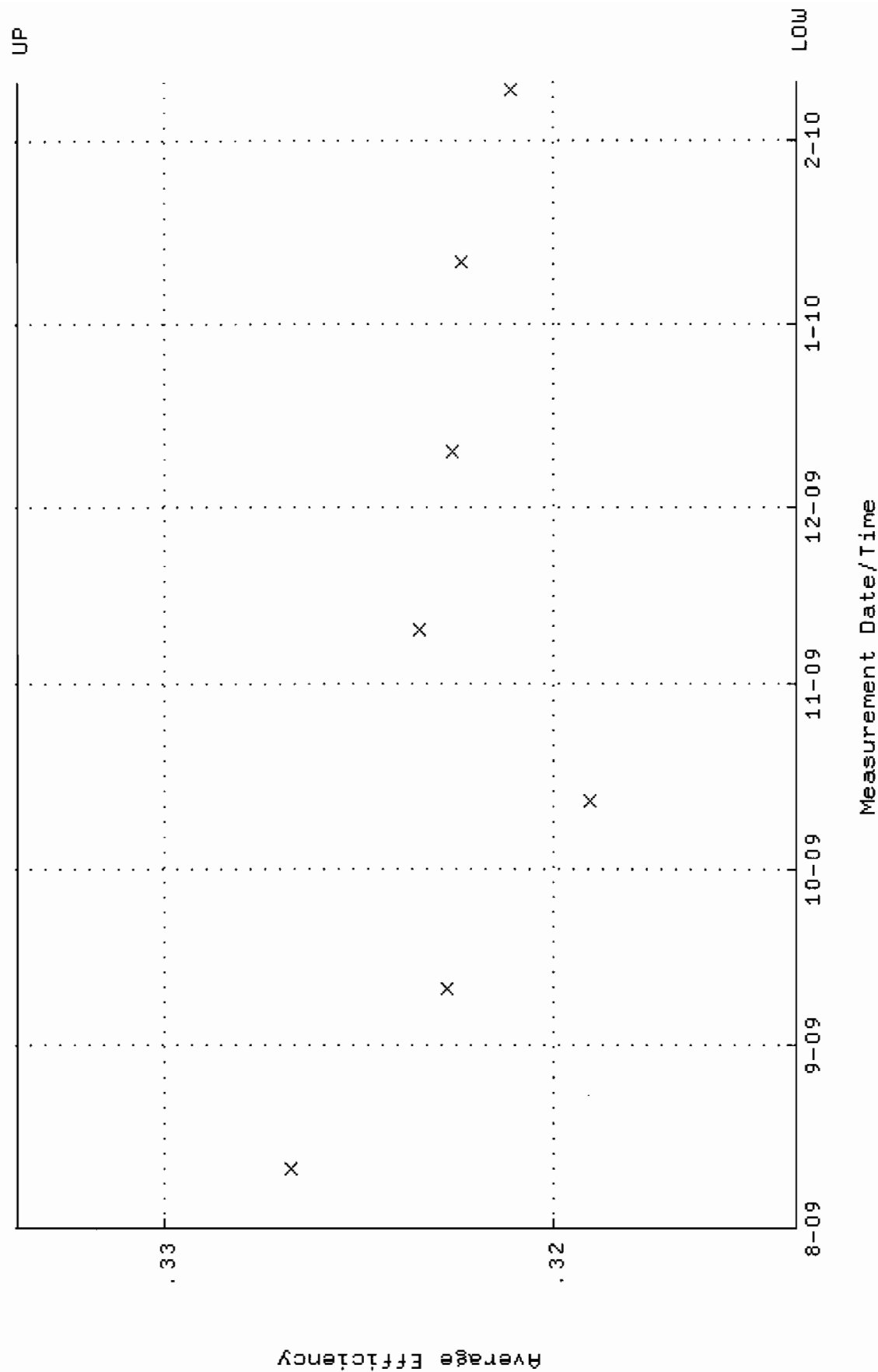
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QA filename      : DKA100:[ENV_ALPHA.QA.B]B071.QAF;1
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 2-AUG-2009 17:38:39 through 10-FEB-2010 17:38:39
Lower/Upper Lmts: 0.000000E+00 through 2.000000E+02

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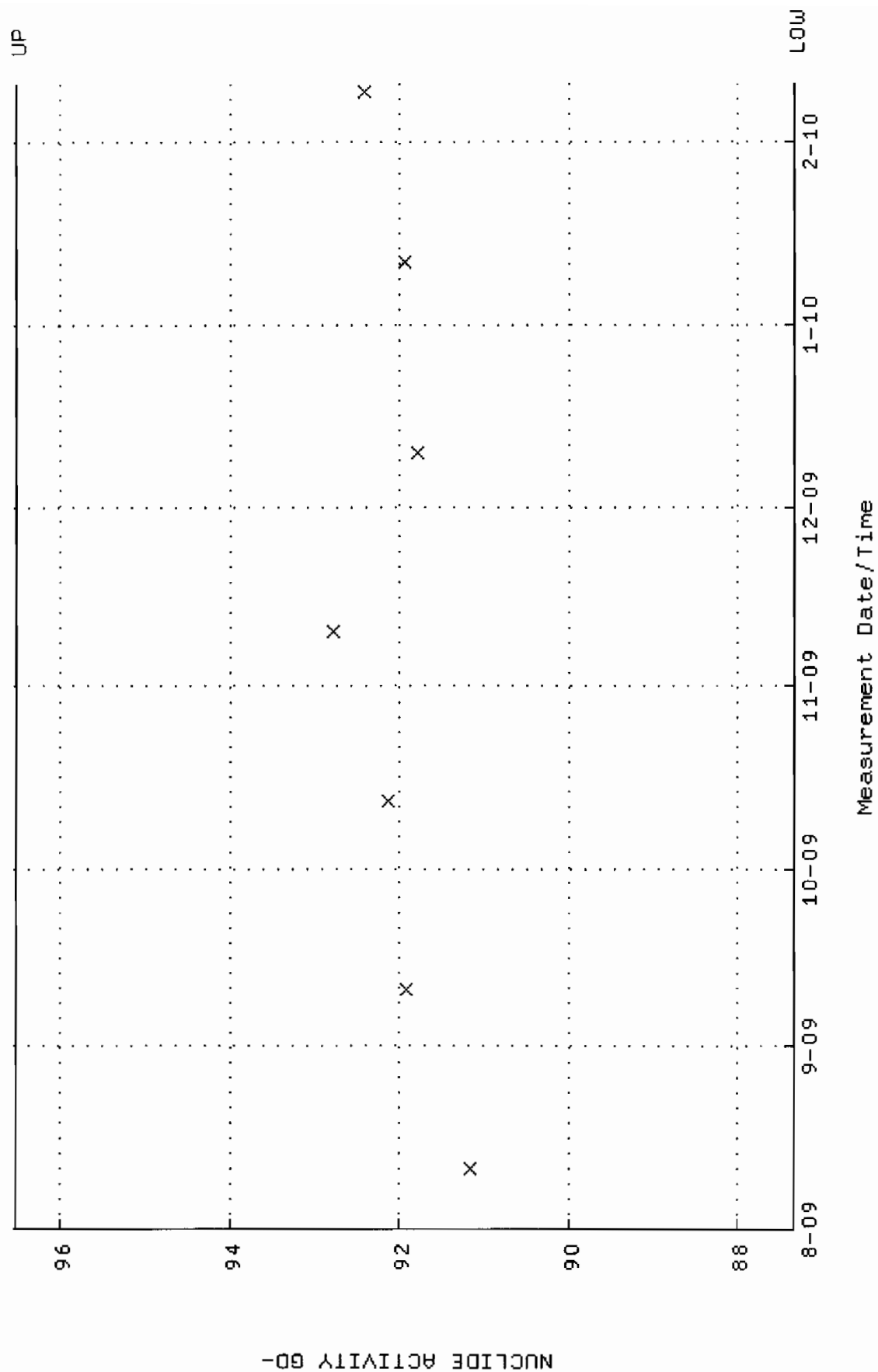


QA filename : DKA100:[ENV\_ALPHA.QA.W]W072.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.313761 through 0.333761

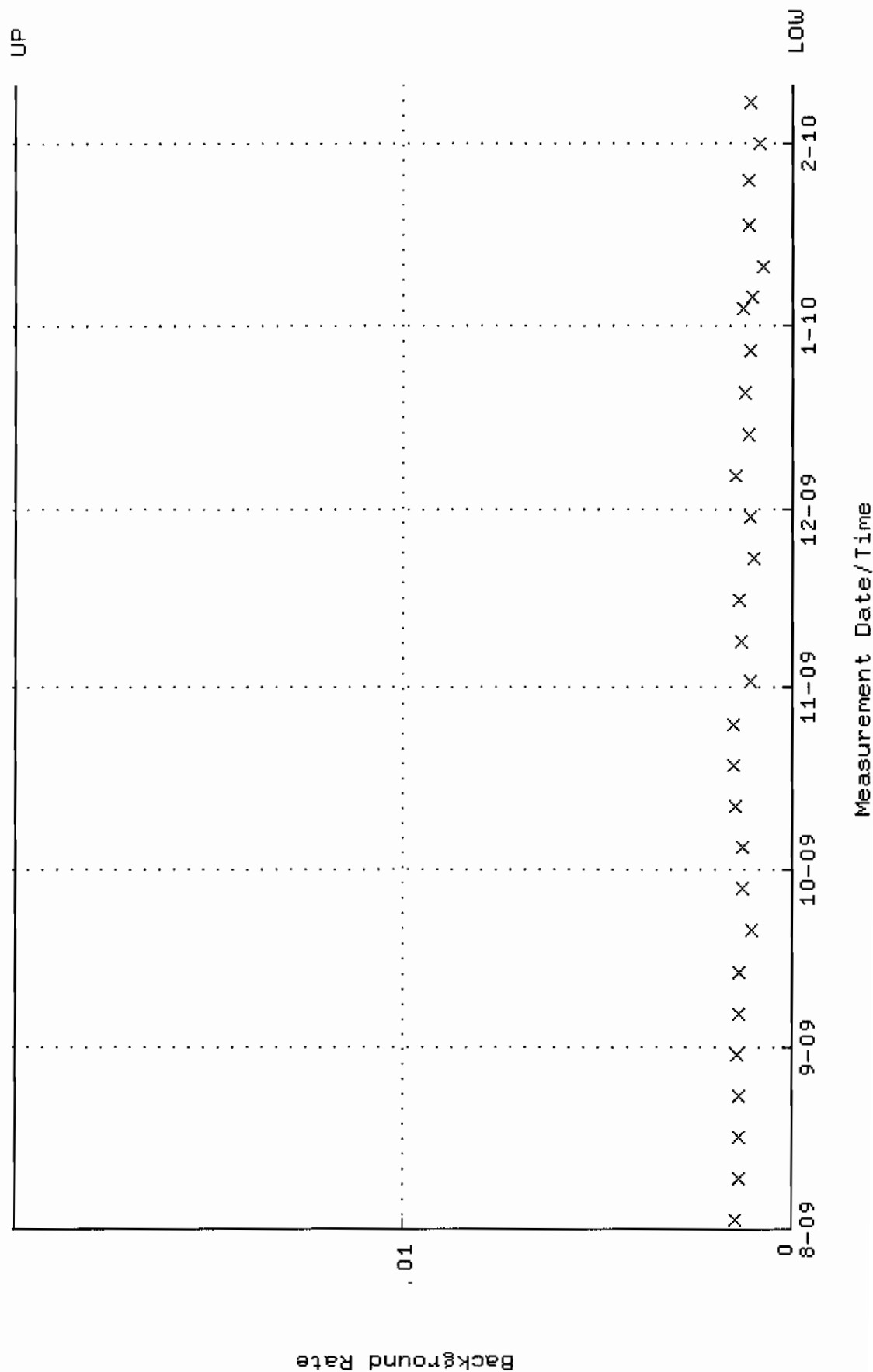




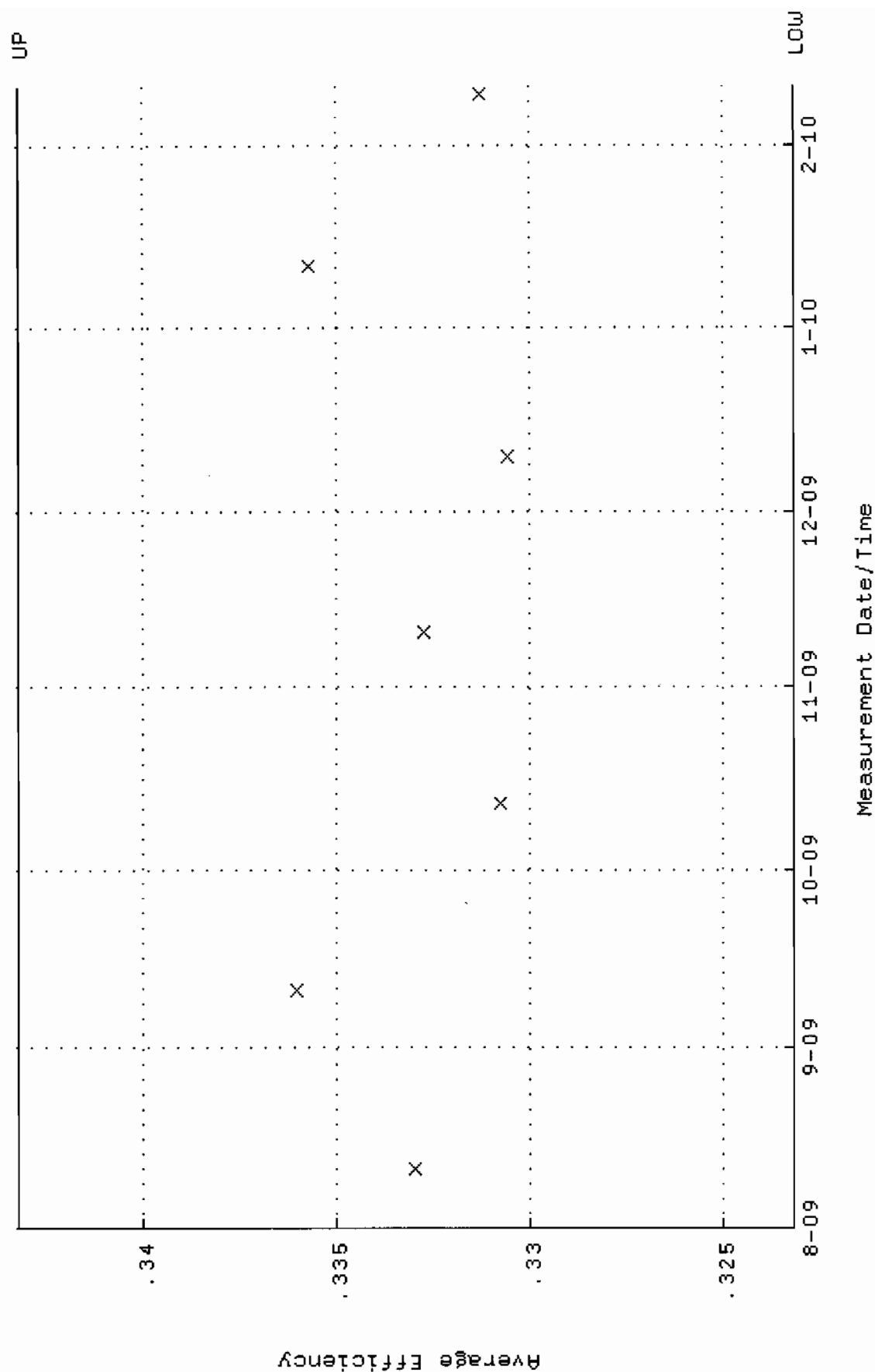
QA filename : DKA100:[ENV\_ALPHA.QA.W]W072.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.3348 through 96.5280



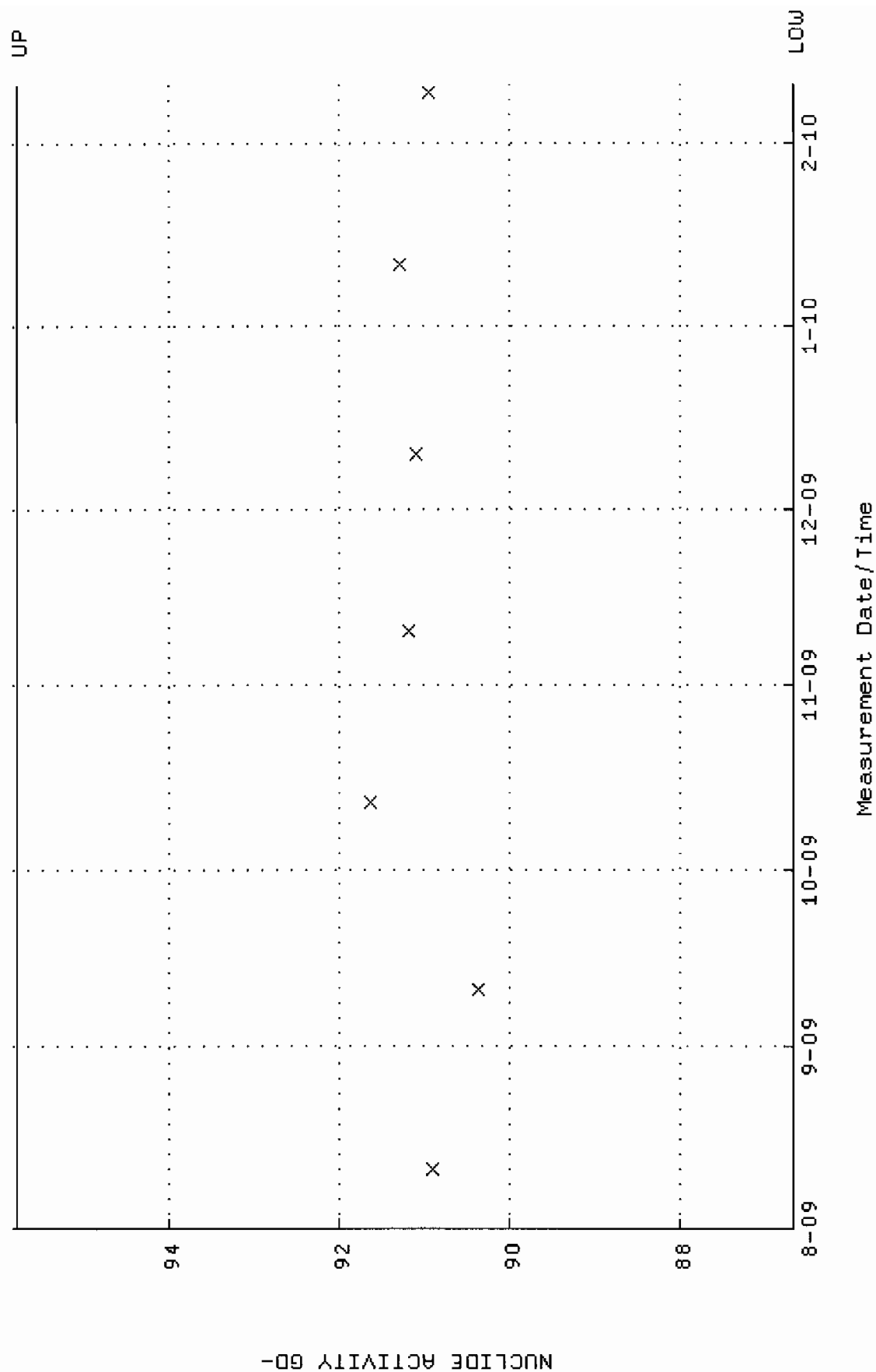
QA filename : DKA100:[ENV\_ALPHA.QA.B]B072.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:39 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W073.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.323184 through 0.343184



QA filename : DKA100:[ENV\_ALPHA.QA.W]W073.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 86.6734 through 95.7970

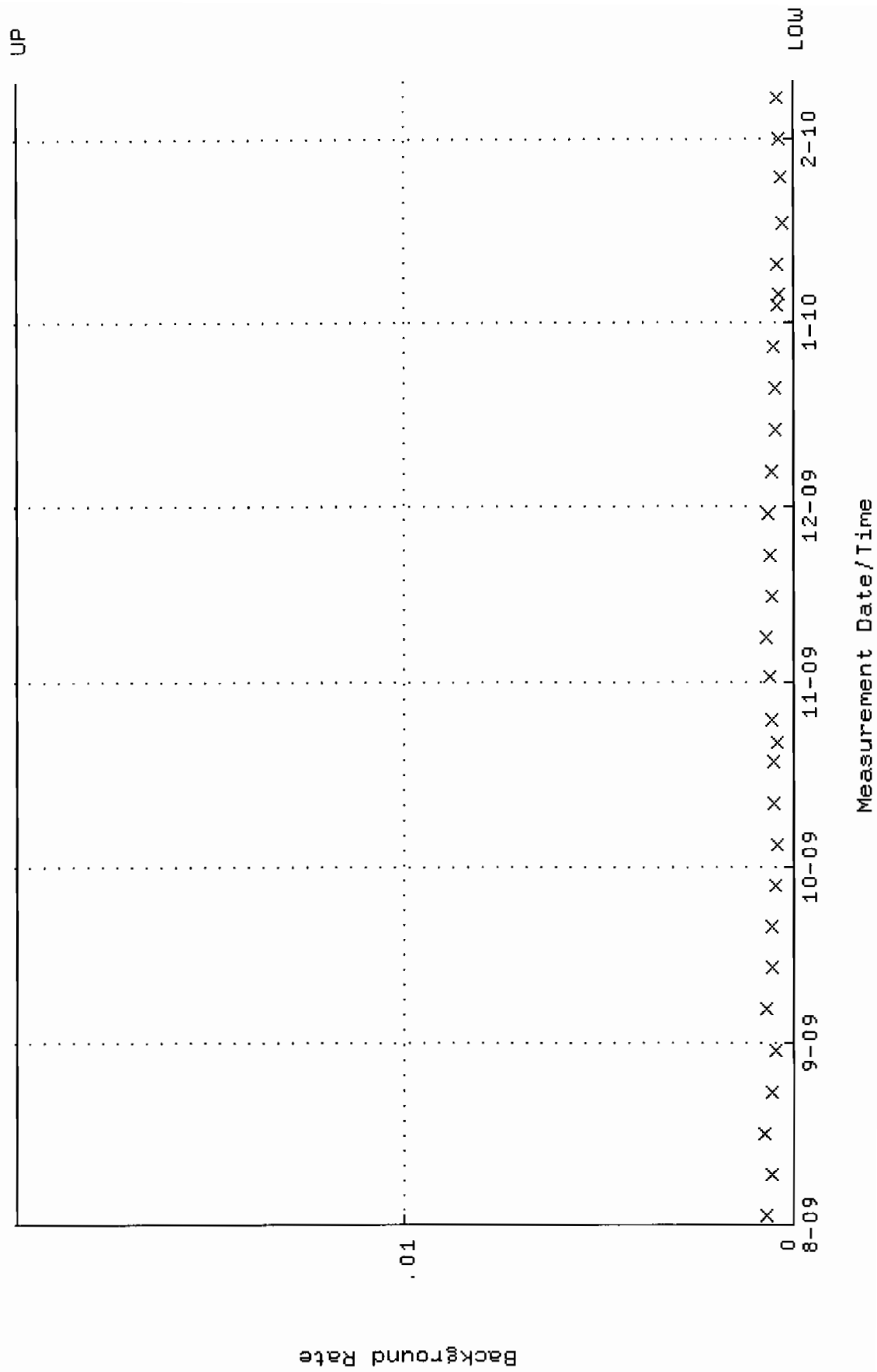


QA filename : OKA100:[ENV\_ALPHA.QA.B]B073.QAF;1

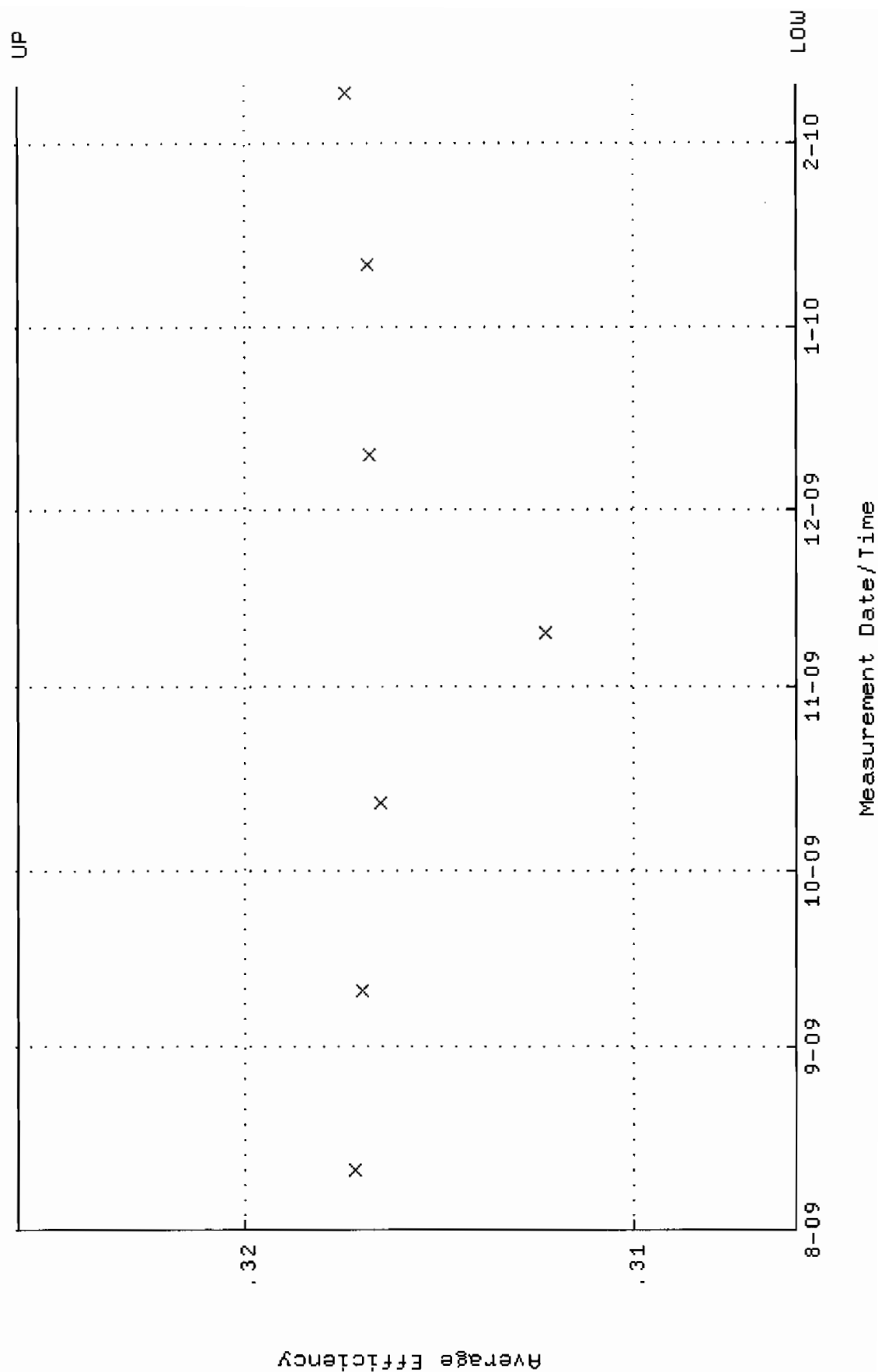
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:39 through 10-FEB-2010 12:00:00

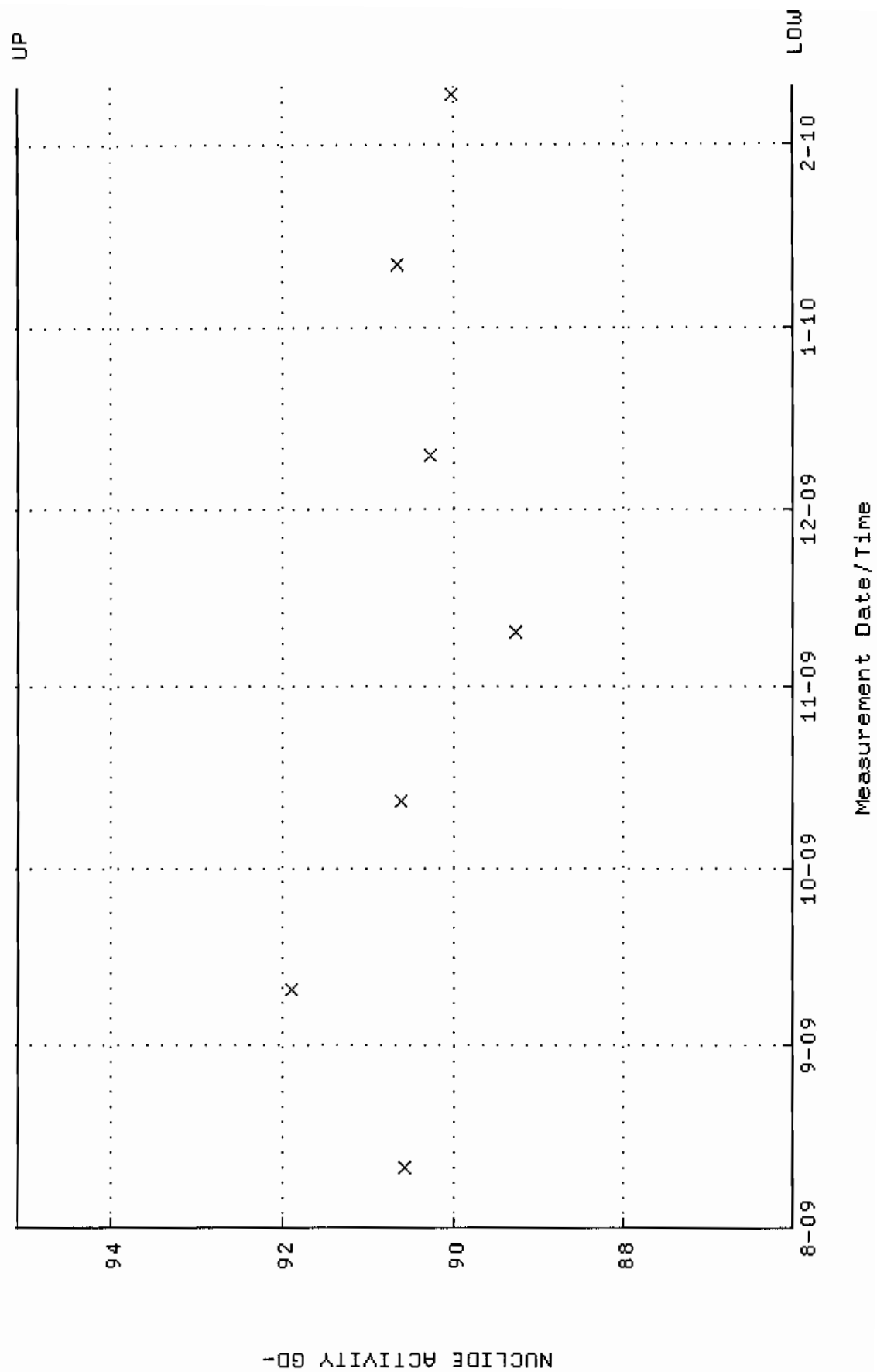
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



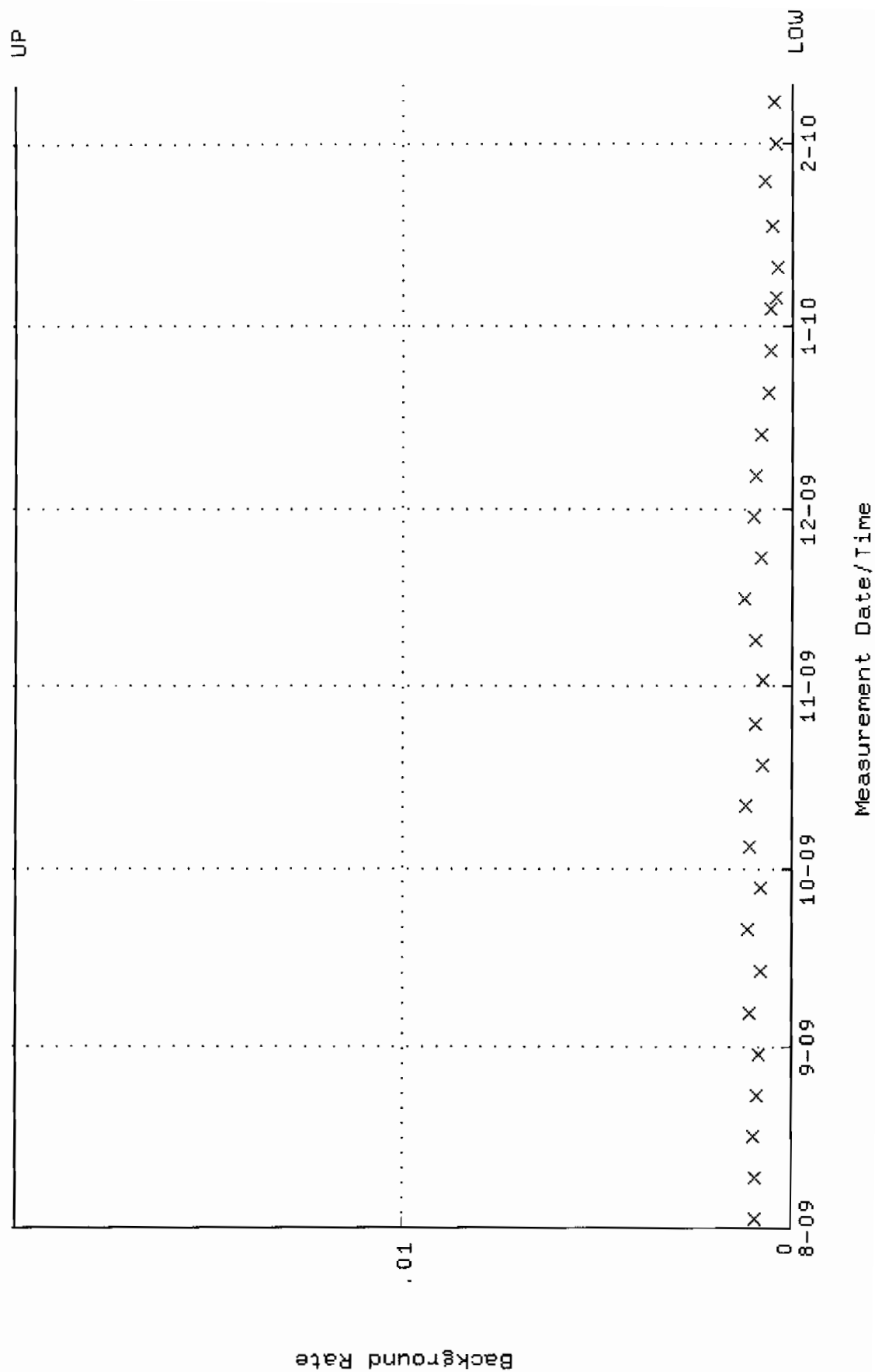
QA filename : DKA100:[ENV\_ALPHA.QA.W]W074.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.305830 through 0.325830



QA filename : DKA100:[ENV\_ALPHA.QA.W]W074.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 86.0289 through 95.0845

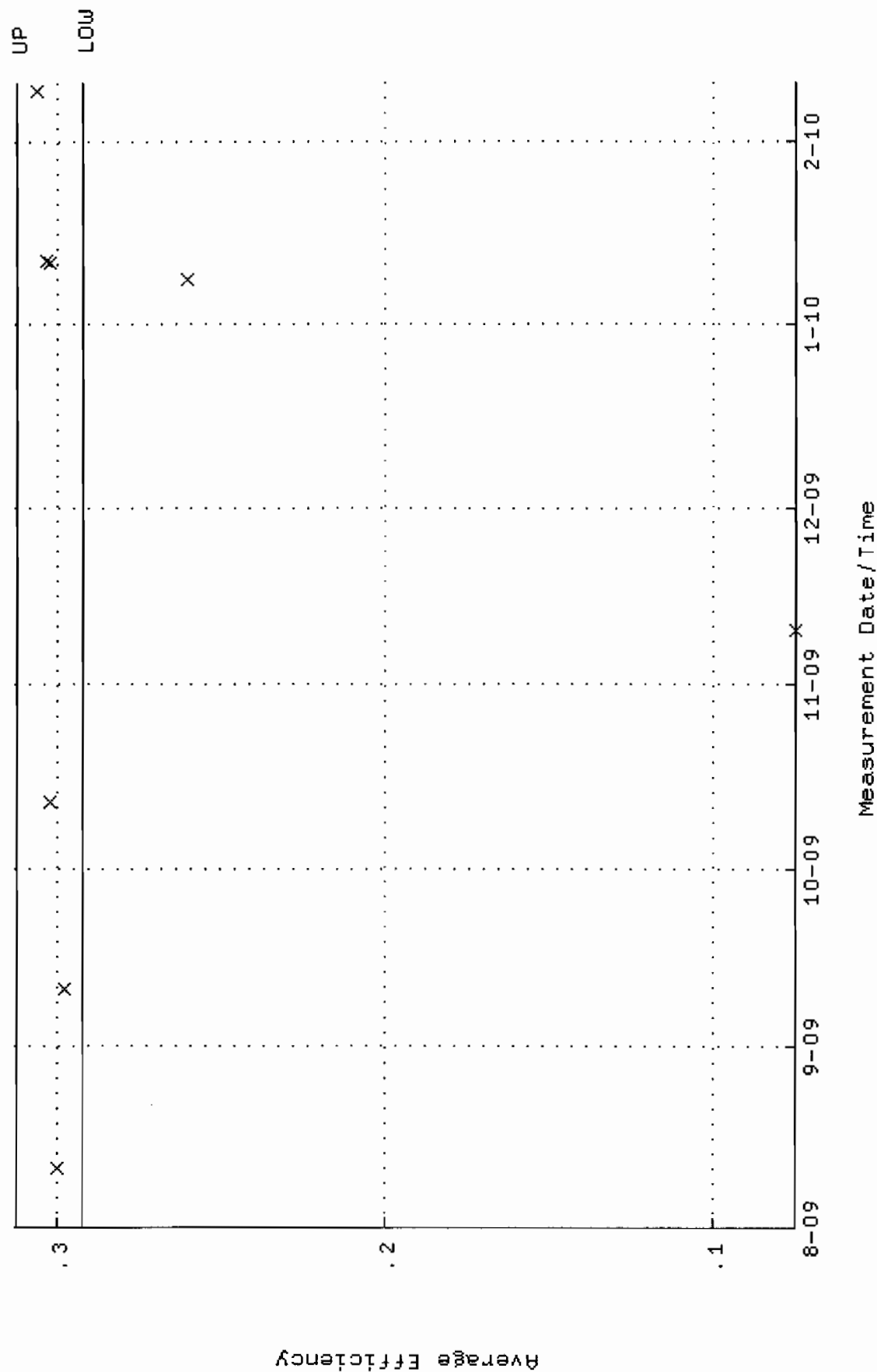


QA filename : DKA100:[ENV\_ALPHA.QA.B]B074.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:39 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

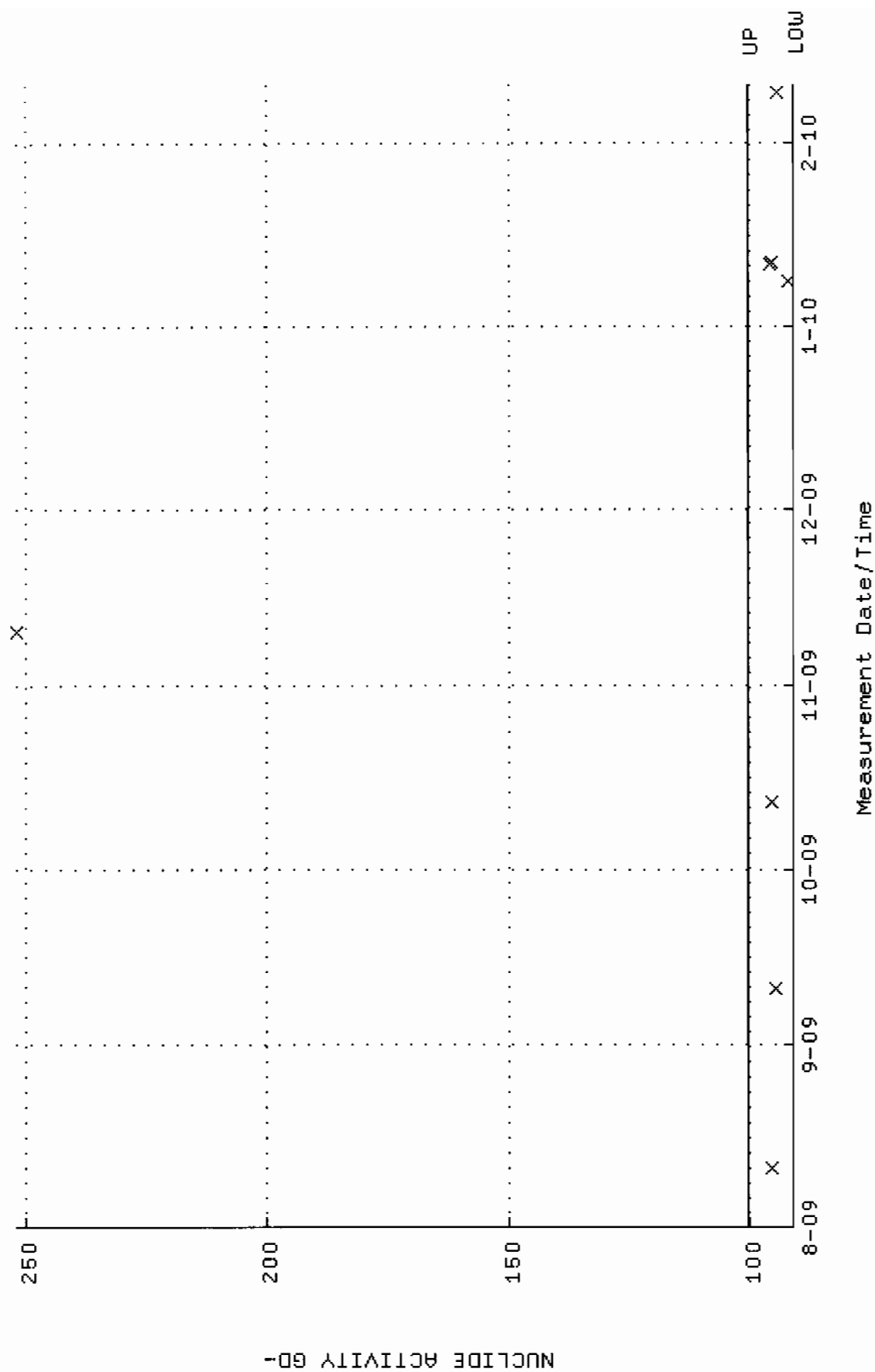




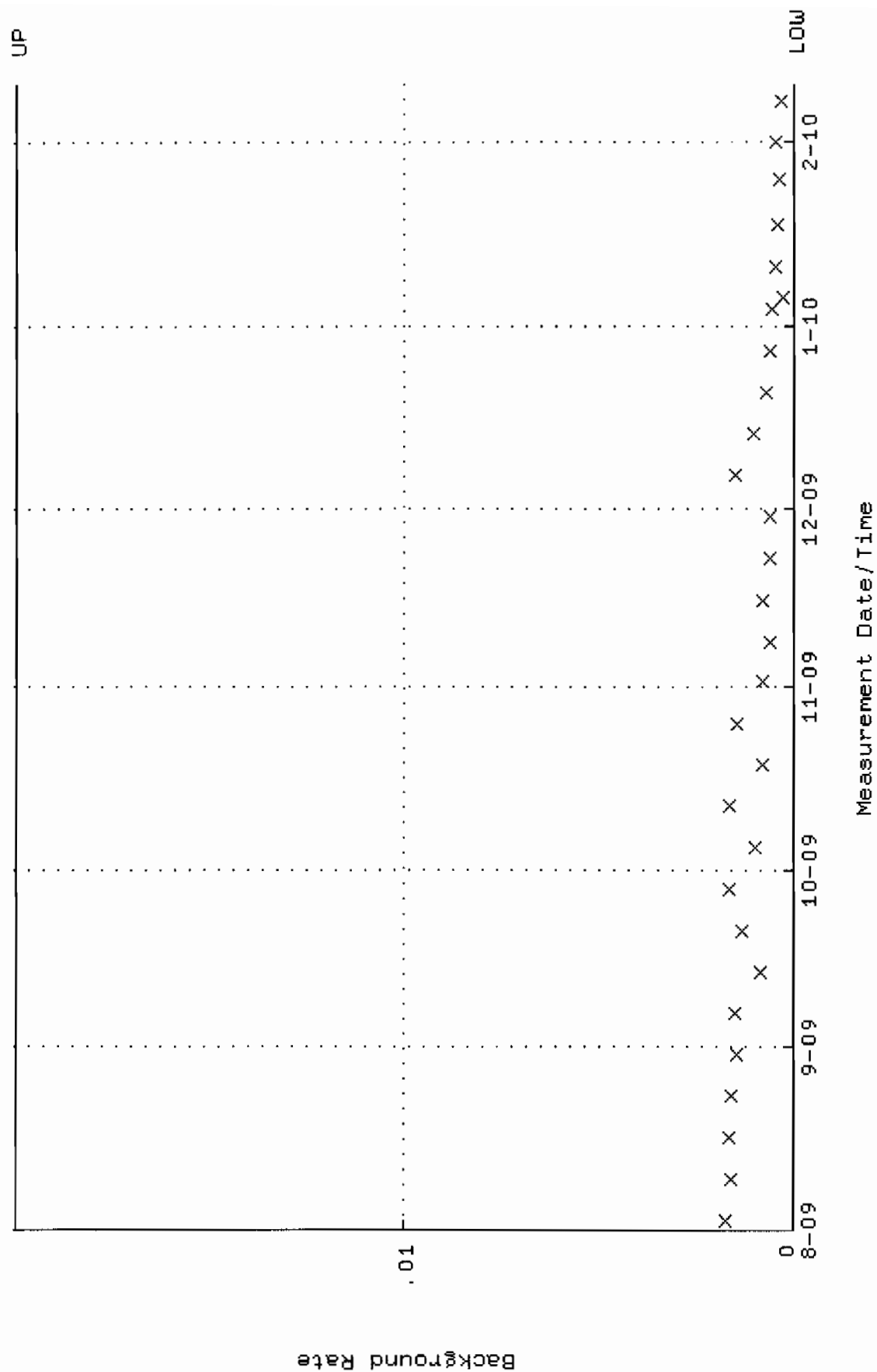
QA filename : DKA100:[ENV\_ALPHA.QA.W]W075.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.292134 through 0.312134



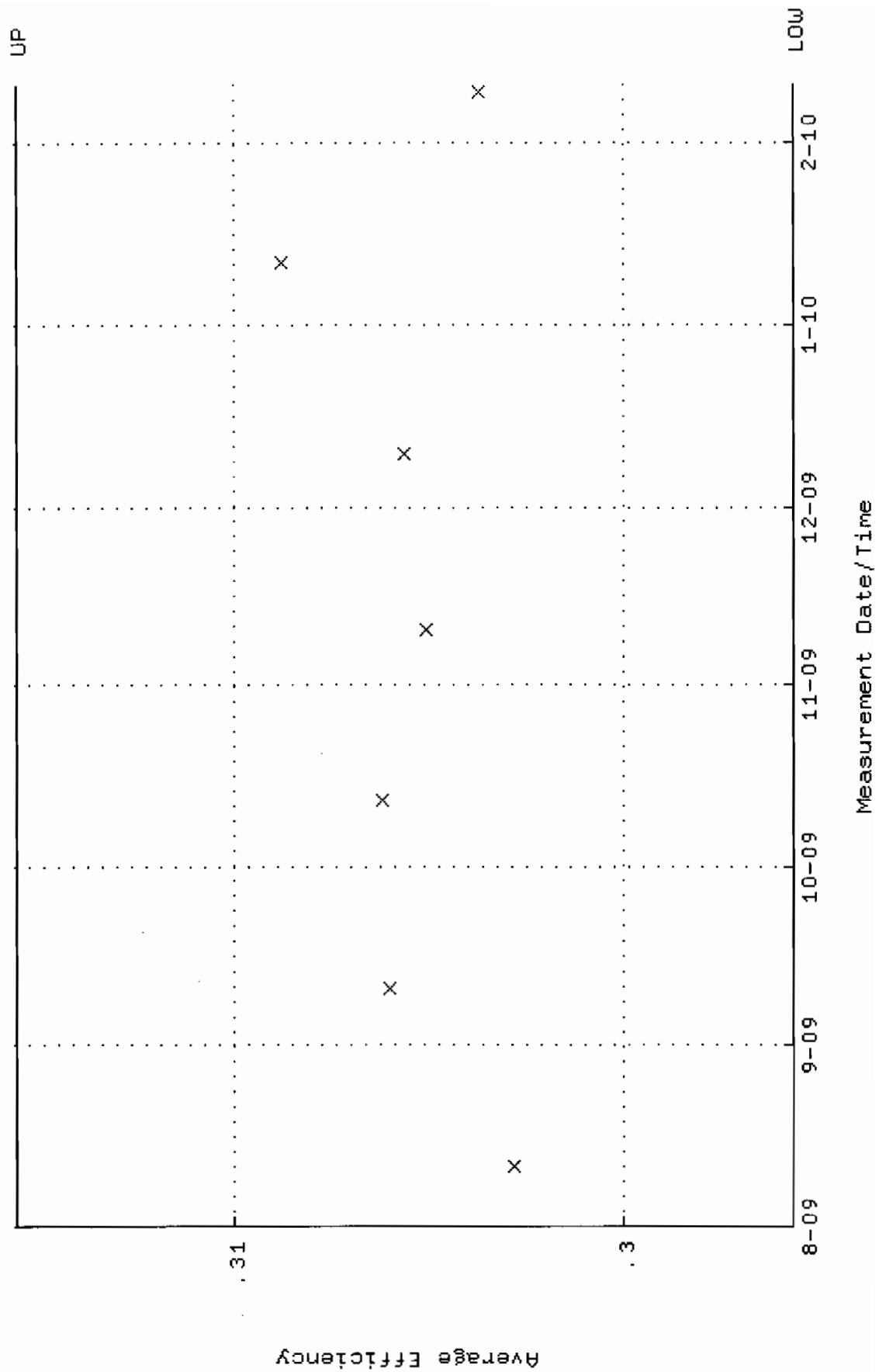
QA filename : DKA100:[ENV\_ALPHA.QA.W]W075.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 91.1212 through 100.713



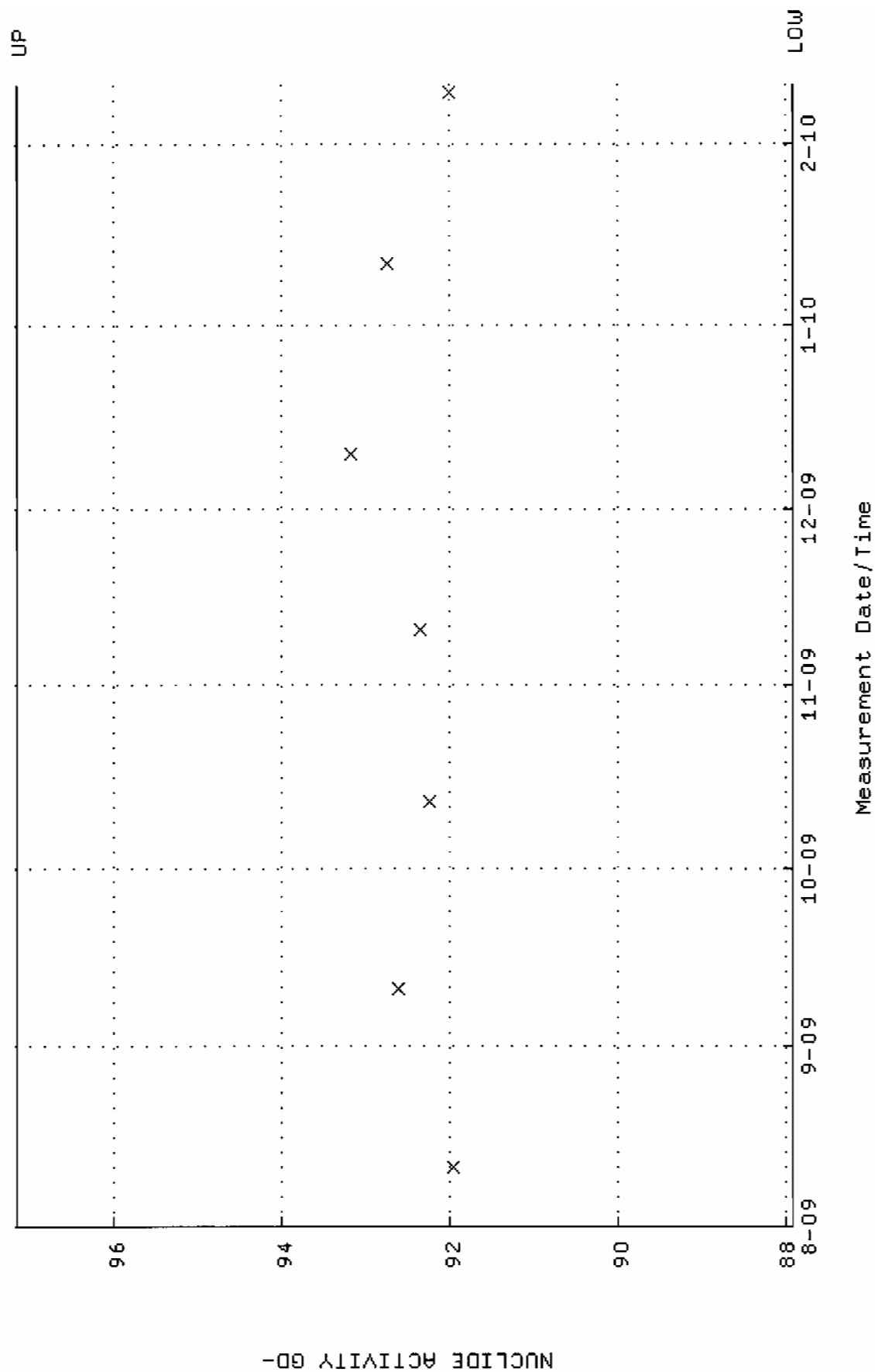
QA filename : DKA100:[ENV\_ALPHA.QA.B]B075.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:39 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



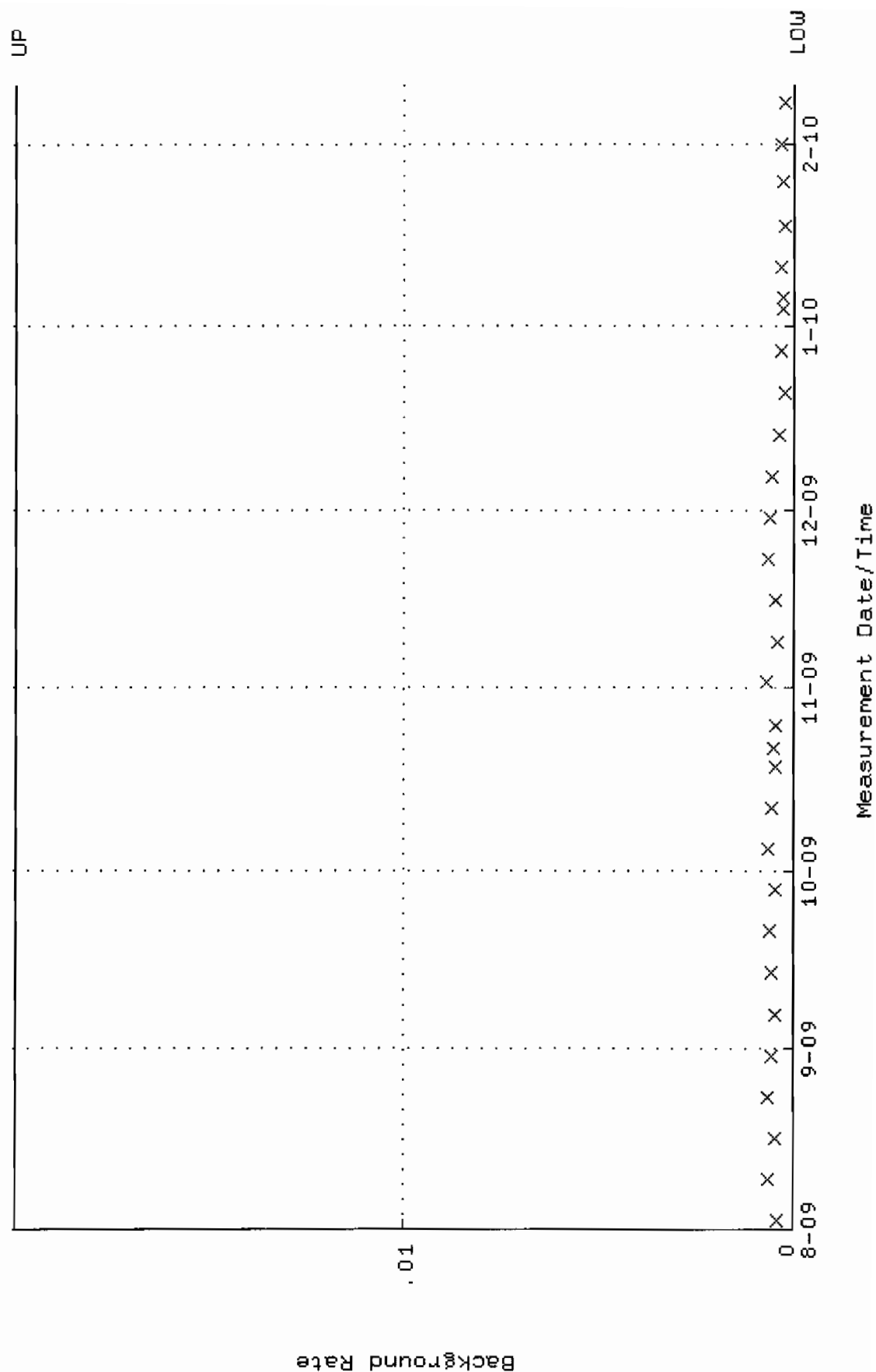
QA filename : DKA100:[ENV\_ALPHA.QA.W]W076.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.295613 through 0.315613



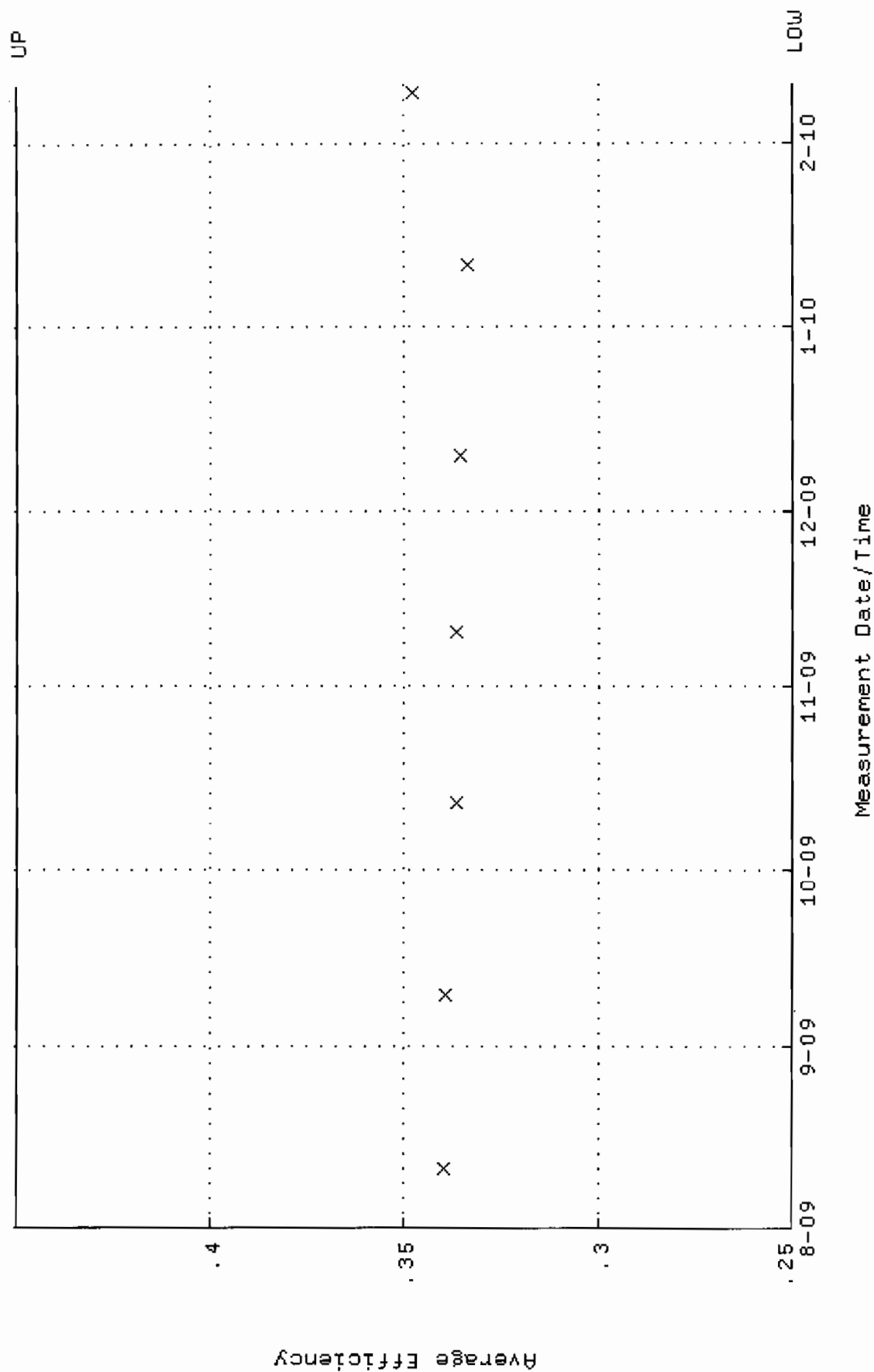
QA filename : DKA100:[ENV\_ALPHA.QA.W]W076.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:11 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.9031 through 97.1561



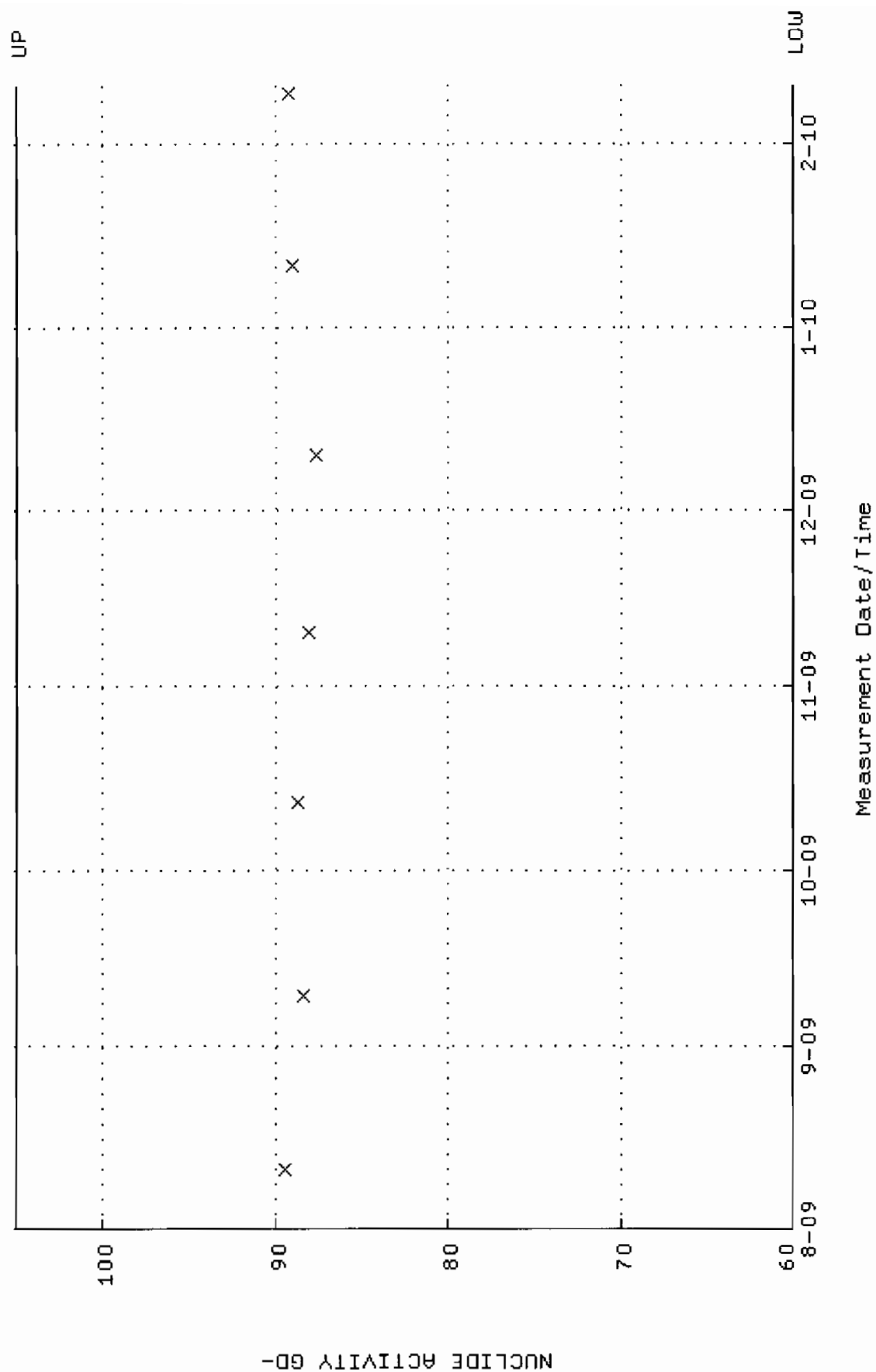
QA filename : DKA100:[ENV\_ALPHA.QA.B]B076.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:39 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W083.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000

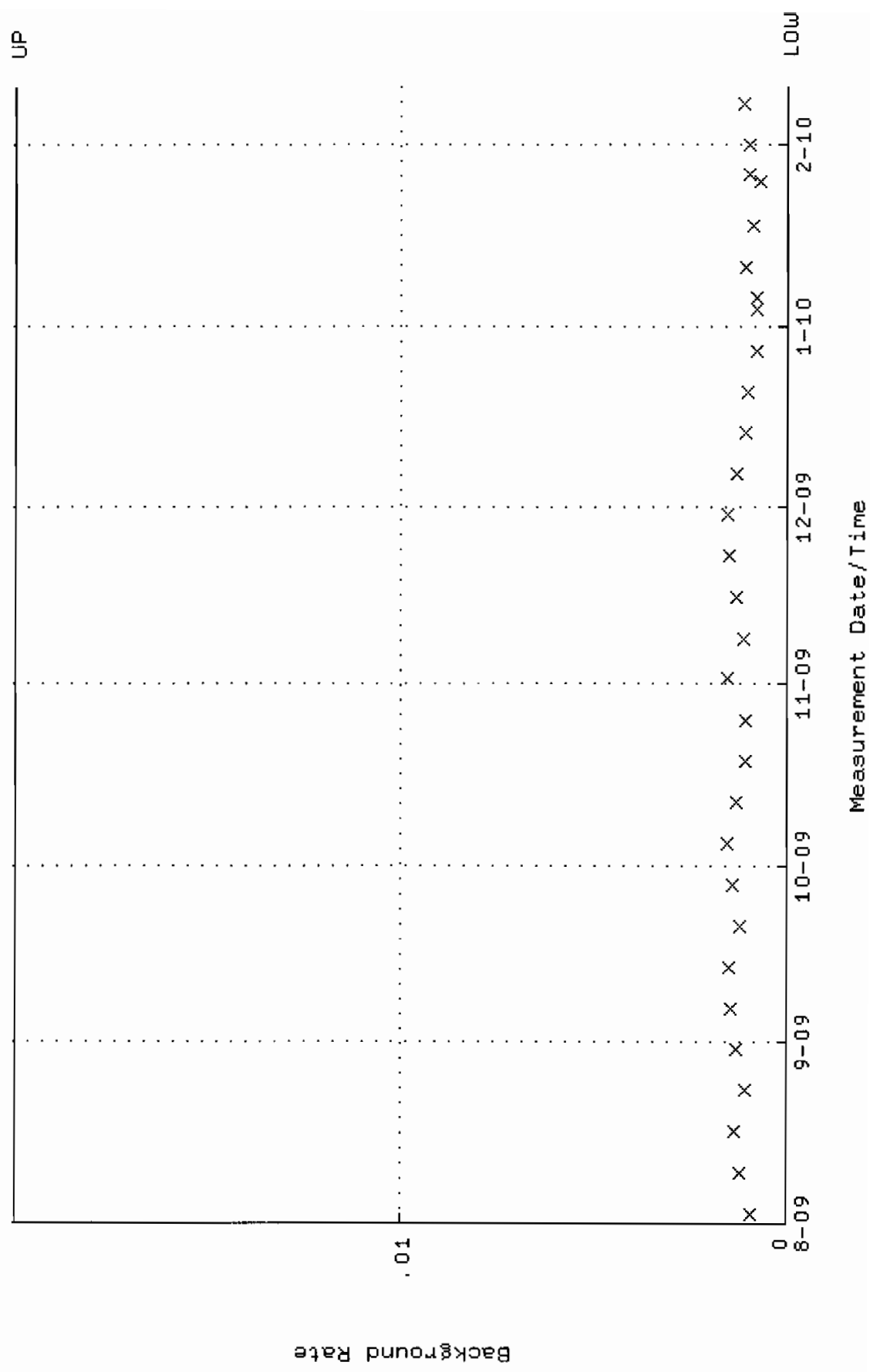


QA filename : DKA100:[ENV\_ALPHA.QA.W]W083.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.000

