

Tuesday, March 02, 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: 10-2195
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 3/2/2010

TURNAROUND/REPORT DUE: 4/1/2010

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
EP&A:901.1		1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1						
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
EPA:906.0						
		1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:906.0						
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
HASL-300:AM-241						
		1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
HASL-300:ISOPU						
		1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOPU						
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
HASL-300:ISOU						
		1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	

Final Page of REQUEST NUMBER 10-2195

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2195C

LOS ALAMOS

REQUEST NUMBER: 10-2195

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 4/1/2010

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
RE36-10-7407	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7407	1	POLY	H3	Ice	R
RE36-10-7421	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7421	1	POLY	H3	Ice	R
RE36-10-7422	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7422	1	POLY	H3	Ice	R
RE36-10-7451	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7451	1	POLY	H3	Ice	R
RE36-10-7449	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7449	1	POLY	H3	Ice	R
RE36-10-7445	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7445	1	POLY	H3	Ice	R
RE36-10-7450	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7450	1	POLY	H3	Ice	R
RE36-10-7444	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7444	1	POLY	H3	Ice	R
RE36-10-7448	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7448	1	POLY	H3	Ice	R
RE36-10-7447	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7447	1	POLY	H3	Ice	R
RE36-10-7443	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7443	1	POLY	H3	Ice	R
RE36-10-7452	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7452	1	POLY	H3	Ice	R
RE36-10-7437	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7437	1	POLY	H3	Ice	R

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2195C

LOS ALAMOS

REQUEST NUMBER: 10-2195

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 4/1/2010

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
RE36-10-7440	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7440	1	POLY	H3	Ice	R
RE36-10-7435	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7435	1	POLY	H3	Ice	R
RE36-10-7441	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7441	1	POLY	H3	Ice	R
RE36-10-7442	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7442	1	POLY	H3	Ice	R
RE36-10-7436	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7436	1	POLY	H3	Ice	R
RE36-10-7438	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7438	1	POLY	H3	Ice	R
RE36-10-7439	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7439	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

 3/5/10 3:00

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By: Date

Time

Remarks:

Printed Name

Signature

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7407

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	Allh
TIME COLLECTED(HH:MM)		1134	SUB-MEDIA:	TUFF 1	NA
PRS ID:	36-008	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	36-610576	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	Q	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	Q	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	Normal	8082+8270+NME D-EXP	500 ML AMBER GLASS	Ice	Y	
1		8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown moist silty sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-27

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 25 dpm
Beta/Gamma = 1538 dpm

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

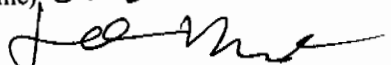

73m 2/25/10

COLLECTED BY (PRINT)

Th McFarlane

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) 	1530	(Signature) 	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7421

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		A114
TIME COLLECTED(HH:MM)		0941		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610583	↓		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	normal	8082+8270+NME D-EXP	500 ML AMBER GLASS	Ice	Y	
1		8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown sandy silt, roots

SAMPLE COMMENTS:

NA

LOCATION DESC: 8-30

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 94 dpm
Beta/Gamma = 2290 dpm

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

77m 2/25/10

COLLECTED BY (PRINT)

ThMcFarland

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>[Signature]</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7422

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		955		SUB-MEDIA:		TUFF 1	
PRS ID: 36-008		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: 36-610583		↓		FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC		↓		FIELD PREP:		NA	
TOP DEPTH: 0		2.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		3.0		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		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	normal	8082+8270+NME D-EXP	500 ML AMBER GLASS	Ice	Y	
1		8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown sandy silt

SAMPLE COMMENTS:

NA

LOCATION DESC: 8-30

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 29 dpm
Beta/Gamma \leq 2160 dpm

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

COLLECTED BY (PRINT)

REVIEWED BY (PRINT)

J. Branch

72m 2/25/10

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) J. Branch	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7435

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	OBT3	SED
TIME COLLECTED (HH:MM)		9100	SUB-MEDIA:	TUFF 1	NA
PRS ID:	36-008	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	36-610590		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	SED	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	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Frozen brown silt

SAMPLE COMMENTS:

NA

LOCATION DESC:

8 - 37

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 10 dpm
Beta/Gamma \leq 1734 dpm

PID $\frac{\text{Ambient Reading}}{734} = \text{ppm}$

734 2/25/10

COLLECTED BY (PRINT)

Thm Farlane

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) [Signature]	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 2/25/10 1550
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7436

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1110		SUB-MEDIA:		TUFF 1	
PRS ID: 36-008		ok		SAMPLE TECH CODE:		HA	
LOCATION ID: 36-610520		↓		FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC		↓		FIELD PREP:		NA	
TOP DEPTH: 0		2.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		3.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		S		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	Norms!	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Frozen black and brown silty sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-37

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \pm 47 dpm
Beta/Gamma \pm 1440 dpm

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

73m 2/25/10

COLLECTED BY (PRINT)

J. Branch

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) <i>Sheri Sherwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7437

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		SED
TIME COLLECTED (HH:MM)		1115		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610591			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	SED		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	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown loamy silt, roots
 FD RE36-10-7524

SAMPLE COMMENTS:

NA

LOCATION DESC:

8 - 38

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 58 dpm
 Beta/Gamma \leq 1785 dpm

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

73m 2/25/10

COLLECTED BY (PRINT)

J. McFarlane

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>[Signature]</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sherri Sherwood (Signature) <i>[Signature]</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7438

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>	<u>AS PLANNED</u>	<u>AS COLLECTED</u>
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3
TIME COLLECTED (HH:MM)		1120	SUB-MEDIA:	TUFF 1
PRS ID:	36-008	ok	SAMPLE TECH CODE:	HA
LOCATION ID:	36-610591	↓	FIELD QC TYPE:	NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA
TOP DEPTH:	0	2.0	SAMPLE USAGE:	INV
BOTTOM DEPTH:	0	3.0	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	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Pinkish gray tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

8 - 38

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = $\frac{41}{30}$ dpm ⁴¹ ₃₀ 2/25/10
 Beta/Gamma = 2210 dpm

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

7 mm 2/25/10

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sheri Sherwood	2/25/10
(Signature) <i>[Signature]</i>	1530	(Signature) <i>[Signature]</i>	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7439

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	OBT3		Alk
TIME COLLECTED (HH:MM)		1135		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610592	↓		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	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silt, cobbles, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8 - 39

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 41 dpm
Beta/Gamma = 1644 dpm

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

7m 2/25/10

COLLECTED BY (PRINT)

Thmcfarlang

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherrie Newwood	2/25/10
(Signature) [Signature]	1530	(Signature) [Signature]	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7440

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	OBT3		A11h
TIME COLLECTED (HH:MM)		1445		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610592			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0		2.0	SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0		3.0	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	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

FR RE36-10-7536

Pinkish gray tuff and brown silty sand, roots

SAMPLE COMMENTS:

NA

LOCATION DESC: 4 - 39

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 72 dpm
Beta/Gamma = 2090 dpm

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

73m 2/25/10

COLLECTED BY (PRINT)

TLM cFarland

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sherri Sherwood (Signature) <i>Sherri Sherwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7441

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1104		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610593			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	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown loamy silt

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-25

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 64 dpm
Beta/Gamma = 1834 dpm

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

72m 2/25/10

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Jennifer Newwood (Signature) <i>Jennifer Newwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7442

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		62/25/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1111		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610593			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	3.0		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	NA			BOREHOLE DECLINATION:	NA		BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silt, moist, and pinkish gray tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-25

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 15 dpm
Beta/Gamma \leq 1996 dpm

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

7m 2/25/10

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>[Signature]</i>	Date/Time 1530 2/25/10	RECEIVED BY (Printed Name) Sheri Newwood (Signature) <i>[Signature]</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7443

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	11h
TIME COLLECTED(HH:MM)		1150	SUB-MEDIA:	TUFF 1	NA
PRS ID:	36-008	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610594	↓	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	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	y	
1		H3	500 ML POLY	Ice	y	
1		METALS+U-GEL	125 ML POLY	Ice	y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	y	

SAMPLE DESC: moist brown silty sand, roots

SAMPLE COMMENTS:

NA

LOCATION DESC: 8-41

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 41 dpm
Beta/Gamma \leq 1805 dpm

PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$ T_{7m} 2/25/10

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) <i>Sheri Sherwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7444

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		A11h
TIME COLLECTED (HH:MM)		1157		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610594			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0		2.0	SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0		3.0	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	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-41

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 61 dpmBeta/Gamma \leq 1623 dpmPID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

72m 2/25/10

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) <i>Shenig Shenwood</i> (Signature) <i>Shenig Shenwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7445

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1152		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610595		↓	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	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

moist brown silt, some loam, tuff fragments,
roots, pine needles

SAMPLE COMMENTS:

NA

LOCATION DESC: 8-28

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 25 dpm
Beta/Gamma \leq 1583 dpm

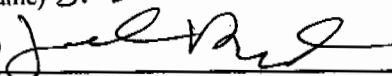

PID $\frac{\text{Ambient Reading}}{\text{ppm}} = 72m \ 2/25/10$

COLLECTED BY (PRINT)

TLM cFarlano

REVIEWED BY (PRINT)

J. Branch

RELINQUISHED BY (Printed Name) J. Branch (Signature) 	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sherin Sherwood (Signature) 	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7447

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		A11h
TIME COLLECTED (HH:MM)		12:17		SUB-MEDIA:	TUFF 1		N/A
PRS ID:	36-008		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610596		↓	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	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Dark Brown, moist, silty soil w/roots + cobbles.

FTB: RE36-10-7543

SAMPLE COMMENTS: N/A

LOCATION DESC: 8-42

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 2.9 dpm
Beta/Gamma ≤ 1936 dpm

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

7th 2/25/10

COLLECTED BY (PRINT)

J. Branch

REVIEWED BY (PRINT)

L. Lopez

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) <i>Henry Sherwood</i> (Signature) <i>Henry Sherwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7448

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1230		SUB-MEDIA:		TUFF 1	
PRS ID: 36-008		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: 36-610596		↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		2.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		3.0		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	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Dark Brown, moist, silty soil w roots

FR: RE36-10-7537

SAMPLE COMMENTS: N/A

LOCATION DESC: 8-42

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 47 dpm
Beta/Gamma ≤ 2000 dpm

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

72-2/25/10

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L. Lopez

RELINQUISHED BY (Printed Name) J. Branch (Signature)	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sherril Sherwood (Signature)	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7449

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		11h
TIME COLLECTED (HH:MM)		1345		SUB-MEDIA:	TUFF 1		N/A
PRS ID:	36-008	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610597			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:	N/A		
FIELD MATRIX:	R			EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	N/A			COMPOSITE TIME INTERVAL:	N/A		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	N/A		
				BOREHOLE DIRECTION:	N/A		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	g	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice		
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None		
1		H3	500 ML POLY	Ice		
1		METALS+U-GEL	125 ML POLY	Ice		
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice		
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	✓	

SAMPLE DESC: Brown, moist, silty soil w/roots & organics

FD: RE36-10-7525

SAMPLE COMMENTS:

N/A

LOCATION DESC: 8-40

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 29 dpm
Beta/Gamma = 1790 dpm

PID $\frac{\text{Ambient}}{\text{Reading}}$ = ppm
29 2/25/10

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RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sherrin Sherwood (Signature) <i>Sherrin Sherwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7450

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	OBT3		A116
TIME COLLECTED (HH:MM)		1400		SUB-MEDIA:	TUFF 1		N/A
PRS ID:	36-008		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610597			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC		↓	FIELD PREP:	NA		
TOP DEPTH:	0		2.0	SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0		3.0	SCREEN/PORT DESC:	N/A		
FIELD MATRIX:	R		S	EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	N/A			COMPOSITE TIME INTERVAL:	N/A		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	N/A		
				BOREHOLE DIRECTION:	N/A		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice		
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None		
1		H3	500 ML POLY	Ice		
1		METALS+U-GEL	125 ML POLY	Ice		
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice		
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	↓	

SAMPLE DESC: Brown, silty, slightly moist soil w/tuff fragments

SAMPLE COMMENTS:

N/A

LOCATION DESC: 8-40

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 51 dpm
Beta/Gamma = 1996 dpm

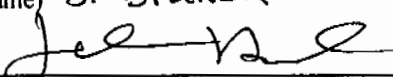
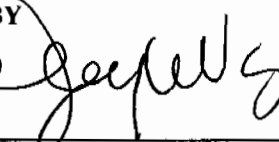
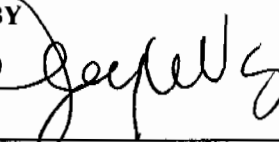
28 2/25/10
PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

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J. Branch

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L. Lopez

RELINQUISHED BY (Printed Name) J. Branch (Signature) 	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name)  (Signature) 	Date/Time 2/25/10 1550
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7451

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/2010		MEDIA:	QBT3		A11h
TIME COLLECTED (HH:MM)		1410		SUB-MEDIA:	TUFF 1		N/A
PRS ID:	36-008		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610598			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:	N/A		
FIELD MATRIX:	R		S	EXCAVATED: YES/NO	NO	2/25/10	
COMPOSITE TYPE:	N/A			COMPOSITE TIME INTERVAL:	N/A		
				WATER FLOWING: YES/NO/NA	NO		
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	N/A		
				BOREHOLE DIRECTION:	N/A		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	✓	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice		
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None		
1		H3	500 ML POLY	Ice		
1		METALS+U-GEL	125 ML POLY	Ice		
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice		
1	✓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	✓	

SAMPLE DESC: Brown, moist silty soil

SAMPLE COMMENTS: N/A

LOCATION DESC: 8-52

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 10 dpm
Beta/Gamma = 1578 dpm

PID ^{2B 2/25/10} ~~Ambient~~ Reading = ppm

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J. Branch

REVIEWED BY (PRINT)

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RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 630	RECEIVED BY (Printed Name) <i>Sherrill Sherwood</i> (Signature) <i>Sherrill Sherwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

EVENT NAME: 4th Qtr. FY09 - AOC 36-008 - Threemile Canyon

SAMPLE ID: RE36-10-7452

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/25/10		MEDIA: QBT3		A11h	
TIME COLLECTED (HH:MM)		1430		SUB-MEDIA: TUFF 1		N/A	
PRS ID: 36-008		OK		SAMPLE TECH CODE: HA		OK	
LOCATION ID: 36-610598		↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		2.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		3.0		SCREEN/PORT DESC: N/A			
FIELD MATRIX: R		S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: N/A		COMPOSITE TIME INTERVAL: N/A		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: N/A		BOREHOLE DIRECTION: N/A			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice		
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None		
1		H3	500 ML POLY	Ice		
1		METALS+U-GEL	125 ML POLY	Ice		
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice		
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	↓	

SAMPLE DESC: Brown, silty soil w/roots (moist)

SAMPLE COMMENTS:

N/A

LOCATION DESC: 8-52

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 25 dpm
Beta/Gamma = 1688 dpm


2/25/10
PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

COLLECTED BY (PRINT)


J. Branch


REVIEWED BY (PRINT) L. Lopez

RELINQUISHED BY (Printed Name) J. Branch (Signature) <i>J. Branch</i>	Date/Time 2/25/10 1530	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) <i>Sheri Sherwood</i>	Date/Time 2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time


DATA VALIDATION COVER SHEET	
5119-1 <div style="text-align: center;">Data Validation Cover Sheet</div>	Records Use only 

Section I.							
REQUEST NUMBER: <u>10-2195</u>		VALIDATION DATE: <u>04/12/10</u>		LAB CODE: <u>GEL</u>			
CONTRACT LABORATORY NAME: <u>GEL Laboratories LLC</u>							
VALIDATOR: <u>David Schwent</u>		ORGANIZATION: <u>Analytical Quality Associates, Inc.</u>					
ANALYTICAL SUITE (CHECK ALL THAT APPLY):							
<input type="checkbox"/> TPH-GRO	<input type="checkbox"/> HIGH EXPLOSIVES	<input type="checkbox"/> DIOXIN FURANS	<input type="checkbox"/> LCMSMS PERCHLORATES				
<input type="checkbox"/> TPH-DRO	<input type="checkbox"/> METALS	<input type="checkbox"/> PCB CONGENERS	<input type="checkbox"/> ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS				
<input type="checkbox"/> GENERAL CHEMISTRY	<input checked="" type="checkbox"/> RADIOCHEMISTRY	<input type="checkbox"/> LCMSMS HIGH EXPLOSIVES					
<input type="checkbox"/> 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):							
<p>1. All reported sample results that were rejected by the laboratory due to interference or low abundance were qualified R₁R₅a. In the QC samples, several results were also rejected by the laboratory. No sample data were qualified as a result.</p> <p>2. The %Rs of alpha spec tracer U-232 for samples RE36-10-7447, -7443, and -7438 were < the laboratory LAL. All associated U-235/6 sample results were NDs and thus, were not qualified. All other associated sample results were detects and, thus, were qualified J+,R3b. Also, the %R of alpha spec tracer Am-243 for the LCS sample of batch 970857 was > the UAL but ≤125%. Since this sample was a QC sample, no sample data were qualified as a result.</p> <p>3. It should be noted that no MS analysis was performed for the tritium analyses. However, an LCS analysis was performed and was within acceptance limits. No sample data were qualified as a result.</p>							
Reviewed by: <u>Susan Ball</u>			Level: <u>I</u>		Date: <u>04/12/10</u>		


DATA VALIDATION COVER SHEET	
5119-1 Data Validation Cover Sheet	Records Use only  Los Alamos NATIONAL LABORATORY EST 1947
VALIDATOR'S SIGNATURE: <u>David Schwartz</u> DATE: <u>04/12/10</u>	
Form 5119-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
5119-2 Rad Analytical Data Validation Checklist	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 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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	
5119-2 Rad Analytical Data Validation Checklist	Records Use only 

Yes No N/A (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				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: April 5, 2010

Client Sample ID: RE36-10-7407
Sample ID: 248513001
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 22.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0189	+/-0.00399	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0182	0.0241	+/-0.00585	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0348	0.0204	+/-0.00915	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.22	0.136	+/-0.119	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236	U	0.0656	0.0831	+/-0.022	0.100	pCi/g						
Uranium-238		1.28	0.0956	+/-0.123	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.30	0.593	+/-0.181	0.200	pCi/g		MXR1	03/20/10	1120	961097	6
Bismuth-211	UI	4.86	R,R5a	0.477	+/-0.394	pCi/g						
Bismuth-214		1.55		0.155	+/-0.139	pCi/g						
Cadmium-109	UI	2.67	R,R5a	2.27	+/-0.742	pCi/g						
Cerium-139	U	-0.0018	0.0776	+/-0.0238	0.050	pCi/g						
Cesium-134	UI	0.176	R,R5a	0.125	+/-0.0434	pCi/g						
Cesium-137		0.477		0.0857	+/-0.0489	pCi/g						
Cobalt-60	U	0.0365		0.0953	+/-0.0275	pCi/g						
Europium-152	U	0.0096		0.224	+/-0.0815	pCi/g						
Lanthanum-140	U	0.121		0.293	+/-0.0904	pCi/g						
Lead-212		2.16		0.140	+/-0.154	pCi/g						
Lead-214		1.76		0.174	+/-0.151	pCi/g						
Mercury-203	U	0.111		0.117	+/-0.0328	pCi/g						
Potassium-40		30.9		0.777	+/-1.89	pCi/g						
Radium-223	U	0.657		1.49	+/-0.491	pCi/g						
Radium-224	UI	7.18	R,R5a	1.50	+/-1.22	pCi/g						
Radium-226		1.55		0.155	+/-0.139	pCi/g						
Radium-228		1.86		0.313	+/-0.240	pCi/g						
Ruthenium-106	U	-0.107		0.742	+/-0.234	pCi/g						
Sodium-22	U	-0.0124		0.103	+/-0.0325	pCi/g						
Strontium-85	U	0.105		0.114	+/-0.0364	pCi/g						

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7407
Sample ID: 248513001

Project: LANL01004
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"												
Thallium-208		0.584	0.0817	+/-0.0582	0.080	pCi/g						
Thorium-227	U	-0.0463	0.607	+/-0.180		pCi/g						
Thorium-231	U	0.657	1.49	+/-0.491		pCi/g						
Thorium-234	U	3.15	5.07	+/-1.51	2.00	pCi/g						
Tin-113	U	-0.00181	0.116	+/-0.035	0.100	pCi/g						
Uranium-235	U	0.150	0.498	+/-0.151	0.500	pCi/g						
Yttrium-88	U	-0.0137	0.064	+/-0.0212	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	105	160	+/-50.0	250	pCi/L		KXK2	03/27/10	1358	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	52.1	(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

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Contact : Ms. Joylene Valdez
Project : LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7421
Sample ID: 248513002
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 15%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0127	0.0184	+/-0.00395	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0199	0.0232	+/-0.00903	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0042	0.0196	+/-0.00513	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.16	0.134	+/-0.115	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0997	0.0817	+/-0.0253	0.100	pCi/g						
Uranium-238		1.60	0.0941	+/-0.147	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.138	0.255	+/-0.0835	0.200	pCi/g		MXR1	03/20/10	1121	961097	6
Bismuth-211	UI	4.97	R,R5a	+/-0.355		pCi/g						
Bismuth-214		1.66		+/-0.133	0.200	pCi/g						
Cadmium-109	UI	4.41	R,R5a	+/-0.619		pCi/g						
Cerium-139	U	-0.0368	0.0515	+/-0.0164	0.050	pCi/g						
Cesium-134	UI	0.125	R,R5a	+/-0.038	0.100	pCi/g						
Cesium-137		0.376	0.0726	+/-0.0497	0.100	pCi/g						
Cobalt-60	U	-0.0232	0.0613	+/-0.0208	0.100	pCi/g						
Europium-152	U	-0.0466	0.173	+/-0.0542	0.200	pCi/g						
Lanthanum-140	U	-0.0676	0.224	+/-0.0729		pCi/g						
Lead-212		1.93	0.0954	+/-0.131	0.100	pCi/g						
Lead-214		1.80	0.111	+/-0.138	0.100	pCi/g						
Mercury-203	U	-0.0139	0.0744	+/-0.0237	0.100	pCi/g						
Potassium-40		28.9	0.748	+/-1.60	1.00	pCi/g						
Radium-223	U	-0.393	1.05	+/-0.393		pCi/g						
Radium-224	UI	5.64	R,R5a	+/-0.760		pCi/g						
Radium-226		1.66	0.118	+/-0.133		pCi/g						
Radium-228		2.13	0.254	+/-0.218	0.500	pCi/g						
Ruthenium-106	U	-0.174	0.512	+/-0.166	0.800	pCi/g						
Sodium-22	U	-0.0693	0.0648	+/-0.0278	0.080	pCi/g						
Strontium-85	UI	0.096	R,R5a	+/-0.0251		pCi/g						
Thallium-208		0.548	0.0609	+/-0.0534	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7421
Sample ID: 248513002
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.00714	0.433	+/-0.134		pCi/g						
Thorium-231	U	-0.393	1.05	+/-0.393		pCi/g						
Thorium-234		3.31	2.12	+/-1.25	2.00	pCi/g						
Tin-113	U	-0.00382	0.0813	+/-0.0243	0.100	pCi/g						
Uranium-235	U	-0.256	0.332	+/-0.108	0.500	pCi/g						
Yttrium-88	U	0.0257	0.0758	+/-0.021	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	103	162	+/-50.4	250	pCi/L		KXK2	03/27/10	1441	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	81.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	61.2	(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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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7422
Sample ID: 248513003
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 5.86%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00251	0.0204	+/-0.00182	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00226	0.022	+/-0.00668	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.00305	0.0186	+/-0.00391	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.14	0.110	+/-0.106	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0724	0.0672	+/-0.0206	0.100	pCi/g						
Uranium-238		1.16	0.0774	+/-0.108	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.104	0.121	+/-0.0362	0.200	pCi/g		MXR1	03/20/10	1121	961097	6
Bismuth-211	UI	4.60	R,R5a	0.379	+/-0.382	pCi/g						
Bismuth-214		1.80		0.143	+/-0.137	0.200	pCi/g					
Cadmium-109	UI	5.13	R,R5a	1.07	+/-0.548	pCi/g						
Cerium-139	U	0.0384	0.0605	+/-0.0172	0.050	pCi/g						
Cesium-134	U	0.0634	0.130	+/-0.0366	0.100	pCi/g						
Cesium-137	U	-0.0232	0.0818	+/-0.0264	0.100	pCi/g						
Cobalt-60	U	-0.0461	0.0867	+/-0.0294	0.100	pCi/g						
Europium-152	U	0.0806	0.200	+/-0.063	0.200	pCi/g						
Lanthanum-140	U	-0.0299	0.301	+/-0.0939		pCi/g						
Lead-212		2.10	0.105	+/-0.128	0.100	pCi/g						
Lead-214		1.67	0.138	+/-0.146	0.100	pCi/g						
Mercury-203	U	0.0627	0.0774	+/-0.037	0.100	pCi/g						
Potassium-40		29.5	0.787	+/-1.72	1.00	pCi/g						
Radium-223	U	-0.569	1.15	+/-0.419		pCi/g						
Radium-224	UI	5.66	R,R5a	1.13	+/-0.658	pCi/g						
Radium-226		1.80	0.143	+/-0.137		pCi/g						
Radium-228		2.15	0.314	+/-0.260	0.500	pCi/g						
Ruthenium-106	U	-0.207	0.604	+/-0.197	0.800	pCi/g						
Sodium-22	U	0.0384	0.111	+/-0.0322	0.080	pCi/g						
Strontium-85	U	0.0621	0.0945	+/-0.0295		pCi/g						
Thallium-208		0.671	0.0752	+/-0.0665	0.080	pCi/g						

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7422
Sample ID: 248513003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.15	0.473	+/-0.151		pCi/g						
Thorium-231	U	-0.569	1.15	+/-0.419		pCi/g						
Thorium-234		1.37	1.18	+/-0.562	2.00	pCi/g						
Tin-113	U	-0.00237	0.0953	+/-0.0283	0.100	pCi/g						
Uranium-235	U	-0.126	0.383	+/-0.120	0.500	pCi/g						
Yttrium-88	U	0.0362	0.0907	+/-0.024	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	87.1	160	+/-49.1	250	pCi/L		KXK2	03/27/10	1523	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	69.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	71.1	(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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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7451
Sample ID: 248513004
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 39.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0146	0.0192	+/-0.00469	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00838	0.0253	+/-0.00622	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240	U	0.013	0.0214	+/-0.00623	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.42	0.143	+/-0.136	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236		0.119	0.0871	+/-0.030	0.100	pCi/g						
Uranium-238		1.68	0.100	+/-0.156	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0364	0.325	+/-0.0978	0.200	pCi/g		MXR1	03/20/10	1122	961097	7
Bismuth-211	UI	4.09	R,R5a	0.311	+/-0.247	pCi/g						
Bismuth-214		1.40		0.0999	+/-0.0988	0.200	pCi/g					
Cadmium-109	UI	4.02	R,R5a	1.39	+/-0.576	pCi/g						
Cerium-139	U	-0.0397		0.0453	+/-0.0143	0.050	pCi/g					
Cesium-134	UI	0.109	R,R5a	0.0835	+/-0.0327	0.100	pCi/g					
Cesium-137		0.691		0.0616	+/-0.0543	0.100	pCi/g					
Cobalt-60	U	-0.011		0.0553	+/-0.0176	0.100	pCi/g					
Europium-152	U	0.00631		0.150	+/-0.0508	0.200	pCi/g					
Lanthanum-140	U	0.0925		0.205	+/-0.0567	pCi/g						
Lead-212		1.69		0.0848	+/-0.082	0.100	pCi/g					
Lead-214		1.49		0.113	+/-0.0985	0.100	pCi/g					
Mercury-203	U	0.0256		0.068	+/-0.0203	0.100	pCi/g					
Potassium-40		23.6		0.432	+/-1.15	1.00	pCi/g					
Radium-223	U	0.119		1.00	+/-0.354	pCi/g						
Radium-224	UI	5.58	R,R5a	0.908	+/-0.728	pCi/g						
Radium-226		1.40		0.0999	+/-0.0988	pCi/g						
Radium-228		2.01		0.200	+/-0.200	0.500	pCi/g					
Ruthenium-106	U	-0.0424		0.439	+/-0.139	0.800	pCi/g					
Sodium-22	U	0.0189		0.0678	+/-0.020	0.080	pCi/g					
Strontium-85	U	-0.152		0.0769	+/-0.0275	pCi/g						
Thallium-208		0.472		0.0466	+/-0.0433	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7451
Sample ID: 248513004

Project: LANL01004
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	-0.0934	0.390	+/-0.122		pCi/g					
Thorium-231	U	0.119	1.00	+/-0.354		pCi/g					
Thorium-234	U	1.20	2.95	+/-0.879	2.00	pCi/g					
Tin-113	U	-0.00756	0.0736	+/-0.0223	0.100	pCi/g					
Uranium-235	U	0.0448	0.334	+/-0.106	0.500	pCi/g					
Yttrium-88	U	0.0125	0.0564	+/-0.0164	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium	U	67.5	156	+/-47.0	250	pCi/L		KXK2	03/27/10	1606 964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	78.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	57.0	(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

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 Contact: Ms. Joylene Valdez
 Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7449
 Sample ID: 248513005
 Matrix: R
 Collect Date: 25-FEB-10
 Receive Date: 03-MAR-10
 Collector: Client
 Moisture: 17.8%

Project: LANL01004
 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0106	0.017	+/-0.00347	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.008	0.0233	+/-0.00467	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.019	0.0197	+/-0.00678	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.06	0.0925	+/-0.0959	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236	U	0.0486	0.0565	+/-0.0175	0.100	pCi/g						
Uranium-238		1.21	0.065	+/-0.107	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.116	0.269	+/-0.0865	0.200	pCi/g		MXR1	03/20/10	1122	961097	6
Bismuth-211	UI	4.22	R,R5a	0.359	+/-0.304	pCi/g						
Bismuth-214		1.43		0.124	+/-0.105	pCi/g						
Cadmium-109	UI	3.01	R,R5a	1.48	+/-0.518	pCi/g						
Cerium-139	U	-0.0053	0.0555	+/-0.0168	0.050	pCi/g						
Cesium-134	U	0.0503	0.0889	+/-0.0252	0.100	pCi/g						
Cesium-137		0.413	0.0672	+/-0.0459	0.100	pCi/g						
Cobalt-60	U	-0.0196	0.0603	+/-0.0195	0.100	pCi/g						
Europium-152	U	-0.069	0.169	+/-0.0765	0.200	pCi/g						
Lanthanum-140	U	-0.0596	0.197	+/-0.0652	pCi/g							
Lead-212		1.67	0.0951	+/-0.0846	0.100	pCi/g						
Lead-214		1.53	0.131	+/-0.118	0.100	pCi/g						
Mercury-203	U	0.034	0.0793	+/-0.0227	0.100	pCi/g						
Potassium-40		25.7	0.492	+/-1.26	1.00	pCi/g						
Radium-223	U	-0.664	1.17	+/-0.363	pCi/g							
Radium-224	UI	4.26	R,R5a	1.02	+/-0.656	pCi/g						
Radium-226		1.43	0.124	+/-0.105	pCi/g							
Radium-228		1.73	0.242	+/-0.193	0.500	pCi/g						
Ruthenium-106	U	-0.114	0.519	+/-0.162	0.800	pCi/g						
Sodium-22	U	0.000974	0.0734	+/-0.022	0.080	pCi/g						
Strontium-85	U	0.0709	0.0851	+/-0.0235	pCi/g							
Thallium-208		0.492	0.0615	+/-0.0423	0.080	pCi/g						

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7449
Sample ID: 248513005

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.131	0.449	+/-0.134		pCi/g						
Thorium-231	U	-0.664	1.17	+/-0.363		pCi/g						
Thorium-234	U	1.86	2.21	+/-0.943	2.00	pCi/g						
Tin-113	U	-0.00202	0.0865	+/-0.0256	0.100	pCi/g						
Uranium-235	U	0.141	0.370	+/-0.109	0.500	pCi/g						
Yttrium-88	U	-0.0124	0.052	+/-0.0174	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	45.6	161	+/-47.1	250	pCi/L		KXK2	03/27/10	1648	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	80.4	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7445
Sample ID: 248513006
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 25.6%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00595	0.0192	+/-0.00273	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00887	0.023	+/-0.00552	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0398	0.0194	+/-0.00862	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.133	+/-0.126	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0817	0.0813	+/-0.0241	0.100	pCi/g						
Uranium-238		1.58	0.0935	+/-0.145	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.116	0.241	+/-0.0756	0.200	pCi/g		MXR1	03/20/10	1123	961097	6
Bismuth-211	UI	5.10	R,R5a	+/-0.367		pCi/g						
Bismuth-214		1.36		+/-0.119	0.200	pCi/g						
Cadmium-109	UI	4.73	R,R5a	+/-0.506		pCi/g						
Cerium-139	U	-0.0181		+/-0.0158	0.050	pCi/g						
Cesium-134	UI	0.0852	R,R5a	+/-0.0229	0.100	pCi/g						
Cesium-137		0.677		+/-0.051	0.100	pCi/g						
Cobalt-60	U	-0.00534		+/-0.0174	0.100	pCi/g						
Europium-152	U	-0.119		+/-0.0578	0.200	pCi/g						
Lanthanum-140	U	0.0359		+/-0.0666		pCi/g						
Lead-212		2.03		+/-0.146	0.100	pCi/g						
Lead-214		1.85		+/-0.143	0.100	pCi/g						
Mercury-203	U	0.045		+/-0.0239	0.100	pCi/g						
Potassium-40		31.8		+/-1.63	1.00	pCi/g						
Radium-223	U	-0.856		+/-0.342		pCi/g						
Radium-224	UI	5.34	R,R5a	+/-0.695		pCi/g						
Radium-226		1.36		+/-0.119		pCi/g						
Radium-228		2.23		+/-0.211	0.500	pCi/g						
Ruthenium-106	U	-0.0374		+/-0.152	0.800	pCi/g						
Sodium-22	U	0.0142		+/-0.0217	0.080	pCi/g						
Strontium-85	UI	0.155	R,R5a	+/-0.0264		pCi/g						
Thallium-208		0.593		+/-0.0505	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7445
Sample ID: 248513006

Project: LANL01004
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	0.0652	0.447	+/-0.135		pCi/g					
Thorium-231	U	-0.856	1.07	+/-0.342		pCi/g					
Thorium-234		2.45	2.15	+/-0.853	2.00	pCi/g					
Tin-113	U	0.00711	0.0805	+/-0.024	0.100	pCi/g					
Uranium-235	U	0.254	0.386	+/-0.112	0.500	pCi/g					
Yttrium-88	U	0.0192	0.0569	+/-0.0162	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium	U	73.5	158	+/-47.8	250	pCi/L		KXK2	03/27/10	1731 964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	59.5	(50%-105%)

Notes:

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

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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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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7450
Sample ID: 248513007
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 9.88%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0181	+/-0.00164	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0101	0.0214	+/-0.00447	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0053	0.0181	+/-0.00345	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.108	+/-0.120	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0802	0.0657	+/-0.0224	0.100	pCi/g						
Uranium-238		1.39	0.0756	+/-0.124	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.27	0.358	+/-0.108	0.200	pCi/g		MXR1	03/20/10	1123	961097	6
Bismuth-211	UI	4.27	R,R5a	0.390	+/-0.294	pCi/g						
Bismuth-214		1.22		0.130	+/-0.103	pCi/g						
Cadmium-109	UI	4.39	R,R5a	1.45	+/-0.585	pCi/g						
Cerium-139	U	-0.00175	0.0588	+/-0.0176	0.050	pCi/g						
Cesium-134	U	0.0865	0.0995	+/-0.0263	0.100	pCi/g						
Cesium-137	U	0.0579	0.087	+/-0.0246	0.100	pCi/g						
Cobalt-60	U	-0.0101	0.0623	+/-0.0199	0.100	pCi/g						
Europium-152	U	-0.107	0.182	+/-0.0998	0.200	pCi/g						
Lanthanum-140	U	-0.119	0.202	+/-0.0707		pCi/g						
Lead-212		1.69	0.105	+/-0.0859	0.100	pCi/g						
Lead-214		1.55	0.136	+/-0.115	0.100	pCi/g						
Mercury-203	U	-0.0089	0.0822	+/-0.0241	0.100	pCi/g						
Potassium-40		25.3	0.472	+/-1.31	1.00	pCi/g						
Radium-223	U	-0.122	1.22	+/-0.413		pCi/g						
Radium-224	UI	4.69	R,R5a	1.12	+/-0.688	pCi/g						
Radium-226		1.22		0.130	+/-0.103	pCi/g						
Radium-228		1.88		0.231	+/-0.230	0.500						
Ruthenium-106	U	-0.118	0.601	+/-0.188	0.800	pCi/g						
Sodium-22	U	-0.0601	0.0718	+/-0.0257	0.080	pCi/g						
Strontium-85	UI	0.0964	R,R5a	0.0872	+/-0.0258	pCi/g						
Thallium-208		0.632		0.0581	+/-0.0501	0.080						

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7450
Sample ID: 248513007
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0848	0.484	+/-0.150		pCi/g						
Thorium-231	U	-0.122	1.22	+/-0.413		pCi/g						
Thorium-234	U	1.52	3.24	+/-0.913	2.00	pCi/g						
Tin-113	U	-0.0162	0.0895	+/-0.0269	0.100	pCi/g						
Uranium-235	U	-0.00152	0.404	+/-0.121	0.500	pCi/g						
Yttrium-88	U	-0.0173	0.0616	+/-0.0205	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	83.3	160	+/-48.8	250	pCi/L		KXK2	03/27/10	1813	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	81.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.5	(50%-105%)

Notes:

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

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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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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7444
Sample ID: 248513008
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 20.6%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00521	0.0172	+/-0.00242	0.050	pCi/g		AXD2	04/03/10	1620	971644	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0192	0.0225	+/-0.00611	0.050	pCi/g		AYB1	03/25/10	2023	965492	5
Plutonium-239/240	U	0.015	0.0191	+/-0.00608	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.14	0.106	+/-0.106	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236		0.0698	0.0649	+/-0.0198	0.100	pCi/g						
Uranium-238		1.27	0.0746	+/-0.115	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0187	0.0816	+/-0.0261	0.200	pCi/g		MXR1	03/20/10	1124	961097	7
Bismuth-211	UI	4.42	R,R5a	0.325	+/-0.331	pCi/g						
Bismuth-214		1.61		0.103	+/-0.127	pCi/g						
Cadmium-109	UI	3.79	R,R5a	0.826	+/-0.394	pCi/g						
Cerium-139	U	-0.00595		0.0422	+/-0.0125	pCi/g						
Cesium-134	UI	0.167	R,R5a	0.0988	+/-0.0387	pCi/g						
Cesium-137		0.383		0.0684	+/-0.0417	pCi/g						
Cobalt-60	U	0.00324		0.0739	+/-0.0224	pCi/g						
Europium-152	U	0.0465		0.163	+/-0.052	pCi/g						
Lanthanum-140	U	0.0111		0.241	+/-0.0714	pCi/g						
Lead-212		1.86		0.0868	+/-0.120	pCi/g						
Lead-214		1.61		0.118	+/-0.128	pCi/g						
Mercury-203	U	0.0424		0.0677	+/-0.0218	pCi/g						
Potassium-40		26.7		0.571	+/-1.43	pCi/g						
Radium-223	U	-0.161		0.957	+/-0.321	pCi/g						
Radium-224	UI	4.41	R,R5a	0.932	+/-0.486	pCi/g						
Radium-226		1.61		0.103	+/-0.127	pCi/g						
Radium-228		1.89		0.233	+/-0.206	pCi/g						
Ruthenium-106	U	-0.0103		0.527	+/-0.155	pCi/g						
Sodium-22	U	0.0356		0.0805	+/-0.0227	pCi/g						
Strontium-85	U	0.0463		0.0709	+/-0.0224	pCi/g						
Thallium-208		0.541		0.0605	+/-0.0503	pCi/g						

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7444
Sample ID: 248513008

Project: LANL01004
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	-0.157	0.378	+/-0.120		pCi/g						
Thorium-231	U	-0.161	0.957	+/-0.321		pCi/g						
Thorium-234		1.63	0.766	+/-0.412	2.00	pCi/g						
Tin-113	U	-0.0353	0.0756	+/-0.0234	0.100	pCi/g						
Uranium-235	U	0.180	0.296	+/-0.0843	0.500	pCi/g						
Yttrium-88	U	-0.0154	0.0563	+/-0.0187	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	111	160	+/-50.6	250	pCi/L		KXK2	03/27/10	1856	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	71.0	(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

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Certificate of Analysis

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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: April 5, 2010

Client Sample ID: RE36-10-7448
Sample ID: 248513009
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 17.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000622	0.016	+/-0.0022	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00551	0.029	+/-0.0091	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240	U	0.0134	0.0245	+/-0.00732	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.995	0.115	+/-0.0965	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236	U	0.0557	0.0705	+/-0.0187	0.100	pCi/g						
Uranium-238		1.15	0.0812	+/-0.109	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00749	0.0836	+/-0.0258	0.200	pCi/g		MXR1	03/20/10	1127	961097	7
Bismuth-211	UI	5.19	R,R5a	0.328	+/-0.350	pCi/g						
Bismuth-214		1.60		0.136	+/-0.141	pCi/g						
Cadmium-109	UI	4.50	R,R5a	0.838	+/-0.423	pCi/g						
Cerium-139	U	0.00324	0.0457	+/-0.0129	0.050	pCi/g						
Cesium-134	U	0.122	0.125	+/-0.0395	0.100	pCi/g						
Cesium-137		0.312	0.0766	+/-0.0458	0.100	pCi/g						
Cobalt-60	U	0.011	0.0892	+/-0.0258	0.100	pCi/g						
Europium-152	U	0.0512	0.177	+/-0.052	0.200	pCi/g						
Lanthanum-140	U	-0.149	0.243	+/-0.0891		pCi/g						
Lead-212		1.91	0.128	+/-0.116	0.100	pCi/g						
Lead-214		1.89	0.119	+/-0.137	0.100	pCi/g						
Mercury-203	U	-0.0267	0.0718	+/-0.0223	0.100	pCi/g						
Potassium-40		28.6	0.532	+/-1.67	1.00	pCi/g						
Radium-223	U	0.728	1.10	+/-0.340		pCi/g						
Radium-224	UI	3.63	R,R5a	1.12	+/-0.565	pCi/g						
Radium-226		1.60	0.136	+/-0.141		pCi/g						
Radium-228		1.94	0.283	+/-0.235	0.500	pCi/g						
Ruthenium-106	U	-0.134	0.616	+/-0.193	0.800	pCi/g						
Sodium-22	U	-0.00309	0.0885	+/-0.0277	0.080	pCi/g						
Strontium-85	U	0.00807	0.0748	+/-0.0247		pCi/g						
Thallium-208		0.583	0.060	+/-0.0566	0.080	pCi/g						

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7448
Sample ID: 248513009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.23	0.405	+/-0.128		pCi/g						
Thorium-231	U	0.728	1.10	+/-0.340		pCi/g						
Thorium-234		1.41	0.842	+/-0.476	2.00	pCi/g						
Tin-113	U	-0.00889	0.083	+/-0.0261	0.100	pCi/g						
Uranium-235	U	0.0702	0.287	+/-0.0874	0.500	pCi/g						
Yttrium-88	U	0.00956	0.0893	+/-0.0265	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	32.1	157	+/-45.3	250	pCi/L		KXK2	03/27/10	1938	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	70.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	64.0	(50%-105%)

Notes:

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

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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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7447
Sample ID: 248513010
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 28.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0109	0.0174	+/-0.0042	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.016	0.0248	+/-0.00628	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240		0.0381	0.021	+/-0.0099	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.21	J+,R3b	0.196	+/-0.132	0.100	pCi/g	AYB1	03/26/10	1748	965493	6
Uranium-235/236	U	0.0775		0.120	+/-0.0292	0.100	pCi/g					
Uranium-238		1.70	J+,R3b	0.138	+/-0.172	0.100	pCi/g					
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0102		0.336	+/-0.115	0.200	pCi/g	MXR1	03/20/10	1127	961097	7
Bismuth-211	UI	5.55	R,R5a	0.396	+/-0.392		pCi/g					
Bismuth-214		1.67		0.153	+/-0.126	0.200	pCi/g					
Cadmium-109	UI	5.14	R,R5a	1.65	+/-0.698		pCi/g					
Cerium-139	U	0.0448		0.0719	+/-0.0214	0.050	pCi/g					
Cesium-134	UI	0.131	R,R5a	0.111	+/-0.0298	0.100	pCi/g					
Cesium-137		0.765		0.0777	+/-0.0609	0.100	pCi/g					
Cobalt-60	U	0.0189		0.0765	+/-0.022	0.100	pCi/g					
Europium-152	U	-0.152		0.200	+/-0.0983	0.200	pCi/g					
Lanthanum-140	U	0.0354		0.279	+/-0.0827		pCi/g					
Lead-212		1.73		0.120	+/-0.109	0.100	pCi/g					
Lead-214		2.02		0.144	+/-0.153	0.100	pCi/g					
Mercury-203	U	0.035		0.097	+/-0.0283	0.100	pCi/g					
Potassium-40		28.1		0.609	+/-1.78	1.00	pCi/g					
Radium-223	U	-0.461		1.37	+/-0.495		pCi/g					
Radium-224	UI	6.59	R,R5a	1.28	+/-0.853		pCi/g					
Radium-226		1.67		0.153	+/-0.126		pCi/g					
Radium-228		1.81		0.306	+/-0.257	0.500	pCi/g					
Ruthenium-106	U	-0.128		0.631	+/-0.193	0.800	pCi/g					
Sodium-22	U	-0.0183		0.0888	+/-0.0275	0.080	pCi/g					
Strontium-85	UI	0.158	R,R5a	0.106	+/-0.0323		pCi/g					
Thallium-208		0.515		0.0696	+/-0.0506	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7447
Sample ID: 248513010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.198	0.557	+/-0.162		pCi/g					
Thorium-231	U	-0.461	1.37	+/-0.495		pCi/g					
Thorium-234	U	2.39	2.90	+/-1.03	2.00	pCi/g					
Tin-113	U	0.034	0.104	+/-0.0307	0.100	pCi/g					
Uranium-235	U	0.219	0.457	+/-0.139	0.500	pCi/g					
Yttrium-88	U	0.000527	0.0652	+/-0.0201	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	129	160	+/-51.4	250	pCi/L		KXK2	03/27/10 2021	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	41.3 *	(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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BD Results are either below the MDC or tracer recovery is low

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7443
Sample ID: 248513011
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 25.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241		0.0171	0.017	+/-0.00446	0.050	pCi/g		AXD2	04/03/10	1620	971644	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0202	0.0224	+/-0.00595	0.050	pCi/g		AYB1	03/25/10	2023	965492	5
Plutonium-239/240		0.0471	0.0189	+/-0.00931	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.17	J+,R3b	+/-0.128	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236	U	0.0581		+/-0.0224	0.100	pCi/g						
Uranium-238		1.53	J+,R3b	+/-0.157	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.16		+/-0.112	0.200	pCi/g		MXR1	03/20/10	1208	961097	7
Bismuth-211	UI	4.91	R,R5a	+/-0.372		pCi/g						
Bismuth-214		1.43		+/-0.138	0.200	pCi/g						
Cadmium-109	UI	3.57	R,R5a	+/-0.655		pCi/g						
Cerium-139	U	0.0294		+/-0.0191	0.050	pCi/g						
Cesium-134	UI	0.204	R,R5a	+/-0.052	0.100	pCi/g						
Cesium-137		0.691		+/-0.0682	0.100	pCi/g						
Cobalt-60	U	0.0126		+/-0.0262	0.100	pCi/g						
Europium-152	U	0.0194		+/-0.0665	0.200	pCi/g						
Lanthanum-140	U	-0.117		+/-0.0924		pCi/g						
Lead-212		1.72		+/-0.111	0.100	pCi/g						
Lead-214		1.78		+/-0.144	0.100	pCi/g						
Mercury-203	U	0.0234		+/-0.0285	0.100	pCi/g						
Potassium-40		28.0		+/-1.60	1.00	pCi/g						
Radium-223	U	0.281		+/-0.456		pCi/g						
Radium-224	UI	5.03	R,R5a	+/-0.827		pCi/g						
Radium-226		1.43		+/-0.138		pCi/g						
Radium-228		1.82		+/-0.214	0.500	pCi/g						
Ruthenium-106	U	0.140		+/-0.173	0.800	pCi/g						
Sodium-22	U	0.018		+/-0.0276	0.080	pCi/g						
Strontium-85	UI	0.154	R,R5a	+/-0.0288		pCi/g						
Thallium-208		0.556		+/-0.0576	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID:
Sample ID:

RE36-10-7443
248513011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.114	0.525	+/-0.160		pCi/g						
Thorium-231	U	0.281	1.35	+/-0.456		pCi/g						
Thorium-234		4.32	2.56	+/-1.35	2.00	pCi/g						
Tin-113	U	0.00534	0.098	+/-0.0298	0.100	pCi/g						
Uranium-235	U	0.0159	0.430	+/-0.127	0.500	pCi/g						
Yttrium-88	U	0.010	0.0638	+/-0.0184	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	12.5	157	+/-44.3	250	pCi/L		KXK2	03/27/10	2103	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	42.8 *	(50%-105%)

Notes:

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

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** 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

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7452
Sample ID: 248513012
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 24.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00213	0.0185	+/-0.0044	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00923	0.0245	+/-0.00416	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0258	0.0207	+/-0.00707	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.14	0.137	+/-0.112	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.042	0.0836	+/-0.0162	0.100	pCi/g						
Uranium-238		1.39	0.0962	+/-0.132	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	UI	0.131	R,R5a	0.127	+/-0.0402	0.200	pCi/g	MXR1	03/20/10	1329	961097	6
Bismuth-211	UI	5.08	R,R5a	0.406	+/-0.362		pCi/g					
Bismuth-214		1.44		0.145	+/-0.111	0.200	pCi/g					
Cadmium-109	UI	4.48	R,R5a	1.08	+/-0.521		pCi/g					
Cerium-139	U	-0.0466		0.0583	+/-0.019	0.050	pCi/g					
Cesium-134	U	0.050		0.115	+/-0.0336	0.100	pCi/g					
Cesium-137		0.733		0.0885	+/-0.0544	0.100	pCi/g					
Cobalt-60	U	0.00912		0.0811	+/-0.0246	0.100	pCi/g					
Europium-152	U	-0.0316		0.208	+/-0.109	0.200	pCi/g					
Lanthanum-140	U	-0.178		0.209	+/-0.079		pCi/g					
Lead-212		1.87		0.112	+/-0.122	0.100	pCi/g					
Lead-214		1.85		0.148	+/-0.141	0.100	pCi/g					
Mercury-203	U	0.050		0.092	+/-0.0297	0.100	pCi/g					
Potassium-40		26.8		0.680	+/-1.35	1.00	pCi/g					
Radium-223	U	-0.144		1.37	+/-0.474		pCi/g					
Radium-224	UI	5.85	R,R5a	1.20	+/-0.867		pCi/g					
Radium-226		1.44		0.145	+/-0.111		pCi/g					
Radium-228		1.83		0.272	+/-0.241	0.500	pCi/g					
Ruthenium-106	U	0.031		0.686	+/-0.211	0.800	pCi/g					
Sodium-22	U	-0.00742		0.0855	+/-0.0269	0.080	pCi/g					
Strontium-85	U	0.082		0.0958	+/-0.0302		pCi/g					
Thallium-208		0.550		0.0693	+/-0.0539	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7452
Sample ID: 248513012

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.189	0.559	+/-0.161		pCi/g						
Thorium-231	U	-0.144	1.37	+/-0.474		pCi/g						
Thorium-234	U	1.26	1.33	+/-0.554	2.00	pCi/g						
Tin-113	U	-0.0176	0.0999	+/-0.0306	0.100	pCi/g						
Uranium-235	U	-0.000242	0.415	+/-0.127	0.500	pCi/g						
Yttrium-88	U	0.00252	0.0583	+/-0.0175	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	116	159	+/-50.5	250	pCi/L		KXK2	03/27/10	2146	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	78.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	70.2	(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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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: April 5, 2010

Client Sample ID: RE36-10-7437
Sample ID: 248513013
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 16.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0115	0.0168	+/-0.00389	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0106	0.0234	+/-0.00436	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0262	0.0198	+/-0.00774	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.30	0.161	+/-0.131	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236		0.127	0.0983	+/-0.0314	0.100	pCi/g						
Uranium-238		1.59	0.113	+/-0.153	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0802	0.337	+/-0.100	0.200	pCi/g		MXR1	03/20/10	1330	961097	6
Bismuth-211	UI	5.00	R,R5a	0.429	+/-0.364	pCi/g						
Bismuth-214		1.43		0.150	+/-0.123	pCi/g						
Cadmium-109	UI	2.98	R,R5a	1.75	+/-0.685	pCi/g						
Cerium-139	U	0.0192	0.0666	+/-0.0202	0.050	pCi/g						
Cesium-134	U	0.0567	0.107	+/-0.0304	0.100	pCi/g						
Cesium-137		0.688	0.0825	+/-0.0562	0.100	pCi/g						
Cobalt-60	U	0.00951	0.0806	+/-0.0241	0.100	pCi/g						
Europium-152	U	-0.161	0.187	+/-0.0724	0.200	pCi/g						
Lanthanum-140	U	0.0131	0.248	+/-0.0734		pCi/g						
Lead-212		2.03	0.117	+/-0.127	0.100	pCi/g						
Lead-214		1.82	0.156	+/-0.141	0.100	pCi/g						
Mercury-203	U	0.0351	0.0978	+/-0.0283	0.100	pCi/g						
Potassium-40		27.7	0.630	+/-1.65	1.00	pCi/g						
Radium-223	U	0.00894	1.48	+/-0.445		pCi/g						
Radium-224	UI	5.88	R,R5a	1.25	+/-0.797	pCi/g						
Radium-226		1.43	0.150	+/-0.123		pCi/g						
Radium-228		2.04	0.293	+/-0.245	0.500	pCi/g						
Ruthenium-106	U	-0.0379	0.670	+/-0.203	0.800	pCi/g						
Sodium-22	U	0.0246	0.0989	+/-0.029	0.080	pCi/g						
Strontium-85	U	-0.197	0.0941	+/-0.0343		pCi/g						
Thallium-208		0.633	0.0692	+/-0.0575	0.080	pCi/g						

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7437
Sample ID: 248513013

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.184	0.528	+/-0.162		pCi/g						
Thorium-231	U	0.00894	1.48	+/-0.445		pCi/g						
Thorium-234	U	1.95	3.18	+/-0.926	2.00	pCi/g						
Tin-113	U	-0.0441	0.0946	+/-0.0305	0.100	pCi/g						
Uranium-235	U	0.205	0.430	+/-0.129	0.500	pCi/g						
Yttrium-88	U	0.0137	0.082	+/-0.0237	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	116	169	+/-53.0	250	pCi/L		KXX2	03/29/10	1955	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	59.1	(50%-105%)

Notes:

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7440
Sample ID: 248513014
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 8.13%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00245	0.0161	+/-0.00179	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00309	0.0263	+/-0.00398	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0119	0.0222	+/-0.0049	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.06	0.153	+/-0.110	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236		0.107	0.0935	+/-0.028	0.100	pCi/g						
Uranium-238		1.19	0.108	+/-0.120	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.128	0.202	+/-0.0624	0.200	pCi/g		MXR1	03/20/10	1330	961097	6
Bismuth-211	UI	5.30	R,R5a	0.380	+/-0.355	pCi/g						
Bismuth-214		1.66		0.129	+/-0.125	0.200	pCi/g					
Cadmium-109	UI	4.01	R,R5a	1.21	+/-0.486	pCi/g						
Cerium-139	U	-0.0408		0.0521	+/-0.017	0.050	pCi/g					
Cesium-134	UI	0.173	R,R5a	0.108	+/-0.0437	0.100	pCi/g					
Cesium-137		0.0793		0.0745	+/-0.0237	0.100	pCi/g					
Cobalt-60	U	0.0102		0.0729	+/-0.0215	0.100	pCi/g					
Europium-152	U	-0.0143		0.169	+/-0.0583	0.200	pCi/g					
Lanthanum-140	U	-0.0811		0.194	+/-0.0669	pCi/g						
Lead-212		2.28		0.096	+/-0.128	0.100	pCi/g					
Lead-214		1.92		0.136	+/-0.139	0.100	pCi/g					
Mercury-203	U	0.0511		0.0828	+/-0.0233	0.100	pCi/g					
Potassium-40		30.7		0.577	+/-1.61	1.00	pCi/g					
Radium-223	U	-0.133		1.13	+/-0.388	pCi/g						
Radium-224	UI	5.38	R,R5a	1.03	+/-0.684	pCi/g						
Radium-226		1.66		0.129	+/-0.125	pCi/g						
Radium-228		2.29		0.235	+/-0.230	0.500	pCi/g					
Ruthenium-106	U	0.327		0.627	+/-0.175	0.800	pCi/g					
Sodium-22	U	0.020		0.0846	+/-0.0246	0.080	pCi/g					
Strontium-85	UI	0.100	R,R5a	0.0905	+/-0.0269	pCi/g						
Thallium-208		0.703		0.0632	+/-0.0587	0.080	pCi/g					

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7440
Sample ID: 248513014
Project: LANL01004
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	-0.24	0.416	+/-0.129		pCi/g					
Thorium-231	U	-0.133	1.13	+/-0.388		pCi/g					
Thorium-234		2.51	1.74	+/-0.838	2.00	pCi/g					
Tin-113	U	-0.0262	0.0826	+/-0.0258	0.100	pCi/g					
Uranium-235	U	0.144	0.368	+/-0.110	0.500	pCi/g					
Yttrium-88	U	-0.018	0.0509	+/-0.0168	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium	U	84.2	154	+/-47.4	250	pCi/L		KXK2	03/27/10	2311 964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	63.7	(50%-105%)

Notes:

TPU is calculated at the 67% confidence level (1-sigma).
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- 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: April 5, 2010

Client Sample ID: RE36-10-7435
Sample ID: 248513015
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 30.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00393	0.0167	+/-0.00256	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0137	0.0203	+/-0.00464	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0115	0.0171	+/-0.00488	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.00	0.151	+/-0.105	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.0662	0.0922	+/-0.0215	0.100	pCi/g						
Uranium-238		1.34	0.106	+/-0.131	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.049	0.192	+/-0.0613	0.200	pCi/g		MXR1	03/20/10	1330	961097	6
Bismuth-211	UI	4.84	R,R5a	+/-0.403		pCi/g						
Bismuth-214		1.52		+/-0.116	0.200	pCi/g						
Cadmium-109	UI	3.65	R,R5a	+/-0.488		pCi/g						
Cerium-139	U	-0.00381		+/-0.0133	0.050	pCi/g						
Cesium-134	UI	0.0886	R,R5a	+/-0.0235	0.100	pCi/g						
Cesium-137		0.453		+/-0.0513	0.100	pCi/g						
Cobalt-60	U	-0.0156		+/-0.0187	0.100	pCi/g						
Europium-152	U	0.0629		+/-0.0514	0.200	pCi/g						
Lanthanum-140	U	-0.0362		+/-0.062		pCi/g						
Lead-212		2.00		+/-0.153	0.100	pCi/g						
Lead-214		1.76		+/-0.154	0.100	pCi/g						
Mercury-203	U	0.0273		+/-0.0239	0.100	pCi/g						
Potassium-40		29.6		+/-1.54	1.00	pCi/g						
Radium-223	U	0.0891		+/-0.343		pCi/g						
Radium-224	UI	5.18	R,R5a	+/-0.636		pCi/g						
Radium-226		1.52		+/-0.116		pCi/g						
Radium-228		1.75		+/-0.183	0.500	pCi/g						
Ruthenium-106	U	-0.015		+/-0.154	0.800	pCi/g						
Sodium-22	U	0.0361		+/-0.0211	0.080	pCi/g						
Strontium-85	U	0.0626		+/-0.0219		pCi/g						
Thallium-208		0.630		+/-0.0535	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID:
Sample ID:

RE36-10-7435
248513015

Project: LANL01004
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	-0.0118	0.368	+/-0.111		pCi/g						
Thorium-231	U	0.0891	1.01	+/-0.343		pCi/g						
Thorium-234		2.07	1.62	+/-0.893	2.00	pCi/g						
Tin-113	U	0.00691	0.0723	+/-0.0207	0.100	pCi/g						
Uranium-235	U	0.050	0.318	+/-0.0921	0.500	pCi/g						
Yttrium-88	U	-0.0199	0.0461	+/-0.0163	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	137	159	+/-51.7	250	pCi/L		KXX2	03/27/10	2354	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	93.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	61.4	(50%-105%)

Notes:

TPU is calculated at the 67% confidence level (1-sigma).
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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANLER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7441
Sample ID: 248513016
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 22.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0171	0.018	+/-0.00485	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0134	0.0244	+/-0.00542	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0462	0.0206	+/-0.0104	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.49	0.181	+/-0.150	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.0794	0.111	+/-0.0258	0.100	pCi/g						
Uranium-238		1.79	0.127	+/-0.174	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0742	0.292	+/-0.0932	0.200	pCi/g		MXR1	03/20/10	1331	961097	6
Bismuth-211	UI	4.44	R,R5a	0.390	+/-0.319	pCi/g						
Bismuth-214		1.42		0.121	+/-0.121	pCi/g						
Cadmium-109	UI	5.14	R,R5a	1.35	+/-0.714	pCi/g						
Cerium-139	U	0.0255		0.0601	+/-0.018	pCi/g						
Cesium-134	U	0.0837		0.108	+/-0.0302	pCi/g						
Cesium-137		1.15		0.0764	+/-0.0768	pCi/g						
Cobalt-60	U	0.0113		0.0729	+/-0.0216	pCi/g						
Europium-152	U	-0.0444		0.187	+/-0.0577	pCi/g						
Lanthanum-140	U	-0.114		0.260	+/-0.0891	pCi/g						
Lead-212		2.03		0.109	+/-0.119	pCi/g						
Lead-214		1.61		0.137	+/-0.124	pCi/g						
Mercury-203	U	0.0228		0.0869	+/-0.0252	pCi/g						
Potassium-40		26.5		0.561	+/-1.51	pCi/g						
Radium-223	U	0.719		1.32	+/-0.430	pCi/g						
Radium-224	UI	5.08	R,R5a	1.17	+/-0.614	pCi/g						
Radium-226		1.42		0.121	+/-0.121	pCi/g						
Radium-228		2.00		0.248	+/-0.216	pCi/g						
Ruthenium-106	U	0.146		0.619	+/-0.179	pCi/g						
Sodium-22	U	0.0178		0.0889	+/-0.0262	pCi/g						
Strontium-85	U	0.0857		0.0928	+/-0.0281	pCi/g						
Thallium-208		0.587		0.0701	+/-0.0548	pCi/g						

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

Report Date: April 5, 2010

Client Sample ID:
Sample ID:

RE36-10-7441
248513016

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.141	0.457	+/-0.139		pCi/g					
Thorium-231	U	0.719	1.32	+/-0.430		pCi/g					
Thorium-234		3.44	2.39	+/-1.21	2.00	pCi/g					
Tin-113	U	-0.00709	0.0894	+/-0.0274	0.100	pCi/g					
Uranium-235	U	0.133	0.382	+/-0.115	0.500	pCi/g					
Yttrium-88	U	0.0112	0.0737	+/-0.0214	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	84.5	155	+/-47.6	250	pCi/L		KXK2	03/28/10	0036 964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	76.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	54.5	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7442
Sample ID: 248513017
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 13.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00305	0.0175	+/-0.0043	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0115	0.029	+/-0.00562	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0175	0.0245	+/-0.00627	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.27	0.165	+/-0.129	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.0652	0.101	+/-0.0223	0.100	pCi/g						
Uranium-238		1.14	0.116	+/-0.119	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.348	0.564	+/-0.178	0.200	pCi/g		MXR1	03/20/10	1331	961097	6
Bismuth-211	UI	5.26	R,R5a	0.480	+/-0.430	pCi/g						
Bismuth-214		1.60		0.162	+/-0.129	0.200	pCi/g					
Cadmium-109	UI	3.44	R,R5a	1.91	+/-0.794	pCi/g						
Cerium-139	U	0.00698		0.0737	+/-0.0222	0.050	pCi/g					
Cesium-134	UI	0.177	R,R5a	0.125	+/-0.0393	0.100	pCi/g					
Cesium-137		0.193		0.0818	+/-0.0449	0.100	pCi/g					
Cobalt-60	U	-0.0541		0.0758	+/-0.0271	0.100	pCi/g					
Europium-152	U	-0.0714		0.230	+/-0.0866	0.200	pCi/g					
Lanthanum-140	U	0.0474		0.284	+/-0.0956	pCi/g						
Lead-212		2.31		0.133	+/-0.160	0.100	pCi/g					
Lead-214		1.91		0.175	+/-0.165	0.100	pCi/g					
Mercury-203	U	0.0995		0.110	+/-0.0306	0.100	pCi/g					
Potassium-40		31.1		0.734	+/-1.84	1.00	pCi/g					
Radium-223	U	0.494		1.57	+/-0.519	pCi/g						
Radium-224	UI	5.82	R,R5a	1.43	+/-1.01	pCi/g						
Radium-226		1.60		0.162	+/-0.129	pCi/g						
Radium-228		2.54		0.276	+/-0.250	0.500	pCi/g					
Ruthenium-106	U	0.118		0.726	+/-0.219	0.800	pCi/g					
Sodium-22	U	-0.0538		0.0798	+/-0.028	0.080	pCi/g					
Strontium-85	UI	0.111	R,R5a	0.106	+/-0.0329	pCi/g						
Thallium-208		0.710		0.0717	+/-0.064	0.080	pCi/g					

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7442
Sample ID: 248513017
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0747	0.597	+/-0.176		pCi/g						
Thorium-231	U	0.494	1.57	+/-0.519		pCi/g						
Thorium-234		4.51	4.32	+/-2.13	2.00	pCi/g						
Tin-113	U	0.00186	0.111	+/-0.0332	0.100	pCi/g						
Uranium-235	U	0.00695	0.476	+/-0.145	0.500	pCi/g						
Yttrium-88	U	-0.0051	0.0589	+/-0.0186	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	103	157	+/-49.2	250	pCi/L		KXX2	03/28/10	0119	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	79.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	65.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	59.2	(50%-105%)

Notes:

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

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- 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: April 5, 2010

Client Sample ID: RE36-10-7436
Sample ID: 248513018
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 21.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00197	0.0176	+/-0.0015	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00695	0.0307	+/-0.00404	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240	U	-0.00204	0.026	+/-0.00467	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.26	0.122	+/-0.118	0.100	pCi/g		AYB1	03/26/10	1746	965493	6
Uranium-235/236		0.075	0.0746	+/-0.0208	0.100	pCi/g						
Uranium-238		1.18	0.0859	+/-0.112	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0187	0.256	+/-0.086	0.200	pCi/g		MXR1	03/20/10	1332	961097	7
Bismuth-211	UI	5.54	R,R5a	0.313	+/-0.397	pCi/g						
Bismuth-214		1.65		0.110	+/-0.122	pCi/g						
Cadmium-109	UI	5.32	R,R5a	1.20	+/-0.459	pCi/g						
Cerium-139	U	-0.0172	0.0489	+/-0.0148	0.050	pCi/g						
Cesium-134	UI	0.110	R,R5a	0.103	+/-0.0348	pCi/g						
Cesium-137	U	0.0508		0.0813	+/-0.0239	pCi/g						
Cobalt-60	U	-0.0186		0.0593	+/-0.0196	pCi/g						
Europium-152	U	0.00336		0.159	+/-0.0461	pCi/g						
Lanthanum-140	U	-0.0112		0.223	+/-0.0678	pCi/g						
Lead-212		2.49		0.0997	+/-0.162	pCi/g						
Lead-214		2.01		0.114	+/-0.154	pCi/g						
Mercury-203	U	0.0466		0.0733	+/-0.0236	pCi/g						
Potassium-40		31.3		0.492	+/-1.65	pCi/g						
Radium-223	U	0.278		1.03	+/-0.349	pCi/g						
Radium-224	UI	5.36	R,R5a	1.07	+/-0.640	pCi/g						
Radium-226		1.65		0.110	+/-0.122	pCi/g						
Radium-228		2.39		0.244	+/-0.216	pCi/g						
Ruthenium-106	U	-0.0306		0.501	+/-0.154	pCi/g						
Sodium-22	U	0.00654		0.079	+/-0.024	pCi/g						
Strontium-85	U	0.0461		0.0704	+/-0.0219	pCi/g						
Thallium-208		0.682		0.0617	+/-0.0586	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7436
Sample ID: 248513018
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0469	0.436	+/-0.134		pCi/g						
Thorium-231	U	0.278	1.03	+/-0.349		pCi/g						
Thorium-234	U	1.98	2.12	+/-0.987	2.00	pCi/g						
Tin-113	U	-0.00334	0.0768	+/-0.0226	0.100	pCi/g						
Uranium-235	U	0.129	0.354	+/-0.103	0.500	pCi/g						
Yttrium-88	U	-0.0041	0.0633	+/-0.0197	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	62.3	157	+/-46.8	250	pCi/L		KXX2	03/28/10	0201	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	71.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.2	(50%-105%)

Notes:

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7438
Sample ID: 248513019
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 5.34%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00186	0.017	+/-0.00143	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.017	0.0226	+/-0.00548	0.050	pCi/g		AYB1	03/25/10	2338	965492	4
Plutonium-239/240	U	0.0136	0.0191	+/-0.00488	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.23	J+,R3b	0.229	+/-0.132	0.100	pCi/g	AYB1	03/29/10	1237	965493	5
Uranium-235/236	U	0.0919		0.138	+/-0.0286	0.100	pCi/g					
Uranium-238		1.31	J+,R3b	0.160	+/-0.140	0.100	pCi/g					
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0058		0.116	+/-0.0356	0.200	pCi/g	MXR1	03/20/10	1332	961097	7
Bismuth-211	UI	5.22	R,R5a	0.379	+/-0.381		pCi/g					
Bismuth-214		1.57		0.141	+/-0.131	0.200	pCi/g					
Cadmium-109	UI	5.72	R,R5a	0.965	+/-0.590		pCi/g					
Cerium-139	U	0.00961		0.0583	+/-0.0169	0.050	pCi/g					
Cesium-134	U	0.125		0.130	+/-0.0431	0.100	pCi/g					
Cesium-137	U	-0.0292		0.0864	+/-0.0277	0.100	pCi/g					
Cobalt-60	U	0.00995		0.0986	+/-0.0292	0.100	pCi/g					
Europium-152	U	-0.0563		0.181	+/-0.0541	0.200	pCi/g					
Lanthanum-140	U	-0.191		0.217	+/-0.0834		pCi/g					
Lead-212		2.33		0.107	+/-0.137	0.100	pCi/g					
Lead-214		1.89		0.138	+/-0.148	0.100	pCi/g					
Mercury-203	U	0.0508		0.0857	+/-0.0259	0.100	pCi/g					
Potassium-40		31.6		0.573	+/-1.75	1.00	pCi/g					
Radium-223	U	0.156		1.24	+/-0.405		pCi/g					
Radium-224	UI	6.31	R,R5a	1.15	+/-0.918		pCi/g					
Radium-226		1.57		0.141	+/-0.131		pCi/g					
Radium-228		2.63		0.279	+/-0.237	0.500	pCi/g					
Ruthenium-106	U	0.099		0.682	+/-0.203	0.800	pCi/g					
Sodium-22	U	-0.0223		0.0889	+/-0.0289	0.080	pCi/g					
Strontium-85	U	0.0594		0.089	+/-0.0275		pCi/g					
Thallium-208		0.714		0.0745	+/-0.0626	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7438
Sample ID: 248513019

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.162	0.466	+/-0.146		pCi/g					
Thorium-231	U	0.156	1.24	+/-0.405		pCi/g					
Thorium-234		2.54	1.15	+/-0.652	2.00	pCi/g					
Tin-113	U	0.0175	0.0977	+/-0.028	0.100	pCi/g					
Uranium-235	U	0.0356	0.378	+/-0.112	0.500	pCi/g					
Yttrium-88	U	-0.0141	0.0692	+/-0.0228	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	91.0	157	+/-48.5	250	pCi/L		KXK2	03/28/10	0244 964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	25.5 *	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7439
Sample ID: 248513020
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 18.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241		0.0169	0.0169	+/-0.00441	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00175	0.0277	+/-0.00446	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240		0.048	0.0234	+/-0.0104	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.39	0.142	+/-0.133	0.100	pCi/g		AYB1	03/26/10	1747	965493	6
Uranium-235/236		0.0993	0.0865	+/-0.0273	0.100	pCi/g						
Uranium-238		1.41	0.0995	+/-0.134	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0249	0.302	+/-0.0872	0.200	pCi/g		MXR1	03/20/10	1338	961097	7
Bismuth-211	UI	4.21	R,R5a	0.268	+/-0.249	pCi/g						
Bismuth-214		1.22		0.0973	+/-0.088	0.200	pCi/g					
Cadmium-109	UI	5.17	R,R5a	1.14	+/-0.631	pCi/g						
Cerium-139	U	0.00425		0.0469	+/-0.0134	0.050	pCi/g					
Cesium-134	UI	0.0969	R,R5a	0.0762	+/-0.0206	0.100	pCi/g					
Cesium-137		0.726		0.058	+/-0.047	0.100	pCi/g					
Cobalt-60	U	-0.0136		0.0503	+/-0.0161	0.100	pCi/g					
Europium-152	U	-0.0588		0.129	+/-0.0515	0.200	pCi/g					
Lanthanum-140	U	-0.0632		0.171	+/-0.0552	pCi/g						
Lead-212		1.70		0.0782	+/-0.0791	0.100	pCi/g					
Lead-214		1.53		0.0975	+/-0.0996	0.100	pCi/g					
Mercury-203	U	0.0365		0.065	+/-0.0212	0.100	pCi/g					
Potassium-40		27.8		0.390	+/-1.27	1.00	pCi/g					
Radium-223	U	0.361		0.919	+/-0.309	pCi/g						
Radium-224	UI	4.84	R,R5a	0.837	+/-0.539	pCi/g						
Radium-226		1.22		0.0973	+/-0.088	pCi/g						
Radium-228		1.70		0.185	+/-0.176	0.500	pCi/g					
Ruthenium-106	U	0.0988		0.459	+/-0.138	0.800	pCi/g					
Sodium-22	U	-0.0524		0.0566	+/-0.0194	0.080	pCi/g					
Strontium-85	UI	0.0939	R,R5a	0.0697	+/-0.019	pCi/g						
Thallium-208		0.551		0.0492	+/-0.0396	0.080	pCi/g					

DJS
04/12/10

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: April 5, 2010

Client Sample ID: RE36-10-7439 Project: LANL01004
Sample ID: 248513020 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.058	0.363	+/-0.107		pCi/g						
Thorium-231	U	0.361	0.919	+/-0.309		pCi/g						
Thorium-234	U	2.52	2.71	+/-0.781	2.00	pCi/g						
Tin-113	U	0.00791	0.0669	+/-0.0195	0.100	pCi/g						
Uranium-235	U	0.0494	0.312	+/-0.0955	0.500	pCi/g						
Yttrium-88	U	-0.0112	0.0425	+/-0.0167	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	77.1	167	+/-50.4	250	pCi/L		KXK2	03/29/10	2038	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	72.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	67.2	(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

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2195C

LOS ALAMOS

REQUEST NUMBER: 10-2195

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 4/1/2010

General Engineering Laboratories, Inc., Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248513

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-7407	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7407	1	POLY	H3	Ice	R
RE36-10-7421	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7421	1	POLY	H3	Ice	R
RE36-10-7422	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7422	1	POLY	H3	Ice	R
RE36-10-7451	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7451	1	POLY	H3	Ice	R
RE36-10-7449	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7449	1	POLY	H3	Ice	R
RE36-10-7445	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7445	1	POLY	H3	Ice	R
RE36-10-7450	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7450	1	POLY	H3	Ice	R
RE36-10-7444	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7444	1	POLY	H3	Ice	R
RE36-10-7448	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7448	1	POLY	H3	Ice	R
RE36-10-7447	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7447	1	POLY	H3	Ice	R
RE36-10-7443	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7443	1	POLY	H3	Ice	R
RE36-10-7452	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7452	1	POLY	H3	Ice	R
RE36-10-7437	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7437	1	POLY	H3	Ice	R

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2195C

LOS ALAMOS

REQUEST NUMBER: 10-2195

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 4/1/2010

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
RE36-10-7440	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7440	1	POLY	H3	Ice	R
RE36-10-7435	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7435	1	POLY	H3	Ice	R
RE36-10-7441	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7441	1	POLY	H3	Ice	R
RE36-10-7442	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7442	1	POLY	H3	Ice	R
RE36-10-7436	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7436	1	POLY	H3	Ice	R
RE36-10-7438	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7438	1	POLY	H3	Ice	R
RE36-10-7439	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7439	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By: Date

Time

Remarks:

Printed Name

Signature

REQUEST NUMBER: 10-2195

Tuesday, March 02, 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: 10-2195

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 3/2/2010

TURNAROUND/REPORT DUE: 4/1/2010

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	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
	EPA:908.0	1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	

Tuesday, March 02, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
	HASL-300:AM-241	1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
	HASL-300:ISOPU	1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	

Tuesday, March 02, 2010

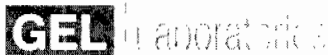
PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
	HASL-300:ISOU	1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	

REQUEST NUMBER: 10-2195

Tuesday, March 02, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	

Final Page of REQUEST NUMBER 10-2195



a member of **The GEL Group**



PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178

March 10, 2010

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: 248513
SDG: 10-2195

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on March 03, 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: 10-2195
Enclosures

Los Alamos National Laboratory (72733-001-09)

LANL ER Project

Work Order #: 248513

SDG: 10-2195

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 248513
SDG # : 10-2195**

March 10, 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 March 03, 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 14,15,17C temperatures. Shipping container temperature was within specification (0 - 6C).

Sample Identification The laboratory received the following samples:

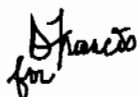
<u>Laboratory ID</u>	<u>Client ID</u>
248513001	RE36-10-7407
248513002	RE36-10-7421
248513003	RE36-10-7422
248513004	RE36-10-7451
248513005	RE36-10-7449
248513006	RE36-10-7445
248513007	RE36-10-7450
248513008	RE36-10-7444
248513009	RE36-10-7448
248513010	RE36-10-7447
248513011	RE36-10-7443
248513012	RE36-10-7452
248513013	RE36-10-7437
248513014	RE36-10-7440
248513015	RE36-10-7435
248513016	RE36-10-7441
248513017	RE36-10-7442
248513018	RE36-10-7436
248513019	RE36-10-7438
248513020	RE36-10-7439

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.



Valerie Davis

Project Manager

List of current GEL Certifications as of 10 March 2010

State	Certification
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

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2195C

LOS ALAMOS

REQUEST NUMBER: 10-2195

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 4/1/2010

General Engineering Laboratories, Inc., Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248513

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-7407	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7407	1	POLY	H3	Ice	R
RE36-10-7421	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7421	1	POLY	H3	Ice	R
RE36-10-7422	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7422	1	POLY	H3	Ice	R
RE36-10-7451	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7451	1	POLY	H3	Ice	R
RE36-10-7449	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7449	1	POLY	H3	Ice	R
RE36-10-7445	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7445	1	POLY	H3	Ice	R
RE36-10-7450	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7450	1	POLY	H3	Ice	R
RE36-10-7444	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7444	1	POLY	H3	Ice	R
RE36-10-7448	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7448	1	POLY	H3	Ice	R
RE36-10-7447	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7447	1	POLY	H3	Ice	R
RE36-10-7443	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7443	1	POLY	H3	Ice	R
RE36-10-7452	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7452	1	POLY	H3	Ice	R
RE36-10-7437	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7437	1	POLY	H3	Ice	R

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2195C

LOS ALAMOS

REQUEST NUMBER: 10-2195

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 4/1/2010

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
RE36-10-7440	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7440	1	POLY	H3	Ice	R
RE36-10-7435	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7435	1	POLY	H3	Ice	R
RE36-10-7441	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7441	1	POLY	H3	Ice	R
RE36-10-7442	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7442	1	POLY	H3	Ice	R
RE36-10-7436	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7436	1	POLY	H3	Ice	R
RE36-10-7438	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7438	1	POLY	H3	Ice	R
RE36-10-7439	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-7439	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By: Date

Time

Remarks:

Printed Name

Signature

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

**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: 10-2195
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 3/2/2010

TURNAROUND/REPORT DUE: 4/1/2010

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	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
		1	RE36-10-7407	R	2/25/2010	
EPA:906.0		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
	HASL-300:AM-241	1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
	HASL-300:ISOPU	1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	
		1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	
	HASL-300:ISOU	1	RE36-10-7407	R	2/25/2010	
		1	RE36-10-7421	R	2/25/2010	
		1	RE36-10-7422	R	2/25/2010	
		1	RE36-10-7435	R	2/25/2010	
		1	RE36-10-7436	R	2/25/2010	
		1	RE36-10-7437	R	2/25/2010	
		1	RE36-10-7438	R	2/25/2010	
		1	RE36-10-7439	R	2/25/2010	
		1	RE36-10-7440	R	2/25/2010	
		1	RE36-10-7441	R	2/25/2010	
		1	RE36-10-7442	R	2/25/2010	
		1	RE36-10-7443	R	2/25/2010	
		1	RE36-10-7444	R	2/25/2010	

Tuesday, March 02, 2010

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REQUEST NUMBER: 10-2195

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE36-10-7445	R	2/25/2010	
		1	RE36-10-7447	R	2/25/2010	
		1	RE36-10-7448	R	2/25/2010	
		1	RE36-10-7449	R	2/25/2010	
		1	RE36-10-7450	R	2/25/2010	
		1	RE36-10-7451	R	2/25/2010	
		1	RE36-10-7452	R	2/25/2010	

Final Page of REQUEST NUMBER 10-2195



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL			SDG/ARCOC/Work Order: 10-2195		
Received By: Greg Tyler			Date Received: 3/3/10		
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*: 60cpm	
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 1-5 14,15,17
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: No time on Chain of Custody.
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:

Fed Ex Tracking Numbers:

7209 7850 3083 1C 7209 7850 3061 2C 7209 7850 3028 17C
 7209 7850 3040 1C 7209 7850 3072 3C
 7209 7850 3094 1C 7209 7850 3120 4C
 7209 7850 3109 2C 7209 7850 3110 5C
 7209 7850 3039 2C 7209 7850 3153 5C
 7209 7850 3050 2C 7209 7850 3006 14C
 7209 7850 3142 2C 7209 7850 2992 14C
 7209 7850 3131 2C 7209 7850 3071 15C

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: 02MAR10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

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: 02MAR10
ACTWGT: 47.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A0532VA00

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A0532VA00

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PSN 7209 7850 3083

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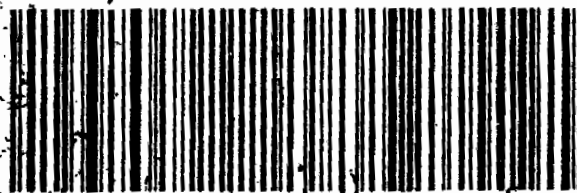
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LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014176/CAFE2450

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LOS ALAMOS, NM 87545
UNITED STATES US

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PRIORITY OVERNIGHT

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JOYLENE VALDEZ (505) 665-9960
LOS ALAMOS NATL LAB
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LOS ALAMOS, NM 87545
UNITED STATES US

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UNITED STATES US

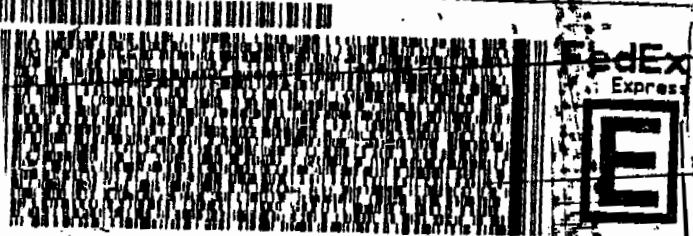
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GENERAL ENGINEERING LAB
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CHARLESTON SC 29407
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GENERAL ENGINEERING LAB
2040 SAVAGE RD

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REF: 6B010AMR3A0532VA00



3 of 3
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Mstr# 7209 7850 3040 0201
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SC-US
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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
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UNITED STATES US
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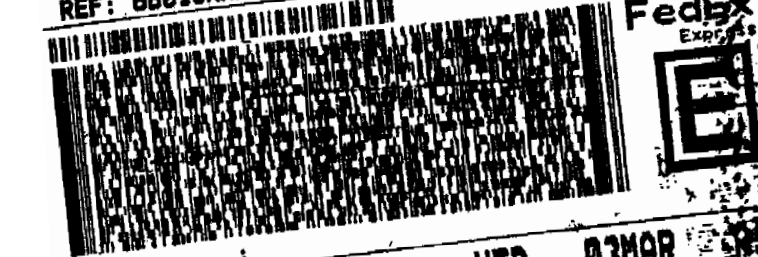
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VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

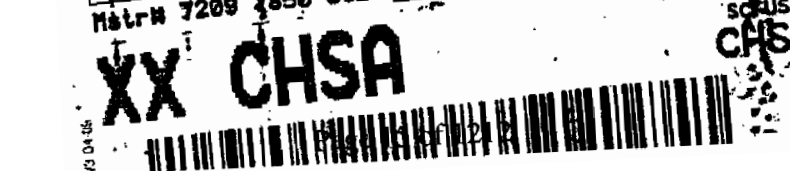
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3 of 3
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Mstr# 7209 7850 3120 0201
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ORIGIN ID: SAFA (000) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

SHIP DATE: 02MAR10
ACTMGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87645
UNITED STATES US

BILL SENDER

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

SHIP DATE: 02MAR10
ACTMGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87645
UNITED STATES US

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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

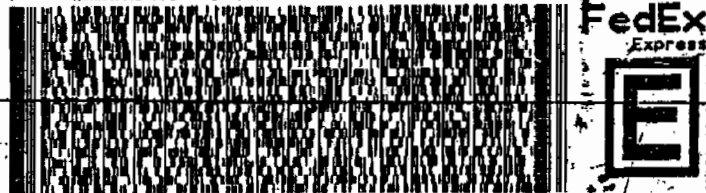
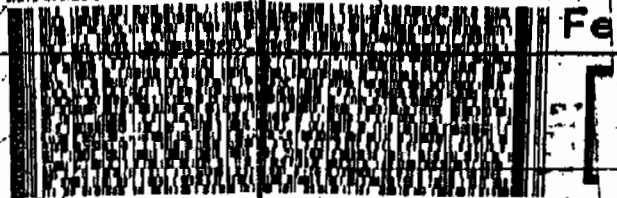
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ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

SHIP DATE: 02MAR10
ACTMGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87645
UNITED STATES US

BILL SENDER

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

SHIP DATE: 02MAR10
ACTMGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87645
UNITED STATES US

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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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REF: 6B010AMR3A05529E00

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1 of 3
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TRK# 7209 7850 3110
NM MASTER NM

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CHS

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29407
SC-US
CHS

ORIGIN ID: SAFA (606) 666-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

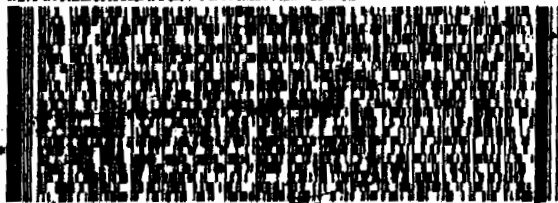
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TO **VALERIE DAVIS**
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

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REF: 6B010AMR3A0532VRO0



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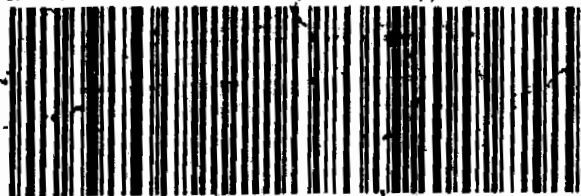


2 of 3
PSN 7209 7850 3028
Matr# 7209 7850 3017 0201

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PRIORITY OVERNIGHT

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CHS



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 10-2195**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 970857
Prep Batch Number: 961006

Sample ID	Client ID
248513001	RE36-10-7407
248513002	RE36-10-7421
248513003	RE36-10-7422
248513004	RE36-10-7451
248513005	RE36-10-7449
248513006	RE36-10-7445
248513007	RE36-10-7450
248513009	RE36-10-7448
248513010	RE36-10-7447
248513012	RE36-10-7452
248513013	RE36-10-7437
248513014	RE36-10-7440
248513015	RE36-10-7435
248513016	RE36-10-7441
248513017	RE36-10-7442
248513018	RE36-10-7436
248513019	RE36-10-7438
248513020	RE36-10-7439
1202085016	Method Blank (MB)
1202085017	248513001(RE36-10-7407) Sample Duplicate (DUP)
1202085018	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202085016 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248513001 (RE36-10-7407). The QC was from LANL work order 248513.

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 were reprepared due to high blank activity. Samples were reprepared due to low carrier/tracer yield.

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, 1202085018 (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: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 971644
Prep Batch Number: 961006

Sample ID	Client ID
248513008	RE36-10-7444
248513011	RE36-10-7443
1202086943	Method Blank (MB)
1202086944	248513008(RE36-10-7444) Sample Duplicate (DUP)
1202086945	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202086943 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248513008 (RE36-10-7444). The QC was from LANL work order 248513.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Am241 blank result is 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

Samples 248513008 (RE36-10-7444) and 248513011 (RE36-10-7443) were reprepared twice due to low tracer yields.

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:	ISOPU
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	965492
Prep Batch Number:	961006

Sample ID	Client ID
248513001	RE36-10-7407
248513002	RE36-10-7421
248513003	RE36-10-7422
248513004	RE36-10-7451
248513005	RE36-10-7449
248513006	RE36-10-7445
248513007	RE36-10-7450
248513008	RE36-10-7444
248513009	RE36-10-7448

248513010	RE36-10-7447
248513011	RE36-10-7443
248513012	RE36-10-7452
248513013	RE36-10-7437
248513014	RE36-10-7440
248513015	RE36-10-7435
248513016	RE36-10-7441
248513017	RE36-10-7442
248513018	RE36-10-7436
248513019	RE36-10-7438
248513020	RE36-10-7439
1202071655	Method Blank (MB)
1202071656	248513001(RE36-10-7407) Sample Duplicate (DUP)
1202071657	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202071655 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248513001 (RE36-10-7407). The QC was from LANL work order 248513.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Pu-238 and Pu-239/240 blank, 1202071655 (MB), result is 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

Samples 248513004 (RE36-10-7451), 248513009 (RE36-10-7448), 248513010 (RE36-10-7447), 248513018 (RE36-10-7436) and 248513020 (RE36-10-7439) were given additional clean-up steps and recounted in order to remove suspected interferences.

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 Pu-238 and Pu-239/240 blank, 1202071655 (MB), result is 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:	965493
Prep Batch Number:	961006

Sample ID	Client ID
248513001	RE36-10-7407
248513002	RE36-10-7421
248513003	RE36-10-7422
248513004	RE36-10-7451
248513005	RE36-10-7449
248513006	RE36-10-7445
248513007	RE36-10-7450
248513008	RE36-10-7444
248513009	RE36-10-7448
248513010	RE36-10-7447
248513011	RE36-10-7443
248513012	RE36-10-7452
248513013	RE36-10-7437
248513014	RE36-10-7440

248513015	RE36-10-7435
248513016	RE36-10-7441
248513017	RE36-10-7442
248513018	RE36-10-7436
248513019	RE36-10-7438
248513020	RE36-10-7439
1202071658	Method Blank (MB)
1202071659	248513001(RE36-10-7407) Sample Duplicate (DUP)
1202071660	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202071658 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248513001 (RE36-10-7407). The QC was from LANL work order 248513.

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.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

Sample 248513019 (RE36-10-7438) was recounted due to high MDA.

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. Samples 248513010 (RE36-10-7447), 248513011 (RE36-10-7443) and 248513019 (RE36-10-7438) did not meet the client's yield requirement. However, there are 400 tracer counts, GEL's standard tracer yield requirements are met, and the client's detection limits are met.

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:	961097
Prep Batch Number:	961006

Sample ID	Client ID
248513001	RE36-10-7407
248513002	RE36-10-7421
248513003	RE36-10-7422
248513004	RE36-10-7451
248513005	RE36-10-7449
248513006	RE36-10-7445
248513007	RE36-10-7450
248513008	RE36-10-7444
248513009	RE36-10-7448
248513010	RE36-10-7447
248513011	RE36-10-7443
248513012	RE36-10-7452
248513013	RE36-10-7437
248513014	RE36-10-7440
248513015	RE36-10-7435
248513016	RE36-10-7441
248513017	RE36-10-7442
248513018	RE36-10-7436

248513019	RE36-10-7438
248513020	RE36-10-7439
1202061452	Method Blank (MB)
1202061453	248513001(RE36-10-7407) Sample Duplicate (DUP)
1202061454	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# 19.

Calibration Information:

Calibration Information

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

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

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: 248513001 (RE36-10-7407). The QC was from LANL work order 248513.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank, 1202061452 (MB), results for La-140, K-40, Th-227 and Th-234 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

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

Additional comments were not required for this sample set.

Blank Decision Level

The blank, 1202061452 (MB), results for La-140, K-40, Th-227 and Th-234 are greater than the decision level but less than the MDC.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to interference.	Bismuth-211	248513001	RE36-10-7407
			248513002	RE36-10-7421
			248513003	RE36-10-7422
			248513004	RE36-10-7451
			248513005	RE36-10-7449
			248513006	RE36-10-7445
			248513007	RE36-10-7450
			248513008	RE36-10-7444
			248513009	RE36-10-7448
			248513010	RE36-10-7447
			248513011	RE36-10-7443
			248513012	RE36-10-7452
			248513013	RE36-10-7437
			248513014	RE36-10-7440
			248513015	RE36-10-7435
			248513016	RE36-10-7441
			248513017	RE36-10-7442
			248513018	RE36-10-7436
			248513019	RE36-10-7438
			248513020	RE36-10-7439
			1202061453	RE36-10-7407(248513001DUP)
		Cadmium-109	248513001	RE36-10-7407
			248513002	RE36-10-7421
			248513003	RE36-10-7422

	248513004	RE36-10-7451
	248513005	RE36-10-7449
	248513006	RE36-10-7445
	248513007	RE36-10-7450
	248513008	RE36-10-7444
	248513009	RE36-10-7448
	248513010	RE36-10-7447
	248513011	RE36-10-7443
	248513012	RE36-10-7452
	248513013	RE36-10-7437
	248513014	RE36-10-7440
	248513015	RE36-10-7435
	248513016	RE36-10-7441
	248513017	RE36-10-7442
	248513018	RE36-10-7436
	248513019	RE36-10-7438
	248513020	RE36-10-7439
	1202061453	RE36-10-7407(248513001DUP)
Radium-224	248513001	RE36-10-7407
	248513002	RE36-10-7421
	248513003	RE36-10-7422
	248513004	RE36-10-7451
	248513005	RE36-10-7449
	248513006	RE36-10-7445
	248513007	RE36-10-7450
	248513008	RE36-10-7444
	248513009	RE36-10-7448
	248513010	RE36-10-7447
	248513011	RE36-10-7443
	248513012	RE36-10-7452
	248513013	RE36-10-7437
	248513014	RE36-10-7440

UI	Data rejected due to low abundance.		248513015	RE36-10-7435
			248513016	RE36-10-7441
			248513017	RE36-10-7442
			248513018	RE36-10-7436
			248513019	RE36-10-7438
			248513020	RE36-10-7439
			1202061453	RE36-10-7407(248513001DUP)
		Americium-241	248513012	RE36-10-7452
		Cesium-134	248513001	RE36-10-7407
			248513002	RE36-10-7421
			248513004	RE36-10-7451
			248513006	RE36-10-7445
			248513008	RE36-10-7444
			248513010	RE36-10-7447
			248513011	RE36-10-7443
			248513014	RE36-10-7440
			248513015	RE36-10-7435
			248513017	RE36-10-7442
			248513018	RE36-10-7436
			248513020	RE36-10-7439
			1202061453	RE36-10-7407(248513001DUP)
		Strontium-85	248513002	RE36-10-7421
			248513006	RE36-10-7445
			248513007	RE36-10-7450
			248513010	RE36-10-7447
			248513011	RE36-10-7443
			248513014	RE36-10-7440
			248513017	RE36-10-7442
			248513020	RE36-10-7439
			1202061453	RE36-10-7407(248513001DUP)

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 964062

Sample ID	Client ID
248513001	RE36-10-7407
248513002	RE36-10-7421
248513003	RE36-10-7422
248513004	RE36-10-7451
248513005	RE36-10-7449
248513006	RE36-10-7445
248513007	RE36-10-7450
248513008	RE36-10-7444
248513009	RE36-10-7448
248513010	RE36-10-7447
248513011	RE36-10-7443
248513012	RE36-10-7452
248513013	RE36-10-7437
248513014	RE36-10-7440
248513015	RE36-10-7435
248513016	RE36-10-7441
248513017	RE36-10-7442
248513018	RE36-10-7436
248513019	RE36-10-7438
248513020	RE36-10-7439
1202068225	Method Blank (MB)
1202068226	248513020(RE36-10-7439) Sample Duplicate (DUP)
1202068227	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

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: 248513020 (RE36-10-7439). The QC was from LANL work order 248513.

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 248513013 (RE36-10-7437) and 248513020 (RE36-10-7439) were recounted to verify results.

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: _____

 7/5/10

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

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

Client SDG: 10-2195 GEL Work Order: 248513

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

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: April 5, 2010

Client Sample ID: RE36-10-7407
Sample ID: 248513001
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 22.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0189	+/-0.00399	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0182	0.0241	+/-0.00585	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0348	0.0204	+/-0.00915	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.22	0.136	+/-0.119	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236	U	0.0656	0.0831	+/-0.022	0.100	pCi/g						
Uranium-238		1.28	0.0956	+/-0.123	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.30	0.593	+/-0.181	0.200	pCi/g		MXR1	03/20/10	1120	961097	6
Bismuth-211	UI	4.86	0.477	+/-0.394		pCi/g						
Bismuth-214		1.55	0.155	+/-0.139	0.200	pCi/g						
Cadmium-109	UI	2.67	2.27	+/-0.742		pCi/g						
Cerium-139	U	-0.0018	0.0776	+/-0.0238	0.050	pCi/g						
Cesium-134	UI	0.176	0.125	+/-0.0434	0.100	pCi/g						
Cesium-137		0.477	0.0857	+/-0.0489	0.100	pCi/g						
Cobalt-60	U	0.0365	0.0953	+/-0.0275	0.100	pCi/g						
Europium-152	U	0.0096	0.224	+/-0.0815	0.200	pCi/g						
Lanthanum-140	U	0.121	0.293	+/-0.0904		pCi/g						
Lead-212		2.16	0.140	+/-0.154	0.100	pCi/g						
Lead-214		1.76	0.174	+/-0.151	0.100	pCi/g						
Mercury-203	U	0.111	0.117	+/-0.0328	0.100	pCi/g						
Potassium-40		30.9	0.777	+/-1.89	1.00	pCi/g						
Radium-223	U	0.657	1.49	+/-0.491		pCi/g						
Radium-224	UI	7.18	1.50	+/-1.22		pCi/g						
Radium-226		1.55	0.155	+/-0.139		pCi/g						
Radium-228		1.86	0.313	+/-0.240	0.500	pCi/g						
Ruthenium-106	U	-0.107	0.742	+/-0.234	0.800	pCi/g						
Sodium-22	U	-0.0124	0.103	+/-0.0325	0.080	pCi/g						
Strontium-85	U	0.105	0.114	+/-0.0364		pCi/g						

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Certificate of Analysis

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7407
Sample ID: 248513001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thallium-208		0.584	0.0817	+/-0.0582	0.080	pCi/g						
Thorium-227	U	-0.0463	0.607	+/-0.180		pCi/g						
Thorium-231	U	0.657	1.49	+/-0.491		pCi/g						
Thorium-234	U	3.15	5.07	+/-1.51	2.00	pCi/g						
Tin-113	U	-0.00181	0.116	+/-0.035	0.100	pCi/g						
Uranium-235	U	0.150	0.498	+/-0.151	0.500	pCi/g						
Yttrium-88	U	-0.0137	0.064	+/-0.0212	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	105	160	+/-50.0	250	pCi/L		KXK2	03/27/10	1358	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	52.1	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7407
Sample ID: 248513001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7421
Sample ID: 248513002
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 15%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0127	0.0184	+/-0.00395	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0199	0.0232	+/-0.00903	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0042	0.0196	+/-0.00513	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.16	0.134	+/-0.115	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0997	0.0817	+/-0.0253	0.100	pCi/g						
Uranium-238		1.60	0.0941	+/-0.147	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.138	0.255	+/-0.0835	0.200	pCi/g		MXR1	03/20/10	1121	961097	6
Bismuth-211	UI	4.97	0.341	+/-0.355		pCi/g						
Bismuth-214		1.66	0.118	+/-0.133	0.200	pCi/g						
Cadmium-109	UI	4.41	1.24	+/-0.619		pCi/g						
Cerium-139	U	-0.0368	0.0515	+/-0.0164	0.050	pCi/g						
Cesium-134	UI	0.125	0.104	+/-0.038	0.100	pCi/g						
Cesium-137		0.376	0.0726	+/-0.0497	0.100	pCi/g						
Cobalt-60	U	-0.0232	0.0613	+/-0.0208	0.100	pCi/g						
Europium-152	U	-0.0466	0.173	+/-0.0542	0.200	pCi/g						
Lanthanum-140	U	-0.0676	0.224	+/-0.0729		pCi/g						
Lead-212		1.93	0.0954	+/-0.131	0.100	pCi/g						
Lead-214		1.80	0.111	+/-0.138	0.100	pCi/g						
Mercury-203	U	-0.0139	0.0744	+/-0.0237	0.100	pCi/g						
Potassium-40		28.9	0.748	+/-1.60	1.00	pCi/g						
Radium-223	U	-0.393	1.05	+/-0.393		pCi/g						
Radium-224	UI	5.64	1.02	+/-0.760		pCi/g						
Radium-226		1.66	0.118	+/-0.133		pCi/g						
Radium-228		2.13	0.254	+/-0.218	0.500	pCi/g						
Ruthenium-106	U	-0.174	0.512	+/-0.166	0.800	pCi/g						
Sodium-22	U	-0.0693	0.0648	+/-0.0278	0.080	pCi/g						
Strontium-85	UI	0.096	0.0842	+/-0.0251		pCi/g						
Thallium-208		0.548	0.0609	+/-0.0534	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7421
Sample ID: 248513002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.00714	0.433	+/-0.134		pCi/g						
Thorium-231	U	-0.393	1.05	+/-0.393		pCi/g						
Thorium-234		3.31	2.12	+/-1.25	2.00	pCi/g						
Tin-113	U	-0.00382	0.0813	+/-0.0243	0.100	pCi/g						
Uranium-235	U	-0.256	0.332	+/-0.108	0.500	pCi/g						
Yttrium-88	U	0.0257	0.0758	+/-0.021	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	103	162	+/-50.4	250	pCi/L		KXK2	03/27/10	1441	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	81.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	61.2	(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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Report Date: April 5, 2010

Client Sample ID: RE36-10-7421
Sample ID: 248513002

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7422
Sample ID: 248513003
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 5.86%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00251	0.0204	+/-0.00182	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00226	0.022	+/-0.00668	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.00305	0.0186	+/-0.00391	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.14	0.110	+/-0.106	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0724	0.0672	+/-0.0206	0.100	pCi/g						
Uranium-238		1.16	0.0774	+/-0.108	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.104	0.121	+/-0.0362	0.200	pCi/g		MXR1	03/20/10	1121	961097	6
Bismuth-211	UI	4.60	0.379	+/-0.382		pCi/g						
Bismuth-214		1.80	0.143	+/-0.137	0.200	pCi/g						
Cadmium-109	UI	5.13	1.07	+/-0.548		pCi/g						
Cerium-139	U	0.0384	0.0605	+/-0.0172	0.050	pCi/g						
Cesium-134	U	0.0634	0.130	+/-0.0366	0.100	pCi/g						
Cesium-137	U	-0.0232	0.0818	+/-0.0264	0.100	pCi/g						
Cobalt-60	U	-0.0461	0.0867	+/-0.0294	0.100	pCi/g						
Europium-152	U	0.0806	0.200	+/-0.063	0.200	pCi/g						
Lanthanum-140	U	-0.0299	0.301	+/-0.0939		pCi/g						
Lead-212		2.10	0.105	+/-0.128	0.100	pCi/g						
Lead-214		1.67	0.138	+/-0.146	0.100	pCi/g						
Mercury-203	U	0.0627	0.0774	+/-0.037	0.100	pCi/g						
Potassium-40		29.5	0.787	+/-1.72	1.00	pCi/g						
Radium-223	U	-0.569	1.15	+/-0.419		pCi/g						
Radium-224	UI	5.66	1.13	+/-0.658		pCi/g						
Radium-226		1.80	0.143	+/-0.137		pCi/g						
Radium-228		2.15	0.314	+/-0.260	0.500	pCi/g						
Ruthenium-106	U	-0.207	0.604	+/-0.197	0.800	pCi/g						
Sodium-22	U	0.0384	0.111	+/-0.0322	0.080	pCi/g						
Strontium-85	U	0.0621	0.0945	+/-0.0295		pCi/g						
Thallium-208		0.671	0.0752	+/-0.0665	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7422
Sample ID: 248513003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.15	0.473	+/-0.151		pCi/g						
Thorium-231	U	-0.569	1.15	+/-0.419		pCi/g						
Thorium-234		1.37	1.18	+/-0.562	2.00	pCi/g						
Tin-113	U	-0.00237	0.0953	+/-0.0283	0.100	pCi/g						
Uranium-235	U	-0.126	0.383	+/-0.120	0.500	pCi/g						
Yttrium-88	U	0.0362	0.0907	+/-0.024	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	87.1	160	+/-49.1	250	pCi/L		KXX2	03/27/10	1523	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	69.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	71.1	(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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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7422
Sample ID: 248513003

Project: LANL01004
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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7451
Sample ID: 248513004
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 39.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0146	0.0192	+/-0.00469	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00838	0.0253	+/-0.00622	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240	U	0.013	0.0214	+/-0.00623	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.42	0.143	+/-0.136	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236		0.119	0.0871	+/-0.030	0.100	pCi/g						
Uranium-238		1.68	0.100	+/-0.156	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0364	0.325	+/-0.0978	0.200	pCi/g		MXR1	03/20/10	1122	961097	7
Bismuth-211	UI	4.09	0.311	+/-0.247		pCi/g						
Bismuth-214		1.40	0.0999	+/-0.0988	0.200	pCi/g						
Cadmium-109	UI	4.02	1.39	+/-0.576		pCi/g						
Cerium-139	U	-0.0397	0.0453	+/-0.0143	0.050	pCi/g						
Cesium-134	UI	0.109	0.0835	+/-0.0327	0.100	pCi/g						
Cesium-137		0.691	0.0616	+/-0.0543	0.100	pCi/g						
Cobalt-60	U	-0.011	0.0553	+/-0.0176	0.100	pCi/g						
Europium-152	U	0.00631	0.150	+/-0.0508	0.200	pCi/g						
Lanthanum-140	U	0.0925	0.205	+/-0.0567		pCi/g						
Lead-212		1.69	0.0848	+/-0.082	0.100	pCi/g						
Lead-214		1.49	0.113	+/-0.0985	0.100	pCi/g						
Mercury-203	U	0.0256	0.068	+/-0.0203	0.100	pCi/g						
Potassium-40		23.6	0.432	+/-1.15	1.00	pCi/g						
Radium-223	U	0.119	1.00	+/-0.354		pCi/g						
Radium-224	UI	5.58	0.908	+/-0.728		pCi/g						
Radium-226		1.40	0.0999	+/-0.0988		pCi/g						
Radium-228		2.01	0.200	+/-0.200	0.500	pCi/g						
Ruthenium-106	U	-0.0424	0.439	+/-0.139	0.800	pCi/g						
Sodium-22	U	0.0189	0.0678	+/-0.020	0.080	pCi/g						
Strontium-85	U	-0.152	0.0769	+/-0.0275		pCi/g						
Thallium-208		0.472	0.0466	+/-0.0433	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7451
Sample ID: 248513004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.0934	0.390	+/-0.122		pCi/g					
Thorium-231	U	0.119	1.00	+/-0.354		pCi/g					
Thorium-234	U	1.20	2.95	+/-0.879	2.00	pCi/g					
Tin-113	U	-0.00756	0.0736	+/-0.0223	0.100	pCi/g					
Uranium-235	U	0.0448	0.334	+/-0.106	0.500	pCi/g					
Yttrium-88	U	0.0125	0.0564	+/-0.0164	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	67.5	156	+/-47.0	250	pCi/L		KXX2	03/27/10	1606 964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	78.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	57.0	(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

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7451
Sample ID: 248513004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7449
Sample ID: 248513005
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 17.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0106	0.017	+/-0.00347	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.008	0.0233	+/-0.00467	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.019	0.0197	+/-0.00678	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.06	0.0925	+/-0.0959	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236	U	0.0486	0.0565	+/-0.0175	0.100	pCi/g						
Uranium-238		1.21	0.065	+/-0.107	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.116	0.269	+/-0.0865	0.200	pCi/g		MXR1	03/20/10	1122	961097	6
Bismuth-211	UI	4.22	0.359	+/-0.304		pCi/g						
Bismuth-214		1.43	0.124	+/-0.105	0.200	pCi/g						
Cadmium-109	UI	3.01	1.48	+/-0.518		pCi/g						
Cerium-139	U	-0.0053	0.0555	+/-0.0168	0.050	pCi/g						
Cesium-134	U	0.0503	0.0889	+/-0.0252	0.100	pCi/g						
Cesium-137		0.413	0.0672	+/-0.0459	0.100	pCi/g						
Cobalt-60	U	-0.0196	0.0603	+/-0.0195	0.100	pCi/g						
Europium-152	U	-0.069	0.169	+/-0.0765	0.200	pCi/g						
Lanthanum-140	U	-0.0596	0.197	+/-0.0652		pCi/g						
Lead-212		1.67	0.0951	+/-0.0846	0.100	pCi/g						
Lead-214		1.53	0.131	+/-0.118	0.100	pCi/g						
Mercury-203	U	0.034	0.0793	+/-0.0227	0.100	pCi/g						
Potassium-40		25.7	0.492	+/-1.26	1.00	pCi/g						
Radium-223	U	-0.664	1.17	+/-0.363		pCi/g						
Radium-224	UI	4.26	1.02	+/-0.656		pCi/g						
Radium-226		1.43	0.124	+/-0.105		pCi/g						
Radium-228		1.73	0.242	+/-0.193	0.500	pCi/g						
Ruthenium-106	U	-0.114	0.519	+/-0.162	0.800	pCi/g						
Sodium-22	U	0.000974	0.0734	+/-0.022	0.080	pCi/g						
Strontium-85	U	0.0709	0.0851	+/-0.0235		pCi/g						
Thallium-208		0.492	0.0615	+/-0.0423	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7449
Sample ID: 248513005

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.131	0.449	+/-0.134		pCi/g					
Thorium-231	U	-0.664	1.17	+/-0.363		pCi/g					
Thorium-234	U	1.86	2.21	+/-0.943	2.00	pCi/g					
Tin-113	U	-0.00202	0.0865	+/-0.0256	0.100	pCi/g					
Uranium-235	U	0.141	0.370	+/-0.109	0.500	pCi/g					
Yttrium-88	U	-0.0124	0.052	+/-0.0174	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	45.6	161	+/-47.1	250	pCi/L		KXX2	03/27/10	1648 964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	80.4	(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

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7449
Sample ID: 248513005

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7445
Sample ID: 248513006
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 25.6%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00595	0.0192	+/-0.00273	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00887	0.023	+/-0.00552	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0398	0.0194	+/-0.00862	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.133	+/-0.126	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0817	0.0813	+/-0.0241	0.100	pCi/g						
Uranium-238		1.58	0.0935	+/-0.145	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.116	0.241	+/-0.0756	0.200	pCi/g		MXR1	03/20/10	1123	961097	6
Bismuth-211	UI	5.10	0.330	+/-0.367		pCi/g						
Bismuth-214		1.36	0.110	+/-0.119	0.200	pCi/g						
Cadmium-109	UI	4.73	1.35	+/-0.506		pCi/g						
Cerium-139	U	-0.0181	0.0526	+/-0.0158	0.050	pCi/g						
Cesium-134	UI	0.0852	0.080	+/-0.0229	0.100	pCi/g						
Cesium-137		0.677	0.062	+/-0.051	0.100	pCi/g						
Cobalt-60	U	-0.00534	0.0563	+/-0.0174	0.100	pCi/g						
Europium-152	U	-0.119	0.146	+/-0.0578	0.200	pCi/g						
Lanthanum-140	U	0.0359	0.198	+/-0.0666		pCi/g						
Lead-212		2.03	0.0936	+/-0.146	0.100	pCi/g						
Lead-214		1.85	0.121	+/-0.143	0.100	pCi/g						
Mercury-203	U	0.045	0.080	+/-0.0239	0.100	pCi/g						
Potassium-40		31.8	0.498	+/-1.63	1.00	pCi/g						
Radium-223	U	-0.856	1.07	+/-0.342		pCi/g						
Radium-224	UI	5.34	1.00	+/-0.695		pCi/g						
Radium-226		1.36	0.110	+/-0.119		pCi/g						
Radium-228		2.23	0.215	+/-0.211	0.500	pCi/g						
Ruthenium-106	U	-0.0374	0.503	+/-0.152	0.800	pCi/g						
Sodium-22	U	0.0142	0.0733	+/-0.0217	0.080	pCi/g						
Strontium-85	UI	0.155	0.0842	+/-0.0264		pCi/g						
Thallium-208		0.593	0.0555	+/-0.0505	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7445
Sample ID: 248513006

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0652	0.447	+/-0.135		pCi/g						
Thorium-231	U	-0.856	1.07	+/-0.342		pCi/g						
Thorium-234		2.45	2.15	+/-0.853	2.00	pCi/g						
Tin-113	U	0.00711	0.0805	+/-0.024	0.100	pCi/g						
Uranium-235	U	0.254	0.386	+/-0.112	0.500	pCi/g						
Yttrium-88	U	0.0192	0.0569	+/-0.0162	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	73.5	158	+/-47.8	250	pCi/L		KXK2	03/27/10	1731	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	59.5	(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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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7445
Sample ID: 248513006

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7450
Sample ID: 248513007
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 9.88%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0181	+/-0.00164	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0101	0.0214	+/-0.00447	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0053	0.0181	+/-0.00345	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.108	+/-0.120	0.100	pCi/g		AYB1	03/26/10	1748	965493	5
Uranium-235/236		0.0802	0.0657	+/-0.0224	0.100	pCi/g						
Uranium-238		1.39	0.0756	+/-0.124	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.27	0.358	+/-0.108	0.200	pCi/g		MXR1	03/20/10	1123	961097	6
Bismuth-211	UI	4.27	0.390	+/-0.294		pCi/g						
Bismuth-214		1.22	0.130	+/-0.103	0.200	pCi/g						
Cadmium-109	UI	4.39	1.45	+/-0.585		pCi/g						
Cerium-139	U	-0.00175	0.0588	+/-0.0176	0.050	pCi/g						
Cesium-134	U	0.0865	0.0995	+/-0.0263	0.100	pCi/g						
Cesium-137	U	0.0579	0.087	+/-0.0246	0.100	pCi/g						
Cobalt-60	U	-0.0101	0.0623	+/-0.0199	0.100	pCi/g						
Europium-152	U	-0.107	0.182	+/-0.0998	0.200	pCi/g						
Lanthanum-140	U	-0.119	0.202	+/-0.0707		pCi/g						
Lead-212		1.69	0.105	+/-0.0859	0.100	pCi/g						
Lead-214		1.55	0.136	+/-0.115	0.100	pCi/g						
Mercury-203	U	-0.0089	0.0822	+/-0.0241	0.100	pCi/g						
Potassium-40		25.3	0.472	+/-1.31	1.00	pCi/g						
Radium-223	U	-0.122	1.22	+/-0.413		pCi/g						
Radium-224	UI	4.69	1.12	+/-0.688		pCi/g						
Radium-226		1.22	0.130	+/-0.103		pCi/g						
Radium-228		1.88	0.231	+/-0.230	0.500	pCi/g						
Ruthenium-106	U	-0.118	0.601	+/-0.188	0.800	pCi/g						
Sodium-22	U	-0.0601	0.0718	+/-0.0257	0.080	pCi/g						
Strontium-85	UI	0.0964	0.0872	+/-0.0258		pCi/g						
Thallium-208		0.632	0.0581	+/-0.0501	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7450
Sample ID: 248513007

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"

Thorium-227	U	-0.0848	0.484	+/-0.150		pCi/g						
Thorium-231	U	-0.122	1.22	+/-0.413		pCi/g						
Thorium-234	U	1.52	3.24	+/-0.913	2.00	pCi/g						
Tin-113	U	-0.0162	0.0895	+/-0.0269	0.100	pCi/g						
Uranium-235	U	-0.00152	0.404	+/-0.121	0.500	pCi/g						
Yttrium-88	U	-0.0173	0.0616	+/-0.0205	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	83.3	160	+/-48.8	250	pCi/L		KXX2	03/27/10	1813	964062	7
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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, Am-05-RC Modified
3	DOE EML HASL-300, Am-05-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R
7	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	81.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.5	(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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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: April 5, 2010

Client Sample ID: RE36-10-7450
Sample ID: 248513007

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7444
Sample ID: 248513008
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 20.6%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00521	0.0172	+/-0.00242	0.050	pCi/g		AXD2	04/03/10	1620	971644	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0192	0.0225	+/-0.00611	0.050	pCi/g		AYB1	03/25/10	2023	965492	5
Plutonium-239/240	U	0.015	0.0191	+/-0.00608	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.14	0.106	+/-0.106	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236		0.0698	0.0649	+/-0.0198	0.100	pCi/g						
Uranium-238		1.27	0.0746	+/-0.115	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0187	0.0816	+/-0.0261	0.200	pCi/g		MXR1	03/20/10	1124	961097	7
Bismuth-211	UI	4.42	0.325	+/-0.331		pCi/g						
Bismuth-214		1.61	0.103	+/-0.127	0.200	pCi/g						
Cadmium-109	UI	3.79	0.826	+/-0.394		pCi/g						
Cerium-139	U	-0.00595	0.0422	+/-0.0125	0.050	pCi/g						
Cesium-134	UI	0.167	0.0988	+/-0.0387	0.100	pCi/g						
Cesium-137		0.383	0.0684	+/-0.0417	0.100	pCi/g						
Cobalt-60	U	0.00324	0.0739	+/-0.0224	0.100	pCi/g						
Europium-152	U	0.0465	0.163	+/-0.052	0.200	pCi/g						
Lanthanum-140	U	0.0111	0.241	+/-0.0714		pCi/g						
Lead-212		1.86	0.0868	+/-0.120	0.100	pCi/g						
Lead-214		1.61	0.118	+/-0.128	0.100	pCi/g						
Mercury-203	U	0.0424	0.0677	+/-0.0218	0.100	pCi/g						
Potassium-40		26.7	0.571	+/-1.43	1.00	pCi/g						
Radium-223	U	-0.161	0.957	+/-0.321		pCi/g						
Radium-224	UI	4.41	0.932	+/-0.486		pCi/g						
Radium-226		1.61	0.103	+/-0.127		pCi/g						
Radium-228		1.89	0.233	+/-0.206	0.500	pCi/g						
Ruthenium-106	U	-0.0103	0.527	+/-0.155	0.800	pCi/g						
Sodium-22	U	0.0356	0.0805	+/-0.0227	0.080	pCi/g						
Strontium-85	U	0.0463	0.0709	+/-0.0224		pCi/g						
Thallium-208		0.541	0.0605	+/-0.0503	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7444
Sample ID: 248513008

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.157	0.378	+/-0.120		pCi/g						
Thorium-231	U	-0.161	0.957	+/-0.321		pCi/g						
Thorium-234		1.63	0.766	+/-0.412	2.00	pCi/g						
Tin-113	U	-0.0353	0.0756	+/-0.0234	0.100	pCi/g						
Uranium-235	U	0.180	0.296	+/-0.0843	0.500	pCi/g						
Yttrium-88	U	-0.0154	0.0563	+/-0.0187	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	111	160	+/-50.6	250	pCi/L		KXX2	03/27/10	1856	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	71.0	(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

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Report Date: April 5, 2010

Client Sample ID: RE36-10-7444
Sample ID: 248513008

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7448
Sample ID: 248513009
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 17.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000622	0.016	+/-0.0022	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00551	0.029	+/-0.0091	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240	U	0.0134	0.0245	+/-0.00732	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.995	0.115	+/-0.0965	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236	U	0.0557	0.0705	+/-0.0187	0.100	pCi/g						
Uranium-238		1.15	0.0812	+/-0.109	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00749	0.0836	+/-0.0258	0.200	pCi/g		MXR1	03/20/10	1127	961097	7
Bismuth-211	UI	5.19	0.328	+/-0.350		pCi/g						
Bismuth-214		1.60	0.136	+/-0.141	0.200	pCi/g						
Cadmium-109	UI	4.50	0.838	+/-0.423		pCi/g						
Cerium-139	U	0.00324	0.0457	+/-0.0129	0.050	pCi/g						
Cesium-134	U	0.122	0.125	+/-0.0395	0.100	pCi/g						
Cesium-137		0.312	0.0766	+/-0.0458	0.100	pCi/g						
Cobalt-60	U	0.011	0.0892	+/-0.0258	0.100	pCi/g						
Europium-152	U	0.0512	0.177	+/-0.052	0.200	pCi/g						
Lanthanum-140	U	-0.149	0.243	+/-0.0891		pCi/g						
Lead-212		1.91	0.128	+/-0.116	0.100	pCi/g						
Lead-214		1.89	0.119	+/-0.137	0.100	pCi/g						
Mercury-203	U	-0.0267	0.0718	+/-0.0223	0.100	pCi/g						
Potassium-40		28.6	0.532	+/-1.67	1.00	pCi/g						
Radium-223	U	0.728	1.10	+/-0.340		pCi/g						
Radium-224	UI	3.63	1.12	+/-0.565		pCi/g						
Radium-226		1.60	0.136	+/-0.141		pCi/g						
Radium-228		1.94	0.283	+/-0.235	0.500	pCi/g						
Ruthenium-106	U	-0.134	0.616	+/-0.193	0.800	pCi/g						
Sodium-22	U	-0.00309	0.0885	+/-0.0277	0.080	pCi/g						
Strontium-85	U	0.00807	0.0748	+/-0.0247		pCi/g						
Thallium-208		0.583	0.060	+/-0.0566	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7448
Sample ID: 248513009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.23	0.405	+/-0.128		pCi/g					
Thorium-231	U	0.728	1.10	+/-0.340		pCi/g					
Thorium-234		1.41	0.842	+/-0.476	2.00	pCi/g					
Tin-113	U	-0.00889	0.083	+/-0.0261	0.100	pCi/g					
Uranium-235	U	0.0702	0.287	+/-0.0874	0.500	pCi/g					
Yttrium-88	U	0.00956	0.0893	+/-0.0265	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	32.1	157	+/-45.3	250	pCi/L		KXK2	03/27/10	1938 964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	70.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	64.0	(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

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Client Sample ID: RE36-10-7448
Sample ID: 248513009

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7447
Sample ID: 248513010
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 28.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0109	0.0174	+/-0.0042	0.050	pCi/g		AYB1	04/01/10	1630	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.016	0.0248	+/-0.00628	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240		0.0381	0.021	+/-0.0099	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.21	0.196	+/-0.132	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236	U	0.0775	0.120	+/-0.0292	0.100	pCi/g						
Uranium-238		1.70	0.138	+/-0.172	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0102	0.336	+/-0.115	0.200	pCi/g		MXR1	03/20/10	1127	961097	7
Bismuth-211	UI	5.55	0.396	+/-0.392		pCi/g						
Bismuth-214		1.67	0.153	+/-0.126	0.200	pCi/g						
Cadmium-109	UI	5.14	1.65	+/-0.698		pCi/g						
Cerium-139	U	0.0448	0.0719	+/-0.0214	0.050	pCi/g						
Cesium-134	UI	0.131	0.111	+/-0.0298	0.100	pCi/g						
Cesium-137		0.765	0.0777	+/-0.0609	0.100	pCi/g						
Cobalt-60	U	0.0189	0.0765	+/-0.022	0.100	pCi/g						
Europium-152	U	-0.152	0.200	+/-0.0983	0.200	pCi/g						
Lanthanum-140	U	0.0354	0.279	+/-0.0827		pCi/g						
Lead-212		1.73	0.120	+/-0.109	0.100	pCi/g						
Lead-214		2.02	0.144	+/-0.153	0.100	pCi/g						
Mercury-203	U	0.035	0.097	+/-0.0283	0.100	pCi/g						
Potassium-40		28.1	0.609	+/-1.78	1.00	pCi/g						
Radium-223	U	-0.461	1.37	+/-0.495		pCi/g						
Radium-224	UI	6.59	1.28	+/-0.853		pCi/g						
Radium-226		1.67	0.153	+/-0.126		pCi/g						
Radium-228		1.81	0.306	+/-0.257	0.500	pCi/g						
Ruthenium-106	U	-0.128	0.631	+/-0.193	0.800	pCi/g						
Sodium-22	U	-0.0183	0.0888	+/-0.0275	0.080	pCi/g						
Strontium-85	UI	0.158	0.106	+/-0.0323		pCi/g						
Thallium-208		0.515	0.0696	+/-0.0506	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7447
Sample ID: 248513010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.198	0.557	+/-0.162		pCi/g						
Thorium-231	U	-0.461	1.37	+/-0.495		pCi/g						
Thorium-234	U	2.39	2.90	+/-1.03	2.00	pCi/g						
Tin-113	U	0.034	0.104	+/-0.0307	0.100	pCi/g						
Uranium-235	U	0.219	0.457	+/-0.139	0.500	pCi/g						
Yttrium-88	U	0.000527	0.0652	+/-0.0201	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	129	160	+/-51.4	250	pCi/L		KXK2	03/27/10	2021	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	41.3 *	(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

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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: April 5, 2010

Client Sample ID: RE36-10-7447
Sample ID: 248513010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7443
Sample ID: 248513011
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 25.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241		0.0171	0.017	+/-0.00446	0.050	pCi/g		AXD2	04/03/10	1620	971644	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0202	0.0224	+/-0.00595	0.050	pCi/g		AYB1	03/25/10	2023	965492	5
Plutonium-239/240		0.0471	0.0189	+/-0.00931	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.17	0.190	+/-0.128	0.100	pCi/g		AYB1	03/26/10	1748	965493	6
Uranium-235/236	U	0.0581	0.116	+/-0.0224	0.100	pCi/g						
Uranium-238		1.53	0.133	+/-0.157	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.16	0.318	+/-0.112	0.200	pCi/g		MXR1	03/20/10	1208	961097	7
Bismuth-211	UI	4.91	0.408	+/-0.372		pCi/g						
Bismuth-214		1.43	0.144	+/-0.138	0.200	pCi/g						
Cadmium-109	UI	3.57	1.44	+/-0.655		pCi/g						
Cerium-139	U	0.0294	0.0672	+/-0.0191	0.050	pCi/g						
Cesium-134	UI	0.204	0.121	+/-0.052	0.100	pCi/g						
Cesium-137		0.691	0.0743	+/-0.0682	0.100	pCi/g						
Cobalt-60	U	0.0126	0.0894	+/-0.0262	0.100	pCi/g						
Europium-152	U	0.0194	0.194	+/-0.0665	0.200	pCi/g						
Lanthanum-140	U	-0.117	0.272	+/-0.0924		pCi/g						
Lead-212		1.72	0.123	+/-0.111	0.100	pCi/g						
Lead-214		1.78	0.150	+/-0.144	0.100	pCi/g						
Mercury-203	U	0.0234	0.094	+/-0.0285	0.100	pCi/g						
Potassium-40		28.0	0.633	+/-1.60	1.00	pCi/g						
Radium-223	U	0.281	1.35	+/-0.456		pCi/g						
Radium-224	UI	5.03	1.31	+/-0.827		pCi/g						
Radium-226		1.43	0.144	+/-0.138		pCi/g						
Radium-228		1.82	0.309	+/-0.214	0.500	pCi/g						
Ruthenium-106	U	0.140	0.600	+/-0.173	0.800	pCi/g						
Sodium-22	U	0.018	0.0951	+/-0.0276	0.080	pCi/g						
Strontium-85	UI	0.154	0.107	+/-0.0288		pCi/g						
Thallium-208		0.556	0.0763	+/-0.0576	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7443
Sample ID: 248513011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.114	0.525	+/-0.160		pCi/g					
Thorium-231	U	0.281	1.35	+/-0.456		pCi/g					
Thorium-234		4.32	2.56	+/-1.35	2.00	pCi/g					
Tin-113	U	0.00534	0.098	+/-0.0298	0.100	pCi/g					
Uranium-235	U	0.0159	0.430	+/-0.127	0.500	pCi/g					
Yttrium-88	U	0.010	0.0638	+/-0.0184	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	12.5	157	+/-44.3	250	pCi/L		KXK2	03/27/10	2103 964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	42.8 *	(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

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7443
Sample ID: 248513011

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7452
Sample ID: 248513012
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 24.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00213	0.0185	+/-0.0044	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00923	0.0245	+/-0.00416	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0258	0.0207	+/-0.00707	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.14	0.137	+/-0.112	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.042	0.0836	+/-0.0162	0.100	pCi/g						
Uranium-238		1.39	0.0962	+/-0.132	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	UI	0.131	0.127	+/-0.0402	0.200	pCi/g		MXR1	03/20/10	1329	961097	6
Bismuth-211	UI	5.08	0.406	+/-0.362		pCi/g						
Bismuth-214		1.44	0.145	+/-0.111	0.200	pCi/g						
Cadmium-109	UI	4.48	1.08	+/-0.521		pCi/g						
Cerium-139	U	-0.0466	0.0583	+/-0.019	0.050	pCi/g						
Cesium-134	U	0.050	0.115	+/-0.0336	0.100	pCi/g						
Cesium-137		0.733	0.0885	+/-0.0544	0.100	pCi/g						
Cobalt-60	U	0.00912	0.0811	+/-0.0246	0.100	pCi/g						
Europium-152	U	-0.0316	0.208	+/-0.109	0.200	pCi/g						
Lanthanum-140	U	-0.178	0.209	+/-0.079		pCi/g						
Lead-212		1.87	0.112	+/-0.122	0.100	pCi/g						
Lead-214		1.85	0.148	+/-0.141	0.100	pCi/g						
Mercury-203	U	0.050	0.092	+/-0.0297	0.100	pCi/g						
Potassium-40		26.8	0.680	+/-1.35	1.00	pCi/g						
Radium-223	U	-0.144	1.37	+/-0.474		pCi/g						
Radium-224	UI	5.85	1.20	+/-0.867		pCi/g						
Radium-226		1.44	0.145	+/-0.111		pCi/g						
Radium-228		1.83	0.272	+/-0.241	0.500	pCi/g						
Ruthenium-106	U	0.031	0.686	+/-0.211	0.800	pCi/g						
Sodium-22	U	-0.00742	0.0855	+/-0.0269	0.080	pCi/g						
Strontium-85	U	0.082	0.0958	+/-0.0302		pCi/g						
Thallium-208		0.550	0.0693	+/-0.0539	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7452
Sample ID: 248513012

Project: LANL01004
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	0.189	0.559	+/-0.161		pCi/g						
Thorium-231	U	-0.144	1.37	+/-0.474		pCi/g						
Thorium-234	U	1.26	1.33	+/-0.554	2.00	pCi/g						
Tin-113	U	-0.0176	0.0999	+/-0.0306	0.100	pCi/g						
Uranium-235	U	-0.000242	0.415	+/-0.127	0.500	pCi/g						
Yttrium-88	U	0.00252	0.0583	+/-0.0175	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	116	159	+/-50.5	250	pCi/L	KXX2	03/27/10	2146	964062	7
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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, Am-05-RC Modified
3	DOE EML HASL-300, Am-05-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R
7	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	78.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	70.2	(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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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7452 Project: LANL01004
Sample ID: 248513012 Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7437
Sample ID: 248513013
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 16.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0115	0.0168	+/-0.00389	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0106	0.0234	+/-0.00436	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0262	0.0198	+/-0.00774	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.30	0.161	+/-0.131	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236		0.127	0.0983	+/-0.0314	0.100	pCi/g						
Uranium-238		1.59	0.113	+/-0.153	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0802	0.337	+/-0.100	0.200	pCi/g		MXR1	03/20/10	1330	961097	6
Bismuth-211	UI	5.00	0.429	+/-0.364		pCi/g						
Bismuth-214		1.43	0.150	+/-0.123	0.200	pCi/g						
Cadmium-109	UI	2.98	1.75	+/-0.685		pCi/g						
Cerium-139	U	0.0192	0.0666	+/-0.0202	0.050	pCi/g						
Cesium-134	U	0.0567	0.107	+/-0.0304	0.100	pCi/g						
Cesium-137		0.688	0.0825	+/-0.0562	0.100	pCi/g						
Cobalt-60	U	0.00951	0.0806	+/-0.0241	0.100	pCi/g						
Europium-152	U	-0.161	0.187	+/-0.0724	0.200	pCi/g						
Lanthanum-140	U	0.0131	0.248	+/-0.0734		pCi/g						
Lead-212		2.03	0.117	+/-0.127	0.100	pCi/g						
Lead-214		1.82	0.156	+/-0.141	0.100	pCi/g						
Mercury-203	U	0.0351	0.0978	+/-0.0283	0.100	pCi/g						
Potassium-40		27.7	0.630	+/-1.65	1.00	pCi/g						
Radium-223	U	0.00894	1.48	+/-0.445		pCi/g						
Radium-224	UI	5.88	1.25	+/-0.797		pCi/g						
Radium-226		1.43	0.150	+/-0.123		pCi/g						
Radium-228		2.04	0.293	+/-0.245	0.500	pCi/g						
Ruthenium-106	U	-0.0379	0.670	+/-0.203	0.800	pCi/g						
Sodium-22	U	0.0246	0.0989	+/-0.029	0.080	pCi/g						
Strontium-85	U	-0.197	0.0941	+/-0.0343		pCi/g						
Thallium-208		0.633	0.0692	+/-0.0575	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7437
Sample ID: 248513013