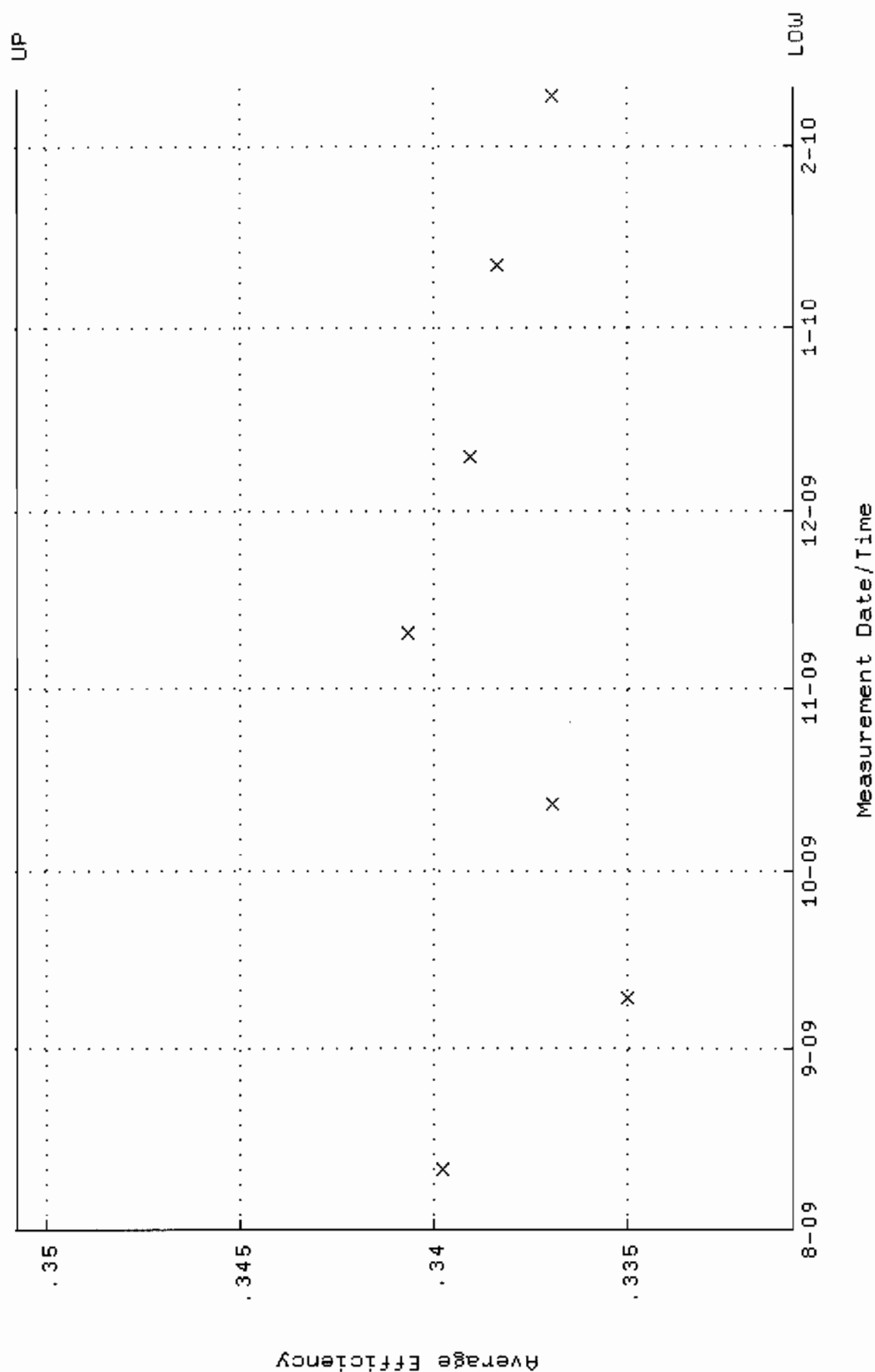




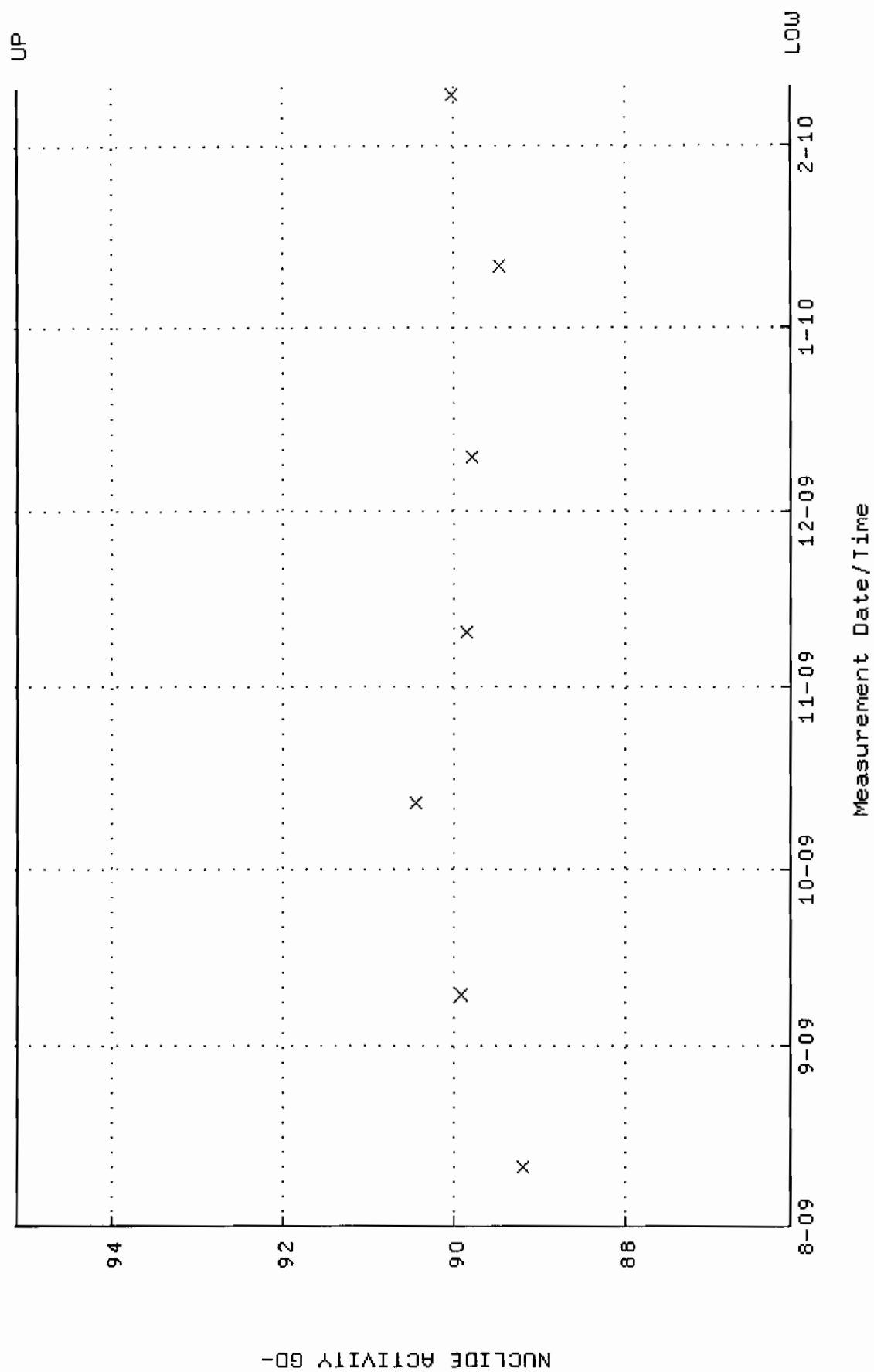
QA filename : DKA100:[ENV\_ALPHA.QA.B]B083.QAF;3  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



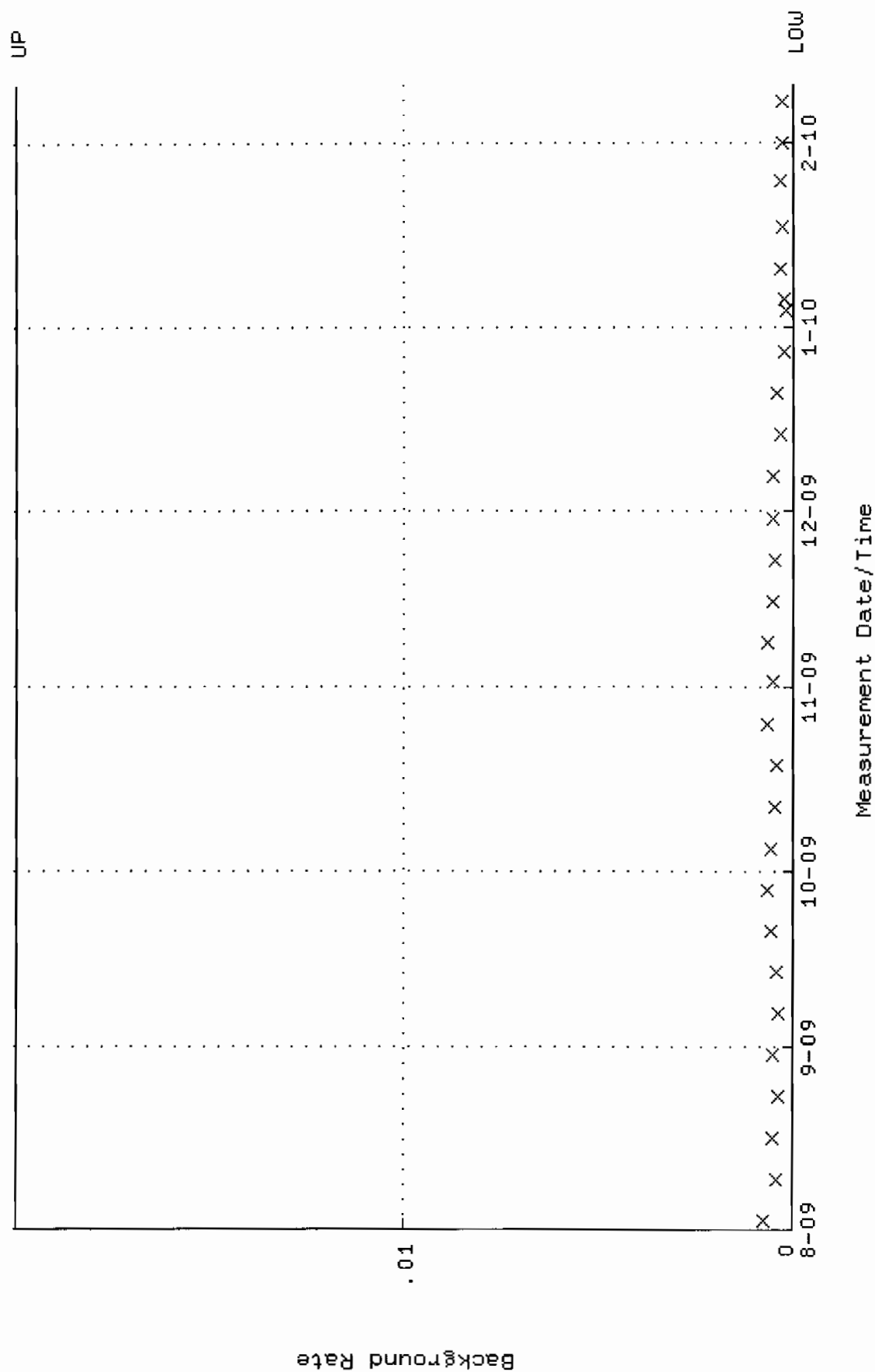
QA filename : DKA100:[ENV\_ALPHA.QA.W]W084.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.330740 through 0.350740



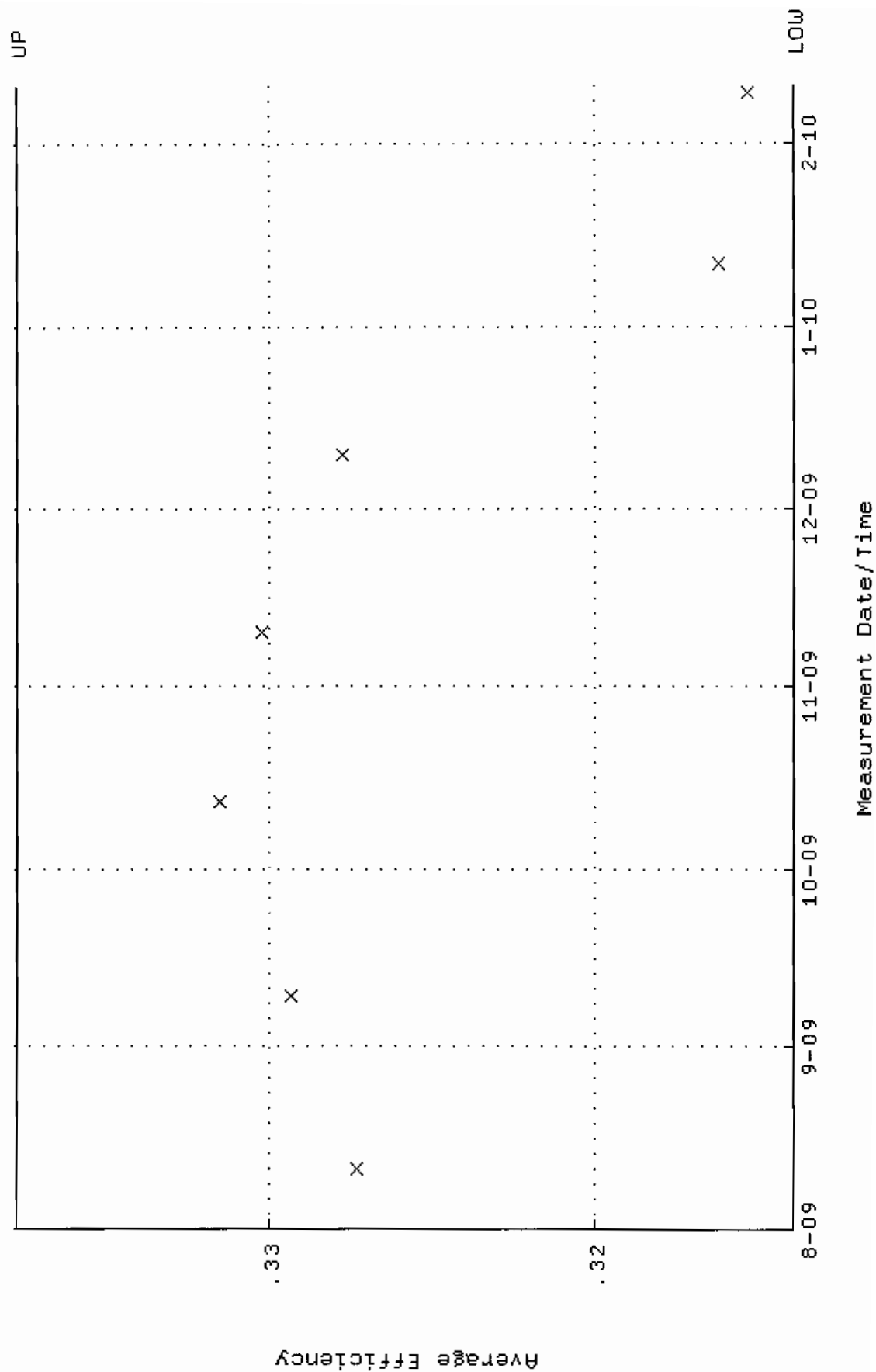
QA filename : DKA100:[ENV\_ALPHA.QA.W]W084.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 86.0569 through 95.1155



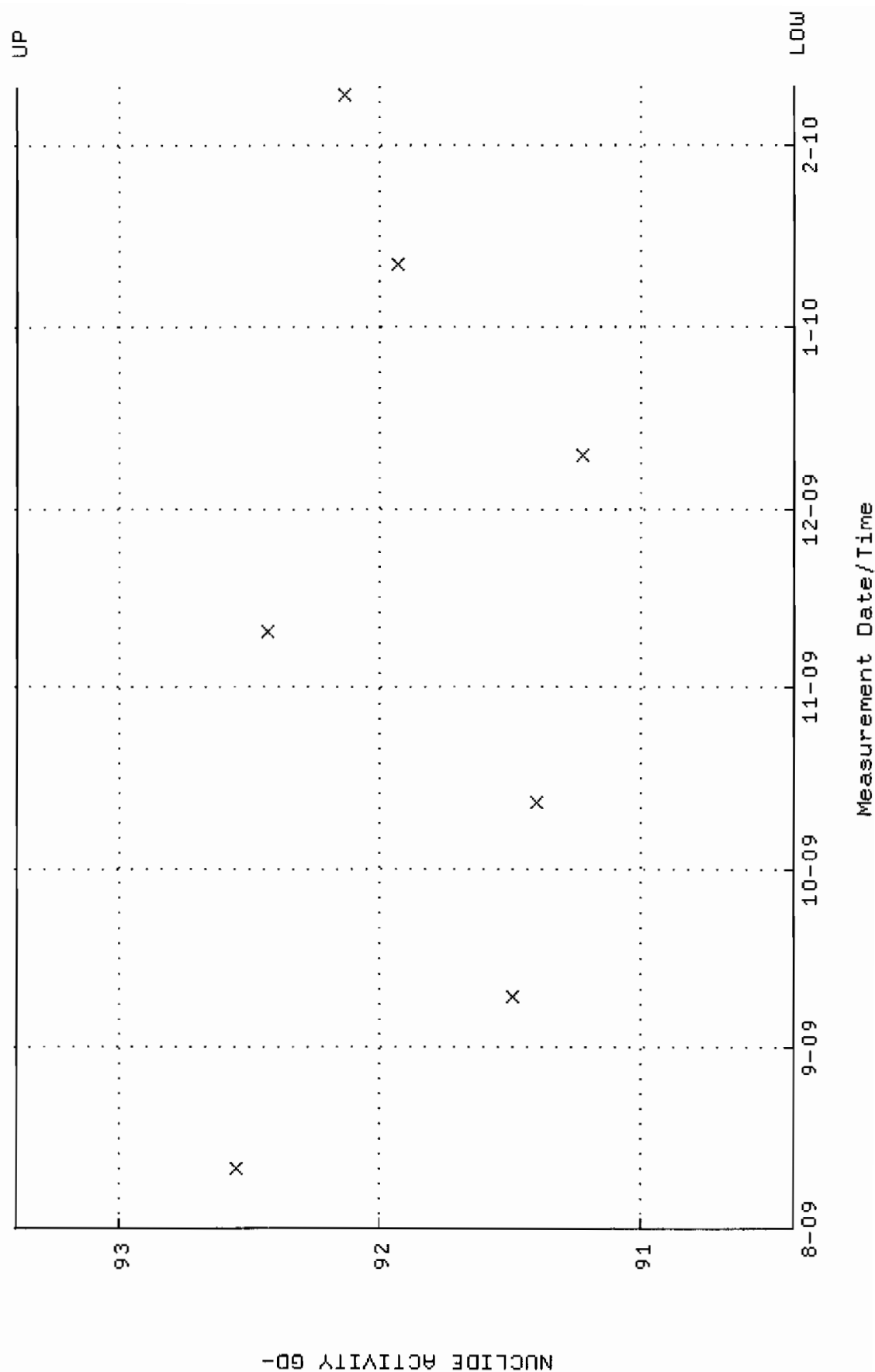
QA filename : DKA100:[ENV\_ALPHA.QA.B]B084.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



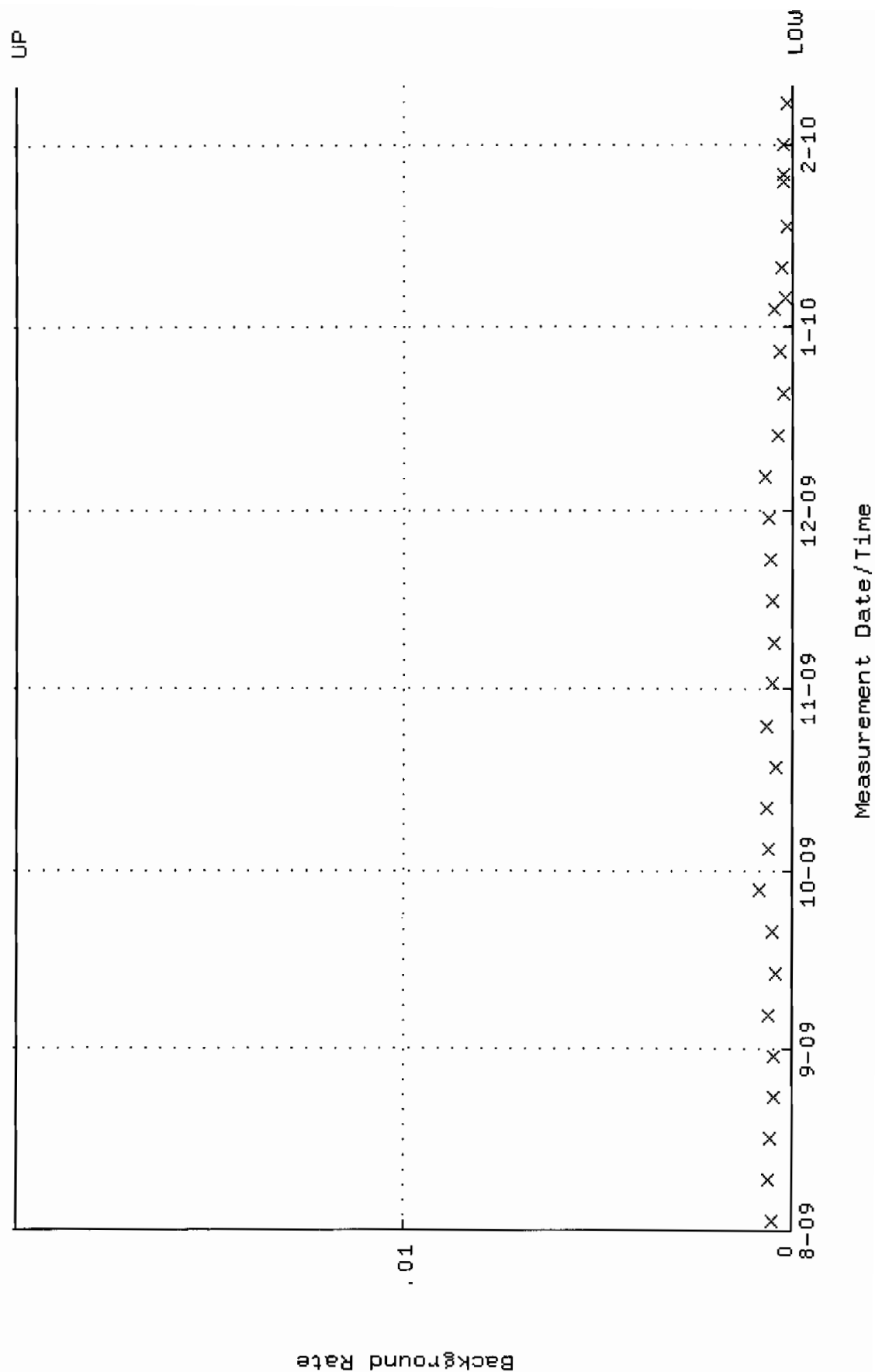
QA filename : DKA100:[ENV\_ALPHA.QA.W]W085.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.313884 through 0.337714



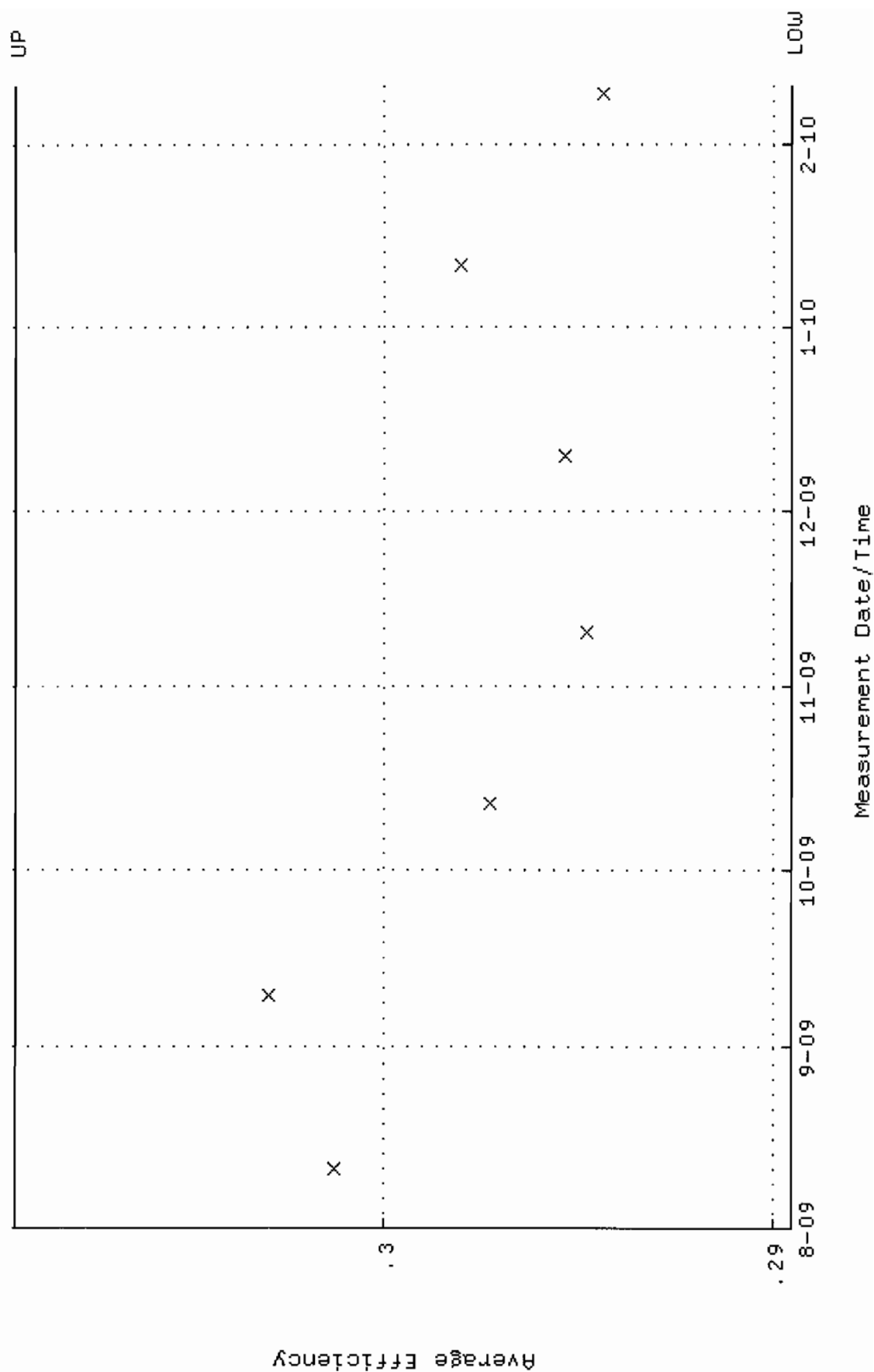
QA filename : DKA100:[ENV\_ALPHA.QA.W]W085.QAF;6  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 90.4059 through 93.3969



QA filename : DKA100:[ENV\_ALPHA.QA.B]B085.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

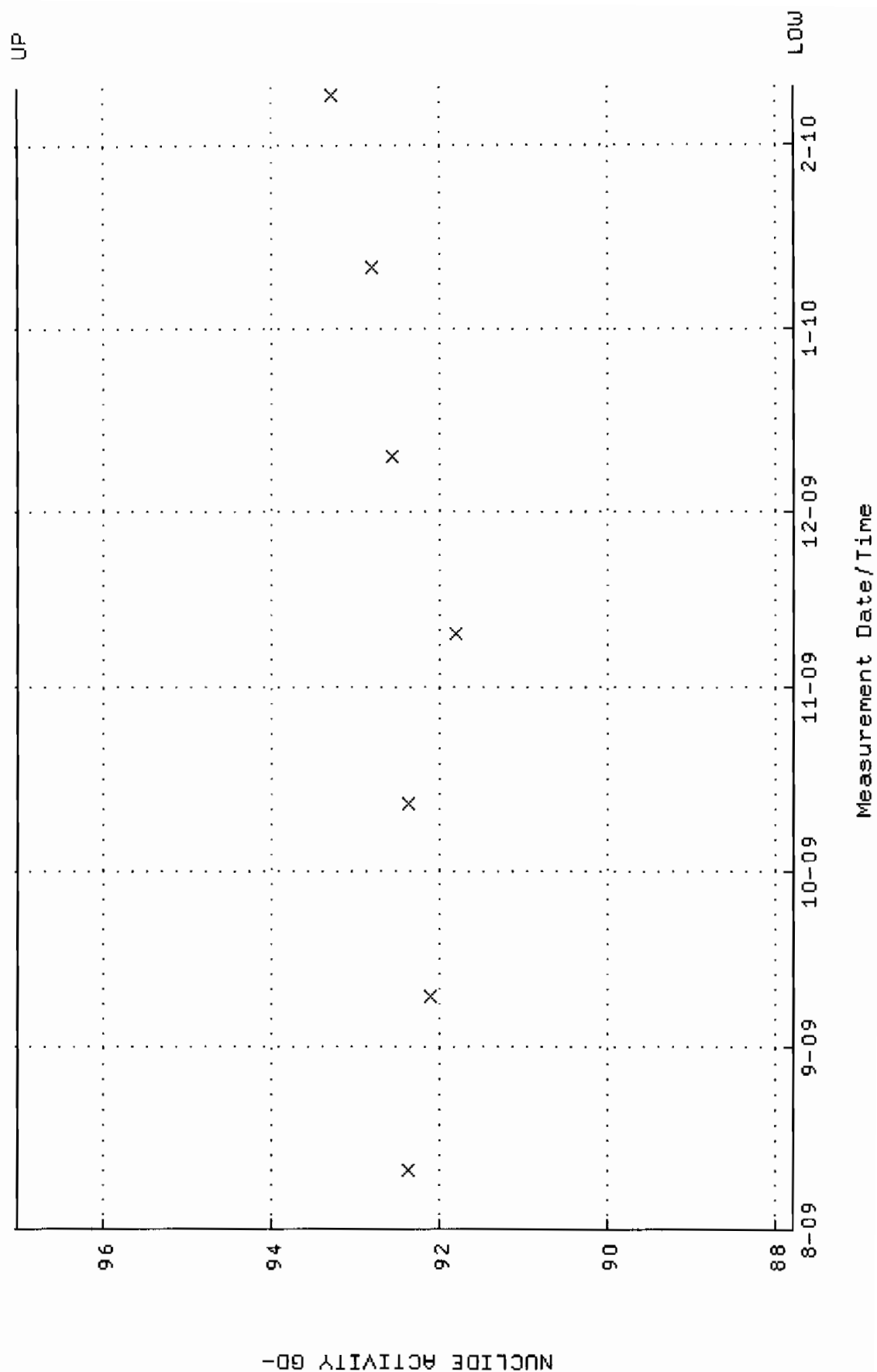


QA filename : DKA100:[ENV\_ALPHA.QA.W]W086.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.289508 through 0.309508

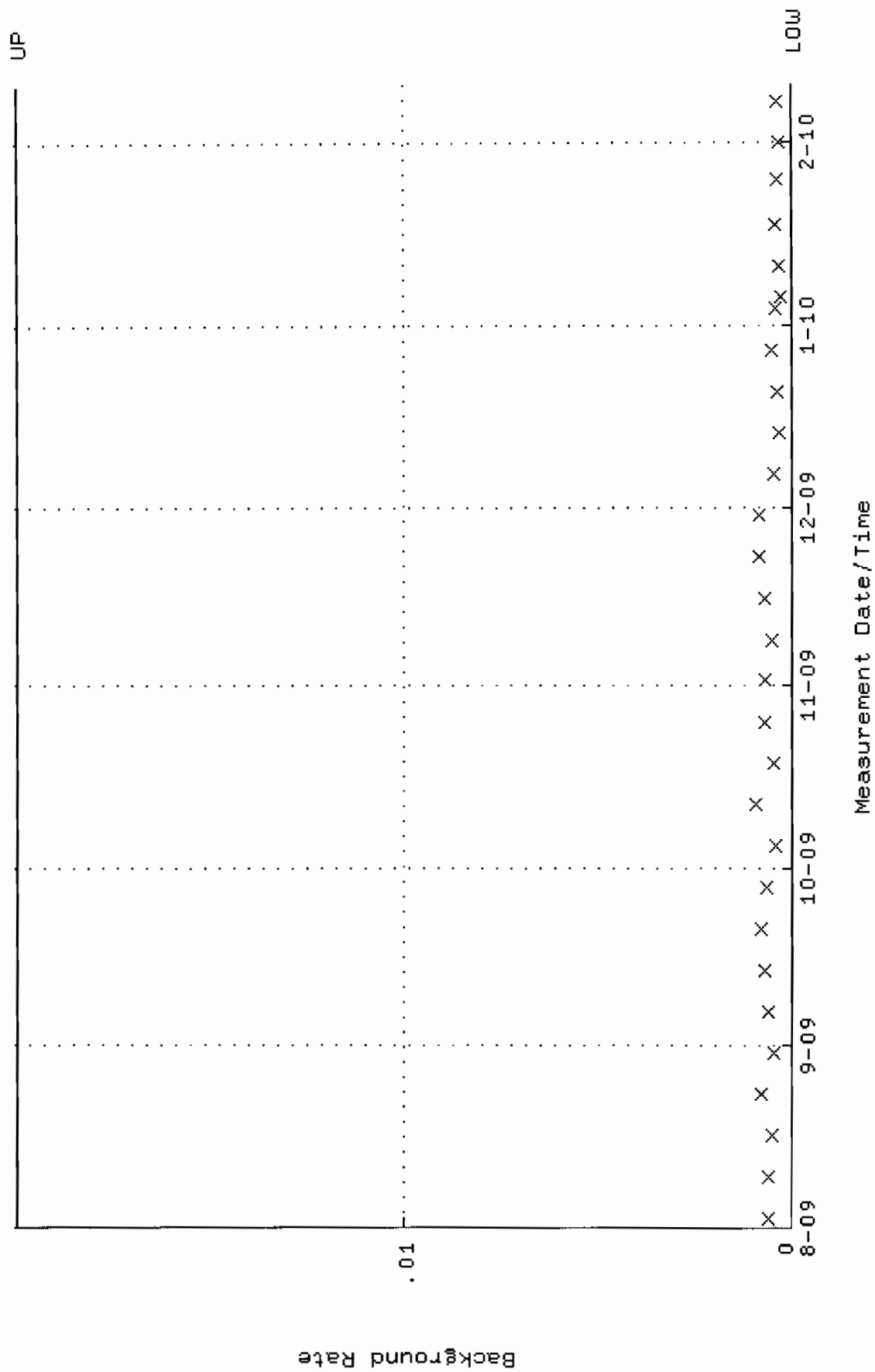




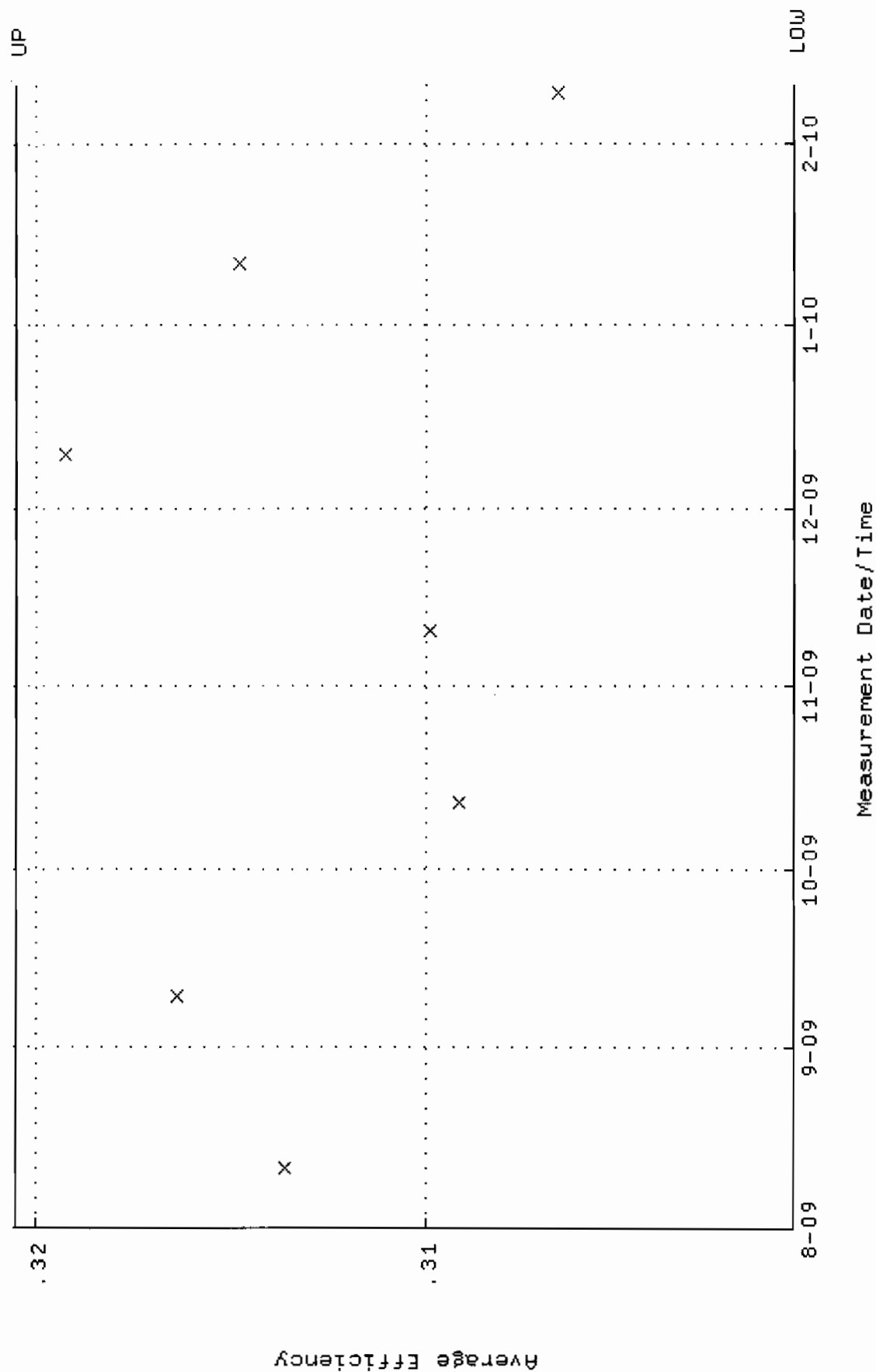
QA filename : DKA100:[ENV\_ALPHA.QA.W]W086.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.7898 through 97.0308



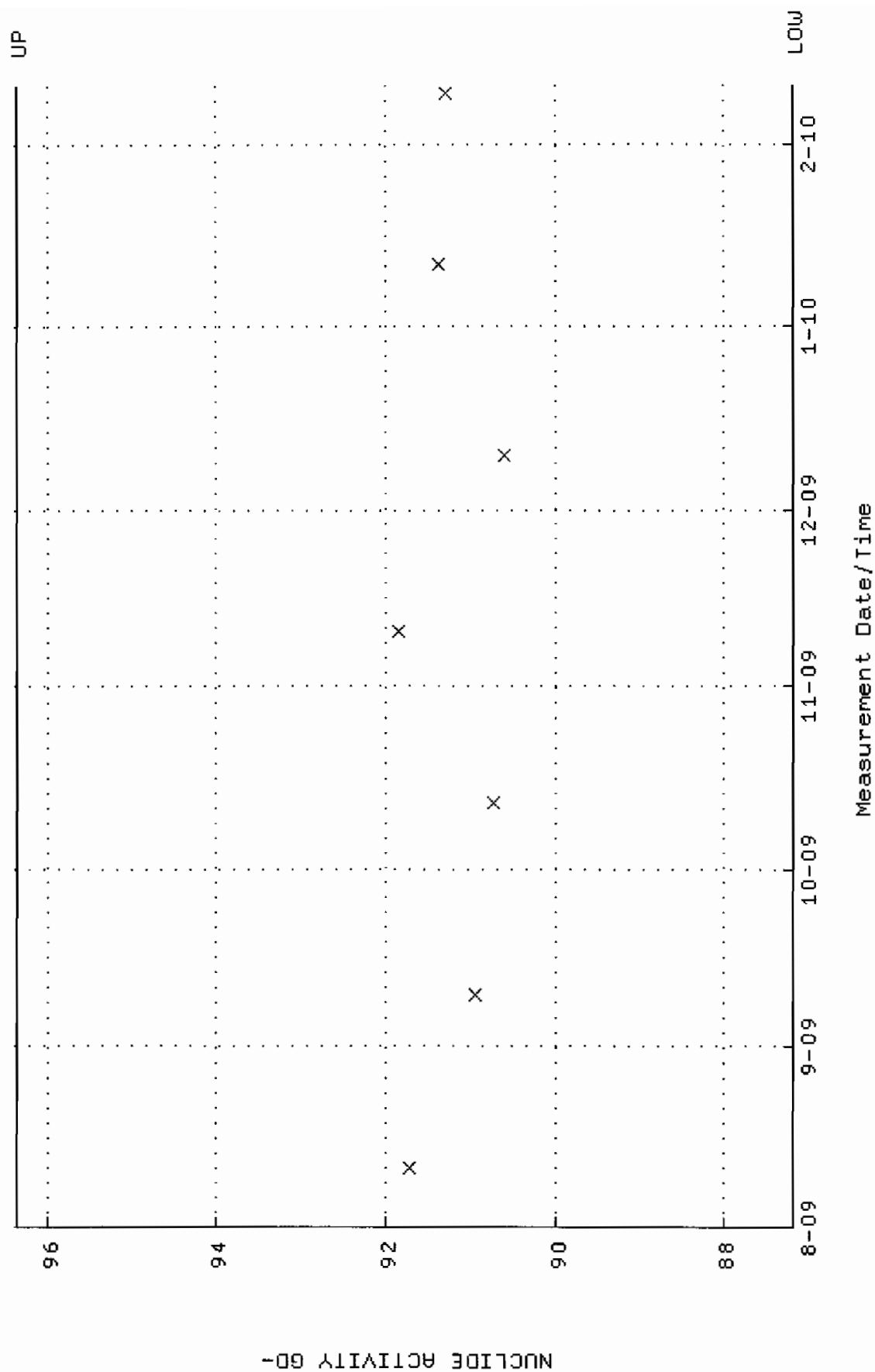
QA filename : DKA100:[ENV\_ALPHA.QA.B]B086.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



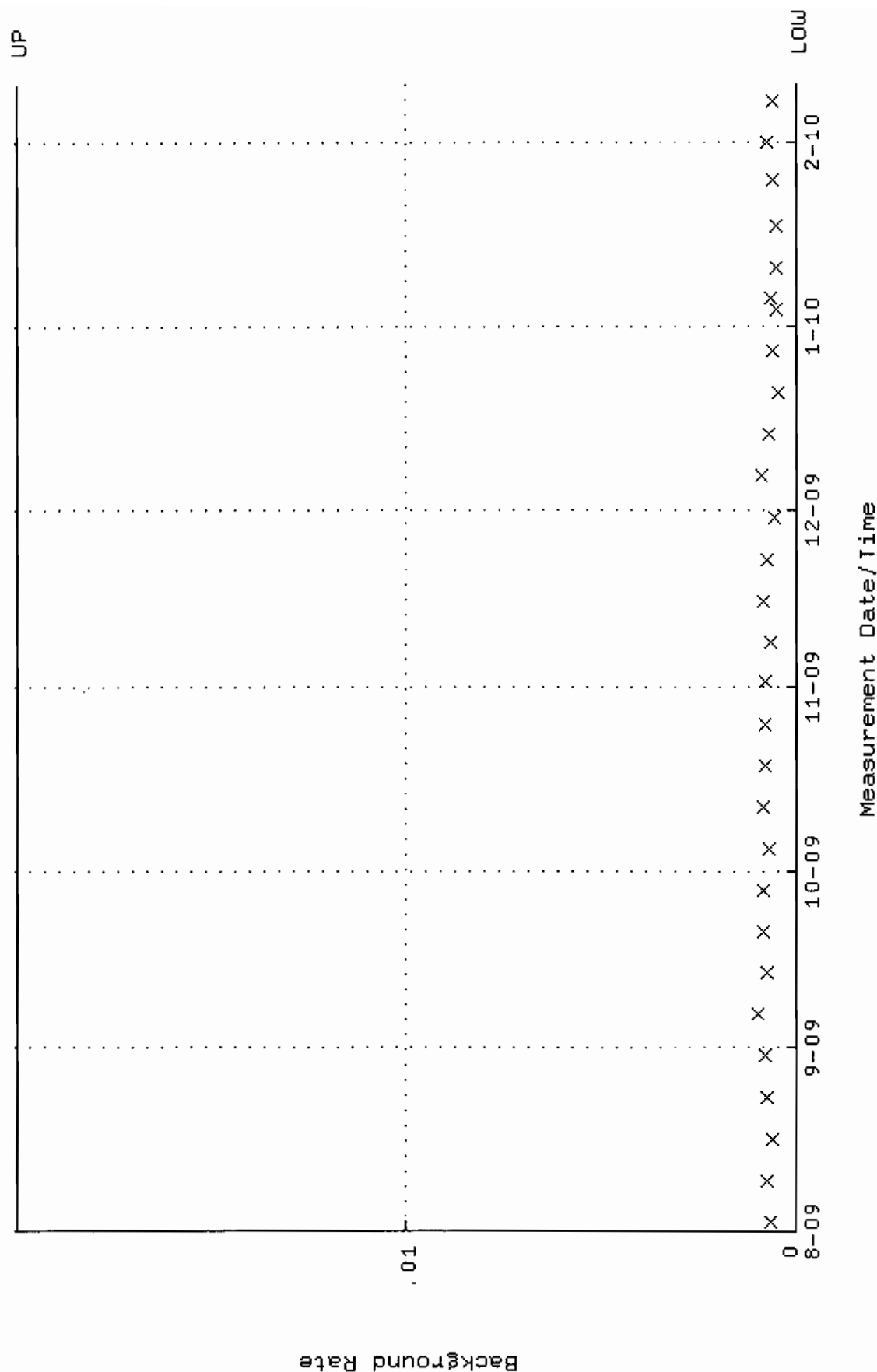
QA filename : DKA100:[ENV\_ALPHA,QA,W]W087,QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.300530 through 0.320530



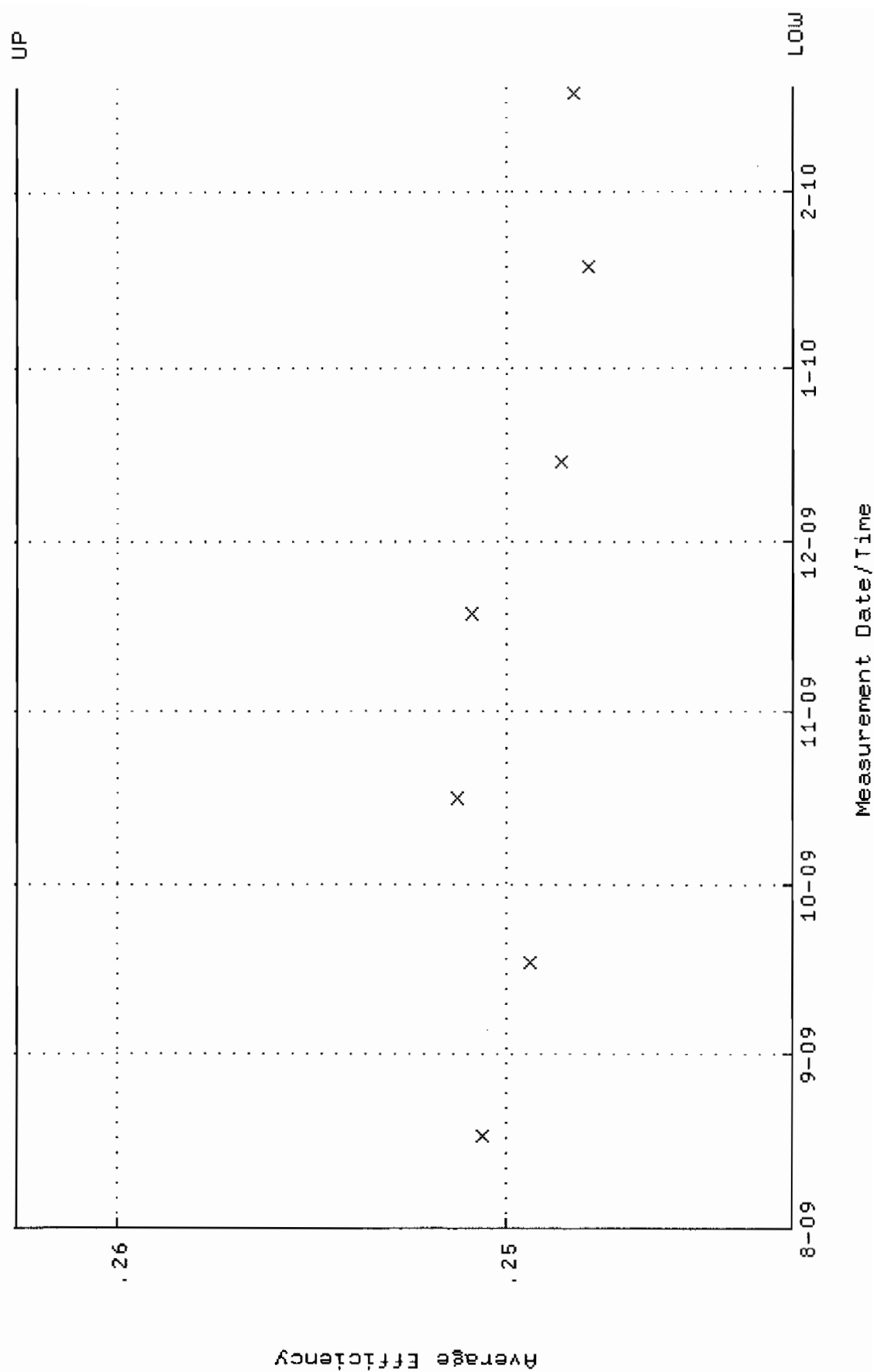
QA filename : DKA100:[ENV\_ALPHA.QA.W]W087.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.1845 through 96.3619



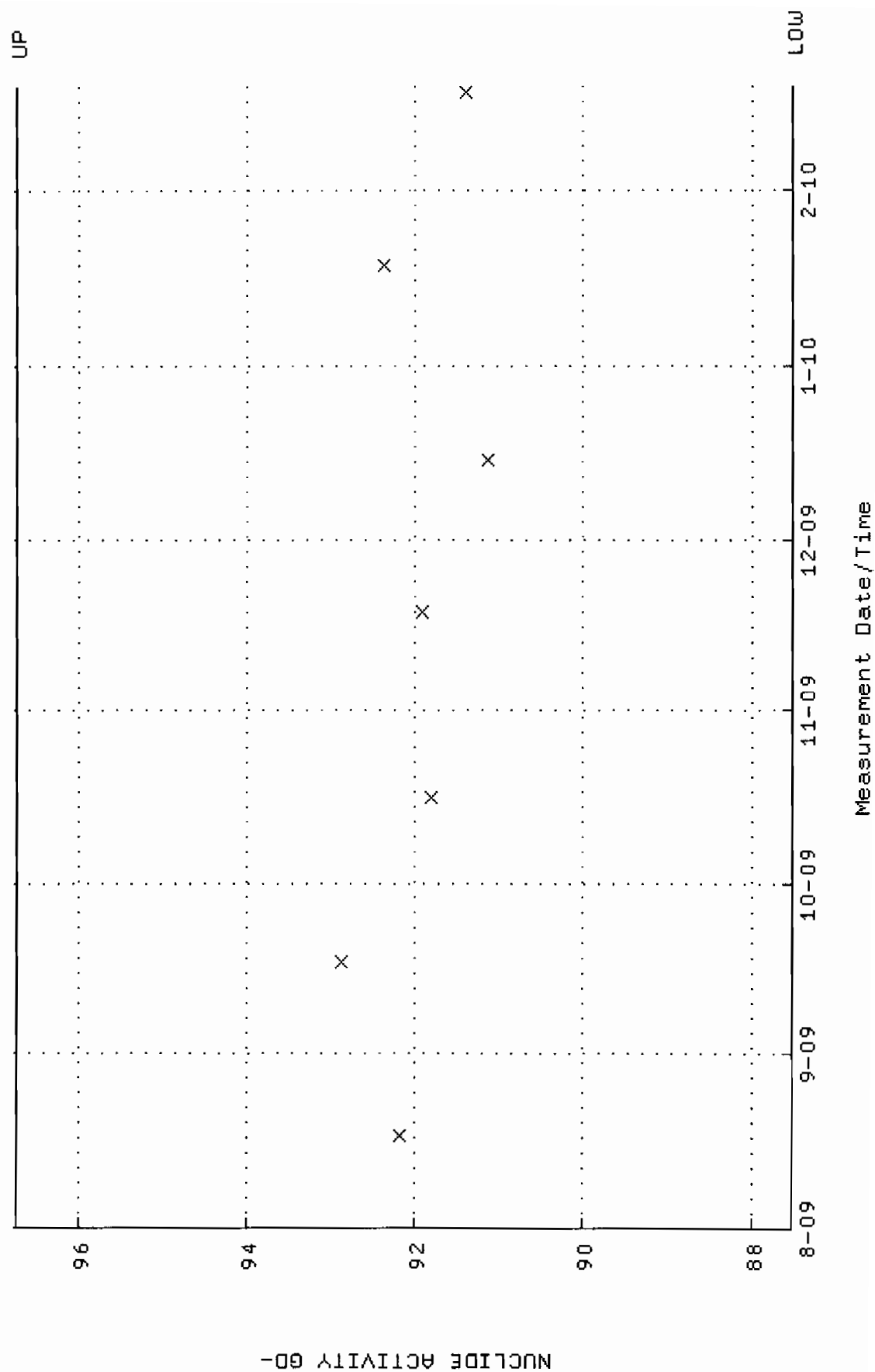
QA filename : DKA100:[ENV\_ALPHA.QA.B]B087.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



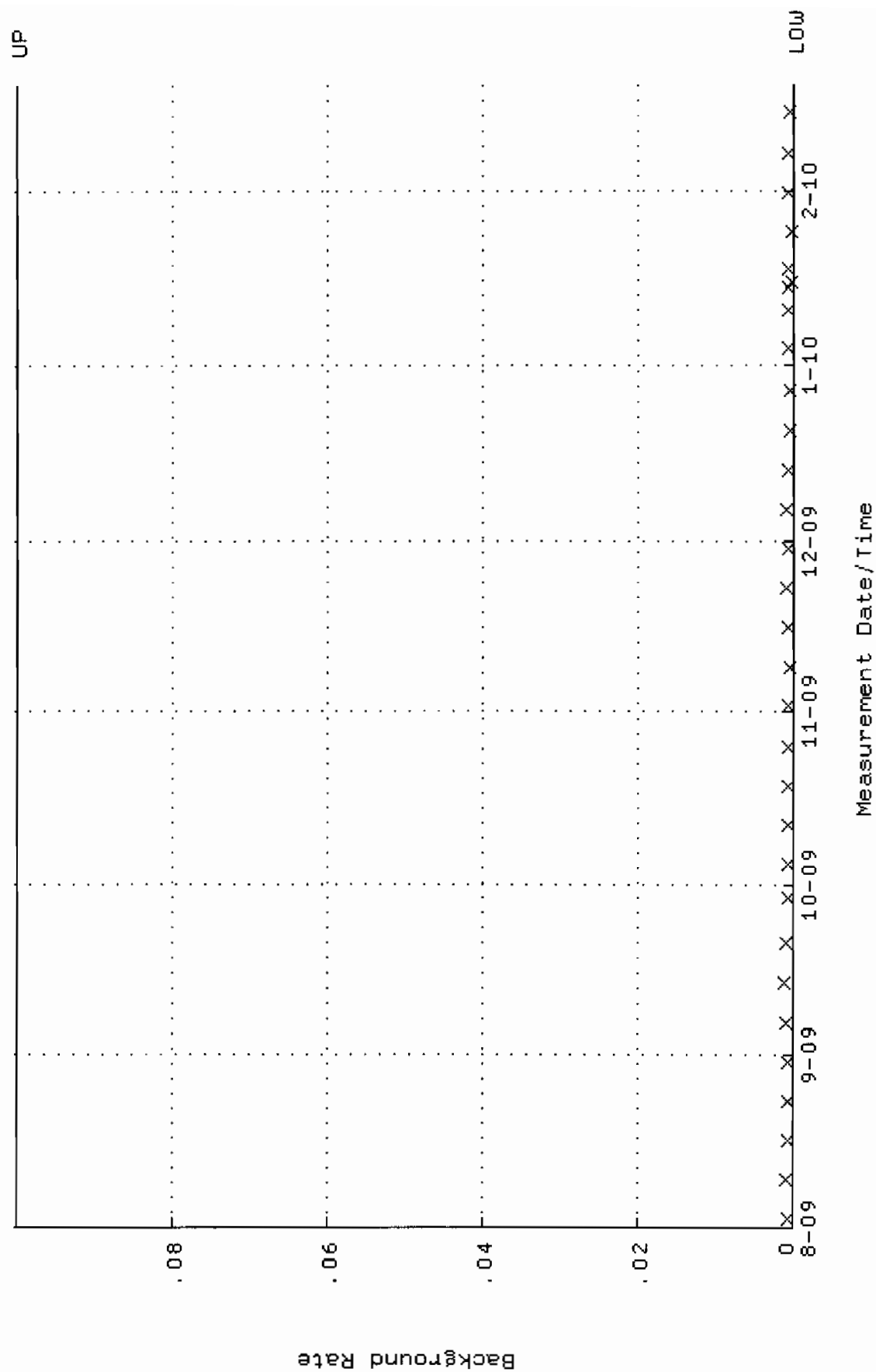
QA filename : DKA100:[ENV-ALPHA.QA.W]W113.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-AUG-2009 09:40:49 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.242598 through 0.262598



QA filename : DKA100:[ENV\_ALPHA.QA.W]W113.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-AUG-2009 09:40:49 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.5172 through 96.7296

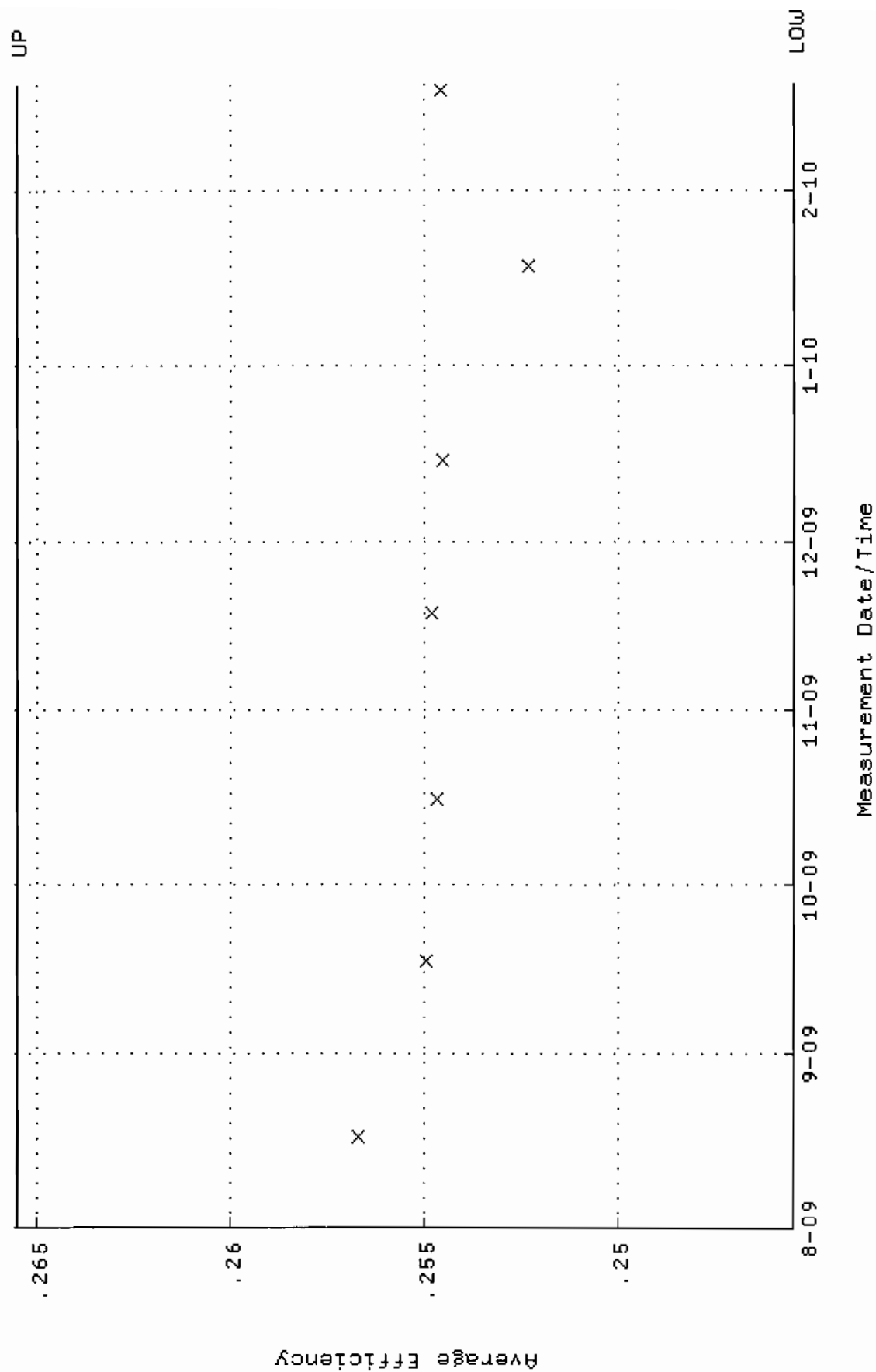


QA filename : DKA100:[ENV\_ALPHA.QA.B]B113.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:11:56 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

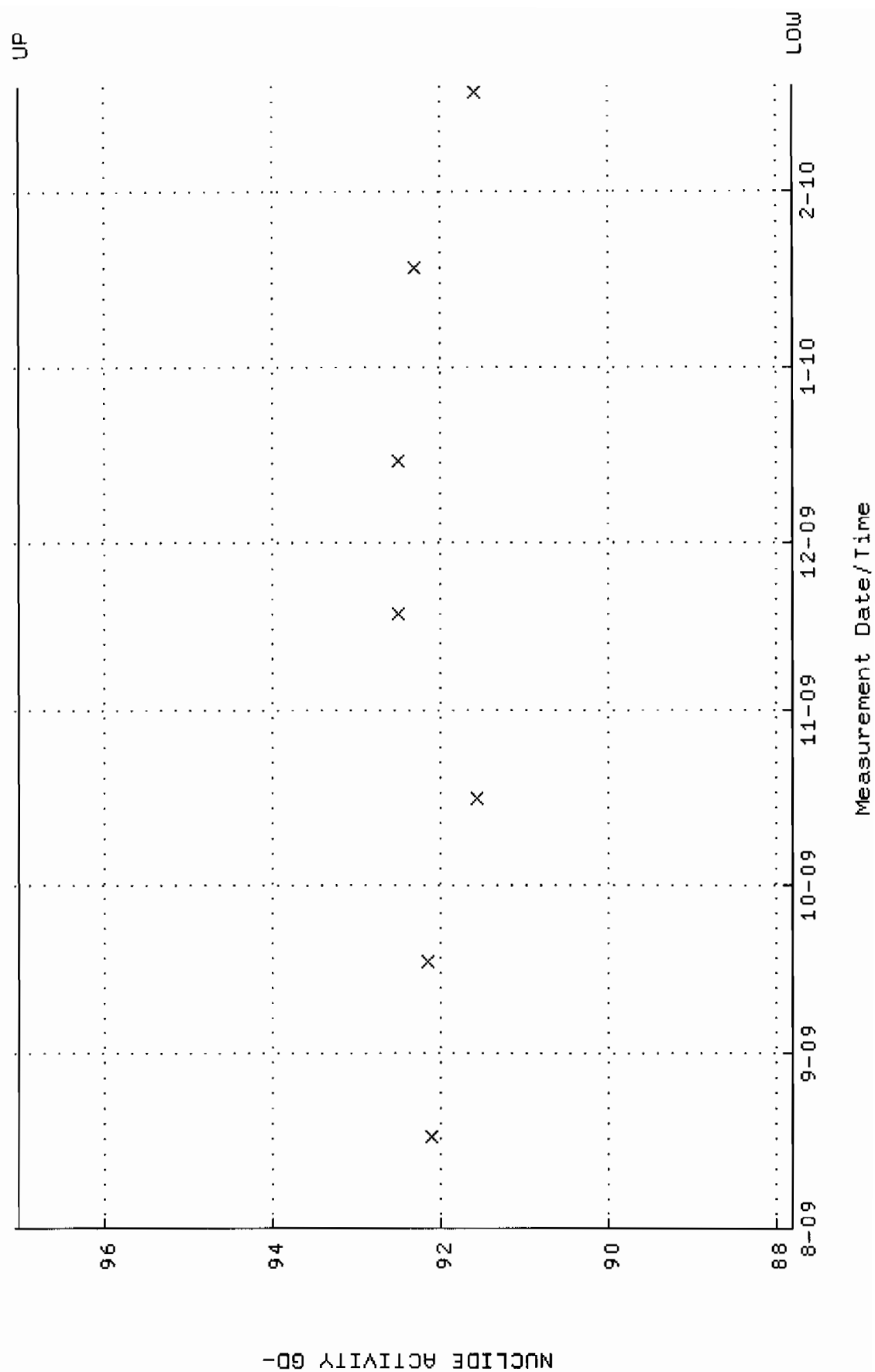




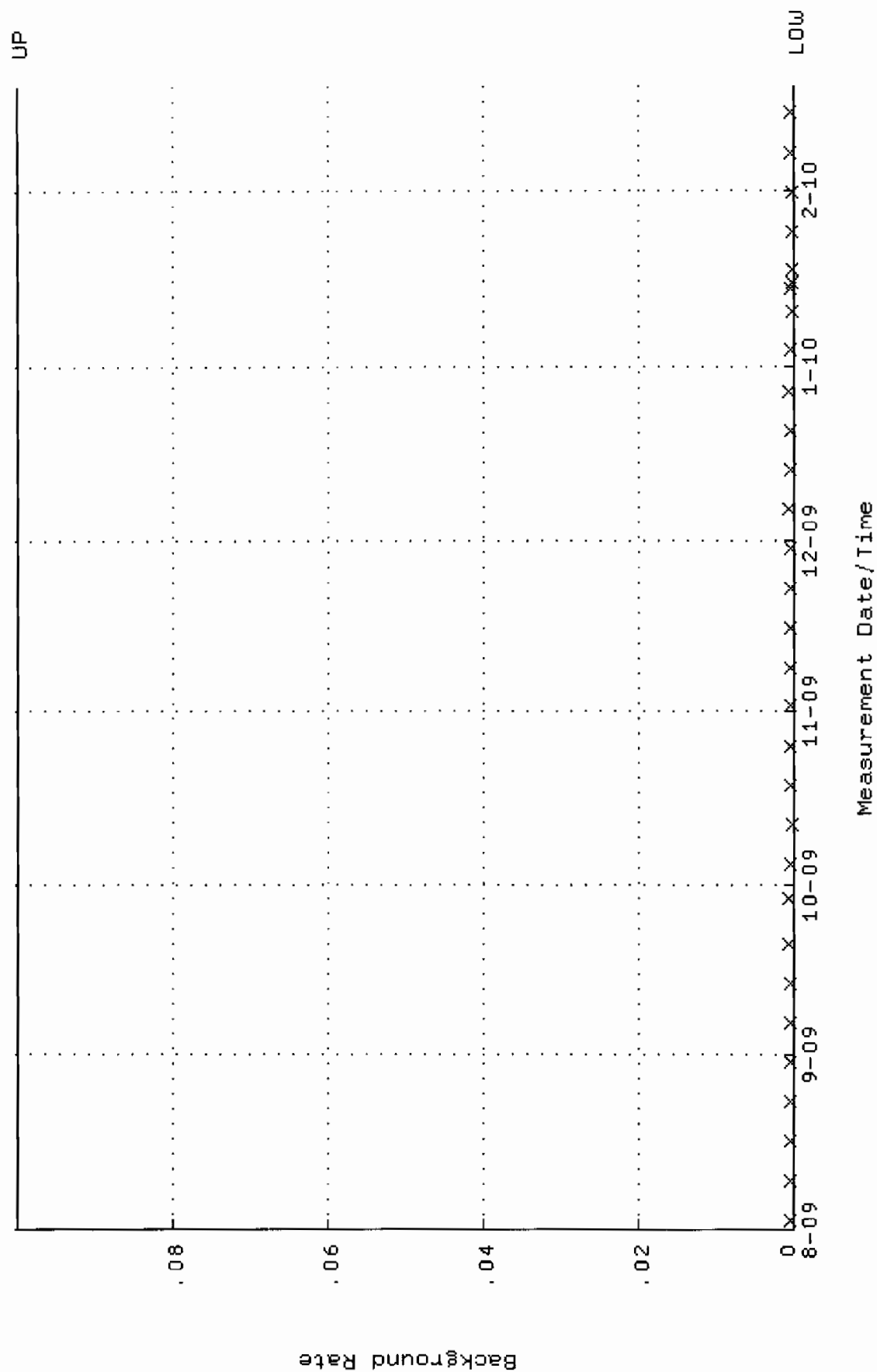
QA filename : DKA100:[ENV\_ALPHA.QA.W]W114.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-AUG-2009 09:40:56 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.245499 through 0.265499



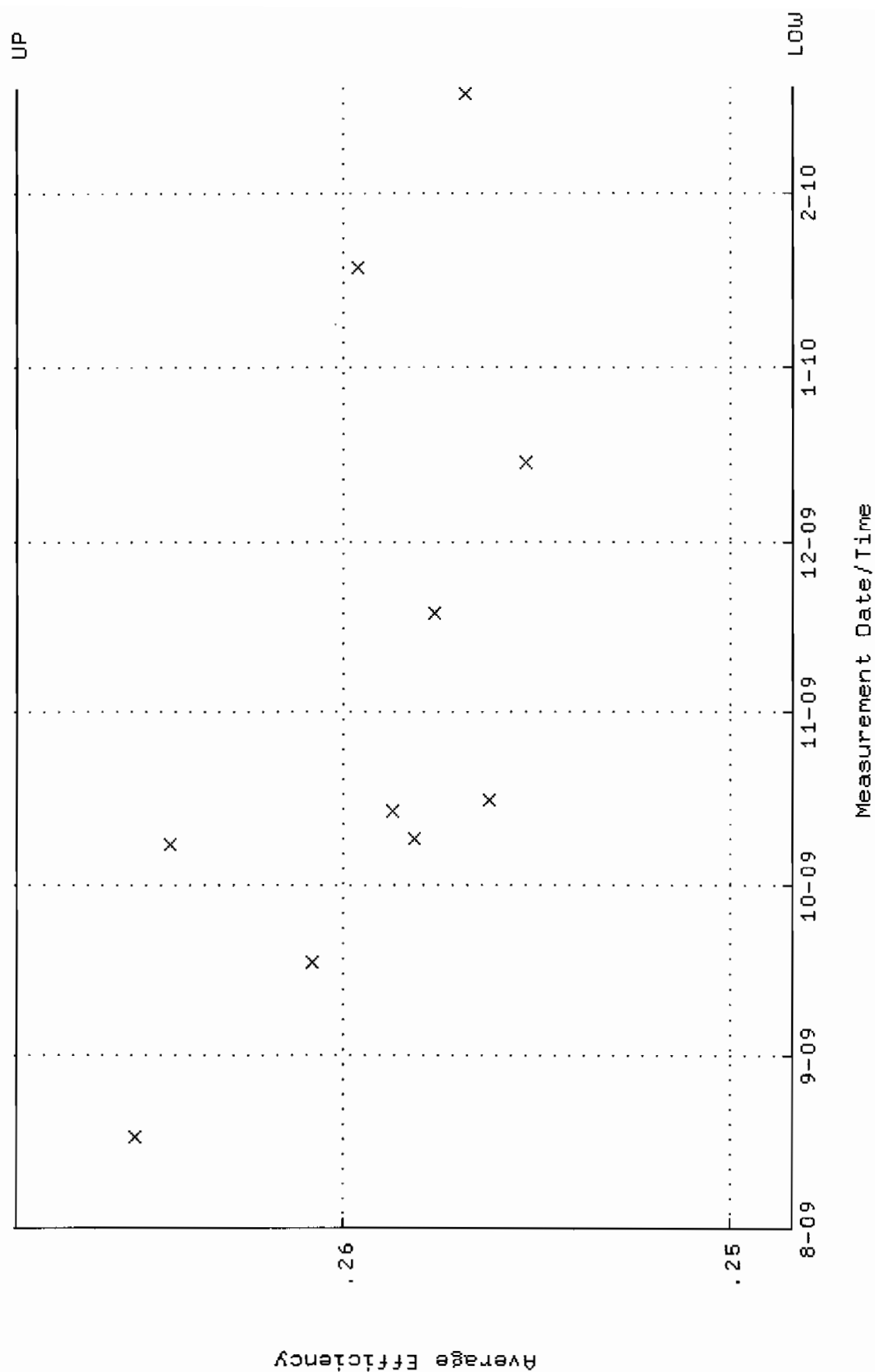
QA filename : DKA100:[ENV\_ALPHA.QA.W]W114.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-AUG-2009 09:40:56 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 87.8108 through 97.0540