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.184	0.528	+/-0.162		pCi/g					
Thorium-231	U	0.00894	1.48	+/-0.445		pCi/g					
Thorium-234	U	1.95	3.18	+/-0.926	2.00	pCi/g					
Tin-113	U	-0.0441	0.0946	+/-0.0305	0.100	pCi/g					
Uranium-235	U	0.205	0.430	+/-0.129	0.500	pCi/g					
Yttrium-88	U	0.0137	0.082	+/-0.0237	0.100	pCi/g					

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	116	169	+/-53.0	250	pCi/L	KXX2	03/29/10	1955	964062	7
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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, Am-05-RC Modified
3	DOE EML HASL-300, Am-05-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R
7	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	59.1	(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: April 5, 2010

Client Sample ID: RE36-10-7437
Sample ID: 248513013

Project: LANL01004
Client ID: LANL010

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

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

UJ 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: April 5, 2010

Client Sample ID: RE36-10-7440
Sample ID: 248513014
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 8.13%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00245	0.0161	+/-0.00179	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00309	0.0263	+/-0.00398	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0119	0.0222	+/-0.0049	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.06	0.153	+/-0.110	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236		0.107	0.0935	+/-0.028	0.100	pCi/g						
Uranium-238		1.19	0.108	+/-0.120	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.128	0.202	+/-0.0624	0.200	pCi/g		MXR1	03/20/10	1330	961097	6
Bismuth-211	UI	5.30	0.380	+/-0.355		pCi/g						
Bismuth-214		1.66	0.129	+/-0.125	0.200	pCi/g						
Cadmium-109	UI	4.01	1.21	+/-0.486		pCi/g						
Cerium-139	U	-0.0408	0.0521	+/-0.017	0.050	pCi/g						
Cesium-134	UI	0.173	0.108	+/-0.0437	0.100	pCi/g						
Cesium-137		0.0793	0.0745	+/-0.0237	0.100	pCi/g						
Cobalt-60	U	0.0102	0.0729	+/-0.0215	0.100	pCi/g						
Europium-152	U	-0.0143	0.169	+/-0.0583	0.200	pCi/g						
Lanthanum-140	U	-0.0811	0.194	+/-0.0669		pCi/g						
Lead-212		2.28	0.096	+/-0.128	0.100	pCi/g						
Lead-214		1.92	0.136	+/-0.139	0.100	pCi/g						
Mercury-203	U	0.0511	0.0828	+/-0.0233	0.100	pCi/g						
Potassium-40		30.7	0.577	+/-1.61	1.00	pCi/g						
Radium-223	U	-0.133	1.13	+/-0.388		pCi/g						
Radium-224	UI	5.38	1.03	+/-0.684		pCi/g						
Radium-226		1.66	0.129	+/-0.125		pCi/g						
Radium-228		2.29	0.235	+/-0.230	0.500	pCi/g						
Ruthenium-106	U	0.327	0.627	+/-0.175	0.800	pCi/g						
Sodium-22	U	0.020	0.0846	+/-0.0246	0.080	pCi/g						
Strontium-85	UI	0.100	0.0905	+/-0.0269		pCi/g						
Thallium-208		0.703	0.0632	+/-0.0587	0.080	pCi/g						

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7440
Sample ID: 248513014

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.24	0.416	+/-0.129		pCi/g						
Thorium-231	U	-0.133	1.13	+/-0.388		pCi/g						
Thorium-234		2.51	1.74	+/-0.838	2.00	pCi/g						
Tin-113	U	-0.0262	0.0826	+/-0.0258	0.100	pCi/g						
Uranium-235	U	0.144	0.368	+/-0.110	0.500	pCi/g						
Yttrium-88	U	-0.018	0.0509	+/-0.0168	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	84.2	154	+/-47.4	250	pCi/L		KXK2	03/27/10	2311	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	63.7	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7440
Sample ID: 248513014

Project: LANL01004
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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7435
Sample ID: 248513015
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 30.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00393	0.0167	+/-0.00256	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0137	0.0203	+/-0.00464	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0115	0.0171	+/-0.00488	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.00	0.151	+/-0.105	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.0662	0.0922	+/-0.0215	0.100	pCi/g						
Uranium-238		1.34	0.106	+/-0.131	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.049	0.192	+/-0.0613	0.200	pCi/g		MXR1	03/20/10	1330	961097	6
Bismuth-211	UI	4.84	0.310	+/-0.403		pCi/g						
Bismuth-214		1.52	0.109	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	3.65	1.22	+/-0.488		pCi/g						
Cerium-139	U	-0.00381	0.0454	+/-0.0133	0.050	pCi/g						
Cesium-134	UI	0.0886	0.086	+/-0.0235	0.100	pCi/g						
Cesium-137		0.453	0.0593	+/-0.0513	0.100	pCi/g						
Cobalt-60	U	-0.0156	0.0571	+/-0.0187	0.100	pCi/g						
Europium-152	U	0.0629	0.156	+/-0.0514	0.200	pCi/g						
Lanthanum-140	U	-0.0362	0.187	+/-0.062		pCi/g						
Lead-212		2.00	0.0902	+/-0.153	0.100	pCi/g						
Lead-214		1.76	0.113	+/-0.154	0.100	pCi/g						
Mercury-203	U	0.0273	0.0732	+/-0.0239	0.100	pCi/g						
Potassium-40		29.6	0.414	+/-1.54	1.00	pCi/g						
Radium-223	U	0.0891	1.01	+/-0.343		pCi/g						
Radium-224	UI	5.18	0.967	+/-0.636		pCi/g						
Radium-226		1.52	0.109	+/-0.116		pCi/g						
Radium-228		1.75	0.188	+/-0.183	0.500	pCi/g						
Ruthenium-106	U	-0.015	0.509	+/-0.154	0.800	pCi/g						
Sodium-22	U	0.0361	0.0747	+/-0.0211	0.080	pCi/g						
Strontium-85	U	0.0626	0.0724	+/-0.0219		pCi/g						
Thallium-208		0.630	0.0597	+/-0.0535	0.080	pCi/g						

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7435 Project: LANL01004
Sample ID: 248513015 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0118	0.368	+/-0.111		pCi/g						
Thorium-231	U	0.0891	1.01	+/-0.343		pCi/g						
Thorium-234		2.07	1.62	+/-0.893	2.00	pCi/g						
Tin-113	U	0.00691	0.0723	+/-0.0207	0.100	pCi/g						
Uranium-235	U	0.050	0.318	+/-0.0921	0.500	pCi/g						
Yttrium-88	U	-0.0199	0.0461	+/-0.0163	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	137	159	+/-51.7	250	pCi/L		KXK2	03/27/10	2354	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	93.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	61.4	(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

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7435
Sample ID: 248513015

Project: LANL01004
Client ID: LANL010

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

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

Report Date: April 5, 2010

Client Sample ID: RE36-10-7441
Sample ID: 248513016
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 22.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0171	0.018	+/-0.00485	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0134	0.0244	+/-0.00542	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240		0.0462	0.0206	+/-0.0104	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.49	0.181	+/-0.150	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.0794	0.111	+/-0.0258	0.100	pCi/g						
Uranium-238		1.79	0.127	+/-0.174	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0742	0.292	+/-0.0932	0.200	pCi/g		MXR1	03/20/10	1331	961097	6
Bismuth-211	UI	4.44	0.390	+/-0.319		pCi/g						
Bismuth-214		1.42	0.121	+/-0.121	0.200	pCi/g						
Cadmium-109	UI	5.14	1.35	+/-0.714		pCi/g						
Cerium-139	U	0.0255	0.0601	+/-0.018	0.050	pCi/g						
Cesium-134	U	0.0837	0.108	+/-0.0302	0.100	pCi/g						
Cesium-137		1.15	0.0764	+/-0.0768	0.100	pCi/g						
Cobalt-60	U	0.0113	0.0729	+/-0.0216	0.100	pCi/g						
Europium-152	U	-0.0444	0.187	+/-0.0577	0.200	pCi/g						
Lanthanum-140	U	-0.114	0.260	+/-0.0891		pCi/g						
Lead-212		2.03	0.109	+/-0.119	0.100	pCi/g						
Lead-214		1.61	0.137	+/-0.124	0.100	pCi/g						
Mercury-203	U	0.0228	0.0869	+/-0.0252	0.100	pCi/g						
Potassium-40		26.5	0.561	+/-1.51	1.00	pCi/g						
Radium-223	U	0.719	1.32	+/-0.430		pCi/g						
Radium-224	UI	5.08	1.17	+/-0.614		pCi/g						
Radium-226		1.42	0.121	+/-0.121		pCi/g						
Radium-228		2.00	0.248	+/-0.216	0.500	pCi/g						
Ruthenium-106	U	0.146	0.619	+/-0.179	0.800	pCi/g						
Sodium-22	U	0.0178	0.0889	+/-0.0262	0.080	pCi/g						
Strontium-85	U	0.0857	0.0928	+/-0.0281		pCi/g						
Thallium-208		0.587	0.0701	+/-0.0548	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7441
Sample ID: 248513016

Project: LANL01004
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	-0.141	0.457	+/-0.139		pCi/g						
Thorium-231	U	0.719	1.32	+/-0.430		pCi/g						
Thorium-234		3.44	2.39	+/-1.21	2.00	pCi/g						
Tin-113	U	-0.00709	0.0894	+/-0.0274	0.100	pCi/g						
Uranium-235	U	0.133	0.382	+/-0.115	0.500	pCi/g						
Yttrium-88	U	0.0112	0.0737	+/-0.0214	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	84.5	155	+/-47.6	250	pCi/L		KXK2	03/28/10	0036	964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	76.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	54.5	(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: April 5, 2010

Client Sample ID: RE36-10-7441
Sample ID: 248513016

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7442
Sample ID: 248513017
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 13.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00305	0.0175	+/-0.0043	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0115	0.029	+/-0.00562	0.050	pCi/g		AYB1	03/25/10	2023	965492	4
Plutonium-239/240	U	0.0175	0.0245	+/-0.00627	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.27	0.165	+/-0.129	0.100	pCi/g		AYB1	03/26/10	1746	965493	5
Uranium-235/236	U	0.0652	0.101	+/-0.0223	0.100	pCi/g						
Uranium-238		1.14	0.116	+/-0.119	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.348	0.564	+/-0.178	0.200	pCi/g		MXR1	03/20/10	1331	961097	6
Bismuth-211	UI	5.26	0.480	+/-0.430		pCi/g						
Bismuth-214		1.60	0.162	+/-0.129	0.200	pCi/g						
Cadmium-109	UI	3.44	1.91	+/-0.794		pCi/g						
Cerium-139	U	0.00698	0.0737	+/-0.0222	0.050	pCi/g						
Cesium-134	UI	0.177	0.125	+/-0.0393	0.100	pCi/g						
Cesium-137		0.193	0.0818	+/-0.0449	0.100	pCi/g						
Cobalt-60	U	-0.0541	0.0758	+/-0.0271	0.100	pCi/g						
Europium-152	U	-0.0714	0.230	+/-0.0866	0.200	pCi/g						
Lanthanum-140	U	0.0474	0.284	+/-0.0956		pCi/g						
Lead-212		2.31	0.133	+/-0.160	0.100	pCi/g						
Lead-214		1.91	0.175	+/-0.165	0.100	pCi/g						
Mercury-203	U	0.0995	0.110	+/-0.0306	0.100	pCi/g						
Potassium-40		31.1	0.734	+/-1.84	1.00	pCi/g						
Radium-223	U	0.494	1.57	+/-0.519		pCi/g						
Radium-224	UI	5.82	1.43	+/-1.01		pCi/g						
Radium-226		1.60	0.162	+/-0.129		pCi/g						
Radium-228		2.54	0.276	+/-0.250	0.500	pCi/g						
Ruthenium-106	U	0.118	0.726	+/-0.219	0.800	pCi/g						
Sodium-22	U	-0.0538	0.0798	+/-0.028	0.080	pCi/g						
Strontium-85	UI	0.111	0.106	+/-0.0329		pCi/g						
Thallium-208		0.710	0.0717	+/-0.064	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: April 5, 2010

Client Sample ID: RE36-10-7442
Sample ID: 248513017
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.0747	0.597	+/-0.176		pCi/g					
Thorium-231	U	0.494	1.57	+/-0.519		pCi/g					
Thorium-234		4.51	4.32	+/-2.13	2.00	pCi/g					
Tin-113	U	0.00186	0.111	+/-0.0332	0.100	pCi/g					
Uranium-235	U	0.00695	0.476	+/-0.145	0.500	pCi/g					
Yttrium-88	U	-0.0051	0.0589	+/-0.0186	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	103	157	+/-49.2	250	pCi/L		KXX2	03/28/10	0119 964062	7

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	79.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	65.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	59.2	(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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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7442
Sample ID: 248513017

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7436
Sample ID: 248513018
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 21.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00197	0.0176	+/-0.0015	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00695	0.0307	+/-0.00404	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240	U	-0.00204	0.026	+/-0.00467	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.26	0.122	+/-0.118	0.100	pCi/g		AYB1	03/26/10	1746	965493	6
Uranium-235/236		0.075	0.0746	+/-0.0208	0.100	pCi/g						
Uranium-238		1.18	0.0859	+/-0.112	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0187	0.256	+/-0.086	0.200	pCi/g		MXR1	03/20/10	1332	961097	7
Bismuth-211	UI	5.54	0.313	+/-0.397		pCi/g						
Bismuth-214		1.65	0.110	+/-0.122	0.200	pCi/g						
Cadmium-109	UI	5.32	1.20	+/-0.459		pCi/g						
Cerium-139	U	-0.0172	0.0489	+/-0.0148	0.050	pCi/g						
Cesium-134	UI	0.110	0.103	+/-0.0348	0.100	pCi/g						
Cesium-137	U	0.0508	0.0813	+/-0.0239	0.100	pCi/g						
Cobalt-60	U	-0.0186	0.0593	+/-0.0196	0.100	pCi/g						
Europium-152	U	0.00336	0.159	+/-0.0461	0.200	pCi/g						
Lanthanum-140	U	-0.0112	0.223	+/-0.0678		pCi/g						
Lead-212		2.49	0.0997	+/-0.162	0.100	pCi/g						
Lead-214		2.01	0.114	+/-0.154	0.100	pCi/g						
Mercury-203	U	0.0466	0.0733	+/-0.0236	0.100	pCi/g						
Potassium-40		31.3	0.492	+/-1.65	1.00	pCi/g						
Radium-223	U	0.278	1.03	+/-0.349		pCi/g						
Radium-224	UI	5.36	1.07	+/-0.640		pCi/g						
Radium-226		1.65	0.110	+/-0.122		pCi/g						
Radium-228		2.39	0.244	+/-0.216	0.500	pCi/g						
Ruthenium-106	U	-0.0306	0.501	+/-0.154	0.800	pCi/g						
Sodium-22	U	0.00654	0.079	+/-0.024	0.080	pCi/g						
Strontium-85	U	0.0461	0.0704	+/-0.0219		pCi/g						
Thallium-208		0.682	0.0617	+/-0.0586	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7436
Sample ID: 248513018

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.0469	0.436	+/-0.134		pCi/g					
Thorium-231	U	0.278	1.03	+/-0.349		pCi/g					
Thorium-234	U	1.98	2.12	+/-0.987	2.00	pCi/g					
Tin-113	U	-0.00334	0.0768	+/-0.0226	0.100	pCi/g					
Uranium-235	U	0.129	0.354	+/-0.103	0.500	pCi/g					
Yttrium-88	U	-0.0041	0.0633	+/-0.0197	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	62.3	157	+/-46.8	250	pCi/L		KXK2	03/28/10 0201	964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	71.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.2	(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

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7436
Sample ID: 248513018
Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7438
Sample ID: 248513019
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 5.34%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00186	0.017	+/-0.00143	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.017	0.0226	+/-0.00548	0.050	pCi/g		AYB1	03/25/10	2338	965492	4
Plutonium-239/240	U	0.0136	0.0191	+/-0.00488	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.23	0.229	+/-0.132	0.100	pCi/g		AYB1	03/29/10	1237	965493	5
Uranium-235/236	U	0.0919	0.138	+/-0.0286	0.100	pCi/g						
Uranium-238		1.31	0.160	+/-0.140	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0058	0.116	+/-0.0356	0.200	pCi/g		MXR1	03/20/10	1332	961097	7
Bismuth-211	UI	5.22	0.379	+/-0.381		pCi/g						
Bismuth-214		1.57	0.141	+/-0.131	0.200	pCi/g						
Cadmium-109	UI	5.72	0.965	+/-0.590		pCi/g						
Cerium-139	U	0.00961	0.0583	+/-0.0169	0.050	pCi/g						
Cesium-134	U	0.125	0.130	+/-0.0431	0.100	pCi/g						
Cesium-137	U	-0.0292	0.0864	+/-0.0277	0.100	pCi/g						
Cobalt-60	U	0.00995	0.0986	+/-0.0292	0.100	pCi/g						
Europium-152	U	-0.0563	0.181	+/-0.0541	0.200	pCi/g						
Lanthanum-140	U	-0.191	0.217	+/-0.0834		pCi/g						
Lead-212		2.33	0.107	+/-0.137	0.100	pCi/g						
Lead-214		1.89	0.138	+/-0.148	0.100	pCi/g						
Mercury-203	U	0.0508	0.0857	+/-0.0259	0.100	pCi/g						
Potassium-40		31.6	0.573	+/-1.75	1.00	pCi/g						
Radium-223	U	0.156	1.24	+/-0.405		pCi/g						
Radium-224	UI	6.31	1.15	+/-0.918		pCi/g						
Radium-226		1.57	0.141	+/-0.131		pCi/g						
Radium-228		2.63	0.279	+/-0.237	0.500	pCi/g						
Ruthenium-106	U	0.099	0.682	+/-0.203	0.800	pCi/g						
Sodium-22	U	-0.0223	0.0889	+/-0.0289	0.080	pCi/g						
Strontium-85	U	0.0594	0.089	+/-0.0275		pCi/g						
Thallium-208		0.714	0.0745	+/-0.0626	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7438
Sample ID: 248513019

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.162	0.466	+/-0.146		pCi/g					
Thorium-231	U	0.156	1.24	+/-0.405		pCi/g					
Thorium-234		2.54	1.15	+/-0.652	2.00	pCi/g					
Tin-113	U	0.0175	0.0977	+/-0.028	0.100	pCi/g					
Uranium-235	U	0.0356	0.378	+/-0.112	0.500	pCi/g					
Yttrium-88	U	-0.0141	0.0692	+/-0.0228	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	91.0	157	+/-48.5	250	pCi/L		KXK2	03/28/10	0244 964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	25.5 *	(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

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Project: LANL ER Project

Report Date: April 5, 2010

Client Sample ID: RE36-10-7438
Sample ID: 248513019

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 2010

Client Sample ID: RE36-10-7439
Sample ID: 248513020
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 18.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241		0.0169	0.0169	+/-0.00441	0.050	pCi/g		AYB1	04/01/10	1631	970857	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00175	0.0277	+/-0.00446	0.050	pCi/g		AYB1	03/30/10	0740	965492	4
Plutonium-239/240		0.048	0.0234	+/-0.0104	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.39	0.142	+/-0.133	0.100	pCi/g		AYB1	03/26/10	1747	965493	6
Uranium-235/236		0.0993	0.0865	+/-0.0273	0.100	pCi/g						
Uranium-238		1.41	0.0995	+/-0.134	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0249	0.302	+/-0.0872	0.200	pCi/g		MXR1	03/20/10	1338	961097	7
Bismuth-211	UI	4.21	0.268	+/-0.249		pCi/g						
Bismuth-214		1.22	0.0973	+/-0.088	0.200	pCi/g						
Cadmium-109	UI	5.17	1.14	+/-0.631		pCi/g						
Cerium-139	U	0.00425	0.0469	+/-0.0134	0.050	pCi/g						
Cesium-134	UI	0.0969	0.0762	+/-0.0206	0.100	pCi/g						
Cesium-137		0.726	0.058	+/-0.047	0.100	pCi/g						
Cobalt-60	U	-0.0136	0.0503	+/-0.0161	0.100	pCi/g						
Europium-152	U	-0.0588	0.129	+/-0.0515	0.200	pCi/g						
Lanthanum-140	U	-0.0632	0.171	+/-0.0552		pCi/g						
Lead-212		1.70	0.0782	+/-0.0791	0.100	pCi/g						
Lead-214		1.53	0.0975	+/-0.0996	0.100	pCi/g						
Mercury-203	U	0.0365	0.065	+/-0.0212	0.100	pCi/g						
Potassium-40		27.8	0.390	+/-1.27	1.00	pCi/g						
Radium-223	U	0.361	0.919	+/-0.309		pCi/g						
Radium-224	UI	4.84	0.837	+/-0.539		pCi/g						
Radium-226		1.22	0.0973	+/-0.088		pCi/g						
Radium-228		1.70	0.185	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	0.0988	0.459	+/-0.138	0.800	pCi/g						
Sodium-22	U	-0.0524	0.0566	+/-0.0194	0.080	pCi/g						
Strontium-85	UI	0.0939	0.0697	+/-0.019		pCi/g						
Thallium-208		0.551	0.0492	+/-0.0396	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: April 5, 2010

Client Sample ID: RE36-10-7439
Sample ID: 248513020

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.058	0.363	+/-0.107		pCi/g					
Thorium-231	U	0.361	0.919	+/-0.309		pCi/g					
Thorium-234	U	2.52	2.71	+/-0.781	2.00	pCi/g					
Tin-113	U	0.00791	0.0669	+/-0.0195	0.100	pCi/g					
Uranium-235	U	0.0494	0.312	+/-0.0955	0.500	pCi/g					
Yttrium-88	U	-0.0112	0.0425	+/-0.0167	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	77.1	167	+/-50.4	250	pCi/L		KXK2	03/29/10	2038 964062	8

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	72.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	67.2	(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

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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
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Report Date: April 5, 2010

Client Sample ID: RE36-10-7439
Sample ID: 248513020

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: April 5, 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: 248513

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	965492										
QC1202071656	248513001	DUP									
Plutonium-238		U	0.0182	U	0.0116	pCi/g	0.318	(0-1)	AYB1	03/25/10	23:38
		TPU:	+/-0.00585		+/-0.00445						
		Yield:	87.2		88.7						
Plutonium-239/240			0.0348	U	0.0183	pCi/g	0.559	(0-1)			
		TPU:	+/-0.00915		+/-0.00561						
		Yield:	87.2		88.7						
QC1202071657	LCS										
Plutonium-238					6.61	pCi/g		(75%-125%)		03/26/10	08:27
		TPU:			+/-0.565						
		Yield:			83.3						
Plutonium-239/240	41.8				42.4	pCi/g	101	(75%-125%)			
		TPU:			+/-2.91						
		Yield:			83.3						
QC1202071655	MB										
Plutonium-238				U	0.0207	pCi/g				03/25/10	23:38
		TPU:			+/-0.00762						
		Yield:			85.8						
Plutonium-239/240				U	0.0136	pCi/g					
		TPU:			+/-0.006						
		Yield:			85.8						
Batch	965493										
QC1202071659	248513001	DUP									
Uranium-233/234			1.22		1.26	pCi/g	0.0847	(0-1)	AYB1	03/26/10	17:47
		TPU:	+/-0.119		+/-0.130						
		Yield:	52.1		55.1						
Uranium-235/236		U	0.0656	U	0.0522	pCi/g	0.158	(0-1)			
		TPU:	+/-0.022		+/-0.0201						
		Yield:	52.1		55.1						
Uranium-238			1.28		1.28	pCi/g	0.00275	(0-1)			
		TPU:	+/-0.123		+/-0.132						
		Yield:	52.1		55.1						
QC1202071660	LCS										
Uranium-233/234					5.73	pCi/g				03/26/10	17:47
		TPU:			+/-0.541						
		Yield:			93.6						
Uranium-235/236				U	0.143	pCi/g					
		TPU:			+/-0.0553						
		Yield:			93.6						
Uranium-238	5.75				5.07	pCi/g	88.1	(75%-125%)			
		TPU:			+/-0.489						
		Yield:			93.6						
QC1202071658	MB										
Uranium-233/234				U	0.0107	pCi/g				03/26/10	17:47

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QC Summary

Workorder: 248513

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Parmname		NOM		Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec													
Batch	965493												
			</										

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QC Summary

Workorder: 248513

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch	961097									
Cesium-137		0.477		0.466	pCi/g	0.0542		(0-1)		
	TPU:	+/-0.0489		+/-0.048						
Cobalt-60	U	0.0365	U	-0.00414	pCi/g	0.432		(0-1)		
	TPU:	+/-0.0275		+/-0.0195						
Europium-152	U	0.0096	U	0.0553	pCi/g	0.156		(0-1)		
	TPU:	+/-0.0815		+/-0.0653						
Lanthanum-140	U	0.121	U	-0.231	pCi/g	1.08		(0-1)		
	TPU:	+/-0.0904		+/-0.073						
Lead-212		2.16		2.16	pCi/g	0.00808		(0-1)		
	TPU:	+/-0.154		+/-0.156						
Lead-214		1.76		1.93	pCi/g	0.280		(0-1)		
	TPU:	+/-0.151		+/-0.150						
Mercury-203	U	0.111	U	0.0621	pCi/g	0.420		(0-1)		
	TPU:	+/-0.0328		+/-0.0252						
Potassium-40		30.9		31.8	pCi/g	0.130		(0-1)		
	TPU:	+/-1.89		+/-1.66						
Radium-223	U	0.657	U	-0.497	pCi/g	0.672		(0-1)		
	TPU:	+/-0.491		+/-0.367						
Radium-224	UI	7.18	UI	5.76	pCi/g	0.374		(0-1)		
	TPU:	+/-1.22		+/-0.672						
Radium-226		1.55		1.50	pCi/g	0.108		(0-1)		
	TPU:	+/-0.139		+/-0.115						
Radium-228		1.86		2.11	pCi/g	0.282		(0-1)		
	TPU:	+/-0.240		+/-0.208						
Ruthenium-106	U	-0.107	U	-0.0379	pCi/g	0.0871		(0-1)		
	TPU:	+/-0.234		+/-0.164						
Sodium-22	U	-0.0124	U	-0.0374	pCi/g	0.227		(0-1)		
	TPU:	+/-0.0325		+/-0.0223						
Strontium-85	U	0.105	UI	0.186	pCi/g	0.643		(0-1)		
	TPU:	+/-0.0364		+/-0.0268						
Thallium-208		0.584		0.625	pCi/g	0.193		(0-1)		
	TPU:	+/-0.0582		+/-0.050						
Thorium-227	U	-0.0463	U	-0.228	pCi/g	0.283		(0-1)		
	TPU:	+/-0.180		+/-0.141						
Thorium-231	U	0.657	U	-0.497	pCi/g	0.672		(0-1)		
	TPU:	+/-0.491		+/-0.367						
Thorium-234	U	3.15		2.55	pCi/g	0.128		(0-1)		
	TPU:	+/-1.51		+/-0.847						
Tin-113	U	-0.00181	U	-0.0303	pCi/g	0.240		(0-1)		
	TPU:	+/-0.035		+/-0.0244						
Uranium-235	U	0.150	U	-0.0855	pCi/g	0.451		(0-1)		
	TPU:	+/-0.151		+/-0.110						
Yttrium-88	U	-0.0137	U	-0.0112	pCi/g	0.0322		(0-1)		
	TPU:	+/-0.0212		+/-0.0173						
QC1202061454	LCS									
Americium-241	15.9			13.4	pCi/g		84 (75%-125%)			03/20/1012:14
	TPU:			+/-0.601						
Bismuth-211				1.96	pCi/g					
	TPU:			+/-0.342						
Bismuth-214				0.735	pCi/g					
	TPU:			+/-0.124						

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QC Summary

Workorder: 248513

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	961097									
Cadmium-109			29.3	pCi/g						
	TPU:		+/-1.84							
Cerium-139		U	0.0215	pCi/g						
	TPU:		+/-0.0214							
Cesium-134		U	0.0799	pCi/g						
	TPU:		+/-0.0427							
Cesium-137	5.55		6.41	pCi/g			116 (75%-125%)			
	TPU:		+/-0.348							
Cobalt-60	6.33		6.45	pCi/g			102 (75%-125%)			
	TPU:		+/-0.312							
Europium-152		U	-0.155	pCi/g						
	TPU:		+/-0.0832							
Lanthanum-140		U	0.041	pCi/g						
	TPU:		+/-0.0472							
Lead-212			1.15	pCi/g						
	TPU:		+/-0.0934							
Lead-214			0.710	pCi/g						
	TPU:		+/-0.126							
Mercury-203		U	-0.0128	pCi/g						
	TPU:		+/-0.0298							
Potassium-40			1.05	pCi/g						
	TPU:		+/-0.267							
Radium-223		U	-0.911	pCi/g						
	TPU:		+/-0.550							
Radium-224			3.00	pCi/g						
	TPU:		+/-0.765							
Radium-226			0.735	pCi/g						
	TPU:		+/-0.124							
Radium-228			1.51	pCi/g						
	TPU:		+/-0.255							
Ruthenium-106		U	-0.042	pCi/g						
	TPU:		+/-0.260							
Sodium-22		U	-0.0424	pCi/g						
	TPU:		+/-0.0227							
Strontium-85		U	0.118	pCi/g						
	TPU:		+/-0.0381							
Thallium-208			0.345	pCi/g						
	TPU:		+/-0.055							
Thorium-227		U	0.268	pCi/g						
	TPU:		+/-0.196							
Thorium-231		U	-0.911	pCi/g						
	TPU:		+/-0.550							
Thorium-234		U	2.24	pCi/g						
	TPU:		+/-0.928							
Tin-113		U	0.0141	pCi/g						
	TPU:		+/-0.0388							
Uranium-235		U	0.0241	pCi/g						
	TPU:		+/-0.138							
Yttrium-88		U	0.00444	pCi/g						
	TPU:		+/-0.0225							

QC1202061452 MB

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QC Summary

Workorder: 248513

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC %	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	961097										
Americium-241			U	-0.0834	pCi/g						
	TPU:			+/-0.0316							
Bismuth-211			U	0.040	pCi/g						
	TPU:			+/-0.0552							
Bismuth-214			U	0.0227	pCi/g						
	TPU:			+/-0.022							
Cadmium-109			U	-0.394	pCi/g						
	TPU:			+/-0.164							
Cerium-139			U	0.00732	pCi/g						
	TPU:			+/-0.00681							
Cesium-134			U	0.00805	pCi/g						
	TPU:			+/-0.0103							
Cesium-137			U	0.00115	pCi/g						
	TPU:			+/-0.00957							
Cobalt-60			U	0.0158	pCi/g						
	TPU:			+/-0.0115							
Europium-152			U	0.00571	pCi/g						
	TPU:			+/-0.0224							
Lanthanum-140			U	0.0608	pCi/g						
	TPU:			+/-0.0205							
Lead-212			U	-0.0093	pCi/g						
	TPU:			+/-0.0166							
Lead-214			U	0.00607	pCi/g						
	TPU:			+/-0.0198							
Mercury-203			U	-0.00968	pCi/g						
	TPU:			+/-0.00927							
Potassium-40			U	0.228	pCi/g						
	TPU:			+/-0.115							
Radium-223			U	0.0935	pCi/g						
	TPU:			+/-0.163							
Radium-224			U	0.219	pCi/g						
	TPU:			+/-0.157							
Radium-226			U	0.0227	pCi/g						
	TPU:			+/-0.022							
Radium-228			U	-0.0298	pCi/g						
	TPU:			+/-0.0416							
Ruthenium-106			U	-0.109	pCi/g						
	TPU:			+/-0.0823							
Sodium-22			U	0.00267	pCi/g						
	TPU:			+/-0.00935							
Strontium-85			U	-0.0493	pCi/g						
	TPU:			+/-0.0166							
Thallium-208			U	0.0121	pCi/g						
	TPU:			+/-0.0112							
Thorium-227			U	0.125	pCi/g						
	TPU:			+/-0.0682							
Thorium-231			U	0.0935	pCi/g						
	TPU:			+/-0.163							
Thorium-234			U	0.646	pCi/g						
	TPU:			+/-0.328							

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QC Summary

Workorder: 248513

Page 6 of 7

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	961097										
Tin-113			U	-0.00729	pCi/g						
		TPU:		+/-0.0104							
Uranium-235			U	-0.0091	pCi/g						
		TPU:		+/-0.0497							
Yttrium-88			U	-0.00425	pCi/g						
		TPU:		+/-0.00979							
Rad Liquid Scintillation											
Batch	964062										
QC1202068226	248513020	DUP									
Tritium		U	77.1	U	84.6	pCi/L	0.0383	(0-1)	KXK2	03/28/1004:52	
		TPU:	+/-50.4		+/-47.7						
QC1202068227	LCS										
Tritium		5520			5940	pCi/L		108 (80%-120%)		03/28/1005:35	
		TPU:			+/-494						
QC1202068225	MB										
Tritium			U	-23.2	pCi/L					03/28/1004:10	
		TPU:		+/-42.4							

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
- 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
- UJ 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.

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QC Summary

Workorder: 248513

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
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# 965492 Product: RU Date: 3/31/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			MA
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)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			MA
Smears Taken for Radioactive batches.			MA
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.			MA
Aux data is correct.			MA
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)			MA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			MA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			MA
Aliquot Correction completed if required.			MA
Review sample historical results if available (If REMF, 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: Debbie Green 3/31/10Secondary Review Performed By: Ms. L. H. Green 3/31/10

Plutonium Que Sheet

15-MAR-10

Batch #: 965492 *pu 238* Analyst: AYB1 First Client Due Date: 31-MAR-10 Internal Due Date: 20-MAR-10
 Tracer Isotope(s): ~~Pu-239/Pu-238~~ Tracer Code: *1430-2* Expiration Date: *3/11/10* Vol: *0.1*
 LCS Isotope(s): Pu-239/Pu-238 LCS Code: */* Expiration Date: */* Vol: */*
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: */* Expiration Date: */* Vol: */*
 Prep Date: *3/22/10* Initials: *AYB* Pipet ID: *2971058* Balance ID: *60410272* Witness: *JCH 3-22-10*

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry	Pu
										Aliquot (g)	
248513001-1	RE36-10-7407	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	1	1	1.751	28
248513002-1	RE36-10-7421	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	2	2	1.750	29
248513003-1	RE36-10-7422	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	3	3	1.751	30
248513004-1	RE36-10-7451	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	4	4	1.753	31
248513005-1	RE36-10-7449	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	5	5	1.752	32
248513006-1	RE36-10-7445	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	6	6	1.753	33
248513007-1	RE36-10-7450	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	7	7	1.753	34
248513008-1	RE36-10-7444	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	8	8	1.758	35
248513009-1	RE36-10-7448	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	9	9	1.759	36
248513010-1	RE36-10-7447	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	10	10	1.759	37
248513011-1	RE36-10-7443	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	11	11	1.751	38
248513012-1	RE36-10-7452	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	12	12	1.750	39
248513013-1	RE36-10-7437	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	13	13	1.756	40
248513014-1	RE36-10-7440	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	14	14	1.752	41
248513015-1	RE36-10-7435	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	15	15	1.749	42
248513016-1	RE36-10-7441	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	16	16	1.756	43
248513017-1	RE36-10-7442	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	17	17	1.752	44
248513018-1	RE36-10-7436	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	18	18	1.756	45
248513019-1	RE36-10-7438	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	19	19	1.756	46
248513020-1	RE36-10-7439	SAMPLE	.05 pCi/g		SOIL	LANL010	25-FEB-10	20	20	1.753	47
1202071655-1	MB for batch 965492	MB	.05 pCi/g		SOIL	QC ACCOUNT		21	21	1	93
1202071656-1	RE36-10-7407(248513001DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	25-FEB-10	22	22	1.756	94
1202071657-1	LCS for batch 965492	LCS	.05 pCi/g		SOIL	QC ACCOUNT		23	23	0.104	95

SRM 0244-B exp 4/30/10

Solid Sample Dissolution by LEACH or DIGESTION
 Circle One

Choose SOP Used: GL-RAD-A-012, GL-RAD-A-036, GL-RAD-A-045, GL-RAD-A-043

Data Reviewed By: *DS 3/31/10*

Blank Correction Report

Batch ID 965492

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202071656	DUP	Plutonium-238	1.26 g	0.0116	0.00445	0.0221	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0183	0.00561	0.0186	.010793651	pCi/g	YES
1202071657	LCS	Plutonium-238	0.109 g	6.61	0.565	0.265	.189908257	pCi/g	NO
		Plutonium-239/240	0.109 g	42.4	2.91	0.224	.124770642	pCi/g	NO
1202071655	MB	Plutonium-238	1.00 g	0.0207	0.00762	0.0288	.0207	pCi/g	YES
		Plutonium-239/240	1.00 g	0.0136	0.006	0.0243	.0136	pCi/g	YES
248513001	RE36-10-7407	Plutonium-238	1.25 g	0.0182	0.00585	0.0241	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0348	0.00915	0.0204	.01088	pCi/g	YES
248513002	RE36-10-7421	Plutonium-238	1.25 g	0.0199	0.00903	0.0232	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0042	0.00513	0.0196	.01088	pCi/g	YES
248513003	RE36-10-7422	Plutonium-238	1.25 g	0.00226	0.00668	0.022	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00305	0.00391	0.0186	.01088	pCi/g	YES
248513004	RE36-10-7451	Plutonium-238	1.25 g	0.00838	0.00622	0.0253	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.013	0.00623	0.0214	.01088	pCi/g	YES
248513005	RE36-10-7449	Plutonium-238	1.25 g	0.008	0.00467	0.0233	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.019	0.00678	0.0197	.01088	pCi/g	YES
248513006	RE36-10-7445	Plutonium-238	1.25 g	0.00887	0.00552	0.023	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0398	0.00862	0.0194	.01088	pCi/g	YES
248513007	RE36-10-7450	Plutonium-238	1.25 g	0.0101	0.00447	0.0214	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0053	0.00345	0.0181	.01088	pCi/g	YES
248513008	RE36-10-7444	Plutonium-238	1.26 g	0.0192	0.00611	0.0225	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.015	0.00608	0.0191	.010793651	pCi/g	YES
248513009	RE36-10-7448	Plutonium-238	1.26 g	-0.00551	0.0091	0.029	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0134	0.00732	0.0245	.010793651	pCi/g	YES
248513010	RE36-10-7447	Plutonium-238	1.26 g	0.016	0.00628	0.0248	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0381	0.0099	0.021	.010793651	pCi/g	YES
248513011	RE36-10-7443	Plutonium-238	1.25 g	0.0202	0.00595	0.0224	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0471	0.00931	0.0189	.01088	pCi/g	YES
248513012	RE36-10-7452	Plutonium-238	1.25 g	0.00923	0.00416	0.0245	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0258	0.00707	0.0207	.01088	pCi/g	YES
248513013	RE36-10-7437	Plutonium-238	1.26 g	0.0106	0.00436	0.0234	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0262	0.00774	0.0198	.010793651	pCi/g	YES
248513014	RE36-10-7440	Plutonium-238	1.25 g	0.00309	0.00398	0.0263	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0119	0.0049	0.0222	.01088	pCi/g	YES
248513015	RE36-10-7435	Plutonium-238	1.25 g	0.0137	0.00464	0.0203	.01656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0115	0.00488	0.0171	.01088	pCi/g	YES
248513016	RE36-10-7441	Plutonium-238	1.26 g	0.0134	0.00542	0.0244	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0462	0.0104	0.0206	.010793651	pCi/g	YES
248513017	RE36-10-7442	Plutonium-238	1.25 g	0.0115	0.00562	0.029	.01656	pCi/g	YES

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248513017	RE36-10-7442	Plutonium-239/240	1.25 g	0.0175	0.00627	0.0245	.01088	pCi/g	YES
248513018	RE36-10-7436	Plutonium-238	1.26 g	0.00695	0.00404	0.0307	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.00204	0.00467	0.026	.010793651	pCi/g	YES
248513019	RE36-10-7438	Plutonium-238	1.26 g	0.017	0.00548	0.0226	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0136	0.00488	0.0191	.010793651	pCi/g	YES
248513020	RE36-10-7439	Plutonium-238	1.26 g	0.00175	0.00446	0.0277	.016428571	pCi/g	YES
		Plutonium-239/240	1.26 g	0.048	0.0104	0.0234	.010793651	pCi/g	YES

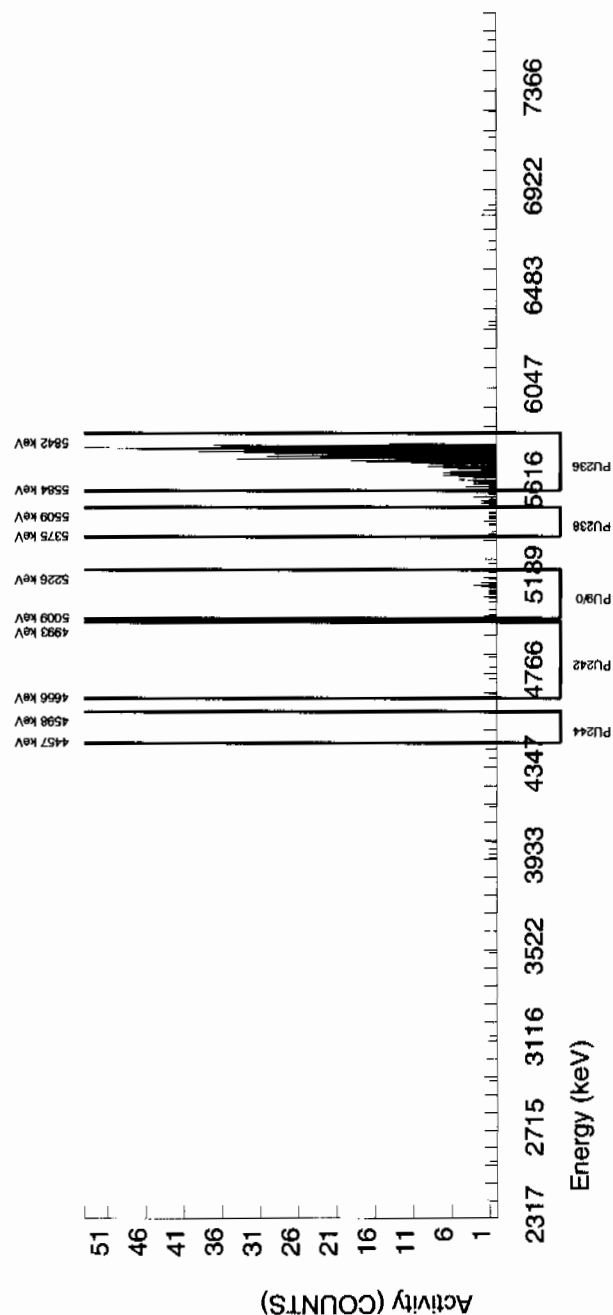
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513001_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 87.213				CHAMBER : 028 DETECTOR S/N : 78792 AVERAGE %EFFICIENCY : 31.5679 COUNT DATE : 25-MAR-2010 20:23:07 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B028.CNF;1134 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W028.CNF;323 CAL DATE : 4-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.6303E+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	5745.335	58.042	590.000	586.400	3.600	1.8974	100.0000	1.09E+00	7.83E-02	7.44E-03	1.98E-02	4.51E-02
PU-238	5499.000	5455.236	0.000	10.000	10.000	0.000	2.4495	99.900000	1.82E-02	5.85E-03	9.61E-03	2.41E-02	5.75E-03
PU-9/0	5155.000	5128.956	18.385	22.000	19.120	2.880	1.9732	99.900000	3.48E-02	9.15E-03	7.74E-03	2.04E-02	8.92E-03
PU242	4890.000	4749.086	168.088	5.000	4.280	0.720	*****	100.0000	7.77E-03	4.29E-03	4.88E-01	9.82E-01	4.27E-03
PU-244	4589.000	4467.174	4.944	1.000	0.280	0.720	6.4609	99.900000	5.09E-04	2.24E-03	2.53E-02	5.56E-02	2.24E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).

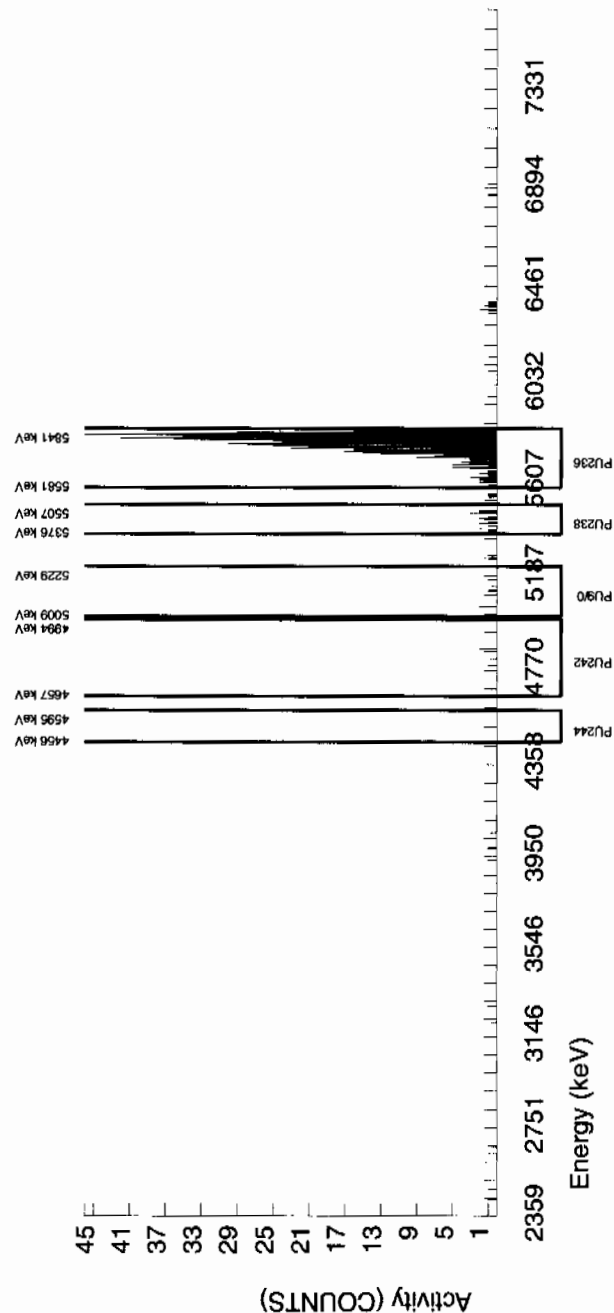


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513002_PU SAMPLE QTY : 1.250 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 88.083				CHAMBER : 029 DETECTOR S/N : 33454 AVERAGE %EFFICIENCY : 32.5354 COUNT DATE : 25-MAR-2010 20:23:07 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B029.CNF;1125 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W029.CNF;322 CAL DATE : 4-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.6565E+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	5780.056	58.123	614.000	610.400	3.600	1.8974	100.0000	1.09E+00	7.73E-02	7.15E-03	1.90E-02	4.42E-02
PU-238	5499.000	5442.160	81.423	20.000	11.360	8.640	2.4495	99.900000	1.99E-02	9.03E-03	9.24E-03	2.32E-02	8.96E-03
PU-9/0	5155.000	5114.594	4.867	6.000	2.400	3.600	1.9732	99.900000	4.20E-03	5.13E-03	7.44E-03	1.96E-02	5.12E-03
PU242	4890.000	4811.938	4.867	5.000	2.120	2.880	*****	100.0000	3.70E-03	4.65E-03	4.70E-01	9.44E-01	4.64E-03
PU-244	4589.000	4525.208	0.000	1.000	-0.440	1.440	6.4609	99.900000	-7.69E-04	2.50E-03	2.44E-02	5.35E-02	2.49E-03

NOTES:

- * BKG Sg calculated via blank population.
- (Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



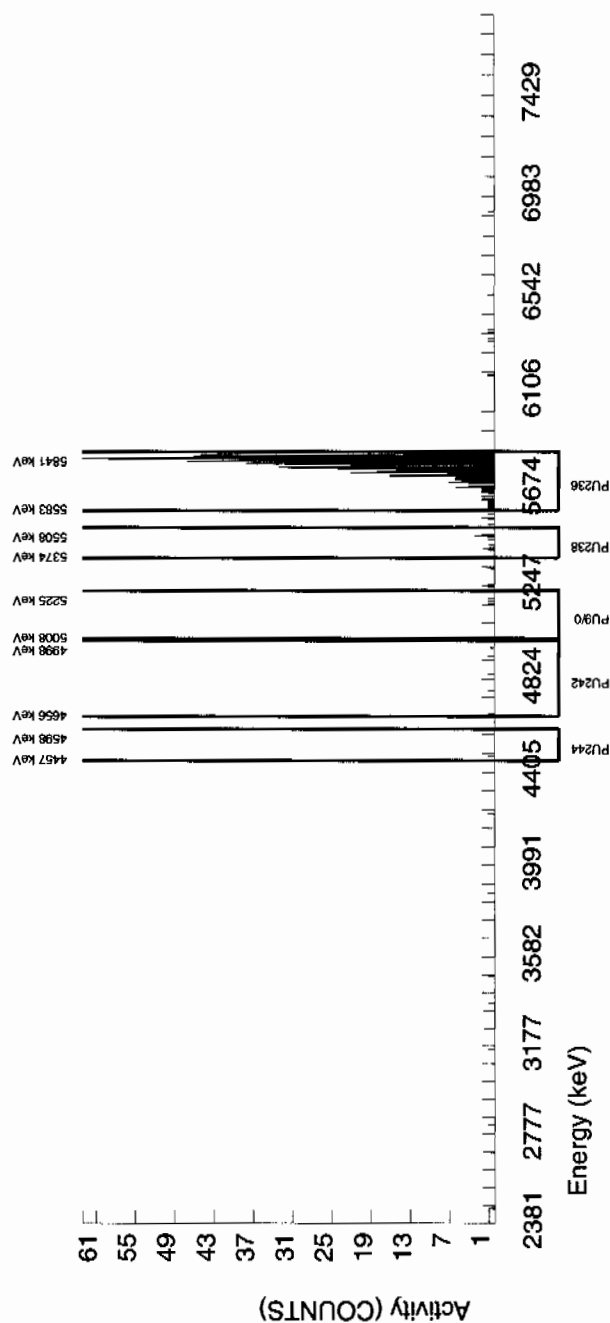
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513003_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 85.578				CHAMBER : 030 DETECTOR S/N : 33447 AVERAGE %EFFICIENCY : 35.2784 COUNT DATE : 25-MAR-2010 20:23:07 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B030.CNF;1122 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W030.CNF;307 CAL DATE : 4-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.5810E+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	5786.298	51.795	656.000	643.040	12.960	3.6000	100.0000	1.09E+00	7.65E-02	1.29E-02	3.02E-02	4.36E-02
PU-238	5499.000	5467.221	9.735	10.000	1.360	8.640	2.4495	99.900000	2.26E-03	6.68E-03	8.76E-03	2.20E-02	6.68E-03
PU-9/0	5155.000	5178.904	28.898	4.000	1.840	2.160	1.9732	99.900000	3.05E-03	3.91E-03	7.06E-03	1.86E-02	3.91E-03
PU242	4890.000	4840.544	285.288	5.000	4.280	0.720	*****	100.0000	7.09E-03	3.91E-03	4.45E-01	8.95E-01	3.89E-03
PU-244	4589.000	4483.440	4.919	1.000	0.280	0.720	6.4609	99.900000	4.64E-04	2.05E-03	2.31E-02	5.07E-02	2.04E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513004_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 78.203	CHAMBER : 065 DETECTOR S/N : 68551 AVERAGE %EFFICIENCY : 33.5681 COUNT DATE : 30-MAR-2010 07:40:21 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B065.CNF;1957 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W065.CNF;309 CAL DATE : 12-MAR-2010
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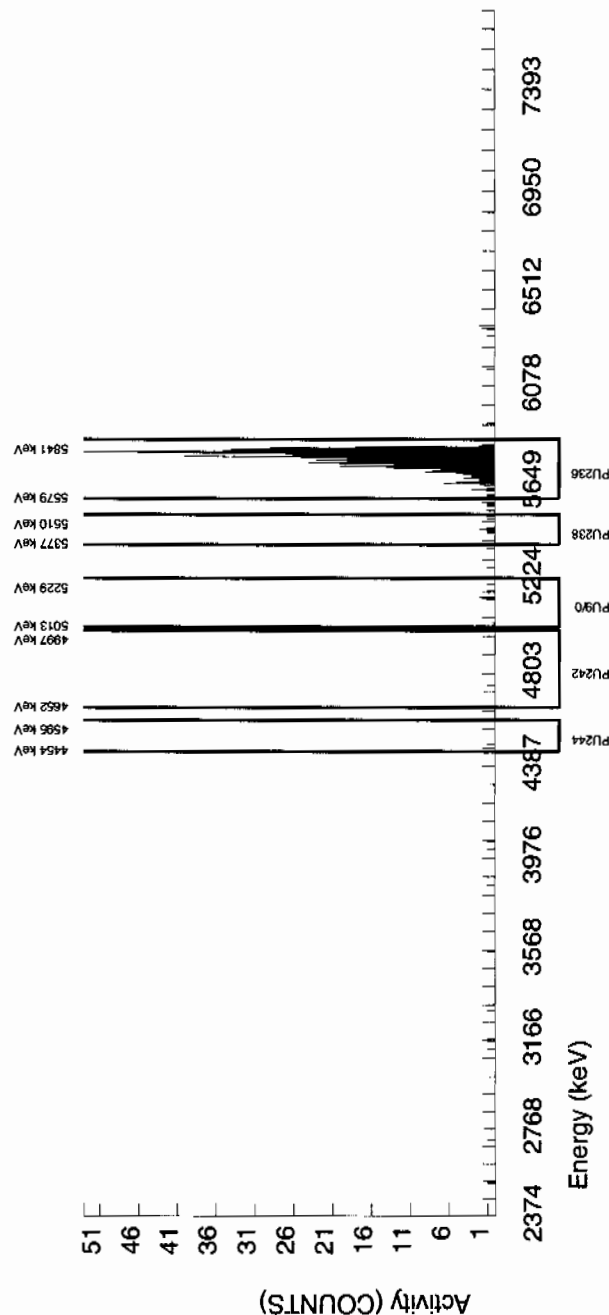
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.3586E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5762.786	39.534	569.000	557.480	11.520	3.3941	100.0000	1.08E+00	8.01E-02	1.39E-02	3.30E-02	4.67E-02
PU-238	5499.000	5460.263	9.786	8.000	4.400	3.600	2.4495	99.900000	8.38E-03	6.22E-03	1.01E-02	2.53E-02	6.20E-03
PU-9/0	5155.000	5149.837	26.759	9.000	6.840	2.160	1.9732	99.900000	1.30E-02	6.23E-03	8.10E-03	2.14E-02	6.19E-03
PU242	4890.000	4709.227	92.968	2.000	-2.320	4.320	*****	100.0000	-4.41E-03	4.30E-03	5.11E-01	1.03E+00	4.30E-03
PU-244	4589.000	4490.768	4.893	1.000	0.280	0.720	6.4609	99.900000	5.33E-04	2.35E-03	2.65E-02	5.82E-02	2.35E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).

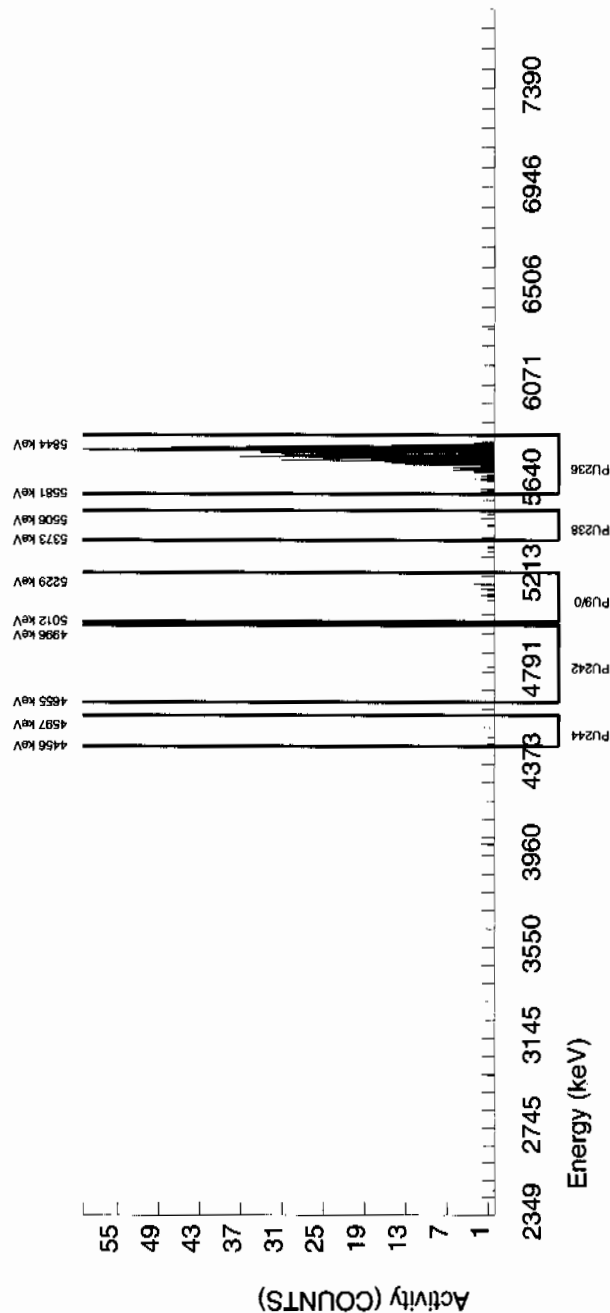


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513005_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 87.037				CHAMBER : 096 DETECTOR S/N : 80016 AVERAGE %EFFICIENCY : 32.7970 COUNT DATE : 25-MAR-2010 20:23:10 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B096.CNF:689 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W096.CNF:181 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.6250E+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	5763.148	60.642	608.000	608.000	0.000	0.0000	100.0000	1.09E+00	7.70E-02	0.00E+00	4.74E-03	4.40E-02
PU-238	5499.000	5453.795	4.925	6.000	4.560	1.440	2.4495	99.900000	8.00E-03	4.67E-03	9.26E-03	2.33E-02	4.65E-03
PU-9/0	5155.000	5155.536	48.838	13.000	10.840	2.160	1.9732	99.900000	1.90E-02	6.78E-03	7.46E-03	1.97E-02	6.69E-03
PU242	4890.000	4817.419	4.925	1.000	-1.880	2.880	*****	100.0000	-3.29E-03	3.07E-03	4.71E-01	9.46E-01	3.07E-03
PU-244	4589.000	4487.704	34.474	2.000	1.280	0.720	6.4609	99.900000	2.24E-03	2.78E-03	2.44E-02	5.36E-02	2.78E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).

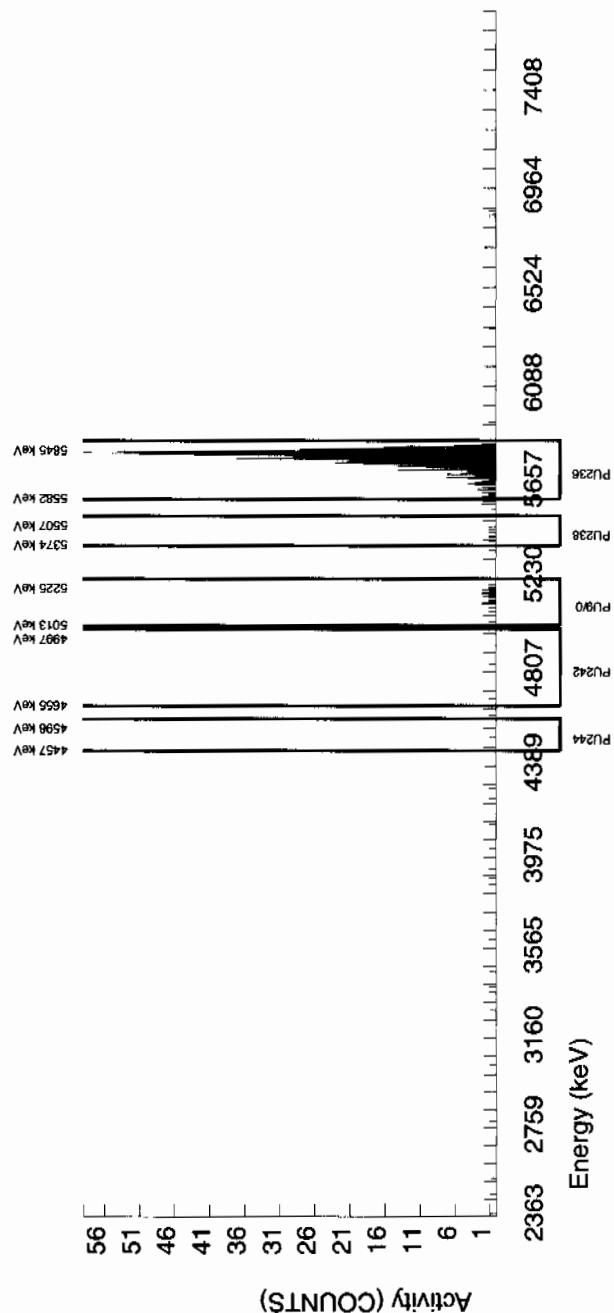


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513006_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 83.049				CHAMBER : 097 DETECTOR S/N : 67599 AVERAGE %EFFICIENCY : 34.7742 COUNT DATE : 25-MAR-2010 20:23:10 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B097.CNF;686 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W097.CNF;195 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.5047E+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	5769.242	36.839	618.000	615.120	2.880	1.6971	100.0000	1.08E+00	7.68E-02	6.33E-03	1.73E-02	4.39E-02
PU-238	5499.000	5448.202	0.000	8.000	5.120	2.880	2.4495	99.900000	8.87E-03	5.52E-03	9.15E-03	2.30E-02	5.50E-03
PU-9/0	5155.000	5147.350	65.622	23.000	23.000	0.000	1.9732	99.900000	3.98E-02	8.62E-03	7.37E-03	1.94E-02	8.30E-03
PU242	4890.000	4767.889	147.880	2.000	-3.040	5.040	*****	100.0000	-5.26E-03	4.10E-03	4.65E-01	9.35E-01	4.10E-03
PU-244	4589.000	4519.248	4.929	1.000	1.000	0.000	6.4609	99.900000	1.73E-03	1.73E-03	2.41E-02	5.29E-02	1.73E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



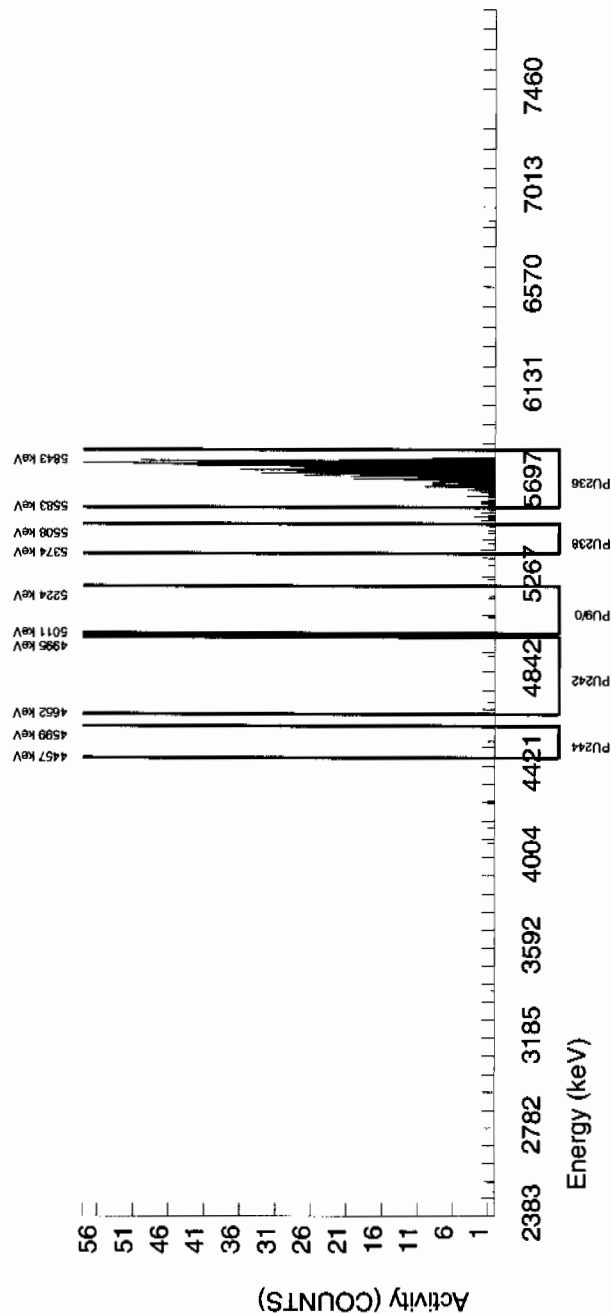
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513007_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 86.827				CHAMBER : 098 DETECTOR S/N : 80017 AVERAGE %EFFICIENCY : 35.6488 COUNT DATE : 25-MAR-2010 20:23:10 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B098.CNF;692 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W098.CNF;200 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.6187E+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	5755.567	59.504	660.000	659.280	0.720	0.8485	100.0000	1.08E+00	7.50E-02	2.95E-03	1.03E-02	4.23E-02
PU-238	5499.000	5442.153	4.954	7.000	6.280	0.720	2.4495	99.90000	1.01E-02	4.47E-03	8.53E-03	2.14E-02	4.43E-03
PU-9/0	5155.000	5137.546	93.501	4.000	3.280	0.720	1.9732	99.90000	5.30E-03	3.45E-03	6.87E-03	1.81E-02	3.43E-03
PU242	4890.000	4812.544	198.147	2.000	1.280	0.720	*****	100.0000	2.06E-03	2.56E-03	4.34E-01	8.72E-01	2.56E-03
PU-244	4589.000	4536.049	4.954	1.000	0.280	0.720	6.4609	99.90000	4.52E-04	1.99E-03	2.25E-02	4.94E-02	1.99E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



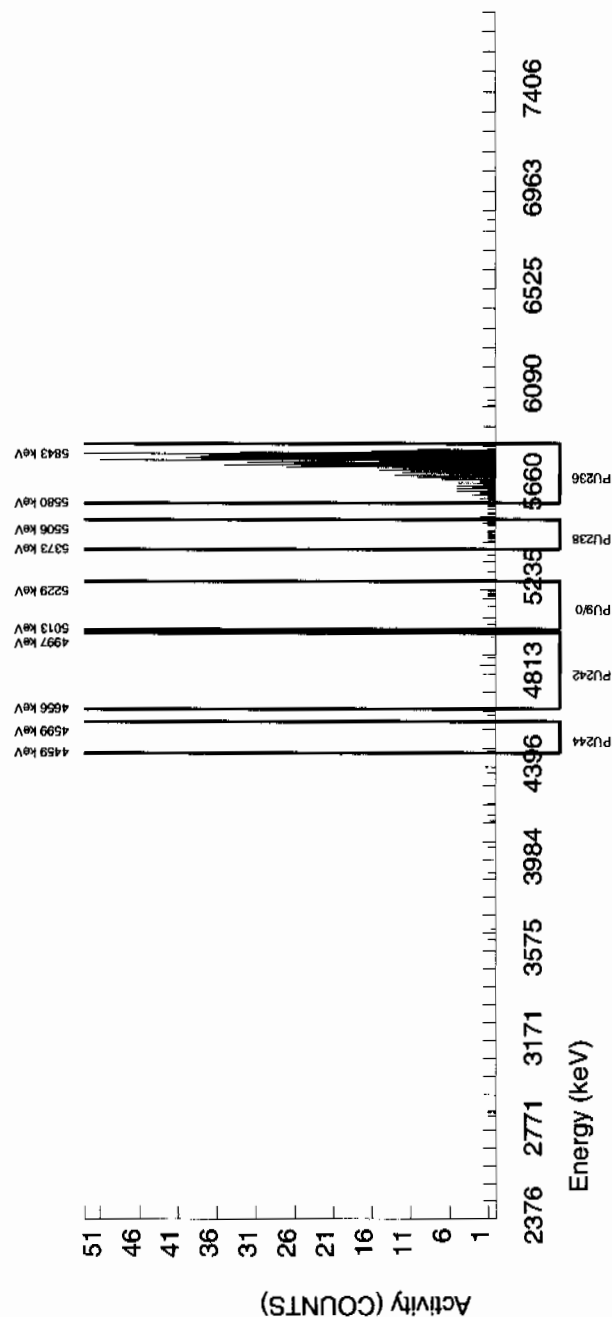
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492				CHAMBER : 099				LIB FILE : ENV_ALPHA_PU					
SAMPLE ID : S0248513008_PU				DETECTOR S/N : 70317				BKG FILE : B099.CNF;689					
SAMPLE QTY : 1.258 G				AVERAGE %EFFICIENCY : 35.1904				BKG DATE : 21-MAR-2010					
SAMPLE DATE : 25-FEB-2010 00:00:00				COUNT DATE : 25-MAR-2010 20:23:10				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : AYB1				ELAPSED LIVE TIME(SEC) : 43200.00				EFF FILE : W099.CNF;195					
% YIELD : 83.326								CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C				MS/MSD ID : 0244-B				LCS/LCSD ID : 0244-B					
NUCLIDE : PU-236				NUCLIDE : PU-9/0				NUCLIDE : PU-9/0					
NOMINAL : 3.0160E+00 dpm				NOMINAL : 4.1778E+01 pCi/G				NOMINAL : 4.1778E+01 pCi/G					
RESULTS : 2.5131E+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	5762.250	61.002	626.000	624.560	1.440	1.2000	100.0000	1.08E+00	7.60E-02	4.39E-03	1.34E-02	4.33E-02
PU-238	5499.000	5443.019	117.357	12.000	11.280	0.720	2.4495	99.90000	1.92E-02	6.11E-03	8.97E-03	2.25E-02	6.01E-03
PU-9/0	5155.000	5139.513	7.220	11.000	8.840	2.160	1.9732	99.90000	1.50E-02	6.08E-03	7.23E-03	1.91E-02	6.02E-03
PU242	4890.000	4833.238	4.915	5.000	4.280	0.720	*****	100.0000	7.26E-03	4.01E-03	4.56E-01	9.17E-01	3.98E-03
PU-244	4589.000	4474.131	4.915	1.000	0.280	0.720	6.4609	99.90000	4.75E-04	2.09E-03	2.37E-02	5.19E-02	2.09E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).

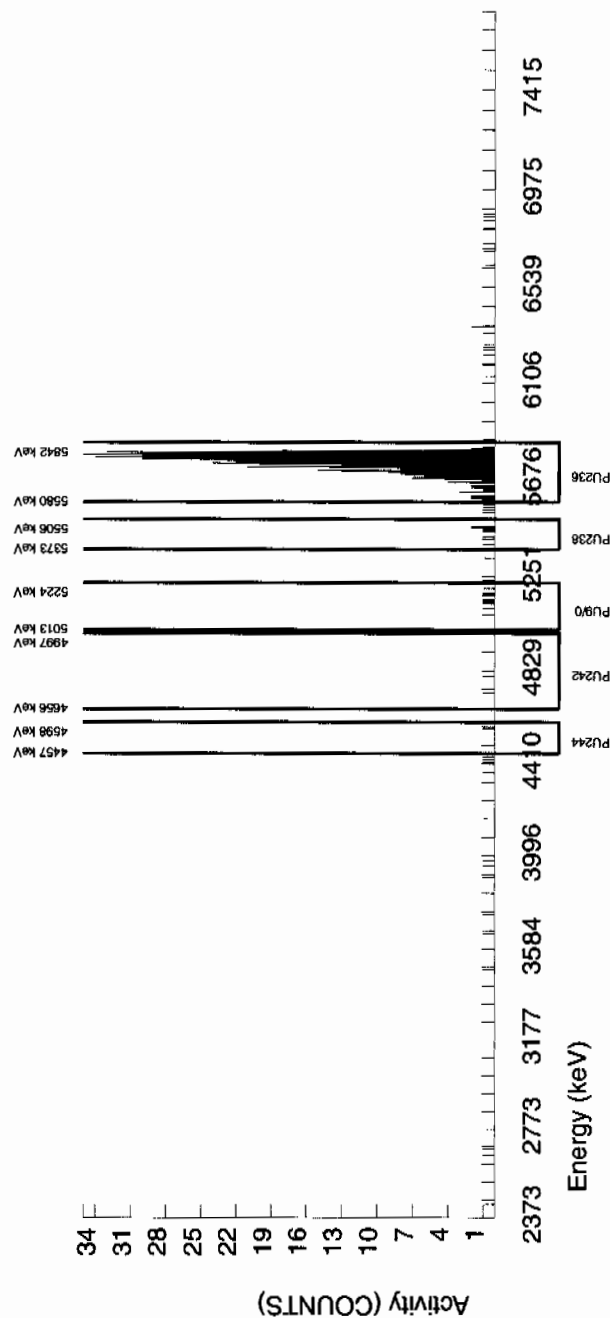


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513009_PU SAMPLE QTY : 1.259 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 70.414				CHAMBER : 066 DETECTOR S/N : 46-089C1 AVERAGE %EFFICIENCY : 32.3245 COUNT DATE : 30-MAR-2010 07:40:21 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B066.CNF:1118 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W066.CNF:310 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.1237E+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	5759.727	67.444	492.000	483.360	8.640	2.9394	100.0000	1.08E+00	8.36E-02	1.38E-02	3.36E-02	4.98E-02
PU-238	5499.000	5459.009	11.984	9.000	-2.520	11.520	2.4495	99.900000	-5.51E-03	9.10E-03	1.15E-02	2.90E-02	9.09E-03
PU-9/0	5155.000	5155.492	89.649	9.000	6.120	2.880	1.9732	99.900000	1.34E-02	7.32E-03	9.30E-03	2.45E-02	7.27E-03
PU242	4890.000	4770.978	74.707	2.000	-2.320	4.320	*****	100.0000	-5.07E-03	4.94E-03	5.87E-01	1.18E+00	4.94E-03
PU-244	4589.000	4572.015	4.980	1.000	1.000	0.000	6.4609	99.900000	2.19E-03	2.19E-03	3.05E-02	6.68E-02	2.19E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).

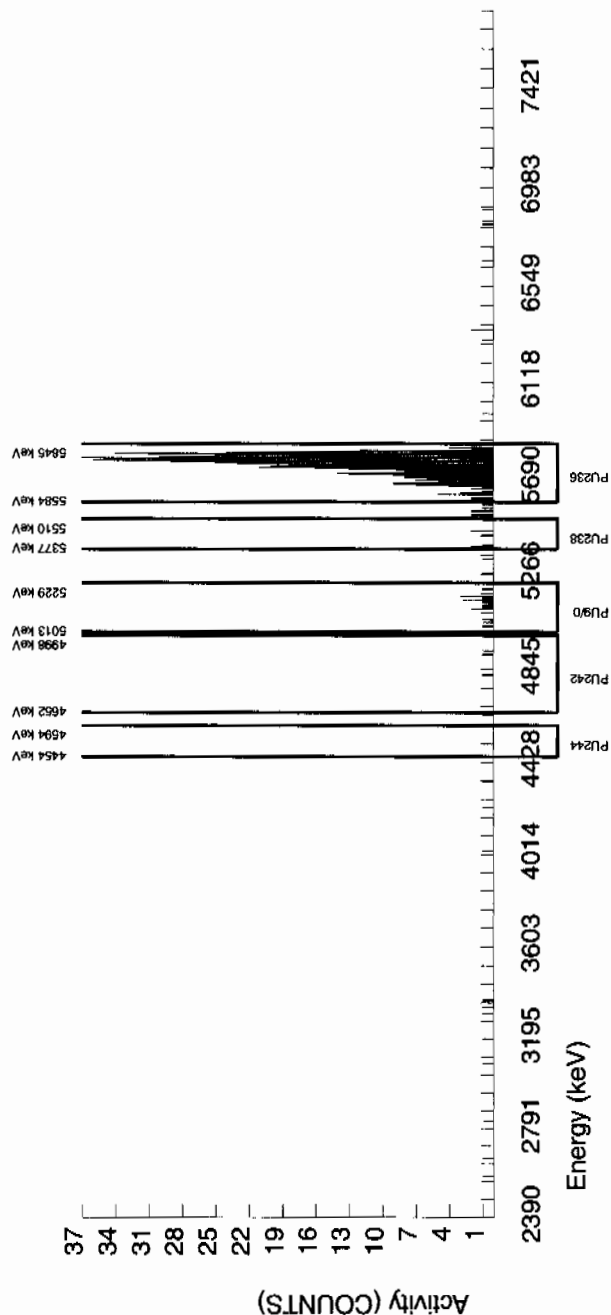


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513010_PU SAMPLE QTY : 1.259 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 80.374				CHAMBER : 067 DETECTOR S/N : 46-089B4 AVERAGE %EFFICIENCY : 33.1255 COUNT DATE : 30-MAR-2010 07:40:21 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B067.CNF;1116 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W067.CNF;291 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.4241E+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	5757.656	69.397	569.000	565.400	3.600	1.8974	100.0000	1.08E+00	7.87E-02	7.64E-03	2.03E-02	4.56E-02
PU-238	5499.000	5427.018	72.345	10.000	8.560	1.440	2.4495	99.900000	1.60E-02	6.28E-03	9.87E-03	2.48E-02	6.21E-03
PU-9/0	5155.000	5138.062	58.624	24.000	20.400	3.600	1.9732	99.900000	3.81E-02	9.90E-03	7.95E-03	2.10E-02	9.63E-03
PU242	4890.000	4882.031	109.141	6.000	4.560	1.440	*****	100.0000	8.51E-03	4.98E-03	5.02E-01	1.01E+00	4.95E-03
PU-244	4589.000	4524.061	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.35E-03	2.30E-03	2.60E-02	5.71E-02	2.30E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).

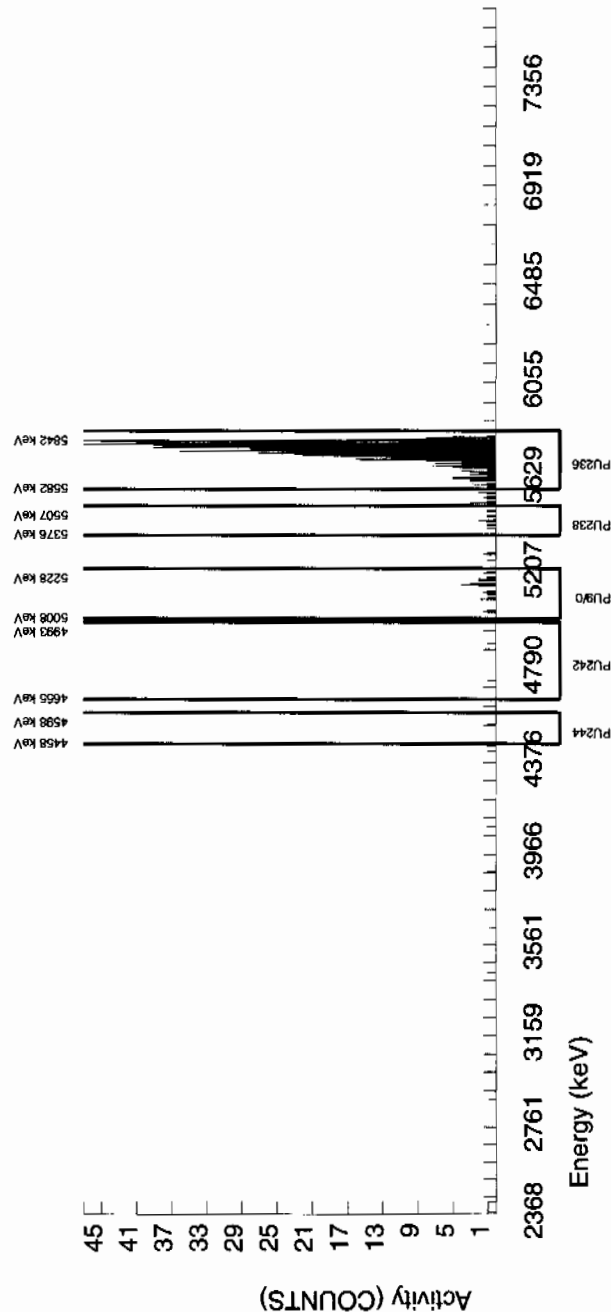


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513011_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 85.499				CHAMBER : 102 DETECTOR S/N : 72525 AVERAGE %EFFICIENCY : 34.7750 COUNT DATE : 25-MAR-2010 20:23:11 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B102.CNF;692 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W102.CNF;196 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.5786E+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	5760.140	61.926	634.000	633.280	0.720	0.8485	100.0000	1.09E+00	7.61E-02	3.08E-03	1.07E-02	4.32E-02
PU-238	5499.000	5458.658	0.000	12.000	12.000	0.000	2.4495	99.900000	2.02E-02	5.95E-03	8.90E-03	2.24E-02	5.84E-03
PU-9/0	5155.000	5144.682	11.334	28.000	28.000	0.000	1.9732	99.900000	4.71E-02	9.31E-03	7.17E-03	1.89E-02	8.91E-03
PU242	4890.000	4823.474	156.609	2.000	0.560	1.440	*****	100.0000	9.42E-04	2.93E-03	4.52E-01	9.09E-01	2.93E-03
PU-244	4589.000	4551.313	4.894	1.000	1.000	0.000	6.4609	99.900000	1.68E-03	1.69E-03	2.35E-02	5.15E-02	1.68E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	: 965492
SAMPLE ID	: S02485
SAMPLE QTY	: 1.25
SAMPLE DATE	: 25-FEB-2012
ANALYST	: AYB1
% YIELD	: 80.244

ATCH NUMBER	: 965492
SAMPLE ID	: S0248513012_PU
SAMPLE QTY	: 1.250 G
SAMPLE DATE	: 25-FEB-2010 00:00:00
ANALYST	: AYB1
% YIELD	: 80.244

CHAMBER : 103
DETECTOR S/N : 79461
AVERAGE %EFFICIENCY : 33.8341
COUNT DATE : 25-MAR-2010 20:23:11
ELAPSED LIVE TIME(SEC) : 43199.99

```
LIB FILE : ENV_ALPHA_PU
BKG FILE : B103.CNF:696
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W103.CNF:200
CAL DATE : 12-MAR-2010
```

TRACER	ID	: 1430-C
	NUCLIDE	: PU-236
	NOMINAL	: 3.0160E+00 dpm
	RESULTS	: 2.4202E+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

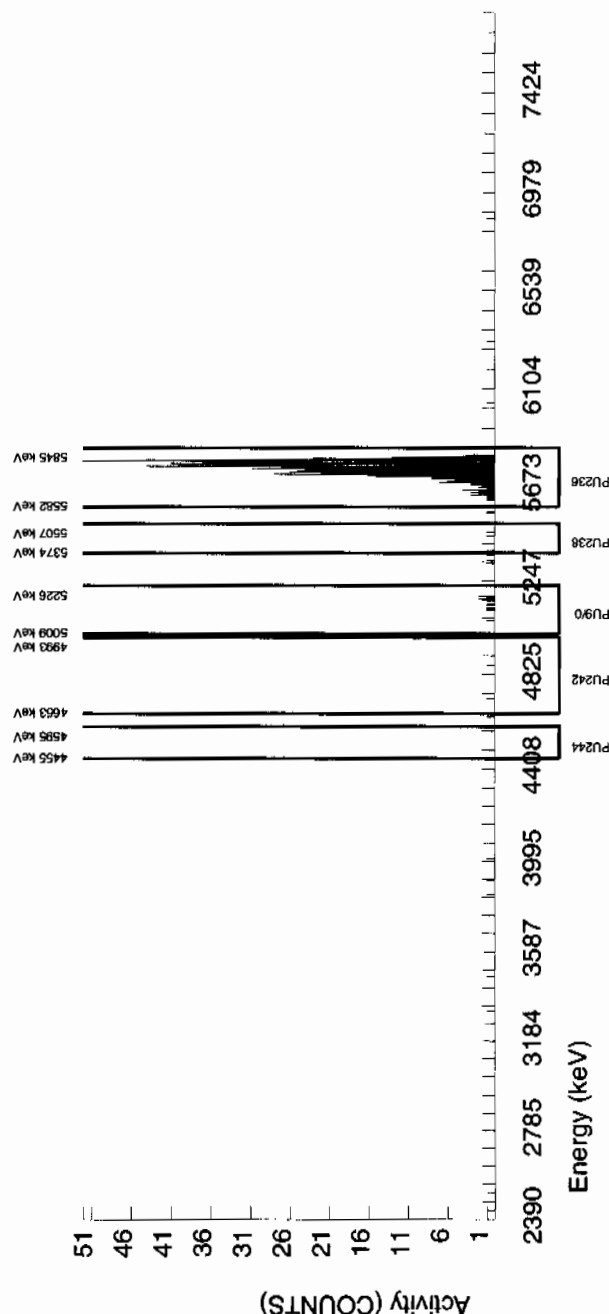
NUCLIDE ACTIVITY SUMMARY

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	5759.723	63.746	579.000	578.280	0.720	0.8485	100.0000	1.09E+00	7.84E-02	3.37E-03	1.17E-02	4.52E-02
PU-238	5499.000	5443.490	78.418	5.000	5.000	0.000	2.4495	99.90000	9.23E-03	4.16E-03	9.75E-03	2.45E-02	4.13E-03
PU-9/0	5155.000	5139.542	14.601	14.000	14.000	0.000	1.9732	99.90000	2.58E-02	7.07E-03	7.86E-03	2.07E-02	6.90E-03
PU242	4890.000	4798.986	142.133	2.000	1.280	0.720	*****	100.0000	2.36E-03	2.93E-03	4.96E-01	9.96E-01	2.93E-03
PU-244	4589.000	4459.922	4.901	1.000	0.280	0.720	6.4609	99.90000	5.17E-04	2.28E-03	2.57E-02	5.64E-02	2.27E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).

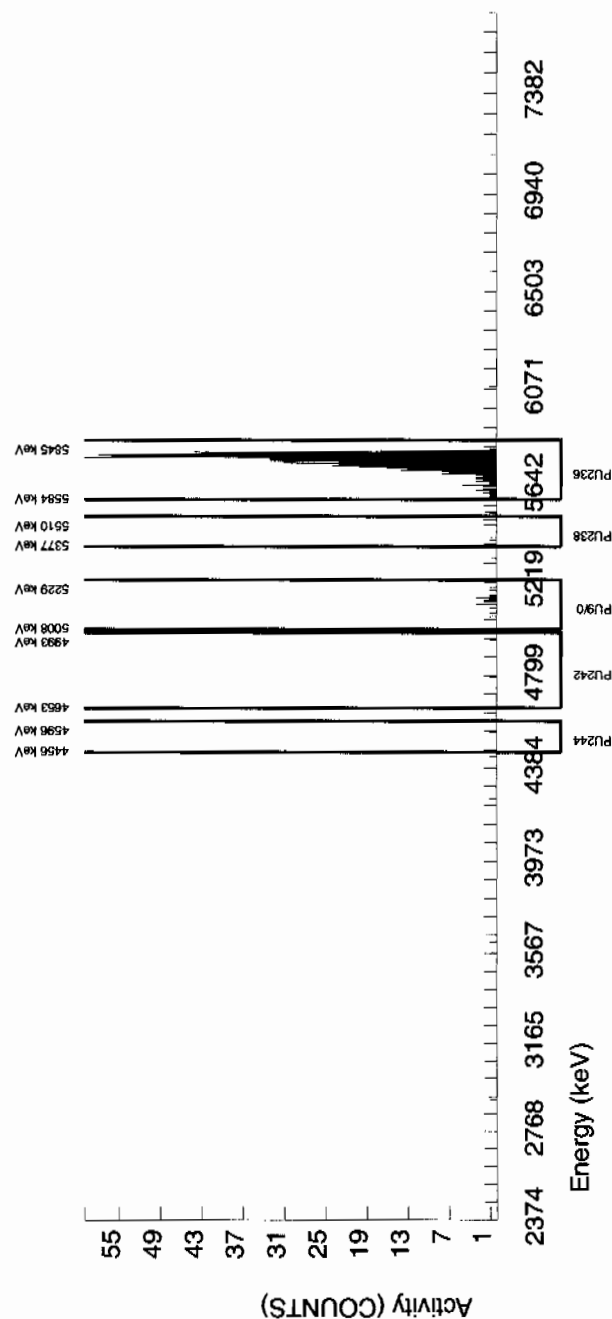


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513013_PU SAMPLE QTY : 1.256 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 84.888				CHAMBER : 105 DETECTOR S/N : 78777 AVERAGE %EFFICIENCY : 33.3263 COUNT DATE : 25-MAR-2010 20:23:11 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B105.CNF;694 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W105.CNF;177 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.5602E+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	5758.628	37.527	604.000	602.560	1.440	1.2000	100.0000	1.08E+00	7.71E-02	4.56E-03	1.39E-02	4.42E-02
PU-238	5499.000	5446.731	72.070	6.000	6.000	0.000	2.4495	99.900000	1.06E-02	4.36E-03	9.31E-03	2.34E-02	4.32E-03
PU-9/0	5155.000	5146.391	35.424	17.000	14.840	2.160	1.9732	99.900000	2.62E-02	7.74E-03	7.50E-03	1.98E-02	7.59E-03
PU242	4890.000	4882.640	161.240	2.000	0.560	1.440	*****	100.0000	9.86E-04	3.07E-03	4.73E-01	9.52E-01	3.07E-03
PU-244	4589.000	4549.521	4.886	1.000	1.000	0.000	6.4609	99.900000	1.76E-03	1.77E-03	2.46E-02	5.39E-02	1.76E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).

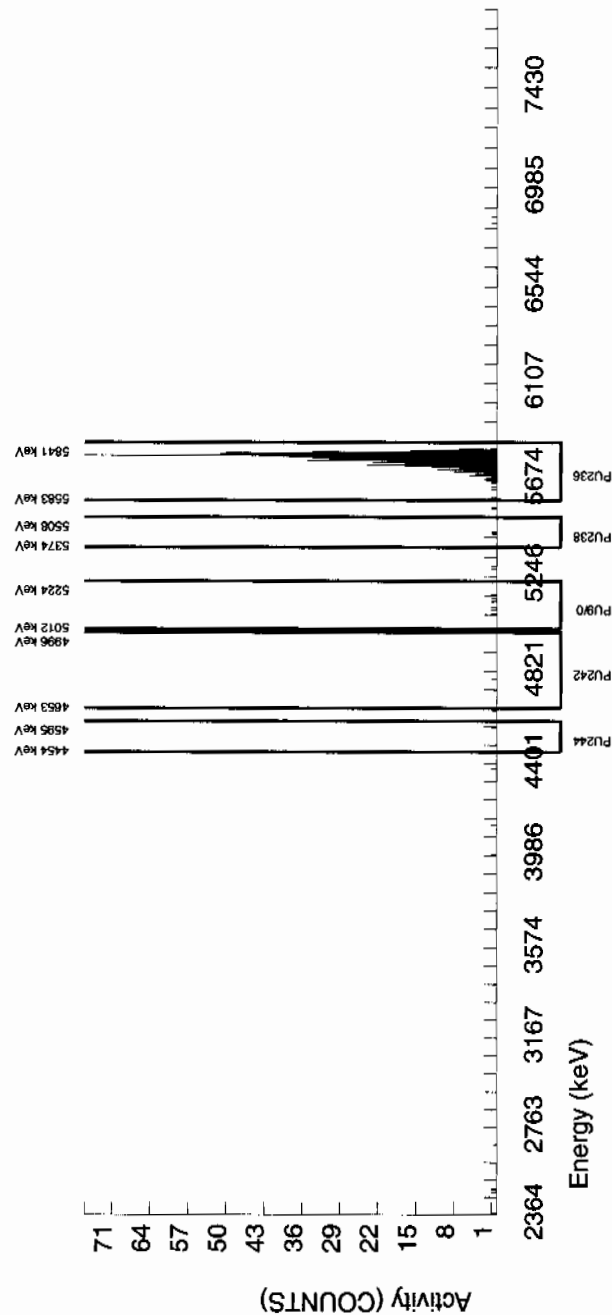


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513014_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 77.184				CHAMBER : 107 DETECTOR S/N : 67578 AVERAGE %EFFICIENCY : 32.7767 COUNT DATE : 25-MAR-2010 20:23:12 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B107.CNF:695 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W107.CNF:234 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.3278E+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	5771.261	20.113	541.000	538.840	2.160	1.4697	100.0000	1.09E+00	8.03E-02	6.26E-03	1.79E-02	4.69E-02
PU-238	5499.000	5464.820	0.000	3.000	1.560	1.440	2.4495	99.900000	3.09E-03	3.98E-03	1.04E-02	2.63E-02	3.98E-03
PU-9/0	5155.000	5126.874	84.324	6.000	6.000	0.000	1.9732	99.900000	1.19E-02	4.90E-03	8.42E-03	2.22E-02	4.84E-03
PU242	4890.000	4789.812	4.960	1.000	-1.160	2.160	*****	100.0000	-2.29E-03	3.16E-03	5.31E-01	1.07E+00	3.16E-03
PU-244	4589.000	4568.919	4.960	1.000	0.280	0.720	6.4609	99.900000	5.54E-04	2.44E-03	2.76E-02	6.05E-02	2.44E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 965492 SAMPLE ID : S0248513015_PU SAMPLE QTY : 1.249 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 93.056</p>	<p>CHAMBER : 108 DETECTOR S/N : 78778 AVERAGE %EFFICIENCY : 35.3171 COUNT DATE : 25-MAR-2010 20:23:12 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B108.CNF:693 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W108.CNF:215 CAL DATE : 12-MAR-2010</p>
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<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.8065E+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

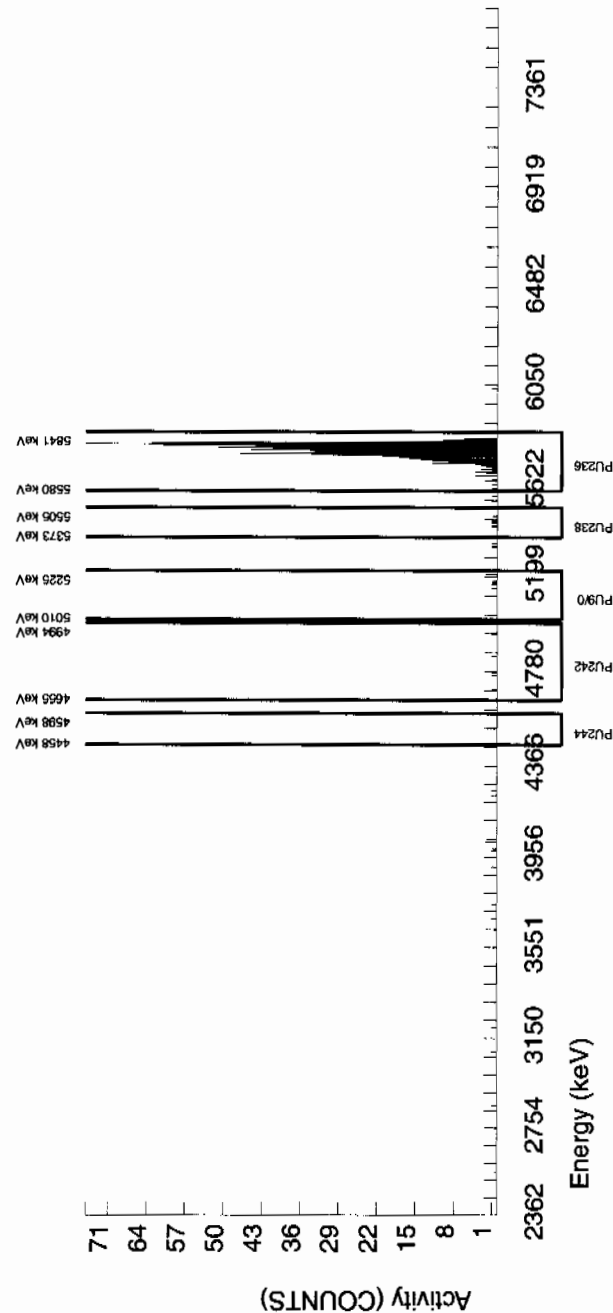
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5764.394	50.306	700.000	700.000	0.000	0.0000	100.0000	1.09E+00	7.38E-02	0.00E+00	4.13E-03	4.11E-02
PU-238	5499.000	5451.645	0.000	9.000	9.000	0.000	2.4495	99.900000	1.37E-02	4.64E-03	8.06E-03	2.03E-02	4.58E-03
PU-9/0	5155.000	5166.608	4.867	9.000	7.560	1.440	1.9732	99.900000	1.15E-02	4.88E-03	6.49E-03	1.71E-02	4.83E-03
PU-242	4890.000	4835.514	238.464	6.000	3.120	2.880	*****	100.0000	4.76E-03	4.34E-03	4.10E-01	8.24E-01	4.33E-03
PU-244	4589.000	4528.223	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.53E-03	2.13E-02	4.67E-02	1.53E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

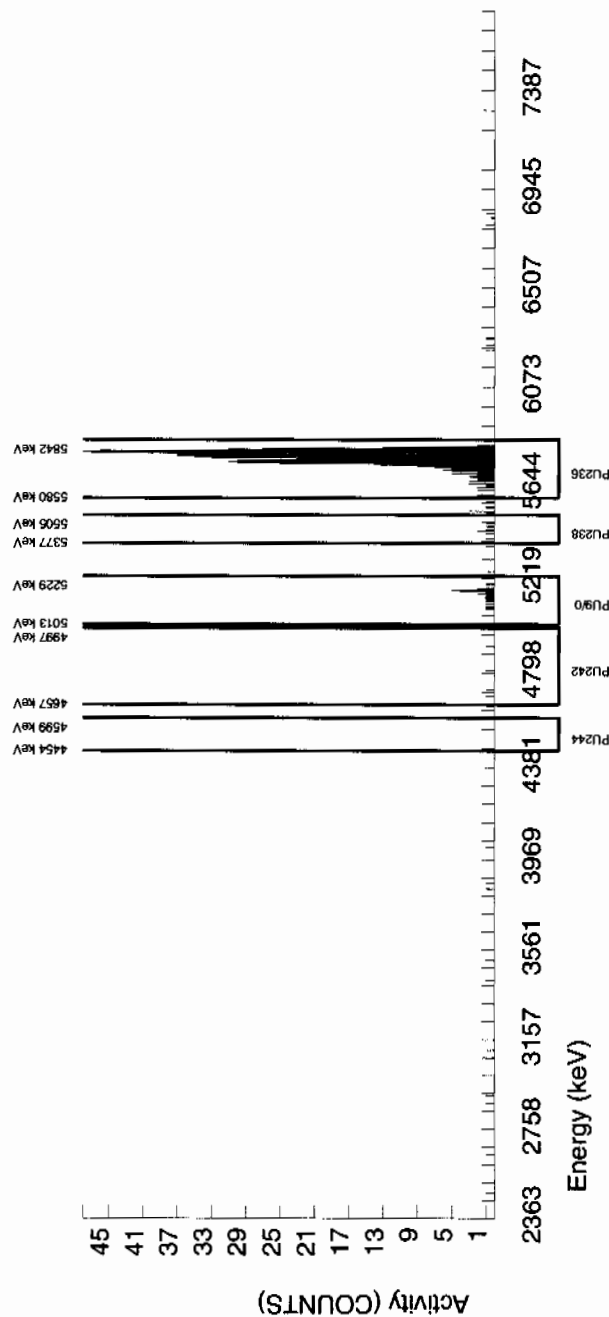
BATCH NUMBER : 965492 SAMPLE ID : S0248513016_PU SAMPLE QTY : 1.256 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 76.268				CHAMBER : 109 DETECTOR S/N : 79463 AVERAGE %EFFICIENCY : 35.5809 COUNT DATE : 25-MAR-2010 20:23:12 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B109.CNF:691 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W109.CNF:196 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.3002E+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	5766.478	65.321	578.000	578.000	0.000	0.0000	100.0000	1.08E+00	7.80E-02	0.00E+00	4.97E-03	4.50E-02
PU-238	5499.000	5439.905	7.213	8.000	7.280	0.720	2.4495	99.900000	1.34E-02	5.42E-03	9.71E-03	2.44E-02	5.37E-03
PU-9/0	5155.000	5147.069	11.254	28.000	25.120	2.880	1.9732	99.900000	4.62E-02	1.04E-02	7.82E-03	2.06E-02	1.01E-02
PU242	4890.000	4763.212	0.000	5.000	5.000	0.000	*****	100.0000	9.18E-03	4.14E-03	4.94E-01	9.92E-01	4.10E-03
PU-244	4589.000	4526.500	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.84E-03	2.56E-02	5.62E-02	1.84E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492 SAMPLE ID : S0248513017_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 65.619		CHAMBER : 111 DETECTOR S/N : 79462 AVERAGE %EFFICIENCY : 34.9158 COUNT DATE : 25-MAR-2010 20:23:12 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B111.CNF:690 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W111.CNF:211 CAL DATE : 12-MAR-2010
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 1.9791E+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

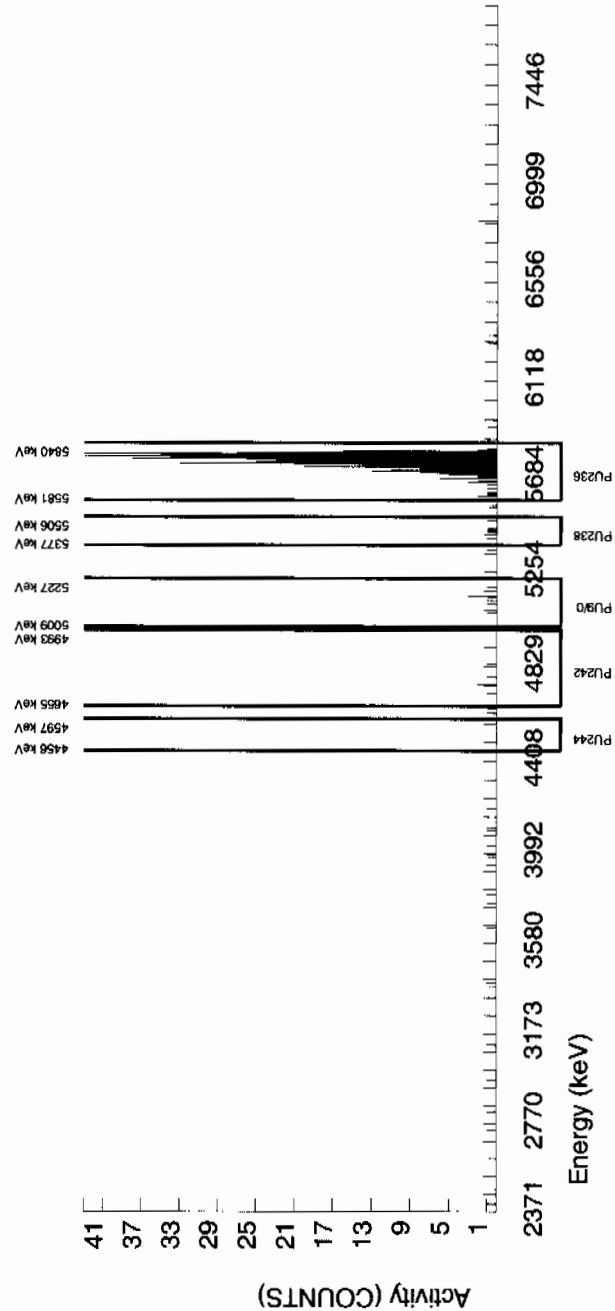
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5762.710	51.801	488.000	488.000	0.000	0.0000	100.0000	1.09E+00	8.29E-02	0.00E+00	5.91E-03	4.91E-02
PU-238	5499.000	5451.367	79.255	6.000	5.280	0.720	2.4495	99.90000	1.15E-02	5.62E-03	1.15E-02	2.90E-02	5.58E-03
PU-9/0	5155.000	5140.146	6.140	8.000	8.000	0.000	1.9732	99.90000	1.75E-02	6.27E-03	9.29E-03	2.45E-02	6.18E-03
PU242	4890.000	4737.797	0.000	7.000	4.120	2.880	*****	100.0000	8.99E-03	6.59E-03	5.86E-01	1.18E+00	6.57E-03
PU-244	4589.000	4460.740	4.953	1.000	1.000	0.000	6.4609	99.90000	2.18E-03	2.19E-03	3.04E-02	6.68E-02	2.18E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



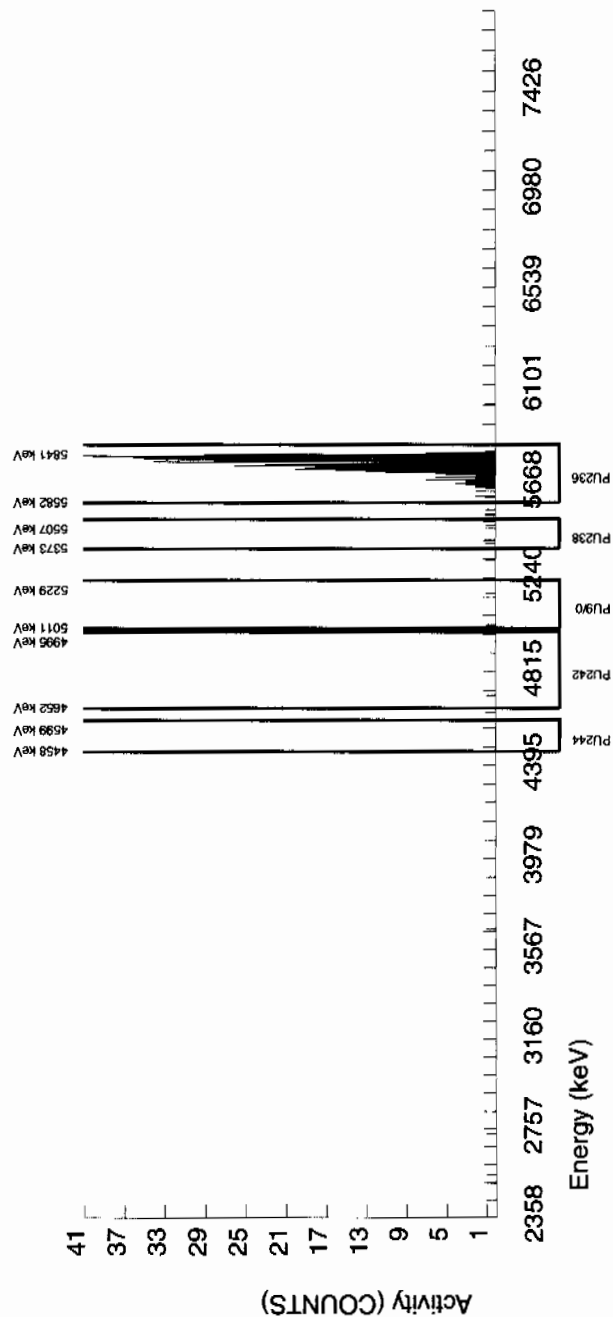
BATCH NUMBER : 965492 SAMPLE ID : S0248513018_PU SAMPLE QTY : 1.256 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 71.940				CHAMBER : 068 DETECTOR S/N : 78794 AVERAGE %EFFICIENCY : 29.9395 COUNT DATE : 30-MAR-2010 07:40:21 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B068.CNF;1109 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W068.CNF;282 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.1697E+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	5761.219	49.458	461.000	457.400	3.600	1.8974	100.0000	1.08E+00	8.50E-02	9.47E-03	2.52E-02	5.09E-02
PU-238	5499.000	5451.710	84.292	3.000	3.000	0.000	2.4495	99.900000	6.95E-03	4.04E-03	1.22E-02	3.07E-02	4.01E-03
PU-9/0	5155.000	5103.871	138.833	2.000	-0.880	2.880	1.9732	99.900000	-2.04E-03	4.67E-03	9.85E-03	2.60E-02	4.67E-03
PU242	4890.000	4702.666	79.333	3.000	2.280	0.720	*****	100.0000	5.27E-03	4.35E-03	6.22E-01	1.25E+00	4.34E-03
PU-244	4589.000	4528.400	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	2.32E-03	3.23E-02	7.08E-02	2.31E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

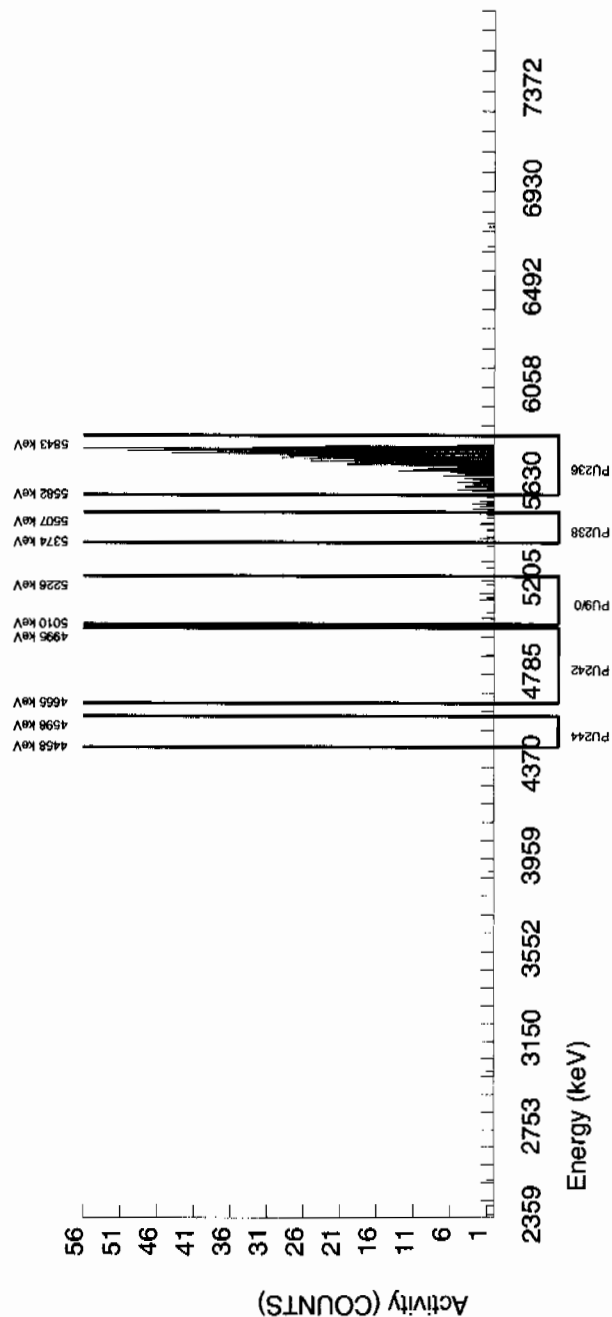
BATCH NUMBER : 965492 SAMPLE ID : S0248513019_PU SAMPLE QTY : 1.256 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 84.011		CHAMBER : 090 DETECTOR S/N : 78263 AVERAGE %EFFICIENCY : 34.8354 COUNT DATE : 25-MAR-2010 23:38:21 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B090.CNF;737 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W090.CNF;203 CAL DATE : 12-MAR-2010
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.5337E+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	5749.244	46.639	624.000	623.280	0.720	0.8485	100.0000	1.08E+00	7.61E-02	3.12E-03	1.08E-02	4.34E-02
PU-238	5499.000	5448.123	63.508	10.000	10.000	0.000	2.4495	99.900000	1.70E-02	5.48E-03	9.00E-03	2.26E-02	5.39E-03
PU-9/0	5155.000	5135.959	29.209	8.000	8.000	0.000	1.9732	99.900000	1.36E-02	4.88E-03	7.25E-03	1.91E-02	4.82E-03
PU242	4890.000	4766.949	0.000	2.000	1.280	0.720	*****	100.0000	2.18E-03	2.70E-03	4.58E-01	9.20E-01	2.70E-03
PU-244	4589.000	4527.620	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.23E-03	2.10E-03	2.37E-02	5.21E-02	2.10E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



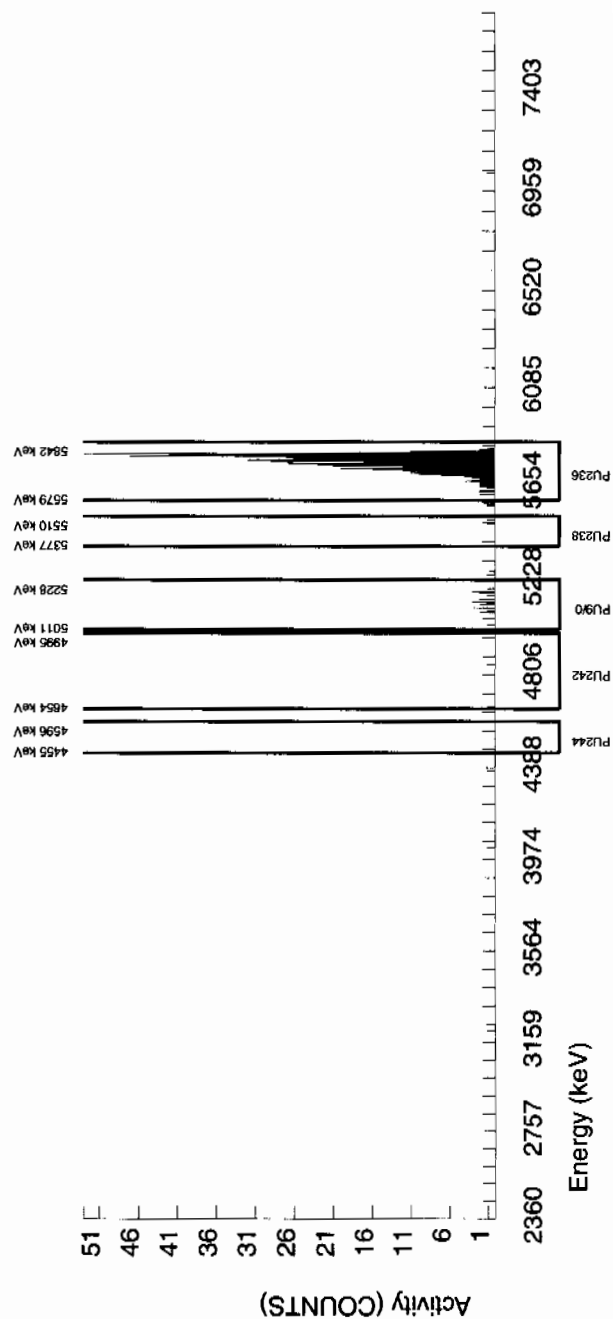
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492				CHAMBER : 069				LIB FILE : ENV_ALPHA_PU					
SAMPLE ID : S0248513020_PU				DETECTOR S/N : 78795				BKG FILE : B069.CNF:1111					
SAMPLE QTY : 1.257 G				AVERAGE %EFFICIENCY : 33.1235				BKG DATE : 28-MAR-2010					
SAMPLE DATE : 25-FEB-2010 00:00:00				COUNT DATE : 30-MAR-2010 07:40:21				BKG LIVE TIME(SEC) : 59999.99					
ANALYST : AYB1				ELAPSED LIVE TIME(SEC) : 43200.00				EFF FILE : W069.CNF:289					
% YIELD : 72.054								CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C				MS/MSD ID : 0244-B				LCS/LCSD ID : 0244-B					
NUCLIDE : PU-236				NUCLIDE : PU-9/0				NUCLIDE : PU-9/0					
NOMINAL : 3.0160E+00 dpm				NOMINAL : 4.1778E+01 pCi/G				NOMINAL : 4.1778E+01 pCi/G					
RESULTS : 2.1731E+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	5755.519	33.946	509.000	506.840	2.160	1.4697	100.0000	1.08E+00	8.17E-02	6.61E-03	1.89E-02	4.82E-02
PU-238	5499.000	5495.760	0.000	3.000	0.840	2.160	2.4495	99.900000	1.75E-03	4.46E-03	1.10E-02	2.77E-02	4.46E-03
PU-9/0	5155.000	5138.507	88.838	23.000	23.000	0.000	1.9732	99.900000	4.80E-02	1.04E-02	8.89E-03	2.34E-02	1.00E-02
PU242	4890.000	4763.615	182.612	2.000	-3.760	5.760	*****	100.0000	-7.84E-03	5.17E-03	5.61E-01	1.13E+00	5.17E-03
PU-244	4589.000	4525.556	0.000	0.000	-1.440	1.440	6.4609	99.900000	-3.01E-03	2.98E-03	2.91E-02	6.39E-02	2.98E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

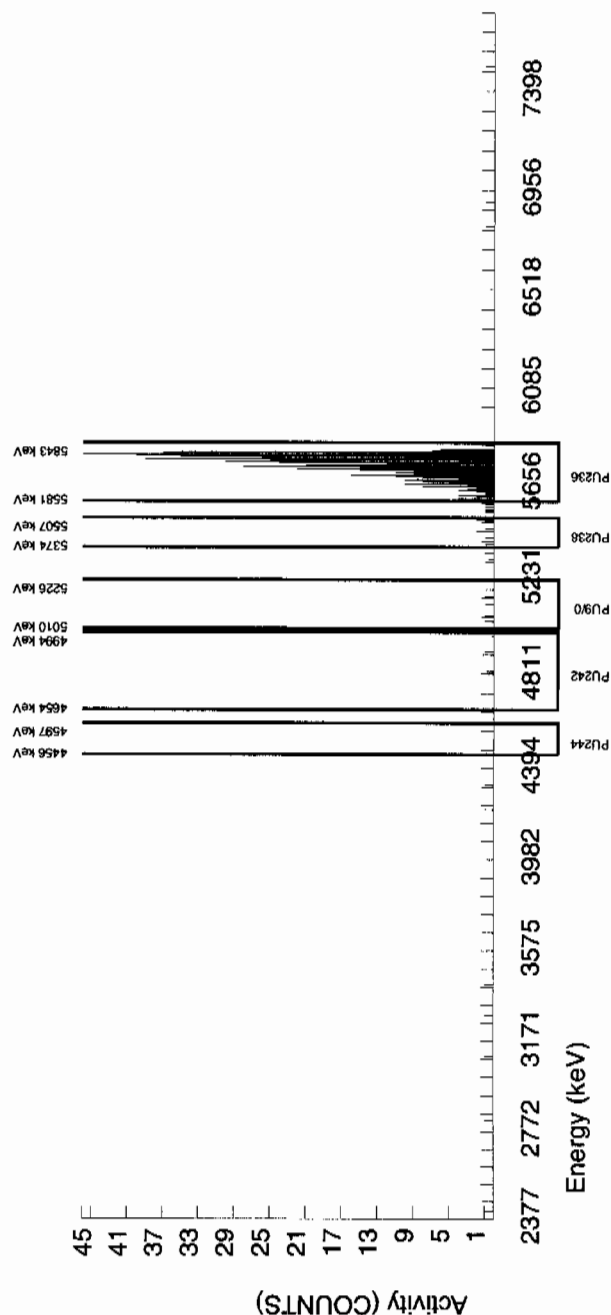
BATCH NUMBER : 965492 SAMPLE ID : S1202071655_PU SAMPLE QTY : 1.000 G SAMPLE DATE : 22-MAR-2010 00:00:00 ANALYST : AYB1 % YIELD : 85.849				CHAMBER : 093 DETECTOR S/N : 33206 AVERAGE %EFFICIENCY : 33.6363 COUNT DATE : 25-MAR-2010 23:38:21 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B093.CNF:726 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W093.CNF:203 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 2.9663E+00 dpm RESULTS : 2.5466E+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	5748.607	62.879	615.000	615.000	0.000	0.0000	100.0000	1.34E+00	9.45E-02	0.00E+00	5.87E-03	5.39E-02
PU-238	5499.000	5461.696	0.000	11.000	9.560	1.440	2.4495	99.900000	2.07E-02	7.62E-03	1.15E-02	2.88E-02	7.52E-03
PU-9/0	5155.000	5114.952	137.452	7.000	6.280	0.720	1.9732	99.900000	1.36E-02	6.00E-03	9.23E-03	2.43E-02	5.95E-03
PU242	4890.000	4870.696	88.362	2.000	1.280	0.720	*****	100.0000	2.77E-03	3.44E-03	5.83E-01	1.17E+00	3.44E-03
PU-244	4589.000	4526.486	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	2.17E-03	3.02E-02	6.63E-02	2.17E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

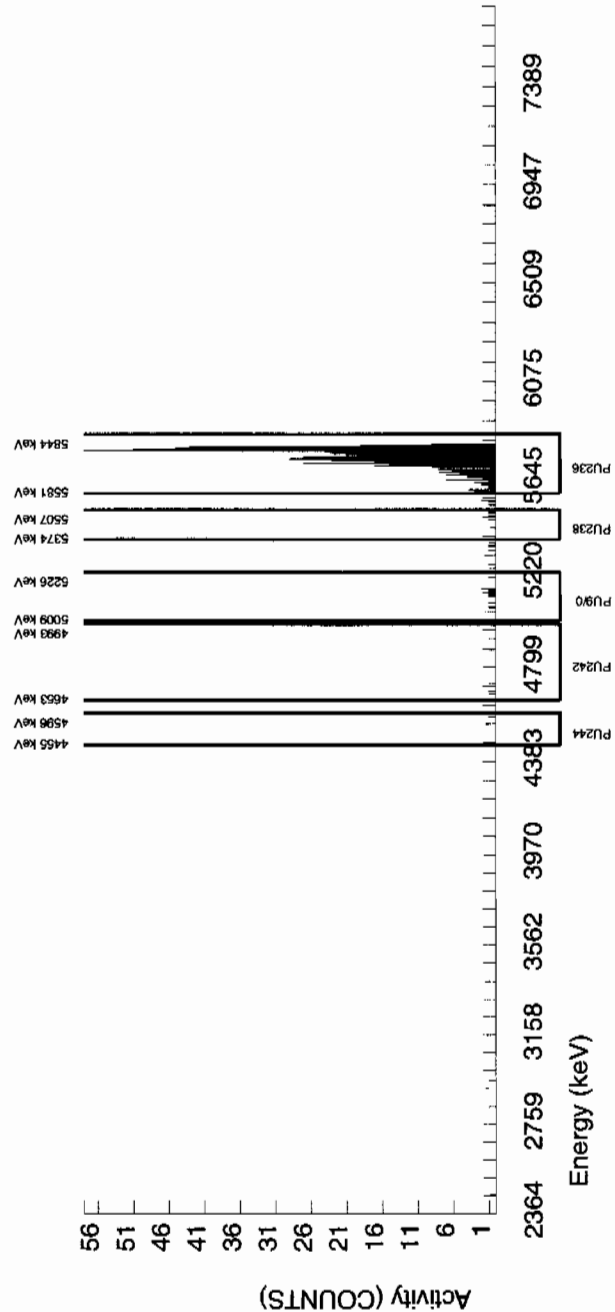
<p>BATCH NUMBER : 965492 SAMPLE ID : S1202071656_PU SAMPLE QTY : 1.256 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 88.729</p>		<p>CHAMBER : 094 DETECTOR S/N : 78267 AVERAGE %EFFICIENCY : 33.8294 COUNT DATE : 25-MAR-2010 23:38:21 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B094.CNF:727 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W094.CNF:195 CAL DATE : 12-MAR-2010</p>
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0160E+00 dpm RESULTS : 2.6761E+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>	

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	5748.444	26.396	640.000	639.280	0.720	0.8485	100.0000	1.08E+00	7.55E-02	3.04E-03	1.06E-02	4.28E-02
PU-238	5499.000	5468.038	0.000	7.000	7.000	0.000	2.4495	99.900000	1.16E-02	4.45E-03	8.78E-03	2.21E-02	4.40E-03
PU-9/0	5155.000	5132.363	7.217	11.000	11.000	0.000	1.9732	99.900000	1.83E-02	5.61E-03	7.07E-03	1.86E-02	5.51E-03
PU242	4890.000	4749.975	0.000	7.000	5.560	1.440	*****	100.0000	9.23E-03	4.73E-03	4.46E-01	8.97E-01	4.70E-03
PU-244	4589.000	4585.228	4.913	1.000	-0.440	1.440	6.4609	99.900000	-7.31E-04	2.37E-03	2.32E-02	5.08E-02	2.37E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).