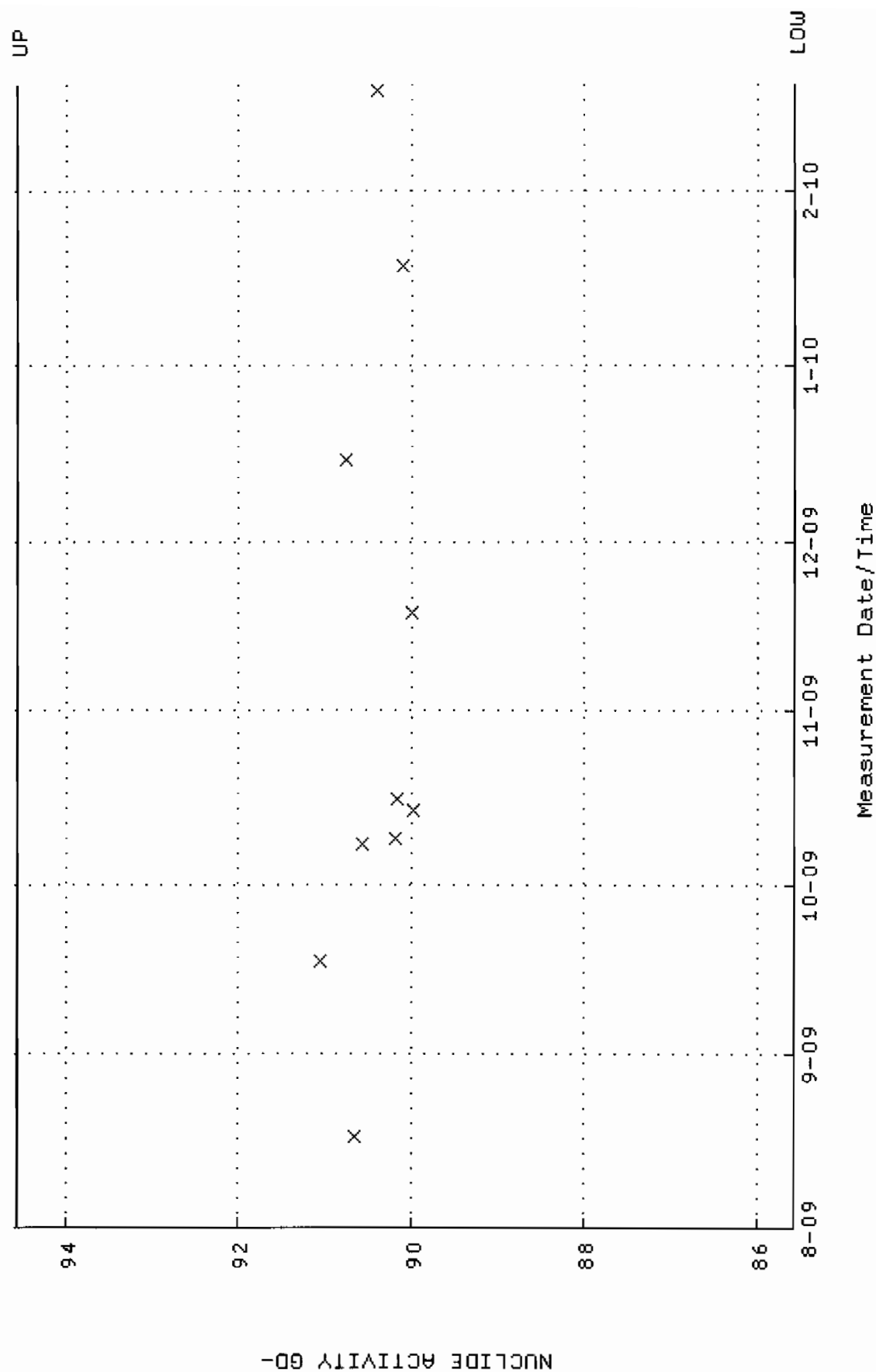
QA filename : OKA100:[ENV\_ALPHA.QA.B]B114.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:12:01 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



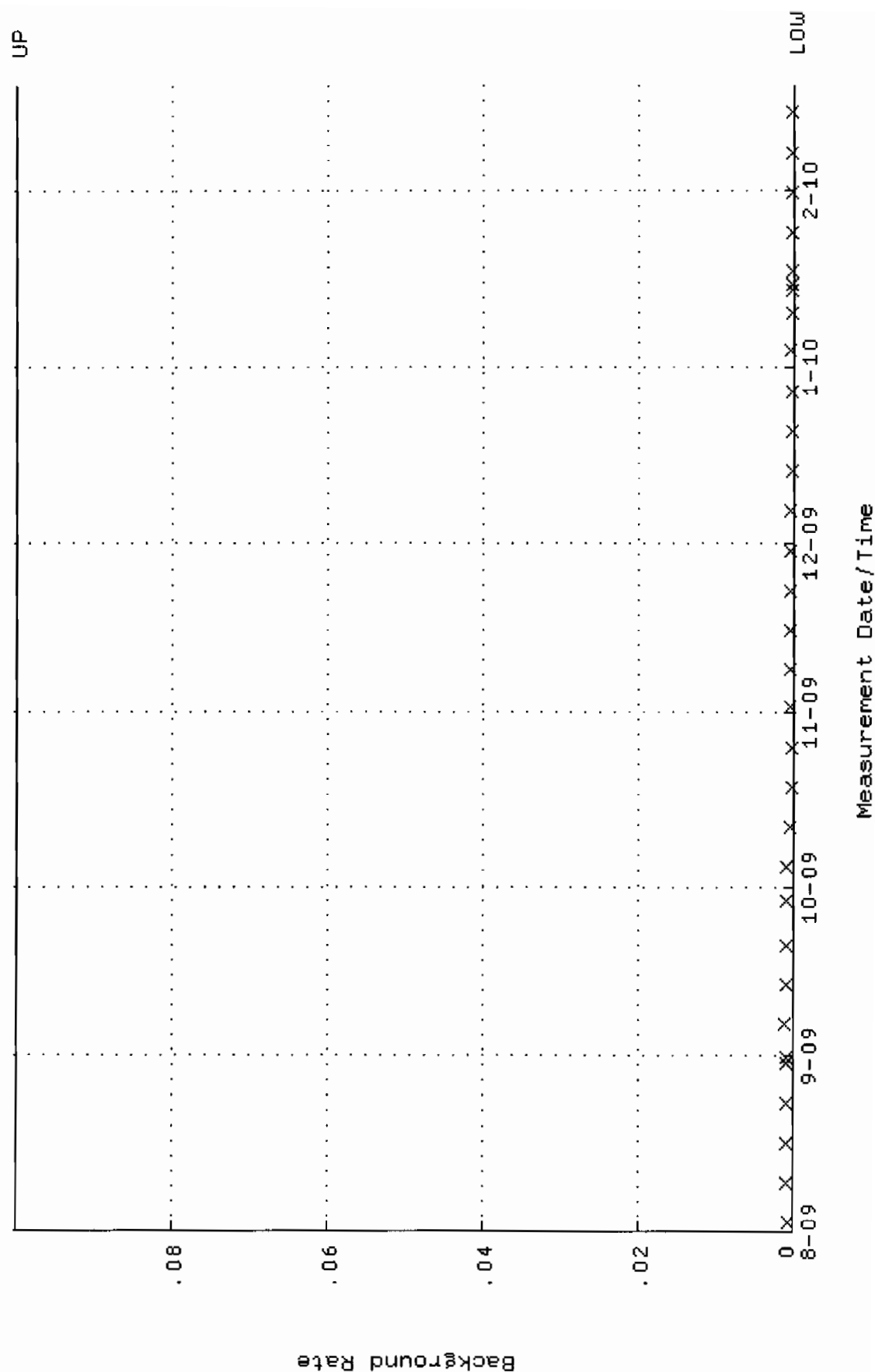
QA filename : DKA100:[ENV\_ALPHA.QA.W]W115.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-AUG-2009 09:41:02 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.248404 through 0.268404



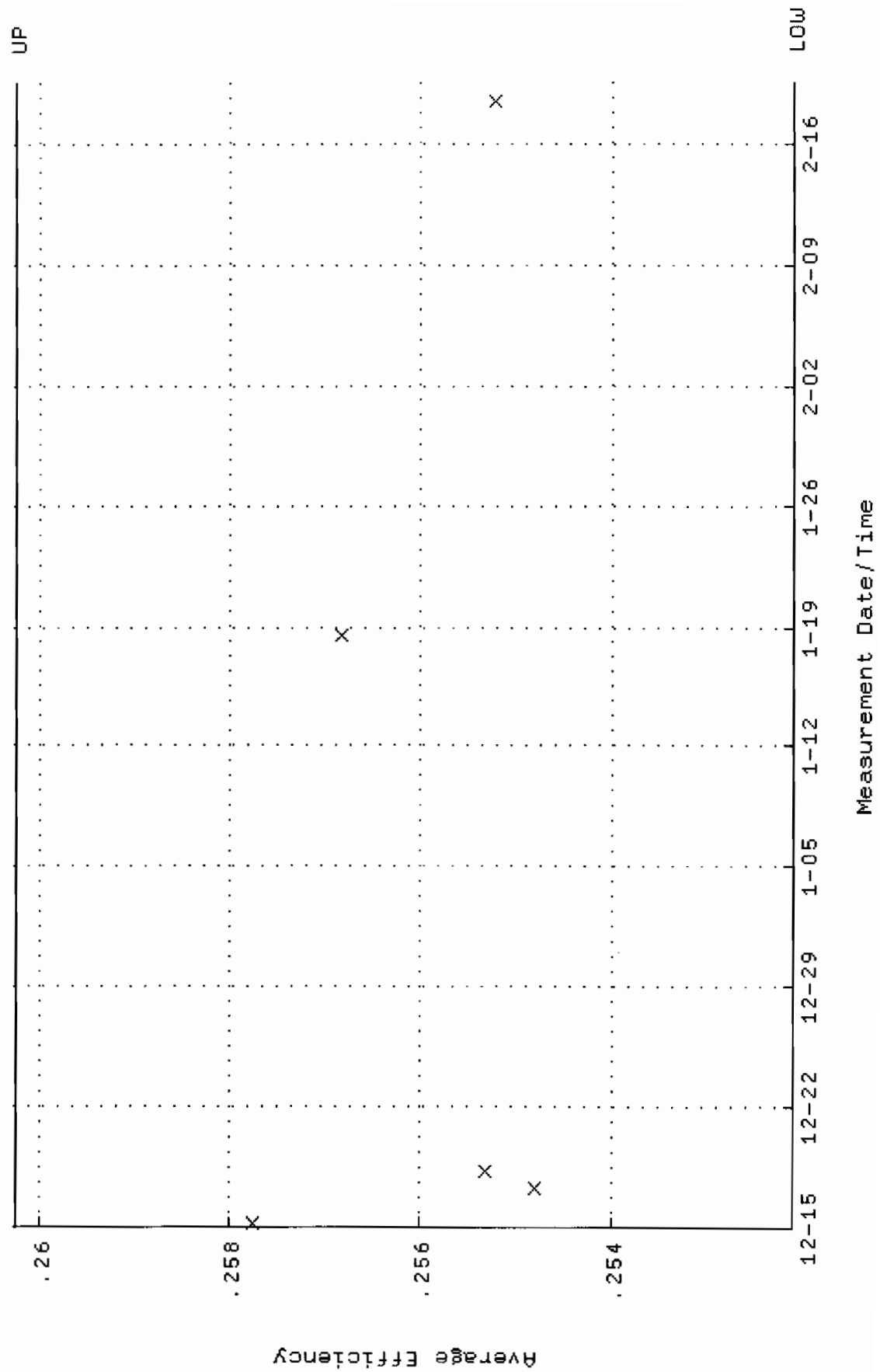
QA filename : DKA100:[ENV\_ALPHA.QA.W]W115.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-AUG-2009 09:41:02 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 85.5661 through 94.5731



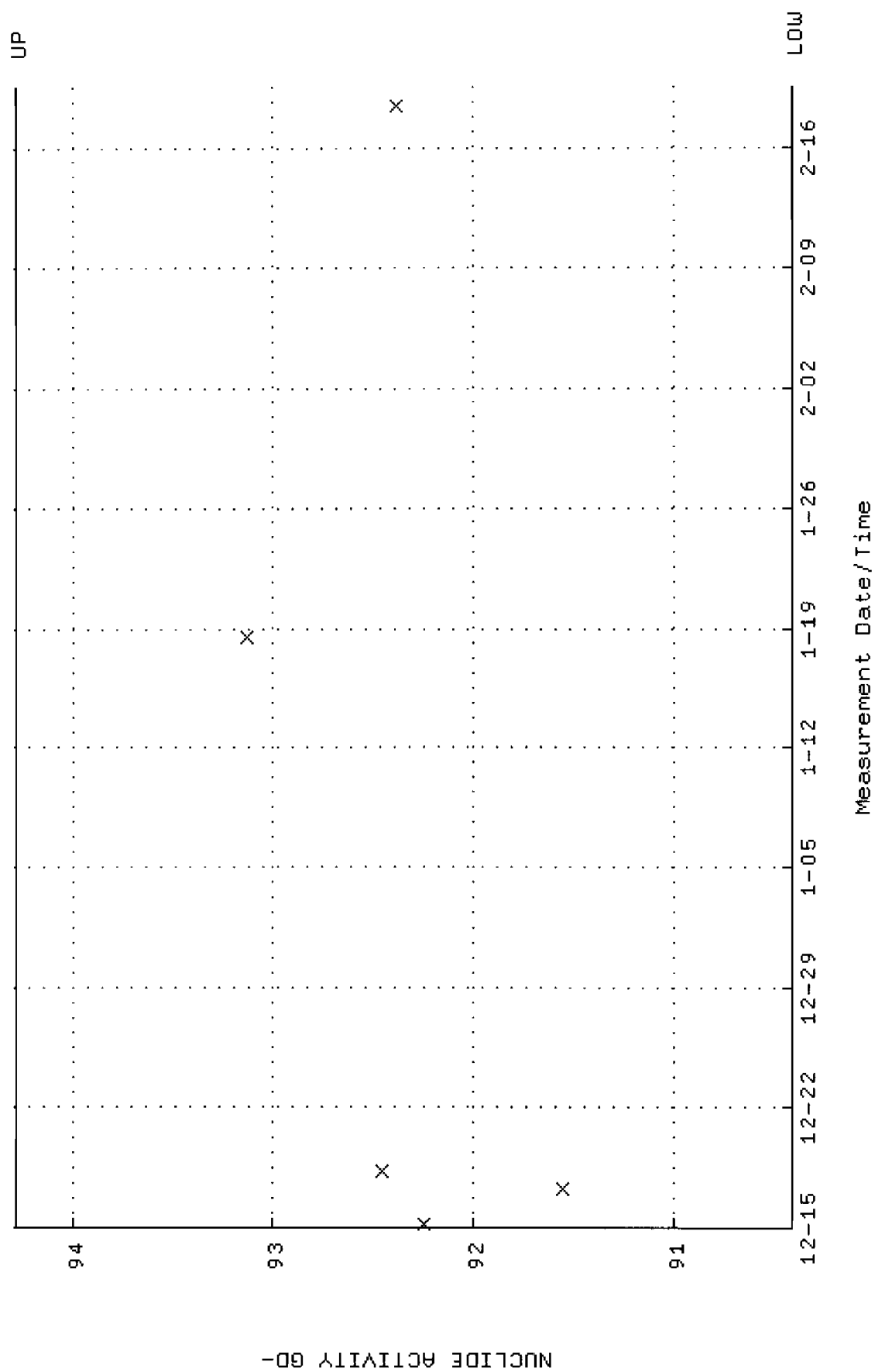
QA filename : DKA100:[ENV\_ALPHA.QA.B]B115.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 2-AUG-2009 17:12:05 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W119.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 06:21:52 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.252093 through 0.260243

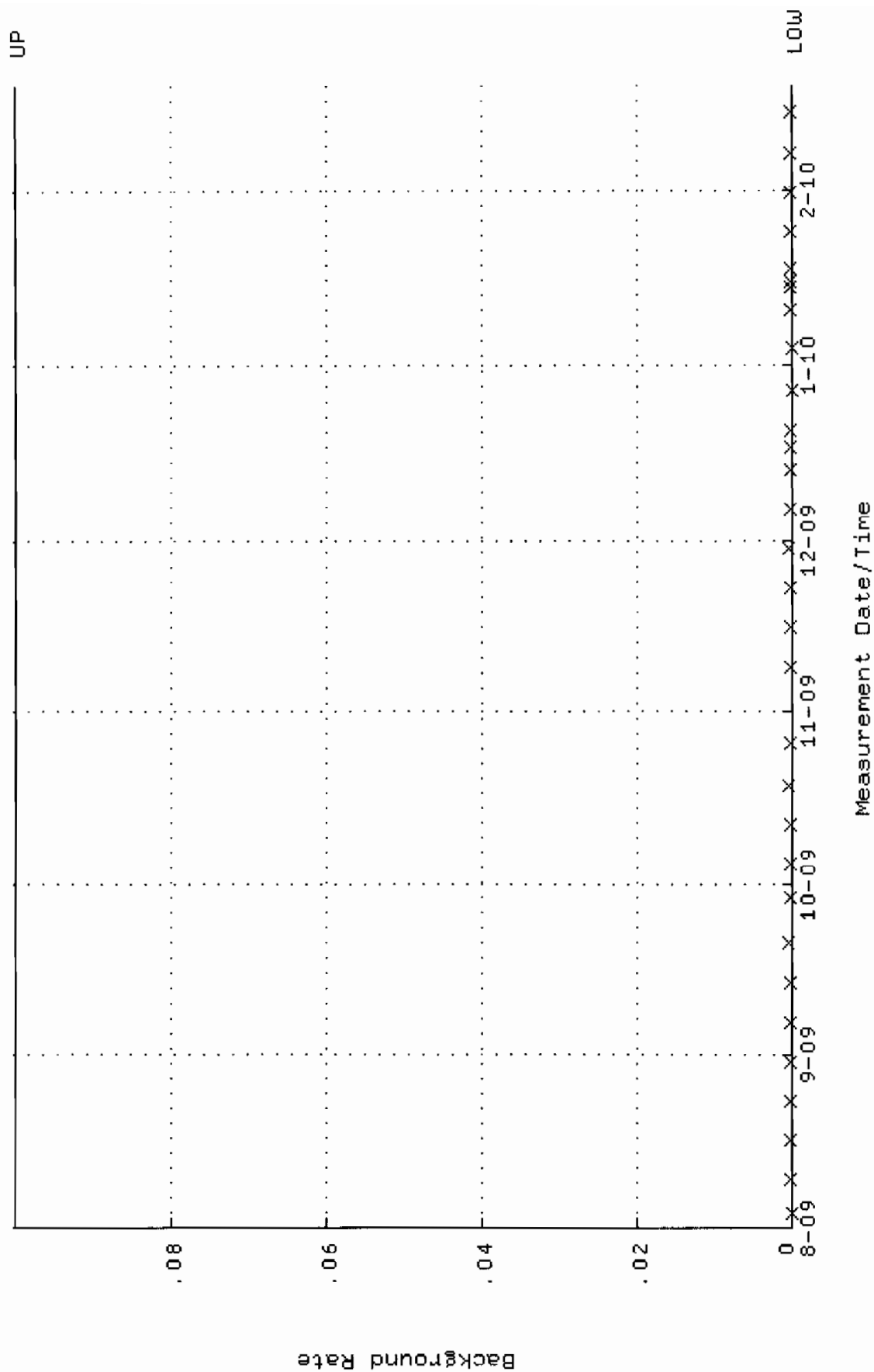


QA filename : OKR100:[ENV\_ALPHA.QA.W]W119.QAF;1  
 Parameter Name : NACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 06:21:52 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 90.4107 through 94.2781

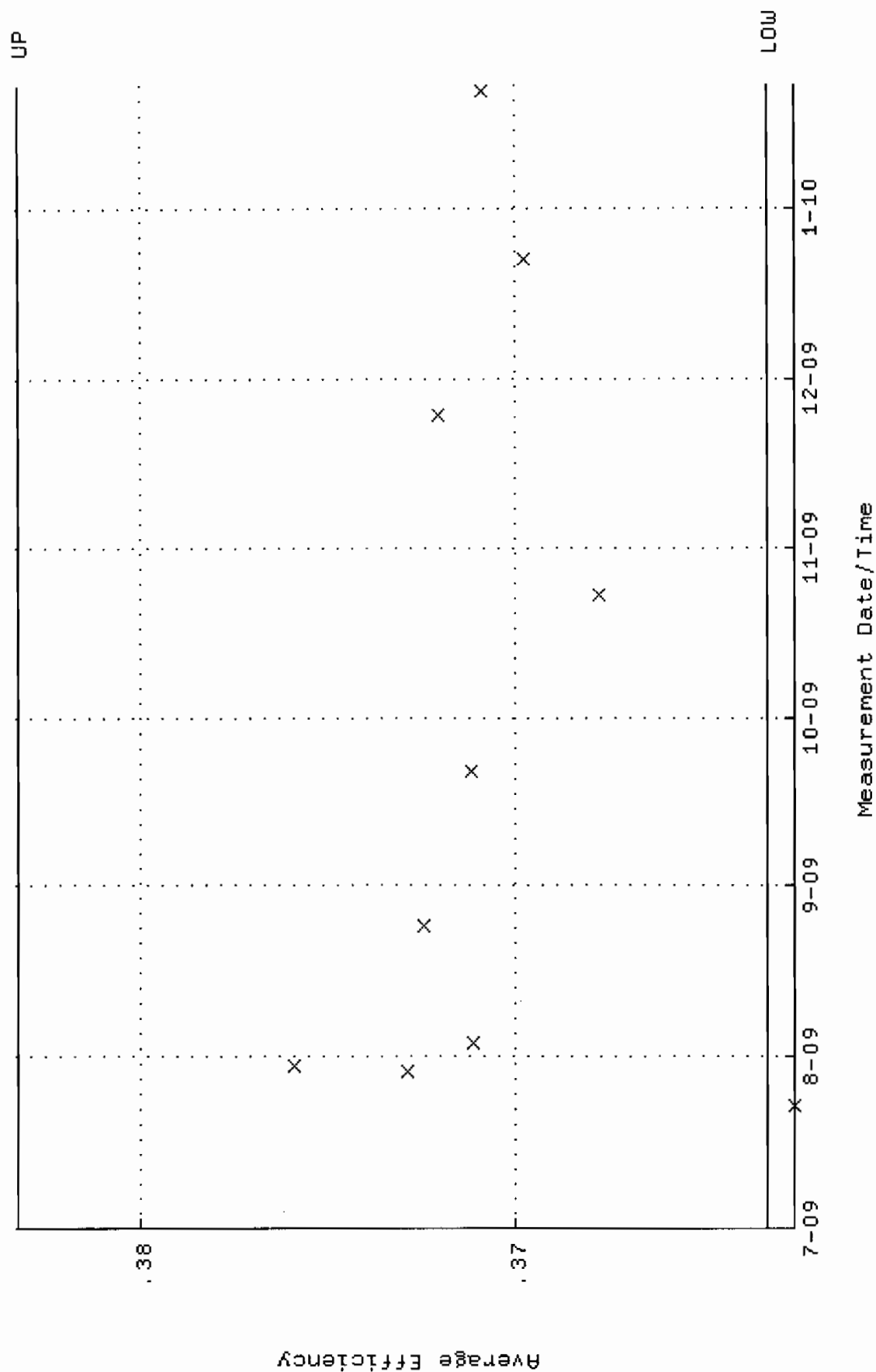




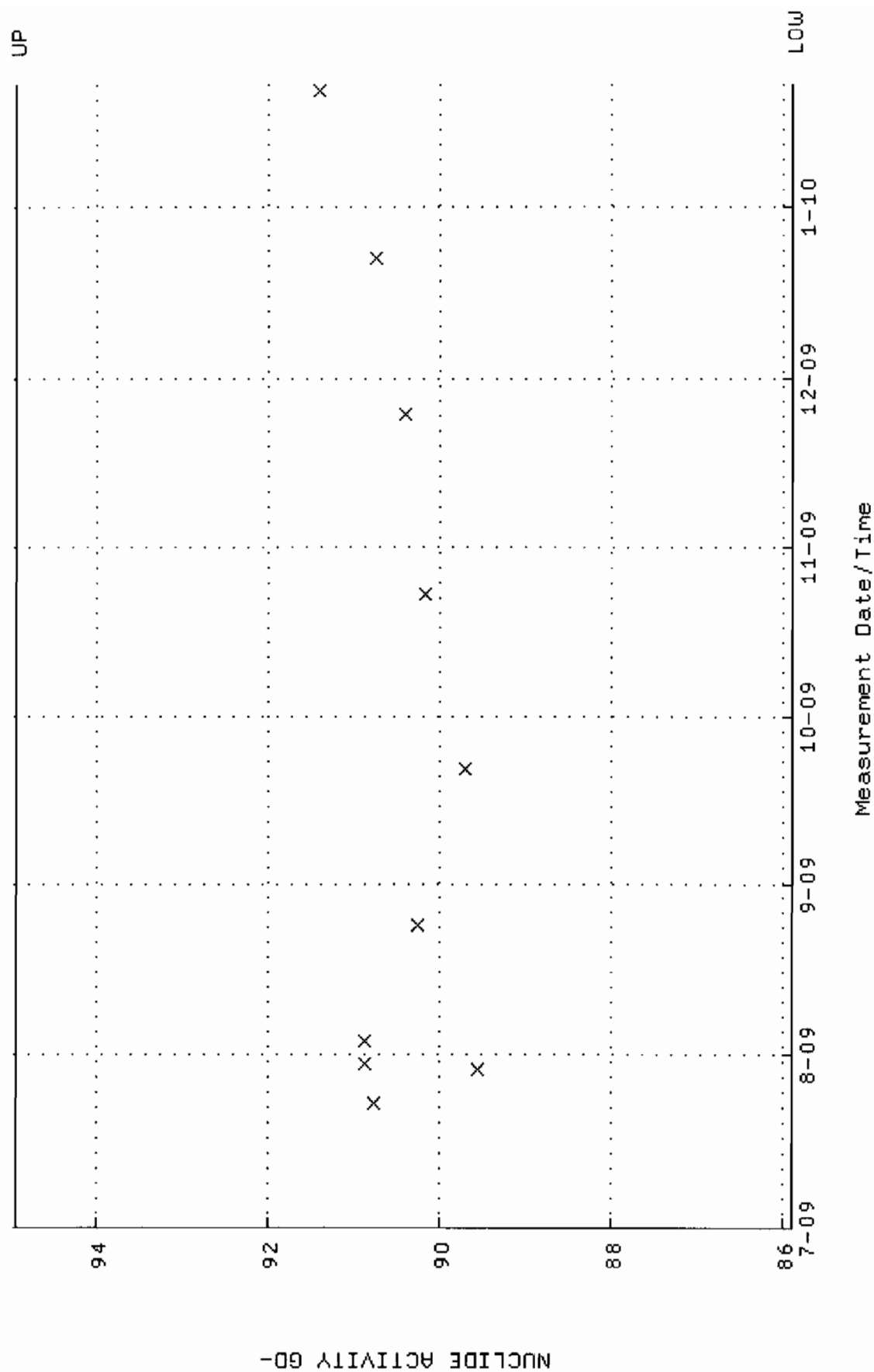
QA filename : DKA100:[ENV\_ALPHA.QA.B]B119.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 3-AUG-2009 15:38:13 through 19-FEB-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



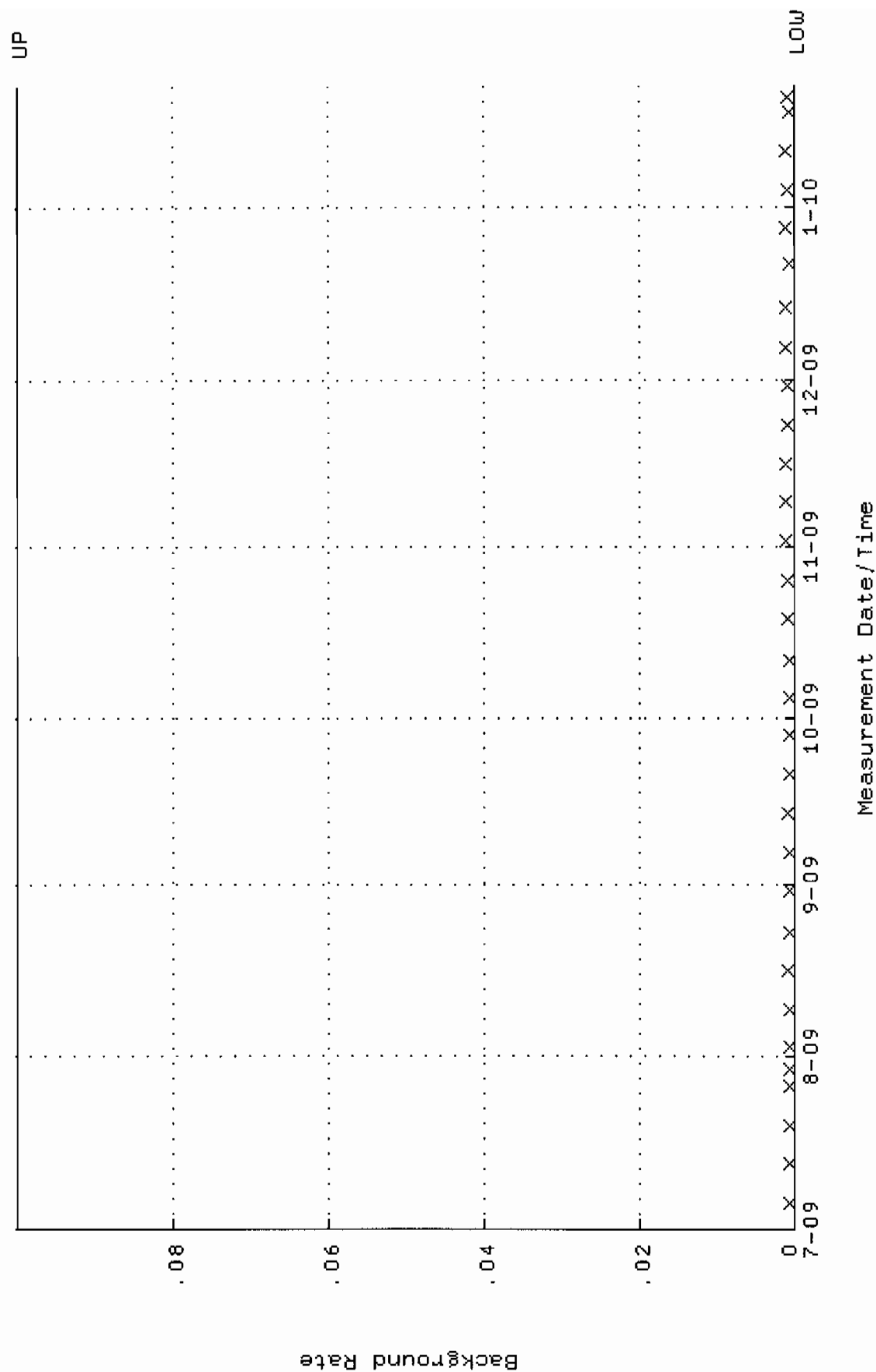
QA filename : DKA100:[ENV\_ALPHA.QA.W]W162.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:02 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.363287 through 0.383287



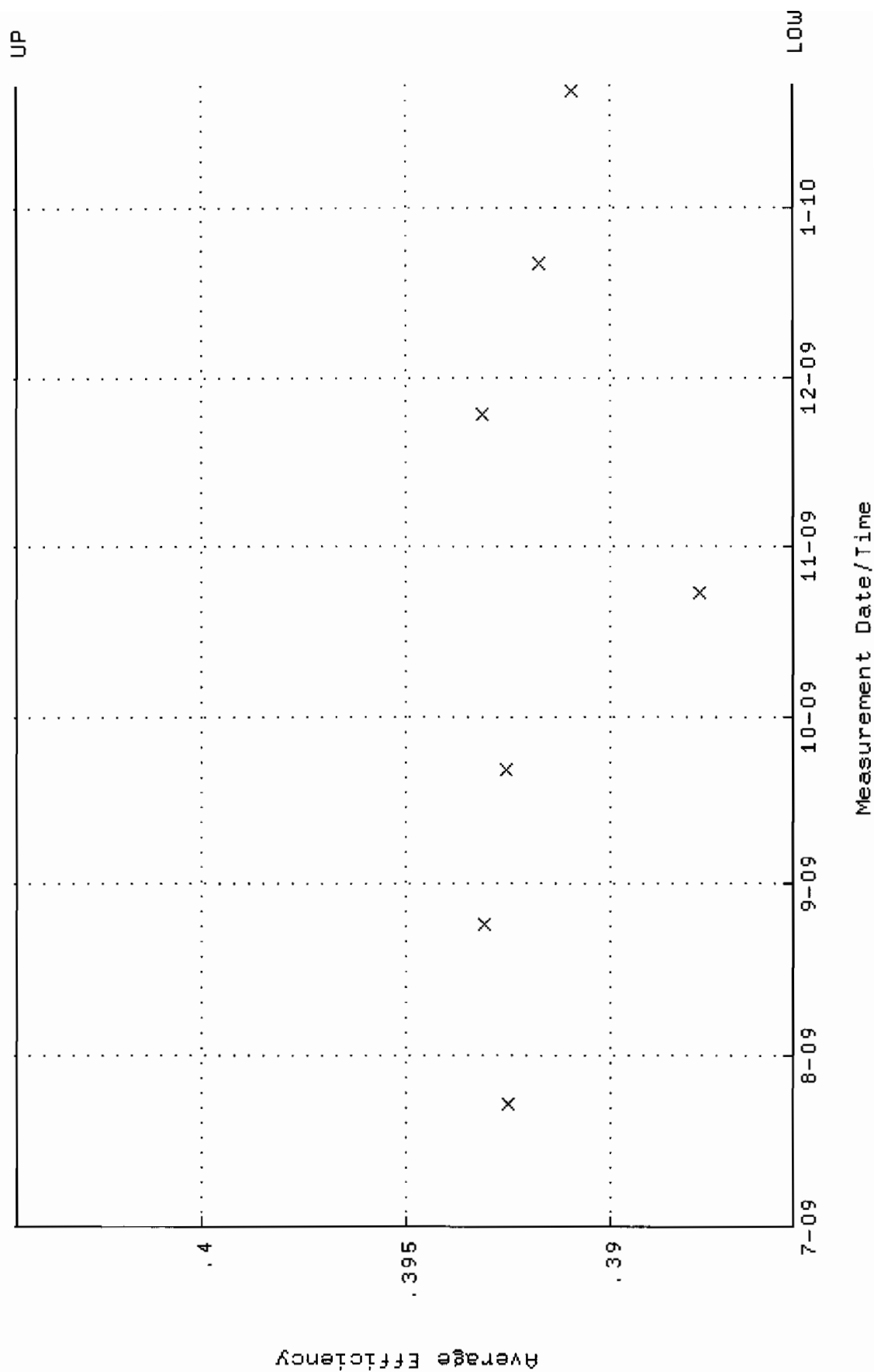
QA filename : DKA100:[ENV\_ALPHA.QA.W]W162.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:02 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.8969 through 94.9387



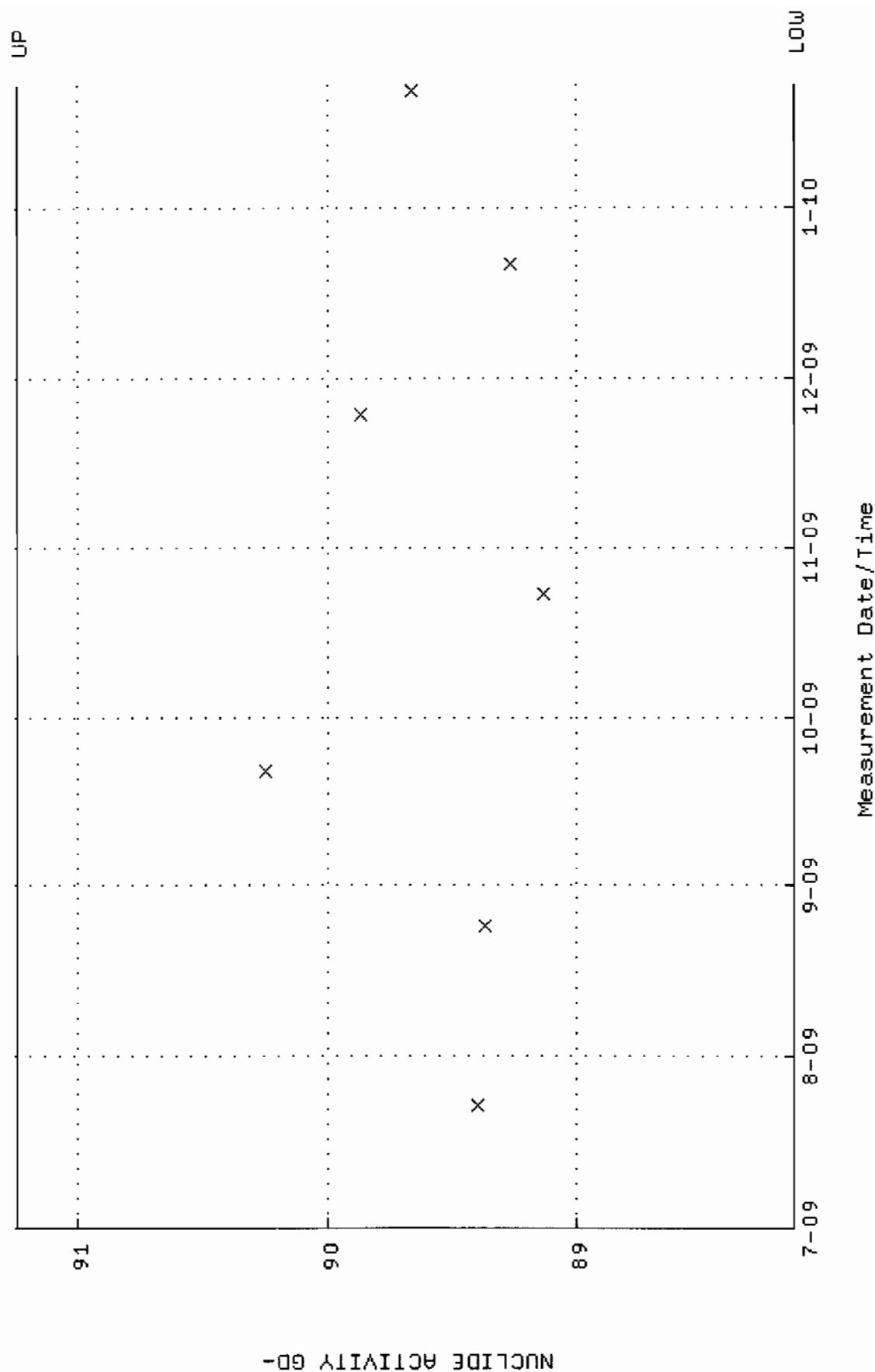
QA filename : DKA100:[ENV\_ALPHA.QA.B]B162.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:59:33 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



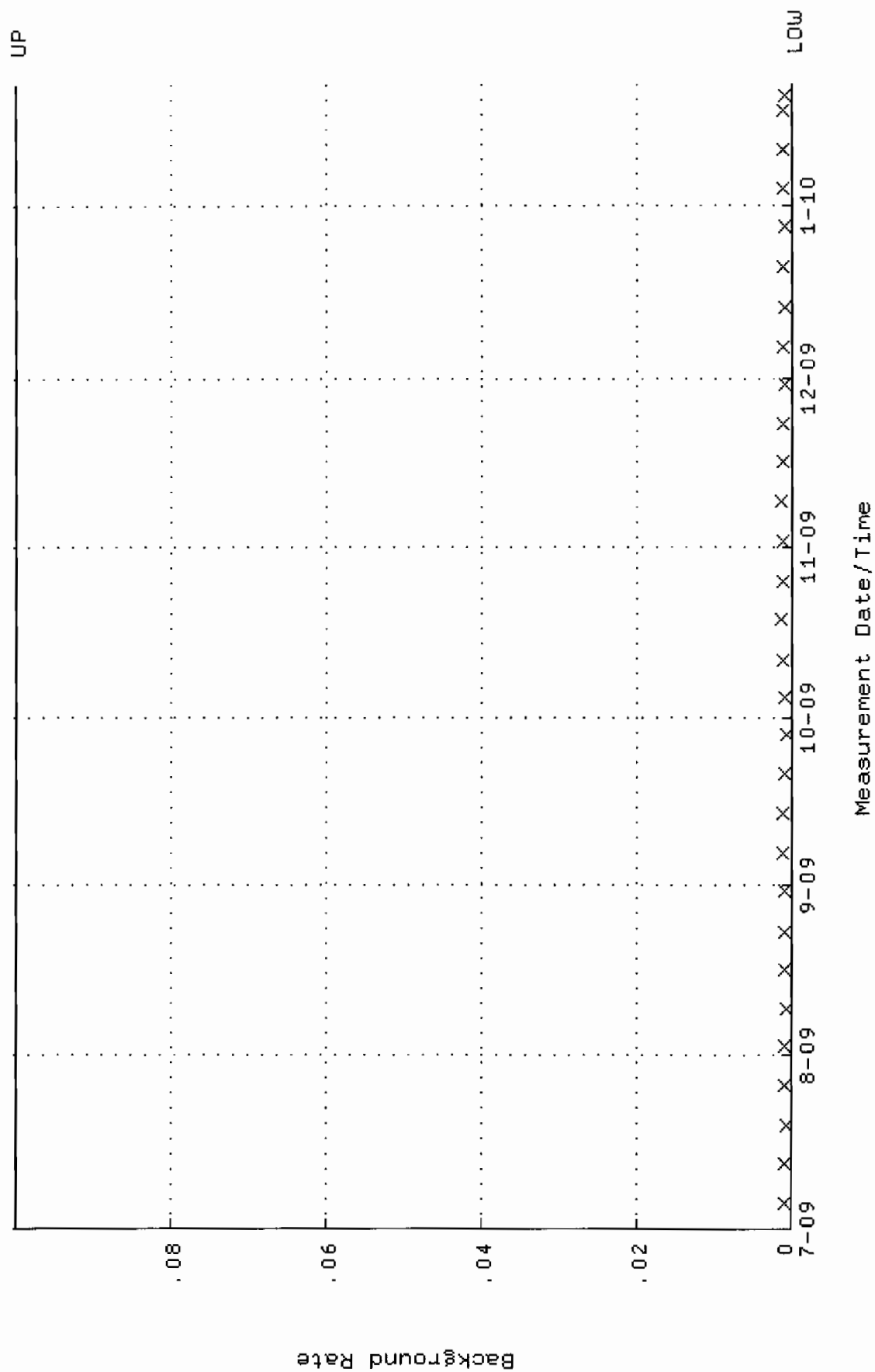
QA filename : DKA100:[ENV\_ALPHA.QA.W]W166.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:19 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.385564 through 0.404504



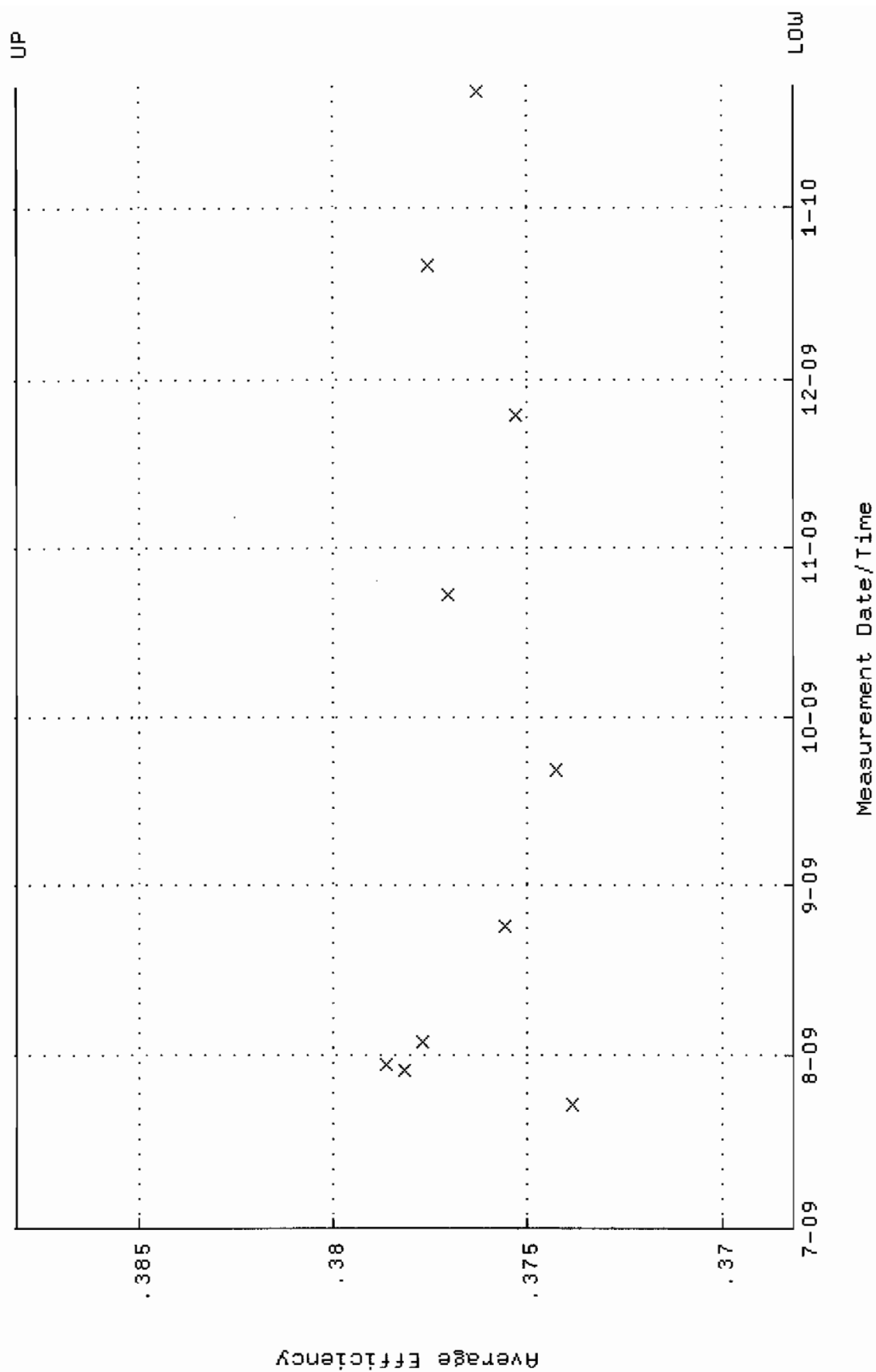
QA filename : DKA100:[ENV-ALPHA.QA.W]W166.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:19 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 88.1264 through 91.2442



QA filename : DKA100:[ENV\_ALPHA.QA.B]B166.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:59:54 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

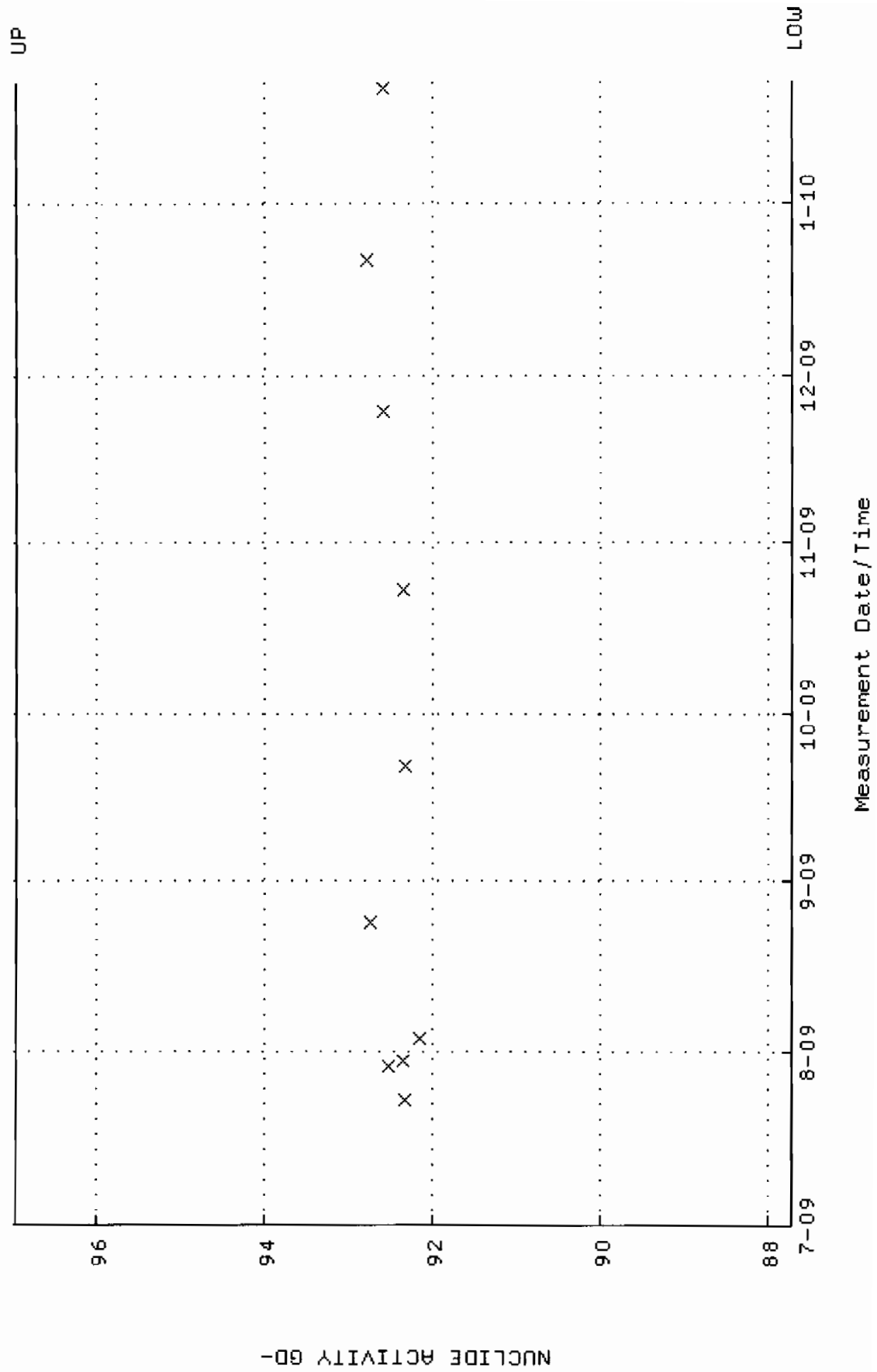


QA filename : DKA100:[ENV\_ALPHA.QA.W]W169.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:32 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.368144 through 0.388144

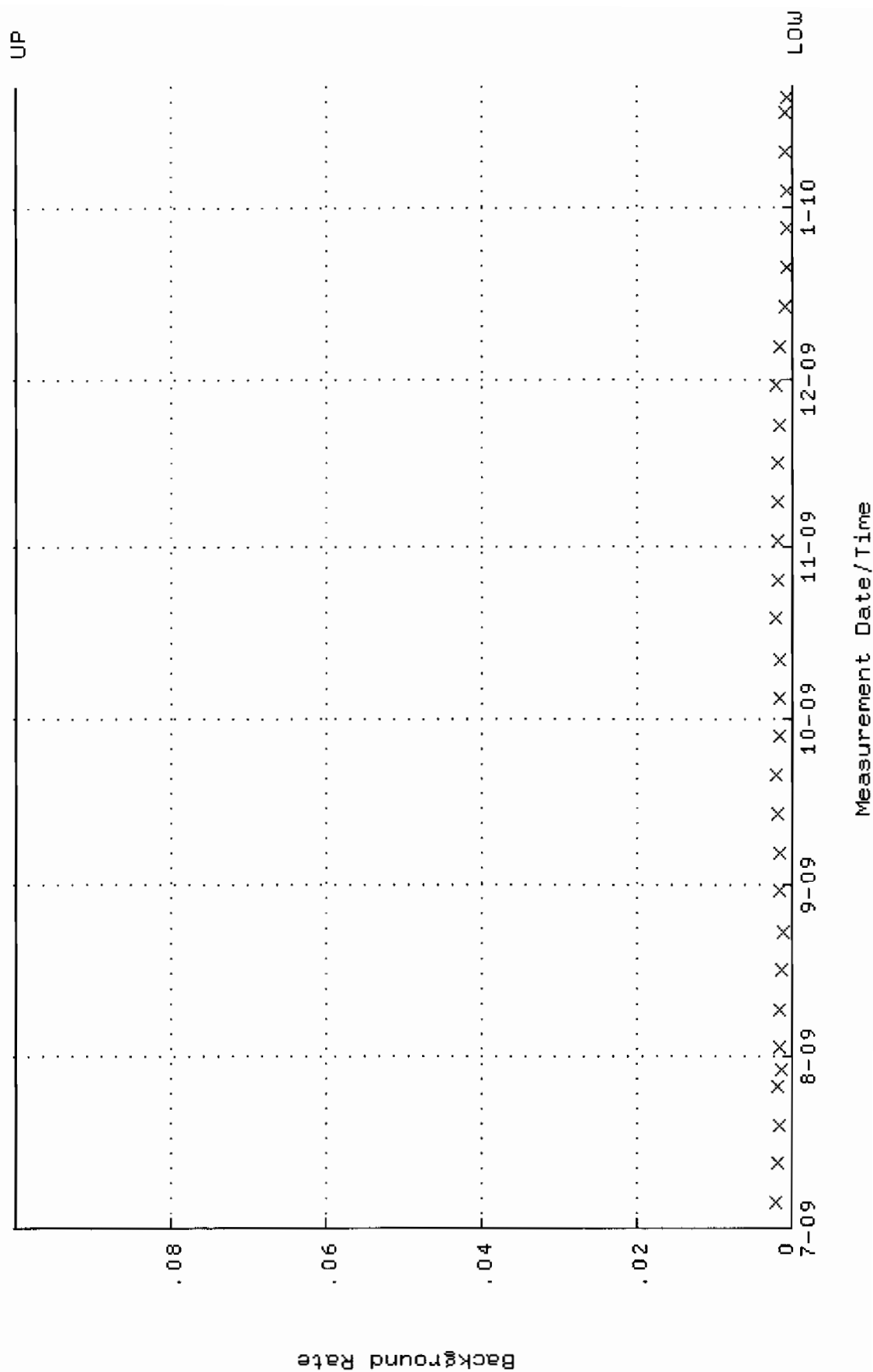




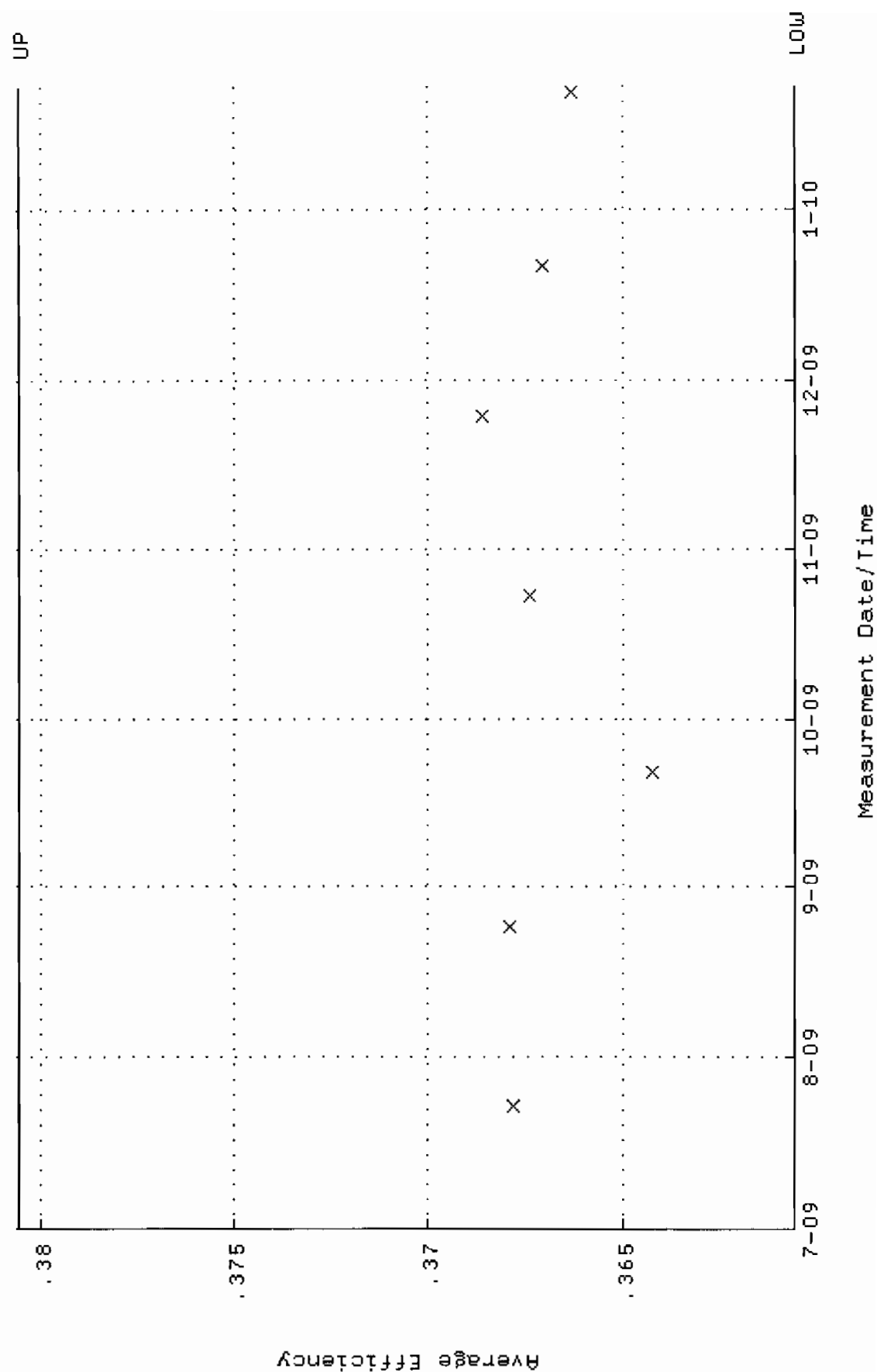
QA filename : DKA100:[ENV\_ALPHA.QA.W]w169.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:32 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.7141 through 96.9471



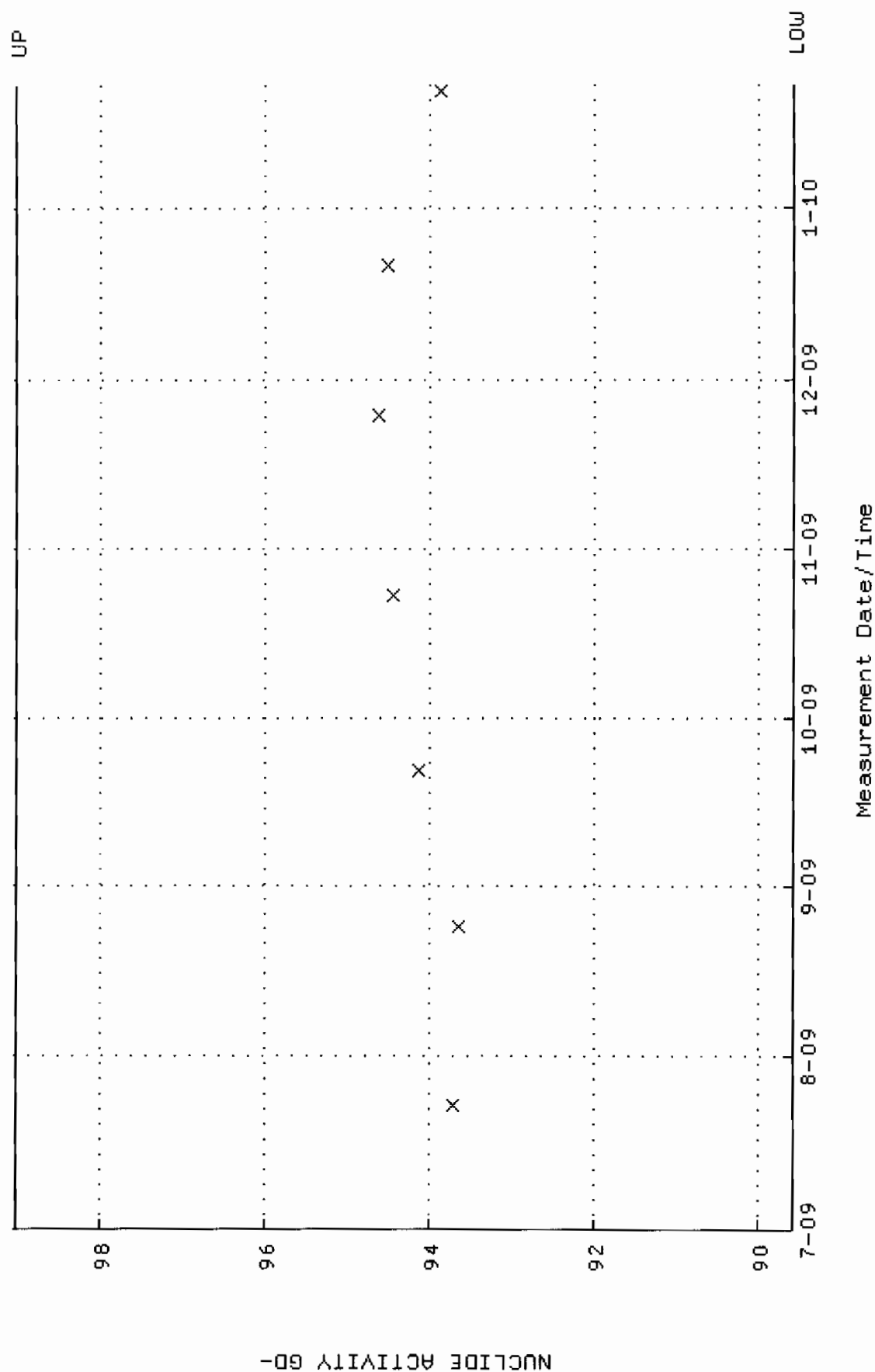
QA filename : DKA100:[ENV\_ALPHA.QA.B]B169.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:00:09 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



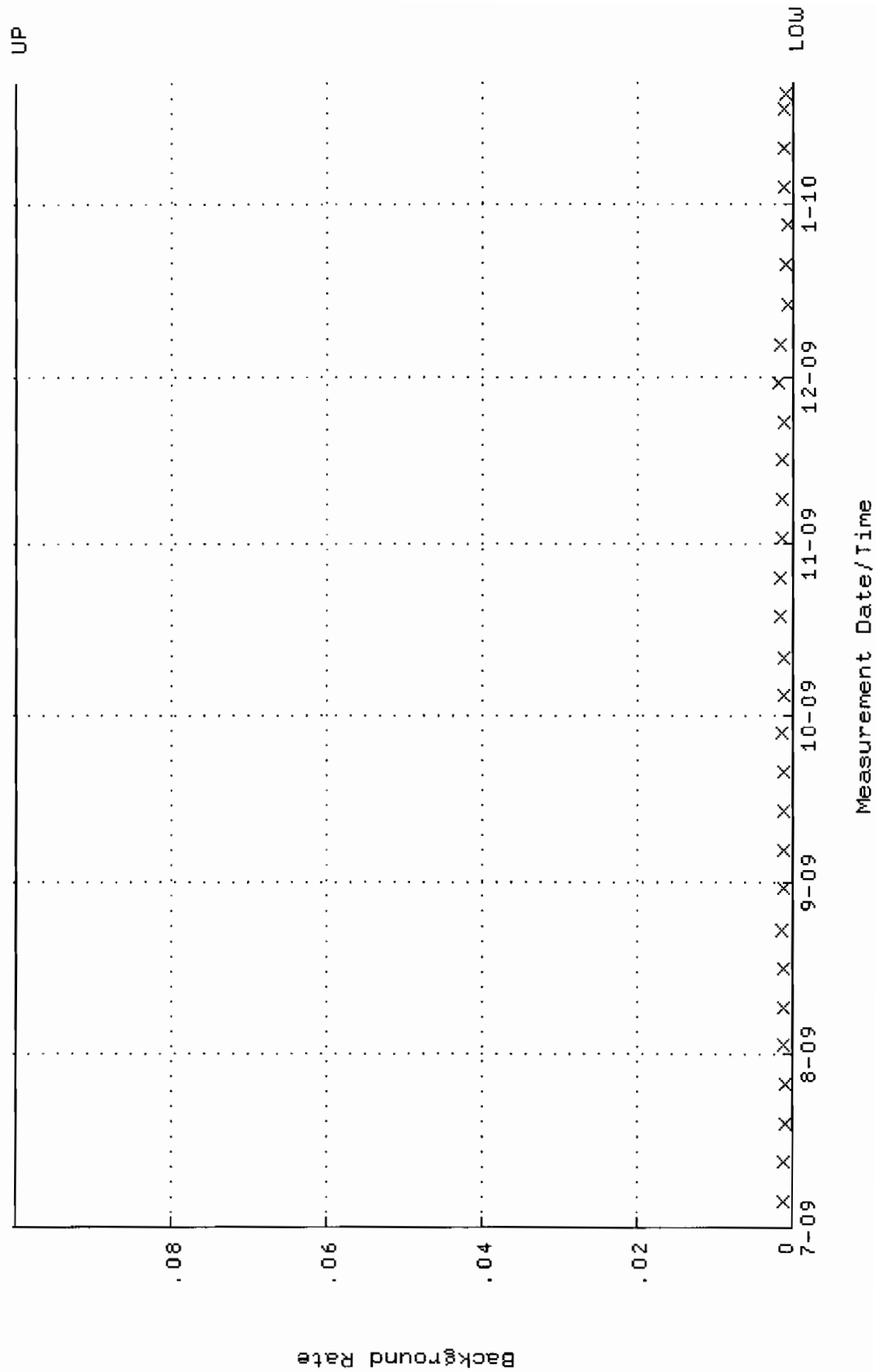
QA filename : DKA100:[ENV\_ALPHA.QA.W]W170.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:36 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.360563 through 0.380563



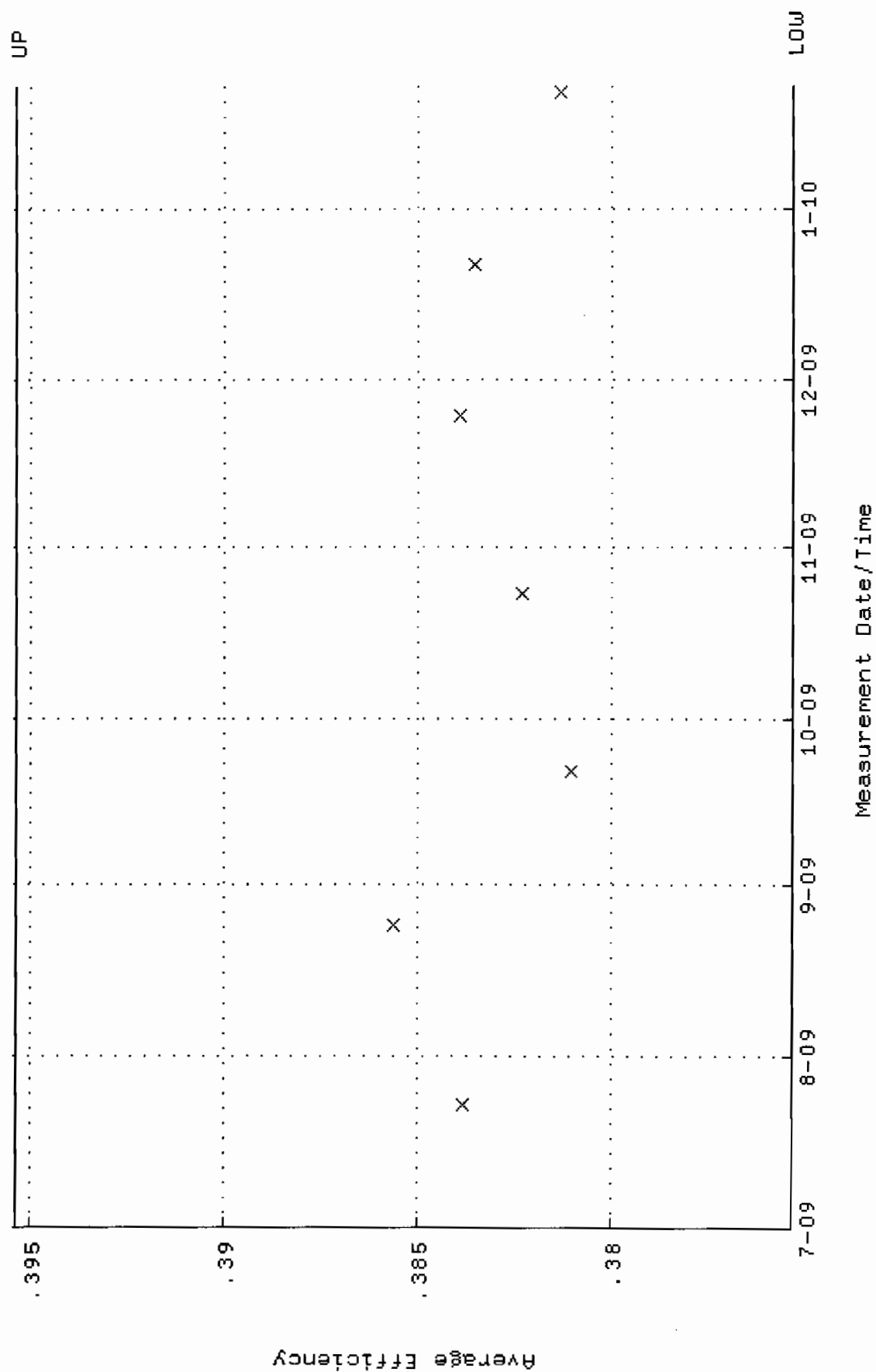
QA filename : DKA100:[ENV\_ALPHA.QA.W]W170.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:36 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.5841 through 99.0139



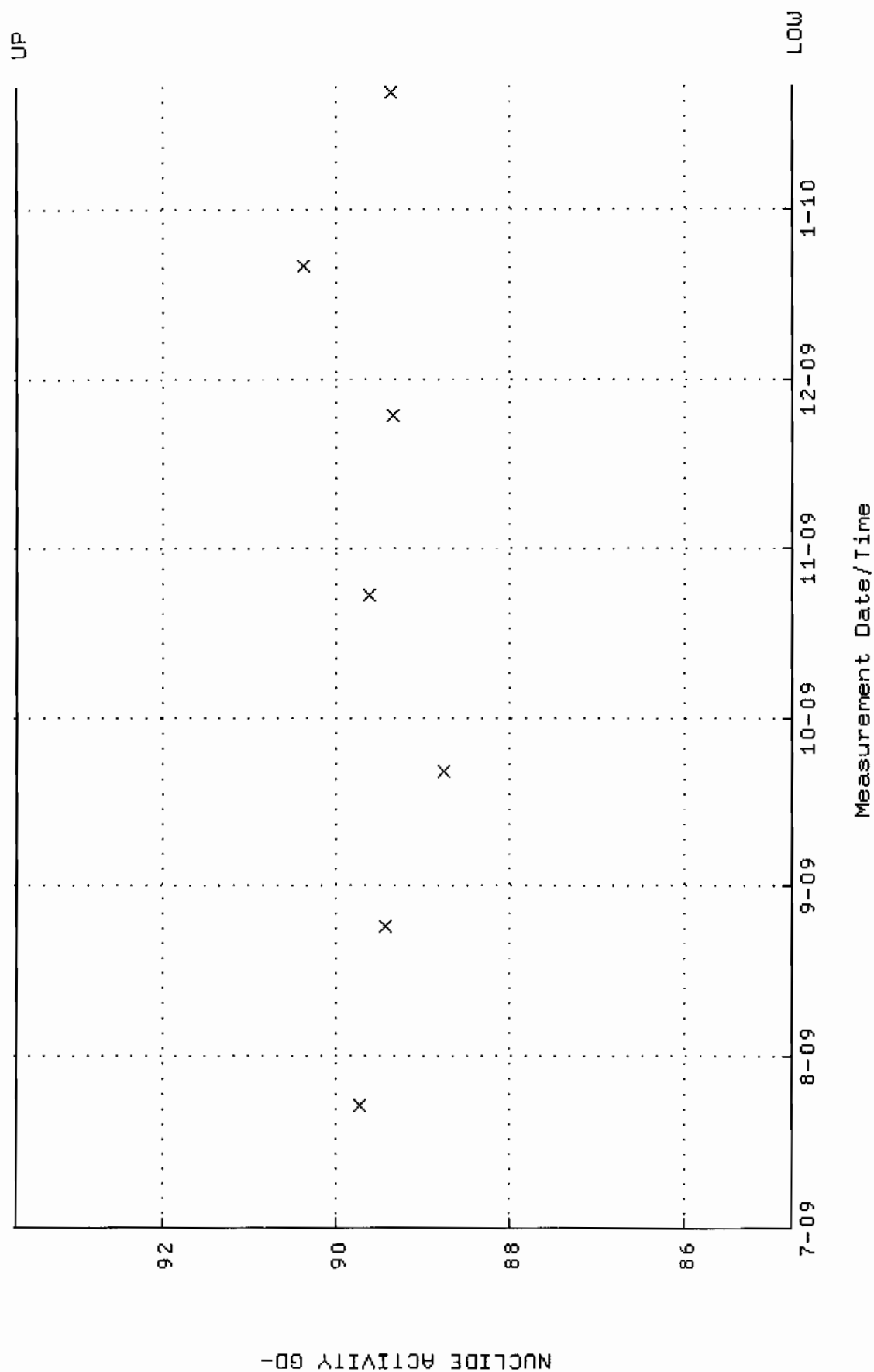
QA filename : DKA100:[ENV\_ALPHA.QA.B]B170.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:00:14 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



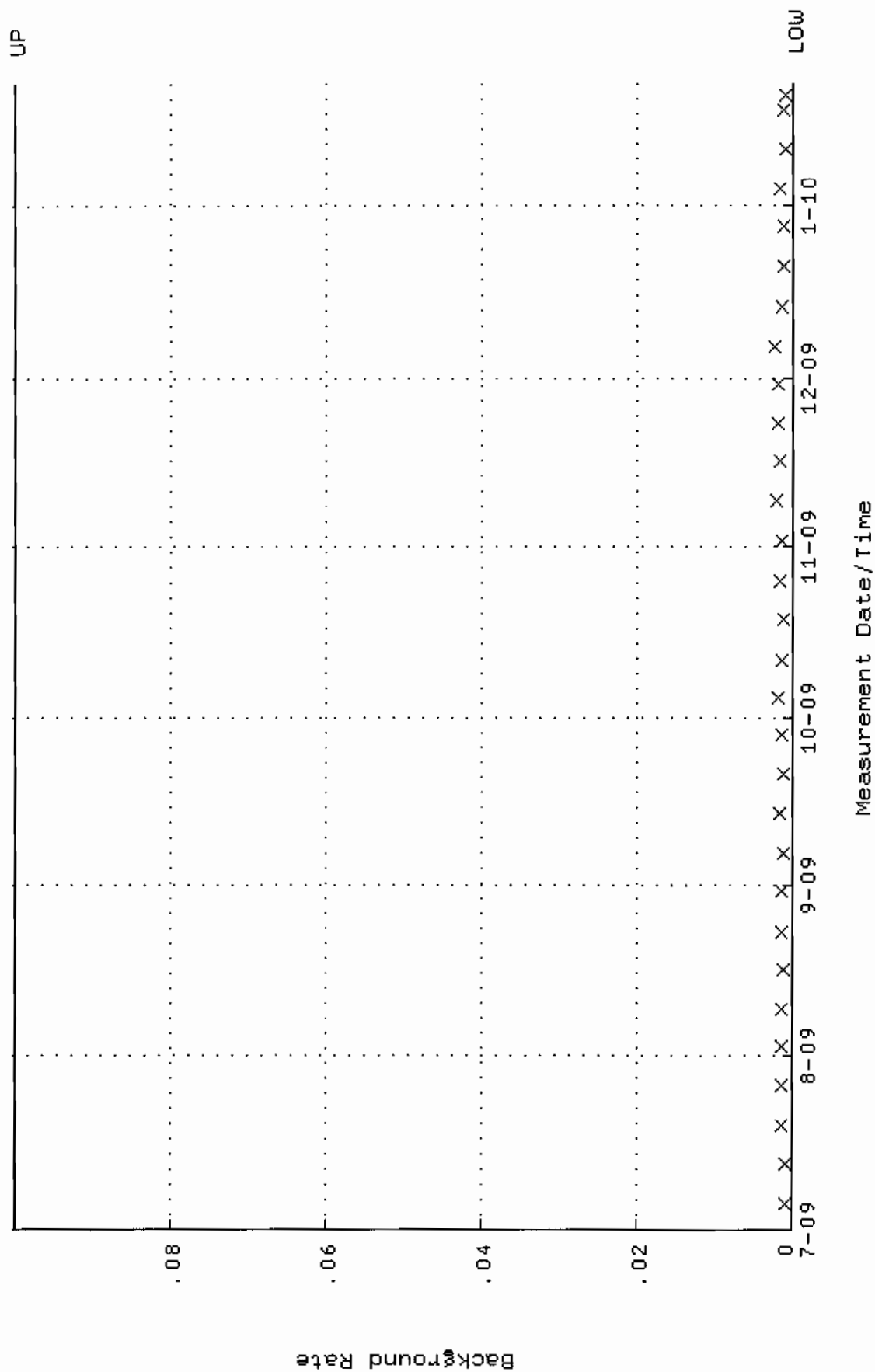
QA filename : DKA100:[ENV\_ALPHA.QA.W]W171.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:41 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.375364 through 0.395364



QA filename : DKA100:[ENV\_ALPHA.QA.W]w171.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:41 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.7539 through 93.6753

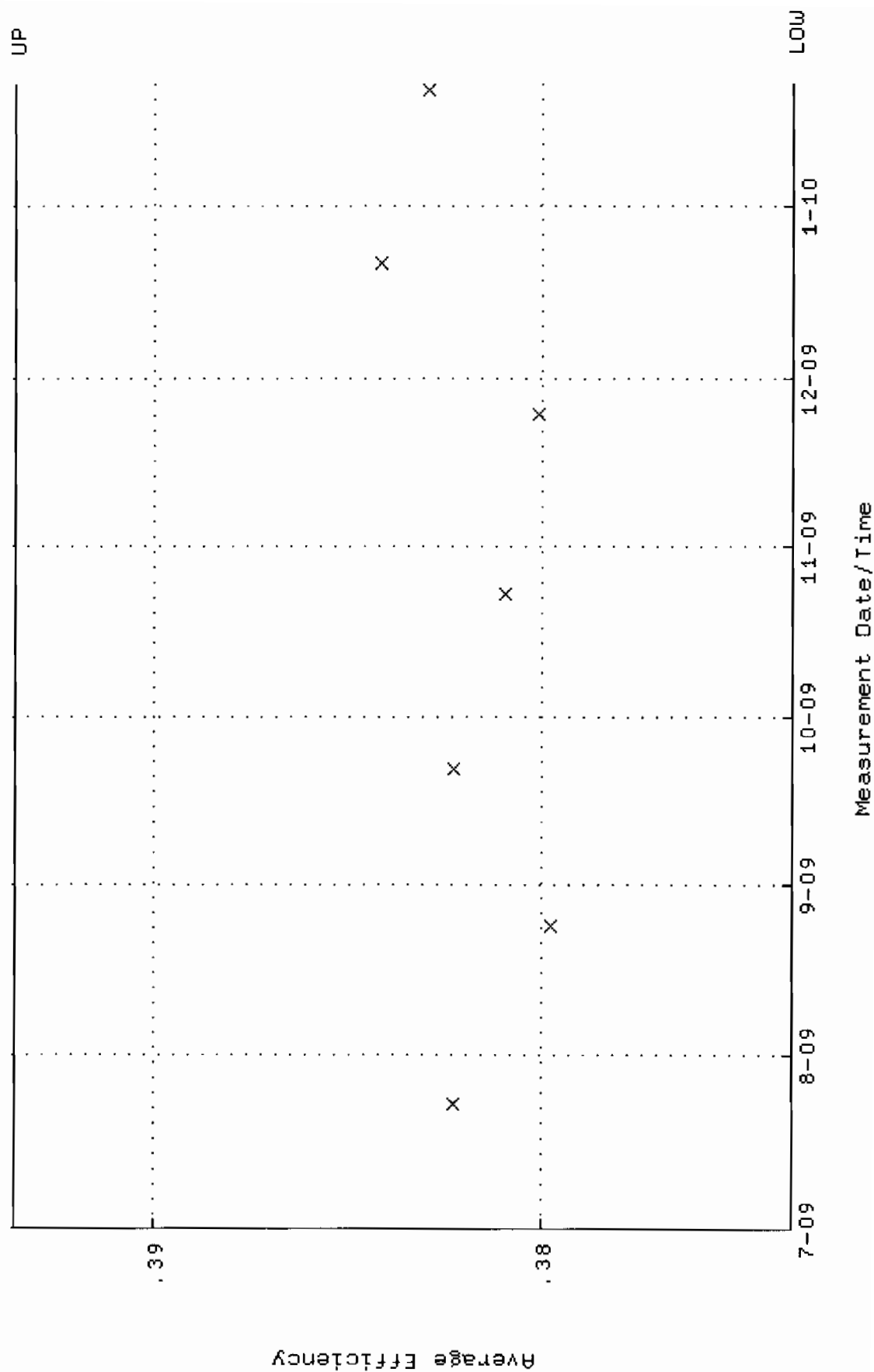


QA filename : DKA100:[ENV\_ALPHA.QA.B]B171.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:00:19 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

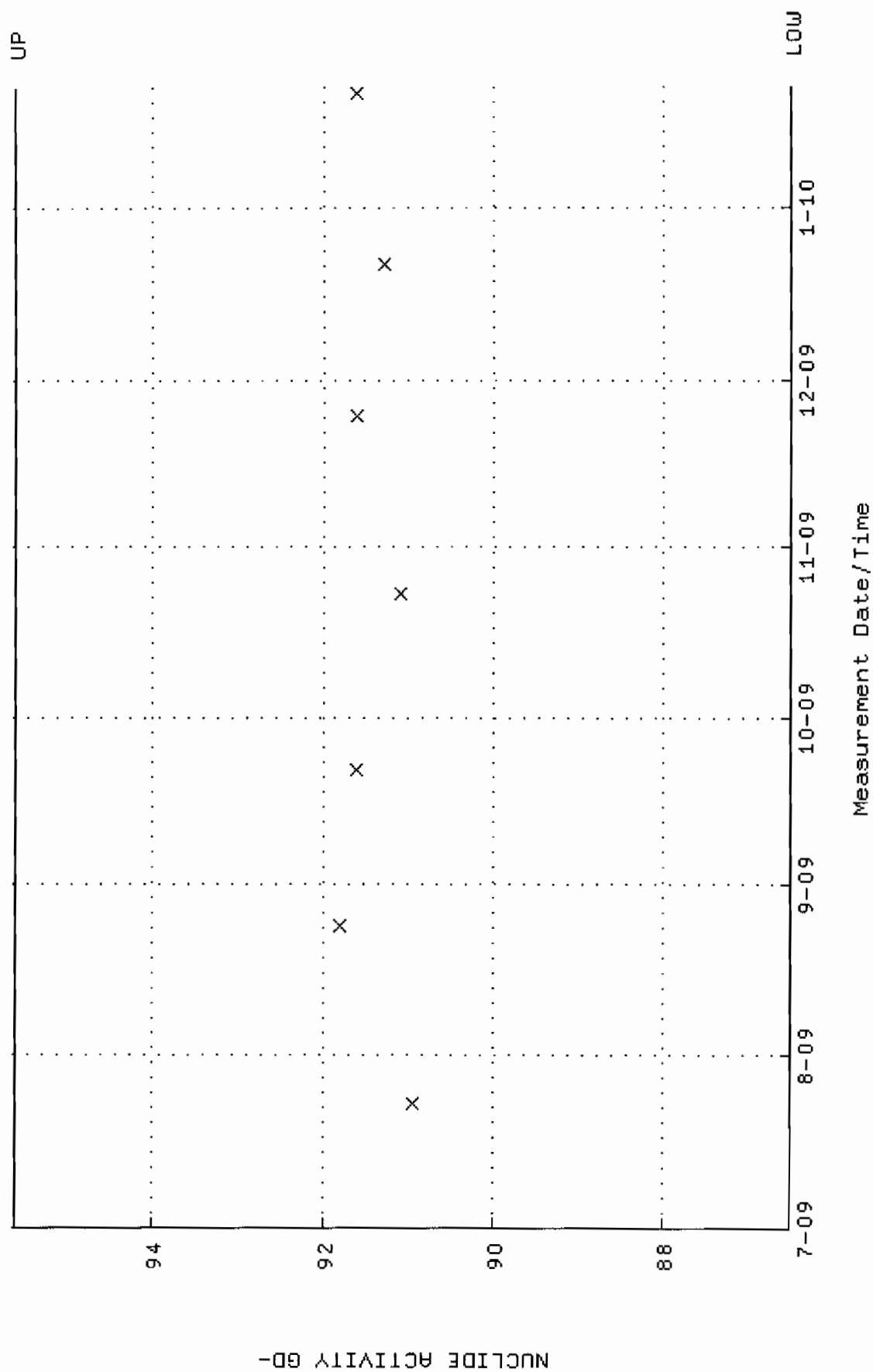




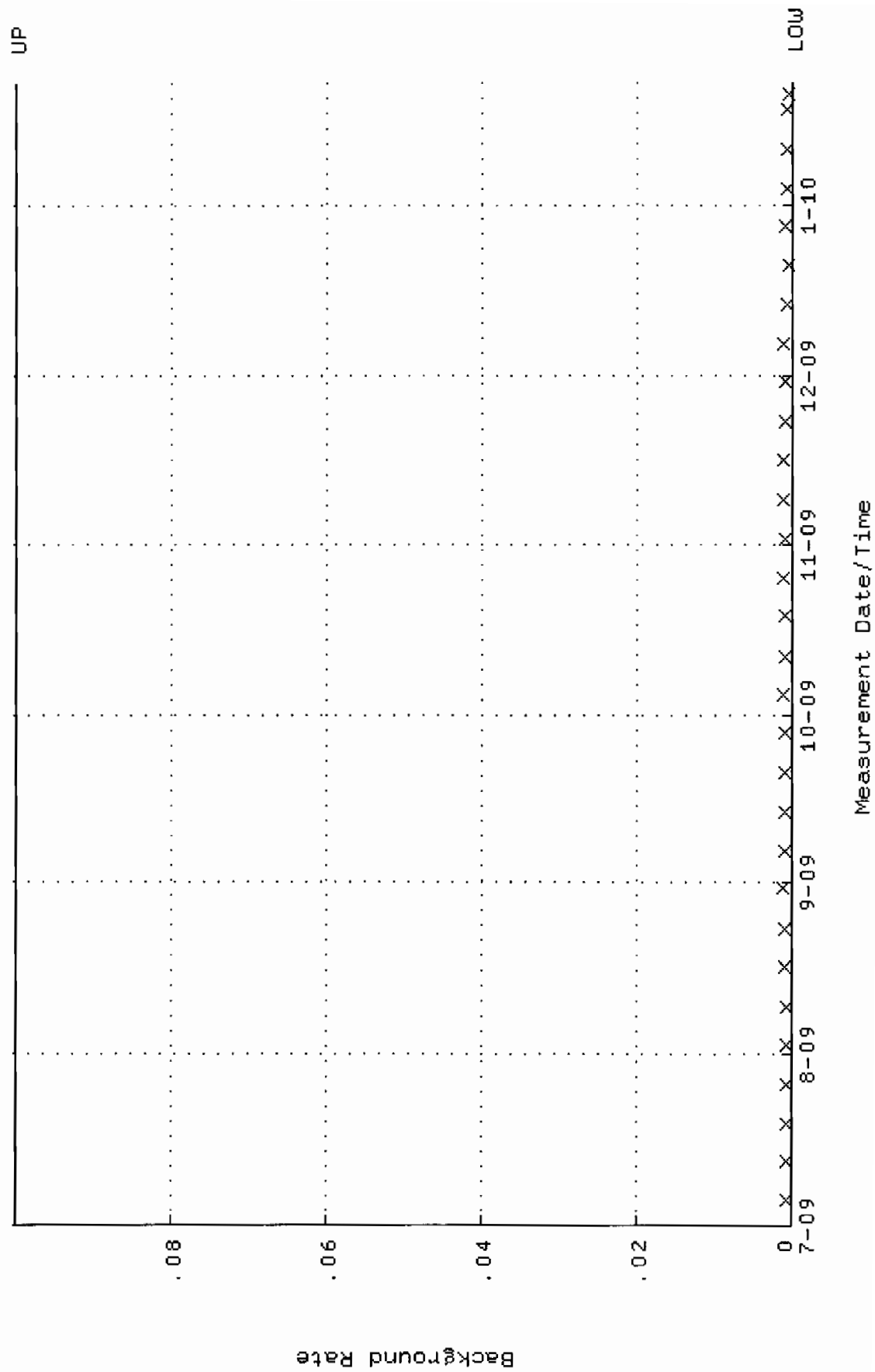
QA filename : DKA100:[ENV\_ALPHA.QA.W]W172.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:46 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.373575 through 0.393575



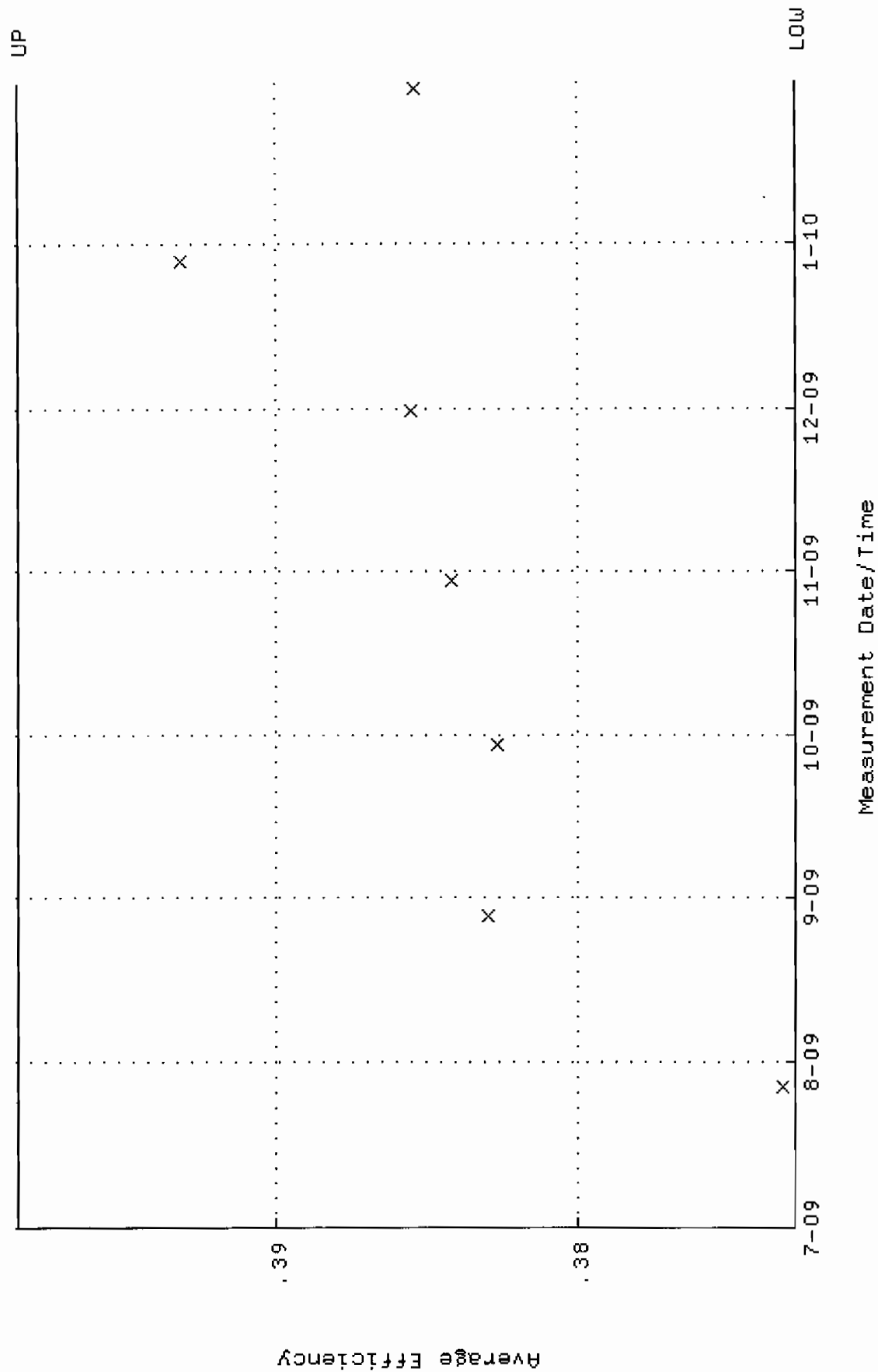
QA filename : DKA100:[ENV\_ALPHA.QA.W]w172.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:46 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.5089 through 95.6151



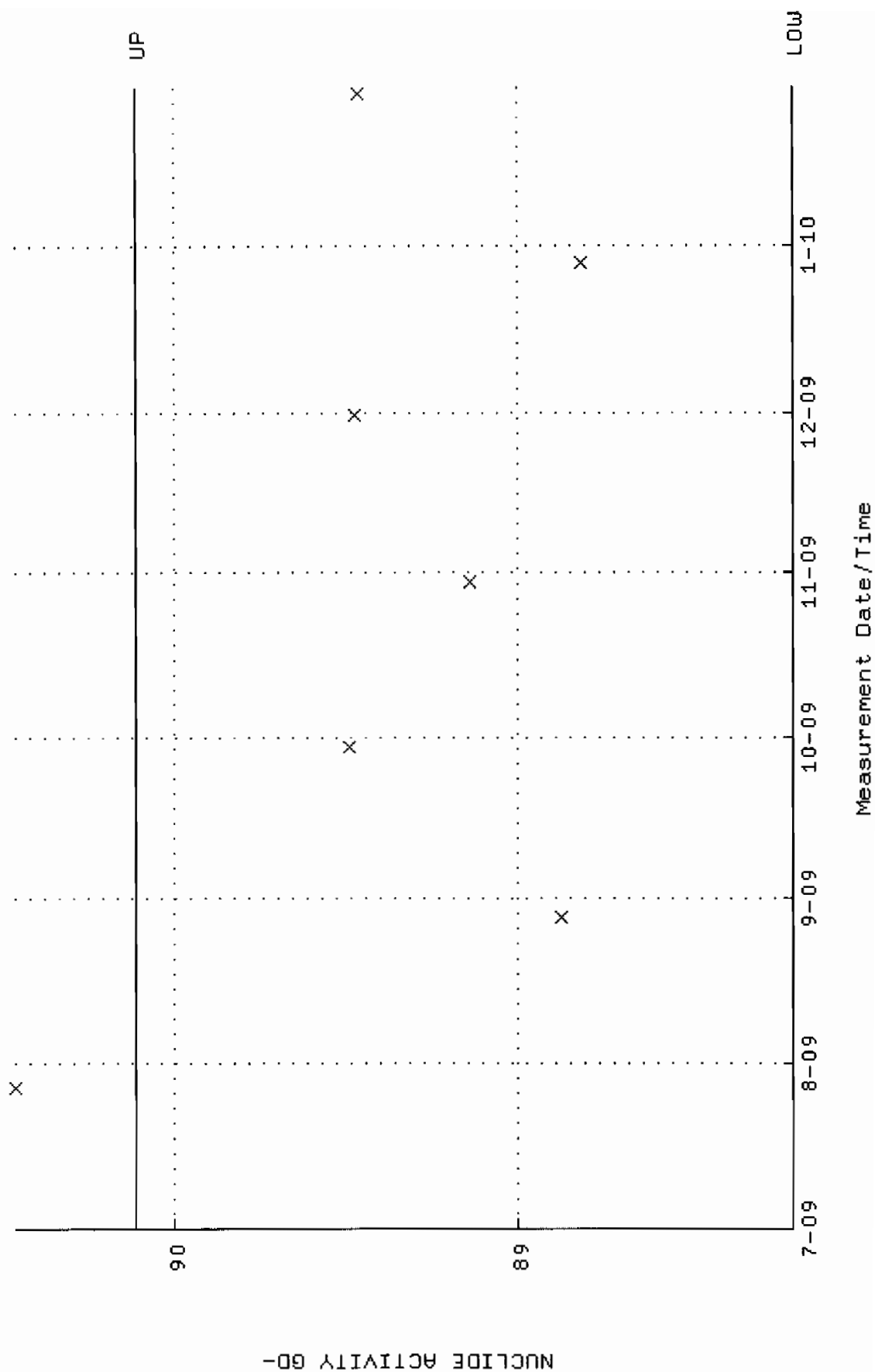
QA filename : DKA100:[ENV\_ALPHA.QA.B]B172.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:00:24 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



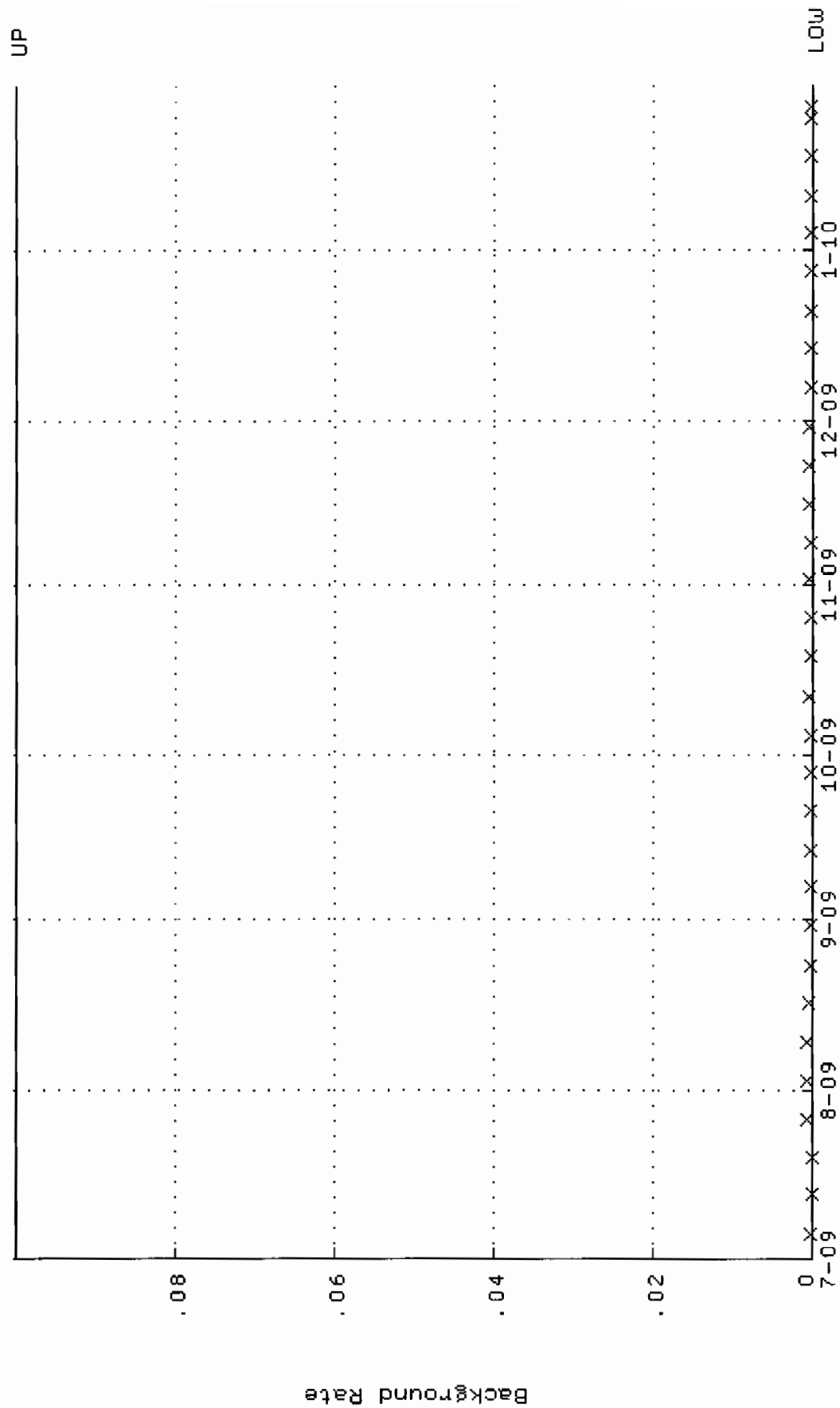
QA filename : DKA100:[ENV\_ALPHA.QA.W]w216.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:47:57 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.372749 through 0.398591



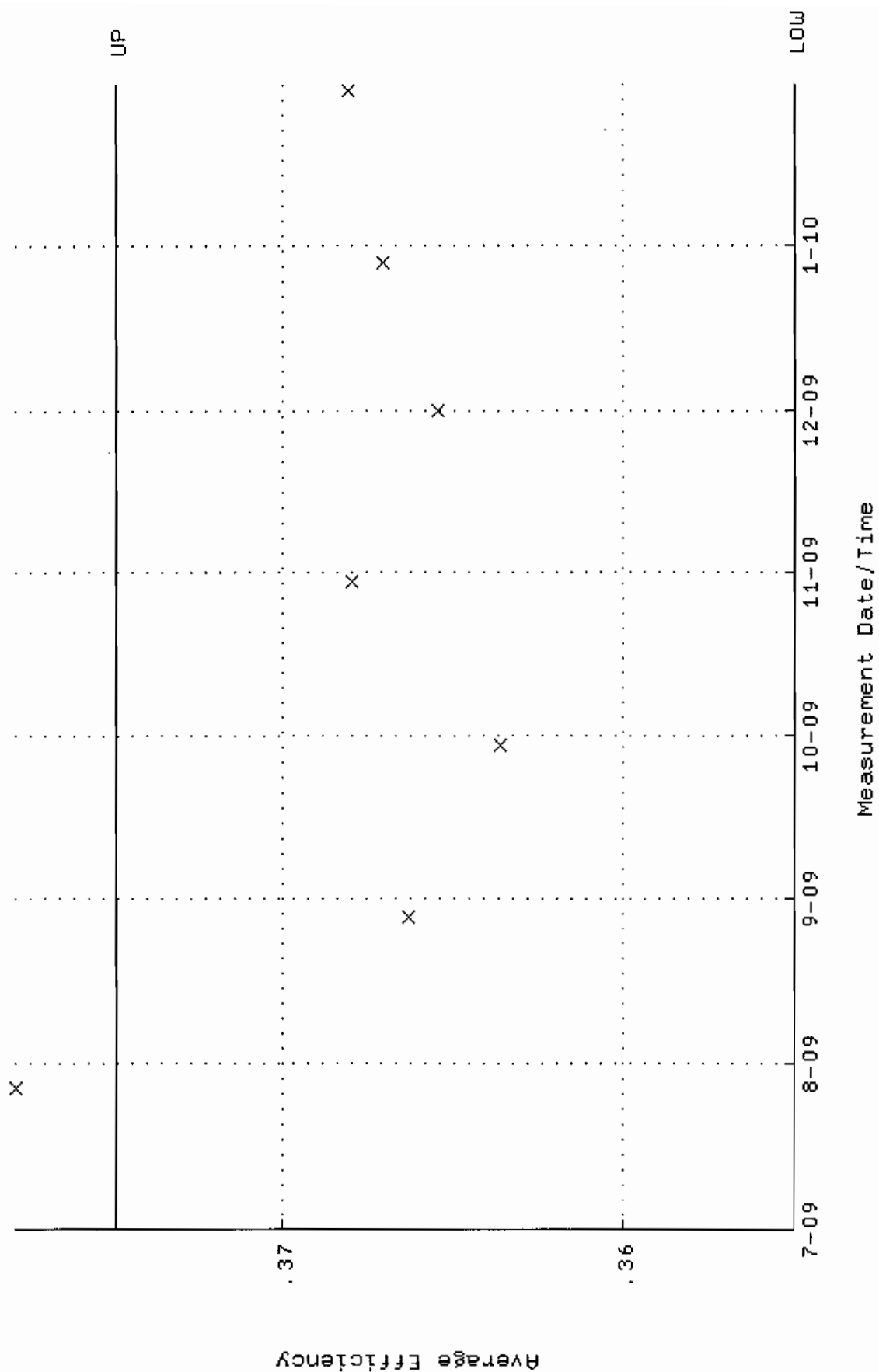
QA filename : DKA100:[ENV\_ALPHA.QA.W]W216.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:47:57 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 88.1955 through 90.1147



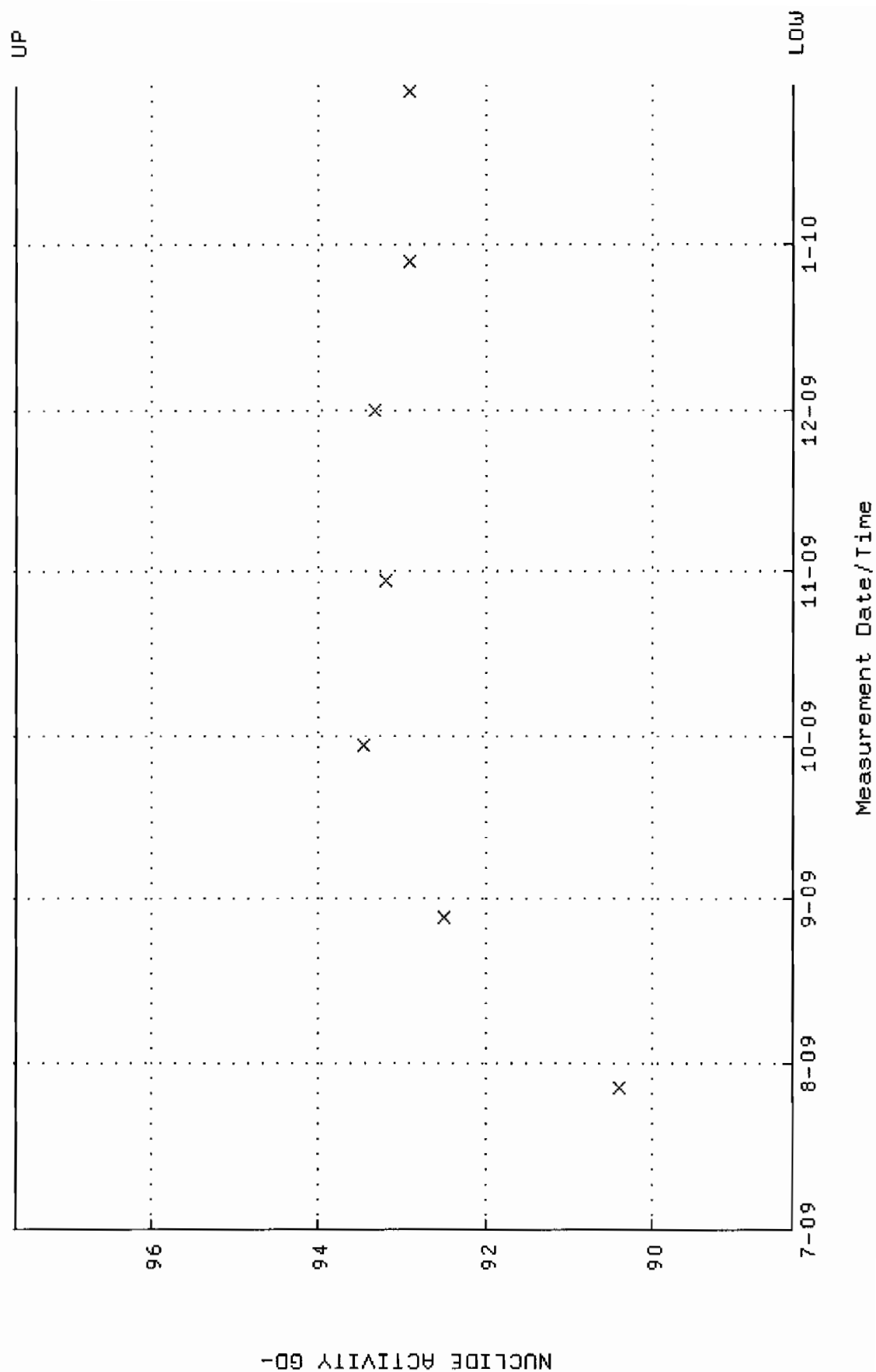
QA filename : DKA100:[ENV\_ALPHA.QA.B]B216.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:03:52 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W217.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:48:04 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.354934 through 0.374934

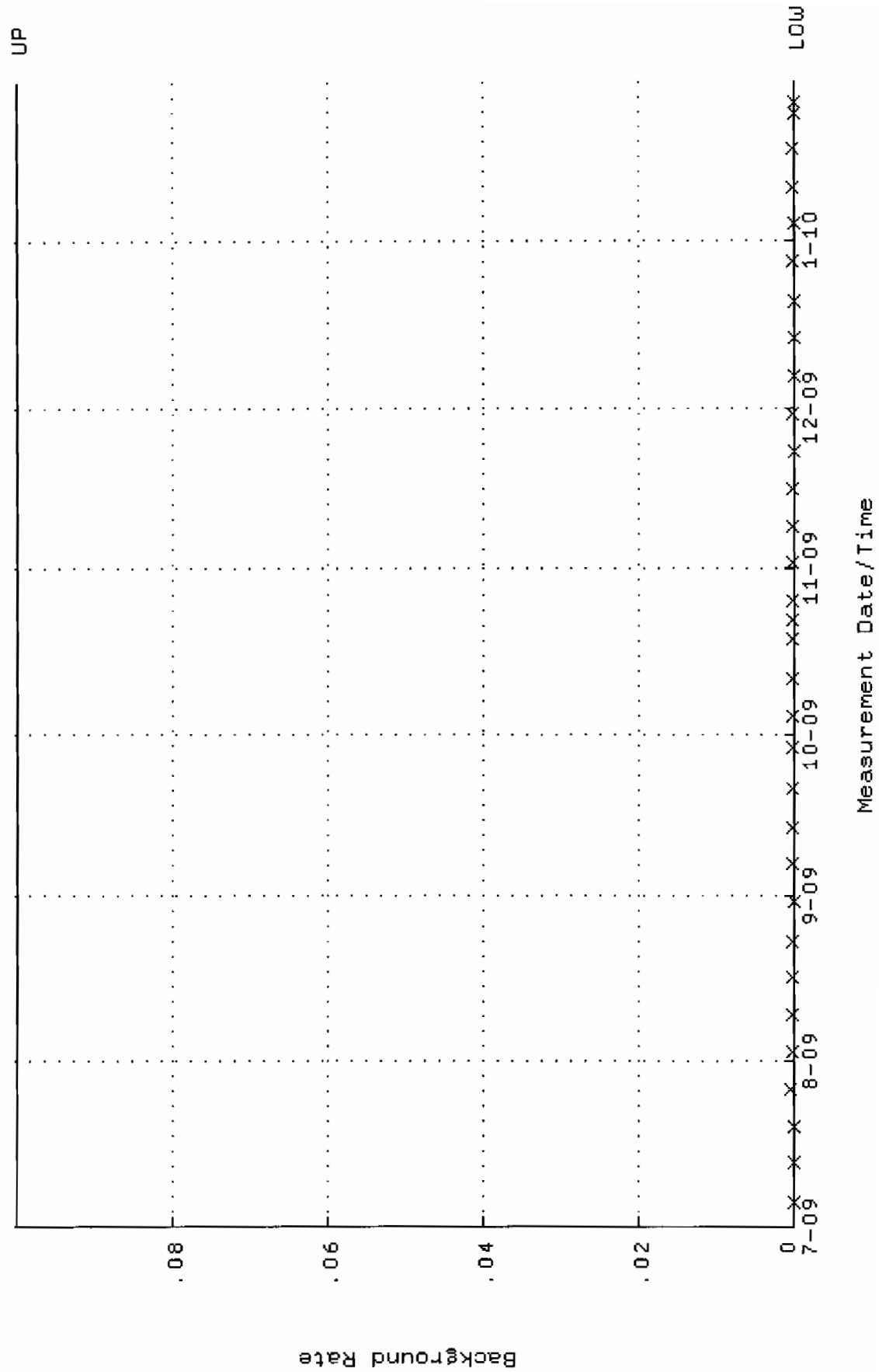


QA filename : DKA100:[ENV\_ALPHA.QA.W]w217.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:48:04 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 88.3174 through 97.6140

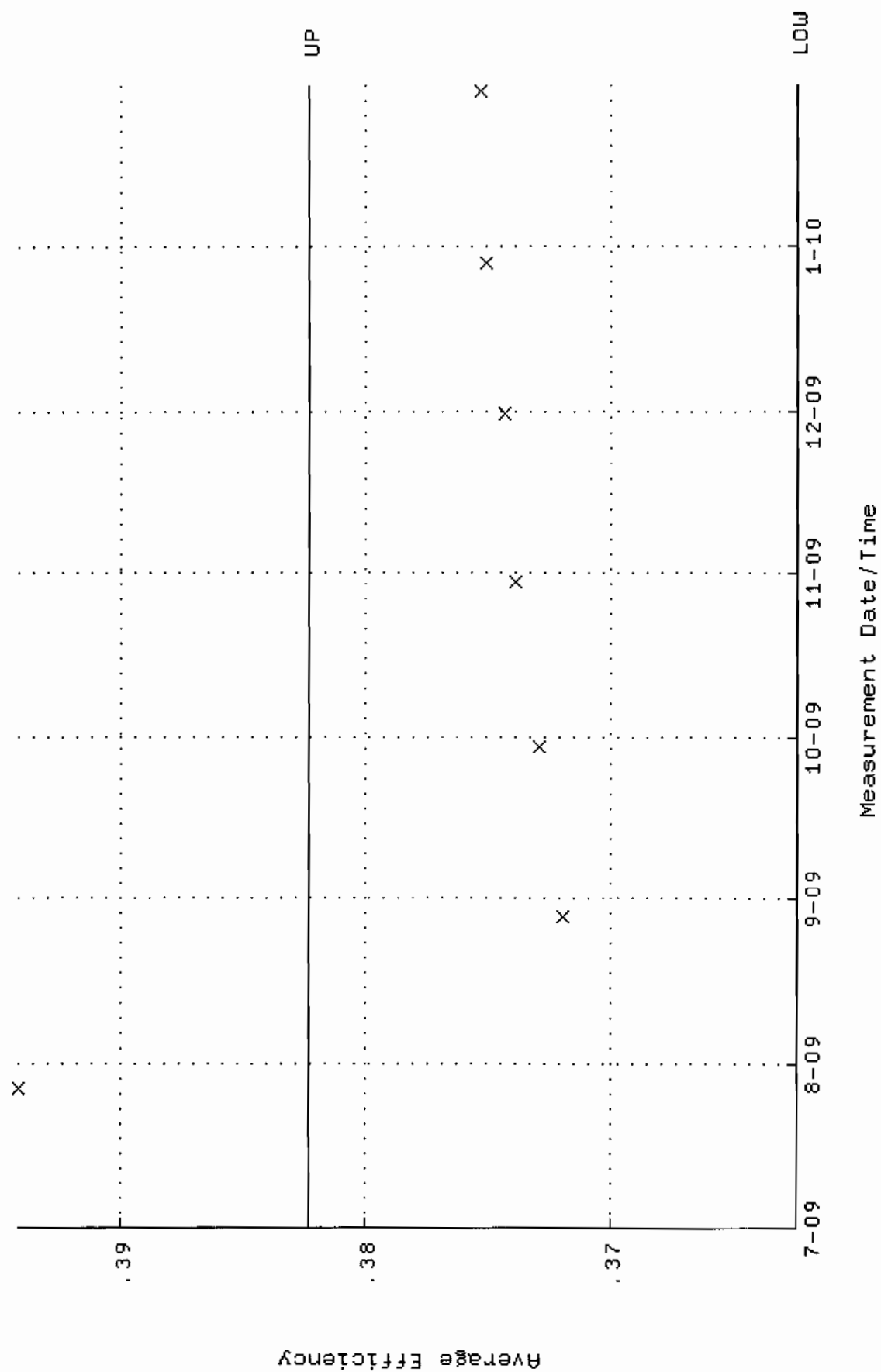




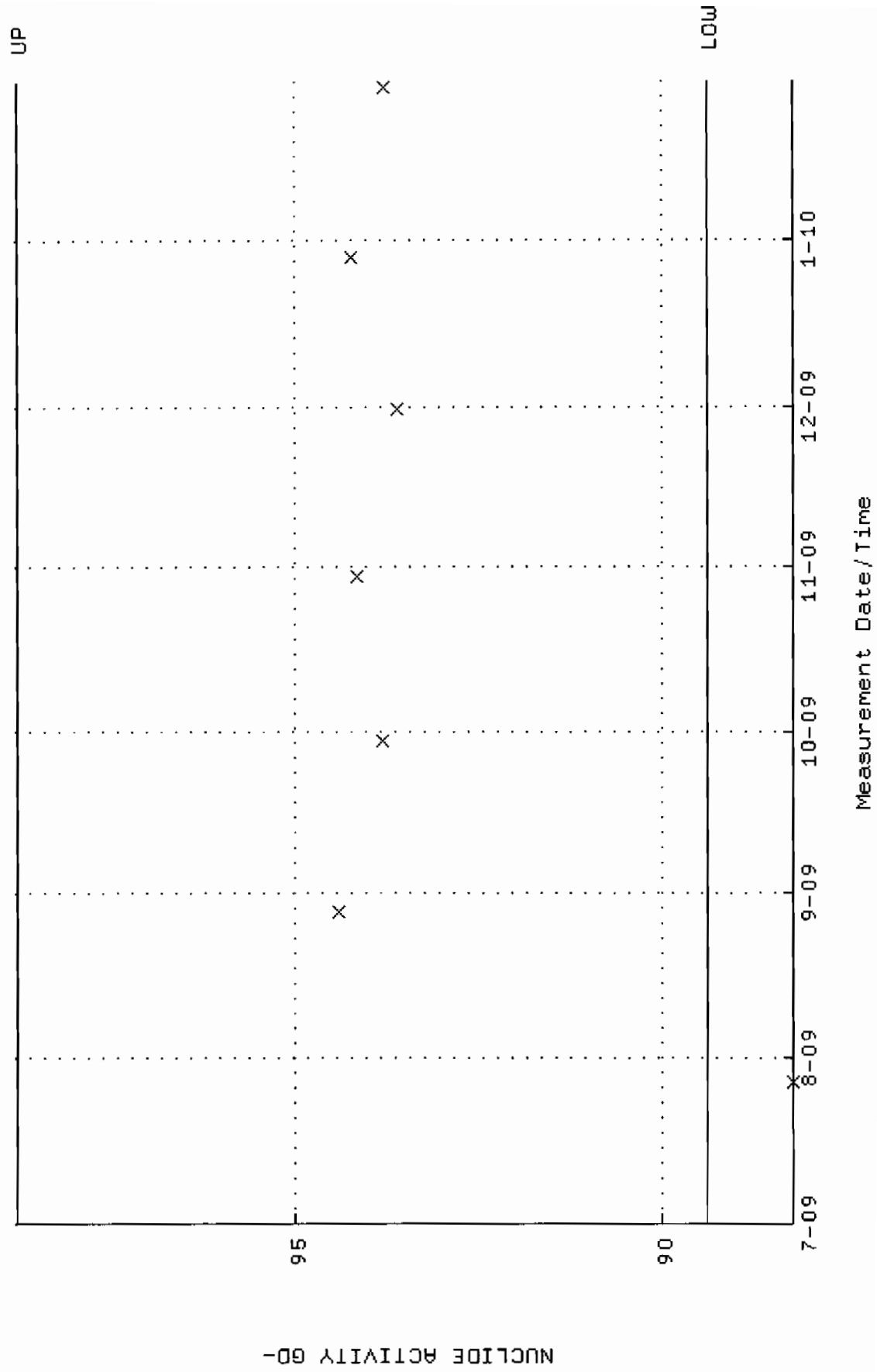
QA filename : DKA100:[ENV\_ALPHA.QA.B]B217.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:03:56 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



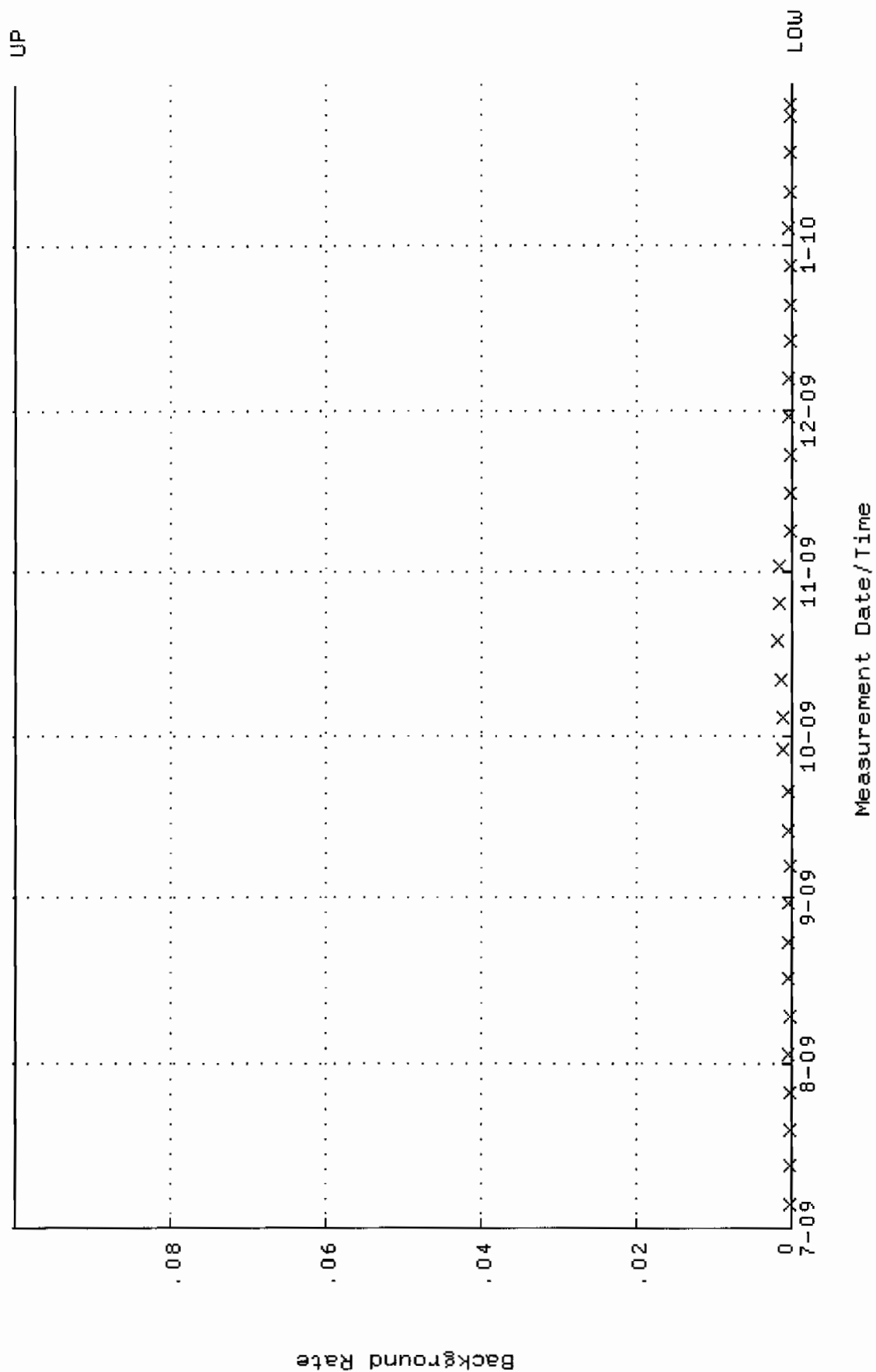
QA filename : DKA100:[ENV\_ALPHA.QA.W]W218.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:48:10 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.362380 through 0.382380



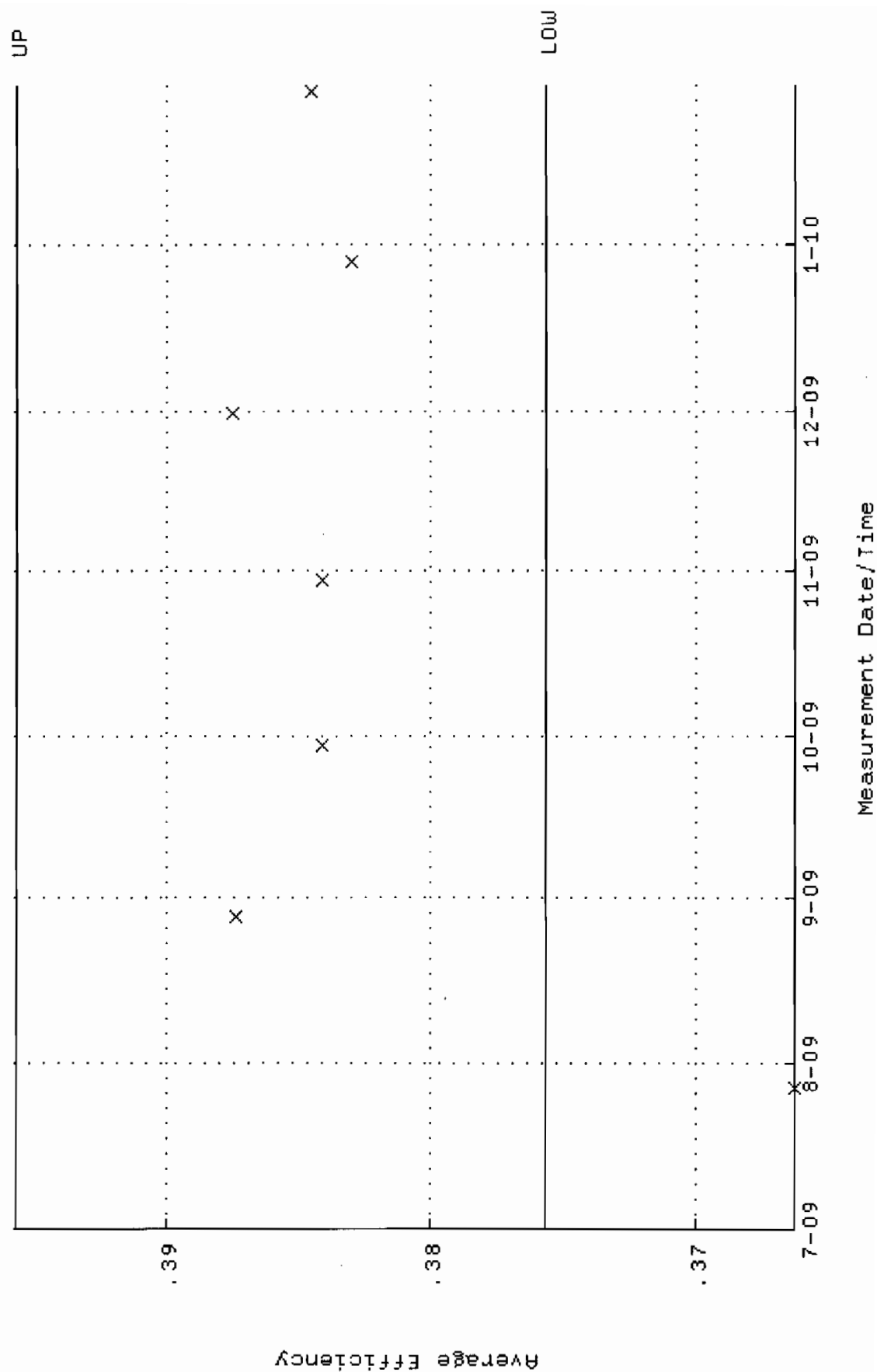
QA filename : DKA100:[ENV\_ALPHA.QA.W]W218.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:48:10 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.3892 through 98.7986



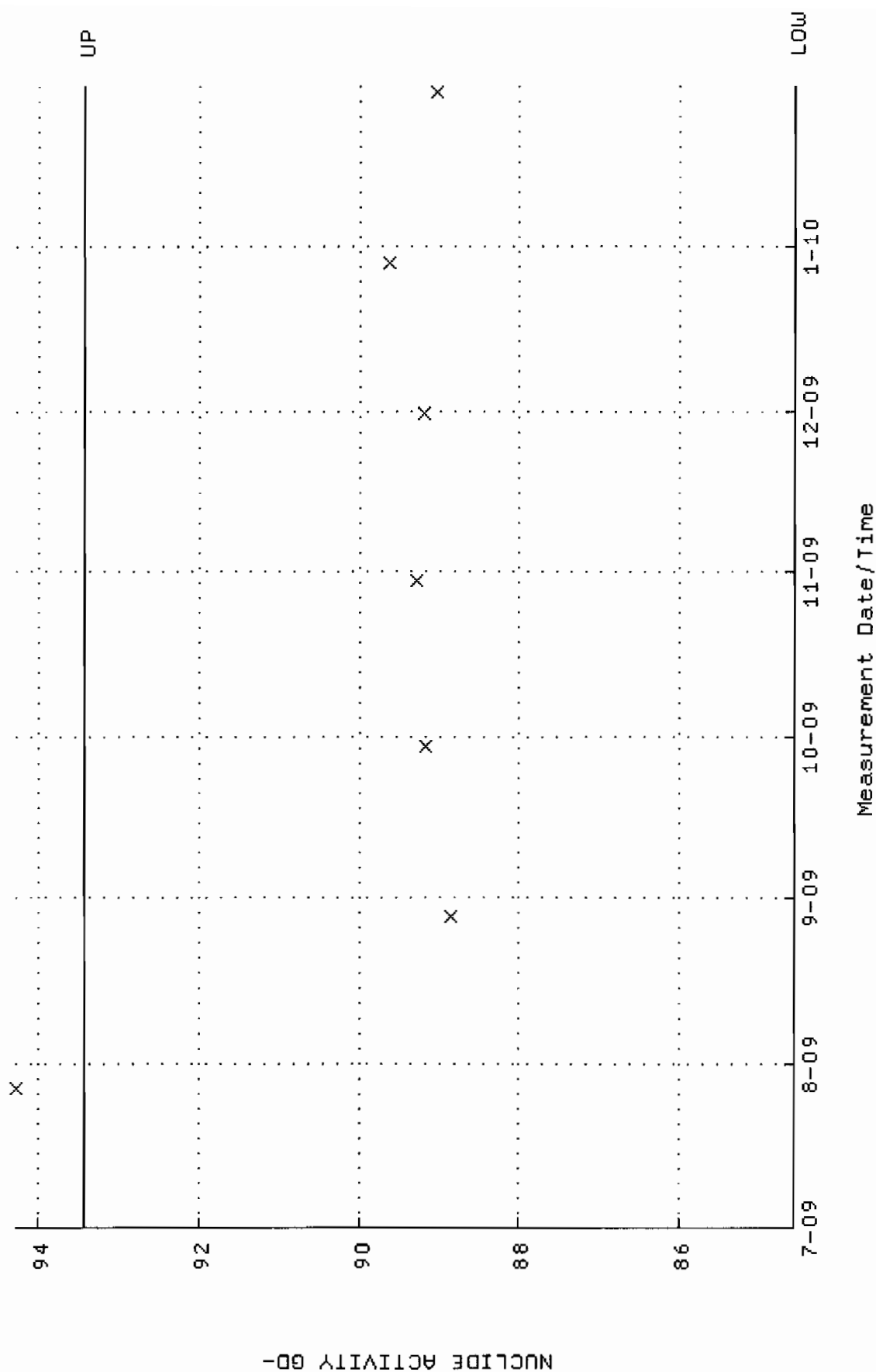
QA filename : OKA100:[ENV\_ALPHA.QA.B]B218.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:04:01 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



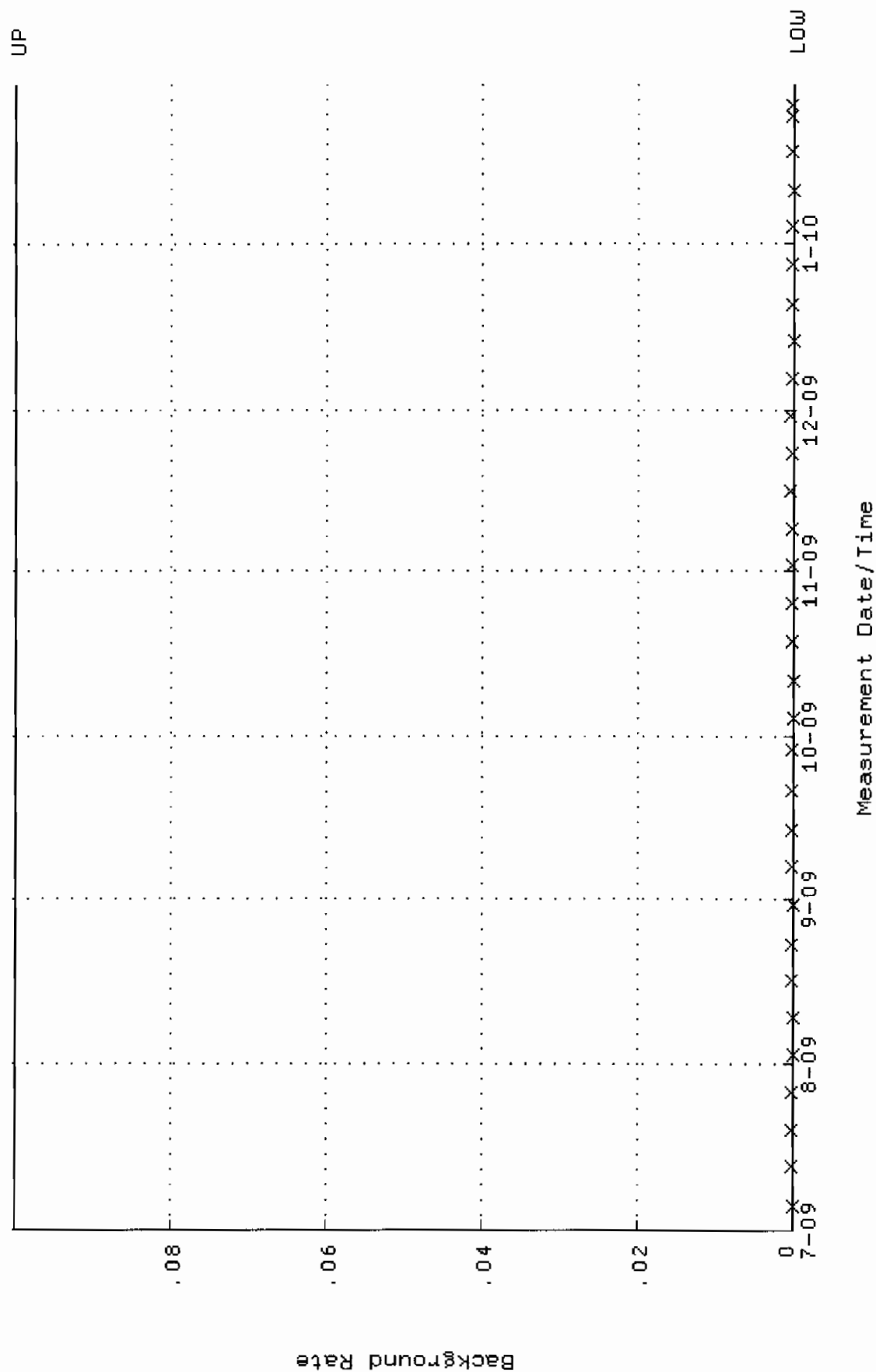
QA filename : DKA100:[ENV\_ALPHA.QA.W]W219.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:48:16 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.375667 through 0.395667



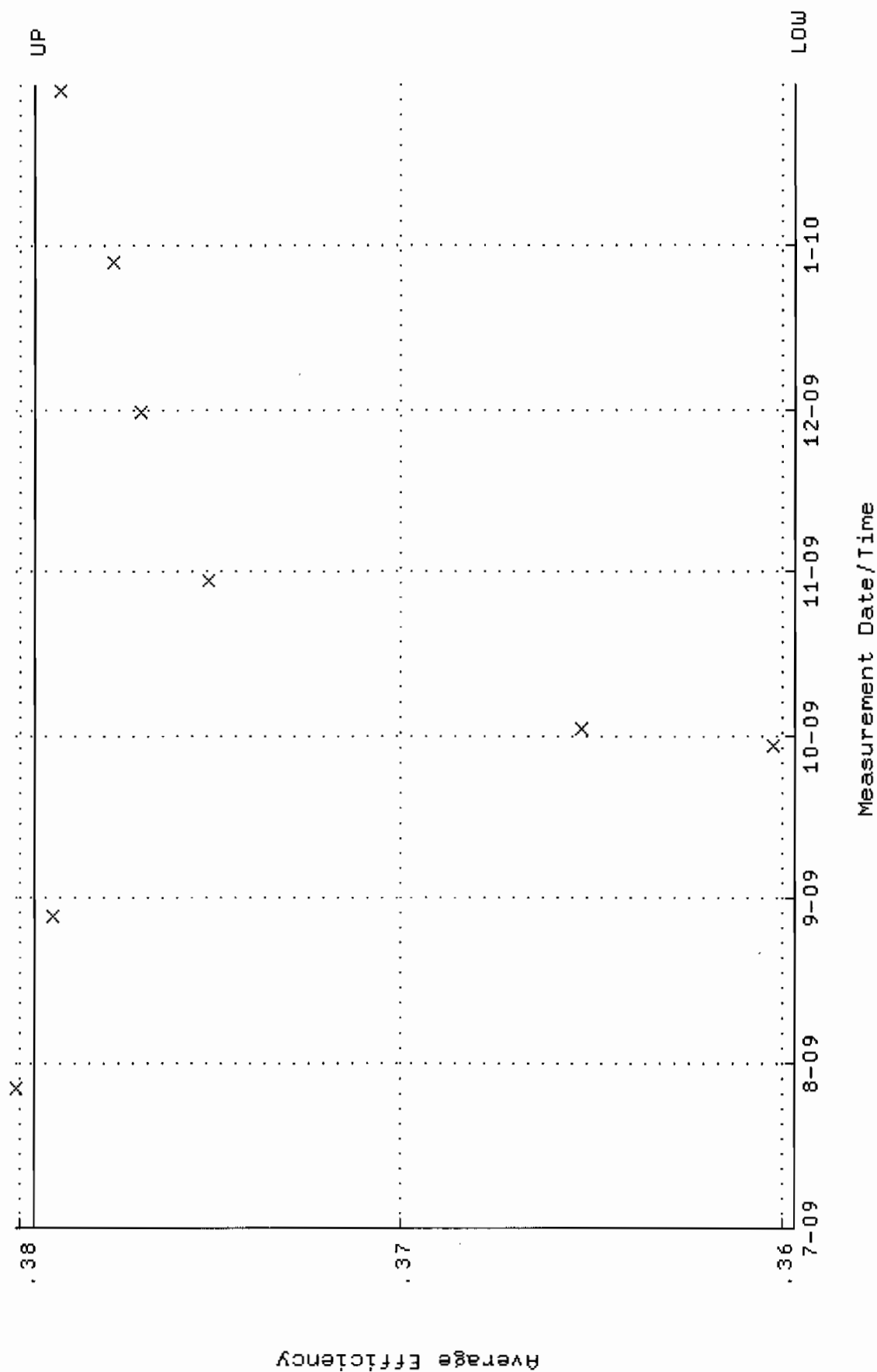
QA filename : DKA100:[ENV\_ALPHA.QA.W]W219.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GO-148)  
 Start/End Dates : 27-JUL-2009 11:48:16 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.5518 through 93.4520



QA filename : DKA100:[ENV\_ALPHA.QA.B]B219.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:04:06 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

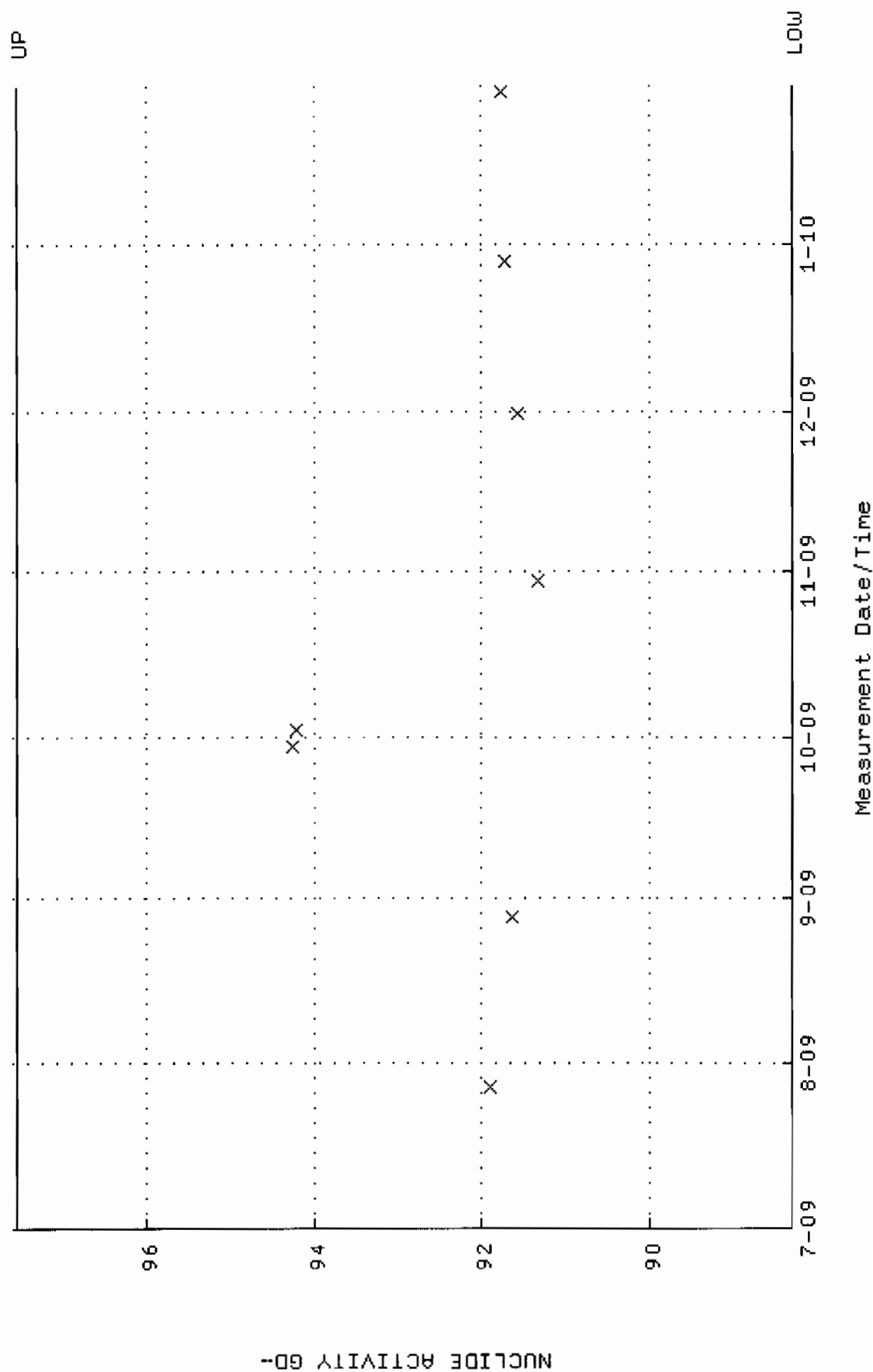


QA filename : DKA100:[ENV\_ALPHA.QA.W]W220.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:48:23 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.359644 through 0.379644