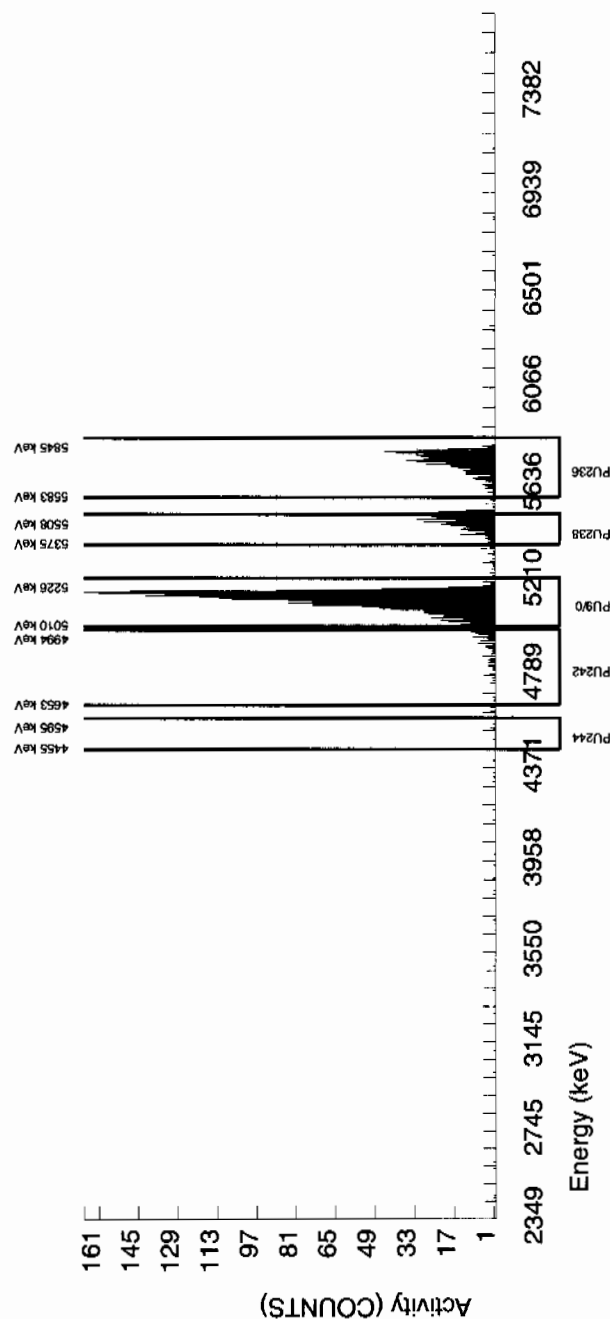


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965492				CHAMBER : 036				LIB FILE : ENV_ALPHA_PU					
SAMPLE ID : S1202071657_PU				DETECTOR S/N : 78203				BKG FILE : B036.CNF;1116					
SAMPLE QTY : 0.109 G				AVERAGE %EFFICIENCY : 34.5971				BKG DATE : 21-MAR-2010					
SAMPLE DATE : 22-MAR-2010 00:00:00				COUNT DATE : 26-MAR-2010 08:27:44				BKG LIVE TIME(SEC) : 59999.99					
ANALYST : AYB1				ELAPSED LIVE TIME(SEC) : 43200.00				EFF FILE : W036.CNF;333					
% YIELD : 83.328								CAL DATE : 4-MAR-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 1430-C				ID : 0244-B				ID : 0244-B					
NUCLIDE : PU-236				NUCLIDE : PU-9/0				NUCLIDE : PU-9/0					
NOMINAL : 2.9663E+00 dpm				NOMINAL : 4.1778E+01 pCi/G				NOMINAL : 4.1778E+01 pCi/G					
RESULTS : 2.4718E+00 dpm													
NUCLEIDE 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	5746.656	65.366	616.000	613.840	2.160	1.4697	100.0000	1.23E+01	9.41E-01	6.31E-02	1.80E-01	4.96E-01
PU-238	5499.000	5467.935	0.000	334.000	331.840	2.160	2.4495	99.90000	6.61E+00	5.65E-01	1.05E-01	2.65E-01	3.65E-01
PU-9/0	5155.000	5132.264	54.661	2129.000	2126.840	2.160	1.9732	99.90000	4.24E+01	2.91E+00	8.48E-02	2.24E-01	9.20E-01
PU242	4890.000	4920.693	0.000	130.000	127.120	2.880	*****	100.0000	2.53E+00	2.82E-01	5.35E+00	1.08E+01	2.29E-01
PU-244	4589.000	4535.222	4.922	6.000	6.000	0.000	6.4609	99.90000	1.20E-01	4.94E-02	2.78E-01	6.10E-01	4.88E-02

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



Radiochemistry Batch Checklist, Rev10

Batch# 965493 Product: J Date: 3/31/10

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%.	✓		case narrative
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		case narrative
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
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 stasured.	✓		
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: JapLMF- 3/31/10

Secondary Review Performed By: Ng B. Jones 3/31/10

3/31
LANL

Uranium Que Sheet

15-MAR-10

Batch #: 965493 Analyst: AYB1 First Client Due Date: 31-MAR-10 Internal Due Date: 20-MAR-10
 Tracer Isotope: U-235 Tracer Code: 1283-A Expiration Date: 12/9/10 Vol: 0.1
 LCS Isotope: U-238 LCS Code: Expiration Date: Vol:
 Spike Isotope: U-238 Spike Code: Expiration Date: Vol:
 Prep Date: 3/23/10 Initials: AYB Pipet ID: 4497063 Balance ID: 5041032
 Witness: QW 03/23/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/f)	U Det #
248513001-1	RE36-10-7407	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	1	1	0.505	1
248513002-1	RE36-10-7421	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	2	2	0.505	2
248513003-1	RE36-10-7422	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	3	3	0.504	3
248513004-1	RE36-10-7451	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	4	4	0.501	4
248513005-1	RE36-10-7449	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	5	5	0.509	5
248513006-1	RE36-10-7445	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	6	6	0.500	6
248513007-1	RE36-10-7450	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	7	7	0.501	7
248513008-1	RE36-10-7444	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	8	8	0.504	8
248513009-1	RE36-10-7448	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	9	9	0.501	9
248513010-1	RE36-10-7447	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	10	10	0.500	10
248513011-1	RE36-10-7443	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	11	11	0.501	11
248513012-1	RE36-10-7452	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	12	12	0.505	114
248513013-1	RE36-10-7437	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	13	13	0.506	115
248513014-1	RE36-10-7440	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	14	14	0.502	116
248513015-1	RE36-10-7435	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	15	15	0.504	117
248513016-1	RE36-10-7441	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	16	16	0.503	118
248513017-1	RE36-10-7442	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	17	17	0.501	119
248513018-1	RE36-10-7436	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	18	18	0.508	120
248513019-1	RE36-10-7438	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	19	19	0.503	116
248513020-1	RE36-10-7439	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	20	20	0.506	122
1202071658-1	MB for batch 965493	MB		.1 pCi/g	SOIL	QC ACCOUNT		21	21	1	123
1202071659-1	RE36-10-7487(248513001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	22	22	0.502	124
1202071660-1	LCS for batch 965493	LCS		.1 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	23	23	0.109	125

ASRM 0744-A exp: 10/31/10

Choose SOP used: GL-RAD-A-011 Solid Sample Dissolution by: LEACH or DIGESTION Data Reviewed By: Jed ML C-3/31/10

Blank Correction Report

Batch ID 965493

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202071659	DUP	Uranium-233/234	0.502 g	1.28	0.130	0.170	.021314741	pCi/g	NO
		Uranium-235/236	0.502 g	0.0522	0.0201	0.104	.013446215	pCi/g	YES
		Uranium-238	0.502 g	1.28	0.132	0.120	.003625498	pCi/g	NO
1202071660	LCS	Uranium-233/234	0.109 g	5.73	0.541	0.487	.098165138	pCi/g	NO
		Uranium-235/236	0.109 g	0.143	0.0553	0.285	.061928606	pCi/g	YES
		Uranium-238	0.109 g	5.07	0.489	0.328	.016697248	pCi/g	NO
1202071658	MB	Uranium-233/234	1.00 g	0.0107	0.00448	0.0514	.0107	pCi/g	YES
		Uranium-235/236	1.00 g	0.00675	0.00506	0.0314	.00675	pCi/g	YES
		Uranium-238	1.00 g	0.00182	0.00316	0.0361	.00182	pCi/g	YES
248513001	RE36-10-7407	Uranium-233/234	0.515 g	1.22	0.119	0.136	.020776699	pCi/g	NO
		Uranium-235/236	0.515 g	0.0856	0.022	0.0831	.013106796	pCi/g	NO
		Uranium-238	0.515 g	1.28	0.123	0.0956	.003533981	pCi/g	NO
248513002	RE36-10-7421	Uranium-233/234	0.509 g	1.16	0.115	0.134	.021021611	pCi/g	NO
		Uranium-235/236	0.509 g	0.0997	0.0253	0.0817	.013261297	pCi/g	NO
		Uranium-238	0.509 g	1.60	0.147	0.0941	.003575639	pCi/g	NO
248513003	RE36-10-7422	Uranium-233/234	0.504 g	1.14	0.106	0.110	.021230159	pCi/g	NO
		Uranium-235/236	0.504 g	0.0724	0.0206	0.0672	.013392857	pCi/g	NO
		Uranium-238	0.504 g	1.16	0.108	0.0774	.003611111	pCi/g	NO
248513004	RE36-10-7451	Uranium-233/234	0.501 g	1.42	0.136	0.143	.021357285	pCi/g	NO
		Uranium-235/236	0.501 g	0.119	0.030	0.0871	.013473054	pCi/g	NO
		Uranium-238	0.501 g	1.68	0.156	0.100	.003632735	pCi/g	NO
248513005	RE36-10-7449	Uranium-233/234	0.509 g	1.06	0.0959	0.0925	.021021611	pCi/g	NO
		Uranium-235/236	0.509 g	0.0486	0.0175	0.0565	.013261297	pCi/g	YES
		Uranium-238	0.509 g	1.21	0.107	0.065	.003575639	pCi/g	NO
248513006	RE36-10-7445	Uranium-233/234	0.500 g	1.32	0.126	0.133	.0214	pCi/g	NO
		Uranium-235/236	0.500 g	0.0817	0.0241	0.0813	.0135	pCi/g	NO
		Uranium-238	0.500 g	1.58	0.145	0.0935	.00364	pCi/g	NO
248513007	RE36-10-7450	Uranium-233/234	0.501 g	1.32	0.120	0.108	.021357285	pCi/g	NO
		Uranium-235/236	0.501 g	0.0802	0.0224	0.0657	.013473054	pCi/g	NO
		Uranium-238	0.501 g	1.39	0.124	0.0756	.003632735	pCi/g	NO
248513008	RE36-10-7444	Uranium-233/234	0.504 g	1.14	0.106	0.106	.021230159	pCi/g	NO
		Uranium-235/236	0.504 g	0.0698	0.0198	0.0649	.013392857	pCi/g	NO
		Uranium-238	0.504 g	1.27	0.115	0.0746	.003611111	pCi/g	NO
248513009	RE36-10-7448	Uranium-233/234	0.501 g	0.995	0.0965	0.115	.021357285	pCi/g	NO
		Uranium-235/236	0.501 g	0.0557	0.0187	0.0705	.013473054	pCi/g	YES
		Uranium-238	0.501 g	1.15	0.109	0.0812	.003632735	pCi/g	NO
248513010	RE36-10-7447	Uranium-233/234	0.500 g	1.21	0.132	0.196	.0214	pCi/g	NO
		Uranium-235/236	0.500 g	0.0775	0.0292	0.120	.0135	pCi/g	NO
		Uranium-238	0.500 g	1.70	0.172	0.138	.00364	pCi/g	NO
248513011	RE36-10-7443	Uranium-233/234	0.501 g	1.17	0.128	0.190	.021357285	pCi/g	NO
		Uranium-235/236	0.501 g	0.0581	0.0224	0.116	.013473054	pCi/g	YES

Blank Correction Report

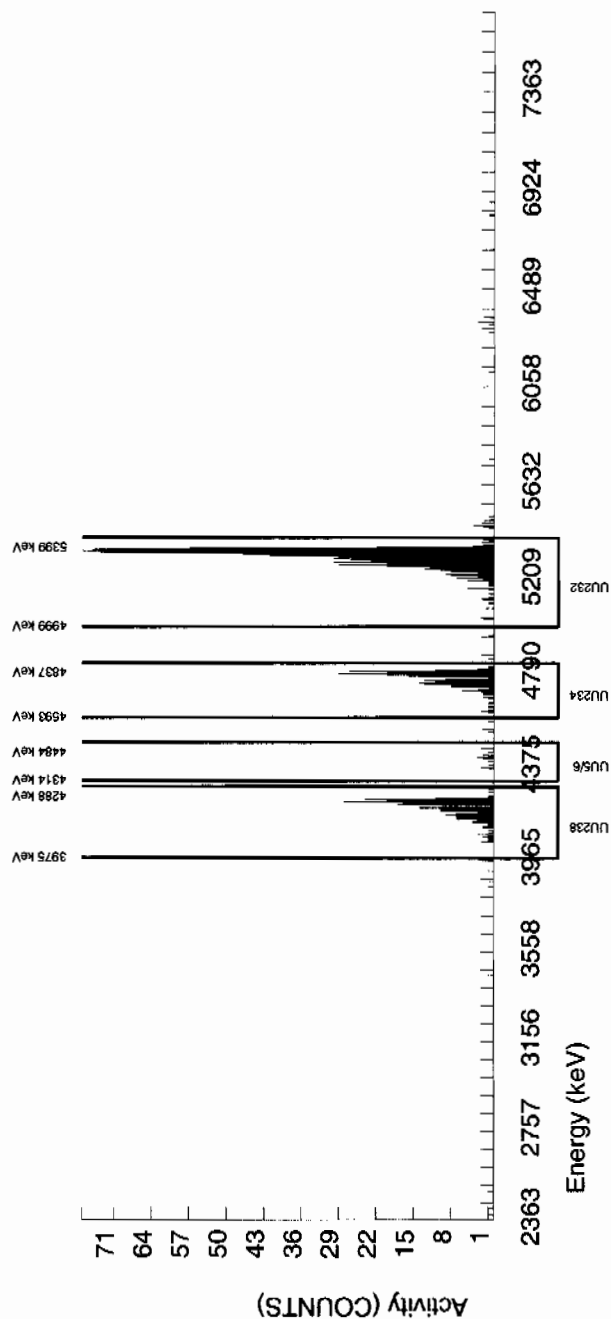
GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248513011	RE36-10-7443	Uranium-238	0.501 g	1.53	0.157	0.133	.003632735	pCi/g	NO
248513012	RE36-10-7452	Uranium-233/234	0.505 g	1.14	0.112	0.137	.021188119	pCi/g	NO
		Uranium-235/236	0.505 g	0.042	0.0162	0.0836	.013366337	pCi/g	YES
		Uranium-238	0.505 g	1.39	0.132	0.0962	.003603960	pCi/g	NO
248513013	RE36-10-7437	Uranium-233/234	0.506 g	1.30	0.131	0.161	.021148245	pCi/g	NO
		Uranium-235/236	0.506 g	0.127	0.0314	0.0983	.013339921	pCi/g	NO
		Uranium-238	0.506 g	1.59	0.153	0.113	.003596838	pCi/g	NO
248513014	RE36-10-7440	Uranium-233/234	0.502 g	1.06	0.110	0.153	.021314741	pCi/g	NO
		Uranium-235/236	0.502 g	0.107	0.028	0.0935	.013446215	pCi/g	NO
		Uranium-238	0.502 g	1.19	0.120	0.108	.003625498	pCi/g	NO
248513015	RE36-10-7435	Uranium-233/234	0.504 g	1.00	0.105	0.151	.021230159	pCi/g	NO
		Uranium-235/236	0.504 g	0.0662	0.0215	0.0922	.013392857	pCi/g	YES
		Uranium-238	0.504 g	1.34	0.131	0.106	.003611111	pCi/g	NO
248513016	RE36-10-7441	Uranium-233/234	0.503 g	1.49	0.150	0.181	.021272366	pCi/g	NO
		Uranium-235/236	0.503 g	0.0794	0.0258	0.111	.013419483	pCi/g	NO
		Uranium-238	0.503 g	1.79	0.174	0.127	.003618290	pCi/g	NO
248513017	RE36-10-7442	Uranium-233/234	0.501 g	1.27	0.129	0.165	.021357285	pCi/g	NO
		Uranium-235/236	0.501 g	0.0652	0.0223	0.101	.013473054	pCi/g	YES
		Uranium-238	0.501 g	1.14	0.119	0.116	.003632735	pCi/g	NO
248513018	RE36-10-7436	Uranium-233/234	0.508 g	1.26	0.118	0.122	.021062992	pCi/g	NO
		Uranium-235/236	0.508 g	0.075	0.0208	0.0746	.013287402	pCi/g	NO
		Uranium-238	0.508 g	1.18	0.112	0.0859	.003582677	pCi/g	NO
248513019	RE36-10-7438	Uranium-233/234	0.503 g	1.23	0.132	0.229	.021272366	pCi/g	NO
		Uranium-235/236	0.503 g	0.0919	0.0286	0.138	.013419483	pCi/g	NO
		Uranium-238	0.503 g	1.31	0.140	0.160	.003618290	pCi/g	NO
248513020	RE36-10-7439	Uranium-233/234	0.506 g	1.39	0.133	0.142	.021146245	pCi/g	NO
		Uranium-235/236	0.506 g	0.0993	0.0273	0.0865	.013339921	pCi/g	NO
		Uranium-238	0.506 g	1.41	0.134	0.0995	.003596838	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513001_UU SAMPLE QTY : 0.515 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 52.097				CHAMBER : 001 DETECTOR S/N : 79451 AVERAGE %EFFICIENCY : 34.8147 COUNT DATE : 26-MAR-2010 17:48:35 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B001.CNF;1135 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W001.CNF;384 CAL DATE : 4-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.3458E+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	5315.083	33.341	822.000	816.000	6.000	2.4495	100.0000	3.94E+00	3.24E-01	2.75E-02	6.80E-02	1.39E-01
U-3/4	4763.020	4769.983	27.134	254.000	253.173	0.000	5.4790	100.0000	1.22E+00	1.19E-01	6.15E-02	1.36E-01	7.67E-02
U-235	4391.000	4417.603	17.068	12.000	11.000	1.000	2.4127	80.90000	6.56E-02	2.20E-02	3.35E-02	8.31E-02	2.15E-02
U-238	4184.730	4196.594	29.243	266.000	265.000	1.000	3.6781	100.0000	1.28E+00	1.23E-01	4.13E-02	9.56E-02	7.88E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 965493 SAMPLE ID : S0248513002_UU SAMPLE QTY : 0.509 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 61.150</p>	<p>CHAMBER : 002 DETECTOR S/N : 79452 AVERAGE %EFFICIENCY : 30.4967 COUNT DATE : 26-MAR-2010 17:48:35 ELAPSED LIVE TIME(SEC) : 59999.99</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B002.CNF:1125 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W002.CNF:330 CAL DATE : 4-MAR-2010</p>
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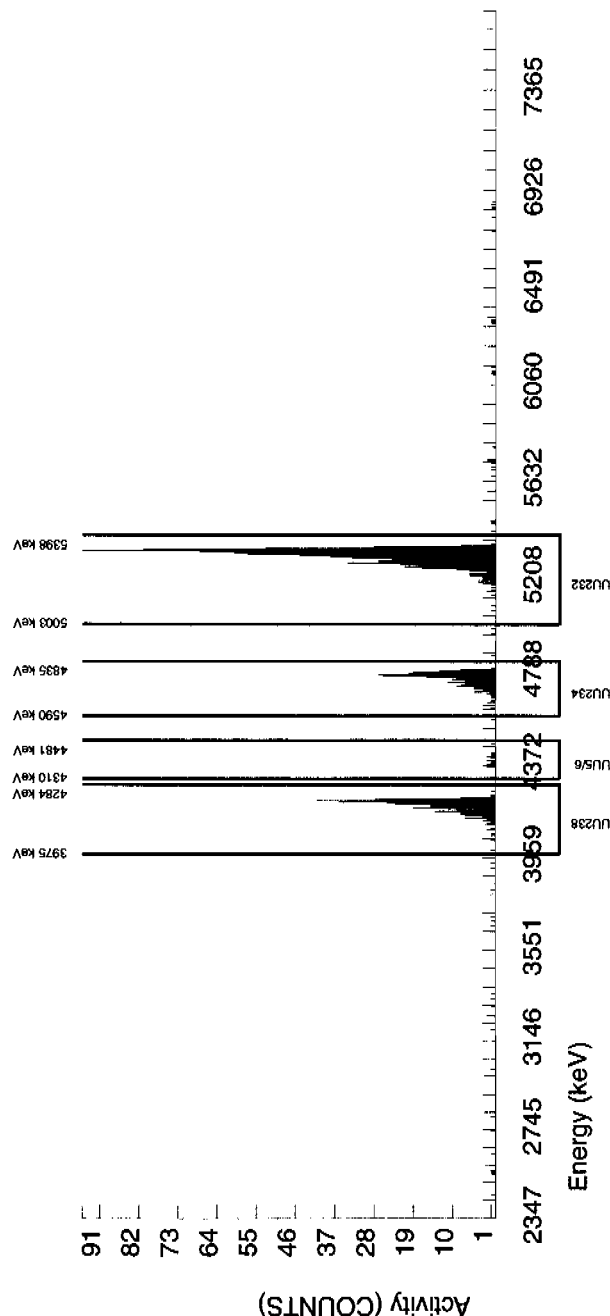
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.7534E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY 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	5307.741	29.557	844.000	839.000	5.000	2.2361	100.0000	3.98E+00	3.26E-01	2.47E-02	6.22E-02	1.38E-01
U-3/4	4763.020	4761.346	30.579	251.000	245.150	5.000	5.4790	100.0000	1.16E+00	1.15E-01	6.05E-02	1.34E-01	7.58E-02
U-235	4391.000	4400.559	51.898	17.000	17.000	0.000	2.4127	80.90000	9.97E-02	2.53E-02	3.29E-02	8.17E-02	2.42E-02
U-238	4184.730	4192.200	26.871	337.000	337.000	0.000	3.6781	100.0000	1.60E+00	1.47E-01	4.06E-02	9.41E-02	8.71E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

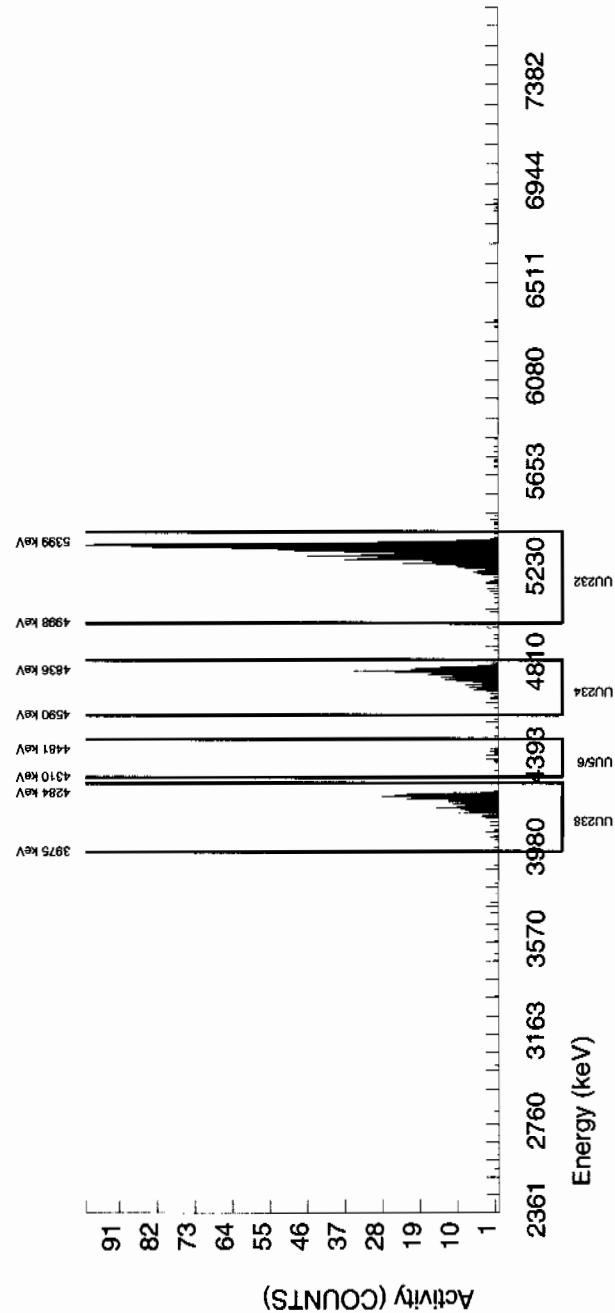


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513003_UU SAMPLE QTY : 0.504 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 71.138		CHAMBER : 003 DETECTOR S/N : 79453 AVERAGE %EFFICIENCY : 32.1827 COUNT DATE : 26-MAR-2010 17:48:35 ELAPSED LIVE TIME(SEC) : 59999.99	LIB FILE : ENV_ALPHA_UU BKG FILE : B003.CNF;1120 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W003.CNF;343 CAL DATE : 4-MAR-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 3.2031E+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	FWHM
U232	5302.100	5316.464	35.623
U-3/4	4763.020	4771.176	26.051
U-235	4391.000	4413.032	53.367
U-238	4184.730	4196.909	63.994
	GROSS AREA	NET AREA	BKG AREA
	1036.000	1030.000	6.000
	292.000	290.956	0.000
	16.000	15.000	1.000
	298.000	298.000	0.000
	BKG Sg	%ABUN	ACTIVITY pCi/g
	2.4495	100.0000	4.02E+00
	5.4790	100.0000	1.14E+00
	2.4127	80.90000	7.24E-02
	3.6781	100.0000	1.16E+00
			TPU 1-SIGMA
			3.18E-01
			1.06E-01
			2.06E-02
			1.08E-01
			DLC pCi/g
			2.22E-02
			4.98E-02
			2.71E-02
			3.34E-02
			MDC pCi/g
			5.51E-02
			1.10E-01
			6.72E-02
			7.74E-02
			UNC pCi/g
			1.26E-01
			6.66E-02
			1.99E-02
			6.74E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area
due to tracer impurity:
U-3/4

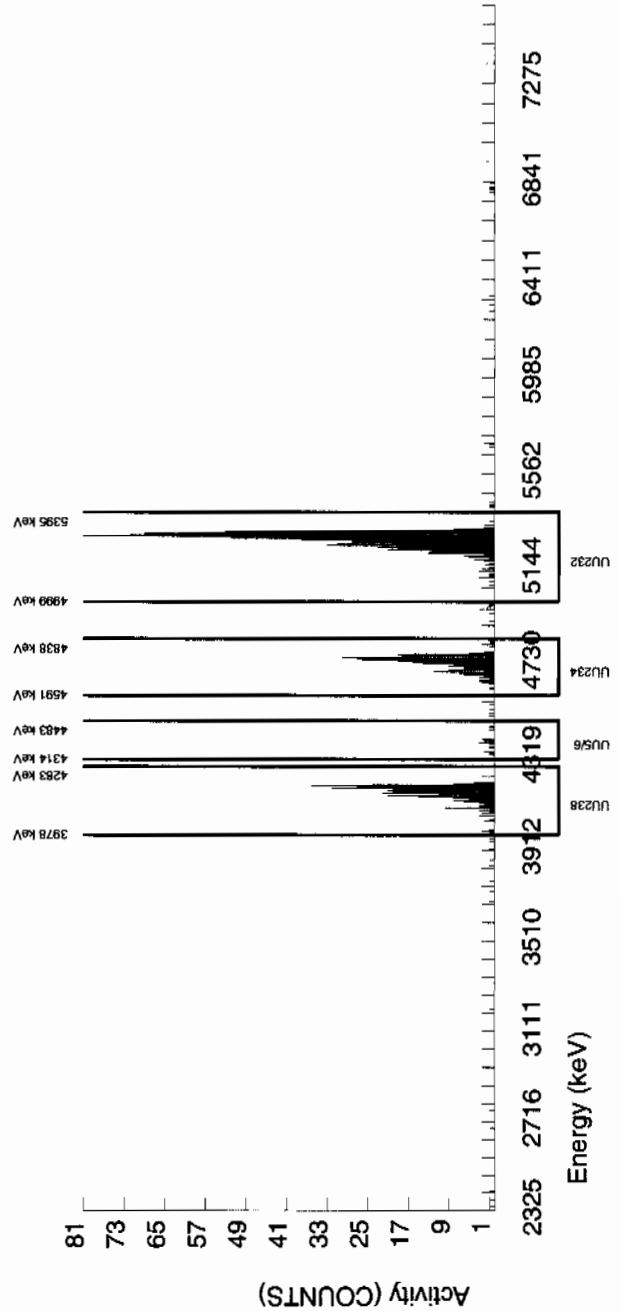


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513004_UU SAMPLE QTY : 0.501 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 56.977				CHAMBER : 004 DETECTOR S/N : 68548 AVERAGE %EFFICIENCY : 31.2086 COUNT DATE : 26-MAR-2010 17:48:35 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B004.CNF;1129 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W004.CNF;332 CAL DATE : 4-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.5655E+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	5278.786	34.680	806.000	800.000	6.000	2.4495	100.0000	4.05E+00	3.34E-01	2.88E-02	7.13E-02	1.44E-01
U-3/4	4763.020	4739.093	35.950	284.000	280.190	3.000	5.4790	100.0000	1.42E+00	1.36E-01	6.44E-02	1.43E-01	8.55E-02
U-235	4391.000	4387.538	52.285	20.000	19.000	1.000	2.4127	80.90000	1.19E-01	3.00E-02	3.51E-02	8.71E-02	2.86E-02
U-238	4184.730	4168.712	52.863	338.000	333.000	5.000	3.6781	100.0000	1.68E+00	1.56E-01	4.33E-02	1.00E-01	9.36E-02

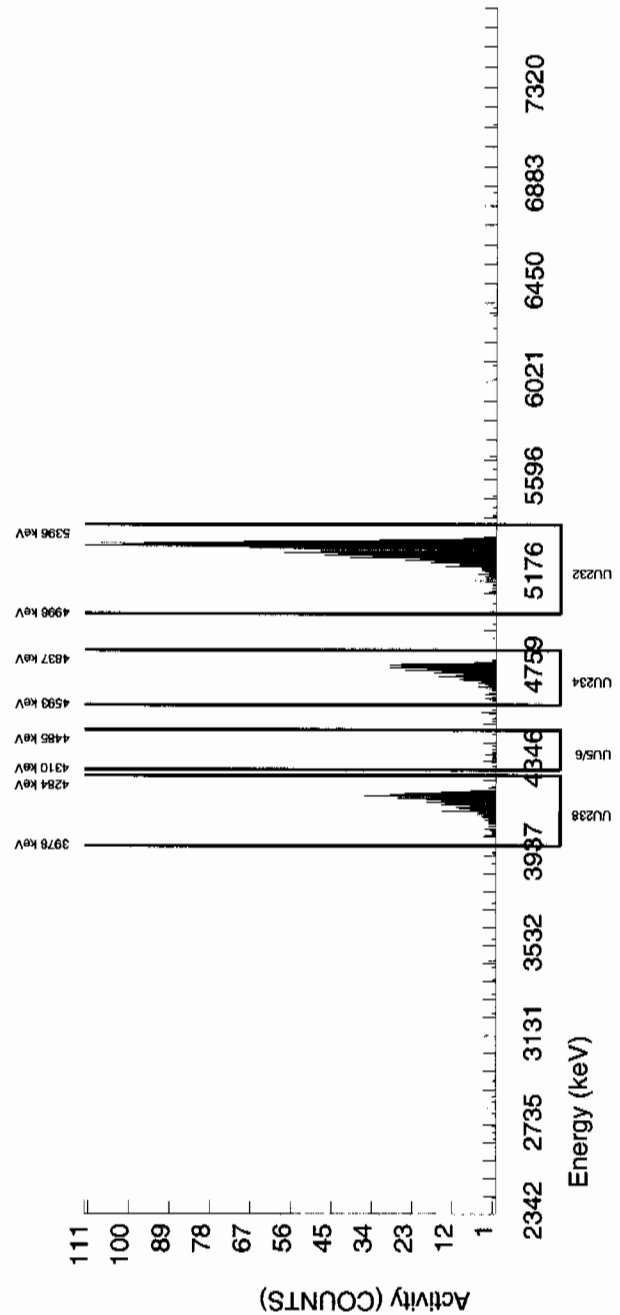
NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as $\sqrt{\text{BKG AREA}}$.
- * Corrections made to the following net area
due to tracer impurity:
U-3/4

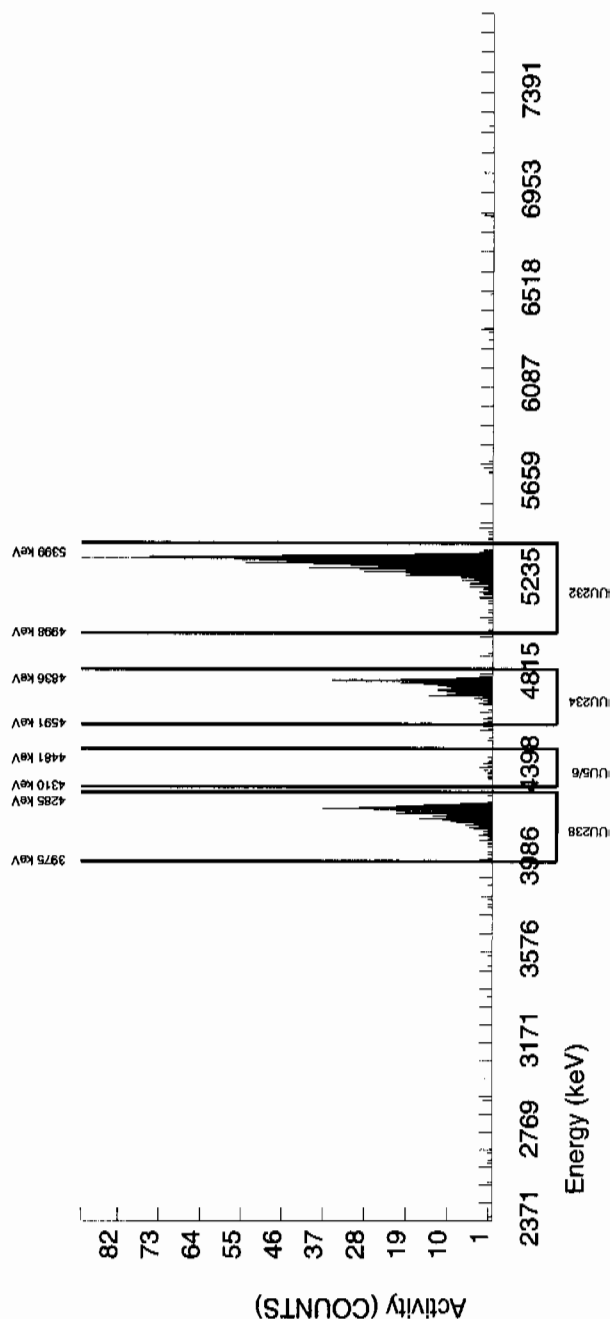


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513006_UU SAMPLE QTY : 0.500 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 59.542				CHAMBER : 006 DETECTOR S/N : 79455 AVERAGE %EFFICIENCY : 32.0671 COUNT DATE : 26-MAR-2010 17:48:35 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B006.CNF:1128 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W006.CNF:363 CAL DATE : 4-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.6810E+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	5309.852	37.443	860.000	859.000	1.000	1.0000	100.0000	4.06E+00	3.29E-01	1.10E-02	3.47E-02	1.39E-01
U-3/4	4763.020	4762.914	21.828	283.000	280.130	2.000	5.4790	100.0000	1.32E+00	1.26E-01	6.01E-02	1.33E-01	7.95E-02
U-235	4391.000	4393.611	37.145	15.000	14.000	1.000	2.4127	80.90000	8.17E-02	2.41E-02	3.27E-02	8.13E-02	2.33E-02
U-238	4184.730	4191.221	37.820	334.000	334.000	0.000	3.6781	100.0000	1.58E+00	1.45E-01	4.04E-02	9.35E-02	8.62E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

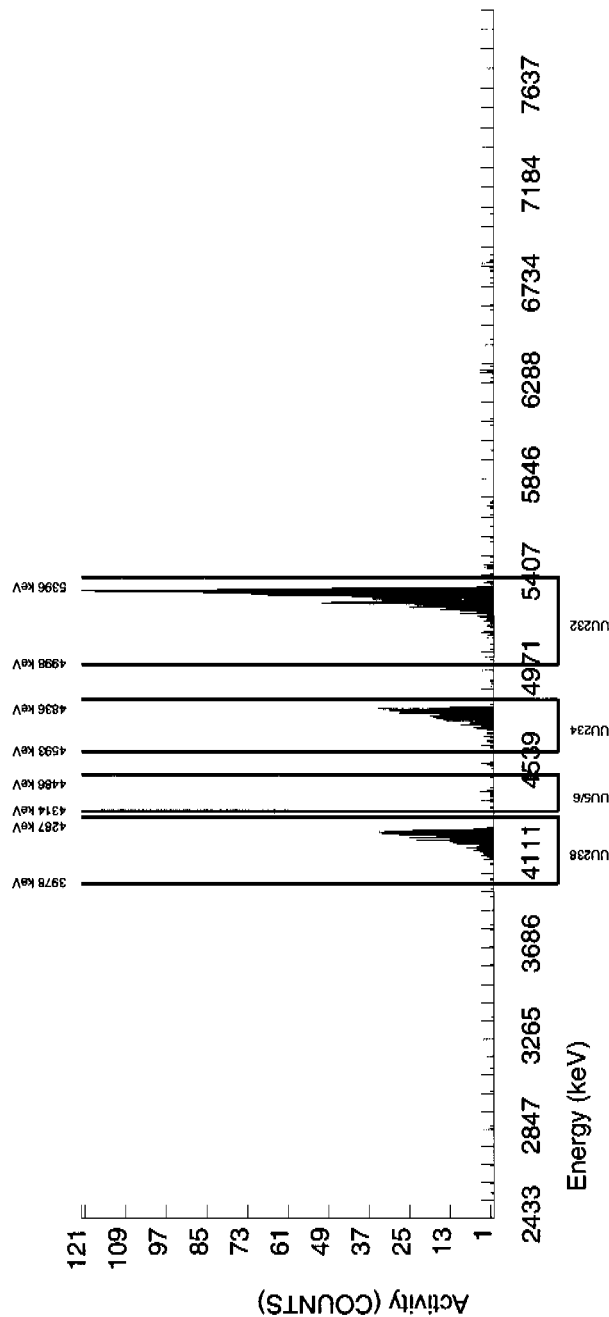


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513007_UU SAMPLE QTY : 0.501 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 76.466		CHAMBER : 007 DETECTOR S/N : 67607 AVERAGE %EFFICIENCY : 30.8124 COUNT DATE : 26-MAR-2010 17:48:40 ELAPSED LIVE TIME(SEC) : 59999.99	LIB FILE : ENV_ALPHA_UU BKG FILE : B007.CNF;1123 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W007.CNF;314 CAL DATE : 4-MAR-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 3.4430E+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	FWHM ENERGY
U232	5302.100	5310.802	29.535
U-3/4	4763.020	4764.993	42.396
U-235	4391.000	4397.974	10.309
U-238	4184.730	4196.067	51.472
	GROSS AREA	NET AREA	BKG AREA
	1077.000	1060.000	17.000
	350.000	346.926	2.000
	19.000	17.000	2.000
	365.000	363.000	2.000
	%ABUN	BKG Sg	ACTIVITY pCi/g
	100.0000	4.1231	4.05E+00
	100.0000	5.4790	1.32E+00
	80.90000	2.4127	8.02E-02
	100.0000	3.6781	1.39E+00
	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g
	3.19E-01	3.66E-02	8.35E-02
	1.20E-01	4.86E-02	1.08E-01
	2.24E-02	2.65E-02	6.57E-02
	1.24E-01	3.27E-02	7.56E-02
	UNC pCi/g		
	1.26E-01		
	7.15E-02		
	2.16E-02		
	7.31E-02		

NOTES:

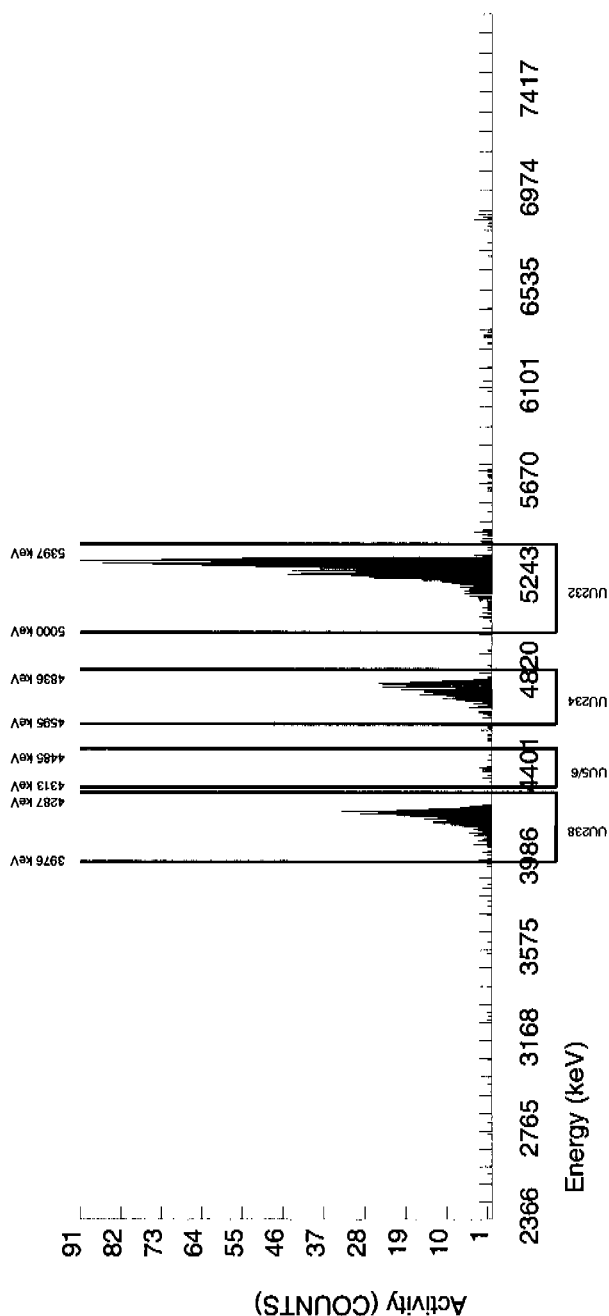
- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area
due to tracer impurity:
U-3/4



BATCH NUMBER : 965493 SAMPLE ID : S0248513008_UU SAMPLE QTY : 0.504 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 70.960				CHAMBER : 008 DETECTOR S/N : 78788 AVERAGE %EFFICIENCY : 33.4538 COUNT DATE : 26-MAR-2010 17:48:40 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B008.CNF:1125 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W008.CNF:345 CAL DATE : 4-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 3.1951E+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	5289.909	38.248	1075.000	1068.000	7.000	2.6458	100.0000	4.02E+00	3.16E-01	2.32E-02	5.65E-02	1.24E-01
U-3/4	4763.020	4748.011	61.139	307.000	302.918	3.000	5.4790	100.0000	1.14E+00	1.06E-01	4.80E-02	1.06E-01	6.62E-02
U-235	4391.000	4384.124	47.154	16.000	15.000	1.000	2.4127	80.90000	6.98E-02	1.98E-02	2.61E-02	6.49E-02	1.92E-02
U-238	4184.730	4175.571	34.137	340.000	338.000	2.000	3.6781	100.0000	1.27E+00	1.15E-01	3.22E-02	7.46E-02	6.96E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as $\sqrt{\text{BKG AREA}}$.
- * Corrections made to the following net area
due to tracer impurity:
U-3/4

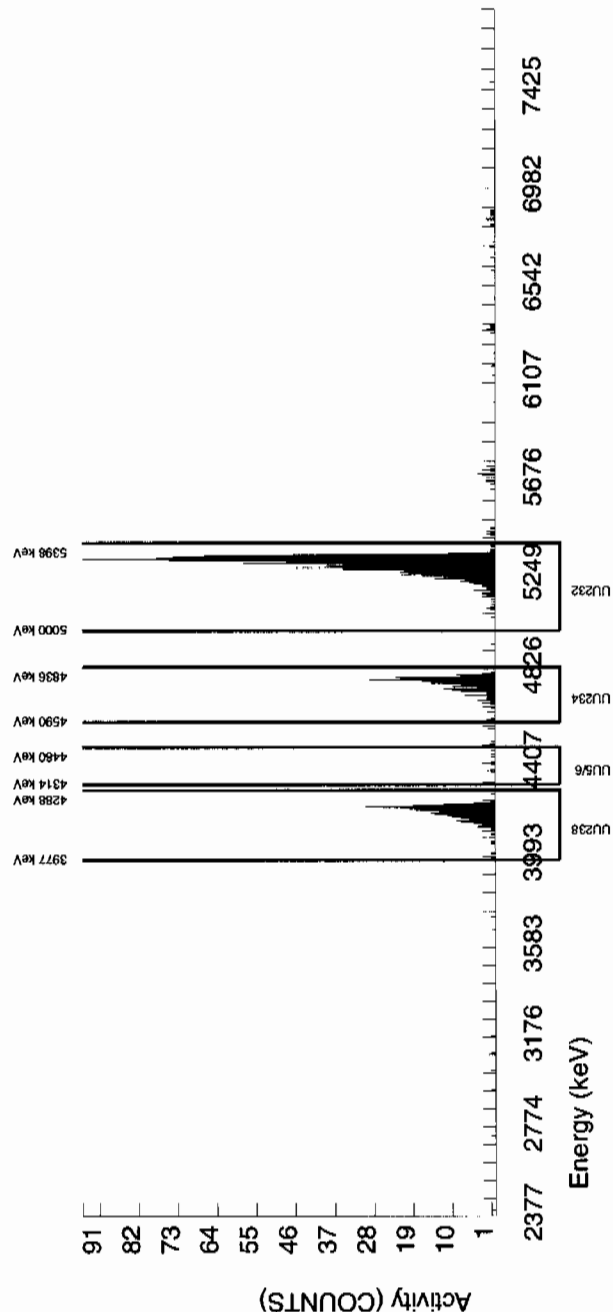


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513009_UU SAMPLE QTY : 0.501 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 63.977				CHAMBER : 009 DETECTOR S/N : 72528 AVERAGE %EFFICIENCY : 34.3260 COUNT DATE : 26-MAR-2010 17:48:40 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B009.CNF:1116 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W009.CNF:309 CAL DATE : 4-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.8807E+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	5304.518	36.749	998.000	988.000	10.000	3.1623	100.0000	4.05E+00	3.22E-01	3.01E-02	7.13E-02	1.30E-01
U-3/4	4763.020	4760.048	28.194	244.000	242.999	0.000	5.4790	100.0000	9.95E-01	9.65E-02	5.22E-02	1.15E-01	6.38E-02
U-235	4391.000	4412.523	34.622	12.000	11.000	1.000	2.4127	80.90000	5.57E-02	1.87E-02	2.84E-02	7.05E-02	1.82E-02
U-238	4184.730	4188.523	30.541	283.000	282.000	1.000	3.6781	100.0000	1.15E+00	1.09E-01	3.50E-02	8.12E-02	6.90E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

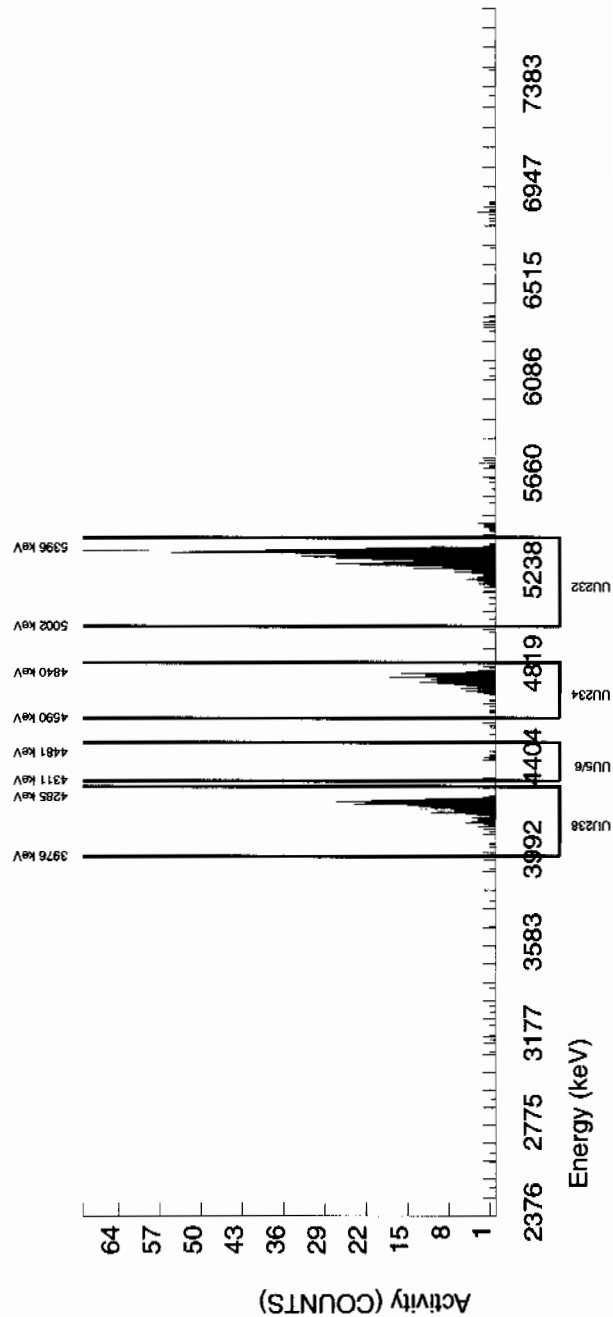


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513010_UU SAMPLE QTY : 0.500 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 41.268				CHAMBER : 010 DETECTOR S/N : 72529 AVERAGE %EFFICIENCY : 31.3468 COUNT DATE : 26-MAR-2010 17:48:40 ELAPSED LIVE TIME(SEC) : 59999.99				LIB FILE : ENV_ALPHA_UU BKG FILE : B010.CNF;1134 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W010.CNF;337 CAL DATE : 4-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 1.8582E+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	5309.818	19.553	590.000	582.000	8.000	2.8284	100.0000	4.06E+00	3.58E-01	4.58E-02	1.11E-01	1.70E-01
U-3/4	4763.020	4763.504	48.780	177.000	173.410	3.000	5.4790	100.0000	1.21E+00	1.32E-01	8.88E-02	1.96E-01	9.33E-02
U-235	4391.000	4417.183	17.222	10.000	9.000	1.000	2.4127	80.90000	7.75E-02	2.92E-02	4.83E-02	1.20E-01	2.86E-02
U-238	4184.730	4194.963	27.703	246.000	244.000	2.000	3.6781	100.0000	1.70E+00	1.72E-01	5.96E-02	1.38E-01	1.10E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

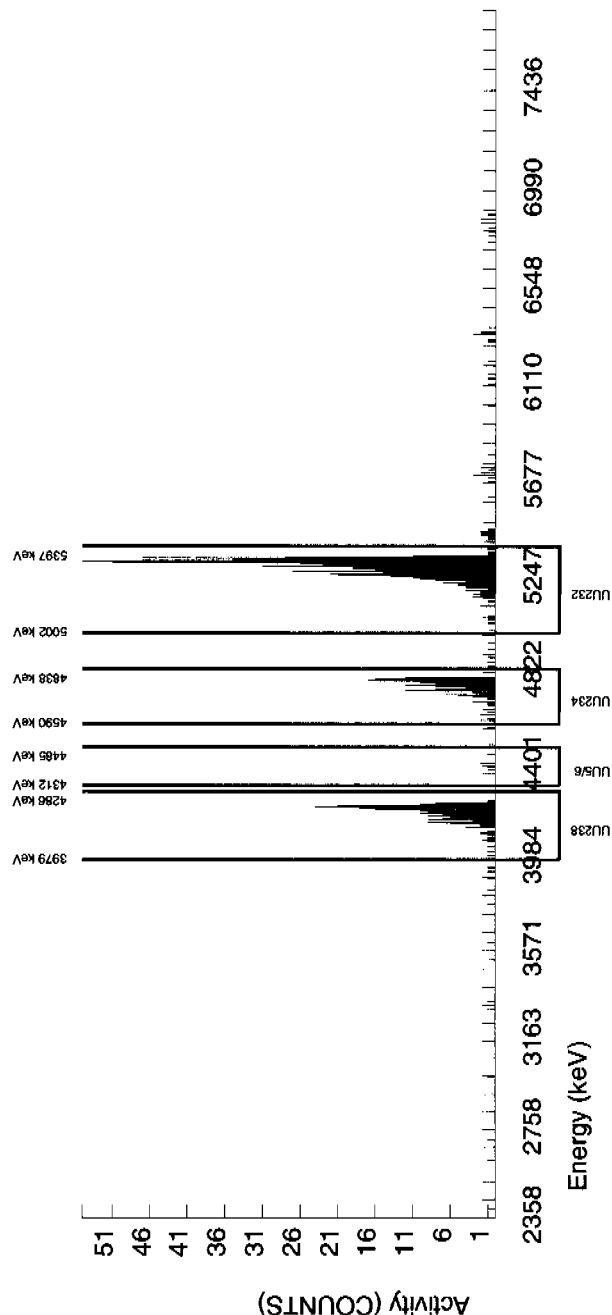


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 965493 SAMPLE ID : S0248513011_UU SAMPLE QTY : 0.501 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 42.826</p>		<p>CHAMBER : 011 DETECTOR S/N : 72531 AVERAGE %EFFICIENCY : 31.2445 COUNT DATE : 26-MAR-2010 17:48:40 ELAPSED LIVE TIME(SEC) : 59999.99</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B011.CNF;1126 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W011.CNF;315 CAL DATE : 4-MAR-2010</p>
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 1.9283E+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>	
<p>NUCLIDE ACTIVITY SUMMARY</p>			
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM
U232	5302.100	5304.427	41.362
U-3/4	4763.020	4762.193	59.163
U-235	4391.000	4403.292	49.778
U-238	4184.730	4192.643	27.222
	GROSS AREA	NET AREA	BKG AREA
	611.000	602.000	9.000
	179.000	174.390	4.000
	7.000	7.000	0.000
	231.000	227.000	4.000
	BKG Sg	%ABUN	ACTIVITY pCi/G
	3.0000	100.0000	4.05E+00
	5.4790	100.0000	1.17E+00
	2.4127	80.90000	5.81E-02
	3.6781	100.0000	1.53E+00
	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G
	3.55E-01	4.69E-02	1.12E-01
	1.28E-01	8.56E-02	1.90E-01
	2.24E-02	4.66E-02	1.16E-01
	1.57E-01	5.75E-02	1.33E-01
			UNC pCi/G
			1.67E-01
			9.07E-02
			2.20E-02
			1.03E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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

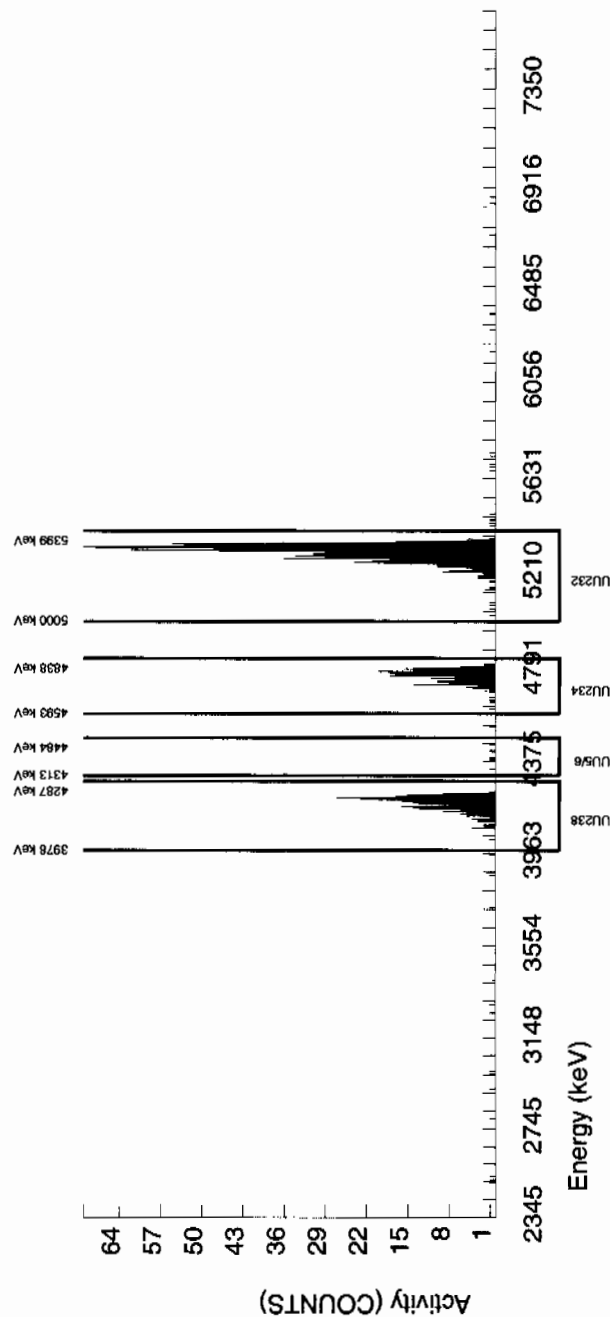
BATCH NUMBER : 965493 SAMPLE ID : S0248513012_UU SAMPLE QTY : 0.505 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 70.186		CHAMBER : 114 DETECTOR S/N : 78258 AVERAGE %EFFICIENCY : 26.1905 COUNT DATE : 26-MAR-2010 17:46:30 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B114.CNF;461 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W114.CNF;123 CAL DATE : 19-MAR-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 3.1603E+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	5307.018	65.487	833.000	827.000	6.000	2.4495	100.0000	4.02E+00	3.29E-01	2.77E-02	6.85E-02	1.41E-01
U-3/4	4763.020	4762.934	73.815	236.000	234.162	1.000	5.4790	100.0000	1.14E+00	1.12E-01	6.19E-02	1.37E-01	7.46E-02
U-235	4391.000	4407.144	109.455	7.000	7.000	0.000	2.4127	80.90000	4.20E-02	1.62E-02	3.37E-02	8.36E-02	1.59E-02
U-238	4184.730	4189.305	57.526	288.000	286.000	2.000	3.6781	100.0000	1.39E+00	1.32E-01	4.15E-02	9.62E-02	8.26E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

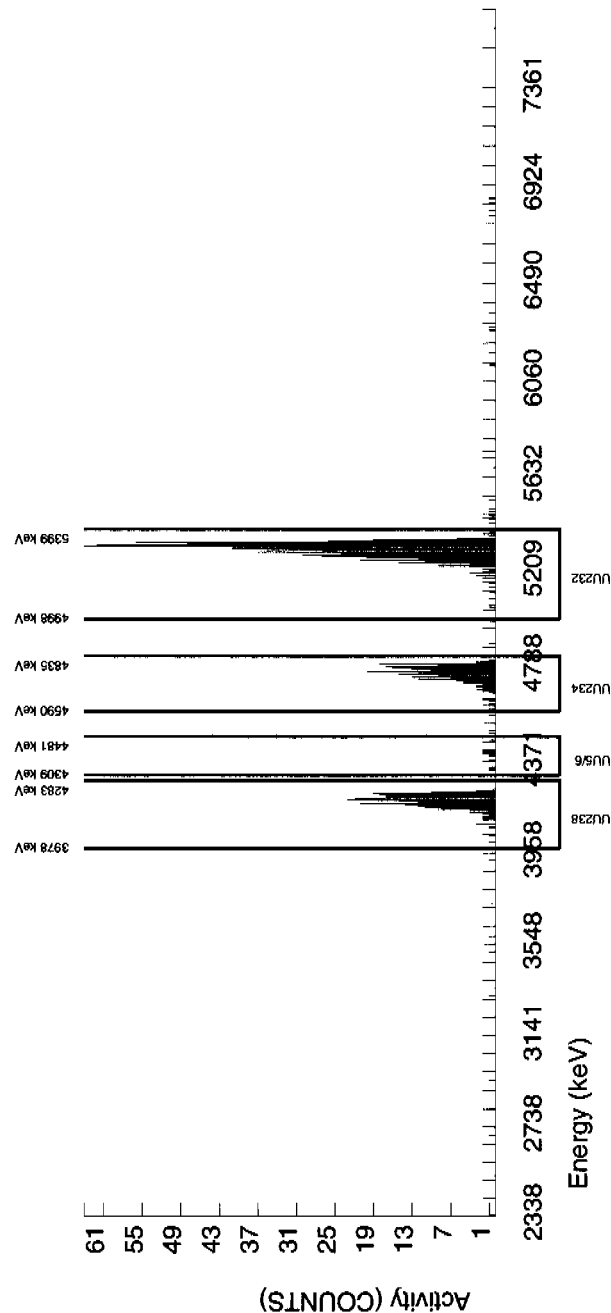


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513013_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 59.133		CHAMBER : 115 DETECTOR S/N : 79995 AVERAGE %EFFICIENCY : 26.3873 COUNT DATE : 26-MAR-2010 17:46:35 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B115.CNF:467 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W115.CNF:151 CAL DATE : 19-MAR-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.6626E+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
U232	5302.100	5308.431	45.305
U-3/4	4763.020	4760.674	69.016
U-235	4391.000	4400.242	26.909
U-238	4184.730	4194.520	60.765
	GROSS AREA	NET AREA	BKG AREA
	703.000	702.000	1.000
	229.000	228.289	0.000
	18.000	18.000	0.000
	278.000	278.000	0.000
	%ABUN	BKG Sg	ACTIVITY pCi/G
	100.0000	1.0000	4.01E+00
	100.0000	5.4790	1.30E+00
	80.90000	2.4127	1.27E-01
	100.0000	3.6781	1.59E+00
	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G
	3.38E-01	1.33E-02	4.20E-02
	1.31E-01	7.27E-02	1.61E-01
	3.14E-02	3.96E-02	9.83E-02
	1.53E-01	4.88E-02	1.13E-01
			UNC pCi/G
			1.52E-01
			8.62E-02
			2.99E-02
			9.51E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

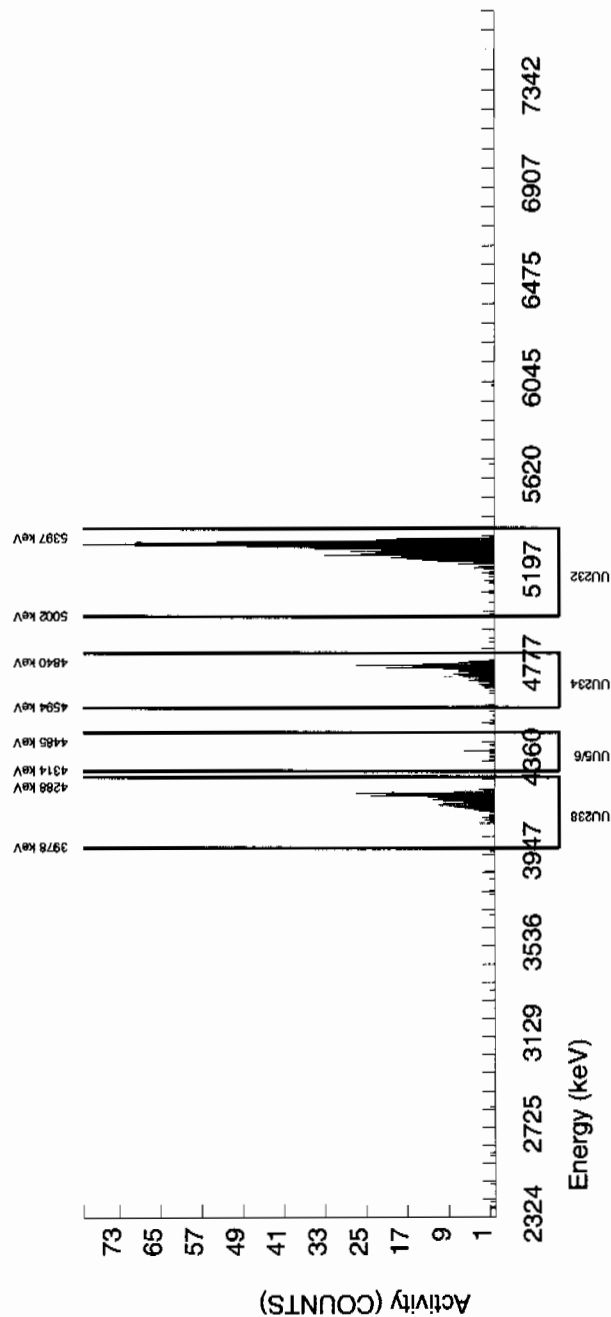


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513014_UU SAMPLE QTY : 0.502 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 63.680				CHAMBER : 116 DETECTOR S/N : 80004 AVERAGE %EFFICIENCY : 25.9691 COUNT DATE : 26-MAR-2010 17:46:37 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B116.CNF;452 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W116.CNF;113 CAL DATE : 19-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.8673E+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	5310.669	30.205	746.000	744.000	2.000	1.4142	100.0000	4.04E+00	3.37E-01	1.79E-02	5.04E-02	1.49E-01
U-3/4	4763.020	4766.170	23.730	197.000	196.246	0.000	5.4790	100.0000	1.06E+00	1.10E-01	6.92E-02	1.53E-01	7.60E-02
U-235	4391.000	4404.120	5.992	16.000	16.000	0.000	2.4127	80.90000	1.07E-01	2.80E-02	3.76E-02	9.35E-02	2.68E-02
U-238	4184.730	4195.541	22.445	220.000	220.000	0.000	3.6781	100.0000	1.19E+00	1.20E-01	4.64E-02	1.08E-01	8.05E-02

NOTES:

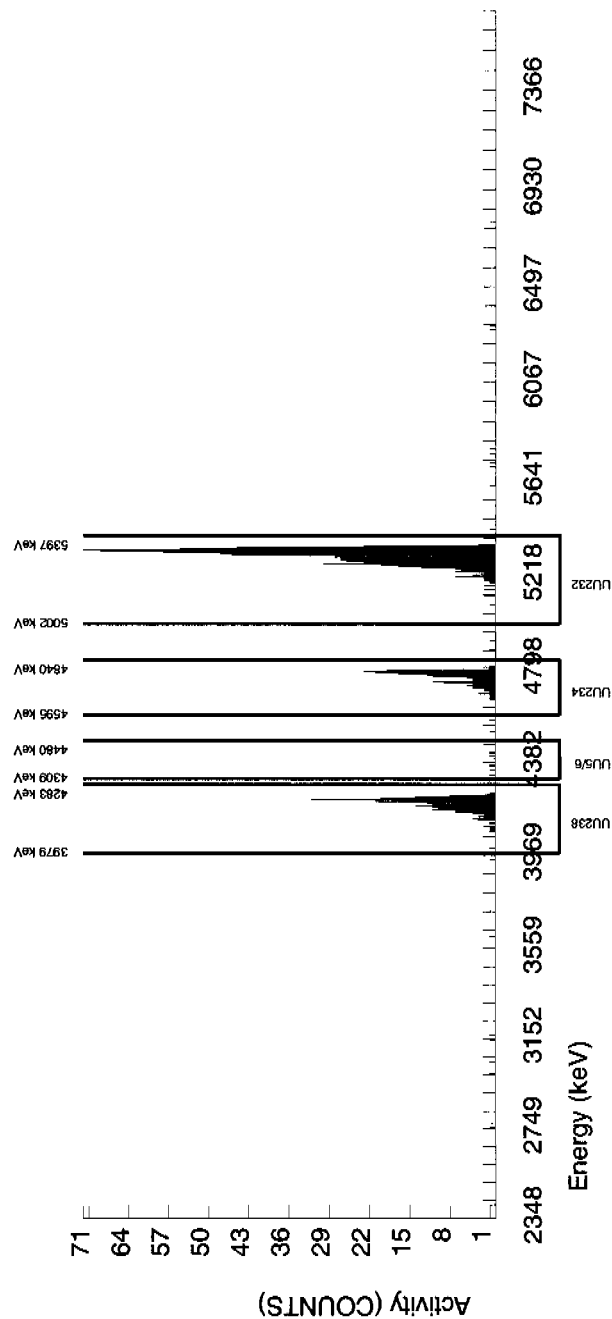
- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



BATCH NUMBER : 965493 SAMPLE ID : S0248513015_UU SAMPLE QTY : 0.504 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 61.362				CHAMBER : 117 DETECTOR S/N : 80003 AVERAGE %EFFICIENCY : 27.2036 COUNT DATE : 26-MAR-2010 17:46:42 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B117.CNF:463 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W117.CNF:126 CAL DATE : 19-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.7630E+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	5310.068	38.167	752.000	751.000	1.000	1.0000	100.0000	4.02E+00	3.35E-01	1.25E-02	3.94E-02	1.47E-01
U-3/4	4763.020	4767.986	25.918	189.000	187.239	1.000	5.4790	100.0000	1.00E+00	1.05E-01	6.82E-02	1.51E-01	7.37E-02
U-235	4391.000	4398.838	134.469	10.000	10.000	0.000	2.4127	80.90000	6.62E-02	2.15E-02	3.71E-02	9.22E-02	2.09E-02
U-238	4184.730	4195.169	26.005	251.000	250.000	1.000	3.6781	100.0000	1.34E+00	1.31E-01	4.58E-02	1.06E-01	8.50E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as $\sqrt{\text{BKG AREA}}$.
- * Corrections made to the following net area
due to tracer impurity:
U-3/4

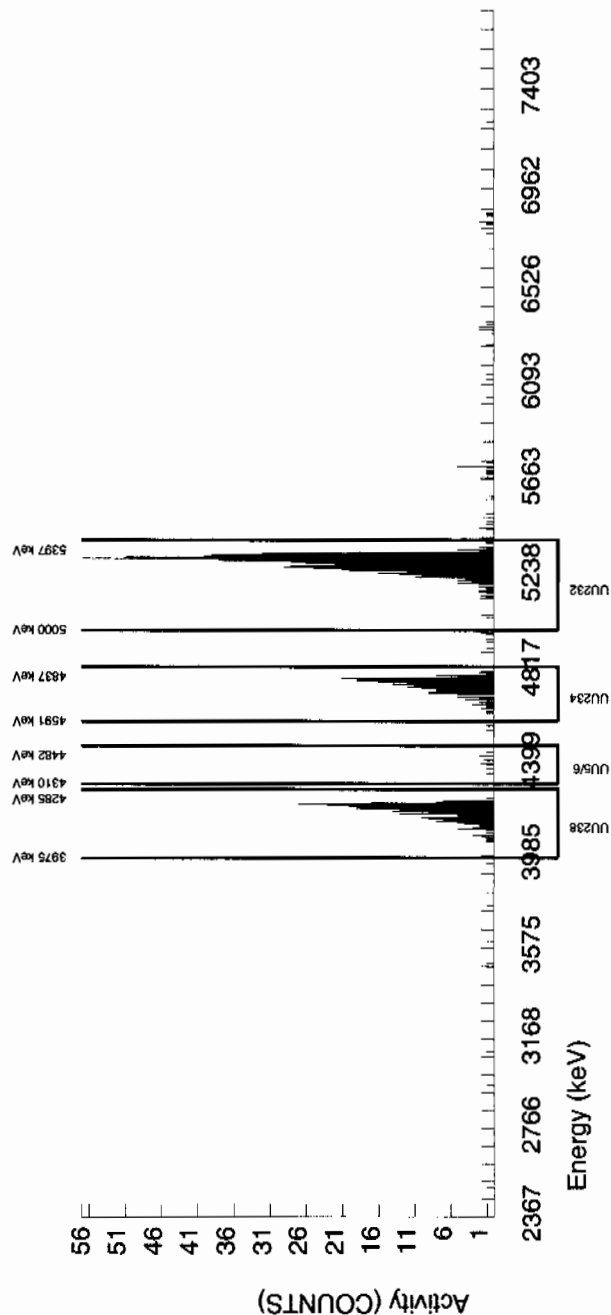


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513016_UU SAMPLE QTY : 0.503 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 54.467		CHAMBER : 118 DETECTOR S/N : 75544 AVERAGE %EFFICIENCY : 25.5870 COUNT DATE : 26-MAR-2010 17:46:48 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B118.CNF:464 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W118.CNF:121 CAL DATE : 19-MAR-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.4525E+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
U232	5302.100	5301.012	55.913
U-3/4	4763.020	4755.264	44.744
U-235	4391.000	4410.727	22.159
U-238	4184.730	4187.743	36.887
	GROSS AREA	NET AREA	BKG AREA
U232	632.000	627.000	5.000
U-3/4	233.000	231.365	1.000
U-235	10.000	10.000	0.000
U-238	278.000	278.000	0.000
	%ABUN	BKG Sg	ACTIVITY pCi/G
U232	100.0000	2.2361	4.03E+00
U-3/4	100.0000	5.4790	1.49E+00
U-235	80.90000	2.4127	7.94E-02
U-238	100.0000	3.6781	1.79E+00
	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G
U232	3.49E-01	3.34E-02	8.43E-02
U-3/4	1.50E-01	8.19E-02	1.81E-01
U-235	2.58E-02	4.46E-02	1.11E-01
U-238	1.74E-01	5.50E-02	1.27E-01
	UNC pCi/G		
U232	1.62E-01		
U-3/4	9.82E-02		
U-235	2.51E-02		
U-238	1.07E-01		

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 965493 SAMPLE ID : S0248513017_UU SAMPLE QTY : 0.501 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 59.197		CHAMBER : 119 DETECTOR S/N : 79450 AVERAGE %EFFICIENCY : 25.9082 COUNT DATE : 26-MAR-2010 17:46:54 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B119.CNF:471 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W119.CNF:123 CAL DATE : 19-MAR-2010
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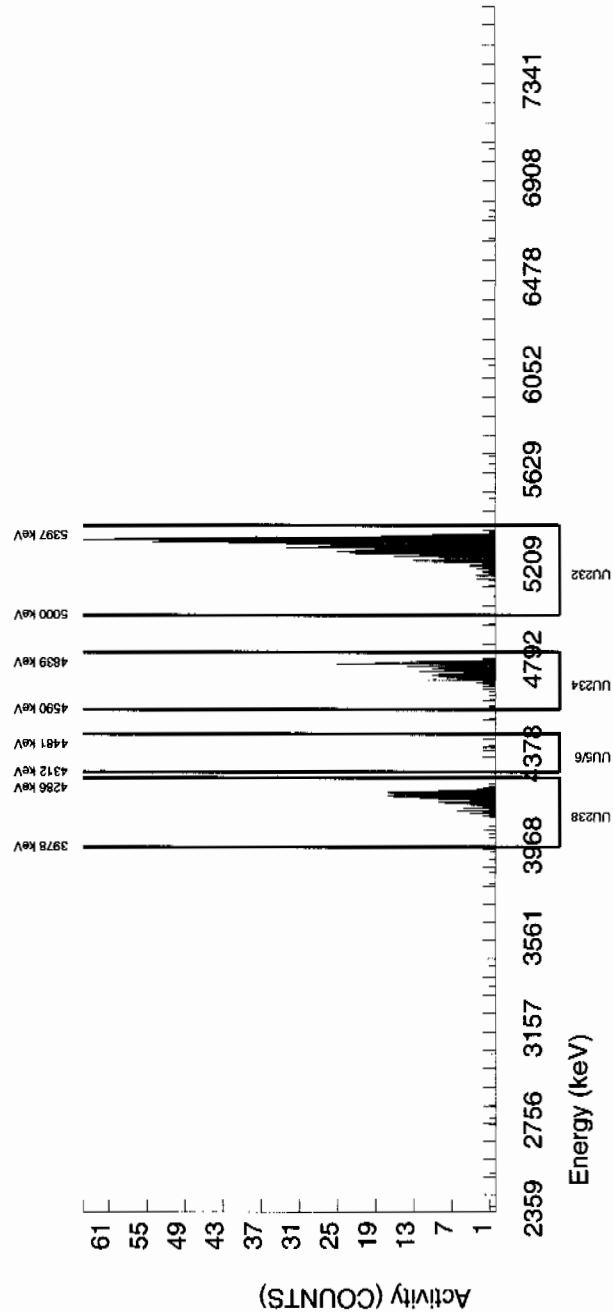
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.6655E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5308.043	45.956	692.000	690.000	2.000	1.4142	100.0000	4.05E+00	3.43E-01	1.93E-02	5.45E-02	1.55E-01
U-3/4	4763.020	4763.053	26.379	217.000	216.301	0.000	5.4790	100.0000	1.27E+00	1.29E-01	7.47E-02	1.65E-01	8.62E-02
U-235	4391.000	4417.903	27.057	9.000	9.000	0.000	2.4127	80.90000	6.52E-02	2.23E-02	4.07E-02	1.01E-01	2.17E-02
U-238	4184.730	4196.552	51.399	194.000	194.000	0.000	3.6781	100.0000	1.14E+00	1.19E-01	5.02E-02	1.16E-01	8.17E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

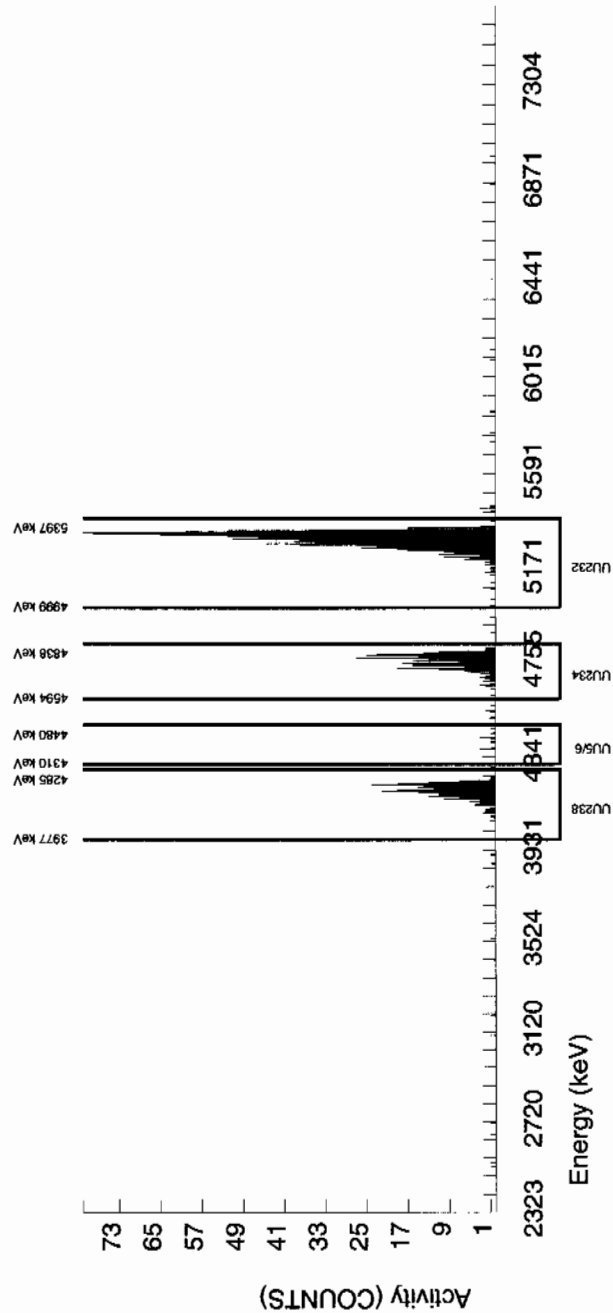


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513018_UU SAMPLE QTY : 0.508 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 78.234				CHAMBER : 120 DETECTOR S/N : 74430 AVERAGE %EFFICIENCY : 26.1668 COUNT DATE : 26-MAR-2010 17:46:58 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B120.CNF:475 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W120.CNF:130 CAL DATE : 19-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 3.5226E+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	5309.702	60.725	924.000	921.000	3.000	1.7321	100.0000	3.99E+00	3.20E-01	1.75E-02	4.66E-02	1.32E-01
U-3/4	4763.020	4762.695	68.345	293.000	291.067	1.000	5.4790	100.0000	1.26E+00	1.18E-01	5.52E-02	1.22E-01	7.42E-02
U-235	4391.000	4409.558	54.361	14.000	14.000	0.000	2.4127	80.90000	7.50E-02	2.08E-02	3.01E-02	7.46E-02	2.00E-02
U-238	4184.730	4194.478	62.255	274.000	272.000	2.000	3.6781	100.0000	1.18E+00	1.12E-01	3.71E-02	8.59E-02	7.20E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area
due to tracer impurity:
U-3/4

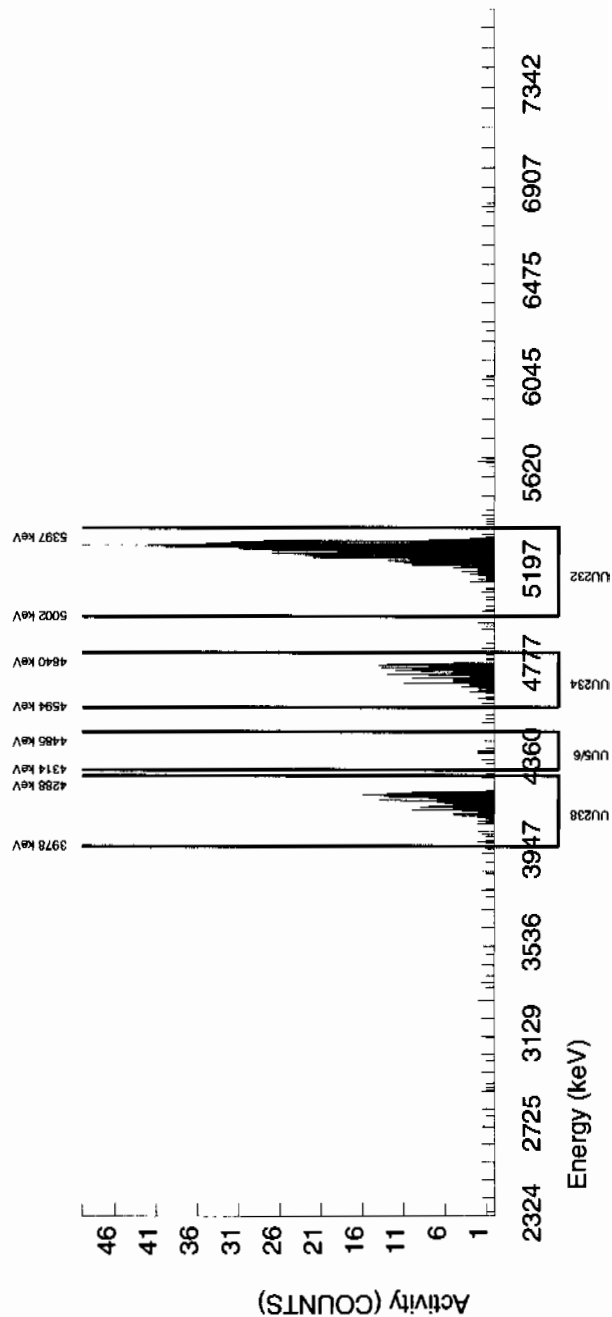


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513019_UU SAMPLE QTY : 0.503 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 25.509		CHAMBER : 116 DETECTOR S/N : 80004 AVERAGE %EFFICIENCY : 25.9691 COUNT DATE : 29-MAR-2010 12:37:53 ELAPSED LIVE TIME(SEC) : 119999.99	LIB FILE : ENV_ALPHA_UU BKG FILE : B116.CNF:454 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W116.CNF:113 CAL DATE : 19-MAR-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 1.1486E+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
U232	5302.100	5294.735	57.652
U-3/4	4763.020	4747.688	86.453
U-235	4391.000	4389.578	19.348
U-238	4184.730	4171.047	78.203
	GROSS AREA	NET AREA	PEAK FWHM
	596.000	596.000	57.652
	184.000	181.396	86.453
	11.000	11.000	19.348
	198.000	194.000	78.203
	BKG Sg	BKG AREA	BKG FWHM
	0.0000	0.000	57.652
	5.4790	2.000	86.453
	2.4127	0.000	19.348
	3.6781	4.000	78.203
	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA
	100.0000	4.03E+00	3.52E-01
	100.0000	1.23E+00	1.32E-01
	80.90000	9.19E-02	2.86E-02
	100.0000	1.31E+00	1.40E-01
	DLC pCi/g	MDC pCi/g	UNC pCi/g
	0.00E+00	1.83E-02	1.65E-01
	1.06E-01	2.29E-01	9.25E-02
	5.74E-02	1.38E-01	2.77E-02
	7.08E-02	1.60E-01	9.70E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area
due to tracer impurity:
U-3/4

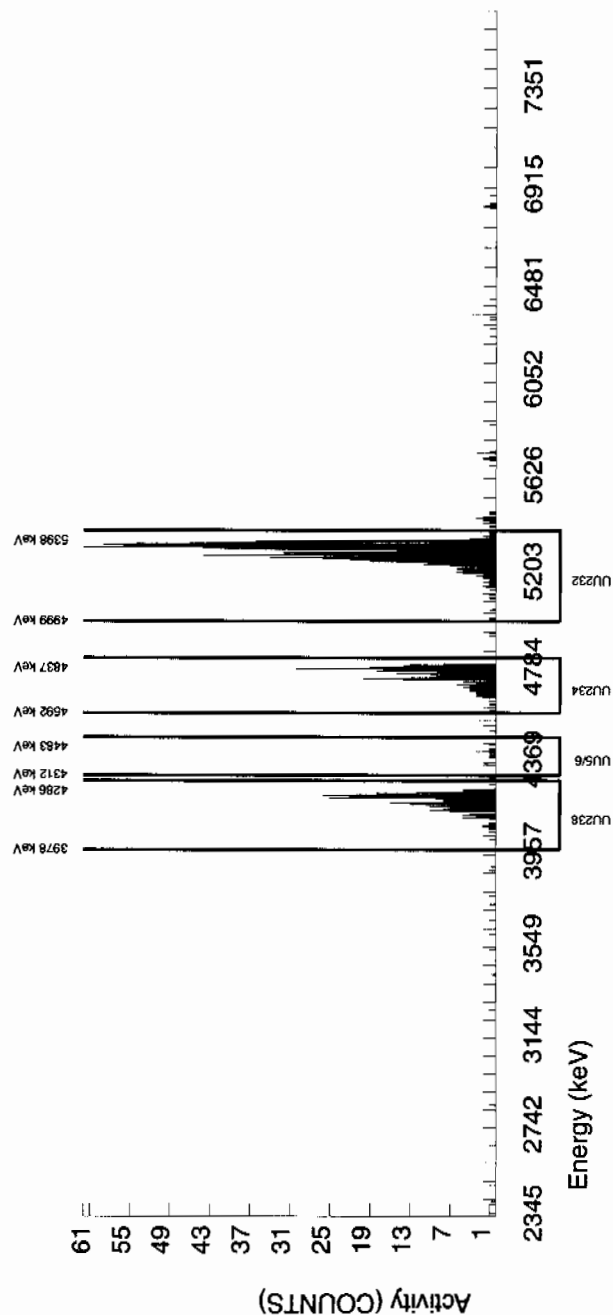


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S0248513020_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 67.188		CHAMBER : 122 DETECTOR S/N : 75546 AVERAGE %EFFICIENCY : 26.3997 COUNT DATE : 26-MAR-2010 17:47:06 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B122.CNF:459 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W122.CNF:124 CAL DATE : 19-MAR-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 3.0253E+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
U232	5302.100	5306.483	72.366
U-3/4	4763.020	4762.929	57.575
U-235	4391.000	4407.687	64.154
U-238	4184.730	4196.104	48.665
	GROSS AREA	NET AREA	BKG AREA
	805.000	798.000	7.000
	279.000	277.192	1.000
	17.000	16.000	1.000
	281.000	281.000	0.000
	BKG Sg	%ABUN	ACTIVITY pCi/G
	2.6458	100.0000	4.01E+00
	5.4790	100.0000	1.39E+00
	2.4127	80.90000	9.93E-02
	3.6781	100.0000	1.41E+00
	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G
	3.31E-01	3.09E-02	7.54E-02
	1.33E-01	6.40E-02	1.42E-01
	2.73E-02	3.48E-02	8.65E-02
	1.34E-01	4.29E-02	9.95E-02
	UNC pCi/G		
	1.43E-01		
	8.39E-02		
	2.63E-02		
	8.41E-02		

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area
due to tracer impurity:
U-3/4

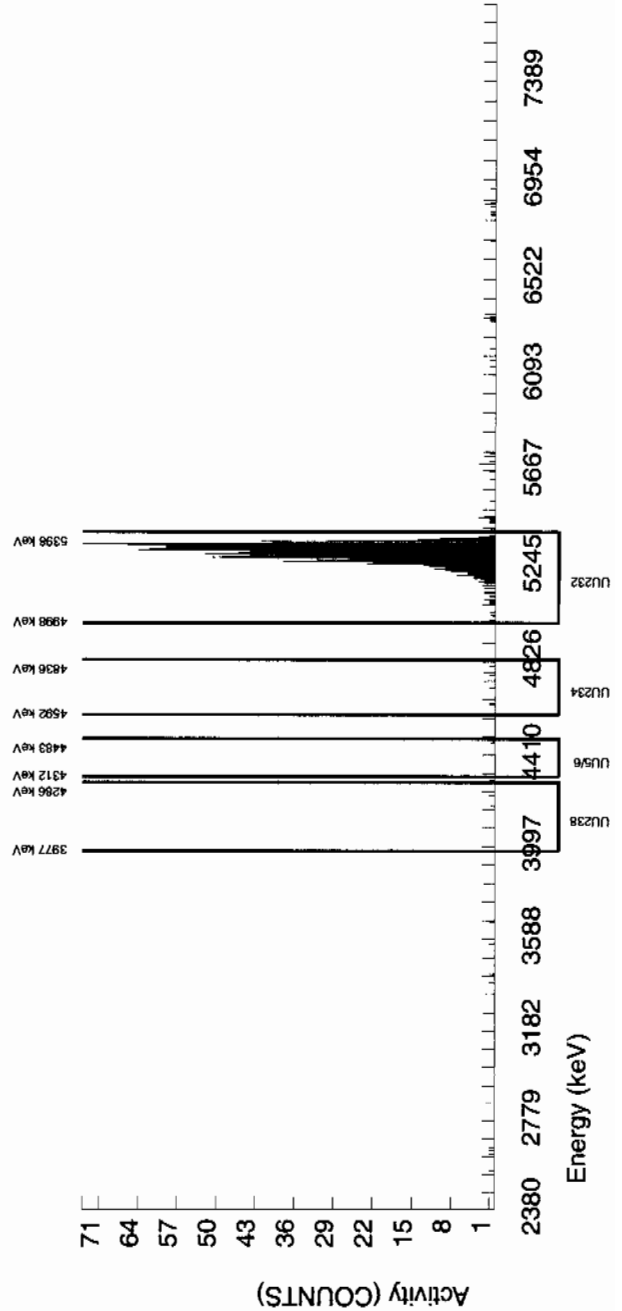


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S1202071658_UU SAMPLE QTY : 1.000 G SAMPLE DATE : 23-MAR-2010 00:00:00 ANALYST : AYB1 % YIELD : 90.826				CHAMBER : 123 DETECTOR S/N : 45-142V3 AVERAGE %EFFICIENCY : 27.2378 COUNT DATE : 26-MAR-2010 17:47:10 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B123.CNF:457 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W123.CNF:120 CAL DATE : 19-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.4995E+00 dpm RESULTS : 4.0867E+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	5308.785	73.678	1118.000	1113.000	5.000	2.2361	100.0000	2.03E+00	1.58E-01	9.47E-03	2.39E-02	6.10E-02
U-3/4	4763.020	4738.055	4.975	7.000	5.872	0.000	5.4790	100.0000	1.07E-02	4.48E-03	2.32E-02	5.14E-02	4.41E-03
U-235	4391.000	4446.358	4.975	4.000	3.000	1.000	2.4127	80.90000	6.75E-03	5.06E-03	1.26E-02	3.14E-02	5.03E-03
U-238	4184.730	4208.551	54.720	2.000	1.000	1.000	3.6781	100.0000	1.82E-03	3.16E-03	1.56E-02	3.61E-02	3.15E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

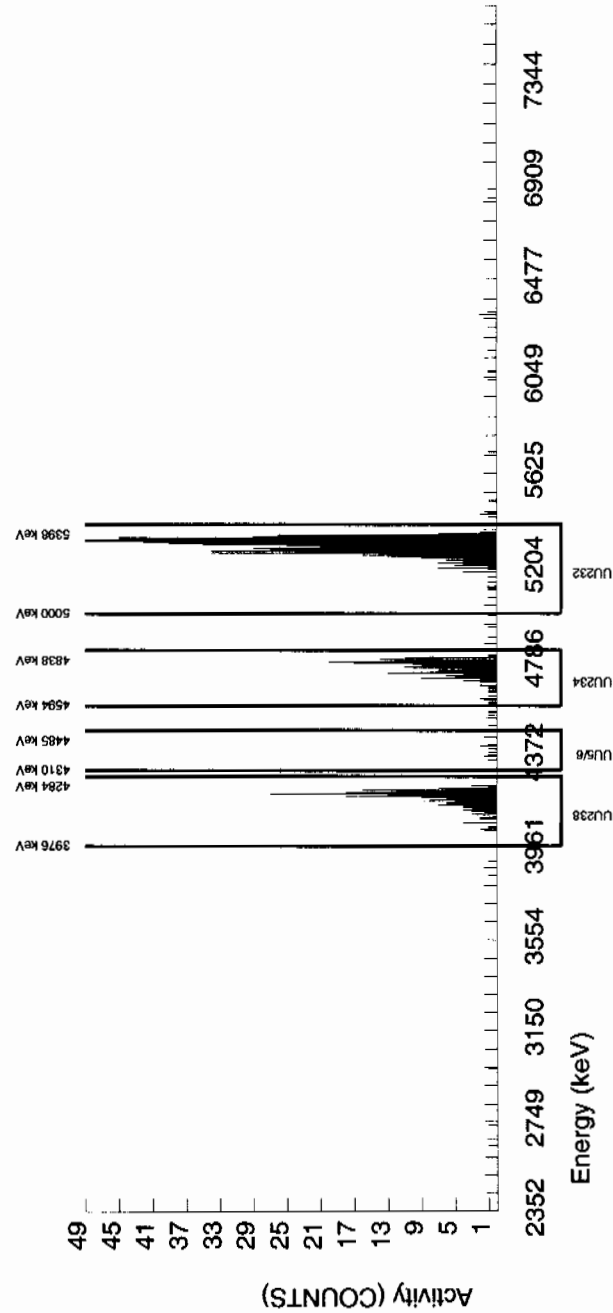


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965493 SAMPLE ID : S1202071659_UU SAMPLE QTY : 0.502 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 55.059				CHAMBER : 125 DETECTOR S/N : 75547 AVERAGE %EFFICIENCY : 27.0077 COUNT DATE : 26-MAR-2010 17:47:13 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B125.CNF;463 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W125.CNF;134 CAL DATE : 18-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5027E+00 dpm RESULTS : 2.4791E+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	5306.660	76.623	673.000	669.000	4.000	2.0000	100.0000	4.04E+00	3.45E-01	2.81E-02	7.25E-02	1.57E-01
U-3/4	4763.020	4761.307	67.209	212.000	209.322	2.000	5.4790	100.0000	1.26E+00	1.30E-01	7.69E-02	1.70E-01	8.81E-02
U-235	4391.000	4402.682	7.256	7.000	7.000	0.000	2.4127	80.90000	5.22E-02	2.01E-02	4.19E-02	1.04E-01	1.97E-02
U-238	4184.730	4190.124	28.337	214.000	212.000	2.000	3.6781	100.0000	1.28E+00	1.32E-01	5.16E-02	1.20E-01	8.87E-02

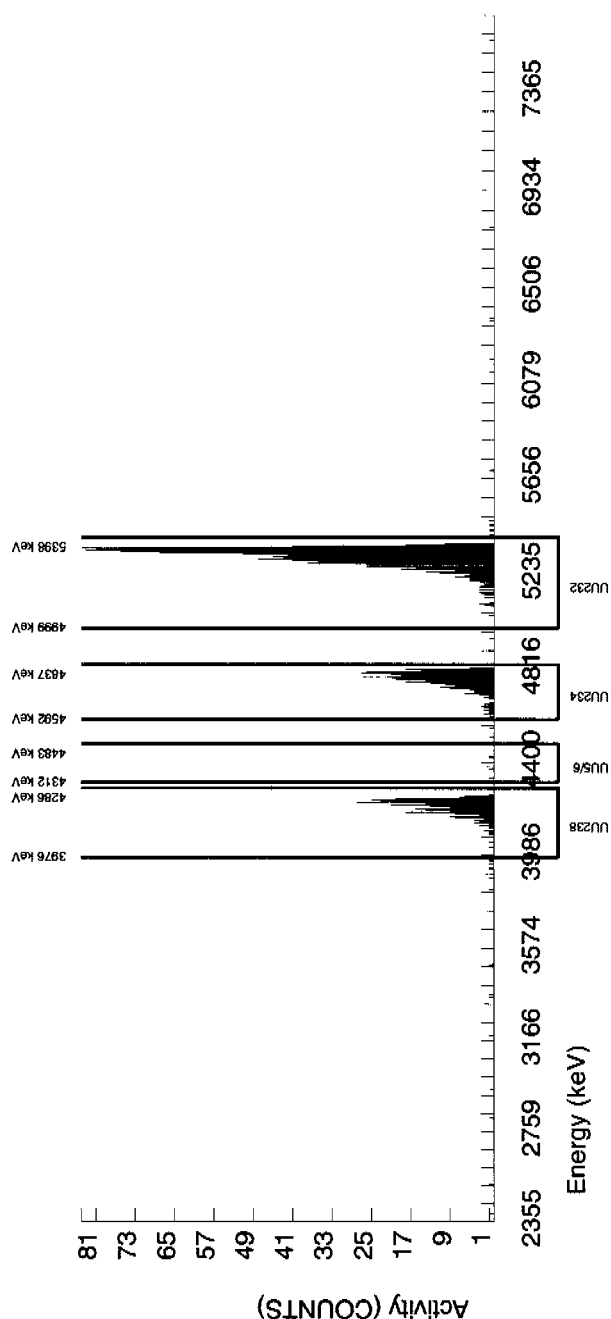
NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
* BKG Sg of U232 calculated as $\sqrt{\text{BKG AREA}}$.
* Corrections made to the following net area
due to tracer impurity:
U-3/4



Radiochemistry Batch Checklist, Rev10

Batch#

970857

Product:

Am

Date:

4/2/10

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%.	✓		case 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.			N/A
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	✓		
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-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

Denise Green 4/2/10

Secondary Review Performed By:

John Bell 4/2/10

Am/Cm Que Sheet

31-MAR-10

Batch #: 970857 Analyst: AYB1 First Client Due Date: 01-APR-10 Internal Due Date: 26-MAR-10
 Tracer(s): Am241/Cm244 Tracer Code: 445-96-2-VV Expiration Date: 03/09/11
 LCS Isotope(s): Am241/Cm244 LCS Code(s): 1 Expiration Date: 1
 Spike Isotope(s): Am241/Cm244 Spike Code(s): 1 Expiration Date: 1
 Prep Date: 3/31/10 Initials: AYB Pipet ID: 1645319 Balance ID: 19350008

Comments:

Vol: 6

Vol(s): 1

Vol(s): 1

Witness: AYB 3/31/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/f)	Am/Cm Det #
248513001-3	RE36-10-7407	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	1		1.251	221
248513002-3	RE36-10-7421	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	2		1.251	222
248513003-3	RE36-10-7422	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	3		1.253	223
248513004-3	RE36-10-7451	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	4		1.259	224
248513005-3	RE36-10-7449	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	5		1.256	225
248513006-3	RE36-10-7445	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	6		1.259	226
248513007-3	RE36-10-7450	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	7		1.251	227
248513008-3	RE36-10-7444	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	8		1.257	228
248513009-3	RE36-10-7448	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	9		1.251	229
248513010-3	RE36-10-7447	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	10		1.259	230
248513011-3	RE36-10-7443	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	11		1.257	231
248513012-3	RE36-10-7452	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	12		1.255	232
248513013-3	RE36-10-7437	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	13		1.257	233
248513014-3	RE36-10-7440	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	14		1.255	234
248513015-3	RE36-10-7435	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	15		1.250	235
248513016-3	RE36-10-7441	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	16		1.254	236
248513017-3	RE36-10-7442	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	17		1.253	237
248513018-3	RE36-10-7436	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	18		1.253	238
248513019-3	RE36-10-7438	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	19		1.253	239
248513020-3	RE36-10-7439	SAMPLE		.05 pCV/g	SOIL	LANL010	25-FEB-10	20		1.253	240
1202085016-1	MB for batch 970857	MB		UCF pCV/g to pCV/soil	QC ACCOUNT	QC ACCOUNT		21		1.234	241
1202085017-3	RE36-10-7407(248513001DUP)	DUP		.05 pCV/g	SOIL	QC ACCOUNT	25-FEB-10	22		1.234	242
1202085018-1	LCS for batch 970857	LCS		UCF pCV/g to pCV/soil	QC ACCOUNT	QC ACCOUNT		23		230.101	243

SEM 0244-B exp: 4/30/20

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

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: AYB 4/2/10

Blank Correction Report

Batch ID 970857

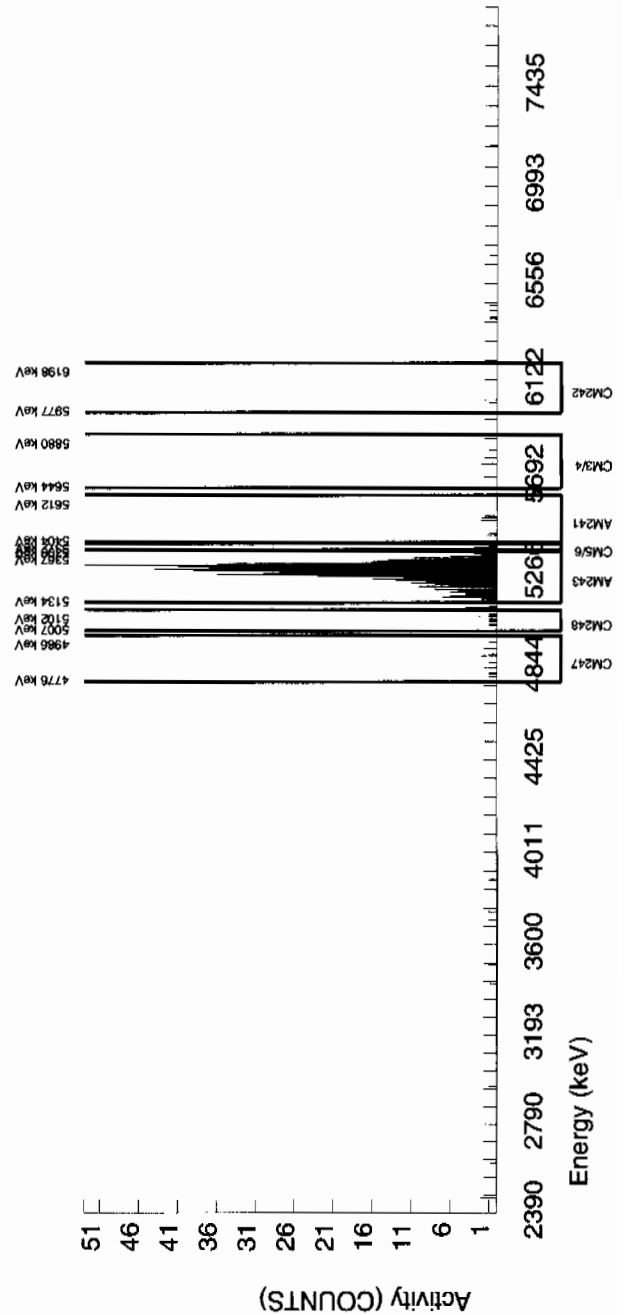
GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202085017	DUP	Americium-241	1.25 g	0.0129	0.00416	0.0172	-.001424	pCi/g	NO
1202085018	LCS	Americium-241	0.101 g	26.3	1.87	0.160	-.01762376	pCi/g	NO
1202085016	MB	Americium-241	1.00 g	-0.00178	0.00123	0.0191	-.00178	pCi/g	NO
248513001	RE36-10-7407	Americium-241	1.25 g	-0.00142	0.00399	0.0189	-.001424	pCi/g	NO
248513002	RE36-10-7421	Americium-241	1.26 g	0.0127	0.00395	0.0184	-.00141270	pCi/g	NO
248513003	RE36-10-7422	Americium-241	1.25 g	0.00251	0.00182	0.0204	-.001424	pCi/g	NO
248513004	RE36-10-7451	Americium-241	1.26 g	0.0146	0.00469	0.0192	-.00141270	pCi/g	NO
248513005	RE36-10-7449	Americium-241	1.26 g	0.0106	0.00347	0.017	-.00141270	pCi/g	NO
248513006	RE36-10-7445	Americium-241	1.26 g	0.00595	0.00273	0.0192	-.00141270	pCi/g	NO
248513007	RE36-10-7450	Americium-241	1.25 g	-0.00142	0.00164	0.0181	-.001424	pCi/g	NO
248513009	RE36-10-7448	Americium-241	1.25 g	0.000622	0.0022	0.016	-.001424	pCi/g	NO
248513010	RE36-10-7447	Americium-241	1.26 g	0.0109	0.0042	0.0174	-.00141270	pCi/g	NO
248513012	RE36-10-7452	Americium-241	1.26 g	0.00213	0.0044	0.0185	-.00141270	pCi/g	NO
248513013	RE36-10-7437	Americium-241	1.26 g	0.0115	0.00389	0.0168	-.00141270	pCi/g	NO
248513014	RE36-10-7440	Americium-241	1.26 g	-0.00245	0.00179	0.0161	-.00141270	pCi/g	NO
248513015	RE36-10-7435	Americium-241	1.26 g	0.00393	0.00256	0.0167	-.00141270	pCi/g	NO
248513016	RE36-10-7441	Americium-241	1.25 g	0.0171	0.00485	0.018	-.001424	pCi/g	NO
248513017	RE36-10-7442	Americium-241	1.25 g	0.00305	0.0043	0.0175	-.001424	pCi/g	NO
248513018	RE36-10-7436	Americium-241	1.25 g	0.00197	0.0015	0.0176	-.001424	pCi/g	NO
248513019	RE36-10-7438	Americium-241	1.25 g	0.00186	0.00143	0.017	-.001424	pCi/g	NO
248513020	RE36-10-7439	Americium-241	1.25 g	0.0169	0.00441	0.0169	-.001424	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 970857 SAMPLE ID : S0248513001_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 75.384				CHAMBER : 221 DETECTOR S/N : 79414 AVERAGE %EFFICIENCY : 39.3817 COUNT DATE : 1-APR-2010 16:30:38 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B221.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W221.CNF:33 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.7152E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5502.725	17.386	6.000	-1.173	6.000	2.7707	99.94000	-1.42E-03	3.99E-03	7.82E-03	1.89E-02	3.99E-03
AM243	5270.000	5276.269	53.329	674.000	674.000	0.000	0.0000	99.78000	8.19E-01	6.12E-02	0.00E+00	3.29E-03	3.16E-02
CM-242	6102.000	6006.271	39.740	2.000	2.000	0.000	4.0092	100.0000	2.83E-03	2.01E-03	1.13E-02	2.59E-02	2.00E-03
CM-3/4	5795.020	5802.075	4.968	4.000	1.000	3.000	4.8510	100.0000	1.22E-03	3.22E-03	1.37E-02	3.07E-02	3.22E-03
CM-5/6	5386.000	5384.040	0.000	10.000	10.000	0.000	6.1294	86.09000	1.41E-02	4.55E-03	2.01E-02	4.40E-02	4.46E-03
CM-247	4946.000	4874.133	7.296	8.000	8.000	0.000	6.3427	79.30000	1.22E-02	4.40E-03	2.26E-02	4.93E-02	4.33E-03
CM-248	5078.600	5065.126	6.158	12.000	12.000	0.000	11.0244	91.00000	1.60E-02	4.73E-03	3.42E-02	7.20E-02	4.62E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 :	970857
SAMPLE ID :	S0248513002_AM
SAMPLE QTY :	1.257 G
SAMPLE DATE :	25-FEB-2010 00:00:00
ANALYST :	AYB1
% YIELD :	81.231

CHAMBER	:	222
DETECTOR S/N	:	79415
AVERAGE %EFFICIENCY	:	37.5234
COUNT DATE	:	1-APR-2010 16:30:39
ELAPSED LIVE TIME(SEC)	:	60000.00

LIB FILE	:	ENV_ALPHA_AM
BKG FILE	:	B222.CNF:93
BKG DATE	:	28-MAR-2010
BKG LIVE TIME(SEC)	:	60000.00
EFF FILE	:	W222.CNF:33
CAL DATE	:	30-MAR-2010

TRACER	
ID	: 445-96-2-VV
NUCLIDE	: AM243
NOMINAL	: 2.2753E+00
RESULTS	: 1.8483E+00

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

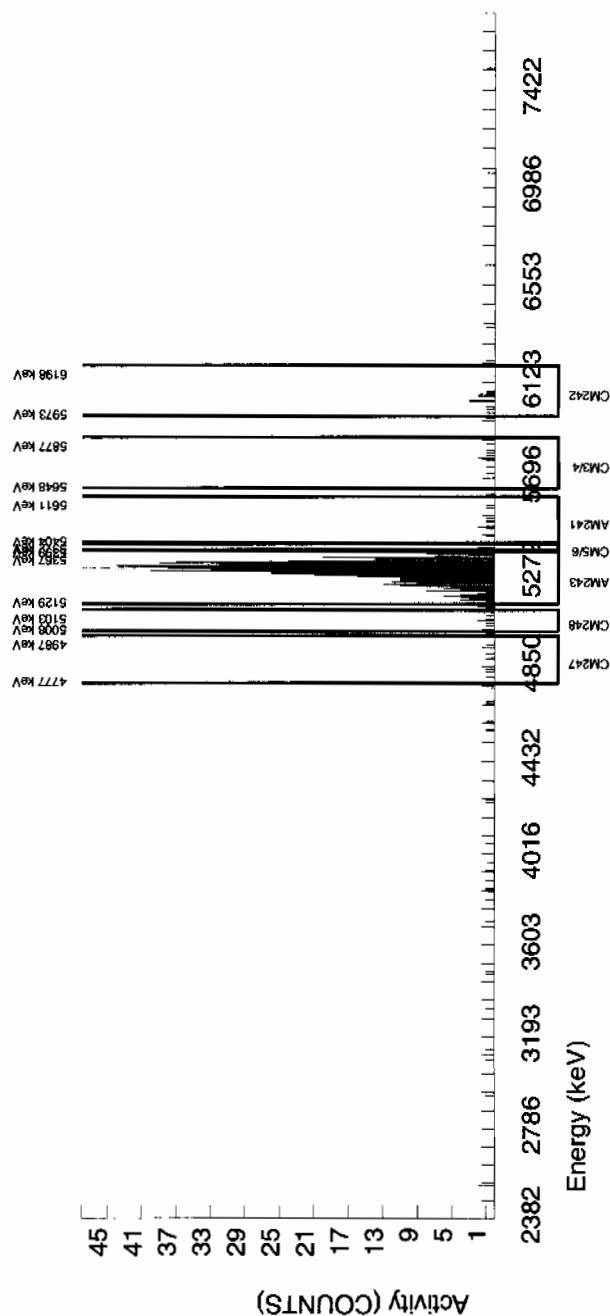
LCS/LCSD	
ID	: 0244-B
NUCLIDE	: AM-241
NOMINAL	: 3.3152E

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	5501.061	10.067	12.000	10.796	0.000	2.7707	99.94000	1.27E-02	3.95E-03	7.58E-03	1.84E-02	3.87E-03
AM-243	5270.000	5284.258	56.804	692.000	692.000	0.000	0.0000	99.78000	8.15E-01	6.05E-02	0.00E+00	3.19E-03	3.10E-02
CM-242	6102.000	6049.004	33.977	18.000	18.000	0.000	4.0092	100.0000	2.47E-02	6.02E-03	1.10E-02	2.51E-02	5.81E-03
CM-3/4	5795.020	5792.350	5.034	9.000	7.000	2.000	4.8510	100.0000	8.26E-03	3.95E-03	1.33E-02	2.97E-02	3.91E-03
CM-5/6	5386.000	5380.650	0.000	13.000	12.000	1.000	6.1294	86.09000	1.64E-02	5.22E-03	1.95E-02	4.26E-02	5.11E-03
CM-247	4946.000	4896.254	0.000	9.000	9.000	0.000	6.3427	79.30000	1.33E-02	4.53E-03	2.19E-02	4.78E-02	4.45E-03
CM-248	5078.600	5048.659	0.000	20.000	20.000	0.000	11.0244	91.00000	2.58E-02	6.01E-03	3.31E-02	6.98E-02	5.78E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
* BKG 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	: 970857
SAMPLE ID	: S0248513003_AM
SAMPLE QTY	: 1.253 G
SAMPLE DATE	: 25-FEB-2010 00:00
ANALYST	: AYB1
% YIELD	: 69.290

BATCH NUMBER	: 970857
SAMPLE ID	: S0248513003_AM
SAMPLE QTY	: 1.253 G
SAMPLE DATE	: 25-FEB-2010 00:00:00
ANALYST	: AYB1
% YIELD	: 69.290

CHAMBER	:	223
DETECTOR S/N	:	79416
AVERAGE %EFFICIENCY	:	39.6668
COUNT DATE	:	1-APR-2010 16:30:42
ELAPSED LIVE TIME(SEC)	:	60000.00

LIB FILE	:	ENV_ALPHA_AM
BKG FILE	:	B223.CNF;95
BKG DATE	:	28-MAR-2010
BKG LIVE TIME(SEC)	:	60000.00
EFF FILE	:	W223.CNF;33
CAL DATE	:	30-MAR-2010

TRACER	:	445-96-2-VV
ID	:	AM243
NUCLIDE	:	2.2753E+00
NOMINAL	:	1.5766E+00
RESULTS	:	

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

LCS/LCSD	
ID	: 0244-B
NUCLIDE	: AM-241
NOMINAL	: 3.3152E

NUCLIDE ACTIVITY SUMMARY

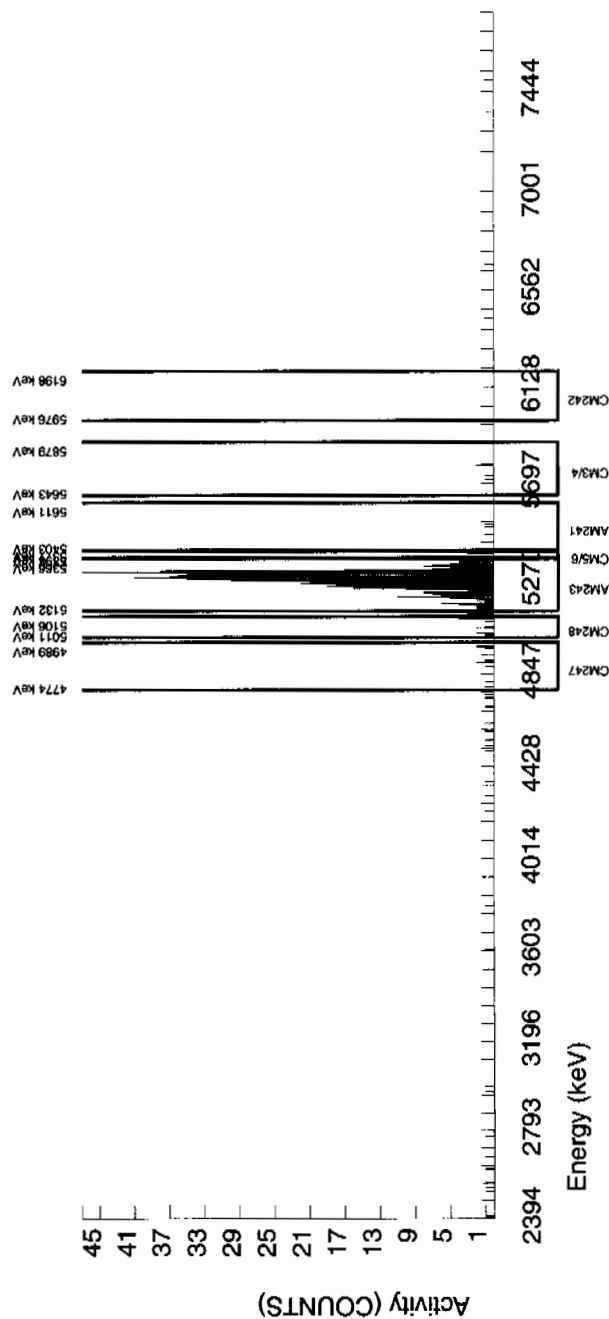
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
AM-241	5479.150	5502.521	44.636	3.000	1.914	0.000	2.7707	99.94000	2.51E-03	1.82E-03	8.44E-03	2.04E-02	1.81E-03
AM243	5270.000	5279.119	50.938	624.000	624.000	0.000	0.0000	99.78000	8.18E-01	6.24E-02	0.00E+00	3.55E-03	3.27E-02
CM-242	6102.000	6087.120	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.53E-03	1.22E-02	2.79E-02	1.52E-03
CM-3/4	5795.020	5754.521	4.960	4.000	4.000	0.000	4.8510	100.0000	5.25E-03	2.65E-03	1.48E-02	3.31E-02	2.63E-03
CM-5/6	5386.000	5379.241	0.000	13.000	13.000	0.000	6.1294	86.09000	1.98E-02	5.63E-03	2.17E-02	4.74E-02	5.48E-03
CM-247	4946.000	4922.555	74.291	13.000	13.000	0.000	6.3427	79.30000	2.14E-02	6.11E-03	2.43E-02	5.31E-02	5.95E-03
CM-248	5078.600	5074.327	0.000	16.000	16.000	0.000	11.0244	91.00000	2.30E-02	5.94E-03	3.69E-02	7.76E-02	5.75E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sq 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

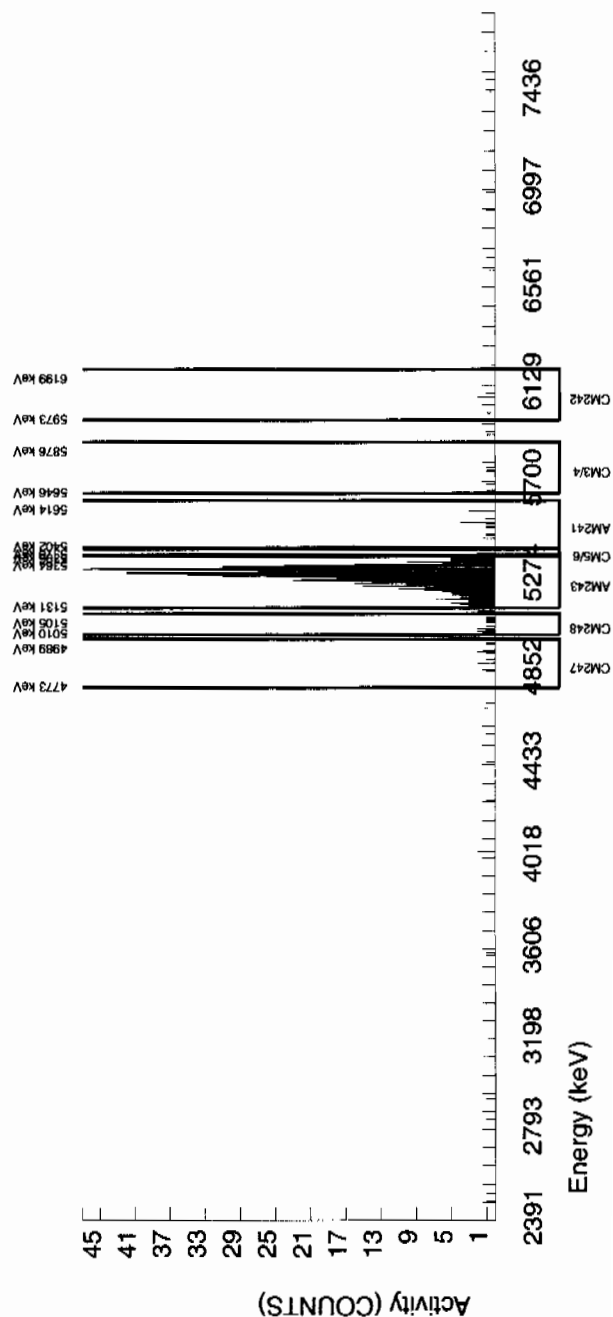
BATCH NUMBER : 970857				CHAMBER : 224				LIB FILE : ENV_ALPHA_AM					
SAMPLE ID : S0248513004_AM				DETECTOR S/N : 79417				BKG FILE : B224.CNF.93					
SAMPLE QTY : 1.259 G				AVERAGE %EFFICIENCY : 38.5716				BKG DATE : 28-MAR-2010					
SAMPLE DATE : 25-FEB-2010 00:00:00				COUNT DATE : 1-APR-2010 16:30:45				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : AYB1				ELAPSED LIVE TIME(SEC) : 60000.00				EFF FILE : W224.CNF.33					
% YIELD : 75.255								CAL DATE : 30-MAR-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 445-96-2-VV				ID : 0244-B				ID : 0244-B					
NUCLIDE : AM243				NUCLIDE : AM-241				NUCLIDE : AM-241					
NOMINAL : 2.2753E+00 dpm				NOMINAL : 3.3152E+01 pCi/G				NOMINAL : 3.3152E+01 pCi/G					
RESULTS : 1.7123E+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	5513.227	54.951	14.000	11.853	1.000	2.7707	99.94000	1.46E-02	4.69E-03	7.95E-03	1.92E-02	4.59E-03
AM-243	5270.000	5281.183	51.831	660.000	659.000	1.000	1.0000	99.78000	8.14E-01	6.12E-02	2.87E-03	9.10E-03	3.18E-02
CM-242	6102.000	6066.889	4.998	4.000	3.000	1.000	4.0092	100.0000	4.31E-03	3.22E-03	1.15E-02	2.63E-02	3.21E-03
CM-3/4	5795.020	5737.212	119.958	6.000	6.000	0.000	4.8510	100.0000	7.42E-03	3.07E-03	1.39E-02	3.12E-02	3.03E-03
CM-5/6	5386.000	5376.811	0.000	15.000	15.000	0.000	6.1294	86.09000	2.15E-02	5.71E-03	2.04E-02	4.47E-02	5.55E-03
CM-247	4946.000	4921.122	49.983	9.000	9.000	0.000	6.3427	79.30000	1.40E-02	4.75E-03	2.29E-02	5.01E-02	4.66E-03
CM-248	5078.600	5062.805	0.000	16.000	16.000	0.000	11.0244	91.00000	2.17E-02	5.59E-03	3.47E-02	7.31E-02	5.42E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG 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 : 970857 SAMPLE ID : S0248513005_AM SAMPLE QTY : 1.256 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 83.907</p>	<p>CHAMBER : 225 DETECTOR S/N : 79418 AVERAGE %EFFICIENCY : 39.1612 COUNT DATE : 1-APR-2010 16:30:47 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B225.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W225.CNF:33 CAL DATE : 30-MAR-2010</p>
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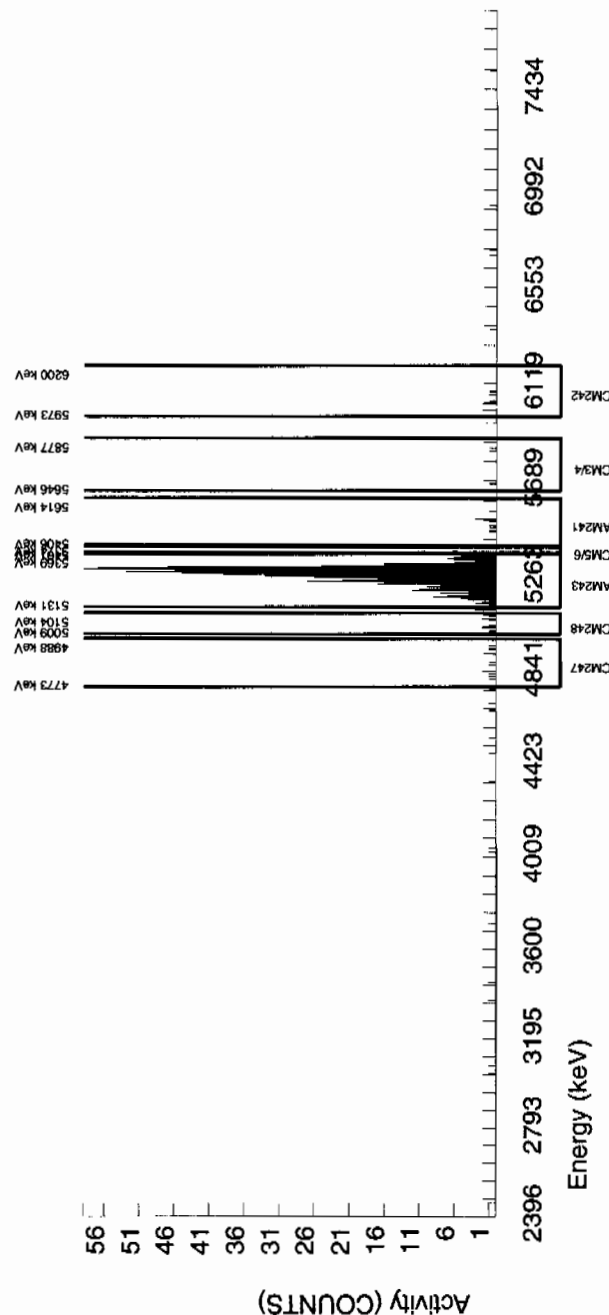
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9092E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>
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NUCLIDE ACTIVITY 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	5499.040	4.938	11.000	9.702	0.000	2.7707	99.94000	1.06E-02	3.47E-03	7.04E-03	1.70E-02	3.40E-03
AM243	5270.000	5280.413	45.429	748.000	746.000	2.000	1.4142	99.78000	8.16E-01	5.94E-02	3.60E-03	1.02E-02	3.00E-02
CM-242	6102.000	6026.029	56.783	13.000	13.000	0.000	4.0092	100.0000	1.65E-02	4.70E-03	1.02E-02	2.33E-02	4.59E-03
CM-3/4	5795.020	5782.601	148.130	4.000	4.000	0.000	4.8510	100.0000	4.38E-03	2.21E-03	1.23E-02	2.76E-02	2.19E-03
CM-5/6	5386.000	5376.011	0.000	6.000	6.000	0.000	6.1294	86.09000	7.61E-03	3.14E-03	1.81E-02	3.96E-02	3.11E-03
CM-247	4946.000	4887.335	64.190	13.000	12.000	1.000	6.3427	79.30000	1.65E-02	5.25E-03	2.03E-02	4.43E-02	5.15E-03
CM-248	5078.600	5053.964	64.087	16.000	16.000	0.000	11.0244	91.00000	1.92E-02	4.95E-03	3.08E-02	6.48E-02	4.80E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241

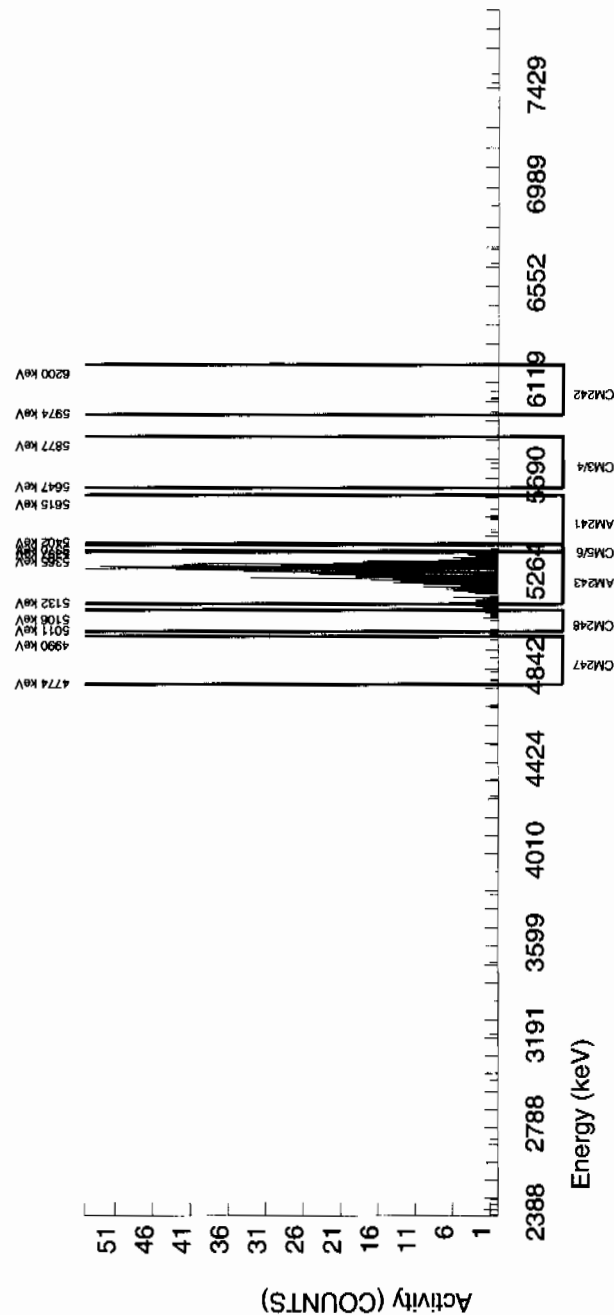


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 970857 SAMPLE ID : S0248513006_AM SAMPLE QTY : 1.259 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 74.702				CHAMBER : 226 DETECTOR S/N : 79419 AVERAGE %EFFICIENCY : 39.0338 COUNT DATE : 1-APR-2010 16:30:50 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B226.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W226.CNF:33 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.6997E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5507.796	99.509	6.000	4.848	0.000	2.7707	99.94000	5.95E-03	2.73E-03	7.91E-03	1.92E-02	2.70E-03
AM243	5270.000	5279.553	64.727	662.000	662.000	0.000	0.0000	99.78000	8.14E-01	6.11E-02	0.00E+00	3.33E-03	3.16E-02
CM-242	6102.000	6046.588	89.558	4.000	4.000	0.000	4.0092	100.00000	5.72E-03	2.88E-03	1.14E-02	2.62E-02	2.86E-03
CM-3/4	5795.020	5777.358	89.558	3.000	3.000	0.000	4.8510	100.00000	3.69E-03	2.15E-03	1.38E-02	3.10E-02	2.13E-03
CM-5/6	5386.000	5374.811	0.000	11.000	11.000	0.000	6.1294	86.09000	1.57E-02	4.83E-03	2.03E-02	4.45E-02	4.73E-03
CM-247	4946.000	4874.746	178.494	7.000	5.000	2.000	6.3427	79.30000	7.74E-03	4.67E-03	2.28E-02	4.99E-02	4.64E-03
CM-248	5078.600	5067.052	9.951	9.000	9.000	0.000	11.0244	91.00000	1.21E-02	4.12E-03	3.46E-02	7.28E-02	4.05E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241

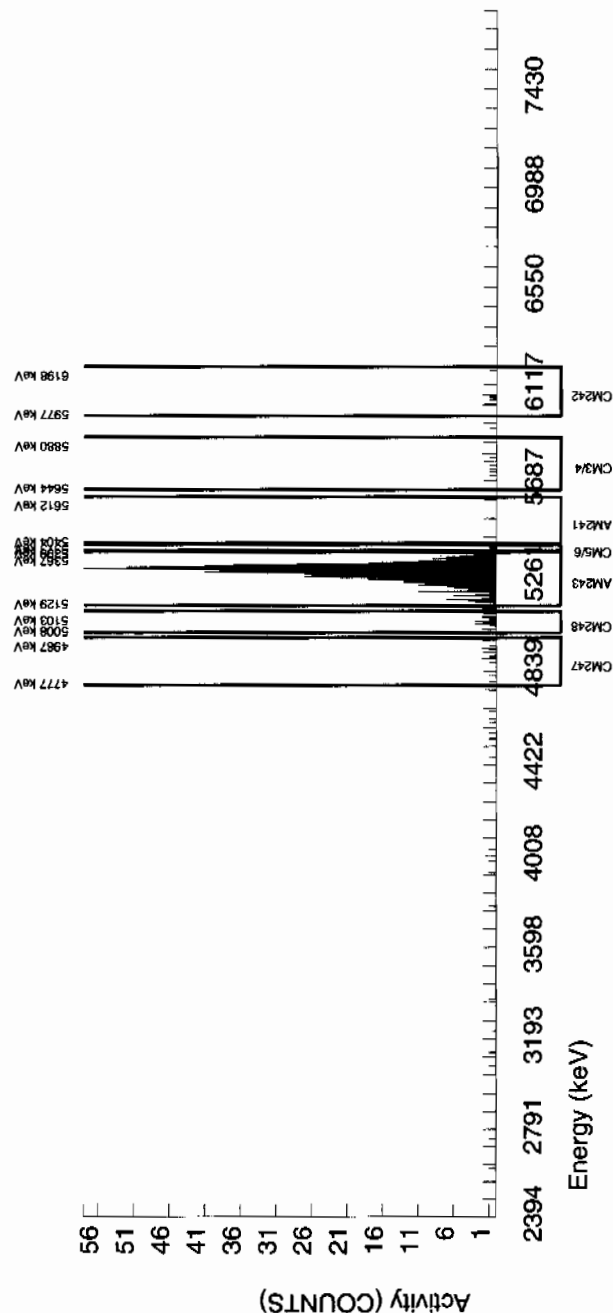


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 970857 SAMPLE ID : S0248513007_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 81.343				CHAMBER : 227 DETECTOR S/N : 79420 AVERAGE %EFFICIENCY : 38.2299 COUNT DATE : 1-APR-2010 16:30:52 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B227.CNF.93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W227.CNF.33 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.8508E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5516.122	4.944	1.000	-1.228	1.000	2.7707	99.94000	-1.42E-03	1.64E-03	7.47E-03	1.81E-02	1.64E-03
AM-243	5270.000	5277.732	42.277	708.000	706.000	2.000	1.4142	99.78000	8.19E-01	6.05E-02	3.82E-03	1.08E-02	3.09E-02
CM-242	6102.000	6051.496	87.761	12.000	11.000	1.000	4.0092	100.0000	1.48E-02	4.96E-03	1.08E-02	2.47E-02	4.87E-03
CM-3/4	5795.020	5758.845	4.944	9.000	9.000	0.000	4.8510	100.0000	1.05E-02	3.55E-03	1.31E-02	2.93E-02	3.49E-03
CM-5/6	5386.000	5380.050	0.000	12.000	12.000	0.000	6.1294	86.09000	1.61E-02	4.77E-03	1.92E-02	4.20E-02	4.66E-03
CM-247	4946.000	4894.402	79.006	17.000	17.000	0.000	6.3427	79.30000	2.48E-02	6.22E-03	2.15E-02	4.70E-02	6.02E-03
CM-248	5078.600	5066.867	0.000	21.000	21.000	0.000	11.0244	91.00000	2.67E-02	6.07E-03	3.26E-02	6.87E-02	5.83E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 970857 SAMPLE ID : S0248513009_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 91.539</p>	<p>CHAMBER : 229 DETECTOR S/N : 79422 AVERAGE %EFFICIENCY : 38.4945 COUNT DATE : 1-APR-2010 16:30:57 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B229.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W229.CNF:33 CAL DATE : 30-MAR-2010</p>
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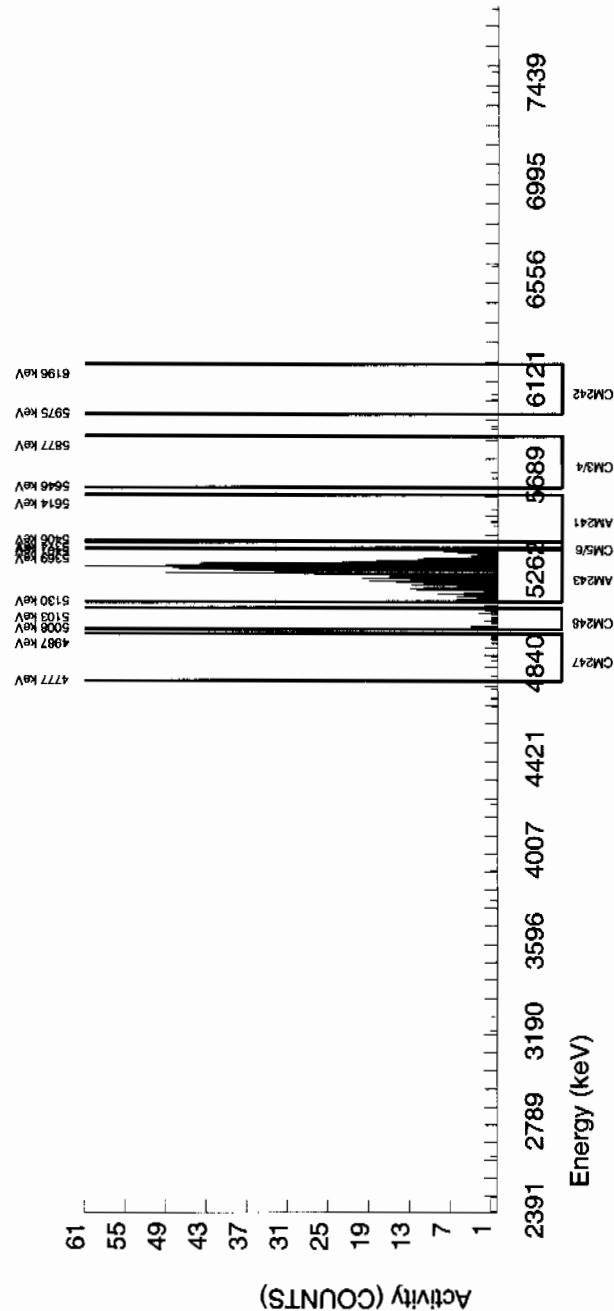
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0828E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>
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NUCLIDE ACTIVITY 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	5507.415	69.214	4.000	0.608	2.000	2.7707	99.94000	6.22E-04	2.20E-03	6.59E-03	1.60E-02	2.20E-03
AM243	5270.000	5270.691	47.242	801.000	800.000	1.000	1.0000	99.78000	8.19E-01	5.86E-02	2.38E-03	7.54E-03	2.90E-02
CM-242	6102.000	6058.283	29.863	2.000	1.000	1.000	4.0092	100.0000	1.19E-03	2.06E-03	9.53E-03	2.18E-02	2.06E-03
CM-3/4	5795.020	5751.099	59.326	2.000	2.000	0.000	4.8510	100.0000	2.05E-03	1.46E-03	1.15E-02	2.58E-02	1.45E-03
CM-5/6	5386.000	5380.312	5.546	6.000	6.000	0.000	6.1294	86.09000	7.12E-03	2.94E-03	1.69E-02	3.71E-02	2.91E-03
CM-247	4946.000	4912.468	7.261	12.000	12.000	0.000	6.3427	79.30000	1.55E-02	4.57E-03	1.90E-02	4.15E-02	4.46E-03
CM-248	5078.600	5055.568	63.343	22.000	22.000	0.000	11.0244	91.00000	2.47E-02	5.49E-03	2.88E-02	6.06E-02	5.27E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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

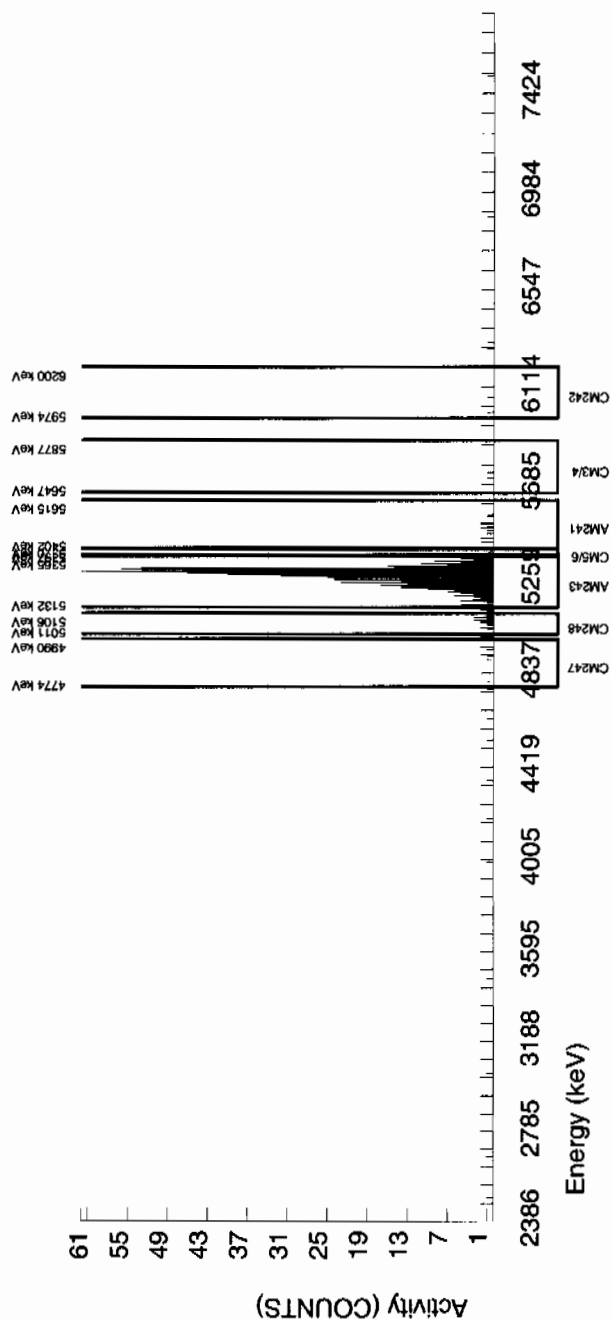
BATCH NUMBER : 970857 SAMPLE ID : S0248513010_AM SAMPLE QTY : 1.259 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 83.790	CHAMBER : 230 DETECTOR S/N : 79423 AVERAGE %EFFICIENCY : 38.2171 COUNT DATE : 1-APR-2010 16:30:59 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B230.CNF;93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W230.CNF;33 CAL DATE : 30-MAR-2010											
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9065E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5502.126	69.535	13.000	9.735	2.000	2.7707	99.94000	1.09E-02	4.20E-03	7.21E-03	1.74E-02	4.14E-03
AM-243	5270.000	5281.504	38.168	728.000	727.000	1.000	1.0000	99.78000	8.14E-01	5.97E-02	2.60E-03	8.24E-03	3.02E-02
CM-242	6102.000	6038.540	64.569	2.000	2.000	0.000	4.0092	100.0000	2.60E-03	1.85E-03	1.04E-02	2.39E-02	1.84E-03
CM-3/4	5795.020	5732.767	29.801	3.000	3.000	0.000	4.8510	100.0000	3.36E-03	1.95E-03	1.26E-02	2.82E-02	1.94E-03
CM-5/6	5386.000	5376.373	0.000	9.000	9.000	0.000	6.1294	86.09000	1.17E-02	3.96E-03	1.85E-02	4.05E-02	3.89E-03
CM-247	4946.000	4916.163	4.967	6.000	5.000	1.000	6.3427	79.30000	7.04E-03	3.75E-03	2.08E-02	4.54E-02	3.73E-03
CM-248	5078.600	5069.564	49.461	23.000	23.000	0.000	11.0244	91.00000	2.82E-02	6.15E-03	3.15E-02	6.63E-02	5.89E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