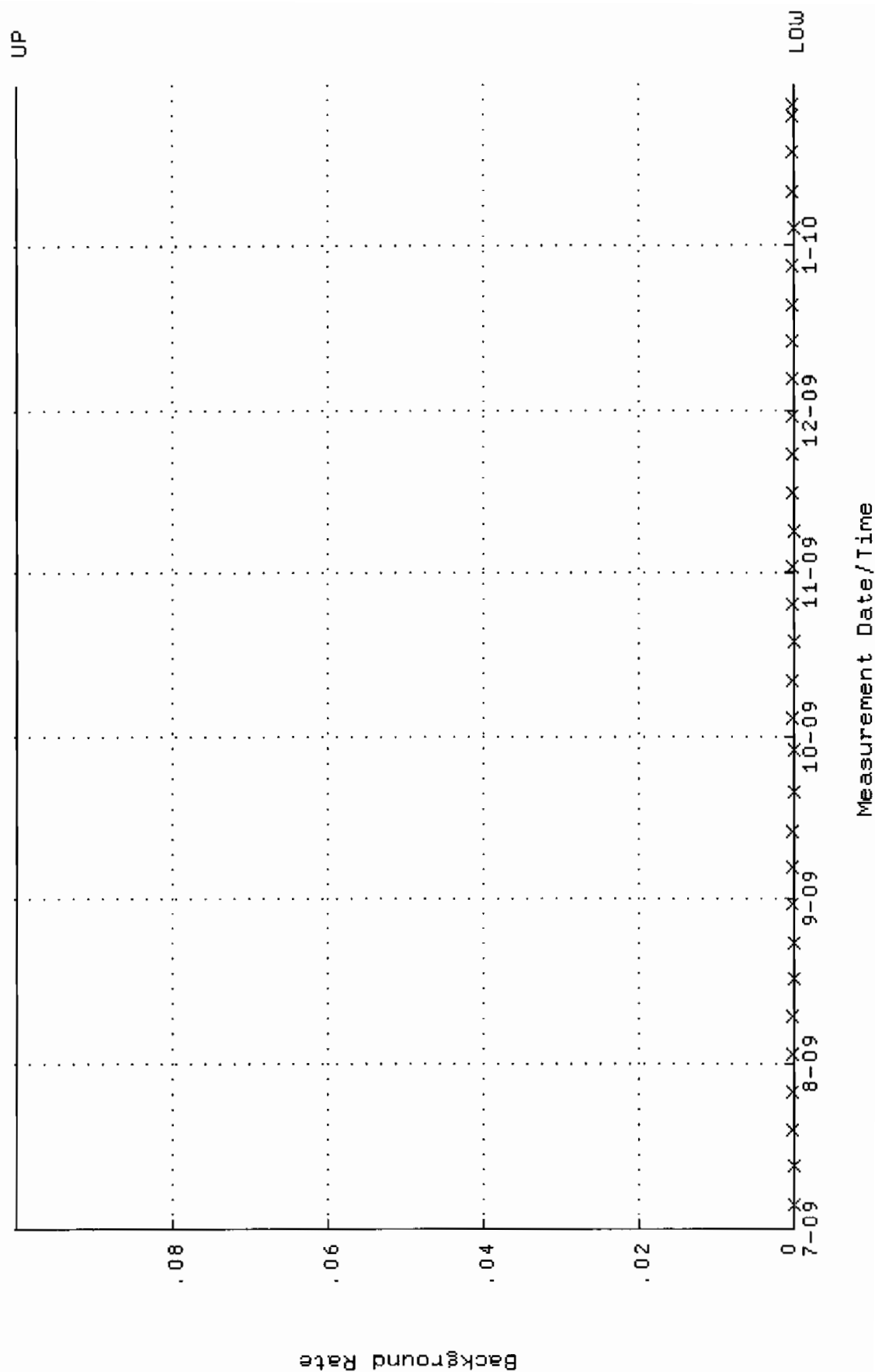




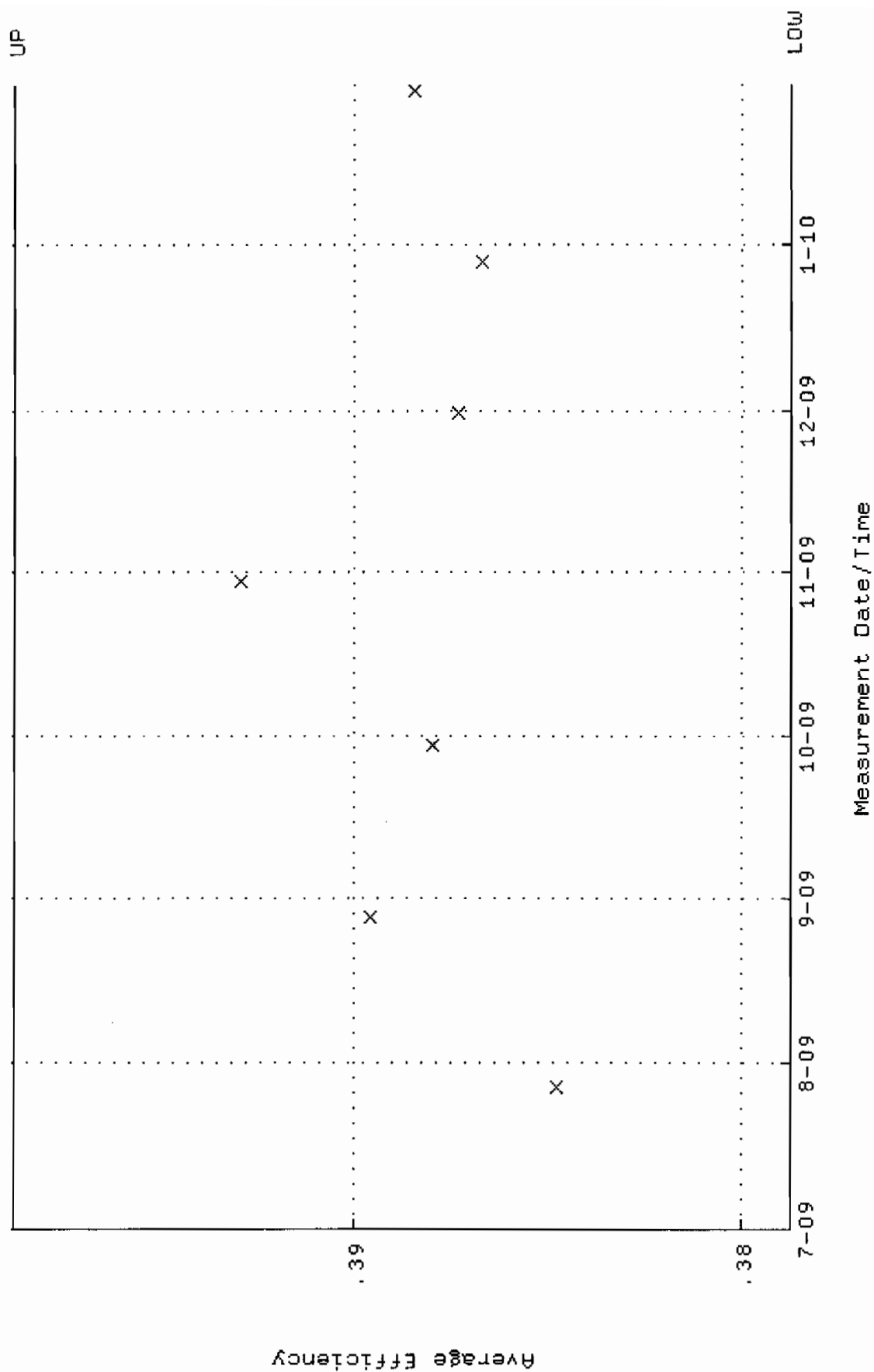
QA filename : DKA100:[ENV\_ALPHA.QA.W]W220.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:48:23 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 88.2863 through 97.5795



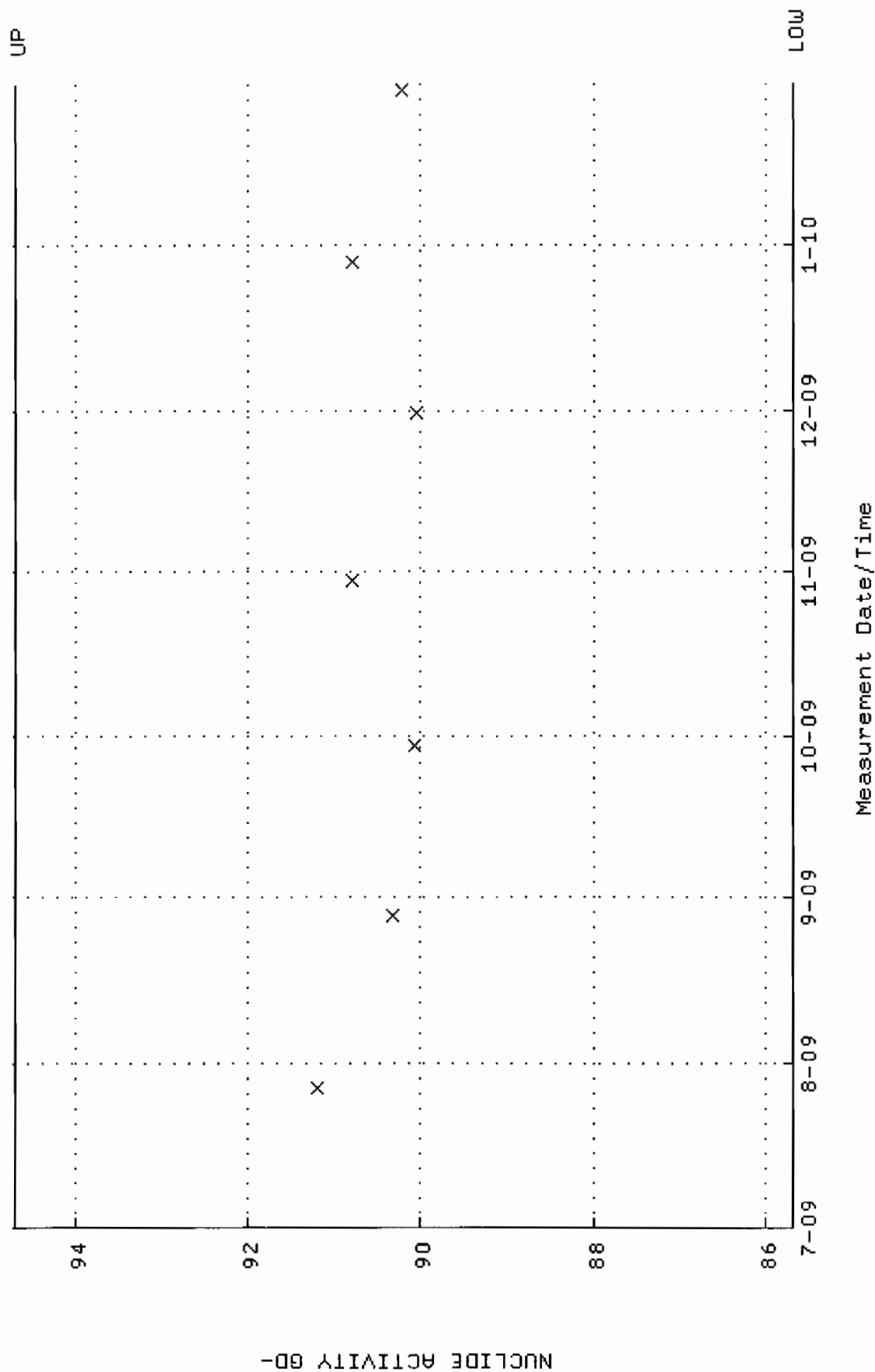
QA filename : DKA100:[ENV\_ALPHA.QA.B]B220.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:04:10 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



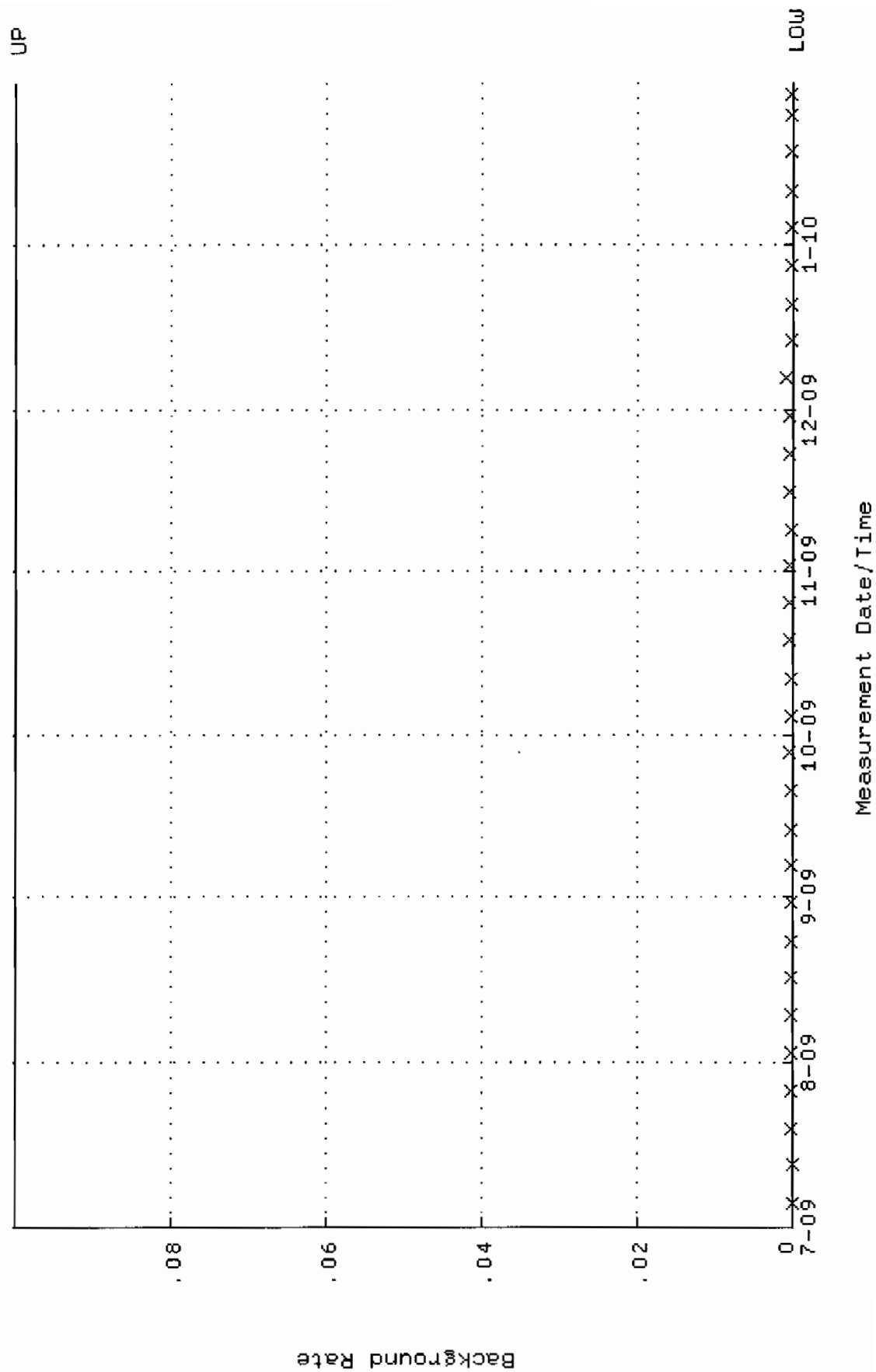
QA filename : DKA100:[ENV\_ALPHA.QA.W]W231.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:49:35 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.378748 through 0.398748



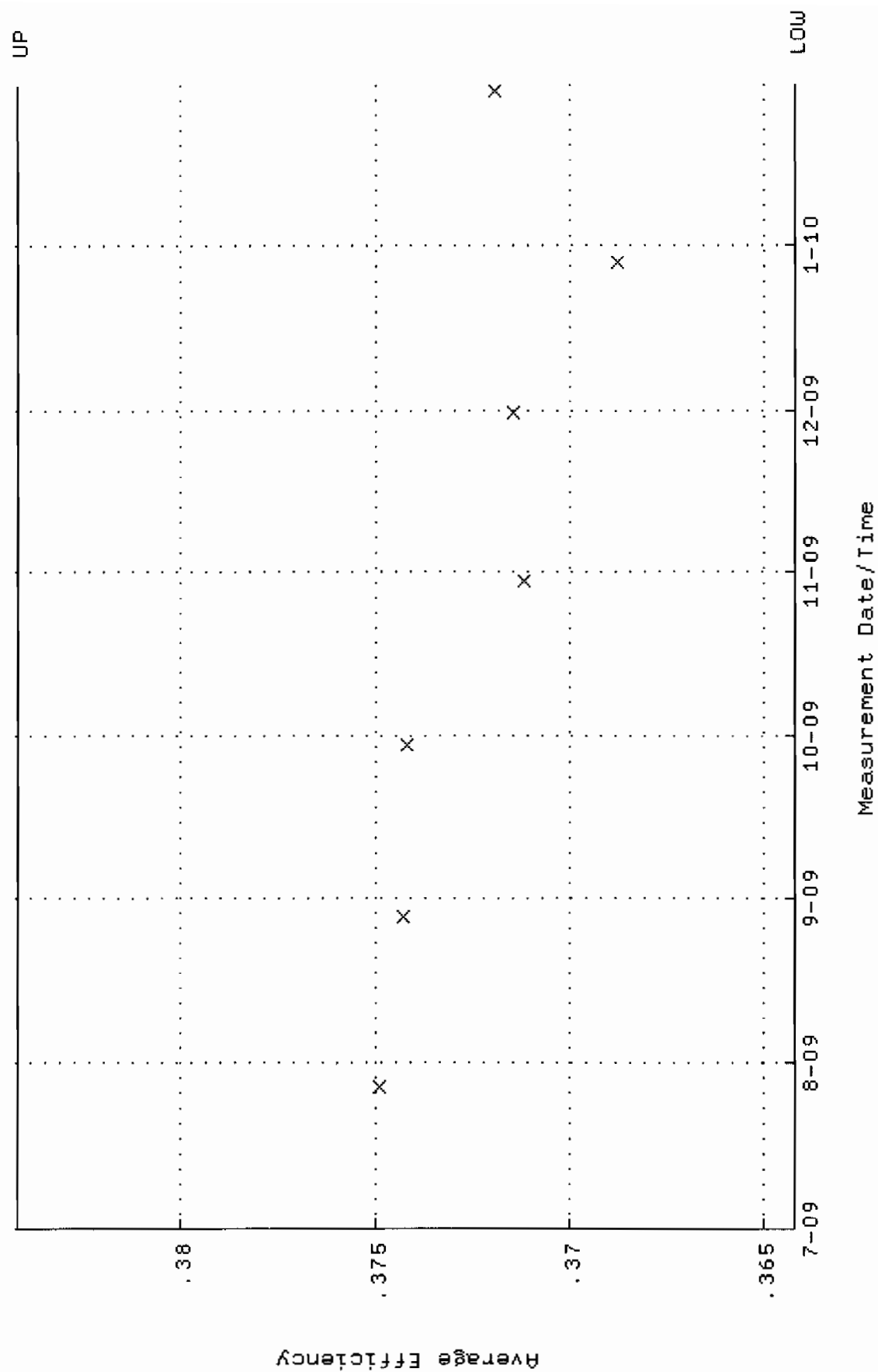
QA filename : DKA100:[ENV\_ALPHA.QA.W]W231.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:49:35 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.6783 through 94.6971



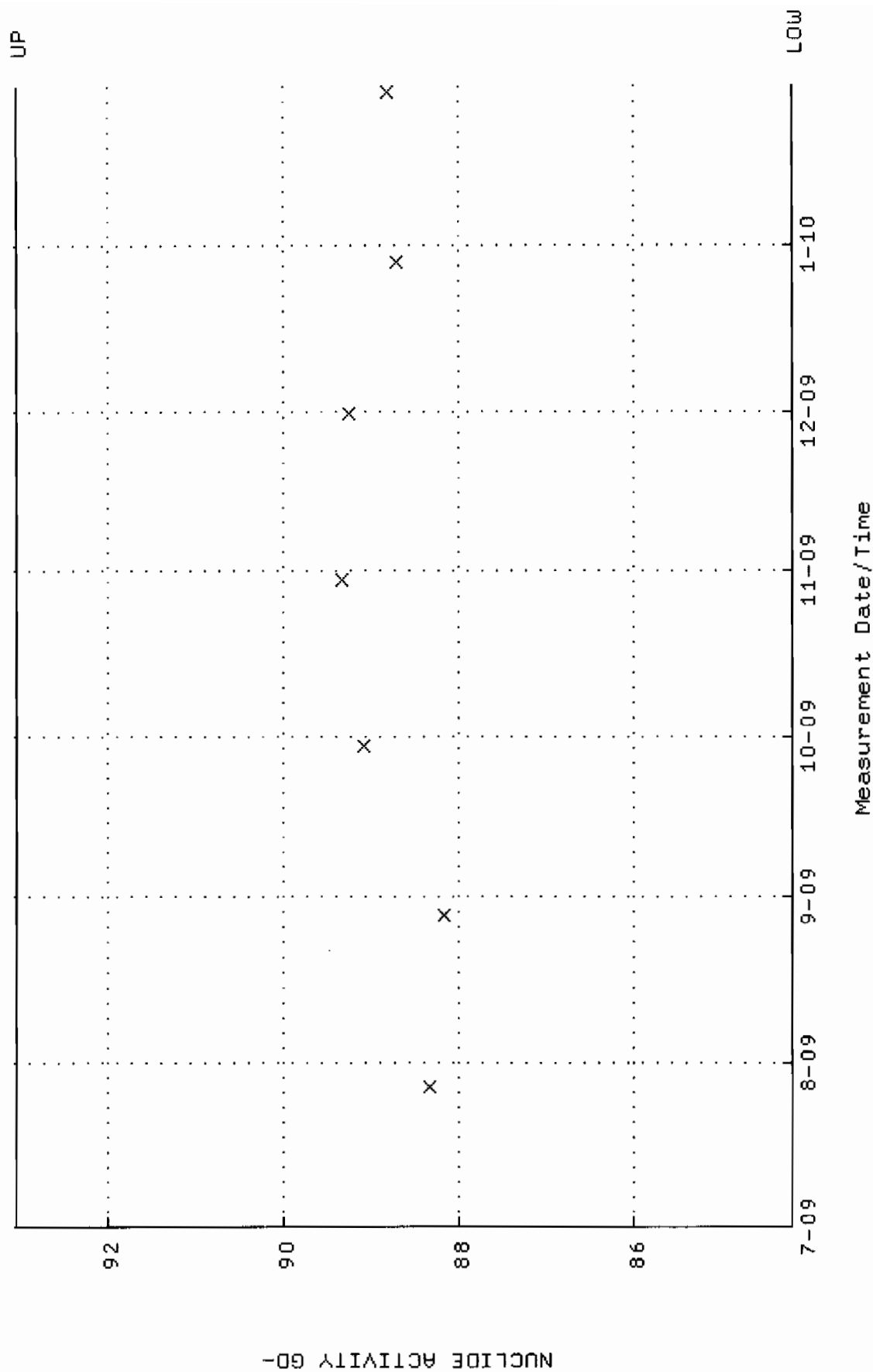
QA filename : DKA100:[ENV\_ALPHA.QA.B]B231.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:01 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



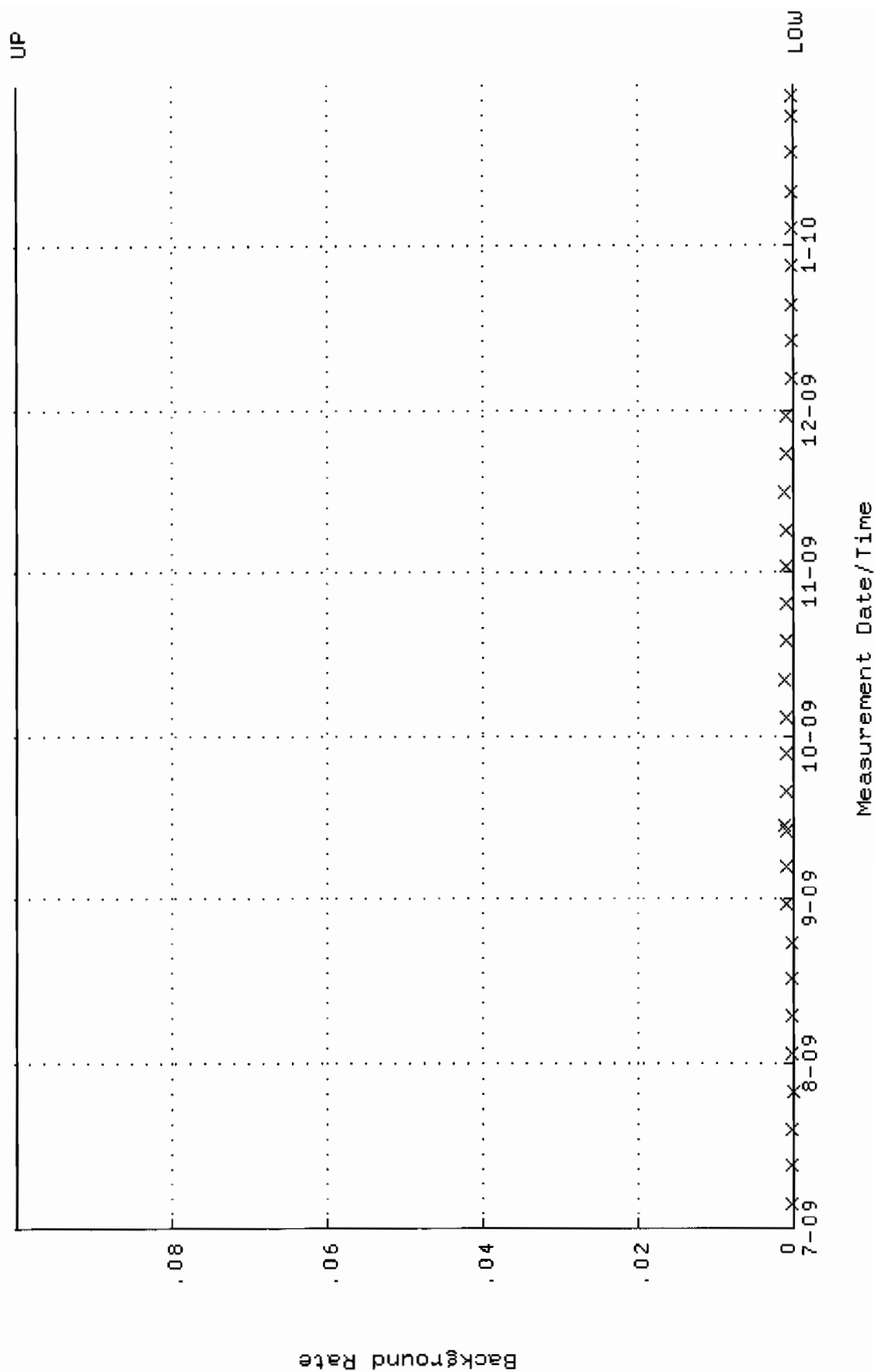
QA filename : DKA100:[ENV\_ALPHA.QA.W]W232.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:49:42 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.364210 through 0.384210



QA filename : DKA100:[ENV\_ALPHA.QA.W]W232.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:49:42 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.1819 through 93.0431

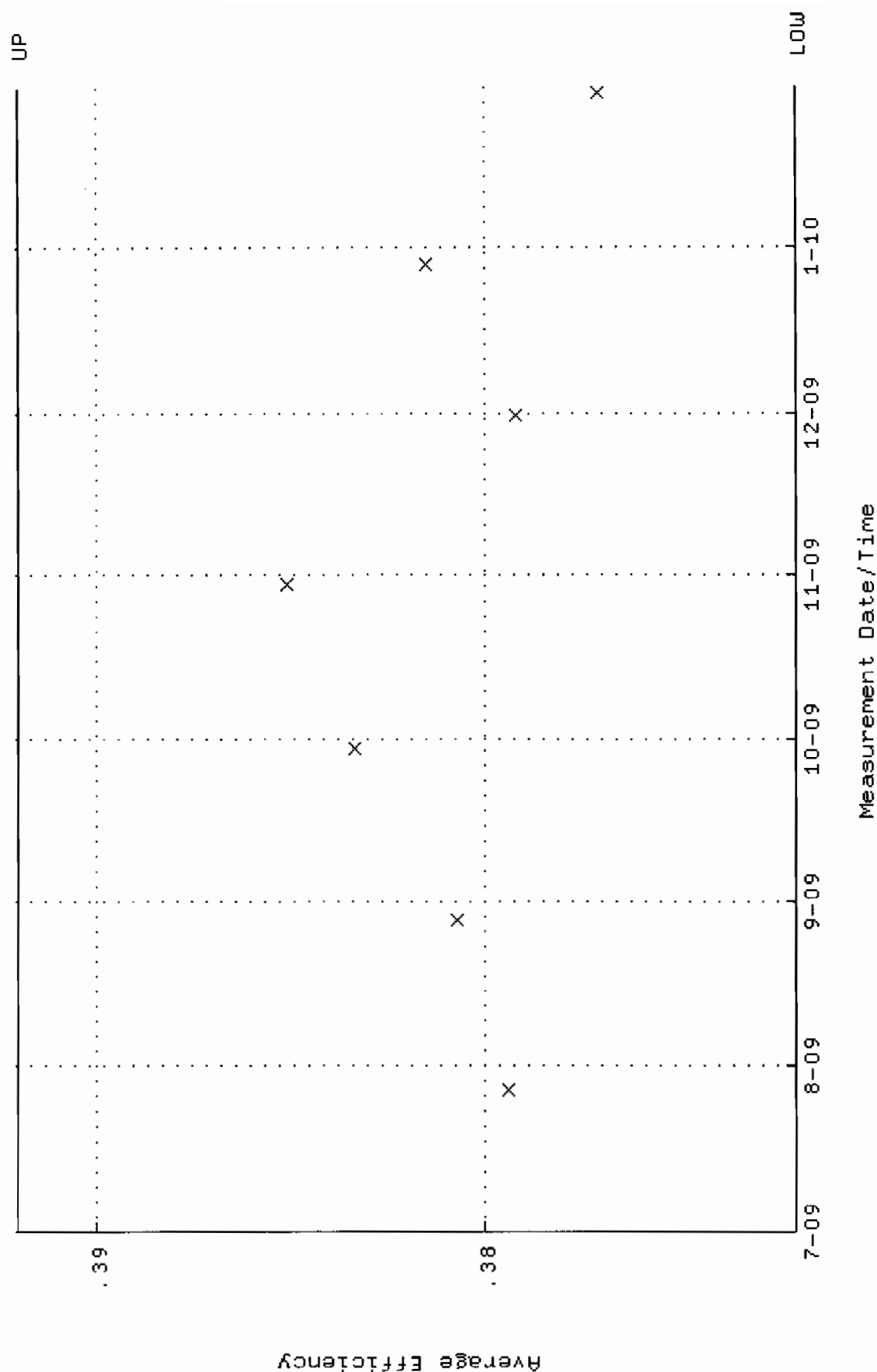


QA filename : DKA100:[ENV\_ALPHA.QA.B]B232.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:06 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

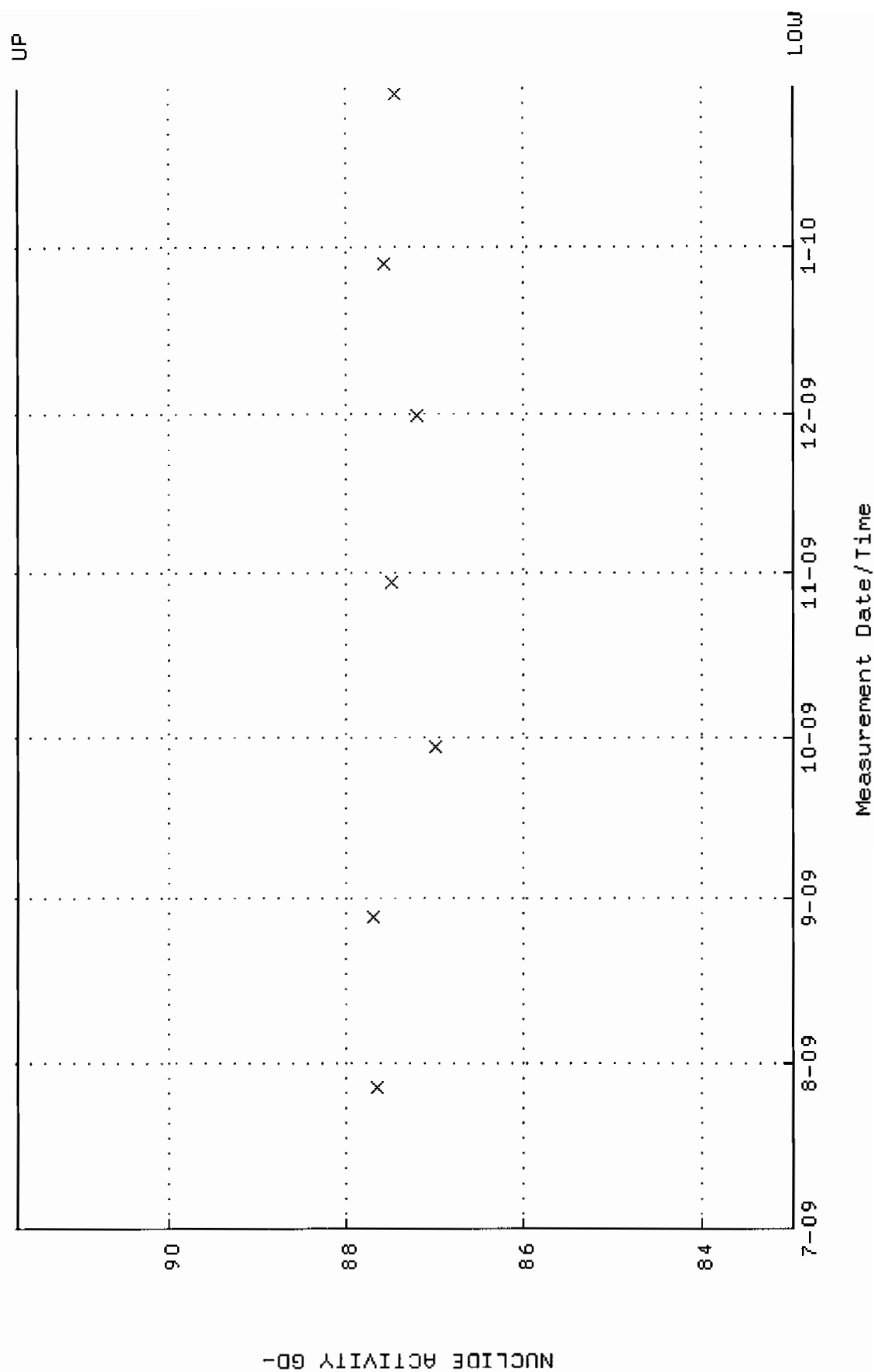




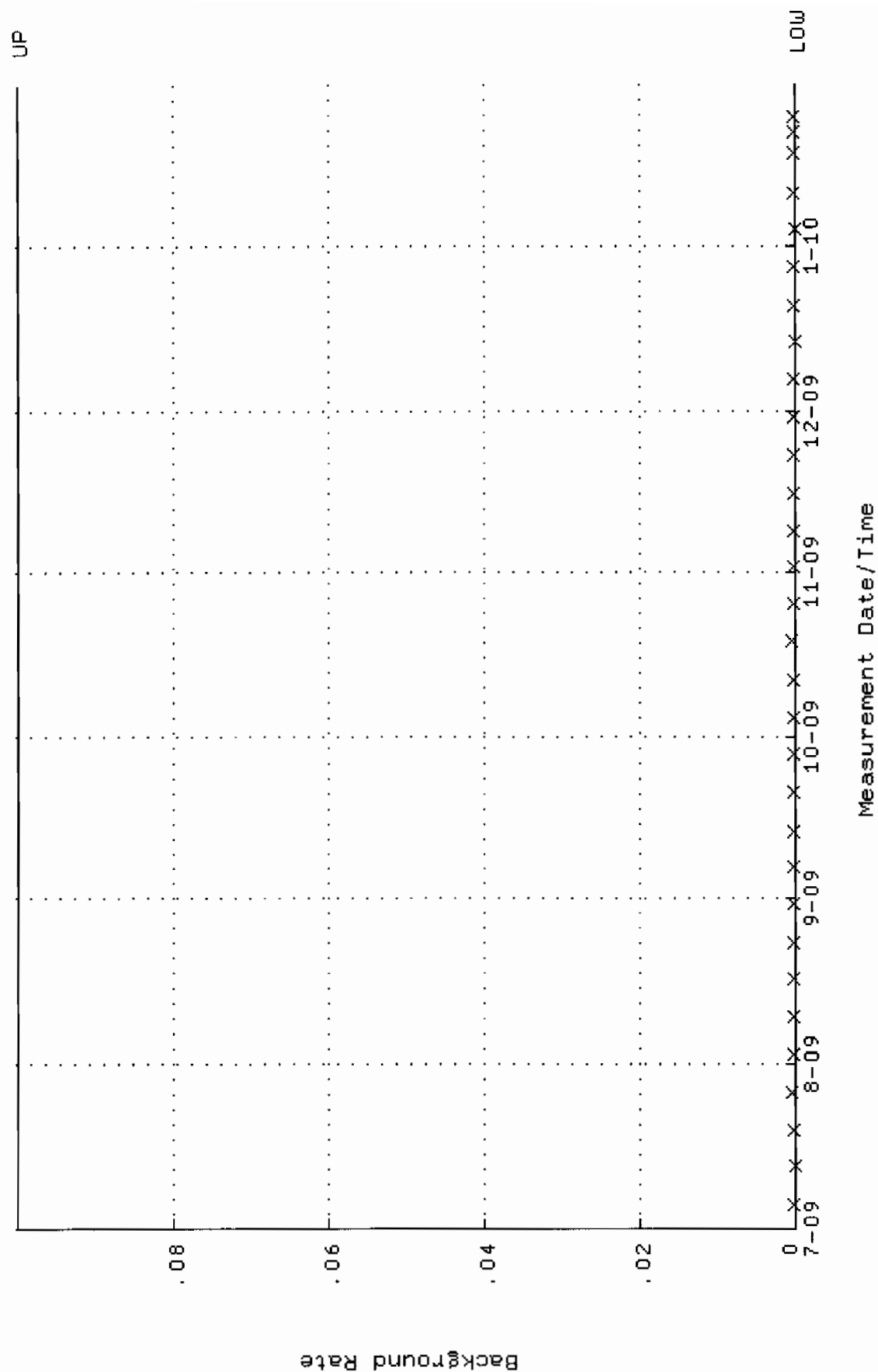
QA filename : DKA100:[ENV\_ALPHA.QA.W]W233.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:49:48 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.372001 through 0.392001



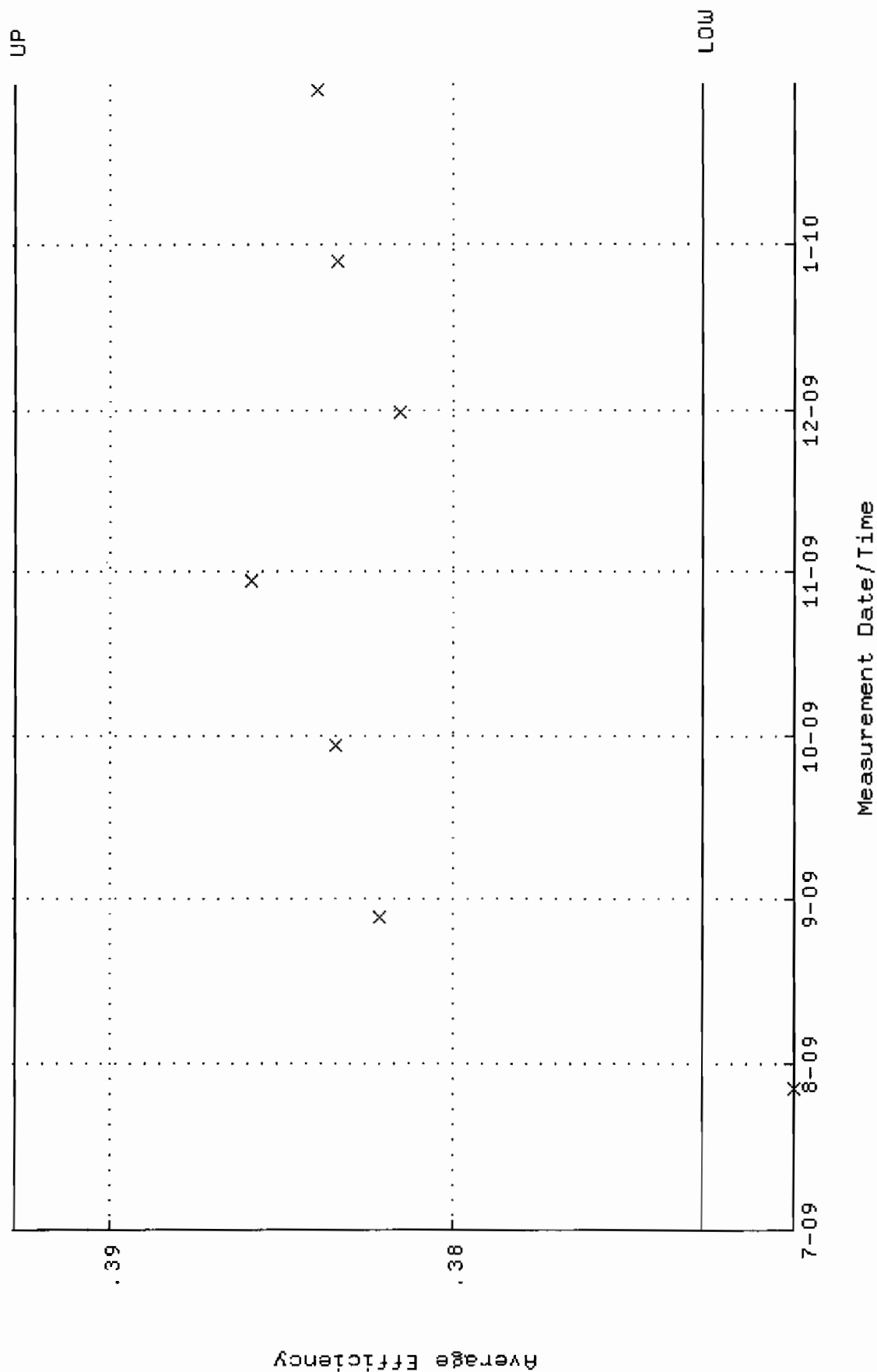
QA filename : DKA100:[ENV\_ALPHA.QA.W]W233.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:49:48 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 82.9652 through 91.6984



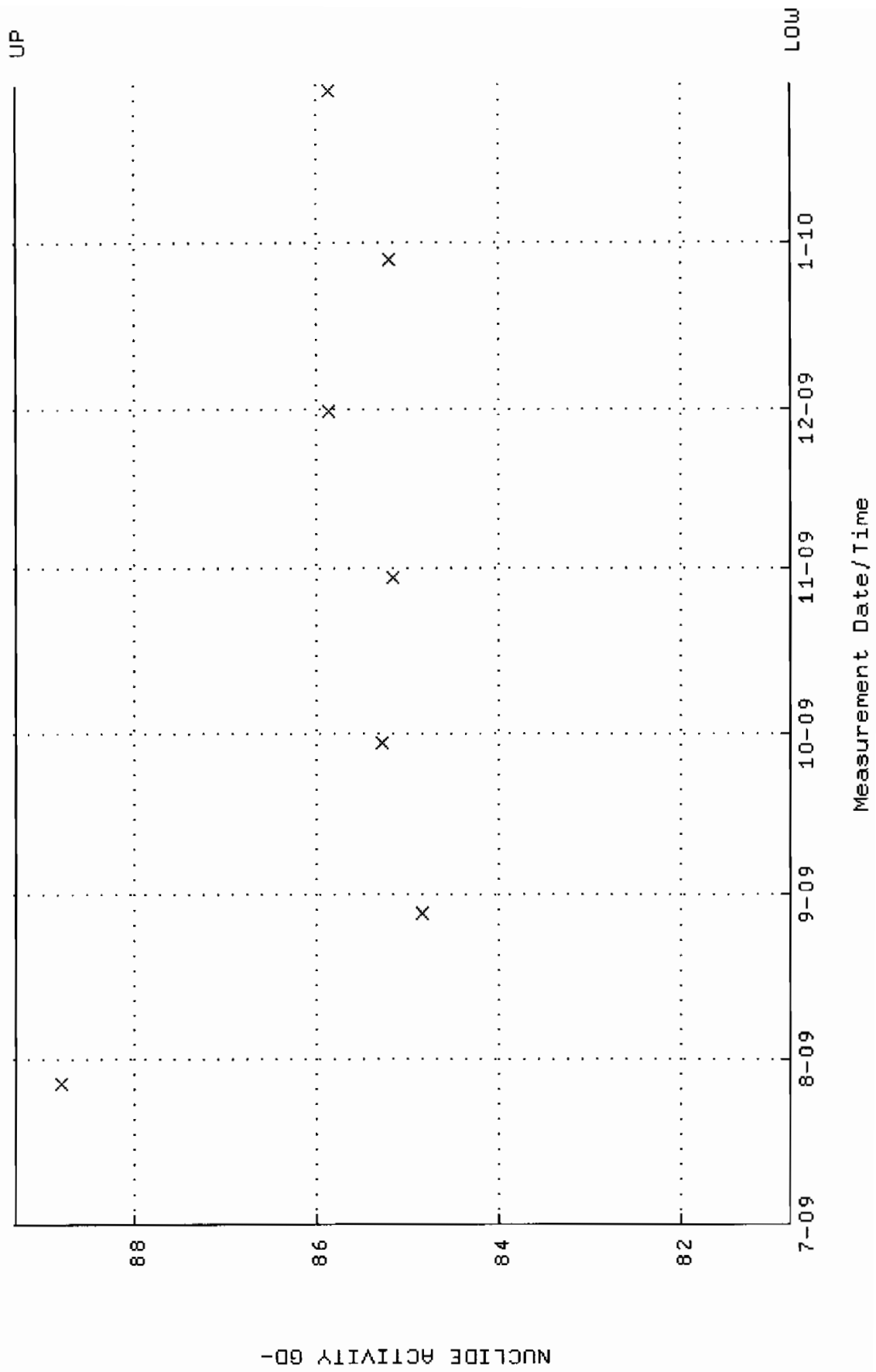
QA filename : DKA100:[ENV\_ALPHA.QA.B]B233.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:10 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



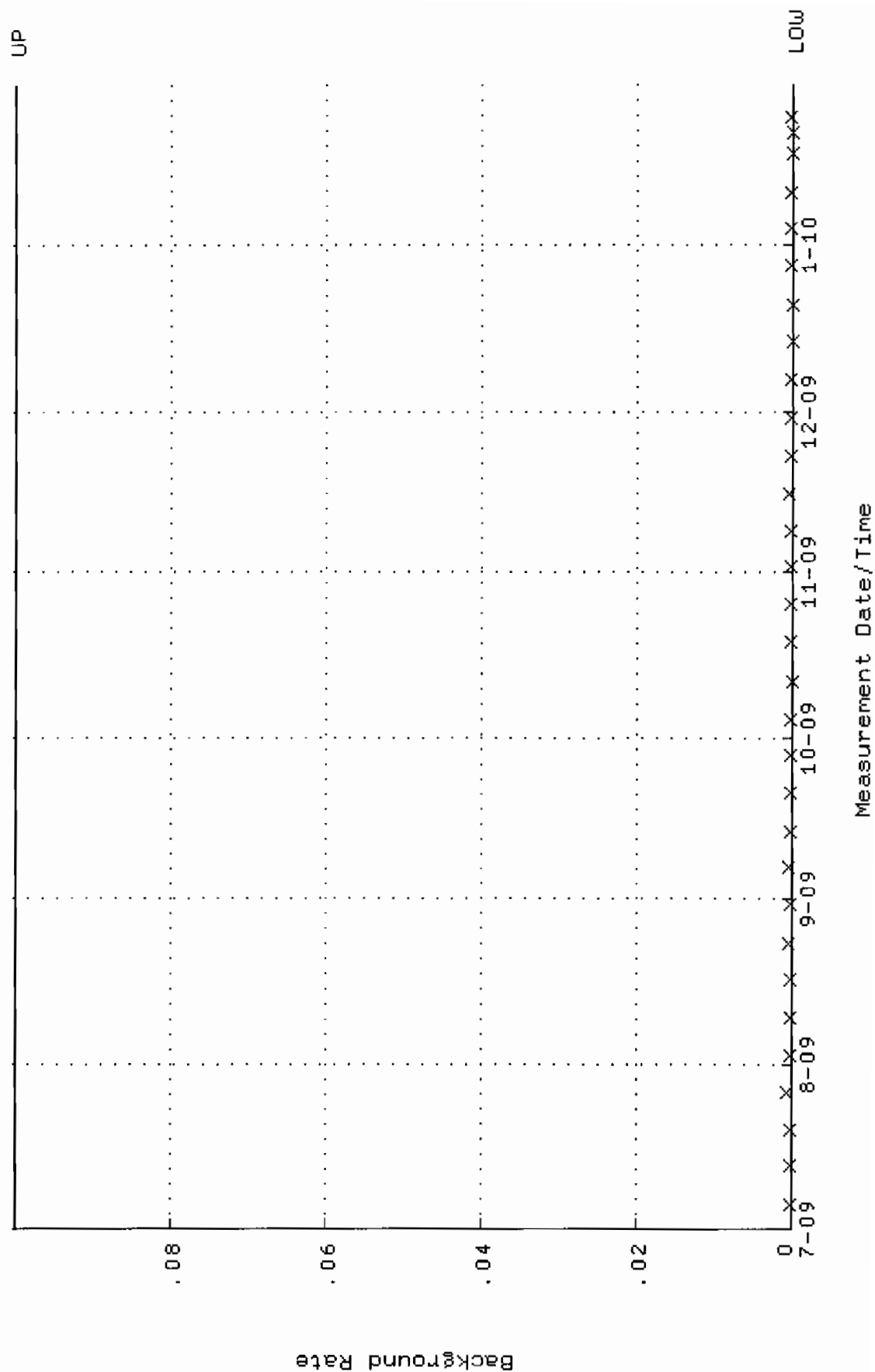
QA filename : DKA100:[ENV\_ALPHA.QA.W]W234.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:49:54 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.372763 through 0.392763



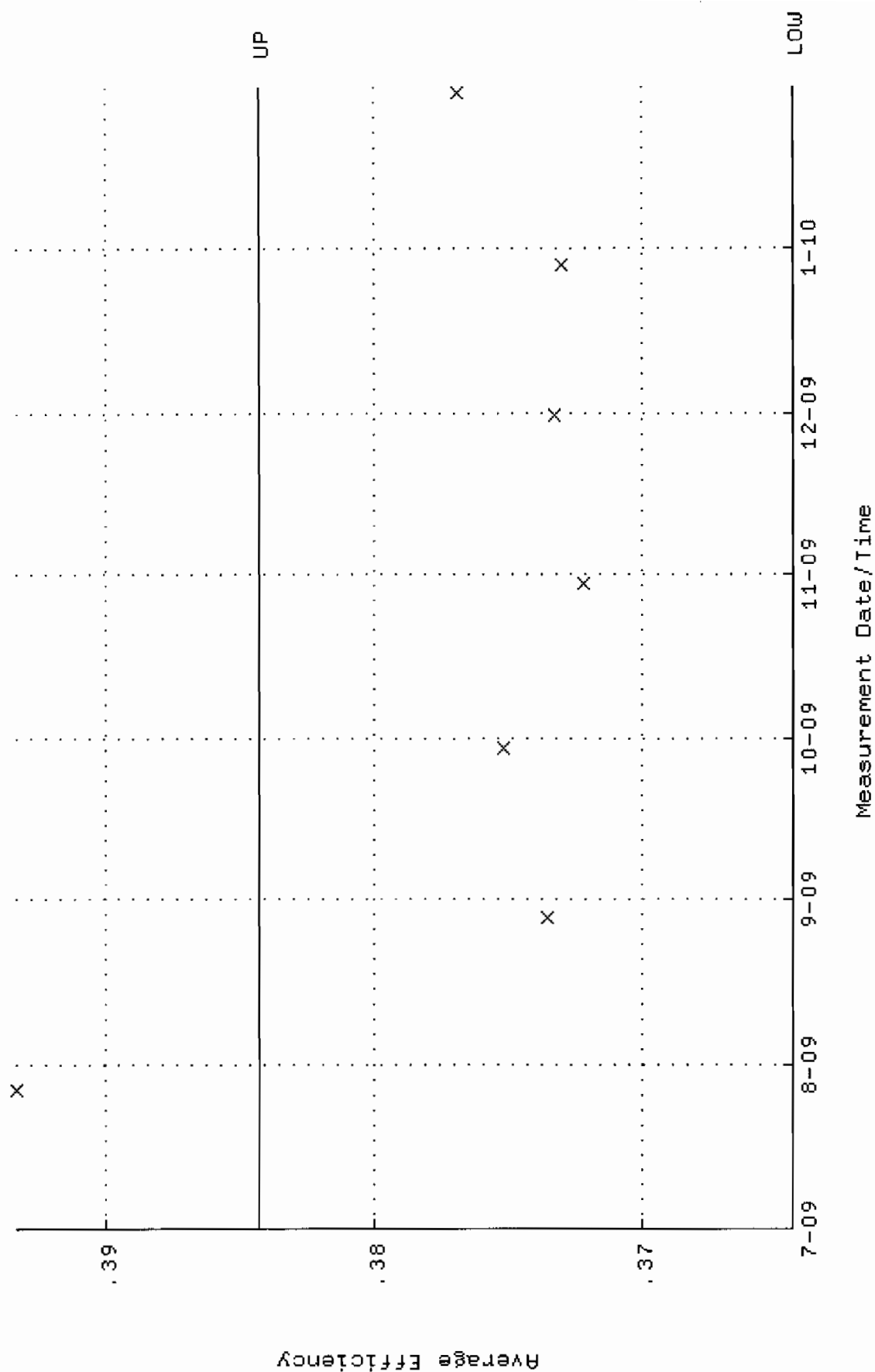
QA filename : DKA100:[ENV\_ALPHA.QA.W]w234.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:49:54 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 80.7996 through 89.3048



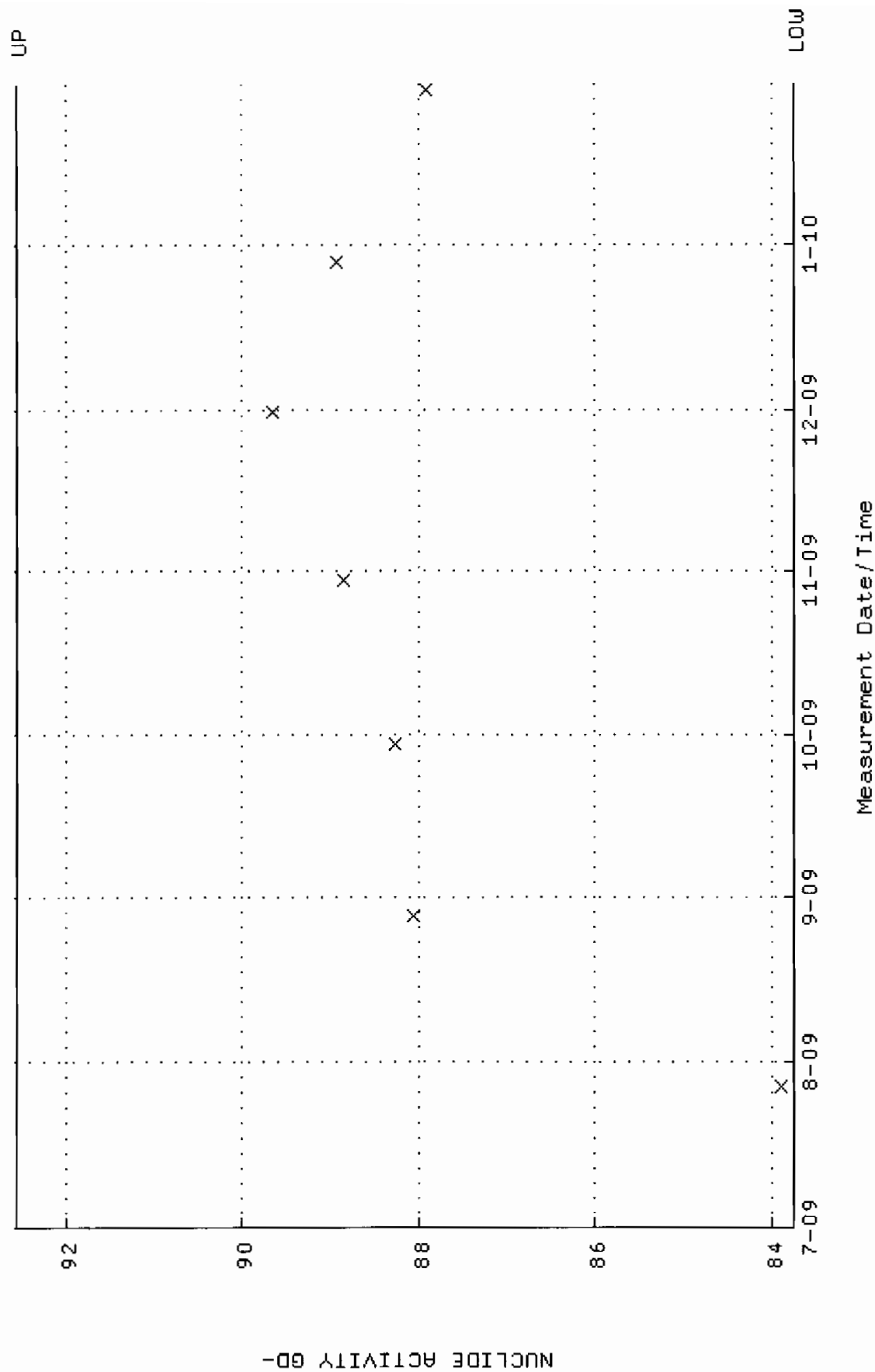
QA filename : DKA100:[ENV\_ALPHA.QA.B]B234.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:15 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]U235.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:01 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.364314 through 0.384314

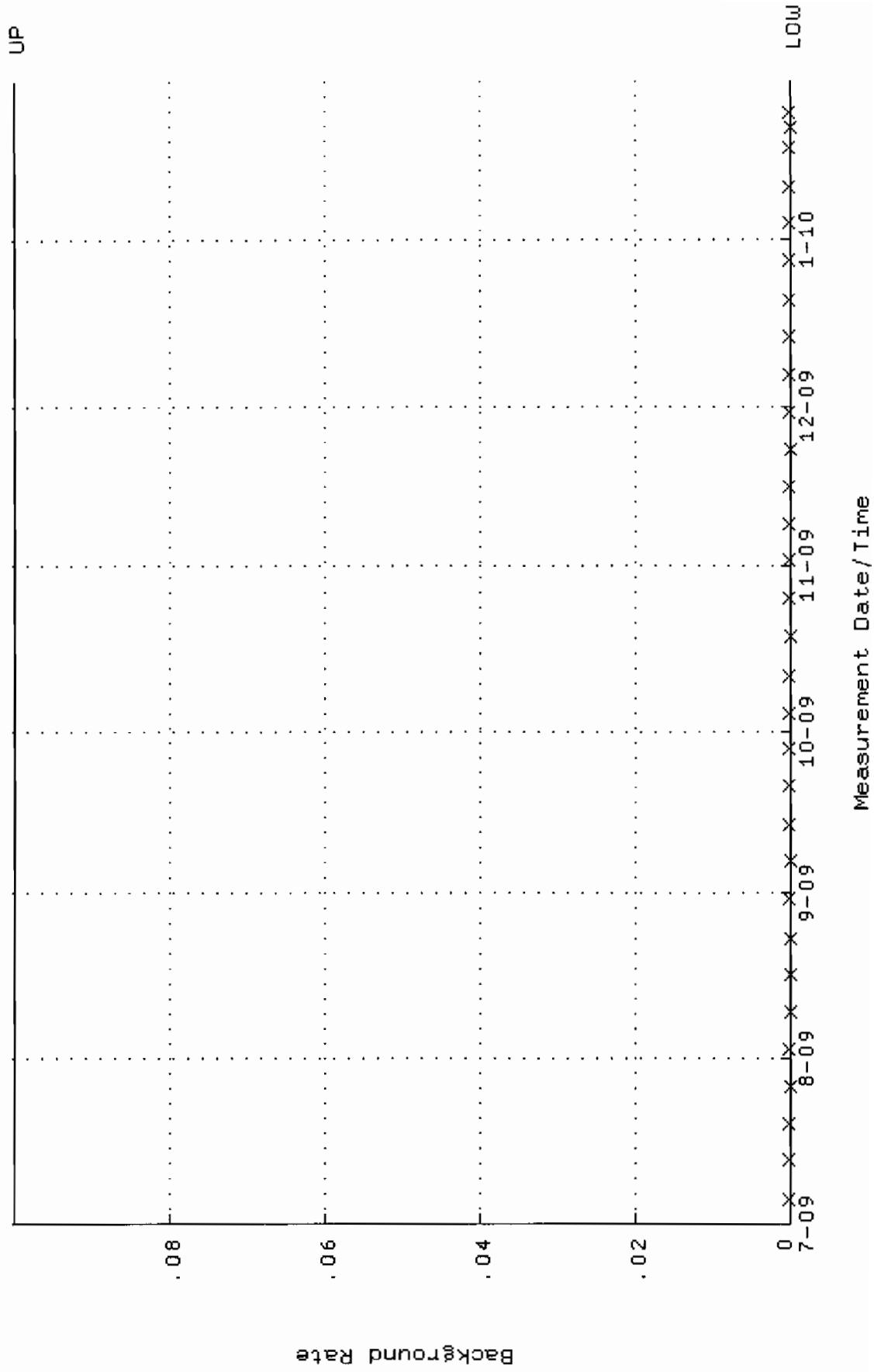


QA filename : DKA100:[ENV\_ALPHA.QA.W]w235.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:01 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.7416 through 92.5566

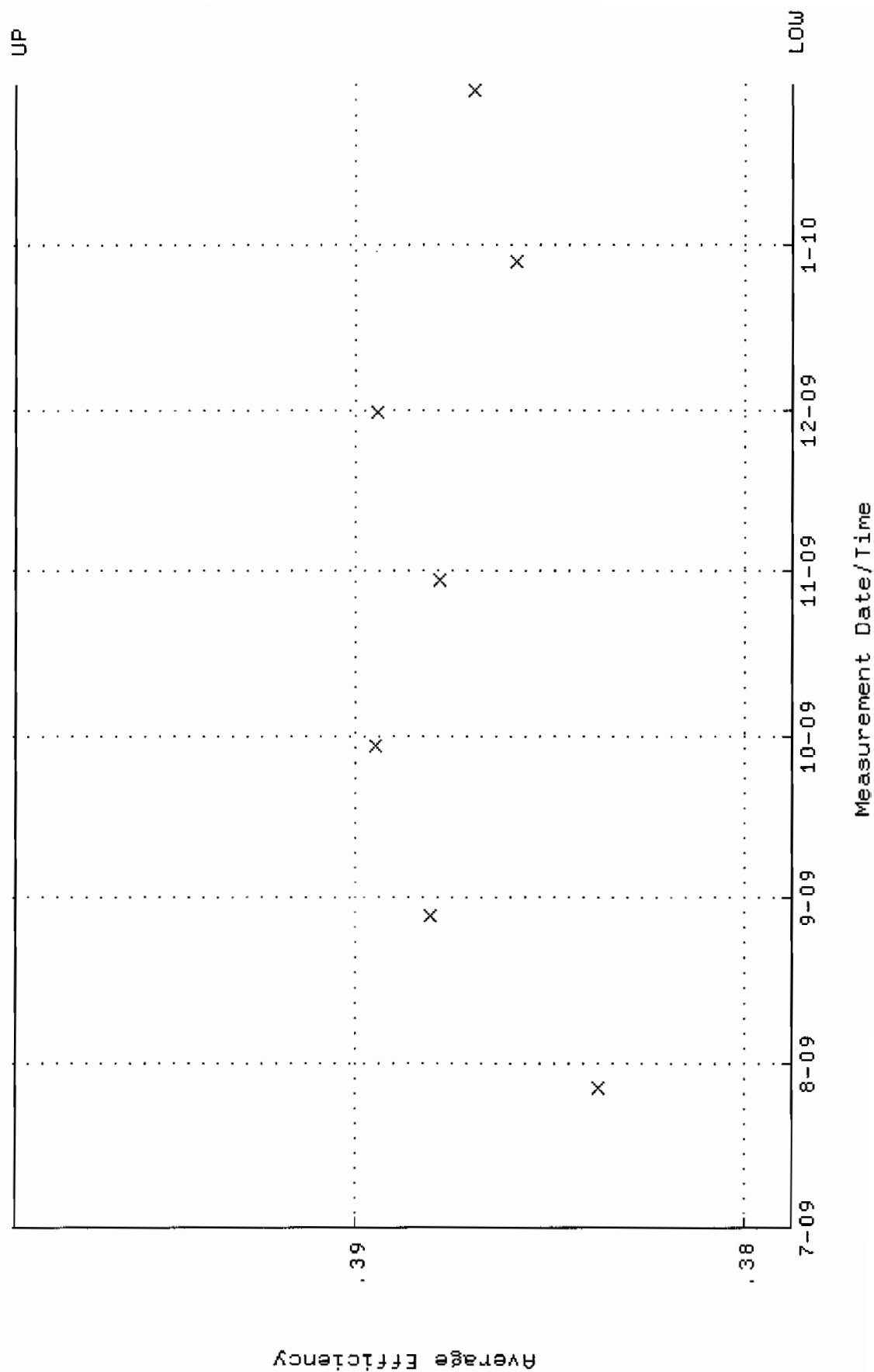




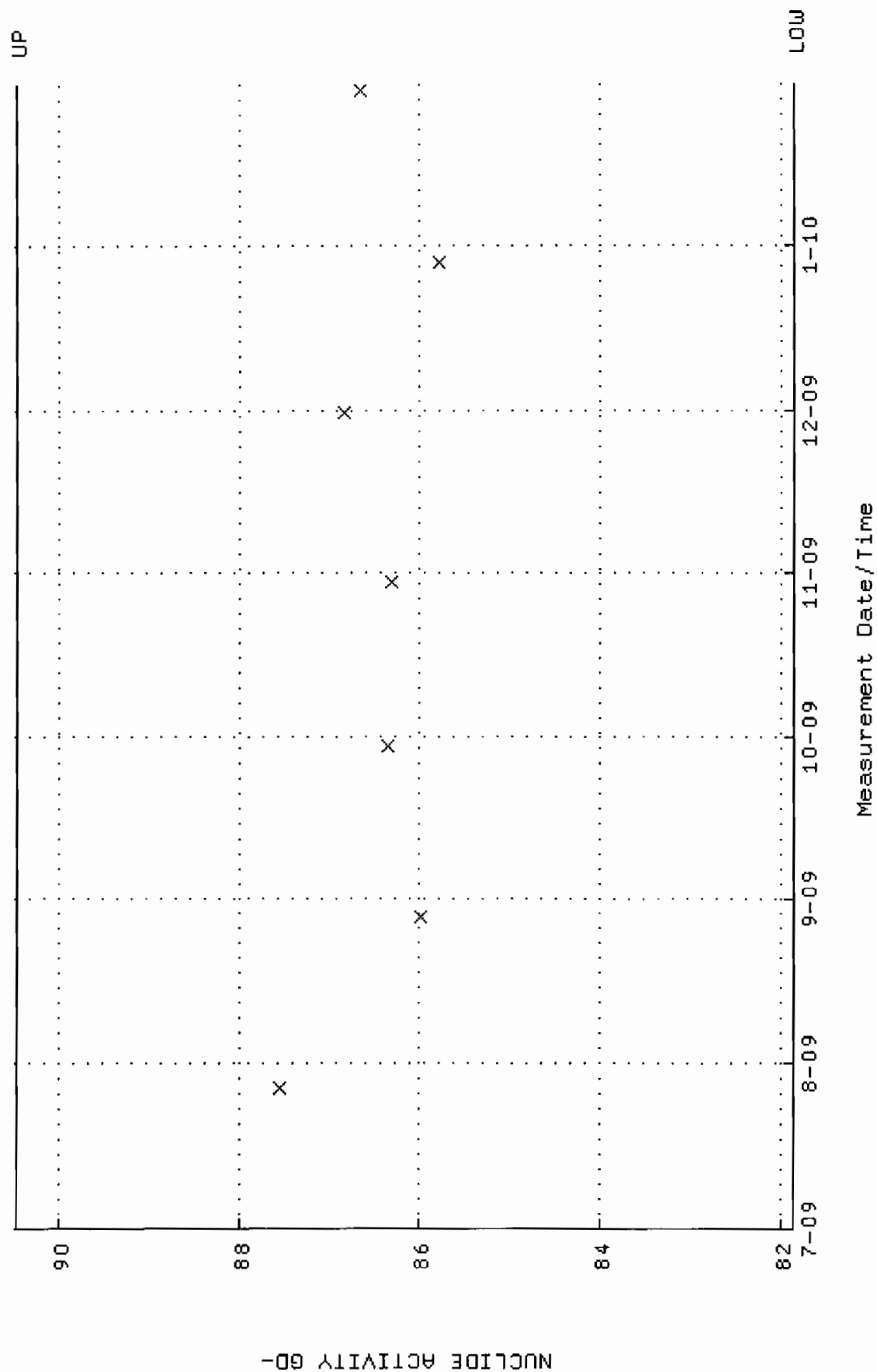
QA filename : DKA100:[ENV\_ALPHA.QA.B]B235.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:20 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



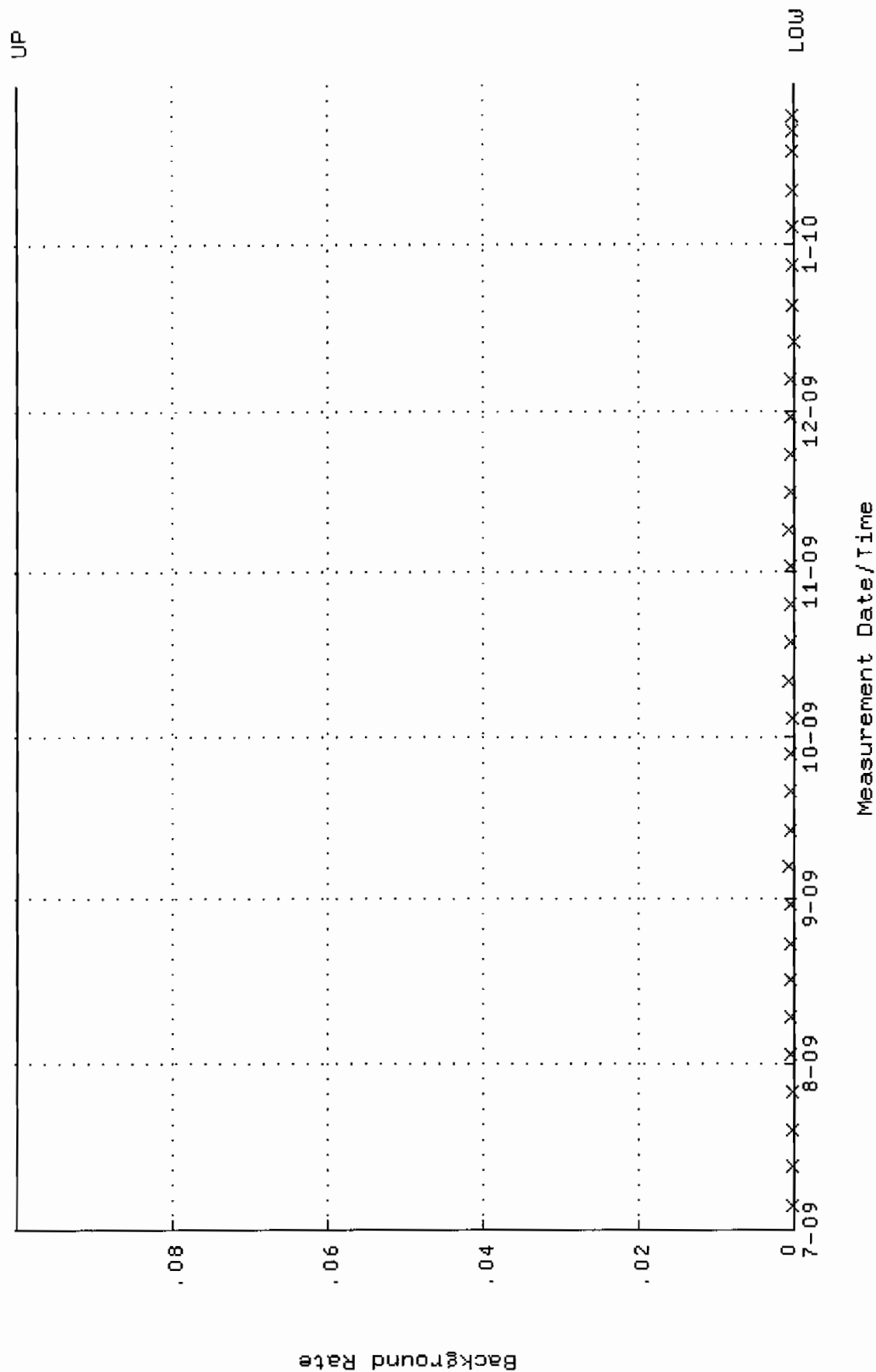
QA filename : DKA100:[ENV\_ALPHA.QA.W]W236.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:07 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.378766 through 0.398766



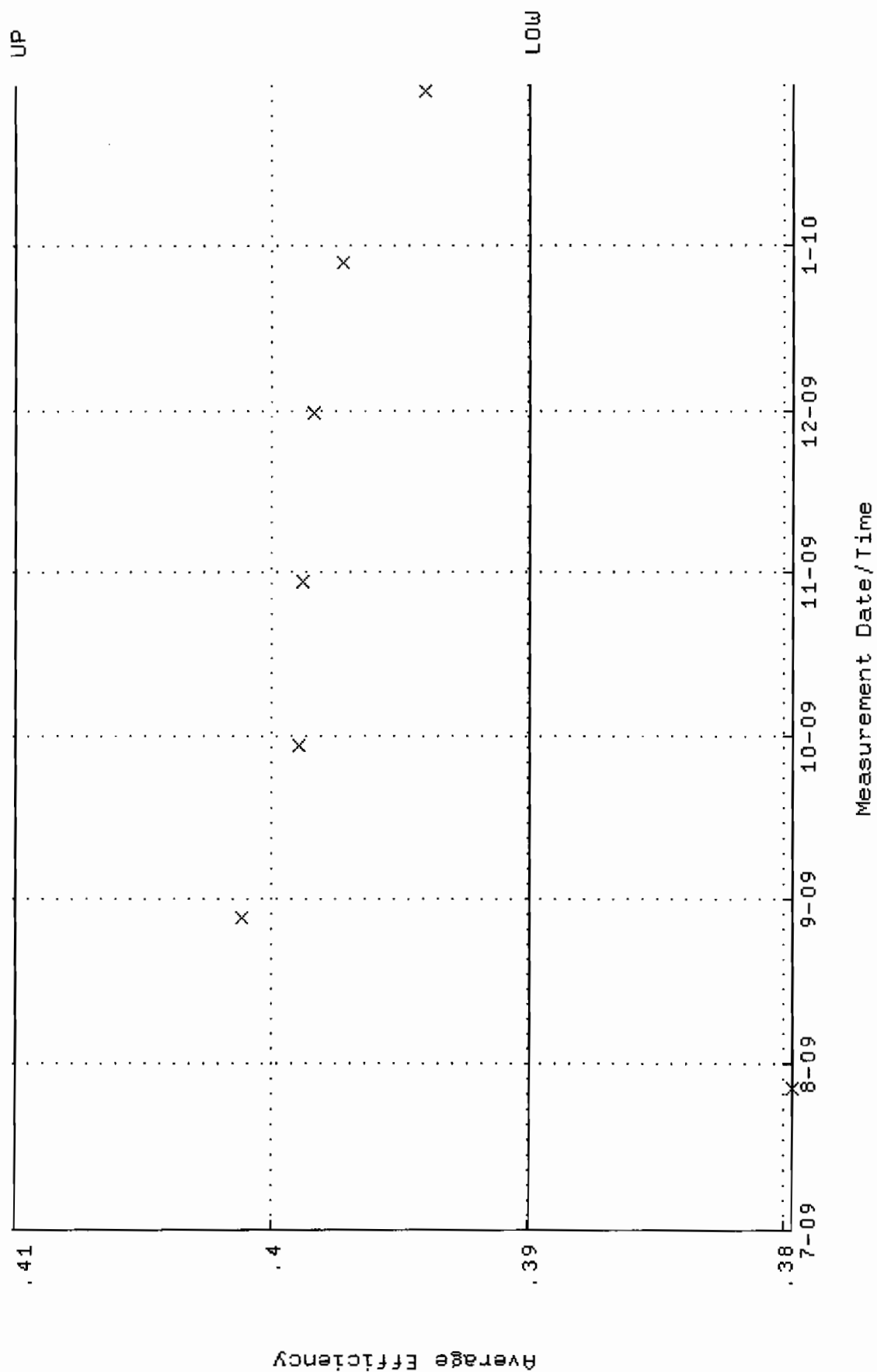
QA filename : DKA100:[ENV\_ALPHA.QA.W]W236.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:07 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 81.8490 through 90.4646



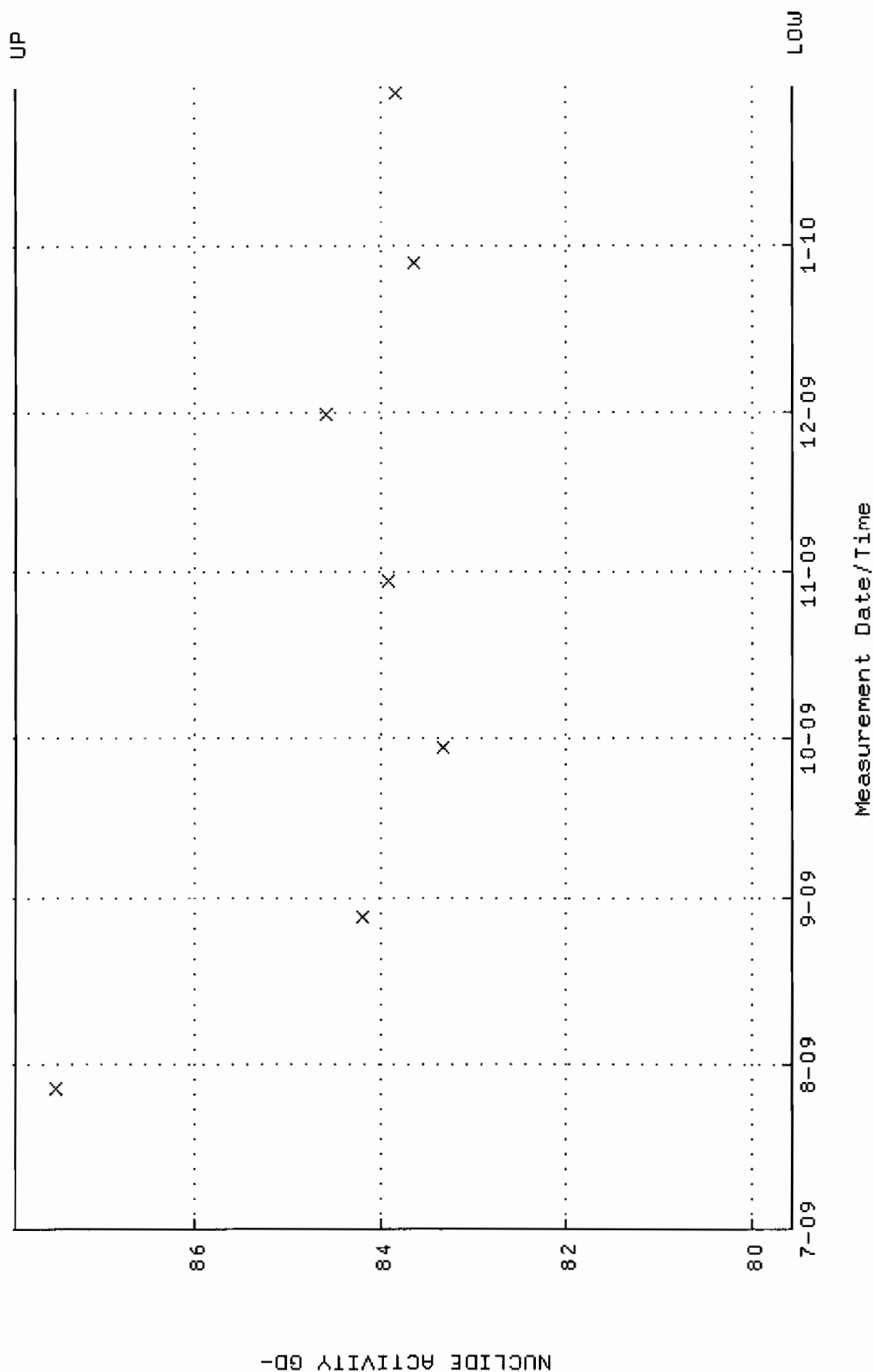
QA filename : DKA100:[ENV\_ALPHA.QA.B]B236.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:24 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



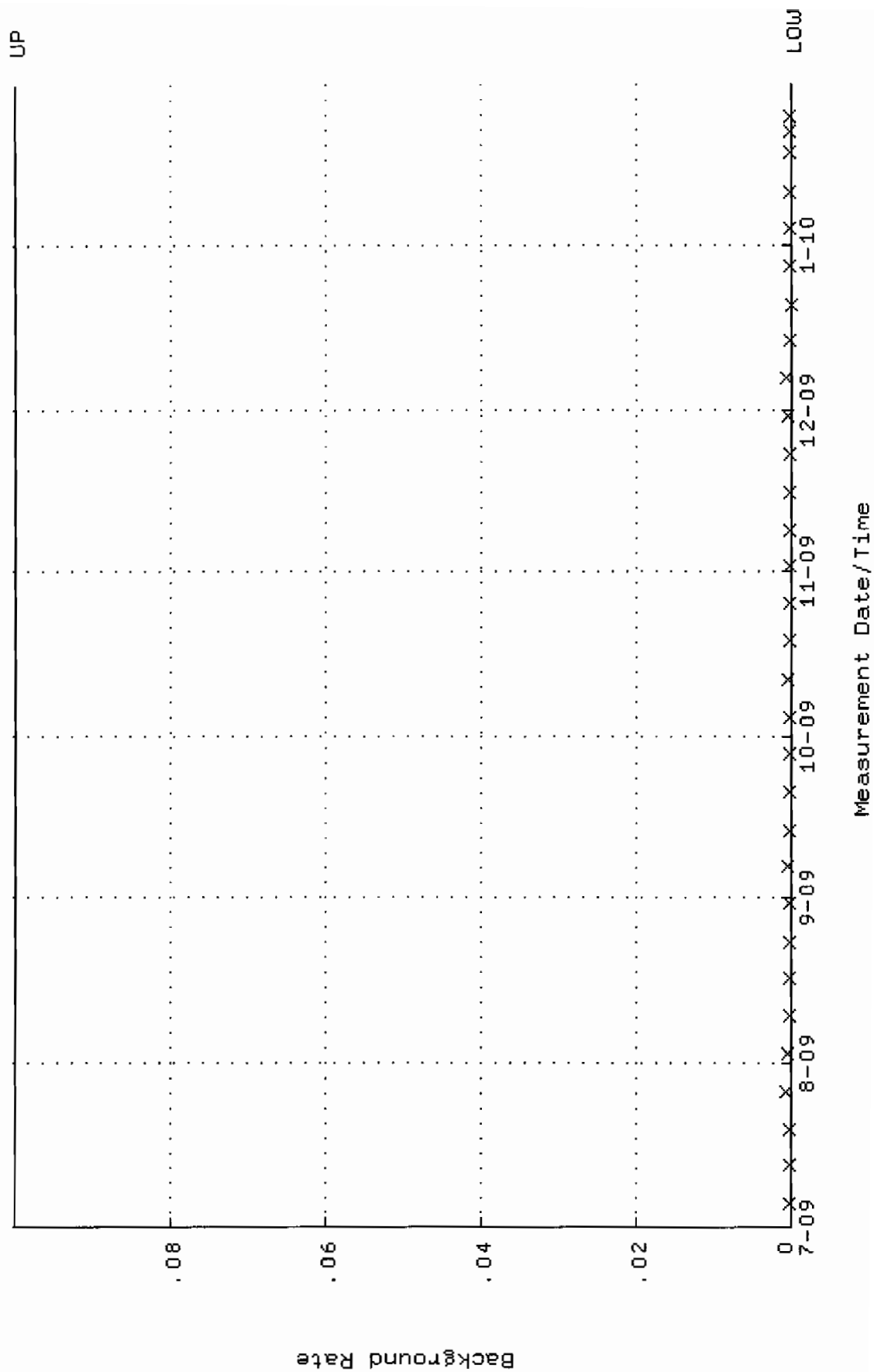
QA filename : DKA100:[ENV\_ALPHA.QA.W]W237.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:14 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.390000 through 0.410000



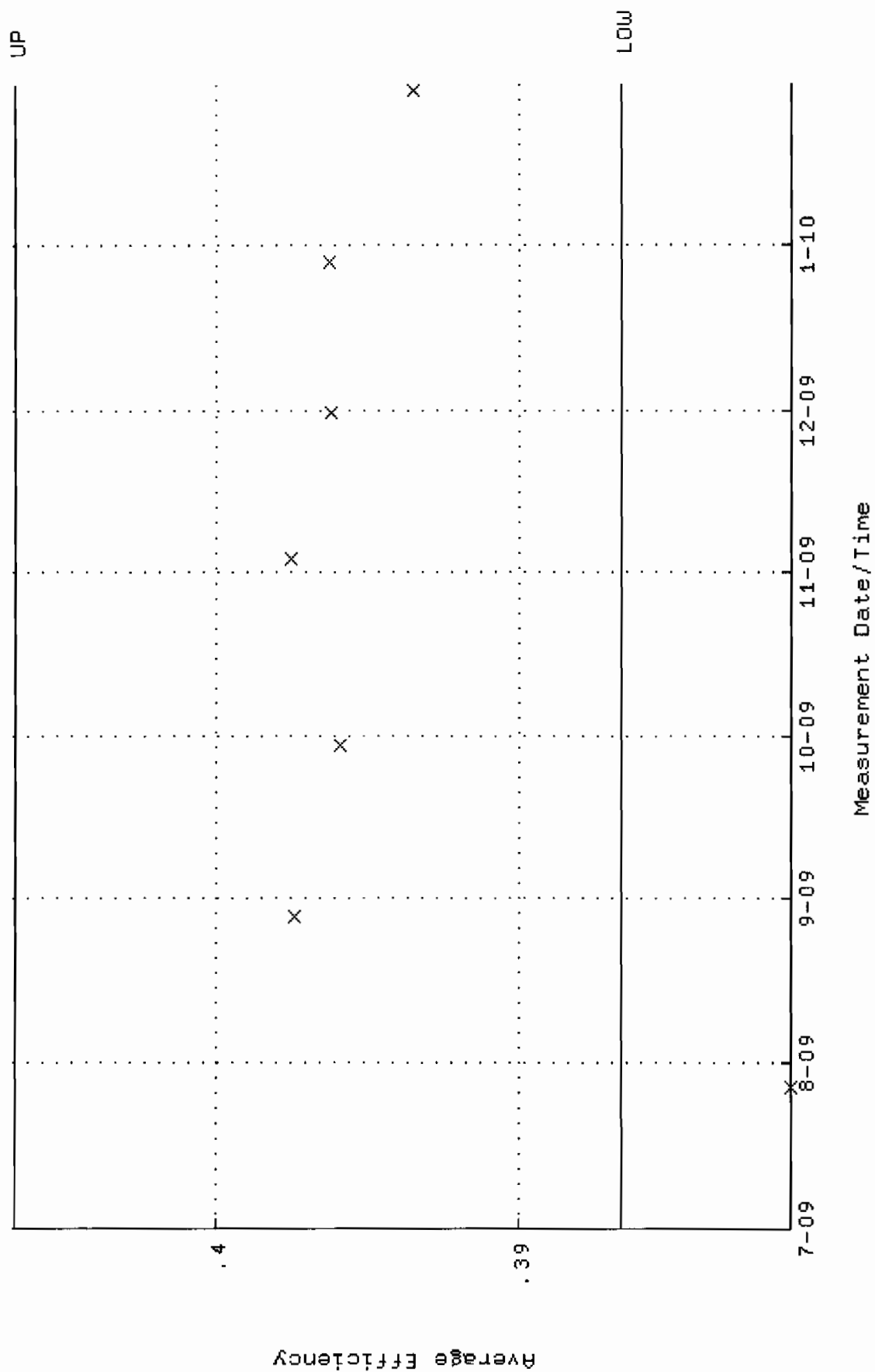
QA filename : DKA100:[ENV\_ALPHA.QA.W]W237.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:14 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 79.5642 through 87.9394



QA filename : DKA100:[ENV\_ALPHA.QA.B]B237.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:29 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

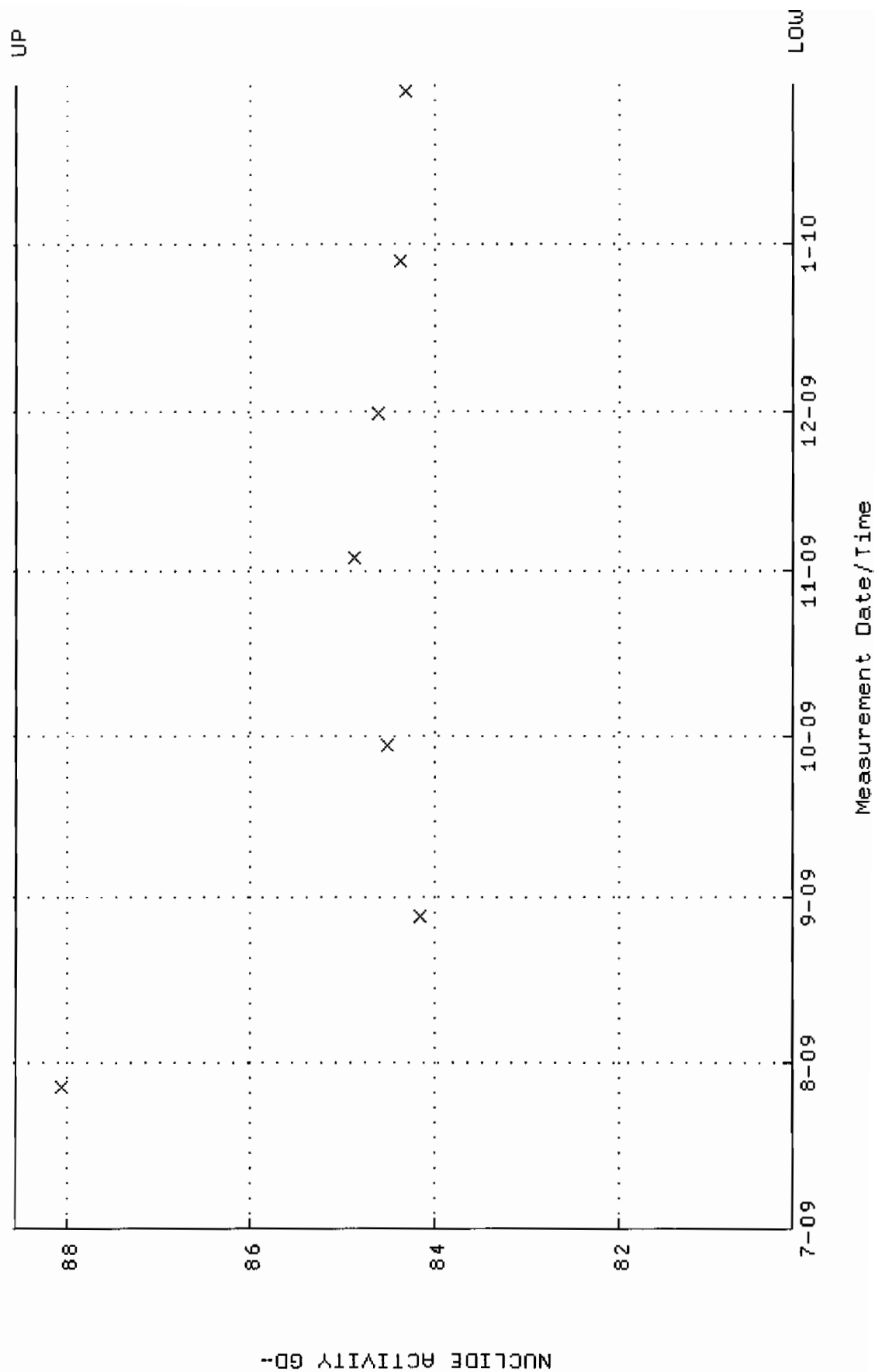


QA filename : DKA100:[ENV\_ALPHA.QA.W]W238.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:20 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.386660 through 0.406660

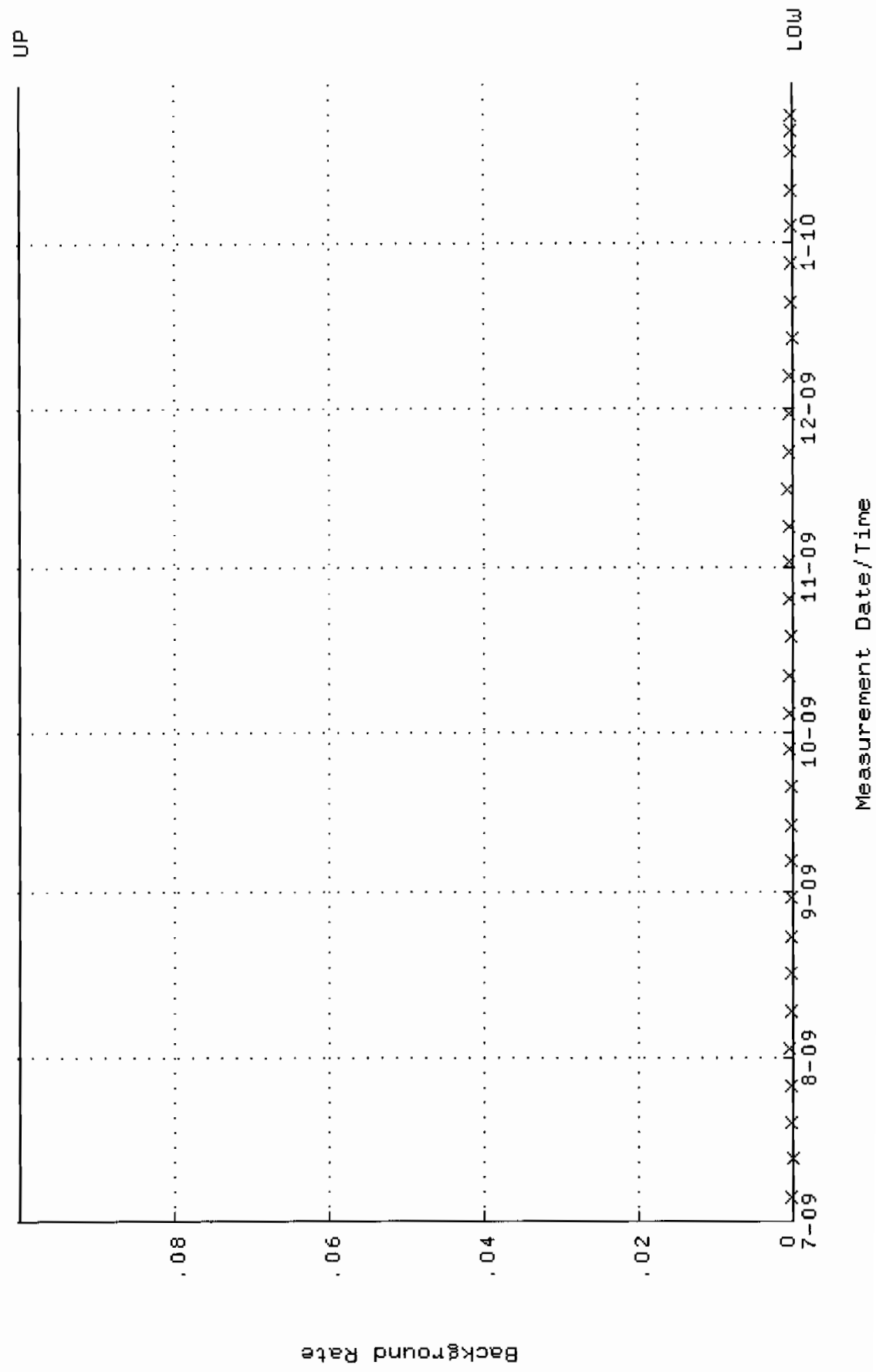




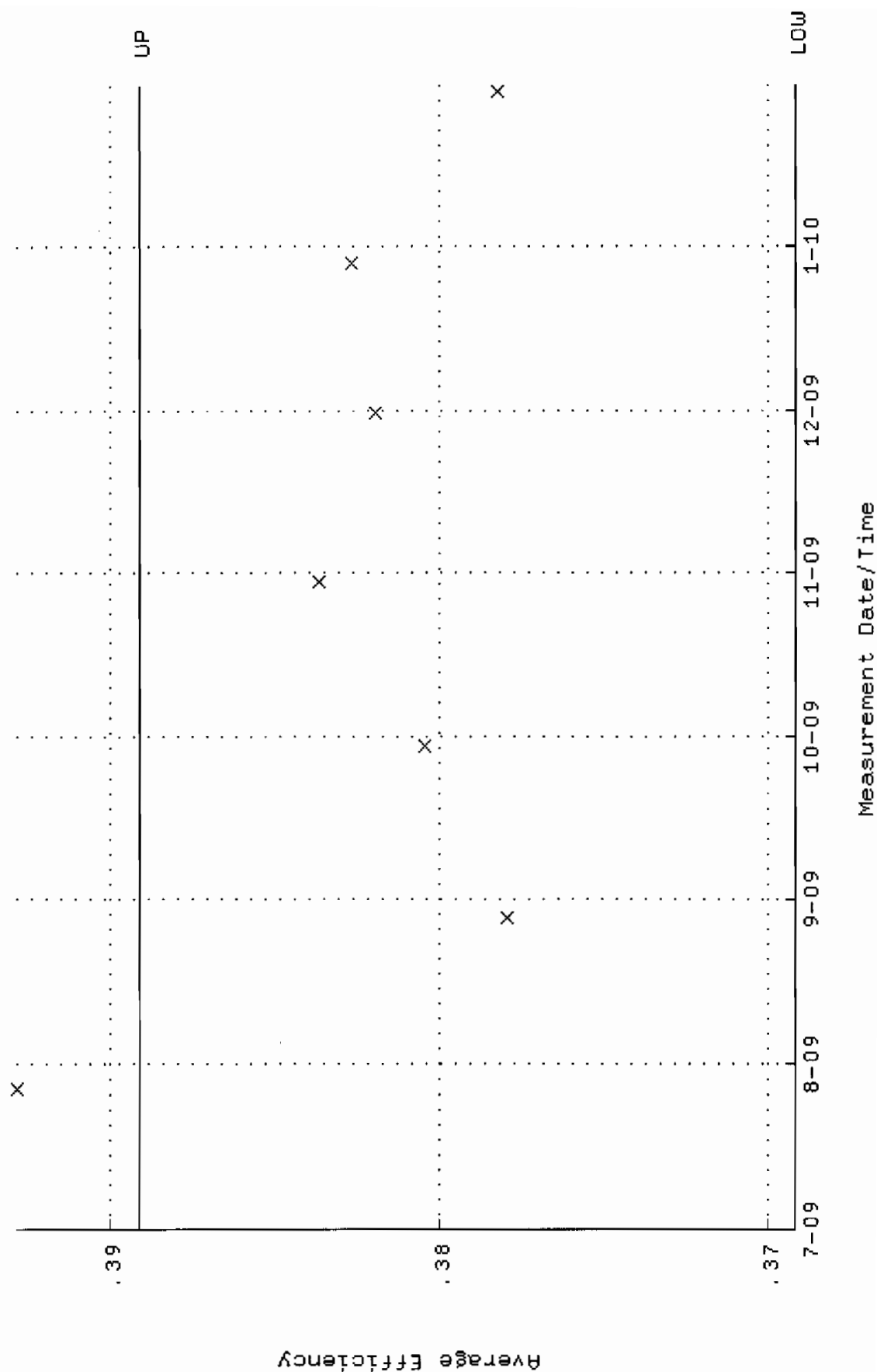
QA filename : DKA100:[ENV\_ALPHA.QA.W]W238.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:20 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 80.1146 through 88.5478



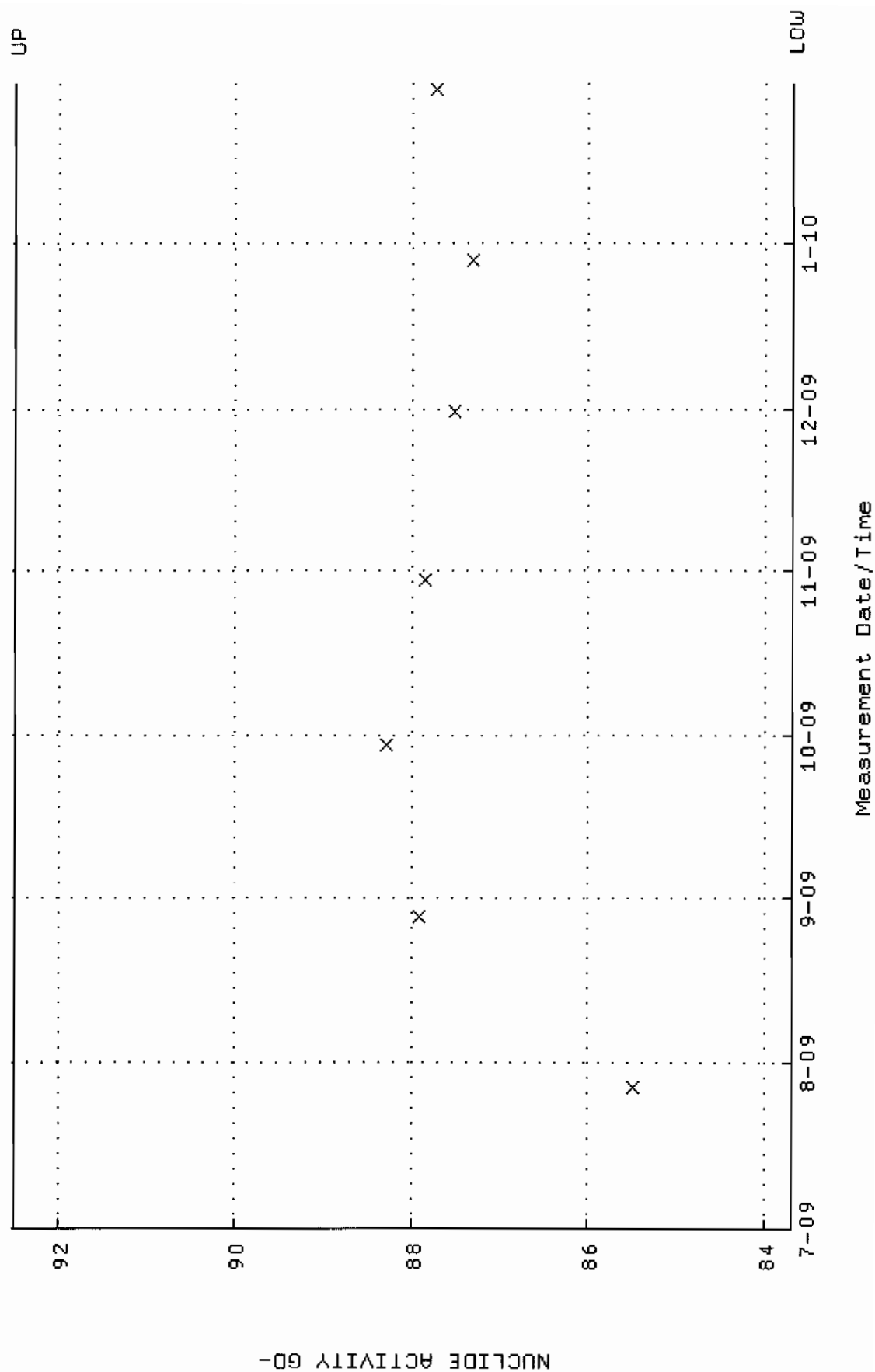
QA filename : DKA100:[ENV\_ALPHA,QA,B]B238.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:34 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



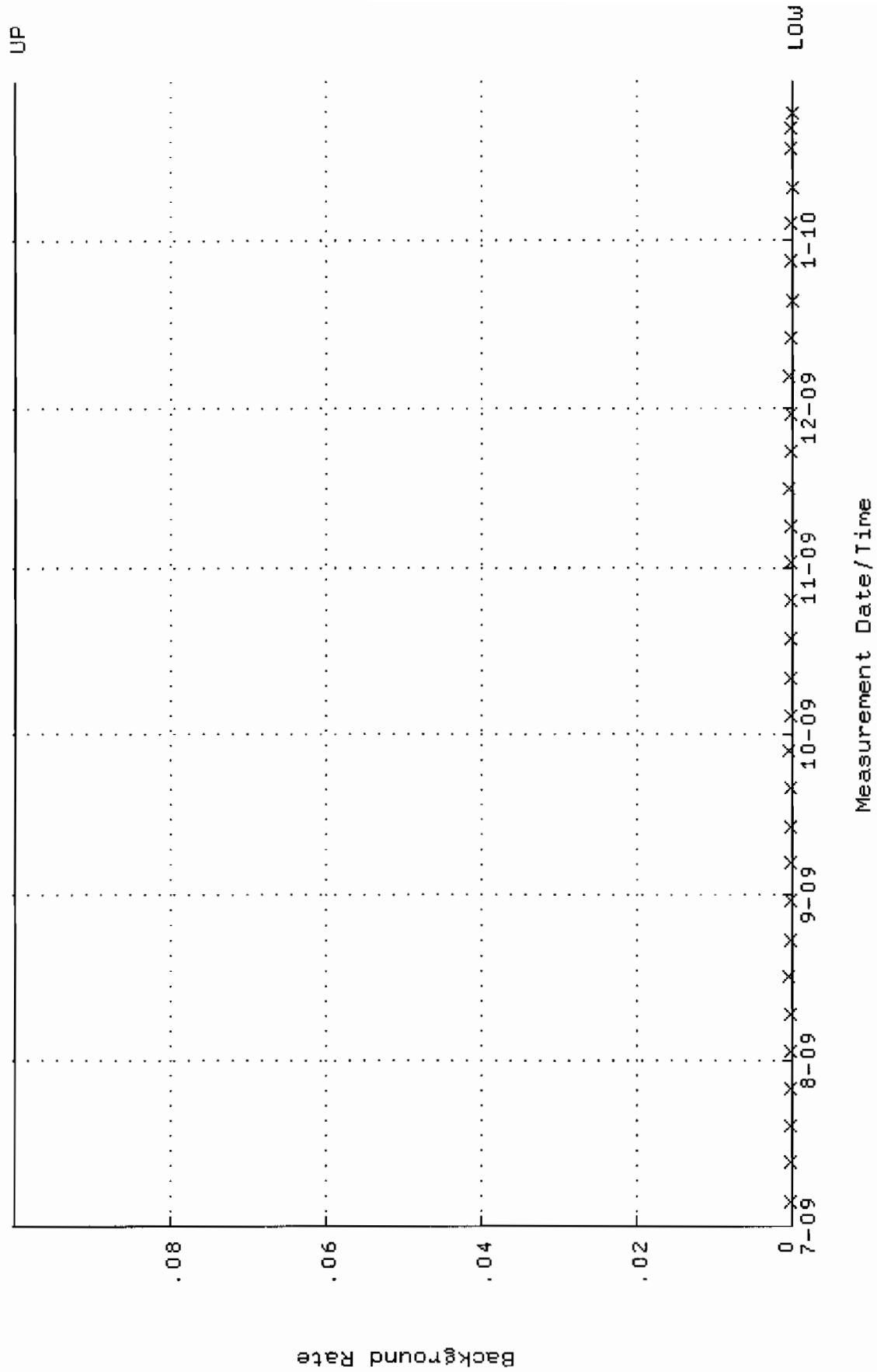
QA filename : DKA100:[ENV\_ALPHA.QA.W]W239.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:26 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.369142 through 0.389142



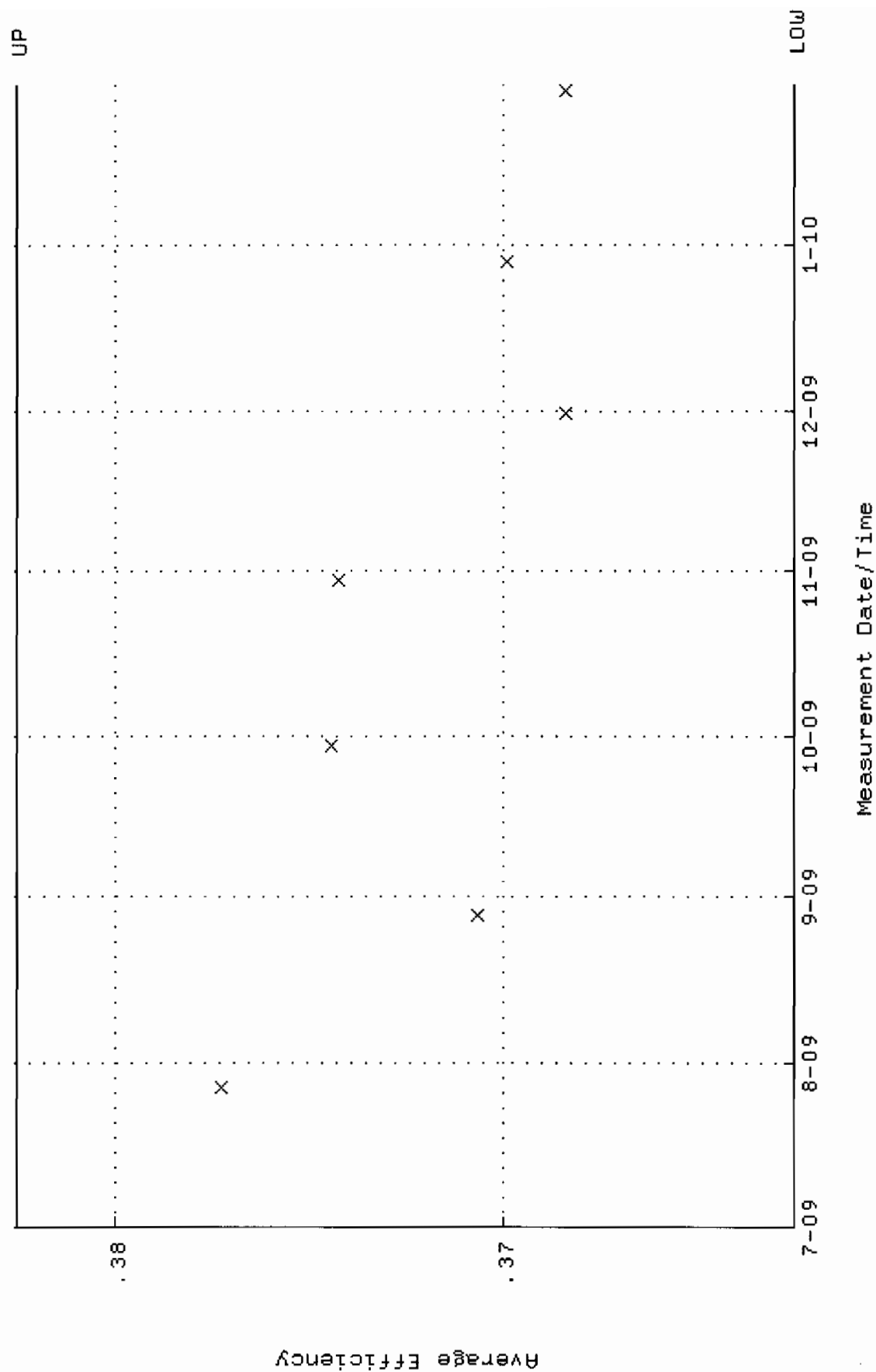
QA filename : DKA100:[ENV\_ALPHA.QA.W]W239.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:26 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.6848 through 92.4938



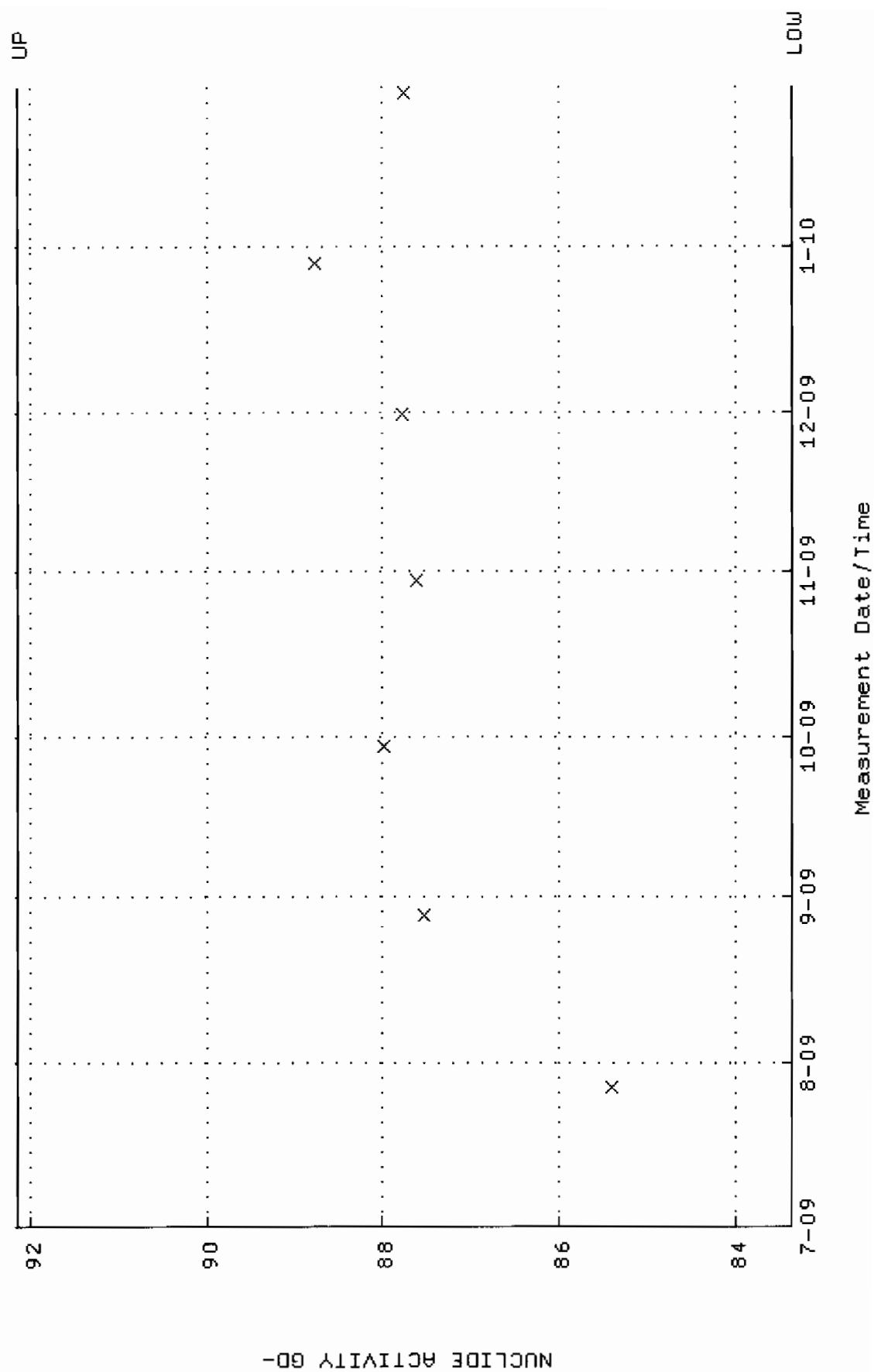
QA filename : DKA100:[ENV\_ALPHA.QA.B]B239.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:39 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



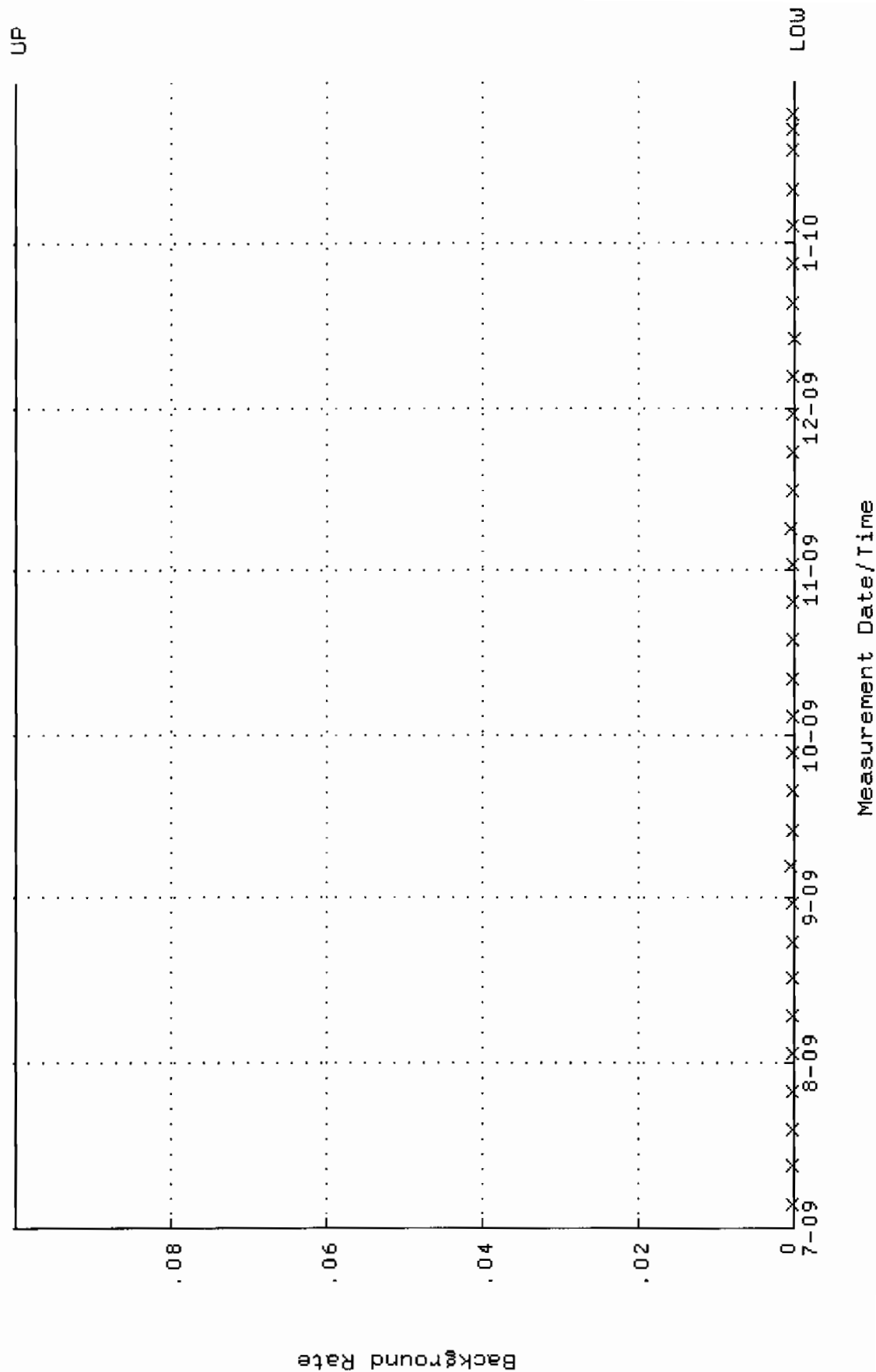
QA filename : DKA100:[ENV\_ALPHA.QA.W]W240.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:32 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.362523 through 0.382523



QA filename : DKA100:[ENV\_ALPHA.QA.W]W240.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:32 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.3638 through 92.1390

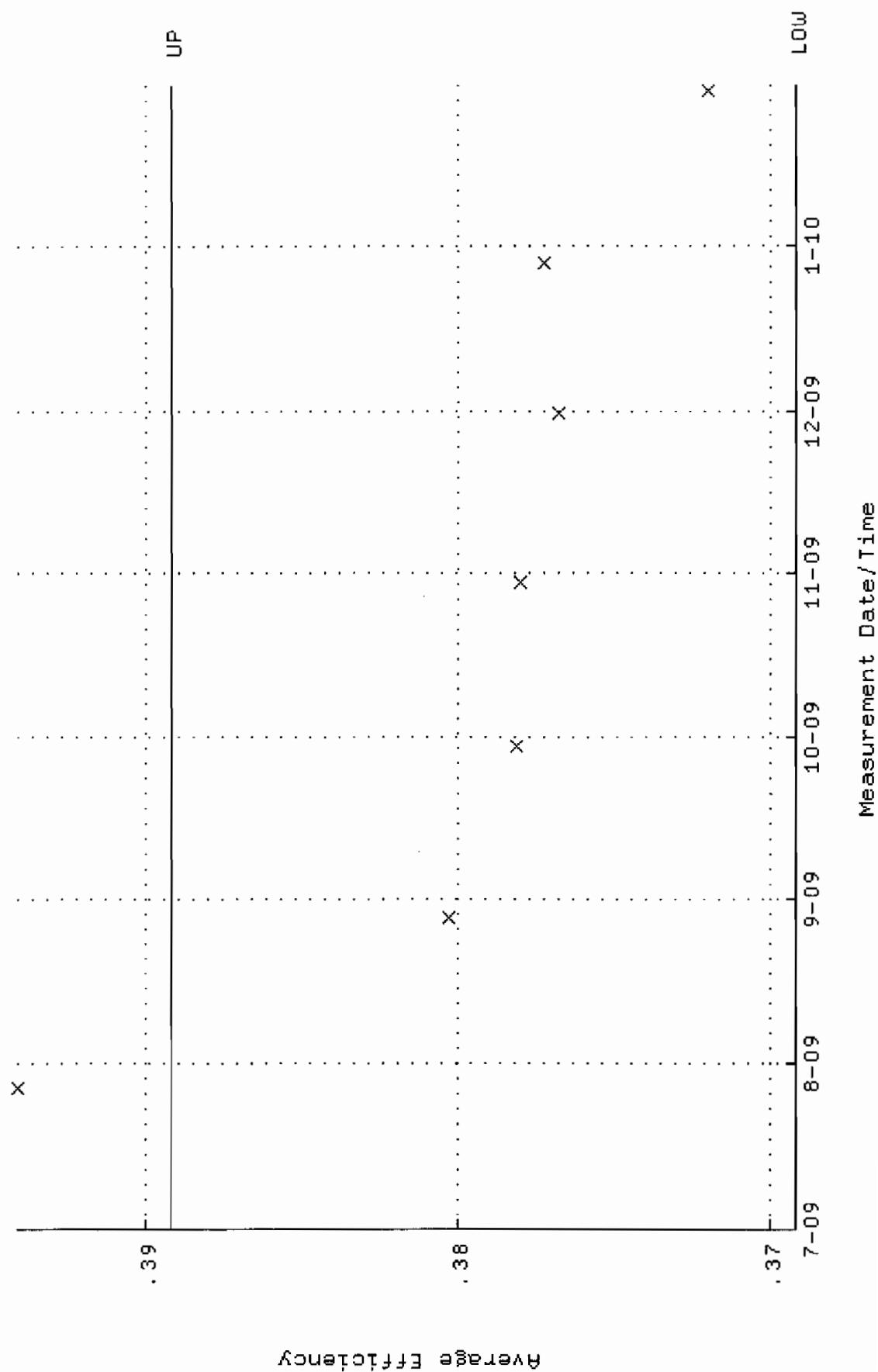


QA filename : DKA100:[ENV\_ALPHA.QA.B]B240.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:43 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

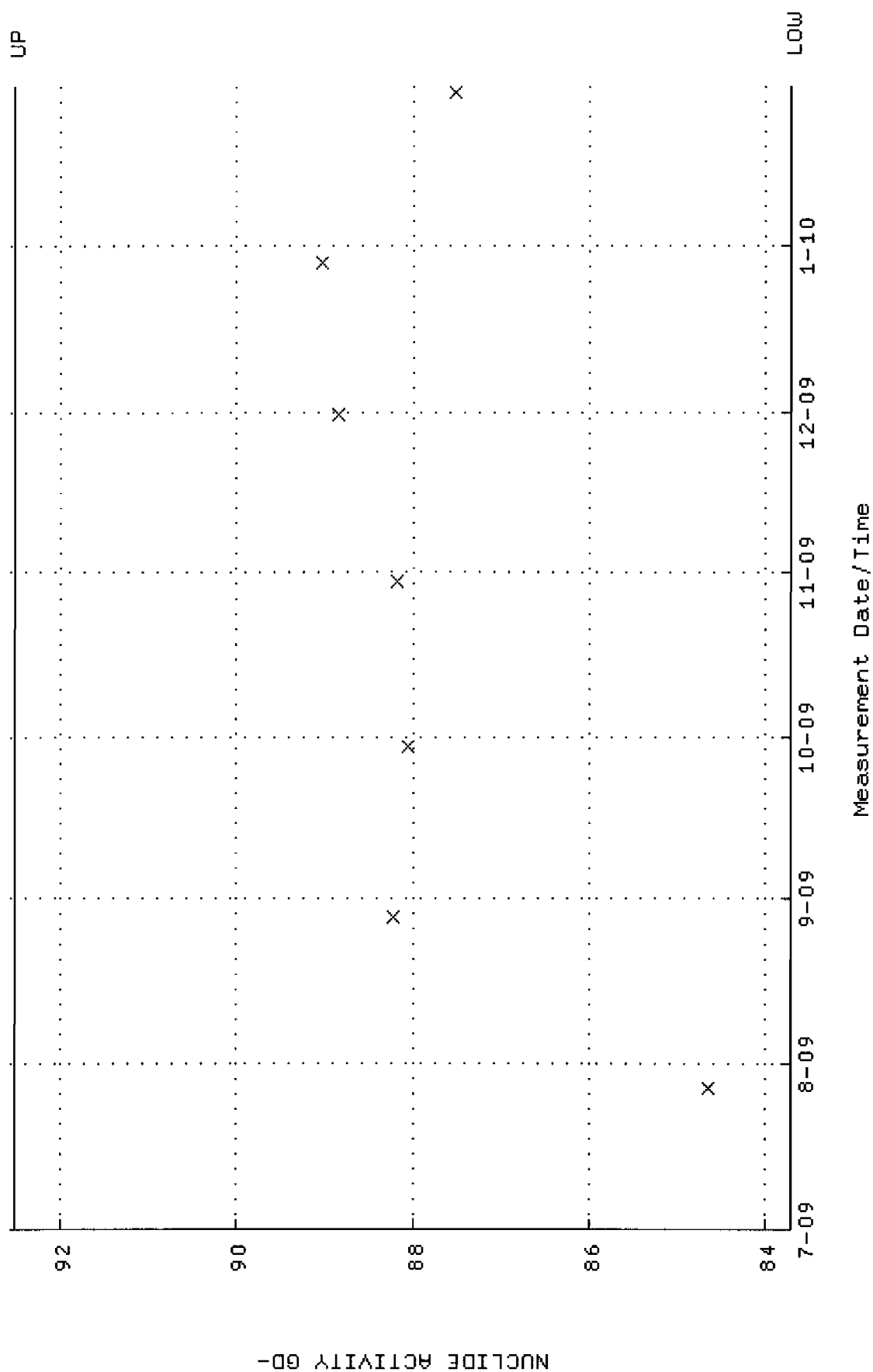




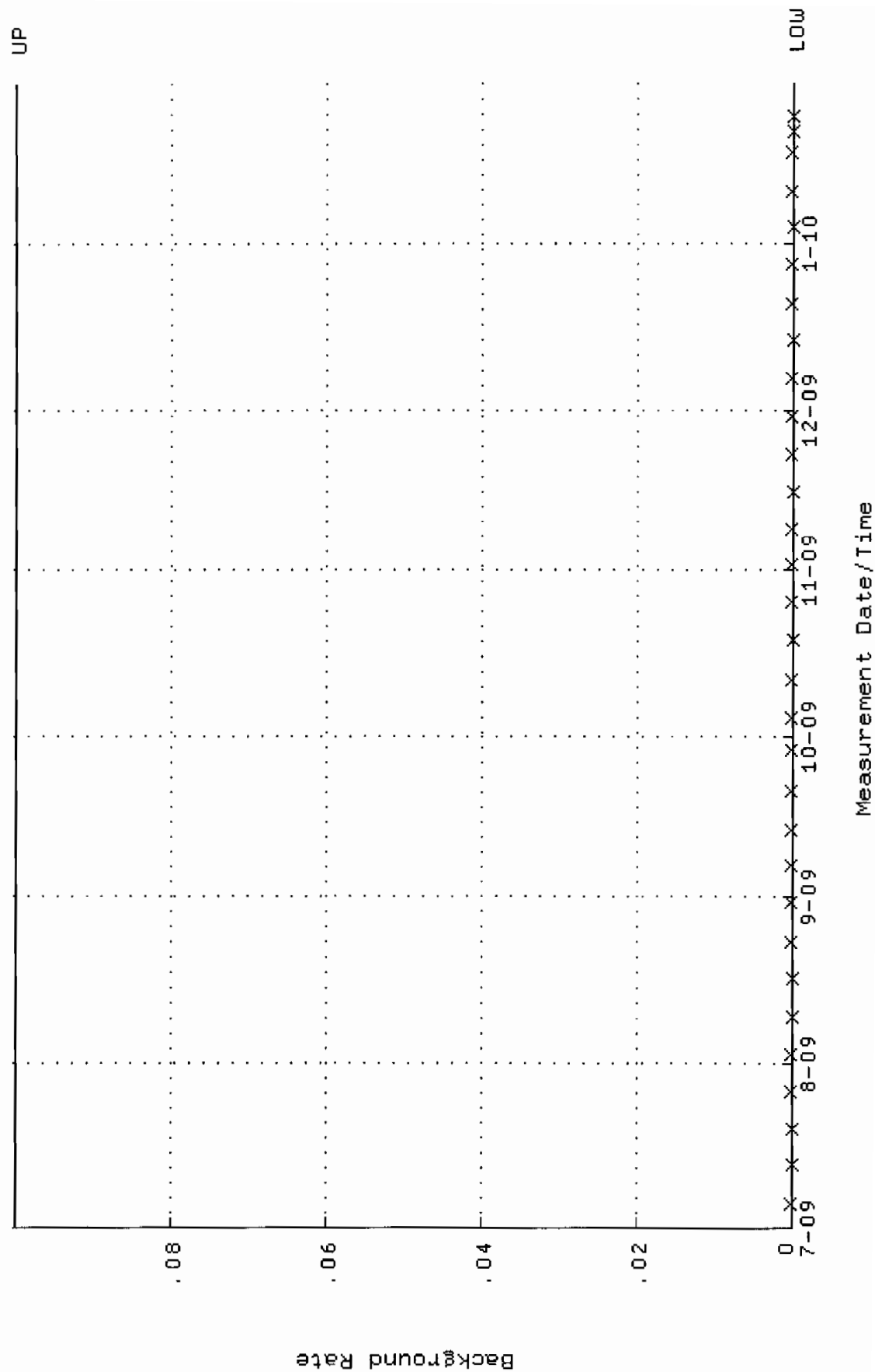
QA filename : DKA100:[ENV\_ALPHA.QA.W]W241.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:38 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.369174 through 0.389174



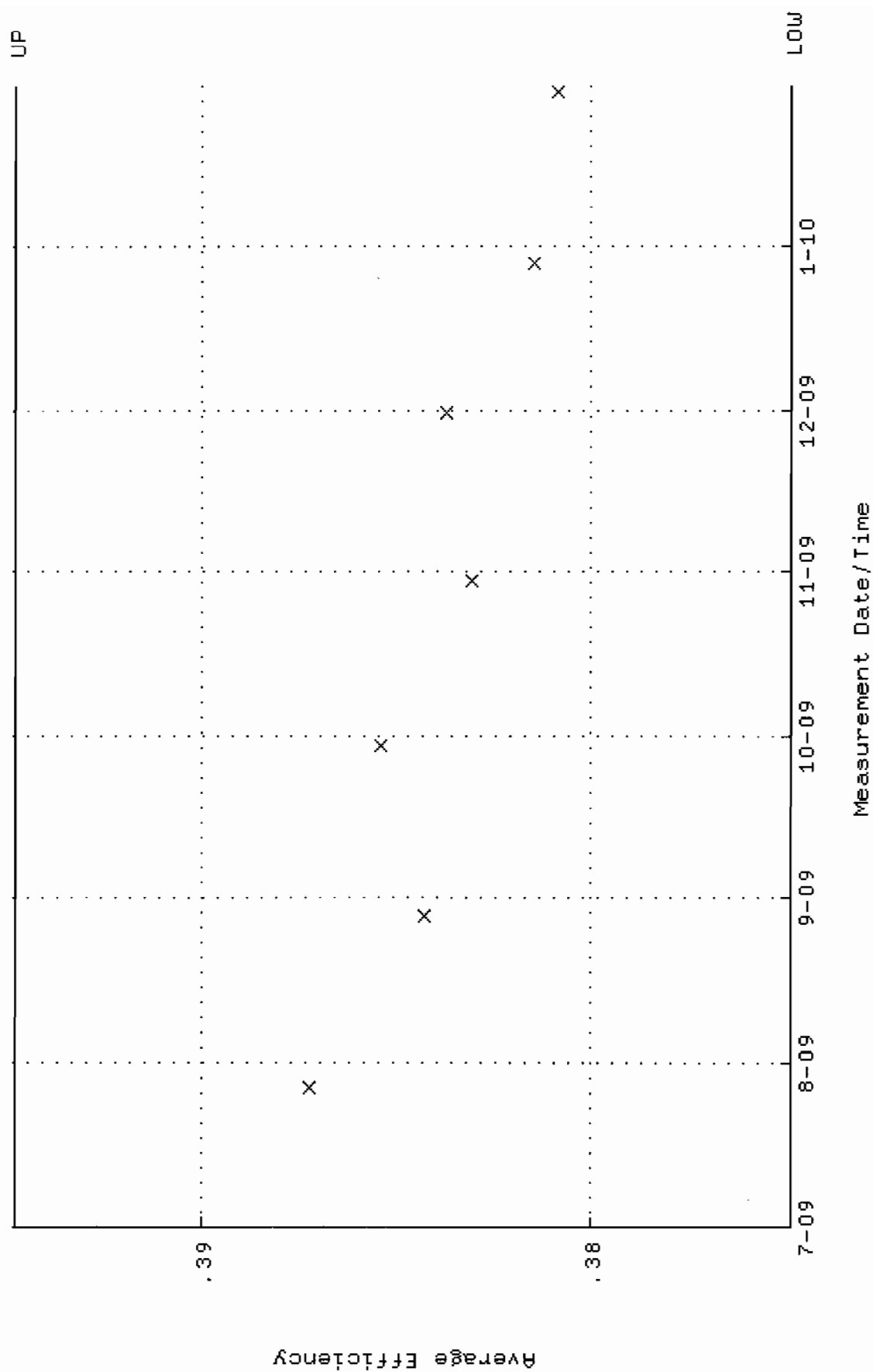
QA filename : DKA100:[ENV\_ALPHA.QA.W]W241.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:38 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.7197 through 92.5323



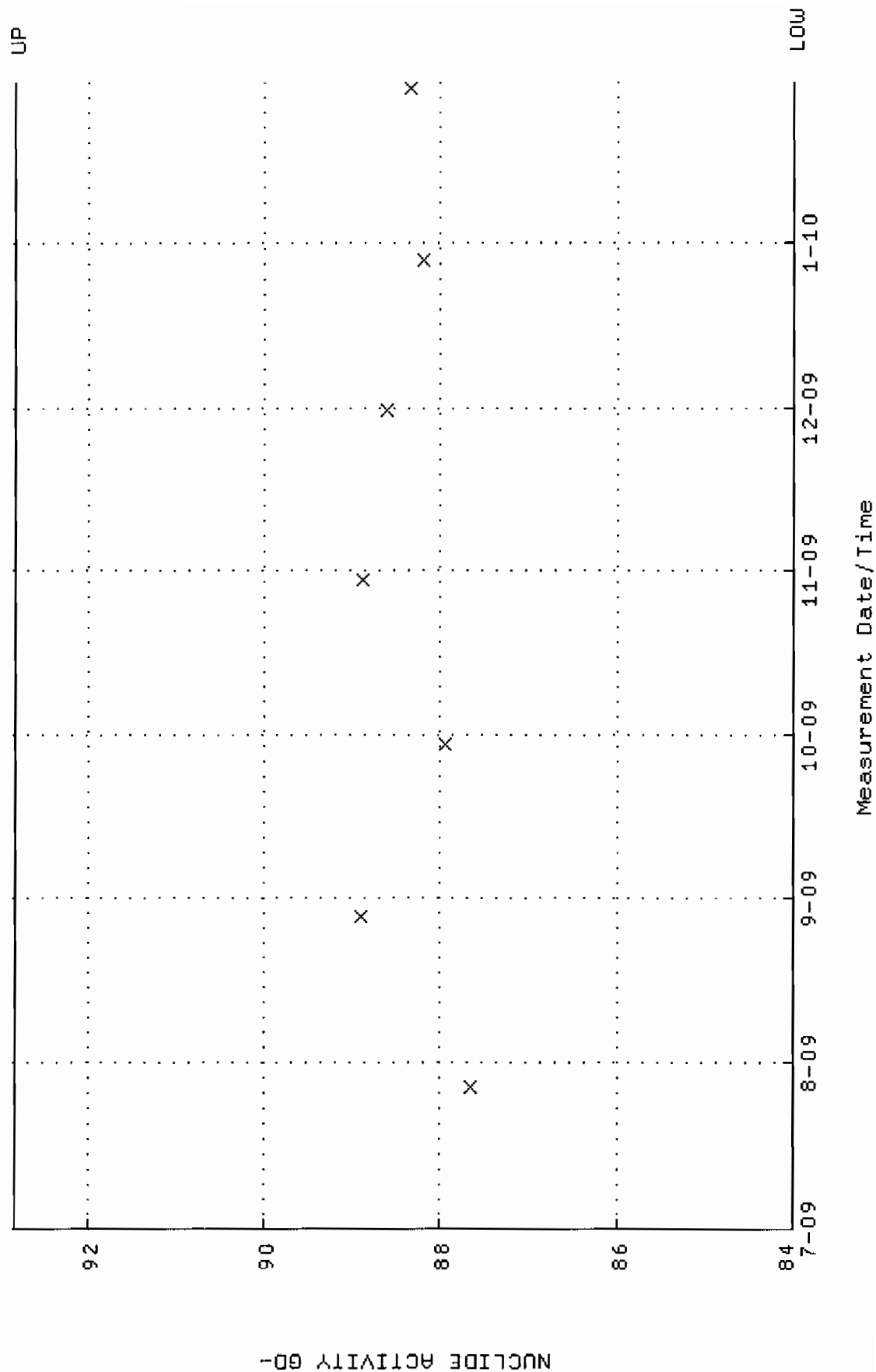
QA filename : DKA100:[ENV\_ALPHA.QA.B]B241.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:48 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



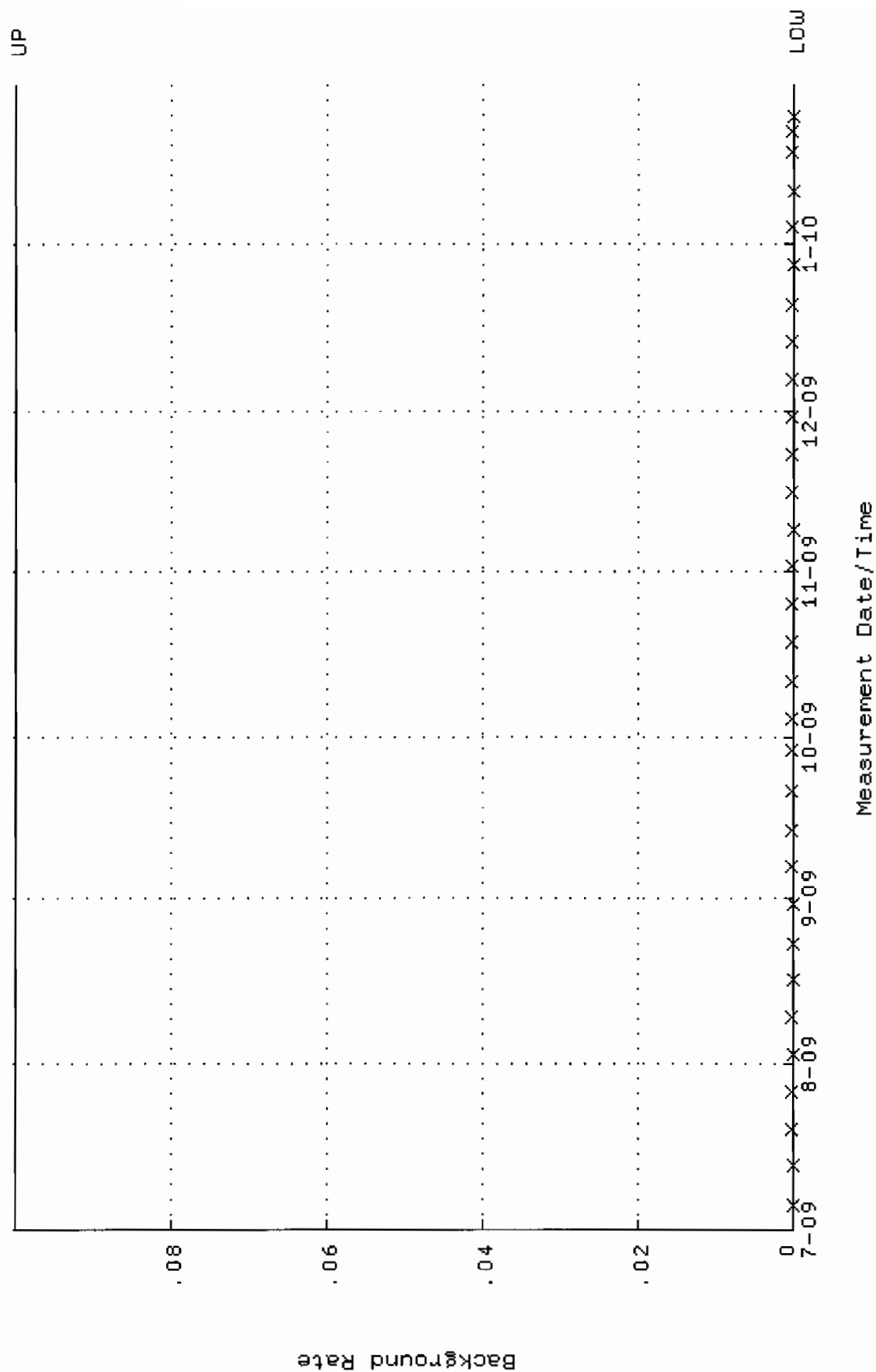
QA filename : DKA100:[ENV\_ALPHA.QA.W]W242.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 27-JUL-2009 11:50:45 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.374815 through 0.394815