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

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

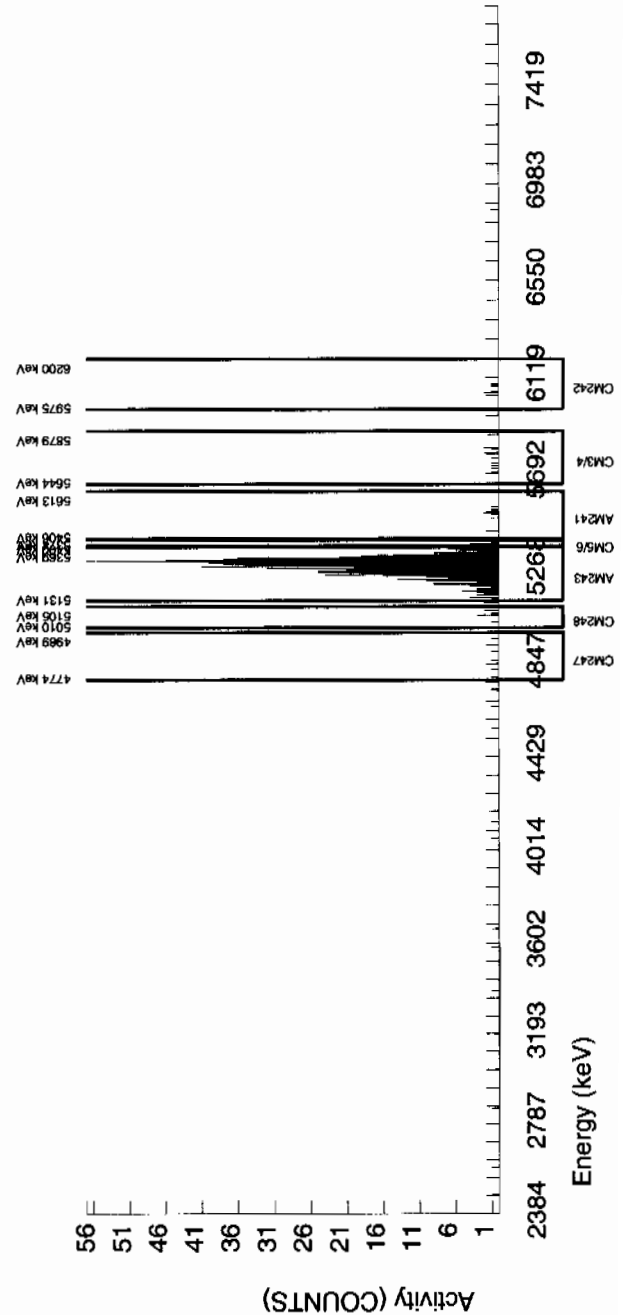


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 970857 SAMPLE ID : S0248513012_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 78.084				CHAMBER : 232 DETECTOR S/N : 79425 AVERAGE %EFFICIENCY : 38.8663 COUNT DATE : 1-APR-2010 16:31:04 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B232.CNF;95 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W232.CNF;33 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.7767E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5516.969	10.033	9.000	1.801	6.000	2.7707	99.94000	2.13E-03	4.40E-03	7.63E-03	1.85E-02	4.40E-03
AM243	5270.000	5286.964	49.364	690.000	689.000	1.000	1.0000	99.78000	8.17E-01	6.07E-02	2.76E-03	8.73E-03	3.12E-02
CM-242	6102.000	6055.139	7.368	9.000	9.000	0.000	4.0092	100.0000	1.24E-02	4.21E-03	1.10E-02	2.53E-02	4.14E-03
CM-3/4	5795.020	5765.206	25.081	10.000	9.000	1.000	4.8510	100.0000	1.07E-02	4.00E-03	1.33E-02	2.99E-02	3.94E-03
CM-5/6	5386.000	5381.998	0.000	19.000	19.000	0.000	6.1294	86.09000	2.61E-02	6.22E-03	1.96E-02	4.29E-02	5.99E-03
CM-247	4946.000	4872.184	0.000	9.000	8.000	1.000	6.3427	79.30000	1.19E-02	4.78E-03	2.20E-02	4.81E-02	4.72E-03
CM-248	5078.600	5073.065	25.081	11.000	11.000	0.000	11.0244	91.00000	1.43E-02	4.41E-03	3.33E-02	7.02E-02	4.31E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 970857				CHAMBER : 233				LIB FILE : ENV_ALPHA_AM					
SAMPLE ID : S0248513013_AM				DETECTOR S/N : 79426				BKG FILE : B233.CNF;94					
SAMPLE QTY : 1.257 G				AVERAGE %EFFICIENCY : 39.1441				BKG DATE : 28-MAR-2010					
SAMPLE DATE : 25-FEB-2010 00:00:00				COUNT DATE : 1-APR-2010 16:31:07				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : AYB1				ELAPSED LIVE TIME(SEC) : 60000.00				EFF FILE : W233.CNF;34					
% YIELD : 85.294								CAL DATE : 30-MAR-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 445-96-2-VV				ID : 0244-B				ID : 0244-B					
NUCLIDE : AM243				NUCLIDE : AM-241				NUCLIDE : AM-241					
NOMINAL : 2.2753E+00 dpm				NOMINAL : 3.3152E+01 pCi/G				NOMINAL : 3.3152E+01 pCi/G					
RESULTS : 1.9407E+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	5523.139	56.582	13.000	10.681	1.000	2.7707	99.94000	1.15E-02	3.89E-03	6.92E-03	1.68E-02	3.83E-03
AM243	5270.000	5276.791	44.247	760.000	758.000	2.000	1.4142	99.78000	8.15E-01	5.92E-02	3.54E-03	9.99E-03	2.97E-02
CM-242	6102.000	6035.222	93.484	5.000	5.000	0.000	4.0092	100.0000	6.26E-03	2.83E-03	1.00E-02	2.29E-02	2.80E-02
CM-3/4	5795.020	5715.917	118.085	5.000	5.000	0.000	4.8510	100.0000	5.39E-03	2.43E-03	1.21E-02	2.71E-02	2.41E-03
CM-5/6	5386.000	5376.982	0.000	13.000	13.000	0.000	6.1294	86.09000	1.62E-02	4.61E-03	1.78E-02	3.89E-02	4.50E-03
CM-247	4946.000	4913.105	4.920	6.000	6.000	0.000	6.3427	79.30000	8.12E-03	3.35E-03	2.00E-02	4.36E-02	3.32E-03
CM-248	5078.600	5072.132	0.000	16.000	16.000	0.000	11.0244	91.00000	1.89E-02	4.86E-03	3.02E-02	6.37E-02	4.72E-03

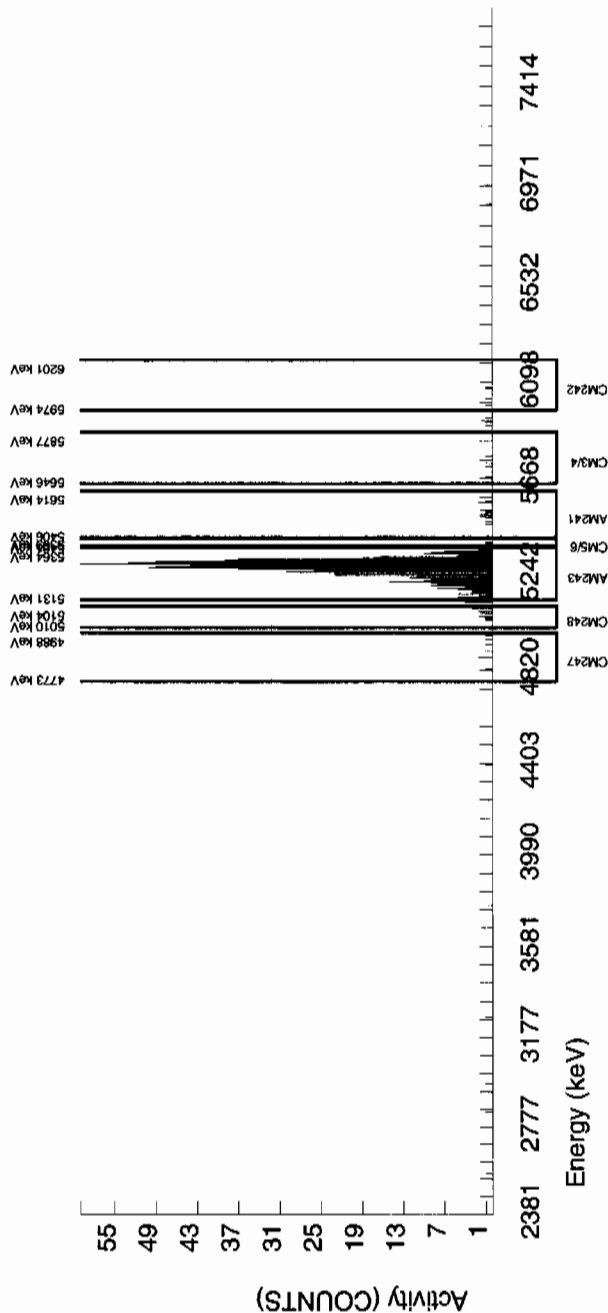
NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

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

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 970857 SAMPLE ID : S0248513014_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 87.509</p>	<p>CHAMBER : 234 DETECTOR S/N : 79427 AVERAGE %EFFICIENCY : 39.6637 COUNT DATE : 1-APR-2010 16:31:09 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B234.CNF:94 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W234.CNF:33 CAL DATE : 30-MAR-2010</p>
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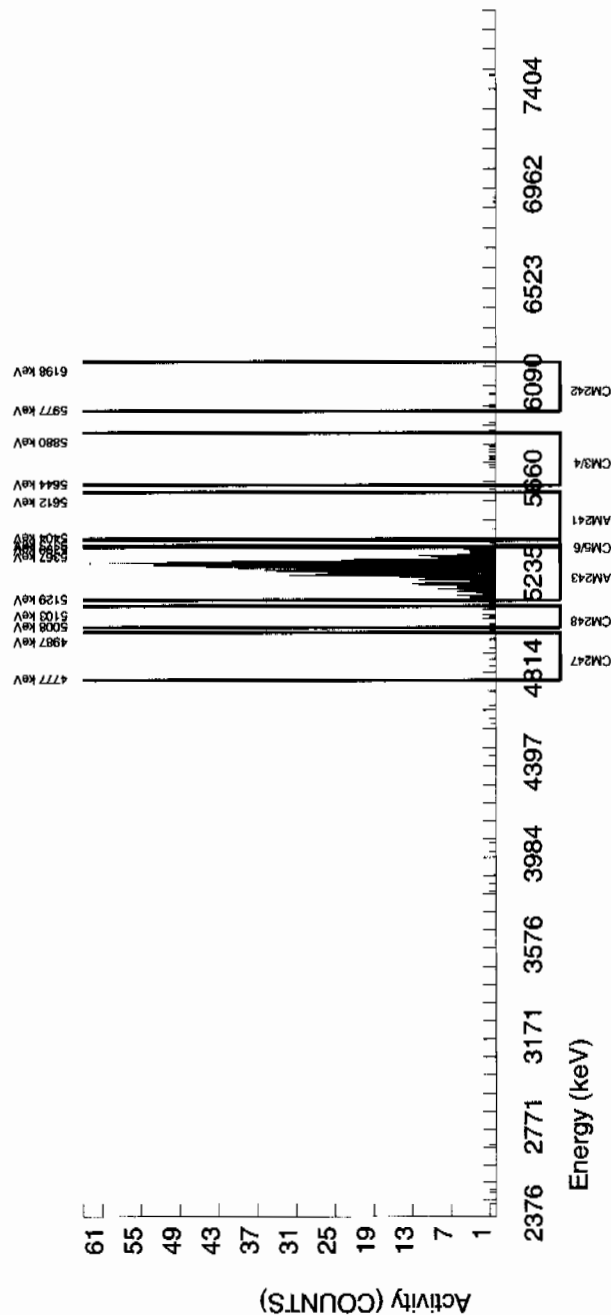
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9911E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>
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NUCLIDE ACTIVITY 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	5457.534	4.920	1.000	-2.371	2.000	2.7707	99.94000	-2.45E-03	1.79E-03	6.67E-03	1.61E-02	1.79E-03
AM243	5270.000	5272.173	48.108	789.000	788.000	1.000	1.0000	99.78000	8.17E-01	5.87E-02	2.41E-03	7.63E-03	2.91E-02
CM-242	6102.000	6018.057	7.227	7.000	7.000	0.000	4.0092	100.0000	8.44E-03	3.23E-03	9.64E-03	2.21E-02	3.19E-03
CM-3/4	5795.020	5781.572	93.486	10.000	9.000	1.000	4.8510	100.0000	9.34E-03	3.49E-03	1.17E-02	2.61E-02	3.44E-03
CM-5/6	5386.000	5382.479	0.000	8.000	7.000	1.000	6.1294	86.09000	8.41E-03	3.64E-03	1.71E-02	3.75E-02	3.60E-03
CM-247	4946.000	4881.009	0.000	7.000	7.000	0.000	6.3427	79.30000	9.13E-03	3.50E-03	1.92E-02	4.20E-02	3.45E-03
CM-248	5078.600	5061.733	0.000	13.000	13.000	0.000	11.0244	91.00000	1.48E-02	4.20E-03	2.91E-02	6.14E-02	4.10E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 970857 SAMPLE ID : S0248513015_AM SAMPLE QTY : 1.258 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 84.644</p>	<p>CHAMBER : 235 DETECTOR S/N : 79428 AVERAGE %EFFICIENCY : 39.6012 COUNT DATE : 1-APR-2010 16:31:12 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B235.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W235.CNF:33 CAL DATE : 30-MAR-2010</p>
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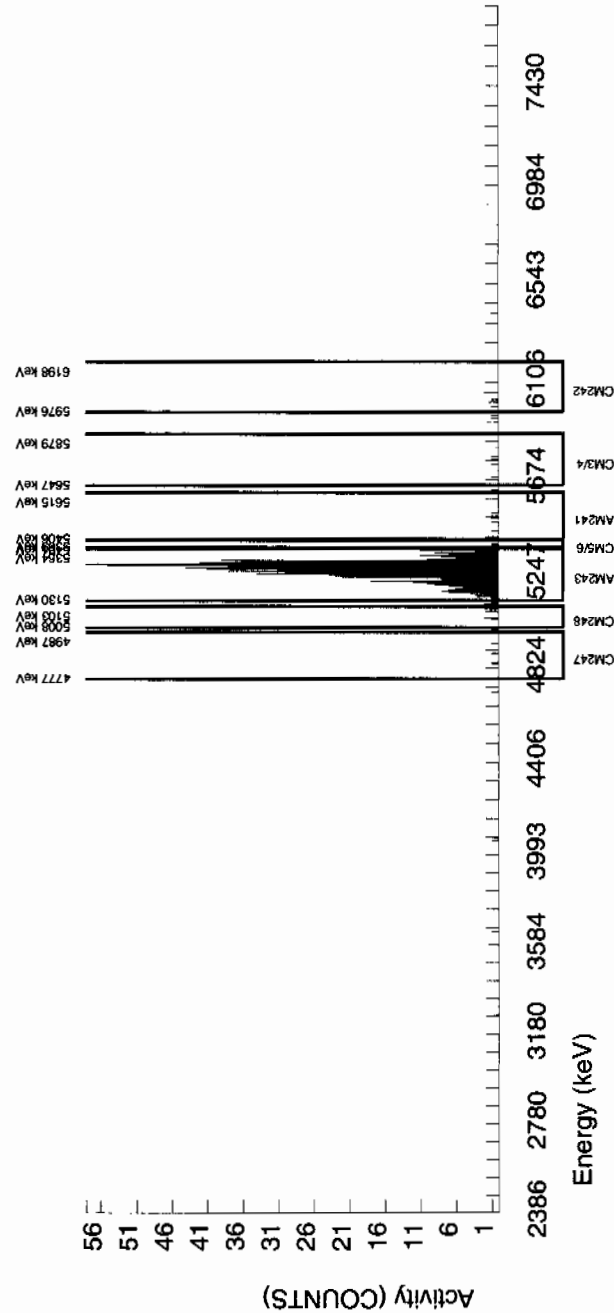
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9259E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5498.947	78.468	6.000	3.676	1.000	2.7707	99.94000	3.93E-03	2.56E-03	6.89E-03	1.67E-02	2.55E-03
AM243	5270.000	5273.525	57.723	762.000	761.000	1.000	1.0000	99.78000	8.15E-01	5.90E-02	2.49E-03	7.88E-03	2.96E-02
CM-242	6102.000	6043.640	4.904	4.000	4.000	0.000	4.0092	100.0000	4.98E-03	2.51E-03	9.96E-03	2.28E-02	2.49E-03
CM-3/4	5795.020	5763.273	127.510	5.000	2.000	3.000	4.8510	100.0000	2.14E-03	3.04E-03	1.21E-02	2.70E-02	3.03E-03
CM-5/6	5386.000	5378.641	0.000	5.000	5.000	0.000	6.1294	86.09000	6.20E-03	2.80E-03	1.77E-02	3.87E-02	2.77E-03
CM-247	4946.000	4887.073	87.663	5.000	5.000	0.000	6.3427	79.30000	6.74E-03	3.04E-03	1.99E-02	4.34E-02	3.01E-03
CM-248	5078.600	5064.859	0.000	10.000	10.000	0.000	11.0244	91.00000	1.17E-02	3.78E-03	3.01E-02	6.34E-02	3.71E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 970857 SAMPLE ID : S0248513016_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 75.382</p>	<p>CHAMBER : 236 DETECTOR S/N : 79429 AVERAGE %EFFICIENCY : 41.3110 COUNT DATE : 1-APR-2010 16:31:15 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B236.CNF;93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W236.CNF;33 CAL DATE : 30-MAR-2010</p>
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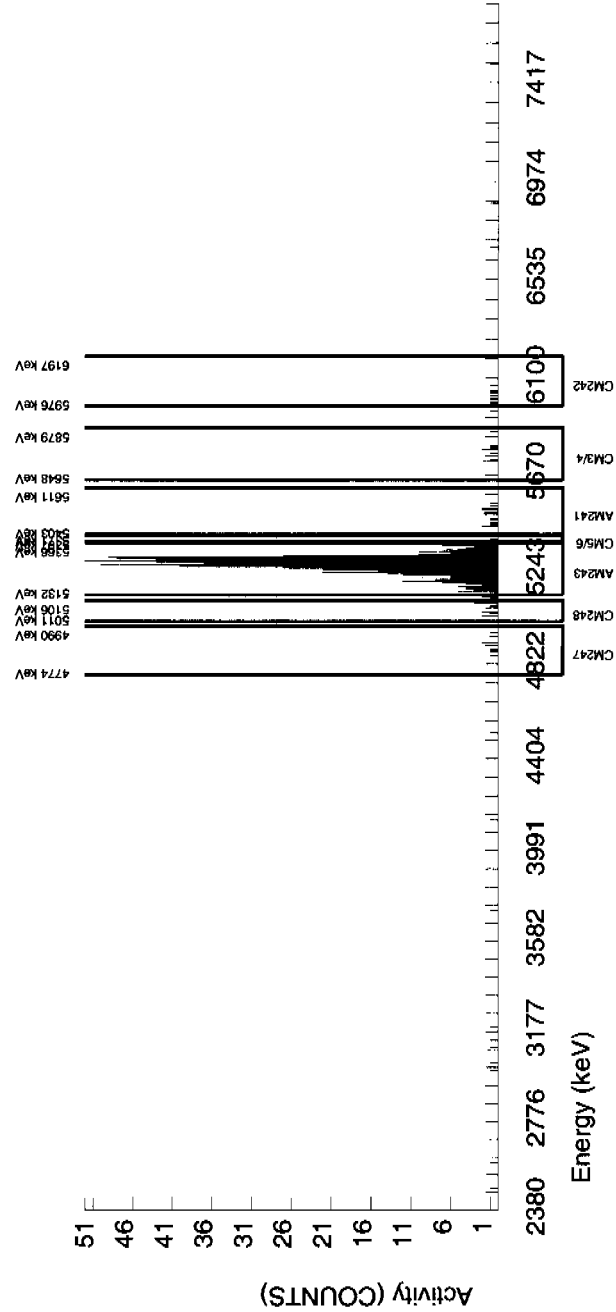
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.7152E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5493.907	78.712	17.000	14.770	1.000	2.7707	99.94000	1.70E-02	4.85E-03	7.44E-03	1.80E-02	4.73E-03
AM243	5270.000	5272.131	50.534	708.000	707.000	1.000	1.0000	99.78000	8.17E-01	6.04E-02	2.69E-03	8.51E-03	3.08E-02
CM-242	6102.000	6024.369	0.000	9.000	9.000	0.000	4.0092	100.0000	1.21E-02	4.11E-03	1.08E-02	2.46E-02	4.03E-03
CM-3/4	5795.020	5767.396	56.494	12.000	8.000	4.000	4.8510	100.0000	9.26E-03	4.67E-03	1.30E-02	2.92E-02	4.63E-03
CM-5/6	5386.000	5376.590	0.000	12.000	12.000	0.000	6.1294	86.09000	1.61E-02	4.75E-03	1.91E-02	4.18E-02	4.64E-03
CM-247	4946.000	4918.444	4.926	9.000	8.000	1.000	6.3427	79.30000	1.16E-02	4.66E-03	2.15E-02	4.69E-02	4.60E-03
CM-248	5078.600	5064.054	57.879	12.000	12.000	0.000	11.0244	91.00000	1.52E-02	4.50E-03	3.25E-02	6.85E-02	4.39E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 970857 SAMPLE ID : S0248513017_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 79.578		CHAMBER : 237 DETECTOR S/N : 79430 AVERAGE %EFFICIENCY : 40.4061 COUNT DATE : 1-APR-2010 16:31:17 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B237.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W237.CNF:33 CAL DATE : 30-MAR-2010
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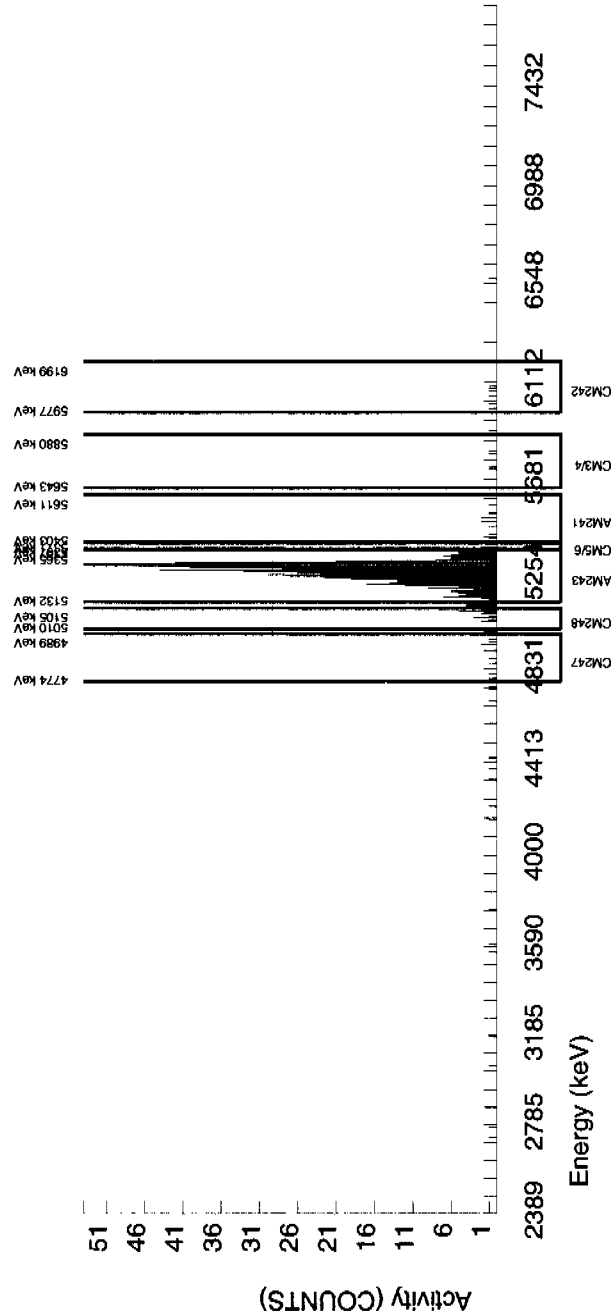
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.8107E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5500.870	19.692	10.000	2.730	6.000	2.7707	99.94000	3.05E-03	4.30E-03	7.21E-03	1.75E-02	4.29E-03
AM243	5270.000	5273.777	61.421	733.000	730.000	3.000	1.7321	99.78000	8.18E-01	6.00E-02	4.51E-03	1.21E-02	3.04E-02
CM-242	6102.000	6054.242	93.538	6.000	6.000	0.000	4.0092	100.0000	7.82E-03	3.23E-03	1.04E-02	2.39E-02	3.19E-03
CM-3/4	5795.020	5769.299	78.769	4.000	4.000	0.000	4.8510	100.0000	4.49E-03	2.26E-03	1.26E-02	2.83E-02	2.24E-03
CM-5/6	5386.000	5376.087	0.000	10.000	10.000	0.000	6.1294	86.09000	1.30E-02	4.19E-03	1.85E-02	4.06E-02	4.11E-03
CM-247	4946.000	4896.792	4.923	11.000	11.000	0.000	6.3427	79.30000	1.55E-02	4.78E-03	2.08E-02	4.54E-02	4.68E-03
CM-248	5078.600	5077.381	0.000	23.000	23.000	0.000	11.0244	91.00000	2.83E-02	6.16E-03	3.15E-02	6.63E-02	5.89E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 970857 SAMPLE ID : S0248513018_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 79.955				CHAMBER : 238 DETECTOR S/N : 79431 AVERAGE %EFFICIENCY : 39.8299 COUNT DATE : 1-APR-2010 16:31:20 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B238.CNF;97 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W238.CNF;35 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.8192E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5531.718	117.836	3.000	1.742	0.000	2.7707	99.94000	1.97E-03	1.50E-03	7.28E-03	1.76E-02	1.49E-03
AM243	5270.000	5270.129	64.822	723.000	723.000	0.000	0.0000	99.78000	8.18E-01	6.00E-02	0.00E+00	3.07E-03	3.04E-02
CM-242	6102.000	6009.583	4.910	6.000	6.000	0.000	4.0092	100.0000	7.90E-03	3.26E-03	1.05E-02	2.41E-02	3.22E-03
CM-3/4	5795.020	5743.054	0.000	13.000	12.000	1.000	4.8510	100.0000	1.36E-02	4.33E-03	1.27E-02	2.85E-02	4.24E-03
CM-5/6	5386.000	5378.443	0.000	10.000	10.000	0.000	6.1294	86.09000	1.31E-02	4.23E-03	1.87E-02	4.09E-02	4.15E-03
CM-247	4946.000	4908.409	7.211	10.000	10.000	0.000	6.3427	79.30000	1.42E-02	4.59E-03	2.10E-02	4.59E-02	4.50E-03
CM-248	5078.600	5065.690	0.000	22.000	22.000	0.000	11.0244	91.00000	2.73E-02	6.07E-03	3.18E-02	6.70E-02	5.82E-03

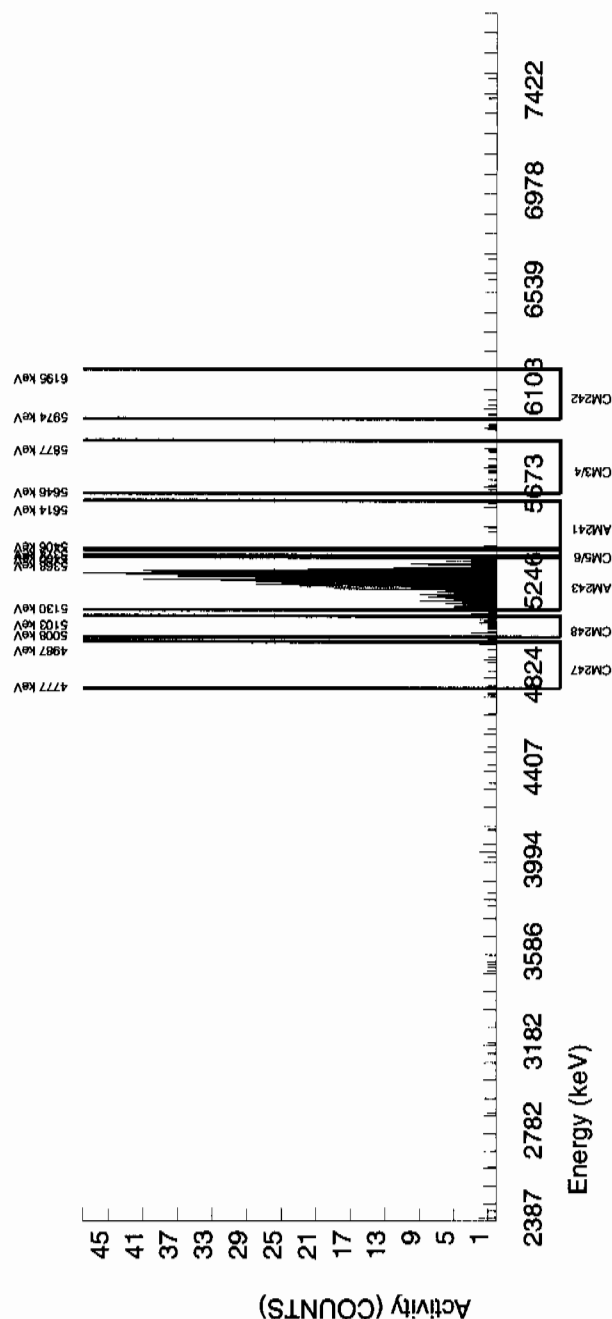
NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

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

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

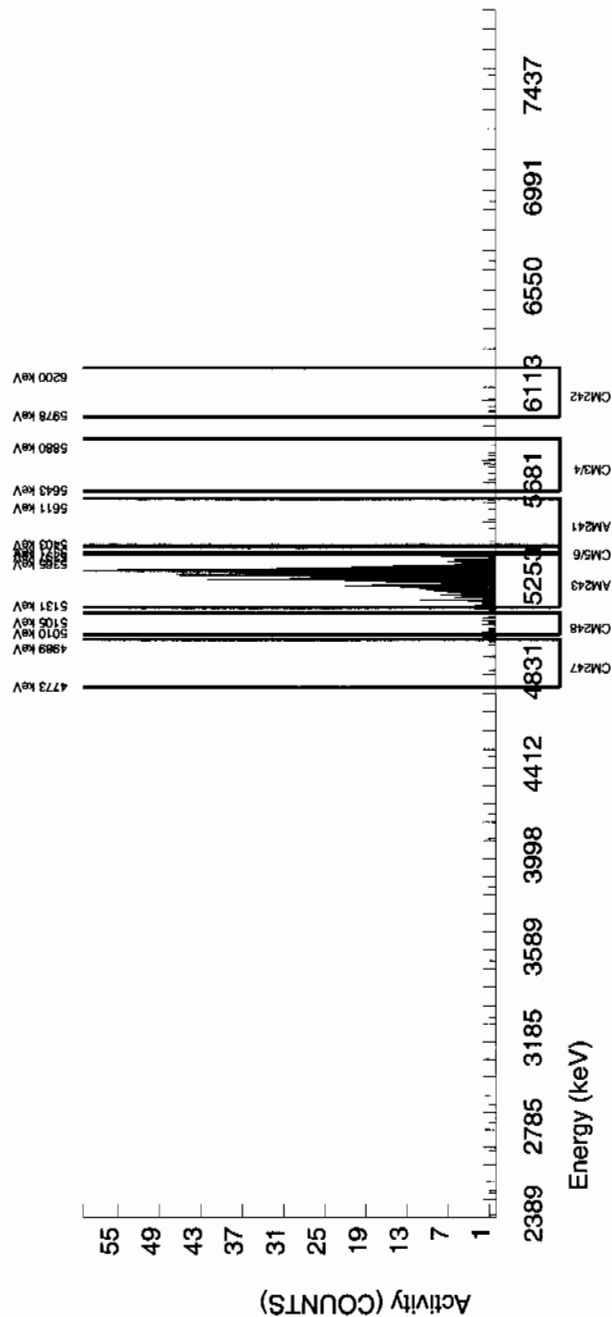
BATCH NUMBER : 970857 SAMPLE ID : S0248513019_AM SAMPLE QTY : 1.252 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 84.228		CHAMBER : 239 DETECTOR S/N : 79432 AVERAGE %EFFICIENCY : 39.1166 COUNT DATE : 1-APR-2010 16:31:22 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B239.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W239.CNF:33 CAL DATE : 30-MAR-2010
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9165E+00 dpm		MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5525.450	83.532	3.000	1.699	0.000	2.7707	99.94000	1.86E-03	1.43E-03	7.04E-03	1.70E-02	1.42E-03
AM243	5270.000	5271.988	52.742	749.000	748.000	1.000	1.0000	99.78000	8.19E-01	5.96E-02	2.55E-03	8.06E-03	3.00E-02
CM-242	6102.000	6034.675	76.162	9.000	9.000	0.000	4.0092	100.0000	1.15E-02	3.89E-03	1.02E-02	2.33E-02	3.82E-03
CM-3/4	5795.020	5765.204	7.217	9.000	6.000	3.000	4.8510	100.0000	6.58E-03	3.82E-03	1.23E-02	2.76E-02	3.80E-03
CM-5/6	5386.000	5373.220	0.000	8.000	8.000	0.000	6.1294	86.09000	1.01E-02	3.64E-03	1.81E-02	3.96E-02	3.59E-03
CM-247	4946.000	4914.745	127.755	5.000	2.000	3.000	6.3427	79.30000	2.75E-03	3.90E-03	2.03E-02	4.44E-02	3.89E-03
CM-248	5078.600	5052.981	53.948	16.000	16.000	0.000	11.0244	91.00000	1.92E-02	4.95E-03	3.08E-02	6.48E-02	4.80E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



BATCH NUMBER : 970857 SAMPLE ID : S0248513020_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 85.391				CHAMBER : 240 DETECTOR S/N : 79433 AVERAGE %EFFICIENCY : 38.9963 COUNT DATE : 1-APR-2010 16:31:25 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B240.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W240.CNF:33 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9429E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5499.168	118.073	17.000	15.685	0.000	2.7707	99.94000	1.69E-02	4.41E-03	6.95E-03	1.69E-02	4.28E-03
AM243	5270.000	5273.083	36.392	760.000	756.000	4.000	2.000	99.78000	8.18E-01	5.95E-02	5.03E-03	1.30E-02	2.99E-02
CM-242	6102.000	6044.909	93.474	8.000	8.000	0.000	4.0092	100.0000	1.01E-02	3.62E-03	1.01E-02	2.31E-02	3.56E-03
CM-3/4	5795.020	5786.973	83.020	4.000	4.000	0.000	4.8510	100.0000	4.33E-03	2.18E-03	1.22E-02	2.73E-02	2.17E-03
CM-5/6	5386.000	5379.199	0.000	7.000	7.000	0.000	6.1294	86.09000	8.78E-03	3.36E-03	1.79E-02	3.92E-02	3.32E-03
CM-247	4946.000	4926.640	113.153	6.000	5.000	1.000	6.3427	79.30000	6.81E-03	3.63E-03	2.01E-02	4.39E-02	3.60E-03
CM-248	5078.600	5078.614	73.796	9.000	8.000	1.000	11.0244	91.00000	9.49E-03	3.80E-03	3.04E-02	6.41E-02	3.75E-03

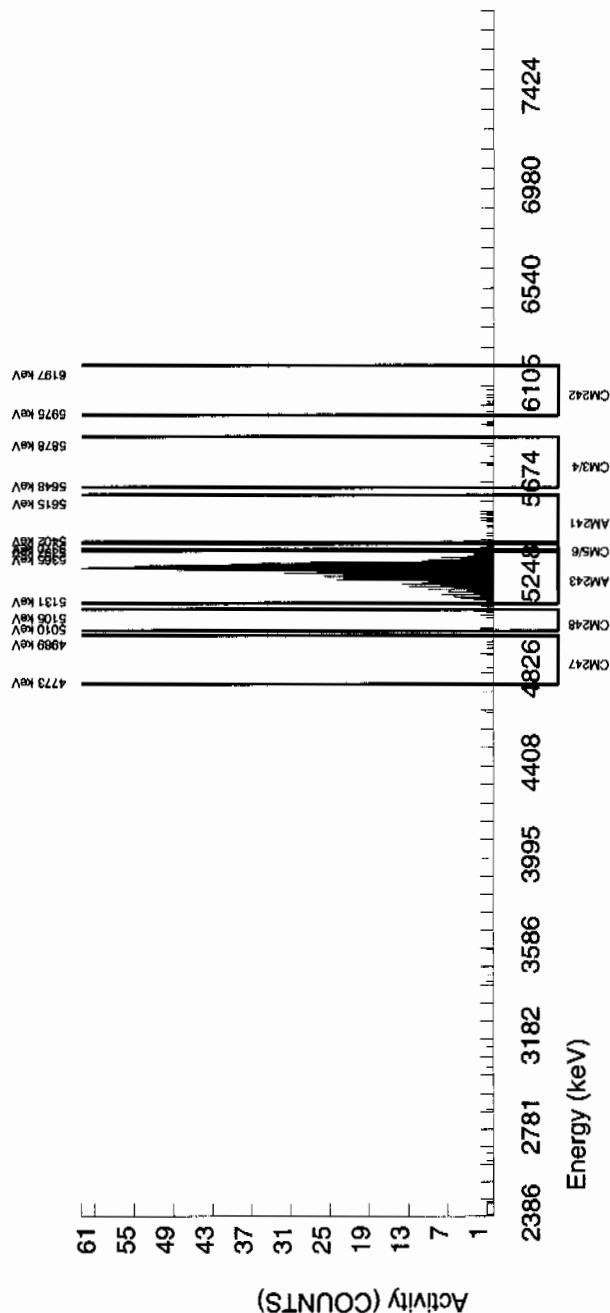
NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

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

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

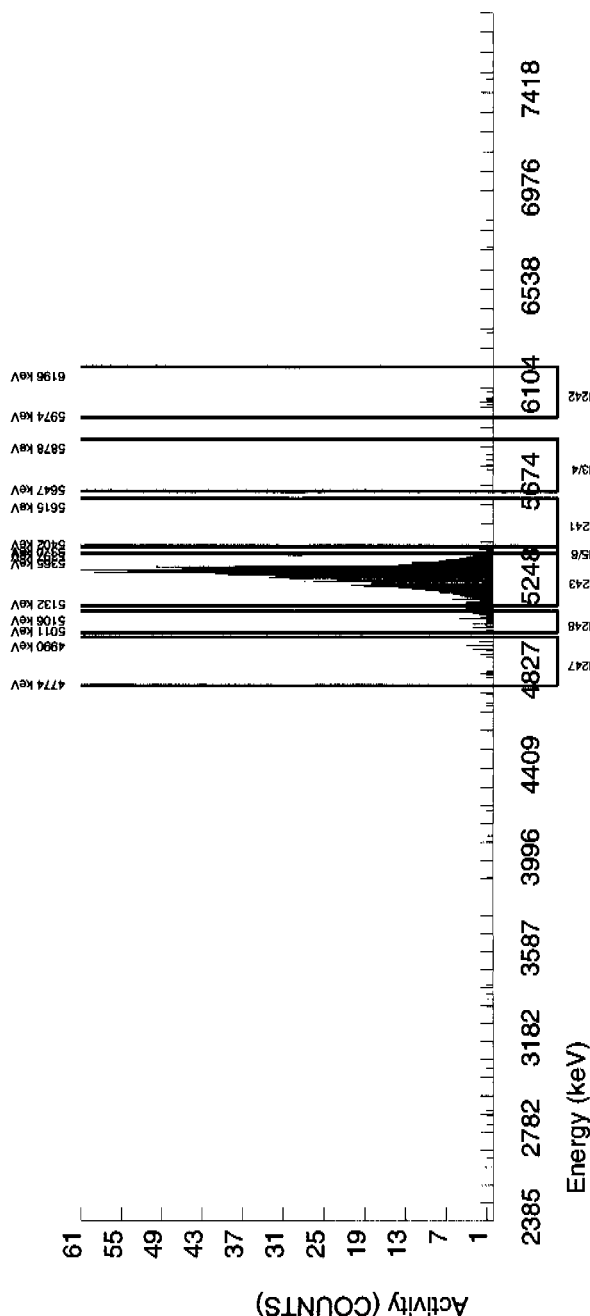


NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG 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 : 970857 SAMPLE ID : S1202085017_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AYB1 % YIELD : 83.480</p>	<p>CHAMBER : 242 DETECTOR S/N : 79435 AVERAGE %EFFICIENCY : 39.0977 COUNT DATE : 1-APR-2010 16:31:30 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B242.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W242.CNF:35 CAL DATE : 30-MAR-2010</p>
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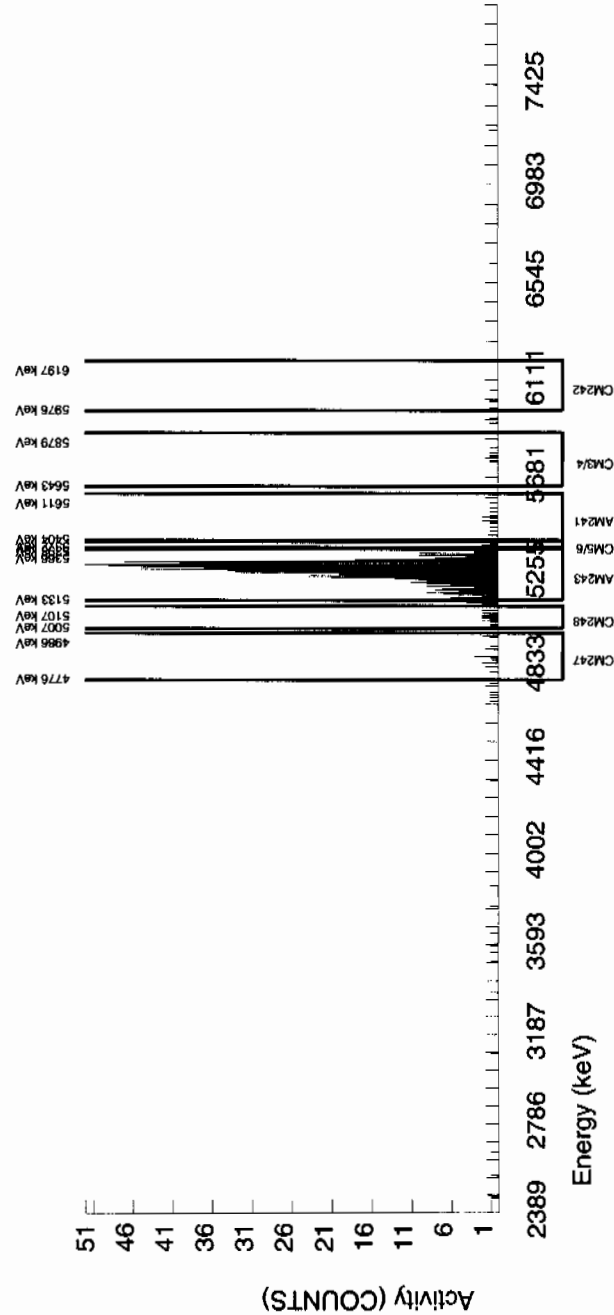
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.8994E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5501.560	22.069	14.000	11.711	1.000	2.7707	99.94000	1.29E-02	4.16E-03	7.10E-03	1.72E-02	4.08E-03
AM243	5270.000	5273.013	51.836	741.000	741.000	0.000	0.0000	99.78000	8.17E-01	5.96E-02	0.00E+00	2.99E-03	3.00E-02
CM-242	6102.000	6026.976	79.015	4.000	4.000	0.000	4.0092	100.0000	5.13E-03	2.59E-03	1.03E-02	2.35E-02	2.57E-03
CM-3/4	5795.020	5781.553	63.582	6.000	5.000	1.000	4.8510	100.0000	5.52E-03	2.94E-03	1.24E-02	2.78E-02	2.92E-03
CM-5/6	5386.000	5380.668	0.000	10.000	10.000	0.000	6.1294	86.09000	1.28E-02	4.12E-03	1.82E-02	3.99E-02	4.04E-03
CM-247	4946.000	4894.871	115.992	15.000	15.000	0.000	6.3427	79.30000	2.08E-02	5.53E-03	2.05E-02	4.47E-02	5.38E-03
CM-248	5078.600	5059.666	0.000	22.000	22.000	0.000	11.0244	91.00000	2.66E-02	5.91E-03	3.10E-02	6.53E-02	5.67E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241

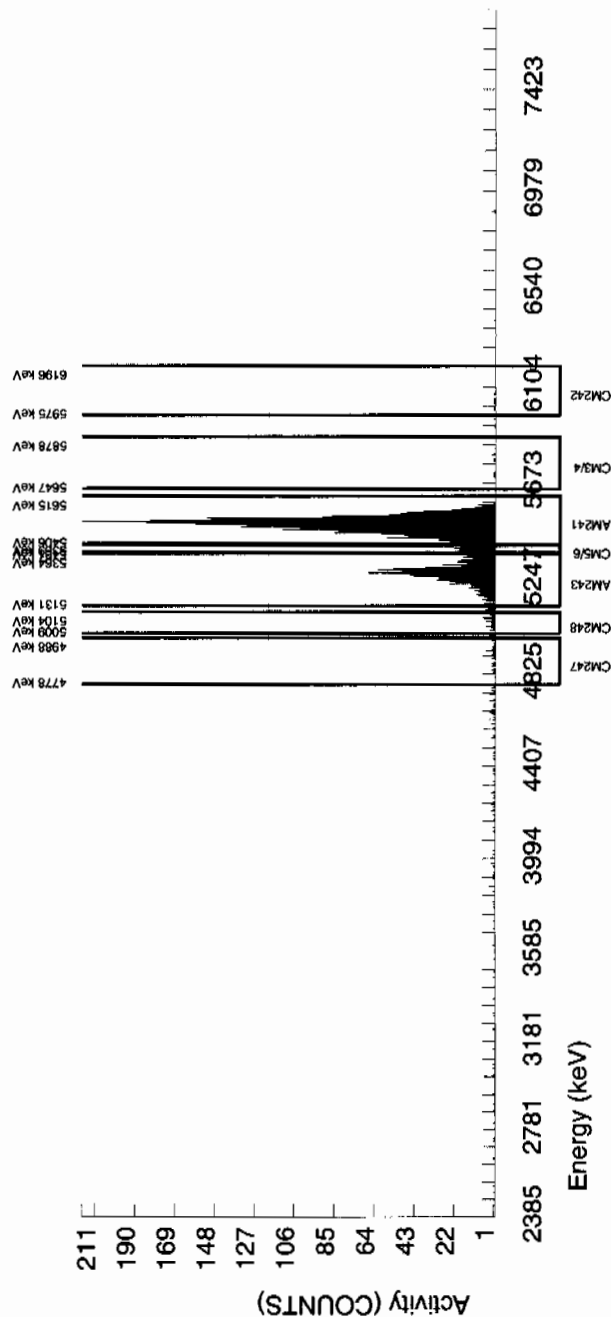


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 970857 SAMPLE ID : S1202085018_AM SAMPLE QTY : 0.101 G SAMPLE DATE : 31-MAR-2010 00:00:00 ANALYST : AYB1 % YIELD : 106.360				CHAMBER : 243 DETECTOR S/N : 79436 AVERAGE %EFFICIENCY : 40.9161 COUNT DATE : 1-APR-2010 16:31:32 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B243.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W243.CNF:33 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.4200E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3147E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3147E+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	5496.252	48.190	2569.000	2567.281	0.000	2.7707	99.94000	2.63E+01	1.87E+00	6.61E-02	1.60E-01	5.20E-01
AM243	5270.000	5275.855	43.407	989.000	988.000	1.000	1.0000	99.78000	1.01E+01	7.63E-01	2.39E-02	7.56E-02	3.23E-01
CM-242	6102.000	6033.113	88.526	12.000	12.000	0.000	4.0092	100.0000	1.24E-01	3.68E-02	9.56E-02	2.19E-01	3.58E-02
CM-3/4	5795.020	5764.232	7.223	12.000	9.000	3.000	4.8510	100.0000	9.23E-02	4.02E-02	1.16E-01	2.59E-01	3.97E-02
CM-5/6	5386.000	5385.128	0.000	124.000	123.000	1.000	6.1294	86.09000	1.46E+00	1.66E-01	1.70E-01	3.72E-01	1.33E-01
CM-247	4946.000	4909.459	98.736	41.000	40.000	1.000	6.3427	79.30000	5.17E-01	9.09E-02	1.91E-01	4.16E-01	8.38E-02
CM-248	5078.600	5065.191	36.476	43.000	43.000	0.000	11.0244	91.00000	4.84E-01	8.09E-02	2.89E-01	6.08E-01	7.38E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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# 971644 Product: Am Date: 4/5/10

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.	✓		case narrative
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
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: J. L. M. 4/5/10

Secondary Review Performed By: [Signature] 4/5/10

Am/Cm Que Sheet

02-APR-10

Batch #: 971644 Analyst: AXD2 First Client Due Date: 01-APR-10 Internal Due Date: 26-MAR-10 Comments:
 Tracer(s): Am243/Cm244 Tracer Code: 445-96-2-VV Expiration Date: 3/9/10 Vol: 0.1 10/15/10
 LCS Isotope(s): Am241/Cm244 LCS Code(s): 001/5/10 Expiration Date: 10/15/10 Vol(s): 1 10/15/10
 Spike Isotope(s): Am241/Cm244 Spike Code(s): 001/5/10 Expiration Date: 10/15/10 Vol(s): 1 10/15/10
 Prep Date: 4/2/10 Initials: JAO Pipet ID: 1642219 Balance ID: 16750207 Witness: mm 4/12/10

Sample ID	Client Description	Type	Hazard	Min	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot	Am/Cm	Det #
248513008-4	RE36-18-7444	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	25-FEB-10	1	1	1.266	209	
248513011-4	RE36-18-7443	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	25-FEB-10	2	2	1.266	210	
1202086943-1	MB for batch 971644	MB	UCF	pCi/g to pCi/soil	SOIL	QC ACCOUNT	QC ACCOUNT	25-FEB-10	3	3	1.266	211	
1202086944-4	RE36-18-7444(248513008DUP)	DUP	.05	pCi/g	SOIL	QC ACCOUNT	QC ACCOUNT	25-FEB-10	4	4	1.266	212	
1202086945-1	LCS for batch 971644	LCS	UCF	pCi/g to pCi/soil	SOIL	QC ACCOUNT	QC ACCOUNT	25-FEB-10	5	5	0.116	213	

* SRM 0244-B exp 4/30/20

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

Solid Sample Dissolution by LEACH or DIGESTION
 Circle One

Data Reviewed By: Spencer 4/5/12
 Page 1 of 1

GEL Laboratories LLC, Radiochemistry Division

Blank Correction Report

Batch ID 971644

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202086944	DUP	Americium-241	1.26E+00 g	1.83E-02	4.75E-03	1.81E-02	.004706349	pCi/g	YES
1202086945	LCS	Americium-241	1.16E-01 g	2.96E+01	2.08E+00	1.65E-01	.051120690	pCi/g	NO
1202086943	MB	Americium-241	1.00E+00 g	5.93E-03	3.33E-03	2.01E-02	.00593	pCi/g	YES
248513008	RE36-10-7444	Americium-241	1.27E+00 g	5.21E-03	2.42E-03	1.72E-02	.004669291	pCi/g	YES
248513011	RE36-10-7443	Americium-241	1.27E+00 g	1.71E-02	4.46E-03	1.70E-02	.004669291	pCi/g	YES

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 971644 SAMPLE ID : S0248513008_AM SAMPLE QTY : 1.266 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AXD2 % YIELD : 83.150</p>	<p>CHAMBER : 209 DETECTOR S/N : 79188 AVERAGE %EFFICIENCY : 38.8292 COUNT DATE : 3-APR-2010 16:20:04 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B209.CNF:94 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W209.CNF:36 CAL DATE : 30-MAR-2010</p>
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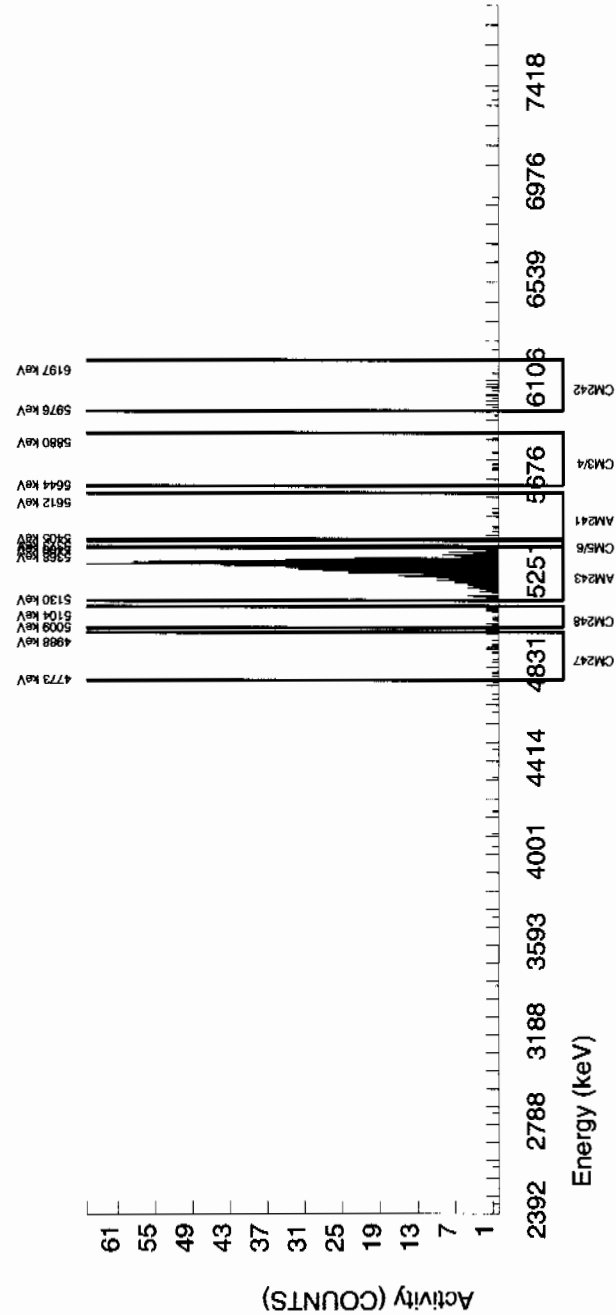
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.8919E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5496.216	103.410	6.000	4.725	0.000	2.7707	99.94000	5.21E-03	2.42E-03	7.11E-03	1.72E-02	2.40E-03
AM243	5270.000	5283.833	36.562	733.000	733.000	0.000	0.0000	99.78000	8.10E-01	5.92E-02	0.00E+00	2.99E-03	2.99E-02
CM-242	6102.000	6059.689	83.713	15.000	15.000	0.000	4.0092	100.0000	1.94E-02	5.17E-03	1.03E-02	2.35E-02	5.02E-03
CM-3/4	5795.020	5744.337	201.897	10.000	9.000	1.000	4.8510	100.0000	9.96E-03	3.72E-03	1.24E-02	2.79E-02	3.67E-03
CM-5/6	5386.000	5379.737	0.000	13.000	13.000	0.000	6.1294	86.09000	1.66E-02	4.73E-03	1.83E-02	4.00E-02	4.62E-03
CM-247	4946.000	4895.038	61.400	16.000	16.000	0.000	6.3427	79.30000	2.22E-02	5.73E-03	2.05E-02	4.48E-02	5.56E-03
CM-248	5078.600	5069.208	73.660	13.000	12.000	1.000	11.0244	91.00000	1.45E-02	4.62E-03	3.11E-02	6.54E-02	4.53E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 971644 SAMPLE ID : S0248513011_AM SAMPLE QTY : 1.266 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AXD2 % YIELD : 82.530</p>	<p>CHAMBER : 210 DETECTOR S/N : 79189 AVERAGE %EFFICIENCY : 39.5479 COUNT DATE : 3-APR-2010 16:20:05 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B210.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W210.CNF:34 CAL DATE : 30-MAR-2010</p>
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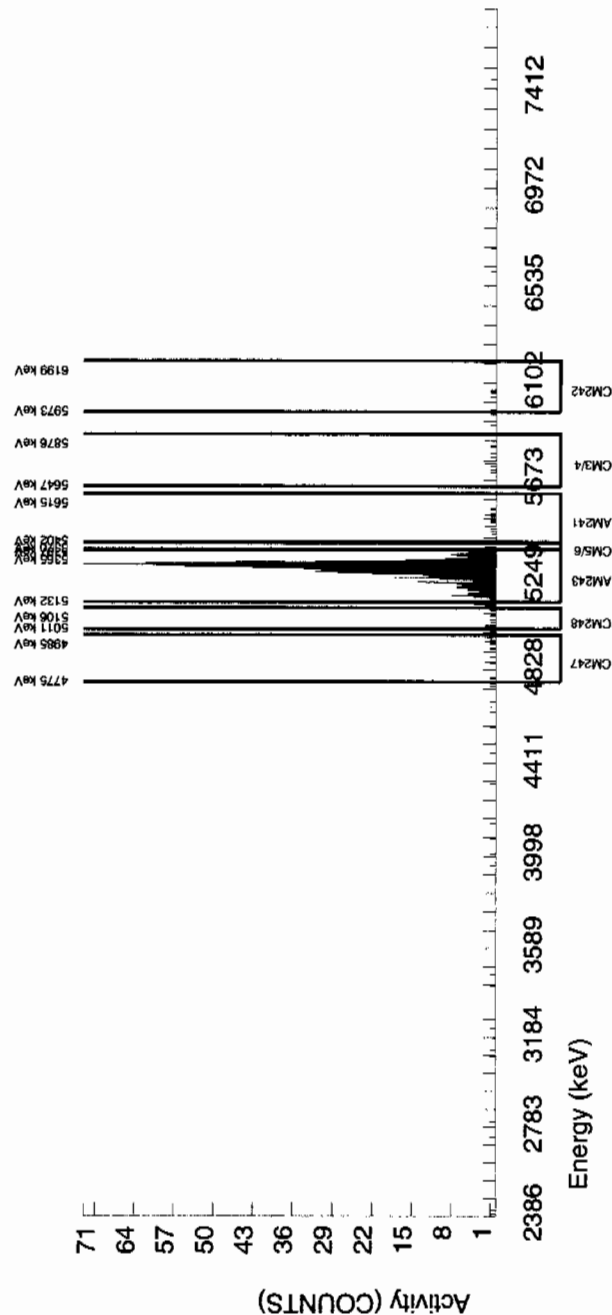
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.8778E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5504.168	56.783	17.000	15.711	0.000	2.7707	99.94000	1.71E-02	4.46E-03	7.03E-03	1.70E-02	4.32E-03
AM243	5270.000	5282.936	31.596	742.000	741.000	1.000	1.0000	99.78000	8.10E-01	5.90E-02	2.54E-03	8.04E-03	2.98E-02
CM-242	6102.000	6042.895	83.940	6.000	6.000	0.000	4.0092	100.0000	7.69E-03	3.18E-03	1.02E-02	2.33E-02	3.14E-03
CM-3/4	5795.020	5771.388	4.938	11.000	10.000	1.000	4.8510	100.0000	1.09E-02	3.85E-03	1.23E-02	2.76E-02	3.79E-03
CM-5/6	5386.000	5377.050	0.000	7.000	7.000	0.000	6.1294	86.09000	8.86E-03	3.40E-03	1.81E-02	3.95E-02	3.35E-03
CM-247	4946.000	4912.979	0.000	18.000	18.000	0.000	6.3427	79.30000	2.47E-02	6.04E-03	2.03E-02	4.43E-02	5.83E-03
CM-248	5078.600	5060.859	0.000	19.000	19.000	0.000	11.0244	91.00000	2.28E-02	5.41E-03	3.07E-02	6.47E-02	5.22E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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 : 971644
SAMPLE ID : S1202086943_AM
SAMPLE QTY : 1.000 G
SAMPLE DATE : 2-APR-2010 00:00:00.
ANALYST : AXD2
% YIELD : 89.043

CHAMBER : 211
DETECTOR S/N : 79190
AVERAGE %EFFICIENCY : 39.3758
COUNT DATE : 3-APR-2010 16:20:09
ELAPSED LIVE TIME(SEC) : 60000.00

```
LIB FILE      : ENV_ALPHA_AM
BKG FILE      : B211.CNF;93
BKG DATE      : 28-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE      : W211.CNF;34
CAL DATE      : 30-MAR-2010
```

TRACER	ID	: 445-96-2-VV
	NUCLIDE	: AM243
	NOMINAL	: 2.2753E+00 dpm
	RESULTS	: 2.0260E+00 dpm

MS/MSD	ID : 0244-B
	NUCLIDE : AM-241
	NOMINAL : 3.3146E+01 pCi/G

LCS/LCSD	ID	: 0244-B
	NUCLIDE	: AM-241
	NOMINAL	: 3.3146E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

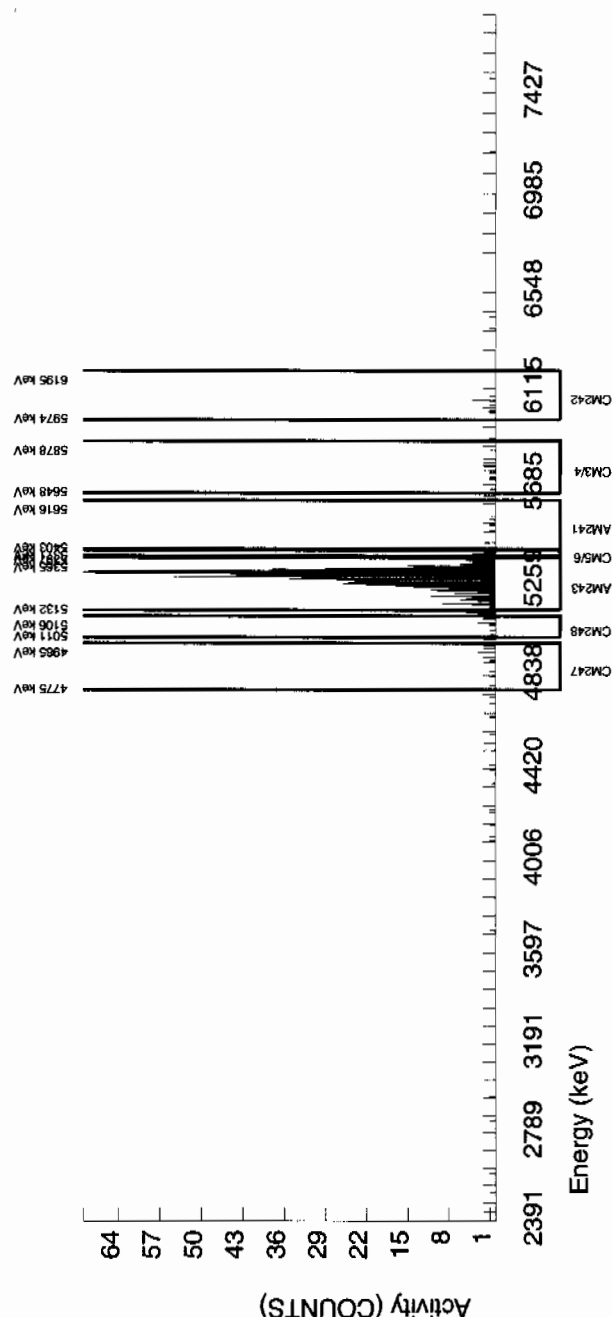
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5508.183	7.267	7.000	4.615	1.000	2.7707	99.94000	5.93E-03	3.33E-03	8.29E-03	2.01E-02	3.31E-03
AM243	5270.000	5282.550	35.816	797.000	796.000	1.000	1.0000	99.78000	1.02E+00	7.34E-02	3.00E-03	9.48E-03	3.64E-02
CM-242	6102.000	6043.199	5.746	13.000	13.000	0.000	4.0092	100.0000	1.68E-02	4.79E-03	1.20E-02	2.74E-02	4.67E-03
CM-3/4	5795.020	5758.786	51.794	15.000	14.000	1.000	4.8510	100.0000	1.80E-02	5.26E-03	1.45E-02	3.25E-02	5.14E-03
CM-5/6	5386.000	5379.729	0.000	23.000	23.000	0.000	6.1294	86.09000	3.43E-02	7.47E-03	2.13E-02	4.66E-02	7.16E-03
CM-247	4946.000	4895.213	190.479	17.000	17.000	0.000	6.3427	79.30000	2.75E-02	6.90E-03	2.39E-02	5.22E-02	6.68E-03
CM-248	5078.600	5065.792	0.000	14.000	14.000	0.000	11.0244	91.00000	1.98E-02	5.42E-03	3.62E-02	7.62E-02	5.28E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG 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

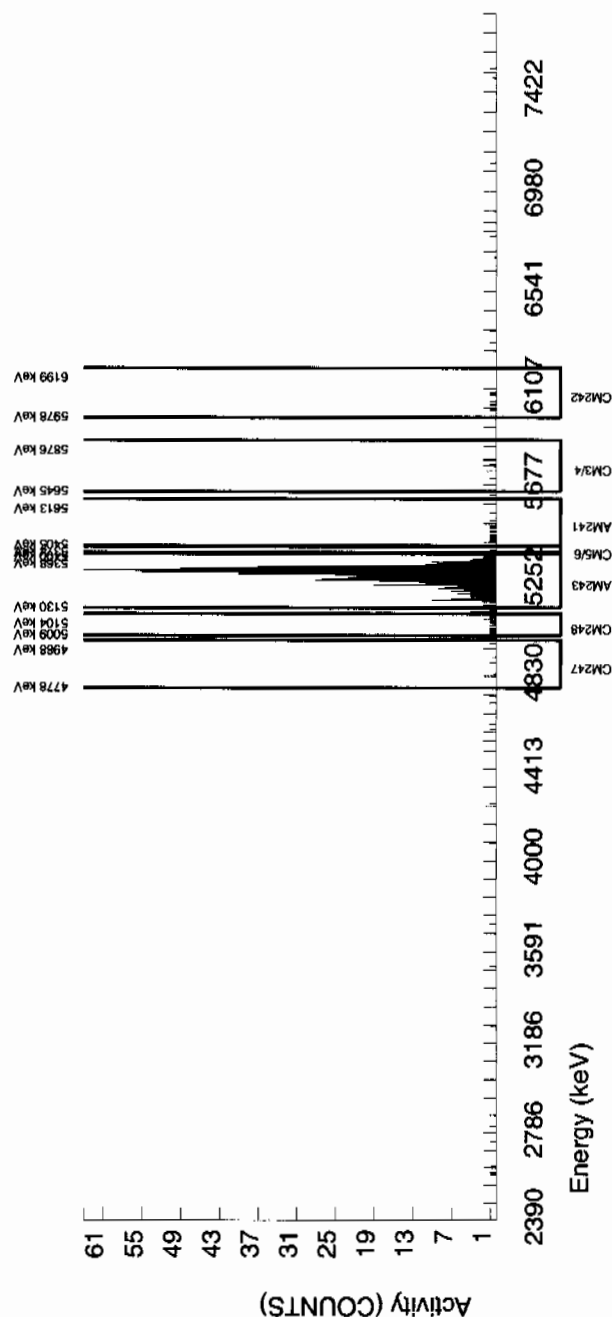
BATCH NUMBER : 971644 SAMPLE ID : S1202086944_AM SAMPLE QTY : 1.256 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : AXD2 % YIELD : 78.818				CHAMBER : 212 DETECTOR S/N : 79191 AVERAGE %EFFICIENCY : 39.2868 COUNT DATE : 3-APR-2010 16:20:11 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B212.CNF;93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W212.CNF;33 CAL DATE : 30-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.7934E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+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	5482.060	6.107	17.000	15.777	0.000	2.7707	99.94000	1.83E-02	4.75E-03	7.47E-03	1.81E-02	4.60E-03
AM243	5270.000	5279.511	36.585	704.000	703.000	1.000	1.0000	99.78000	8.16E-01	6.03E-02	2.70E-03	8.55E-03	3.08E-02
CM-242	6102.000	6057.990	78.202	9.000	9.000	0.000	4.0092	100.0000	1.23E-02	4.16E-03	1.08E-02	2.47E-02	4.08E-03
CM-3/4	5795.020	5761.938	54.187	11.000	10.000	1.000	4.8510	100.0000	1.16E-02	4.10E-03	1.31E-02	2.93E-02	4.03E-03
CM-5/6	5386.000	5379.379	0.000	10.000	10.000	0.000	6.1294	86.09000	1.35E-02	4.34E-03	1.92E-02	4.20E-02	4.25E-03
CM-247	4946.000	4925.621	4.926	5.000	5.000	0.000	6.3427	79.30000	7.30E-03	3.30E-03	2.16E-02	4.71E-02	3.27E-03
CM-248	5078.600	5058.559	0.000	13.000	13.000	0.000	11.0244	91.00000	1.65E-02	4.71E-03	3.26E-02	6.87E-02	4.59E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG 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 : 971644 SAMPLE ID : S1202086945_AM SAMPLE QTY : 0.116 G SAMPLE DATE : 2-APR-2010 00:00:00. ANALYST : AXD2 % YIELD : 95.979</p>		<p>CHAMBER : 213 DETECTOR S/N : 79192 AVERAGE %EFFICIENCY : 38.1825 COUNT DATE : 3-APR-2010 16:20:14 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B213.CNF:93 BKG DATE : 28-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W213.CNF:33 CAL DATE : 30-MAR-2010</p>
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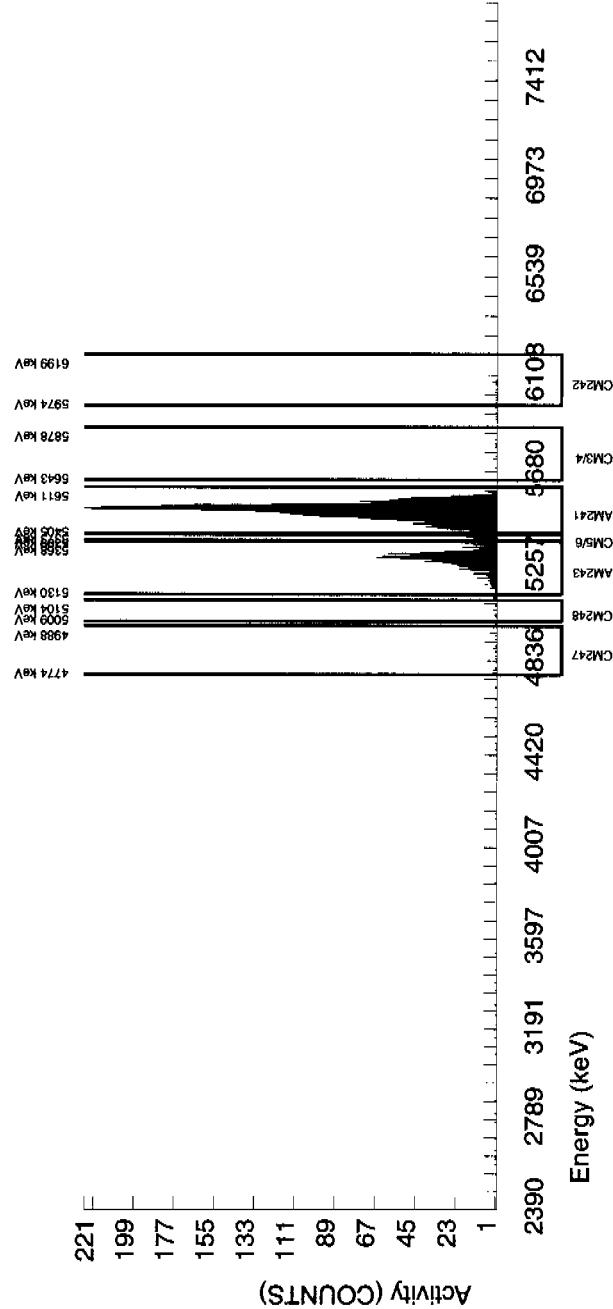
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.1838E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3146E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3146E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5509.738	45.385	2798.000	2795.552	1.000	2.7707	99.94000	2.96E+01	2.08E+00	6.83E-02	1.65E-01	5.61E-01
AM243	5270.000	5290.938	46.598	832.000	832.000	0.000	0.0000	99.78000	8.84E+00	6.72E-01	0.00E+00	2.88E-02	3.06E-01
CM-242	6102.000	6052.316	7.442	11.000	11.000	0.000	4.0092	100.0000	1.18E-01	3.63E-02	9.88E-02	2.26E-01	3.54E-02
CM-3/4	5795.020	5767.118	4.961	11.000	11.000	0.000	4.8510	100.0000	1.17E-01	3.60E-02	1.20E-01	2.68E-01	3.52E-02
CM-5/6	5386.000	5387.031	0.000	70.000	70.000	0.000	6.1294	86.09000	8.62E-01	1.18E-01	1.76E-01	3.84E-01	1.03E-01
CM-247	4946.000	4878.693	4.961	23.000	23.000	0.000	6.3427	79.30000	3.07E-01	6.74E-02	1.97E-01	4.31E-01	6.41E-02
CM-248	5078.600	5065.569	5.762	14.000	14.000	0.000	11.0244	91.00000	1.63E-01	4.49E-02	2.99E-01	6.29E-01	4.36E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG 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# 961097

Product: Gamma Solid

Date: 03/24/10

LANL

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)			N/A
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%.			N/A
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.	✓		
Aux data is correct.	✓		
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:

for Hinkle 3/24/10

Secondary Review Performed By:

Kost 3/24/10

3/31

Gamma Spec Que Sheet

1.6-3/15/10

03/04/2010

Batch #: 951097 Analyst: MXR1 First Client Due Date: 03/31/2010 Internal Due Date: 03/20/2010

Gamma Spike Isotope: Mixed Gamma Spike Code: NA Expiration Date: NA Vol: NA Nominal Concentration: NA CB137-5.55

Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 12/2/10 Vol: 1.0mL Nominal Concentration: NA Co60-6.333

Initials: MS Prep Date: 3/8/10 Library: SOL10 Witness: NA Am241-15.90

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Aliquot (1/1000)	Detector	Sealing Date/Time (if Applicable)
248513001-1	RE36-10-7407	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	cen	114.03	15	3/6/10
248513002-1	RE36-10-7421	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		108.68	16	
248513003-1	RE36-10-7422	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		123.24	17	
248513004-1	RE36-10-7451	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		101.16	18	
248513005-1	RE36-10-7449	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		121.73	19	
248513006-1	RE36-10-7445	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		119.44	22	3/8/10
248513007-1	RE36-10-7450	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		124.90	23	3/6/10
248513008-1	RE36-10-7444	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		130.44	25	3/8/10
248513009-1	RE36-10-7448	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		125.44	21	3/6/10
248513010-1	RE36-10-7447	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		107.28	29	3/6/10
248513011-1	RE36-10-7443	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		114.18	1	
248513012-1	RE36-10-7452	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		114.94	5	
248513013-1	RE36-10-7437	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		118.01	6	3/8/10
248513014-1	RE36-10-7440	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		121.07	7	3/8/10
248513015-1	RE36-10-7435	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		126.35	11	3/6/10
248513016-1	RE36-10-7441	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		120.71	12	
248513017-1	RE36-10-7442	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		122.60	15	
248513018-1	RE36-10-7436	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		124.00	16	
248513019-1	RE36-10-7438	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		139.59	17	
248513020-1	RE36-10-7439	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00		122.64	18	
1202061452-1	MB	MB		QC ACCOUNT	SOIL	3/8/10		139.59	19	3/8/10
1202061453-1	DUP RE36-10-7407(248513001)	DUP		QC ACCOUNT	SOIL	25-FEB-10 12:00:00		114.03	22	3/6/10
1202061454-1	LCS	LCS		QC ACCOUNT	SOIL	3/8/10		155.44	20	3/6/10

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: NA 3/8/10 Page 1 of 1

✓ no history
✓ details

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
961097	248513001	SAMPLE	20-MAR-10		Americium-241	-0.3001	0.5927	0.200
					Cerium-139	-0.0018	0.07759	0.050
					Europium-152	0.0096	0.2241	0.200
					Mercury-203	0.1108	0.117	0.100
					Sodium-22	-0.0124	0.1027	0.080
					Thorium-234	3.152	5.072	2.00
					Tin-113	-0.00181	0.1159	0.100
961097	248513002	SAMPLE	20-MAR-10		Americium-241	0.138	0.2551	0.200
					Cerium-139	-0.03678	0.05149	0.050
961097	248513003	SAMPLE	20-MAR-10		Cerium-139	0.03838	0.06047	0.050
					Cesium-134	0.0634	0.1302	0.100
					Sodium-22	0.03841	0.1106	0.080
961097	248513004	SAMPLE	20-MAR-10		Americium-241	-0.03637	0.3253	0.200
					Thorium-234	1.201	2.949	2.00
961097	248513005	SAMPLE	20-MAR-10		Americium-241	0.1183	0.2689	0.200
					Cerium-139	-0.0053	0.0555	0.050
					Thorium-234	1.856	2.213	2.00
961097	248513006	SAMPLE	20-MAR-10		Americium-241	0.1155	0.2405	0.200
					Cerium-139	-0.01814	0.05263	0.050
961097	248513007	SAMPLE	20-MAR-10		Americium-241	-0.27	0.3579	0.200
					Cerium-139	-0.00175	0.05875	0.050
					Thorium-234	1.515	3.236	2.00
961097	248513008	SAMPLE	20-MAR-10		Sodium-22	0.03558	0.08051	0.080
961097	248513009	SAMPLE	20-MAR-10		Cesium-134	0.1221	0.1247	0.100
					Sodium-22	-0.00309	0.08853	0.080
961097	248513010	SAMPLE	20-MAR-10		Americium-241	-0.0102	0.336	0.200
					Cerium-139	0.04477	0.07187	0.050
					Europium-152	-0.1518	0.2004	0.200
					Sodium-22	-0.01828	0.0888	0.080
					Thorium-234	2.394	2.898	2.00
					Tin-113	0.03399	0.104	0.100
961097	248513011	SAMPLE	20-MAR-10		Americium-241	-0.1602	0.3177	0.200
					Cerium-139	0.02944	0.06721	0.050
					Sodium-22	0.01796	0.09514	0.080
961097	248513012	SAMPLE	20-MAR-10		Cerium-139	-0.04658	0.05831	0.050
					Cesium-134	0.04996	0.1152	0.100
					Europium-152	-0.03161	0.2077	0.200
					Sodium-22	-0.00742	0.08548	0.080
961097	248513013	SAMPLE	20-MAR-10		Americium-241	-0.08019	0.337	0.200
					Cerium-139	0.01918	0.0666	0.050
					Cesium-134	0.05674	0.1067	0.100
					Sodium-22	0.02458	0.0989	0.080
					Thorium-234	1.951	3.18	2.00
961097	248513014	SAMPLE	20-MAR-10		Americium-241	0.1276	0.2021	0.200
					Cerium-139	-0.04083	0.05214	0.050

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
961097	248513014	SAMPLE	20-MAR-10		Sodium-22	0.01999	0.08461	0.080
961097	248513015	SAMPLE	20-MAR-10					
961097	248513016	SAMPLE	20-MAR-10		Americium-241	0.0742	0.2922	0.200
					Cerium-139	0.02551	0.06009	0.050
					Cesium-134	0.0837	0.1084	0.100
					Sodium-22	0.01784	0.08889	0.080
961097	248513017	SAMPLE	20-MAR-10		Americium-241	0.3484	0.5639	0.200
					Cerium-139	0.00698	0.07365	0.050
					Europium-152	-0.07143	0.2304	0.200
					Mercury-203	0.09945	0.1098	0.100
					Tin-113	0.00186	0.1111	0.100
961097	248513018	SAMPLE	20-MAR-10		Americium-241	-0.01865	0.2555	0.200
					Thorium-234	1.979	2.123	2.00
961097	248513019	SAMPLE	20-MAR-10		Cerium-139	0.00961	0.05828	0.050
					Cesium-134	0.1254	0.1304	0.100
					Sodium-22	-0.02227	0.08894	0.080
961097	248513020	SAMPLE	20-MAR-10		Americium-241	-0.02491	0.3018	0.200
					Thorium-234	2.518	2.707	2.00
961097	1202061452	MB	20-MAR-10					
961097	1202061453	DUP	20-MAR-10		Americium-241	0.06985	0.2504	0.200
					Cerium-139	-0.02491	0.05568	0.050
961097	1202061454	LCS	20-MAR-10		Cerium-139	0.0215	0.07445	0.050
					Cesium-134	0.07992	0.1542	0.100
					Europium-152	-0.1551	0.2609	0.200
					Mercury-203	-0.01275	0.1038	0.100
					Ruthenium-106	-0.04202	0.8503	0.800
					Thorium-234	2.244	2.335	2.00
					Tin-113	0.01405	0.1345	0.100

GEL QUALS

Batch ID: 961097

Report run on: March 24, 2010 8:42 AM

Samp Id	Parname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
248513001-1 20-MAR-2010 11:20	Bismuth-211	UI	UI	Data rejected due to interference.		4.856			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.671			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1763		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		7.179			
248513002-1 20-MAR-2010 11:21	Bismuth-211	UI	UI	Data rejected due to interference.		4.965			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.409			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1246		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.639			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.09602			
248513003-1 20-MAR-2010 11:21	Bismuth-211	UI	UI	Data rejected due to interference.		4.6			
	Cadmium-109	UI	UI	Data rejected due to interference.		5.131			
	Radium-224	UI	UI	Data rejected due to interference.		5.656			
248513004-1 20-MAR-2010 11:22	Bismuth-211	UI	UI	Data rejected due to interference.		4.094			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.019			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1085		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.58			
248513005-1 20-MAR-2010 11:22	Bismuth-211	UI	UI	Data rejected due to interference.		4.22			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.014			
	Radium-224	UI	UI	Data rejected due to interference.		4.258			

GEL QUALS

Batch ID: 961097

Report run on: March 24, 2010 8:42 AM

Samp Id	Parmname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
248513006-1 20-MAR-2010 11:23	Bismuth-211	UI	UI	Data rejected due to interference.		5.101			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.734			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.08521		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.344			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1554			
248513007-1 20-MAR-2010 11:23	Bismuth-211	UI	UI	Data rejected due to interference.		4.273			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.388			
	Radium-224	UI	UI	Data rejected due to interference.		4.894			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.09643			
248513008-1 20-MAR-2010 11:24	Bismuth-211	UI	UI	Data rejected due to interference.		4.422			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.789			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1665		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.413			
248513009-1 20-MAR-2010 11:27	Bismuth-211	UI	UI	Data rejected due to interference.		5.193			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.498			
	Radium-224	UI	UI	Data rejected due to interference.		3.834			
248513010-1 20-MAR-2010 11:27	Bismuth-211	UI	UI	Data rejected due to interference.		5.551			
	Cadmium-109	UI	UI	Data rejected due to interference.		5.14			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1312		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		6.588			

GEL QUALS

Batch ID: 961097

Report run on: March 24, 2010 8:42 AM

Samp Id	Parname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
248513010-1 20-MAR-2010 11:27	Strontium-85	UI	UI	Data rejected due to low abundance.		.158			
248513011-1 20-MAR-2010 12:08	Bismuth-211	UI	UI	Data rejected due to interference.		4.907			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.566			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.2036		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.034			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1536			
248513012-1 20-MAR-2010 13:29	Americium-241	UI	UI	Data rejected due to low abundance.		.1313		.2	.2
	Bismuth-211	UI	UI	Data rejected due to interference.		5.082			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.484			
	Radium-224	UI	UI	Data rejected due to interference.		5.848			
248513013-1 20-MAR-2010 13:30	Bismuth-211	UI	UI	Data rejected due to interference.		5			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.977			
	Radium-224	UI	UI	Data rejected due to interference.		5.88			
248513014-1 20-MAR-2010 13:30	Bismuth-211	UI	UI	Data rejected due to interference.		5.295			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.005			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1725		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.375			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1004			
248513015-1 20-MAR-2010 13:30	Bismuth-211	UI	UI	Data rejected due to interference.		4.839			

GEL QUALS

Batch ID: 961097

Report run on: March 24, 2010 8:42 AM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
248513015-1 20-MAR-2010 13:30	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.651			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08858		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.175			
248513016-1 20-MAR-2010 13:31	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.439			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.144			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.083			
248513017-1 20-MAR-2010 13:31	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.284			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.436			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1769		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.819			
248513018-1 20-MAR-2010 13:32	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1107			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.542			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.319			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1103		.1	.1
248513019-1 20-MAR-2010 13:32	Radium-224	UI	UI	UI	Data rejected due to interference.		5.362			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.216			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.723			
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.311			
1202061453-1 DUP 20-MAR-2010 13:34	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.322			

GEL QUALS

Batch ID: 961097

Report run on: March 24, 2010 8:42 AM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
1202061453-1 DUP 20-MAR-2010 13:34	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.403			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1178		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.762			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1864			
248513020-1 20-MAR-2010 13:38	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.212			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.171			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.09892		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.839			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09393			

Gamma Review Report based on Result > MDA for Batch:961097

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513001	25-FEB-10 12:00	20-MAR-10 11:20	23	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.856	0.24	pCi/g	0.3131	N	911.3	3	1.653 IDENTIFIED	11.42	☐
Annihilation Rad. HE	0.1115	0.04165	pCi/g	0.06952	N	510.8	1	1.678 IDENTIFIED	37.11	☐
Barium-137m ✓	0.451	0.04625	pCi/g	0.08109	N	661.5	2	1.259 IDENTIFIED	9.395	☐
Bismuth-211 int	4.856	0.3939	pCi/g	0.4774	Y	351.9	2	1.43 IDENTIFIED	6.409	☐ ui
Bismuth-212 la nr	2.889	0.5979	pCi/g	1.624	N	0	8	0 FAIL_ABUND	0	☐
Bismuth-214 ✓	1.55	0.1388	pCi/g	0.155	0.200	609.3	2	1.373 IDENTIFIED	7.446	☐
Cadmium-109 int	2.671	0.7419	pCi/g	2.274	Y	87.19	3	1.153 IDENTIFIED	27.08	☐ ui
Cadmium-115 HE	44.83	93.28	pCi/g	0	N	0	8	0 SHORT_HLIF	0	☐
Cerium-143 ✓	60980	10330	pCi/g	0	N	0	8	0 SHORT_HLIF	0	☐
Cesium-134 la	0.1763	0.04335	pCi/g	0.1247	0.100	0	8	0 FAIL_ABUND	0	☐ ui Data rejected due to low abundance.
Cesium-137 ✓	0.4765	0.04888	pCi/g	0.08566	0.100	661.5	2	1.259 IDENTIFIED	9.395	☐
Gross Gamma ✓	12.15	2.057	pCi/g	6.621	N	0				☐
Iodine-133 HE	1.31E+06	2.18E+06	pCi/g	0	N	0	8	0 SHORT_HLIF	0	☐
Lead-212 ✓	2.164	0.1537	pCi/g	0.1404	0.100	238.7	2	1.254 IDENTIFIED	3.843	☐
Lead-214 ✓	1.763	0.151	pCi/g	0.1743	0.100	351.9	2	1.43 IDENTIFIED	6.409	☐
Neptunium-237 HE	0.7699	0.2286	pCi/g	0.6139	N	87.19	3	1.153 IDENTIFIED	27.08	☐
Niobium-95m HE	0.5487	0.1247	pCi/g	0.3961	N	0	8	0 NOT_IDENTI	0	☐
Potassium-40 ✓	30.85	1.887	pCi/g	0.7768	1.00	1460	1	2.073 IDENTIFIED	3.642	☐
Protactinium-234m HE	14.39	5.415	pCi/g	11.24	N	0	8	0 FAIL_ABUND	0	☐
Radium-224 int	7.179	1.22	pCi/g	1.504	Y	241.6	1	2.468 IDENTIFIED	16.07	☐ ui
Radium-226 ✓	1.55	0.1388	pCi/g	0.155	Y	609.3	2	1.373 IDENTIFIED	7.446	☐
Radium-228 ✓	1.856	0.24	pCi/g	0.3131	0.500	911.3	3	1.653 IDENTIFIED	11.42	☐
Sodium-24 HE	1.36E+09	3.71E+09	pCi/g	0	N	0	8	0 SHORT_HLIF	0	☐
Thallium-208 ✓	0.5836	0.05817	pCi/g	0.08165	0.080	583.2	1	1.488 IDENTIFIED	8.858	☐
Thorium-228 nr	2.164	0.1537	pCi/g	0.1404	N	238.7	2	1.254 IDENTIFIED	3.843	☐
Thorium-232 nr	1.856	0.24	pCi/g	0.3131	N	911.3	3	1.653 IDENTIFIED	11.42	☐
Tin-126 HE	0.258	0.07167	pCi/g	0.2287	N	87.19	3	1.153 IDENTIFIED	27.08	☐
Total Uranium —	9.4452	4.51E-06	ug/g	7.5499	N	0				☐

*** = Number of isotopes identified with a skyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513002	25-FEB-10 12:00	20-MAR-10 11:21	23	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.125	0.218	pCi/g	0.254	N	910.8	3	1.614 IDENTIFIED	8.246	☐
Annihilation Rad.	0.151	0.03889	pCi/g	0.05144	N	510.8	1	1.638 IDENTIFIED	25.3	☐
Barium-137m	0.3559	0.04702	pCi/g	0.06868	N	661.7	2	1.308 IDENTIFIED	12.45	☐
Bismuth-211 int	4.965	0.3552	pCi/g	0.3413	Y	351.7	2	1.093 IDENTIFIED	4.626	☐ ui
Bismuth-212 HE	2.179	0.4904	pCi/g	1.341	N	0	6	0 FAIL_ABUND	0	☐
Bismuth-214 ✓	1.66	0.1329	pCi/g	0.1179	0.200	609.2	2	1.346 IDENTIFIED	5.995	☐
Cadmium-109 int	4.409	0.6189	pCi/g	1.238	Y	87.21	3	1.068 IDENTIFIED	13.2	☐ ui
Cerium-143 —	33010	6193	pCi/g	0	N	0	6	0 SHORT_HLIF	0	☐

Cesium-134	1a	0.1246	0.03798	pCi/g	0.1036	0.100	0	6	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Cesium-137	✓	0.3759	0.04968	pCi/g	0.07255	0.100	661.7	2	1.308	IDENTIFIED	12.45	<input type="checkbox"/>	
Gross Gamma		11.55	1.737	pCi/g	5.015	N		0				<input type="checkbox"/>	
Lead-212	✓	1.931	0.1309	pCi/g	0.09535	0.100	238.5	2	0.9709	IDENTIFIED	3.276	<input type="checkbox"/>	
Lead-214	✓	1.802	0.1382	pCi/g	0.1114	0.100	351.7	2	1.093	IDENTIFIED	4.626	<input type="checkbox"/>	
Molybdenum-99	HE	16.85	46.92	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Neptunium-237	int nr	1.271	0.2227	pCi/g	0.4101	N	87.21	3	1.068	IDENTIFIED	13.2	<input type="checkbox"/>	
Potassium-40	✓	28.85	1.598	pCi/g	0.7478	1.00	1460	1	1.951	IDENTIFIED	3.37	<input type="checkbox"/>	
Radium-224	int	5.639	0.76	pCi/g	1.022	Y	241.6	1	1.819	IDENTIFIED	12.3	<input type="checkbox"/> ui	
Radium-226	✓	1.66	0.1329	pCi/g	0.1179	Y	609.2	2	1.346	IDENTIFIED	5.995	<input type="checkbox"/>	
Radium-228	✓	2.125	0.218	pCi/g	0.254	0.500	910.8	3	1.614	IDENTIFIED	8.246	<input type="checkbox"/>	
Strontium-85	1a	0.09602	0.02507	pCi/g	0.08417	Y	0	6	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Technetium-99m		4.51E+25	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.5478	0.05336	pCi/g	0.06092	0.080	583	1	1.211	IDENTIFIED	8.389	<input type="checkbox"/>	
Thorium-228	nr	1.931	0.1309	pCi/g	0.09535	N	238.5	2	0.9709	IDENTIFIED	3.276	<input type="checkbox"/>	
Thorium-232	nr	2.125	0.218	pCi/g	0.254	N	910.8	3	1.614	IDENTIFIED	8.246	<input type="checkbox"/>	
Thorium-234	✓	3.312	1.247	pCi/g	2.115	2.00	63.26	2	1.161	IDENTIFIED	36.57	<input type="checkbox"/>	
Tin-126	int nr	0.4259	0.05979	pCi/g	0.1202	N	87.21	3	1.068	IDENTIFIED	13.2	<input type="checkbox"/>	
Total Uranium		9.7359	3.71E-06	ug/g	3.1492	N		0				<input type="checkbox"/>	
Uranium-238	HE	3.312	1.247	pCi/g	2.115	N	63.26	2	1.161	IDENTIFIED	36.57	<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		
248513003	25-FEB-10 12:00	20-MAR-10 11:21	23	SAMPLE	LOAD	1	LANL	LANL010041	GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	2.15	0.2595	pCi/g	0.3137	N	911.1	3	1.668	IDENTIFIED	10.56	☐	
Annihilation Rad.		0.1615	0.0426	pCi/g	0.05622	N	510.9	1	2.182	IDENTIFIED	25.99	☐	
Bismuth-211	int	4.6	0.3821	pCi/g	0.3786	Y	351.9	2	1.152	IDENTIFIED	6.876	☐ ui	
Bismuth-212	HE	2.651	0.5239	pCi/g	1.607	N	0	6	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.798	0.1372	pCi/g	0.1425	0.200	609.2	2	1.249	IDENTIFIED	5.667	☐	
Cadmium-109	int	5.131	0.5476	pCi/g	1.071	Y	87.28	3	1.158	IDENTIFIED	9.493	☐ ui	
Cadmium-115	HE	30.75	85.46	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Cerium-143	✓	26760	5720	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Gross Gamma	✓	11.23	1.673	pCi/g	4.874	N	0					☐	
Iodine-133	HE	1.69E+05	2.08E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Iodine-135	✓	2.64E+24	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Lead-210	HE	1.543	0.3949	pCi/g	0.8639	N	46.56	1	0.9929	IDENTIFIED	25.01	☐	
Lead-212	✓	2.1	0.1276	pCi/g	0.105	0.100	238.7	2	1.021	IDENTIFIED	3.355	☐	
Lead-214	✓	1.669	0.1461	pCi/g	0.1378	0.100	351.9	2	1.152	IDENTIFIED	6.876	☐	
Neptunium-237	int nr	1.479	0.2213	pCi/g	0.308	N	87.28	3	1.158	IDENTIFIED	9.493	☐	
Potassium-40	✓	29.54	1.721	pCi/g	0.787	1.00	1460	1	2.148	IDENTIFIED	3.771	☐	
Radium-224	int	5.656	0.6576	pCi/g	1.126	Y	241.8	1	1.507	IDENTIFIED	10.71	☐ ui	
Radium-226	✓	1.798	0.1372	pCi/g	0.1425	Y	609.2	2	1.249	IDENTIFIED	5.667	☐	
Radium-228	✓	2.15	0.2595	pCi/g	0.3137	0.500	911.1	3	1.668	IDENTIFIED	10.56	☐	
Technetium-99m		3.98E+25	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Thallium-208	✓	0.6705	0.06654	pCi/g	0.07516	0.080	583.2	1	1.343	IDENTIFIED	8.728	☐	
Thorium-228	nr	2.1	0.1276	pCi/g	0.105	N	238.7	2	1.021	IDENTIFIED	3.355	☐	
Thorium-232	nr	2.15	0.2595	pCi/g	0.3137	N	911.1	3	1.668	IDENTIFIED	10.56	☐	

Thorium-234	✓	1.369	0.5622	pCi/g	1.18	2.00	63.28	2	1.004	IDENTIFIED	39.94	□
Tin-126	int nr	0.4956	0.0529	pCi/g	0.1033	N	87.28	3	1.158	IDENTIFIED	9.493	□
Total Uranium		4.0156	1.67E-06	ug/g	1.759	N		0				□
Uranium-238	HE	1.369	0.5622	pCi/g	1.18	N	63.28	2	1.004	IDENTIFIED	39.94	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513004	25-FEB-10 12:00	20-MAR-10 11:22	23	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	2.012	0.2003	pCi/g	0.2003	N	910.7	3	2.021	IDENTIFIED	7.296	□		
Barium-137m		0.6538	0.05139	pCi/g	0.05827	N	661.4	2	1.712	IDENTIFIED	6.874	□		
Bismuth-211	int	4.094	0.2469	pCi/g	0.3111	Y	351.8	2	1.305	IDENTIFIED	5.105	□	ui	
Bismuth-212	la nr	1.891	0.346	pCi/g	1.07	N	0	9	0	FAIL_ABUND	0	□		
Bismuth-214	✓	1.397	0.09876	pCi/g	0.09991	0.200	608.9	2	1.5	IDENTIFIED	5.456	□		
Cadmium-109	int	4.019	0.5756	pCi/g	1.393	Y	87.31	3	1.231	IDENTIFIED	13.56	□	ui	
Cerium-143	—	48490	7111	pCi/g	0	N	0	9	0	SHORT_HLIF	0	□		
Cesium-134	la	0.1085	0.03268	pCi/g	0.08347	0.100	0	9	0	FAIL_ABUND	0	□	UI	Data rejected due to low abundance.
Cesium-135	HE	0.2992	0.08478	pCi/g	0.2682	N	0	9	0	NOT_IDENTI	0	□		
Cesium-137	✓	0.6907	0.05432	pCi/g	0.06155	0.100	661.4	2	1.712	IDENTIFIED	6.874	□		
Gross Gamma		9.245	1.188	pCi/g	2.505	N	0					□		
Iodine-135		1.20E+24	0	pCi/g	0	N	0	9	0	SHORT_HLIF	0	□		
Lead-212	✓	1.69	0.08203	pCi/g	0.08482	0.100	238.7	2	1.216	IDENTIFIED	3.249	□		
Lead-214	✓	1.486	0.09853	pCi/g	0.1131	0.100	351.8	2	1.305	IDENTIFIED	5.105	□		
Molybdenum-99	HE	69.71	40.71	pCi/g	0	N	0	9	0	SHORT_HLIF	0	□		
Neptunium-237	int nr	1.159	0.2056	pCi/g	0.4286	N	87.31	3	1.231	IDENTIFIED	13.56	□		
Potassium-40	✓	23.55	1.154	pCi/g	0.432	1.00	1460	1	2.243	IDENTIFIED	3.097	□		
Promethium-149	HE	612.8	507	pCi/g	0	N	0	9	0	SHORT_HLIF	0	□		
Radium-224	int	5.58	0.7278	pCi/g	0.908	Y	241.7	1	2.138	IDENTIFIED	12.74	□	ui	
Radium-226	✓	1.397	0.09876	pCi/g	0.09991	Y	608.9	2	1.5	IDENTIFIED	5.456	□		
Radium-228	✓	2.012	0.2003	pCi/g	0.2003	0.500	910.7	3	2.021	IDENTIFIED	7.296	□		
Silver-110m	HE	0.1144	0.02378	pCi/g	0.07916	N	0	9	0	NOT_IDENTI	0	□		
Sodium-24	HE	1.35E+09	1.93E+09	pCi/g	0	N	0	9	0	SHORT_HLIF	0	□		
Thallium-208	✓	0.4722	0.04331	pCi/g	0.0466	0.080	582.9	1	1.324	IDENTIFIED	8.295	□		
Thorium-228	nr	1.69	0.08203	pCi/g	0.08482	N	238.7	2	1.216	IDENTIFIED	3.249	□		
Thorium-232	nr	2.012	0.2003	pCi/g	0.2003	N	910.7	3	2.021	IDENTIFIED	7.296	□		
Tin-126	int nr	0.3883	0.05561	pCi/g	0.1354	N	87.31	3	1.231	IDENTIFIED	13.56	□		

*** = 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
248513005	25-FEB-10 12:00	20-MAR-10 11:22	23	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	1.73	0.1927	pCi/g	0.2424	N	911.7	3	1.839	IDENTIFIED	9.496	□		
Annihilation Rad.	HE	0.08632	0.03952	pCi/g	0.05268	N	511.2	1	1.917	IDENTIFIED	45.68	□		
Barium-137m		0.391	0.0434	pCi/g	0.06362	N	661.9	2	1.632	IDENTIFIED	10.71	□		
Bismuth-211	int	4.22	0.3041	pCi/g	0.3594	Y	351.7	2	1.363	IDENTIFIED	6.46	□	ui	
Bismuth-212	HE	2.118	0.4173	pCi/g	1.289	N	0	6	0	FAIL_ABUND	0	□		
Bismuth-214	✓	1.431	0.1046	pCi/g	0.1235	0.200	609.6	2	1.559	IDENTIFIED	6.147	□		
Cadmium-109	int	3.014	0.518	pCi/g	1.479	Y	87.24	3	1.161	IDENTIFIED	16.6	□	ui	

Cerium-143	-	49120	7726	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-135	HE	0.4012	0.147	pCi/g	0.2786	N	269.6	1	2.763	IDENTIFIED	36.44	<input type="checkbox"/>
Cesium-137	✓	0.413	0.04586	pCi/g	0.06721	0.100	661.9	2	1.632	IDENTIFIED	10.71	<input type="checkbox"/>
Gross Gamma	-	9.315	1.402	pCi/g	3.855	N		0				<input type="checkbox"/>
Iodine-133	HE	1.67E+06	1.66E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-135	-	1.26E+24	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.668	0.08463	pCi/g	0.0951	0.100	238.6	2	1.323	IDENTIFIED	3.535	<input type="checkbox"/>
Lead-214	✓	1.531	0.1182	pCi/g	0.1307	0.100	351.7	2	1.363	IDENTIFIED	6.46	<input type="checkbox"/>
Molybdenum-99	HE	32.51	42.51	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Neptunium-237	int nr	0.8687	0.1749	pCi/g	0.4763	N	87.24	3	1.161	IDENTIFIED	16.6	<input type="checkbox"/>
Niobium-95m	HE	0.3862	0.08686	pCi/g	0.2779	N	0	6	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	✓	25.66	1.264	pCi/g	0.4921	1.00	1461	1	2.151	IDENTIFIED	3.226	<input type="checkbox"/>
Radium-224	int	4.258	0.6561	pCi/g	1.019	Y	241.5	1	1.798	IDENTIFIED	15.14	<input type="checkbox"/> ui
Radium-226	✓	1.431	0.1046	pCi/g	0.1235	Y	609.6	2	1.559	IDENTIFIED	6.147	<input type="checkbox"/>
Radium-228	✓	1.73	0.1927	pCi/g	0.2424	0.500	911.7	3	1.839	IDENTIFIED	9.496	<input type="checkbox"/>
Thallium-208	✓	0.4923	0.04234	pCi/g	0.06147	0.080	583.3	1	1.552	IDENTIFIED	7.903	<input type="checkbox"/>
Thorium-228	nr	1.668	0.08463	pCi/g	0.0951	N	238.6	2	1.323	IDENTIFIED	3.535	<input type="checkbox"/>
Thorium-232	nr	1.73	0.1927	pCi/g	0.2424	N	911.7	3	1.839	IDENTIFIED	9.496	<input type="checkbox"/>
Tin-126	int nr	0.2911	0.05004	pCi/g	0.1572	N	87.24	3	1.161	IDENTIFIED	16.6	<input type="checkbox"/>
Total Uranium		5.5867	2.81E-06	ug/g	3.2953	N		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
248513006	25-FEB-10 12:00	20-MAR-10 11:23	23	SAMPLE	LOAD	1	LANL	LANL010041GEL		N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.23	0.2114	pCi/g	0.2147	N	911.2	3	2.155	IDENTIFIED	6.635	<input type="checkbox"/>
Annihilation Rad.	0.134	0.03412	pCi/g	0.04549	N	511	1	2.113	IDENTIFIED	24.96	<input type="checkbox"/>
Barium-137m	0.6411	0.04827	pCi/g	0.05873	N	661.6	2	1.853	IDENTIFIED	5.376	<input type="checkbox"/>
Bismuth-211 int	5.101	0.3674	pCi/g	0.3298	Y	352	2	1.381	IDENTIFIED	4.253	<input type="checkbox"/> ui
Bismuth-212 la nr	2.446	0.5007	pCi/g	1.157	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214 ✓	1.355	0.1191	pCi/g	0.1097	0.200	609.5	2	1.708	IDENTIFIED	6.569	<input type="checkbox"/>
Cadmium-109 int	4.734	0.5062	pCi/g	1.35	Y	87.25	3	1.416	IDENTIFIED	9.603	<input type="checkbox"/> ui
Cerium-143	56240	8843	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-134 la	0.08521	0.02294	pCi/g	0.08003	0.100	0	8	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Cesium-137 ✓	0.6772	0.05103	pCi/g	0.06204	0.100	661.6	2	1.853	IDENTIFIED	5.376	<input type="checkbox"/>
Gross Gamma	11.49	1.293	pCi/g	2.935	N		0				<input type="checkbox"/>
Iodine-133 HE	7.83E+05	1.52E+06	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212 ✓	2.027	0.1457	pCi/g	0.09355	0.100	238.7	2	1.247	IDENTIFIED	2.782	<input type="checkbox"/>
Lead-214 ✓	1.851	0.1428	pCi/g	0.1209	0.100	352	2	1.381	IDENTIFIED	4.253	<input type="checkbox"/>
Neptunium-237 int nr	1.365	0.2044	pCi/g	0.419	N	87.25	3	1.416	IDENTIFIED	9.603	<input type="checkbox"/>
Niobium-95 HE	0.1086	0.02439	pCi/g	0.07911	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40 ✓	31.76	1.633	pCi/g	0.4981	1.00	1461	1	2.703	IDENTIFIED	2.336	<input type="checkbox"/>
Promethium-149 HE	305.2	596.8	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>
Radium-224 int	5.344	0.6947	pCi/g	1.002	Y	241.8	1	1.886	IDENTIFIED	11.38	<input type="checkbox"/> ui
Radium-226 ✓	1.355	0.1191	pCi/g	0.1097	Y	609.5	2	1.708	IDENTIFIED	6.569	<input type="checkbox"/>
Radium-228 ✓	2.23	0.2114	pCi/g	0.2147	0.500	911.2	3	2.155	IDENTIFIED	6.635	<input type="checkbox"/>
Silver-110m HE	0.07965	0.02145	pCi/g	0.06817	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>
Strontium-85 la	0.1554	0.02635	pCi/g	0.08424	Y	0	8	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.

Thallium-208 ✓	0.5931	0.05053	pCi/g	0.05548	0.080	583	1	1.529	IDENTIFIED	6.576	□
Thorium-228 nr	2.027	0.1457	pCi/g	0.09355	N	238.7	2	1.247	IDENTIFIED	2.782	□
Thorium-232 nr	2.23	0.2114	pCi/g	0.2147	N	911.2	3	2.155	IDENTIFIED	6.635	□
Thorium-234 ✓	2.454	0.8528	pCi/g	2.147	2.00	63.36	2	1.319	IDENTIFIED	33.6	□
Tin-126 int nr	0.4574	0.0489	pCi/g	0.1309	N	87.25	3	1.416	IDENTIFIED	9.603	□
Total Uranium	7.4172	2.54E-06	ug/g	3.1965	N	0					□
Uranium-238 HE	2.454	0.8528	pCi/g	2.147	N	63.36	2	1.319	IDENTIFIED	33.6	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513007	25-FEB-10 12:00	20-MAR-10 11:23	23	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.876	0.2298	pCi/g	0.2313	N	910.1	3	1.907	IDENTIFIED	10.71	□
Annihilation Rad.	0.1541	0.04007	pCi/g	0.05063	N	510.6	1	2.366	IDENTIFIED	25.85	□
Bismuth-211 int	4.273	0.2942	pCi/g	0.3895	Y	351.4	2	1.327	IDENTIFIED	6.065	□ ui
Bismuth-212 la nr	2.567	0.5029	pCi/g	1.428	N	0	7	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.224	0.1026	pCi/g	0.1296	0.200	608.5	2	1.443	IDENTIFIED	7.473	□
Cadmium-109 int	4.388	0.5849	pCi/g	1.449	Y	87.07	3	1.165	IDENTIFIED	12.42	□ ui
Cadmium-115 HE	6.966	74.37	pCi/g	0	N	0	7	0	SHORT_HLIF	0	□
Cerium-143 —	74820	11380	pCi/g	0	N	0	7	0	SHORT_HLIF	0	□
Cesium-135 HE	0.3327	0.104	pCi/g	0.3283	N	0	7	0	NOT_IDENTI	0	□
Gross Gamma —	9.334	1.325	pCi/g	3.522	N	0					□
Iodine-135 —	8.20E+23	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0	□
Lead-212 ✓	1.69	0.08591	pCi/g	0.1045	0.100	238.3	2	1.116	IDENTIFIED	3.563	□
Lead-214 ✓	1.551	0.115	pCi/g	0.1357	0.100	351.4	2	1.327	IDENTIFIED	6.065	□
Neptunium-237 int nr	1.265	0.2145	pCi/g	0.4266	N	87.07	3	1.165	IDENTIFIED	12.42	□
Niobium-95m HE	0.5499	0.1081	pCi/g	0.3456	N	0	7	0	NOT_IDENTI	0	□
Potassium-40 ✓	25.28	1.307	pCi/g	0.4716	1.00	1459	1	2.009	IDENTIFIED	3.57	□
Radium-224 int	4.694	0.6876	pCi/g	1.12	Y	241.3	1	1.827	IDENTIFIED	14.37	□ ui
Radium-226 ✓	1.224	0.1026	pCi/g	0.1296	Y	608.5	2	1.443	IDENTIFIED	7.473	□
Radium-228 ✓	1.876	0.2298	pCi/g	0.2313	0.500	910.1	3	1.907	IDENTIFIED	10.71	□
Strontium-85 la	0.09643	0.02583	pCi/g	0.08716	Y	0	7	0	NOT_IDENTI	0	□ ui Data rejected due to low abundance.
Thallium-208 ✓	0.6321	0.05006	pCi/g	0.05809	0.080	582.4	1	1.629	IDENTIFIED	7.226	□
Thorium-228 nr	1.69	0.08591	pCi/g	0.1045	N	238.3	2	1.116	IDENTIFIED	3.563	□
Thorium-232 nr	1.876	0.2298	pCi/g	0.2313	N	910.1	3	1.907	IDENTIFIED	10.71	□
Tin-126 int nr	0.4239	0.0565	pCi/g	0.1408	N	87.07	3	1.165	IDENTIFIED	12.42	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513008	25-FEB-10 12:00	20-MAR-10 11:24	23	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.889	0.206	pCi/g	0.2328	N	911.3	3	1.551	IDENTIFIED	9.031	□
Annihilation Rad. HE	0.1095	0.0304	pCi/g	0.05173	N	510.9	1	1.992	IDENTIFIED	27.29	□
Barium-137m	0.3623	0.03948	pCi/g	0.06478	N	661.6	2	1.556	IDENTIFIED	9.382	□
Bismuth-211 int	4.422	0.331	pCi/g	0.3254	Y	351.9	2	1.19	IDENTIFIED	5.328	□ ui
Bismuth-212 la nr	2.543	0.4135	pCi/g	1.304	N	0	6	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.61	0.1267	pCi/g	0.1025	0.200	609.2	2	1.465	IDENTIFIED	5.023	□
Cadmium-109 int	3.789	0.3937	pCi/g	0.8263	Y	87.18	3	0.9957	IDENTIFIED	8.908	□ ui

Cadmium-115	HE	41.32	68.41	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Cerium-143		31730	5458	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-134	1a	0.1665	0.03873	pCi/g	0.09883	0.100	0	6	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Cesium-137	✓	0.3828	0.04172	pCi/g	0.06843	0.100	661.6	2	1.556	IDENTIFIED	9.382	<input type="checkbox"/>
Europium-155	HE	0.1948	0.04854	pCi/g	0.126	N	105.8	1	1.855	IDENTIFIED	24.21	<input type="checkbox"/>
Gross Gamma		10.36	1.234	pCi/g	3.358	N		0				<input type="checkbox"/>
Lead-210	nr	1.584	0.3558	pCi/g	0.5756	N	46.51	1	0.8699	IDENTIFIED	21.86	<input type="checkbox"/>
Lead-212	✓	1.861	0.1199	pCi/g	0.08684	0.100	238.6	2	0.9963	IDENTIFIED	2.983	<input type="checkbox"/>
Lead-214	✓	1.605	0.128	pCi/g	0.1184	0.100	351.9	2	1.19	IDENTIFIED	5.328	<input type="checkbox"/>
Molybdenum-99	HE	24.31	44.71	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Neptunium-237	int nr	1.092	0.1612	pCi/g	0.2366	N	87.18	3	0.9957	IDENTIFIED	8.908	<input type="checkbox"/>
Potassium-40	✓	26.71	1.425	pCi/g	0.5706	1.00	1461	1	2.074	IDENTIFIED	3.216	<input type="checkbox"/>
Promethium-149	HE	756.7	529.3	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Radium-224	int	4.413	0.4864	pCi/g	0.9319	Y	241.6	1	1.589	IDENTIFIED	9.686	<input type="checkbox"/> ui
Radium-226	✓	1.61	0.1267	pCi/g	0.1025	Y	609.2	2	1.465	IDENTIFIED	5.023	<input type="checkbox"/>
Radium-228	✓	1.889	0.206	pCi/g	0.2328	0.500	911.3	3	1.551	IDENTIFIED	9.031	<input type="checkbox"/>
Thallium-208	✓	0.5405	0.05027	pCi/g	0.06047	0.080	583.3	1	1.417	IDENTIFIED	7.4	<input type="checkbox"/>
Thorium-228	nr	1.861	0.1199	pCi/g	0.08684	N	238.6	2	0.9963	IDENTIFIED	2.983	<input type="checkbox"/>
Thorium-232	nr	1.889	0.206	pCi/g	0.2328	N	911.3	3	1.551	IDENTIFIED	9.031	<input type="checkbox"/>
Thorium-234	✓	1.625	0.4115	pCi/g	0.7658	2.00	63.31	2	0.6833	IDENTIFIED	23.48	<input type="checkbox"/>
Tin-126	int nr	0.366	0.03804	pCi/g	0.07966	N	87.18	3	0.9957	IDENTIFIED	8.908	<input type="checkbox"/>
Total Uranium		4.9164	1.22E-06	ug/g	1.1418	N		0				<input type="checkbox"/>
Uranium-238	nr	1.625	0.4115	pCi/g	0.7658	N	63.31	2	0.6833	IDENTIFIED	23.48	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513009	25-FEB-10 12:00	20-MAR-10 11:27	23	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	nr	1.94	0.235	pCi/g	0.2829	N	910.8	3	1.446	IDENTIFIED 10.6 <input type="checkbox"/>
Annihilation Rad.		0.1939	0.04089	pCi/g	0.05265	N	510.7	1	1.813	IDENTIFIED 20.54 <input type="checkbox"/>
Barium-137m		0.2953	0.04333	pCi/g	0.07246	N	661.8	2	1.611	IDENTIFIED 13.6 <input type="checkbox"/>
Bismuth-211	int	5.193	0.3499	pCi/g	0.3277	Y	351.7	2	1.142	IDENTIFIED 5.007 <input type="checkbox"/> ui
Bismuth-212	HE	2.096	0.4956	pCi/g	1.55	N	0	5	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.602	0.1407	pCi/g	0.1359	0.200	609.2	2	1.233	IDENTIFIED 6.485 <input type="checkbox"/>
Cadmium-109	int	4.498	0.4233	pCi/g	0.8377	Y	87.14	3	1.034	IDENTIFIED 8.171 <input type="checkbox"/> ui
Cadmium-115	HE	24.41	70.31	pCi/g	0	N	0	5	0	SHORT_HLIF 0 <input type="checkbox"/>
Cerium-143		16960	4554	pCi/g	0	N	0	5	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-137	✓	0.3119	0.04578	pCi/g	0.07655	0.100	661.8	2	1.611	IDENTIFIED 13.6 <input type="checkbox"/>
Gross Gamma		11.07	1.463	pCi/g	5.222	N		0		<input type="checkbox"/>
Iodine-135		2.46E+23	0	pCi/g	0	N	0	5	0	SHORT_HLIF 0 <input type="checkbox"/>
Lead-210	nr	1.477	0.356	pCi/g	0.6267	N	46.36	1	0.6411	IDENTIFIED 23.63 <input type="checkbox"/>
Lead-212	✓	1.912	0.1156	pCi/g	0.128	0.100	238.5	2	0.9361	IDENTIFIED 3.403 <input type="checkbox"/>
Lead-214	✓	1.885	0.1372	pCi/g	0.1193	0.100	351.7	2	1.142	IDENTIFIED 5.007 <input type="checkbox"/>
Neptunium-237	int nr	1.296	0.1826	pCi/g	0.2401	N	87.14	3	1.034	IDENTIFIED 8.171 <input type="checkbox"/>
Potassium-40	✓	28.58	1.672	pCi/g	0.5315	1.00	1460	1	2.207	IDENTIFIED 4.001 <input type="checkbox"/>
Radium-224	int	3.634	0.5647	pCi/g	1.124	Y	241.6	1	1.083	IDENTIFIED 14.89 <input type="checkbox"/> ui
Radium-226	✓	1.602	0.1407	pCi/g	0.1359	Y	609.2	2	1.233	IDENTIFIED 6.485 <input type="checkbox"/>
Radium-228	✓	1.94	0.235	pCi/g	0.2829	0.500	910.8	3	1.446	IDENTIFIED 10.6 <input type="checkbox"/>

Technetium-99m	2.77E+25	0	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208 ✓	0.5832	0.05656	pCi/g	0.06	0.080	582.9	1	1.181	IDENTIFIED	8.027	<input type="checkbox"/>
Thorium-228 nr	1.912	0.1156	pCi/g	0.128	N	238.5	2	0.9361	IDENTIFIED	3.403	<input type="checkbox"/>
Thorium-232 nr	1.94	0.235	pCi/g	0.2829	N	910.8	3	1.446	IDENTIFIED	10.6	<input type="checkbox"/>
Thorium-234 ✓	1.411	0.476	pCi/g	0.8415	2.00	63.13	2	0.881	IDENTIFIED	32.51	<input type="checkbox"/>
Tin-126 int nr	0.4345	0.04089	pCi/g	0.08078	N	87.14	3	1.034	IDENTIFIED	8.171	<input type="checkbox"/>
Total Uranium	4.2293	1.42E-06	ug/g	1.2543	N		0				<input type="checkbox"/>
Uranium-238 HE	1.411	0.476	pCi/g	0.8415	N	63.13	2	0.881	IDENTIFIED	32.51	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513010	25-FEB-10 12:00	20-MAR-10 11:27	23	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 nr	1.812	0.2565	pCi/g	0.3055	N	911.4	3	1.789	IDENTIFIED	11.93		<input type="checkbox"/>		
Annihilation Rad. HE	0.1275	0.03564	pCi/g	0.05909	N	510.8	1	2.19	IDENTIFIED	27.58		<input type="checkbox"/>		
Barium-137m	0.7242	0.0576	pCi/g	0.07355	N	661.5	2	1.352	IDENTIFIED	6.816		<input type="checkbox"/>		
Bismuth-211 int	5.551	0.3919	pCi/g	0.3962	Y	351.8	2	1.156	IDENTIFIED	5.19		<input type="checkbox"/>	ui	
Bismuth-212 la nr	3.41	0.6063	pCi/g	1.397	N	0	8	0	FAIL_ABUND	0		<input type="checkbox"/>		
Bismuth-214 ✓	1.669	0.1264	pCi/g	0.1526	0.200	609.2	2	1.406	IDENTIFIED	5.642		<input type="checkbox"/>		
Cadmium-109 int	5.14	0.6977	pCi/g	1.647	Y	87.24	3	1.359	IDENTIFIED	12.74		<input type="checkbox"/>	ui	
Cerium-143	74060	11040	pCi/g	0	N	0	8	0	SHORT_HLIF	0		<input type="checkbox"/>		
Cesium-134 la	0.1312	0.02979	pCi/g	0.1108	0.100	0	8	0	NOT_IDENTI	0		<input checked="" type="checkbox"/>	UI	Data rejected due to low abundance.
Cesium-137 ✓	0.7651	0.06089	pCi/g	0.0777	0.100	661.5	2	1.352	IDENTIFIED	6.816		<input type="checkbox"/>		
Gross Gamma	11.39	1.577	pCi/g	5.428	N		0					<input type="checkbox"/>		
Iodine-133 HE	1.77E+06	2.09E+06	pCi/g	0	N	0	8	0	SHORT_HLIF	0		<input type="checkbox"/>		
Lead-212 ✓	1.733	0.1094	pCi/g	0.1198	0.100	238.5	2	1.103	IDENTIFIED	3.874		<input type="checkbox"/>		
Lead-214 ✓	2.015	0.1527	pCi/g	0.1441	0.100	351.8	2	1.156	IDENTIFIED	5.19		<input type="checkbox"/>		
Neptunium-237 int nr	1.481	0.2541	pCi/g	0.4822	N	87.24	3	1.359	IDENTIFIED	12.74		<input type="checkbox"/>		
Niobium-95m la nr	0.6943	0.11	pCi/g	0.3557	N	0	8	0	NOT_IDENTI	0		<input type="checkbox"/>		
Potassium-40 ✓	28.12	1.783	pCi/g	0.6092	1.00	1461	1	1.859	IDENTIFIED	3.261		<input type="checkbox"/>		
Promethium-149 HE	620.7	703.7	pCi/g	0	N	0	8	0	SHORT_HLIF	0		<input type="checkbox"/>		
Radium-224 int	6.588	0.8527	pCi/g	1.283	Y	241.5	1	1.827	IDENTIFIED	12.16		<input type="checkbox"/>	ui	
Radium-226 ✓	1.669	0.1264	pCi/g	0.1526	Y	609.2	2	1.406	IDENTIFIED	5.642		<input type="checkbox"/>		
Radium-228 ✓	1.812	0.2565	pCi/g	0.3055	0.500	911.4	3	1.789	IDENTIFIED	11.93		<input type="checkbox"/>		
Sodium-24 HE	3.28E+09	2.38E+09	pCi/g	0	N	0	8	0	SHORT_HLIF	0		<input type="checkbox"/>		
Strontium-85 la	0.158	0.03225	pCi/g	0.1059	Y	0	8	0	NOT_IDENTI	0		<input checked="" type="checkbox"/>	UI	Data rejected due to low abundance.
Thallium-208 ✓	0.5151	0.05062	pCi/g	0.06956	0.080	583.2	1	1.551	IDENTIFIED	8.638		<input type="checkbox"/>		
Thorium-228 nr	1.733	0.1094	pCi/g	0.1198	N	238.5	2	1.103	IDENTIFIED	3.874		<input type="checkbox"/>		
Thorium-232 nr	1.812	0.2565	pCi/g	0.3055	N	911.4	3	1.789	IDENTIFIED	11.93		<input type="checkbox"/>		
Tin-126 int nr	0.4965	0.0674	pCi/g	0.1598	N	87.24	3	1.359	IDENTIFIED	12.74		<input type="checkbox"/>		
Total Uranium	7.2235	3.07E-06	ug/g	4.3152	N		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
248513011	25-FEB-10 12:00	20-MAR-10 12:08	23	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 nr	1.818	0.2135	pCi/g	0.3088	N	911.6	3	2.006	IDENTIFIED	10.12		<input type="checkbox"/>		
Annihilation Rad.	0.1785	0.04422	pCi/g	0.05392	N	511.6	1	2.026	IDENTIFIED	24.41		<input type="checkbox"/>		

Barium-137m	0.6543	0.06452	pCi/g	0.07031	N	662.2	2	1.623	IDENTIFIED	8.969	<input type="checkbox"/>	
Bismuth-211 int	4.907	0.3721	pCi/g	0.4081	Y	352.5	2	1.509	IDENTIFIED	6.075	<input type="checkbox"/>	ui
Bismuth-212 HE	1.9	0.4623	pCi/g	1.463	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214 ✓	1.428	0.1377	pCi/g	0.1437	0.200	609.8	2	1.628	IDENTIFIED	8.275	<input type="checkbox"/>	
Cadmium-109 int	3.566	0.655	pCi/g	1.437	Y	87.51	3	1.291	IDENTIFIED	17.76	<input type="checkbox"/>	ui
Cerium-143	15620	5593	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134 la	0.2036	0.05195	pCi/g	0.1209	0.100	0	6	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137 ✓	0.6912	0.06818	pCi/g	0.07428	0.100	662.2	2	1.623	IDENTIFIED	8.969	<input type="checkbox"/>	
Gross Gamma	10.53	1.568	pCi/g	4.247	N	0					<input type="checkbox"/>	
Iodine-133 HE	1.60E+06	1.93E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135	2.12E+24	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212 ✓	1.719	0.1108	pCi/g	0.1225	0.100	239	2	1.214	IDENTIFIED	3.962	<input type="checkbox"/>	
Lead-214 ✓	1.781	0.1437	pCi/g	0.1501	0.100	352.5	2	1.509	IDENTIFIED	6.075	<input type="checkbox"/>	
Neptunium-237 int nr	1.028	0.2174	pCi/g	0.4218	N	87.51	3	1.291	IDENTIFIED	17.76	<input type="checkbox"/>	
Potassium-40 ✓	28	1.604	pCi/g	0.6332	1.00	1461	1	1.961	IDENTIFIED	3.614	<input type="checkbox"/>	
Radium-224 int	5.034	0.8269	pCi/g	1.314	Y	242.1	1	1.825	IDENTIFIED	15.79	<input type="checkbox"/>	ui
Radium-226 ✓	1.428	0.1377	pCi/g	0.1437	Y	609.8	2	1.628	IDENTIFIED	8.275	<input type="checkbox"/>	
Radium-228 ✓	1.818	0.2135	pCi/g	0.3088	0.500	911.6	3	2.006	IDENTIFIED	10.12	<input type="checkbox"/>	
Strontium-85 la	0.1536	0.02883	pCi/g	0.1068	Y	0	6	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208 ✓	0.5563	0.05762	pCi/g	0.07634	0.080	583.7	1	1.29	IDENTIFIED	9.312	<input type="checkbox"/>	
Thorium-228 nr	1.719	0.1108	pCi/g	0.1225	N	239	2	1.214	IDENTIFIED	3.962	<input type="checkbox"/>	
Thorium-232 nr	1.818	0.2135	pCi/g	0.3088	N	911.6	3	2.006	IDENTIFIED	10.12	<input type="checkbox"/>	
Thorium-234 ✓	4.324	1.347	pCi/g	2.562	2.00	63.53	2	1.185	IDENTIFIED	29.82	<input type="checkbox"/>	
Tin-126 int nr	0.3444	0.06327	pCi/g	0.1395	N	87.51	3	1.291	IDENTIFIED	17.76	<input type="checkbox"/>	
Total Uranium	12.872	4.01E-06	ug/g	3.8141	N	0					<input type="checkbox"/>	
Uranium-238 HE	4.324	1.347	pCi/g	2.562	N	63.53	2	1.185	IDENTIFIED	29.82	<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
248513012	25-FEB-10 12:00	20-MAR-10 13:29	23.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.826	0.2406	pCi/g	0.2724	N	910.2	3	1.699	IDENTIFIED	11.54 <input type="checkbox"/>
Americium-241 la nr	0.1313	0.0402	pCi/g	0.1272	0.200	0	10	0	NOT_IDENTI	0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Annihilation Rad. --	0.1938	0.04581	pCi/g	0.05945	N	510.6	1	2.17	IDENTIFIED	23.42 <input type="checkbox"/>
Barium-137m	0.6938	0.05141	pCi/g	0.08373	N	661	2	1.422	IDENTIFIED	6.641 <input type="checkbox"/>
Bismuth-211 int	5.082	0.3618	pCi/g	0.4056	Y	351.5	2	1.391	IDENTIFIED	5.918 <input type="checkbox"/> ui
Bismuth-212 HE	2.313	0.5769	pCi/g	1.511	N	0	10	0	FAIL_ABUND	0 <input type="checkbox"/>
Bismuth-214 ✓	1.438	0.1109	pCi/g	0.145	0.200	608.7	2	1.551	IDENTIFIED	6.454 <input type="checkbox"/>
Cadmium-109 int	4.484	0.5212	pCi/g	1.076	Y	86.77	3	1.35	IDENTIFIED	10.98 <input type="checkbox"/> ui
Cadmium-115 HE	66.28	86.53	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Cerium-143	71600	10950	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Cesium-135 HE	0.3993	0.1152	pCi/g	0.3693	N	0	10	0	NOT_IDENTI	0 <input type="checkbox"/>
Cesium-137 ✓	0.7329	0.05435	pCi/g	0.08845	0.100	661	2	1.422	IDENTIFIED	6.641 <input type="checkbox"/>
Gross Gamma	11.2	1.651	pCi/g	4.803	N	0				<input type="checkbox"/>
Iodine-135	6.15E+24	0	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Lead-210 nr	2.103	0.4614	pCi/g	0.9682	N	45.93	1	0.8773	IDENTIFIED	21.6 <input type="checkbox"/>
Lead-212 ✓	1.869	0.1216	pCi/g	0.1118	0.100	238.2	2	1.265	IDENTIFIED	3.61 <input type="checkbox"/>
Lead-214 ✓	1.845	0.1408	pCi/g	0.1475	0.100	351.5	2	1.391	IDENTIFIED	5.918 <input type="checkbox"/>

Molybdenum-99 HE	8.961	57.39	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>
Neptunium-237 int nr	1.292	0.2023	pCi/g 0.3087	N	86.77	3	1.35	IDENTIFIED 10.98	<input type="checkbox"/>
Niobium-95m la nr	1.365	0.1322	pCi/g 0.411	N	0	10	0	NOT_IDENTI 0	<input type="checkbox"/>
Potassium-40 ✓	26.78	1.345	pCi/g 0.68	1.00	1460	1	2.029	IDENTIFIED 3.943	<input type="checkbox"/>
Promethium-149 HE	67.76	679.7	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>
Radium-224 int	5.848	0.8667	pCi/g 1.198	Y	241.2	1	2.031	IDENTIFIED 13.99	<input type="checkbox"/> ui
Radium-226 ✓	1.438	0.1109	pCi/g 0.145	Y	608.7	2	1.551	IDENTIFIED 6.454	<input type="checkbox"/>
Radium-228 ✓	1.826	0.2406	pCi/g 0.2724	0.500	910.2	3	1.699	IDENTIFIED 11.54	<input type="checkbox"/>
Silver-110m HE	0.1135	0.03338	pCi/g 0.1067	N	0	10	0	NOT_IDENTI 0	<input type="checkbox"/>
Thallium-208 ✓	0.5497	0.05393	pCi/g 0.06925	0.080	582.7	1	1.272	IDENTIFIED 9.099	<input type="checkbox"/>
Thorium-228 nr	1.869	0.1216	pCi/g 0.1118	N	238.2	2	1.265	IDENTIFIED 3.61	<input type="checkbox"/>
Thorium-232 nr	1.826	0.2406	pCi/g 0.2724	N	910.2	3	1.699	IDENTIFIED 11.54	<input type="checkbox"/>
Tin-126 int nr	0.4331	0.05035	pCi/g 0.1038	N	86.77	3	1.35	IDENTIFIED 10.98	<input type="checkbox"/>
Total Uranium	3.7375	1.65E-06 ug/g	1.9769	N	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
248513013	25-FEB-10 12:00	20-MAR-10 13:30	23.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.036	0.2446	pCi/g	0.2932	N	911.3	3	1.693	IDENTIFIED	10.38	<input type="checkbox"/>	
Barium-137m	0.6512	0.05313	pCi/g	0.07805	N	661.8	2	1.643	IDENTIFIED	7.085	<input type="checkbox"/>	
Bismuth-211 int	5	0.3642	pCi/g	0.4288	Y	352	2	1.359	IDENTIFIED	5.575	<input type="checkbox"/> ui	
Bismuth-212 nr	2.77	0.5595	pCi/g	1.029	N	728.2	1	1.718	IDENTIFIED	19.23	<input type="checkbox"/>	
Bismuth-214 ✓	1.426	0.1232	pCi/g	0.1496	0.200	609.4	2	1.519	IDENTIFIED	7.075	<input type="checkbox"/>	
Cadmium-109 int	2.977	0.6847	pCi/g	1.753	Y	87.15	3	0.9076	IDENTIFIED	22.33	<input type="checkbox"/> ui	
Cadmium-115 HE	54.52	86.45	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cerium-143 —	35530	6960	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-137 ✓	0.688	0.05616	pCi/g	0.08245	0.100	661.8	2	1.643	IDENTIFIED	7.085	<input type="checkbox"/>	
Gross Gamma —	10.87	1.523	pCi/g	4.466	N	0					<input type="checkbox"/>	
Iodine-133 HE	9.44E+05	2.18E+06	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212 ✓	2.03	0.1266	pCi/g	0.1166	0.100	238.7	2	1.206	IDENTIFIED	3.547	<input type="checkbox"/>	
Lead-214 ✓	1.815	0.1413	pCi/g	0.156	0.100	352	2	1.359	IDENTIFIED	5.575	<input type="checkbox"/>	
Molybdenum-99 HE	41.16	62.74	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Neptunium-237 HE	0.858	0.2169	pCi/g	0.4679	N	87.15	3	0.9076	IDENTIFIED	22.33	<input type="checkbox"/>	
Potassium-40 ✓	27.65	1.65	pCi/g	0.6297	1.00	1461	1	2.049	IDENTIFIED	3.659	<input type="checkbox"/>	
Promethium-149 HE	7.705	681	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224 int	5.88	0.7965	pCi/g	1.25	Y	241.8	1	1.846	IDENTIFIED	12.74	<input type="checkbox"/> ui	
Radium-226 ✓	1.426	0.1232	pCi/g	0.1496	Y	609.4	2	1.519	IDENTIFIED	7.075	<input type="checkbox"/>	
Radium-228 ✓	2.036	0.2446	pCi/g	0.2932	0.500	911.3	3	1.693	IDENTIFIED	10.38	<input type="checkbox"/>	
Thallium-208 ✓	0.6325	0.05746	pCi/g	0.06923	0.080	583.3	1	1.301	IDENTIFIED	7.853	<input type="checkbox"/>	
Thorium-228 nr	2.03	0.1266	pCi/g	0.1166	N	238.7	2	1.206	IDENTIFIED	3.547	<input type="checkbox"/>	
Thorium-232 nr	2.036	0.2446	pCi/g	0.2932	N	911.3	3	1.693	IDENTIFIED	10.38	<input type="checkbox"/>	
Tin-126 HE	0.2876	0.06614	pCi/g	0.1726	N	87.15	3	0.9076	IDENTIFIED	22.33	<input type="checkbox"/>	
Total Uranium	5.8984	2.75E-06 ug/g	4.7336	N	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
248513014	25-FEB-10 12:00	20-MAR-10 13:30	23.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.291	0.2297	pCi/g	0.2346	N	911.6 3	1.53	IDENTIFIED	8.042	<input type="checkbox"/>	
Annihilation Rad.	0.1383	0.03618	pCi/g	0.05474	N	510.9 1	1.559	IDENTIFIED	25.79	<input type="checkbox"/>	
Barium-137m HE	0.07502	0.02238	pCi/g	0.07048	N	662.1 2	1.02	IDENTIFIED	29.51	<input type="checkbox"/>	
Bismuth-211 int	5.295	0.3554	pCi/g	0.3801	Y	352 2	1.293	IDENTIFIED	4.993	<input type="checkbox"/>	ui
Bismuth-212 la nr	3.082	0.5487	pCi/g	1.447	N	0 7 0		FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214 ✓	1.657	0.1252	pCi/g	0.1292	0.200	609.5 2	1.508	IDENTIFIED	5.484	<input type="checkbox"/>	
Cadmium-109 int	4.005	0.4855	pCi/g	1.205	Y	87.29 3	1.024	IDENTIFIED	11.19	<input type="checkbox"/>	ui
Cerium-143	43260	7126	pCi/g	0	N	0 7 0		SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134 la	0.1725	0.0437	pCi/g	0.1081	0.100	0 7 0		FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137 ✓	0.07925	0.02365	pCi/g	0.07446	0.100	662.1 2	1.02	IDENTIFIED	29.51	<input type="checkbox"/>	
Gross Gamma	12.19	1.692	pCi/g	4.691	N	0				<input type="checkbox"/>	
Iodine-133 HE	8.84E+05	1.77E+06	pCi/g	0	N	0 7 0		SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212 ✓	2.283	0.1282	pCi/g	0.09598	0.100	238.7 2	1.135	IDENTIFIED	2.905	<input type="checkbox"/>	
Lead-214 ✓	1.922	0.1394	pCi/g	0.1356	0.100	352 2	1.293	IDENTIFIED	4.993	<input type="checkbox"/>	
Molybdenum-99 HE	3.864	50.56	pCi/g	0	N	0 7 0		SHORT_HLIF	0	<input type="checkbox"/>	
Neptunium-237 int nr	1.154	0.185	pCi/g	0.3502	N	87.29 3	1.024	IDENTIFIED	11.19	<input type="checkbox"/>	
Potassium-40 ✓	30.73	1.613	pCi/g	0.5771	1.00	1461 1	2.007	IDENTIFIED	3.018	<input type="checkbox"/>	
Radium-224 int	5.375	0.6841	pCi/g	1.029	Y	241.7 1	1.683	IDENTIFIED	12	<input type="checkbox"/>	ui
Radium-226 ✓	1.657	0.1252	pCi/g	0.1292	Y	609.5 2	1.508	IDENTIFIED	5.484	<input type="checkbox"/>	
Radium-228 ✓	2.291	0.2297	pCi/g	0.2346	0.500	911.6 3	1.53	IDENTIFIED	8.042	<input type="checkbox"/>	
Sodium-24 HE	2.01E+09	2.59E+09	pCi/g	0	N	0 7 0		SHORT_HLIF	0	<input type="checkbox"/>	
Strontium-85 la	0.1004	0.02686	pCi/g	0.0905	Y	0 7 0		NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208 ✓	0.703	0.05872	pCi/g	0.0632	0.080	583.4 1	1.487	IDENTIFIED	6.853	<input type="checkbox"/>	
Thorium-228 nr	2.283	0.1282	pCi/g	0.09598	N	238.7 2	1.135	IDENTIFIED	2.905	<input type="checkbox"/>	
Thorium-232 nr	2.291	0.2297	pCi/g	0.2346	N	911.6 3	1.53	IDENTIFIED	8.042	<input type="checkbox"/>	
Thorium-234 ✓	2.514	0.838	pCi/g	1.742	2.00	63.31 2	1.112	IDENTIFIED	32.13	<input type="checkbox"/>	
Tin-126 int nr	0.3869	0.0469	pCi/g	0.1167	N	87.29 3	1.024	IDENTIFIED	11.19	<input type="checkbox"/>	
Total Uranium	7.5442	2.49E-06	ug/g	2.5942	N	0				<input type="checkbox"/>	
Uranium-238 HE	2.514	0.838	pCi/g	1.742	N	63.31 2	1.112	IDENTIFIED	32.13	<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
248513015	25-FEB-10 12:00	20-MAR-10 13:30	23.1	SAMPLE	LOAD	1	LANL	LANL010041GEL		N	RCSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.753	0.1832	pCi/g	0.1878	N	911.7 3	1.352	IDENTIFIED	8.382	<input type="checkbox"/>	
Annihilation Rad.	0.1649	0.03233	pCi/g	0.04583	N	510.9 1	1.68	IDENTIFIED	18.87	<input type="checkbox"/>	
Barium-137m	0.4285	0.04855	pCi/g	0.0561	N	661.8 2	1.526	IDENTIFIED	10.29	<input type="checkbox"/>	
Bismuth-211 int	4.839	0.4031	pCi/g	0.3102	Y	352.1 2	1.137	IDENTIFIED	5.117	<input type="checkbox"/>	ui
Bismuth-212 nr	1.87	0.4337	pCi/g	0.7496	N	728.1 1	1.033	IDENTIFIED	22.23	<input type="checkbox"/>	
Bismuth-214 ✓	1.524	0.1161	pCi/g	0.1092	0.200	609.5 2	1.352	IDENTIFIED	5.084	<input type="checkbox"/>	
Cadmium-109 int	3.651	0.4876	pCi/g	1.217	Y	87.25 3	0.9381	IDENTIFIED	12.5	<input type="checkbox"/>	ui
Cadmium-115 HE	12.37	63.5	pCi/g	0	N	0 5 0		SHORT_HLIF	0	<input type="checkbox"/>	
Cerium-143	15180	4283	pCi/g	0	N	0 5 0		SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134 la	0.08858	0.02345	pCi/g	0.08597	0.100	0 5 0		NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137 ✓	0.4527	0.0513	pCi/g	0.05926	0.100	661.8 2	1.526	IDENTIFIED	10.29	<input type="checkbox"/>	
Gross Gamma	11.37	1.612	pCi/g	4.291	N	0				<input type="checkbox"/>	
Iodine-133 HE	3.02E+05	1.61E+06	pCi/g	0	N	0 5 0		SHORT_HLIF	0	<input type="checkbox"/>	

Lead-212 ✓	2	0.1527	pCi/g	0.09019	0.100	238.7	2	0.954	IDENTIFIED	3.002	□
Lead-214 ✓	1.756	0.1541	pCi/g	0.1128	0.100	352.1	2	1.137	IDENTIFIED	5.117	□
Neptunium-237 int nr	1.052	0.1786	pCi/g	0.3547	N	87.25	3	0.9381	IDENTIFIED	12.5	□
Potassium-40 ✓	29.63	1.536	pCi/g	0.4143	1.00	1462	1	1.986	IDENTIFIED	2.859	□
Radium-224 int	5.175	0.6364	pCi/g	0.9669	Y	241.7	1	1.574	IDENTIFIED	10.3	□ ui
Radium-226 ✓	1.524	0.1161	pCi/g	0.1092	Y	609.5	2	1.352	IDENTIFIED	5.084	□
Radium-228 ✓	1.753	0.1832	pCi/g	0.1878	0.500	911.7	3	1.352	IDENTIFIED	8.382	□
Sodium-24 HE	4.43E+08	2.33E+09	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□
Thallium-208 ✓	0.6301	0.05351	pCi/g	0.05969	0.080	583.5	1	1.351	IDENTIFIED	6.559	□
Thorium-228 nr	2	0.1527	pCi/g	0.09019	N	238.7	2	0.954	IDENTIFIED	3.002	□
Thorium-232 nr	1.753	0.1832	pCi/g	0.1878	N	911.7	3	1.352	IDENTIFIED	8.382	□
Thorium-234 ✓	2.071	0.8926	pCi/g	1.622	2.00	63.25	2	0.9634	IDENTIFIED	42.17	□
Tin-126 int nr	0.3526	0.04709	pCi/g	0.1179	N	87.25	3	0.9381	IDENTIFIED	12.5	□
Total Uranium	6.1851	2.66E-06	ug/g	2.4157	N	0					□
Uranium-238 HE	2.071	0.8926	pCi/g	1.622	N	63.25	2	0.9634	IDENTIFIED	42.17	□

*** = 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
248513016	25-FEB-10 12:00	20-MAR-10 13:31	23.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	***FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.997	0.2156	pCi/g	0.2482	N	911.2	3	1.745	IDENTIFIED	8.684 □
Annihilation Rad.	0.1509	0.03267	pCi/g	0.0555	N	510.9	1	1.492	IDENTIFIED	21.21 □
Barium-137m	1.09	0.07262	pCi/g	0.07231	N	661.7	2	1.493	IDENTIFIED	4.95 □
Bismuth-211 int	4.439	0.3191	pCi/g	0.39	Y	351.9	2	1.051	IDENTIFIED	5.644 □ ui
Bismuth-212 la nr	2.983	0.4745	pCi/g	1.409	N	0	3	0	FAIL_ABUND	0 □
Bismuth-214 ✓	1.416	0.1209	pCi/g	0.1213	0.200	609.3	2	1.39	IDENTIFIED	6.779 □
Cadmium-109 int	5.144	0.714	pCi/g	1.345	Y	87.21	3	1.504	IDENTIFIED	13.07 □ ui
Cerium-143	49020	7934	pCi/g	0	N	0	3	0	SHORT_HLIF	0 □
Cesium-137 ✓	1.151	0.07678	pCi/g	0.07639	0.100	661.7	2	1.493	IDENTIFIED	4.95 □
Gross Gamma	11.69	1.547	pCi/g	4.263	N	0				□
Lead-210 HE	6.546	2.494	pCi/g	5.856	N	46.59	1	1.052	IDENTIFIED	37.82 □
Lead-212 ✓	2.028	0.1187	pCi/g	0.1088	0.100	238.6	2	1.143	IDENTIFIED	3.291 □
Lead-214 ✓	1.611	0.124	pCi/g	0.1371	0.100	351.9	2	1.051	IDENTIFIED	5.644 □
Neptunium-237 int nr	1.483	0.2579	pCi/g	0.3937	N	87.21	3	1.504	IDENTIFIED	13.07 □
Potassium-40 ✓	26.54	1.514	pCi/g	0.5605	1.00	1461	1	2.111	IDENTIFIED	3.46 □
Promethium-149 HE	449.4	626	pCi/g	0	N	0	3	0	SHORT_HLIF	0 □
Radium-224 int	5.083	0.614	pCi/g	1.166	Y	241.6	1	1.518	IDENTIFIED	11.3 □ ui
Radium-226 ✓	1.416	0.1209	pCi/g	0.1213	Y	609.3	2	1.39	IDENTIFIED	6.779 □
Radium-228 ✓	1.997	0.2156	pCi/g	0.2482	0.500	911.2	3	1.745	IDENTIFIED	8.684 □
Thallium-208 ✓	0.5867	0.05476	pCi/g	0.07013	0.080	583.3	1	1.204	IDENTIFIED	8.032 □
Thorium-228 nr	2.028	0.1187	pCi/g	0.1088	N	238.6	2	1.143	IDENTIFIED	3.291 □
Thorium-232 nr	1.997	0.2156	pCi/g	0.2482	N	911.2	3	1.745	IDENTIFIED	8.684 □
Thorium-234 ✓	3.439	1.212	pCi/g	2.39	2.00	63.16	2	0.7504	IDENTIFIED	34.09 □
Tin-126 int nr	0.4969	0.06897	pCi/g	0.1305	N	87.21	3	1.504	IDENTIFIED	13.07 □
Total Uranium	10.292	3.60E-06	ug/g	3.5589	N	0				□
Uranium-238 HE	3.439	1.212	pCi/g	2.39	N	63.16	2	0.7504	IDENTIFIED	34.09 □

*** = 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
248513017	25-FEB-10 12:00	20-MAR-10 13:31	23.1	SAMPLE	LOAD	1	LANL	LANL01004 GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.544	0.25	pCi/g	0.2758	N	910.9	3 1.756	IDENTIFIED 7.741	<input type="checkbox"/>	
Annihilation Rad. HE	0.1173	0.0418	pCi/g	0.06538	N	510.7	1 1.816	IDENTIFIED 35.37	<input type="checkbox"/>	
Barium-137m	0.1828	0.0425	pCi/g	0.07742	N	661.6	2 1.345	IDENTIFIED 22.89	<input type="checkbox"/>	
Bismuth-211 int	5.264	0.4301	pCi/g	0.4802	Y	352	2 1.368	IDENTIFIED 6.485	<input type="checkbox"/>	ui
Bismuth-212 HE	2.289	0.5237	pCi/g	1.517	N	0	8 0	FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 ✓	1.603	0.1293	pCi/g	0.1616	0.200	609.2	2 1.44	IDENTIFIED 6.347	<input type="checkbox"/>	
Cadmium-109 int	3.436	0.7943	pCi/g	1.911	Y	87.5	3 1.282	IDENTIFIED 22.27	<input type="checkbox"/>	ui
Cerium-143	68320	10580	pCi/g	0	N	0	8 0	SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 la	0.1769	0.03925	pCi/g	0.1247	0.100	0	8 0	FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-135 HE	0.5145	0.1305	pCi/g	0.4209	N	0	8 0	NOT_IDENTI 0	<input type="checkbox"/>	
Cesium-137 ✓	0.1931	0.0449	pCi/g	0.08179	0.100	661.6	2 1.345	IDENTIFIED 22.89	<input type="checkbox"/>	
Gross Gamma	12.19	1.864	pCi/g	6.302	N	0			<input type="checkbox"/>	
Iodine-135	1.62E+24 0		pCi/g	0	N	0	8 0	SHORT_HLIF 0	<input type="checkbox"/>	
Lead-212 ✓	2.305	0.1595	pCi/g	0.1332	0.100	238.7	2 1.293	IDENTIFIED 3.494	<input type="checkbox"/>	
Lead-214 ✓	1.91	0.1647	pCi/g	0.1746	0.100	352	2 1.368	IDENTIFIED 6.485	<input type="checkbox"/>	
Neptunium-237 HE	0.9904	0.2514	pCi/g	0.5656	N	87.5	3 1.282	IDENTIFIED 22.27	<input type="checkbox"/>	
Niobium-95m HE	0.567	0.1228	pCi/g	0.3925	N	0	8 0	NOT_IDENTI 0	<input type="checkbox"/>	
Potassium-40 ✓	31.09	1.843	pCi/g	0.7337	1.00	1460	1 2.035	IDENTIFIED 3.319	<input type="checkbox"/>	
Promethium-149 HE	758.3	766	pCi/g	0	N	0	8 0	SHORT_HLIF 0	<input type="checkbox"/>	
Radium-224 int	5.819	1.014	pCi/g	1.427	Y	241.7	1 2.04	IDENTIFIED 16.53	<input type="checkbox"/>	ui
Radium-226 ✓	1.603	0.1293	pCi/g	0.1616	Y	609.2	2 1.44	IDENTIFIED 6.347	<input type="checkbox"/>	
Radium-228 ✓	2.544	0.25	pCi/g	0.2758	0.500	910.9	3 1.756	IDENTIFIED 7.741	<input type="checkbox"/>	
Strontium-85 la	0.1107	0.03286	pCi/g	0.1057	Y	0	8 0	NOT_IDENTI 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208 ✓	0.7097	0.06403	pCi/g	0.07165	0.080	583.2	1 1.711	IDENTIFIED 7.777	<input type="checkbox"/>	
Thorium-228 nr	2.305	0.1595	pCi/g	0.1332	N	238.7	2 1.293	IDENTIFIED 3.494	<input type="checkbox"/>	
Thorium-232 nr	2.544	0.25	pCi/g	0.2758	N	910.9	3 1.756	IDENTIFIED 7.741	<input type="checkbox"/>	
Thorium-234 ✓	4.505	2.131	pCi/g	4.324	2.00	63.97	2 1.357	IDENTIFIED 46.25	<input type="checkbox"/>	
Tin-126 HE	0.3319	0.07672	pCi/g	0.186	N	87.5	3 1.282	IDENTIFIED 22.27	<input type="checkbox"/>	
Total Uranium	13.405	6.34E-06 ug/g		6.4373	N	0			<input type="checkbox"/>	
Uranium-238 HE	4.505	2.131	pCi/g	4.324	N	63.97	2 1.357	IDENTIFIED 46.25	<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
248513018	25-FEB-10 12:00	20-MAR-10 13:32	23.1	SAMPLE	LOAD	1	LANL	LANL01004 GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.385	0.2162	pCi/g	0.2444	N	911	3 1.481	IDENTIFIED 6.704	<input type="checkbox"/>	
Annihilation Rad.	0.1536	0.03886	pCi/g	0.04879	N	510.8	1 1.535	IDENTIFIED 24.86	<input type="checkbox"/>	
Bismuth-211 int	5.542	0.397	pCi/g	0.3127	Y	351.8	2 1.134	IDENTIFIED 4.64	<input type="checkbox"/>	ui
Bismuth-212 la nr	2.561	0.4194	pCi/g	1.292	N	0	6 0	FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 ✓	1.653	0.122	pCi/g	0.1095	0.200	609.1	2 1.248	IDENTIFIED 5.126	<input type="checkbox"/>	
Cadmium-109 int	5.319	0.4591	pCi/g	1.2	Y	87.21	3 1.037	IDENTIFIED 7.191	<input type="checkbox"/>	ui
Cerium-143	38820	6599	pCi/g	0	N	0	6 0	SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 la	0.1103	0.0348	pCi/g	0.1033	0.100	0	6 0	FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gross Gamma	12.04	1.518	pCi/g	4.299	N	0			<input type="checkbox"/>	

Iodine-133	HE	2.32E+05	1.71E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	□
Lead-212 ✓		2.485	0.162	pCi/g	0.09971	0.100	238.5	2	0.9811	IDENTIFIED	2.688	□
Lead-214 ✓		2.011	0.1544	pCi/g	0.1137	0.100	351.8	2	1.134	IDENTIFIED	4.64	□
Molybdenum-99	HE	40.33	49.36	pCi/g	0	N	0	6	0	SHORT_HLIF	0	□
Neptunium-237	int nr	1.533	0.2082	pCi/g	0.4045	N	87.21	3	1.037	IDENTIFIED	7.191	□
Potassium-40 ✓		31.26	1.646	pCi/g	0.4919	1.00	1460	1	1.876	IDENTIFIED	2.899	□
Radium-224	int	5.362	0.6397	pCi/g	1.069	Y	241.5	1	1.475	IDENTIFIED	10.58	□ ui
Radium-226 ✓		1.653	0.122	pCi/g	0.1095	Y	609.1	2	1.248	IDENTIFIED	5.126	□
Radium-228 ✓		2.385	0.2162	pCi/g	0.2444	0.500	911	3	1.481	IDENTIFIED	6.704	□
Sodium-24	HE	3.70E+09	2.53E+09	pCi/g	0	N	0	6	0	SHORT_HLIF	0	□
Thallium-208 ✓		0.6817	0.05859	pCi/g	0.0617	0.080	583.1	1	1.388	IDENTIFIED	7.025	□
Thorium-228	nr	2.485	0.162	pCi/g	0.09971	N	238.5	2	0.9811	IDENTIFIED	2.688	□
Thorium-232	nr	2.385	0.2162	pCi/g	0.2444	N	911	3	1.481	IDENTIFIED	6.704	□
Tin-126	int nr	0.5138	0.04434	pCi/g	0.1164	N	87.21	3	1.037	IDENTIFIED	7.191	□
Total Uranium		5.9485	2.94E-06	ug/g	3.1605	N		0				□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248513019	25-FEB-10 12:00	20-MAR-10 13:32	23.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	2.634	0.2371	pCi/g	0.2794	N	911	3	1.473	IDENTIFIED	6.845	□	
Annihilation Rad.		0.2024	0.04083	pCi/g	0.06364	N	510.8	1	1.385	IDENTIFIED	19.67	□	
Bismuth-211	int	5.216	0.3813	pCi/g	0.3791	Y	351.9	2	1.131	IDENTIFIED	5.629	□ ui	
Bismuth-212	HE	2.483	0.5865	pCi/g	1.547	N	0	4	0	FAIL_ABUND	0	□	
Bismuth-214 ✓		1.57	0.1313	pCi/g	0.141	0.200	609.3	2	1.24	IDENTIFIED	6.622	□	
Cadmium-109	int	5.723	0.59	pCi/g	0.9646	Y	87.4	3	1.473	IDENTIFIED	9.082	□ ui	
Cadmium-115	HE	11.28	85.75	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□	
Cerium-143		25220	5554	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□	
Gross Gamma		12.44	1.621	pCi/g	4.467	N		0				□	
Iodine-133	HE	2.61E+05	2.18E+06	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□	
Lead-210	HE	1.668	0.4446	pCi/g	0.8518	N	46.49	1	0.8788	IDENTIFIED	26.1	□	
Lead-212 ✓		2.332	0.137	pCi/g	0.1073	0.100	238.7	2	1.039	IDENTIFIED	2.982	□	
Lead-214 ✓		1.893	0.1479	pCi/g	0.1379	0.100	351.9	2	1.131	IDENTIFIED	5.629	□	
Neptunium-237	int nr	1.649	0.2425	pCi/g	0.2768	N	87.4	3	1.473	IDENTIFIED	9.082	□	
Potassium-40 ✓		31.57	1.748	pCi/g	0.573	1.00	1460	1	1.851	IDENTIFIED	3.313	□	
Radium-224	int	6.311	0.9175	pCi/g	1.151	Y	241.6	1	1.852	IDENTIFIED	13.82	□ ui	
Radium-226 ✓		1.57	0.1313	pCi/g	0.141	Y	609.3	2	1.24	IDENTIFIED	6.622	□	
Radium-228 ✓		2.634	0.2371	pCi/g	0.2794	0.500	911	3	1.473	IDENTIFIED	6.845	□	
Thallium-208 ✓		0.7139	0.06258	pCi/g	0.07445	0.080	583.1	1	1.459	IDENTIFIED	7.384	□	
Thorium-228	nr	2.332	0.137	pCi/g	0.1073	N	238.7	2	1.039	IDENTIFIED	2.982	□	
Thorium-232	nr	2.634	0.2371	pCi/g	0.2794	N	911	3	1.473	IDENTIFIED	6.845	□	
Thorium-234 ✓		2.538	0.6522	pCi/g	1.146	2.00	63.42	2	1.089	IDENTIFIED	23.87	□	
Tin-126	int nr	0.5528	0.05699	pCi/g	0.09304	N	87.4	3	1.473	IDENTIFIED	9.082	□	
Total Uranium		7.5676	1.94E-06	ug/g	1.7076	N		0				□	
Uranium-238	nr	2.538	0.6522	pCi/g	1.146	N	63.42	2	1.089	IDENTIFIED	23.87	□	

*** = 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
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248513020	25-FEB-10 12:00	20-MAR-10 13:38	23.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.704	0.1763	pCi/g	0.1846	N	910.6	3	1.735 IDENTIFIED	7.822	□
Annihilation Rad. HE	0.1025	0.03586	pCi/g	0.04003	N	511.1	1	2.482 IDENTIFIED	34.85	□
Barium-137m	0.6876	0.04446	pCi/g	0.05487	N	661.2	2	1.428 IDENTIFIED	5.224	□
Bismuth-211 int	4.212	0.2485	pCi/g	0.2682	Y	351.7	2	1.316 IDENTIFIED	4.951	□ ui
Bismuth-212 nr	2.348	0.4044	pCi/g	0.6799	N	727	1	1.845 IDENTIFIED	16.07	□
Bismuth-214 ✓	1.215	0.08796	pCi/g	0.09726	0.200	608.9	2	1.588 IDENTIFIED	5.676	□
Cadmium-109 int	5.171	0.6313	pCi/g	1.139	Y	87.24	3	1.48 IDENTIFIED	11.31	□ ui
Cadmium-115 HE	41.27	53.96	pCi/g	0	N	0	8	0 SHORT_HLIF	0	□
Cerium-143	40940	6366	pCi/g	0	N	0	8	0 SHORT_HLIF	0	□
Cesium-134 la	0.09692	0.02055	pCi/g	0.07615	0.100	0	8	0 NOT_IDENTI	0	□ UI Data rejected due to low abundance.
Cesium-137 ✓	0.7264	0.04701	pCi/g	0.05796	0.100	661.2	2	1.428 IDENTIFIED	5.224	□
Gross Gamma	10.62	1.415	pCi/g	2.884	N	0	0	0	0	□
Iodine-133 HE	9.17E+05	1.42E+06	pCi/g	0	N	0	8	0 SHORT_HLIF	0	□
Lead-212 ✓	1.704	0.07912	pCi/g	0.07823	0.100	238.7	2	1.238 IDENTIFIED	2.926	□
Lead-214 ✓	1.529	0.09957	pCi/g	0.0975	0.100	351.7	2	1.316 IDENTIFIED	4.951	□
Molybdenum-99 HE	48.08	36.93	pCi/g	0	N	0	8	0 SHORT_HLIF	0	□
Neptunium-237 int nr	1.49	0.2398	pCi/g	0.3356	N	87.24	3	1.48 IDENTIFIED	11.31	□
Potassium-40 ✓	27.78	1.273	pCi/g	0.3903	1.00	1460	1	2.532 IDENTIFIED	2.568	□
Radium-224 int	4.839	0.5386	pCi/g	0.8374	Y	241.6	1	1.644 IDENTIFIED	10.78	□ ui
Radium-226 ✓	1.215	0.08796	pCi/g	0.09726	Y	608.9	2	1.588 IDENTIFIED	5.676	□
Radium-228 ✓	1.704	0.1763	pCi/g	0.1846	0.500	910.6	3	1.735 IDENTIFIED	7.822	□
Silver-110m la nr	0.1119	0.01943	pCi/g	0.06713	N	0	8	0 NOT_IDENTI	0	□
Strontium-85 la	0.09393	0.01898	pCi/g	0.06969	Y	0	8	0 NOT_IDENTI	0	□ UI Data rejected due to low abundance.
Thallium-208 ✓	0.5507	0.03964	pCi/g	0.04923	0.080	582.8	1	1.606 IDENTIFIED	6.042	□
Thorium-228 nr	1.704	0.07912	pCi/g	0.07823	N	238.7	2	1.238 IDENTIFIED	2.926	□
Thorium-232 nr	1.704	0.1763	pCi/g	0.1846	N	910.6	3	1.735 IDENTIFIED	7.822	□
Tin-126 int nr	0.4994	0.06098	pCi/g	0.1107	N	87.24	3	1.48 IDENTIFIED	11.31	□
Total Uranium	7.5131	2.32E-06	ug/g	4.0293	N	0	0	0	0	□
Zinc-65 HE	0.1578	0.0431	pCi/g	0.1441	N	0	8	0 NOT_IDENTI	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
1202061452		20-MAR-10 13:33	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Cerium-143 HE	1.784	8.342	pCi/g	0	N	0	3	0 SHORT_HLIF	0	□
Iodine-135 HE	1.85E+12	2.44E+12	pCi/g	0	N	0	3	0 SHORT_HLIF	0	□
Technetium-99m HE	6.32E+12	7.77E+12	pCi/g	0	N	0	3	0 SHORT_HLIF	0	□
Total Uranium	1.9181	9.75E-07	ug/g	1.6727	N	0	0	0	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
1202061453	25-FEB-10 12:00	20-MAR-10 13:34	23.1	DUP	LOAD	1		LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.109	0.2082	pCi/g	0.2172	N	911.1	3	1.736 IDENTIFIED	7.183	□
Annihilation Rad.	0.1661	0.03583	pCi/g	0.04669	N	511	1	2.116 IDENTIFIED	20.98	□
Antimony-126 HE	0.4257	0.13	pCi/g	0.4034	N	0	9	0 NOT_IDENTI	0	□

Barium-137m	0.4412	0.04538	pCi/g	0.05363	N	661.7	2	1.573	IDENTIFIED	8.833	<input type="checkbox"/>	
Bismuth-211 int	5.322	0.385	pCi/g	0.3425	Y	352	2	1.226	IDENTIFIED	4.305	<input type="checkbox"/>	ui
Bismuth-212 la nr	2.865	0.4668	pCi/g	1.18	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	1.495	0.115	pCi/g	0.1231	0.200	609.4	2	1.502	IDENTIFIED	5.009	<input type="checkbox"/>	
Cadmium-109 int	4.403	0.5219	pCi/g	1.316	Y	87.19	3	1.374	IDENTIFIED	10.88	<input type="checkbox"/>	ui
Cerium-143	62900	9861	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134 la	0.1178	0.03462	pCi/g	0.08738	0.100	0	9	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137	0.466	0.04796	pCi/g	0.05665	0.100	661.7	2	1.573	IDENTIFIED	8.833	<input type="checkbox"/>	
Gross Gamma	11.84	1.373	pCi/g	3.028	N	0					<input type="checkbox"/>	
Iodine-133 HE	2.30E+06	1.79E+06	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	2.159	0.1557	pCi/g	0.1036	0.100	238.7	2	1.219	IDENTIFIED	2.842	<input type="checkbox"/>	
Lead-214	1.931	0.1495	pCi/g	0.1245	0.100	352	2	1.226	IDENTIFIED	4.305	<input type="checkbox"/>	
Molybdenum-99 HE	11.56	47.29	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Neptunium-237 int nr	1.269	0.2008	pCi/g	0.43	N	87.19	3	1.374	IDENTIFIED	10.88	<input type="checkbox"/>	
Niobium-95 HE	0.09713	0.02845	pCi/g	0.08832	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	31.77	1.664	pCi/g	0.5786	1.00	1461	1	2.808	IDENTIFIED	2.54	<input type="checkbox"/>	
Promethium-149 HE	599.5	615.4	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224 int	5.762	0.6719	pCi/g	1.109	Y	241.8	1	1.632	IDENTIFIED	9.829	<input type="checkbox"/>	ui
Radium-226	1.495	0.115	pCi/g	0.1231	Y	609.4	2	1.502	IDENTIFIED	5.009	<input type="checkbox"/>	
Radium-228	2.109	0.2082	pCi/g	0.2172	0.500	911.1	3	1.736	IDENTIFIED	7.183	<input type="checkbox"/>	
Strontium-85 la	0.1864	0.02684	pCi/g	0.0871	Y	0	9	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	0.6254	0.04996	pCi/g	0.05566	0.080	583.3	1	1.556	IDENTIFIED	5.871	<input type="checkbox"/>	
Thorium-228 nr	2.159	0.1557	pCi/g	0.1036	N	238.7	2	1.219	IDENTIFIED	2.842	<input type="checkbox"/>	
Thorium-232 nr	2.109	0.2082	pCi/g	0.2172	N	911.1	3	1.736	IDENTIFIED	7.183	<input type="checkbox"/>	
Thorium-234	2.548	0.8468	pCi/g	2.174	2.00	63.26	2	1.088	IDENTIFIED	32.02	<input type="checkbox"/>	
Tin-126 int nr	0.4253	0.05041	pCi/g	0.1376	N	87.19	3	1.374	IDENTIFIED	10.88	<input type="checkbox"/>	
Total Uranium	7.5397	2.52E-06	ug/g	3.2375	N	0					<input type="checkbox"/>	
Uranium-238 HE	2.548	0.8468	pCi/g	2.174	N	63.26	2	1.088	IDENTIFIED	32.02	<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
1202061454		20-MAR-10 12:14	0	LCS	LOAD	1		GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.512	0.255	pCi/g	0.5018	N	911.8	3	1.566	IDENTIFIED	15.65 <input type="checkbox"/>
Americium-241	13.36	0.6007	pCi/g	0.4474	0.200	59.65	1	1.109	IDENTIFIED	2.215 <input type="checkbox"/>
Annihilation Rad. HE	0.1379	0.04934	pCi/g	0.089	N	511.3	1	2.342	IDENTIFIED	35.47 <input type="checkbox"/>
Barium-137m	6.069	0.3293	pCi/g	0.1039	N	662.1	2	1.507	IDENTIFIED	2.062 <input type="checkbox"/>
Bismuth-211	1.957	0.3416	pCi/g	0.5757	Y	352	2	1.128	IDENTIFIED	16.78 <input type="checkbox"/>
Bismuth-212 HE	2.204	0.6081	pCi/g	1.742	N	0	5	0	FAIL_ABUND	0 <input type="checkbox"/>
Bismuth-214	0.735	0.1236	pCi/g	0.3217	0.200	0	5	0	FAIL_ABUND	0 <input type="checkbox"/>
Cadmium-109	29.28	1.836	pCi/g	2.007	Y	88.15	2	1.047	IDENTIFIED	4.127 <input type="checkbox"/>
Cerium-143	77.41	29.15	pCi/g	0	N	0	5	0	SHORT_HLIF	0 <input type="checkbox"/>
Cesium-137	6.411	0.3483	pCi/g	0.1098	0.100	662.1	2	1.507	IDENTIFIED	2.062 <input type="checkbox"/>
Cobalt-57	0.1817	0.03318	pCi/g	0.05922	N	121.9	1	0.9291	IDENTIFIED	17.78 <input type="checkbox"/>
Cobalt-60	6.446	0.312	pCi/g	0.07308	0.100	1333	1	1.88	IDENTIFIED	2.426 <input type="checkbox"/>
Gross Gamma	27.57	2.647	pCi/g	4.069	N	0				<input type="checkbox"/>
Lead-212	1.145	0.09336	pCi/g	0.1563	0.100	238.7	2	1.21	IDENTIFIED	6.161 <input type="checkbox"/>
Lead-214	0.7104	0.1255	pCi/g	0.2094	0.100	352	2	1.128	IDENTIFIED	16.78 <input type="checkbox"/>

Neptunium-237	3.324	0.4517	pCi/g	0.937	N	0	5	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	1.049	0.2673	pCi/g	0.3671	1.00	1462	1	2.009	IDENTIFIED	25.1	<input type="checkbox"/>
Radium-224	3.001	0.7648	pCi/g	1.674	Y	241.5	1	1.482	IDENTIFIED	25.02	<input type="checkbox"/>
Radium-226	0.735	0.1236	pCi/g	0.3217	Y	0	5	0	FAIL_ABUND	0	<input type="checkbox"/>
Radium-228	1.512	0.255	pCi/g	0.5018	0.500	911.8	3	1.566	IDENTIFIED	15.65	<input type="checkbox"/>
Thallium-208	0.3447	0.05495	pCi/g	0.09986	0.080	583.5	1	1.294	IDENTIFIED	15.09	<input type="checkbox"/>
Thorium-228	1.145	0.09336	pCi/g	0.1563	N	238.7	2	1.21	IDENTIFIED	6.161	<input type="checkbox"/>
Thorium-232	1.512	0.255	pCi/g	0.5018	N	911.8	3	1.566	IDENTIFIED	15.65	<input type="checkbox"/>
Tin-126	2.873	0.1802	pCi/g	0.1976	N	88.15	2	1.047	IDENTIFIED	4.127	<input type="checkbox"/>
Total Uranium	6.6871	2.76E-06	ug/g	3.4766	N		0				<input type="checkbox"/>

*** = 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
961097	248513019	SAMPLE	20-MAR-10	Mercury-203	0.0508	0.0259	pCi/g	0.04288	0.100
				Potassium-40	31.57	1.748	pCi/g	0.2867	1.00
				Radium-224	6.311	0.9175	pCi/g	0.5758	Y
				Radium-226	1.57	0.1313	pCi/g	0.07053	Y
				Radium-228	2.634	0.2371	pCi/g	0.1398	0.500
				Strontium-85	0.05939	0.02753	pCi/g	0.04451	Y
				Thallium-208	0.7139	0.06258	pCi/g	0.03725	0.080
				Thorium-234	2.538	0.6522	pCi/g	0.5732	2.00
961097	248513020	SAMPLE	20-MAR-10	Bismuth-211	4.212	0.2485	pCi/g	0.1342	Y
				Bismuth-214	1.215	0.08796	pCi/g	0.04866	0.200
				Cadmium-109	5.171	0.6313	pCi/g	0.5697	Y
				Cadmium-115	41.27	53.96	pCi/g	0	N
				Cerium-143	10940	6366	pCi/g	0	N
				Cesium-134	0.09692	0.02055	pCi/g	0.0381	0.100
				Cesium-137	0.7264	0.04701	pCi/g	0.029	0.100
				Gross Gamma	10.62	1.415	pCi/g	1.398	N
				Iodine-133	9.17E+05	1.42E+06	pCi/g	0	N
				Lead-210	7.714	2.714	pCi/g	4.845	N
				Lead-212	1.704	0.07912	pCi/g	0.03914	0.100
				Lead-214	1.529	0.09957	pCi/g	0.04878	0.100
				Mercury-203	0.03654	0.02121	pCi/g	0.03253	0.100
				Molybdenum-99	48.08	36.93	pCi/g	0	N
				Potassium-40	27.78	1.273	pCi/g	0.1952	1.00
				Protactinium-234m	5.618	2.587	pCi/g	3.409	N
				Radium-224	4.839	0.5386	pCi/g	0.4189	Y
				Radium-226	1.215	0.08796	pCi/g	0.04866	Y
				Radium-228	1.704	0.1763	pCi/g	0.09237	0.500
				Strontium-85	0.08393	0.01898	pCi/g	0.03487	Y
961097	1202061452	MB	20-MAR-10	Thorium-208	0.5507	0.03964	pCi/g	0.02463	0.080
				Thorium-234	2.518	0.781	pCi/g	1.354	2.00
				Iodine-135	1.85E+12	2.44E+12	pCi/g	0	N
				Lanthanum-140	0.06075	0.02048	pCi/g	0.04437	0.00
				Potassium-40	0.2276	0.115	pCi/g	0.2222	1.00
				Technetium-99m	6.32E+12	7.77E+12	pCi/g	0	N
961097	1202061453	MB	20-MAR-10	Thorium-227	0.1251	0.06815	pCi/g	0.1223	0.00
				Thorium-234	0.6462	0.3275	pCi/g	0.5621	2.00
961097	1202061453	MB	20-MAR-10	Bismuth-211	5.322	0.666	pCi/g	0.1716	Y

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:20:48.99

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*****
*                               GEL Laboratories LLC
*                               2040 Savage Road
*                               Charleston, SC 29414
*                               *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513001.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:20:20
Sample ID          : G248513001 Sample quantity : 1.14030E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.32 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	3	74.98*	321	546	1.76	148.88	143	15	4.46E-02	16.7	2.32E+00
2	3	77.35*	460	358	1.22	153.63	143	15	6.39E-02	8.8	
3	0	87.19	129	402	1.15	173.31	171	7	1.79E-02	27.1	
4	0	93.57*	105	645	1.44	186.06	180	10	1.46E-02	48.8	
5	0	129.60	98	379	1.15	258.12	253	10	1.37E-02	38.6	
6	0	186.35*	235	534	1.65	371.60	365	16	3.26E-02	23.5	
7	0	209.47*	134	310	1.82	417.84	413	10	1.86E-02	26.3	
8	5	238.72*	1180	223	1.25	476.34	471	25	1.64E-01	3.8	4.63E-01
9	5	241.60	365	349	2.47	482.11	471	25	5.07E-02	16.1	
10	4	270.45	167	218	2.28	539.80	534	31	2.32E-02	19.0	1.37E+00
11	4	277.52	90	231	2.29	553.94	534	31	1.25E-02	38.8	
12	0	295.36*	409	191	1.16	589.62	584	10	5.68E-02	8.2	
13	0	327.06	132	186	1.44	653.01	645	14	1.84E-02	23.5	
14	0	338.52	291	190	1.52	675.94	671	13	4.04E-02	11.5	
15	0	351.92*	599	201	1.43	702.75	697	12	8.32E-02	6.4	
16	0	462.57	63	129	1.64	924.04	920	10	8.69E-03	36.1	
17	0	510.84*	82	144	1.68	1020.58	1015	13	1.14E-02	37.1	
18	0	583.17*	330	115	1.49	1165.26	1160	12	4.58E-02	8.9	
19	0	609.31*	453	135	1.37	1217.55	1210	15	6.30E-02	7.4	
20	0	661.46	244	84	1.26	1321.84	1316	11	3.39E-02	9.4	
21	0	665.68	43	39	1.51	1330.28	1327	8	6.01E-03	30.1	
22	0	726.97*	107	70	1.43	1452.87	1445	14	1.49E-02	19.7	
23	0	768.19	58	53	1.23	1535.33	1530	11	8.08E-03	27.4	
24	0	795.23	68	46	1.69	1589.41	1584	13	9.48E-03	24.2	
25	0	860.23	65	56	1.14	1719.43	1710	16	9.02E-03	28.6	
26	0	911.29*	217	71	1.65	1821.57	1813	17	3.02E-02	11.4	
27	0	932.59	46	43	1.35	1864.18	1856	15	6.37E-03	35.0	
28	1	964.37	63	24	2.20	1927.74	1922	46	8.72E-03	21.7	1.18E+00
29	1	968.63*	149	30	1.86	1936.26	1922	46	2.07E-02	11.4	
30	0	1002.18	50	49	0.96	2003.38	1993	20	6.96E-03	37.3	
31	0	1120.13*	84	57	1.47	2239.32	2233	12	1.17E-02	21.7	
32	0	1238.05	45	87	1.67	2475.23	2467	14	6.22E-03	46.7	
33	0	1377.00	36	14	1.63	2753.19	2745	14	5.00E-03	27.6	
34	0	1460.29	965	46	2.07	2919.83	2911	20	1.34E-01	3.6	
35	0	1589.75	42	44	5.72	3178.85	3164	25	5.85E-03	45.0	
36	0	1729.71	15	10	1.50	3458.87	3453	10	2.08E-03	47.1	
37	0	1764.05*	104	0	2.38	3527.59	3518	19	1.45E-02	10.4	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:20:20
Sample ID         : G248513001 Sample quantity : 114.03 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.32 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	+	1460.82	*	3.085E+01	3.773E+00	7.801E-01	7.666E-02	39.544
CD-109	+	88.03	*	2.671E+00	1.484E+00	2.226E+00	2.764E-01	1.200
SN-126		64.28		5.719E-01	1.090E+00	1.784E+00	3.021E-01	0.321
	+	86.94		1.073E+00	7.372E-01	9.385E-01	3.968E-01	1.143
	+	87.57	*	2.580E-01	1.433E-01	2.239E-01	2.771E-02	1.152
BA-137M	+	661.66	*	4.510E-01	9.251E-02	8.085E-02	6.647E-03	5.579
CS-137	+	661.66	*	4.765E-01	9.776E-02	8.541E-02	7.036E-03	5.579
TL-208	+	277.37		1.212E+00	9.567E-01	8.601E-01	1.216E-01	1.409
	+	583.19	*	5.836E-01	1.163E-01	8.131E-02	7.436E-03	7.177
	+	860.56		1.085E+00	6.296E-01	5.121E-01	5.006E-02	2.118
BI-211		72.87		6.152E+00	6.320E+00	9.476E+00	1.085E+00	0.649
	+	351.06	*	4.856E+00	7.877E-01	4.732E-01	4.713E-02	10.262
PB-212	+	74.82		3.170E+00	1.160E+00	9.551E-01	1.439E-01	3.319
	+	77.11		2.524E+00	5.308E-01	5.328E-01	6.175E-02	4.738
	+	238.63	*	2.164E+00	3.075E-01	1.387E-01	1.657E-02	15.610
		300.09		3.345E+00	1.366E+00	2.183E+00	2.658E-01	1.532
BI-214	+	609.32	*	1.550E+00	2.777E-01	1.544E-01	1.538E-02	10.038
	+	1120.29		1.512E+00	6.766E-01	5.901E-01	6.390E-02	2.562
	+	1764.49		2.619E+00	5.933E-01	3.697E-01	3.241E-02	7.084
PB-214	+	74.82		5.618E+00	2.032E+00	1.693E+00	2.366E-01	3.319
	+	77.11		4.450E+00	1.005E+00	9.392E-01	1.336E-01	4.738
	+	242.00		4.060E+00	1.399E+00	8.429E-01	1.050E-01	4.817
	+	295.22		2.061E+00	4.246E-01	3.875E-01	4.829E-02	5.320
	+	351.93	*	1.763E+00	3.020E-01	1.728E-01	1.964E-02	10.201
RA-224	+	240.99	*	7.179E+00	2.439E+00	1.486E+00	1.639E-01	4.832
RA-226	+	609.32	*	1.550E+00	2.777E-01	1.544E-01	1.538E-02	10.038
	+	1120.29		1.512E+00	6.766E-01	5.901E-01	6.390E-02	2.562
	+	1764.49		2.619E+00	5.933E-01	3.697E-01	3.241E-02	7.084
AC-228	+	338.32		2.636E+00	1.261E+00	5.547E-01	2.329E-01	4.752
	+	911.20	*	1.856E+00	4.799E-01	3.131E-01	3.793E-02	5.927
	+	968.97		2.206E+00	7.378E-01	5.237E-01	1.287E-01	4.211
RA-228	+	338.32		2.636E+00	1.261E+00	5.547E-01	2.329E-01	4.752
	+	911.20	*	1.856E+00	4.799E-01	3.131E-01	3.793E-02	5.927
	+	968.97		2.206E+00	7.378E-01	5.237E-01	1.287E-01	4.211

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.170E+00	1.119E+00	9.551E-01	1.104E-01	3.319
	+	77.11		2.524E+00	5.308E-01	5.328E-01	6.175E-02	4.738
	+	238.63	*	2.164E+00	3.075E-01	1.387E-01	1.657E-02	15.610
		300.09		3.345E+00	2.437E+00	2.183E+00	1.343E+00	1.532
TH-232	+	338.32		2.636E+00	6.580E-01	5.547E-01	5.469E-02	4.752
	+	911.20	*	1.856E+00	4.799E-01	3.131E-01	3.793E-02	5.927
	+	968.97		2.206E+00	7.378E-01	5.237E-01	1.287E-01	4.211
NP-237	+	86.48	*	7.699E-01	4.572E-01	6.010E-01	1.460E-01	1.281
		95.86		-1.478E-01	1.574E+00	2.245E+00	5.620E-01	-0.066
ANH-511	+	511.00	*	1.115E-01	8.329E-02	6.915E-02	5.975E-03	1.612

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-1.534E-01	5.293E-01	8.462E-01	7.865E-02	-0.181
NA-22		1274.54	*	-1.240E-02	6.503E-02	1.030E-01	9.359E-03	-0.120
NA-24		1368.63	*	1.355E+03	6.503E-02	Half-Life too short		
SC-46		889.28	*	-1.060E-02	6.182E-02	9.360E-02	8.698E-03	-0.113
	+	1120.55		2.729E-01	1.207E-01	1.873E-01	1.593E-02	1.457
V-48		944.13		2.568E-01	1.638E+00	2.735E+00	2.529E-01	0.094
		983.53	*	1.943E-02	1.517E-01	2.177E-01	1.990E-02	0.089
		1312.11		3.320E-02	1.603E-01	2.645E-01	2.493E-02	0.125
CR-51		320.08	*	2.051E-01	6.935E-01	1.023E+00	1.085E-01	0.201
MN-54		834.85	*	4.217E-02	5.069E-02	8.932E-02	8.106E-03	0.472
CO-56		846.77	*	-5.385E-04	5.374E-02	8.893E-02	8.115E-03	-0.006
		1037.84		-1.873E-01	4.676E-01	7.354E-01	6.896E-02	-0.255
	+	1238.28		2.428E-01	2.280E-01	2.831E-01	2.544E-02	0.858
		1771.35		1.397E-01	3.281E-01	5.198E-01	4.541E-02	0.269
CO-57		122.06	*	-1.478E-02	3.652E-02	5.829E-02	5.871E-03	-0.254
		136.47		-2.374E-01	3.159E-01	4.944E-01	5.254E-02	-0.480
CO-58		810.76	*	2.139E-03	5.747E-02	9.309E-02	8.369E-03	0.023
FE-59		1099.45	*	-5.143E-02	1.465E-01	2.308E-01	2.153E-02	-0.223
		1291.59		-1.864E-01	2.015E-01	2.893E-01	2.988E-02	-0.645
CO-60		1173.23		2.592E-02	6.912E-02	1.158E-01	9.426E-03	0.224
		1332.49	*	3.653E-02	5.505E-02	9.561E-02	9.191E-03	0.382
ZN-65		1115.54	*	-1.064E-01	1.549E-01	1.957E-01	1.672E-02	-0.543
SE-75		121.12		-1.410E-01	1.965E-01	3.086E-01	3.779E-02	-0.457
		136.00		-2.509E-02	6.218E-02	9.900E-02	1.002E-02	-0.253
		264.66	*	-5.203E-02	8.036E-02	1.118E-01	1.226E-02	-0.465
		279.54		2.569E-01	1.717E-01	3.014E-01	3.337E-02	0.852
		400.66		-1.730E-01	4.043E-01	6.476E-01	7.096E-02	-0.267
SR-85		514.00	*	1.050E-01	7.282E-02	1.136E-01	9.813E-03	0.924
Y-88		898.04		2.183E-03	6.225E-02	1.031E-01	9.651E-03	0.021
		1836.06	*	-1.365E-02	4.236E-02	6.437E-02	5.421E-03	-0.212
Y-91		1204.77	*	-3.494E+01	3.325E+01	4.819E+01	4.062E+00	-0.725
NB-94		702.65	*	-1.314E-02	4.874E-02	8.004E-02	6.758E-03	-0.164
		871.09		3.994E-02	4.853E-02	8.547E-02	7.883E-03	0.467
NB-95		765.81	*	9.257E-02	6.750E-02	1.106E-01	9.692E-03	0.837

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	235.69	*		5.487E-01	2.493E-01	3.912E-01	4.714E-02	1.403
ZR-95	724.19			9.003E-02	1.664E-01	2.520E-01	2.340E-02	0.357
	756.73	*		-8.240E-03	1.010E-01	1.645E-01	1.581E-02	-0.050
MO-99	140.51			-2.715E-05	1.010E-01	Half-Life	too short	
	181.07			-1.099E-04	1.010E-01	Half-Life	too short	
	366.42			-8.450E-05	1.010E-01	Half-Life	too short	
	739.50	*		-2.022E-05	1.010E-01	Half-Life	too short	
	777.92			-4.194E-04	1.010E-01	Half-Life	too short	
TC-99M	140.51	*		-1.723E+19	1.010E-01	Half-Life	too short	
RU-103	497.08	*		-2.485E-02	6.155E-02	9.694E-02	1.355E-02	-0.256
	610.33		+	1.838E+01	4.051E+00	4.518E+00	7.345E-01	4.067
RH-106	621.93	*		-1.071E-01	4.681E-01	7.392E-01	9.696E-02	-0.145
	1050.41			-2.025E+00	3.541E+00	5.452E+00	4.844E-01	-0.371
RU-106	621.93	*		-1.071E-01	4.680E-01	7.392E-01	6.212E-02	-0.145
	1050.41			-2.025E+00	3.541E+00	5.452E+00	4.844E-01	-0.371
AG-108M	433.94	*		-1.934E-02	4.179E-02	6.630E-02	5.860E-03	-0.292
	614.28			-2.492E-02	5.793E-02	7.641E-02	6.665E-03	-0.326
	722.91			1.791E-02	5.422E-02	8.100E-02	7.150E-03	0.221
AG-110M	657.76	*		7.394E-02	5.292E-02	8.731E-02	7.431E-03	0.847
	677.62			3.689E-01	4.145E-01	7.386E-01	6.326E-02	0.500
	706.68			4.634E-02	3.064E-01	5.178E-01	4.513E-02	0.089
	763.94			6.375E-02	2.274E-01	3.375E-01	3.033E-02	0.189
	884.68			4.164E-02	6.671E-02	1.162E-01	1.108E-02	0.358
	937.49			-4.560E-02	1.755E-01	2.391E-01	2.284E-02	-0.191
	1384.29			2.327E-01	2.293E-01	3.951E-01	3.889E-02	0.589
	1505.03			-1.589E-01	3.811E-01	5.954E-01	5.691E-02	-0.267
SN-113	391.69	*		-1.809E-03	6.996E-02	1.150E-01	9.985E-03	-0.016
CD-115	260.90			4.685E-04	6.996E-02	Half-Life	too short	
	492.35			3.454E-04	6.996E-02	Half-Life	too short	
	527.90	*		4.483E-05	6.996E-02	Half-Life	too short	
SN-117M	156.02			1.383E+00	4.990E+00	8.133E+00	8.477E-01	0.170
	158.56	*		-4.695E-02	1.225E-01	1.941E-01	2.035E-02	-0.242
TE-123M	159.00	*		-3.857E-02	4.449E-02	6.876E-02	7.246E-03	-0.561
SB-124	602.73			1.909E-03	6.927E-02	9.646E-02	8.175E-03	0.020
	645.85			-3.082E-01	8.073E-01	1.256E+00	1.107E-01	-0.245
	722.78			2.306E-01	5.987E-01	8.995E-01	7.868E-02	0.256
	1690.97	*		-3.132E-02	1.061E-01	1.647E-01	1.551E-02	-0.190
SB-125	427.87	*		9.184E-04	1.269E-01	2.080E-01	1.811E-02	0.004
	463.37		+	7.629E-01	5.555E-01	8.094E-01	7.499E-02	0.942
	600.60			5.992E-02	2.681E-01	4.144E-01	3.783E-02	0.145
	635.95			1.982E-01	3.996E-01	6.662E-01	6.040E-02	0.298
TE-125M	109.28	*		-1.632E-01	1.586E+01	2.584E+01	3.076E+00	-0.006
I-126	388.63			8.051E-02	3.657E-01	6.096E-01	5.188E-02	0.132
	666.33	*		7.546E-01	4.586E-01	8.031E-01	6.623E-02	0.940
	753.82			-6.637E-01	3.525E+00	5.783E+00	5.033E-01	-0.115
SB-126	414.70			-1.138E-01	1.751E-01	2.758E-01	2.344E-02	-0.413
	666.50		+	2.641E-01	1.605E-01	2.802E-01	2.311E-02	0.943
	695.00			1.894E-02	1.690E-01	2.851E-01	2.395E-02	0.066
	697.00			4.442E-02	5.863E-01	9.864E-01	8.299E-02	0.045

---- Non-Identified Nuclides ----

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SB-127	720.70	*		2.053E-01	3.244E-01	5.007E-01	4.274E-02	0.410
	856.80			1.858E-01	1.104E+00	1.605E+00	1.471E-01	0.116
	252.40			-2.613E+01	2.850E+01	3.917E+01	1.679E+01	-0.667
	473.00			-8.507E+00	9.851E+00	1.498E+01	2.266E+00	-0.568
I-131	685.70	*		2.596E+00	7.637E+00	1.308E+01	1.805E+00	0.198
	783.70			3.179E+01	2.004E+01	3.630E+01	5.411E+00	0.876
	80.19			-1.080E+01	1.665E+01	2.320E+01	2.750E+00	-0.465
	284.31			1.369E-02	4.684E+00	6.792E+00	7.588E-01	0.002
TE-132	364.49	*		-9.375E-02	3.362E-01	5.461E-01	5.306E-02	-0.172
	636.99			1.074E+00	4.630E+00	7.569E+00	6.752E-01	0.142
	49.72			-3.105E+02	3.519E+02	5.576E+02	9.541E+01	-0.557
	111.76			-1.359E+02	2.719E+02	4.333E+02	6.307E+01	-0.314
BA-133	116.30			1.172E+02	2.303E+02	3.813E+02	5.525E+01	0.307
	228.16	*		-1.752E+00	5.890E+00	9.772E+00	1.851E+00	-0.179
	81.00			-2.619E-01	1.826E-01	2.372E-01	4.149E-02	-1.104
	276.40		+	1.122E+00	8.886E-01	9.353E-01	1.456E-01	1.200
I-133	302.85			-2.371E-01	2.151E-01	3.346E-01	4.814E-02	-0.709
	356.01	*		1.099E-02	7.176E-02	1.040E-01	1.406E-02	0.106
	383.85			-1.479E-02	4.120E-01	6.772E-01	8.431E-02	-0.022
	529.87	*		1.307E+00	4.120E-01	Half-Life	too short	
CS-134	875.33			4.687E+01	4.120E-01	Half-Life	too short	
	1298.22			7.832E+01	4.120E-01	Half-Life	too short	
	563.25			2.990E-01	5.017E-01	8.463E-01	7.331E-02	0.353
	569.33			1.244E-01	2.935E-01	4.802E-01	4.171E-02	0.259
CS-135	604.72			-1.182E-02	5.474E-02	7.420E-02	6.299E-03	-0.159
	795.86	*	+	1.763E-01	8.669E-02	1.246E-01	1.116E-02	1.415
	801.95			-2.646E-01	6.301E-01	8.499E-01	7.630E-02	-0.311
	1365.19			7.754E-02	1.883E+00	3.163E+00	3.159E-01	0.025
I-135	268.22	*		3.951E-01	2.696E-01	4.208E-01	5.049E-02	0.939
CS-136	546.56			-6.479E+18	2.696E-01	Half-Life	too short	
	836.80			7.510E+18	2.696E-01	Half-Life	too short	
	1038.76			-1.081E+19	2.696E-01	Half-Life	too short	
	1131.51			2.802E+18	2.696E-01	Half-Life	too short	
	1260.41	*		-9.734E+17	2.696E-01	Half-Life	too short	
	1457.56			5.185E+20	2.696E-01	Half-Life	too short	
	1678.03			-1.357E+18	2.696E-01	Half-Life	too short	
	1791.20			-3.186E+18	2.696E-01	Half-Life	too short	
	153.25			6.787E-01	1.863E+00	3.047E+00	3.588E-01	0.223
	176.60			7.403E-01	1.163E+00	1.911E+00	2.196E-01	0.387
	273.65			1.047E+00	1.078E+00	1.870E+00	2.142E-01	0.560
	340.55			1.500E+00	4.140E-01	6.855E-01	6.927E-02	2.188
CE-139	818.51			-4.850E-02	1.412E-01	2.267E-01	2.045E-02	-0.214
	1048.07	*		2.638E-02	2.173E-01	3.597E-01	3.330E-02	0.073
	1235.36			2.691E+00	1.563E+00	2.519E+00	2.983E-01	1.068
	165.86	*		-1.803E-03	4.756E-02	7.640E-02	8.156E-03	-0.024
BA-140	162.66			-1.317E+00	1.891E+00	2.948E+00	3.263E-01	-0.447
	304.85			-5.255E+00	3.428E+00	4.627E+00	1.382E+00	-1.136
	423.72			-1.600E+00	4.229E+00	6.711E+00	2.206E+00	-0.238
	537.26	*		-8.674E-02	5.447E-01	8.705E-01	2.952E-01	-0.100

---- Non-Identified Nuclides ----

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LA-140		328.76		1.218E+00	7.956E-01	1.248E+00	1.308E-01	0.976
		487.02		-2.337E-01	2.944E-01	4.502E-01	4.128E-02	-0.519
		815.77		-2.466E-01	6.396E-01	1.023E+00	1.020E-01	-0.241
		1596.21	*	1.208E-01	1.807E-01	2.949E-01	2.765E-02	0.410
CE-141		145.44	*	-1.245E-02	1.103E-01	1.753E-01	1.812E-02	-0.071
CE-143		57.36		-7.783E-02	1.103E-01	Half-Life too short		
		293.27	*	6.098E-02	1.103E-01	Half-Life too short		
	+	664.57		1.369E-01	1.103E-01	Half-Life too short		
		721.93		1.230E-01	1.103E-01	Half-Life too short		
CE-144		80.12		-2.280E+00	4.675E+00	6.578E+00	7.732E-01	-0.347
		133.52	*	1.507E-01	3.407E-01	4.933E-01	7.959E-02	0.305
PM-144		476.78		-1.524E-02	9.545E-02	1.540E-01	1.444E-02	-0.099
		618.01		9.366E-03	4.873E-02	7.743E-02	6.713E-03	0.121
		696.49	*	3.016E-03	4.923E-02	8.275E-02	6.965E-03	0.036
PR-144		696.51	*	-1.182E-01	3.729E+00	6.227E+00	5.237E-01	-0.019
		1489.16		-8.857E-01	1.807E+01	2.985E+01	2.859E+00	-0.030
PM-146		453.88	*	1.191E-02	6.214E-02	1.028E-01	1.087E-02	0.116
		633.25		-4.038E-01	2.061E+00	3.250E+00	1.239E+00	-0.124
		735.93		-6.155E-02	1.779E-01	2.865E-01	8.030E-02	-0.215
		747.24		2.722E-03	1.324E-01	2.212E-01	3.233E-02	0.012
ND-147		91.11		1.439E-01	1.289E+00	1.343E+00	1.663E-01	0.107
		319.41		-1.762E+00	8.778E+00	1.245E+01	1.275E+00	-0.142
		531.02	*	-2.433E-01	1.259E+00	2.011E+00	3.008E-01	-0.121
PM-149		285.90	*	-1.118E-03	1.259E+00	Half-Life too short		
EU-152		121.78		-6.275E-02	1.037E-01	1.638E-01	1.833E-02	-0.383
		244.70		2.989E-01	4.985E-01	8.542E-01	9.415E-02	0.350
		344.28	*	9.597E-03	1.631E-01	2.221E-01	2.260E-02	0.043
		778.90		-4.448E-01	3.577E-01	5.297E-01	4.674E-02	-0.840
	+	964.08		9.997E-01	4.441E-01	7.667E-01	7.051E-02	1.304
		1085.87		7.136E-02	5.633E-01	9.302E-01	8.100E-02	0.077
		1112.07		4.669E-01	4.397E-01	7.416E-01	6.346E-02	0.630
		1408.01		6.086E-02	2.257E-01	3.897E-01	3.755E-02	0.156
GD-153		69.67		2.524E+00	3.671E+00	5.473E+00	6.247E-01	0.461
		97.43	*	-5.741E-02	1.507E-01	2.105E-01	2.323E-02	-0.273
		103.18		-1.843E-01	1.707E-01	2.653E-01	2.805E-02	-0.695
EU-154		123.07		-1.472E-03	7.616E-02	1.193E-01	1.489E-02	-0.012
		723.31		-2.077E-02	2.575E-01	3.674E-01	3.464E-02	-0.057
		873.19		2.446E-01	4.018E-01	6.961E-01	8.593E-02	0.351
		996.26		-1.362E-01	5.144E-01	6.933E-01	1.228E-01	-0.196
		1004.73		-2.240E-01	3.476E-01	4.428E-01	5.303E-02	-0.506
		1274.44	*	-2.457E-03	1.811E-01	2.922E-01	3.427E-02	-0.008
EU-155	+	86.55		3.139E-01	1.744E-01	2.784E-01	3.433E-02	1.128
		105.31	*	-5.339E-02	1.561E-01	2.513E-01	2.647E-02	-0.212
TB-160	+	86.79		8.951E-01	4.972E-01	7.896E-01	9.709E-02	1.134
		197.04		7.825E-02	9.071E-01	1.456E+00	1.587E-01	0.054
		215.65		-8.004E-04	1.230E+00	1.959E+00	2.155E-01	0.000
		298.57		4.807E-01	2.124E-01	3.412E-01	3.610E-02	1.409
		879.36	*	-2.337E-01	2.023E-01	2.953E-01	2.733E-02	-0.791
		962.29		9.087E-01	9.596E-01	1.471E+00	1.354E-01	0.618

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		966.15		1.913E+00	4.355E-01	8.229E-01	7.563E-02	2.325
		1177.93		-1.134E-01	5.803E-01	9.259E-01	7.577E-02	-0.123
		1271.85		-6.271E-01	1.086E+00	1.641E+00	1.485E-01	-0.382
		80.57		-6.520E-01	5.062E-01	6.770E-01	7.977E-02	-0.963
		184.41		1.354E-01	6.530E-02	1.010E-01	1.092E-02	1.340
		280.46		7.905E-02	1.368E-01	2.060E-01	2.224E-02	0.384
		410.95		1.349E-01	3.591E-01	6.022E-01	5.111E-02	0.224
		711.68	*	-3.214E-02	8.164E-02	1.323E-01	1.123E-02	-0.243
		752.31		1.516E-01	3.460E-01	5.971E-01	5.192E-02	0.254
		810.29		1.360E-03	8.001E-02	1.294E-01	1.160E-02	0.011
TA-182		67.75		-2.868E-01	2.382E-01	3.704E-01	4.227E-02	-0.774
		100.11		4.706E-02	2.832E-01	4.620E-01	4.987E-02	0.102
		152.43		-3.222E-01	5.409E-01	8.499E-01	8.789E-02	-0.379
		222.11		-3.081E-01	5.271E-01	8.643E-01	9.525E-02	-0.357
	+	1121.30		7.429E-01	3.287E-01	5.152E-01	4.379E-02	1.442
IR-192		1189.05		1.637E-02	4.602E-01	7.494E-01	6.209E-02	0.022
		1221.41	*	9.200E-02	2.918E-01	4.858E-01	4.170E-02	0.189
		1231.02		2.830E-01	7.776E-01	1.129E+00	9.791E-02	0.251
	+	295.96		1.641E+00	3.211E-01	4.628E-01	4.937E-02	3.546
		308.46		3.320E-02	1.494E-01	2.511E-01	2.629E-02	0.132
HG-203		316.51	*	-9.832E-03	5.371E-02	8.833E-02	9.108E-03	-0.111
		468.07		8.346E-02	1.187E-01	1.781E-01	1.647E-02	0.469
		70.83		4.587E-01	3.012E+00	4.391E+00	7.782E-01	0.104
		72.87		1.722E+00	1.783E+00	2.652E+00	4.579E-01	0.649
		279.20	*	1.108E-01	6.569E-02	1.157E-01	1.272E-02	0.957
BI-207		72.81		2.948E-01	3.622E-01	5.405E-01	6.190E-02	0.546
	+	74.97		9.140E-01	3.224E-01	3.886E-01	4.473E-02	2.352
		569.70		3.909E-02	4.467E-02	7.523E-02	6.444E-03	0.520
		1063.66	*	6.754E-02	7.107E-02	1.262E-01	1.113E-02	0.535
		1770.23		1.293E-01	6.740E-01	9.964E-01	8.710E-02	0.130
PB-210		46.54	*	1.487E+00	1.415E+01	2.345E+01	2.887E+00	0.063
PB-211		404.85	*	6.076E-02	1.105E+00	1.820E+00	8.804E-01	0.033
		427.09		-6.845E-02	2.133E+00	3.488E+00	1.613E+00	-0.020
		832.01		7.609E-01	1.357E+00	2.258E+00	1.173E+00	0.337
BI-212	+	727.33	*	2.889E+00	1.196E+00	1.620E+00	2.013E-01	1.783
		785.37		5.362E+00	4.361E+00	7.867E+00	6.965E-01	0.682
		1620.50		3.048E+00	3.064E+00	5.795E+00	5.394E-01	0.526
RN-219	+	271.23		1.352E+00	5.392E-01	6.814E-01	8.327E-02	1.984
		401.81	*	1.769E-01	6.077E-01	1.015E+00	1.499E-01	0.174
RA-223		81.07		-5.840E-01	4.056E-01	5.369E-01	6.344E-02	-1.088
		83.79		2.937E-01	2.172E-01	3.284E-01	3.948E-02	0.895
	+	94.87		1.245E+00	1.225E+00	1.258E+00	1.424E-01	0.990
		144.24		2.468E-01	1.011E+00	1.629E+00	1.799E-01	0.152
		154.21		2.838E-01	5.607E-01	9.217E-01	1.021E-01	0.308
AC-227	+	269.46		1.050E+00	4.153E-01	5.188E-01	5.725E-02	2.025
		323.87	*	6.569E-01	9.823E-01	1.480E+00	2.685E-01	0.444
	+	338.28		1.046E+01	2.757E+00	3.453E+00	4.484E-01	3.029
		79.69		1.892E+00	2.396E+00	3.537E+00	6.714E-01	0.535
		235.96		1.146E+00	3.173E-01	4.899E-01	6.087E-02	2.340

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227	256.23	*		-4.632E-02	3.605E-01	6.001E-01	8.304E-02	-0.077
	299.98			3.644E+00	1.522E+00	2.396E+00	3.377E-01	1.521
	304.50			-4.800E+00	2.584E+00	3.664E+00	6.440E-01	-1.310
	334.37			2.607E-02	3.072E+00	4.171E+00	6.822E-01	0.006
	79.80			7.237E-01	3.093E+00	4.502E+00	1.044E+00	0.161
	235.96			1.146E+00	3.149E-01	4.899E-01	5.851E-02	2.340
	256.23	*		-4.632E-02	3.605E-01	6.001E-01	9.128E-02	-0.077
TH-229	299.98			3.644E+00	1.522E+00	2.396E+00	3.377E-01	1.521
	304.50			-4.800E+00	2.584E+00	3.664E+00	6.440E-01	-1.310
	334.37			2.607E-02	3.072E+00	4.171E+00	6.822E-01	0.006
	85.43			5.487E-01	3.746E-01	5.654E-01	6.878E-02	0.971
	+	88.47		3.978E-01	2.210E-01	3.681E-01	4.537E-02	1.081
	+	193.51	*	1.615E-01	8.974E-01	1.265E+00	1.377E-01	0.128
	+	210.85		3.508E+00	1.888E+00	2.472E+00	2.715E-01	1.419
PA-231	283.69	*		-5.947E-01	2.342E+00	3.331E+00	5.312E-01	-0.179
TH-231	301.36			1.114E+00	9.113E-01	1.486E+00	2.019E-01	0.750
	81.07			-5.840E-01	4.056E-01	5.369E-01	6.344E-02	-1.088
	83.79			2.937E-01	2.172E-01	3.284E-01	3.948E-02	0.895
	+	94.87		1.245E+00	1.225E+00	1.258E+00	1.424E-01	0.990
	144.24			2.468E-01	1.011E+00	1.629E+00	1.799E-01	0.152
	154.21			2.838E-01	5.607E-01	9.217E-01	1.021E-01	0.308
	+	269.46		1.050E+00	4.153E-01	5.188E-01	5.725E-02	2.025
PA-233	323.87	*		6.569E-01	9.823E-01	1.480E+00	2.685E-01	0.444
	+	338.28		1.046E+01	2.757E+00	3.453E+00	4.484E-01	3.029
	300.13			1.671E+00	7.026E-01	1.087E+00	1.744E-01	1.537
	311.90	*		4.309E-02	9.565E-02	1.623E-01	1.717E-02	0.265
	340.48			4.474E+00	1.551E+00	1.965E+00	4.817E-01	2.277
	+	94.67		4.513E-01	4.458E-01	4.734E-01	6.831E-02	0.953
	98.44			1.415E-01	1.670E-01	2.307E-01	1.296E-01	0.614
PA-234	111.00			-4.926E-02	2.726E-01	4.411E-01	5.855E-02	-0.112
	131.20			1.239E-01	1.814E-01	2.658E-01	2.668E-02	0.466
	569.50			2.675E-01	4.006E-01	6.659E-01	5.704E-02	0.402
	733.00			2.190E-01	4.911E-01	7.446E-01	1.652E-01	0.294
	880.51			-9.035E-02	3.611E-01	5.824E-01	5.393E-02	-0.155
	883.24			1.477E-01	3.920E-01	6.487E-01	4.366E-01	0.228
	926.50			-1.054E-01	2.539E-01	3.300E-01	8.419E-02	-0.319
PA-234M	946.00	*		-2.251E-01	4.037E-01	6.248E-01	1.191E-01	-0.360
	949.00			1.492E-02	5.722E-01	9.439E-01	8.716E-02	0.016
	766.42			2.975E+01	2.260E+01	2.857E+01	1.450E+01	1.041
	+	1001.03	*	1.439E+01	1.083E+01	1.125E+01	1.167E+00	1.279
	TH-234	63.29	*	3.152E+00	3.028E+00	4.952E+00	9.819E-01	0.636
	+	92.59		1.675E+00	1.683E+00	2.034E+00	4.765E-01	0.823
	U-235	89.96		-2.453E+00	2.499E+00	2.320E+00	6.036E-01	-1.057
U-238	+	93.35		1.265E+00	1.274E+00	1.500E+00	3.650E-01	0.843
	143.76	*		1.500E-01	3.019E-01	4.898E-01	8.715E-02	0.306
	163.33			1.263E-01	6.564E-01	1.064E+00	2.021E-01	0.119
	+	185.72		2.786E-01	1.345E-01	1.346E-01	1.457E-02	2.070
	205.31			1.051E+00	8.400E-01	1.223E+00	2.368E-01	0.859
	63.29	*		3.152E+00	3.028E+00	4.952E+00	9.819E-01	0.636

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		1.675E+00	1.648E+00	2.034E+00	2.365E-01	0.823
		99.53		1.477E-01	2.494E-01	4.126E-01	4.473E-02	0.358
		103.37		-1.343E-01	1.503E-01	2.358E-01	2.490E-02	-0.570
		106.12		-1.631E-02	1.244E-01	2.019E-01	2.102E-02	-0.081
	*	117.23		1.430E-01	5.763E-01	9.467E-01	9.555E-02	0.151
		228.18		-9.408E-02	3.179E-01	5.281E-01	5.826E-02	-0.178
AM-241	+	277.60		5.540E-01	4.344E-01	4.636E-01	5.020E-02	1.195
	*	59.54		-3.001E-01	3.619E-01	5.783E-01	6.788E-02	-0.519
CM-247	+	278.00		2.353E+00	1.845E+00	1.997E+00	2.161E-01	1.178
		287.50		8.673E-01	1.860E+00	3.002E+00	3.219E-01	0.289
	*	402.40		3.255E-02	5.599E-02	9.493E-02	8.028E-03	0.343
CF-249		252.80		-1.435E+00	1.374E+00	2.108E+00	2.318E-01	-0.681
		333.37		2.347E-01	3.602E-01	4.382E-01	4.366E-02	0.536
	*	388.16		2.755E-02	5.651E-02	9.562E-02	8.151E-03	0.288
CF-251	*	177.52		8.424E-02	2.018E-01	3.291E-01	3.542E-02	0.256
		227.38		1.513E-01	5.189E-01	8.825E-01	9.734E-02	0.171
		285.41		-4.449E-01	3.588E+00	5.155E+00	5.540E-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]G248513001      *
* Acquisition date   : 20-MAR-2010 11:20:20 Detector SN#                   *
* Detector ID        : GAM15                                           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 02:00:01.32                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513001                               Analyst initials: MXR1        *
* Batch Number       : 961097                                   Sample Quantity : 1.1403E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight  : 0.00000      *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                         *
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 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	3.085E+01	3.698E+00	7.768E-01	0.000E+00
CD-109	2.671E+00	1.454E+00	2.274E+00	0.000E+00
SN-126	2.580E-01	1.405E-01	2.287E-01	0.000E+00
BA-137M	4.510E-01	9.066E-02	8.109E-02	0.000E+00
CS-137	4.765E-01	9.580E-02	8.566E-02	0.000E+00
TL-208	5.836E-01	1.140E-01	8.165E-02	0.000E+00
BI-211	4.856E+00	7.720E-01	4.774E-01	0.000E+00
PB-212	2.164E+00	3.013E-01	1.404E-01	0.000E+00
BI-214	1.550E+00	2.721E-01	1.550E-01	0.000E+00
PB-214	1.763E+00	2.959E-01	1.743E-01	0.000E+00
RA-224	7.179E+00	2.390E+00	1.504E+00	0.000E+00
RA-226	1.550E+00	2.721E-01	1.550E-01	0.000E+00
AC-228	1.856E+00	4.703E-01	3.131E-01	0.000E+00
RA-228	1.856E+00	4.703E-01	3.131E-01	0.000E+00
TH-228	2.164E+00	3.013E-01	1.404E-01	0.000E+00
TH-232	1.856E+00	4.703E-01	3.131E-01	0.000E+00
NP-237	7.699E-01	4.480E-01	6.139E-01	0.000E+00
ANH-511	1.115E-01	8.163E-02	6.952E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.534E-01	5.187E-01	8.513E-01	0.000E+00 NOT IDENT.
NA-22	-1.240E-02	6.373E-02	1.027E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.279E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.060E-02	6.058E-02	9.362E-02	0.000E+00 FAIL ABUN
V-48	1.943E-02	1.487E-01	2.176E-01	0.000E+00 NOT IDENT.
CR-51	2.051E-01	6.797E-01	1.033E+00	0.000E+00 NOT IDENT.
MN-54	4.217E-02	4.967E-02	8.940E-02	0.000E+00 NOT IDENT.
CO-56	-5.385E-04	5.267E-02	8.899E-02	0.000E+00 FAIL ABUN
CO-57	-1.478E-02	3.579E-02	5.936E-02	0.000E+00 NOT IDENT.

CO-58	2.139E-03	5.632E-02	9.319E-02	0.000E+00	NOT IDENT.
FE-59	-5.143E-02	1.436E-01	2.304E-01	0.000E+00	NOT IDENT.
CO-60	3.653E-02	5.395E-02	9.528E-02	0.000E+00	NOT IDENT.
ZN-65	-1.064E-01	1.518E-01	1.954E-01	0.000E+00	NOT IDENT.
SE-75	-5.203E-02	7.875E-02	1.130E-01	0.000E+00	NOT IDENT.
SR-85	1.050E-01	7.136E-02	1.142E-01	0.000E+00	NOT IDENT.
Y-88	-1.365E-02	4.151E-02	6.396E-02	0.000E+00	NOT IDENT.
Y-91	-3.494E+01	3.259E+01	4.807E+01	0.000E+00	NOT IDENT.
NB-94	-1.314E-02	4.777E-02	8.024E-02	0.000E+00	NOT IDENT.
NB-95	9.257E-02	6.615E-02	1.108E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.443E-01	3.961E-01	0.000E+00	NOT IDENT.
ZR-95	-8.240E-03	9.900E-02	1.648E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.176E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.455E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.485E-02	6.032E-02	9.749E-02	0.000E+00	FAIL ABUN
RH-106	-1.071E-01	4.588E-01	7.419E-01	0.000E+00	NOT IDENT.
RU-106	-1.071E-01	4.587E-01	7.419E-01	0.000E+00	NOT IDENT.
AG-108M	-1.934E-02	4.095E-02	6.675E-02	0.000E+00	NOT IDENT.
AG-110M	7.394E-02	5.186E-02	8.758E-02	0.000E+00	NOT IDENT.
SN-113	-1.809E-03	6.857E-02	1.159E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.828E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-4.695E-02	1.201E-01	1.972E-01	0.000E+00	NOT IDENT.
TE-123M	-3.857E-02	4.360E-02	6.986E-02	0.000E+00	NOT IDENT.
SB-124	-3.132E-02	1.040E-01	1.637E-01	0.000E+00	NOT IDENT.
SB-125	9.184E-04	1.243E-01	2.095E-01	0.000E+00	FAIL ABUN
TE-125M	-1.632E-01	1.554E+01	2.635E+01	0.000E+00	NOT IDENT.
I-126	7.546E-01	4.494E-01	8.054E-01	0.000E+00	FAIL ABUN
SB-126	2.053E-01	3.179E-01	5.018E-01	0.000E+00	FAIL ABUN
SB-127	2.596E+00	7.484E+00	1.312E+01	0.000E+00	NOT IDENT.
I-131	-9.375E-02	3.295E-01	5.508E-01	0.000E+00	NOT IDENT.
TE-132	-1.752E+00	5.772E+00	9.896E+00	0.000E+00	NOT IDENT.
BA-133	1.099E-02	7.033E-02	1.049E-01	0.000E+00	FAIL ABUN
I-133	0.000E+00	4.264E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.496E-02	1.247E-01	0.000E+00	FAIL ABUN
CS-135	3.951E-01	2.642E-01	4.255E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.984E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.638E-02	2.130E-01	3.593E-01	0.000E+00	NOT IDENT.
CE-139	-1.803E-03	4.661E-02	7.759E-02	0.000E+00	NOT IDENT.
BA-140	-8.674E-02	5.338E-01	8.747E-01	0.000E+00	NOT IDENT.
LA-140	1.208E-01	1.771E-01	2.934E-01	0.000E+00	NOT IDENT.
CE-141	-1.245E-02	1.081E-01	1.783E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.025E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.507E-01	3.339E-01	5.019E-01	0.000E+00	NOT IDENT.
PM-144	3.016E-03	4.825E-02	8.296E-02	0.000E+00	NOT IDENT.
PR-144	-1.182E-01	3.654E+00	6.243E+00	0.000E+00	NOT IDENT.
PM-146	1.191E-02	6.090E-02	1.034E-01	0.000E+00	NOT IDENT.
ND-147	-2.433E-01	1.234E+00	2.022E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	1.802E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	9.597E-03	1.598E-01	2.241E-01	0.000E+00	FAIL ABUN
GD-153	-5.741E-02	1.476E-01	2.148E-01	0.000E+00	NOT IDENT.
EU-154	-2.457E-03	1.775E-01	2.913E-01	0.000E+00	NOT IDENT.
EU-155	-5.339E-02	1.530E-01	2.563E-01	0.000E+00	FAIL ABUN
TB-160	-2.337E-01	1.983E-01	2.954E-01	0.000E+00	FAIL ABUN
HO-166M	-3.214E-02	8.000E-02	1.326E-01	0.000E+00	NOT IDENT.
TA-182	9.200E-02	2.859E-01	4.845E-01	0.000E+00	FAIL ABUN
IR-192	-9.832E-03	5.264E-02	8.919E-02	0.000E+00	FAIL ABUN
HG-203	1.108E-01	6.437E-02	1.170E-01	0.000E+00	NOT IDENT.
BI-207	6.754E-02	6.964E-02	1.260E-01	0.000E+00	FAIL ABUN
PB-210	1.487E+00	1.387E+01	2.409E+01	0.000E+00	NOT IDENT.
PB-211	6.076E-02	1.083E+00	1.834E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.172E+00	1.624E+00	0.000E+00	FAIL ABUN
RN-219	1.769E-01	5.956E-01	1.022E+00	0.000E+00	FAIL ABUN
RA-223	6.569E-01	9.626E-01	1.494E+00	0.000E+00	FAIL ABUN
AC-227	-4.632E-02	3.533E-01	6.071E-01	0.000E+00	NOT IDENT.
TH-227	-4.632E-02	3.533E-01	6.071E-01	0.000E+00	NOT IDENT.
TH-229	1.615E-01	8.795E-01	1.283E+00	0.000E+00	FAIL ABUN
PA-231	-5.947E-01	2.295E+00	3.367E+00	0.000E+00	NOT IDENT.
TH-231	6.569E-01	9.626E-01	1.494E+00	0.000E+00	FAIL ABUN
PA-233	4.309E-02	9.374E-02	1.639E-01	0.000E+00	NOT IDENT.
PA-234	-2.251E-01	3.956E-01	6.246E-01	0.000E+00	FAIL ABUN
PA-234M	0.000E+00	1.061E+01	1.124E+01	0.000E+00	FAIL ABUN
TH-234	3.152E+00	2.968E+00	5.072E+00	0.000E+00	FAIL ABUN
U-235	1.500E-01	2.958E-01	4.980E-01	0.000E+00	FAIL ABUN
U-238	3.152E+00	2.968E+00	5.072E+00	0.000E+00	FAIL ABUN
NP-239	1.430E-01	5.648E-01	9.645E-01	0.000E+00	FAIL ABUN
AM-241	-3.001E-01	3.547E-01	5.927E-01	0.000E+00	NOT IDENT.
CM-247	3.255E-02	5.487E-02	9.565E-02	0.000E+00	FAIL ABUN
CF-249	2.755E-02	5.538E-02	9.638E-02	0.000E+00	NOT IDENT.

CF-251

8.424E-02

1.978E-01

3.341E-01

0.000E+00 NOT IDENT.


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513001.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:20:20
Sample ID          : G248513001 Sample quantity : 1.14030E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.32 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	965	10.66*	9.664E-01	3.085E+01	3.085E+01	12.23
CD-109	88.03	129	3.70*	4.436E+00	2.580E+00	2.671E+00	55.55
SN-126	64.28	-----	9.60	1.941E+00	-----	Line Not Found	-----
	86.94	129	8.90	4.436E+00	1.073E+00	1.073E+00	68.72
	87.57	129	37.00*	4.436E+00	2.580E-01	2.580E-01	55.55
BA-137M	661.66	244	89.90*	1.982E+00	4.504E-01	4.510E-01	20.51
CS-137	661.66	244	85.10*	1.982E+00	4.758E-01	4.765E-01	20.52
TL-208	277.37	90	6.60	3.704E+00	1.212E+00	1.212E+00	78.93
	583.19	330	85.00*	2.191E+00	5.836E-01	5.836E-01	19.94
	860.56	65	12.50	1.576E+00	1.085E+00	1.085E+00	58.05
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	599	12.92*	3.141E+00	4.856E+00	4.856E+00	16.22
PB-212	74.82	321	10.28	3.246E+00	3.170E+00	3.170E+00	36.59
	77.11	460	17.10	3.511E+00	2.524E+00	2.524E+00	21.03
	238.63	1180	43.60*	4.115E+00	2.164E+00	2.164E+00	14.21
	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
BI-214	609.32	453	45.49*	2.117E+00	1.550E+00	1.550E+00	17.92
	1120.29	84	14.92	1.227E+00	1.512E+00	1.512E+00	44.76
	1764.49	104	15.30	8.555E-01	2.619E+00	2.619E+00	22.65
PB-214	74.82	321	5.80	3.246E+00	5.618E+00	5.618E+00	36.16
	77.11	460	9.70	3.511E+00	4.450E+00	4.450E+00	22.59
	242.00	365	7.25	4.080E+00	4.060E+00	4.060E+00	34.47
	295.22	409	18.42	3.546E+00	2.061E+00	2.061E+00	20.60
	351.93	599	35.60*	3.141E+00	1.763E+00	1.763E+00	17.13
RA-224	240.99	365	4.10*	4.080E+00	7.179E+00	7.179E+00	33.98
RA-226	609.32	453	45.49*	2.117E+00	1.550E+00	1.550E+00	17.92
	1120.29	84	14.92	1.227E+00	1.512E+00	1.512E+00	44.76
	1764.49	104	15.30	8.555E-01	2.619E+00	2.619E+00	22.65
AC-228	338.32	291	11.27	3.226E+00	2.636E+00	2.636E+00	47.85
	911.20	217	25.80*	1.494E+00	1.856E+00	1.856E+00	25.86
	968.97	149	15.80	1.410E+00	2.206E+00	2.206E+00	33.45
RA-228	338.32	291	11.27	3.226E+00	2.636E+00	2.636E+00	47.85

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	217	25.80*	1.494E+00	1.856E+00	1.856E+00	25.86
	968.97	149	15.80	1.410E+00	2.206E+00	2.206E+00	33.45
	74.82	321	10.28	3.246E+00	3.170E+00	3.170E+00	35.30
	77.11	460	17.10	3.511E+00	2.524E+00	2.524E+00	21.03
	238.63	1180	43.60*	4.115E+00	2.164E+00	2.164E+00	14.21
TH-232	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
	338.32	291	11.27	3.226E+00	2.636E+00	2.636E+00	24.96
	911.20	217	25.80*	1.494E+00	1.856E+00	1.856E+00	25.86
NP-237	968.97	149	15.80	1.410E+00	2.206E+00	2.206E+00	33.45
	86.48	129	12.40*	4.436E+00	7.699E-01	7.699E-01	59.38
ANH-511	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
	511.00	82	100.00*	2.419E+00	1.115E-01	1.115E-01	74.72

Flag: "*" = Keyline

Total number of lines in spectrum 37
Number of unidentified lines 7
Number of lines tentatively identified by NID 30 81.08%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.085E+01	3.085E+01	0.377E+01	12.23	
CD-109	461.40D	1.04	2.580E+00	2.671E+00	1.484E+00	55.55	
SN-126	2.30E+05Y	1.00	2.580E-01	2.580E-01	1.433E-01	55.55	
BA-137M	30.08Y	1.00	4.504E-01	4.510E-01	0.925E-01	20.51	
CS-137	30.08Y	1.00	4.758E-01	4.765E-01	0.978E-01	20.52	
TL-208	1.41E+10Y	1.00	5.836E-01	5.836E-01	1.163E-01	19.94	
BI-211	7.04E+08Y	1.00	4.856E+00	4.856E+00	0.788E+00	16.22	
PB-212	1.41E+10Y	1.00	2.164E+00	2.164E+00	0.307E+00	14.21	
BI-214	1600.00Y	1.00	1.550E+00	1.550E+00	0.278E+00	17.92	
PB-214	1600.00Y	1.00	1.763E+00	1.763E+00	0.302E+00	17.13	
RA-224	1.41E+10Y	1.00	7.179E+00	7.179E+00	2.439E+00	33.98	
RA-226	1600.00Y	1.00	1.550E+00	1.550E+00	0.278E+00	17.92	
AC-228	1.41E+10Y	1.00	1.856E+00	1.856E+00	0.480E+00	25.86	
RA-228	1.41E+10Y	1.00	1.856E+00	1.856E+00	0.480E+00	25.86	
TH-228	1.41E+10Y	1.00	2.164E+00	2.164E+00	0.307E+00	14.21	
TH-232	1.41E+10Y	1.00	1.856E+00	1.856E+00	0.480E+00	25.86	
NP-237	2.14E+06Y	1.00	7.699E-01	7.699E-01	4.572E-01	59.38	
ANH-511	1.00E+09Y	1.00	1.115E-01	1.115E-01	0.833E-01	74.72	

Total Activity : 6.287E+01 6.297E+01

Grand Total Activity : 6.287E+01 6.297E+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	93.57	105	645	1.44	186.06	180	10	1.46E-02	97.7	4.88E+00	T
0	129.60	98	379	1.15	258.12	253	10	1.37E-02	77.2	5.63E+00	
0	186.35	235	534	1.65	371.60	365	16	3.26E-02	47.0	4.85E+00	T
0	209.47	134	310	1.82	417.84	413	10	1.86E-02	52.7	4.50E+00	T
4	270.45	167	218	2.28	539.80	534	31	2.32E-02	38.0	3.77E+00	T
0	327.06	132	186	1.44	653.01	645	14	1.84E-02	47.0	3.30E+00	
0	462.57	63	129	1.64	924.04	920	10	8.69E-03	72.2	2.60E+00	T
0	665.68	43	39	1.51	1330.28	1327	8	6.01E-03	60.2	1.97E+00	T
0	726.97	107	70	1.43	1452.87	1445	14	1.49E-02	39.5	1.83E+00	T
0	768.19	58	53	1.23	1535.33	1530	11	8.08E-03	54.8	1.75E+00	
0	795.23	68	46	1.69	1589.41	1584	13	9.48E-03	48.3	1.69E+00	T
0	932.59	46	43	1.35	1864.18	1856	15	6.37E-03	70.1	1.46E+00	
1	964.37	63	24	2.20	1927.74	1922	46	8.72E-03	43.5	1.42E+00	T
0	1002.18	50	49	0.96	2003.38	1993	20	6.96E-03	74.5	1.36E+00	T
0	1238.05	45	87	1.67	2475.23	2467	14	6.22E-03	93.5	1.12E+00	T
0	1377.00	36	14	1.63	2753.19	2745	14	5.00E-03	55.3	1.01E+00	
0	1589.75	42	44	5.72	3178.85	3164	25	5.85E-03	90.0	9.08E-01	
0	1729.71	15	10	1.50	3458.87	3453	10	2.08E-03	94.3	8.64E-01	

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513001.CNF;1
* Acquisition date   : 20-MAR-2010 11:20:20  Detector SN#      :
* Detector ID        : GAM15                      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 02:00:01.32             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513001             Analyst initials: MXR1
* Batch Number       : 961097                 Sample Quantity : 1.14030E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32.11MS 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	3.085E+01	3.773E+00	7.801E-01	7.666E-02	39.544
CD-109	2.671E+00	1.484E+00	2.226E+00	2.764E-01	1.200
SN-126	2.580E-01	1.433E-01	2.239E-01	2.771E-02	1.152
BA-137M	4.510E-01	9.251E-02	8.085E-02	6.647E-03	5.579
CS-137	4.765E-01	9.776E-02	8.541E-02	7.036E-03	5.579
TL-208	5.836E-01	1.163E-01	8.131E-02	7.436E-03	7.177
BI-211	4.856E+00	7.877E-01	4.732E-01	4.713E-02	10.262
PB-212	2.164E+00	3.075E-01	1.387E-01	1.657E-02	15.610
BI-214	1.550E+00	2.777E-01	1.544E-01	1.538E-02	10.038
PB-214	1.763E+00	3.020E-01	1.728E-01	1.964E-02	10.201
RA-224	7.179E+00	2.439E+00	1.486E+00	1.639E-01	4.832
RA-226	1.550E+00	2.777E-01	1.544E-01	1.538E-02	10.038
AC-228	1.856E+00	4.799E-01	3.131E-01	3.793E-02	5.927
RA-228	1.856E+00	4.799E-01	3.131E-01	3.793E-02	5.927
TH-228	2.164E+00	3.075E-01	1.387E-01	1.657E-02	15.610
TH-232	1.856E+00	4.799E-01	3.131E-01	3.793E-02	5.927
NP-237	7.699E-01	4.572E-01	6.010E-01	1.460E-01	1.281
ANH-511	1.115E-01	8.329E-02	6.915E-02	5.975E-03	1.612

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.534E-01		5.293E-01	8.462E-01	7.865E-02	-0.181
NA-22	-1.240E-02		6.503E-02	1.030E-01	9.359E-03	-0.120
NA-24	1.355E+03		3.714E+03	Half-Life	too short	
SC-46	-1.060E-02		6.182E-02	9.360E-02	8.698E-03	-0.113
V-48	1.943E-02		1.517E-01	2.177E-01	1.990E-02	0.089
CR-51	2.051E-01		6.935E-01	1.023E+00	1.085E-01	0.201
MN-54	4.217E-02		5.069E-02	8.932E-02	8.106E-03	0.472
CO-56	-5.385E-04		5.374E-02	8.893E-02	8.115E-03	-0.006
CO-57	-1.478E-02		3.652E-02	5.829E-02	5.871E-03	-0.254
CO-58	2.139E-03		5.747E-02	9.309E-02	8.369E-03	0.023
FE-59	-5.143E-02		1.465E-01	2.308E-01	2.153E-02	-0.223
CO-60	3.653E-02		5.505E-02	9.561E-02	9.191E-03	0.382
ZN-65	-1.064E-01		1.549E-01	1.957E-01	1.672E-02	-0.543
SE-75	-5.203E-02		8.036E-02	1.118E-01	1.226E-02	-0.465
SR-85	1.050E-01		7.282E-02	1.136E-01	9.813E-03	0.924
Y-88	-1.365E-02		4.236E-02	6.437E-02	5.421E-03	-0.212
Y-91	-3.494E+01		3.325E+01	4.819E+01	4.062E+00	-0.725
NB-94	-1.314E-02		4.874E-02	8.004E-02	6.758E-03	-0.164
NB-95	9.257E-02		6.750E-02	1.106E-01	9.692E-03	0.837
NB-95M	5.487E-01		2.493E-01	3.912E-01	4.714E-02	1.403
ZR-95	-8.240E-03		1.010E-01	1.645E-01	1.581E-02	-0.050
MO-99	-2.022E-05		6.000E-05	Half-Life	too short	
TC-99M	-1.723E+19		7.423E+19	Half-Life	too short	
RU-103	-2.485E-02		6.155E-02	9.694E-02	1.355E-02	-0.256
RH-106	-1.071E-01		4.681E-01	7.392E-01	9.696E-02	-0.145
RU-106	-1.071E-01		4.680E-01	7.392E-01	6.212E-02	-0.145
AG-108M	-1.934E-02		4.179E-02	6.630E-02	5.860E-03	-0.292
AG-110M	7.394E-02		5.292E-02	8.731E-02	7.431E-03	0.847
SN-113	-1.809E-03		6.996E-02	1.150E-01	9.985E-03	-0.016
CD-115	4.483E-05		9.328E-05	Half-Life	too short	
SN-117M	-4.695E-02		1.225E-01	1.941E-01	2.035E-02	-0.242
TE-123M	-3.857E-02		4.449E-02	6.876E-02	7.246E-03	-0.561
SB-124	-3.132E-02		1.061E-01	1.647E-01	1.551E-02	-0.190
SB-125	9.184E-04		1.269E-01	2.080E-01	1.811E-02	0.004
TE-125M	-1.632E-01		1.586E+01	2.584E+01	3.076E+00	-0.006
I-126	7.546E-01	+	4.586E-01	8.031E-01	6.623E-02	0.940
SB-126	2.053E-01		3.244E-01	5.007E-01	4.274E-02	0.410
SB-127	2.596E+00		7.637E+00	1.308E+01	1.805E+00	0.198
I-131	-9.375E-02		3.362E-01	5.461E-01	5.306E-02	-0.172
TE-132	-1.752E+00		5.890E+00	9.772E+00	1.851E+00	-0.179
BA-133	1.099E-02		7.176E-02	1.040E-01	1.406E-02	0.106
I-133	1.307E+00		2.176E+00	Half-Life	too short	
CS-134	1.763E-01	+	8.669E-02	1.246E-01	1.116E-02	1.415
CS-135	3.951E-01		2.696E-01	4.208E-01	5.049E-02	0.939
I-135	-9.734E+17		2.033E+18	Half-Life	too short	
CS-136	2.638E-02		2.173E-01	3.597E-01	3.330E-02	0.073
CE-139	-1.803E-03		4.756E-02	7.640E-02	8.156E-03	-0.024
BA-140	-8.674E-02		5.447E-01	8.705E-01	2.952E-01	-0.100

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140	1.208E-01		1.807E-01	2.949E-01	2.765E-02	0.410
CE-141	-1.245E-02		1.103E-01	1.753E-01	1.812E-02	-0.071
CE-143	6.098E-02		1.033E-02	Half-Life too short		
CE-144	1.507E-01		3.407E-01	4.933E-01	7.959E-02	0.305
PM-144	3.016E-03		4.923E-02	8.275E-02	6.965E-03	0.036
PR-144	-1.182E-01		3.729E+00	6.227E+00	5.237E-01	-0.019
PM-146	1.191E-02		6.214E-02	1.028E-01	1.087E-02	0.116
ND-147	-2.433E-01		1.259E+00	2.011E+00	3.008E-01	-0.121
PM-149	-1.118E-03		9.194E-04	Half-Life too short		
EU-152	9.597E-03		1.631E-01	2.221E-01	2.260E-02	0.043
GD-153	-5.741E-02		1.507E-01	2.105E-01	2.323E-02	-0.273
EU-154	-2.457E-03		1.811E-01	2.922E-01	3.427E-02	-0.008
EU-155	-5.339E-02		1.561E-01	2.513E-01	2.647E-02	-0.212
TB-160	-2.337E-01		2.023E-01	2.953E-01	2.733E-02	-0.791
HO-166M	-3.214E-02		8.164E-02	1.323E-01	1.123E-02	-0.243
TA-182	9.200E-02		2.918E-01	4.858E-01	4.170E-02	0.189
IR-192	-9.832E-03		5.371E-02	8.833E-02	9.108E-03	-0.111
HG-203	1.108E-01		6.569E-02	1.157E-01	1.272E-02	0.957
BI-207	6.754E-02		7.107E-02	1.262E-01	1.113E-02	0.535
PB-210	1.487E+00		1.415E+01	2.345E+01	2.887E+00	0.063
PB-211	6.076E-02		1.105E+00	1.820E+00	8.804E-01	0.033
BI-212	2.889E+00	+	1.196E+00	1.620E+00	2.013E-01	1.783
RN-219	1.769E-01		6.077E-01	1.015E+00	1.499E-01	0.174
RA-223	6.569E-01		9.823E-01	1.480E+00	2.685E-01	0.444
AC-227	-4.632E-02		3.605E-01	6.001E-01	8.304E-02	-0.077
TH-227	-4.632E-02		3.605E-01	6.001E-01	9.128E-02	-0.077
TH-229	1.615E-01		8.974E-01	1.265E+00	1.377E-01	0.128
PA-231	-5.947E-01		2.342E+00	3.331E+00	5.312E-01	-0.179
TH-231	6.569E-01		9.823E-01	1.480E+00	2.685E-01	0.444
PA-233	4.309E-02		9.565E-02	1.623E-01	1.717E-02	0.265
PA-234	-2.251E-01		4.037E-01	6.248E-01	1.191E-01	-0.360
PA-234M	1.439E+01	+	1.083E+01	1.125E+01	1.167E+00	1.279
TH-234	3.152E+00		3.028E+00	4.952E+00	9.819E-01	0.636
U-235	1.500E-01		3.019E-01	4.898E-01	8.715E-02	0.306
U-238	3.152E+00		3.028E+00	4.952E+00	9.819E-01	0.636
NP-239	1.430E-01		5.763E-01	9.467E-01	9.555E-02	0.151
AM-241	-3.001E-01		3.619E-01	5.783E-01	6.788E-02	-0.519
CM-247	3.255E-02		5.599E-02	9.493E-02	8.028E-03	0.343
CF-249	2.755E-02		5.651E-02	9.562E-02	8.151E-03	0.288
CF-251	8.424E-02		2.018E-01	3.291E-01	3.542E-02	0.256

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]G248513001          *
* Acquisition date   : 20-MAR-2010 11:20:20 Detector SN#      :             *
* Detector ID        : GAM15                      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 02:00:01.32              Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513001              Analyst initials: MXR1         *
* Batch Number       : 961097                  Sample Quantity : 1.1403E+02 GRAM *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 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	3.085E+01	3.698E+00	3.886E-01	1.887E+00
CD-109	2.671E+00	1.454E+00	1.138E+00	7.419E-01
SN-126	2.580E-01	1.405E-01	1.144E-01	7.167E-02
BA-137M	4.510E-01	9.066E-02	4.057E-02	4.625E-02
CS-137	4.765E-01	9.580E-02	4.286E-02	4.888E-02
TL-208	5.836E-01	1.140E-01	4.085E-02	5.817E-02
BI-211	4.856E+00	7.720E-01	2.388E-01	3.939E-01
PB-212	2.164E+00	3.013E-01	7.022E-02	1.537E-01
BI-214	1.550E+00	2.721E-01	7.754E-02	1.388E-01
PB-214	1.763E+00	2.959E-01	8.720E-02	1.510E-01
RA-224	7.179E+00	2.390E+00	7.524E-01	1.220E+00
RA-226	1.550E+00	2.721E-01	7.754E-02	1.388E-01
AC-228	1.856E+00	4.703E-01	1.567E-01	2.400E-01
RA-228	1.856E+00	4.703E-01	1.567E-01	2.400E-01
TH-228	2.164E+00	3.013E-01	7.022E-02	1.537E-01
TH-232	1.856E+00	4.703E-01	1.567E-01	2.400E-01
NP-237	7.699E-01	4.480E-01	3.072E-01	2.286E-01
ANH-511	1.115E-01	8.163E-02	3.478E-02	4.165E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.534E-01	5.187E-01	4.259E-01	2.647E-01 NOT IDENT.
NA-22	-1.240E-02	6.373E-02	5.138E-02	3.252E-02 NOT IDENT.
NA-24	1.355E+09	7.279E+09	0.000E+00	3.714E+09 SHORT HLIF
SC-46	-1.060E-02	6.058E-02	4.684E-02	3.091E-02 FAIL ABUN
V-48	1.943E-02	1.487E-01	1.089E-01	7.585E-02 NOT IDENT.
CR-51	2.051E-01	6.797E-01	5.167E-01	3.468E-01 NOT IDENT.
MN-54	4.217E-02	4.967E-02	4.472E-02	2.534E-02 NOT IDENT.
CO-56	-5.385E-04	5.267E-02	4.452E-02	2.687E-02 FAIL ABUN
CO-57	-1.478E-02	3.579E-02	2.970E-02	1.826E-02 NOT IDENT.

CO-58	2.139E-03	5.632E-02	4.662E-02	2.874E-02	NOT IDENT.
FE-59	-5.143E-02	1.436E-01	1.153E-01	7.325E-02	NOT IDENT.
CO-60	3.653E-02	5.395E-02	4.767E-02	2.753E-02	NOT IDENT.
ZN-65	-1.064E-01	1.518E-01	9.774E-02	7.747E-02	NOT IDENT.
SE-75	-5.203E-02	7.875E-02	5.656E-02	4.018E-02	NOT IDENT.
SR-85	1.050E-01	7.136E-02	5.713E-02	3.641E-02	NOT IDENT.
Y-88	-1.365E-02	4.151E-02	3.200E-02	2.118E-02	NOT IDENT.
Y-91	-3.494E+01	3.259E+01	2.405E+01	1.663E+01	NOT IDENT.
NB-94	-1.314E-02	4.777E-02	4.014E-02	2.437E-02	NOT IDENT.
NB-95	9.257E-02	6.615E-02	5.544E-02	3.375E-02	NOT IDENT.
NB-95M	5.487E-01	2.443E-01	1.982E-01	1.247E-01	NOT IDENT.
ZR-95	-8.240E-03	9.900E-02	8.246E-02	5.051E-02	NOT IDENT.
MO-99	-2.022E+01	1.176E+02	0.000E+00	6.000E+01	SHORT HLIF
TC-99M	-1.723E+25	1.455E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.485E-02	6.032E-02	4.877E-02	3.078E-02	FAIL ABUN
RH-106	-1.071E-01	4.588E-01	3.712E-01	2.341E-01	NOT IDENT.
RU-106	-1.071E-01	4.587E-01	3.712E-01	2.340E-01	NOT IDENT.
AG-108M	-1.934E-02	4.095E-02	3.340E-02	2.089E-02	NOT IDENT.
AG-110M	7.394E-02	5.186E-02	4.382E-02	2.646E-02	NOT IDENT.
SN-113	-1.809E-03	6.857E-02	5.797E-02	3.498E-02	NOT IDENT.
CD-115	4.483E+01	1.828E+02	0.000E+00	9.328E+01	SHORT HLIF
SN-117M	-4.695E-02	1.201E-01	9.867E-02	6.126E-02	NOT IDENT.
TE-123M	-3.857E-02	4.360E-02	3.495E-02	2.224E-02	NOT IDENT.
SB-124	-3.132E-02	1.040E-01	8.192E-02	5.305E-02	NOT IDENT.
SB-125	9.184E-04	1.243E-01	1.048E-01	6.343E-02	FAIL ABUN
TE-125M	-1.632E-01	1.554E+01	1.318E+01	7.929E+00	NOT IDENT.
I-126	7.546E-01	4.494E-01	4.030E-01	2.293E-01	FAIL ABUN
SB-126	2.053E-01	3.179E-01	2.511E-01	1.622E-01	FAIL ABUN
SB-127	2.596E+00	7.484E+00	6.564E+00	3.819E+00	NOT IDENT.
I-131	-9.375E-02	3.295E-01	2.755E-01	1.681E-01	NOT IDENT.
TE-132	-1.752E+00	5.772E+00	4.951E+00	2.945E+00	NOT IDENT.
BA-133	1.099E-02	7.033E-02	5.250E-02	3.588E-02	FAIL ABUN
I-133	1.307E+06	4.264E+06	0.000E+00	2.176E+06	SHORT HLIF
CS-134	1.763E-01	8.496E-02	6.239E-02	4.335E-02	FAIL ABUN
CS-135	3.951E-01	2.642E-01	2.129E-01	1.348E-01	NOT IDENT.
I-135	-9.734E+23	3.984E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.638E-02	2.130E-01	1.797E-01	1.087E-01	NOT IDENT.
CE-139	-1.803E-03	4.661E-02	3.882E-02	2.378E-02	NOT IDENT.
BA-140	-8.674E-02	5.338E-01	4.376E-01	2.723E-01	NOT IDENT.
LA-140	1.208E-01	1.771E-01	1.468E-01	9.036E-02	NOT IDENT.
CE-141	-1.245E-02	1.081E-01	8.919E-02	5.517E-02	NOT IDENT.
CE-143	6.098E+04	2.025E+04	0.000E+00	1.033E+04	SHORT HLIF
CE-144	1.507E-01	3.339E-01	2.511E-01	1.704E-01	NOT IDENT.
PM-144	3.016E-03	4.825E-02	4.150E-02	2.462E-02	NOT IDENT.
PR-144	-1.182E-01	3.654E+00	3.123E+00	1.864E+00	NOT IDENT.
PM-146	1.191E-02	6.090E-02	5.175E-02	3.107E-02	NOT IDENT.
ND-147	-2.433E-01	1.234E+00	1.011E+00	6.297E-01	NOT IDENT.
PM-149	-1.118E+03	1.802E+03	0.000E+00	9.194E+02	SHORT HLIF
EU-152	9.597E-03	1.598E-01	1.121E-01	8.154E-02	FAIL ABUN
GD-153	-5.741E-02	1.476E-01	1.075E-01	7.533E-02	NOT IDENT.
EU-154	-2.457E-03	1.775E-01	1.457E-01	9.054E-02	NOT IDENT.
EU-155	-5.339E-02	1.530E-01	1.282E-01	7.807E-02	FAIL ABUN
TB-160	-2.337E-01	1.983E-01	1.478E-01	1.012E-01	FAIL ABUN
HO-166M	-3.214E-02	8.000E-02	6.636E-02	4.082E-02	NOT IDENT.
TA-182	9.200E-02	2.859E-01	2.424E-01	1.459E-01	FAIL ABUN
IR-192	-9.832E-03	5.264E-02	4.462E-02	2.686E-02	FAIL ABUN
HG-203	1.108E-01	6.437E-02	5.854E-02	3.284E-02	NOT IDENT.
BI-207	6.754E-02	6.964E-02	6.305E-02	3.553E-02	FAIL ABUN
PB-210	1.487E+00	1.387E+01	1.205E+01	7.075E+00	NOT IDENT.
PB-211	6.076E-02	1.083E+00	9.175E-01	5.524E-01	NOT IDENT.
BI-212	2.889E+00	1.172E+00	8.123E-01	5.979E-01	FAIL ABUN
RN-219	1.769E-01	5.956E-01	5.114E-01	3.039E-01	FAIL ABUN
RA-223	6.569E-01	9.626E-01	7.473E-01	4.911E-01	FAIL ABUN
AC-227	-4.632E-02	3.533E-01	3.037E-01	1.802E-01	NOT IDENT.
TH-227	-4.632E-02	3.533E-01	3.037E-01	1.802E-01	NOT IDENT.
TH-229	1.615E-01	8.795E-01	6.421E-01	4.487E-01	FAIL ABUN
PA-231	-5.947E-01	2.295E+00	1.684E+00	1.171E+00	NOT IDENT.
TH-231	6.569E-01	9.626E-01	7.473E-01	4.911E-01	FAIL ABUN
PA-233	4.309E-02	9.374E-02	8.201E-02	4.783E-02	NOT IDENT.
PA-234	-2.251E-01	3.956E-01	3.125E-01	2.019E-01	FAIL ABUN
PA-234M	1.439E+01	1.061E+01	5.624E+00	5.415E+00	FAIL ABUN
TH-234	3.152E+00	2.968E+00	2.537E+00	1.514E+00	FAIL ABUN
U-235	1.500E-01	2.958E-01	2.492E-01	1.509E-01	FAIL ABUN
U-238	3.152E+00	2.968E+00	2.537E+00	1.514E+00	FAIL ABUN
NP-239	1.430E-01	5.648E-01	4.825E-01	2.881E-01	FAIL ABUN
AM-241	-3.001E-01	3.547E-01	2.965E-01	1.810E-01	NOT IDENT.
CM-247	3.255E-02	5.487E-02	4.785E-02	2.800E-02	FAIL ABUN
CF-249	2.755E-02	5.538E-02	4.822E-02	2.825E-02	NOT IDENT.

CF-251

8.424E-02

1.978E-01

1.671E-01

1.009E-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
46.54	271.1030
49.72	324.2299
57.36	0.0000
59.54	390.5393
63.29	385.8797
63.29	385.8797
64.28	415.7836
67.75	485.6763
69.67	402.1978
70.83	418.6334
72.81	453.0195
72.87	453.0553
72.87	453.0553
74.82	428.8195
74.82	428.8195
74.82	428.8195
74.97	428.9052
77.11	430.1049
77.11	430.1049
77.11	430.1049
79.69	468.2903
79.80	474.7505
80.12	474.9426
80.19	474.9843
80.57	505.6135
81.00	523.4974
81.07	523.5433
81.07	523.5433
83.79	391.9816
83.79	391.9816
85.43	437.8413
86.48	454.5168
86.55	454.5563
86.79	554.9205
86.94	580.5571
87.57	584.2244
88.03	547.4072
88.47	714.9114
89.96	716.1754
91.11	717.1450
92.59	464.0396
92.59	464.0396
93.35	339.6020
94.67	349.8828
94.87	364.6125
94.87	364.6125
95.86	392.7267
97.43	377.0993
98.44	322.7770
99.53	342.5998
100.11	355.0997
103.18	390.1805
103.37	379.9916
105.31	360.2045
106.12	359.4862
109.28	359.6569
111.00	362.3728
111.76	375.0925
116.30	322.7042
117.23	319.8811
121.12	328.4409
121.78	327.6074
122.06	320.3694
123.07	316.1932
131.20	353.1799
133.52	331.9272
136.00	361.7531

136.47	370.3998
140.51	0.0000
140.51	0.0000
143.76	330.1018
144.24	337.7221
144.24	337.7221
145.44	335.9392
152.43	357.3524
153.25	316.6704
154.21	312.6164
154.21	312.6164
156.02	328.2092
158.56	342.9725
159.00	350.6721
162.66	359.3317
163.33	330.2015
165.86	341.7630
176.60	312.8494
177.52	322.9577
181.07	0.0000
184.41	314.5050
185.72	322.7746
193.51	288.1769
197.04	302.0714
205.31	260.1327
210.85	279.1514
215.65	282.3334
222.11	279.4859
227.38	264.9869
228.16	279.7009
228.18	279.7047
235.69	286.8748
235.96	286.9245
235.96	286.9245
238.63	264.1781
238.63	264.1781
240.99	264.5754
242.00	264.7459
244.70	265.1977
252.40	228.9994
252.80	228.2841
256.23	217.9451
256.23	217.9451
260.90	0.0000
264.66	225.2704
268.22	205.5088
269.46	193.1950
269.46	193.1950
271.23	188.0940
273.65	188.3614
276.40	188.6632
277.37	188.7687
277.60	188.7957
278.00	188.8374
279.20	188.9699
279.54	189.0067
280.46	185.0304
283.69	193.2260
284.31	183.8670
285.41	196.5612
285.90	0.0000
287.50	181.8387
293.27	0.0000
295.22	273.5436
295.96	295.8018
298.57	179.0063
299.98	144.2666
299.98	144.2666
300.09	144.2759
300.09	144.2759
300.13	144.2796
301.36	185.6261
302.85	239.1302
304.50	246.9732
304.50	246.9732
304.85	233.6682
308.46	173.9220
311.90	177.1163

316.51	175.6326
319.41	163.4071
320.08	144.2322
323.87	138.0966
323.87	138.0966
328.76	172.2554
333.37	151.6867
334.37	185.9930
334.37	185.9930
338.28	173.7449
338.28	173.7449
338.32	173.7493
338.32	173.7493
338.32	173.7493
340.48	142.5202
340.55	142.5247
344.28	147.9848
351.06	157.9289
351.93	159.2991
356.01	164.8421
364.49	159.2967
366.42	0.0000
383.85	136.9488
388.16	130.2628
388.63	139.2412
391.69	154.3775
400.66	164.0120
401.81	147.0861
402.40	143.1222
404.85	162.3184
410.95	141.6627
414.70	155.9877
423.72	131.3473
427.09	122.4327
427.87	119.4376
433.94	127.8688
453.88	123.8330
463.37	136.9906
468.07	108.0864
473.00	132.0266
476.78	119.8317
477.60	127.1035
487.02	115.1354
492.35	0.0000
497.08	101.0117
511.00	119.3556
514.00	122.2871
527.90	0.0000
529.87	0.0000
531.02	94.9438
537.26	89.8767
546.56	0.0000
563.25	86.4600
569.33	94.1359
569.50	89.8632
569.70	84.5200
583.19	97.8206
600.60	95.9783
602.73	101.0078
604.72	104.6860
609.32	94.3640
609.32	94.3640
610.33	94.0363
614.28	103.2151
618.01	93.0709
621.93	98.0332
621.93	98.0332
633.25	91.8422
635.95	84.2620
636.99	91.9550
645.85	99.9067
657.76	61.4027
661.66	88.2773
661.66	88.2773
664.57	0.0000
666.33	99.4592
666.50	99.4658
677.62	64.6950

685.70	83.3899
695.00	91.0635
696.49	93.8943
696.51	96.6833
697.00	92.9789
702.65	104.3164
706.68	90.4579
711.68	85.9243
720.70	62.6133
721.93	0.0000
722.78	69.0771
722.91	69.0801
723.31	80.3362
724.19	91.6071
727.33	61.1284
733.00	49.9523
735.93	64.9135
739.50	0.0000
747.24	75.5127
752.31	60.5000
753.82	69.9832
756.73	60.5781
763.94	60.1624
765.81	58.5678
766.42	58.5778
777.92	0.0000
778.90	89.5402
783.70	55.3237
785.37	62.9841
795.86	71.7850
801.95	67.3872
810.29	61.5026
810.76	61.5104
815.77	62.5575
818.51	59.7156
832.01	58.0017
834.85	60.9479
836.80	0.0000
846.77	57.2619
856.80	60.0569
860.56	43.4171
871.09	56.6548
873.19	59.6175
875.33	0.0000
879.36	71.4613
880.51	56.7940
883.24	52.9146
884.68	49.9935
889.28	62.8125
898.04	66.8877
911.20	62.1784
911.20	62.1784
911.20	62.1784
926.50	49.2551
937.49	59.6094
944.13	52.7412
946.00	61.7250
949.00	51.8085
962.29	66.8272
964.08	68.5714
966.15	58.0283
968.97	58.0684
968.97	58.0684
968.97	58.0684
983.53	49.9479
996.26	48.3721
1001.03	53.4712
1004.73	65.7790
1037.84	62.0723
1038.76	0.0000
1048.07	50.9989
1050.41	60.2124
1050.41	60.2124
1063.66	42.9912
1085.87	58.6375
1099.45	62.9410
1112.07	42.7680
1115.54	74.5547

1120.29	49.7539
1120.29	49.7539
1120.55	55.0890
1121.30	51.5430
1131.51	0.0000
1173.23	68.1421
1177.93	71.3590
1189.05	63.1104
1204.77	74.9233
1221.41	63.5327
1231.02	58.2009
1235.36	65.5338
1238.28	71.0357
1260.41	0.0000
1271.85	54.5527
1274.44	52.4393
1274.54	55.6520
1291.59	55.8382
1298.22	0.0000
1312.11	39.8906
1332.49	30.3060
1365.19	38.2731
1368.63	0.0000
1384.29	20.4015
1408.01	24.4639
1457.56	0.0000
1460.82	27.5486
1489.16	24.8230
1505.03	27.7640
1596.21	13.6133
1620.50	12.6917
1678.03	0.0000
1690.97	14.8122
1764.49	9.9895
1764.49	9.9895
1770.23	12.2479
1771.35	8.7500
1791.20	0.0000
1836.06	12.1184

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513001

Total Uranium Activity	9.4452E+00	ug/g
Total Uranium Counting Unc.	8.8298E+00	ug/g
Total Uranium Tpu	4.5050E-06	ug/g
Total Uranium Mda	7.5499E+00	ug/g


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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 961097                SAMPLE ID   : G248513001                *
*  ANALYST       : MXR1                  DETECTOR    : GAM15                  *
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00        *
*  ANALYSIS DATE : 20-MAR-2010 11:20:20.83  SAMPLE ALQT: 114.030 GRAM        *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.215E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 2.057E+00
GROSS GAMMA MDA (pCi/GRAM )     : 6.621E+00
GROSS GAMMA DLC (pCi/GRAM )     : 3.225E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:21:36.65

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513002.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:21:04
Sample ID          : G248513002          Sample quantity  : 1.08680E+02 GRAM
Detector name      : GAM16              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.94  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 961097              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	46.66*	60	286	1.27	93.50	90	7	8.38E-03	49.8	
2	0	63.26*	125	540	1.16	126.70	122	10	1.74E-02	36.6	
3	4	74.91*	407	316	0.90	150.00	145	18	5.65E-02	8.3	2.96E+00
4	4	77.14*	736	292	0.87	154.47	145	18	1.02E-01	5.2	
5	0	87.21	285	412	1.07	174.60	171	7	3.96E-02	13.2	
6	5	89.95	125	281	0.82	180.10	178	12	1.73E-02	22.0	1.38E+00
7	5	92.78*	253	391	1.18	185.75	178	12	3.52E-02	15.1	
8	0	128.80	83	398	1.03	257.79	253	10	1.16E-02	46.0	
9	0	186.03*	209	422	1.40	372.26	367	11	2.90E-02	20.9	
10	0	208.99	130	242	1.08	418.17	414	8	1.80E-02	22.6	
11	7	238.53*	1274	162	0.97	477.25	470	19	1.77E-01	3.3	7.97E-01
12	7	241.60	347	227	1.82	483.38	470	19	4.82E-02	12.3	
13	0	269.92	125	221	1.35	540.03	535	10	1.74E-02	23.9	
14	0	295.10*	445	166	1.09	590.38	586	10	6.19E-02	7.3	
15	0	299.99	82	102	0.97	600.17	597	6	1.14E-02	22.4	
16	0	328.12	86	202	1.76	656.44	652	12	1.20E-02	33.7	
17	0	338.06*	293	203	1.05	676.31	670	12	4.07E-02	11.4	
18	0	351.74*	732	115	1.09	703.67	699	9	1.02E-01	4.6	
19	0	402.18	26	74	1.00	804.53	801	7	3.65E-03	57.9	
20	0	463.00	76	102	1.67	926.17	921	10	1.06E-02	27.4	
21	0	510.80*	130	161	1.64	1021.76	1015	14	1.80E-02	25.3	
22	0	582.97*	360	125	1.21	1166.07	1161	12	5.00E-02	8.4	
23	0	609.17*	563	124	1.35	1218.46	1210	14	7.82E-02	6.0	
24	0	661.70*	222	124	1.31	1323.51	1317	13	3.09E-02	12.4	
25	0	726.95*	94	75	1.54	1454.00	1448	12	1.30E-02	21.6	
26	0	769.22	86	91	5.44	1538.52	1530	19	1.20E-02	28.5	
27	0	794.97	56	61	1.07	1590.00	1585	11	7.76E-03	30.1	
28	0	860.53*	62	48	1.43	1721.08	1715	13	8.62E-03	27.3	
29	0	910.76*	290	56	1.61	1821.53	1814	15	4.02E-02	8.2	
30	0	968.98	133	95	1.67	1937.94	1932	15	1.84E-02	18.4	
31	0	1120.27*	118	65	2.19	2240.43	2235	14	1.65E-02	17.2	
32	0	1238.46	35	95	1.31	2476.71	2469	15	4.88E-03	62.5	
33	0	1281.77	30	27	0.78	2563.30	2557	12	4.20E-03	40.1	
34	0	1376.23	58	8	2.81	2752.15	2744	15	7.99E-03	16.8	
35	0	1460.35*	1076	43	1.95	2920.30	2911	16	1.49E-01	3.4	
36	0	1587.90	26	8	1.78	3175.27	3169	11	3.57E-03	29.3	
37	0	1729.16	34	0	1.62	3457.65	3450	15	4.72E-03	17.1	
38	0	1764.09*	99	3	1.77	3527.45	3521	16	1.38E-02	11.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1847.37*	20	6	1.78	3693.93	3687	12	2.72E-03	35.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:21:39

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:21:04
Sample ID         : G248513002 Sample quantity : 108.68 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA16 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.94 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	+	1460.82	*	2.885E+01	3.195E+00	7.523E-01	6.613E-02	38.344
CD-109	+	88.03	*	4.409E+00	1.238E+00	1.223E+00	1.178E-01	3.606
SN-126	+	64.28		1.277E+00	9.520E-01	7.713E-01	1.124E-01	1.655
	+	86.94		1.771E+00	8.718E-01	5.614E-01	2.333E-01	3.154
	+	87.57	*	4.259E-01	1.196E-01	1.187E-01	1.138E-02	3.590
BA-137M	+	661.66	*	3.559E-01	9.404E-02	6.872E-02	6.099E-03	5.178
CS-137	+	661.66	*	3.759E-01	9.937E-02	7.260E-02	6.455E-03	5.178
TL-208		277.37		1.931E-01	4.287E-01	6.981E-01	1.049E-01	0.277
	+	583.19	*	5.478E-01	1.067E-01	6.091E-02	6.031E-03	8.994
	+	860.56		8.933E-01	4.957E-01	5.034E-01	5.038E-02	1.774
PB-210	+	46.54	*	4.725E+00	4.730E+00	5.293E+00	4.894E-01	0.893
BI-211		72.87		3.614E+00	3.279E+00	5.291E+00	4.301E-01	0.683
	+	351.06	*	4.965E+00	7.105E-01	3.401E-01	3.719E-02	14.601
PB-212	+	74.82		2.671E+00	5.606E-01	5.499E-01	7.029E-02	4.857
	+	77.11		2.771E+00	3.709E-01	3.156E-01	2.681E-02	8.782
	+	238.63	*	1.931E+00	2.619E-01	9.477E-02	1.126E-02	20.372
	+	300.09		1.936E+00	9.036E-01	1.315E+00	1.735E-01	1.472
BI-214	+	609.32	*	1.660E+00	2.659E-01	1.179E-01	1.252E-02	14.082
	+	1120.29		1.809E+00	6.525E-01	5.047E-01	5.444E-02	3.584
	+	1764.49		2.124E+00	5.209E-01	3.275E-01	2.710E-02	6.486
PB-214	+	74.82		4.734E+00	9.573E-01	9.747E-01	1.118E-01	4.857
	+	77.11		4.886E+00	7.681E-01	5.564E-01	6.587E-02	8.782
	+	242.00		3.189E+00	8.792E-01	5.765E-01	7.192E-02	5.532
	+	295.22		1.861E+00	3.687E-01	2.309E-01	3.112E-02	8.060
	+	351.93	*	1.802E+00	2.763E-01	1.111E-01	1.358E-02	16.227
RN-219	+	271.23		8.372E-01	4.145E-01	4.141E-01	5.404E-02	2.022
	+	401.81	*	3.859E-01	4.509E-01	6.556E-01	1.001E-01	0.589
RA-224	+	240.99	*	5.639E+00	1.520E+00	1.016E+00	1.120E-01	5.551
RA-226	+	609.32	*	1.660E+00	2.659E-01	1.179E-01	1.252E-02	14.082
	+	1120.29		1.809E+00	6.525E-01	5.047E-01	5.444E-02	3.584
	+	1764.49		2.124E+00	5.209E-01	3.275E-01	2.710E-02	6.486
AC-228	+	338.32		2.213E+00	1.064E+00	4.025E-01	1.701E-01	5.499
	+	911.20	*	2.125E+00	4.360E-01	2.547E-01	3.109E-02	8.343
	+	968.97		1.678E+00	7.422E-01	4.764E-01	1.172E-01	3.521

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		2.213E+00	1.064E+00	4.025E-01	1.701E-01	5.499
	+	911.20	*	2.125E+00	4.360E-01	2.547E-01	3.109E-02	8.343
	+	968.97		1.678E+00	7.422E-01	4.764E-01	1.172E-01	3.521
TH-228	+	74.82		2.671E+00	4.978E-01	5.499E-01	4.605E-02	4.857
	+	77.11		2.771E+00	3.709E-01	3.156E-01	2.681E-02	8.782
	+	238.63	*	1.931E+00	2.619E-01	9.477E-02	1.126E-02	20.372
	+	300.09		1.936E+00	1.476E+00	1.315E+00	8.119E-01	1.472
TH-232	+	338.32		2.213E+00	5.612E-01	4.025E-01	4.393E-02	5.499
	+	911.20	*	2.125E+00	4.360E-01	2.547E-01	3.109E-02	8.343
	+	968.97		1.678E+00	7.422E-01	4.764E-01	1.172E-01	3.521
TH-234	+	63.29	*	3.312E+00	2.494E+00	2.084E+00	3.716E-01	1.589
	+	92.59		3.134E+00	1.176E+00	9.928E-01	2.216E-01	3.157
U-235	+	89.96		1.932E+00	9.758E-01	1.421E+00	3.541E-01	1.359
	+	93.35		2.367E+00	9.027E-01	7.293E-01	1.699E-01	3.246
		143.76	*	-2.558E-01	2.163E-01	3.289E-01	5.566E-02	-0.778
		163.33		7.932E-01	4.849E-01	8.195E-01	1.487E-01	0.968
	+	185.72		2.054E-01	8.820E-02	6.758E-02	6.456E-03	3.039
		205.31		-3.773E-01	5.910E-01	8.178E-01	1.544E-01	-0.461
NP-237	+	86.48	*	1.271E+00	4.453E-01	4.049E-01	9.313E-02	3.139
		95.86		2.280E-01	9.604E-01	1.480E+00	3.570E-01	0.154
U-238	+	63.29	*	3.312E+00	2.494E+00	2.084E+00	3.716E-01	1.589
	+	92.59		3.134E+00	9.886E-01	9.928E-01	9.144E-02	3.157
CM-247		278.00		2.824E-01	8.384E-01	1.358E+00	1.627E-01	0.208
		287.50		4.207E-01	1.327E+00	2.156E+00	2.567E-01	0.195
	+	402.40	*	3.537E-02	4.111E-02	5.927E-02	5.510E-03	0.597
ANH-511	+	511.00	*	1.510E-01	7.778E-02	5.139E-02	4.887E-03	2.939

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-6.682E-02	4.056E-01	6.644E-01	6.720E-02	-0.101
NA-22		1274.54	*	-6.933E-02	5.559E-02	6.516E-02	5.422E-03	-1.064
NA-24		1368.63	*	-7.082E+01	5.559E-02	Half-Life too short		
SC-46		889.28	*	-1.958E-02	4.152E-02	6.591E-02	6.230E-03	-0.297
	+	1120.55		3.265E-01	1.157E-01	1.686E-01	1.424E-02	1.937
V-48		944.13		-6.238E-01	1.168E+00	1.821E+00	1.701E-01	-0.343
		983.53	*	-8.519E-02	1.043E-01	1.573E-01	1.448E-02	-0.542
		1312.11		-1.157E-02	1.329E-01	2.128E-01	1.786E-02	-0.054
CR-51		320.08	*	4.716E-01	4.643E-01	7.827E-01	9.147E-02	0.602
MN-54		834.85	*	-2.242E-02	4.190E-02	6.714E-02	6.306E-03	-0.334
CO-56		846.77	*	-1.341E-02	4.333E-02	7.051E-02	6.635E-03	-0.190
		1037.84		-1.550E-02	3.368E-01	5.531E-01	5.194E-02	-0.028
	+	1238.28		1.606E-01	2.012E-01	2.157E-01	1.830E-02	0.745
		1771.35		-1.526E-01	2.664E-01	2.968E-01	2.452E-02	-0.514
CO-57		122.06	*	1.444E-02	2.566E-02	4.397E-02	3.654E-03	0.329
		136.47		8.006E-02	2.066E-01	3.499E-01	3.178E-02	0.229
CO-58		810.76	*	-3.197E-02	4.232E-02	6.585E-02	6.169E-03	-0.486
FE-59		1099.45	*	1.995E-02	1.041E-01	1.744E-01	1.621E-02	0.114

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1291.59			2.228E-01	1.530E-01	2.854E-01	2.725E-02	0.781
	1173.23			1.203E-02	5.331E-02	8.884E-02	7.143E-03	0.135
	1332.49	*		-2.321E-02	4.154E-02	6.161E-02	5.197E-03	-0.377
ZN-65	1115.54	*		-1.456E-02	1.024E-01	1.420E-01	1.206E-02	-0.103
SE-75	121.12			-3.097E-02	1.370E-01	2.273E-01	2.465E-02	-0.136
	136.00			2.258E-02	4.123E-02	7.026E-02	5.964E-03	0.321
	264.66	*		-5.555E-03	5.520E-02	7.810E-02	9.115E-03	-0.071
	279.54			-9.342E-02	1.280E-01	1.934E-01	2.368E-02	-0.483
	400.66			5.569E-02	3.200E-01	4.800E-01	5.576E-02	0.116
SR-85	514.00	*		9.602E-02	5.014E-02	8.408E-02	7.995E-03	1.142
Y-88	898.04			-3.893E-03	4.901E-02	7.823E-02	7.430E-03	-0.050
	1836.06	*		2.570E-02	4.195E-02	7.637E-02	6.200E-03	0.337
Y-91	1204.77	*		4.740E+00	2.711E+01	4.490E+01	3.651E+00	0.106
NB-94	702.65	*		-1.031E-02	3.732E-02	5.856E-02	5.294E-03	-0.176
	871.09			6.176E-04	3.560E-02	5.967E-02	5.632E-03	0.010
NB-95	765.81	*		4.094E-02	5.754E-02	8.708E-02	8.049E-03	0.470
NB-95M	235.69	*		-3.974E-02	1.585E-01	2.242E-01	2.669E-02	-0.177
ZR-95	724.19			7.310E-02	1.177E-01	1.777E-01	1.743E-02	0.411
	756.73	*		6.066E-02	8.791E-02	1.493E-01	1.503E-02	0.406
MO-99	140.51			7.095E-05	8.791E-02	Half-Life	too short	
	181.07			-1.512E-04	8.791E-02	Half-Life	too short	
	366.42			1.558E-04	8.791E-02	Half-Life	too short	
	739.50	*		1.685E-05	8.791E-02	Half-Life	too short	
	777.92			9.937E-05	8.791E-02	Half-Life	too short	
TC-99M	140.51	*		4.510E+19	8.791E-02	Half-Life	too short	
RU-103	497.08	*		-4.564E-02	4.513E-02	6.724E-02	9.774E-03	-0.679
	610.33	+		1.968E+01	4.042E+00	4.038E+00	6.729E-01	4.874
RH-106	621.93	*		-1.740E-01	3.324E-01	5.126E-01	6.972E-02	-0.340
	1050.41			-3.903E-01	2.786E+00	4.526E+00	4.024E-01	-0.086
RU-106	621.93	*		-1.740E-01	3.320E-01	5.126E-01	4.687E-02	-0.340
	1050.41			-3.903E-01	2.786E+00	4.526E+00	4.024E-01	-0.086
AG-108M	433.94	*		-5.943E-03	2.966E-02	4.873E-02	4.716E-03	-0.122
	614.28			-1.855E-02	4.321E-02	5.829E-02	5.511E-03	-0.318
	722.91			-4.364E-03	4.136E-02	5.704E-02	5.348E-03	-0.077
AG-110M	657.76	*		8.392E-03	4.283E-02	6.205E-02	5.680E-03	0.135
	677.62			5.384E-02	3.411E-01	5.585E-01	5.128E-02	0.096
	706.68			-9.110E-02	2.334E-01	3.615E-01	3.359E-02	-0.252
	763.94			2.342E-02	1.917E-01	2.716E-01	2.569E-02	0.086
	884.68			1.804E-03	4.954E-02	8.311E-02	8.064E-03	0.022
SN-113	937.49			-1.417E-01	1.192E-01	1.725E-01	1.665E-02	-0.821
	1384.29			7.858E-02	1.776E-01	2.967E-01	2.590E-02	0.265
	1505.03			-2.683E-01	2.995E-01	4.304E-01	3.680E-02	-0.623
	391.69	*		-3.821E-03	4.854E-02	8.110E-02	7.698E-03	-0.047
	260.90			6.812E-04	4.854E-02	Half-Life	too short	
CD-115	492.35			3.962E-04	4.854E-02	Half-Life	too short	
	527.90	*		-1.787E-05	4.854E-02	Half-Life	too short	
SN-117M	156.02			-2.175E+00	3.406E+00	5.460E+00	4.816E-01	-0.398
	158.56	*		1.740E-02	7.833E-02	1.308E-01	1.162E-02	0.133
TE-123M	159.00	*		-3.722E-03	2.892E-02	4.750E-02	4.248E-03	-0.078