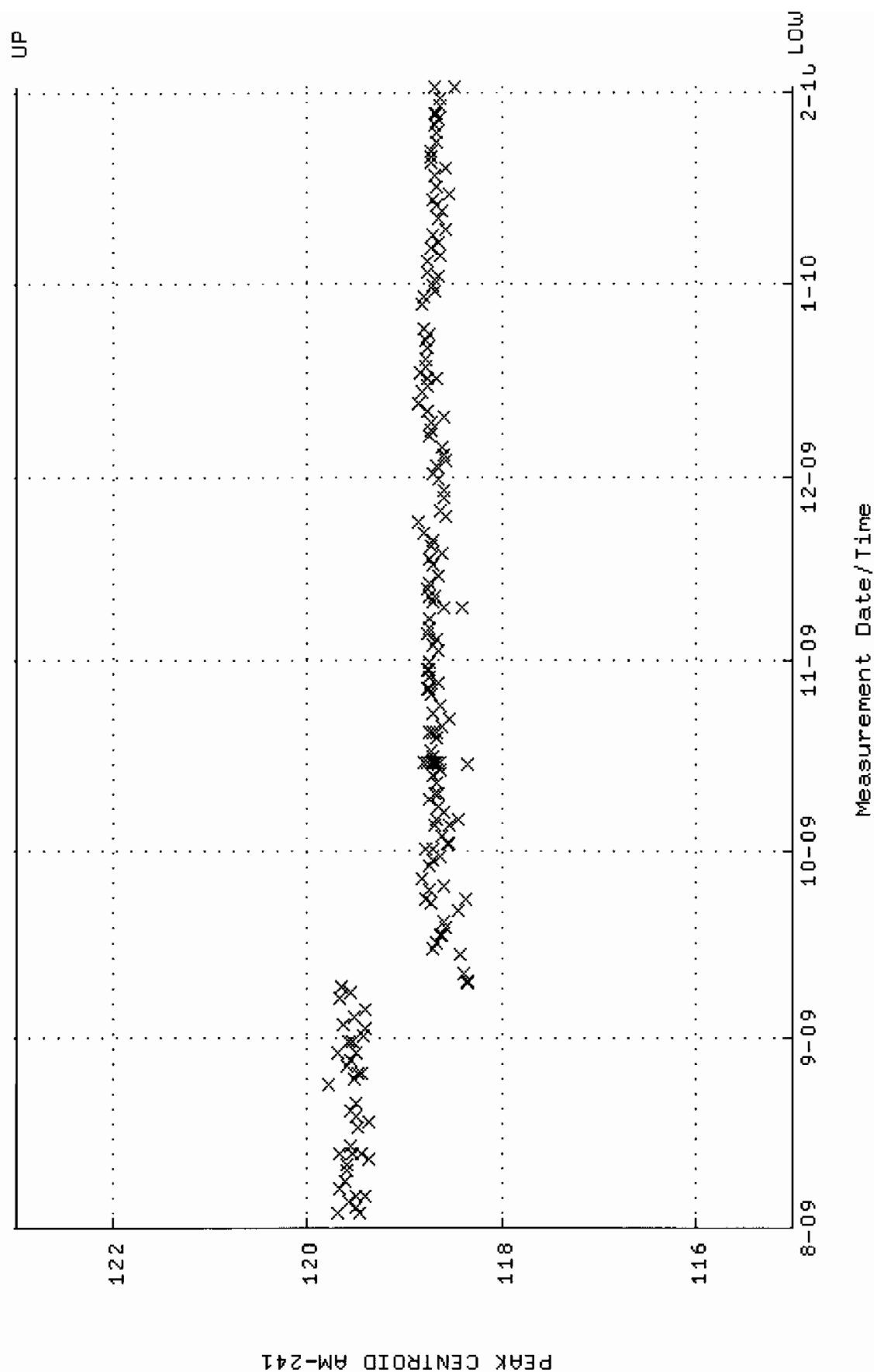
QA filename : DKA100:[ENV\_ALPHA.QA.W]w242.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 27-JUL-2009 11:50:45 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.9949 through 92.8365



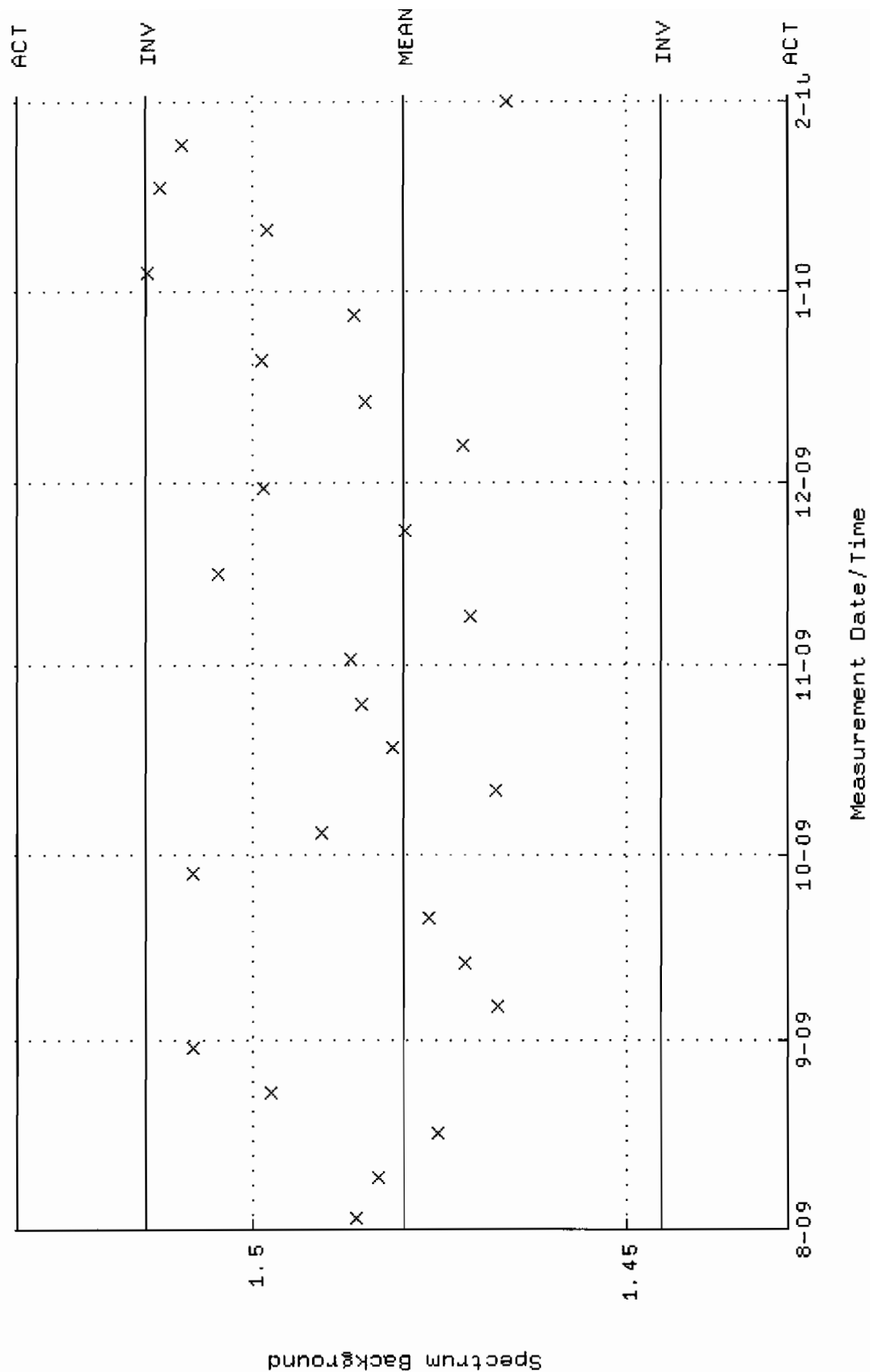
QA filename : DKA100:[ENV\_ALPHA.QA.B]B242.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:05:53 through 30-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM10\_500MLMB.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-AUG-2009 09:36:50 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000

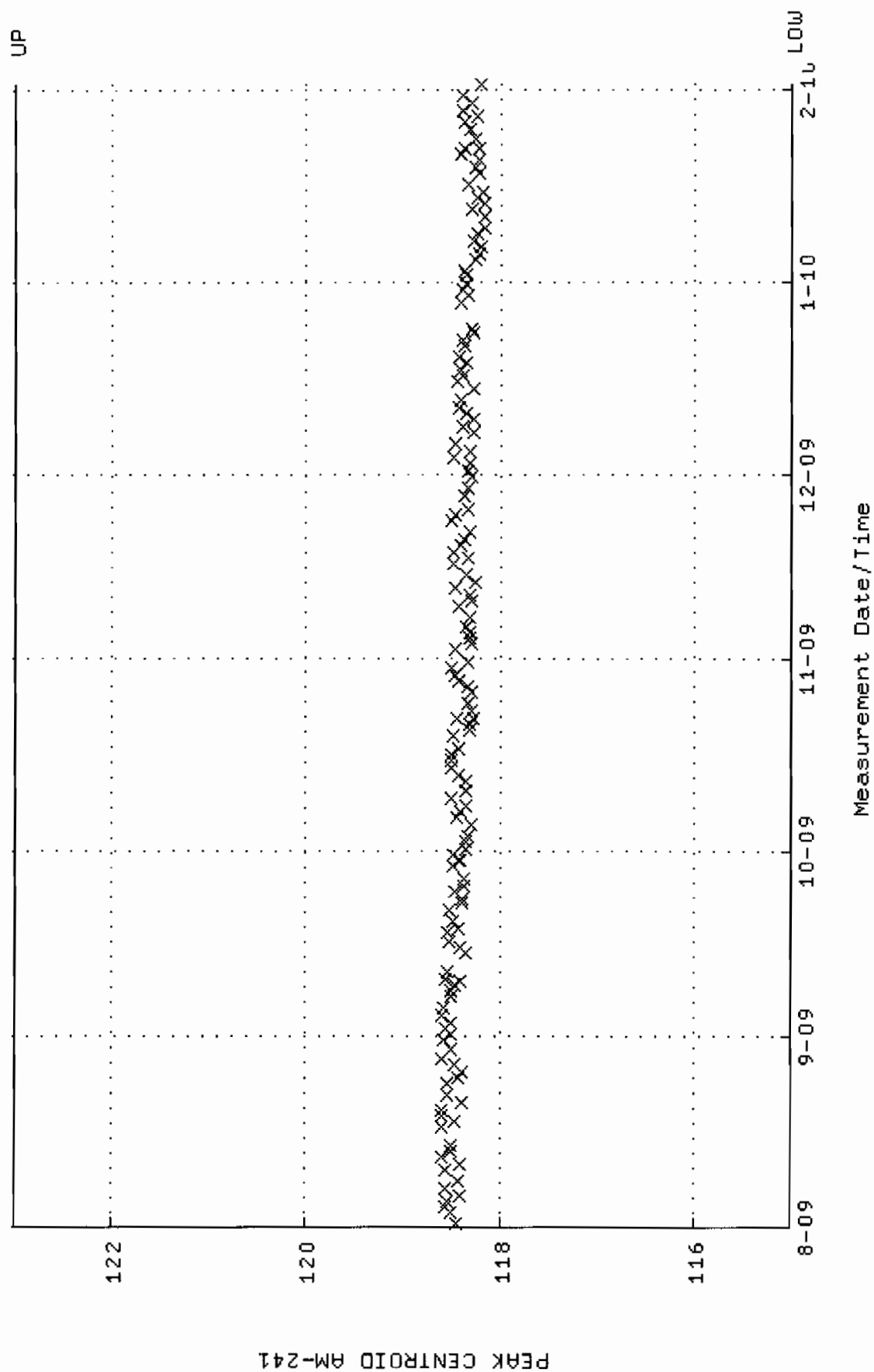


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM10.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:23:43 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.48000 +- 1.723892E-02 (1.16 %)

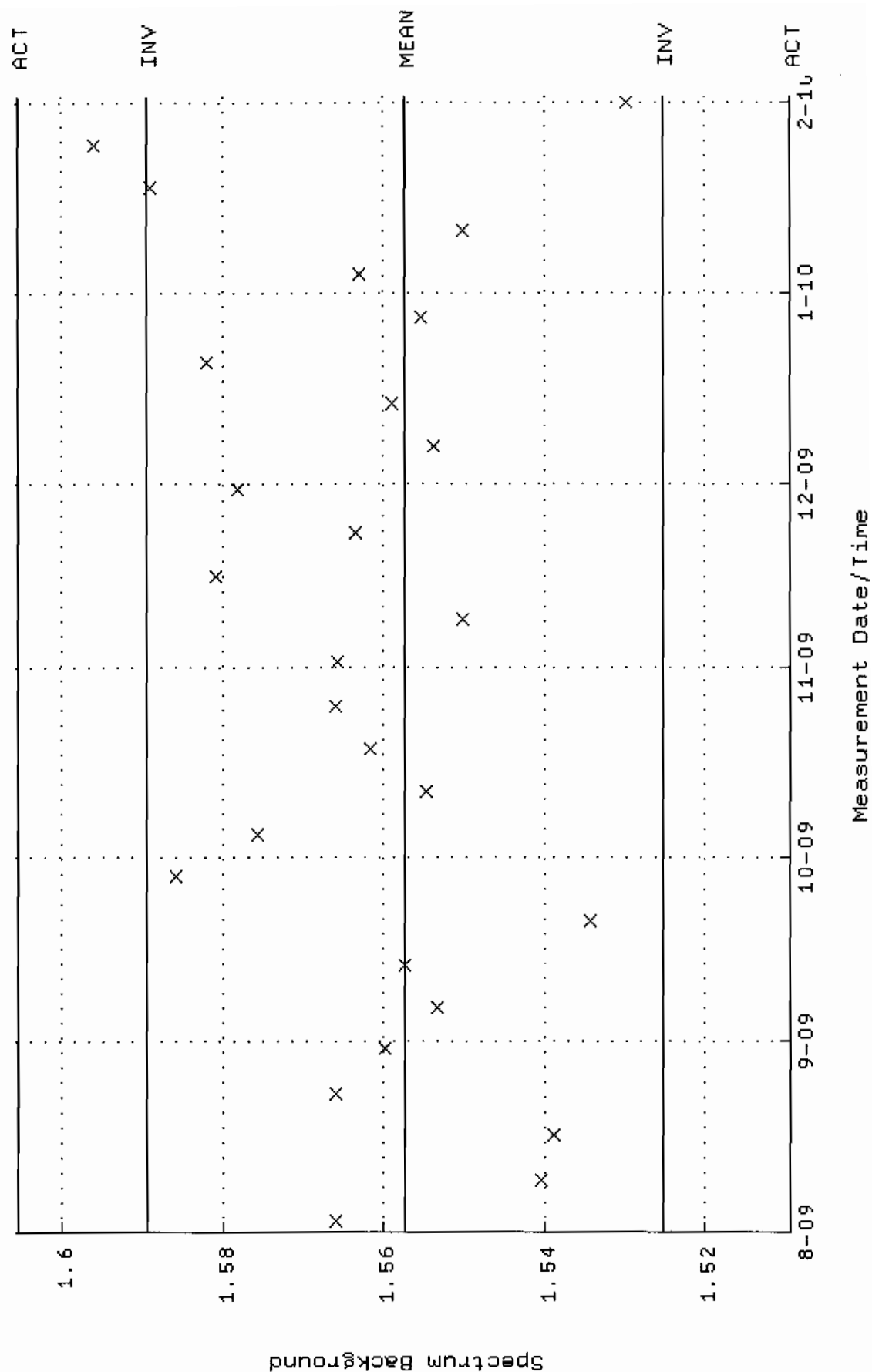




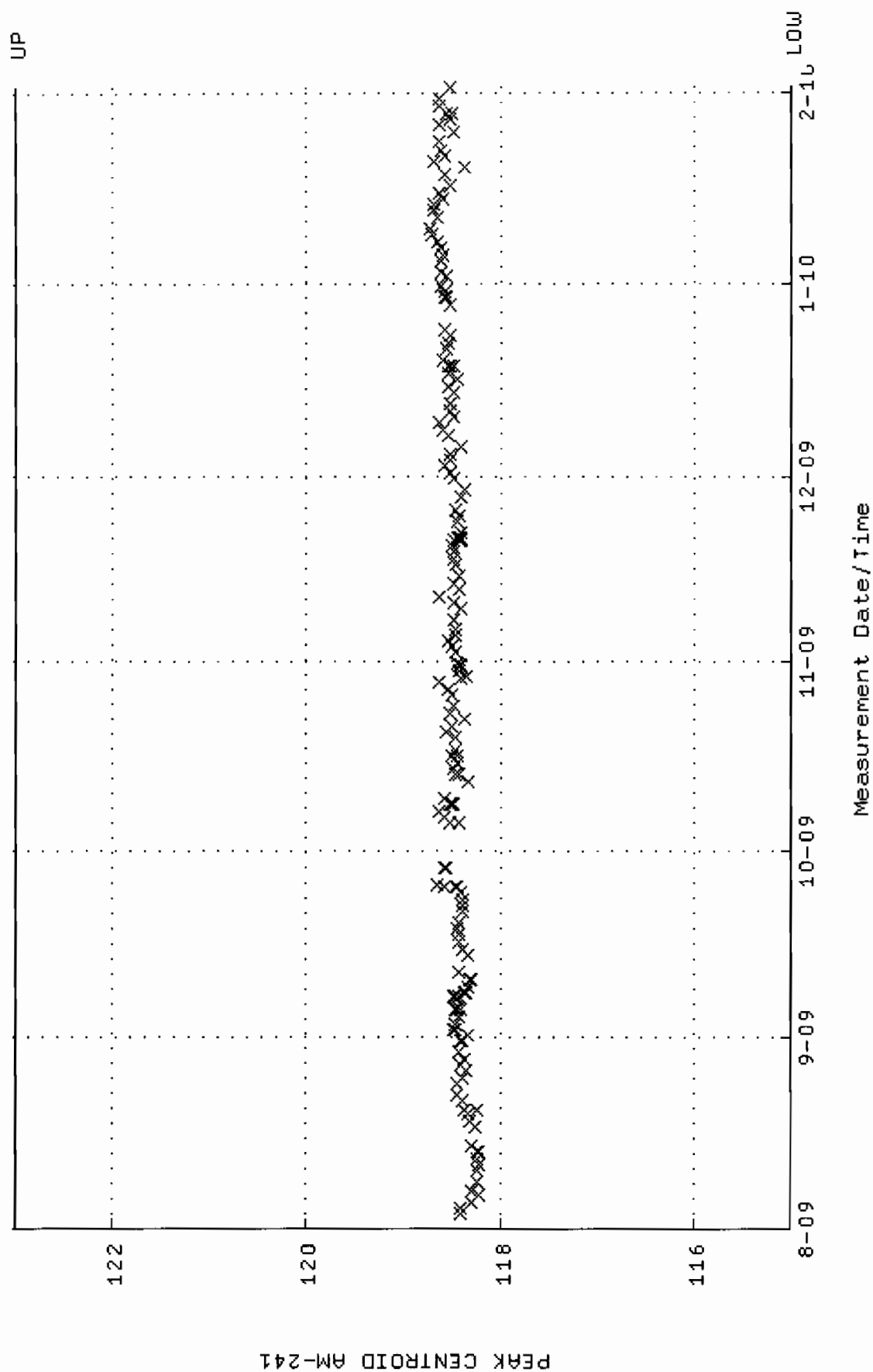
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM12-CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 1-AUG-2009 13:58:23 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



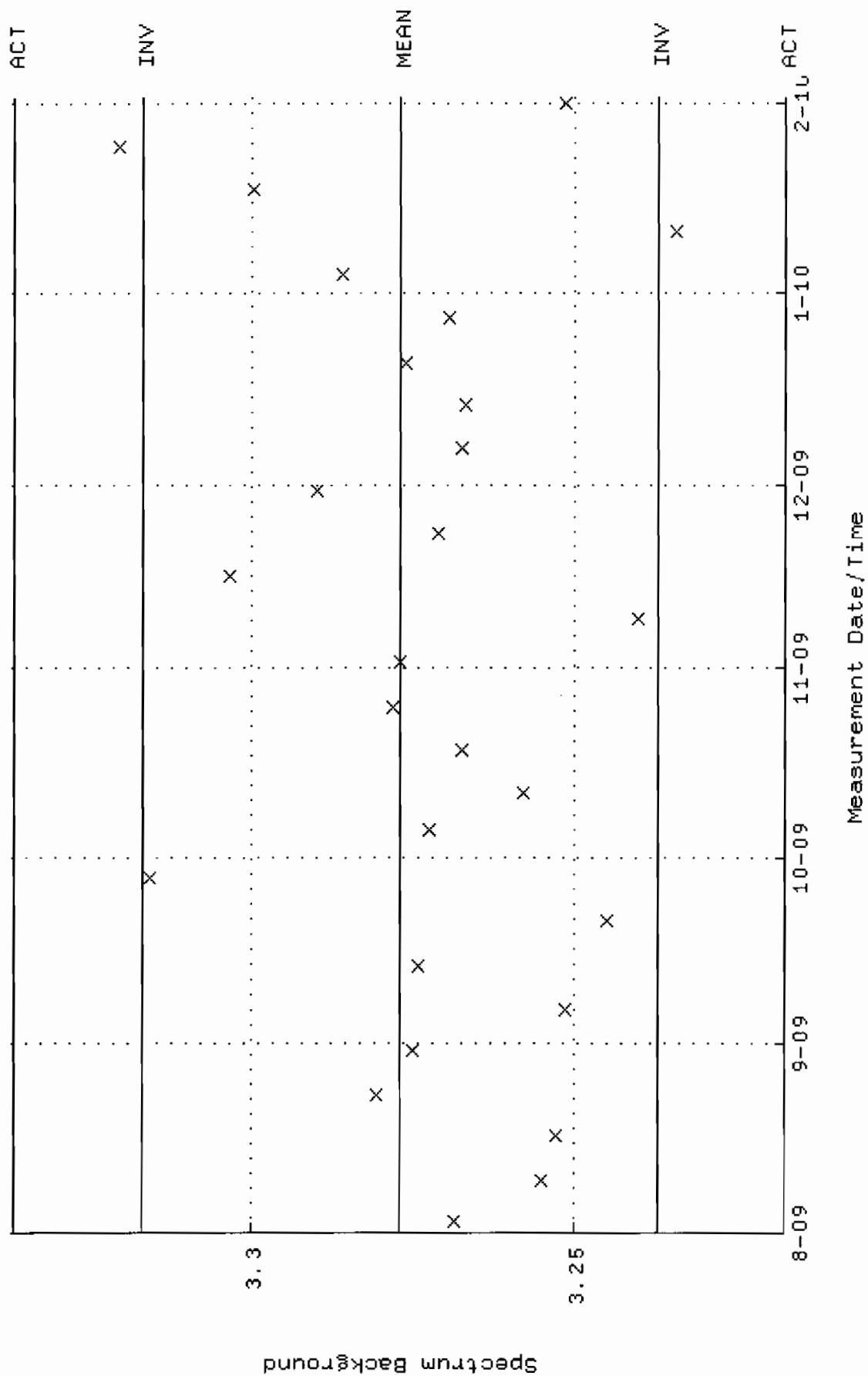
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM12.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:24:08 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)



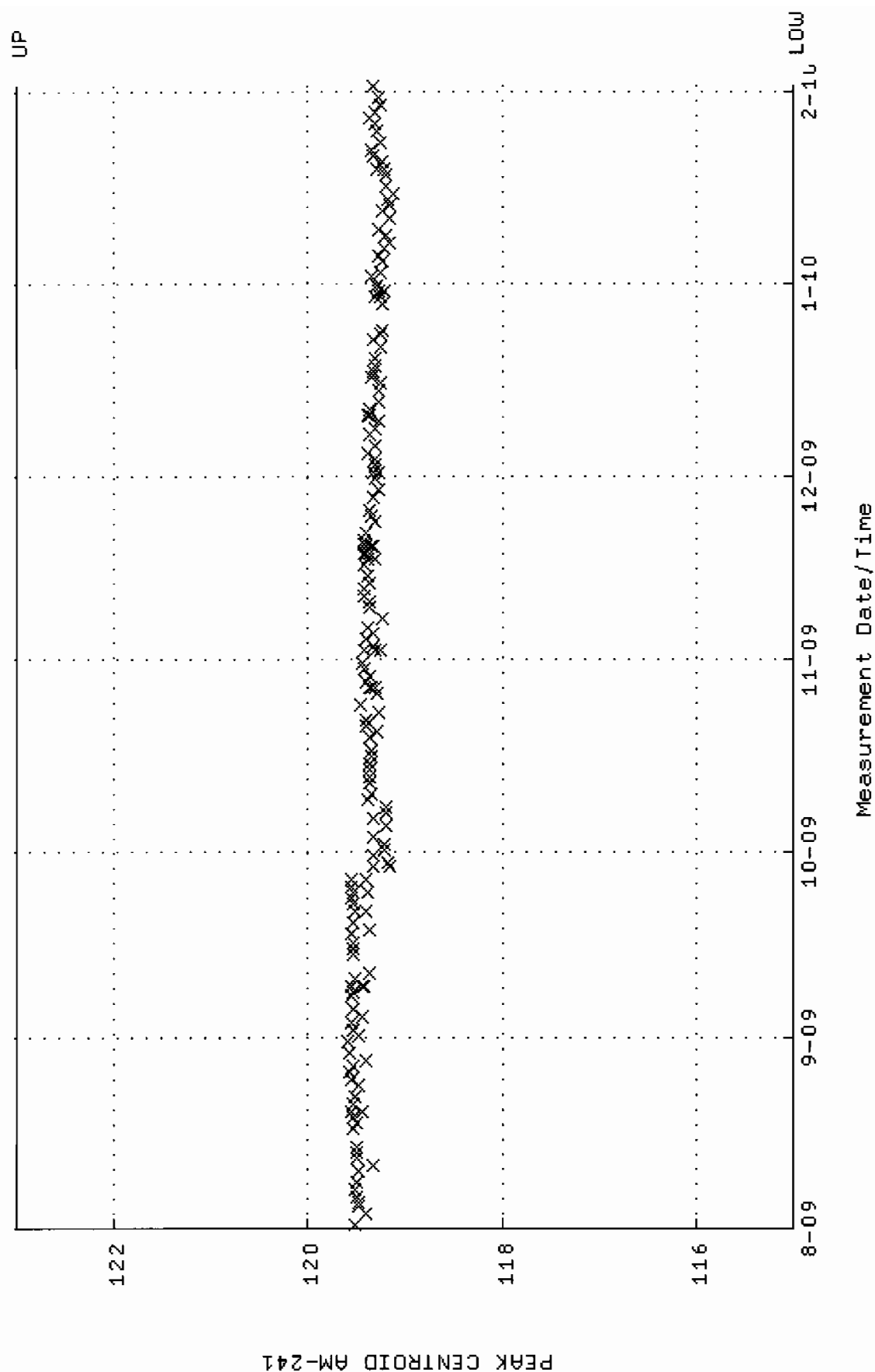
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM13-CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-AUG-2009 09:34:18 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



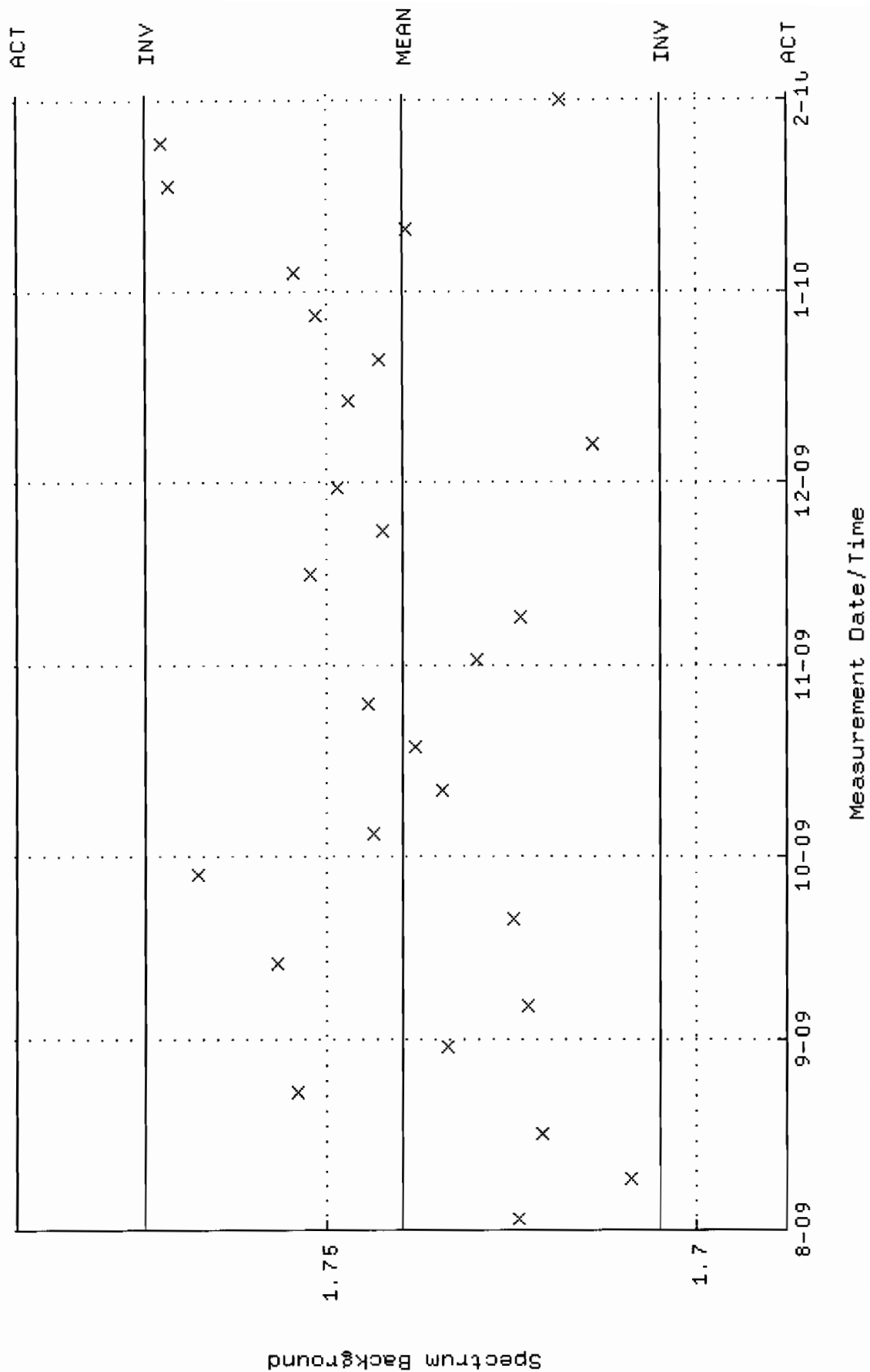
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM13.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:24:20 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



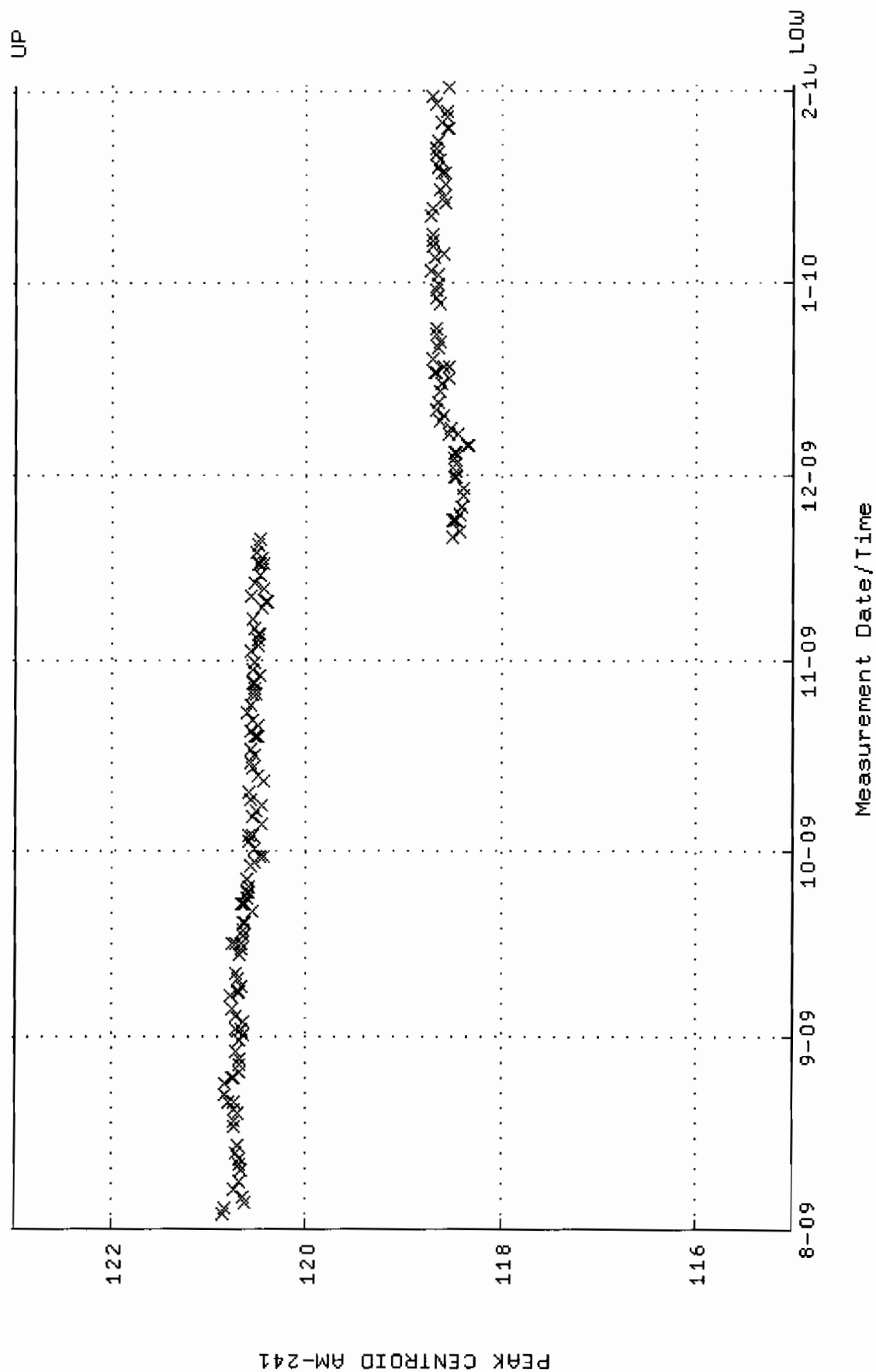
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM16-CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 1-AUG-2009 13:27:30 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



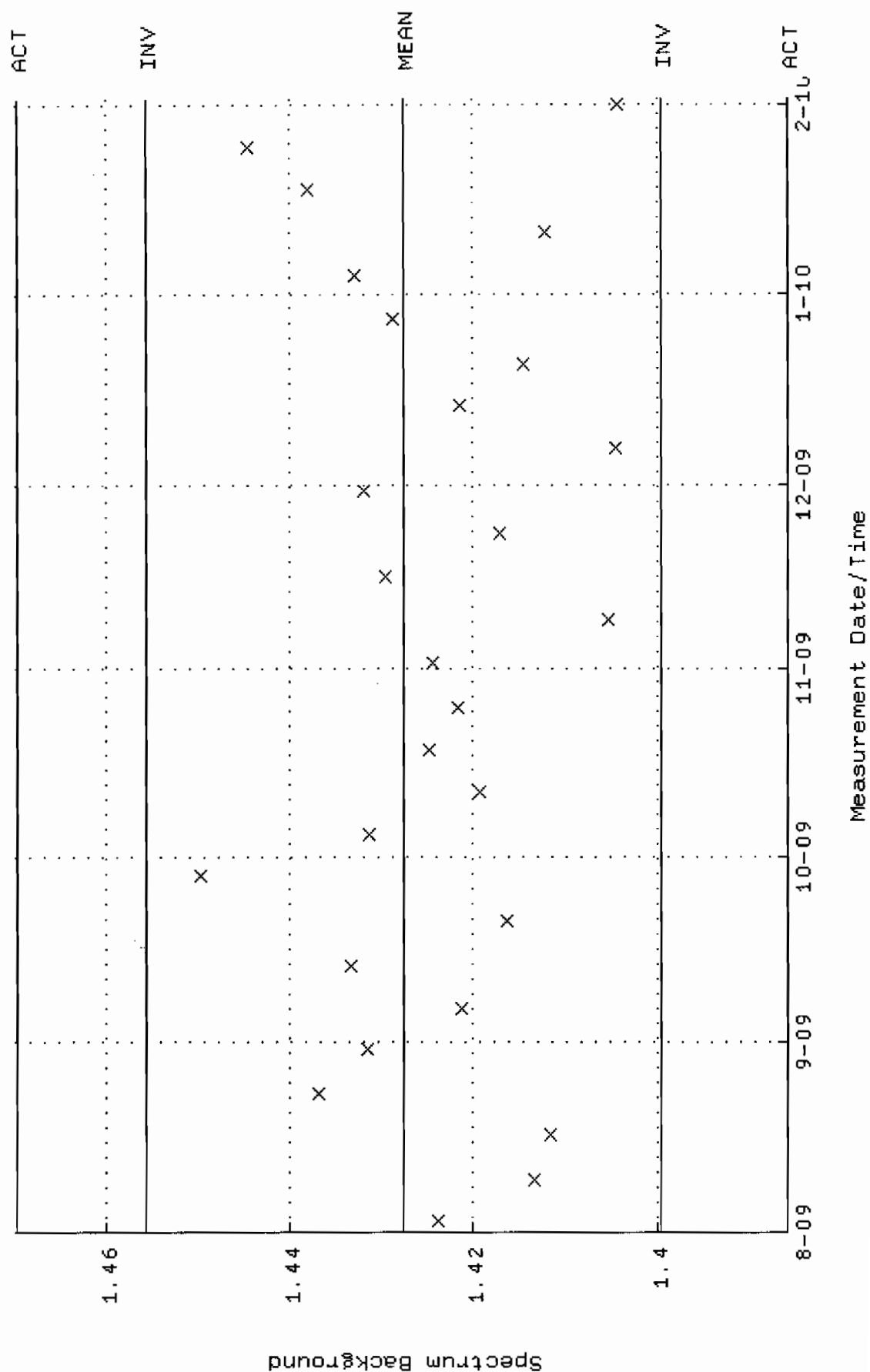
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM16.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:24:58 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM17\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-AUG-2009 09:55:06 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000

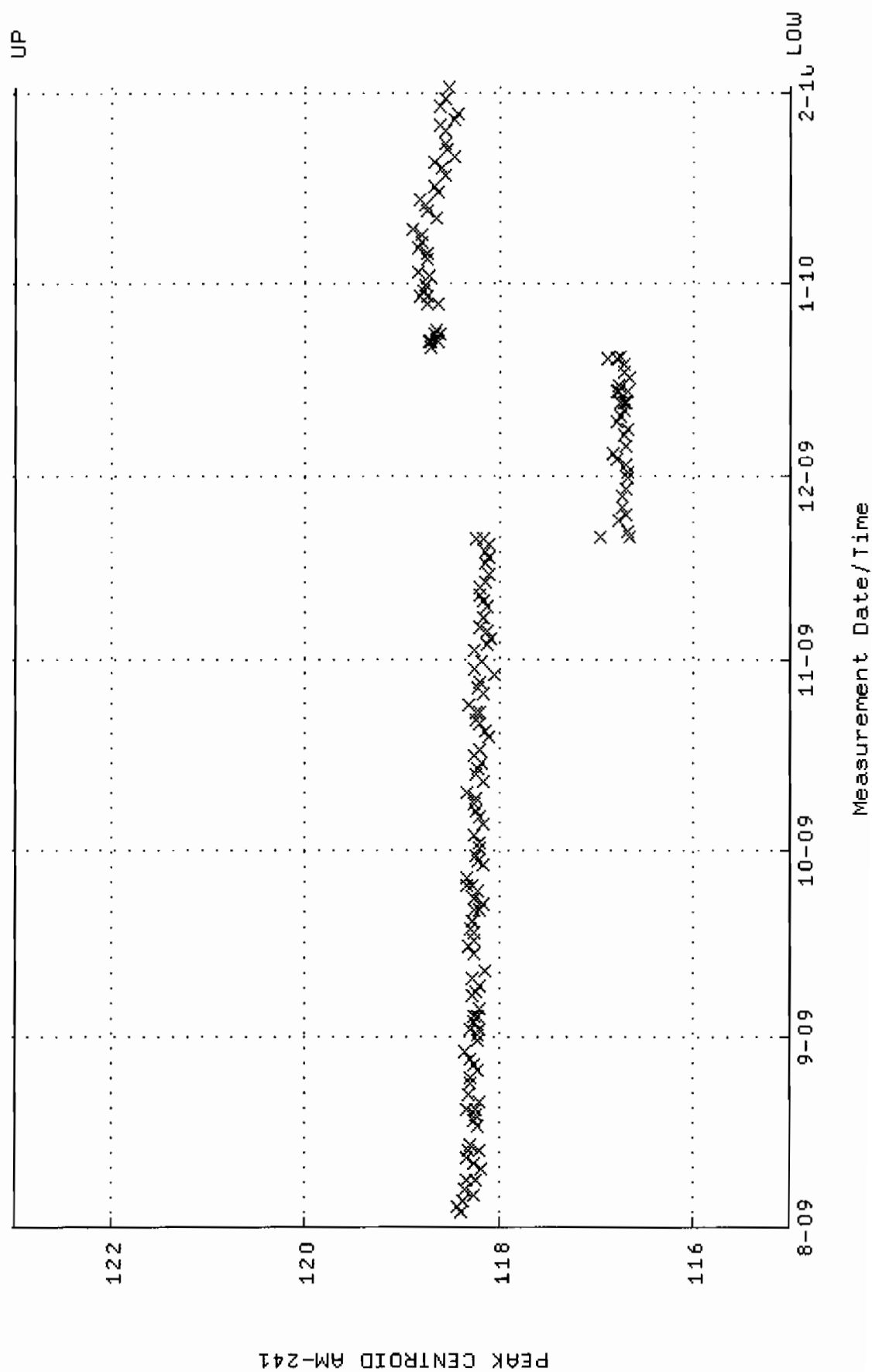


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM17.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:25:10 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)

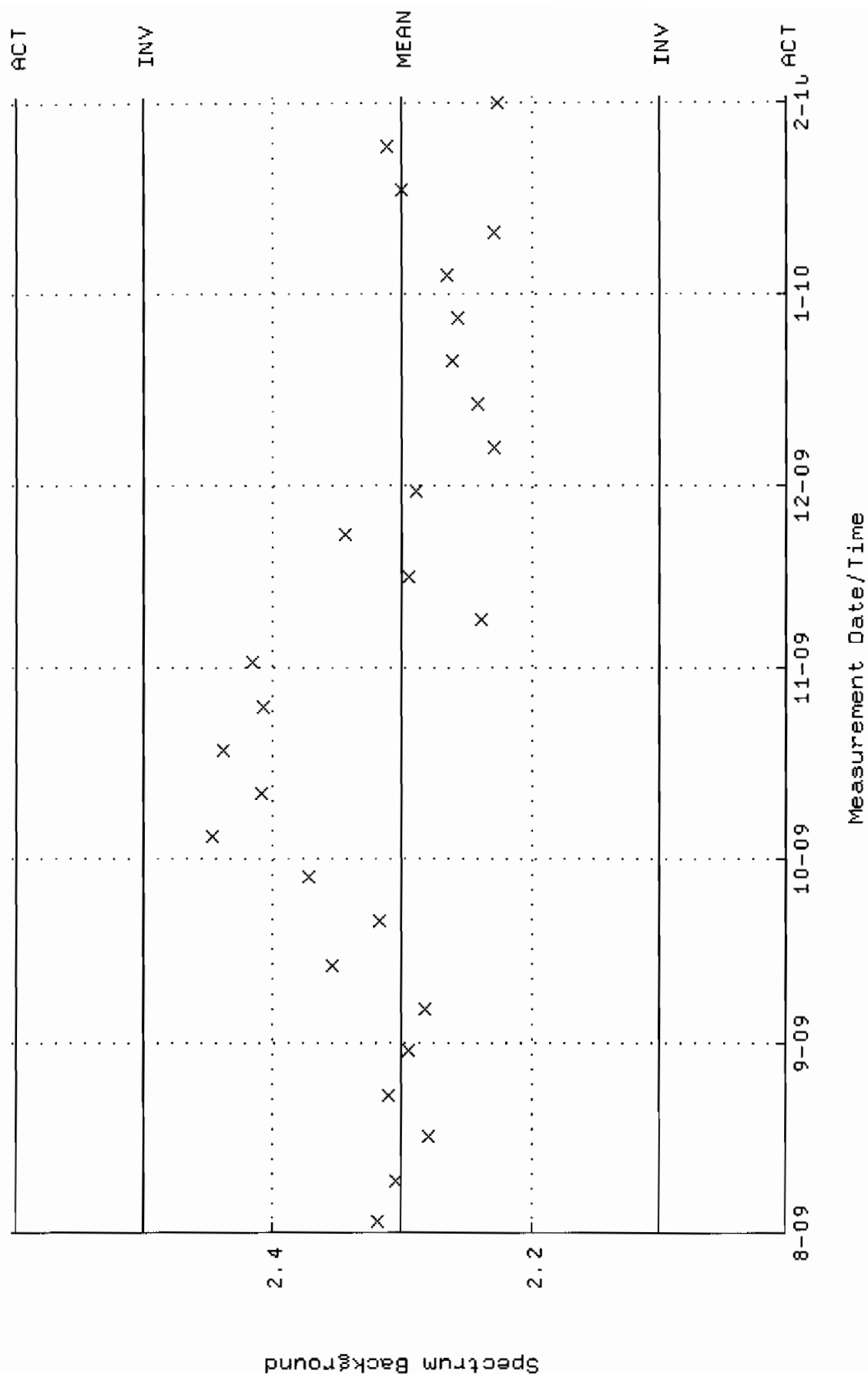




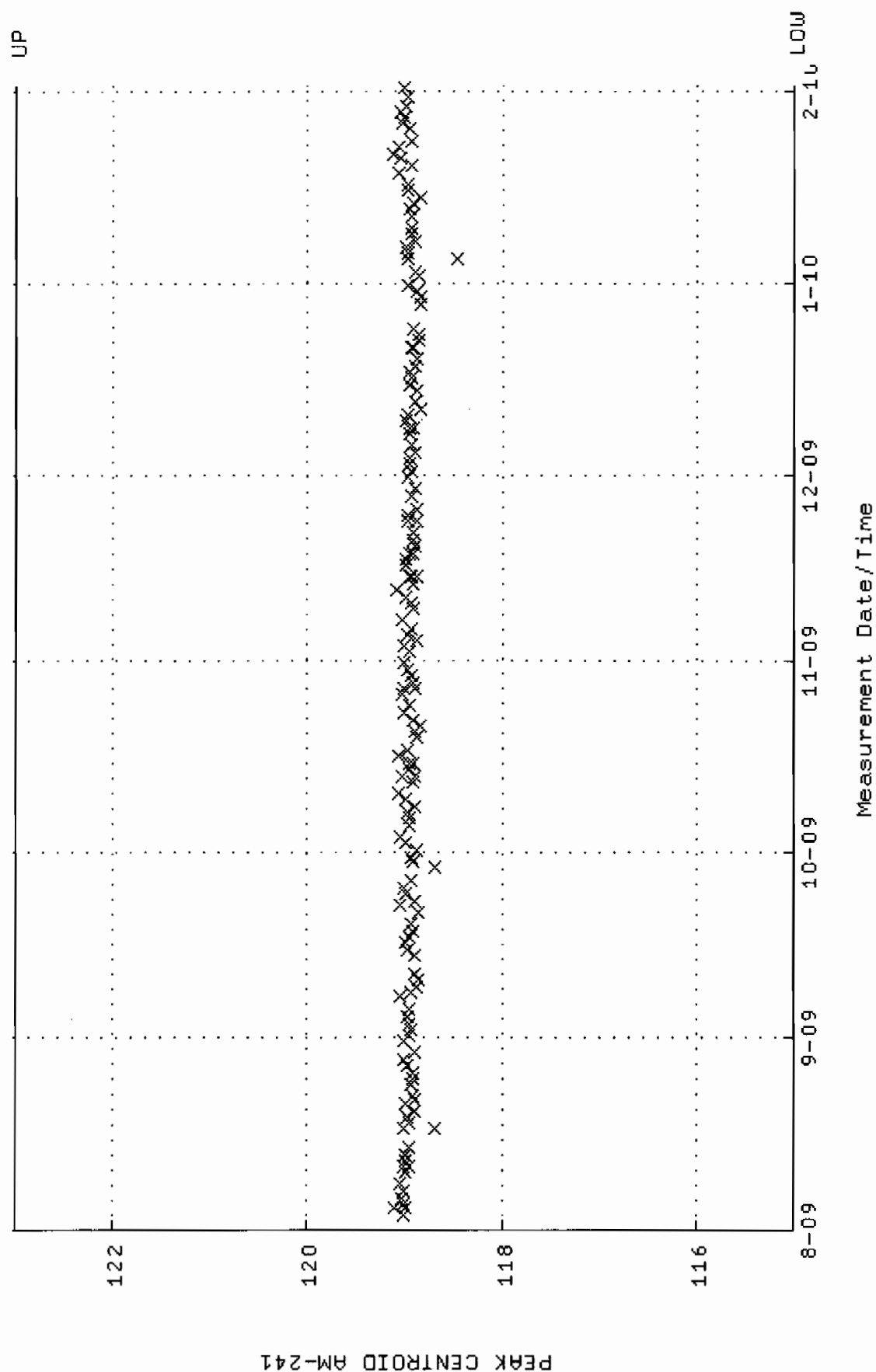
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM18-CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-AUG-2009 10:02:47 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



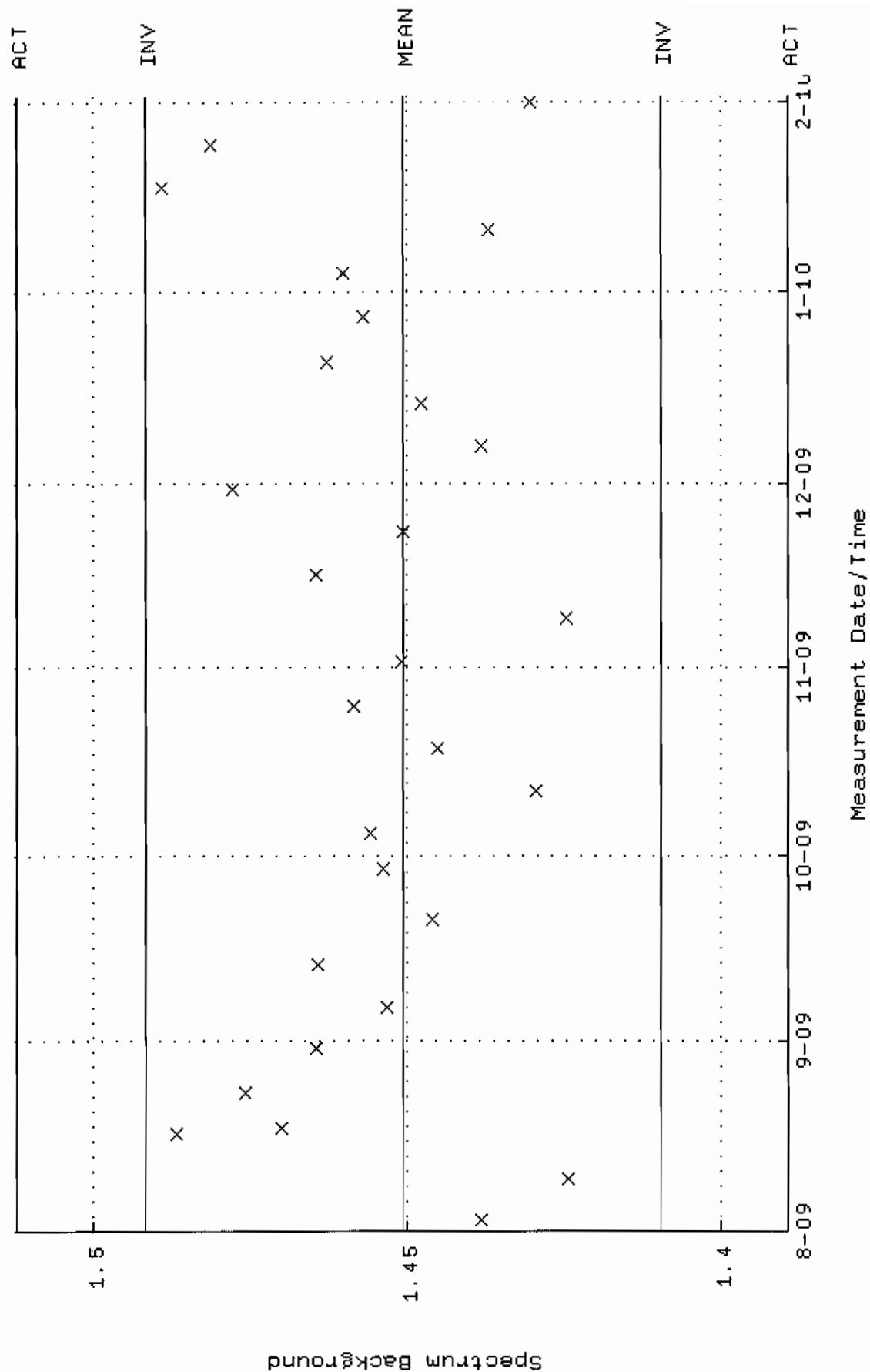
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM18.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:25:23 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



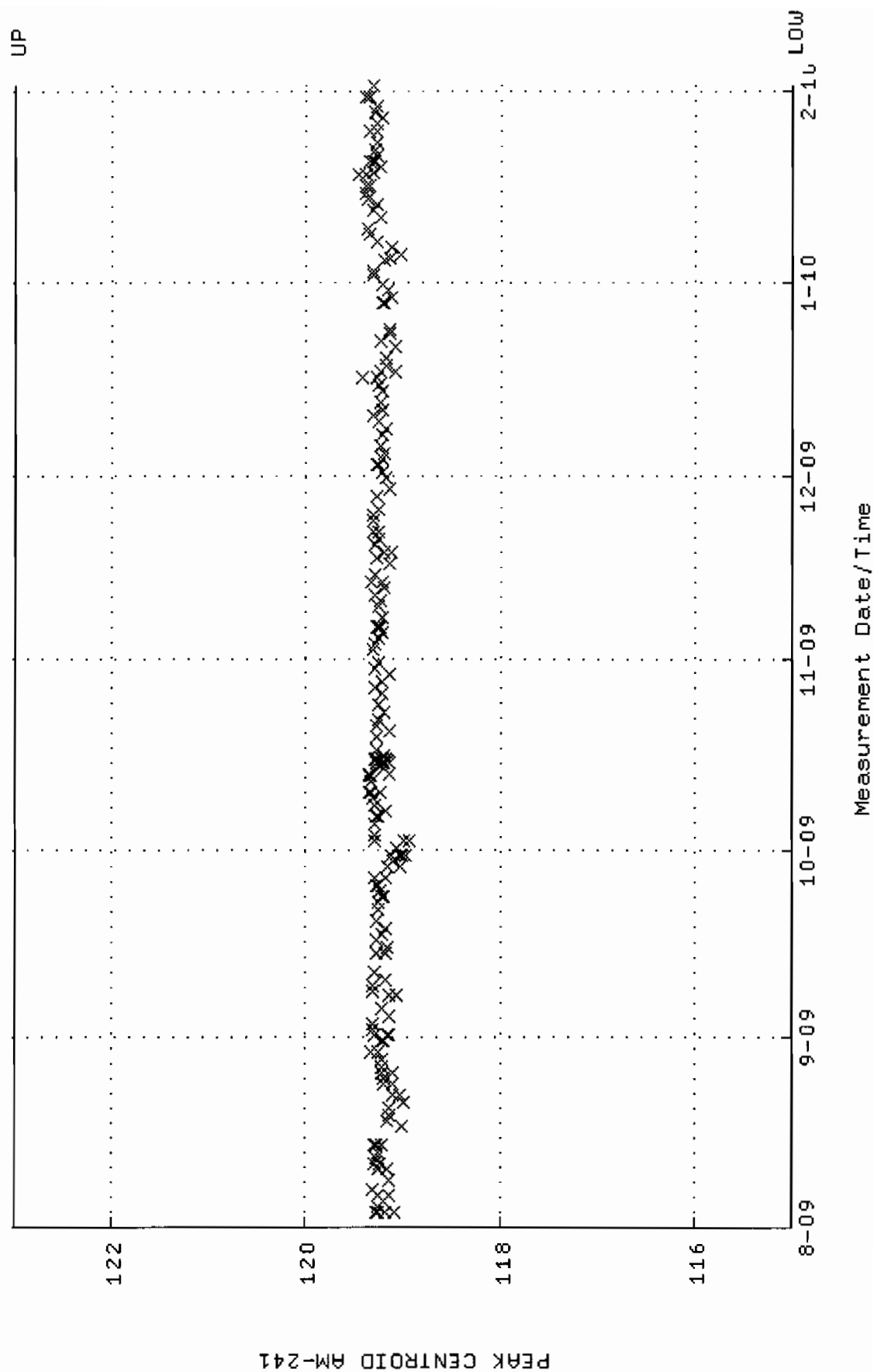
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM19\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-AUG-2009 10:08:04 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



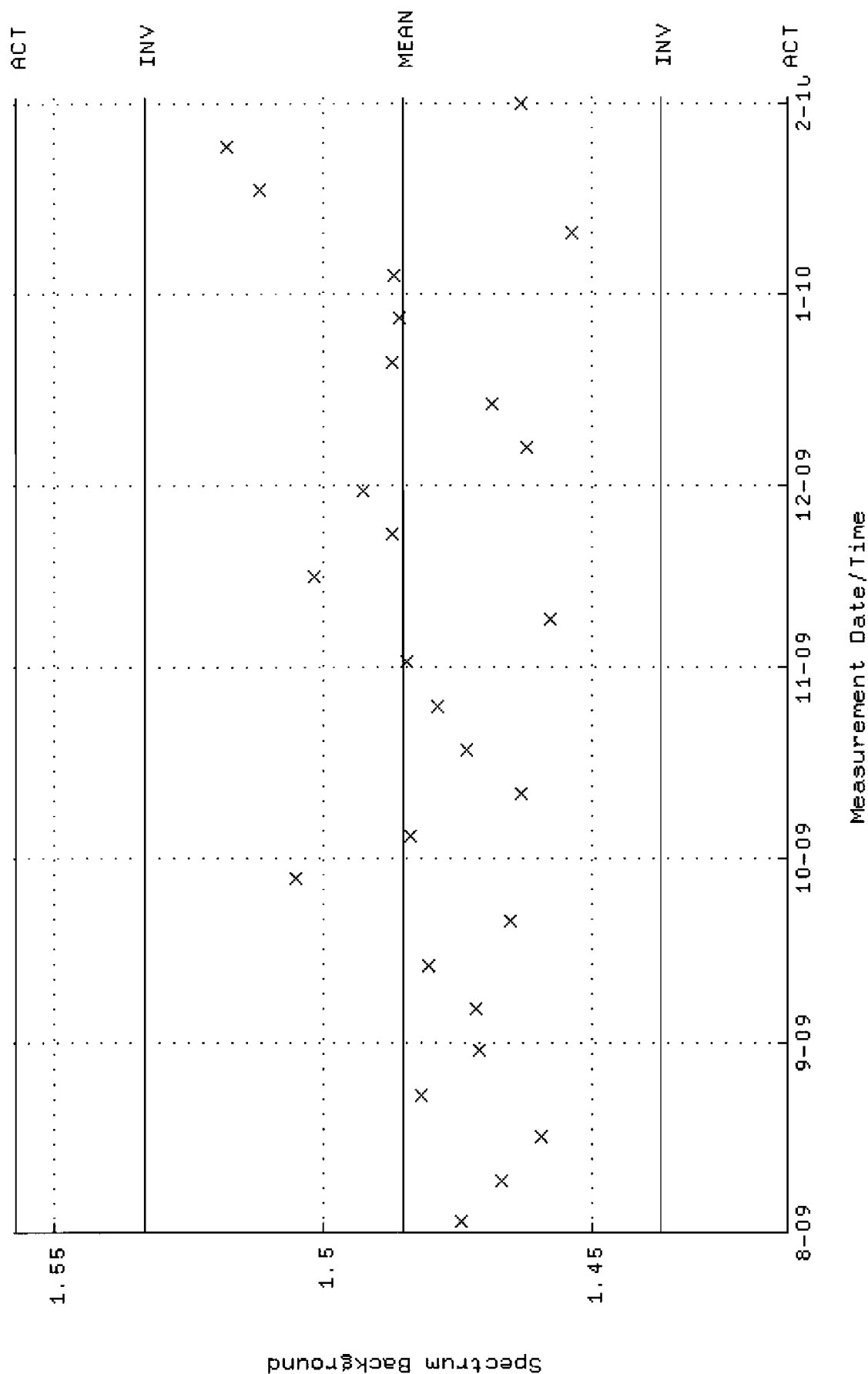
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM19.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:25:41 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.45067 +- 2.046038E-02 (1.41 %)



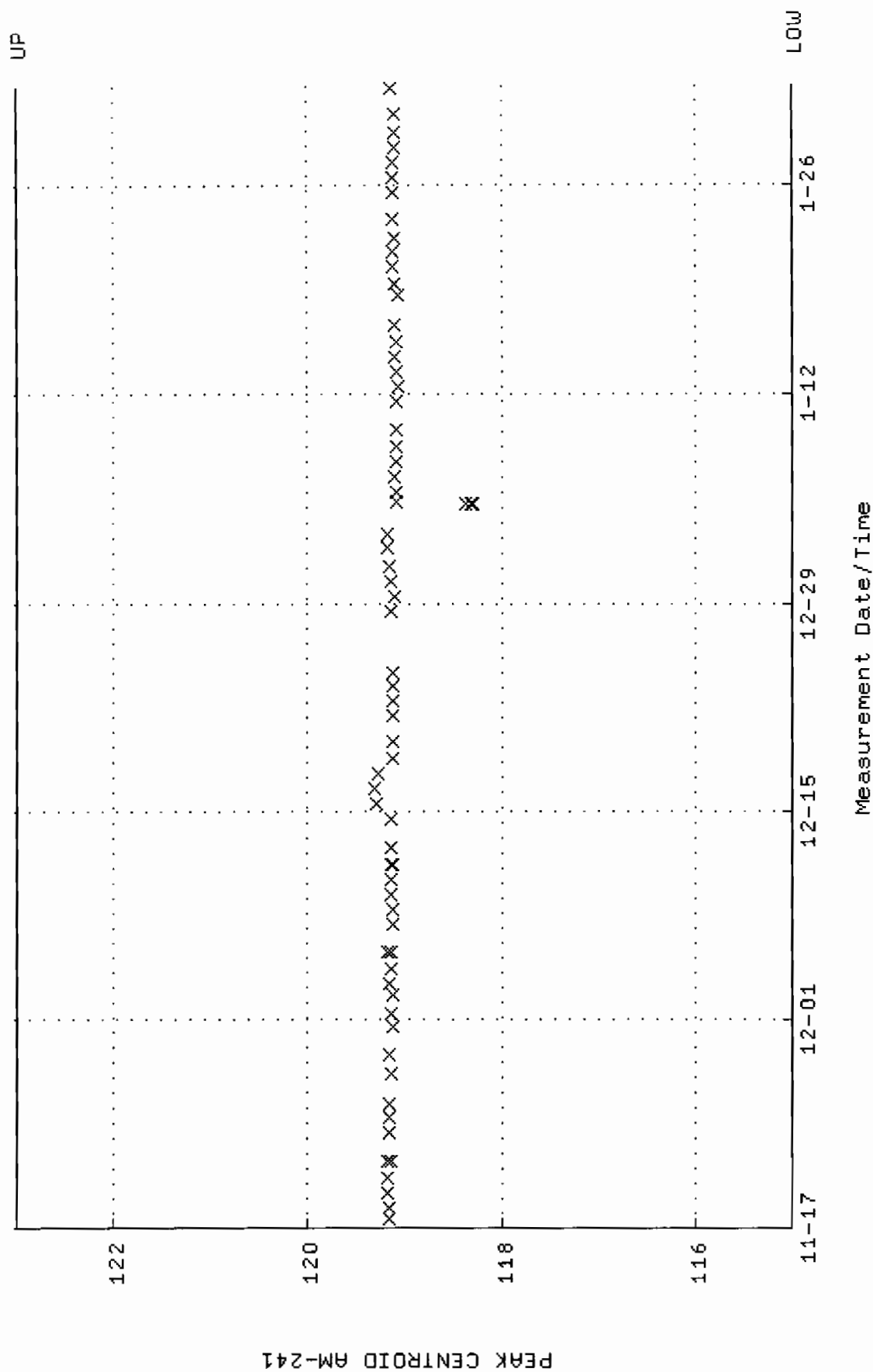
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM20\_500MLMB.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 3-AUG-2009 09:19:21 through 1-FEB-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000



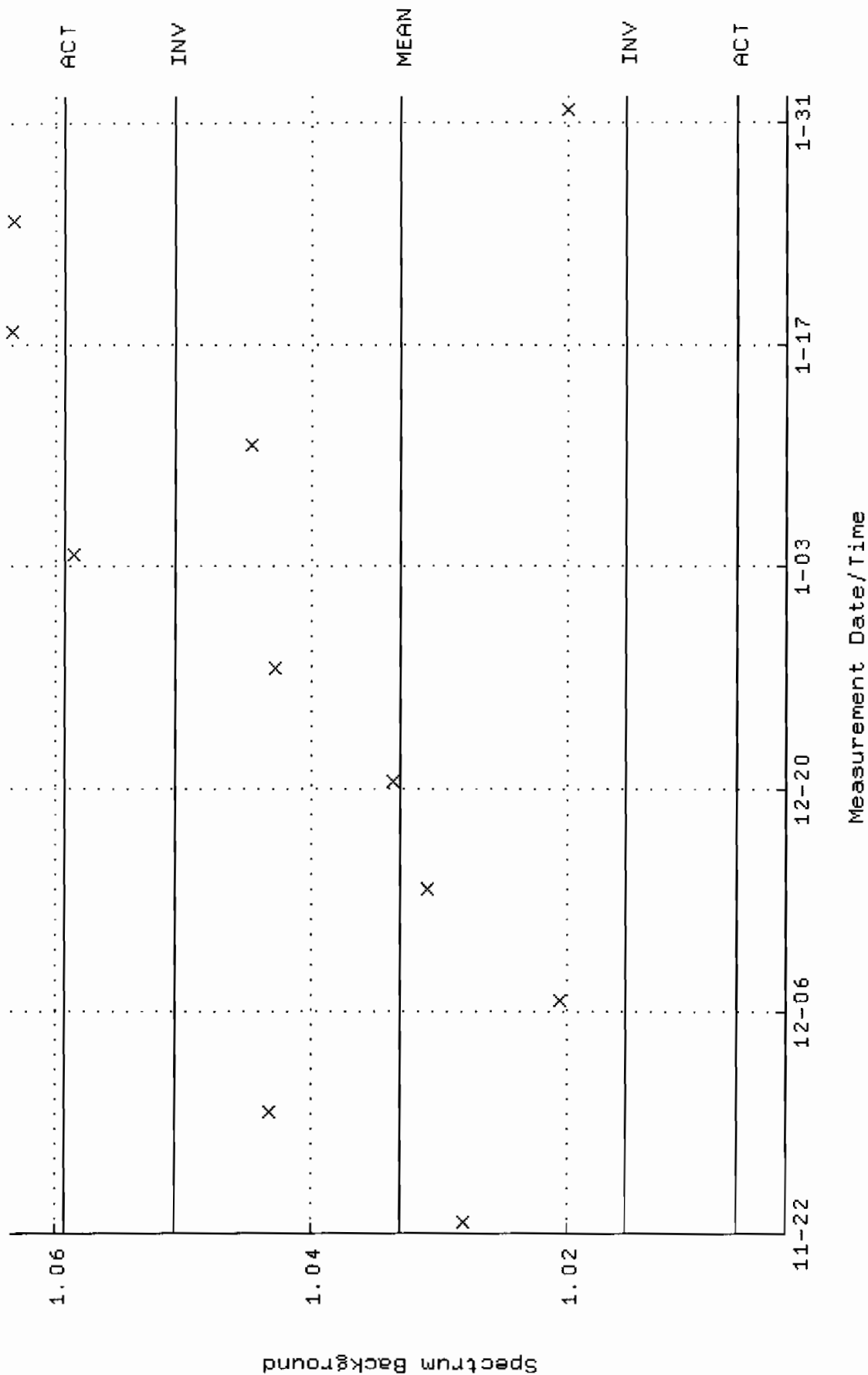
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM20.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:25:55 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM21-CAN.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 17-NOV-2009 15:50:12 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000

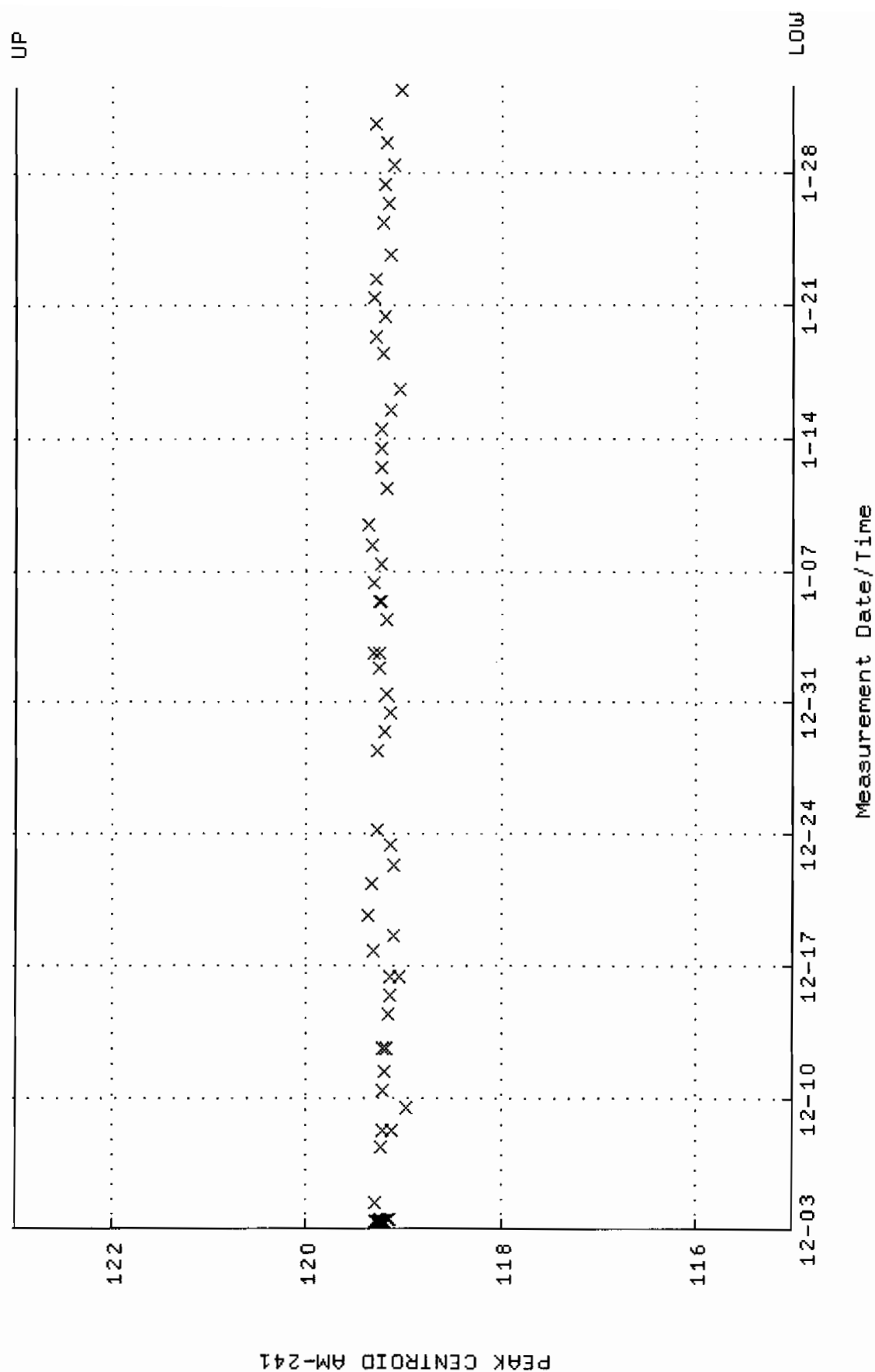


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM21.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 22-NOV-2009 17:05:16 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.03312 +- 8.784250E-03 (0.85 %)