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		602.73		-1.138E-02	5.243E-02	7.289E-02	6.742E-03	-0.156
		645.85		1.062E-01	5.656E-01	9.321E-01	8.824E-02	0.114
		722.78		-1.289E-01	4.631E-01	6.224E-01	5.788E-02	-0.207
	1690.97		*	8.506E-03	8.540E-02	1.442E-01	1.266E-02	0.059
SB-125		427.87	*	-3.813E-02	9.117E-02	1.475E-01	1.408E-02	-0.259
	+	463.37		7.910E-01	4.401E-01	5.962E-01	6.011E-02	1.327
		600.60		-3.622E-02	1.879E-01	3.011E-01	2.967E-02	-0.120
		635.95		1.938E-01	3.154E-01	5.363E-01	5.216E-02	0.361
TE-125M		109.28	*	5.419E+00	1.036E+01	1.779E+01	1.843E+00	0.305
I-126		388.63		1.826E-02	2.708E-01	4.569E-01	4.275E-02	0.040
		666.33	*	-2.441E-01	4.528E-01	5.981E-01	5.320E-02	-0.408
		753.82		1.636E+00	3.025E+00	5.083E+00	4.682E-01	0.322
SB-126		414.70		1.076E-02	1.216E-01	2.046E-01	1.913E-02	0.053
		666.50		-9.259E-02	1.581E-01	2.075E-01	1.845E-02	-0.446
		695.00		7.002E-02	1.249E-01	2.114E-01	1.905E-02	0.331
		697.00		2.524E-01	4.459E-01	7.535E-01	6.796E-02	0.335
		720.70	*	-1.499E-01	2.793E-01	3.624E-01	3.299E-02	-0.414
		856.80		-2.739E-01	8.949E-01	1.252E+00	1.180E-01	-0.219
SB-127		252.40		1.590E+00	1.838E+01	2.969E+01	1.275E+01	0.054
		473.00		6.913E+00	6.999E+00	1.229E+01	1.923E+00	0.562
		685.70	*	-2.528E+00	6.155E+00	9.538E+00	1.353E+00	-0.265
		783.70		2.672E+01	1.569E+01	2.821E+01	4.280E+00	0.947
I-131		80.19		4.358E+00	9.081E+00	1.428E+01	1.272E+00	0.305
		284.31		4.234E-01	3.203E+00	5.152E+00	6.347E-01	0.082
		364.49	*	-7.055E-02	2.216E-01	3.659E-01	3.890E-02	-0.193
		636.99		3.903E+00	3.552E+00	6.243E+00	5.985E-01	0.625
TE-132		49.72		2.863E+01	1.099E+02	1.616E+02	2.127E+01	0.177
		111.76		-8.295E+01	1.757E+02	2.889E+02	3.858E+01	-0.287
		116.30		-3.706E+01	1.500E+02	2.489E+02	3.314E+01	-0.149
		228.16	*	-6.762E-01	4.190E+00	6.719E+00	1.259E+00	-0.101
BA-133		81.00		-1.302E-01	1.021E-01	1.444E-01	2.260E-02	-0.902
		276.40		1.661E-01	3.994E-01	6.521E-01	1.066E-01	0.255
		302.85		5.586E-02	1.667E-01	2.419E-01	3.689E-02	0.231
		356.01	*	-5.306E-03	4.617E-02	6.816E-02	9.695E-03	-0.078
		383.85		-1.440E-01	3.134E-01	5.111E-01	6.681E-02	-0.282
I-133		529.87	*	-2.936E+00	3.134E-01	Half-Life	too short	
		875.33		3.467E+01	3.134E-01	Half-Life	too short	
		1298.22		-1.700E+02	3.134E-01	Half-Life	too short	
CS-134		563.25		-4.648E-03	3.920E-01	6.413E-01	6.083E-02	-0.007
		569.33		4.182E-02	2.287E-01	3.652E-01	3.469E-02	0.115
		604.72		7.359E-03	4.157E-02	6.039E-02	5.592E-03	0.122
	+	795.86	*	1.246E-01	7.597E-02	1.038E-01	9.733E-03	1.200
		801.95		-1.798E-01	4.471E-01	6.819E-01	6.394E-02	-0.264
		1365.19		5.193E-01	1.117E+00	1.941E+00	1.724E-01	0.268
CS-135		268.22	*	2.595E-01	1.869E-01	2.907E-01	3.707E-02	0.893
I-135		546.56		3.084E+18	1.869E-01	Half-Life	too short	
		836.80		4.352E+18	1.869E-01	Half-Life	too short	
		1038.76		7.708E+16	1.869E-01	Half-Life	too short	
		1131.51		1.056E+18	1.869E-01	Half-Life	too short	

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CS-136	1260.41	*		-3.712E+18	1.869E-01	Half-Life	too short	
	1457.56			3.337E+20	1.869E-01	Half-Life	too short	
	1678.03			-3.139E+18	1.869E-01	Half-Life	too short	
	1791.20			-7.940E+17	1.869E-01	Half-Life	too short	
	153.25			1.541E+00	1.305E+00	2.256E+00	2.344E-01	0.683
	176.60			2.320E-01	7.685E-01	1.280E+00	1.301E-01	0.181
	273.65			-1.338E-01	9.434E-01	1.328E+00	1.648E-01	-0.101
	340.55			2.509E-01	2.578E-01	4.109E-01	4.572E-02	0.611
	818.51			-4.828E-02	1.141E-01	1.839E-01	1.725E-02	-0.263
	1048.07	*		7.718E-02	1.795E-01	3.082E-01	2.855E-02	0.250
CE-139	1235.36			3.349E-02	1.198E+00	1.688E+00	1.938E-01	0.020
BA-140	165.86	*		-3.678E-02	3.283E-02	5.105E-02	4.630E-03	-0.720
	162.66			1.926E+00	1.319E+00	2.292E+00	2.187E-01	0.840
	304.85			2.808E-01	2.238E+00	3.581E+00	1.085E+00	0.078
LA-140	423.72			-1.416E+00	3.196E+00	5.122E+00	1.695E+00	-0.276
	537.26	*		-2.161E-01	4.265E-01	6.600E-01	2.253E-01	-0.327
	328.76		+	1.236E+00	8.455E-01	9.453E-01	1.090E-01	1.308
	487.02			1.062E-01	2.187E-01	3.746E-01	3.746E-02	0.283
	815.77			-4.009E-01	5.065E-01	7.838E-01	8.071E-02	-0.512
CE-141	1596.21	*		-6.755E-02	1.458E-01	2.254E-01	1.920E-02	-0.300
CE-143	145.44	*		5.293E-02	7.430E-02	1.269E-01	1.110E-02	0.417
	57.36			3.468E-02	7.430E-02	Half-Life	too short	
	293.27	*		3.301E-02	7.430E-02	Half-Life	too short	
CE-144	664.57			6.809E-02	7.430E-02	Half-Life	too short	
	721.93			3.170E-03	7.430E-02	Half-Life	too short	
	80.12			1.206E+00	2.540E+00	3.992E+00	3.505E-01	0.302
PM-144	133.52	*		2.985E-03	2.249E-01	3.368E-01	5.105E-02	0.009
	476.78			6.813E-03	7.287E-02	1.215E-01	1.238E-02	0.056
PR-144	618.01			2.902E-02	3.510E-02	6.083E-02	5.717E-03	0.477
	696.49	*		2.705E-02	3.723E-02	6.371E-02	5.748E-03	0.425
	696.51	*		2.033E+00	2.798E+00	4.787E+00	4.317E-01	0.425
PM-146	1489.16			-7.037E-01	1.301E+01	2.159E+01	1.846E+00	-0.033
	453.88	*		3.458E-02	4.724E-02	8.204E-02	9.266E-03	0.422
	633.25			-4.591E-01	1.604E+00	2.522E+00	9.658E-01	-0.182
ND-147	735.93			-4.972E-04	1.500E-01	2.404E-01	6.777E-02	-0.002
	747.24			3.891E-02	1.095E-01	1.810E-01	2.702E-02	0.215
	91.11		+	1.027E+00	4.631E-01	8.139E-01	8.141E-02	1.262
	319.41			7.238E-02	5.824E+00	9.227E+00	1.048E+00	0.008
	531.02	*		4.268E-01	9.838E-01	1.669E+00	2.582E-01	0.256
PM-149	285.90	*		-4.153E-04	9.838E-01	Half-Life	too short	
EU-152	121.78			3.081E-02	7.141E-02	1.218E-01	1.173E-02	0.253
	244.70			-3.223E-03	3.432E-01	4.923E-01	5.473E-02	-0.007
	344.28	*		-4.657E-02	1.084E-01	1.727E-01	1.930E-02	-0.270
	778.90			-1.197E-01	2.791E-01	4.250E-01	3.943E-02	-0.282
	964.08			3.691E-01	3.472E-01	5.612E-01	5.207E-02	0.658
GD-153	1085.87			3.190E-03	4.030E-01	6.630E-01	5.755E-02	0.005
	1112.07			-7.533E-02	3.014E-01	4.804E-01	4.087E-02	-0.157
	1408.01			3.288E-01	2.014E-01	3.896E-01	3.317E-02	0.844
	69.67			-1.344E-01	1.756E+00	2.877E+00	2.267E-01	-0.047

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EU-154	97.43	*		-3.678E-02	8.540E-02	1.353E-01	1.202E-02	-0.272
	103.18			-8.203E-02	1.097E-01	1.791E-01	1.544E-02	-0.458
	123.07			5.479E-02	5.159E-02	8.965E-02	9.964E-03	0.611
	723.31			-4.307E-03	1.890E-01	2.640E-01	2.625E-02	-0.016
	873.19			1.291E-02	3.080E-01	5.173E-01	6.468E-02	0.025
EU-155	996.26			-4.619E-01	4.055E-01	5.796E-01	1.028E-01	-0.797
	1004.73			-1.925E-01	2.295E-01	3.449E-01	4.142E-02	-0.558
	1274.44	*		-9.822E-02	1.443E-01	1.877E-01	2.093E-02	-0.523
	86.55	+		5.181E-01	1.456E-01	2.036E-01	1.944E-02	2.544
	105.31	*		1.698E-01	1.077E-01	1.910E-01	1.651E-02	0.889
TB-160	86.79	+		1.477E+00	4.148E-01	5.870E-01	5.575E-02	2.517
	197.04			-6.998E-01	6.794E-01	1.035E+00	1.020E-01	-0.676
	215.65			6.691E-01	8.631E-01	1.451E+00	1.501E-01	0.461
	298.57	+		2.939E-01	1.360E-01	2.212E-01	2.597E-02	1.329
	879.36	*		-1.593E-02	1.568E-01	2.597E-01	2.453E-02	-0.061
HO-166M	962.29			3.867E-01	6.847E-01	1.095E+00	1.016E-01	0.353
	966.15			8.082E-01	3.254E-01	5.647E-01	5.234E-02	1.431
	1177.93			1.051E-01	4.436E-01	7.403E-01	5.962E-02	0.142
	1271.85			9.655E-01	7.926E-01	1.457E+00	1.210E-01	0.663
	80.57			-1.233E-01	2.803E-01	4.219E-01	3.723E-02	-0.292
TA-182	184.41			7.966E-02	4.336E-02	7.025E-02	6.688E-03	1.134
	280.46			-1.157E-01	9.558E-02	1.396E-01	1.674E-02	-0.829
	410.95			1.615E-01	2.650E-01	4.594E-01	4.288E-02	0.352
	711.68	*		6.585E-03	6.150E-02	9.993E-02	9.066E-03	0.066
	752.31			-1.846E-01	3.117E-01	4.694E-01	4.321E-02	-0.393
IR-192	810.29			-4.458E-02	5.901E-02	9.184E-02	8.585E-03	-0.485
	67.75			-7.726E-03	1.348E-01	1.907E-01	1.476E-02	-0.041
	100.11			-1.429E-02	1.711E-01	2.883E-01	2.521E-02	-0.050
	152.43			1.276E-01	3.615E-01	6.079E-01	5.311E-02	0.210
	222.11			4.687E-01	4.032E-01	6.864E-01	7.218E-02	0.683
HG-203	1121.30	+		8.889E-01	3.151E-01	4.538E-01	3.832E-02	1.959
	1189.05			-4.234E-02	3.447E-01	5.552E-01	4.490E-02	-0.076
	1221.41	*		-1.980E-01	2.430E-01	3.644E-01	2.980E-02	-0.543
	1231.02			3.265E-01	6.222E-01	9.350E-01	7.670E-02	0.349
	295.96	+		1.482E+00	2.776E-01	3.607E-01	4.267E-02	4.108
BI-207	308.46			-1.460E-02	1.149E-01	1.808E-01	2.097E-02	-0.081
	316.51	*		-7.695E-03	3.846E-02	6.000E-02	6.857E-03	-0.128
	468.07			-1.512E-02	8.193E-02	1.171E-01	1.179E-02	-0.129
	70.83			2.242E-01	1.534E+00	2.390E+00	3.757E-01	0.094
	72.87			1.011E+00	9.269E-01	1.481E+00	2.261E-01	0.683
PB-211	279.20	*		-1.392E-02	4.748E-02	7.405E-02	9.011E-03	-0.188
	72.81			2.047E-01	1.888E-01	3.046E-01	2.474E-02	0.672
	74.97	+		7.701E-01	1.432E-01	2.398E-01	1.992E-02	3.211
	569.70			-2.573E-03	3.480E-02	5.437E-02	5.105E-03	-0.047
	1063.66	*		4.130E-02	6.000E-02	1.050E-01	9.256E-03	0.393
PB-211	1770.23			4.390E-02	4.182E-01	6.160E-01	5.091E-02	0.071
	404.85	*		-8.937E-01	9.148E-01	1.057E+00	5.128E-01	-0.846
	427.09			-5.578E-01	1.520E+00	2.432E+00	1.129E+00	-0.229
	832.01			-4.898E-01	1.141E+00	1.799E+00	9.351E-01	-0.272

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-212	+	727.33	*	2.179E+00	9.808E-01	1.342E+00	1.720E-01	1.623
		785.37		2.732E+00	3.305E+00	5.926E+00	5.507E-01	0.461
		1620.50		-6.478E-01	2.510E+00	4.029E+00	3.423E-01	-0.161
RA-223		81.07		-2.871E-01	2.278E-01	3.275E-01	2.906E-02	-0.877
		83.79		1.792E-01	1.426E-01	2.128E-01	1.949E-02	0.842
		94.87		4.958E-01	4.702E-01	7.517E-01	6.797E-02	0.660
		144.24		-2.579E-01	7.019E-01	1.130E+00	1.082E-01	-0.228
		154.21		3.947E-01	3.929E-01	6.758E-01	6.480E-02	0.584
		269.46		6.505E-01	3.202E-01	3.966E-01	4.715E-02	1.640
AC-227		323.87	*	-3.931E-01	7.856E-01	1.046E+00	1.965E-01	-0.376
		338.28		8.784E+00	2.347E+00	2.827E+00	3.903E-01	3.107
		79.69		6.977E-02	1.147E+00	1.963E+00	3.394E-01	0.036
		235.96		1.521E-02	1.724E-01	2.496E-01	3.069E-02	0.061
		256.23		-7.141E-03	2.682E-01	4.302E-01	6.104E-02	-0.017
		299.98		2.129E+00	1.005E+00	1.709E+00	2.561E-01	1.246
TH-227		304.50		2.911E-01	1.763E+00	2.829E+00	5.173E-01	0.103
		334.37		9.944E-01	2.442E+00	2.833E+00	4.824E-01	0.351
		79.80		5.112E-02	1.510E+00	2.581E+00	5.634E-01	0.020
		235.96		1.521E-02	1.724E-01	2.496E-01	2.948E-02	0.061
		256.23		-7.141E-03	2.682E-01	4.302E-01	6.682E-02	-0.017
		299.98		2.129E+00	1.005E+00	1.709E+00	2.561E-01	1.246
TH-229		304.50		2.911E-01	1.763E+00	2.829E+00	5.173E-01	0.103
		334.37		9.944E-01	2.442E+00	2.833E+00	4.824E-01	0.351
		85.43		-6.838E-02	2.247E-01	3.370E-01	3.148E-02	-0.203
		88.47		6.566E-01	1.843E-01	2.320E-01	2.225E-02	2.830
		193.51		1.594E-02	5.792E-01	9.479E-01	9.247E-02	0.017
		210.85		9.261E-01	1.040E+00	1.589E+00	1.624E-01	0.583
PA-231		283.69	*	3.203E-01	1.579E+00	2.551E+00	4.278E-01	0.126
		301.36		1.368E+00	6.438E-01	1.106E+00	1.603E-01	1.237
TH-231		81.07		-2.871E-01	2.278E-01	3.275E-01	2.906E-02	-0.877
		83.79		1.792E-01	1.426E-01	2.128E-01	1.949E-02	0.842
		94.87		4.958E-01	4.702E-01	7.517E-01	6.797E-02	0.660
		144.24		-2.579E-01	7.019E-01	1.130E+00	1.082E-01	-0.228
		154.21		3.947E-01	3.929E-01	6.758E-01	6.480E-02	0.584
		269.46		6.505E-01	3.202E-01	3.966E-01	4.715E-02	1.640
PA-233		323.87	*	-3.931E-01	7.856E-01	1.046E+00	1.965E-01	-0.376
		338.28		8.784E+00	2.347E+00	2.827E+00	3.903E-01	3.107
		300.13		9.635E-01	4.608E-01	7.779E-01	1.308E-01	1.239
		311.90		1.741E-02	6.852E-02	1.105E-01	1.292E-02	0.158
		340.48		7.886E-01	7.534E-01	1.174E+00	2.929E-01	0.672
		94.67		2.821E-01	1.770E-01	2.852E-01	3.625E-02	0.989
PA-234		98.44		3.067E-02	8.724E-02	1.468E-01	8.197E-02	0.209
		111.00		-3.085E-02	1.766E-01	2.950E-01	3.521E-02	-0.105
		131.20		2.789E-02	1.153E-01	1.751E-01	1.464E-02	0.159
		569.50		2.586E-02	3.106E-01	4.919E-01	4.618E-02	0.053
		733.00		5.873E-04	4.266E-01	6.359E-01	1.425E-01	0.001
		880.51		-4.510E-02	2.945E-01	4.851E-01	4.583E-02	-0.093
		883.24		1.985E-01	3.106E-01	5.015E-01	3.377E-01	0.396
		926.50		9.981E-02	1.860E-01	3.227E-01	8.245E-02	0.309

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	946.00	*		4.273E-02	2.940E-01	4.961E-01	9.476E-02	0.086
	949.00			4.128E-01	4.392E-01	7.961E-01	7.426E-02	0.518
PA-234M	766.42			1.702E+01	1.702E+01	2.316E+01	1.178E+01	0.735
	1001.03	*		4.810E+00	4.987E+00	9.009E+00	9.379E-01	0.534
NP-239	99.53			-1.442E-02	1.524E-01	2.567E-01	2.252E-02	-0.056
	103.37			-3.515E-02	9.672E-02	1.607E-01	1.384E-02	-0.219
	106.12			8.885E-02	8.471E-02	1.481E-01	1.262E-02	0.600
	117.23	*		9.931E-02	3.892E-01	6.603E-01	5.496E-02	0.150
	228.18			-3.630E-02	2.263E-01	3.631E-01	3.877E-02	-0.100
	277.60			7.785E-02	1.959E-01	3.185E-01	3.812E-02	0.244
AM-241	59.54	*		1.380E-01	1.670E-01	2.513E-01	1.972E-02	0.549
CF-249	252.80			1.964E-01	9.883E-01	1.608E+00	1.822E-01	0.122
	333.37			1.110E-01	2.568E-01	2.994E-01	3.304E-02	0.371
	388.16	*		3.031E-02	4.225E-02	7.392E-02	6.929E-03	0.410
CF-251	177.52	*		7.271E-02	1.322E-01	2.226E-01	2.080E-02	0.327
	227.38			2.746E-03	3.696E-01	5.986E-01	6.380E-02	0.005
	285.41			-1.750E+00	2.449E+00	3.717E+00	4.435E-01	-0.471

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]G248513002
* Acquisition date   : 20-MAR-2010 11:21:04 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 02:00:01.94                      Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248513002                      Analyst initials: MXR1
* Batch Number       : 961097                          Sample Quantity : 1.0868E+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	2.885E+01	3.131E+00	7.478E-01	0.000E+00
CD-109	4.409E+00	1.213E+00	1.238E+00	0.000E+00
SN-126	4.259E-01	1.172E-01	1.202E-01	0.000E+00
BA-137M	3.559E-01	9.216E-02	6.868E-02	0.000E+00
CS-137	3.759E-01	9.738E-02	7.255E-02	0.000E+00
TL-208	5.478E-01	1.046E-01	6.092E-02	0.000E+00
PB-210	4.725E+00	4.635E+00	5.382E+00	0.000E+00
BI-211	4.965E+00	6.963E-01	3.413E-01	0.000E+00
PB-212	1.931E+00	2.566E-01	9.535E-02	0.000E+00
BI-214	1.660E+00	2.606E-01	1.179E-01	0.000E+00
PB-214	1.802E+00	2.708E-01	1.114E-01	0.000E+00
RN-219	3.859E-01	4.419E-01	6.574E-01	0.000E+00
RA-224	5.639E+00	1.490E+00	1.022E+00	0.000E+00
RA-226	1.660E+00	2.606E-01	1.179E-01	0.000E+00
AC-228	2.125E+00	4.273E-01	2.540E-01	0.000E+00
RA-228	2.125E+00	4.273E-01	2.540E-01	0.000E+00
TH-228	1.931E+00	2.566E-01	9.535E-02	0.000E+00
TH-232	2.125E+00	4.273E-01	2.540E-01	0.000E+00
TH-234	3.312E+00	2.444E+00	2.115E+00	0.000E+00
U-235	-2.558E-01	2.120E-01	3.320E-01	0.000E+00
NP-237	1.271E+00	4.364E-01	4.101E-01	0.000E+00
U-238	3.312E+00	2.444E+00	2.115E+00	0.000E+00
CM-247	3.537E-02	4.029E-02	5.942E-02	0.000E+00
ANH-511	1.510E-01	7.622E-02	5.144E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-6.682E-02	3.975E-01	6.654E-01	0.000E+00 NOT IDENT.
NA-22	-6.933E-02	5.448E-02	6.484E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.585E+09	0.000E+00	0.000E+00 SHORT HLIF

SC-46	-1.958E-02	4.069E-02	6.573E-02	0.000E+00	FAIL ABUN
V-48	-8.519E-02	1.023E-01	1.568E-01	0.000E+00	NOT IDENT.
CR-51	4.716E-01	4.550E-01	7.860E-01	0.000E+00	NOT IDENT.
MN-54	-2.242E-02	4.106E-02	6.699E-02	0.000E+00	NOT IDENT.
CO-56	-1.341E-02	4.246E-02	7.035E-02	0.000E+00	FAIL ABUN
CO-57	1.444E-02	2.515E-02	4.444E-02	0.000E+00	NOT IDENT.
CO-58	-3.197E-02	4.147E-02	6.571E-02	0.000E+00	NOT IDENT.
FE-59	1.995E-02	1.020E-01	1.737E-01	0.000E+00	NOT IDENT.
CO-60	-2.321E-02	4.071E-02	6.128E-02	0.000E+00	NOT IDENT.
ZN-65	-1.456E-02	1.003E-01	1.414E-01	0.000E+00	NOT IDENT.
SE-75	-5.555E-03	5.409E-02	7.853E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.913E-02	8.417E-02	0.000E+00	NOT IDENT.
Y-88	2.570E-02	4.111E-02	7.580E-02	0.000E+00	NOT IDENT.
Y-91	4.740E+00	2.657E+01	4.469E+01	0.000E+00	NOT IDENT.
NB-94	-1.031E-02	3.657E-02	5.850E-02	0.000E+00	NOT IDENT.
NB-95	4.094E-02	5.639E-02	8.693E-02	0.000E+00	NOT IDENT.
NB-95M	-3.974E-02	1.554E-01	2.256E-01	0.000E+00	NOT IDENT.
ZR-95	6.066E-02	8.615E-02	1.491E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.196E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.038E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.564E-02	4.423E-02	6.732E-02	0.000E+00	FAIL ABUN
RH-106	-1.740E-01	3.258E-01	5.124E-01	0.000E+00	NOT IDENT.
RU-106	-1.740E-01	3.253E-01	5.124E-01	0.000E+00	NOT IDENT.
AG-108M	-5.943E-03	2.906E-02	4.884E-02	0.000E+00	NOT IDENT.
AG-110M	8.392E-03	4.197E-02	6.201E-02	0.000E+00	NOT IDENT.
SN-113	-3.821E-03	4.757E-02	8.133E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.355E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.740E-02	7.676E-02	1.320E-01	0.000E+00	NOT IDENT.
TE-123M	-3.722E-03	2.834E-02	4.792E-02	0.000E+00	NOT IDENT.
SB-124	8.506E-03	8.370E-02	1.432E-01	0.000E+00	NOT IDENT.
SB-125	-3.813E-02	8.935E-02	1.478E-01	0.000E+00	FAIL ABUN
TE-125M	5.419E+00	1.015E+01	1.799E+01	0.000E+00	NOT IDENT.
I-126	-2.441E-01	4.438E-01	5.977E-01	0.000E+00	NOT IDENT.
SB-126	-1.499E-01	2.737E-01	3.619E-01	0.000E+00	NOT IDENT.
SB-127	-2.528E+00	6.031E+00	9.530E+00	0.000E+00	NOT IDENT.
I-131	-7.055E-02	2.172E-01	3.671E-01	0.000E+00	NOT IDENT.
TE-132	-6.762E-01	4.107E+00	6.762E+00	0.000E+00	NOT IDENT.
BA-133	-5.306E-03	4.525E-02	6.840E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.541E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.445E-02	1.036E-01	0.000E+00	FAIL ABUN
CS-135	2.595E-01	1.832E-01	2.922E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.257E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.718E-02	1.759E-01	3.070E-01	0.000E+00	NOT IDENT.
CE-139	-3.678E-02	3.217E-02	5.149E-02	0.000E+00	NOT IDENT.
BA-140	-2.161E-01	4.179E-01	6.605E-01	0.000E+00	NOT IDENT.
LA-140	-6.755E-02	1.429E-01	2.239E-01	0.000E+00	FAIL ABUN
CE-141	5.293E-02	7.281E-02	1.281E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.214E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	2.985E-03	2.204E-01	3.401E-01	0.000E+00	NOT IDENT.
PM-144	2.705E-02	3.648E-02	6.364E-02	0.000E+00	NOT IDENT.
PR-144	2.033E+00	2.742E+00	4.783E+00	0.000E+00	NOT IDENT.
PM-146	3.458E-02	4.629E-02	8.219E-02	0.000E+00	NOT IDENT.
ND-147	4.268E-01	9.641E-01	1.670E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.168E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-4.657E-02	1.062E-01	1.733E-01	0.000E+00	NOT IDENT.
GD-153	-3.678E-02	8.369E-02	1.369E-01	0.000E+00	NOT IDENT.
EU-154	-9.822E-02	1.414E-01	1.868E-01	0.000E+00	NOT IDENT.
EU-155	1.698E-01	1.056E-01	1.932E-01	0.000E+00	FAIL ABUN
TB-160	-1.593E-02	1.537E-01	2.590E-01	0.000E+00	FAIL ABUN
HO-166M	6.585E-03	6.027E-02	9.981E-02	0.000E+00	NOT IDENT.
TA-182	-1.980E-01	2.381E-01	3.627E-01	0.000E+00	FAIL ABUN
IR-192	-7.695E-03	3.769E-02	6.026E-02	0.000E+00	FAIL ABUN
HG-203	-1.392E-02	4.653E-02	7.442E-02	0.000E+00	NOT IDENT.
BI-207	4.130E-02	5.880E-02	1.046E-01	0.000E+00	FAIL ABUN
PB-211	-8.937E-01	8.965E-01	1.060E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.612E-01	1.341E+00	0.000E+00	FAIL ABUN
RA-223	-3.931E-01	7.699E-01	1.050E+00	0.000E+00	FAIL ABUN
AC-227	-7.141E-03	2.628E-01	4.326E-01	0.000E+00	FAIL ABUN
TH-227	-7.141E-03	2.628E-01	4.326E-01	0.000E+00	FAIL ABUN
TH-229	1.594E-02	5.676E-01	9.551E-01	0.000E+00	FAIL ABUN
PA-231	3.203E-01	1.548E+00	2.563E+00	0.000E+00	FAIL ABUN
TH-231	-3.931E-01	7.699E-01	1.050E+00	0.000E+00	FAIL ABUN
PA-233	1.741E-02	6.715E-02	1.110E-01	0.000E+00	FAIL ABUN
PA-234	4.273E-02	2.881E-01	4.945E-01	0.000E+00	NOT IDENT.
PA-234M	4.810E+00	4.887E+00	8.978E+00	0.000E+00	NOT IDENT.
NP-239	9.931E-02	3.815E-01	6.674E-01	0.000E+00	NOT IDENT.
AM-241	1.380E-01	1.636E-01	2.551E-01	0.000E+00	NOT IDENT.
CF-249	3.031E-02	4.140E-02	7.413E-02	0.000E+00	NOT IDENT.

CF-251	7.271E-02	1.296E-01	2.244E-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]G248513002.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:21:04
Sample ID          : G248513002 Sample quantity : 1.08680E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.94 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	1076	10.66*	1.208E+00	2.885E+01	2.885E+01	11.08
CD-109	88.03	285	3.70*	6.256E+00	4.259E+00	4.409E+00	28.07
SN-126	64.28	125	9.60	3.525E+00	1.277E+00	1.277E+00	74.57
	86.94	285	8.90	6.256E+00	1.771E+00	1.771E+00	49.24
	87.57	285	37.00*	6.256E+00	4.259E-01	4.259E-01	28.07
BA-137M	661.66	222	89.90*	2.405E+00	3.554E-01	3.559E-01	26.43
CS-137	661.66	222	85.10*	2.405E+00	3.754E-01	3.759E-01	26.43
TL-208	277.37	-----	6.60	4.694E+00	-----	Line Not Found	-----
	583.19	360	85.00*	2.668E+00	5.478E-01	5.478E-01	19.48
	860.56	62	12.50	1.919E+00	8.933E-01	8.933E-01	55.49
PB-210	46.54	60	4.25*	1.040E+00	4.716E+00	4.725E+00	100.10
BI-211	72.87	-----	1.23	4.872E+00	-----	Line Not Found	-----
	351.06	732	12.92*	3.941E+00	4.965E+00	4.965E+00	14.31
PB-212	74.82	407	10.28	5.116E+00	2.671E+00	2.671E+00	20.99
	77.11	736	17.10	5.366E+00	2.771E+00	2.771E+00	13.38
	238.63	1274	43.60*	5.226E+00	1.931E+00	1.931E+00	13.56
	300.09	82	3.30	4.434E+00	1.936E+00	1.936E+00	46.68
BI-214	609.32	563	45.49*	2.575E+00	1.660E+00	1.660E+00	16.02
	1120.29	118	14.92	1.516E+00	1.809E+00	1.809E+00	36.07
	1764.49	99	15.30	1.056E+00	2.124E+00	2.124E+00	24.52
PB-214	74.82	407	5.80	5.116E+00	4.734E+00	4.734E+00	20.22
	77.11	736	9.70	5.366E+00	4.886E+00	4.886E+00	15.72
	242.00	347	7.25	5.180E+00	3.189E+00	3.189E+00	27.57
	295.22	445	18.42	4.487E+00	1.861E+00	1.861E+00	19.81
	351.93	732	35.60*	3.941E+00	1.802E+00	1.802E+00	15.34
RN-219	271.23	125	10.80	4.788E+00	8.372E-01	8.372E-01	49.51
	401.81	26	6.60*	3.564E+00	3.859E-01	3.859E-01	116.86
RA-224	240.99	347	4.10*	5.180E+00	5.639E+00	5.639E+00	26.95
RA-226	609.32	563	45.49*	2.575E+00	1.660E+00	1.660E+00	16.02
	1120.29	118	14.92	1.516E+00	1.809E+00	1.809E+00	36.07
	1764.49	99	15.30	1.056E+00	2.124E+00	2.124E+00	24.52
AC-228	338.32	293	11.27	4.059E+00	2.213E+00	2.213E+00	48.05

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	290	25.80*	1.825E+00	2.125E+00	2.125E+00	20.52
	968.97	133	15.80	1.727E+00	1.678E+00	1.678E+00	44.24
	338.32	293	11.27	4.059E+00	2.213E+00	2.213E+00	48.05
	911.20	290	25.80*	1.825E+00	2.125E+00	2.125E+00	20.52
TH-228	968.97	133	15.80	1.727E+00	1.678E+00	1.678E+00	44.24
	74.82	407	10.28	5.116E+00	2.671E+00	2.671E+00	18.64
	77.11	736	17.10	5.366E+00	2.771E+00	2.771E+00	13.38
	238.63	1274	43.60*	5.226E+00	1.931E+00	1.931E+00	13.56
TH-232	300.09	82	3.30	4.434E+00	1.936E+00	1.936E+00	76.26
	338.32	293	11.27	4.059E+00	2.213E+00	2.213E+00	25.35
	911.20	290	25.80*	1.825E+00	2.125E+00	2.125E+00	20.52
	968.97	133	15.80	1.727E+00	1.678E+00	1.678E+00	44.24
TH-234	63.29	125	3.70*	3.525E+00	3.312E+00	3.312E+00	75.28
	92.59	253	4.23	6.595E+00	3.134E+00	3.134E+00	37.53
	89.96	125	3.47	6.435E+00	1.932E+00	1.932E+00	50.51
	93.35	253	5.60	6.595E+00	2.367E+00	2.367E+00	38.14
U-235	143.76	-----	10.96*	6.943E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.588E+00	-----	Line Not Found	-----
	185.72	209	57.20	6.142E+00	2.054E-01	2.054E-01	42.94
	205.31	-----	5.01	5.780E+00	-----	Line Not Found	-----
	86.48	285	12.40*	6.256E+00	1.271E+00	1.271E+00	35.04
	95.86	-----	2.68	6.742E+00	-----	Line Not Found	-----
U-238	63.29	125	3.70*	3.525E+00	3.312E+00	3.312E+00	75.28
	92.59	253	4.23	6.595E+00	3.134E+00	3.134E+00	31.55
CM-247	278.00	-----	3.40	4.687E+00	-----	Line Not Found	-----
	287.50	-----	2.00	4.574E+00	-----	Line Not Found	-----
	402.40	26	72.00*	3.564E+00	3.537E-02	3.537E-02	116.23
ANH-511	511.00	130	100.00*	2.964E+00	1.510E-01	1.510E-01	51.50

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 8
Number of lines tentatively identified by NID 31 79.49%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.885E+01	2.885E+01	0.320E+01	11.08	
CD-109	461.40D	1.04	4.259E+00	4.409E+00	1.238E+00	28.07	
SN-126	2.30E+05Y	1.00	4.259E-01	4.259E-01	1.196E-01	28.07	
BA-137M	30.08Y	1.00	3.554E-01	3.559E-01	0.940E-01	26.43	
CS-137	30.08Y	1.00	3.754E-01	3.759E-01	0.994E-01	26.43	
TL-208	1.41E+10Y	1.00	5.478E-01	5.478E-01	1.067E-01	19.48	
PB-210	22.20Y	1.00	4.716E+00	4.725E+00	4.730E+00	100.10	
BI-211	7.04E+08Y	1.00	4.965E+00	4.965E+00	0.710E+00	14.31	
PB-212	1.41E+10Y	1.00	1.931E+00	1.931E+00	0.262E+00	13.56	
BI-214	1600.00Y	1.00	1.660E+00	1.660E+00	0.266E+00	16.02	
PB-214	1600.00Y	1.00	1.802E+00	1.802E+00	0.276E+00	15.34	
RN-219	7.04E+08Y	1.00	3.859E-01	3.859E-01	4.509E-01	116.86	
RA-224	1.41E+10Y	1.00	5.639E+00	5.639E+00	1.520E+00	26.95	
RA-226	1600.00Y	1.00	1.660E+00	1.660E+00	0.266E+00	16.02	
AC-228	1.41E+10Y	1.00	2.125E+00	2.125E+00	0.436E+00	20.52	
RA-228	1.41E+10Y	1.00	2.125E+00	2.125E+00	0.436E+00	20.52	
TH-228	1.41E+10Y	1.00	1.931E+00	1.931E+00	0.262E+00	13.56	
TH-232	1.41E+10Y	1.00	2.125E+00	2.125E+00	0.436E+00	20.52	
TH-234	4.47E+09Y	1.00	3.312E+00	3.312E+00	2.494E+00	75.28	
U-235	7.04E+08Y	1.00	2.054E-01	2.054E-01	0.882E-01	42.94	K
NP-237	2.14E+06Y	1.00	1.271E+00	1.271E+00	0.445E+00	35.04	
U-238	4.47E+09Y	1.00	3.312E+00	3.312E+00	2.494E+00	75.28	
CM-247	1.56E+07Y	1.00	3.537E-02	3.537E-02	4.111E-02	116.23	
ANH-511	1.00E+09Y	1.00	1.510E-01	1.510E-01	0.778E-01	51.50	
Total Activity :			7.416E+01	7.432E+01			

Grand Total Activity : 7.416E+01 7.432E+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	128.80	83	398	1.03	257.79	253	10	1.16E-02	92.0	7.13E+00	
0	208.99	130	242	1.08	418.17	414	8	1.80E-02	45.2	5.71E+00	
0	328.12	86	202	1.76	656.44	652	12	1.20E-02	67.4	4.15E+00	T
0	463.00	76	102	1.67	926.17	921	10	1.06E-02	54.7	3.20E+00	T
0	726.95	94	75	1.54	1454.00	1448	12	1.30E-02	43.1	2.22E+00	T
0	769.22	86	91	5.44	1538.52	1530	19	1.20E-02	57.0	2.12E+00	
0	794.97	56	61	1.07	1590.00	1585	11	7.76E-03	60.3	2.06E+00	T
0	1238.46	35	95	1.31	2476.71	2469	15	4.88E-03	***	1.39E+00	T
0	1281.77	30	27	0.78	2563.30	2557	12	4.20E-03	80.1	1.35E+00	
0	1376.23	58	8	2.81	2752.15	2744	15	7.99E-03	33.6	1.27E+00	
0	1587.90	26	8	1.78	3175.27	3169	11	3.57E-03	58.5	1.13E+00	
0	1729.16	34	0	1.62	3457.65	3450	15	4.72E-03	34.3	1.07E+00	
0	1847.37	20	6	1.78	3693.93	3687	12	2.72E-03	71.7	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]G248513002.CNF;1
* Acquisition date   : 20-MAR-2010 11:21:04  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 02:00:01.94          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513002            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.08680E+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	2.885E+01	3.195E+00	7.523E-01	6.613E-02	38.344
CD-109	4.409E+00	1.238E+00	1.223E+00	1.178E-01	3.606
SN-126	4.259E-01	1.196E-01	1.187E-01	1.138E-02	3.590
BA-137M	3.559E-01	9.404E-02	6.872E-02	6.099E-03	5.178
CS-137	3.759E-01	9.937E-02	7.260E-02	6.455E-03	5.178
TL-208	5.478E-01	1.067E-01	6.091E-02	6.031E-03	8.994
PB-210	4.725E+00	4.730E+00	5.293E+00	4.894E-01	0.893
BI-211	4.965E+00	7.105E-01	3.401E-01	3.719E-02	14.601
PB-212	1.931E+00	2.619E-01	9.477E-02	1.126E-02	20.372
BI-214	1.660E+00	2.659E-01	1.179E-01	1.252E-02	14.082
PB-214	1.802E+00	2.763E-01	1.111E-01	1.358E-02	16.227
RN-219	3.859E-01	4.509E-01	6.556E-01	1.001E-01	0.589
RA-224	5.639E+00	1.520E+00	1.016E+00	1.120E-01	5.551
RA-226	1.660E+00	2.659E-01	1.179E-01	1.252E-02	14.082
AC-228	2.125E+00	4.360E-01	2.547E-01	3.109E-02	8.343
RA-228	2.125E+00	4.360E-01	2.547E-01	3.109E-02	8.343
TH-228	1.931E+00	2.619E-01	9.477E-02	1.126E-02	20.372
TH-232	2.125E+00	4.360E-01	2.547E-01	3.109E-02	8.343

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	3.312E+00	2.494E+00	2.084E+00	3.716E-01	1.589
U-235	2.054E-01	8.820E-02	3.289E-01	5.566E-02	0.624
NP-237	1.271E+00	4.453E-01	4.049E-01	9.313E-02	3.139
U-238	3.312E+00	2.494E+00	2.084E+00	3.716E-01	1.589
CM-247	3.537E-02	4.111E-02	5.927E-02	5.510E-03	0.597
ANH-511	1.510E-01	7.778E-02	5.139E-02	4.887E-03	2.939

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.682E-02		4.056E-01	6.644E-01	6.720E-02	-0.101
NA-22	-6.933E-02		5.559E-02	6.516E-02	5.422E-03	-1.064
NA-24	-7.082E+01		2.339E+03	Half-Life too short		
SC-46	-1.958E-02		4.152E-02	6.591E-02	6.230E-03	-0.297
V-48	-8.519E-02		1.043E-01	1.573E-01	1.448E-02	-0.542
CR-51	4.716E-01		4.643E-01	7.827E-01	9.147E-02	0.602
MN-54	-2.242E-02		4.190E-02	6.714E-02	6.306E-03	-0.334
CO-56	-1.341E-02		4.333E-02	7.051E-02	6.635E-03	-0.190
CO-57	1.444E-02		2.566E-02	4.397E-02	3.654E-03	0.329
CO-58	-3.197E-02		4.232E-02	6.585E-02	6.169E-03	-0.486
FE-59	1.995E-02		1.041E-01	1.744E-01	1.621E-02	0.114
CO-60	-2.321E-02		4.154E-02	6.161E-02	5.197E-03	-0.377
ZN-65	-1.456E-02		1.024E-01	1.420E-01	1.206E-02	-0.103
SE-75	-5.555E-03		5.520E-02	7.810E-02	9.115E-03	-0.071
SR-85	9.602E-02		5.014E-02	8.408E-02	7.995E-03	1.142
Y-88	2.570E-02		4.195E-02	7.637E-02	6.200E-03	0.337
Y-91	4.740E+00		2.711E+01	4.490E+01	3.651E+00	0.106
NB-94	-1.031E-02		3.732E-02	5.856E-02	5.294E-03	-0.176
NB-95	4.094E-02		5.754E-02	8.708E-02	8.049E-03	0.470
NB-95M	-3.974E-02		1.585E-01	2.242E-01	2.669E-02	-0.177
ZR-95	6.066E-02		8.791E-02	1.493E-01	1.503E-02	0.406
MO-99	1.685E-05		4.692E-05	Half-Life too short		
TC-99M	4.510E+19		5.293E+19	Half-Life too short		
RU-103	-4.564E-02		4.513E-02	6.724E-02	9.774E-03	-0.679
RH-106	-1.740E-01		3.324E-01	5.126E-01	6.972E-02	-0.340
RU-106	-1.740E-01		3.320E-01	5.126E-01	4.687E-02	-0.340
AG-108M	-5.943E-03		2.966E-02	4.873E-02	4.716E-03	-0.122
AG-110M	8.392E-03		4.283E-02	6.205E-02	5.680E-03	0.135
SN-113	-3.821E-03		4.854E-02	8.110E-02	7.698E-03	-0.047
CD-115	-1.787E-05		6.915E-05	Half-Life too short		
SN-117M	1.740E-02		7.833E-02	1.308E-01	1.162E-02	0.133
TE-123M	-3.722E-03		2.892E-02	4.750E-02	4.248E-03	-0.078
SB-124	8.506E-03		8.540E-02	1.442E-01	1.266E-02	0.059
SB-125	-3.813E-02		9.117E-02	1.475E-01	1.408E-02	-0.259
TE-125M	5.419E+00		1.036E+01	1.779E+01	1.843E+00	0.305
I-126	-2.441E-01		4.528E-01	5.981E-01	5.320E-02	-0.408
SB-126	-1.499E-01		2.793E-01	3.624E-01	3.299E-02	-0.414

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	-2.528E+00		6.155E+00	9.538E+00	1.353E+00	-0.265
I-131	-7.055E-02		2.216E-01	3.659E-01	3.890E-02	-0.193
TE-132	-6.762E-01		4.190E+00	6.719E+00	1.259E+00	-0.101
BA-133	-5.306E-03		4.617E-02	6.816E-02	9.695E-03	-0.078
I-133	-2.936E+00		1.807E+00	Half-Life	too short	
CS-134	1.246E-01	+	7.597E-02	1.038E-01	9.733E-03	1.200
CS-135	2.595E-01		1.869E-01	2.907E-01	3.707E-02	0.893
I-135	-3.712E+18		1.662E+18	Half-Life	too short	
CS-136	7.718E-02		1.795E-01	3.082E-01	2.855E-02	0.250
CE-139	-3.678E-02		3.283E-02	5.105E-02	4.630E-03	-0.720
BA-140	-2.161E-01		4.265E-01	6.600E-01	2.253E-01	-0.327
LA-140	-6.755E-02		1.458E-01	2.254E-01	1.920E-02	-0.300
CE-141	5.293E-02		7.430E-02	1.269E-01	1.110E-02	0.417
CE-143	3.301E-02		6.193E-03	Half-Life	too short	
CE-144	2.985E-03		2.249E-01	3.368E-01	5.105E-02	0.009
PM-144	2.705E-02		3.723E-02	6.371E-02	5.748E-03	0.425
PR-144	2.033E+00		2.798E+00	4.787E+00	4.317E-01	0.425
PM-146	3.458E-02		4.724E-02	8.204E-02	9.266E-03	0.422
ND-147	4.268E-01		9.838E-01	1.669E+00	2.582E-01	0.256
PM-149	-4.153E-04		5.961E-04	Half-Life	too short	
EU-152	-4.657E-02		1.084E-01	1.727E-01	1.930E-02	-0.270
GD-153	-3.678E-02		8.540E-02	1.353E-01	1.202E-02	-0.272
EU-154	-9.822E-02		1.443E-01	1.877E-01	2.093E-02	-0.523
EU-155	1.698E-01		1.077E-01	1.910E-01	1.651E-02	0.889
TB-160	-1.593E-02		1.568E-01	2.597E-01	2.453E-02	-0.061
HO-166M	6.585E-03		6.150E-02	9.993E-02	9.066E-03	0.066
TA-182	-1.980E-01		2.430E-01	3.644E-01	2.980E-02	-0.543
IR-192	-7.695E-03		3.846E-02	6.000E-02	6.857E-03	-0.128
HG-203	-1.392E-02		4.748E-02	7.405E-02	9.011E-03	-0.188
BI-207	4.130E-02		6.000E-02	1.050E-01	9.256E-03	0.393
PB-211	-8.937E-01		9.148E-01	1.057E+00	5.128E-01	-0.846
BI-212	2.179E+00	+	9.808E-01	1.342E+00	1.720E-01	1.623
RA-223	-3.931E-01		7.856E-01	1.046E+00	1.965E-01	-0.376
AC-227	-7.141E-03		2.682E-01	4.302E-01	6.104E-02	-0.017
TH-227	-7.141E-03		2.682E-01	4.302E-01	6.682E-02	-0.017
TH-229	1.594E-02		5.792E-01	9.479E-01	9.247E-02	0.017
PA-231	3.203E-01		1.579E+00	2.551E+00	4.278E-01	0.126
TH-231	-3.931E-01		7.856E-01	1.046E+00	1.965E-01	-0.376
PA-233	1.741E-02		6.852E-02	1.105E-01	1.292E-02	0.158
PA-234	4.273E-02		2.940E-01	4.961E-01	9.476E-02	0.086
PA-234M	4.810E+00		4.987E+00	9.009E+00	9.379E-01	0.534
NP-239	9.931E-02		3.892E-01	6.603E-01	5.496E-02	0.150
AM-241	1.380E-01		1.670E-01	2.513E-01	1.972E-02	0.549
CF-249	3.031E-02		4.225E-02	7.392E-02	6.929E-03	0.410
CF-251	7.271E-02		1.322E-01	2.226E-01	2.080E-02	0.327

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]G248513002
* Acquisition date   : 20-MAR-2010 11:21:04 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 02:00:01.94                      Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248513002                      Analyst initials: MXR1
* Batch Number       : 961097                          Sample Quantity : 1.0868E+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	2.885E+01	3.131E+00	3.741E-01	1.598E+00
CD-109	4.409E+00	1.213E+00	6.195E-01	6.189E-01
SN-126	4.259E-01	1.172E-01	6.012E-02	5.979E-02
BA-137M	3.559E-01	9.216E-02	3.436E-02	4.702E-02
CS-137	3.759E-01	9.738E-02	3.630E-02	4.968E-02
TL-208	5.478E-01	1.046E-01	3.048E-02	5.336E-02
PB-210	4.725E+00	4.635E+00	2.693E+00	2.365E+00
BI-211	4.965E+00	6.963E-01	1.707E-01	3.552E-01
PB-212	1.931E+00	2.566E-01	4.770E-02	1.309E-01
BI-214	1.660E+00	2.606E-01	5.897E-02	1.329E-01
PB-214	1.802E+00	2.708E-01	5.576E-02	1.382E-01
RN-219	3.859E-01	4.419E-01	3.289E-01	2.255E-01
RA-224	5.639E+00	1.490E+00	5.114E-01	7.600E-01
RA-226	1.660E+00	2.606E-01	5.897E-02	1.329E-01
AC-228	2.125E+00	4.273E-01	1.271E-01	2.180E-01
RA-228	2.125E+00	4.273E-01	1.271E-01	2.180E-01
TH-228	1.931E+00	2.566E-01	4.770E-02	1.309E-01
TH-232	2.125E+00	4.273E-01	1.271E-01	2.180E-01
TH-234	3.312E+00	2.444E+00	1.058E+00	1.247E+00
U-235	-2.558E-01	2.120E-01	1.661E-01	1.081E-01
NP-237	1.271E+00	4.364E-01	2.052E-01	2.227E-01
U-238	3.312E+00	2.444E+00	1.058E+00	1.247E+00
CM-247	3.537E-02	4.029E-02	2.973E-02	2.056E-02
ANH-511	1.510E-01	7.622E-02	2.574E-02	3.889E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-6.682E-02	3.975E-01	3.329E-01	2.028E-01 NOT IDENT.
NA-22	-6.933E-02	5.448E-02	3.244E-02	2.779E-02 NOT IDENT.
NA-24	-7.082E+07	4.585E+09	0.000E+00	2.339E+09 SHORT HLIF

SC-46	-1.958E-02	4.069E-02	3.289E-02	2.076E-02	FAIL ABUN
V-48	-8.519E-02	1.023E-01	7.844E-02	5.217E-02	NOT IDENT.
CR-51	4.716E-01	4.550E-01	3.932E-01	2.322E-01	NOT IDENT.
MN-54	-2.242E-02	4.106E-02	3.352E-02	2.095E-02	NOT IDENT.
CO-56	-1.341E-02	4.246E-02	3.519E-02	2.166E-02	FAIL ABUN
CO-57	1.444E-02	2.515E-02	2.223E-02	1.283E-02	NOT IDENT.
CO-58	-3.197E-02	4.147E-02	3.288E-02	2.116E-02	NOT IDENT.
FE-59	1.995E-02	1.020E-01	8.690E-02	5.203E-02	NOT IDENT.
CO-60	-2.321E-02	4.071E-02	3.066E-02	2.077E-02	NOT IDENT.
ZN-65	-1.456E-02	1.003E-01	7.076E-02	5.118E-02	NOT IDENT.
SE-75	-5.555E-03	5.409E-02	3.929E-02	2.760E-02	NOT IDENT.
SR-85	9.602E-02	4.913E-02	4.211E-02	2.507E-02	NOT IDENT.
Y-88	2.570E-02	4.111E-02	3.792E-02	2.098E-02	NOT IDENT.
Y-91	4.740E+00	2.657E+01	2.236E+01	1.356E+01	NOT IDENT.
NB-94	-1.031E-02	3.657E-02	2.927E-02	1.866E-02	NOT IDENT.
NB-95	4.094E-02	5.639E-02	4.349E-02	2.877E-02	NOT IDENT.
NB-95M	-3.974E-02	1.554E-01	1.129E-01	7.927E-02	NOT IDENT.
ZR-95	6.066E-02	8.615E-02	7.460E-02	4.395E-02	NOT IDENT.
MO-99	1.685E+01	9.196E+01	0.000E+00	4.692E+01	SHORT HLIF
TC-99M	4.510E+25	1.038E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.564E-02	4.423E-02	3.368E-02	2.256E-02	FAIL ABUN
RH-106	-1.740E-01	3.258E-01	2.564E-01	1.662E-01	NOT IDENT.
RU-106	-1.740E-01	3.253E-01	2.564E-01	1.660E-01	NOT IDENT.
AG-108M	-5.943E-03	2.906E-02	2.443E-02	1.483E-02	NOT IDENT.
AG-110M	8.392E-03	4.197E-02	3.102E-02	2.141E-02	NOT IDENT.
SN-113	-3.821E-03	4.757E-02	4.069E-02	2.427E-02	NOT IDENT.
CD-115	-1.787E+01	1.355E+02	0.000E+00	6.915E+01	SHORT HLIF
SN-117M	1.740E-02	7.676E-02	6.603E-02	3.917E-02	NOT IDENT.
TE-123M	-3.722E-03	2.834E-02	2.397E-02	1.446E-02	NOT IDENT.
SB-124	8.506E-03	8.370E-02	7.163E-02	4.270E-02	NOT IDENT.
SB-125	-3.813E-02	8.935E-02	7.395E-02	4.559E-02	FAIL ABUN
TE-125M	5.419E+00	1.015E+01	9.001E+00	5.179E+00	NOT IDENT.
I-126	-2.441E-01	4.438E-01	2.990E-01	2.264E-01	NOT IDENT.
SB-126	-1.499E-01	2.737E-01	1.811E-01	1.397E-01	NOT IDENT.
SB-127	-2.528E+00	6.031E+00	4.768E+00	3.077E+00	NOT IDENT.
I-131	-7.055E-02	2.172E-01	1.837E-01	1.108E-01	NOT IDENT.
TE-132	-6.762E-01	4.107E+00	3.383E+00	2.095E+00	NOT IDENT.
BA-133	-5.306E-03	4.525E-02	3.422E-02	2.308E-02	NOT IDENT.
I-133	-2.936E+06	3.541E+06	0.000E+00	1.807E+06	SHORT HLIF
CS-134	1.246E-01	7.445E-02	5.184E-02	3.798E-02	FAIL ABUN
CS-135	2.595E-01	1.832E-01	1.462E-01	9.346E-02	NOT IDENT.
I-135	-3.712E+24	3.257E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.718E-02	1.759E-01	1.536E-01	8.977E-02	NOT IDENT.
CE-139	-3.678E-02	3.217E-02	2.576E-02	1.641E-02	NOT IDENT.
BA-140	-2.161E-01	4.179E-01	3.304E-01	2.132E-01	NOT IDENT.
LA-140	-6.755E-02	1.429E-01	1.120E-01	7.291E-02	FAIL ABUN
CE-141	5.293E-02	7.281E-02	6.409E-02	3.715E-02	NOT IDENT.
CE-143	3.301E+04	1.214E+04	0.000E+00	6.193E+03	SHORT HLIF
CE-144	2.985E-03	2.204E-01	1.702E-01	1.125E-01	NOT IDENT.
PM-144	2.705E-02	3.648E-02	3.184E-02	1.861E-02	NOT IDENT.
PR-144	2.033E+00	2.742E+00	2.393E+00	1.399E+00	NOT IDENT.
PM-146	3.458E-02	4.629E-02	4.112E-02	2.362E-02	NOT IDENT.
ND-147	4.268E-01	9.641E-01	8.357E-01	4.919E-01	FAIL ABUN
PM-149	-4.153E+02	1.168E+03	0.000E+00	5.961E+02	SHORT HLIF
EU-152	-4.657E-02	1.062E-01	8.672E-02	5.418E-02	NOT IDENT.
GD-153	-3.678E-02	8.369E-02	6.850E-02	4.270E-02	NOT IDENT.
EU-154	-9.822E-02	1.414E-01	9.344E-02	7.214E-02	NOT IDENT.
EU-155	1.698E-01	1.056E-01	9.665E-02	5.385E-02	FAIL ABUN
TB-160	-1.593E-02	1.537E-01	1.296E-01	7.842E-02	FAIL ABUN
HO-166M	6.585E-03	6.027E-02	4.994E-02	3.075E-02	NOT IDENT.
TA-182	-1.980E-01	2.381E-01	1.815E-01	1.215E-01	FAIL ABUN
IR-192	-7.695E-03	3.769E-02	3.015E-02	1.923E-02	FAIL ABUN
HG-203	-1.392E-02	4.653E-02	3.723E-02	2.374E-02	NOT IDENT.
BI-207	4.130E-02	5.880E-02	5.233E-02	3.000E-02	FAIL ABUN
PB-211	-8.937E-01	8.965E-01	5.302E-01	4.574E-01	NOT IDENT.
BI-212	2.179E+00	9.612E-01	6.707E-01	4.904E-01	FAIL ABUN
RA-223	-3.931E-01	7.699E-01	5.255E-01	3.928E-01	FAIL ABUN
AC-227	-7.141E-03	2.628E-01	2.164E-01	1.341E-01	FAIL ABUN
TH-227	-7.141E-03	2.628E-01	2.164E-01	1.341E-01	FAIL ABUN
TH-229	1.594E-02	5.676E-01	4.778E-01	2.896E-01	FAIL ABUN
PA-231	3.203E-01	1.548E+00	1.282E+00	7.896E-01	FAIL ABUN
TH-231	-3.931E-01	7.699E-01	5.255E-01	3.928E-01	FAIL ABUN
PA-233	1.741E-02	6.715E-02	5.553E-02	3.426E-02	FAIL ABUN
PA-234	4.273E-02	2.881E-01	2.474E-01	1.470E-01	NOT IDENT.
PA-234M	4.810E+00	4.887E+00	4.492E+00	2.494E+00	NOT IDENT.
NP-239	9.931E-02	3.815E-01	3.339E-01	1.946E-01	NOT IDENT.
AM-241	1.380E-01	1.636E-01	1.276E-01	8.348E-02	NOT IDENT.
CF-249	3.031E-02	4.140E-02	3.709E-02	2.112E-02	NOT IDENT.

CF-251

7.271E-02

1.296E-01

1.122E-01

6.611E-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
46.54	205.7343
49.72	208.9557
57.36	0.0000
59.54	231.1696
63.29	287.3121
63.29	287.3121
64.28	288.0436
67.75	312.5970
69.67	330.7775
70.83	315.3682
72.81	326.9551
72.87	327.0005
72.87	327.0005
74.82	322.9945
74.82	322.9945
74.82	322.9945
74.97	323.1072
77.11	324.6907
77.11	324.6907
77.11	324.6907
79.69	326.5734
79.80	326.6531
80.12	302.9224
80.19	302.9692
80.57	346.9077
81.00	381.9588
81.07	382.0177
81.07	382.0177
83.79	291.5484
83.79	291.5484
85.43	358.3502
86.48	376.0581
86.55	376.1132
86.79	376.3006
86.94	376.4219
87.57	294.7508
88.03	295.0318
88.47	295.3008
89.96	390.5703
91.11	295.5820
92.59	296.4626
92.59	296.4626
93.35	283.7163
94.67	261.9672
94.87	263.3935
94.87	263.3935
95.86	265.2313
97.43	261.7849
98.44	237.2374
99.53	241.2932
100.11	234.4283
103.18	269.8479
103.37	257.3888
105.31	234.0090
106.12	245.1719
109.28	236.6003
111.00	246.4153
111.76	254.0287
116.30	232.1740
117.23	229.7847
121.12	243.3173
121.78	223.2077
122.06	227.0183
123.07	215.3300
131.20	238.3757
133.52	242.0708
136.00	224.5237

136.47	222.7867
140.51	0.0000
140.51	0.0000
143.76	277.9491
144.24	250.3294
144.24	250.3294
145.44	229.6324
152.43	225.1536
153.25	213.7539
154.21	218.9049
154.21	218.9049
156.02	250.6707
158.56	202.6117
159.00	215.4637
162.66	215.5536
163.33	214.7623
165.86	268.8678
176.60	212.5003
177.52	205.7236
181.07	0.0000
184.41	212.5592
185.72	218.9839
193.51	242.5402
197.04	256.9097
205.31	248.9990
210.85	205.1432
215.65	194.1649
222.11	184.9619
227.38	187.0645
228.16	190.4097
228.18	190.4133
235.69	213.8825
235.96	201.0746
235.96	201.0746
238.63	180.6550
238.63	180.6550
240.99	181.0874
242.00	181.2720
244.70	142.8134
252.40	153.7153
252.80	150.5037
256.23	160.8530
256.23	160.8530
260.90	0.0000
264.66	152.2234
268.22	136.1303
269.46	156.2325
269.46	156.2325
271.23	176.4650
273.65	173.5227
276.40	169.5002
277.37	158.4875
277.60	159.6385
278.00	163.0470
279.20	160.9863
279.54	173.3375
280.46	186.9135
283.69	148.1697
284.31	149.3734
285.41	170.8794
285.90	0.0000
287.50	139.6615
293.27	0.0000
295.22	141.1770
295.96	115.7378
298.57	109.1738
299.98	143.4650
299.98	143.4650
300.09	143.4778
300.09	143.4778
300.13	143.4829
301.36	143.6342
302.85	133.5436
304.50	139.4467
304.50	139.4467
304.85	139.4889
308.46	141.0601
311.90	121.9134

316.51	118.9156
319.41	122.6703
320.08	99.5792
323.87	137.6352
323.87	137.6352
328.76	134.0965
333.37	105.3296
334.37	105.4138
334.37	105.4138
338.28	131.2912
338.28	131.2912
338.32	131.2958
338.32	131.2958
338.32	131.2958
340.48	131.3398
340.55	131.3466
344.28	144.6783
351.06	116.5739
351.93	94.0323
356.01	108.6145
364.49	104.2701
366.42	0.0000
383.85	123.0606
388.16	102.4058
388.63	114.3303
391.69	109.9933
400.66	109.2024
401.81	92.3050
402.40	89.5714
404.85	112.4767
410.95	107.7411
414.70	100.5628
423.72	109.5965
427.09	92.0021
427.87	94.8663
433.94	90.5259
453.88	93.5872
463.37	84.5316
468.07	84.7747
473.00	71.5012
476.78	95.8745
477.60	104.6415
487.02	75.0249
492.35	0.0000
497.08	83.3087
511.00	89.9044
514.00	72.8363
527.90	0.0000
529.87	0.0000
531.02	72.9332
537.26	79.1977
546.56	0.0000
563.25	80.3067
569.33	80.5623
569.50	80.5695
569.70	81.5991
583.19	73.9512
600.60	77.7122
602.73	84.6406
604.72	81.4027
609.32	73.8883
609.32	73.8883
610.33	63.3030
614.28	81.7879
618.01	61.6612
621.93	71.2041
621.93	71.2041
633.25	76.8563
635.95	69.5771
636.99	62.2284
645.85	61.4303
657.76	63.0518
661.66	85.3589
661.66	85.3589
664.57	0.0000
666.33	88.9637
666.50	88.9713
677.62	62.3383

685.70	75.5115
695.00	56.3275
696.49	58.5319
696.51	58.5335
697.00	60.7134
702.65	76.0818
706.68	70.7724
711.68	55.6505
720.70	70.1094
721.93	0.0000
722.78	57.8918
722.91	54.3862
723.31	54.3953
724.19	56.1719
727.33	60.4214
733.00	54.3287
735.93	54.0289
739.50	0.0000
747.24	59.8255
752.31	72.1649
753.82	55.5466
756.73	55.6137
763.94	55.3323
765.81	60.7335
766.42	62.5369
777.92	0.0000
778.90	60.6099
783.70	38.2355
785.37	53.1158
795.86	51.2297
801.95	63.4375
810.29	58.1906
810.76	58.2016
815.77	58.3156
818.51	54.7280
832.01	70.6028
834.85	73.4316
836.80	0.0000
846.77	54.4021
856.80	60.1615
860.56	56.5382
871.09	49.3161
873.19	54.0097
875.33	0.0000
879.36	50.3996
880.51	51.3544
883.24	36.4511
884.68	43.0161
889.28	48.7094
898.04	52.6217
911.20	55.7029
911.20	55.7029
911.20	55.7029
926.50	42.7159
937.49	60.9844
944.13	42.9785
946.00	40.1389
949.00	33.4841
962.29	59.0350
964.08	51.2865
966.15	60.9460
968.97	65.4998
968.97	65.4998
968.97	65.4998
983.53	53.2369
996.26	64.1550
1001.03	36.9962
1004.73	57.5120
1037.84	42.3659
1038.76	0.0000
1048.07	45.4699
1050.41	48.4712
1050.41	48.4712
1063.66	45.6945
1085.87	43.0105
1099.45	40.1758
1112.07	43.3548
1115.54	43.7354

1120.29	50.5371
1120.29	50.5371
1120.55	50.5396
1121.30	50.5518
1131.51	0.0000
1173.23	58.5168
1177.93	54.4829
1189.05	51.5625
1204.77	58.0098
1221.41	74.9320
1231.02	52.1753
1235.36	74.8721
1238.28	54.3715
1260.41	0.0000
1271.85	26.3794
1274.44	43.7468
1274.54	55.8149
1291.59	25.4590
1298.22	0.0000
1312.11	41.5956
1332.49	33.2387
1365.19	15.1375
1368.63	0.0000
1384.29	22.9367
1408.01	15.3009
1457.56	0.0000
1460.82	36.3755
1489.16	18.5758
1505.03	27.9675
1596.21	24.7474
1620.50	16.2681
1678.03	0.0000
1690.97	11.6592
1764.49	10.8518
1764.49	10.8518
1770.23	6.7726
1771.35	11.8550
1791.20	0.0000
1836.06	11.0085

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513002

Total Uranium Activity	9.7359E+00	ug/g
Total Uranium Counting Unc.	7.2709E+00	ug/g
Total Uranium Tpu	3.7096E-06	ug/g
Total Uranium Mda	3.1492E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513002
*  ANALYST       : MXR1                             DETECTOR    : GAM16
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 11:21:04.46          SAMPLE ALQT  : 108.680 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.155E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.737E+00
GROSS GAMMA MDA (pCi/GRAM ) : 5.015E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.429E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:22:29.68

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513003.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:21:47
Sample ID          : G248513003 Sample quantity : 1.23240E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:10.00 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	46.56*	136	318	0.99	92.75	89	7	1.89E-02	25.0	
2	0	63.28*	113	604	1.00	126.20	123	8	1.57E-02	39.9	
3	4	74.93*	710	437	0.95	149.51	144	21	9.87E-02	6.0	1.93E+00
4	4	77.25*	1033	326	0.91	154.15	144	21	1.44E-01	4.2	
5	0	83.91*	113	432	1.16	167.48	165	7	1.57E-02	32.3	
6	5	87.28*	402	396	1.16	174.21	171	24	5.58E-02	9.5	1.95E+00
7	5	90.03*	260	365	1.22	179.72	171	24	3.61E-02	13.9	
8	5	92.96*	322	381	1.39	185.58	171	24	4.47E-02	12.8	
9	0	128.85	100	404	0.79	257.39	253	10	1.39E-02	38.7	
10	0	186.05*	227	260	1.00	371.83	367	9	3.15E-02	14.9	
11	0	208.98*	113	278	0.96	417.71	413	11	1.56E-02	30.8	
12	3	238.73*	1209	151	1.02	477.24	472	25	1.68E-01	3.4	8.03E-01
13	3	241.80	303	190	1.51	483.38	472	25	4.21E-02	10.7	
14	0	270.05	110	124	1.14	539.90	536	9	1.53E-02	20.6	
15	0	277.91	42	177	1.01	555.62	551	9	5.90E-03	58.8	
16	0	295.36*	287	256	1.11	590.53	585	12	3.99E-02	12.8	
17	0	300.82	54	184	1.03	601.47	596	10	7.49E-03	49.3	
18	0	327.61	91	124	1.05	655.08	650	9	1.27E-02	24.3	
19	0	338.52*	191	213	1.14	676.89	672	12	2.65E-02	17.2	
20	0	351.87*	567	207	1.15	703.61	697	14	7.88E-02	6.9	
21	0	463.42	83	103	0.80	926.81	921	13	1.15E-02	27.8	
22	0	510.87*	109	109	2.18	1021.77	1015	15	1.51E-02	26.0	
23	0	583.24*	339	104	1.34	1166.58	1159	15	4.71E-02	8.7	
24	0	609.23*	466	57	1.25	1218.58	1213	11	6.48E-02	5.7	
25	0	727.10	85	43	1.16	1454.47	1449	12	1.18E-02	18.7	
26	0	860.97	37	73	0.79	1722.37	1715	15	5.18E-03	52.1	
27	0	911.09*	215	60	1.67	1822.69	1815	15	2.99E-02	10.6	
28	0	934.41	49	47	1.65	1869.35	1863	15	6.85E-03	33.9	
29	3	964.66	59	24	2.22	1929.90	1921	25	8.21E-03	24.9	1.64E+00
30	3	968.68*	130	25	1.67	1937.95	1921	25	1.80E-02	12.1	
31	0	1120.05	110	64	1.96	2240.90	2234	18	1.52E-02	19.5	
32	0	1377.88	18	11	0.99	2756.97	2753	7	2.43E-03	40.2	
33	0	1460.30*	804	19	2.15	2921.96	2912	17	1.12E-01	3.8	
34	0	1763.92	72	7	1.96	3529.78	3523	14	1.00E-02	14.1	
35	0	1846.61	19	6	0.64	3695.32	3689	11	2.57E-03	33.8	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:21:47
Sample ID        : G248513003 Sample quantity : 123.24 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.00 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	+	1460.82	*	2.954E+01	3.442E+00	7.882E-01	6.998E-02	37.483
CD-109	+	88.03	*	5.131E+00	1.095E+00	1.034E+00	1.009E-01	4.963
SN-126	+	64.28		5.278E-01	4.299E-01	4.582E-01	7.314E-02	1.152
	+	86.94		2.060E+00	9.424E-01	4.277E-01	1.780E-01	4.817
	+	87.57	*	4.956E-01	1.058E-01	9.973E-02	9.732E-03	4.970
HG-203		70.83		-3.282E-01	1.082E+00	1.625E+00	2.717E-01	-0.202
		72.87		1.066E+00	6.865E-01	1.075E+00	1.742E-01	0.991
	+	279.20	*	6.274E-02	7.400E-02	7.579E-02	7.115E-03	0.828
TL-208	+	277.37		5.505E-01	6.512E-01	7.082E-01	9.149E-02	0.777
	+	583.19	*	6.705E-01	1.331E-01	7.435E-02	7.024E-03	9.018
	+	860.56		7.294E-01	7.628E-01	5.850E-01	5.502E-02	1.247
PB-210	+	46.54	*	1.543E+00	7.898E-01	8.273E-01	8.919E-02	1.866
BI-211		72.87		3.808E+00	2.403E+00	3.841E+00	3.756E-01	0.991
	+	351.06	*	4.600E+00	7.642E-01	3.720E-01	3.472E-02	12.364
PB-212	+	74.82		3.097E+00	5.664E-01	4.110E-01	5.663E-02	7.537
	+	77.11		2.715E+00	3.476E-01	2.482E-01	2.419E-02	10.938
	+	238.63	*	2.100E+00	2.552E-01	1.026E-01	1.039E-02	20.467
	+	300.09		1.494E+00	1.481E+00	1.401E+00	1.540E-01	1.066
BI-214	+	609.32	*	1.798E+00	2.744E-01	1.410E-01	1.441E-02	12.753
	+	1120.29		2.289E+00	9.270E-01	6.965E-01	7.481E-02	3.286
	+	1764.49		2.134E+00	6.296E-01	4.077E-01	3.448E-02	5.235
PB-214	+	74.82		5.490E+00	9.551E-01	7.284E-01	9.161E-02	7.537
	+	77.11		4.786E+00	7.289E-01	4.375E-01	5.587E-02	10.938
	+	242.00		3.199E+00	7.666E-01	6.248E-01	6.714E-02	5.119
	+	295.22		1.404E+00	3.913E-01	2.614E-01	2.943E-02	5.370
	+	351.93	*	1.669E+00	2.923E-01	1.354E-01	1.467E-02	12.333
RA-224	+	240.99	*	5.656E+00	1.315E+00	1.101E+00	9.955E-02	5.138
RA-226	+	609.32	*	1.798E+00	2.744E-01	1.410E-01	1.441E-02	12.753
	+	1120.29		2.289E+00	9.270E-01	6.965E-01	7.481E-02	3.286
	+	1764.49		2.134E+00	6.296E-01	4.077E-01	3.448E-02	5.235
AC-228	+	338.32		1.713E+00	9.262E-01	4.709E-01	1.968E-01	3.637
	+	911.20	*	2.150E+00	5.190E-01	3.122E-01	3.649E-02	6.888
	+	968.97		2.239E+00	7.682E-01	4.403E-01	1.074E-01	5.085
RA-228	+	338.32		1.713E+00	9.262E-01	4.709E-01	1.968E-01	3.637

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	911.20	*	2.150E+00	5.190E-01	3.122E-01	3.649E-02	6.888
	+	968.97		2.239E+00	7.682E-01	4.403E-01	1.074E-01	5.085
	+	74.82		3.097E+00	4.809E-01	4.110E-01	4.040E-02	7.537
	+	77.11		2.715E+00	3.476E-01	2.482E-01	2.419E-02	10.938
	+	238.63	*	2.100E+00	2.552E-01	1.026E-01	1.039E-02	20.467
TH-232	+	300.09		1.494E+00	1.734E+00	1.401E+00	8.585E-01	1.066
	+	338.32		1.713E+00	6.075E-01	4.709E-01	4.243E-02	3.637
	+	911.20	*	2.150E+00	5.190E-01	3.122E-01	3.649E-02	6.888
TH-234	+	968.97		2.239E+00	7.682E-01	4.403E-01	1.074E-01	5.085
	+	63.29	*	1.369E+00	1.124E+00	1.135E+00	2.159E-01	1.207
U-235	+	92.59		3.516E+00	1.204E+00	8.865E-01	2.008E-01	3.966
	+	89.96		3.436E+00	1.286E+00	1.071E+00	2.686E-01	3.208
	+	93.35		2.656E+00	9.268E-01	6.713E-01	1.588E-01	3.956
		143.76	*	-1.255E-01	2.403E-01	3.721E-01	6.625E-02	-0.337
		163.33		7.953E-02	4.898E-01	8.038E-01	1.441E-01	0.099
	+	185.72		2.515E-01	7.820E-02	7.249E-02	6.208E-03	3.469
		205.31		5.117E-02	6.205E-01	8.851E-01	1.612E-01	0.058
NP-237	+	86.48	*	1.479E+00	4.425E-01	2.973E-01	6.874E-02	4.975
		95.86		-1.985E-01	9.371E-01	1.388E+00	3.412E-01	-0.143
U-238	+	63.29	*	1.369E+00	1.124E+00	1.135E+00	2.159E-01	1.207
	+	92.59		3.516E+00	9.684E-01	8.865E-01	8.844E-02	3.966
ANH-511	+	511.00	*	1.615E-01	8.520E-02	5.551E-02	4.958E-03	2.910

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	4.678E-01	4.928E-01	8.594E-01	8.176E-02	0.544
NA-22		1274.54	*	3.841E-02	6.439E-02	1.105E-01	9.311E-03	0.348
NA-24		1368.63	*	-2.226E+03	6.439E-02	Half-Life too short		
SC-46		889.28	*	-2.697E-02	5.762E-02	9.057E-02	7.929E-03	-0.298
	+	1120.55		4.132E-01	1.650E-01	2.086E-01	1.750E-02	1.981
V-48		944.13		4.472E-01	1.744E+00	2.948E+00	2.580E-01	0.152
		983.53	*	1.265E-01	1.504E-01	2.664E-01	2.323E-02	0.475
		1312.11		-4.383E-02	1.547E-01	2.507E-01	2.128E-02	-0.175
CR-51		320.08	*	2.761E-01	4.984E-01	8.663E-01	8.267E-02	0.319
MN-54		834.85	*	-7.908E-02	5.334E-02	7.517E-02	6.609E-03	-1.052
CO-56		846.77	*	-6.538E-03	5.840E-02	9.596E-02	8.435E-03	-0.068
		1037.84		6.975E-02	4.496E-01	7.479E-01	6.795E-02	0.093
CO-57		1238.28		2.594E-01	1.537E-01	2.798E-01	2.404E-02	0.927
		1771.35		9.702E-02	2.738E-01	4.536E-01	3.831E-02	0.214
		122.06	*	7.494E-03	2.712E-02	4.537E-02	5.316E-03	0.165
		136.47		5.133E-02	2.341E-01	3.886E-01	4.371E-02	0.132
		810.76	*	-4.216E-02	5.193E-02	7.853E-02	6.916E-03	-0.537
FE-59		1099.45	*	-4.904E-02	1.554E-01	2.443E-01	2.242E-02	-0.201
		1291.59		-4.370E-02	1.895E-01	2.955E-01	2.847E-02	-0.148
CO-60		1173.23		-6.493E-04	6.446E-02	1.042E-01	8.511E-03	-0.006
		1332.49	*	-4.605E-02	5.874E-02	8.671E-02	7.390E-03	-0.531
ZN-65		1115.54	*	1.830E-02	1.479E-01	2.115E-01	1.780E-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	121.12			-1.336E-03	1.440E-01	2.380E-01	3.232E-02	-0.006
	136.00			3.886E-02	4.561E-02	7.755E-02	8.387E-03	0.501
	264.66	*		-5.809E-03	5.859E-02	8.748E-02	8.038E-03	-0.066
	279.54			5.334E-02	1.372E-01	2.119E-01	2.011E-02	0.252
	400.66			2.312E-01	3.373E-01	5.832E-01	6.404E-02	0.396
SR-85	514.00	*		6.209E-02	5.909E-02	9.335E-02	8.340E-03	0.665
Y-88	898.04			-1.173E-02	5.750E-02	9.297E-02	8.166E-03	-0.126
	1836.06	*		3.622E-02	4.808E-02	9.108E-02	7.595E-03	0.398
Y-91	1204.77	*		1.146E+01	3.855E+01	6.393E+01	5.276E+00	0.179
NB-94	702.65	*		4.092E-02	4.654E-02	8.342E-02	7.156E-03	0.491
	871.09			-1.062E-02	5.051E-02	8.204E-02	7.199E-03	-0.129
NB-95	765.81	*		5.121E-03	5.974E-02	1.007E-01	8.800E-03	0.051
NB-95M	235.69	*		8.091E-02	1.685E-01	2.474E-01	2.530E-02	0.327
ZR-95	724.19			-2.383E-03	1.487E-01	2.172E-01	2.035E-02	-0.011
	756.73	*		3.481E-02	1.045E-01	1.802E-01	1.732E-02	0.193
MO-99	140.51			6.250E-05	1.045E-01	Half-Life	too short	
	181.07			-1.511E-05	1.045E-01	Half-Life	too short	
	366.42			1.219E-04	1.045E-01	Half-Life	too short	
	739.50	*		-7.235E-05	1.045E-01	Half-Life	too short	
	777.92			-1.848E-04	1.045E-01	Half-Life	too short	
TC-99M	140.51	*		3.978E+19	1.045E-01	Half-Life	too short	
RU-103	497.08	*		-2.642E-03	5.498E-02	8.949E-02	1.266E-02	-0.030
	610.33	+		2.132E+01	4.253E+00	4.757E+00	7.809E-01	4.481
RH-106	621.93	*		-2.072E-01	3.953E-01	5.984E-01	7.959E-02	-0.346
	1050.41			-3.558E+00	3.662E+00	5.278E+00	4.542E-01	-0.674
RU-106	621.93	*		-2.072E-01	3.948E-01	5.984E-01	5.199E-02	-0.346
	1050.41			-3.558E+00	3.662E+00	5.278E+00	4.542E-01	-0.674
AG-108M	433.94	*		5.426E-04	3.534E-02	5.839E-02	5.234E-03	0.009
	614.28			3.775E-02	4.722E-02	7.348E-02	6.618E-03	0.514
	722.91			-4.039E-02	5.542E-02	7.318E-02	6.524E-03	-0.552
AG-110M	657.76	*		-1.167E-02	4.741E-02	7.399E-02	6.449E-03	-0.158
	677.62			2.463E-01	4.205E-01	7.107E-01	6.212E-02	0.346
	706.68			-1.709E-01	2.751E-01	4.367E-01	3.860E-02	-0.391
	763.94			-2.023E-01	2.242E-01	3.441E-01	3.084E-02	-0.588
	884.68			-2.913E-02	7.337E-02	1.166E-01	1.053E-02	-0.250
	937.49			-6.390E-02	1.769E-01	2.380E-01	2.156E-02	-0.268
	1384.29			4.144E-02	2.050E-01	3.384E-01	2.983E-02	0.122
	1505.03			-2.257E-01	4.087E-01	6.189E-01	5.352E-02	-0.365
SN-113	391.69	*		-2.367E-03	5.660E-02	9.376E-02	8.147E-03	-0.025
CD-115	260.90			1.620E-03	5.660E-02	Half-Life	too short	
	492.35			-1.582E-04	5.660E-02	Half-Life	too short	
	527.90	*		3.075E-05	5.660E-02	Half-Life	too short	
SN-117M	156.02			1.298E+00	3.744E+00	6.211E+00	5.718E-01	0.209
	158.56	*		6.594E-03	8.803E-02	1.442E-01	1.296E-02	0.046
TE-123M	159.00	*		-1.834E-02	3.256E-02	5.154E-02	4.639E-03	-0.356
SB-124	602.73			-2.875E-02	6.352E-02	8.984E-02	7.890E-03	-0.320
	645.85			-4.594E-01	7.951E-01	1.204E+00	1.089E-01	-0.381
	722.78			-6.049E-01	6.285E-01	8.019E-01	7.085E-02	-0.754
	1690.97	*		-3.933E-02	1.154E-01	1.753E-01	1.563E-02	-0.224

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	+	427.87	*	3.620E-03	1.145E-01	1.895E-01	1.671E-02	0.019
		463.37		1.079E+00	6.092E-01	7.037E-01	6.653E-02	1.533
		600.60		1.105E-01	2.535E-01	4.231E-01	3.984E-02	0.261
		635.95		-1.611E-01	3.798E-01	5.841E-01	5.436E-02	-0.276
TE-125M		109.28	*	4.412E-01	1.030E+01	1.715E+01	2.134E+00	0.026
I-126	*	388.63		-2.602E-02	3.020E-01	4.990E-01	4.223E-02	-0.052
		666.33		-7.725E-02	4.639E-01	7.299E-01	6.163E-02	-0.106
		753.82		5.636E+00	3.709E+00	6.956E+00	6.061E-01	0.810
SB-126		414.70		3.069E-02	1.458E-01	2.449E-01	2.100E-02	0.125
		666.50		1.036E-02	1.600E-01	2.574E-01	2.174E-02	0.040
		695.00		4.881E-02	1.606E-01	2.773E-01	2.372E-02	0.176
		697.00		-2.465E-01	5.780E-01	9.404E-01	8.049E-02	-0.262
SB-127		720.70	*	-2.597E-02	3.397E-01	5.161E-01	4.456E-02	-0.050
		856.80		-4.716E-01	1.141E+00	1.544E+00	1.356E-01	-0.305
		252.40		2.043E+01	2.200E+01	3.420E+01	1.451E+01	0.597
		473.00		-5.144E+00	8.406E+00	1.303E+01	1.987E+00	-0.395
I-131		685.70	*	5.931E+00	7.783E+00	1.324E+01	1.840E+00	0.448
		783.70		3.149E+00	1.987E+01	3.353E+01	4.981E+00	0.094
		80.19		-1.109E+01	7.572E+00	1.055E+01	1.040E+00	-1.051
		284.31		5.062E-01	3.189E+00	5.453E+00	5.269E-01	0.093
TE-132		364.49	*	-1.885E-02	2.801E-01	4.655E-01	4.328E-02	-0.040
		636.99		-2.714E-01	4.098E+00	6.534E+00	5.986E-01	-0.042
		49.72		-2.204E+00	2.381E+01	3.665E+01	5.291E+00	-0.060
		111.76		-7.119E+01	1.961E+02	3.165E+02	4.799E+01	-0.225
BA-133		116.30		-4.125E+00	1.671E+02	2.765E+02	4.251E+01	-0.015
		228.16	*	2.076E+00	4.764E+00	7.778E+00	1.385E+00	0.267
		81.00		-1.295E-01	8.182E-02	1.104E-01	1.784E-02	-1.173
		276.40		3.119E-01	4.951E-01	7.687E-01	1.111E-01	0.406
I-133		302.85		5.207E-02	1.705E-01	2.604E-01	3.498E-02	0.200
		356.01	*	-3.428E-02	5.658E-02	7.829E-02	1.027E-02	-0.438
		383.85		9.259E-03	3.731E-01	6.217E-01	7.686E-02	0.015
		529.87	*	1.691E-01	3.731E-01	Half-Life	too short	
CS-134		875.33		-5.629E-01	3.731E-01	Half-Life	too short	
		1298.22		3.697E+01	3.731E-01	Half-Life	too short	
		563.25		5.858E-01	5.038E-01	8.880E-01	7.980E-02	0.660
		569.33		2.502E-02	2.668E-01	4.354E-01	3.921E-02	0.057
CS-135		604.72		-1.967E-02	5.121E-02	6.850E-02	6.024E-03	-0.287
		795.86	*	6.340E-02	7.316E-02	1.294E-01	1.143E-02	0.490
		801.95		4.877E-02	5.738E-01	9.646E-01	8.515E-02	0.051
		1365.19		-1.184E+00	1.499E+00	2.169E+00	1.944E-01	-0.546
I-135		268.22	*	-7.323E-02	2.071E-01	2.826E-01	2.949E-02	-0.259
		546.56		1.562E+17	2.071E-01	Half-Life	too short	
		836.80		4.280E+18	2.071E-01	Half-Life	too short	
		1038.76		-3.562E+17	2.071E-01	Half-Life	too short	
		1131.51		-3.251E+18	2.071E-01	Half-Life	too short	
		1260.41	*	2.638E+18	2.071E-01	Half-Life	too short	
		1457.56		3.569E+20	2.071E-01	Half-Life	too short	
		1678.03		-8.640E+17	2.071E-01	Half-Life	too short	
		1791.20		-3.385E+18	2.071E-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	153.25			1.192E+00	1.429E+00	2.417E+00	2.652E-01	0.493
	176.60			-6.357E-01	8.825E-01	1.376E+00	1.290E-01	-0.462
	273.65			-2.956E-01	1.365E+00	1.453E+00	1.434E-01	-0.203
	340.55			4.796E-01	3.152E-01	5.123E-01	4.773E-02	0.936
	818.51			6.966E-02	1.314E-01	2.315E-01	2.039E-02	0.301
	1048.07	*		-2.073E-01	2.254E-01	3.266E-01	2.934E-02	-0.635
	1235.36			8.075E-01	1.346E+00	2.280E+00	2.636E-01	0.354
BA-137M	661.66	*		-2.198E-02	5.006E-02	7.668E-02	6.459E-03	-0.287
CS-137	661.66	*		-2.322E-02	5.289E-02	8.100E-02	6.837E-03	-0.287
CE-139	165.86	*		3.838E-02	3.442E-02	5.885E-02	4.907E-03	0.652
BA-140	162.66			7.149E-01	1.359E+00	2.269E+00	2.089E-01	0.315
	304.85			-1.685E-01	2.604E+00	3.856E+00	1.135E+00	-0.044
	423.72			-7.052E-01	3.788E+00	6.166E+00	2.029E+00	-0.114
	537.26	*		-2.605E-01	5.266E-01	8.050E-01	2.737E-01	-0.324
LA-140	328.76	+		1.545E+00	7.665E-01	1.055E+00	1.007E-01	1.464
	487.02			1.499E-01	2.603E-01	4.459E-01	4.195E-02	0.336
	815.77			1.322E-01	6.143E-01	1.047E+00	1.024E-01	0.126
	1596.21	*		-2.986E-02	1.878E-01	3.017E-01	2.604E-02	-0.099
CE-141	145.44	*		3.790E-02	8.441E-02	1.409E-01	1.438E-02	0.269
CE-143	57.36			-2.129E-02	8.441E-02	Half-Life	too short	
	293.27	*		2.676E-02	8.441E-02	Half-Life	too short	
	664.57			5.585E-03	8.441E-02	Half-Life	too short	
	721.93			-5.113E-02	8.441E-02	Half-Life	too short	
CE-144	80.12			-3.012E+00	2.117E+00	2.960E+00	2.883E-01	-1.018
	133.52	*		-1.795E-01	2.539E-01	3.552E-01	5.935E-02	-0.505
PM-144	476.78			4.759E-02	9.113E-02	1.549E-01	1.485E-02	0.307
	618.01			-1.055E-02	3.945E-02	6.165E-02	5.518E-03	-0.171
	696.49	*		-2.938E-02	4.792E-02	7.664E-02	6.563E-03	-0.383
PR-144	696.51	*		-2.189E+00	3.602E+00	5.765E+00	4.933E-01	-0.380
	1489.16			-6.700E+00	1.409E+01	2.096E+01	1.812E+00	-0.320
PM-146	453.88	*		2.439E-02	5.023E-02	8.574E-02	9.194E-03	0.284
	633.25			1.140E+00	1.982E+00	3.278E+00	1.252E+00	0.348
	735.93			1.301E-01	1.937E-01	3.387E-01	9.498E-02	0.384
	747.24			6.093E-02	1.346E-01	2.339E-01	3.422E-02	0.261
ND-147	91.11	+		1.827E+00	5.426E-01	7.658E-01	8.069E-02	2.386
	319.41			1.027E+00	6.108E+00	1.038E+01	9.473E-01	0.099
	531.02	*		1.375E-01	1.201E+00	1.972E+00	2.986E-01	0.070
PM-149	285.90	*		-4.920E-04	1.201E+00	Half-Life	too short	
EU-152	121.78			-4.808E-04	7.657E-02	1.266E-01	1.603E-02	-0.004
	244.70			-7.859E-02	3.749E-01	5.886E-01	5.336E-02	-0.134
	344.28	*		8.057E-02	1.261E-01	1.962E-01	1.856E-02	0.411
	778.90			-3.109E-01	3.281E-01	4.929E-01	4.315E-02	-0.631
	964.08	+		1.101E+00	5.572E-01	8.787E-01	7.679E-02	1.253
	1085.87			-7.057E-02	5.590E-01	8.977E-01	7.639E-02	-0.079
GD-153	1112.07			-2.857E-02	4.769E-01	7.245E-01	6.102E-02	-0.039
	1408.01			1.406E-01	2.415E-01	4.342E-01	3.735E-02	0.324
	69.67			-1.002E+00	1.282E+00	1.884E+00	1.849E-01	-0.532
	97.43	*		-2.115E-02	9.234E-02	1.367E-01	1.397E-02	-0.155
	103.18			-9.159E-02	1.073E-01	1.714E-01	1.805E-02	-0.535

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		123.07		2.594E-02	5.380E-02	9.066E-02	1.251E-02	0.286
		723.31		-1.171E-01	2.567E-01	3.539E-01	3.366E-02	-0.331
		873.19		5.127E-01	4.077E-01	7.467E-01	8.965E-02	0.687
		996.26		-3.389E-02	5.074E-01	8.264E-01	1.447E-01	-0.041
		1004.73		1.047E-01	3.111E-01	5.270E-01	6.161E-02	0.199
		1274.44	*	8.337E-02	1.840E-01	3.108E-01	3.489E-02	0.268
EU-155	+	86.55		6.028E-01	1.289E-01	1.853E-01	1.822E-02	3.253
		105.31	*	1.138E-01	1.036E-01	1.790E-01	1.923E-02	0.635
TB-160	+	86.79		1.719E+00	3.670E-01	5.315E-01	5.185E-02	3.235
		197.04		-5.939E-01	6.924E-01	1.040E+00	9.033E-02	-0.571
		215.65		-1.808E-01	9.250E-01	1.467E+00	1.299E-01	-0.123
		298.57		-2.475E-02	2.332E-01	2.500E-01	2.295E-02	-0.099
		879.36	*	-3.918E-02	2.114E-01	3.436E-01	3.013E-02	-0.114
		962.29		1.380E+00	8.649E-01	1.480E+00	1.293E-01	0.933
	+	966.15		8.286E-01	4.192E-01	8.294E-01	7.247E-02	0.999
		1177.93		-1.691E-01	5.450E-01	8.505E-01	6.959E-02	-0.199
		1271.85		-3.885E-02	1.123E+00	1.797E+00	1.511E-01	-0.022
		80.57		-3.293E-01	2.276E-01	3.176E-01	3.094E-02	-1.037
HO-166M		184.41		4.448E-02	4.603E-02	7.150E-02	6.113E-03	0.622
		280.46		-1.225E-02	1.018E-01	1.510E-01	1.387E-02	-0.081
		410.95		2.848E-01	3.046E-01	5.343E-01	4.569E-02	0.533
		711.68	*	-2.152E-02	7.858E-02	1.290E-01	1.110E-02	-0.167
		752.31		-4.681E-02	3.864E-01	6.410E-01	5.583E-02	-0.073
		810.29		-7.558E-02	7.399E-02	1.089E-01	9.571E-03	-0.694
		67.75		5.862E-02	7.936E-02	1.245E-01	1.226E-02	0.471
		100.11		1.955E-01	1.830E-01	3.043E-01	3.154E-02	0.643
TA-182		152.43		-2.071E-01	4.107E-01	6.548E-01	6.225E-02	-0.316
		222.11		8.393E-02	4.241E-01	6.864E-01	6.118E-02	0.122
	+	1121.30		1.125E+00	4.493E-01	5.594E-01	4.693E-02	2.011
		1189.05		2.938E-02	4.736E-01	7.705E-01	6.327E-02	0.038
		1221.41	*	1.212E-01	2.874E-01	4.837E-01	4.013E-02	0.251
		1231.02		4.550E-01	6.937E-01	1.192E+00	9.913E-02	0.382
	+	295.96		1.117E+00	3.031E-01	3.825E-01	3.534E-02	2.922
		308.46		-1.333E-02	1.192E-01	1.996E-01	1.836E-02	-0.067
IR-192		316.51	*	-2.406E-02	4.222E-02	6.844E-02	6.262E-03	-0.352
		468.07		6.883E-02	9.599E-02	1.492E-01	1.409E-02	0.461
		72.81		2.010E-01	1.375E-01	2.192E-01	2.143E-02	0.917
BI-207	+	74.97		8.931E-01	1.383E-01	1.962E-01	1.915E-02	4.552
		569.70		1.258E-03	4.125E-02	6.694E-02	5.952E-03	0.019
		1063.66	*	2.728E-02	8.277E-02	1.393E-01	1.195E-02	0.196
PB-211		1770.23		6.602E-02	5.968E-01	8.717E-01	7.363E-02	0.076
		404.85	*	4.403E-02	8.844E-01	1.471E+00	7.115E-01	0.030
		427.09		9.973E-01	1.947E+00	3.244E+00	1.501E+00	0.307
BI-212		832.01		-9.751E-03	1.283E+00	2.133E+00	1.107E+00	-0.005
	+	727.33	*	2.651E+00	1.048E+00	1.594E+00	1.989E-01	1.663
		785.37		3.121E-01	4.702E+00	7.874E+00	6.900E-01	0.040
RN-219		1620.50		2.660E+00	3.119E+00	5.879E+00	5.066E-01	0.453
	+	271.23		8.506E-01	3.618E-01	4.965E-01	5.322E-02	1.713
		401.81	*	2.167E-01	5.259E-01	8.941E-01	1.323E-01	0.242

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		6.773E-02	2.012E-01	2.489E-01	2.424E-02	0.272
	+	83.79		2.077E-01	1.355E-01	1.850E-01	1.802E-02	1.123
		94.87		5.630E-01	4.662E-01	7.352E-01	7.418E-02	0.766
		144.24		-2.522E-01	7.944E-01	1.245E+00	1.372E-01	-0.203
		154.21		4.192E-01	4.359E-01	7.402E-01	7.494E-02	0.566
AC-227	+	269.46		6.609E-01	2.789E-01	3.963E-01	3.695E-02	1.668
		323.87	*	-5.686E-01	8.370E-01	1.128E+00	1.983E-01	-0.504
	+	338.28		6.796E+00	2.478E+00	3.001E+00	3.707E-01	2.265
		79.69		-1.074E+00	1.050E+00	1.489E+00	2.654E-01	-0.721
		235.96		1.266E-01	1.883E-01	2.798E-01	2.986E-02	0.453
TH-227		256.23	*	-1.503E-01	3.021E-01	4.627E-01	5.744E-02	-0.325
	+	299.98		1.643E+00	1.634E+00	1.896E+00	2.482E-01	0.866
		304.50		4.938E-01	2.012E+00	3.056E+00	5.139E-01	0.162
		334.37		-4.430E-01	2.355E+00	3.427E+00	5.423E-01	-0.129
		79.80		-1.615E+00	1.404E+00	1.942E+00	4.320E-01	-0.832
TH-229		235.96		1.266E-01	1.882E-01	2.798E-01	2.827E-02	0.453
		256.23	*	-1.503E-01	3.022E-01	4.627E-01	6.445E-02	-0.325
	+	299.98		1.643E+00	1.634E+00	1.896E+00	2.482E-01	0.866
		304.50		4.938E-01	2.012E+00	3.056E+00	5.139E-01	0.162
		334.37		-4.430E-01	2.355E+00	3.427E+00	5.423E-01	-0.129
PA-231		85.43		5.348E-01	2.329E-01	3.180E-01	3.100E-02	1.682
	+	88.47		7.641E-01	1.631E-01	2.273E-01	2.224E-02	3.361
		193.51	*	5.842E-02	5.814E-01	9.434E-01	8.158E-02	0.062
		210.85		9.102E-01	1.147E+00	1.725E+00	1.521E-01	0.528
		283.69	*	3.701E-01	1.563E+00	2.684E+00	4.005E-01	0.138
TH-231	+	301.36		1.055E+00	1.049E+00	1.245E+00	1.563E-01	0.848
		81.07		6.773E-02	2.012E-01	2.489E-01	2.424E-02	0.272
	+	83.79		2.077E-01	1.355E-01	1.850E-01	1.802E-02	1.123
		94.87		5.630E-01	4.662E-01	7.352E-01	7.418E-02	0.766
		144.24		-2.522E-01	7.944E-01	1.245E+00	1.372E-01	-0.203
PA-233		154.21		4.192E-01	4.359E-01	7.402E-01	7.494E-02	0.566
	+	269.46		6.609E-01	2.789E-01	3.963E-01	3.695E-02	1.668
		323.87	*	-5.686E-01	8.370E-01	1.128E+00	1.983E-01	-0.504
	+	338.28		6.796E+00	2.478E+00	3.001E+00	3.707E-01	2.265
	+	300.13		7.434E-01	7.414E-01	8.545E-01	1.295E-01	0.870
PA-234		311.90	*	5.335E-03	7.494E-02	1.268E-01	1.190E-02	0.042
		340.48		1.628E+00	9.772E-01	1.491E+00	3.610E-01	1.091
		94.67		3.315E-01	1.777E-01	2.812E-01	3.784E-02	1.179
		98.44		1.066E-01	1.111E-01	1.490E-01	8.352E-02	0.716
		111.00		-4.144E-02	1.855E-01	3.049E-01	4.233E-02	-0.136
PA-234M		131.20		1.204E-01	1.241E-01	1.925E-01	2.137E-02	0.626
		569.50		9.298E-02	3.592E-01	5.945E-01	5.286E-02	0.156
		733.00		-3.063E-01	6.083E-01	8.283E-01	1.840E-01	-0.370
		880.51		1.003E-01	3.892E-01	6.612E-01	5.796E-02	0.152
		883.24		3.651E-01	4.555E-01	6.963E-01	4.682E-01	0.524
PA-234M		926.50		-1.055E-02	2.313E-01	3.694E-01	9.354E-02	-0.029
		946.00	*	-6.561E-02	4.225E-01	6.842E-01	1.288E-01	-0.096
		949.00		-1.364E-01	6.193E-01	9.957E-01	8.710E-02	-0.137
		766.42		7.777E+00	1.617E+01	2.729E+01	1.385E+01	0.285

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		5.617E+00	6.451E+00	1.147E+01	1.151E+00	0.490
	99.53			2.899E-01	1.681E-01	2.714E-01	2.805E-02	1.068
	103.37			-4.332E-02	9.531E-02	1.555E-01	1.640E-02	-0.279
	106.12			4.272E-02	8.168E-02	1.387E-01	1.485E-02	0.308
	117.23	*		-2.895E-01	4.236E-01	6.784E-01	7.727E-02	-0.427
	228.18			1.108E-01	2.567E-01	4.199E-01	3.762E-02	0.264
AM-241	+	277.60		2.516E-01	2.968E-01	3.785E-01	3.474E-02	0.665
CM-247	59.54	*		1.036E-01	7.232E-02	1.158E-01	1.229E-02	0.895
	+	278.00		1.069E+00	1.260E+00	1.582E+00	1.452E-01	0.675
CF-249	287.50			9.517E-01	1.408E+00	2.467E+00	2.266E-01	0.386
	402.40	*		2.318E-02	4.761E-02	8.142E-02	6.915E-03	0.285
	252.80			6.694E-01	1.132E+00	1.861E+00	1.695E-01	0.360
	333.37			2.246E-02	2.430E-01	3.623E-01	3.276E-02	0.062
CF-251	388.16	*		-8.635E-04	4.808E-02	7.984E-02	6.762E-03	-0.011
	177.52	*		2.045E-02	1.502E-01	2.452E-01	2.077E-02	0.083
	227.38			2.324E-01	4.194E-01	6.905E-01	6.182E-02	0.337
	285.41			-5.543E-01	2.451E+00	4.099E+00	3.765E-01	-0.135

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]G248513003      *
* Acquisition date   : 20-MAR-2010 11:21:47 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 02:00:10.00 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248513003 Analyst initials: MXR1                  *
* Batch Number       : 961097 Sample Quantity : 1.2324E+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	2.954E+01	3.373E+00	7.870E-01	0.000E+00
CD-109	5.131E+00	1.073E+00	1.071E+00	0.000E+00
SN-126	4.956E-01	1.037E-01	1.033E-01	0.000E+00
HG-203	6.274E-02	7.252E-02	7.737E-02	0.000E+00
TL-208	6.705E-01	1.304E-01	7.516E-02	0.000E+00
PB-210	1.543E+00	7.740E-01	8.639E-01	0.000E+00
BI-211	4.600E+00	7.490E-01	3.786E-01	0.000E+00
PB-212	2.100E+00	2.501E-01	1.050E-01	0.000E+00
BI-214	1.798E+00	2.689E-01	1.425E-01	0.000E+00
PB-214	1.669E+00	2.864E-01	1.378E-01	0.000E+00
RA-224	5.656E+00	1.289E+00	1.126E+00	0.000E+00
RA-226	1.798E+00	2.689E-01	1.425E-01	0.000E+00
AC-228	2.150E+00	5.087E-01	3.137E-01	0.000E+00
RA-228	2.150E+00	5.087E-01	3.137E-01	0.000E+00
TH-228	2.100E+00	2.501E-01	1.050E-01	0.000E+00
TH-232	2.150E+00	5.087E-01	3.137E-01	0.000E+00
TH-234	1.369E+00	1.102E+00	1.180E+00	0.000E+00
U-235	-1.255E-01	2.355E-01	3.831E-01	0.000E+00
NP-237	1.479E+00	4.337E-01	3.080E-01	0.000E+00
U-238	1.369E+00	1.102E+00	1.180E+00	0.000E+00
ANH-511	1.615E-01	8.350E-02	5.622E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	4.678E-01	4.829E-01	8.711E-01	0.000E+00 NOT IDENT.
NA-22	3.841E-02	6.310E-02	1.106E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.365E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.697E-02	5.647E-02	9.105E-02	0.000E+00 FAIL ABUN
V-48	1.265E-01	1.474E-01	2.674E-01	0.000E+00 NOT IDENT.
CR-51	2.761E-01	4.884E-01	8.827E-01	0.000E+00 NOT IDENT.

MN-54	-7.908E-02	5.228E-02	7.563E-02	0.000E+00	NOT IDENT.
CO-56	-6.538E-03	5.723E-02	9.653E-02	0.000E+00	NOT IDENT.
CO-57	7.494E-03	2.658E-02	4.681E-02	0.000E+00	NOT IDENT.
CO-58	-4.216E-02	5.090E-02	7.905E-02	0.000E+00	NOT IDENT.
FE-59	-4.904E-02	1.523E-01	2.449E-01	0.000E+00	NOT IDENT.
CO-60	-4.605E-02	5.757E-02	8.669E-02	0.000E+00	NOT IDENT.
ZN-65	1.830E-02	1.449E-01	2.119E-01	0.000E+00	NOT IDENT.
SE-75	-5.809E-03	5.742E-02	8.936E-02	0.000E+00	NOT IDENT.
SR-85	6.209E-02	5.791E-02	9.453E-02	0.000E+00	NOT IDENT.
Y-88	3.622E-02	4.712E-02	9.066E-02	0.000E+00	NOT IDENT.
Y-91	1.146E+01	3.778E+01	6.400E+01	0.000E+00	NOT IDENT.
NB-94	4.092E-02	4.561E-02	8.412E-02	0.000E+00	NOT IDENT.
NB-95	5.121E-03	5.854E-02	1.015E-01	0.000E+00	NOT IDENT.
NB-95M	8.091E-02	1.651E-01	2.531E-01	0.000E+00	NOT IDENT.
ZR-95	3.481E-02	1.024E-01	1.815E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.144E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.110E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.642E-03	5.388E-02	9.067E-02	0.000E+00	FAIL ABUN
RH-106	-2.072E-01	3.874E-01	6.044E-01	0.000E+00	NOT IDENT.
RU-106	-2.072E-01	3.869E-01	6.044E-01	0.000E+00	NOT IDENT.
AG-108M	5.426E-04	3.464E-02	5.926E-02	0.000E+00	NOT IDENT.
AG-110M	-1.167E-02	4.646E-02	7.468E-02	0.000E+00	NOT IDENT.
SN-113	-2.367E-03	5.547E-02	9.529E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.675E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	6.594E-03	8.627E-02	1.482E-01	0.000E+00	NOT IDENT.
TE-123M	-1.834E-02	3.191E-02	5.300E-02	0.000E+00	NOT IDENT.
SB-124	-3.933E-02	1.131E-01	1.747E-01	0.000E+00	NOT IDENT.
SB-125	3.620E-03	1.122E-01	1.924E-01	0.000E+00	FAIL ABUN
TE-125M	4.412E-01	1.010E+01	1.772E+01	0.000E+00	NOT IDENT.
I-126	-7.725E-02	4.546E-01	7.366E-01	0.000E+00	NOT IDENT.
SB-126	-2.597E-02	3.329E-01	5.203E-01	0.000E+00	NOT IDENT.
SB-127	5.931E+00	7.628E+00	1.336E+01	0.000E+00	NOT IDENT.
I-131	-1.885E-02	2.745E-01	4.735E-01	0.000E+00	NOT IDENT.
TE-132	2.076E+00	4.669E+00	7.960E+00	0.000E+00	NOT IDENT.
BA-133	-3.428E-02	5.545E-02	7.967E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.082E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.340E-02	7.170E-02	1.302E-01	0.000E+00	NOT IDENT.
CS-135	-7.323E-02	2.029E-01	2.886E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.678E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.073E-01	2.209E-01	3.276E-01	0.000E+00	NOT IDENT.
BA-137M	-2.198E-02	4.906E-02	7.739E-02	0.000E+00	NOT IDENT.
CS-137	-2.322E-02	5.183E-02	8.175E-02	0.000E+00	NOT IDENT.
CE-139	3.838E-02	3.374E-02	6.047E-02	0.000E+00	NOT IDENT.
BA-140	-2.605E-01	5.161E-01	8.147E-01	0.000E+00	NOT IDENT.
LA-140	-2.986E-02	1.840E-01	3.009E-01	0.000E+00	FAIL ABUN
CE-141	3.790E-02	8.272E-02	1.451E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.121E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.795E-01	2.488E-01	3.661E-01	0.000E+00	NOT IDENT.
PM-144	-2.938E-02	4.696E-02	7.730E-02	0.000E+00	NOT IDENT.
PR-144	-2.189E+00	3.530E+00	5.814E+00	0.000E+00	NOT IDENT.
PM-146	2.439E-02	4.923E-02	8.697E-02	0.000E+00	NOT IDENT.
ND-147	1.375E-01	1.177E+00	1.997E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.199E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	8.057E-02	1.235E-01	1.998E-01	0.000E+00	FAIL ABUN
GD-153	-2.115E-02	9.049E-02	1.414E-01	0.000E+00	NOT IDENT.
EU-154	8.337E-02	1.803E-01	3.110E-01	0.000E+00	NOT IDENT.
EU-155	1.138E-01	1.015E-01	1.851E-01	0.000E+00	FAIL ABUN
TB-160	-3.918E-02	2.072E-01	3.455E-01	0.000E+00	FAIL ABUN
HO-166M	-2.152E-02	7.701E-02	1.301E-01	0.000E+00	NOT IDENT.
TA-182	1.212E-01	2.816E-01	4.842E-01	0.000E+00	FAIL ABUN
IR-192	-2.406E-02	4.137E-02	6.975E-02	0.000E+00	FAIL ABUN
BI-207	2.728E-02	8.112E-02	1.397E-01	0.000E+00	FAIL ABUN
PB-211	4.403E-02	8.667E-01	1.494E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.027E+00	1.607E+00	0.000E+00	FAIL ABUN
RN-219	2.167E-01	5.154E-01	9.083E-01	0.000E+00	FAIL ABUN
RA-223	-5.686E-01	8.202E-01	1.150E+00	0.000E+00	FAIL ABUN
AC-227	-1.503E-01	2.960E-01	4.729E-01	0.000E+00	FAIL ABUN
TH-227	-1.503E-01	2.962E-01	4.729E-01	0.000E+00	FAIL ABUN
TH-229	5.842E-02	5.698E-01	9.676E-01	0.000E+00	FAIL ABUN
PA-231	3.701E-01	1.532E+00	2.739E+00	0.000E+00	FAIL ABUN
TH-231	-5.686E-01	8.202E-01	1.150E+00	0.000E+00	FAIL ABUN
PA-233	5.335E-03	7.344E-02	1.293E-01	0.000E+00	FAIL ABUN
PA-234	-6.561E-02	4.140E-01	6.872E-01	0.000E+00	NOT IDENT.
PA-234M	5.617E+00	6.322E+00	1.151E+01	0.000E+00	NOT IDENT.
NP-239	-2.895E-01	4.151E-01	7.003E-01	0.000E+00	FAIL ABUN
AM-241	1.036E-01	7.087E-02	1.205E-01	0.000E+00	NOT IDENT.
CM-247	2.318E-02	4.666E-02	8.272E-02	0.000E+00	FAIL ABUN
CF-249	-8.635E-04	4.712E-02	8.115E-02	0.000E+00	NOT IDENT.

CF-251	2.045E-02	1.472E-01	2.518E-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]G248513003.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:21:47
Sample ID          : G248513003 Sample quantity : 1.23240E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:10.00 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	804	10.66*	7.780E-01	2.954E+01	2.954E+01	11.65
CD-109	88.03	402	3.70*	6.675E+00	4.956E+00	5.131E+00	21.35
SN-126	64.28	113	9.60	6.776E+00	5.278E-01	5.278E-01	81.46
	86.94	402	8.90	6.675E+00	2.060E+00	2.060E+00	45.74
	87.57	402	37.00*	6.675E+00	4.956E-01	4.956E-01	21.35
HG-203	70.83	-----	3.69	6.807E+00	-----	Line Not Found	-----
	72.87	-----	6.19	6.803E+00	-----	Line Not Found	-----
	279.20	42	81.56*	3.562E+00	4.455E-02	6.274E-02	117.95
TL-208	277.37	42	6.60	3.562E+00	5.505E-01	5.505E-01	118.28
	583.19	339	85.00*	1.811E+00	6.705E-01	6.705E-01	19.85
	860.56	37	12.50	1.246E+00	7.294E-01	7.294E-01	104.57
PB-210	46.54	136	4.25*	6.315E+00	1.540E+00	1.543E+00	51.18
BI-211	72.87	-----	1.23	6.803E+00	-----	Line Not Found	-----
	351.06	567	12.92*	2.908E+00	4.600E+00	4.600E+00	16.62
PB-212	74.82	710	10.28	6.795E+00	3.097E+00	3.097E+00	18.29
	77.11	1033	17.10	6.781E+00	2.715E+00	2.715E+00	12.81
	238.63	1209	43.60*	4.020E+00	2.100E+00	2.100E+00	12.15
	300.09	54	3.30	3.333E+00	1.494E+00	1.494E+00	99.18
BI-214	609.32	466	45.49*	1.736E+00	1.798E+00	1.798E+00	15.26
	1120.29	110	14.92	9.771E-01	2.289E+00	2.289E+00	40.50
	1764.49	72	15.30	6.716E-01	2.134E+00	2.134E+00	29.50
PB-214	74.82	710	5.80	6.795E+00	5.490E+00	5.490E+00	17.40
	77.11	1033	9.70	6.781E+00	4.785E+00	4.786E+00	15.23
	242.00	303	7.25	3.981E+00	3.199E+00	3.199E+00	23.97
	295.22	287	18.42	3.386E+00	1.404E+00	1.404E+00	27.88
	351.93	567	35.60*	2.908E+00	1.669E+00	1.669E+00	17.51
RA-224	240.99	303	4.10*	3.981E+00	5.656E+00	5.656E+00	23.25
RA-226	609.32	466	45.49*	1.736E+00	1.798E+00	1.798E+00	15.26
	1120.29	110	14.92	9.771E-01	2.289E+00	2.289E+00	40.50
	1764.49	72	15.30	6.716E-01	2.134E+00	2.134E+00	29.50
AC-228	338.32	191	11.27	3.009E+00	1.713E+00	1.713E+00	54.08
	911.20	215	25.80*	1.181E+00	2.150E+00	2.150E+00	24.14

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	130	15.80	1.116E+00	2.239E+00	2.239E+00	34.32
	338.32	191	11.27	3.009E+00	1.713E+00	1.713E+00	54.08
	911.20	215	25.80*	1.181E+00	2.150E+00	2.150E+00	24.14
TH-228	968.97	130	15.80	1.116E+00	2.239E+00	2.239E+00	34.32
	74.82	710	10.28	6.795E+00	3.097E+00	3.097E+00	15.53
	77.11	1033	17.10	6.781E+00	2.715E+00	2.715E+00	12.81
TH-232	238.63	1209	43.60*	4.020E+00	2.100E+00	2.100E+00	12.15
	300.09	54	3.30	3.333E+00	1.494E+00	1.494E+00	116.07
	338.32	191	11.27	3.009E+00	1.713E+00	1.713E+00	35.47
TH-234	911.20	215	25.80*	1.181E+00	2.150E+00	2.150E+00	24.14
	968.97	130	15.80	1.116E+00	2.239E+00	2.239E+00	34.32
	63.29	113	3.70*	6.776E+00	1.369E+00	1.369E+00	82.11
U-235	92.59	322	4.23	6.591E+00	3.516E+00	3.516E+00	34.23
	89.96	260	3.47	6.636E+00	3.436E+00	3.436E+00	37.42
	93.35	322	5.60	6.591E+00	2.656E+00	2.656E+00	34.90
NP-237	143.76	-----	10.96*	5.592E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
	185.72	227	57.20	4.804E+00	2.515E-01	2.515E-01	31.10
U-238	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
	86.48	402	12.40*	6.675E+00	1.479E+00	1.479E+00	29.92
	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
ANH-511	63.29	113	3.70*	6.776E+00	1.369E+00	1.369E+00	82.11
	92.59	322	4.23	6.591E+00	3.516E+00	3.516E+00	27.54
	511.00	109	100.00*	2.057E+00	1.615E-01	1.615E-01	52.74

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 5
Number of lines tentatively identified by NID 30 85.71%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.954E+01	2.954E+01	0.344E+01	11.65	
CD-109	461.40D	1.04	4.956E+00	5.131E+00	1.095E+00	21.35	
SN-126	2.30E+05Y	1.00	4.956E-01	4.956E-01	1.058E-01	21.35	
HG-203	46.59D	1.41	4.455E-02	6.274E-02	7.400E-02	117.95	
TL-208	1.41E+10Y	1.00	6.705E-01	6.705E-01	1.331E-01	19.85	
PB-210	22.20Y	1.00	1.540E+00	1.543E+00	0.790E+00	51.18	
BI-211	7.04E+08Y	1.00	4.600E+00	4.600E+00	0.764E+00	16.62	
PB-212	1.41E+10Y	1.00	2.100E+00	2.100E+00	0.255E+00	12.15	
BI-214	1600.00Y	1.00	1.798E+00	1.798E+00	0.274E+00	15.26	
PB-214	1600.00Y	1.00	1.669E+00	1.669E+00	0.292E+00	17.51	
RA-224	1.41E+10Y	1.00	5.656E+00	5.656E+00	1.315E+00	23.25	
RA-226	1600.00Y	1.00	1.798E+00	1.798E+00	0.274E+00	15.26	
AC-228	1.41E+10Y	1.00	2.150E+00	2.150E+00	0.519E+00	24.14	
RA-228	1.41E+10Y	1.00	2.150E+00	2.150E+00	0.519E+00	24.14	
TH-228	1.41E+10Y	1.00	2.100E+00	2.100E+00	0.255E+00	12.15	
TH-232	1.41E+10Y	1.00	2.150E+00	2.150E+00	0.519E+00	24.14	
TH-234	4.47E+09Y	1.00	1.369E+00	1.369E+00	1.124E+00	82.11	
U-235	7.04E+08Y	1.00	2.515E-01	2.515E-01	0.782E-01	31.10	K
NP-237	2.14E+06Y	1.00	1.479E+00	1.479E+00	0.443E+00	29.92	
U-238	4.47E+09Y	1.00	1.369E+00	1.369E+00	1.124E+00	82.11	
ANH-511	1.00E+09Y	1.00	1.615E-01	1.615E-01	0.852E-01	52.74	
Total Activity :			6.805E+01	6.825E+01			

Grand Total Activity : 6.805E+01 6.825E+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	83.91	113	432	1.16	167.48	165	7	1.57E-02	64.5	6.72E+00	T
0	128.85	100	404	0.79	257.39	253	10	1.39E-02	77.3	5.90E+00	
0	208.98	113	278	0.96	417.71	413	11	1.56E-02	61.6	4.44E+00	
0	270.05	110	124	1.14	539.90	536	9	1.53E-02	41.2	3.65E+00	T
0	327.61	91	124	1.05	655.08	650	9	1.27E-02	48.7	3.10E+00	T
0	463.42	83	103	0.80	926.81	921	13	1.15E-02	55.7	2.26E+00	T
0	727.10	85	43	1.16	1454.47	1449	12	1.18E-02	37.5	1.46E+00	T
0	934.41	49	47	1.65	1869.35	1863	15	6.85E-03	67.7	1.15E+00	
3	964.66	59	24	2.22	1929.90	1921	25	8.21E-03	49.8	1.12E+00	T
0	1377.88	18	11	0.99	2756.97	2753	7	2.43E-03	80.4	8.16E-01	
0	1846.61	19	6	0.64	3695.32	3689	11	2.57E-03	67.6	6.50E-01	

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]G248513003.CNF;1
* Acquisition date   : 20-MAR-2010 11:21:47   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 02:00:10.00             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248513003             Analyst initials: MXR1
* Batch Number       : 961097                 Sample Quantity : 1.23240E+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	2.954E+01	3.442E+00	7.882E-01	6.998E-02	37.483
CD-109	5.131E+00	1.095E+00	1.034E+00	1.009E-01	4.963
SN-126	4.956E-01	1.058E-01	9.973E-02	9.732E-03	4.970
HG-203	6.274E-02	7.400E-02	7.579E-02	7.115E-03	0.828
TL-208	6.705E-01	1.331E-01	7.435E-02	7.024E-03	9.018
PB-210	1.543E+00	7.898E-01	8.273E-01	8.919E-02	1.866
BI-211	4.600E+00	7.642E-01	3.720E-01	3.472E-02	12.364
PB-212	2.100E+00	2.552E-01	1.026E-01	1.039E-02	20.467
BI-214	1.798E+00	2.744E-01	1.410E-01	1.441E-02	12.753
PB-214	1.669E+00	2.923E-01	1.354E-01	1.467E-02	12.333
RA-224	5.656E+00	1.315E+00	1.101E+00	9.955E-02	5.138
RA-226	1.798E+00	2.744E-01	1.410E-01	1.441E-02	12.753
AC-228	2.150E+00	5.190E-01	3.122E-01	3.649E-02	6.888
RA-228	2.150E+00	5.190E-01	3.122E-01	3.649E-02	6.888
TH-228	2.100E+00	2.552E-01	1.026E-01	1.039E-02	20.467
TH-232	2.150E+00	5.190E-01	3.122E-01	3.649E-02	6.888
TH-234	1.369E+00	1.124E+00	1.135E+00	2.159E-01	1.207
U-235	2.515E-01	7.820E-02	3.721E-01	6.625E-02	0.676

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.479E+00	4.425E-01	2.973E-01	6.874E-02	4.975
U-238	1.369E+00	1.124E+00	1.135E+00	2.159E-01	1.207
ANH-511	1.615E-01	8.520E-02	5.551E-02	4.958E-03	2.910

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.678E-01		4.928E-01	8.594E-01	8.176E-02	0.544
NA-22	3.841E-02		6.439E-02	1.105E-01	9.311E-03	0.348
NA-24	-2.226E+03		2.737E+03	Half-Life too short		
SC-46	-2.697E-02		5.762E-02	9.057E-02	7.929E-03	-0.298
V-48	1.265E-01		1.504E-01	2.664E-01	2.323E-02	0.475
CR-51	2.761E-01		4.984E-01	8.663E-01	8.267E-02	0.319
MN-54	-7.908E-02		5.334E-02	7.517E-02	6.609E-03	-1.052
CO-56	-6.538E-03		5.840E-02	9.596E-02	8.435E-03	-0.068
CO-57	7.494E-03		2.712E-02	4.537E-02	5.316E-03	0.165
CO-58	-4.216E-02		5.193E-02	7.853E-02	6.916E-03	-0.537
FE-59	-4.904E-02		1.554E-01	2.443E-01	2.242E-02	-0.201
CO-60	-4.605E-02		5.874E-02	8.671E-02	7.390E-03	-0.531
ZN-65	1.830E-02		1.479E-01	2.115E-01	1.780E-02	0.087
SE-75	-5.809E-03		5.859E-02	8.748E-02	8.038E-03	-0.066
SR-85	6.209E-02		5.909E-02	9.335E-02	8.340E-03	0.665
Y-88	3.622E-02		4.808E-02	9.108E-02	7.595E-03	0.398
Y-91	1.146E+01		3.855E+01	6.393E+01	5.276E+00	0.179
NB-94	4.092E-02		4.654E-02	8.342E-02	7.156E-03	0.491
NB-95	5.121E-03		5.974E-02	1.007E-01	8.800E-03	0.051
NB-95M	8.091E-02		1.685E-01	2.474E-01	2.530E-02	0.327
ZR-95	3.481E-02		1.045E-01	1.802E-01	1.732E-02	0.193
MO-99	-7.235E-05		5.834E-05	Half-Life too short		
TC-99M	3.978E+19		5.664E+19	Half-Life too short		
RU-103	-2.642E-03		5.498E-02	8.949E-02	1.266E-02	-0.030
RH-106	-2.072E-01		3.953E-01	5.984E-01	7.959E-02	-0.346
RU-106	-2.072E-01		3.948E-01	5.984E-01	5.199E-02	-0.346
AG-108M	5.426E-04		3.534E-02	5.839E-02	5.234E-03	0.009
AG-110M	-1.167E-02		4.741E-02	7.399E-02	6.449E-03	-0.158
SN-113	-2.367E-03		5.660E-02	9.376E-02	8.147E-03	-0.025
CD-115	3.075E-05		8.546E-05	Half-Life too short		
SN-117M	6.594E-03		8.803E-02	1.442E-01	1.296E-02	0.046
TE-123M	-1.834E-02		3.256E-02	5.154E-02	4.639E-03	-0.356
SB-124	-3.933E-02		1.154E-01	1.753E-01	1.563E-02	-0.224
SB-125	3.620E-03		1.145E-01	1.895E-01	1.671E-02	0.019
TE-125M	4.412E-01		1.030E+01	1.715E+01	2.134E+00	0.026
I-126	-7.725E-02		4.639E-01	7.299E-01	6.163E-02	-0.106
SB-126	-2.597E-02		3.397E-01	5.161E-01	4.456E-02	-0.050
SB-127	5.931E+00		7.783E+00	1.324E+01	1.840E+00	0.448
I-131	-1.885E-02		2.801E-01	4.655E-01	4.328E-02	-0.040
TE-132	2.076E+00		4.764E+00	7.778E+00	1.385E+00	0.267

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-3.428E-02		5.658E-02	7.829E-02	1.027E-02	-0.438
I-133	1.691E-01		2.083E+00	Half-Life too short		
CS-134	6.340E-02		7.316E-02	1.294E-01	1.143E-02	0.490
CS-135	-7.323E-02		2.071E-01	2.826E-01	2.949E-02	-0.259
I-135	2.638E+18		1.877E+18	Half-Life too short		
CS-136	-2.073E-01		2.254E-01	3.266E-01	2.934E-02	-0.635
BA-137M	-2.198E-02		5.006E-02	7.668E-02	6.459E-03	-0.287
CS-137	-2.322E-02		5.289E-02	8.100E-02	6.837E-03	-0.287
CE-139	3.838E-02		3.442E-02	5.885E-02	4.907E-03	0.652
BA-140	-2.605E-01		5.266E-01	8.050E-01	2.737E-01	-0.324
LA-140	-2.986E-02		1.878E-01	3.017E-01	2.604E-02	-0.099
CE-141	3.790E-02		8.441E-02	1.409E-01	1.438E-02	0.269
CE-143	2.676E-02		5.720E-03	Half-Life too short		
CE-144	-1.795E-01		2.539E-01	3.552E-01	5.935E-02	-0.505
PM-144	-2.938E-02		4.792E-02	7.664E-02	6.563E-03	-0.383
PR-144	-2.189E+00		3.602E+00	5.765E+00	4.933E-01	-0.380
PM-146	2.439E-02		5.023E-02	8.574E-02	9.194E-03	0.284
ND-147	1.375E-01		1.201E+00	1.972E+00	2.986E-01	0.070
PM-149	-4.920E-04		6.116E-04	Half-Life too short		
EU-152	8.057E-02		1.261E-01	1.962E-01	1.856E-02	0.411
GD-153	-2.115E-02		9.234E-02	1.367E-01	1.397E-02	-0.155
EU-154	8.337E-02		1.840E-01	3.108E-01	3.489E-02	0.268
EU-155	1.138E-01		1.036E-01	1.790E-01	1.923E-02	0.635
TB-160	-3.918E-02		2.114E-01	3.436E-01	3.013E-02	-0.114
HO-166M	-2.152E-02		7.858E-02	1.290E-01	1.110E-02	-0.167
TA-182	1.212E-01		2.874E-01	4.837E-01	4.013E-02	0.251
IR-192	-2.406E-02		4.222E-02	6.844E-02	6.262E-03	-0.352
BI-207	2.728E-02		8.277E-02	1.393E-01	1.195E-02	0.196
PB-211	4.403E-02		8.844E-01	1.471E+00	7.115E-01	0.030
BI-212	2.651E+00	+	1.048E+00	1.594E+00	1.989E-01	1.663
RN-219	2.167E-01		5.259E-01	8.941E-01	1.323E-01	0.242
RA-223	-5.686E-01		8.370E-01	1.128E+00	1.983E-01	-0.504
AC-227	-1.503E-01		3.021E-01	4.627E-01	5.744E-02	-0.325
TH-227	-1.503E-01		3.022E-01	4.627E-01	6.445E-02	-0.325
TH-229	5.842E-02		5.814E-01	9.434E-01	8.158E-02	0.062
PA-231	3.701E-01		1.563E+00	2.684E+00	4.005E-01	0.138
TH-231	-5.686E-01		8.370E-01	1.128E+00	1.983E-01	-0.504
PA-233	5.335E-03		7.494E-02	1.268E-01	1.190E-02	0.042
PA-234	-6.561E-02		4.225E-01	6.842E-01	1.288E-01	-0.096
PA-234M	5.617E+00		6.451E+00	1.147E+01	1.151E+00	0.490
NP-239	-2.895E-01		4.236E-01	6.784E-01	7.727E-02	-0.427
AM-241	1.036E-01		7.232E-02	1.158E-01	1.229E-02	0.895
CM-247	2.318E-02		4.761E-02	8.142E-02	6.915E-03	0.285
CF-249	-8.635E-04		4.808E-02	7.984E-02	6.762E-03	-0.011
CF-251	2.045E-02		1.502E-01	2.452E-01	2.077E-02	0.083

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248513003          *
* Acquisition date   : 20-MAR-2010 11:21:47 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 02:00:10.00                               Half life ratio  : 8.000      *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID           : G248513003                               Analyst initials: MXR1         *
* Batch Number        : 961097                                   Sample Quantity : 1.2324E+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	2.954E+01	3.373E+00	3.938E-01	1.721E+00
CD-109	5.131E+00	1.073E+00	5.358E-01	5.476E-01
SN-126	4.956E-01	1.037E-01	5.169E-02	5.290E-02
HG-203	6.274E-02	7.252E-02	3.871E-02	3.700E-02
TL-208	6.705E-01	1.304E-01	3.760E-02	6.654E-02
PB-210	1.543E+00	7.740E-01	4.322E-01	3.949E-01
BI-211	4.600E+00	7.490E-01	1.894E-01	3.821E-01
PB-212	2.100E+00	2.501E-01	5.251E-02	1.276E-01
BI-214	1.798E+00	2.689E-01	7.127E-02	1.372E-01
PB-214	1.669E+00	2.864E-01	6.892E-02	1.461E-01
RA-224	5.656E+00	1.289E+00	5.632E-01	6.576E-01
RA-226	1.798E+00	2.689E-01	7.127E-02	1.372E-01
AC-228	2.150E+00	5.087E-01	1.570E-01	2.595E-01
RA-228	2.150E+00	5.087E-01	1.570E-01	2.595E-01
TH-228	2.100E+00	2.501E-01	5.251E-02	1.276E-01
TH-232	2.150E+00	5.087E-01	1.570E-01	2.595E-01
TH-234	1.369E+00	1.102E+00	5.905E-01	5.622E-01
U-235	-1.255E-01	2.355E-01	1.917E-01	1.202E-01
NP-237	1.479E+00	4.337E-01	1.541E-01	2.213E-01
U-238	1.369E+00	1.102E+00	5.905E-01	5.622E-01
ANH-511	1.615E-01	8.350E-02	2.812E-02	4.260E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	4.678E-01	4.829E-01	4.358E-01	2.464E-01 NOT IDENT.
NA-22	3.841E-02	6.310E-02	5.532E-02	3.219E-02 NOT IDENT.
NA-24	-2.226E+09	5.365E+09	0.000E+00	2.737E+09 SHORT HLIF
SC-46	-2.697E-02	5.647E-02	4.555E-02	2.881E-02 FAIL ABUN
V-48	1.265E-01	1.474E-01	1.338E-01	7.520E-02 NOT IDENT.
CR-51	2.761E-01	4.884E-01	4.416E-01	2.492E-01 NOT IDENT.

MN-54	-7.908E-02	5.228E-02	3.784E-02	2.667E-02	NOT IDENT.
CO-56	-6.538E-03	5.723E-02	4.829E-02	2.920E-02	NOT IDENT.
CO-57	7.494E-03	2.658E-02	2.342E-02	1.356E-02	NOT IDENT.
CO-58	-4.216E-02	5.090E-02	3.955E-02	2.597E-02	NOT IDENT.
FE-59	-4.904E-02	1.523E-01	1.225E-01	7.772E-02	NOT IDENT.
CO-60	-4.605E-02	5.757E-02	4.337E-02	2.937E-02	NOT IDENT.
ZN-65	1.830E-02	1.449E-01	1.060E-01	7.395E-02	NOT IDENT.
SE-75	-5.809E-03	5.742E-02	4.471E-02	2.929E-02	NOT IDENT.
SR-85	6.209E-02	5.791E-02	4.729E-02	2.954E-02	NOT IDENT.
Y-88	3.622E-02	4.712E-02	4.536E-02	2.404E-02	NOT IDENT.
Y-91	1.146E+01	3.778E+01	3.202E+01	1.928E+01	NOT IDENT.
NB-94	4.092E-02	4.561E-02	4.209E-02	2.327E-02	NOT IDENT.
NB-95	5.121E-03	5.854E-02	5.077E-02	2.987E-02	NOT IDENT.
NB-95M	8.091E-02	1.651E-01	1.266E-01	8.424E-02	NOT IDENT.
ZR-95	3.481E-02	1.024E-01	9.083E-02	5.225E-02	NOT IDENT.
MO-99	-7.235E+01	1.144E+02	0.000E+00	5.834E+01	SHORT HLIF
TC-99M	3.978E+25	1.110E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.642E-03	5.388E-02	4.536E-02	2.749E-02	FAIL ABUN
RH-106	-2.072E-01	3.874E-01	3.024E-01	1.977E-01	NOT IDENT.
RU-106	-2.072E-01	3.869E-01	3.024E-01	1.974E-01	NOT IDENT.
AG-108M	5.426E-04	3.464E-02	2.965E-02	1.767E-02	NOT IDENT.
AG-110M	-1.167E-02	4.646E-02	3.736E-02	2.370E-02	NOT IDENT.
SN-113	-2.367E-03	5.547E-02	4.767E-02	2.830E-02	NOT IDENT.
CD-115	3.075E+01	1.675E+02	0.000E+00	8.546E+01	SHORT HLIF
SN-117M	6.594E-03	8.627E-02	7.417E-02	4.401E-02	NOT IDENT.
TE-123M	-1.834E-02	3.191E-02	2.652E-02	1.628E-02	NOT IDENT.
SB-124	-3.933E-02	1.131E-01	8.738E-02	5.768E-02	NOT IDENT.
SB-125	3.620E-03	1.122E-01	9.626E-02	5.725E-02	FAIL ABUN
TE-125M	4.412E-01	1.010E+01	8.867E+00	5.151E+00	NOT IDENT.
I-126	-7.725E-02	4.546E-01	3.685E-01	2.320E-01	NOT IDENT.
SB-126	-2.597E-02	3.329E-01	2.603E-01	1.698E-01	NOT IDENT.
SB-127	5.931E+00	7.628E+00	6.684E+00	3.892E+00	NOT IDENT.
I-131	-1.885E-02	2.745E-01	2.369E-01	1.401E-01	NOT IDENT.
TE-132	2.076E+00	4.669E+00	3.982E+00	2.382E+00	NOT IDENT.
BA-133	-3.428E-02	5.545E-02	3.986E-02	2.829E-02	NOT IDENT.
I-133	1.691E+05	4.082E+06	0.000E+00	2.083E+06	SHORT HLIF
CS-134	6.340E-02	7.170E-02	6.515E-02	3.658E-02	NOT IDENT.
CS-135	-7.323E-02	2.029E-01	1.444E-01	1.035E-01	NOT IDENT.
I-135	2.638E+24	3.678E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.073E-01	2.209E-01	1.639E-01	1.127E-01	NOT IDENT.
BA-137M	-2.198E-02	4.906E-02	3.872E-02	2.503E-02	NOT IDENT.
CS-137	-2.322E-02	5.183E-02	4.090E-02	2.644E-02	NOT IDENT.
CE-139	3.838E-02	3.374E-02	3.026E-02	1.721E-02	NOT IDENT.
BA-140	-2.605E-01	5.161E-01	4.076E-01	2.633E-01	NOT IDENT.
LA-140	-2.986E-02	1.840E-01	1.506E-01	9.388E-02	FAIL ABUN
CE-141	3.790E-02	8.272E-02	7.259E-02	4.221E-02	NOT IDENT.
CE-143	2.676E+04	1.121E+04	0.000E+00	5.720E+03	SHORT HLIF
CE-144	-1.795E-01	2.488E-01	1.832E-01	1.269E-01	NOT IDENT.
PM-144	-2.938E-02	4.696E-02	3.867E-02	2.396E-02	NOT IDENT.
PR-144	-2.189E+00	3.530E+00	2.909E+00	1.801E+00	NOT IDENT.
PM-146	2.439E-02	4.923E-02	4.351E-02	2.512E-02	NOT IDENT.
ND-147	1.375E-01	1.177E+00	9.989E-01	6.003E-01	FAIL ABUN
PM-149	-4.920E+02	1.199E+03	0.000E+00	6.116E+02	SHORT HLIF
EU-152	8.057E-02	1.235E-01	9.995E-02	6.303E-02	FAIL ABUN
GD-153	-2.115E-02	9.049E-02	7.076E-02	4.617E-02	NOT IDENT.
EU-154	8.337E-02	1.803E-01	1.556E-01	9.201E-02	NOT IDENT.
EU-155	1.138E-01	1.015E-01	9.258E-02	5.178E-02	FAIL ABUN
TB-160	-3.918E-02	2.072E-01	1.729E-01	1.057E-01	FAIL ABUN
HO-166M	-2.152E-02	7.701E-02	6.508E-02	3.929E-02	NOT IDENT.
TA-182	1.212E-01	2.816E-01	2.423E-01	1.437E-01	FAIL ABUN
IR-192	-2.406E-02	4.137E-02	3.490E-02	2.111E-02	FAIL ABUN
BI-207	2.728E-02	8.112E-02	6.992E-02	4.139E-02	FAIL ABUN
PB-211	4.403E-02	8.667E-01	7.475E-01	4.422E-01	NOT IDENT.
BI-212	2.651E+00	1.027E+00	8.039E-01	5.239E-01	FAIL ABUN
RN-219	2.167E-01	5.154E-01	4.544E-01	2.630E-01	FAIL ABUN
RA-223	-5.686E-01	8.202E-01	5.751E-01	4.185E-01	FAIL ABUN
AC-227	-1.503E-01	2.960E-01	2.366E-01	1.510E-01	FAIL ABUN
TH-227	-1.503E-01	2.962E-01	2.366E-01	1.511E-01	FAIL ABUN
TH-229	5.842E-02	5.698E-01	4.841E-01	2.907E-01	FAIL ABUN
PA-231	3.701E-01	1.532E+00	1.370E+00	7.817E-01	FAIL ABUN
TH-231	-5.686E-01	8.202E-01	5.751E-01	4.185E-01	FAIL ABUN
PA-233	5.335E-03	7.344E-02	6.467E-02	3.747E-02	FAIL ABUN
PA-234	-6.561E-02	4.140E-01	3.438E-01	2.112E-01	NOT IDENT.
PA-234M	5.617E+00	6.322E+00	5.758E+00	3.225E+00	NOT IDENT.
NP-239	-2.895E-01	4.151E-01	3.504E-01	2.118E-01	FAIL ABUN
AM-241	1.036E-01	7.087E-02	6.029E-02	3.616E-02	NOT IDENT.
CM-247	2.318E-02	4.666E-02	4.138E-02	2.381E-02	FAIL ABUN
CF-249	-8.635E-04	4.712E-02	4.060E-02	2.404E-02	NOT IDENT.

CF-251

2.045E-02

1.472E-01

1.260E-01

7.511E-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
46.54	244.7106
49.72	298.6983
57.36	0.0000
59.54	301.6377
63.29	403.3982
63.29	403.3982
64.28	444.1228
67.75	412.1803
69.67	471.1106
70.83	437.7764
72.81	410.3483
72.87	410.4045
72.87	410.4045
74.82	410.8560
74.82	410.8560
74.82	410.8560
74.97	410.9937
77.11	412.9268
77.11	412.9268
77.11	412.9268
79.69	415.2240
79.80	415.3197
80.12	415.6022
80.19	415.6629
80.57	415.9968
81.00	416.3750
81.07	293.9546
81.07	293.9546
83.79	295.6215
83.79	295.6215
85.43	302.1056
86.48	302.7484
86.55	302.7904
86.79	302.9347
86.94	322.3106
87.57	302.0306
88.03	302.3080
88.47	302.5720
89.96	303.4608
91.11	304.1425
92.59	305.0147
92.59	305.0147
93.35	305.4592
94.67	306.2261
94.87	306.3414
94.87	306.3414
95.86	306.9145
97.43	303.5984
98.44	243.6139
99.53	215.8823
100.11	239.5585
103.18	272.7041
103.37	264.2715
105.31	233.8156
106.12	244.6185
109.28	241.1770
111.00	263.0028
111.76	281.6024
116.30	260.4993
117.23	269.6264
121.12	235.2155
121.78	238.3942
122.06	231.6575
123.07	221.2595
131.20	215.6304
133.52	268.6157
136.00	220.6763

136.47	241.8129
140.51	0.0000
140.51	0.0000
143.76	260.5300
144.24	248.5800
144.24	248.5800
145.44	246.9760
152.43	250.3982
153.25	212.8200
154.21	215.1462
154.21	215.1462
156.02	219.7776
158.56	205.0649
159.00	223.7437
162.66	199.9540
163.33	218.7915
165.86	187.2565
176.60	237.2429
177.52	214.2853
181.07	0.0000
184.41	215.5394
185.72	198.2834
193.51	185.0298
197.04	205.2168
205.31	186.4076
210.85	189.1808
215.65	186.2947
222.11	172.0241
227.38	169.6130
228.16	171.9811
228.18	171.9842
235.69	167.0988
235.96	167.1441
235.96	167.1441
238.63	161.3798
238.63	161.3798
240.99	161.7536
242.00	161.9136
244.70	162.3384
252.40	122.3669
252.80	138.4292
256.23	157.2405
256.23	157.2405
260.90	0.0000
264.66	142.9678
268.22	142.7368
269.46	118.4978
269.46	118.4978
271.23	141.3767
273.65	160.9242
276.40	155.7062
277.37	138.6406
277.60	138.6695
278.00	138.7177
279.20	120.9354
279.54	120.9711
280.46	126.6987
283.69	119.9961
284.31	122.7099
285.41	136.9648
285.90	0.0000
287.50	123.9334
293.27	0.0000
295.22	132.5886
295.96	132.6726
298.57	171.5654
299.98	118.8039
299.98	118.8039
300.09	118.8160
300.09	118.8160
300.13	124.5464
301.36	120.3727
302.85	113.3484
304.50	114.9395
304.50	114.9395
304.85	123.5956
308.46	124.3192
311.90	121.9565

316.51	122.4097
319.41	107.2418
320.08	100.0232
323.87	118.1995
323.87	118.1995
328.76	134.7634
333.37	126.4238
334.37	135.3474
334.37	135.3474
338.28	127.2672
338.28	127.2672
338.32	127.2714
338.32	127.2714
338.32	127.2714
340.48	125.6323
340.55	125.6385
344.28	97.8286
351.06	97.7646
351.93	97.8271
356.01	116.6230
364.49	109.0668
366.42	0.0000
383.85	109.6094
388.16	98.4626
388.63	96.5816
391.69	98.7000
400.66	94.4769
401.81	103.2334
402.40	99.4135
404.85	99.5738
410.95	87.3564
414.70	92.4357
423.72	97.8683
427.09	82.3863
427.87	90.2775
433.94	79.7875
453.88	68.8084
463.37	83.2432
468.07	62.7580
473.00	84.7280
476.78	86.9370
477.60	79.8993
487.02	64.0651
492.35	0.0000
497.08	66.4778
511.00	64.9356
514.00	71.0314
527.90	0.0000
529.87	0.0000
531.02	68.7735
537.26	72.1396
546.56	0.0000
563.25	62.5255
569.33	71.2243
569.50	66.9779
569.70	72.3019
583.19	65.3002
600.60	73.4204
602.73	82.1416
604.72	76.1621
609.32	61.8028
609.32	61.8028
610.33	53.8050
614.28	45.2131
618.01	54.4388
621.93	57.8135
621.93	57.8135
633.25	54.8309
635.95	68.0774
636.99	58.2227
645.85	77.2141
657.76	60.9972
661.66	71.1035
661.66	71.1035
664.57	0.0000
666.33	65.6872
666.50	61.2389
677.62	48.1152

685.70	53.9004
695.00	60.4341
696.49	75.8153
696.51	75.8174
697.00	74.9310
702.65	58.8237
706.68	63.4580
711.68	59.9591
720.70	65.1385
721.93	0.0000
722.78	71.4983
722.91	65.4168
723.31	65.4273
724.19	60.8854
727.33	61.2700
733.00	68.7488
735.93	45.8875
739.50	0.0000
747.24	53.4787
752.31	62.8286
753.82	38.8295
756.73	50.9086
763.94	71.4788
765.81	57.5967
766.42	62.2580
777.92	0.0000
778.90	56.0303
783.70	52.3947
785.37	63.6637
795.86	56.4038
801.95	48.0565
810.29	51.9922
810.76	48.2197
815.77	37.8916
818.51	31.2936
832.01	46.7031
834.85	73.4677
836.80	0.0000
846.77	50.7938
856.80	52.9053
860.56	41.4190
871.09	55.1144
873.19	36.7708
875.33	0.0000
879.36	49.4598
880.51	43.6586
883.24	33.9900
884.68	54.4113
889.28	49.6353
898.04	43.9310
911.20	45.1150
911.20	45.1150
911.20	45.1150
926.50	38.3430
937.49	46.1847
944.13	42.6515
946.00	46.6489
949.00	46.6959
962.29	34.9282
964.08	29.9568
966.15	29.9773
968.97	30.0051
968.97	30.0051
968.97	30.0051
983.53	41.2042
996.26	45.4109
1001.03	37.3957
1004.73	44.5231
1037.84	37.8347
1038.76	0.0000
1048.07	49.2398
1050.41	51.3281
1050.41	51.3281
1063.66	49.4766
1085.87	44.6230
1099.45	52.0996
1112.07	48.3728
1115.54	45.3688

1120.29	51.3734
1120.29	51.3734
1120.55	51.3758
1121.30	51.3878
1131.51	0.0000
1173.23	46.8402
1177.93	47.9685
1189.05	49.1872
1204.77	60.1426
1221.41	44.2332
1231.02	43.2676
1235.36	59.5627
1238.28	50.9404
1260.41	0.0000
1271.85	39.3697
1274.44	36.1131
1274.54	33.9259
1291.59	30.7795
1298.22	0.0000
1312.11	34.0747
1332.49	35.1781
1365.19	23.3348
1368.63	0.0000
1384.29	18.0063
1408.01	18.8656
1457.56	0.0000
1460.82	21.2882
1489.16	13.4622
1505.03	25.0923
1596.21	19.6997
1620.50	9.9015
1678.03	0.0000
1690.97	13.0656
1764.49	8.7448
1764.49	8.7448
1770.23	7.0039
1771.35	4.5972
1791.20	0.0000
1836.06	6.2083

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513003

Total Uranium Activity	4.0156E+00	ug/g
Total Uranium Counting Unc.	3.2797E+00	ug/g
Total Uranium Tpu	1.6733E-06	ug/g
Total Uranium Mda	1.7590E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID : G248513003
*  ANALYST       : MXR1                             DETECTOR  : GAM17
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 11:21:47.85          SAMPLE ALQT: 123.240 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.123E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.673E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.874E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.364E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:23:19.79

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513004.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:22:20
Sample ID        : G248513004 Sample quantity : 1.01160E+02 GRAM
Detector name    : GAM18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.44 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 961097 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	2	74.98*	368	354	1.18	149.08	143	15	5.11E-02	10.3	1.52E+00
2	2	77.24	583	290	1.03	153.60	143	15	8.09E-02	6.3	
3	4	87.31	250	348	1.23	173.72	170	28	3.47E-02	13.6	2.09E+00
4	4	90.11	141	424	1.44	179.32	170	28	1.96E-02	27.7	
5	4	92.88*	249	356	1.38	184.86	170	28	3.46E-02	15.8	
6	0	129.00	81	320	1.03	257.08	253	9	1.13E-02	41.0	
7	0	185.92*	221	283	1.39	370.89	367	9	3.07E-02	16.1	
8	0	209.26	101	384	1.19	417.55	412	12	1.41E-02	40.3	
9	5	238.68*	1349	172	1.22	476.36	470	20	1.87E-01	3.2	1.61E+00
10	5	241.68*	416	236	2.14	482.36	470	20	5.78E-02	12.7	
11	0	270.24*	94	264	1.93	539.45	534	11	1.30E-02	35.9	
12	0	295.19*	437	207	1.33	589.35	585	11	6.07E-02	8.2	
13	0	300.22	82	145	1.12	599.41	596	8	1.14E-02	27.8	
14	0	327.87	73	225	1.05	654.69	650	11	1.02E-02	41.4	
15	0	338.14*	287	165	1.52	675.21	670	11	3.99E-02	10.7	
16	0	351.82*	777	187	1.31	702.57	697	12	1.08E-01	5.1	
17	0	582.87*	426	156	1.32	1164.53	1157	16	5.91E-02	8.3	
18	0	608.92*	653	109	1.50	1216.62	1209	16	9.07E-02	5.5	
19	0	661.39	568	186	1.71	1321.53	1313	16	7.88E-02	6.9	
20	0	726.71	113	72	1.16	1452.14	1446	11	1.58E-02	17.2	
21	0	794.87	68	77	1.75	1588.43	1581	14	9.51E-03	29.7	
22	0	860.25*	51	84	1.67	1719.16	1711	16	7.14E-03	43.0	
23	0	910.69*	389	62	2.02	1820.02	1812	19	5.40E-02	7.3	
24	6	964.38	49	79	2.36	1927.38	1923	30	6.81E-03	30.2	3.02E+00
25	6	968.53*	147	77	1.95	1935.68	1923	30	2.04E-02	15.7	
26	0	1119.78	175	58	2.10	2238.14	2231	17	2.43E-02	12.6	
27	0	1376.77	49	26	1.89	2752.04	2744	15	6.78E-03	27.0	
28	0	1459.66*	1281	49	2.24	2917.80	2906	20	1.78E-01	3.1	
29	0	1630.31	36	5	3.78	3259.09	3249	17	5.04E-03	21.2	
30	0	1763.23*	114	18	2.53	3524.90	3514	18	1.59E-02	13.4	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:22:20
Sample ID        : G248513004 Sample quantity : 101.16 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.44 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	+	1460.82	*	2.355E+01	2.308E+00	4.357E-01	3.306E-02	54.064
CD-109	+	88.03	*	4.019E+00	1.151E+00	1.392E+00	1.287E-01	2.888
SN-126		64.28		4.169E-01	6.385E-01	1.071E+00	1.583E-01	0.389
	+	86.94		1.614E+00	8.001E-01	5.677E-01	2.354E-01	2.844
	+	87.57	*	3.883E-01	1.112E-01	1.353E-01	1.247E-02	2.869
BA-137M	+	661.66	*	6.538E-01	1.028E-01	5.861E-02	4.468E-03	11.155
CS-137	+	661.66	*	6.907E-01	1.086E-01	6.191E-02	4.731E-03	11.155
TL-208		277.37		1.925E-01	3.597E-01	6.011E-01	6.448E-02	0.320
	+	583.19	*	4.722E-01	8.661E-02	4.685E-02	3.667E-03	10.078
	+	860.56		5.234E-01	4.542E-01	3.659E-01	4.093E-02	1.431
BI-211		72.87		3.165E-01	3.866E+00	5.754E+00	4.751E-01	0.055
	+	351.06	*	4.094E+00	4.938E-01	3.123E-01	2.005E-02	13.110
PB-212	+	74.82		2.693E+00	6.516E-01	6.114E-01	7.840E-02	4.404
	+	77.11		2.408E+00	3.649E-01	3.460E-01	2.933E-02	6.959
	+	238.63	*	1.690E+00	1.641E-01	8.505E-02	6.131E-03	19.876
	+	300.09		1.538E+00	8.659E-01	1.178E+00	9.841E-02	1.306
BI-214	+	609.32	*	1.397E+00	1.975E-01	1.005E-01	9.029E-03	13.908
	+	1120.29		1.863E+00	5.028E-01	4.112E-01	3.960E-02	4.529
	+	1764.49		1.638E+00	4.494E-01	3.318E-01	2.017E-02	4.936
PB-214	+	74.82		4.773E+00	1.123E+00	1.084E+00	1.248E-01	4.404
	+	77.11		4.246E+00	7.324E-01	6.100E-01	7.214E-02	6.959
	+	242.00		3.155E+00	8.432E-01	5.163E-01	4.151E-02	6.111
	+	295.22		1.458E+00	2.696E-01	2.037E-01	1.768E-02	7.159
	+	351.93	*	1.486E+00	1.971E-01	1.135E-01	9.611E-03	13.085
RA-224	+	240.99	*	5.580E+00	1.456E+00	9.104E-01	5.072E-02	6.129
RA-226	+	609.32	*	1.397E+00	1.975E-01	1.005E-01	9.029E-03	13.908
	+	1120.29		1.863E+00	5.028E-01	4.112E-01	3.960E-02	4.529
	+	1764.49		1.638E+00	4.494E-01	3.318E-01	2.017E-02	4.936
AC-228	+	338.32		1.695E+00	7.871E-01	3.587E-01	1.479E-01	4.725
	+	911.20	*	2.012E+00	4.006E-01	2.017E-01	2.732E-02	9.973
	+	968.97		1.307E+00	5.235E-01	3.805E-01	9.492E-02	3.435
RA-228	+	338.32		1.695E+00	7.871E-01	3.587E-01	1.479E-01	4.725
	+	911.20	*	2.012E+00	4.006E-01	2.017E-01	2.732E-02	9.973
	+	968.97		1.307E+00	5.235E-01	3.805E-01	9.492E-02	3.435

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.693E+00	5.975E-01	6.114E-01	5.157E-02	4.404
	+	77.11		2.408E+00	3.649E-01	3.460E-01	2.933E-02	6.959
	+	238.63	*	1.690E+00	1.641E-01	8.505E-02	6.131E-03	19.876
	+	300.09		1.538E+00	1.269E+00	1.178E+00	7.173E-01	1.306
TH-232	+	338.32		1.695E+00	3.755E-01	3.587E-01	2.075E-02	4.725
	+	911.20	*	2.012E+00	4.006E-01	2.017E-01	2.732E-02	9.973
	+	968.97		1.307E+00	5.235E-01	3.805E-01	9.492E-02	3.435
U-235	+	89.96		2.252E+00	1.366E+00	1.398E+00	3.455E-01	1.611
	+	93.35		2.372E+00	9.276E-01	8.343E-01	1.919E-01	2.843
		143.76	*	4.478E-02	2.109E-01	3.346E-01	5.218E-02	0.134
		163.33		2.393E-01	4.158E-01	7.156E-01	1.188E-01	0.334
	+	185.72		1.875E-01	6.124E-02	6.022E-02	3.203E-03	3.113
		205.31		7.980E-02	5.235E-01	7.735E-01	1.304E-01	0.103
NP-237	+	86.48	*	1.159E+00	4.113E-01	4.284E-01	9.796E-02	2.705
		95.86		-1.868E+00	1.070E+00	1.456E+00	3.463E-01	-1.283

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-1.291E-01	3.265E-01	5.244E-01	3.799E-02	-0.246
NA-22		1274.54	*	1.887E-02	3.998E-02	6.836E-02	4.651E-03	0.276
NA-24		1368.63	*	1.345E+03	3.998E-02	Half-Life too short		
SC-46		889.28	*	1.315E-03	3.571E-02	5.856E-02	6.532E-03	0.022
	+	1120.55		3.362E-01	8.791E-02	1.305E-01	9.012E-03	2.577
V-48		944.13		-6.852E-01	1.081E+00	1.647E+00	1.743E-01	-0.416
		983.53	*	-1.856E-02	9.292E-02	1.477E-01	1.461E-02	-0.126
		1312.11		-2.268E-02	1.011E-01	1.617E-01	1.178E-02	-0.140
CR-51		320.08	*	-1.097E-01	4.307E-01	6.832E-01	4.392E-02	-0.161
MN-54		834.85	*	-4.596E-03	3.866E-02	6.303E-02	6.457E-03	-0.073
CO-56		846.77	*	7.195E-03	3.885E-02	6.471E-02	6.756E-03	0.111
		1037.84		-5.193E-03	2.744E-01	4.585E-01	4.244E-02	-0.011
		1238.28		1.555E-01	9.285E-02	1.682E-01	1.121E-02	0.924
		1771.35		-1.110E+00	3.789E-01	4.082E-01	2.467E-02	-2.719
CO-57		122.06	*	-4.361E-03	2.460E-02	3.911E-02	2.317E-03	-0.112
		136.47		6.408E-02	2.098E-01	3.389E-01	2.214E-02	0.189
CO-58		810.76	*	-1.004E-02	3.754E-02	6.051E-02	5.973E-03	-0.166
FE-59		1099.45	*	-4.311E-02	9.169E-02	1.465E-01	1.206E-02	-0.294
		1291.59		-2.419E-02	1.274E-01	2.051E-01	1.724E-02	-0.118
CO-60		1173.23		-4.444E-02	3.826E-02	5.659E-02	3.128E-03	-0.785
		1332.49	*	-1.102E-02	3.528E-02	5.571E-02	4.209E-03	-0.198
ZN-65		1115.54	*	7.912E-02	1.013E-01	1.558E-01	1.098E-02	0.508
SE-75		121.12		-2.908E-02	1.357E-01	2.155E-01	1.978E-02	-0.135
		136.00		1.862E-02	4.082E-02	6.643E-02	3.785E-03	0.280
		264.66	*	-2.927E-02	4.991E-02	6.829E-02	3.907E-03	-0.429
		279.54		3.410E-02	1.075E-01	1.779E-01	1.101E-02	0.192
		400.66		2.441E-01	2.495E-01	4.377E-01	3.973E-02	0.558
SR-85		514.00	*	-1.515E-01	5.507E-02	7.733E-02	5.123E-03	-1.960
Y-88		898.04		-1.834E-02	4.082E-02	6.405E-02	7.261E-03	-0.286

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1836.06		*	1.251E-02	3.277E-02	5.689E-02	3.240E-03	0.220
Y-91	1204.77		*	1.966E+01	2.106E+01	3.721E+01	2.199E+00	0.528
NB-94	702.65		*	1.306E-02	3.139E-02	5.376E-02	4.410E-03	0.243
	871.09			-1.973E-02	3.036E-02	4.671E-02	5.066E-03	-0.422
NB-95	765.81		*	5.435E-02	4.480E-02	7.939E-02	7.262E-03	0.685
NB-95M	235.69		*	1.415E-01	1.457E-01	2.225E-01	1.638E-02	0.636
ZR-95	724.19			2.650E-01	1.133E-01	1.912E-01	1.770E-02	1.385
	756.73		*	8.394E-02	7.328E-02	1.304E-01	1.287E-02	0.644
MO-99	140.51			-3.906E-05	7.328E-02	Half-Life	too short	
	181.07			-1.010E-05	7.328E-02	Half-Life	too short	
	366.42			3.662E-04	7.328E-02	Half-Life	too short	
	739.50		*	6.971E-05	7.328E-02	Half-Life	too short	
	777.92			-1.202E-04	7.328E-02	Half-Life	too short	
TC-99M	140.51		*	-2.488E+19	7.328E-02	Half-Life	too short	
RU-103	497.08		*	1.746E-02	3.978E-02	6.727E-02	8.591E-03	0.260
	610.33			1.657E+01	3.165E+00	3.179E+00	4.986E-01	5.211
RH-106	621.93		*	-4.240E-02	2.772E-01	4.412E-01	5.503E-02	-0.096
	1050.41			3.930E-01	2.252E+00	3.819E+00	3.264E-01	0.103
RU-106	621.93		*	-4.240E-02	2.772E-01	4.412E-01	3.247E-02	-0.096
	1050.41			3.930E-01	2.252E+00	3.819E+00	3.264E-01	0.103
AG-108M	433.94		*	-4.424E-03	2.811E-02	4.629E-02	2.984E-03	-0.096
	614.28			-3.733E-03	3.428E-02	4.709E-02	3.598E-03	-0.079
	722.91			2.858E-02	3.865E-02	5.938E-02	5.214E-03	0.481
AG-110M	657.76		*	1.144E-01	4.756E-02	7.962E-02	6.280E-03	1.437
	677.62			1.328E-02	2.694E-01	4.527E-01	3.675E-02	0.029
	706.68			-8.907E-03	2.008E-01	3.340E-01	2.846E-02	-0.027
	763.94			-2.381E-01	1.650E-01	2.441E-01	2.281E-02	-0.975
	884.68			-2.188E-02	4.312E-02	6.706E-02	7.573E-03	-0.326
	937.49			-6.092E-02	1.104E-01	1.710E-01	1.872E-02	-0.356
	1384.29			1.387E-01	1.567E-01	2.501E-01	1.935E-02	0.554
	1505.03			-2.526E-01	2.548E-01	3.725E-01	2.674E-02	-0.678
SN-113	391.69		*	-7.562E-03	4.452E-02	7.393E-02	4.535E-03	-0.102
CD-115	260.90			5.686E-04	4.452E-02	Half-Life	too short	
	492.35			-3.223E-04	4.452E-02	Half-Life	too short	
	527.90		*	-1.054E-04	4.452E-02	Half-Life	too short	
SN-117M	156.02			1.553E+00	3.260E+00	5.625E+00	3.004E-01	0.276
	158.56		*	-4.557E-02	8.190E-02	1.325E-01	7.041E-03	-0.344
TE-123M	159.00		*	-2.808E-02	3.030E-02	4.827E-02	2.605E-03	-0.582
SB-124	602.73			-1.971E-02	4.938E-02	6.561E-02	4.746E-03	-0.300
	645.85			-2.294E-01	5.228E-01	8.112E-01	6.556E-02	-0.283
	722.78			3.003E-01	4.240E-01	6.499E-01	5.654E-02	0.462
	1690.97		*	-2.391E-02	8.022E-02	1.266E-01	8.771E-03	-0.189
SB-125	427.87		*	-9.382E-02	8.358E-02	1.291E-01	8.056E-03	-0.727
	463.37			6.570E-01	2.753E-01	5.057E-01	3.608E-02	1.299
	600.60			-2.048E-02	1.972E-01	2.911E-01	2.320E-02	-0.070
	635.95			-3.208E-02	2.705E-01	4.314E-01	3.560E-02	-0.074
TE-125M	109.28		*	-2.463E+00	1.097E+01	1.754E+01	1.578E+00	-0.140
I-126	388.63			2.227E-01	2.432E-01	4.265E-01	2.452E-02	0.522
	666.33		*	-2.099E-01	3.628E-01	4.949E-01	3.804E-02	-0.424

---- 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			1.623E-01	2.604E+00	4.338E+00	3.889E-01	0.037
	414.70			-6.491E-02	1.098E-01	1.768E-01	1.046E-02	-0.367
	666.50			-7.478E-02	1.270E-01	1.730E-01	1.330E-02	-0.432
	695.00			1.052E-01	1.130E-01	1.994E-01	1.614E-02	0.527
	697.00			1.560E-01	3.995E-01	6.833E-01	5.550E-02	0.228
SB-127	720.70	*		-3.184E-02	2.351E-01	3.326E-01	2.816E-02	-0.096
	856.80			5.152E-01	8.017E-01	1.205E+00	1.278E-01	0.428
	252.40			7.274E+00	1.722E+01	2.839E+01	1.187E+01	0.256
	473.00			-2.228E+00	6.135E+00	9.874E+00	1.377E+00	-0.226
	685.70	*		1.438E+00	4.648E+00	7.943E+00	1.077E+00	0.181
I-131	783.70			1.097E+01	1.363E+01	2.348E+01	3.582E+00	0.467
	80.19			-2.755E+00	9.981E+00	1.448E+01	1.272E+00	-0.190
	284.31			5.662E-01	2.823E+00	4.638E+00	2.994E-01	0.122
	364.49	*		-9.861E-02	2.095E-01	3.438E-01	2.251E-02	-0.287
	636.99			3.128E-01	3.049E+00	4.941E+00	4.004E-01	0.063
TE-132	49.72			1.494E+01	1.533E+02	2.597E+02	3.370E+01	0.058
	111.76			-8.146E+01	1.848E+02	2.917E+02	3.578E+01	-0.279
	116.30			-4.834E+00	1.599E+02	2.570E+02	3.113E+01	-0.019
	228.16	*		1.449E+00	3.834E+00	6.433E+00	1.052E+00	0.225
	81.00			-4.229E-02	1.059E-01	1.523E-01	2.371E-02	-0.278
BA-133	276.40			4.064E-02	3.469E-01	5.493E-01	6.888E-02	0.074
	302.85			7.026E-02	1.515E-01	2.214E-01	2.520E-02	0.317
	356.01	*		1.765E-02	4.478E-02	6.438E-02	7.254E-03	0.274
	383.85			-2.442E-01	2.734E-01	4.339E-01	4.617E-02	-0.563
	529.87	*		-1.673E+00	2.734E-01	Half-Life	too short	
I-133	875.33			4.572E+01	2.734E-01	Half-Life	too short	
	1298.22			9.618E+00	2.734E-01	Half-Life	too short	
	563.25			-1.899E-02	3.442E-01	5.576E-01	3.941E-02	-0.034
	569.33			-6.890E-02	2.012E-01	3.143E-01	2.247E-02	-0.219
	604.72			-2.731E-02	3.903E-02	5.067E-02	3.684E-03	-0.539
CS-134	795.86	*		1.085E-01	6.537E-02	8.401E-02	8.126E-03	1.291
	801.95			-7.390E-01	4.423E-01	5.456E-01	5.323E-02	-1.354
	1365.19			-3.930E-01	1.002E+00	1.547E+00	1.232E-01	-0.254
	268.22	*		2.992E-01	1.696E-01	2.691E-01	2.034E-02	1.112
	546.56			1.924E+18	1.696E-01	Half-Life	too short	
I-135	836.80			1.816E+19	1.696E-01	Half-Life	too short	
	1038.76			2.564E+18	1.696E-01	Half-Life	too short	
	1131.51			6.465E+17	1.696E-01	Half-Life	too short	
	1260.41	*		1.200E+18	1.696E-01	Half-Life	too short	
	1457.56			5.097E+20	1.696E-01	Half-Life	too short	
CS-135	1678.03			-4.107E+18	1.696E-01	Half-Life	too short	
	1791.20			1.761E+18	1.696E-01	Half-Life	too short	
	153.25			-1.114E-01	1.229E+00	2.079E+00	1.612E-01	-0.054
	176.60			1.289E-01	7.021E-01	1.190E+00	7.912E-02	0.108
	273.65			-4.916E-01	8.371E-01	1.144E+00	7.724E-02	-0.430
CS-136	340.55			6.253E-01	2.597E-01	4.178E-01	2.622E-02	1.497
	818.51			7.942E-02	1.045E-01	1.815E-01	1.814E-02	0.438
	1048.07	*		-1.426E-03	1.417E-01	2.368E-01	2.124E-02	-0.006
	1235.36			1.471E+00	8.551E-01	1.543E+00	1.573E-01	0.953

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-139		165.86	*	-3.974E-02	2.860E-02	4.535E-02	2.381E-03	-0.876
BA-140		162.66		8.379E-01	1.195E+00	2.073E+00	1.281E-01	0.404
		304.85		2.002E+00	2.239E+00	3.278E+00	9.361E-01	0.611
		423.72		3.675E-01	2.689E+00	4.511E+00	1.457E+00	0.081
		537.26	*	2.719E-01	3.888E-01	6.473E-01	2.168E-01	0.420
LA-140	+	328.76		8.216E-01	6.831E-01	8.274E-01	5.372E-02	0.993
		487.02		6.458E-02	2.033E-01	3.413E-01	2.435E-02	0.189
		815.77		-5.619E-01	4.709E-01	6.937E-01	7.507E-02	-0.810
		1596.21	*	9.251E-02	1.135E-01	2.070E-01	1.421E-02	0.447
CE-141		145.44	*	2.986E-02	7.809E-02	1.248E-01	7.125E-03	0.239
CE-143		57.36		2.743E-03	7.809E-02	Half-Life	too short	
		293.27	*	4.849E-02	7.809E-02	Half-Life	too short	
		664.57		2.231E-01	7.809E-02	Half-Life	too short	
		721.93		2.865E-02	7.809E-02	Half-Life	too short	
CE-144		80.12		-8.450E-01	2.790E+00	4.041E+00	3.499E-01	-0.209
		133.52	*	-1.123E-01	2.272E-01	3.112E-01	4.303E-02	-0.361
PM-144		476.78		-1.111E-02	5.818E-02	9.473E-02	6.959E-03	-0.117
		618.01		9.820E-04	2.895E-02	4.554E-02	3.470E-03	0.022
		696.49	*	6.035E-03	3.320E-02	5.609E-02	4.556E-03	0.108
PR-144		696.51	*	4.569E-01	2.495E+00	4.216E+00	3.422E-01	0.108
		1489.16		-1.836E+00	1.259E+01	1.998E+01	1.443E+00	-0.092
PM-146		453.88	*	1.106E-02	3.892E-02	6.557E-02	5.728E-03	0.169
		633.25		-1.335E-01	1.406E+00	2.246E+00	8.523E-01	-0.059
		735.93		1.016E-02	1.312E-01	2.194E-01	6.153E-02	0.046
		747.24		-7.058E-02	8.631E-02	1.331E-01	1.961E-02	-0.530
ND-147	+	91.11		1.198E+00	6.731E-01	8.746E-01	8.232E-02	1.369
		319.41		-4.207E+00	5.257E+00	8.055E+00	4.655E-01	-0.522
		531.02	*	-2.776E-01	8.158E-01	1.299E+00	1.812E-01	-0.214
PM-149		285.90	*	6.128E-04	8.158E-01	Half-Life	too short	
EU-152		121.78		9.760E-04	6.974E-02	1.120E-01	8.598E-03	0.009
		244.70		-1.283E-01	3.401E-01	4.776E-01	2.668E-02	-0.269
		344.28	*	6.310E-03	1.016E-01	1.507E-01	9.829E-03	0.042
		778.90		2.825E-03	2.328E-01	3.855E-01	3.605E-02	0.007
	+	964.08		4.700E-01	2.879E-01	5.698E-01	5.836E-02	0.825
		1085.87		-1.374E-01	3.495E-01	5.632E-01	4.363E-02	-0.244
		1112.07		2.357E-01	2.961E-01	4.625E-01	3.292E-02	0.510
		1408.01		1.193E-01	1.824E-01	3.151E-01	2.340E-02	0.378
GD-153		69.67		-1.289E+00	2.368E+00	3.349E+00	2.718E-01	-0.385
		97.43	*	-1.873E-01	9.595E-02	1.413E-01	1.104E-02	-1.326
		103.18		-1.812E-01	1.176E-01	1.759E-01	1.269E-02	-1.030
EU-154		123.07		-4.489E-02	5.004E-02	7.631E-02	7.206E-03	-0.588
		723.31		1.846E-01	1.749E-01	2.757E-01	2.589E-02	0.670
		873.19		9.043E-02	2.568E-01	4.322E-01	5.888E-02	0.209
		996.26		-9.960E-02	3.134E-01	4.906E-01	8.831E-02	-0.203
		1004.73		-1.313E-01	1.987E-01	3.006E-01	3.696E-02	-0.437
		1274.44	*	1.381E-02	1.156E-01	1.918E-01	1.931E-02	0.072
EU-155	+	86.55		4.723E-01	1.354E-01	2.040E-01	1.880E-02	2.315
		105.31	*	4.399E-02	1.108E-01	1.825E-01	1.304E-02	0.241
TB-160	+	86.79		1.347E+00	3.858E-01	5.844E-01	5.347E-02	2.305

----- 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		-2.640E-02	5.773E-01	9.442E-01	5.071E-02	-0.028
		215.65		-6.457E-02	7.935E-01	1.215E+00	6.634E-02	-0.053
		298.57		2.068E-01	1.728E-01	2.023E-01	1.162E-02	1.022
		879.36	*	5.638E-03	1.357E-01	2.227E-01	2.447E-02	0.025
		962.29		1.526E+00	6.573E-01	1.094E+00	1.124E-01	1.396
		966.15		1.348E+00	3.218E-01	5.624E-01	5.740E-02	2.396
		1177.93		3.245E-02	3.338E-01	5.567E-01	3.108E-02	0.058
		1271.85		3.670E-01	6.608E-01	1.141E+00	7.709E-02	0.322
		80.57		-6.767E-02	3.015E-01	4.386E-01	3.811E-02	-0.154
		184.41		7.329E-02	4.026E-02	6.571E-02	3.491E-03	1.115
		280.46		-3.788E-02	8.128E-02	1.290E-01	7.357E-03	-0.294
		410.95		2.357E-01	2.385E-01	4.178E-01	2.459E-02	0.564
		711.68	*	6.325E-03	5.443E-02	9.148E-02	7.625E-03	0.069
		752.31		-6.979E-03	2.538E-01	4.204E-01	3.759E-02	-0.017
TA-182		810.29		-1.158E-02	5.289E-02	8.562E-02	8.430E-03	-0.135
		67.75		-2.639E-02	1.416E-01	2.288E-01	1.839E-02	-0.115
		100.11		9.584E-02	2.133E-01	3.173E-01	2.385E-02	0.302
		152.43		-3.719E-02	3.689E-01	5.801E-01	3.121E-02	-0.064
		222.11		5.611E-02	3.431E-01	5.724E-01	3.142E-02	0.098
		1121.30		6.802E-01	1.939E-01	3.462E-01	2.385E-02	1.965
		1189.05		1.098E-01	2.911E-01	4.953E-01	2.832E-02	0.222
IR-192		1221.41	*	-3.989E-02	1.815E-01	2.940E-01	1.799E-02	-0.136
		1231.02		-6.280E-01	5.075E-01	7.603E-01	4.742E-02	-0.826
	+	295.96		1.161E+00	2.012E-01	3.062E-01	1.786E-02	3.791
		308.46		-2.172E-03	9.886E-02	1.595E-01	9.295E-03	-0.014
HG-203		316.51	*	2.511E-02	3.510E-02	5.888E-02	3.415E-03	0.426
		468.07		-1.050E-01	7.178E-02	1.074E-01	7.665E-03	-0.977
		70.83		-3.261E-01	1.934E+00	2.786E+00	4.408E-01	-0.117
		72.87		8.857E-02	1.082E+00	1.610E+00	2.470E-01	0.055
BI-207		279.20	*	2.563E-02	4.058E-02	6.819E-02	4.111E-03	0.376
		72.81		-1.350E-02	2.218E-01	3.279E-01	2.706E-02	-0.041
	+	74.97		7.764E-01	1.720E-01	2.584E-01	2.160E-02	3.005
		569.70		-2.153E-02	3.151E-02	4.807E-02	3.368E-03	-0.448
PB-210		1063.66	*	4.061E-02	4.748E-02	8.441E-02	6.967E-03	0.481
		1770.23		3.200E-01	4.502E-01	7.316E-01	4.426E-02	0.437
PB-211		46.54	*	7.430E-01	5.979E+00	9.759E+00	7.482E-01	0.076
		404.85	*	-1.379E+00	9.471E-01	1.000E+00	4.799E-01	-1.378
		427.09		-1.452E+00	1.536E+00	2.154E+00	9.876E-01	-0.674
BI-212		832.01		1.931E-01	9.526E-01	1.581E+00	8.245E-01	0.122
	+	727.33	*	1.891E+00	6.920E-01	1.077E+00	1.338E-01	1.756
		785.37		7.409E-01	2.966E+00	4.862E+00	4.595E-01	0.152
RN-219		1620.50		1.677E+00	2.580E+00	4.061E+00	2.746E-01	0.413
	+	271.23		5.063E-01	3.658E-01	4.454E-01	3.538E-02	1.137
RA-223		401.81	*	1.483E-02	3.769E-01	6.318E-01	8.494E-02	0.023
		81.07		-1.022E-01	2.390E-01	3.433E-01	2.994E-02	-0.298
		83.79		8.207E-03	1.480E-01	2.156E-01	1.922E-02	0.038
		94.87		2.246E-02	4.971E-01	8.119E-01	6.612E-02	0.028
		144.24		2.556E-01	7.063E-01	1.128E+00	7.844E-02	0.227
		154.21		9.329E-02	3.673E-01	6.293E-01	4.156E-02	0.148

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227	+	269.46		3.934E-01	2.835E-01	3.452E-01	2.047E-02	1.139
		323.87	*	1.186E-01	7.081E-01	1.007E+00	1.623E-01	0.118
	+	338.28		6.726E+00	1.595E+00	2.270E+00	2.325E-01	2.963
		79.69		-9.831E-01	1.394E+00	1.960E+00	3.379E-01	-0.502
		235.96		4.291E-01	1.761E-01	2.831E-01	2.255E-02	1.516
		256.23	*	-9.340E-02	2.433E-01	3.908E-01	3.959E-02	-0.239
TH-227	+	299.98		1.692E+00	9.601E-01	1.480E+00	1.622E-01	1.144
		304.50		1.709E+00	1.702E+00	2.566E+00	3.908E-01	0.666
		334.37		6.378E-01	2.166E+00	2.623E+00	3.730E-01	0.243
		79.80		-7.391E-01	1.805E+00	2.589E+00	5.641E-01	-0.285
		235.96		4.291E-01	1.755E-01	2.831E-01	2.035E-02	1.516
		256.23	*	-9.340E-02	2.434E-01	3.908E-01	4.665E-02	-0.239
TH-229	+	299.98		1.692E+00	9.601E-01	1.480E+00	1.622E-01	1.144
		304.50		1.709E+00	1.702E+00	2.566E+00	3.908E-01	0.666
		334.37		6.378E-01	2.166E+00	2.623E+00	3.730E-01	0.243
		85.43		3.710E-01	2.412E-01	3.771E-01	3.409E-02	0.984
	+	88.47		5.986E-01	1.715E-01	2.456E-01	2.249E-02	2.438
		193.51	*	3.208E-01	4.931E-01	8.464E-01	4.532E-02	0.379
PA-231		210.85		1.096E+00	9.488E-01	1.476E+00	8.023E-02	0.743
		283.69	*	1.023E+00	1.374E+00	2.312E+00	3.024E-01	0.443
	+	301.36		1.087E+00	6.154E-01	9.665E-01	9.970E-02	1.125
TH-231		81.07		-1.022E-01	2.390E-01	3.433E-01	2.994E-02	-0.298
		83.79		8.207E-03	1.480E-01	2.156E-01	1.922E-02	0.038
		94.87		2.246E-02	4.971E-01	8.119E-01	6.612E-02	0.028
		144.24		2.556E-01	7.063E-01	1.128E+00	7.844E-02	0.227
		154.21		9.329E-02	3.673E-01	6.293E-01	4.156E-02	0.148
	+	269.46		3.934E-01	2.835E-01	3.452E-01	2.047E-02	1.139
PA-233		323.87	*	1.186E-01	7.081E-01	1.007E+00	1.623E-01	0.118
	+	338.28		6.726E+00	1.595E+00	2.270E+00	2.325E-01	2.963
	+	300.13		7.658E-01	4.383E-01	6.689E-01	8.940E-02	1.145
		311.90	*	-1.488E-02	6.242E-02	9.936E-02	6.089E-03	-0.150
		340.48		1.933E+00	8.578E-01	1.202E+00	2.789E-01	1.609
		94.67		1.345E-01	1.858E-01	3.099E-01	3.747E-02	0.434
PA-234		98.44		-3.474E-02	1.104E-01	1.549E-01	8.623E-02	-0.224
		111.00		-1.779E-01	1.885E-01	2.895E-01	3.105E-02	-0.615
		131.20		7.850E-02	1.165E-01	1.723E-01	9.805E-03	0.456
		569.50		-1.944E-01	2.794E-01	4.258E-01	2.983E-02	-0.456
		733.00		-1.713E-01	3.759E-01	5.321E-01	1.182E-01	-0.322
		880.51		-9.173E-02	2.617E-01	4.151E-01	4.568E-02	-0.221
PA-234M		883.24		-1.986E-01	2.867E-01	3.848E-01	2.601E-01	-0.516
		926.50		-7.942E-02	1.651E-01	2.554E-01	6.674E-02	-0.311
		946.00	*	-4.929E-02	2.563E-01	4.086E-01	8.060E-02	-0.121
		949.00		1.740E-01	3.645E-01	6.183E-01	6.493E-02	0.281
		766.42		1.826E+01	1.445E+01	2.017E+01	1.026E+01	0.905
		1001.03	*	1.441E+00	4.261E+00	7.072E+00	7.629E-01	0.204
TH-234		63.29	*	1.201E+00	1.758E+00	2.944E+00	5.304E-01	0.408
	+	92.59		3.140E+00	1.209E+00	1.465E+00	3.227E-01	2.143
U-238		63.29	*	1.201E+00	1.758E+00	2.944E+00	5.304E-01	0.408
	+	92.59		3.140E+00	1.027E+00	1.465E+00	1.241E-01	2.143

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	99.53			-1.567E-02	1.918E-01	2.769E-01	2.099E-02	-0.057
	103.37			-1.646E-01	1.048E-01	1.565E-01	1.126E-02	-1.052
	106.12			1.074E-01	8.825E-02	1.498E-01	1.041E-02	0.717
	117.23	*		-7.852E-02	4.050E-01	6.456E-01	3.988E-02	-0.122
	228.18			7.790E-02	2.067E-01	3.474E-01	1.916E-02	0.224
	277.60			8.047E-02	1.639E-01	2.737E-01	1.559E-02	0.294
AM-241	59.54	*		-3.637E-02	1.956E-01	3.247E-01	2.693E-02	-0.112
CM-247	278.00			1.177E-01	7.022E-01	1.154E+00	6.572E-02	0.102
	287.50			-1.912E-02	1.145E+00	1.858E+00	1.063E-01	-0.010
	402.40	*		1.306E-03	3.404E-02	5.705E-02	3.322E-03	0.023
CF-249	252.80			7.715E-01	8.988E-01	1.536E+00	8.625E-02	0.502
	333.37			9.256E-02	2.669E-01	2.806E-01	1.623E-02	0.330
	388.16	*		2.911E-02	3.814E-02	6.644E-02	3.819E-03	0.438
CF-251	177.52	*		1.304E-02	1.235E-01	2.086E-01	1.102E-02	0.063
	227.38			2.465E-01	3.351E-01	5.719E-01	3.153E-02	0.431
	285.41			1.216E+00	2.051E+00	3.438E+00	1.965E-01	0.354
ANH-511	511.00	*		4.999E-02	4.428E-02	8.573E-02	5.662E-03	0.583

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]G248513004      *
* Acquisition date   : 20-MAR-2010 11:22:20 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 02:00:01.44 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G248513004 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.0116E+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	2.355E+01	2.262E+00	4.320E-01	0.000E+00
CD-109	4.019E+00	1.128E+00	1.393E+00	0.000E+00
SN-126	3.883E-01	1.090E-01	1.354E-01	0.000E+00
BA-137M	6.538E-01	1.007E-01	5.827E-02	0.000E+00
CS-137	6.907E-01	1.065E-01	6.155E-02	0.000E+00
TL-208	4.722E-01	8.488E-02	4.660E-02	0.000E+00
BI-211	4.094E+00	4.839E-01	3.111E-01	0.000E+00
PB-212	1.690E+00	1.608E-01	8.482E-02	0.000E+00
BI-214	1.397E+00	1.936E-01	9.991E-02	0.000E+00
PB-214	1.486E+00	1.931E-01	1.131E-01	0.000E+00
RA-224	5.580E+00	1.426E+00	9.080E-01	0.000E+00
RA-226	1.397E+00	1.936E-01	9.991E-02	0.000E+00
AC-228	2.012E+00	3.926E-01	2.003E-01	0.000E+00
RA-228	2.012E+00	3.926E-01	2.003E-01	0.000E+00
TH-228	1.690E+00	1.608E-01	8.482E-02	0.000E+00
TH-232	2.012E+00	3.926E-01	2.003E-01	0.000E+00
U-235	4.478E-02	2.067E-01	3.343E-01	0.000E+00
NP-237	1.159E+00	4.030E-01	4.286E-01	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.291E-01	3.200E-01	5.219E-01	0.000E+00 NOT IDENT.
NA-22	1.887E-02	3.918E-02	6.782E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.785E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.315E-03	3.500E-02	5.816E-02	0.000E+00 FAIL ABUN
V-48	-1.856E-02	9.106E-02	1.467E-01	0.000E+00 NOT IDENT.
CR-51	-1.097E-01	4.221E-01	6.808E-01	0.000E+00 NOT IDENT.
MN-54	-4.596E-03	3.789E-02	6.262E-02	0.000E+00 NOT IDENT.
CO-56	7.195E-03	3.808E-02	6.429E-02	0.000E+00 NOT IDENT.
CO-57	-4.361E-03	2.410E-02	3.909E-02	0.000E+00 NOT IDENT.

CO-58	-1.004E-02	3.679E-02	6.012E-02	0.000E+00	NOT IDENT.
FE-59	-4.311E-02	8.986E-02	1.455E-01	0.000E+00	NOT IDENT.
CO-60	-1.102E-02	3.458E-02	5.526E-02	0.000E+00	NOT IDENT.
ZN-65	7.912E-02	9.929E-02	1.547E-01	0.000E+00	NOT IDENT.
SE-75	-2.927E-02	4.891E-02	6.809E-02	0.000E+00	NOT IDENT.
SR-85	-1.515E-01	5.397E-02	7.694E-02	0.000E+00	NOT IDENT.
Y-88	1.251E-02	3.212E-02	5.637E-02	0.000E+00	NOT IDENT.
Y-91	1.966E+01	2.063E+01	3.692E+01	0.000E+00	NOT IDENT.
NB-94	1.306E-02	3.076E-02	5.343E-02	0.000E+00	NOT IDENT.
NB-95	5.435E-02	4.391E-02	7.889E-02	0.000E+00	NOT IDENT.
NB-95M	1.415E-01	1.428E-01	2.220E-01	0.000E+00	NOT IDENT.
ZR-95	8.394E-02	7.181E-02	1.295E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.979E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.070E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.746E-02	3.898E-02	6.694E-02	0.000E+00	FAIL ABUN
RH-106	-4.240E-02	2.717E-01	4.387E-01	0.000E+00	NOT IDENT.
RU-106	-4.240E-02	2.717E-01	4.387E-01	0.000E+00	NOT IDENT.
AG-108M	-4.424E-03	2.754E-02	4.608E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	4.661E-02	7.916E-02	0.000E+00	NOT IDENT.
SN-113	-7.562E-03	4.363E-02	7.362E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.121E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-4.557E-02	8.027E-02	1.323E-01	0.000E+00	NOT IDENT.
TE-123M	-2.808E-02	2.969E-02	4.821E-02	0.000E+00	NOT IDENT.
SB-124	-2.391E-02	7.861E-02	1.255E-01	0.000E+00	NOT IDENT.
SB-125	-9.382E-02	8.190E-02	1.285E-01	0.000E+00	NOT IDENT.
TE-125M	-2.463E+00	1.075E+01	1.754E+01	0.000E+00	NOT IDENT.
I-126	-2.099E-01	3.556E-01	4.920E-01	0.000E+00	NOT IDENT.
SB-126	-3.184E-02	2.304E-01	3.305E-01	0.000E+00	NOT IDENT.
SB-127	1.438E+00	4.556E+00	7.895E+00	0.000E+00	NOT IDENT.
I-131	-9.861E-02	2.053E-01	3.425E-01	0.000E+00	NOT IDENT.
TE-132	1.449E+00	3.757E+00	6.417E+00	0.000E+00	NOT IDENT.
BA-133	1.765E-02	4.389E-02	6.413E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.780E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.406E-02	8.347E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.662E-01	2.682E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.396E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.426E-03	1.389E-01	2.351E-01	0.000E+00	NOT IDENT.
CE-139	-3.974E-02	2.803E-02	4.528E-02	0.000E+00	NOT IDENT.
BA-140	2.719E-01	3.810E-01	6.439E-01	0.000E+00	NOT IDENT.
LA-140	9.251E-02	1.112E-01	2.053E-01	0.000E+00	FAIL ABUN
CE-141	2.986E-02	7.653E-02	1.246E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.394E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.123E-01	2.227E-01	3.109E-01	0.000E+00	NOT IDENT.
PM-144	6.035E-03	3.254E-02	5.576E-02	0.000E+00	NOT IDENT.
PR-144	4.569E-01	2.445E+00	4.191E+00	0.000E+00	NOT IDENT.
PM-146	1.106E-02	3.814E-02	6.526E-02	0.000E+00	NOT IDENT.
ND-147	-2.776E-01	7.994E-01	1.292E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.937E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	6.310E-03	9.958E-02	1.502E-01	0.000E+00	FAIL ABUN
GD-153	-1.873E-01	9.404E-02	1.413E-01	0.000E+00	NOT IDENT.
EU-154	1.381E-02	1.133E-01	1.903E-01	0.000E+00	NOT IDENT.
EU-155	4.399E-02	1.085E-01	1.824E-01	0.000E+00	FAIL ABUN
TB-160	5.638E-03	1.330E-01	2.212E-01	0.000E+00	FAIL ABUN
HO-166M	6.325E-03	5.334E-02	9.093E-02	0.000E+00	NOT IDENT.
TA-182	-3.989E-02	1.779E-01	2.917E-01	0.000E+00	NOT IDENT.
IR-192	2.511E-02	3.440E-02	5.868E-02	0.000E+00	FAIL ABUN
HG-203	2.563E-02	3.977E-02	6.798E-02	0.000E+00	NOT IDENT.
BI-207	4.061E-02	4.653E-02	8.379E-02	0.000E+00	FAIL ABUN
PB-210	7.430E-01	5.860E+00	9.783E+00	0.000E+00	NOT IDENT.
PB-211	-1.379E+00	9.281E-01	9.961E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.782E-01	1.070E+00	0.000E+00	FAIL ABUN
RN-219	1.483E-02	3.694E-01	6.291E-01	0.000E+00	FAIL ABUN
RA-223	1.186E-01	6.939E-01	1.004E+00	0.000E+00	FAIL ABUN
AC-227	-9.340E-02	2.385E-01	3.897E-01	0.000E+00	FAIL ABUN
TH-227	-9.340E-02	2.386E-01	3.897E-01	0.000E+00	FAIL ABUN
TH-229	3.208E-01	4.832E-01	8.448E-01	0.000E+00	FAIL ABUN
PA-231	1.023E+00	1.347E+00	2.305E+00	0.000E+00	FAIL ABUN
TH-231	1.186E-01	6.939E-01	1.004E+00	0.000E+00	FAIL ABUN
PA-233	-1.488E-02	6.117E-02	9.902E-02	0.000E+00	FAIL ABUN
PA-234	-4.929E-02	2.512E-01	4.058E-01	0.000E+00	NOT IDENT.
PA-234M	1.441E+00	4.176E+00	7.021E+00	0.000E+00	NOT IDENT.
TH-234	1.201E+00	1.723E+00	2.949E+00	0.000E+00	FAIL ABUN
U-238	1.201E+00	1.723E+00	2.949E+00	0.000E+00	FAIL ABUN
NP-239	-7.852E-02	3.969E-01	6.454E-01	0.000E+00	NOT IDENT.
AM-241	-3.637E-02	1.917E-01	3.253E-01	0.000E+00	NOT IDENT.
CM-247	1.306E-03	3.336E-02	5.680E-02	0.000E+00	NOT IDENT.
CF-249	2.911E-02	3.738E-02	6.616E-02	0.000E+00	NOT IDENT.
CF-251	1.304E-02	1.210E-01	2.083E-01	0.000E+00	NOT IDENT.

ANH-511	4.999E-02	4.340E-02	8.530E-02	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513004.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:22:20
Sample ID          : G248513004 Sample quantity : 1.01160E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.44 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	1281	10.66*	1.894E+00	2.355E+01	2.355E+01	9.80
CD-109	88.03	250	3.70*	6.448E+00	3.883E+00	4.019E+00	28.64
SN-126	64.28	-----	9.60	3.245E+00	-----	Line Not Found	-----
	86.94	250	8.90	6.448E+00	1.614E+00	1.614E+00	49.56
	87.57	250	37.00*	6.448E+00	3.883E-01	3.883E-01	28.64
BA-137M	661.66	568	89.90*	3.588E+00	6.529E-01	6.538E-01	15.72
CS-137	661.66	568	85.10*	3.588E+00	6.897E-01	6.907E-01	15.73
TL-208	277.37	-----	6.60	6.258E+00	-----	Line Not Found	-----
	583.19	426	85.00*	3.935E+00	4.722E-01	4.722E-01	18.34
	860.56	51	12.50	2.915E+00	5.234E-01	5.234E-01	86.77
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	777	12.92*	5.452E+00	4.094E+00	4.094E+00	12.06
PB-212	74.82	368	10.28	4.934E+00	2.693E+00	2.693E+00	24.20
	77.11	583	17.10	5.252E+00	2.408E+00	2.408E+00	15.15
	238.63	1349	43.60*	6.793E+00	1.690E+00	1.690E+00	9.71
	300.09	82	3.30	5.983E+00	1.538E+00	1.538E+00	56.28
BI-214	609.32	653	45.49*	3.813E+00	1.397E+00	1.397E+00	14.14
	1120.29	175	14.92	2.335E+00	1.862E+00	1.863E+00	26.99
	1764.49	114	15.30	1.695E+00	1.638E+00	1.638E+00	27.44
PB-214	74.82	368	5.80	4.934E+00	4.773E+00	4.773E+00	23.53
	77.11	583	9.70	5.252E+00	4.245E+00	4.246E+00	17.25
	242.00	416	7.25	6.748E+00	3.155E+00	3.155E+00	26.72
	295.22	437	18.42	6.041E+00	1.458E+00	1.458E+00	18.49
	351.93	777	35.60*	5.452E+00	1.486E+00	1.486E+00	13.26
RA-224	240.99	416	4.10*	6.748E+00	5.580E+00	5.580E+00	26.09
RA-226	609.32	653	45.49*	3.813E+00	1.397E+00	1.397E+00	14.14
	1120.29	175	14.92	2.335E+00	1.862E+00	1.863E+00	26.99
	1764.49	114	15.30	1.695E+00	1.638E+00	1.638E+00	27.44
AC-228	338.32	287	11.27	5.582E+00	1.695E+00	1.695E+00	46.44
	911.20	389	25.80*	2.780E+00	2.012E+00	2.012E+00	19.91
	968.97	147	15.80	2.640E+00	1.307E+00	1.307E+00	40.05
RA-228	338.32	287	11.27	5.582E+00	1.695E+00	1.695E+00	46.44

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	389	25.80*	2.780E+00	2.012E+00	2.012E+00	19.91
	968.97	147	15.80	2.640E+00	1.307E+00	1.307E+00	40.05
	74.82	368	10.28	4.934E+00	2.693E+00	2.693E+00	22.19
	77.11	583	17.10	5.252E+00	2.408E+00	2.408E+00	15.15
	238.63	1349	43.60*	6.793E+00	1.690E+00	1.690E+00	9.71
TH-232	300.09	82	3.30	5.983E+00	1.538E+00	1.538E+00	82.49
	338.32	287	11.27	5.582E+00	1.695E+00	1.695E+00	22.15
	911.20	389	25.80*	2.780E+00	2.012E+00	2.012E+00	19.91
	968.97	147	15.80	2.640E+00	1.307E+00	1.307E+00	40.05
U-235	89.96	141	3.47	6.715E+00	2.252E+00	2.252E+00	60.64
	93.35	249	5.60	6.953E+00	2.372E+00	2.372E+00	39.11
	143.76	-----	10.96*	8.222E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.005E+00	-----	Line Not Found	-----
NP-237	185.72	221	57.20	7.649E+00	1.875E-01	1.875E-01	32.66
	205.31	-----	5.01	7.323E+00	-----	Line Not Found	-----
	86.48	250	12.40*	6.448E+00	1.159E+00	1.159E+00	35.50
	95.86	-----	2.68	7.180E+00	-----	Line Not Found	-----

Flag: "*" = Keyline

Total number of lines in spectrum 30
Number of unidentified lines 4
Number of lines tentatively identified by NID 26 86.67%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.355E+01	2.355E+01	0.231E+01	9.80	
CD-109	461.40D	1.04	3.883E+00	4.019E+00	1.151E+00	28.64	
SN-126	2.30E+05Y	1.00	3.883E-01	3.883E-01	1.112E-01	28.64	
BA-137M	30.08Y	1.00	6.529E-01	6.538E-01	1.028E-01	15.72	
CS-137	30.08Y	1.00	6.897E-01	6.907E-01	1.086E-01	15.73	
TL-208	1.41E+10Y	1.00	4.722E-01	4.722E-01	0.866E-01	18.34	
BI-211	7.04E+08Y	1.00	4.094E+00	4.094E+00	0.494E+00	12.06	
PB-212	1.41E+10Y	1.00	1.690E+00	1.690E+00	0.164E+00	9.71	
BI-214	1600.00Y	1.00	1.397E+00	1.397E+00	0.198E+00	14.14	
PB-214	1600.00Y	1.00	1.486E+00	1.486E+00	0.197E+00	13.26	
RA-224	1.41E+10Y	1.00	5.580E+00	5.580E+00	1.456E+00	26.09	
RA-226	1600.00Y	1.00	1.397E+00	1.397E+00	0.198E+00	14.14	
AC-228	1.41E+10Y	1.00	2.012E+00	2.012E+00	0.401E+00	19.91	
RA-228	1.41E+10Y	1.00	2.012E+00	2.012E+00	0.401E+00	19.91	
TH-228	1.41E+10Y	1.00	1.690E+00	1.690E+00	0.164E+00	9.71	
TH-232	1.41E+10Y	1.00	2.012E+00	2.012E+00	0.401E+00	19.91	
U-235	7.04E+08Y	1.00	1.875E-01	1.875E-01	0.612E-01	32.66	K
NP-237	2.14E+06Y	1.00	1.159E+00	1.159E+00	0.411E+00	35.50	

Total Activity : 5.435E+01 5.449E+01

Grand Total Activity : 5.435E+01 5.449E+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	129.00	81	320	1.03	257.08	253	9	1.13E-02	82.0	8.25E+00	
0	209.26	101	384	1.19	417.55	412	12	1.41E-02	80.6	7.26E+00	
0	270.24	94	264	1.93	539.45	534	11	1.30E-02	71.8	6.35E+00	T
0	327.87	73	225	1.05	654.69	650	11	1.02E-02	82.9	5.68E+00	T
0	726.71	113	72	1.16	1452.14	1446	11	1.58E-02	34.4	3.34E+00	T
0	794.87	68	77	1.75	1588.43	1581	14	9.51E-03	59.5	3.11E+00	T
6	964.38	49	79	2.36	1927.38	1923	30	6.81E-03	60.4	2.65E+00	T
0	1376.77	49	26	1.89	2752.04	2744	15	6.78E-03	54.0	1.98E+00	
0	1630.31	36	5	3.78	3259.09	3249	17	5.04E-03	42.3	1.76E+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]G248513004.CNF;1
* Acquisition date   : 20-MAR-2010 11:22:20  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 02:00:01.44          Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513004            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.01160E+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	2.355E+01	2.308E+00	4.357E-01	3.306E-02	54.064
CD-109	4.019E+00	1.151E+00	1.392E+00	1.287E-01	2.888
SN-126	3.883E-01	1.112E-01	1.353E-01	1.247E-02	2.869
BA-137M	6.538E-01	1.028E-01	5.861E-02	4.468E-03	11.155
CS-137	6.907E-01	1.086E-01	6.191E-02	4.731E-03	11.155
TL-208	4.722E-01	8.661E-02	4.685E-02	3.667E-03	10.078
BI-211	4.094E+00	4.938E-01	3.123E-01	2.005E-02	13.110
PB-212	1.690E+00	1.641E-01	8.505E-02	6.131E-03	19.876
BI-214	1.397E+00	1.975E-01	1.005E-01	9.029E-03	13.908
PB-214	1.486E+00	1.971E-01	1.135E-01	9.611E-03	13.085
RA-224	5.580E+00	1.456E+00	9.104E-01	5.072E-02	6.129
RA-226	1.397E+00	1.975E-01	1.005E-01	9.029E-03	13.908
AC-228	2.012E+00	4.006E-01	2.017E-01	2.732E-02	9.973
RA-228	2.012E+00	4.006E-01	2.017E-01	2.732E-02	9.973
TH-228	1.690E+00	1.641E-01	8.505E-02	6.131E-03	19.876
TH-232	2.012E+00	4.006E-01	2.017E-01	2.732E-02	9.973
U-235	1.875E-01	6.124E-02	3.346E-01	5.218E-02	0.560
NP-237	1.159E+00	4.113E-01	4.284E-01	9.796E-02	2.705

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.291E-01		3.265E-01	5.244E-01	3.799E-02	-0.246
NA-22	1.887E-02		3.998E-02	6.836E-02	4.651E-03	0.276
NA-24	1.345E+03		1.931E+03	Half-Life	too short	
SC-46	1.315E-03		3.571E-02	5.856E-02	6.532E-03	0.022
V-48	-1.856E-02		9.292E-02	1.477E-01	1.461E-02	-0.126
CR-51	-1.097E-01		4.307E-01	6.832E-01	4.392E-02	-0.161
MN-54	-4.596E-03		3.866E-02	6.303E-02	6.457E-03	-0.073
CO-56	7.195E-03		3.885E-02	6.471E-02	6.756E-03	0.111
CO-57	-4.361E-03		2.460E-02	3.911E-02	2.317E-03	-0.112
CO-58	-1.004E-02		3.754E-02	6.051E-02	5.973E-03	-0.166
FE-59	-4.311E-02		9.169E-02	1.465E-01	1.206E-02	-0.294
CO-60	-1.102E-02		3.528E-02	5.571E-02	4.209E-03	-0.198
ZN-65	7.912E-02		1.013E-01	1.558E-01	1.098E-02	0.508
SE-75	-2.927E-02		4.991E-02	6.829E-02	3.907E-03	-0.429
SR-85	-1.515E-01		5.507E-02	7.733E-02	5.123E-03	-1.960
Y-88	1.251E-02		3.277E-02	5.689E-02	3.240E-03	0.220
Y-91	1.966E+01		2.106E+01	3.721E+01	2.199E+00	0.528
NB-94	1.306E-02		3.139E-02	5.376E-02	4.410E-03	0.243
NB-95	5.435E-02		4.480E-02	7.939E-02	7.262E-03	0.685
NB-95M	1.415E-01		1.457E-01	2.225E-01	1.638E-02	0.636
ZR-95	8.394E-02		7.328E-02	1.304E-01	1.287E-02	0.644
MO-99	6.971E-05		4.071E-05	Half-Life	too short	
TC-99M	-2.488E+19		5.459E+19	Half-Life	too short	
RU-103	1.746E-02		3.978E-02	6.727E-02	8.591E-03	0.260
RH-106	-4.240E-02		2.772E-01	4.412E-01	5.503E-02	-0.096
RU-106	-4.240E-02		2.772E-01	4.412E-01	3.247E-02	-0.096
AG-108M	-4.424E-03		2.811E-02	4.629E-02	2.984E-03	-0.096
AG-110M	1.144E-01		4.756E-02	7.962E-02	6.280E-03	1.437
SN-113	-7.562E-03		4.452E-02	7.393E-02	4.535E-03	-0.102
CD-115	-1.054E-04		5.717E-05	Half-Life	too short	
SN-117M	-4.557E-02		8.190E-02	1.325E-01	7.041E-03	-0.344
TE-123M	-2.808E-02		3.030E-02	4.827E-02	2.605E-03	-0.582
SB-124	-2.391E-02		8.022E-02	1.266E-01	8.771E-03	-0.189
SB-125	-9.382E-02		8.358E-02	1.291E-01	8.056E-03	-0.727
TE-125M	-2.463E+00		1.097E+01	1.754E+01	1.578E+00	-0.140
I-126	-2.099E-01		3.628E-01	4.949E-01	3.804E-02	-0.424
SB-126	-3.184E-02		2.351E-01	3.326E-01	2.816E-02	-0.096
SB-127	1.438E+00		4.648E+00	7.943E+00	1.077E+00	0.181
I-131	-9.861E-02		2.095E-01	3.438E-01	2.251E-02	-0.287
TE-132	1.449E+00		3.834E+00	6.433E+00	1.052E+00	0.225
BA-133	1.765E-02		4.478E-02	6.438E-02	7.254E-03	0.274
I-133	-1.673E+00		1.419E+00	Half-Life	too short	
CS-134	1.085E-01	+	6.537E-02	8.401E-02	8.126E-03	1.291
CS-135	2.992E-01		1.696E-01	2.691E-01	2.034E-02	1.112
I-135	1.200E+18		1.222E+18	Half-Life	too short	
CS-136	-1.426E-03		1.417E-01	2.368E-01	2.124E-02	-0.006
CE-139	-3.974E-02		2.860E-02	4.535E-02	2.381E-03	-0.876
BA-140	2.719E-01		3.888E-01	6.473E-01	2.168E-01	0.420

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140	9.251E-02		1.135E-01	2.070E-01	1.421E-02	0.447
CE-141	2.986E-02		7.809E-02	1.248E-01	7.125E-03	0.239
CE-143	4.849E-02		7.111E-03	Half-Life too short		
CE-144	-1.123E-01		2.272E-01	3.112E-01	4.303E-02	-0.361
PM-144	6.035E-03		3.320E-02	5.609E-02	4.556E-03	0.108
PR-144	4.569E-01		2.495E+00	4.216E+00	3.422E-01	0.108
PM-146	1.106E-02		3.892E-02	6.557E-02	5.728E-03	0.169
ND-147	-2.776E-01		8.158E-01	1.299E+00	1.812E-01	-0.214
PM-149	6.128E-04		5.070E-04	Half-Life too short		
EU-152	6.310E-03		1.016E-01	1.507E-01	9.829E-03	0.042
GD-153	-1.873E-01		9.595E-02	1.413E-01	1.104E-02	-1.326
EU-154	1.381E-02		1.156E-01	1.918E-01	1.931E-02	0.072
EU-155	4.399E-02		1.108E-01	1.825E-01	1.304E-02	0.241
TB-160	5.638E-03		1.357E-01	2.227E-01	2.447E-02	0.025
HO-166M	6.325E-03		5.443E-02	9.148E-02	7.625E-03	0.069
TA-182	-3.989E-02		1.815E-01	2.940E-01	1.799E-02	-0.136
IR-192	2.511E-02		3.510E-02	5.888E-02	3.415E-03	0.426
HG-203	2.563E-02		4.058E-02	6.819E-02	4.111E-03	0.376
BI-207	4.061E-02		4.748E-02	8.441E-02	6.967E-03	0.481
PB-210	7.430E-01		5.979E+00	9.759E+00	7.482E-01	0.076
PB-211	-1.379E+00		9.471E-01	1.000E+00	4.799E-01	-1.378
BI-212	1.891E+00	+	6.920E-01	1.077E+00	1.338E-01	1.756
RN-219	1.483E-02		3.769E-01	6.318E-01	8.494E-02	0.023
RA-223	1.186E-01		7.081E-01	1.007E+00	1.623E-01	0.118
AC-227	-9.340E-02		2.433E-01	3.908E-01	3.959E-02	-0.239
TH-227	-9.340E-02		2.434E-01	3.908E-01	4.665E-02	-0.239
TH-229	3.208E-01		4.931E-01	8.464E-01	4.532E-02	0.379
PA-231	1.023E+00		1.374E+00	2.312E+00	3.024E-01	0.443
TH-231	1.186E-01		7.081E-01	1.007E+00	1.623E-01	0.118
PA-233	-1.488E-02		6.242E-02	9.936E-02	6.089E-03	-0.150
PA-234	-4.929E-02		2.563E-01	4.086E-01	8.060E-02	-0.121
PA-234M	1.441E+00		4.261E+00	7.072E+00	7.629E-01	0.204
TH-234	1.201E+00		1.758E+00	2.944E+00	5.304E-01	0.408
U-238	1.201E+00		1.758E+00	2.944E+00	5.304E-01	0.408
NP-239	-7.852E-02		4.050E-01	6.456E-01	3.988E-02	-0.122
AM-241	-3.637E-02		1.956E-01	3.247E-01	2.693E-02	-0.112
CM-247	1.306E-03		3.404E-02	5.705E-02	3.322E-03	0.023
CF-249	2.911E-02		3.814E-02	6.644E-02	3.819E-03	0.438
CF-251	1.304E-02		1.235E-01	2.086E-01	1.102E-02	0.063
ANH-511	4.999E-02		4.428E-02	8.573E-02	5.662E-03	0.583

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]G248513004          *
* Acquisition date   : 20-MAR-2010 11:22:20 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 02:00:01.44 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513004 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.0116E+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	2.355E+01	2.262E+00	2.161E-01	1.154E+00
CD-109	4.019E+00	1.128E+00	6.967E-01	5.756E-01
SN-126	3.883E-01	1.090E-01	6.774E-02	5.561E-02
BA-137M	6.538E-01	1.007E-01	2.915E-02	5.139E-02
CS-137	6.907E-01	1.065E-01	3.080E-02	5.432E-02
TL-208	4.722E-01	8.488E-02	2.331E-02	4.331E-02
BI-211	4.094E+00	4.839E-01	1.556E-01	2.469E-01
PB-212	1.690E+00	1.608E-01	4.244E-02	8.203E-02
BI-214	1.397E+00	1.936E-01	4.998E-02	9.876E-02
PB-214	1.486E+00	1.931E-01	5.659E-02	9.853E-02
RA-224	5.580E+00	1.426E+00	4.543E-01	7.278E-01
RA-226	1.397E+00	1.936E-01	4.998E-02	9.876E-02
AC-228	2.012E+00	3.926E-01	1.002E-01	2.003E-01
RA-228	2.012E+00	3.926E-01	1.002E-01	2.003E-01
TH-228	1.690E+00	1.608E-01	4.244E-02	8.203E-02
TH-232	2.012E+00	3.926E-01	1.002E-01	2.003E-01
U-235	4.478E-02	2.067E-01	1.672E-01	1.055E-01
NP-237	1.159E+00	4.030E-01	2.144E-01	2.056E-01

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.291E-01	3.200E-01	2.611E-01	1.633E-01 NOT IDENT.
NA-22	1.887E-02	3.918E-02	3.393E-02	1.999E-02 NOT IDENT.
NA-24	1.345E+09	3.785E+09	0.000E+00	1.931E+09 SHORT HLIF
SC-46	1.315E-03	3.500E-02	2.910E-02	1.786E-02 FAIL ABUN
V-48	-1.856E-02	9.106E-02	7.338E-02	4.646E-02 NOT IDENT.
CR-51	-1.097E-01	4.221E-01	3.406E-01	2.153E-01 NOT IDENT.
MN-54	-4.596E-03	3.789E-02	3.133E-02	1.933E-02 NOT IDENT.
CO-56	7.195E-03	3.808E-02	3.216E-02	1.943E-02 NOT IDENT.
CO-57	-4.361E-03	2.410E-02	1.956E-02	1.230E-02 NOT IDENT.

CO-58	-1.004E-02	3.679E-02	3.008E-02	1.877E-02	NOT IDENT.
FE-59	-4.311E-02	8.986E-02	7.277E-02	4.585E-02	NOT IDENT.
CO-60	-1.102E-02	3.458E-02	2.765E-02	1.764E-02	NOT IDENT.
ZN-65	7.912E-02	9.929E-02	7.739E-02	5.066E-02	NOT IDENT.
SE-75	-2.927E-02	4.891E-02	3.406E-02	2.496E-02	NOT IDENT.
SR-85	-1.515E-01	5.397E-02	3.849E-02	2.753E-02	NOT IDENT.
Y-88	1.251E-02	3.212E-02	2.820E-02	1.639E-02	NOT IDENT.
Y-91	1.966E+01	2.063E+01	1.847E+01	1.053E+01	NOT IDENT.
NB-94	1.306E-02	3.076E-02	2.673E-02	1.569E-02	NOT IDENT.
NB-95	5.435E-02	4.391E-02	3.947E-02	2.240E-02	NOT IDENT.
NB-95M	1.415E-01	1.428E-01	1.110E-01	7.286E-02	NOT IDENT.
ZR-95	8.394E-02	7.181E-02	6.481E-02	3.664E-02	NOT IDENT.
MO-99	6.971E+01	7.979E+01	0.000E+00	4.071E+01	SHORT HLIF
TC-99M	-2.488E+25	1.070E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.746E-02	3.898E-02	3.349E-02	1.989E-02	FAIL ABUN
RH-106	-4.240E-02	2.717E-01	2.195E-01	1.386E-01	NOT IDENT.
RU-106	-4.240E-02	2.717E-01	2.195E-01	1.386E-01	NOT IDENT.
AG-108M	-4.424E-03	2.754E-02	2.305E-02	1.405E-02	NOT IDENT.
AG-110M	1.144E-01	4.661E-02	3.960E-02	2.378E-02	NOT IDENT.
SN-113	-7.562E-03	4.363E-02	3.683E-02	2.226E-02	NOT IDENT.
CD-115	-1.054E+02	1.121E+02	0.000E+00	5.717E+01	SHORT HLIF
SN-117M	-4.557E-02	8.027E-02	6.619E-02	4.095E-02	NOT IDENT.
TE-123M	-2.808E-02	2.969E-02	2.412E-02	1.515E-02	NOT IDENT.
SB-124	-2.391E-02	7.861E-02	6.280E-02	4.011E-02	NOT IDENT.
SB-125	-9.382E-02	8.190E-02	6.429E-02	4.179E-02	NOT IDENT.
TE-125M	-2.463E+00	1.075E+01	8.773E+00	5.483E+00	NOT IDENT.
I-126	-2.099E-01	3.556E-01	2.461E-01	1.814E-01	NOT IDENT.
SB-126	-3.184E-02	2.304E-01	1.654E-01	1.176E-01	NOT IDENT.
SB-127	1.438E+00	4.556E+00	3.950E+00	2.324E+00	NOT IDENT.
I-131	-9.861E-02	2.053E-01	1.713E-01	1.048E-01	NOT IDENT.
TE-132	1.449E+00	3.757E+00	3.210E+00	1.917E+00	NOT IDENT.
BA-133	1.765E-02	4.389E-02	3.209E-02	2.239E-02	NOT IDENT.
I-133	-1.673E+06	2.780E+06	0.000E+00	1.419E+06	SHORT HLIF
CS-134	1.085E-01	6.406E-02	4.176E-02	3.268E-02	FAIL ABUN
CS-135	2.992E-01	1.662E-01	1.342E-01	8.478E-02	NOT IDENT.
I-135	1.200E+24	2.396E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.426E-03	1.389E-01	1.176E-01	7.087E-02	NOT IDENT.
CE-139	-3.974E-02	2.803E-02	2.265E-02	1.430E-02	NOT IDENT.
BA-140	2.719E-01	3.810E-01	3.221E-01	1.944E-01	NOT IDENT.
LA-140	9.251E-02	1.112E-01	1.027E-01	5.674E-02	FAIL ABUN
CE-141	2.986E-02	7.653E-02	6.235E-02	3.904E-02	NOT IDENT.
CE-143	4.849E+04	1.394E+04	0.000E+00	7.111E+03	SHORT HLIF
CE-144	-1.123E-01	2.227E-01	1.555E-01	1.136E-01	NOT IDENT.
PM-144	6.035E-03	3.254E-02	2.790E-02	1.660E-02	NOT IDENT.
PR-144	4.569E-01	2.445E+00	2.097E+00	1.248E+00	NOT IDENT.
PM-146	1.106E-02	3.814E-02	3.265E-02	1.946E-02	NOT IDENT.
ND-147	-2.776E-01	7.994E-01	6.464E-01	4.079E-01	FAIL ABUN
PM-149	6.128E+02	9.937E+02	0.000E+00	5.070E+02	SHORT HLIF
EU-152	6.310E-03	9.958E-02	7.513E-02	5.081E-02	FAIL ABUN
GD-153	-1.873E-01	9.404E-02	7.068E-02	4.798E-02	NOT IDENT.
EU-154	1.381E-02	1.133E-01	9.522E-02	5.781E-02	NOT IDENT.
EU-155	4.399E-02	1.085E-01	9.128E-02	5.538E-02	FAIL ABUN
TB-160	5.638E-03	1.330E-01	1.107E-01	6.783E-02	FAIL ABUN
HO-166M	6.325E-03	5.334E-02	4.549E-02	2.721E-02	NOT IDENT.
TA-182	-3.989E-02	1.779E-01	1.460E-01	9.077E-02	NOT IDENT.
IR-192	2.511E-02	3.440E-02	2.936E-02	1.755E-02	FAIL ABUN
HG-203	2.563E-02	3.977E-02	3.401E-02	2.029E-02	NOT IDENT.
BI-207	4.061E-02	4.653E-02	4.192E-02	2.374E-02	FAIL ABUN
PB-210	7.430E-01	5.860E+00	4.895E+00	2.990E+00	NOT IDENT.
PB-211	-1.379E+00	9.281E-01	4.983E-01	4.735E-01	NOT IDENT.
BI-212	1.891E+00	6.782E-01	5.354E-01	3.460E-01	FAIL ABUN
RN-219	1.483E-02	3.694E-01	3.147E-01	1.885E-01	FAIL ABUN
RA-223	1.186E-01	6.939E-01	5.022E-01	3.541E-01	FAIL ABUN
AC-227	-9.340E-02	2.385E-01	1.950E-01	1.217E-01	FAIL ABUN
TH-227	-9.340E-02	2.386E-01	1.950E-01	1.217E-01	FAIL ABUN
TH-229	3.208E-01	4.832E-01	4.226E-01	2.465E-01	FAIL ABUN
PA-231	1.023E+00	1.347E+00	1.153E+00	6.871E-01	FAIL ABUN
TH-231	1.186E-01	6.939E-01	5.022E-01	3.541E-01	FAIL ABUN
PA-233	-1.488E-02	6.117E-02	4.954E-02	3.121E-02	FAIL ABUN
PA-234	-4.929E-02	2.512E-01	2.030E-01	1.282E-01	NOT IDENT.
PA-234M	1.441E+00	4.176E+00	3.513E+00	2.130E+00	NOT IDENT.
TH-234	1.201E+00	1.723E+00	1.475E+00	8.790E-01	FAIL ABUN
U-238	1.201E+00	1.723E+00	1.475E+00	8.790E-01	FAIL ABUN
NP-239	-7.852E-02	3.969E-01	3.229E-01	2.025E-01	NOT IDENT.
AM-241	-3.637E-02	1.917E-01	1.627E-01	9.779E-02	NOT IDENT.
CM-247	1.306E-03	3.336E-02	2.842E-02	1.702E-02	NOT IDENT.
CF-249	2.911E-02	3.738E-02	3.310E-02	1.907E-02	NOT IDENT.
CF-251	1.304E-02	1.210E-01	1.042E-01	6.175E-02	NOT IDENT.

ANH-511	4.999E-02	4.340E-02	4.268E-02	2.214E-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
46.54	241.0443
49.72	247.7834
57.36	0.0000
59.54	284.9910
63.29	322.6515
63.29	322.6515
64.28	319.9359
67.75	324.5370
69.67	345.3057
70.83	326.2545
72.81	354.5054
72.87	354.5703
72.87	354.5703
74.82	319.9646
74.82	319.9646
74.82	319.9646
74.97	320.1077
77.11	322.1335
77.11	322.1335
77.11	322.1335
79.69	318.5853
79.80	303.7930
80.12	304.0701
80.19	304.1292
80.57	311.9198
81.00	318.2747
81.07	318.3381
81.07	318.3381
83.79	329.7899
83.79	329.7899
85.43	311.6042
86.48	383.7832
86.55	383.8565
86.79	352.2180
86.94	352.3613
87.57	352.9543
88.03	353.3862
88.47	353.7968
89.96	355.1827
91.11	356.2448
92.59	357.6024
92.59	357.6024
93.35	358.2944
94.67	359.4910
94.87	359.6715
94.87	359.6715
95.86	360.5618
97.43	361.9655
98.44	298.7348
99.53	282.2772
100.11	259.1167
103.18	309.0056
103.37	311.2544
105.31	272.3932
106.12	254.8523
109.28	279.1577
111.00	292.0491
111.76	277.4857
116.30	261.7888
117.23	263.4012
121.12	245.8249
121.78	229.6791
122.06	232.0122
123.07	254.5361
131.20	246.9814
133.52	270.0439
136.00	241.9430

136.47	252.3450
140.51	0.0000
140.51	0.0000
143.76	271.8735
144.24	267.5196
144.24	267.5196
145.44	265.8060
152.43	277.3011
153.25	285.2848
154.21	273.4904
154.21	273.4904
156.02	275.2290
158.56	287.9113
159.00	306.6854
162.66	261.4490
163.33	258.1817
165.86	283.4019
176.60	248.3081
177.52	260.5076
181.07	0.0000
184.41	262.1763
185.72	233.3637
193.51	236.0738
197.04	242.9113
205.31	262.6614
210.85	240.1973
215.65	228.4138
222.11	225.1996
227.38	215.0166
228.16	226.9714
228.18	226.9767
235.69	240.2053
235.96	246.6103
235.96	246.6103
238.63	213.1300
238.63	213.1300
240.99	213.7501
242.00	214.0142
244.70	215.7182
252.40	196.5487
252.80	180.5077
256.23	213.6353
256.23	213.6353
260.90	0.0000
264.66	197.9337
268.22	170.8129
269.46	206.6157
269.46	206.6157
271.23	199.4048
273.65	218.1190
276.40	197.7097
277.37	185.6235
277.60	185.6699
278.00	195.0913
279.20	178.7214
279.54	185.0237
280.46	204.9809
283.69	169.1513
284.31	185.9825
285.41	169.4652
285.90	0.0000
287.50	175.0855
293.27	0.0000
295.22	172.4985
295.96	172.6330
298.57	161.2217
299.98	181.8504
299.98	181.8504
300.09	181.8713
300.09	181.8713
300.13	181.8765
301.36	168.4909
302.85	173.8632
304.50	146.8362
304.50	146.8362
304.85	152.0127
308.46	170.3544
311.90	177.3921

316.51	147.9644
319.41	180.8801
320.08	171.2430
323.87	170.5717
323.87	170.5717
328.76	190.6116
333.37	158.0757
334.37	158.2251
334.37	158.2251
338.28	170.9361
338.28	170.9361
338.32	170.9432
338.32	170.9432
338.32	170.9432
340.48	167.9733
340.55	167.9825
344.28	161.1693
351.06	162.9156
351.93	163.0425
356.01	139.8801
364.49	157.1990
366.42	0.0000
383.85	164.4300
388.16	143.8201
388.63	141.1104
391.69	159.0370
400.66	131.3355
401.81	146.3759
402.40	141.7819
404.85	190.6623
410.95	145.5755
414.70	153.5447
423.72	127.1217
427.09	146.4767
427.87	148.4666
433.94	140.5526
453.88	121.3104
463.37	111.4005
468.07	169.6253
473.00	123.9759
476.78	113.4544
477.60	124.3789
487.02	121.2226
492.35	0.0000
497.08	95.0475
511.00	120.1774
514.00	339.9969
527.90	0.0000
529.87	0.0000
531.02	103.3401
537.26	97.5907
546.56	0.0000
563.25	114.8447
569.33	120.5114
569.50	129.9548
569.70	129.9729
583.19	82.4199
600.60	117.4255
602.73	119.3519
604.72	142.6725
609.32	101.9232
609.32	101.9232
610.33	89.4592
614.28	89.6606
618.01	86.2559
621.93	87.5279
621.93	87.5279
633.25	108.7427
635.95	108.9038
636.99	104.6086
645.85	108.4021
657.76	118.0769
661.66	119.6375
661.66	119.6375
664.57	0.0000
666.33	115.4526
666.50	115.4628
677.62	82.5973

685.70	80.1491
695.00	92.7078
696.49	108.7099
696.51	108.7122
697.00	106.8634
702.65	101.5313
706.68	103.6218
711.68	91.6045
720.70	95.9470
721.93	0.0000
722.78	86.2803
722.91	86.2858
723.31	81.4174
724.19	81.4523
727.33	75.0516
733.00	94.4863
735.93	86.0193
739.50	0.0000
747.24	93.2169
752.31	92.4805
753.82	95.4390
756.73	76.2645
763.94	136.5823
765.81	95.0133
766.42	93.1016
777.92	0.0000
778.90	82.9162
783.70	77.2336
785.37	82.1851
795.86	75.8402
801.95	94.6387
810.29	80.1513
810.76	79.1797
815.77	97.2124
818.51	70.5146
832.01	87.9212
834.85	111.0384
836.80	0.0000
846.77	76.4206
856.80	77.9041
860.56	59.6782
871.09	76.2009
873.19	68.1328
875.33	0.0000
879.36	70.3477
880.51	79.5615
883.24	76.5884
884.68	68.4599
889.28	62.4483
898.04	82.1956
911.20	70.2426
911.20	70.2426
911.20	70.2426
926.50	78.9904
937.49	88.7302
944.13	70.1229
946.00	62.8430
949.00	51.3826
962.29	68.6629
964.08	83.1761
966.15	84.4499
968.97	84.5410
968.97	84.5410
968.97	84.5410
983.53	72.2597
996.26	66.2004
1001.03	59.9010
1004.73	79.2633
1037.84	58.5461
1038.76	0.0000
1048.07	65.2930
1050.41	62.5461
1050.41	62.5461
1063.66	59.0911
1085.87	72.7864
1099.45	74.0771
1112.07	53.4141
1115.54	76.8726

1120.29	68.8661
1120.29	68.8661
1120.55	68.8736
1121.30	72.0009
1131.51	0.0000
1173.23	79.8179
1177.93	67.2673
1189.05	71.4215
1204.77	64.8974
1221.41	81.0534
1231.02	125.9104
1235.36	80.4152
1238.28	75.5202
1260.41	0.0000
1271.85	49.1931
1274.44	63.2966
1274.54	56.2656
1291.59	59.5844
1298.22	0.0000
1312.11	52.8343
1332.49	48.0393
1365.19	34.0474
1368.63	0.0000
1384.29	27.2296
1408.01	35.5024
1457.56	0.0000
1460.82	25.9518
1489.16	35.2190
1505.03	42.1985
1596.21	22.0721
1620.50	25.7438
1678.03	0.0000
1690.97	25.5263
1764.49	24.8524
1764.49	24.8524
1770.23	14.2196
1771.35	89.0081
1791.20	0.0000
1836.06	17.2464