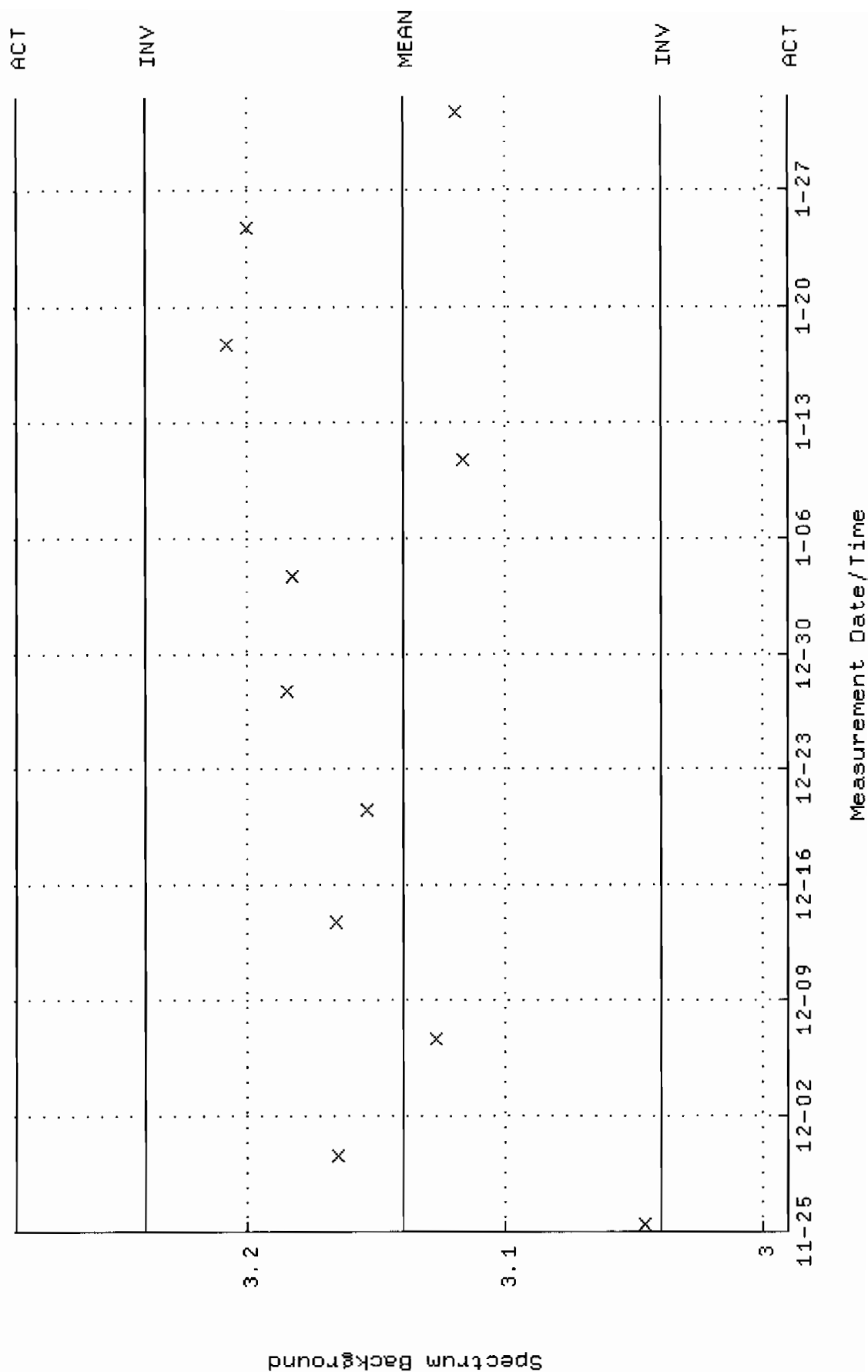




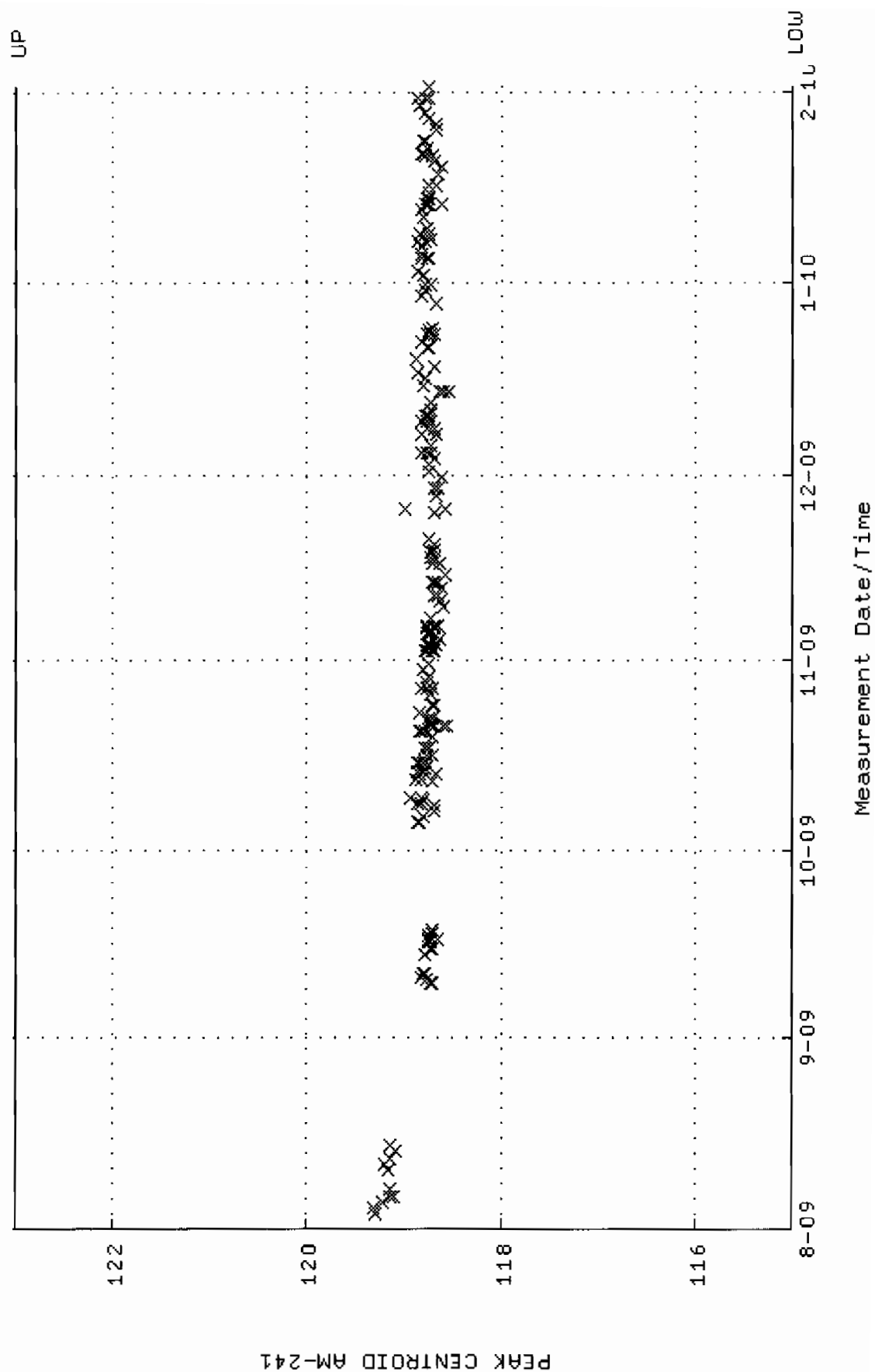
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM22\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM22.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



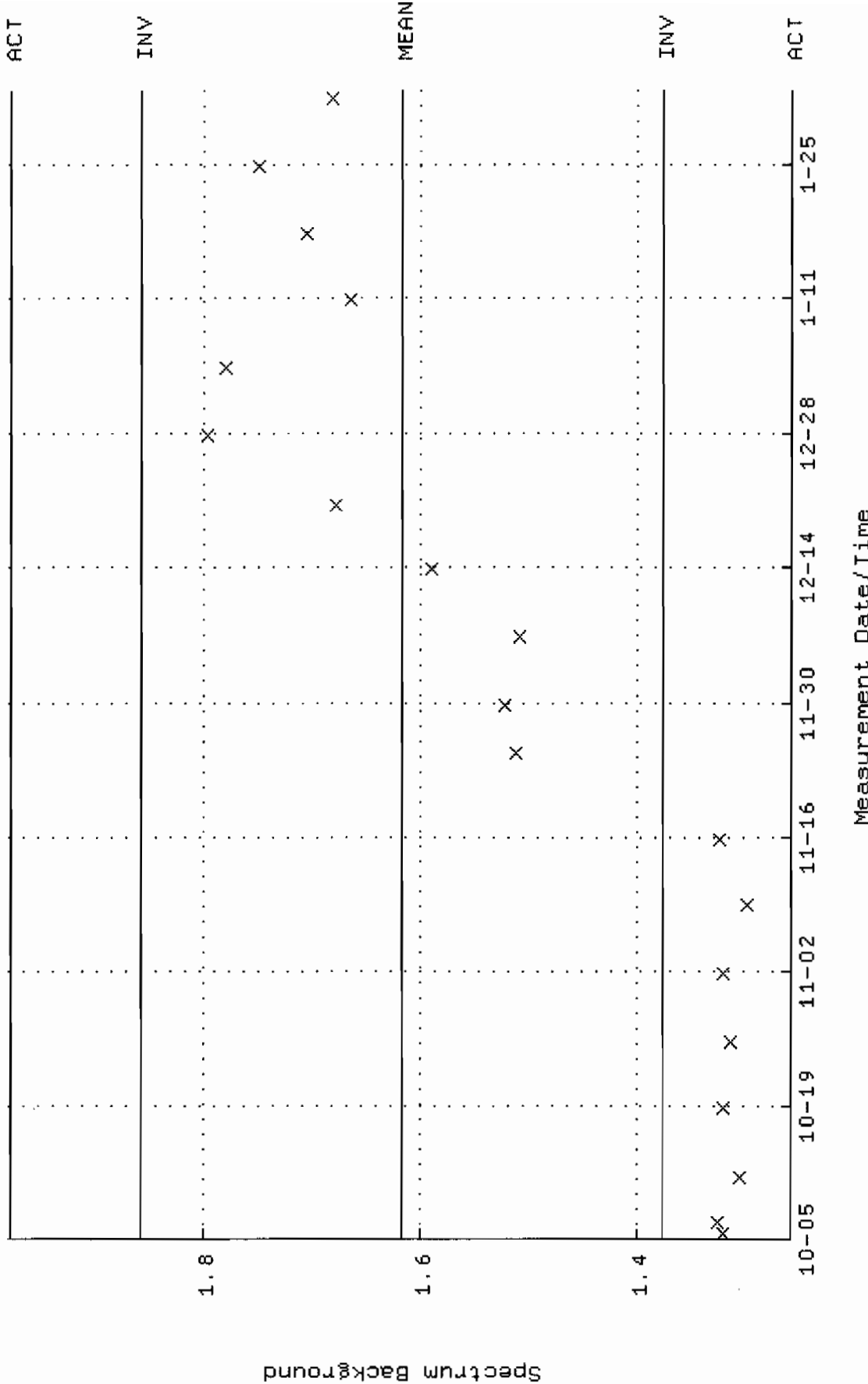
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM23\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-AUG-2009 09:16:07 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



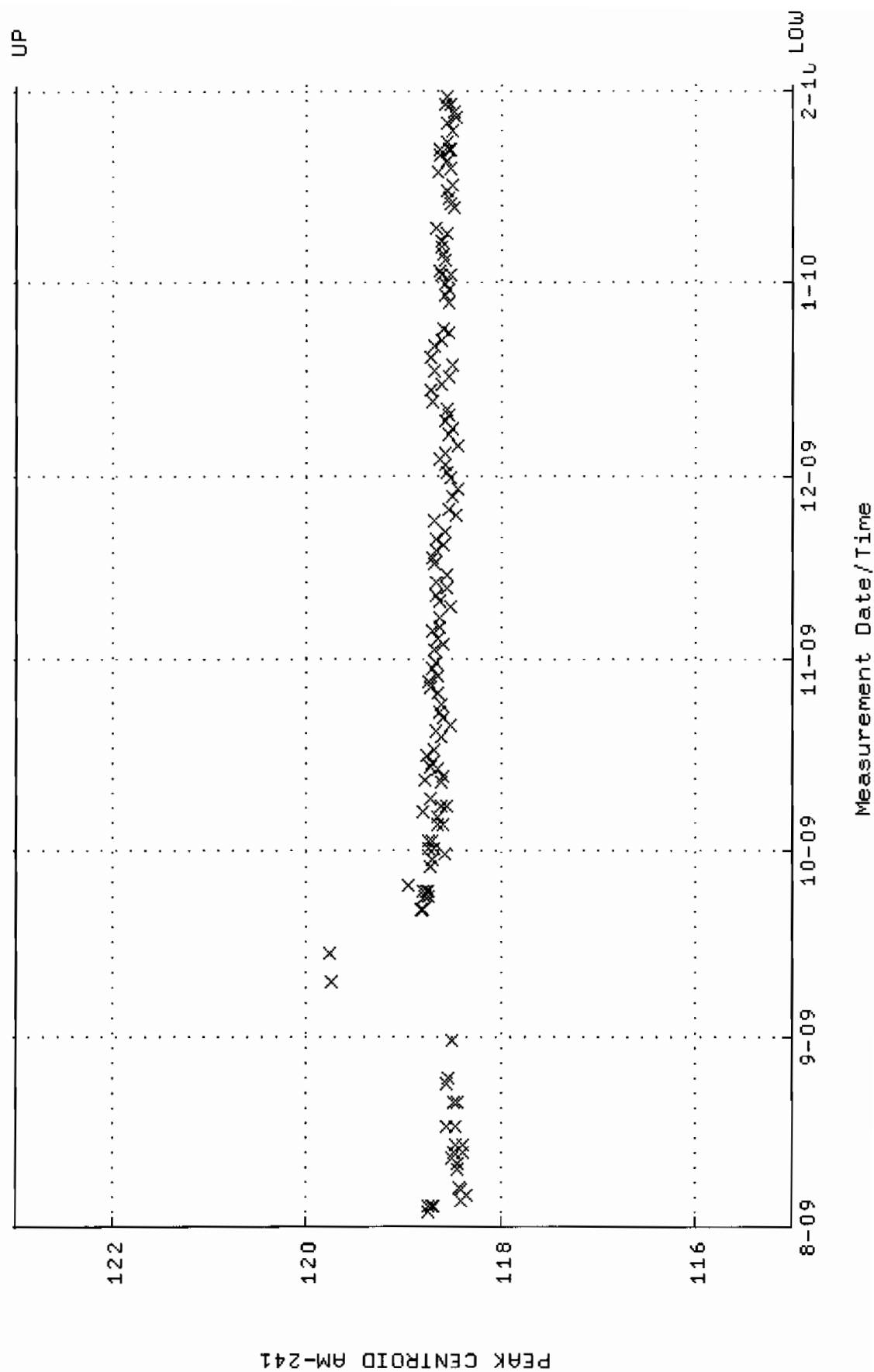
```

QA filename      : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM23.QAF;1
Parameter Name   : BACKRATE (Spectrum Background Rate)
Start/End Dates  : 5-OCT-2009 15:13:53 through 1-FEB-2010 12:00:00
Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)

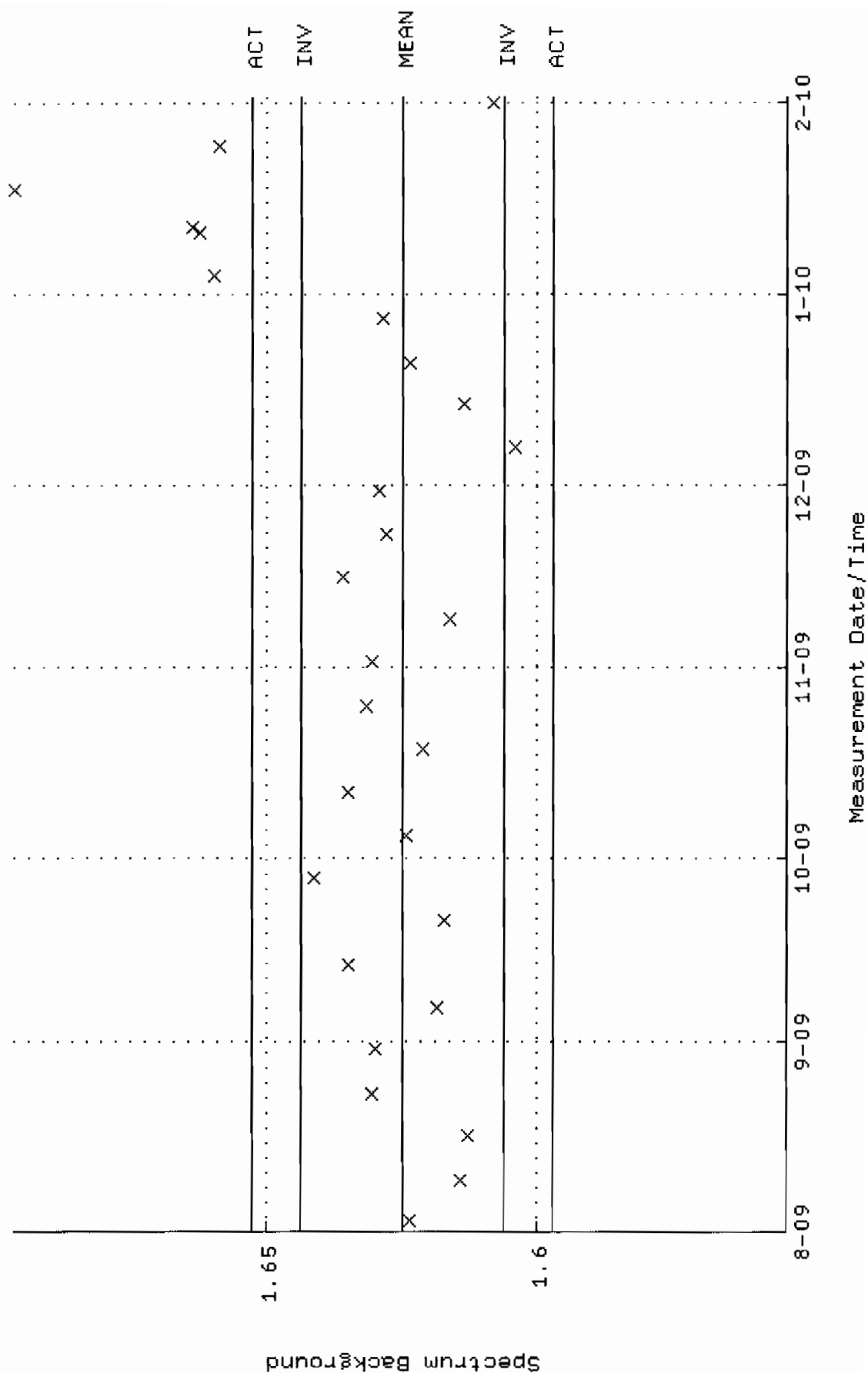
```

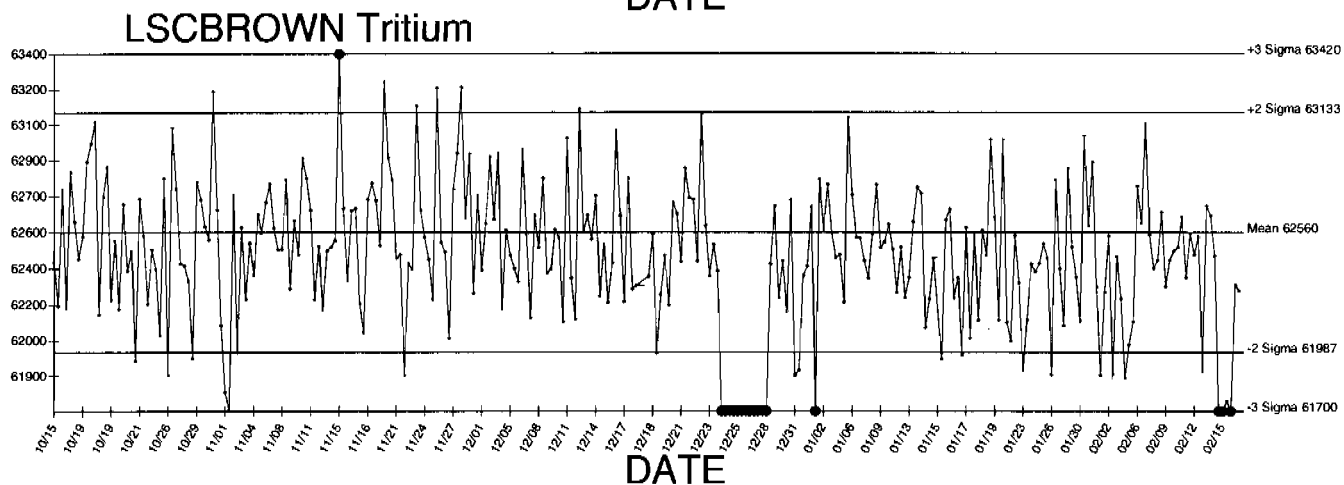
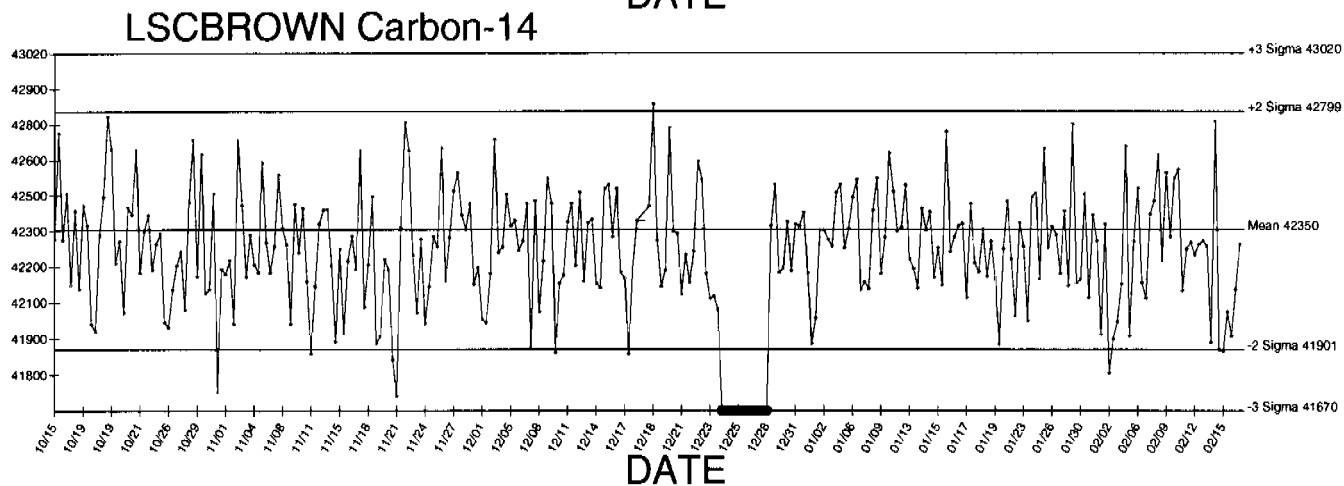
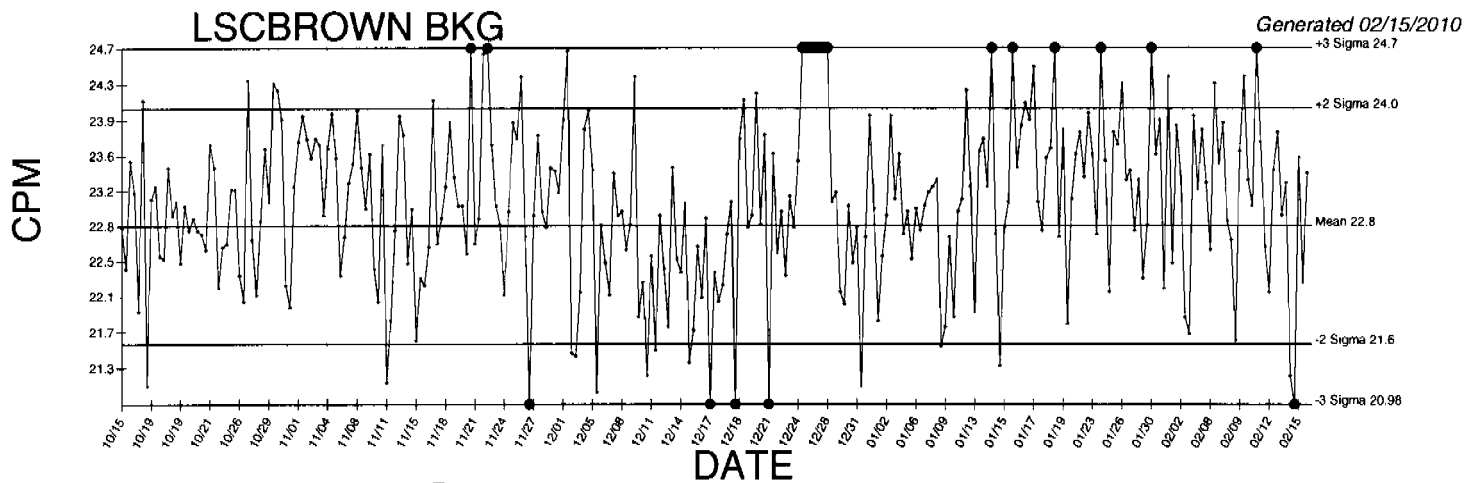


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM25\_2LMB.QAF;1  
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)  
 Start/End Dates : 3-AUG-2009 10:11:17 through 1-FEB-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM25.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 2-AUG-2009 16:26:41 through 1-FEB-2010 12:00:00  
 Mean +- Std Dev : 1.62502 +- 9.370414E-03 (0.58 %)

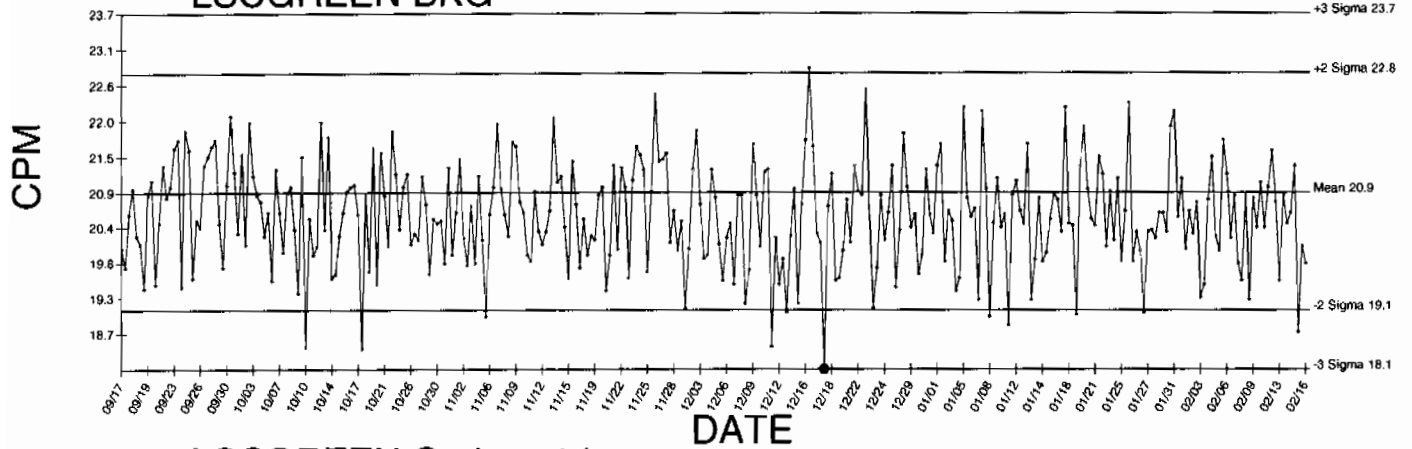




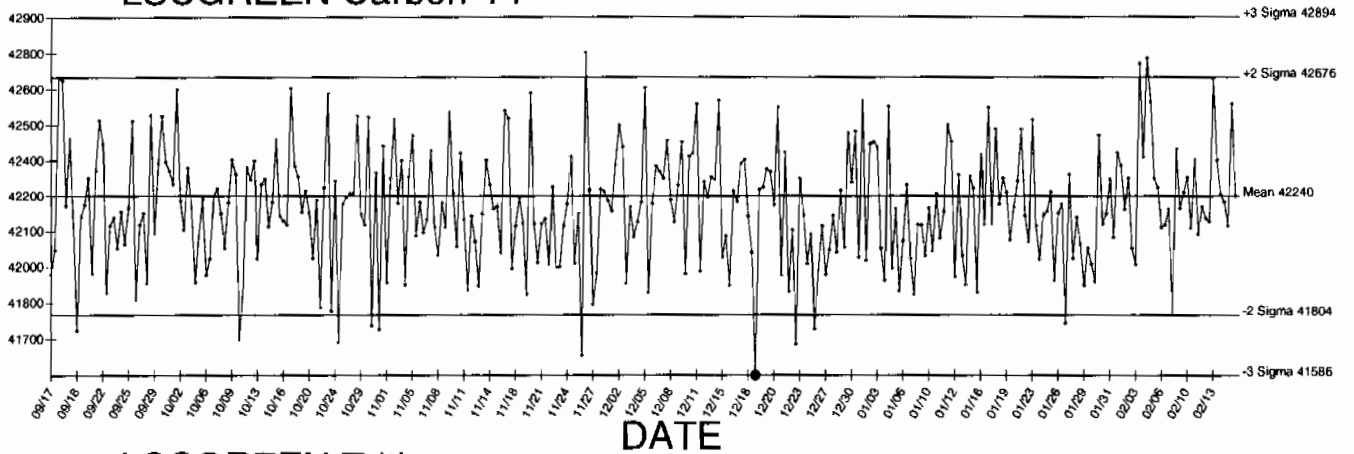
● Denotes Outlier

# LSCGREEN BKG

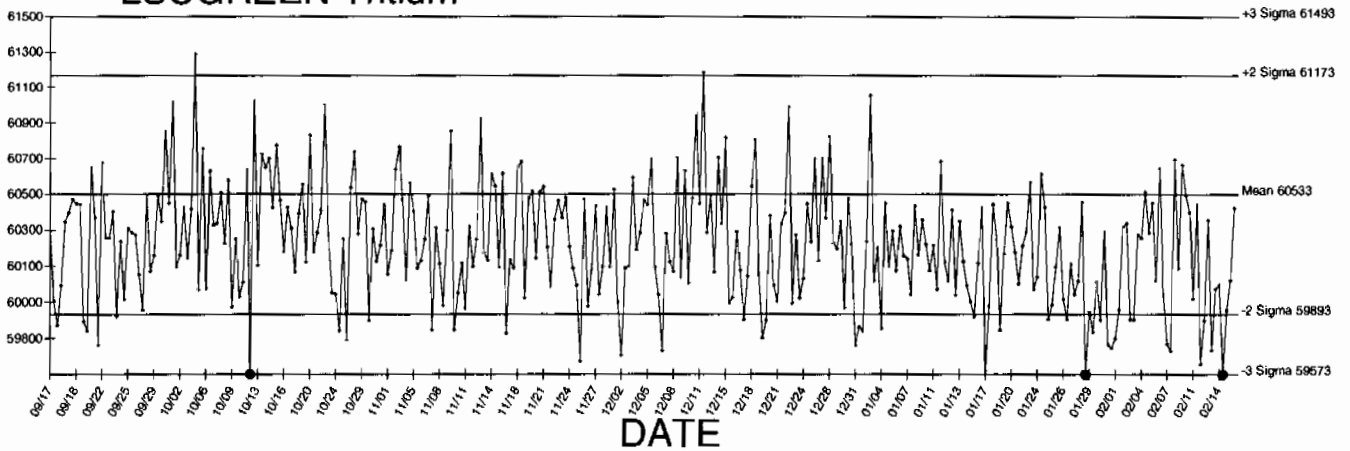
Generated 02/16/2010



# LSCGREEN Carbon-14



# LSCGREEN Tritium



● Denotes Outlier



# STANDARDS DATA

0134



CALIBRATION  
No. 0146

**Description** Radionuclide: TRITIUM (HYDROGEN-3) Product code: TRY-64  
Chemical form: water Batch: 111

**Measurement** Reference time: 1200 GMT on 1 March 1996  
Radioactive concentration of tritium: 488.0 kilobecquerels per gram of water  
which is equivalent to: 13.19 microcuries per gram of water  
or:  $2.93 \times 10^7$  disintegrations per minute per gram of water

Method of Measurement  
This reference material was calibrated by direct comparison with a standard of tritium-labelled water obtained from the National Institute of Standards and Technology, USA.

**Accuracy** The OVERALL UNCERTAINTY of the result quoted above is estimated to be less than  $\pm 2.5\%$   
This estimate of uncertainty was calculated in accordance with the recommendations of the International Commission on Radiation Units and Measurements (ICRU Report 12). The limits of uncertainty were taken as the arithmetic sum of the uncertainty due to random variations, calculated at the 99.7% confidence level, and the estimated systematic uncertainties.

**Purity** No radioactive impurities were detected. (Impurities with total activity greater than 0.001% of the activity of the tritium would have been detected).

**Physical Data** Half-life of tritium:  $12.43 \pm 0.11$  years  
Maximum beta energy of tritium: 18.6 keV

**Remarks:** The S.I. unit of radioactivity is the becquerel.  
1 becquerel (Bq) = 1 nuclear transformation per second, therefore  
1 curie (Ci) =  $3.7 \times 10^{10}$  becquerels exactly.  
Useful conversion factors are:  
1 microcurie ( $\mu$ Ci) =  $3.7 \times 10^4$  Bq = 37 kilobecquerels (kBq)  
1 kilobecquerel (kBq) = 27.027 nanocuries (nCi)

This product meets the quality assurance requirements of NRC Regulatory Guide 4.15 for achieving implicit NIST (NBS) traceability as defined in NCRP58 (1985).

Approved  
signatory

*W. F. Case*

2C-5-023-061a

# Standard Traceability Log Rad

Source Material Info	
Parent Code:	0134
Prepared By:	Angela Johnson
Carrier Conc:	DI WATER
Reference Date:	03/01/1996
Ampoule Mass (g):	5 g
Uncertainty:	+/- 2.5 %
LogBook No:	RC S 023 061

A Solution Material Info	
Isotope:	Tritium
Prepared By:	Angela Johnson
Prep Date:	02/21/2001
Verification Date:	09/10/2008
Expiration Date:	03/27/2010
Primary Code:	0134-A
Dilution(mL):	100 mL
Mass of Parent(g):	3.3659 g
Density(g/mL):	1.0004
Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/20/2004	Amanda Fehr	5.86	1000	0134-H	5773.1566 dpm/mL	07/25/2006	07/25/2007
12/20/2005	Amanda Fehr	5.5451	1000	0134-I	5462.92 dpm/mL	12/20/2006	12/20/2007
07/11/2007	Daniel Roy	5.5863	1000	0134-J	5503.5128 dpm/ml	07/29/2008	07/29/2009
03/25/2009	Mary Aders	5.4917	1000	0134-K	5410.3147 dpm/ml	03/27/2009	03/27/2010

GEL Laboratories LLC  
Version 1.0 9/18/2000

# Verification for H-3 Standard 0134-K

M. Aders	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff Mass. Used (mL)	Source DPM/mL
4/9/2009	0134-K N1	1097.2000	54.0000	1043.2000	1.0000	2741.3099
	0134-K N2	1073.2000	54.0000	1019.2000	1.0000	2678.242955
	0134-K N3	1085.2000	54.0000	1031.2000	1.0000	2709.776428
Mean Value (Counting) =	2709.776428		104.954429	Pass		2709.776428
Stdev =	31.53347278		0.01163693	Rule 3 (Pass/Fail)		

Certificate Value = 2581.86 dpm/mL  
 Lower Limit = 2646.709482 dpm/mL  
 Upper Limit = 2772.843373 dpm/mL  
 Rule 1 Pass/Fail Fail  
 Two sigma = 63.06694556 dpm/mL  
 10 % of Mean = 270.9776428 dpm/mL  
 Rule 2 (Pass/Fail) Pass

\*exception taken due to full recovery of standard

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. Ten mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on Silver for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 4/9/09 using 0020-A (H-3). Calibration data is recorded in this logbook under H-3 0020. Each verification source calculation was performed as follows:

$$\text{Source dpm/g} = (A - B)/(C)(D)$$

where:

- A = Ver. source cpm,
- B = BKG cpm,
- C = System efficiency, (cpm/dpm), and
- D = mass used for standard verification.

Reference RAD SOP M-001

Handwritten signatures and dates:  
 Amanda J. Dehn 4/9/09  
 4/12/09

1032

## CERTIFICATE OF CALIBRATION

### Standard Radionuclide Source

74047-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE	GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432 y	3339	3.0
Cd-109	88	462.6 d	4815	3.3
Co-57	122	271.79 d	2409	3.0
Ce-139	166	137.6 d	3408	2.8
Hg-203	279	46.61 d	7522	2.7
Sn-113	392	115.1 d	4728	2.6
Cs-137	662	30.07 y	2973	3.0
Y-88	898	106.6 d	11600	2.6
Co-60	1173	5.2714 y	5780	2.7
Co-60	1332	5.2714 y	5783	2.6
Y-88	1836	106.6 d	12260	2.6

5.31725 grams 4M HCl solution.  
P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova  
M. Dimitrova, Radiochemist

Q A APPROVED:

W.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06  
RC-S-045-073-0

1380 Seaboard Industrial Blvd.  
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

## ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

### CALIBRATION DATE: October 1, 2006 12:00 EST

Isotope	Energy (keV)	Calibration Method <sup>1</sup>	Statistics <sup>2</sup>	Calibration <sup>2</sup>	Peak Fitting <sup>2</sup>	Geometry <sup>2</sup>	Impurities <sup>2</sup>	Weighing	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

#### Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

#### Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

<sup>2</sup>As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1032	Isotope:	Mixed Gamma
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL	Prep Date:	11/30/2006
Reference Date:	10/01/2006	Verification Date:	12/02/2009
Ampoule Mass (g):	5.31725 g	Expiration Date:	12/02/2010
Uncertainty:	+/- 2.81 %	Primary Code:	1032-A
LogBook No:	RC-S-045-073	Dilution(mL):	100 mL
		Mass of Parent(g):	5.2579 g
		Density(g/mL):	1.0611
		Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parent Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parent Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
-----------	----------	--------------	---------------	------	-------------	-------------------	-----------------

GEL Laboratories LLC  
Version 1.0 9/18/2000

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Am-241	Isotope	Result	pCi/L - Ver. Jar. 1
	Mixed Gamma N1	2534	pCi/L
	Mixed Gamma N2	2510	pCi/L
	Mixed Gamma N3	2413	pCi/L

Mean Value (Counting) = 2485.67  
Stdev = 64.065  
Rule 3 (Pass/Fail) Pass

Certificate Value = 2485.68018  
Lower Limit = 2357.536524  
Upper Limit = 2613.796809  
Rule 1 (Pass/Fail) Pass  
Two sigma = 128.1301422  
10 % of Mean = 248.5666667  
Rule 2 (Pass/Fail) Pass

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Stamps  
12/2/09  
independent  
12/2/09



# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Cs-137

Isotope	Result	pCi/L - Ver. Tab. 1
Mixed Gamma N1	854.2	pCi/L
Mixed Gamma N2	907.6	pCi/L
Mixed Gamma N3	898.9	pCi/L

Mean Value (Counting) = 886.90  
Stdev = 28.651

*Handwritten:* 12/2/09  
*Handwritten:* 12/2/09  
*Handwritten:* 12/2/09

Certificate Value = 933.44144  
Lower Limit = 829.597644  
Upper Limit = 944.202356  
Rule 1 (Pass/Fail) Pass  
Two sigma = 57.30235597  
10 % of Mean = 88.69000000  
Rule 2 (Pass/Fail) Pass

pCi/L  
pCi/L  
pCi/L

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver-Tag-5
Mixed Gamma N1	1572	pCi/L - Ver-Tag-2
Mixed Gamma N2	1495	pCi/L - Ver-Tag-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67  
Stdev = 42.829  
Rule 3 (Pass/Fail) 98.50 Pass

Certificate Value = 1545.8378  
Lower Limit = 1437.008431  
Upper Limit = 1608.324902  
Rule 1 (Pass/Fail) Pass  
Two sigma = 85.65823564  
10 % of Mean = 152.26666667  
Rule 2 (Pass/Fail) Pass

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

*M. Stamps issued 12/2/09*

### 0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATE 4/14/2000 *fit c held 12/1/04*

*angela d. johnson 12/3/04*

TRM

Invoice:

5 bottles of TRM-1  
 10 " " TRM-2 and 3  
 5 " each of TRM-1 through 6  
 7 " baghouse dirt

Use 1/4 gm x 10 samples with together  
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM-1	TRM-2	TRM-3	TRM-4
U-238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U-234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th-230	471 ± 11	24.5 ± 0.6	58.5 ± 2.1	44.0 ± 1.6
Ra-226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb-210	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0	

9911627-01-200

Page 1 of 1  
AR/COC- 602945

Attention Nancy Slater At GEL  
Not For Log-In  
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Press F1 for Instructions for each field.

SARWR No. N/A

Internal Lab  
Batch No.

SF 2001-COC (10-97)  
Supersedes (5-97) Issue

Dept. No./Mail Stop: 7132 / 1042 Project/Task Manager: PAM PUISSANT Project Name: Record Center Code: N/A Logbook Ref. No.: N/A Service Order No.:		Date Samples Shipped: 11-16-99 Carrier/Origin No.: 726794 Lab Contact: EDIE KENT Lab Destination: GEL SMO Contact/Phone: Doug Salimi / 844-3110 Send Report to SMO: Suzi Jensen/844-3184		Contract No.: AJ-2480A Case No.: 10204 13 SMO Authorization: [Signature] Bill to: Sandia National Laboratories Supplier Services, Dept. P.O. Box 5800 MS 0154	
Location		Tech Area VI		Reference LOV (available at SMO)	
Building N/A	Room N/A	ER Sample ID or Sample Location Detail		Sample Type	
Sample No. - Fraction					
050484 - 001	PEM-1			SA	
050485 - 001	TRM-2			SA	
050486 - 001	-NRM-2 NBHD			SA	
-					
-					
-					
-					
-					
-					
-					
-					
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No.		Sample Tracking (see use)		Special Instructions/QC Requirements	
Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		Data Entered (m/d/y)		EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Delay		Init		Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Name Douglas E. Perry		Company/Organization/Phone		These samples are well characterized and individuals being sent to GEL are being sent to GEL on behalf of Hank Hinton.	
1. Relinquished by [Signature]		Date 11-16-99 Time 0900		Please list as separate report.	
1. Received by		Org.		Org.	
2. Relinquished by		Date		Date	
2. Received by		Org.		Org.	
3. Relinquished by		Date		Date	
3. Received by		Org.		Org.	

Original To Accompany Samples, Laboratory Copy (White) 1<sup>st</sup> Copy To Accompany Samples, Return to SMO (Blue) 2<sup>nd</sup> Copy SMO Suspense Copy (Yellow) 3<sup>rd</sup> Copy Field Copy (Pink)

### 0244-B Characterization

Sample #	Plutonium-239 Result (pCi/g)	Plutonium-238 Result (pCi/g)	Americium-241 Result (pCi/g)
0244-B 1	39.9	7.88	38.4
0244-B 2	44.1	7.97	40.6
0244-B 3	45.8	6.56	31.8
0244-B 4	43.6	7.69	31.5
0244-B 5	43	7.9	40.2
0244-B 6	43.5	7.84	29.4
0244-B 7	41.3	7.67	36
0244-B 8	44.3	6.95	33.2
0244-B 9	42.7	7.2	29.2
0244-B 10	44.9	7.69	30
0244-B 11	41.4	7.22	30.2
0244-B 12	41.3	7.74	36
0244-B 13	39.2	6.65	33.8
0244-B 14	39.6	7.78	31.1
0244-B 15	45.3	8.41	37.3
0244-B 16	38.1	6.74	33.6
0244-B 17	48.5	8.51	30.5
0244-B 18	36.5	7.23	38.6
0244-B 19	35.3	6.98	30.9
0244-B 20	37.4	8.55	31.3
Mean Value	41.79	7.56	33.68
1 sigma	3.418	0.596	3.724
2 sigma	6.835	1.193	7.448
75% Limit	30.75	6.02	24.38
125% Limit	51.25	10.04	40.63
Expected Result	41.0 +/- 3.0	8.03 +/- 0.37	32.5 +/- 1.1
Achieved Results	41.79 +/- 3.418	7.56 +/- .596	33.68 +/- 3.724

REFERENCE DATA 4/14/2000

Amanda L. Lehn 4/30/04  
 Lott & Stadel 5/1/04

## PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

### INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

### SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.





# CERTIFICATE OF CALIBRATION

## ALPHA STANDARD SOLUTION

Radionuclide	Am-243	Customer:	GENERAL ENGINEERING LABS
Half Life:	7380 $\pm$ 40 years	P.O.No.:	9290-RAD
Catalog No.:	7243	Reference Date:	January 1 1994 12:00 PST.
Source No.:	445-96-2	Contained Radioactivity:	(Am-243) 101.2 $\mu$ Ci
		Contained Radioactivity:	(Am-243) 3750 kBq

### Description of Solution

a. Mass of solution:	5.3739 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form:	Am(NO <sub>3</sub> ) <sub>3</sub> in 2N HNO <sub>3</sub>
c. Carrier content:	None added
d. Density:	1.0651 g/ml @ 20°C.

### Radioimpurities

None detected

### Radioactive Daughters

Np-239 (beta active) in equilibrium

### Radionuclide Concentration

(Am-243) 18.84  $\mu$ Ci/g

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under:	228, 278	keV.
Branching ratio(s) used:	0.108, 0.1420	gamma rays per decay.

### Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	$\pm 3.0\%$
b. Random uncertainty in assay:	$\pm 0.4\%$
c. Random uncertainty in weighing(s):	$\pm 0.0\%$
d. Total uncertainty at the 99% confidence level:	$\pm 3.0\%$

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

*Anna H. Khan*  
QUALITY CONTROL

*Jan 3, 1994*  
Date Signed

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO  
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE

☒ 1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 2. SOAK TEST

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.

☒ 5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha at the time of shipment.

# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	05/11/2009
Ampoule Mass (g):	5.3739 g	Expiration Date:	05/11/2010
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Julie Strock	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/30/2008	09/29/2009
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC  
Version 1.0 9/18/2000

## Verification for Am-243 Standard 445-96-2-SS

M. Aders 5/15/2009	Isotope	Value	Uncertainty
	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590
Mean Value (Counting) =	1.340	101.99	Pass
Stdev =	0.043588989	Rule 3 (Pass/Fail)	
Target =	1.314		
Lower Limit =	1.252822021		
Upper Limit =	1.427177979		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.087177979		
10 % of Mean =	0.134		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard **445-96-2-SS** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **Cm-244** standard **0533-O** and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

*M. Aders* 5/15/09  
*Taheri* 07/09



**Eckert & Ziegler**

**Analytics**

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**CERTIFICATE OF CALIBRATION**  
**Standard Radionuclide Source**

**78747-278**

**1283**

**U-232 5 mL Liquid in Flame Sealed Vial**

**Customer:** GEL Laboratories, LLC  
**P.O. No.:** 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

<b>Isotope:</b>	<b>U-232</b>
<b>Activity (Bq):</b>	<b>3.754 E3</b>
<b>Half-Life:</b>	<b>68.9 years</b>
<b>Calibration Date:</b>	<b>December 9, 2008 12:00 EST</b>
<b>Relative Expanded Uncertainty (k=2):</b>	<b>5.0%</b>

**Comments:**

Impurities: U-233 <0.3%, Am-241 <0.15%  
5.20453 grams 1M HNO<sub>3</sub> solution.

**Source Prepared By:** W. Mao

W. Mao, Radiochemist

**QA Approved:** D. M. Montgomery

D. M. Montgomery, QA Manager

**Date:** 12-11-08



# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/ml	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/02/2009	12/02/2010
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/ml	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/08/2010	12/02/2010
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

## Verification for Uranium-232 Standard 1283-H

<b>Analyst:</b> A. Drochter	<b>Serial #</b>	<b>Value</b>	<b>Uncertainty</b>					
<b>Date:</b> 12/10/09	1283-H N1	2.020	pCi/L	0.238	pCi/L			
	1283-H N2	2.000	pCi/L	0.234	pCi/L			
	1283-H N3	2.060	pCi/L	0.242	pCi/L			
<b>Mean Value (Counting) =</b>	2.027	pCi/L	<b>99.66904</b>	<b>Pass</b>				
<b>Stdev =</b>	0.030550505	pCi/L	<b>Rule 3 (Pass/Fail)</b>					
<b>Target =</b>	2.033	pCi/L						
<b>Lower Limit =</b>	1.965565657	pCi/L						
<b>Upper Limit =</b>	2.087767676	pCi/L						
<b>Rule 1 Pass/Fail</b>	<b>Pass</b>							
<b>Two sigma =</b>	0.061101009							
<b>10 % of Mean =</b>	0.202666667							
<b>Rule 2 (Pass/Fail)</b>	<b>Pass</b>							

**Rule 1 =** The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

**Rule 2 =** The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

**Rule 3 =** The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

*A. Drochter*  
12/14/09

1375



# National Institute of Standards & Technology Certificate

## Standard Reference Material 4334H Plutonium-242 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive plutonium-242 nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

**Radiological Hazard:** The SRM ampoule contains plutonium-242 with a total activity of approximately 150 Bq. Plutonium-242 decays by alpha-particle emission. None of the alpha particles escape from the SRM ampoule. During the decay process, X-rays and gamma rays with energies from 10 keV to 160 keV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. The SRM should be used only by persons qualified to handle radioactive material.

**Chemical Hazard:** The SRM ampoule contains nitric acid ( $\text{HNO}_3$ ) with a concentration of 3 moles per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

**Storage and Handling:** The SRM should be stored and used at a temperature between 5 °C and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least January 2015. The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

**Preparation:** This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, M.P. Unterweger, Acting Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group. The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program.

RECEIVED

Lisa R. Karam, Acting Chief  
Ionizing Radiation Division

Gaithersburg, Maryland 20899  
January 2005

Robert L. Watters, Jr., Chief  
Measurement Services Division

### **Recommended Procedure for Opening the SRM Ampoule**

- 1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.
- 2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.
- 3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.
- 4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.
- 5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.
- 6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.
- 7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.
- 8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.
- 9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]\*.

# PROPERTIES OF SRM 4334H

## Certified values

Radionuclide	Plutonium-242
Reference time	1200 EST, 07 June 1994 [b]*
Massic activity of the solution [c]	26.31 Bq·g <sup>-1</sup>
Relative expanded uncertainty (k=2)	0.72% [d] [e]
Solution density	(1.105 ± 0.002) g·mL <sup>-1</sup> at 20 °C [f]

## Uncertified values

Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter	(16.5 ± 0.5) mm	
	Wall thickness	(0.60 ± 0.04) mm	
	Barium content	Less than 2.5%	
	Lead-oxide content	Less than 0.02%	
	Other heavy elements	Trace quantities	
Solution mass	Approximately 5.5 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L <sup>-1</sup> )	Mass Fraction (g·g <sup>-1</sup> )
	H <sub>2</sub> O	50	0.81
	HNO <sub>3</sub>	3.2	0.19
	<sup>242</sup> Pu <sup>+6</sup>	8 × 10 <sup>-7</sup>	2 × 10 <sup>-7</sup>
Radiological Properties:			
Alpha-particle-emitting impurities	None detected [g] [h]. See table on page 5.		
Beta-particle-emitting impurities	Plutonium-241: (0.092 ± 0.018) Bq·g <sup>-1</sup> [f] [h]		
Photon-emitting impurities	None detected [i]		
Half lives used	Plutonium-242: (373 500 ± 1100) a [j] [5] Plutonium-241: (14.35 ± 0.10) a [j] [5] Americium-241: (432.2 ± 0.7) a [j] [5]		
Calibration method and measuring instrument(s)	Three 4π liquid-scintillation counters, a calibrated germanium detector system, and a silicon surface-barrier detector		

**EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d] [c]\***

Input Quantity $x_i$ , the source of uncertainty  (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$ , the standard uncertainty of $x_i$ , (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$ , (%) [k]	Relative Sensitivity Factor, $ \partial y / \partial x_i  \cdot$ ( $x_i/y$ ) [m]	Relative Uncertainty Of Output Quantity, $u_c(y)/y$ , (%) [n]
Massic alpha-particle emission rate, corrected for background and decay	Standard deviation of the mean for 80 sets of $4\pi\alpha$ liquid- scintillation measurements (A)	0.05	1.0	0.05
Half life of Pu-242	Standard uncertainty of the half life (A)	0.32 [p]	0.00001 [q]	0.000003
Decay-scheme data	Standard uncertainty of the probability of decay by alpha- particle emission (A)	0.001	1.0	0.001
Extrapolation of alpha- particle-count-rate- versus-energy to zero energy	Estimated (B)	0.25	1.0	0.25
Gravimetric measurements	Estimated (B)	0.10	1.0	0.10
Live time [r]	Estimated (B)	0.10	1.0	0.10
Alpha-particle detection efficiency of scintillators	Estimated (B)	0.15	1.0	0.15
Alpha-particle-emitting impurities	Limit of detection (B) [s]	100.	0.001	0.10
Photon-emitting impurities	Limit of detection (B) [s]	100.	0.001	0.10
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$ , (%)				0.36
Coverage Factor, $k$				<u>x 2</u>
Relative Expanded Uncertainty of the Output Quantity, $U/y$ , (%)				0.72

RELATIVE ACTIVITIES OF RADIONUCLIDIC IMPURITIES AT THE REFERENCE TIME [b]

Radionuclide	Half Life (years) [j] [5]	Relative Activity As Determined By	
		LLNL	NIST
Plutonium-242	373 500 ± 1100	1.000 000	1.000 000
Plutonium-241	14.35 ± 0.10	--	0.0035 ± 0.0004 [t]
Plutonium-240	6 564 ± 11	<sup>239</sup> Pu + <sup>240</sup> Pu <0.000 001 [u]	<sup>239</sup> Pu + <sup>240</sup> Pu 0.000 020 ± 0.000 021 [v]
Plutonium-239	24 110 ± 30	<sup>238</sup> Pu + <sup>241</sup> Am <0.000 016 [u]	0.000 009 ± 0.000 016 [v]
Plutonium-238	87.7 ± 0.1		
Americium-241	432.2 ± 0.7		0.000 000 assumed [t]

NOTES

- [a] The Sievert is the SI unit for dose equivalent. See reference [1]. One  $\mu\text{Sv}$  is equal to 0.1 mrem.  
Distance from Ampoule (cm):           1       30     100  
Approximate Dose Rate ( $\mu\text{Sv/h}$ ):   <0.1       -       -
- [b] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994.
- [c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].
- [d] The reported value,  $y$ , of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as  $y = f(x_1, x_2, x_3, \dots, x_n)$ , where  $f$  is a mathematical function derived from the assumed model of the measurement process. The value,  $x_i$ , used for each input quantity  $i$  has a **standard uncertainty**,  $u(x_i)$ , that generates a corresponding uncertainty in  $y$ ,  $u_i(y) \equiv |\partial y / \partial x_i| \cdot u(x_i)$ , called a **component of combined standard uncertainty** of  $y$ . The **combined standard uncertainty** of  $y$ ,  $u_c(y)$ , is the positive square root of the sum of the squares of the components of combined standard uncertainty. The combined standard uncertainty is multiplied by a **coverage factor** of  $k=2$  to obtain  $U$ , the **expanded uncertainty** of  $y$ .

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation  $u_c(y)$ , the unknown value of the massic activity is believed to lie in the interval  $y \pm U$  with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

- [e] The value of each component of combined standard uncertainty, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval  $U/2$  to  $2U$  (i.e., within a factor of 2 of the estimated value).
- [f] The stated uncertainty is two times the standard uncertainty.
- [g] Estimated limits of detection for alpha-particle-emitting impurities, expressed as massic alpha-particle emission rates (numbers of alpha particles per second per gram), are:  
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies less than 3.1 MeV,  
 $0.03 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 3.1 and 4.4 MeV, and  
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies greater than 5.0 MeV.
- [h] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994. Americium-241, the daughter of plutonium-241, was removed but has been growing in since that time.
- [i] Estimated limits of detection for photon-emitting impurities, expressed as massic photon emission rates (numbers of photons per second per gram), are:  
 $5 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 19 and 39 keV,  
 $7 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 49 and 92 keV,  
 $2 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 106 and 507 keV,  
 $1 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 515 and 1456 keV, and  
 $5 \times 10^{-6} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 1465 and 2750 keV,  
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of plutonium-242, plutonium-241, or americium-241.
- [j] The stated uncertainty is the standard uncertainty.
- [k] Relative standard uncertainty of the input quantity  $x_i$ .
- [m] The relative change in the output quantity  $y$  divided by the relative change in the input quantity  $x_i$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 1.0$ , then a 1% change in  $x_i$  results in a 1% change in  $y$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 0.05$ , then a 1% change in  $x_i$  results in a 0.05% change in  $y$ .
- [n] Relative component of combined standard uncertainty of output quantity  $y$ , rounded to two significant figures or less. The relative component of combined standard uncertainty of  $y$  is given by  $u_c(y)/y = |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$ . The numerical values of  $u(x_i)/x_i$ ,  $|\partial y / \partial x_i| \cdot (x_i / y)$ , and  $u_c(y)/y$ , all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.



- [p] The relative standard uncertainty of  $\lambda \cdot t$  is determined by the relative standard uncertainty of  $\lambda$  (i.e., of the half life). The relative standard uncertainty of  $t$  is negligible.
- [q]  $|\partial y / \partial x_i| \cdot (x_i / y) = |\lambda \cdot t|$
- [r] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.
- [s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e.  $u(x_i) / x_i = 100\%$ .  $|\partial y / \partial x_i| \cdot (x_i / y) = \{(\text{response per Bq of impurity}) / (\text{response per Bq of Pu-242})\} \cdot \{(\text{Bq of impurity}) / (\text{Bq of Pu-242})\}$ . Thus  $u_i(y) / y$  is the relative change in  $y$  if the impurity were present with a massic activity equal to the estimated limit of detection.
- [t] The stated uncertainty is the standard uncertainty. The plutonium-241 activity was calculated from a gamma-ray measurement of the americium-241 ingrowth as of 25 November 1998, assuming that americium-241 was completely removed at the time of chemical purification.
- [u] Using alpha-particle spectrometry, no alpha-particle emission was detected that could reliably be ascribed to these radionuclides. The value shown is an estimated upper limit based upon background and counting statistics. Measurements were made at the Lawrence Livermore National Laboratory (LLNL) in July of 1994.
- [v] Using alpha-particle spectrometry, no alpha-particle emission was detected that could reliably be ascribed to these radionuclides. The stated uncertainty is the standard uncertainty. Measurements were made at the National Institute of Standards and Technology (NIST) in June and July of 1999.

#### REFERENCES

- [1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from Global Engineering Documents, 12 Inverness Way East, Englewood, CO 80112, U.S.A. Telephone 1-800-854-7179.
- [2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993 (corrected and reprinted, 1995). Available from Global Engineering Documents, 12 Inverness Way East, Englewood, CO 80112, U.S.A. Telephone 1-800-854-7179.
- [3] B.N. Taylor and C.E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.
- [4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.
- [5] Evaluated Nuclear Structure Data File (ENSDF), January 2005.



# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1375	Isotope:	Plutonium-242
Prepared By:	Mary Aders	Prepared By:	Ashley Drochter
Carrier Conc:	0.5M HNO3	Prep Date:	01/08/2010
Reference Date:	06/07/1994	Verification Date:	01/08/2010
Ampoule Mass (g):	5.5 g	Expiration Date:	01/08/2011
Uncertainty:	+/- .72 %	Primary Code:	1375-A
LogBook No:	RC-S-051-094	Dilution(mL):	250 mL
		Mass of Parent(g):	5.3542 g
		Density(g/mL):	1.0148
		Balance ID:	38080204

### Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3542 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (250 \text{ mL}) = 33.8086 \text{ dpm/mL}$
$(5.3542 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0148 \text{ g/mL}) / (250 \text{ mL}) = 33.3155 \text{ dpm/g}$

### Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
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GEL Laboratories LLC

Version 1.0 9/18/2000

## Verification for Pu-242 Standard 1375-A

A.Drochter 1/9/2010	Isotope	Value	Uncertainty
	1375-A	1.530	0.2410
	1375-A	1.630	0.2630
	1375-A	1.580	0.2480
Mean Value (Counting) =	1.580	103.75	Pass
Stdev =	0.05	Rule 3 (Pass/Fail)	
Target =	1.52		
Lower Limit =	1.48		
Upper Limit =	1.68		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.1		
10 % of Mean =	0.158		
Rule 2 (Pass/Fail)	Pass		

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

The analyst prepared three standard verification sources for standard 1375-A using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu 239 standard 0338-BB and 50 micrograms of neodymium carrier in a disposable centrifuge tube containing 4 mL of 2 M HCl and 6 mL of DI water. Four drops of 25% Hydrazine dihydrochloride were added to each centrifuge tube and swirled. Two mL of 49% HF was added to precipitate neodymium (and plutonium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Pu-242 were calculated by comparison to Pu-239 certified values.

*dal* 1/12/10  
*for* 1/12/10

# RUNLOGS

# Instrument Run Log

**Instrument Type: GAMMA SPECTROMETER**

**Batch ID: 947037**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
245667001	SAMPLE	MJH1	GAM10	09-FEB-10 13:16	DONE CAN		16-MAR-09 00:00
245667002	SAMPLE	MJH1	GAM12	09-FEB-10 13:17	DONE CAN		10-FEB-09 00:00
245667003	SAMPLE	MJH1	GAM16	09-FEB-10 13:17	DONE CAN		16-NOV-09 00:00
245667004	SAMPLE	MJH1	GAM13	09-FEB-10 13:19	DONE CAN		02-FEB-09 00:00
245667005	SAMPLE	MJH1	GAM23	09-FEB-10 13:21	DONE CAN		02-JUN-09 00:00
245667006	SAMPLE	MJH1	GAM20	09-FEB-10 13:24	DONE CAN		26-AUG-09 00:00
245691001	SAMPLE	MJH1	GAM19	09-FEB-10 13:25	DONE CAN		12-MAR-09 00:00
245691003	SAMPLE	MJH1	GAM25	09-FEB-10 14:46	DONE CAN		07-OCT-09 00:00
245691004	SAMPLE	MJH1	GAM17	09-FEB-10 14:53	DONE CAN		06-JAN-10 00:00
245691002	SAMPLE	MJH1	GAM22	09-FEB-10 15:21	DONE CAN		02-DEC-09 00:00
245691005	SAMPLE	MJH1	GAM10	09-FEB-10 15:24	DONE CAN		16-MAR-09 00:00
245691006	SAMPLE	MJH1	GAM13	09-FEB-10 15:24	DONE CAN		02-FEB-09 00:00
245691007	SAMPLE	MJH1	GAM16	09-FEB-10 15:24	DONE CAN		16-NOV-09 00:00
245691008	SAMPLE	MJH1	GAM12	09-FEB-10 15:32	DONE CAN		10-FEB-09 00:00
245691009	SAMPLE	MJH1	GAM18	09-FEB-10 15:32	DONE CAN		23-APR-09 00:00
245691010	SAMPLE	MJH1	GAM19	09-FEB-10 15:33	DONE CAN		12-MAR-09 00:00
245691011	SAMPLE	MJH1	GAM20	09-FEB-10 15:33	DONE CAN		26-AUG-09 00:00
245691012	SAMPLE	MJH1	GAM23	09-FEB-10 15:33	DONE CAN		02-JUN-09 00:00
245691014	SAMPLE	MJH1	GAM17	09-FEB-10 17:27	DONE CAN		06-JAN-10 00:00
1202028548	MB	MJH1	GAM21	09-FEB-10 17:28	DONE CAN		28-JUL-09 00:00
245691013	SAMPLE	MJH1	GAM18	09-FEB-10 17:37	DONE CAN		23-APR-09 00:00
1202028549	DUP	MJH1	GAM10	09-FEB-10 17:44	DONE CAN		16-MAR-09 00:00
1202028550	LCS	MJH1	GAM19	09-FEB-10 17:44	DONE CAN		12-MAR-09 00:00

## Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 947354**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
245667001	SAMPLE	CXM2	1088	10-FEB-10 16:27	DONE		
245667002	SAMPLE	CXM2	1211	10-FEB-10 18:13	DONE		
245667003	SAMPLE	CXM2	1212	10-FEB-10 18:13	DONE		
245667004	SAMPLE	CXM2	1213	10-FEB-10 18:13	DONE		
245667005	SAMPLE	CXM2	1214	10-FEB-10 18:13	DONE		
245667006	SAMPLE	CXM2	1215	10-FEB-10 18:13	DONE		
245691001	SAMPLE	CXM2	1216	10-FEB-10 18:13	DONE		
245691002	SAMPLE	CXM2	1217	10-FEB-10 18:13	DONE		
245691003	SAMPLE	CXM2	1218	10-FEB-10 18:14	DONE		
245691004	SAMPLE	CXM2	1219	10-FEB-10 18:14	DONE		
245691005	SAMPLE	CXM2	1220	10-FEB-10 18:14	DONE		
245691006	SAMPLE	CXM2	1231	10-FEB-10 18:14	DONE		
245691007	SAMPLE	CXM2	1232	10-FEB-10 18:14	DONE		
245691008	SAMPLE	CXM2	1233	10-FEB-10 18:14	DONE		
245691009	SAMPLE	CXM2	1234	10-FEB-10 18:14	DONE		
245691010	SAMPLE	CXM2	1235	10-FEB-10 18:14	DONE		
245691011	SAMPLE	CXM2	1236	10-FEB-10 18:14	DONE		
245691012	SAMPLE	CXM2	1237	10-FEB-10 18:14	DONE		
245691013	SAMPLE	CXM2	1238	10-FEB-10 18:14	DONE		
245691014	SAMPLE	CXM2	1239	10-FEB-10 18:14	DONE		
1202029343	MB	CXM2	1240	10-FEB-10 18:14	DONE		
1202029344	DUP	CXM2	1241	10-FEB-10 18:14	DONE		
1202029345	LCS	CXM2	1242	10-FEB-10 18:14	DONE		

## Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 947356**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
245667001	SAMPLE	CXM2	1037	10-FEB-10 16:27	DUSE		
245667002	SAMPLE	CXM2	1038	10-FEB-10 16:27	DONE		
245667003	SAMPLE	CXM2	1039	10-FEB-10 16:27	DONE		
245667004	SAMPLE	CXM2	1040	10-FEB-10 16:27	DONE		
245667005	SAMPLE	CXM2	1041	10-FEB-10 16:27	DONE		
245667006	SAMPLE	CXM2	1042	10-FEB-10 16:27	DONE		
245691001	SAMPLE	CXM2	1043	10-FEB-10 16:27	DONE		
245691002	SAMPLE	CXM2	1044	10-FEB-10 16:27	DONE		
245691003	SAMPLE	CXM2	1045	10-FEB-10 16:27	DONE		
245691004	SAMPLE	CXM2	1046	10-FEB-10 16:27	DONE		
245691005	SAMPLE	CXM2	1047	10-FEB-10 16:27	DONE		
245691006	SAMPLE	CXM2	1048	10-FEB-10 16:27	DONE		
245691007	SAMPLE	CXM2	1071	10-FEB-10 16:27	DONE		
245691008	SAMPLE	CXM2	1072	10-FEB-10 16:27	DONE		
245691009	SAMPLE	CXM2	1073	10-FEB-10 16:27	DONE		
245691010	SAMPLE	CXM2	1074	10-FEB-10 16:27	DONE		
245691011	SAMPLE	CXM2	1075	10-FEB-10 16:27	DONE		
245691012	SAMPLE	CXM2	1076	10-FEB-10 16:27	DONE		
245691013	SAMPLE	CXM2	1083	10-FEB-10 16:27	DONE		
245691014	SAMPLE	CXM2	1084	10-FEB-10 16:27	DONE		
1202029347	MB	CXM2	1085	10-FEB-10 16:27	DONE		
1202029348	DUP	CXM2	1086	10-FEB-10 16:27	DONE		
1202029349	LCS	CXM2	1087	10-FEB-10 16:27	DONE		

# Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 947357

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
245691013	SAMPLE	CXM2	1166	09-FEB-10 11:26	DONE		
245691014	SAMPLE	CXM2	1169	09-FEB-10 11:26	DONE		
1202029350	MB	CXM2	1170	09-FEB-10 11:26	DONE		
1202029351	DUP	CXM2	1171	09-FEB-10 11:26	DONE		
1202029352	LCS	CXM2	1172	09-FEB-10 11:26	DONE		
245667001	SAMPLE	CXM2	1139	10-FEB-10 10:40	DONE		
245667002	SAMPLE	CXM2	1140	10-FEB-10 10:40	DONE		
245667003	SAMPLE	CXM2	1145	10-FEB-10 10:40	DONE		
245667004	SAMPLE	CXM2	1146	10-FEB-10 10:40	DONE		
245667005	SAMPLE	CXM2	1147	10-FEB-10 10:40	DONE		
245667006	SAMPLE	CXM2	1148	10-FEB-10 10:40	DONE		
245691001	SAMPLE	CXM2	1001	10-FEB-10 10:43	DONE		
245691002	SAMPLE	CXM2	1002	10-FEB-10 10:43	DONE		
245691003	SAMPLE	CXM2	1003	10-FEB-10 10:43	DONE		
245691004	SAMPLE	CXM2	1004	10-FEB-10 10:43	DUSE		
245691005	SAMPLE	CXM2	1005	10-FEB-10 10:43	DONE		
245691006	SAMPLE	CXM2	1006	10-FEB-10 10:43	DONE		
245691007	SAMPLE	CXM2	1007	10-FEB-10 10:43	DONE		
245691008	SAMPLE	CXM2	1008	10-FEB-10 10:43	DONE		
245691009	SAMPLE	CXM2	1009	10-FEB-10 10:43	DUSE		
245691010	SAMPLE	CXM2	1010	10-FEB-10 10:43	DONE		
245691011	SAMPLE	CXM2	1011	10-FEB-10 10:43	DONE		
245691012	SAMPLE	CXM2	1012	10-FEB-10 10:43	DONE		
245691004	SAMPLE	CXM2	1162	11-FEB-10 15:06	DONE		



# Instrument Run Log

Instrument Type: LSC

Batch ID: 948402

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
245691004	SAMPLE	KXK2	LSCBROWN	14-FEB-10 20:01	DONE		
245691006	SAMPLE	KXK2	LSCBROWN	14-FEB-10 21:39	DONE		
245691007	SAMPLE	KXK2	LSCBROWN	14-FEB-10 23:17	DONE		
245691012	SAMPLE	KXK2	LSCBROWN	15-FEB-10 00:55	DONE		
245691014	SAMPLE	KXK2	LSCBROWN	15-FEB-10 02:33	DONE		
1202031682	MB	KXK2	LSCBROWN	15-FEB-10 04:11	DONE		
1202031683	DUP	KXK2	LSCBROWN	15-FEB-10 05:49	DONE		
245691008	SAMPLE	KXK2	LSCBROWN	15-FEB-10 08:39	DONE		
245691009	SAMPLE	KXK2	LSCBROWN	15-FEB-10 08:55	DONE		
245691010	SAMPLE	KXK2	LSCBROWN	15-FEB-10 09:11	DONE		
245691011	SAMPLE	KXK2	LSCBROWN	15-FEB-10 09:28	DONE		
245691013	SAMPLE	KXK2	LSCBROWN	15-FEB-10 09:44	DONE		
1202031684	LCS	KXK2	LSCBROWN	15-FEB-10 10:00	DONE		
245691001	SAMPLE	KXK2	LSCGREEN	16-FEB-10 17:43	DONE		
245691002	SAMPLE	KXK2	LSCGREEN	16-FEB-10 19:21	DONE		
245691003	SAMPLE	KXK2	LSCGREEN	16-FEB-10 20:59	DONE		
245691005	SAMPLE	KXK2	LSCGREEN	16-FEB-10 22:37	DONE		

## Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 952128**

<b>Sample ID</b>	<b>Sample Type</b>	<b>Analyst</b>	<b>Instrument</b>	<b>Run Date</b>	<b>Status</b>	<b>Geometry</b>	<b>Calibration Date</b>
245691009	SAMPLE	CXM2	1113	18-FEB-10 18:41	DONE		
1202040645	MB	CXM2	1114	18-FEB-10 18:41	DONE		
1202040646	DUP	CXM2	1115	18-FEB-10 18:41	DONE		
1202040647	LCS	CXM2	1119	18-FEB-10 18:41	DONE		