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513004

Total Uranium Activity	3.5948E+00	ug/g
Total Uranium Counting Unc.	5.1266E+00	ug/g
Total Uranium Tpu	2.6156E-06	ug/g
Total Uranium Mda	4.3895E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513004
*  ANALYST       : MXR1            DETECTOR    : GAM18
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-MAR-2010 11:22:20.71  SAMPLE ALQT: 101.160 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.245E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.188E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.505E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.213E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:24:12.38

```
*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513005.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:22:48
Sample ID          : G248513005 Sample quantity   : 1.22730E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity      : 5.00000
Batch ID           : 961097 Detector SN#       :
Matrix Spike ID    : LCS ID : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.17*	81	453	1.26	126.21	122	9	1.12E-02	50.0	
2	3	74.93*	477	635	1.61	149.70	144	16	6.63E-02	11.5	2.53E+00
3	3	77.27	540	440	1.13	154.39	144	16	7.50E-02	7.9	
4	2	84.34*	99	270	1.09	168.51	166	12	1.37E-02	26.9	3.30E+00
5	2	87.24	215	393	1.16	174.30	166	12	2.98E-02	16.6	
6	0	93.09*	292	399	1.54	186.00	183	10	4.06E-02	15.0	
7	0	185.84*	176	469	1.25	371.36	364	14	2.45E-02	27.6	
8	0	209.10	67	221	1.01	417.84	415	8	9.37E-03	39.9	
9	2	238.57*	1193	173	1.32	476.75	468	20	1.66E-01	3.5	2.00E+00
10	2	241.52	284	225	1.80	482.64	468	20	3.94E-02	15.1	
11	0	269.63	97	266	2.76	538.81	534	13	1.34E-02	36.4	
12	0	294.78	422	207	1.41	589.09	582	13	5.87E-02	8.6	
13	0	299.69	91	133	1.33	598.91	595	9	1.27E-02	25.5	
14	0	338.13	220	159	1.24	675.73	670	11	3.05E-02	13.0	
15	0	351.69*	675	240	1.36	702.84	695	16	9.38E-02	6.5	
16	0	408.78	59	133	4.51	816.97	809	13	8.18E-03	42.4	
17	7	463.47	61	66	2.21	926.29	922	18	8.54E-03	26.8	2.71E+00
18	7	468.42	41	44	3.15	936.18	922	18	5.71E-03	30.3	
19	0	511.19*	80	166	1.92	1021.69	1014	19	1.11E-02	45.7	
20	0	568.94*	138	121	1.81	1137.15	1128	15	1.91E-02	19.8	
21	0	583.35*	349	96	1.55	1165.95	1160	12	4.85E-02	7.9	
22	0	609.59*	524	93	1.56	1218.41	1211	16	7.28E-02	6.1	
23	0	661.94	264	119	1.63	1323.08	1316	14	3.67E-02	10.7	
24	0	727.60	98	64	1.64	1454.37	1450	11	1.36E-02	18.9	
25	0	861.86	58	37	3.53	1722.84	1716	14	8.00E-03	26.3	
26	0	911.69*	255	63	1.84	1822.49	1815	16	3.54E-02	9.5	
27	0	966.17	27	47	1.69	1931.47	1923	11	3.78E-03	52.3	
28	0	969.45*	115	42	2.01	1938.01	1933	10	1.60E-02	14.3	
29	0	1121.00	146	45	2.53	2241.15	2230	23	2.02E-02	14.6	
30	0	1238.83	30	38	1.83	2476.85	2473	8	4.14E-03	40.3	
31	0	1461.50*	1045	15	2.15	2922.35	2916	15	1.45E-01	3.2	
32	0	1765.44	98	4	2.02	3530.60	3522	20	1.36E-02	11.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:24:15

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:22:48
Sample ID         : G248513005 Sample quantity : 122.73 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA19 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 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	+	1460.82	*	2.566E+01	2.528E+00	4.928E-01	3.671E-02	52.064
CD-109	+	88.03	*	3.014E+00	1.036E+00	1.429E+00	1.280E-01	2.109
SN-126	+	64.28		7.153E-01	7.234E-01	8.158E-01	1.191E-01	0.877
	+	86.94		1.210E+00	6.425E-01	6.561E-01	2.717E-01	1.845
	+	87.57	*	2.911E-01	1.001E-01	1.519E-01	1.355E-02	1.917
CS-135	+	268.22	*	4.012E-01	2.940E-01	2.730E-01	2.083E-02	1.470
BA-137M	+	661.66	*	3.910E-01	8.679E-02	6.306E-02	3.672E-03	6.200
CS-137	+	661.66	*	4.130E-01	9.171E-02	6.661E-02	3.895E-03	6.200
TL-208		277.37		1.854E-01	4.159E-01	6.686E-01	7.205E-02	0.277
	+	583.19	*	4.923E-01	8.468E-02	6.082E-02	4.127E-03	8.094
	+	860.56		7.687E-01	4.103E-01	4.457E-01	3.990E-02	1.725
BI-211		72.87		1.058E+01	4.115E+00	6.403E+00	5.017E-01	1.653
	+	351.06	*	4.220E+00	6.081E-01	3.533E-01	2.257E-02	11.943
PB-212	+	74.82		2.796E+00	7.330E-01	6.306E-01	7.918E-02	4.433
	+	77.11		1.816E+00	3.236E-01	3.630E-01	2.932E-02	5.003
	+	238.63	*	1.668E+00	1.693E-01	9.303E-02	6.775E-03	17.927
	+	300.09		1.987E+00	1.026E+00	1.217E+00	1.022E-01	1.633
BI-214	+	609.32	*	1.431E+00	2.093E-01	1.223E-01	9.689E-03	11.702
	+	1120.29		2.054E+00	6.305E-01	4.827E-01	4.444E-02	4.254
	+	1764.49		1.899E+00	4.526E-01	3.038E-01	1.841E-02	6.253
PB-214	+	74.82		4.955E+00	1.269E+00	1.118E+00	1.254E-01	4.433
	+	77.11		3.202E+00	6.287E-01	6.400E-01	7.388E-02	5.003
	+	242.00		2.408E+00	7.551E-01	5.428E-01	4.400E-02	4.437
	+	295.22		1.625E+00	3.130E-01	2.478E-01	2.164E-02	6.557
	+	351.93	*	1.531E+00	2.363E-01	1.285E-01	1.084E-02	11.919
RA-224	+	240.99	*	4.258E+00	1.312E+00	9.966E-01	5.647E-02	4.273
RA-226	+	609.32	*	1.431E+00	2.093E-01	1.223E-01	9.689E-03	11.702
	+	1120.29		2.054E+00	6.305E-01	4.827E-01	4.444E-02	4.254
	+	1764.49		1.899E+00	4.526E-01	3.038E-01	1.841E-02	6.253
AC-228	+	338.32		1.529E+00	7.453E-01	4.004E-01	1.651E-01	3.818
	+	911.20	*	1.730E+00	3.854E-01	2.412E-01	2.812E-02	7.170
	+	968.97		1.350E+00	5.068E-01	3.674E-01	8.895E-02	3.675
RA-228	+	338.32		1.529E+00	7.453E-01	4.004E-01	1.651E-01	3.818
	+	911.20	*	1.730E+00	3.854E-01	2.412E-01	2.812E-02	7.170

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.350E+00	5.068E-01	3.674E-01	8.895E-02	3.675
	+	74.82		2.796E+00	6.814E-01	6.306E-01	5.061E-02	4.433
	+	77.11		1.816E+00	3.236E-01	3.630E-01	2.932E-02	5.003
	+	238.63	*	1.668E+00	1.693E-01	9.303E-02	6.775E-03	17.927
	+	300.09		1.987E+00	1.578E+00	1.217E+00	7.409E-01	1.633
TH-229	+	85.43		3.490E-01	1.905E-01	3.923E-01	3.422E-02	0.889
	+	88.47		4.488E-01	1.543E-01	2.039E-01	1.812E-02	2.201
		193.51	*	4.933E-02	5.642E-01	9.117E-01	4.919E-02	0.054
		210.85		1.994E+00	1.066E+00	1.660E+00	9.142E-02	1.201
TH-232	+	338.32		1.529E+00	4.075E-01	4.004E-01	2.315E-02	3.818
	+	911.20	*	1.730E+00	3.854E-01	2.412E-01	2.812E-02	7.170
	+	968.97		1.350E+00	5.068E-01	3.674E-01	8.895E-02	3.675
TH-234	+	63.29	*	1.856E+00	1.887E+00	2.129E+00	3.808E-01	0.872
	+	92.59		3.301E+00	1.226E+00	1.334E+00	2.932E-01	2.474
NP-237	+	86.48	*	8.687E-01	3.498E-01	4.600E-01	1.046E-01	1.888
		95.86		-4.851E-01	1.116E+00	1.554E+00	3.692E-01	-0.312
U-238	+	63.29	*	1.856E+00	1.887E+00	2.129E+00	3.808E-01	0.872
	+	92.59		3.301E+00	1.026E+00	1.334E+00	1.111E-01	2.474
ANH-511	+	511.00	*	8.632E-02	7.903E-02	5.204E-02	3.071E-03	1.659

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-4.930E-01	3.960E-01	5.977E-01	4.056E-02	-0.825
NA-22		1274.54	*	9.739E-04	4.408E-02	7.335E-02	4.893E-03	0.013
NA-24		1368.63	*	-2.952E+02	4.408E-02	Half-Life too short		
SC-46		889.28	*	8.346E-03	4.334E-02	7.129E-02	6.195E-03	0.117
	+	1120.55		3.707E-01	1.111E-01	1.384E-01	8.731E-03	2.678
V-48		944.13		-2.072E-01	1.363E+00	2.159E+00	1.819E-01	-0.096
		983.53	*	6.809E-02	1.102E-01	1.874E-01	1.507E-02	0.363
		1312.11		2.036E-02	1.031E-01	1.750E-01	1.245E-02	0.116
CR-51		320.08	*	-4.044E-02	4.787E-01	7.994E-01	5.165E-02	-0.051
MN-54		834.85	*	2.374E-02	4.309E-02	7.284E-02	5.794E-03	0.326
CO-56		846.77	*	3.428E-03	4.567E-02	7.368E-02	5.978E-03	0.047
		1037.84		-2.451E-01	3.341E-01	5.190E-01	4.123E-02	-0.472
	+	1238.28		1.254E-01	1.014E-01	1.839E-01	1.208E-02	0.682
		1771.35		1.517E-01	2.412E-01	4.038E-01	2.434E-02	0.376
CO-57		122.06	*	5.921E-04	2.704E-02	4.405E-02	2.629E-03	0.013
		136.47		1.767E-01	2.249E-01	3.766E-01	2.481E-02	0.469
CO-58		810.76	*	-4.664E-02	4.579E-02	6.662E-02	5.105E-03	-0.700
FE-59		1099.45	*	2.868E-03	1.056E-01	1.769E-01	1.328E-02	0.016
		1291.59		-7.056E-02	1.356E-01	2.113E-01	1.750E-02	-0.334
CO-60		1173.23		-1.248E-02	4.585E-02	7.313E-02	4.007E-03	-0.171
		1332.49	*	-1.955E-02	3.890E-02	6.031E-02	4.445E-03	-0.324
ZN-65		1115.54	*	-4.090E-02	1.080E-01	1.477E-01	9.442E-03	-0.277
SE-75		121.12		-6.827E-02	1.449E-01	2.309E-01	2.125E-02	-0.296
		136.00		1.576E-02	4.468E-02	7.359E-02	4.240E-03	0.214
		264.66	*	3.684E-03	5.525E-02	8.161E-02	4.747E-03	0.045

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	279.54			5.738E-02	1.171E-01	1.983E-01	1.243E-02	0.289
	400.66			1.721E-01	2.940E-01	4.806E-01	4.299E-02	0.358
SR-85	514.00	*		7.089E-02	4.699E-02	8.405E-02	4.963E-03	0.843
Y-88	898.04			2.196E-02	4.568E-02	7.711E-02	6.825E-03	0.285
	1836.06	*		-1.242E-02	3.482E-02	5.224E-02	2.982E-03	-0.238
Y-91	1204.77	*		1.253E+01	2.594E+01	4.486E+01	2.619E+00	0.279
NB-94	702.65	*		-2.026E-03	3.405E-02	5.524E-02	3.479E-03	-0.037
	871.09			1.173E-02	3.733E-02	6.208E-02	5.240E-03	0.189
NB-95	765.81	*		1.395E-02	5.084E-02	8.436E-02	5.961E-03	0.165
NB-95M	235.69	*		3.862E-01	1.737E-01	2.718E-01	2.020E-02	1.421
ZR-95	724.19			2.367E-02	1.188E-01	1.712E-01	1.281E-02	0.138
	756.73	*		9.252E-02	8.280E-02	1.468E-01	1.181E-02	0.630
MO-99	140.51			-2.668E-04	8.280E-02	Half-Life	too short	
	181.07			6.124E-05	8.280E-02	Half-Life	too short	
	366.42			2.812E-04	8.280E-02	Half-Life	too short	
	739.50	*		3.251E-05	8.280E-02	Half-Life	too short	
	777.92			-1.094E-04	8.280E-02	Half-Life	too short	
TC-99M	140.51	*		-1.701E+20	8.280E-02	Half-Life	too short	
RU-103	497.08	*		-3.017E-02	4.261E-02	6.604E-02	8.231E-03	-0.457
	610.33			1.696E+01	3.303E+00	3.611E+00	5.451E-01	4.698
RH-106	621.93	*		-1.142E-01	3.236E-01	5.139E-01	5.998E-02	-0.222
	1050.41			2.939E-02	2.536E+00	4.254E+00	3.093E-01	0.007
RU-106	621.93	*		-1.142E-01	3.233E-01	5.139E-01	3.031E-02	-0.222
	1050.41			2.939E-02	2.536E+00	4.254E+00	3.093E-01	0.007
AG-108M	433.94	*		-2.229E-02	3.208E-02	5.087E-02	3.121E-03	-0.438
	614.28			-1.717E-02	4.114E-02	5.551E-02	3.504E-03	-0.309
	722.91			-1.035E-02	4.207E-02	5.726E-02	3.952E-03	-0.181
AG-110M	657.76	*		6.356E-04	4.212E-02	5.967E-02	3.703E-03	0.011
	677.62			-1.081E-01	3.190E-01	5.051E-01	3.210E-02	-0.214
	706.68			2.044E-02	2.163E-01	3.554E-01	2.374E-02	0.058
	763.94			-1.678E-01	1.835E-01	2.745E-01	2.012E-02	-0.611
	884.68			-1.464E-02	5.256E-02	8.234E-02	7.331E-03	-0.178
	937.49			-2.664E-02	1.167E-01	1.833E-01	1.613E-02	-0.145
	1384.29			-2.621E-01	1.576E-01	1.915E-01	1.451E-02	-1.369
	1505.03			-1.055E-01	2.470E-01	3.760E-01	2.649E-02	-0.281
SN-113	391.69	*		-2.015E-03	5.119E-02	8.512E-02	5.079E-03	-0.024
CD-115	260.90			-8.584E-04	5.119E-02	Half-Life	too short	
	492.35			-8.736E-05	5.119E-02	Half-Life	too short	
	527.90	*		-8.973E-05	5.119E-02	Half-Life	too short	
SN-117M	156.02			2.487E+00	3.745E+00	6.221E+00	3.334E-01	0.400
	158.56	*		-5.216E-03	9.094E-02	1.468E-01	7.811E-03	-0.036
TE-123M	159.00	*		-5.961E-03	3.269E-02	5.246E-02	2.833E-03	-0.114
SB-124	602.73			1.367E-02	4.912E-02	7.190E-02	4.257E-03	0.190
	645.85			-3.702E-01	5.580E-01	8.600E-01	5.646E-02	-0.430
	722.78			-1.047E-01	4.633E-01	6.324E-01	4.299E-02	-0.166
	1690.97	*		-9.170E-03	1.004E-01	1.619E-01	1.113E-02	-0.057
SB-125	427.87	*		1.776E-02	9.701E-02	1.630E-01	9.695E-03	0.109
	463.37			5.898E-01	3.181E-01	5.205E-01	3.507E-02	1.133
	600.60			-1.402E-01	1.853E-01	2.856E-01	1.946E-02	-0.491

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M I-126	635.95			-7.600E-02	2.942E-01	4.715E-01	3.235E-02	-0.161
	109.28	*		-7.513E+00	1.195E+01	1.899E+01	1.718E+00	-0.396
	388.63			9.729E-02	2.802E-01	4.761E-01	2.657E-02	0.204
	666.33	*		8.014E-02	4.081E-01	5.896E-01	3.465E-02	0.136
SB-126	753.82			-1.034E+00	2.809E+00	4.409E+00	3.050E-01	-0.235
	414.70			4.365E-02	1.363E-01	2.114E-01	1.196E-02	0.206
	666.50			1.649E-02	1.421E-01	2.035E-01	1.196E-02	0.081
	695.00			1.210E-01	1.223E-01	2.154E-01	1.337E-02	0.562
SB-127	697.00			2.124E-01	4.249E-01	7.214E-01	4.495E-02	0.294
	720.70	*		-1.628E-01	2.416E-01	3.434E-01	2.237E-02	-0.474
	856.80			3.326E-01	7.790E-01	1.156E+00	9.532E-02	0.288
	252.40			-1.973E+01	1.984E+01	2.693E+01	1.126E+01	-0.733
I-131	473.00			3.341E+00	8.115E+00	1.210E+01	1.661E+00	0.276
	685.70	*		1.682E+00	5.654E+00	9.453E+00	1.187E+00	0.178
	783.70			1.610E+01	1.484E+01	2.610E+01	3.664E+00	0.617
	80.19			4.758E+00	1.495E+01	1.590E+01	1.339E+00	0.299
TE-132	284.31			-1.494E+00	2.974E+00	4.875E+00	3.184E-01	-0.306
	364.49	*		8.534E-02	2.335E-01	3.984E-01	2.581E-02	0.214
	636.99			-8.665E-01	3.291E+00	5.271E+00	3.516E-01	-0.164
	49.72			-9.351E+01	9.695E+01	1.532E+02	1.932E+01	-0.610
BA-133	111.76			-1.476E+02	2.006E+02	3.164E+02	3.892E+01	-0.466
	116.30			8.636E+01	1.665E+02	2.765E+02	3.358E+01	0.312
	228.16	*		-1.400E+00	4.375E+00	6.887E+00	1.128E+00	-0.203
	81.00			2.054E-02	1.558E-01	1.632E-01	2.509E-02	0.126
I-133	276.40			3.772E-02	4.192E-01	6.191E-01	7.789E-02	0.061
	302.85			-6.342E-02	1.554E-01	2.198E-01	2.509E-02	-0.289
	356.01	*		2.906E-03	4.895E-02	7.153E-02	8.040E-03	0.041
	383.85			-3.195E-02	3.215E-01	5.332E-01	5.630E-02	-0.060
CS-134	529.87	*		1.666E+00	3.215E-01	Half-Life too short		
	875.33			-1.421E+01	3.215E-01	Half-Life too short		
	1298.22			-1.339E+02	3.215E-01	Half-Life too short		
	563.25			3.278E-01	4.378E-01	6.719E-01	4.069E-02	0.488
I-135	569.33	+		1.074E+00	4.294E-01	5.373E-01	3.281E-02	1.999
	604.72			-4.241E-03	4.218E-02	5.927E-02	3.525E-03	-0.072
	795.86	*		5.026E-02	5.041E-02	8.831E-02	6.641E-03	0.569
	801.95			5.002E-02	4.385E-01	7.180E-01	5.443E-02	0.070
CS-136	1365.19			6.071E-01	1.160E+00	2.054E+00	1.601E-01	0.295
	546.56			6.045E+18	1.160E+00	Half-Life too short		
	836.80			1.246E+18	1.160E+00	Half-Life too short		
	1038.76			-5.749E+18	1.160E+00	Half-Life too short		
CS-136	1131.51			2.118E+18	1.160E+00	Half-Life too short		
	1260.41	*		1.258E+18	1.160E+00	Half-Life too short		
	1457.56			7.946E+19	1.160E+00	Half-Life too short		
	1678.03			-3.007E+18	1.160E+00	Half-Life too short		
CS-136	1791.20			-1.185E+18	1.160E+00	Half-Life too short		
	153.25			-2.603E-01	1.433E+00	2.302E+00	1.790E-01	-0.113
	176.60			-8.369E-01	8.254E-01	1.267E+00	8.427E-02	-0.660
	273.65			-8.363E-01	9.269E-01	1.275E+00	8.710E-02	-0.656
CS-136	340.55			6.219E-01	2.726E-01	4.536E-01	2.843E-02	1.371

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	818.51			-1.023E-01	1.107E-01	1.609E-01	1.248E-02	-0.636
	1048.07	*		-1.288E-01	1.595E-01	2.450E-01	1.895E-02	-0.526
	1235.36			1.657E-02	1.072E+00	1.538E+00	1.558E-01	0.011
CE-139	165.86	*		-5.297E-03	3.368E-02	5.404E-02	2.821E-03	-0.098
BA-140	162.66			-4.525E-01	1.373E+00	2.155E+00	1.329E-01	-0.210
	304.85			3.650E-01	2.332E+00	3.450E+00	9.856E-01	0.106
	423.72			-7.663E-01	3.313E+00	5.416E+00	1.747E+00	-0.141
	537.26	*		5.992E-02	3.853E-01	6.423E-01	2.141E-01	0.093
LA-140	328.76			5.988E-01	4.831E-01	8.564E-01	5.574E-02	0.699
	487.02			2.647E-01	2.317E-01	4.105E-01	2.718E-02	0.645
	815.77			1.690E-01	4.747E-01	7.972E-01	7.032E-02	0.212
	1596.21	*		-5.958E-02	1.304E-01	1.979E-01	1.339E-02	-0.301
CE-141	145.44	*		6.054E-02	8.132E-02	1.356E-01	7.814E-03	0.446
CE-143	57.36			2.071E-02	8.132E-02	Half-Life	too short	
	293.27	*		4.912E-02	8.132E-02	Half-Life	too short	
	664.57			3.054E-01	8.132E-02	Half-Life	too short	
	721.93			-2.362E-03	8.132E-02	Half-Life	too short	
CE-144	80.12			1.534E+00	4.186E+00	4.468E+00	3.703E-01	0.343
	133.52	*		-2.165E-01	2.266E-01	3.504E-01	4.856E-02	-0.618
PM-144	476.78			-2.727E-02	7.040E-02	1.134E-01	7.824E-03	-0.240
	618.01			1.844E-02	3.507E-02	5.683E-02	3.554E-03	0.324
	696.49	*		2.069E-02	3.578E-02	6.110E-02	3.809E-03	0.339
PR-144	696.51	*		1.546E+00	2.688E+00	4.589E+00	2.857E-01	0.337
	1489.16			9.883E+00	1.198E+01	2.225E+01	1.577E+00	0.444
PM-146	453.88	*		-8.460E-03	4.317E-02	7.061E-02	5.964E-03	-0.120
	633.25			-5.230E-01	1.576E+00	2.493E+00	9.392E-01	-0.210
	735.93			-8.980E-02	1.412E-01	2.114E-01	5.813E-02	-0.425
	747.24			-3.456E-02	9.330E-02	1.459E-01	1.985E-02	-0.237
ND-147	91.11			2.329E+00	7.729E-01	9.426E-01	8.713E-02	2.471
	319.41			-3.835E+00	5.884E+00	9.525E+00	5.541E-01	-0.403
	531.02	*		6.318E-01	9.005E-01	1.559E+00	2.116E-01	0.405
PM-149	285.90	*		-4.084E-04	9.005E-01	Half-Life	too short	
EU-152	121.78			3.302E-04	7.644E-02	1.244E-01	9.597E-03	0.003
	244.70			7.696E-02	3.840E-01	5.431E-01	3.086E-02	0.142
	344.28	*		-6.900E-02	1.529E-01	1.656E-01	1.077E-02	-0.417
	778.90			-1.023E-01	2.529E-01	3.937E-01	2.847E-02	-0.260
	964.08			2.319E-01	3.414E-01	5.133E-01	4.227E-02	0.452
	1085.87			2.198E-01	3.918E-01	6.891E-01	4.688E-02	0.319
	1112.07			-3.232E-01	4.054E-01	5.239E-01	3.370E-02	-0.617
	1408.01			1.941E-01	2.038E-01	3.714E-01	2.698E-02	0.523
GD-153	69.67			2.192E+00	2.061E+00	3.110E+00	2.393E-01	0.705
	97.43	*		5.474E-02	1.009E-01	1.487E-01	1.156E-02	0.368
	103.18			-1.014E-01	1.281E-01	2.027E-01	1.467E-02	-0.500
EU-154	123.07			4.083E-03	5.441E-02	8.882E-02	8.414E-03	0.046
	723.31			-7.139E-02	1.968E-01	2.638E-01	2.020E-02	-0.271
	873.19			-2.409E-02	3.081E-01	4.937E-01	5.819E-02	-0.049
	996.26			-1.830E-01	3.473E-01	5.203E-01	8.911E-02	-0.352
	1004.73			1.172E-02	2.267E-01	3.824E-01	4.226E-02	0.031
	1274.44	*		1.533E-02	1.230E-01	2.069E-01	2.064E-02	0.074

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EU-155	+	86.55		3.541E-01	1.218E-01	1.999E-01	1.781E-02	1.772
		105.31	*	1.690E-01	1.181E-01	2.020E-01	1.452E-02	0.836
TB-160	+	86.79		1.010E+00	3.472E-01	5.668E-01	5.014E-02	1.782
		197.04		-4.374E-01	6.762E-01	1.037E+00	5.620E-02	-0.422
		215.65		-2.950E-01	8.640E-01	1.363E+00	7.542E-02	-0.216
	+	298.57		3.017E-01	1.548E-01	2.371E-01	1.379E-02	1.272
		879.36	*	-1.765E-02	1.535E-01	2.449E-01	2.095E-02	-0.072
		962.29		3.174E-01	6.049E-01	9.016E-01	7.441E-02	0.352
	+	966.15		2.584E-01	2.714E-01	4.558E-01	3.745E-02	0.567
		1177.93		1.358E-01	3.957E-01	6.797E-01	3.761E-02	0.200
		1271.85		7.540E-02	7.593E-01	1.274E+00	8.441E-02	0.059
HO-166M		80.57		1.210E-01	4.421E-01	4.686E-01	3.899E-02	0.258
	+	184.41		1.273E-01	7.070E-02	7.419E-02	3.958E-03	1.715
		280.46		-5.590E-02	8.621E-02	1.404E-01	8.131E-03	-0.398
		410.95		1.814E-01	3.058E-01	4.634E-01	2.615E-02	0.392
		711.68	*	-3.937E-02	6.115E-02	9.370E-02	6.002E-03	-0.420
		752.31		-1.913E-01	2.724E-01	4.120E-01	2.843E-02	-0.464
		810.29		-6.033E-02	6.425E-02	9.443E-02	7.208E-03	-0.639
TA-182		67.75		-2.200E-01	1.454E-01	1.938E-01	1.479E-02	-1.135
		100.11		1.334E-01	2.090E-01	3.352E-01	2.519E-02	0.398
		152.43		-3.256E-01	4.014E-01	6.272E-01	3.394E-02	-0.519
		222.11		9.673E-02	4.126E-01	6.688E-01	3.726E-02	0.145
	+	1121.30		1.009E+00	3.024E-01	3.756E-01	2.365E-02	2.687
		1189.05		-1.351E-01	3.087E-01	4.920E-01	2.784E-02	-0.275
		1221.41	*	-3.668E-02	2.119E-01	3.473E-01	2.094E-02	-0.106
		1231.02		-6.912E-02	5.488E-01	8.834E-01	5.425E-02	-0.078
IR-192	+	295.96		1.294E+00	2.349E-01	3.377E-01	1.995E-02	3.831
		308.46		-4.452E-02	1.077E-01	1.769E-01	1.041E-02	-0.252
		316.51	*	-2.579E-02	3.931E-02	6.359E-02	3.716E-03	-0.405
	+	468.07		1.073E-01	6.532E-02	1.182E-01	7.940E-03	0.907
HG-203		70.83		1.495E+00	1.804E+00	2.676E+00	4.176E-01	0.559
		72.87		2.961E+00	1.214E+00	1.792E+00	2.708E-01	1.653
		279.20	*	3.400E-02	4.542E-02	7.777E-02	4.755E-03	0.437
BI-207		72.81		7.348E-01	2.311E-01	3.647E-01	2.856E-02	2.015
	+	74.97		8.061E-01	1.963E-01	2.624E-01	2.086E-02	3.072
	+	569.70		1.656E-01	6.614E-02	8.168E-02	4.848E-03	2.027
		1063.66	*	-5.147E-03	5.143E-02	8.529E-02	6.056E-03	-0.060
		1770.23		4.896E-02	5.155E-01	7.407E-01	4.468E-02	0.066
PB-210		46.54	*	9.214E-01	3.305E+00	5.449E+00	4.108E-01	0.169
PB-211		404.85	*	-5.379E-02	8.679E-01	1.248E+00	5.984E-01	-0.043
		427.09		5.844E-01	1.687E+00	2.826E+00	1.295E+00	0.207
		832.01		-3.882E-02	1.152E+00	1.859E+00	9.622E-01	-0.021
BI-212	+	727.33	*	2.118E+00	8.345E-01	1.279E+00	1.426E-01	1.656
		785.37		2.253E+00	3.356E+00	5.751E+00	4.206E-01	0.392
		1620.50		7.139E-03	2.254E+00	3.699E+00	2.470E-01	0.002
RN-219		271.23		4.764E-01	2.868E-01	4.611E-01	3.694E-02	1.033
		401.81	*	3.525E-01	4.740E-01	7.273E-01	9.713E-02	0.485
RA-223		81.07		4.192E-02	3.522E-01	3.687E-01	3.081E-02	0.114
	+	83.79		2.077E-01	1.134E-01	2.204E-01	1.891E-02	0.942

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		94.87		1.320E+00	5.677E-01	8.865E-01	7.140E-02	1.489
		144.24		7.765E-01	7.280E-01	1.222E+00	8.553E-02	0.635
		154.21		9.469E-02	4.246E-01	6.936E-01	4.596E-02	0.137
	+	269.46		4.618E-01	3.377E-01	3.766E-01	2.267E-02	1.226
		323.87	*	-6.643E-01	7.255E-01	1.147E+00	1.849E-01	-0.579
	+	338.28		6.067E+00	1.696E+00	2.404E+00	2.461E-01	2.524
		79.69		2.780E+00	1.835E+00	2.351E+00	4.009E-01	1.183
		235.96		1.059E+00	2.277E-01	3.709E-01	2.978E-02	2.856
		256.23	*	1.308E-01	2.685E-01	4.397E-01	4.478E-02	0.298
	+	299.98		2.186E+00	1.140E+00	1.647E+00	1.812E-01	1.327
TH-227		304.50		-5.161E-01	1.874E+00	2.681E+00	4.090E-01	-0.192
		334.37		6.185E-01	1.923E+00	2.872E+00	4.084E-01	0.215
		79.80		2.539E+00	2.373E+00	2.988E+00	6.465E-01	0.850
		235.96		1.059E+00	2.248E-01	3.709E-01	2.693E-02	2.856
		256.23	*	1.308E-01	2.686E-01	4.397E-01	5.269E-02	0.298
	+	299.98		2.186E+00	1.140E+00	1.647E+00	1.812E-01	1.327
		304.50		-5.161E-01	1.874E+00	2.681E+00	4.090E-01	-0.192
		334.37		6.185E-01	1.923E+00	2.872E+00	4.084E-01	0.215
		283.69	*	-9.228E-02	1.454E+00	2.439E+00	3.199E-01	-0.038
		301.36		5.467E-01	6.489E-01	1.002E+00	1.038E-01	0.545
TH-231		81.07		4.192E-02	3.522E-01	3.687E-01	3.081E-02	0.114
	+	83.79		2.077E-01	1.134E-01	2.204E-01	1.891E-02	0.942
PA-231		94.87		1.320E+00	5.677E-01	8.865E-01	7.140E-02	1.489
		144.24		7.765E-01	7.280E-01	1.222E+00	8.553E-02	0.635
		154.21		9.469E-02	4.246E-01	6.936E-01	4.596E-02	0.137
	+	269.46		4.618E-01	3.377E-01	3.766E-01	2.267E-02	1.226
		323.87	*	-6.643E-01	7.255E-01	1.147E+00	1.849E-01	-0.579
	+	338.28		6.067E+00	1.696E+00	2.404E+00	2.461E-01	2.524
	+	300.13		9.890E-01	5.212E-01	7.381E-01	9.886E-02	1.340
		311.90	*	-3.213E-02	6.787E-02	1.110E-01	6.858E-03	-0.289
		340.48		1.955E+00	8.940E-01	1.309E+00	3.038E-01	1.493
		94.67		7.105E-01	2.196E-01	3.358E-01	4.041E-02	2.116
PA-234		98.44		8.854E-02	1.204E-01	1.632E-01	9.083E-02	0.542
		111.00		-9.091E-02	2.016E-01	3.225E-01	3.473E-02	-0.282
		131.20		1.079E-01	1.158E-01	1.948E-01	1.122E-02	0.554
	+	569.50		1.469E+00	5.871E-01	7.319E-01	4.344E-02	2.008
		733.00		4.679E-01	3.861E-01	6.167E-01	1.327E-01	0.759
		880.51		-4.650E-02	2.841E-01	4.485E-01	3.844E-02	-0.104
		883.24		-1.046E-02	2.991E-01	4.809E-01	3.232E-01	-0.022
		926.50		2.765E-02	1.765E-01	2.887E-01	7.294E-02	0.096
		946.00	*	7.773E-02	3.261E-01	5.366E-01	1.002E-01	0.145
		949.00		4.635E-02	4.975E-01	8.075E-01	6.766E-02	0.057
PA-234M		766.42		1.054E+01	1.347E+01	2.142E+01	1.082E+01	0.492
		1001.03	*	-5.869E-01	4.951E+00	8.284E+00	7.712E-01	-0.071
U-235		89.96		1.794E+00	1.453E+00	1.577E+00	3.884E-01	1.138
	+	93.35		2.493E+00	9.411E-01	1.061E+00	2.436E-01	2.349
		143.76	*	1.409E-01	2.182E-01	3.596E-01	5.615E-02	0.392
		163.33		3.547E-02	4.778E-01	7.636E-01	1.268E-01	0.046
	+	185.72		1.602E-01	8.899E-02	9.542E-02	5.099E-03	1.679

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	205.31			1.985E-01	5.807E-01	8.310E-01	1.403E-01	0.239
	99.53			1.485E-01	1.898E-01	2.948E-01	2.231E-02	0.504
	103.37			-6.642E-02	1.143E-01	1.825E-01	1.319E-02	-0.364
	106.12			1.461E-01	9.426E-02	1.617E-01	1.132E-02	0.903
	117.23	*		-1.039E-01	4.220E-01	6.803E-01	4.244E-02	-0.153
	228.18			-7.624E-02	2.360E-01	3.719E-01	2.084E-02	-0.205
AM-241	277.60			9.778E-02	1.907E-01	3.079E-01	1.782E-02	0.318
	59.54	*		1.163E-01	1.730E-01	2.585E-01	2.128E-02	0.450
CM-247	278.00			6.052E-01	7.949E-01	1.333E+00	7.717E-02	0.454
	287.50			5.229E-01	1.387E+00	2.178E+00	1.264E-01	0.240
	402.40	*		2.933E-02	4.373E-02	6.693E-02	3.754E-03	0.438
CF-249	252.80			-5.647E-01	9.669E-01	1.489E+00	8.511E-02	-0.379
	333.37			-3.988E-03	2.051E-01	2.985E-01	1.729E-02	-0.013
	388.16	*		2.381E-02	4.419E-02	7.585E-02	4.235E-03	0.314
CF-251	177.52	*		-2.882E-02	1.420E-01	2.270E-01	1.201E-02	-0.127
	227.38			-9.162E-02	3.862E-01	6.113E-01	3.423E-02	-0.150
	285.41			-1.407E+00	2.223E+00	3.619E+00	2.099E-01	-0.389

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]G248513005      *
* Acquisition date   : 20-MAR-2010 11:22:48 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 02:00:01.45 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248513005 Analyst initials: MXR1                  *
* Batch Number      : 961097 Sample Quantity : 1.2273E+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	2.566E+01	2.478E+00	4.921E-01	0.000E+00
CD-109	3.014E+00	1.015E+00	1.479E+00	0.000E+00
SN-126	2.911E-01	9.808E-02	1.572E-01	0.000E+00
CS-135	4.012E-01	2.881E-01	2.786E-01	0.000E+00
BA-137M	3.910E-01	8.505E-02	6.362E-02	0.000E+00
CS-137	4.130E-01	8.988E-02	6.721E-02	0.000E+00
TL-208	4.923E-01	8.298E-02	6.147E-02	0.000E+00
BI-211	4.220E+00	5.960E-01	3.594E-01	0.000E+00
PB-212	1.668E+00	1.659E-01	9.510E-02	0.000E+00
BI-214	1.431E+00	2.051E-01	1.235E-01	0.000E+00
PB-214	1.531E+00	2.316E-01	1.307E-01	0.000E+00
RA-224	4.258E+00	1.286E+00	1.019E+00	0.000E+00
RA-226	1.431E+00	2.051E-01	1.235E-01	0.000E+00
AC-228	1.730E+00	3.777E-01	2.424E-01	0.000E+00
RA-228	1.730E+00	3.777E-01	2.424E-01	0.000E+00
TH-228	1.668E+00	1.659E-01	9.510E-02	0.000E+00
TH-229	4.933E-02	5.530E-01	9.345E-01	0.000E+00
TH-232	1.730E+00	3.777E-01	2.424E-01	0.000E+00
TH-234	1.856E+00	1.849E+00	2.213E+00	0.000E+00
NP-237	8.687E-01	3.428E-01	4.763E-01	0.000E+00
U-238	1.856E+00	1.849E+00	2.213E+00	0.000E+00
ANH-511	8.632E-02	7.745E-02	5.268E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-4.930E-01	3.881E-01	6.056E-01	0.000E+00 NOT IDENT.
NA-22	9.739E-04	4.320E-02	7.337E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.239E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	8.346E-03	4.247E-02	7.165E-02	0.000E+00 FAIL ABUN
V-48	6.809E-02	1.080E-01	1.881E-01	0.000E+00 NOT IDENT.

CR-51	-4.044E-02	4.692E-01	8.142E-01	0.000E+00	NOT IDENT.
MN-54	2.374E-02	4.223E-02	7.326E-02	0.000E+00	NOT IDENT.
CO-56	3.428E-03	4.476E-02	7.410E-02	0.000E+00	FAIL ABUN
CO-57	5.921E-04	2.650E-02	4.542E-02	0.000E+00	NOT IDENT.
CO-58	-4.664E-02	4.488E-02	6.704E-02	0.000E+00	NOT IDENT.
FE-59	2.868E-03	1.034E-01	1.773E-01	0.000E+00	NOT IDENT.
CO-60	-1.955E-02	3.813E-02	6.029E-02	0.000E+00	NOT IDENT.
ZN-65	-4.090E-02	1.059E-01	1.480E-01	0.000E+00	NOT IDENT.
SE-75	3.684E-03	5.414E-02	8.331E-02	0.000E+00	NOT IDENT.
SR-85	7.089E-02	4.605E-02	8.508E-02	0.000E+00	NOT IDENT.
Y-88	-1.242E-02	3.413E-02	5.200E-02	0.000E+00	NOT IDENT.
Y-91	1.253E+01	2.542E+01	4.490E+01	0.000E+00	NOT IDENT.
NB-94	-2.026E-03	3.337E-02	5.569E-02	0.000E+00	NOT IDENT.
NB-95	1.395E-02	4.982E-02	8.495E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.702E-01	2.779E-01	0.000E+00	NOT IDENT.
ZR-95	9.252E-02	8.115E-02	1.479E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.332E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.294E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.017E-02	4.176E-02	6.687E-02	0.000E+00	FAIL ABUN
RH-106	-1.142E-01	3.171E-01	5.190E-01	0.000E+00	NOT IDENT.
RU-106	-1.142E-01	3.169E-01	5.190E-01	0.000E+00	NOT IDENT.
AG-108M	-2.229E-02	3.144E-02	5.160E-02	0.000E+00	NOT IDENT.
AG-110M	6.356E-04	4.128E-02	6.020E-02	0.000E+00	NOT IDENT.
SN-113	-2.015E-03	5.017E-02	8.647E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.338E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-5.216E-03	8.912E-02	1.508E-01	0.000E+00	NOT IDENT.
TE-123M	-5.961E-03	3.204E-02	5.391E-02	0.000E+00	NOT IDENT.
SB-124	-9.170E-03	9.843E-02	1.613E-01	0.000E+00	NOT IDENT.
SB-125	1.776E-02	9.507E-02	1.654E-01	0.000E+00	FAIL ABUN
TE-125M	-7.513E+00	1.171E+01	1.960E+01	0.000E+00	NOT IDENT.
I-126	8.014E-02	3.999E-01	5.949E-01	0.000E+00	NOT IDENT.
SB-126	-1.628E-01	2.368E-01	3.460E-01	0.000E+00	NOT IDENT.
SB-127	1.682E+00	5.541E+00	9.533E+00	0.000E+00	NOT IDENT.
I-131	8.534E-02	2.288E-01	4.050E-01	0.000E+00	NOT IDENT.
TE-132	-1.400E+00	4.288E+00	7.045E+00	0.000E+00	NOT IDENT.
BA-133	2.906E-03	4.797E-02	7.275E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.249E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.026E-02	4.941E-02	8.888E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	2.801E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.288E-01	1.563E-01	2.457E-01	0.000E+00	NOT IDENT.
CE-139	-5.297E-03	3.300E-02	5.550E-02	0.000E+00	NOT IDENT.
BA-140	5.992E-02	3.776E-01	6.498E-01	0.000E+00	NOT IDENT.
LA-140	-5.958E-02	1.278E-01	1.973E-01	0.000E+00	NOT IDENT.
CE-141	6.054E-02	7.970E-02	1.395E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.514E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.165E-01	2.221E-01	3.609E-01	0.000E+00	NOT IDENT.
PM-144	2.069E-02	3.507E-02	6.160E-02	0.000E+00	NOT IDENT.
PR-144	1.546E+00	2.634E+00	4.627E+00	0.000E+00	NOT IDENT.
PM-146	-8.460E-03	4.231E-02	7.159E-02	0.000E+00	NOT IDENT.
ND-147	6.318E-01	8.824E-01	1.577E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	1.073E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.900E-02	1.499E-01	1.685E-01	0.000E+00	NOT IDENT.
GD-153	5.474E-02	9.885E-02	1.537E-01	0.000E+00	NOT IDENT.
EU-154	1.533E-02	1.205E-01	2.069E-01	0.000E+00	NOT IDENT.
EU-155	1.690E-01	1.158E-01	2.087E-01	0.000E+00	FAIL ABUN
TB-160	-1.765E-02	1.505E-01	2.461E-01	0.000E+00	FAIL ABUN
HO-166M	-3.937E-02	5.992E-02	9.445E-02	0.000E+00	FAIL ABUN
TA-182	-3.668E-02	2.077E-01	3.475E-01	0.000E+00	FAIL ABUN
IR-192	-2.579E-02	3.852E-02	6.478E-02	0.000E+00	FAIL ABUN
HG-203	3.400E-02	4.451E-02	7.934E-02	0.000E+00	NOT IDENT.
BI-207	-5.147E-03	5.040E-02	8.552E-02	0.000E+00	FAIL ABUN
PB-210	9.214E-01	3.239E+00	5.685E+00	0.000E+00	NOT IDENT.
PB-211	-5.379E-02	8.506E-01	1.267E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.178E-01	1.289E+00	0.000E+00	FAIL ABUN
RN-219	3.525E-01	4.646E-01	7.385E-01	0.000E+00	NOT IDENT.
RA-223	-6.643E-01	7.110E-01	1.168E+00	0.000E+00	FAIL ABUN
AC-227	1.308E-01	2.631E-01	4.491E-01	0.000E+00	FAIL ABUN
TH-227	1.308E-01	2.632E-01	4.491E-01	0.000E+00	FAIL ABUN
PA-231	-9.228E-02	1.425E+00	2.488E+00	0.000E+00	NOT IDENT.
TH-231	-6.643E-01	7.110E-01	1.168E+00	0.000E+00	FAIL ABUN
PA-233	-3.213E-02	6.651E-02	1.131E-01	0.000E+00	FAIL ABUN
PA-234	7.773E-02	3.196E-01	5.389E-01	0.000E+00	FAIL ABUN
PA-234M	-5.869E-01	4.852E+00	8.313E+00	0.000E+00	NOT IDENT.
U-235	1.409E-01	2.138E-01	3.699E-01	0.000E+00	FAIL ABUN
NP-239	-1.039E-01	4.135E-01	7.017E-01	0.000E+00	NOT IDENT.
AM-241	1.163E-01	1.695E-01	2.689E-01	0.000E+00	NOT IDENT.
CM-247	2.933E-02	4.286E-02	6.797E-02	0.000E+00	NOT IDENT.
CF-249	2.381E-02	4.331E-02	7.706E-02	0.000E+00	NOT IDENT.

CF-251	-2.882E-02	1.392E-01	2.329E-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]G248513005.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:22:48
Sample ID          : G248513005 Sample quantity : 1.22730E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	1045	10.66*	1.168E+00	2.566E+01	2.566E+01	9.85
CD-109	88.03	215	3.70*	6.094E+00	2.911E+00	3.014E+00	34.38
SN-126	64.28	81	9.60	3.607E+00	7.153E-01	7.153E-01	101.13
	86.94	215	8.90	6.094E+00	1.210E+00	1.210E+00	53.08
	87.57	215	37.00*	6.094E+00	2.911E-01	2.911E-01	34.38
CS-135	268.22	97	16.00*	4.604E+00	4.012E-01	4.012E-01	73.28
BA-137M	661.66	264	89.90*	2.301E+00	3.904E-01	3.910E-01	22.20
CS-137	661.66	264	85.10*	2.301E+00	4.124E-01	4.130E-01	22.21
TL-208	277.37	-----	6.60	4.511E+00	-----	Line Not Found	-----
	583.19	349	85.00*	2.554E+00	4.923E-01	4.923E-01	17.20
	860.56	58	12.50	1.834E+00	7.687E-01	7.687E-01	53.38
BI-211	72.87	-----	1.23	4.857E+00	-----	Line Not Found	-----
	351.06	675	12.92*	3.788E+00	4.220E+00	4.220E+00	14.41
PB-212	74.82	477	10.28	5.080E+00	2.796E+00	2.796E+00	26.22
	77.11	540	17.10	5.315E+00	1.816E+00	1.816E+00	17.82
	238.63	1193	43.60*	5.016E+00	1.668E+00	1.668E+00	10.15
	300.09	91	3.30	4.265E+00	1.987E+00	1.987E+00	51.65
BI-214	609.32	524	45.49*	2.464E+00	1.431E+00	1.431E+00	14.63
	1120.29	146	14.92	1.455E+00	2.054E+00	2.054E+00	30.70
	1764.49	98	15.30	1.029E+00	1.899E+00	1.899E+00	23.83
PB-214	74.82	477	5.80	5.080E+00	4.955E+00	4.955E+00	25.61
	77.11	540	9.70	5.315E+00	3.201E+00	3.202E+00	19.64
	242.00	284	7.25	4.974E+00	2.408E+00	2.408E+00	31.36
	295.22	422	18.42	4.317E+00	1.625E+00	1.625E+00	19.26
	351.93	675	35.60*	3.788E+00	1.531E+00	1.531E+00	15.43
RA-224	240.99	284	4.10*	4.974E+00	4.258E+00	4.258E+00	30.82
RA-226	609.32	524	45.49*	2.464E+00	1.431E+00	1.431E+00	14.63
	1120.29	146	14.92	1.455E+00	2.054E+00	2.054E+00	30.70
	1764.49	98	15.30	1.029E+00	1.899E+00	1.899E+00	23.83
AC-228	338.32	220	11.27	3.901E+00	1.529E+00	1.529E+00	48.75
	911.20	255	25.80*	1.745E+00	1.730E+00	1.730E+00	22.28
	968.97	115	15.80	1.653E+00	1.350E+00	1.350E+00	37.54

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	220	11.27	3.901E+00	1.529E+00	1.529E+00	48.75
	911.20	255	25.80*	1.745E+00	1.730E+00	1.730E+00	22.28
	968.97	115	15.80	1.653E+00	1.350E+00	1.350E+00	37.54
TH-228	74.82	477	10.28	5.080E+00	2.796E+00	2.796E+00	24.37
	77.11	540	17.10	5.315E+00	1.816E+00	1.816E+00	17.82
	238.63	1193	43.60*	5.016E+00	1.668E+00	1.668E+00	10.15
TH-229	300.09	91	3.30	4.265E+00	1.987E+00	1.987E+00	79.40
	85.43	99	14.70	5.902E+00	3.490E-01	3.490E-01	54.59
	88.47	215	24.00	6.094E+00	4.488E-01	4.488E-01	34.38
TH-232	193.51	-----	4.41*	5.746E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.447E+00	-----	Line Not Found	-----
	338.32	220	11.27	3.901E+00	1.529E+00	1.529E+00	26.66
TH-234	911.20	255	25.80*	1.745E+00	1.730E+00	1.730E+00	22.28
	968.97	115	15.80	1.653E+00	1.350E+00	1.350E+00	37.54
	63.29	81	3.70*	3.607E+00	1.856E+00	1.856E+00	101.65
NP-237	92.59	292	4.23	6.402E+00	3.301E+00	3.301E+00	37.13
	86.48	215	12.40*	6.094E+00	8.687E-01	8.687E-01	40.27
	95.86	-----	2.68	6.514E+00	-----	Line Not Found	-----
U-238	63.29	81	3.70*	3.607E+00	1.856E+00	1.856E+00	101.65
	92.59	292	4.23	6.402E+00	3.301E+00	3.301E+00	31.07
	511.00	80	100.00*	2.840E+00	8.632E-02	8.632E-02	91.55

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 2
Number of lines tentatively identified by NID 30 93.75%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.566E+01	2.566E+01	0.253E+01	9.85	
CD-109	461.40D	1.04	2.911E+00	3.014E+00	1.036E+00	34.38	
SN-126	2.30E+05Y	1.00	2.911E-01	2.911E-01	1.001E-01	34.38	
CS-135	2.30E+06Y	1.00	4.012E-01	4.012E-01	2.940E-01	73.28	
BA-137M	30.08Y	1.00	3.904E-01	3.910E-01	0.868E-01	22.20	
CS-137	30.08Y	1.00	4.124E-01	4.130E-01	0.917E-01	22.21	
TL-208	1.41E+10Y	1.00	4.923E-01	4.923E-01	0.847E-01	17.20	
BI-211	7.04E+08Y	1.00	4.220E+00	4.220E+00	0.608E+00	14.41	
PB-212	1.41E+10Y	1.00	1.668E+00	1.668E+00	0.169E+00	10.15	
BI-214	1600.00Y	1.00	1.431E+00	1.431E+00	0.209E+00	14.63	
PB-214	1600.00Y	1.00	1.531E+00	1.531E+00	0.236E+00	15.43	
RA-224	1.41E+10Y	1.00	4.258E+00	4.258E+00	1.312E+00	30.82	
RA-226	1600.00Y	1.00	1.431E+00	1.431E+00	0.209E+00	14.63	
AC-228	1.41E+10Y	1.00	1.730E+00	1.730E+00	0.385E+00	22.28	
RA-228	1.41E+10Y	1.00	1.730E+00	1.730E+00	0.385E+00	22.28	
TH-228	1.41E+10Y	1.00	1.668E+00	1.668E+00	0.169E+00	10.15	
TH-229	7340.00Y	1.00	4.488E-01	4.488E-01	1.543E-01	34.38	K
TH-232	1.41E+10Y	1.00	1.730E+00	1.730E+00	0.385E+00	22.28	
TH-234	4.47E+09Y	1.00	1.856E+00	1.856E+00	1.887E+00	101.65	
NP-237	2.14E+06Y	1.00	8.687E-01	8.687E-01	3.498E-01	40.27	
U-238	4.47E+09Y	1.00	1.856E+00	1.856E+00	1.887E+00	101.65	
ANH-511	1.00E+09Y	1.00	8.632E-02	8.632E-02	7.903E-02	91.55	
Total Activity :			5.707E+01	5.717E+01			

Grand Total Activity : 5.707E+01 5.717E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G248513005

Page : 4
Acquisition date : 20-MAR-2010 11:22:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.84	176	469	1.25	371.36	364	14	2.45E-02	55.3	5.88E+00	T
0	209.10	67	221	1.01	417.84	415	8	9.37E-03	79.8	5.48E+00	
0	408.78	59	133	4.51	816.97	809	13	8.18E-03	84.9	3.38E+00	
7	463.47	61	66	2.21	926.29	922	18	8.54E-03	53.5	3.07E+00	T
7	468.42	41	44	3.15	936.18	922	18	5.71E-03	60.5	3.04E+00	T
0	568.94	138	121	1.81	1137.15	1128	15	1.91E-02	39.5	2.61E+00	T
0	727.60	98	64	1.64	1454.37	1450	11	1.36E-02	37.8	2.12E+00	T
0	966.17	27	47	1.69	1931.47	1923	11	3.78E-03	****	1.66E+00	T
0	1238.83	30	38	1.83	2476.85	2473	8	4.14E-03	80.6	1.33E+00	T

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513005.CNF;1
* Acquisition date   : 20-MAR-2010 11:22:48  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 02:00:01.45          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513005           Analyst initials: MXR1
* Batch Number       : 961097              Sample Quantity : 1.22730E+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	2.566E+01	2.528E+00	4.928E-01	3.671E-02	52.064
CD-109	3.014E+00	1.036E+00	1.429E+00	1.280E-01	2.109
SN-126	2.911E-01	1.001E-01	1.519E-01	1.355E-02	1.917
CS-135	4.012E-01	2.940E-01	2.730E-01	2.083E-02	1.470
BA-137M	3.910E-01	8.679E-02	6.306E-02	3.672E-03	6.200
CS-137	4.130E-01	9.171E-02	6.661E-02	3.895E-03	6.200
TL-208	4.923E-01	8.468E-02	6.082E-02	4.127E-03	8.094
BI-211	4.220E+00	6.081E-01	3.533E-01	2.257E-02	11.943
PB-212	1.668E+00	1.693E-01	9.303E-02	6.775E-03	17.927
BI-214	1.431E+00	2.093E-01	1.223E-01	9.689E-03	11.702
PB-214	1.531E+00	2.363E-01	1.285E-01	1.084E-02	11.919
RA-224	4.258E+00	1.312E+00	9.966E-01	5.647E-02	4.273
AC-226	1.431E+00	2.093E-01	1.223E-01	9.689E-03	11.702
AC-228	1.730E+00	3.854E-01	2.412E-01	2.812E-02	7.170
RA-228	1.730E+00	3.854E-01	2.412E-01	2.812E-02	7.170
TH-228	1.668E+00	1.693E-01	9.303E-02	6.775E-03	17.927
TH-229	4.488E-01	1.543E-01	9.117E-01	4.919E-02	0.492
TH-232	1.730E+00	3.854E-01	2.412E-01	2.812E-02	7.170

----- Identified Nuclides -----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.856E+00	1.887E+00	2.129E+00	3.808E-01	0.872
NP-237	8.687E-01	3.498E-01	4.600E-01	1.046E-01	1.888
U-238	1.856E+00	1.887E+00	2.129E+00	3.808E-01	0.872
ANH-511	8.632E-02	7.903E-02	5.204E-02	3.071E-03	1.659

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.930E-01		3.960E-01	5.977E-01	4.056E-02	-0.825
NA-22	9.739E-04		4.408E-02	7.335E-02	4.893E-03	0.013
NA-24	-2.952E+02		2.163E+03	Half-Life too short		
SC-46	8.346E-03		4.334E-02	7.129E-02	6.195E-03	0.117
V-48	6.809E-02		1.102E-01	1.874E-01	1.507E-02	0.363
CR-51	-4.044E-02		4.787E-01	7.994E-01	5.165E-02	-0.051
MN-54	2.374E-02		4.309E-02	7.284E-02	5.794E-03	0.326
CO-56	3.428E-03		4.567E-02	7.368E-02	5.978E-03	0.047
CO-57	5.921E-04		2.704E-02	4.405E-02	2.629E-03	0.013
CO-58	-4.664E-02		4.579E-02	6.662E-02	5.105E-03	-0.700
FE-59	2.868E-03		1.056E-01	1.769E-01	1.328E-02	0.016
CO-60	-1.955E-02		3.890E-02	6.031E-02	4.445E-03	-0.324
ZN-65	-4.090E-02		1.080E-01	1.477E-01	9.442E-03	-0.277
SE-75	3.684E-03		5.525E-02	8.161E-02	4.747E-03	0.045
SR-85	7.089E-02		4.699E-02	8.405E-02	4.963E-03	0.843
Y-88	-1.242E-02		3.482E-02	5.224E-02	2.982E-03	-0.238
Y-91	1.253E+01		2.594E+01	4.486E+01	2.619E+00	0.279
NB-94	-2.026E-03		3.405E-02	5.524E-02	3.479E-03	-0.037
NB-95	1.395E-02		5.084E-02	8.436E-02	5.961E-03	0.165
NB-95M	3.862E-01		1.737E-01	2.718E-01	2.020E-02	1.421
ZR-95	9.252E-02		8.280E-02	1.468E-01	1.181E-02	0.630
MO-99	3.251E-05		4.251E-05	Half-Life too short		
TC-99M	-1.701E+20		6.601E+19	Half-Life too short		
RU-103	-3.017E-02		4.261E-02	6.604E-02	8.231E-03	-0.457
RH-106	-1.142E-01		3.236E-01	5.139E-01	5.998E-02	-0.222
RU-106	-1.142E-01		3.233E-01	5.139E-01	3.031E-02	-0.222
AG-108M	-2.229E-02		3.208E-02	5.087E-02	3.121E-03	-0.438
AG-110M	6.356E-04		4.212E-02	5.967E-02	3.703E-03	0.011
SN-113	-2.015E-03		5.119E-02	8.512E-02	5.079E-03	-0.024
CD-115	-8.973E-05		6.827E-05	Half-Life too short		
SN-117M	-5.216E-03		9.094E-02	1.468E-01	7.811E-03	-0.036
TE-123M	-5.961E-03		3.269E-02	5.246E-02	2.833E-03	-0.114
SB-124	-9.170E-03		1.004E-01	1.619E-01	1.113E-02	-0.057
SB-125	1.776E-02		9.701E-02	1.630E-01	9.695E-03	0.109
TE-125M	-7.513E+00		1.195E+01	1.899E+01	1.718E+00	-0.396
I-126	8.014E-02		4.081E-01	5.896E-01	3.465E-02	0.136
SB-126	-1.628E-01		2.416E-01	3.434E-01	2.237E-02	-0.474
SB-127	1.682E+00		5.654E+00	9.453E+00	1.187E+00	0.178
I-131	8.534E-02		2.335E-01	3.984E-01	2.581E-02	0.214

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	-1.400E+00		4.375E+00	6.887E+00	1.128E+00	-0.203
BA-133	2.906E-03		4.895E-02	7.153E-02	8.040E-03	0.041
I-133	1.666E+00		1.658E+00	Half-Life too short		
CS-134	5.026E-02		5.041E-02	8.831E-02	6.641E-03	0.569
I-135	1.258E+18		1.429E+18	Half-Life too short		
CS-136	-1.288E-01		1.595E-01	2.450E-01	1.895E-02	-0.526
CE-139	-5.297E-03		3.368E-02	5.404E-02	2.821E-03	-0.098
BA-140	5.992E-02		3.853E-01	6.423E-01	2.141E-01	0.093
LA-140	-5.958E-02		1.304E-01	1.979E-01	1.339E-02	-0.301
CE-141	6.054E-02		8.132E-02	1.356E-01	7.814E-03	0.446
CE-143	4.912E-02		7.726E-03	Half-Life too short		
CE-144	-2.165E-01		2.266E-01	3.504E-01	4.856E-02	-0.618
PM-144	2.069E-02		3.578E-02	6.110E-02	3.809E-03	0.339
PR-144	1.546E+00		2.688E+00	4.589E+00	2.857E-01	0.337
PM-146	-8.460E-03		4.317E-02	7.061E-02	5.964E-03	-0.120
ND-147	6.318E-01		9.005E-01	1.559E+00	2.116E-01	0.405
PM-149	-4.084E-04		5.475E-04	Half-Life too short		
EU-152	-6.900E-02		1.529E-01	1.656E-01	1.077E-02	-0.417
GD-153	5.474E-02		1.009E-01	1.487E-01	1.156E-02	0.368
EU-154	1.533E-02		1.230E-01	2.069E-01	2.064E-02	0.074
EU-155	1.690E-01		1.181E-01	2.020E-01	1.452E-02	0.836
TB-160	-1.765E-02		1.535E-01	2.449E-01	2.095E-02	-0.072
HO-166M	-3.937E-02		6.115E-02	9.370E-02	6.002E-03	-0.420
TA-182	-3.668E-02		2.119E-01	3.473E-01	2.094E-02	-0.106
IR-192	-2.579E-02		3.931E-02	6.359E-02	3.716E-03	-0.405
HG-203	3.400E-02		4.542E-02	7.777E-02	4.755E-03	0.437
BI-207	-5.147E-03		5.143E-02	8.529E-02	6.056E-03	-0.060
PB-210	9.214E-01		3.305E+00	5.449E+00	4.108E-01	0.169
PB-211	-5.379E-02		8.679E-01	1.248E+00	5.984E-01	-0.043
BI-212	2.118E+00	+	8.345E-01	1.279E+00	1.426E-01	1.656
RN-219	3.525E-01		4.740E-01	7.273E-01	9.713E-02	0.485
RA-223	-6.643E-01		7.255E-01	1.147E+00	1.849E-01	-0.579
AC-227	1.308E-01		2.685E-01	4.397E-01	4.478E-02	0.298
TH-227	1.308E-01		2.686E-01	4.397E-01	5.269E-02	0.298
PA-231	-9.228E-02		1.454E+00	2.439E+00	3.199E-01	-0.038
TH-231	-6.643E-01		7.255E-01	1.147E+00	1.849E-01	-0.579
PA-233	-3.213E-02		6.787E-02	1.110E-01	6.858E-03	-0.289
PA-234	7.773E-02		3.261E-01	5.366E-01	1.002E-01	0.145
PA-234M	-5.869E-01		4.951E+00	8.284E+00	7.712E-01	-0.071
U-235	1.409E-01		2.182E-01	3.596E-01	5.615E-02	0.392
NP-239	-1.039E-01		4.220E-01	6.803E-01	4.244E-02	-0.153
AM-241	1.163E-01		1.730E-01	2.585E-01	2.128E-02	0.450
CM-247	2.933E-02		4.373E-02	6.693E-02	3.754E-03	0.438
CF-249	2.381E-02		4.419E-02	7.585E-02	4.235E-03	0.314
CF-251	-2.882E-02		1.420E-01	2.270E-01	1.201E-02	-0.127

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]G248513005          *
* Acquisition date   : 20-MAR-2010 11:22:48 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 02:00:01.45           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513005           Analyst initials: MXR1          *
* Batch Number       : 961097              Sample Quantity : 1.2273E+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	2.566E+01	2.478E+00	2.462E-01	1.264E+00
CD-109	3.014E+00	1.015E+00	7.401E-01	5.180E-01
SN-126	2.911E-01	9.808E-02	7.866E-02	5.004E-02
CS-135	4.012E-01	2.881E-01	1.394E-01	1.470E-01
BA-137M	3.910E-01	8.505E-02	3.183E-02	4.340E-02
CS-137	4.130E-01	8.988E-02	3.362E-02	4.586E-02
TL-208	4.923E-01	8.298E-02	3.075E-02	4.234E-02
BI-211	4.220E+00	5.960E-01	1.798E-01	3.041E-01
PB-212	1.668E+00	1.659E-01	4.758E-02	8.463E-02
BI-214	1.431E+00	2.051E-01	6.178E-02	1.046E-01
PB-214	1.531E+00	2.316E-01	6.539E-02	1.182E-01
RA-224	4.258E+00	1.286E+00	5.096E-01	6.561E-01
RA-226	1.431E+00	2.051E-01	6.178E-02	1.046E-01
AC-228	1.730E+00	3.777E-01	1.213E-01	1.927E-01
RA-228	1.730E+00	3.777E-01	1.213E-01	1.927E-01
TH-228	1.668E+00	1.659E-01	4.758E-02	8.463E-02
TH-229	4.933E-02	5.530E-01	4.676E-01	2.821E-01
TH-232	1.730E+00	3.777E-01	1.213E-01	1.927E-01
TH-234	1.856E+00	1.849E+00	1.107E+00	9.433E-01
NP-237	8.687E-01	3.428E-01	2.383E-01	1.749E-01
U-238	1.856E+00	1.849E+00	1.107E+00	9.433E-01
ANH-511	8.632E-02	7.745E-02	2.636E-02	3.952E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-4.930E-01	3.881E-01	3.030E-01	1.980E-01 NOT IDENT.
NA-22	9.739E-04	4.320E-02	3.671E-02	2.204E-02 NOT IDENT.
NA-24	-2.952E+08	4.239E+09	0.000E+00	2.163E+09 SHORT HLIF
SC-46	8.346E-03	4.247E-02	3.584E-02	2.167E-02 FAIL ABUN
V-48	6.809E-02	1.080E-01	9.412E-02	5.508E-02 NOT IDENT.

CR-51	-4.044E-02	4.692E-01	4.073E-01	2.394E-01	NOT IDENT.
MN-54	2.374E-02	4.223E-02	3.665E-02	2.155E-02	NOT IDENT.
CO-56	3.428E-03	4.476E-02	3.707E-02	2.284E-02	FAIL ABUN
CO-57	5.921E-04	2.650E-02	2.272E-02	1.352E-02	NOT IDENT.
CO-58	-4.664E-02	4.488E-02	3.354E-02	2.290E-02	NOT IDENT.
FE-59	2.868E-03	1.034E-01	8.872E-02	5.278E-02	NOT IDENT.
CO-60	-1.955E-02	3.813E-02	3.016E-02	1.945E-02	NOT IDENT.
ZN-65	-4.090E-02	1.059E-01	7.404E-02	5.402E-02	NOT IDENT.
SE-75	3.684E-03	5.414E-02	4.168E-02	2.762E-02	NOT IDENT.
SR-85	7.089E-02	4.605E-02	4.257E-02	2.350E-02	NOT IDENT.
Y-88	-1.242E-02	3.413E-02	2.601E-02	1.741E-02	NOT IDENT.
Y-91	1.253E+01	2.542E+01	2.247E+01	1.297E+01	NOT IDENT.
NB-94	-2.026E-03	3.337E-02	2.786E-02	1.703E-02	NOT IDENT.
NB-95	1.395E-02	4.982E-02	4.250E-02	2.542E-02	NOT IDENT.
NB-95M	3.862E-01	1.702E-01	1.390E-01	8.686E-02	NOT IDENT.
ZR-95	9.252E-02	8.115E-02	7.398E-02	4.140E-02	NOT IDENT.
MO-99	3.251E+01	8.332E+01	0.000E+00	4.251E+01	SHORT HLIF
TC-99M	-1.701E+26	1.294E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.017E-02	4.176E-02	3.346E-02	2.130E-02	FAIL ABUN
RH-106	-1.142E-01	3.171E-01	2.596E-01	1.618E-01	NOT IDENT.
RU-106	-1.142E-01	3.169E-01	2.596E-01	1.617E-01	NOT IDENT.
AG-108M	-2.229E-02	3.144E-02	2.582E-02	1.604E-02	NOT IDENT.
AG-110M	6.356E-04	4.128E-02	3.012E-02	2.106E-02	NOT IDENT.
SN-113	-2.015E-03	5.017E-02	4.326E-02	2.560E-02	NOT IDENT.
CD-115	-8.973E+01	1.338E+02	0.000E+00	6.827E+01	SHORT HLIF
SN-117M	-5.216E-03	8.912E-02	7.545E-02	4.547E-02	NOT IDENT.
TE-123M	-5.961E-03	3.204E-02	2.697E-02	1.634E-02	NOT IDENT.
SB-124	-9.170E-03	9.843E-02	8.070E-02	5.022E-02	NOT IDENT.
SB-125	1.776E-02	9.507E-02	8.277E-02	4.851E-02	FAIL ABUN
TE-125M	-7.513E+00	1.171E+01	9.807E+00	5.973E+00	NOT IDENT.
I-126	8.014E-02	3.999E-01	2.976E-01	2.040E-01	NOT IDENT.
SB-126	-1.628E-01	2.368E-01	1.731E-01	1.208E-01	NOT IDENT.
SB-127	1.682E+00	5.541E+00	4.769E+00	2.827E+00	NOT IDENT.
I-131	8.534E-02	2.288E-01	2.026E-01	1.167E-01	NOT IDENT.
TE-132	-1.400E+00	4.288E+00	3.524E+00	2.188E+00	NOT IDENT.
BA-133	2.906E-03	4.797E-02	3.639E-02	2.447E-02	NOT IDENT.
I-133	1.666E+06	3.249E+06	0.000E+00	1.658E+06	SHORT HLIF
CS-134	5.026E-02	4.941E-02	4.447E-02	2.521E-02	FAIL ABUN
I-135	1.258E+24	2.801E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.288E-01	1.563E-01	1.229E-01	7.974E-02	NOT IDENT.
CE-139	-5.297E-03	3.300E-02	2.777E-02	1.684E-02	NOT IDENT.
BA-140	5.992E-02	3.776E-01	3.251E-01	1.927E-01	NOT IDENT.
LA-140	-5.958E-02	1.278E-01	9.871E-02	6.520E-02	NOT IDENT.
CE-141	6.054E-02	7.970E-02	6.981E-02	4.066E-02	NOT IDENT.
CE-143	4.912E+04	1.514E+04	0.000E+00	7.726E+03	SHORT HLIF
CE-144	-2.165E-01	2.221E-01	1.806E-01	1.133E-01	NOT IDENT.
PM-144	2.069E-02	3.507E-02	3.082E-02	1.789E-02	NOT IDENT.
PR-144	1.546E+00	2.634E+00	2.315E+00	1.344E+00	NOT IDENT.
PM-146	-8.460E-03	4.231E-02	3.582E-02	2.158E-02	NOT IDENT.
ND-147	6.318E-01	8.824E-01	7.892E-01	4.502E-01	NOT IDENT.
PM-149	-4.084E+02	1.073E+03	0.000E+00	5.475E+02	SHORT HLIF
EU-152	-6.900E-02	1.499E-01	8.432E-02	7.647E-02	NOT IDENT.
GD-153	5.474E-02	9.885E-02	7.689E-02	5.043E-02	NOT IDENT.
EU-154	1.533E-02	1.205E-01	1.035E-01	6.150E-02	NOT IDENT.
EU-155	1.690E-01	1.158E-01	1.044E-01	5.907E-02	FAIL ABUN
TB-160	-1.765E-02	1.505E-01	1.231E-01	7.677E-02	FAIL ABUN
HO-166M	-3.937E-02	5.992E-02	4.725E-02	3.057E-02	FAIL ABUN
TA-182	-3.668E-02	2.077E-01	1.739E-01	1.060E-01	FAIL ABUN
IR-192	-2.579E-02	3.852E-02	3.241E-02	1.965E-02	FAIL ABUN
HG-203	3.400E-02	4.51E-02	3.969E-02	2.271E-02	NOT IDENT.
BI-207	-5.147E-03	5.040E-02	4.278E-02	2.572E-02	FAIL ABUN
PB-210	9.214E-01	3.239E+00	2.844E+00	1.652E+00	NOT IDENT.
PB-211	-5.379E-02	8.506E-01	6.340E-01	4.340E-01	NOT IDENT.
BI-212	2.118E+00	8.178E-01	6.447E-01	4.173E-01	FAIL ABUN
RN-219	3.525E-01	4.646E-01	3.695E-01	2.370E-01	NOT IDENT.
RA-223	-6.643E-01	7.110E-01	5.845E-01	3.627E-01	FAIL ABUN
AC-227	1.308E-01	2.631E-01	2.247E-01	1.342E-01	FAIL ABUN
TH-227	1.308E-01	2.632E-01	2.247E-01	1.343E-01	FAIL ABUN
PA-231	-9.228E-02	1.425E+00	1.245E+00	7.269E-01	NOT IDENT.
TH-231	-6.643E-01	7.110E-01	5.845E-01	3.627E-01	FAIL ABUN
PA-233	-3.213E-02	6.651E-02	5.660E-02	3.393E-02	FAIL ABUN
PA-234	7.773E-02	3.196E-01	2.696E-01	1.631E-01	FAIL ABUN
PA-234M	-5.869E-01	4.852E+00	4.159E+00	2.476E+00	NOT IDENT.
U-235	1.409E-01	2.138E-01	1.851E-01	1.091E-01	FAIL ABUN
NP-239	-1.039E-01	4.135E-01	3.511E-01	2.110E-01	NOT IDENT.
AM-241	1.163E-01	1.695E-01	1.345E-01	8.649E-02	NOT IDENT.
CM-247	2.933E-02	4.286E-02	3.400E-02	2.187E-02	NOT IDENT.
CF-249	2.381E-02	4.331E-02	3.855E-02	2.210E-02	NOT IDENT.

CF-251

-2.882E-02

1.392E-01

1.165E-01

7.100E-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
46.54	330.4347
49.72	363.8957
57.36	0.0000
59.54	359.8382
63.29	403.0471
63.29	403.0471
64.28	429.8255
67.75	526.8262
69.67	419.3906
70.83	459.7734
72.81	457.4499
72.87	516.6600
72.87	516.6600
74.82	533.8377
74.82	533.8377
74.82	533.8377
74.97	533.9129
77.11	534.9763
77.11	534.9763
77.11	534.9763
79.69	450.7207
79.80	450.7668
80.12	471.0261
80.19	471.0564
80.57	463.1621
81.00	471.3992
81.07	471.4277
81.07	471.4277
83.79	492.7638
83.79	492.7638
85.43	587.5116
86.48	588.0480
86.55	588.0834
86.79	588.2031
86.94	622.0992
87.57	583.5344
88.03	486.4691
88.47	450.1533
89.96	450.7224
91.11	430.8353
92.59	640.9468
92.59	640.9468
93.35	625.4695
94.67	339.1642
94.87	368.5756
94.87	368.5756
95.86	391.7241
97.43	315.4120
98.44	314.0332
99.53	317.8531
100.11	326.3839
103.18	402.2223
103.37	400.2296
105.31	325.8046
106.12	326.0066
109.28	381.4284
111.00	359.2122
111.76	367.6791
116.30	294.2975
117.23	311.0882
121.12	304.6778
121.78	294.4164
122.06	293.4341
123.07	295.7264
131.20	312.0506
133.52	356.5886
136.00	299.3987

136.47	283.7295
140.51	0.0000
140.51	0.0000
143.76	288.2484
144.24	275.6637
144.24	275.6637
145.44	308.6415
152.43	339.7266
153.25	331.4024
154.21	311.4041
154.21	311.4041
156.02	303.2387
158.56	313.2991
159.00	308.0525
162.66	296.9785
163.33	282.1355
165.86	294.3318
176.60	306.9351
177.52	287.7005
181.07	0.0000
184.41	282.3225
185.72	282.5257
193.51	259.8108
197.04	288.6186
205.31	245.0256
210.85	217.6418
215.65	249.6217
222.11	249.3238
227.38	240.0159
228.16	241.2134
228.18	241.2151
235.69	225.6529
235.96	225.6823
235.96	225.6823
238.63	204.6177
238.63	204.6177
240.99	204.8452
242.00	188.9031
244.70	194.4942
252.40	193.6206
252.80	181.3422
256.23	177.1407
256.23	177.1407
260.90	0.0000
264.66	187.5636
268.22	201.3871
269.46	189.4666
269.46	189.4666
271.23	180.5835
273.65	222.9545
276.40	193.0573
277.37	173.1452
277.60	173.1616
278.00	171.0537
279.20	168.5239
279.54	164.0180
280.46	192.1845
283.69	169.7564
284.31	180.6960
285.41	184.4148
285.90	0.0000
287.50	166.2634
293.27	0.0000
295.22	191.5596
295.96	191.6173
298.57	191.8250
299.98	144.7130
299.98	144.7130
300.09	144.7208
300.09	144.7208
300.13	144.7227
301.36	160.0378
302.85	158.6089
304.50	164.8213
304.50	164.8213
304.85	151.1083
308.46	168.7535
311.90	171.7423

316.51	172.0596
319.41	177.7840
320.08	164.9304
323.87	203.0112
323.87	203.0112
328.76	148.8503
333.37	146.6458
334.37	137.4365
334.37	137.4365
338.28	153.1084
338.28	153.1084
338.32	153.1104
338.32	153.1104
338.32	153.1104
340.48	142.4005
340.55	142.4042
344.28	164.3073
351.06	148.2512
351.93	148.2997
356.01	133.8903
364.49	121.8115
366.42	0.0000
383.85	143.4166
388.16	135.1273
388.63	137.0402
391.69	140.9716
400.66	116.2584
401.81	107.6003
402.40	110.7878
404.85	129.8884
410.95	128.5697
414.70	118.5144
423.72	134.8553
427.09	119.6854
427.87	114.9287
433.94	130.5099
453.88	105.2704
463.37	101.7098
468.07	100.2417
473.00	97.1558
476.78	111.8597
477.60	132.3194
487.02	89.7663
492.35	0.0000
497.08	84.1660
511.00	108.0973
514.00	108.1920
527.90	0.0000
529.87	0.0000
531.02	68.1998
537.26	70.3014
546.56	0.0000
563.25	79.7891
569.33	89.9121
569.50	89.9165
569.70	94.9165
583.19	86.2394
600.60	96.7125
602.73	80.6387
604.72	100.8521
609.32	92.8962
609.32	92.8962
610.33	92.9209
614.28	85.9380
618.01	69.5758
621.93	78.0039
621.93	78.0039
633.25	88.3891
635.95	83.3673
636.99	81.3555
645.85	81.5371
657.76	73.2606
661.66	83.9059
661.66	83.9059
664.57	0.0000
666.33	76.8311
666.50	76.8347
677.62	70.8800

685.70	67.9304
695.00	59.8302
696.49	67.0757
696.51	67.0757
697.00	67.0836
702.65	73.3748
706.68	67.2375
711.68	74.5664
720.70	75.2435
721.93	0.0000
722.78	67.4915
722.91	67.4946
723.31	72.6934
724.19	72.7070
727.33	71.0276
733.00	36.4279
735.93	62.4902
739.50	0.0000
747.24	59.5202
752.31	67.9517
753.82	67.9755
756.73	54.4159
763.94	93.2849
765.81	80.7410
766.42	73.4111
777.92	0.0000
778.90	59.9446
783.70	51.5864
785.37	62.1358
795.86	60.1687
801.95	67.6469
810.29	75.1810
810.76	75.1896
815.77	44.5255
818.51	60.4637
832.01	76.5949
834.85	70.2539
836.80	0.0000
846.77	55.4912
856.80	42.7744
860.56	51.7259
871.09	55.7718
873.19	60.0879
875.33	0.0000
879.36	52.6427
880.51	48.3574
883.24	53.7598
884.68	55.9267
889.28	50.5961
898.04	49.6072
911.20	58.3888
911.20	58.3888
911.20	58.3888
926.50	46.6355
937.49	54.3445
944.13	58.7672
946.00	53.3461
949.00	58.8239
962.29	45.5048
964.08	58.2656
966.15	229.5132
968.97	45.5627
968.97	45.5627
968.97	45.5627
983.53	49.3440
996.26	48.3635
1001.03	50.4234
1004.73	57.7974
1037.84	57.2294
1038.76	0.0000
1048.07	55.4858
1050.41	47.1816
1050.41	47.1816
1063.66	48.2231
1085.87	43.7584
1099.45	52.2630
1112.07	75.3587
1115.54	60.9654

1120.29	54.3254
1120.29	54.3254
1120.55	54.3278
1121.30	54.3349
1131.51	0.0000
1173.23	52.9261
1177.93	52.0213
1189.05	54.0127
1204.77	61.7548
1221.41	63.8267
1231.02	71.8209
1235.36	73.6555
1238.28	69.7326
1260.41	0.0000
1271.85	41.2976
1274.44	41.3133
1274.54	43.2367
1291.59	42.3887
1298.22	0.0000
1312.11	28.9941
1332.49	35.8708
1365.19	20.4608
1368.63	0.0000
1384.29	39.0853
1408.01	27.4554
1457.56	0.0000
1460.82	18.6331
1489.16	12.8974
1505.03	19.8869
1596.21	23.1582
1620.50	17.1722
1678.03	0.0000
1690.97	20.3906
1764.49	11.3205
1764.49	11.3205
1770.23	12.3584
1771.35	7.0628
1791.20	0.0000
1836.06	13.4972

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513005

Total Uranium Activity	5.5867E+00	ug/g
Total Uranium Counting Unc.	5.5015E+00	ug/g
Total Uranium Tpu	2.8069E-06	ug/g
Total Uranium Mda	3.2953E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513005
*  ANALYST       : MXR1                             DETECTOR    : GAM19
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 11:22:48.29          SAMPLE ALQT  : 122.730 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.315E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.402E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.855E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.878E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:25:02.74

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513006.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:23:18
Sample ID          : G248513006      Sample quantity   : 1.19440E+02 GRAM
Detector name      : GAM22           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:02.33  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 961097          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	63.36*	126	558	1.32	126.97	123	7	1.74E-02	33.6	
2	3	74.85	560	639	1.21	149.93	145	20	7.77E-02	8.5	2.15E+00
3	3	77.13*	918	501	1.05	154.49	145	20	1.28E-01	5.3	
4	4	87.25	403	473	1.42	174.71	171	25	5.60E-02	9.6	8.61E-01
5	4	89.85	242	596	1.26	179.91	171	25	3.37E-02	19.0	
6	4	92.84*	513	633	1.56	185.88	171	25	7.12E-02	10.6	
7	0	185.93*	278	529	1.31	371.87	367	10	3.86E-02	17.5	
8	0	209.36	160	465	1.54	418.69	415	10	2.22E-02	26.4	
9	3	238.72*	1887	262	1.25	477.35	470	21	2.62E-01	2.8	9.86E-01
10	3	241.82	465	356	1.89	483.56	470	21	6.45E-02	11.4	
11	0	270.46*	146	317	1.75	540.78	536	10	2.03E-02	24.7	
12	0	295.26*	672	304	1.28	590.34	585	11	9.34E-02	6.4	
13	0	300.40	175	274	0.90	600.61	596	11	2.44E-02	19.8	
14	0	338.35*	408	350	1.31	676.46	669	14	5.67E-02	11.1	
15	0	352.03*	1132	275	1.38	703.79	698	12	1.57E-01	4.3	
16	0	463.20*	94	176	1.73	925.96	922	10	1.30E-02	29.2	
17	0	511.03*	183	269	2.11	1021.57	1014	18	2.55E-02	25.0	
18	0	582.98*	631	184	1.53	1165.38	1156	18	8.76E-02	6.6	
19	0	609.48*	747	291	1.71	1218.35	1208	18	1.04E-01	6.6	
20	0	661.63	657	128	1.85	1322.58	1313	15	9.13E-02	5.4	
21	0	726.81	174	181	1.92	1452.88	1446	17	2.41E-02	19.2	
22	0	768.84	100	179	3.93	1536.90	1527	20	1.38E-02	34.5	
23	0	795.38	64	65	1.50	1589.96	1586	9	8.83E-03	26.3	
24	0	861.23	128	149	2.38	1721.61	1710	25	1.78E-02	27.2	
25	0	911.19*	510	103	2.16	1821.50	1812	18	7.09E-02	6.6	
26	0	969.27*	209	126	1.72	1937.62	1932	12	2.91E-02	13.7	
27	0	1120.36*	196	86	1.32	2239.74	2232	15	2.73E-02	12.9	
28	0	1237.37	132	96	3.19	2473.75	2466	16	1.84E-02	18.7	
29	0	1378.41	58	65	2.41	2755.82	2748	18	8.08E-03	37.1	
30	0	1460.87*	2056	29	2.70	2920.76	2908	23	2.86E-01	2.3	
31	0	1588.99*	37	21	2.35	3177.05	3172	12	5.11E-03	32.8	
32	0	1764.18*	173	14	2.26	3527.56	3516	21	2.40E-02	10.4	

Flag: "*" = Peak area was modified by background subtraction


```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:23:18
Sample ID         : G248513006 Sample quantity : 119.44 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.33 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	+	1460.82	*	3.176E+01	3.266E+00	4.994E-01	4.575E-02	63.595
CD-109	+	88.03	*	4.734E+00	1.012E+00	1.311E+00	1.244E-01	3.613
SN-126	+	64.28		9.457E-01	6.501E-01	7.639E-01	1.109E-01	1.238
	+	86.94		1.901E+00	8.700E-01	5.315E-01	2.207E-01	3.577
	+	87.57	*	4.574E-01	9.781E-02	1.271E-01	1.200E-02	3.598
BA-137M	+	661.66	*	6.411E-01	9.655E-02	5.834E-02	6.152E-03	10.989
CS-137	+	661.66	*	6.772E-01	1.021E-01	6.163E-02	6.507E-03	10.989
TL-208		277.37		4.458E-01	4.154E-01	6.835E-01	1.137E-01	0.652
	+	583.19	*	5.931E-01	1.011E-01	5.504E-02	5.963E-03	10.777
	+	860.56		1.102E+00	6.135E-01	4.765E-01	5.551E-02	2.312
BI-211		72.87		6.678E+00	3.404E+00	5.304E+00	4.246E-01	1.259
	+	351.06	*	5.101E+00	7.348E-01	3.252E-01	3.795E-02	15.686
PB-212	+	74.82		2.773E+00	5.874E-01	5.324E-01	6.762E-02	5.208
	+	77.11		2.610E+00	3.533E-01	3.067E-01	2.565E-02	8.512
	+	238.63	*	2.027E+00	2.913E-01	9.185E-02	1.217E-02	22.068
	+	300.09		2.825E+00	1.193E+00	1.152E+00	1.690E-01	2.452
BI-214	+	609.32	*	1.355E+00	2.382E-01	1.089E-01	1.270E-02	12.452
	+	1120.29		1.762E+00	4.939E-01	4.741E-01	5.261E-02	3.717
	+	1764.49		2.072E+00	4.626E-01	3.236E-01	2.696E-02	6.404
PB-214	+	74.82		4.915E+00	1.004E+00	9.437E-01	1.074E-01	5.208
	+	77.11		4.602E+00	7.294E-01	5.406E-01	6.350E-02	8.512
	+	242.00		3.022E+00	8.050E-01	5.578E-01	7.714E-02	5.418
	+	295.22		1.921E+00	3.794E-01	2.263E-01	3.395E-02	8.490
	+	351.93	*	1.851E+00	2.856E-01	1.193E-01	1.535E-02	15.524
RA-224	+	240.99	*	5.344E+00	1.389E+00	9.835E-01	1.231E-01	5.434
RA-226	+	609.32	*	1.355E+00	2.382E-01	1.089E-01	1.270E-02	12.452
	+	1120.29		1.762E+00	4.939E-01	4.741E-01	5.261E-02	3.717
	+	1764.49		2.072E+00	4.626E-01	3.236E-01	2.696E-02	6.404
AC-228	+	338.32		2.060E+00	9.873E-01	3.742E-01	1.591E-01	5.504
	+	911.20	*	2.230E+00	4.228E-01	2.141E-01	2.899E-02	10.416
	+	968.97		1.574E+00	5.849E-01	4.614E-01	1.160E-01	3.411
RA-228	+	338.32		2.060E+00	9.873E-01	3.742E-01	1.591E-01	5.504
	+	911.20	*	2.230E+00	4.228E-01	2.141E-01	2.899E-02	10.416
	+	968.97		1.574E+00	5.849E-01	4.614E-01	1.160E-01	3.411

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.773E+00	5.228E-01	5.324E-01	4.391E-02	5.208
	+	77.11		2.610E+00	3.533E-01	3.067E-01	2.565E-02	8.512
	+	238.63	*	2.027E+00	2.913E-01	9.185E-02	1.217E-02	22.068
	+	300.09		2.825E+00	2.080E+00	1.152E+00	7.151E-01	2.452
TH-232	+	338.32		2.060E+00	5.175E-01	3.742E-01	4.450E-02	5.504
	+	911.20	*	2.230E+00	4.228E-01	2.141E-01	2.899E-02	10.416
	+	968.97		1.574E+00	5.849E-01	4.614E-01	1.160E-01	3.411
TH-234	+	63.29	*	2.454E+00	1.706E+00	2.077E+00	3.696E-01	1.182
	+	92.59		4.841E+00	1.490E+00	1.071E+00	2.385E-01	4.521
U-235	+	89.96		2.861E+00	1.299E+00	1.329E+00	3.304E-01	2.152
	+	93.35		3.656E+00	1.153E+00	8.051E-01	1.873E-01	4.542
		143.76	*	2.535E-01	2.245E-01	3.765E-01	6.435E-02	0.673
		163.33		-2.730E-01	4.625E-01	7.373E-01	1.363E-01	-0.370
	+	185.72		2.008E-01	7.324E-02	7.170E-02	7.508E-03	2.800
		205.31		-1.529E-01	5.869E-01	8.328E-01	1.623E-01	-0.184
NP-237	+	86.48	*	1.365E+00	4.087E-01	4.068E-01	9.333E-02	3.355
		95.86		-2.227E+00	1.103E+00	1.433E+00	3.451E-01	-1.554
U-238	+	63.29	*	2.454E+00	1.706E+00	2.077E+00	3.696E-01	1.182
	+	92.59		4.841E+00	1.119E+00	1.071E+00	9.740E-02	4.521
ANH-511	+	511.00	*	1.340E-01	6.823E-02	4.505E-02	4.514E-03	2.975

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-7.426E-02	3.626E-01	5.714E-01	5.962E-02	-0.130
NA-22		1274.54	*	1.424E-02	4.341E-02	7.340E-02	6.326E-03	0.194
NA-24		1368.63	*	-1.207E+03	4.341E-02	Half-Life too short		
SC-46		889.28	*	-5.586E-03	4.209E-02	6.924E-02	7.751E-03	-0.081
	+	1120.55		3.181E-01	8.657E-02	1.299E-01	1.148E-02	2.449
V-48		944.13		-6.304E-01	1.184E+00	1.879E+00	2.038E-01	-0.335
		983.53	*	-1.809E-02	8.743E-02	1.413E-01	1.482E-02	-0.128
		1312.11		-5.250E-02	1.121E-01	1.784E-01	1.571E-02	-0.294
CR-51		320.08	*	2.062E-01	4.537E-01	7.717E-01	9.989E-02	0.267
MN-54		834.85	*	2.978E-03	3.932E-02	6.588E-02	7.318E-03	0.045
CO-56		846.77	*	-5.694E-02	4.290E-02	6.494E-02	7.229E-03	-0.877
		1037.84		5.258E-02	3.286E-01	5.426E-01	5.590E-02	0.097
	+	1238.28		3.533E-01	1.357E-01	1.879E-01	1.628E-02	1.880
		1771.35		5.008E-02	2.881E-01	4.139E-01	3.439E-02	0.121
CO-57		122.06	*	2.342E-02	2.619E-02	4.287E-02	3.535E-03	0.546
		136.47		-2.598E-02	2.135E-01	3.595E-01	3.332E-02	-0.072
CO-58		810.76	*	-3.512E-02	3.744E-02	5.839E-02	6.466E-03	-0.601
FE-59		1099.45	*	4.824E-03	1.012E-01	1.649E-01	1.615E-02	0.029
		1291.59		-9.258E-05	1.322E-01	2.186E-01	2.154E-02	0.000
CO-60		1173.23		2.141E-02	4.326E-02	7.429E-02	5.974E-03	0.288
		1332.49	*	-5.337E-03	3.471E-02	5.640E-02	5.030E-03	-0.095
ZN-65		1115.54	*	1.222E-01	1.057E-01	1.606E-01	1.433E-02	0.761
SE-75		121.12		2.824E-02	1.413E-01	2.258E-01	2.438E-02	0.125
		136.00		-7.176E-03	4.217E-02	7.093E-02	6.156E-03	-0.101

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		8.649E-03	5.620E-02	7.952E-02	1.070E-02	0.109
	279.54			1.051E-01	1.259E-01	2.069E-01	2.937E-02	0.508
	400.66			1.004E-01	2.727E-01	4.548E-01	5.311E-02	0.221
SR-85	514.00	*		1.554E-01	5.270E-02	8.344E-02	8.372E-03	1.863
Y-88	898.04			-2.080E-02	4.387E-02	7.046E-02	7.916E-03	-0.295
	1836.06	*		1.917E-02	3.235E-02	5.717E-02	4.622E-03	0.335
Y-91	1204.77	*		1.593E+00	2.352E+01	3.930E+01	3.231E+00	0.041
NB-94	702.65	*		2.923E-02	3.381E-02	5.756E-02	6.169E-03	0.508
	871.09			1.649E-02	3.726E-02	5.515E-02	6.161E-03	0.299
NB-95	765.81	*		1.086E-01	4.879E-02	7.872E-02	8.609E-03	1.379
NB-95M	235.69	*		1.432E-01	1.574E-01	2.321E-01	3.071E-02	0.617
ZR-95	724.19			2.428E-01	1.224E-01	1.917E-01	2.182E-02	1.267
	756.73	*		-2.673E-03	7.379E-02	1.193E-01	1.388E-02	-0.022
MO-99	140.51			-2.580E-04	7.379E-02	Half-Life	too short	
	181.07			1.257E-04	7.379E-02	Half-Life	too short	
	366.42			-1.296E-04	7.379E-02	Half-Life	too short	
	739.50	*		-5.466E-05	7.379E-02	Half-Life	too short	
	777.92			-2.888E-06	7.379E-02	Half-Life	too short	
TC-99M	140.51	*		-1.647E+20	7.379E-02	Half-Life	too short	
RU-103	497.08	*		2.721E-02	4.574E-02	7.577E-02	1.123E-02	0.359
+	610.33			1.607E+01	3.498E+00	3.127E+00	5.429E-01	5.138
RH-106	621.93	*		-3.737E-02	3.046E-01	4.993E-01	7.245E-02	-0.075
	1050.41			-1.744E+00	2.428E+00	3.740E+00	3.651E-01	-0.466
RU-106	621.93	*		-3.737E-02	3.046E-01	4.993E-01	5.216E-02	-0.075
	1050.41			-1.744E+00	2.428E+00	3.740E+00	3.651E-01	-0.466
AG-108M	433.94	*		-1.134E-02	2.943E-02	4.699E-02	4.624E-03	-0.241
	614.28			-1.823E-02	3.930E-02	5.370E-02	5.724E-03	-0.339
	722.91			4.466E-02	3.999E-02	6.081E-02	6.699E-03	0.734
AG-110M	657.76	*		7.965E-02	4.290E-02	6.771E-02	7.278E-03	1.176
	677.62			5.078E-02	3.019E-01	4.995E-01	5.403E-02	0.102
	706.68			-2.033E-02	2.221E-01	3.605E-01	3.940E-02	-0.056
	763.94			1.431E-01	1.690E-01	2.519E-01	2.801E-02	0.568
	884.68			-8.877E-03	5.479E-02	8.344E-02	9.515E-03	-0.106
	937.49			3.883E-02	1.119E-01	1.885E-01	2.102E-02	0.206
	1384.29			-5.035E-02	1.729E-01	2.305E-01	2.112E-02	-0.218
	1505.03			-1.654E-01	2.827E-01	4.325E-01	3.846E-02	-0.382
SN-113	391.69	*		7.114E-03	4.798E-02	7.945E-02	7.587E-03	0.090
CD-115	260.90			-3.971E-04	4.798E-02	Half-Life	too short	
	492.35			-1.842E-04	4.798E-02	Half-Life	too short	
	527.90	*		-8.897E-05	4.798E-02	Half-Life	too short	
SN-117M	156.02			-4.761E-01	3.483E+00	5.809E+00	5.446E-01	-0.082
	158.56	*		4.339E-02	8.551E-02	1.452E-01	1.377E-02	0.299
TE-123M	159.00	*		2.067E-02	3.096E-02	5.278E-02	5.040E-03	0.392
SB-124	602.73			-3.554E-02	5.143E-02	6.938E-02	7.208E-03	-0.512
	645.85			-1.891E-01	5.270E-01	8.486E-01	9.266E-02	-0.223
	722.78			4.793E-01	4.390E-01	6.666E-01	7.299E-02	0.719
	1690.97	*		-8.346E-03	7.837E-02	1.281E-01	1.142E-02	-0.065
SB-125	427.87	*		-3.398E-02	9.040E-02	1.446E-01	1.402E-02	-0.235
+	463.37			6.187E-01	3.668E-01	5.263E-01	5.445E-02	1.176

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		600.60		-5.866E-02	2.267E-01	3.001E-01	3.276E-02	-0.195
		635.95		-9.330E-03	2.636E-01	4.335E-01	4.797E-02	-0.022
TE-125M		109.28	*	1.276E+00	1.140E+01	1.829E+01	1.885E+00	0.070
I-126		388.63		2.941E-01	2.569E-01	4.422E-01	4.187E-02	0.665
		666.33	*	4.624E-01	3.436E-01	5.361E-01	5.664E-02	0.863
		753.82		3.251E+00	2.636E+00	4.564E+00	4.974E-01	0.712
SB-126		414.70		-8.686E-02	1.260E-01	1.992E-01	1.885E-02	-0.436
		666.50		1.565E-01	1.199E-01	1.867E-01	1.973E-02	0.838
		695.00		-3.166E-03	1.145E-01	1.868E-01	1.996E-02	-0.017
		697.00		-6.060E-02	4.065E-01	6.583E-01	7.040E-02	-0.092
		720.70	*	-2.726E-02	2.529E-01	3.434E-01	3.703E-02	-0.079
		856.80		-5.375E-02	8.624E-01	1.222E+00	1.362E-01	-0.044
SB-127		252.40		-2.252E+01	2.098E+01	2.840E+01	1.233E+01	-0.793
		473.00		2.224E+00	6.552E+00	1.078E+01	1.707E+00	0.206
		685.70	*	4.987E-01	4.972E+00	8.185E+00	1.252E+00	0.061
		783.70		2.113E+01	1.547E+01	2.631E+01	4.280E+00	0.803
I-131		80.19		-4.212E+00	8.393E+00	1.347E+01	1.182E+00	-0.313
		284.31		-1.865E+00	3.303E+00	5.134E+00	7.277E-01	-0.363
		364.49	*	-9.125E-02	2.246E-01	3.643E-01	4.057E-02	-0.250
		636.99		2.604E-03	2.924E+00	4.818E+00	5.277E-01	0.001
TE-132		49.72		-6.099E+01	8.813E+01	1.437E+02	1.885E+01	-0.424
		111.76		1.151E+02	1.965E+02	3.191E+02	4.249E+01	0.361
		116.30		1.804E+01	1.638E+02	2.616E+02	3.474E+01	0.069
		228.16	*	-9.459E-01	4.165E+00	6.711E+00	1.311E+00	-0.141
BA-133		81.00		-5.034E-02	9.916E-02	1.409E-01	2.195E-02	-0.357
		276.40		1.993E-01	4.061E-01	6.127E-01	1.092E-01	0.325
		302.85		1.448E-01	1.611E-01	2.447E-01	4.038E-02	0.592
		356.01	*	1.207E-02	4.746E-02	6.937E-02	1.021E-02	0.174
		383.85		-2.814E-01	2.936E-01	4.577E-01	6.047E-02	-0.615
I-133		529.87	*	7.830E-01	2.936E-01	Half-Life	too short	
		875.33		-4.542E+01	2.936E-01	Half-Life	too short	
		1298.22		7.333E+01	2.936E-01	Half-Life	too short	
CS-134		563.25		1.498E-01	3.482E-01	5.924E-01	6.112E-02	0.253
		569.33		-6.649E-02	2.089E-01	3.297E-01	3.419E-02	-0.202
		604.72		4.085E-05	3.948E-02	5.621E-02	5.852E-03	0.001
	+	795.86	*	8.521E-02	4.588E-02	7.966E-02	8.818E-03	1.070
		801.95		2.303E-01	4.370E-01	6.610E-01	7.319E-02	0.348
		1365.19		3.531E-01	1.214E+00	2.045E+00	1.905E-01	0.173
CS-135		268.22	*	2.173E-01	1.910E-01	2.809E-01	4.064E-02	0.773
I-135		546.56		6.610E+18	1.910E-01	Half-Life	too short	
		836.80		1.561E+19	1.910E-01	Half-Life	too short	
		1038.76		-1.462E+18	1.910E-01	Half-Life	too short	
		1131.51		-2.070E+17	1.910E-01	Half-Life	too short	
		1260.41	*	-9.252E+17	1.910E-01	Half-Life	too short	
		1457.56		5.226E+20	1.910E-01	Half-Life	too short	
		1678.03		-3.956E+18	1.910E-01	Half-Life	too short	
		1791.20		2.265E+18	1.910E-01	Half-Life	too short	
CS-136		153.25		7.351E-01	1.339E+00	2.279E+00	2.465E-01	0.323
		176.60		-1.027E-01	7.947E-01	1.313E+00	1.436E-01	-0.078

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	273.65			-1.327E+00	9.537E-01	1.194E+00	1.703E-01	-1.111
	340.55			1.343E+00	3.104E-01	4.772E-01	5.748E-02	2.814
	818.51			1.321E-01	1.010E-01	1.808E-01	2.005E-02	0.731
	1048.07	*		-4.164E-02	1.541E-01	2.466E-01	2.495E-02	-0.169
	1235.36			1.992E+00	1.020E+00	1.623E+00	1.884E-01	1.227
CE-139	165.86	*		-1.814E-02	3.152E-02	5.147E-02	5.048E-03	-0.352
BA-140	162.66			-7.273E-01	1.307E+00	2.096E+00	2.135E-01	-0.347
	304.85			2.261E+00	2.377E+00	3.511E+00	1.086E+00	0.644
	423.72			-7.042E-01	2.936E+00	4.722E+00	1.565E+00	-0.149
	537.26	*		-1.206E-01	4.023E-01	6.593E-01	2.264E-01	-0.183
LA-140	328.76			7.323E-01	4.812E-01	8.339E-01	1.054E-01	0.878
	487.02			-7.703E-03	2.158E-01	3.474E-01	3.601E-02	-0.022
	815.77			-2.841E-01	4.556E-01	7.291E-01	8.656E-02	-0.390
	1596.21	*		3.585E-02	1.331E-01	1.992E-01	1.746E-02	0.180
CE-141	145.44	*		8.911E-02	7.835E-02	1.356E-01	1.234E-02	0.657
CE-143	57.36			-1.989E-02	7.835E-02	Half-Life	too short	
	293.27	*		5.624E-02	7.835E-02	Half-Life	too short	
	664.57			6.297E-01	7.835E-02	Half-Life	too short	
	721.93			5.772E-02	7.835E-02	Half-Life	too short	
CE-144	80.12			-1.124E+00	2.349E+00	3.773E+00	3.262E-01	-0.298
	133.52	*		-1.423E-02	2.059E-01	3.479E-01	5.302E-02	-0.041
PM-144	476.78			-2.680E-02	6.732E-02	1.049E-01	1.102E-02	-0.256
	618.01			1.409E-02	3.171E-02	5.137E-02	5.464E-03	0.274
	696.49	*		-5.247E-04	3.369E-02	5.499E-02	5.883E-03	-0.010
PR-144	696.51	*		-3.941E-02	2.532E+00	4.133E+00	4.419E-01	-0.010
	1489.16			3.893E+00	1.186E+01	2.000E+01	1.781E+00	0.195
PM-146	453.88	*		-1.295E-02	4.425E-02	7.074E-02	8.134E-03	-0.183
	633.25			-1.628E-01	1.353E+00	2.212E+00	8.552E-01	-0.074
	735.93			3.347E-02	1.568E-01	2.310E-01	6.651E-02	0.145
	747.24			-6.625E-02	9.500E-02	1.462E-01	2.343E-02	-0.453
ND-147	91.11	+		1.521E+00	5.974E-01	8.746E-01	8.647E-02	1.739
	319.41			4.124E+00	5.581E+00	9.572E+00	1.212E+00	0.431
	531.02	*		5.093E-01	8.881E-01	1.525E+00	2.418E-01	0.334
PM-149	285.90	*		3.052E-04	8.881E-01	Half-Life	too short	
EU-152	121.78			4.502E-02	7.434E-02	1.205E-01	1.154E-02	0.374
	244.70			3.414E-01	3.833E-01	5.648E-01	7.151E-02	0.604
	344.28	*		-1.189E-01	1.156E-01	1.442E-01	1.733E-02	-0.825
	778.90			-1.555E-01	2.814E-01	4.150E-01	4.554E-02	-0.375
	964.08			6.839E-01	3.518E-01	5.563E-01	5.937E-02	1.229
	1085.87			-1.575E-01	3.686E-01	5.801E-01	5.405E-02	-0.271
	1112.07			4.692E-01	3.161E-01	5.008E-01	4.488E-02	0.937
	1408.01			1.212E-01	1.915E-01	3.290E-01	2.942E-02	0.368
GD-153	69.67			1.622E+00	1.821E+00	2.775E+00	2.154E-01	0.584
	97.43	*		-1.153E-02	9.903E-02	1.414E-01	1.243E-02	-0.082
	103.18			-1.228E-01	1.151E-01	1.766E-01	1.509E-02	-0.695
EU-154	123.07			3.072E-03	5.419E-02	8.603E-02	9.533E-03	0.036
	723.31			2.049E-01	1.866E-01	2.825E-01	3.250E-02	0.725
	873.19			-1.548E-02	2.850E-01	4.429E-01	6.137E-02	-0.035
	996.26			-3.746E-01	3.768E-01	5.676E-01	1.044E-01	-0.660

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		1.326E-01	2.146E-01	3.631E-01	4.687E-02	0.365
		1274.44	*	4.362E-02	1.228E-01	2.079E-01	2.364E-02	0.210
		86.55		5.563E-01	1.192E-01	1.903E-01	1.790E-02	2.924
		105.31	*	8.074E-03	1.072E-01	1.723E-01	1.479E-02	0.047
TB-160	+	86.79		1.586E+00	3.393E-01	5.422E-01	5.071E-02	2.926
		197.04		-4.243E-02	6.538E-01	1.051E+00	1.142E-01	-0.040
		215.65		8.060E-01	9.267E-01	1.447E+00	1.673E-01	0.557
		298.57		3.695E-01	1.930E-01	2.233E-01	2.993E-02	1.655
HO-166M		879.36	*	3.218E-04	1.416E-01	2.351E-01	2.629E-02	0.001
		962.29		1.250E+00	6.680E-01	1.061E+00	1.134E-01	1.178
		966.15		1.500E+00	3.502E-01	5.630E-01	5.997E-02	2.664
		1177.93		-1.039E-01	3.767E-01	6.176E-01	4.983E-02	-0.168
		1271.85		-1.528E-01	7.731E-01	1.206E+00	1.036E-01	-0.127
		80.57		-1.465E-01	2.501E-01	4.001E-01	3.476E-02	-0.366
		184.41		6.955E-02	4.587E-02	7.124E-02	7.427E-03	0.976
		280.46		-1.050E-02	9.527E-02	1.517E-01	2.118E-02	-0.069
		410.95		7.289E-02	2.613E-01	4.331E-01	4.088E-02	0.168
		711.68	*	2.928E-02	5.917E-02	9.916E-02	1.066E-02	0.295
		752.31		-2.706E-02	2.643E-01	4.258E-01	4.638E-02	-0.064
		810.29		-4.772E-02	5.317E-02	8.332E-02	9.211E-03	-0.573
TA-182		67.75		-3.312E-02	1.091E-01	1.782E-01	1.359E-02	-0.186
		100.11		1.595E-01	2.139E-01	3.165E-01	2.742E-02	0.504
		152.43		3.633E-01	3.754E-01	6.461E-01	5.962E-02	0.562
		222.11		-1.501E-01	3.824E-01	6.137E-01	7.242E-02	-0.245
		1121.30	+	8.660E-01	2.357E-01	3.546E-01	3.131E-02	2.442
		1189.05		1.676E-02	3.375E-01	5.639E-01	4.586E-02	0.030
IR-192	+	1221.41	*	-1.436E-01	1.947E-01	3.083E-01	2.564E-02	-0.466
		1231.02		4.341E-01	5.033E-01	7.677E-01	6.425E-02	0.565
		295.96		1.529E+00	2.856E-01	3.215E-01	4.350E-02	4.757
		308.46		-7.134E-02	1.057E-01	1.718E-01	2.250E-02	-0.415
HG-203		316.51	*	9.335E-04	3.835E-02	6.429E-02	8.216E-03	0.015
		468.07		2.715E-03	8.236E-02	1.153E-01	1.194E-02	0.024
		70.83		1.386E+00	1.567E+00	2.367E+00	3.706E-01	0.585
		72.87		1.869E+00	9.827E-01	1.484E+00	2.257E-01	1.259
BI-207	+	279.20	*	4.502E-02	4.780E-02	7.872E-02	1.113E-02	0.572
		72.81		3.484E-01	1.948E-01	3.025E-01	2.420E-02	1.152
		74.97		7.995E-01	1.505E-01	2.282E-01	1.866E-02	3.504
		569.70		-2.717E-03	3.190E-02	5.096E-02	5.234E-03	-0.053
PB-210		1063.66	*	5.836E-03	5.088E-02	8.359E-02	8.024E-03	0.070
		1770.23		8.636E-01	6.283E-01	1.038E+00	8.626E-02	0.832
PB-211		46.54	*	2.116E+00	3.007E+00	5.048E+00	4.649E-01	0.419
BI-212	+	404.85	*	-8.014E-01	8.468E-01	1.173E+00	5.694E-01	-0.683
		427.09		-1.324E+00	1.628E+00	2.349E+00	1.091E+00	-0.564
		832.01		-1.104E+00	1.142E+00	1.536E+00	8.040E-01	-0.718
		727.33	*	2.446E+00	1.001E+00	1.150E+00	1.618E-01	2.127
RN-219	+	785.37		7.030E+00	3.249E+00	5.754E+00	6.325E-01	1.222
		1620.50		1.062E+00	2.257E+00	3.926E+00	3.422E-01	0.270
		271.23		6.792E-01	3.506E-01	4.449E-01	6.573E-02	1.527
		401.81	*	-2.248E-01	4.198E-01	6.695E-01	1.026E-01	-0.336

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-1.109E-01	2.239E-01	3.190E-01	2.788E-02	-0.348
		83.79		1.114E-01	1.659E-01	1.981E-01	1.786E-02	0.562
		94.87		1.649E-01	4.916E-01	8.013E-01	7.165E-02	0.206
		144.24		6.644E-01	7.452E-01	1.259E+00	1.245E-01	0.528
		154.21		2.386E-01	4.041E-01	6.885E-01	6.932E-02	0.347
AC-227	+	269.46		5.277E-01	2.710E-01	3.485E-01	4.785E-02	1.514
		323.87	*	-8.560E-01	6.834E-01	1.050E+00	2.052E-01	-0.815
	+	338.28		8.174E+00	2.167E+00	2.390E+00	3.487E-01	3.421
		79.69		-7.723E-01	1.151E+00	1.827E+00	3.147E-01	-0.423
		235.96		6.507E-01	2.040E-01	3.026E-01	4.111E-02	2.150
TH-227		256.23	*	6.521E-02	2.698E-01	4.388E-01	6.836E-02	0.149
	+	299.98		3.108E+00	1.330E+00	1.612E+00	2.626E-01	1.928
		304.50		2.237E+00	1.835E+00	2.794E+00	5.398E-01	0.801
		334.37		3.772E-01	1.925E+00	2.820E+00	4.998E-01	0.134
		79.80		-9.362E-01	1.523E+00	2.416E+00	5.261E-01	-0.388
TH-229		235.96		6.507E-01	2.028E-01	3.026E-01	3.978E-02	2.150
		256.23	*	6.521E-02	2.698E-01	4.388E-01	7.376E-02	0.149
	+	299.98		3.108E+00	1.330E+00	1.612E+00	2.626E-01	1.928
		304.50		2.237E+00	1.835E+00	2.794E+00	5.398E-01	0.801
		334.37		3.772E-01	1.925E+00	2.820E+00	4.998E-01	0.134
PA-231		85.43		4.440E-01	2.340E-01	3.575E-01	3.289E-02	1.242
	+	88.47		7.051E-01	1.508E-01	2.430E-01	2.295E-02	2.902
		193.51	*	-7.456E-02	5.605E-01	9.198E-01	9.885E-02	-0.081
	+	210.85		2.497E+00	1.347E+00	1.661E+00	1.890E-01	1.503
		283.69	*	3.519E-02	1.607E+00	2.570E+00	4.675E-01	0.014
TH-231	+	301.36		1.997E+00	8.514E-01	1.037E+00	1.642E-01	1.924
		81.07		-1.109E-01	2.239E-01	3.190E-01	2.788E-02	-0.348
		83.79		1.114E-01	1.659E-01	1.981E-01	1.786E-02	0.562
		94.87		1.649E-01	4.916E-01	8.013E-01	7.165E-02	0.206
		144.24		6.644E-01	7.452E-01	1.259E+00	1.245E-01	0.528
PA-233		154.21		2.386E-01	4.041E-01	6.885E-01	6.932E-02	0.347
	+	269.46		5.277E-01	2.710E-01	3.485E-01	4.785E-02	1.514
		323.87	*	-8.560E-01	6.834E-01	1.050E+00	2.052E-01	-0.815
	+	338.28		8.174E+00	2.167E+00	2.390E+00	3.487E-01	3.421
	+	300.13		1.406E+00	6.115E-01	7.357E-01	1.324E-01	1.911
PA-234		311.90	*	6.787E-02	6.538E-02	1.131E-01	1.482E-02	0.600
		340.48		3.910E+00	1.251E+00	1.371E+00	3.480E-01	2.852
		94.67		2.208E-01	1.849E-01	3.054E-01	3.859E-02	0.723
		98.44		7.510E-02	1.122E-01	1.543E-01	8.609E-02	0.487
		111.00		1.407E-01	1.999E-01	3.258E-01	3.875E-02	0.432
PA-234M		131.20		-8.530E-02	1.101E-01	1.819E-01	1.541E-02	-0.469
		569.50		-8.088E-02	2.856E-01	4.517E-01	4.640E-02	-0.179
		733.00		1.159E-01	4.205E-01	5.985E-01	1.385E-01	0.194
		880.51		-1.965E-02	2.724E-01	4.502E-01	5.035E-02	-0.044
		883.24		-1.488E-01	3.270E-01	4.638E-01	3.135E-01	-0.321
PA-234M		926.50		-1.488E-01	1.673E-01	2.514E-01	6.582E-02	-0.592
		946.00	*	1.227E-01	2.878E-01	4.862E-01	9.664E-02	0.252
		949.00		1.421E-01	4.247E-01	7.151E-01	7.726E-02	0.199
		766.42		2.535E+01	1.786E+01	1.992E+01	1.019E+01	1.273

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		3.064E+00	4.877E+00	8.162E+00	9.354E-01	0.375
	99.53			1.602E-01	1.874E-01	2.785E-01	2.420E-02	0.575
	103.37			-1.266E-01	1.028E-01	1.565E-01	1.336E-02	-0.809
	106.12			2.183E-02	8.505E-02	1.375E-01	1.162E-02	0.159
	117.23	*		-3.844E-02	4.101E-01	6.497E-01	5.369E-02	-0.059
	228.18			-5.502E-02	2.247E-01	3.620E-01	4.355E-02	-0.152
AM-241	277.60			1.904E-01	1.889E-01	3.119E-01	4.348E-02	0.610
	59.54	*		1.155E-01	1.511E-01	2.325E-01	1.818E-02	0.497
CM-247	278.00			6.991E-01	8.077E-01	1.329E+00	1.854E-01	0.526
	287.50			7.143E-01	1.342E+00	2.186E+00	3.007E-01	0.327
CF-249	402.40	*		-1.431E-02	3.831E-02	6.174E-02	5.791E-03	-0.232
	252.80			-1.356E+00	1.021E+00	1.529E+00	1.984E-01	-0.887
	333.37			-1.387E-01	2.139E-01	2.974E-01	3.599E-02	-0.466
CF-251	388.16	*		4.308E-02	4.048E-02	6.949E-02	6.597E-03	0.620
	177.52	*		-8.487E-02	1.387E-01	2.251E-01	2.294E-02	-0.377
	227.38			1.462E-01	3.697E-01	6.100E-01	7.320E-02	0.240
	285.41			-8.806E-02	2.433E+00	3.879E+00	5.361E-01	-0.023

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]G248513006
* Acquisition date   : 20-MAR-2010 11:23:18 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 02:00:02.33                               Half life ratio  : 8.000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248513006                                     Analyst initials: MXR1
* Batch Number       : 961097                                         Sample Quantity : 1.1944E+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	3.176E+01	3.201E+00	4.981E-01	0.000E+00
CD-109	4.734E+00	9.922E-01	1.350E+00	0.000E+00
SN-126	4.574E-01	9.585E-02	1.309E-01	0.000E+00
BA-137M	6.411E-01	9.462E-02	5.873E-02	0.000E+00
CS-137	6.772E-01	1.000E-01	6.204E-02	0.000E+00
TL-208	5.931E-01	9.904E-02	5.548E-02	0.000E+00
BI-211	5.101E+00	7.201E-01	3.298E-01	0.000E+00
PB-212	2.027E+00	2.855E-01	9.355E-02	0.000E+00
BI-214	1.355E+00	2.334E-01	1.097E-01	0.000E+00
PB-214	1.851E+00	2.799E-01	1.209E-01	0.000E+00
RA-224	5.344E+00	1.362E+00	1.002E+00	0.000E+00
RA-226	1.355E+00	2.334E-01	1.097E-01	0.000E+00
AC-228	2.230E+00	4.143E-01	2.147E-01	0.000E+00
RA-228	2.230E+00	4.143E-01	2.147E-01	0.000E+00
TH-228	2.027E+00	2.855E-01	9.355E-02	0.000E+00
TH-232	2.230E+00	4.143E-01	2.147E-01	0.000E+00
TH-234	2.454E+00	1.672E+00	2.147E+00	0.000E+00
U-235	2.535E-01	2.200E-01	3.857E-01	0.000E+00
NP-237	1.365E+00	4.005E-01	4.190E-01	0.000E+00
U-238	2.454E+00	1.672E+00	2.147E+00	0.000E+00
ANH-511	1.340E-01	6.687E-02	4.549E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-7.426E-02	3.554E-01	5.774E-01	0.000E+00 NOT IDENT.
NA-22	1.424E-02	4.254E-02	7.333E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.830E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-5.586E-03	4.125E-02	6.947E-02	0.000E+00 FAIL ABUN
V-48	-1.809E-02	8.568E-02	1.416E-01	0.000E+00 NOT IDENT.
CR-51	2.062E-01	4.447E-01	7.834E-01	0.000E+00 NOT IDENT.

MN-54	2.978E-03	3.854E-02	6.614E-02	0.000E+00	NOT IDENT.
CO-56	-5.694E-02	4.204E-02	6.519E-02	0.000E+00	FAIL ABUN
CO-57	2.342E-02	2.566E-02	4.399E-02	0.000E+00	NOT IDENT.
CO-58	-3.512E-02	3.669E-02	5.864E-02	0.000E+00	NOT IDENT.
FE-59	4.824E-03	9.913E-02	1.650E-01	0.000E+00	NOT IDENT.
CO-60	-5.337E-03	3.402E-02	5.632E-02	0.000E+00	NOT IDENT.
ZN-65	1.222E-01	1.035E-01	1.607E-01	0.000E+00	NOT IDENT.
SE-75	8.649E-03	5.507E-02	8.090E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.164E-02	8.424E-02	0.000E+00	NOT IDENT.
Y-88	1.917E-02	3.171E-02	5.686E-02	0.000E+00	NOT IDENT.
Y-91	1.593E+00	2.305E+01	3.928E+01	0.000E+00	NOT IDENT.
NB-94	2.923E-02	3.313E-02	5.791E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.781E-02	7.911E-02	0.000E+00	NOT IDENT.
NB-95M	1.432E-01	1.543E-01	2.364E-01	0.000E+00	NOT IDENT.
ZR-95	-2.673E-03	7.232E-02	1.199E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.443E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.295E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.721E-02	4.482E-02	7.653E-02	0.000E+00	FAIL ABUN
RH-106	-3.737E-02	2.985E-01	5.030E-01	0.000E+00	NOT IDENT.
RU-106	-3.737E-02	2.985E-01	5.030E-01	0.000E+00	NOT IDENT.
AG-108M	-1.134E-02	2.885E-02	4.753E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	4.204E-02	6.817E-02	0.000E+00	NOT IDENT.
SN-113	7.114E-03	4.702E-02	8.046E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.242E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	4.339E-02	8.380E-02	1.485E-01	0.000E+00	NOT IDENT.
TE-123M	2.067E-02	3.035E-02	5.400E-02	0.000E+00	NOT IDENT.
SB-124	-8.346E-03	7.680E-02	1.275E-01	0.000E+00	NOT IDENT.
SB-125	-3.398E-02	8.859E-02	1.463E-01	0.000E+00	FAIL ABUN
TE-125M	1.276E+00	1.117E+01	1.879E+01	0.000E+00	NOT IDENT.
I-126	4.624E-01	3.367E-01	5.396E-01	0.000E+00	NOT IDENT.
SB-126	-2.726E-02	2.479E-01	3.453E-01	0.000E+00	NOT IDENT.
SB-127	4.987E-01	4.872E+00	8.236E+00	0.000E+00	NOT IDENT.
I-131	-9.125E-02	2.201E-01	3.693E-01	0.000E+00	NOT IDENT.
TE-132	-9.459E-01	4.081E+00	6.839E+00	0.000E+00	NOT IDENT.
BA-133	1.207E-02	4.651E-02	7.034E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.983E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.496E-02	8.003E-02	0.000E+00	FAIL ABUN
CS-135	2.173E-01	1.871E-01	2.858E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.507E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.164E-02	1.510E-01	2.469E-01	0.000E+00	NOT IDENT.
CE-139	-1.814E-02	3.089E-02	5.263E-02	0.000E+00	NOT IDENT.
BA-140	-1.206E-01	3.943E-01	6.653E-01	0.000E+00	NOT IDENT.
LA-140	3.585E-02	1.305E-01	1.984E-01	0.000E+00	NOT IDENT.
CE-141	8.911E-02	7.678E-02	1.388E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.733E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.423E-02	2.018E-01	3.566E-01	0.000E+00	NOT IDENT.
PM-144	-5.247E-04	3.302E-02	5.533E-02	0.000E+00	NOT IDENT.
PR-144	-3.941E-02	2.481E+00	4.158E+00	0.000E+00	NOT IDENT.
PM-146	-1.295E-02	4.337E-02	7.153E-02	0.000E+00	NOT IDENT.
ND-147	5.093E-01	8.704E-01	1.539E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.170E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.189E-01	1.133E-01	1.462E-01	0.000E+00	NOT IDENT.
GD-153	-1.153E-02	9.705E-02	1.454E-01	0.000E+00	NOT IDENT.
EU-154	4.362E-02	1.203E-01	2.077E-01	0.000E+00	NOT IDENT.
EU-155	8.074E-03	1.051E-01	1.771E-01	0.000E+00	FAIL ABUN
TB-160	3.218E-04	1.387E-01	2.359E-01	0.000E+00	FAIL ABUN
HO-166M	2.928E-02	5.799E-02	9.974E-02	0.000E+00	NOT IDENT.
TA-182	-1.436E-01	1.908E-01	3.082E-01	0.000E+00	FAIL ABUN
IR-192	9.335E-04	3.759E-02	6.527E-02	0.000E+00	FAIL ABUN
HG-203	4.502E-02	4.685E-02	8.004E-02	0.000E+00	NOT IDENT.
BI-207	5.836E-03	4.986E-02	8.368E-02	0.000E+00	FAIL ABUN
PB-210	2.116E+00	2.947E+00	5.236E+00	0.000E+00	NOT IDENT.
PB-211	-8.014E-01	8.298E-01	1.188E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.813E-01	1.157E+00	0.000E+00	FAIL ABUN
RN-219	-2.248E-01	4.114E-01	6.779E-01	0.000E+00	FAIL ABUN
RA-223	-8.560E-01	6.698E-01	1.066E+00	0.000E+00	FAIL ABUN
AC-227	6.521E-02	2.644E-01	4.466E-01	0.000E+00	FAIL ABUN
TH-227	6.521E-02	2.644E-01	4.466E-01	0.000E+00	FAIL ABUN
TH-229	-7.456E-02	5.493E-01	9.390E-01	0.000E+00	FAIL ABUN
PA-231	3.519E-02	1.575E+00	2.613E+00	0.000E+00	FAIL ABUN
TH-231	-8.560E-01	6.698E-01	1.066E+00	0.000E+00	FAIL ABUN
PA-233	6.787E-02	6.408E-02	1.148E-01	0.000E+00	FAIL ABUN
PA-234	1.227E-01	2.821E-01	4.874E-01	0.000E+00	NOT IDENT.
PA-234M	3.064E+00	4.780E+00	8.177E+00	0.000E+00	NOT IDENT.
NP-239	-3.844E-02	4.019E-01	6.671E-01	0.000E+00	NOT IDENT.
AM-241	1.155E-01	1.481E-01	2.405E-01	0.000E+00	NOT IDENT.
CM-247	-1.431E-02	3.754E-02	6.251E-02	0.000E+00	NOT IDENT.
CF-249	4.308E-02	3.967E-02	7.038E-02	0.000E+00	NOT IDENT.

CF-251	-8.487E-02	1.359E-01	2.300E-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]G248513006.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:23:18
Sample ID          : G248513006 Sample quantity   : 1.19440E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.33 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 961097 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	1460.82	2056	10.66*	1.909E+00	3.176E+01	3.176E+01	10.28
CD-109	88.03	403	3.70*	7.483E+00	4.574E+00	4.734E+00	21.39
SN-126	64.28	126	9.60	4.346E+00	9.457E-01	9.457E-01	68.74
	86.94	403	8.90	7.483E+00	1.901E+00	1.901E+00	45.75
	87.57	403	37.00*	7.483E+00	4.574E-01	4.574E-01	21.39
BA-137M	661.66	657	89.90*	3.590E+00	6.401E-01	6.411E-01	15.06
CS-137	661.66	657	85.10*	3.590E+00	6.762E-01	6.772E-01	15.07
TL-208	277.37	-----	6.60	6.182E+00	-----	Line Not Found	-----
	583.19	631	85.00*	3.931E+00	5.931E-01	5.931E-01	17.04
	860.56	128	12.50	2.921E+00	1.102E+00	1.102E+00	55.68
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	1132	12.92*	5.400E+00	5.101E+00	5.101E+00	14.41
PB-212	74.82	560	10.28	6.171E+00	2.773E+00	2.773E+00	21.18
	77.11	918	17.10	6.464E+00	2.610E+00	2.610E+00	13.53
	238.63	1887	43.60*	6.709E+00	2.027E+00	2.027E+00	14.37
	300.09	175	3.30	5.912E+00	2.825E+00	2.825E+00	42.21
BI-214	609.32	747	45.49*	3.810E+00	1.355E+00	1.355E+00	17.57
	1120.29	196	14.92	2.345E+00	1.762E+00	1.762E+00	28.03
	1764.49	173	15.30	1.716E+00	2.072E+00	2.072E+00	22.32
PB-214	74.82	560	5.80	6.171E+00	4.914E+00	4.915E+00	20.42
	77.11	918	9.70	6.464E+00	4.602E+00	4.602E+00	15.85
	242.00	465	7.25	6.662E+00	3.022E+00	3.022E+00	26.64
	295.22	672	18.42	5.970E+00	1.921E+00	1.921E+00	19.75
	351.93	1132	35.60*	5.400E+00	1.851E+00	1.851E+00	15.43
RA-224	240.99	465	4.10*	6.662E+00	5.344E+00	5.344E+00	26.00
RA-226	609.32	747	45.49*	3.810E+00	1.355E+00	1.355E+00	17.57
	1120.29	196	14.92	2.345E+00	1.762E+00	1.762E+00	28.03
	1764.49	173	15.30	1.716E+00	2.072E+00	2.072E+00	22.32
AC-228	338.32	408	11.27	5.525E+00	2.060E+00	2.060E+00	47.93
	911.20	510	25.80*	2.788E+00	2.230E+00	2.230E+00	18.96
	968.97	209	15.80	2.648E+00	1.574E+00	1.574E+00	37.17
RA-228	338.32	408	11.27	5.525E+00	2.060E+00	2.060E+00	47.93

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	510	25.80*	2.788E+00	2.230E+00	2.230E+00	18.96
	968.97	209	15.80	2.648E+00	1.574E+00	1.574E+00	37.17
	74.82	560	10.28	6.171E+00	2.773E+00	2.773E+00	18.85
	77.11	918	17.10	6.464E+00	2.610E+00	2.610E+00	13.53
TH-232	238.63	1887	43.60*	6.709E+00	2.027E+00	2.027E+00	14.37
	300.09	175	3.30	5.912E+00	2.825E+00	2.825E+00	73.61
	338.32	408	11.27	5.525E+00	2.060E+00	2.060E+00	25.13
	911.20	510	25.80*	2.788E+00	2.230E+00	2.230E+00	18.96
TH-234	968.97	209	15.80	2.648E+00	1.574E+00	1.574E+00	37.17
	63.29	126	3.70*	4.346E+00	2.454E+00	2.454E+00	69.51
	92.59	513	4.23	7.868E+00	4.841E+00	4.841E+00	30.79
U-235	89.96	242	3.47	7.676E+00	2.861E+00	2.861E+00	45.40
	93.35	513	5.60	7.868E+00	3.656E+00	3.656E+00	31.52
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
NP-237	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
	185.72	278	57.20	7.606E+00	2.008E-01	2.008E-01	36.48
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
	86.48	403	12.40*	7.483E+00	1.365E+00	1.365E+00	29.95
U-238	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
	63.29	126	3.70*	4.346E+00	2.454E+00	2.454E+00	69.51
ANH-511	92.59	513	4.23	7.868E+00	4.841E+00	4.841E+00	23.12
	511.00	183	100.00*	4.298E+00	1.340E-01	1.340E-01	50.91

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 3
Number of lines tentatively identified by NID 29 90.63%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.176E+01	3.176E+01	0.327E+01	10.28	
CD-109	461.40D	1.04	4.574E+00	4.734E+00	1.012E+00	21.39	
SN-126	2.30E+05Y	1.00	4.574E-01	4.574E-01	0.978E-01	21.39	
BA-137M	30.08Y	1.00	6.401E-01	6.411E-01	0.965E-01	15.06	
CS-137	30.08Y	1.00	6.762E-01	6.772E-01	1.021E-01	15.07	
TL-208	1.41E+10Y	1.00	5.931E-01	5.931E-01	1.011E-01	17.04	
BI-211	7.04E+08Y	1.00	5.101E+00	5.101E+00	0.735E+00	14.41	
PB-212	1.41E+10Y	1.00	2.027E+00	2.027E+00	0.291E+00	14.37	
BI-214	1600.00Y	1.00	1.355E+00	1.355E+00	0.238E+00	17.57	
PB-214	1600.00Y	1.00	1.851E+00	1.851E+00	0.286E+00	15.43	
RA-224	1.41E+10Y	1.00	5.344E+00	5.344E+00	1.389E+00	26.00	
RA-226	1600.00Y	1.00	1.355E+00	1.355E+00	0.238E+00	17.57	
AC-228	1.41E+10Y	1.00	2.230E+00	2.230E+00	0.423E+00	18.96	
RA-228	1.41E+10Y	1.00	2.230E+00	2.230E+00	0.423E+00	18.96	
TH-228	1.41E+10Y	1.00	2.027E+00	2.027E+00	0.291E+00	14.37	
TH-232	1.41E+10Y	1.00	2.230E+00	2.230E+00	0.423E+00	18.96	
TH-234	4.47E+09Y	1.00	2.454E+00	2.454E+00	1.706E+00	69.51	
U-235	7.04E+08Y	1.00	2.008E-01	2.008E-01	0.732E-01	36.48	K
NP-237	2.14E+06Y	1.00	1.365E+00	1.365E+00	0.409E+00	29.95	
U-238	4.47E+09Y	1.00	2.454E+00	2.454E+00	1.706E+00	69.51	
ANH-511	1.00E+09Y	1.00	1.340E-01	1.340E-01	0.682E-01	50.91	
Total Activity :			7.105E+01	7.122E+01			

Grand Total Activity : 7.105E+01 7.122E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G248513006

Page : 4
Acquisition date : 20-MAR-2010 11:23:18

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.36	160	465	1.54	418.69	415	10	2.22E-02	52.7	7.18E+00	T
0	270.46	146	317	1.75	540.78	536	10	2.03E-02	49.5	6.27E+00	T
0	463.20	94	176	1.73	925.96	922	10	1.30E-02	58.4	4.58E+00	T
0	726.81	174	181	1.92	1452.88	1446	17	2.41E-02	38.4	3.34E+00	T
0	768.84	100	179	3.93	1536.90	1527	20	1.38E-02	69.0	3.20E+00	
0	795.38	64	65	1.50	1589.96	1586	9	8.83E-03	52.7	3.12E+00	T
0	1237.37	132	96	3.19	2473.75	2466	16	1.84E-02	37.4	2.16E+00	T
0	1378.41	58	65	2.41	2755.82	2748	18	8.08E-03	74.3	1.99E+00	
0	1588.99	37	21	2.35	3177.05	3172	12	5.11E-03	65.7	1.81E+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]G248513006.CNF;1
* Acquisition date   : 20-MAR-2010 11:23:18   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 02:00:02.33          Half life ratio     : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G248513006             Analyst initials    : MXR1
* Batch Number       : 961097                 Sample Quantity     : 1.19440E+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     :
*****

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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	3.176E+01	3.266E+00	4.994E-01	4.575E-02	63.595
CD-109	4.734E+00	1.012E+00	1.311E+00	1.244E-01	3.613
SN-126	4.574E-01	9.781E-02	1.271E-01	1.200E-02	3.598
BA-137M	6.411E-01	9.655E-02	5.834E-02	6.152E-03	10.989
CS-137	6.772E-01	1.021E-01	6.163E-02	6.507E-03	10.989
TL-208	5.931E-01	1.011E-01	5.504E-02	5.963E-03	10.777
BI-211	5.101E+00	7.348E-01	3.252E-01	3.795E-02	15.686
PB-212	2.027E+00	2.913E-01	9.185E-02	1.217E-02	22.068
BI-214	1.355E+00	2.382E-01	1.089E-01	1.270E-02	12.452
PB-214	1.851E+00	2.856E-01	1.193E-01	1.535E-02	15.524
RA-224	5.344E+00	1.389E+00	9.835E-01	1.231E-01	5.434
RA-226	1.355E+00	2.382E-01	1.089E-01	1.270E-02	12.452
AC-228	2.230E+00	4.228E-01	2.141E-01	2.899E-02	10.416
RA-228	2.230E+00	4.228E-01	2.141E-01	2.899E-02	10.416
TH-228	2.027E+00	2.913E-01	9.185E-02	1.217E-02	22.068
TH-232	2.230E+00	4.228E-01	2.141E-01	2.899E-02	10.416
TH-234	2.454E+00	1.706E+00	2.077E+00	3.696E-01	1.182
U-235	2.008E-01	7.324E-02	3.765E-01	6.435E-02	0.533

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.365E+00	4.087E-01	4.068E-01	9.333E-02	3.355
U-238	2.454E+00	1.706E+00	2.077E+00	3.696E-01	1.182
ANH-511	1.340E-01	6.823E-02	4.505E-02	4.514E-03	2.975

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-7.426E-02		3.626E-01	5.714E-01	5.962E-02	-0.130
NA-22	1.424E-02		4.341E-02	7.340E-02	6.326E-03	0.194
NA-24	-1.207E+03		2.464E+03	Half-Life too short		
SC-46	-5.586E-03		4.209E-02	6.924E-02	7.751E-03	-0.081
V-48	-1.809E-02		8.743E-02	1.413E-01	1.482E-02	-0.128
CR-51	2.062E-01		4.537E-01	7.717E-01	9.989E-02	0.267
MN-54	2.978E-03		3.932E-02	6.588E-02	7.318E-03	0.045
CO-56	-5.694E-02		4.290E-02	6.494E-02	7.229E-03	-0.877
CO-57	2.342E-02		2.619E-02	4.287E-02	3.535E-03	0.546
CO-58	-3.512E-02		3.744E-02	5.839E-02	6.466E-03	-0.601
FE-59	4.824E-03		1.012E-01	1.649E-01	1.615E-02	0.029
CO-60	-5.337E-03		3.471E-02	5.640E-02	5.030E-03	-0.095
ZN-65	1.222E-01		1.057E-01	1.606E-01	1.433E-02	0.761
SE-75	8.649E-03		5.620E-02	7.952E-02	1.070E-02	0.109
SR-85	1.554E-01		5.270E-02	8.344E-02	8.372E-03	1.863
Y-88	1.917E-02		3.235E-02	5.717E-02	4.622E-03	0.335
Y-91	1.593E+00		2.352E+01	3.930E+01	3.231E+00	0.041
NB-94	2.923E-02		3.381E-02	5.756E-02	6.169E-03	0.508
NB-95	1.086E-01		4.879E-02	7.872E-02	8.609E-03	1.379
NB-95M	1.432E-01		1.574E-01	2.321E-01	3.071E-02	0.617
ZR-95	-2.673E-03		7.379E-02	1.193E-01	1.388E-02	-0.022
MO-99	-5.466E-05		4.308E-05	Half-Life too short		
TC-99M	-1.647E+20		6.606E+19	Half-Life too short		
RU-103	2.721E-02		4.574E-02	7.577E-02	1.123E-02	0.359
RH-106	-3.737E-02		3.046E-01	4.993E-01	7.245E-02	-0.075
RU-106	-3.737E-02		3.046E-01	4.993E-01	5.216E-02	-0.075
AG-108M	-1.134E-02		2.943E-02	4.699E-02	4.624E-03	-0.241
AG-110M	7.965E-02		4.290E-02	6.771E-02	7.278E-03	1.176
SN-113	7.114E-03		4.798E-02	7.945E-02	7.587E-03	0.090
CD-115	-8.897E-05		6.336E-05	Half-Life too short		
SN-117M	4.339E-02		8.551E-02	1.452E-01	1.377E-02	0.299
TE-123M	2.067E-02		3.096E-02	5.278E-02	5.040E-03	0.392
SB-124	-8.346E-03		7.837E-02	1.281E-01	1.142E-02	-0.065
SB-125	-3.398E-02		9.040E-02	1.446E-01	1.402E-02	-0.235
TE-125M	1.276E+00		1.140E+01	1.829E+01	1.885E+00	0.070
I-126	4.624E-01		3.436E-01	5.361E-01	5.664E-02	0.863
SB-126	-2.726E-02		2.529E-01	3.434E-01	3.703E-02	-0.079
SB-127	4.987E-01		4.972E+00	8.185E+00	1.252E+00	0.061
I-131	-9.125E-02		2.246E-01	3.643E-01	4.057E-02	-0.250
TE-132	-9.459E-01		4.165E+00	6.711E+00	1.311E+00	-0.141

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	1.207E-02		4.746E-02	6.937E-02	1.021E-02	0.174
I-133	7.830E-01		1.522E+00	Half-Life too short		
CS-134	8.521E-02	+	4.588E-02	7.966E-02	8.818E-03	1.070
CS-135	2.173E-01		1.910E-01	2.809E-01	4.064E-02	0.773
I-135	-9.252E+17		1.279E+18	Half-Life too short		
CS-136	-4.164E-02		1.541E-01	2.466E-01	2.495E-02	-0.169
CE-139	-1.814E-02		3.152E-02	5.147E-02	5.048E-03	-0.352
BA-140	-1.206E-01		4.023E-01	6.593E-01	2.264E-01	-0.183
LA-140	3.585E-02		1.331E-01	1.992E-01	1.746E-02	0.180
CE-141	8.911E-02		7.835E-02	1.356E-01	1.234E-02	0.657
CE-143	5.624E-02		8.843E-03	Half-Life too short		
CE-144	-1.423E-02		2.059E-01	3.479E-01	5.302E-02	-0.041
PM-144	-5.247E-04		3.369E-02	5.499E-02	5.883E-03	-0.010
PR-144	-3.941E-02		2.532E+00	4.133E+00	4.419E-01	-0.010
PM-146	-1.295E-02		4.425E-02	7.074E-02	8.134E-03	-0.183
ND-147	5.093E-01		8.881E-01	1.525E+00	2.418E-01	0.334
PM-149	3.052E-04		5.968E-04	Half-Life too short		
EU-152	-1.189E-01		1.156E-01	1.442E-01	1.733E-02	-0.825
GD-153	-1.153E-02		9.903E-02	1.414E-01	1.243E-02	-0.082
EU-154	4.362E-02		1.228E-01	2.079E-01	2.364E-02	0.210
EU-155	8.074E-03		1.072E-01	1.723E-01	1.479E-02	0.047
TB-160	3.218E-04		1.416E-01	2.351E-01	2.629E-02	0.001
HO-166M	2.928E-02		5.917E-02	9.916E-02	1.066E-02	0.295
TA-182	-1.436E-01		1.947E-01	3.083E-01	2.564E-02	-0.466
IR-192	9.335E-04		3.835E-02	6.429E-02	8.216E-03	0.015
HG-203	4.502E-02		4.780E-02	7.872E-02	1.113E-02	0.572
BI-207	5.836E-03		5.088E-02	8.359E-02	8.024E-03	0.070
PB-210	2.116E+00		3.007E+00	5.048E+00	4.649E-01	0.419
PB-211	-8.014E-01		8.468E-01	1.173E+00	5.694E-01	-0.683
BI-212	2.446E+00	+	1.001E+00	1.150E+00	1.618E-01	2.127
RN-219	-2.248E-01		4.198E-01	6.695E-01	1.026E-01	-0.336
RA-223	-8.560E-01		6.834E-01	1.050E+00	2.052E-01	-0.815
AC-227	6.521E-02		2.698E-01	4.388E-01	6.836E-02	0.149
TH-227	6.521E-02		2.698E-01	4.388E-01	7.376E-02	0.149
TH-229	-7.456E-02		5.605E-01	9.198E-01	9.885E-02	-0.081
PA-231	3.519E-02		1.607E+00	2.570E+00	4.675E-01	0.014
TH-231	-8.560E-01		6.834E-01	1.050E+00	2.052E-01	-0.815
PA-233	6.787E-02		6.538E-02	1.131E-01	1.482E-02	0.600
PA-234	1.227E-01		2.878E-01	4.862E-01	9.664E-02	0.252
PA-234M	3.064E+00		4.877E+00	8.162E+00	9.354E-01	0.375
NP-239	-3.844E-02		4.101E-01	6.497E-01	5.369E-02	-0.059
AM-241	1.155E-01		1.511E-01	2.325E-01	1.818E-02	0.497
CM-247	-1.431E-02		3.831E-02	6.174E-02	5.791E-03	-0.232
CF-249	4.308E-02		4.048E-02	6.949E-02	6.597E-03	0.620
CF-251	-8.487E-02		1.387E-01	2.251E-01	2.294E-02	-0.377

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248513006          *
* Acquisition date   : 20-MAR-2010 11:23:18 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 02:00:02.33                               Half life ratio  : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513006                               Analyst initials: MXR1           *
* Batch Number       : 961097                                   Sample Quantity : 1.1944E+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	3.176E+01	3.201E+00	2.492E-01	1.633E+00
CD-109	4.734E+00	9.922E-01	6.753E-01	5.062E-01
SN-126	4.574E-01	9.585E-02	6.551E-02	4.890E-02
BA-137M	6.411E-01	9.462E-02	2.938E-02	4.827E-02
CS-137	6.772E-01	1.000E-01	3.104E-02	5.103E-02
TL-208	5.931E-01	9.904E-02	2.776E-02	5.053E-02
BI-211	5.101E+00	7.201E-01	1.650E-01	3.674E-01
PB-212	2.027E+00	2.855E-01	4.680E-02	1.457E-01
BI-214	1.355E+00	2.334E-01	5.487E-02	1.191E-01
PB-214	1.851E+00	2.799E-01	6.050E-02	1.428E-01
RA-224	5.344E+00	1.362E+00	5.011E-01	6.947E-01
RA-226	1.355E+00	2.334E-01	5.487E-02	1.191E-01
AC-228	2.230E+00	4.143E-01	1.074E-01	2.114E-01
RA-228	2.230E+00	4.143E-01	1.074E-01	2.114E-01
TH-228	2.027E+00	2.855E-01	4.680E-02	1.457E-01
TH-232	2.230E+00	4.143E-01	1.074E-01	2.114E-01
TH-234	2.454E+00	1.672E+00	1.074E+00	8.528E-01
U-235	2.535E-01	2.200E-01	1.929E-01	1.123E-01
NP-237	1.365E+00	4.005E-01	2.096E-01	2.044E-01
U-238	2.454E+00	1.672E+00	1.074E+00	8.528E-01
ANH-511	1.340E-01	6.687E-02	2.276E-02	3.412E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-7.426E-02	3.554E-01	2.889E-01	1.813E-01 NOT IDENT.
NA-22	1.424E-02	4.254E-02	3.669E-02	2.171E-02 NOT IDENT.
NA-24	-1.207E+09	4.830E+09	0.000E+00	2.464E+09 SHORT HLIF
SC-46	-5.586E-03	4.125E-02	3.475E-02	2.105E-02 FAIL ABUN
V-48	-1.809E-02	8.568E-02	7.086E-02	4.372E-02 NOT IDENT.
CR-51	2.062E-01	4.447E-01	3.919E-01	2.269E-01 NOT IDENT.

MN-54	2.978E-03	3.854E-02	3.309E-02	1.966E-02	NOT IDENT.
CO-56	-5.694E-02	4.204E-02	3.261E-02	2.145E-02	FAIL ABUN
CO-57	2.342E-02	2.566E-02	2.201E-02	1.309E-02	NOT IDENT.
CO-58	-3.512E-02	3.669E-02	2.934E-02	1.872E-02	NOT IDENT.
FE-59	4.824E-03	9.913E-02	8.254E-02	5.058E-02	NOT IDENT.
CO-60	-5.337E-03	3.402E-02	2.818E-02	1.736E-02	NOT IDENT.
ZN-65	1.222E-01	1.035E-01	8.042E-02	5.283E-02	NOT IDENT.
SE-75	8.649E-03	5.507E-02	4.047E-02	2.810E-02	NOT IDENT.
SR-85	1.554E-01	5.164E-02	4.215E-02	2.635E-02	NOT IDENT.
Y-88	1.917E-02	3.171E-02	2.845E-02	1.618E-02	NOT IDENT.
Y-91	1.593E+00	2.305E+01	1.965E+01	1.176E+01	NOT IDENT.
NB-94	2.923E-02	3.313E-02	2.897E-02	1.690E-02	NOT IDENT.
NB-95	1.086E-01	4.781E-02	3.958E-02	2.439E-02	NOT IDENT.
NB-95M	1.432E-01	1.543E-01	1.183E-01	7.871E-02	NOT IDENT.
ZR-95	-2.673E-03	7.232E-02	6.000E-02	3.690E-02	NOT IDENT.
MO-99	-5.466E+01	8.443E+01	0.000E+00	4.308E+01	SHORT HLIF
TC-99M	-1.647E+26	1.295E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.721E-02	4.482E-02	3.829E-02	2.287E-02	FAIL ABUN
RH-106	-3.737E-02	2.985E-01	2.517E-01	1.523E-01	NOT IDENT.
RU-106	-3.737E-02	2.985E-01	2.517E-01	1.523E-01	NOT IDENT.
AG-108M	-1.134E-02	2.885E-02	2.378E-02	1.472E-02	NOT IDENT.
AG-110M	7.965E-02	4.204E-02	3.411E-02	2.145E-02	NOT IDENT.
SN-113	7.114E-03	4.702E-02	4.026E-02	2.399E-02	NOT IDENT.
CD-115	-8.897E+01	1.242E+02	0.000E+00	6.336E+01	SHORT HLIF
SN-117M	4.339E-02	8.380E-02	7.432E-02	4.275E-02	NOT IDENT.
TE-123M	2.067E-02	3.035E-02	2.702E-02	1.548E-02	NOT IDENT.
SB-124	-8.346E-03	7.680E-02	6.380E-02	3.918E-02	NOT IDENT.
SB-125	-3.398E-02	8.859E-02	7.319E-02	4.520E-02	FAIL ABUN
TE-125M	1.276E+00	1.117E+01	9.403E+00	5.700E+00	NOT IDENT.
I-126	4.624E-01	3.367E-01	2.700E-01	1.718E-01	NOT IDENT.
SB-126	-2.726E-02	2.479E-01	1.728E-01	1.265E-01	NOT IDENT.
SB-127	4.987E-01	4.872E+00	4.121E+00	2.486E+00	NOT IDENT.
I-131	-9.125E-02	2.201E-01	1.847E-01	1.123E-01	NOT IDENT.
TE-132	-9.459E-01	4.081E+00	3.422E+00	2.082E+00	NOT IDENT.
BA-133	1.207E-02	4.651E-02	3.519E-02	2.373E-02	NOT IDENT.
I-133	7.830E+05	2.983E+06	0.000E+00	1.522E+06	SHORT HLIF
CS-134	8.521E-02	4.496E-02	4.004E-02	2.294E-02	FAIL ABUN
CS-135	2.173E-01	1.871E-01	1.430E-01	9.548E-02	NOT IDENT.
I-135	-9.252E+23	2.507E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.164E-02	1.510E-01	1.235E-01	7.705E-02	NOT IDENT.
CE-139	-1.814E-02	3.089E-02	2.633E-02	1.576E-02	NOT IDENT.
BA-140	-1.206E-01	3.943E-01	3.329E-01	2.012E-01	NOT IDENT.
LA-140	3.585E-02	1.305E-01	9.927E-02	6.656E-02	NOT IDENT.
CE-141	8.911E-02	7.678E-02	6.946E-02	3.917E-02	NOT IDENT.
CE-143	5.624E+04	1.733E+04	0.000E+00	8.843E+03	SHORT HLIF
CE-144	-1.423E-02	2.018E-01	1.784E-01	1.029E-01	NOT IDENT.
PM-144	-5.247E-04	3.302E-02	2.768E-02	1.685E-02	NOT IDENT.
PR-144	-3.941E-02	2.481E+00	2.080E+00	1.266E+00	NOT IDENT.
PM-146	-1.295E-02	4.337E-02	3.578E-02	2.213E-02	NOT IDENT.
ND-147	5.093E-01	8.704E-01	7.698E-01	4.441E-01	FAIL ABUN
PM-149	3.052E+02	1.170E+03	0.000E+00	5.968E+02	SHORT HLIF
EU-152	-1.189E-01	1.133E-01	7.316E-02	5.779E-02	NOT IDENT.
GD-153	-1.153E-02	9.705E-02	7.277E-02	4.951E-02	NOT IDENT.
EU-154	4.362E-02	1.203E-01	1.039E-01	6.140E-02	NOT IDENT.
EU-155	8.074E-03	1.051E-01	8.862E-02	5.362E-02	FAIL ABUN
TB-160	3.218E-04	1.387E-01	1.180E-01	7.078E-02	FAIL ABUN
HO-166M	2.928E-02	5.799E-02	4.990E-02	2.959E-02	NOT IDENT.
TA-182	-1.436E-01	1.908E-01	1.542E-01	9.736E-02	FAIL ABUN
IR-192	9.335E-04	3.759E-02	3.265E-02	1.918E-02	FAIL ABUN
HG-203	4.502E-02	4.685E-02	4.004E-02	2.390E-02	NOT IDENT.
BI-207	5.836E-03	4.986E-02	4.187E-02	2.544E-02	FAIL ABUN
PB-210	2.116E+00	2.947E+00	2.620E+00	1.503E+00	NOT IDENT.
PB-211	-8.014E-01	8.298E-01	5.942E-01	4.234E-01	NOT IDENT.
BI-212	2.446E+00	9.813E-01	5.787E-01	5.007E-01	FAIL ABUN
RN-219	-2.248E-01	4.114E-01	3.391E-01	2.099E-01	FAIL ABUN
RA-223	-8.560E-01	6.698E-01	5.332E-01	3.417E-01	FAIL ABUN
AC-227	6.521E-02	2.644E-01	2.234E-01	1.349E-01	FAIL ABUN
TH-227	6.521E-02	2.644E-01	2.234E-01	1.349E-01	FAIL ABUN
TH-229	-7.456E-02	5.493E-01	4.698E-01	2.803E-01	FAIL ABUN
PA-231	3.519E-02	1.575E+00	1.307E+00	8.037E-01	FAIL ABUN
TH-231	-8.560E-01	6.698E-01	5.332E-01	3.417E-01	FAIL ABUN
PA-233	6.787E-02	6.408E-02	5.745E-02	3.269E-02	FAIL ABUN
PA-234	1.227E-01	2.821E-01	2.439E-01	1.439E-01	NOT IDENT.
PA-234M	3.064E+00	4.780E+00	4.091E+00	2.439E+00	NOT IDENT.
NP-239	-3.844E-02	4.019E-01	3.337E-01	2.051E-01	NOT IDENT.
AM-241	1.155E-01	1.481E-01	1.203E-01	7.555E-02	NOT IDENT.
CM-247	-1.431E-02	3.754E-02	3.127E-02	1.916E-02	NOT IDENT.
CF-249	4.308E-02	3.967E-02	3.521E-02	2.024E-02	NOT IDENT.

CF-251	-8.487E-02	1.359E-01	1.151E-01	6.936E-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
46.54	308.9442
49.72	373.1289
57.36	0.0000
59.54	384.2093
63.29	519.3110
63.29	519.3110
64.28	512.4945
67.75	517.6033
69.67	479.4771
70.83	499.3742
72.81	538.9338
72.87	539.0458
72.87	539.0458
74.82	533.5215
74.82	533.5215
74.82	533.5215
74.97	533.7900
77.11	537.5847
77.11	537.5847
77.11	537.5847
79.69	542.0938
79.80	542.2844
80.12	542.8376
80.19	542.9585
80.57	543.6138
81.00	548.9944
81.07	549.1163
81.07	549.1163
83.79	505.4318
83.79	505.4318
85.43	533.0554
86.48	655.8511
86.55	655.9879
86.79	582.4694
86.94	582.7347
87.57	583.8300
88.03	584.6289
88.47	585.3911
89.96	587.9557
91.11	589.9218
92.59	592.4313
92.59	592.4313
93.35	593.7130
94.67	595.9289
94.87	596.2620
94.87	596.2620
95.86	597.9105
97.43	460.9301
98.44	428.0271
99.53	419.4995
100.11	425.0589
103.18	458.2062
103.37	466.1308
105.31	422.0831
106.12	416.3218
109.28	462.0903
111.00	453.9894
111.76	450.3520
116.30	413.3343
117.23	405.1463
121.12	384.7453
121.78	371.5302
122.06	359.1091
123.07	410.7051
131.20	514.5600
133.52	453.3906
136.00	449.5614

136.47	446.4439
140.51	0.0000
140.51	0.0000
143.76	455.9387
144.24	469.0581
144.24	469.0581
145.44	452.9497
152.43	423.3360
153.25	447.0502
154.21	448.7988
154.21	448.7988
156.02	456.8390
158.56	434.8268
159.00	424.0006
162.66	442.8349
163.33	447.1361
165.86	434.0997
176.60	440.4763
177.52	464.2898
181.07	0.0000
184.41	477.1202
185.72	456.0868
193.51	437.1643
197.04	400.8293
205.31	446.4901
210.85	404.7192
215.65	380.5882
222.11	385.1913
227.38	359.9802
228.16	372.8721
228.18	372.8830
235.69	370.4470
235.96	353.7393
235.96	353.7393
238.63	338.1128
238.63	338.1128
240.99	339.1846
242.00	339.6411
244.70	322.1121
252.40	353.9777
252.80	359.5408
256.23	326.5211
256.23	326.5211
260.90	0.0000
264.66	307.6992
268.22	305.5365
269.46	311.2754
269.46	311.2754
271.23	274.9348
273.65	369.4187
276.40	314.7765
277.37	306.2633
277.60	308.5632
278.00	317.5955
279.20	318.0493
279.54	318.1759
280.46	356.3867
283.69	332.0268
284.31	353.5231
285.41	334.9333
285.90	0.0000
287.50	300.9357
293.27	0.0000
295.22	290.0039
295.96	235.8250
298.57	236.5168
299.98	236.8882
299.98	236.8882
300.09	236.9199
300.09	236.9199
300.13	271.8614
301.36	316.3376
302.85	274.2041
304.50	241.1307
304.50	241.1307
304.85	247.3308
308.46	299.8109
311.90	249.2358

316.51	282.0090
319.41	256.8262
320.08	260.7295
323.87	325.3452
323.87	325.3452
328.76	270.6223
333.37	309.9848
334.37	263.0440
334.37	263.0440
338.28	254.2827
338.28	254.2827
338.32	254.2957
338.32	254.2957
338.32	254.2957
340.48	223.4651
340.55	213.9725
344.28	259.6318
351.06	241.8329
351.93	246.2063
356.01	234.9509
364.49	234.5896
366.42	0.0000
383.85	245.7688
388.16	209.9156
388.63	206.0221
391.69	236.5255
400.66	228.3439
401.81	251.7334
402.40	246.8243
404.85	275.6194
410.95	254.7411
414.70	264.7195
423.72	208.2559
427.09	221.1860
427.87	210.0040
433.94	207.9486
453.88	221.8050
463.37	201.2094
468.07	189.5379
473.00	172.8251
476.78	193.6470
477.60	187.3431
487.02	189.7414
492.35	0.0000
497.08	166.1653
511.00	175.5117
514.00	177.7159
527.90	0.0000
529.87	0.0000
531.02	158.5139
537.26	182.4620
546.56	0.0000
563.25	161.9650
569.33	173.0652
569.50	172.1326
569.70	164.5457
583.19	158.2962
600.60	189.5361
602.73	219.7483
604.72	198.3513
609.32	166.7313
609.32	166.7313
610.33	147.1833
614.28	176.0376
618.01	138.7941
621.93	153.2673
621.93	153.2673
633.25	147.3752
635.95	149.5930
636.99	142.7432
645.85	158.4274
657.76	137.5865
661.66	165.4721
661.66	165.4721
664.57	0.0000
666.33	107.1485
666.50	107.1593
677.62	136.9583

685.70	127.3778
695.00	147.4863
696.49	153.7567
696.51	153.7598
697.00	158.9261
702.65	150.1556
706.68	170.0623
711.68	138.4792
720.70	138.8450
721.93	0.0000
722.78	117.6131
722.91	117.6200
723.31	124.7754
724.19	140.8813
727.33	141.7082
733.00	132.5713
735.93	128.7356
739.50	0.0000
747.24	145.2745
752.31	135.0964
753.82	109.8483
756.73	126.9360
763.94	107.3758
765.81	94.7252
766.42	112.9740
777.92	0.0000
778.90	155.2942
783.70	134.0027
785.37	108.3625
795.86	108.9153
801.95	107.0707
810.29	125.6467
810.76	121.9513
815.77	121.3060
818.51	86.8923
832.01	160.7777
834.85	161.9309
836.80	0.0000
846.77	158.0856
856.80	143.1172
860.56	141.9299
871.09	103.8398
873.19	114.6042
875.33	0.0000
879.36	111.4242
880.51	119.1692
883.24	126.0473
884.68	120.3504
889.28	128.3103
898.04	135.5786
911.20	111.0260
911.20	111.0260
911.20	111.0260
926.50	117.6311
937.49	116.2036
944.13	117.5121
946.00	103.7677
949.00	105.8748
962.29	118.3920
964.08	134.1578
966.15	148.2208
968.97	174.5758
968.97	174.5758
968.97	174.5758
983.53	92.3161
996.26	143.2084
1001.03	109.1244
1004.73	98.1519
1037.84	109.6646
1038.76	0.0000
1048.07	107.0033
1050.41	110.1870
1050.41	110.1870
1063.66	105.5575
1085.87	107.4689
1099.45	111.1462
1112.07	73.7329
1115.54	107.0437

1120.29	128.8804
1120.29	128.8804
1120.55	112.7815
1121.30	109.1125
1131.51	0.0000
1173.23	113.9249
1177.93	129.1984
1189.05	145.7755
1204.77	136.0787
1221.41	140.6567
1231.02	98.9701
1235.36	123.0352
1238.28	131.7046
1260.41	0.0000
1271.85	100.1710
1274.44	99.2794
1274.54	99.2825
1291.59	89.0533
1298.22	0.0000
1312.11	95.5288
1332.49	64.4148
1365.19	62.0492
1368.63	0.0000
1384.29	60.8337
1408.01	69.9265
1457.56	0.0000
1460.82	48.3511
1489.16	40.4366
1505.03	62.4811
1596.21	35.8446
1620.50	41.0299
1678.03	0.0000
1690.97	33.0168
1764.49	33.8020
1764.49	33.8020
1770.23	37.4104
1771.35	33.8567
1791.20	0.0000
1836.06	23.1117

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513006

Total Uranium Activity	7.4172E+00	ug/g
Total Uranium Counting Unc.	4.9738E+00	ug/g
Total Uranium Tpu	2.5377E-06	ug/g
Total Uranium Mda	3.1965E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513006
*  ANALYST       : MXR1            DETECTOR    : GAM22
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-MAR-2010 11:23:18.41  SAMPLE ALQT: 119.440 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.149E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.293E+00
GROSS GAMMA MDA (pCi/GRAM ) : 2.935E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.431E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:25:53.38

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513007.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:23:47
Sample ID          : G248513007 Sample quantity   : 1.24900E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.71 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 961097 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	74.55*	484	404	1.38	149.10	143	16	6.73E-02	8.5	8.66E+00
2	1	76.95	671	340	1.14	153.91	143	16	9.31E-02	6.1	
3	3	87.07	272	324	1.17	174.14	163	29	3.78E-02	12.4	3.47E+00
4	3	89.76	207	381	1.53	179.53	163	29	2.88E-02	19.2	
5	3	92.57*	266	303	1.30	185.14	163	29	3.70E-02	14.5	
6	0	128.87	71	420	0.97	257.74	253	10	9.93E-03	54.9	
7	0	185.55*	203	354	1.49	371.10	364	11	2.82E-02	19.8	
8	0	209.82	127	377	1.27	419.64	413	13	1.76E-02	33.0	
9	3	238.30*	1137	165	1.12	476.59	471	17	1.58E-01	3.6	9.89E-01
10	3	241.34	294	204	1.83	482.68	471	17	4.09E-02	14.4	
11	0	270.16	84	220	0.94	540.32	534	11	1.17E-02	35.9	
12	0	294.61	390	215	1.26	589.21	582	13	5.42E-02	9.3	
13	0	299.81	81	169	0.93	599.63	595	10	1.13E-02	32.2	
14	0	327.60	75	183	1.06	655.19	650	11	1.03E-02	37.1	
15	0	337.92*	189	189	1.17	675.85	672	12	2.62E-02	16.4	
16	0	351.36*	632	192	1.33	702.71	695	13	8.78E-02	6.1	
17	0	462.46	100	124	0.95	924.92	916	16	1.39E-02	26.8	
18	0	510.64*	130	141	2.37	1021.28	1012	19	1.81E-02	25.8	
19	0	582.42*	407	80	1.63	1164.84	1156	18	5.66E-02	7.2	
20	0	608.54	407	108	1.44	1217.08	1210	15	5.65E-02	7.5	
21	0	726.26	107	66	1.77	1452.52	1445	14	1.49E-02	18.8	
22	0	859.89	61	41	1.43	1719.77	1714	13	8.53E-03	25.2	
23	0	910.06	246	87	1.91	1820.12	1810	19	3.42E-02	10.7	
24	3	963.33	58	8	2.57	1926.66	1920	23	8.02E-03	20.2	1.92E+00
25	3	968.00	168	12	2.57	1936.00	1920	23	2.34E-02	9.7	
26	0	1119.03	88	62	2.26	2238.06	2231	16	1.23E-02	22.8	
27	0	1459.35	894	27	2.01	2918.70	2911	15	1.24E-01	3.6	
28	0	1588.00	16	10	1.26	3175.99	3169	10	2.19E-03	45.3	
29	0	1762.63*	56	4	3.46	3525.25	3517	15	7.72E-03	16.3	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:23:47
Sample ID         : G248513007 Sample quantity : 124.90 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA23 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.71 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	+	1460.82	*	2.528E+01	2.615E+00	4.721E-01	3.531E-02	53.556
CD-109	+	88.03	*	4.388E+00	1.170E+00	1.395E+00	1.362E-01	3.145
SN-126		64.28		1.075E-01	6.656E-01	1.120E+00	1.705E-01	0.096
	+	86.94		1.762E+00	8.537E-01	5.685E-01	2.364E-01	3.100
	+	87.57	*	4.239E-01	1.130E-01	1.356E-01	1.319E-02	3.126
TL-208		277.37		2.337E-01	4.505E-01	7.377E-01	7.960E-02	0.317
	+	583.19	*	6.321E-01	1.001E-01	5.739E-02	3.717E-03	11.013
	+	860.56		9.174E-01	4.694E-01	4.751E-01	4.294E-02	1.931
BI-211		72.87		1.464E+01	4.948E+00	7.832E+00	6.909E-01	1.870
	+	351.06	*	4.273E+00	5.883E-01	3.821E-01	2.490E-02	11.182
PB-212		74.82		3.517E+00	7.561E-01	7.038E-01	9.277E-02	4.997
	+	77.11		2.746E+00	4.181E-01	3.989E-01	3.589E-02	6.883
	+	238.63	*	1.690E+00	1.718E-01	1.020E-01	7.397E-03	16.571
	+	300.09		1.895E+00	1.230E+00	1.292E+00	1.091E-01	1.466
BI-214		609.32	*	1.224E+00	2.051E-01	1.281E-01	9.713E-03	9.554
	+	1120.29		1.415E+00	6.582E-01	4.255E-01	3.978E-02	3.327
		1764.49		7.977E-01	3.955E-01	7.663E-01	4.765E-02	1.041
PB-214		74.82		6.234E+00	1.293E+00	1.248E+00	1.487E-01	4.997
	+	77.11		4.841E+00	8.382E-01	7.033E-01	8.584E-02	6.883
	+	242.00		2.655E+00	7.928E-01	5.659E-01	4.576E-02	4.691
	+	295.22		1.612E+00	3.309E-01	2.593E-01	2.274E-02	6.214
	+	351.93	*	1.551E+00	2.300E-01	1.331E-01	1.137E-02	11.647
RA-224		240.99	*	4.694E+00	1.375E+00	1.093E+00	6.159E-02	4.295
RA-226		609.32	*	1.224E+00	2.051E-01	1.281E-01	9.713E-03	9.554
	+	1120.29		1.415E+00	6.582E-01	4.255E-01	3.978E-02	3.327
		1764.49		7.977E-01	3.955E-01	7.663E-01	4.765E-02	1.041
AC-228		338.32		1.419E+00	7.470E-01	4.118E-01	1.698E-01	3.445
	+	911.20	*	1.876E+00	4.596E-01	2.299E-01	2.731E-02	8.161
	+	968.97		2.221E+00	6.901E-01	4.473E-01	1.087E-01	4.966
RA-228		338.32		1.419E+00	7.470E-01	4.118E-01	1.698E-01	3.445
	+	911.20	*	1.876E+00	4.596E-01	2.299E-01	2.731E-02	8.161
	+	968.97		2.221E+00	6.901E-01	4.473E-01	1.087E-01	4.966
TH-228		74.82		3.517E+00	6.756E-01	7.038E-01	6.313E-02	4.997
	+	77.11		2.746E+00	4.181E-01	3.989E-01	3.589E-02	6.883

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	1.690E+00	1.718E-01	1.020E-01	7.397E-03	16.571
	+	300.09		1.895E+00	1.679E+00	1.292E+00	7.869E-01	1.466
	+	338.32		1.419E+00	4.719E-01	4.118E-01	2.432E-02	3.445
	+	911.20	*	1.876E+00	4.596E-01	2.299E-01	2.731E-02	8.161
U-235	+	968.97		2.221E+00	6.901E-01	4.473E-01	1.087E-01	4.966
	+	89.96		3.318E+00	1.521E+00	1.403E+00	3.493E-01	2.364
	+	93.35		2.562E+00	9.504E-01	8.394E-01	1.944E-01	3.052
	+	143.76	*	-1.522E-03	2.412E-01	3.920E-01	6.104E-02	-0.004
NP-237	+	163.33		-3.998E-01	4.945E-01	7.700E-01	1.275E-01	-0.519
	+	185.72		1.941E-01	7.759E-02	7.319E-02	3.833E-03	2.652
	+	205.31		-2.603E-01	6.695E-01	9.135E-01	1.539E-01	-0.285
	+	86.48	*	1.265E+00	4.290E-01	4.107E-01	9.477E-02	3.080
ANH-511	+	95.86		-1.241E-01	1.162E+00	1.681E+00	4.020E-01	-0.074
	+	511.00	*	1.541E-01	8.015E-02	4.993E-02	2.900E-03	3.086

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.962E-01	4.144E-01	6.469E-01	4.394E-02	-0.458
NA-22		1274.54	*	-6.013E-02	5.134E-02	7.175E-02	4.818E-03	-0.838
NA-24		1368.63	*	-2.073E+03	5.134E-02	Half-Life too short		
SC-46		889.28	*	-1.860E-02	5.014E-02	8.072E-02	7.212E-03	-0.230
V-48		1120.55		2.531E-01	7.853E-02	1.474E-01	9.603E-03	1.717
		944.13		-1.449E-01	1.321E+00	2.169E+00	1.890E-01	-0.067
		983.53	*	-2.752E-03	1.132E-01	1.871E-01	1.557E-02	-0.015
		1312.11		2.789E-02	1.254E-01	2.095E-01	1.491E-02	0.133
CR-51		320.08	*	-1.382E-01	5.179E-01	8.330E-01	5.454E-02	-0.166
MN-54		834.85	*	1.173E-02	4.156E-02	7.114E-02	5.633E-03	0.165
CO-56		846.77	*	-1.815E-02	4.787E-02	7.722E-02	6.282E-03	-0.235
		1037.84		-3.184E-01	3.842E-01	5.785E-01	4.736E-02	-0.550
		1238.28		9.127E-02	1.198E-01	2.072E-01	1.379E-02	0.440
		1771.35		-1.623E-01	2.721E-01	3.944E-01	2.440E-02	-0.412
		122.06	*	1.082E-02	2.982E-02	4.973E-02	2.932E-03	0.217
CO-57		136.47		-2.130E-01	2.488E-01	3.932E-01	2.552E-02	-0.542
CO-58		810.76	*	2.622E-02	4.638E-02	8.143E-02	6.118E-03	0.322
FE-59		1099.45	*	-4.154E-02	1.194E-01	1.894E-01	1.458E-02	-0.219
CO-60		1291.59		5.115E-02	1.610E-01	2.715E-01	2.254E-02	0.188
		1173.23		-1.726E-02	5.320E-02	8.438E-02	4.760E-03	-0.205
		1332.49	*	-1.008E-02	3.986E-02	6.229E-02	4.573E-03	-0.162
		1115.54	*	1.147E-01	1.438E-01	2.212E-01	1.461E-02	0.518
ZN-65		121.12		8.228E-02	1.589E-01	2.665E-01	2.443E-02	0.309
SE-75		136.00		-4.623E-02	4.924E-02	7.760E-02	4.384E-03	-0.596
		264.66	*	-3.135E-02	6.105E-02	8.147E-02	4.744E-03	-0.385
		279.54		-2.025E-02	1.250E-01	2.091E-01	1.317E-02	-0.097
		400.66		-6.089E-02	2.970E-01	4.867E-01	4.413E-02	-0.125
		514.00	*	9.643E-02	5.167E-02	8.596E-02	4.988E-03	1.122
SR-85		898.04		6.634E-02	5.150E-02	9.453E-02	8.644E-03	0.702
Y-88		1836.06	*	-1.734E-02	4.103E-02	6.190E-02	3.645E-03	-0.280

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	1204.77	*		2.958E+01	2.950E+01	5.231E+01	3.120E+00	0.565
NB-94	702.65	*		-2.696E-02	3.793E-02	5.717E-02	3.267E-03	-0.472
	871.09			-1.134E-02	3.683E-02	5.956E-02	5.115E-03	-0.190
NB-95	765.81	*		8.007E-02	6.206E-02	1.086E-01	7.302E-03	0.737
NB-95M	235.69	*		5.499E-01	2.162E-01	3.372E-01	2.496E-02	1.631
ZR-95	724.19			2.015E-01	1.588E-01	2.472E-01	1.742E-02	0.815
	756.73	*		6.312E-02	9.656E-02	1.637E-01	1.263E-02	0.386
MO-99	140.51			-9.080E-05	9.656E-02	Half-Life	too short	
	181.07			1.347E-04	9.656E-02	Half-Life	too short	
	366.42			-8.005E-05	9.656E-02	Half-Life	too short	
	739.50	*		-8.916E-06	9.656E-02	Half-Life	too short	
	777.92			-1.467E-04	9.656E-02	Half-Life	too short	
TC-99M	140.51	*		-5.799E+19	9.656E-02	Half-Life	too short	
RU-103	497.08	*		3.366E-02	5.158E-02	8.850E-02	1.101E-02	0.380
	610.33			1.242E+01	2.522E+00	3.446E+00	5.141E-01	3.603
RH-106	621.93	*		-1.184E-01	3.758E-01	5.941E-01	6.781E-02	-0.199
	1050.41			2.111E+00	2.929E+00	5.167E+00	3.887E-01	0.409
RU-106	621.93	*		-1.184E-01	3.757E-01	5.941E-01	3.192E-02	-0.199
	1050.41			2.111E+00	2.929E+00	5.167E+00	3.887E-01	0.409
AG-108M	433.94	*		-3.437E-03	3.301E-02	5.422E-02	3.389E-03	-0.063
	614.28			1.128E-02	4.687E-02	6.756E-02	3.957E-03	0.167
	722.91			-3.389E-02	5.659E-02	7.302E-02	4.686E-03	-0.464
AG-110M	657.76	*		-4.493E-02	4.380E-02	6.470E-02	3.596E-03	-0.694
	677.62			-2.529E-01	3.793E-01	5.766E-01	3.305E-02	-0.439
	706.68			-6.429E-02	2.593E-01	4.093E-01	2.513E-02	-0.157
	763.94			-1.424E-01	2.351E-01	3.598E-01	2.515E-02	-0.396
	884.68			-8.305E-03	6.025E-02	9.918E-02	9.041E-03	-0.084
	937.49			-1.364E-01	1.282E-01	1.893E-01	1.719E-02	-0.721
	1384.29			-4.005E-02	1.805E-01	2.830E-01	2.142E-02	-0.142
	1505.03			-2.566E-01	3.728E-01	5.387E-01	3.826E-02	-0.476
SN-113	391.69	*		-1.619E-02	5.388E-02	8.793E-02	5.417E-03	-0.184
CD-115	260.90			4.321E-04	5.388E-02	Half-Life	too short	
	492.35			-2.577E-04	5.388E-02	Half-Life	too short	
	527.90	*		6.966E-06	5.388E-02	Half-Life	too short	
SN-117M	156.02			-3.163E+00	3.909E+00	6.159E+00	3.223E-01	-0.513
	158.56	*		5.878E-02	9.271E-02	1.551E-01	8.058E-03	0.379
TE-123M	159.00	*		2.542E-02	3.348E-02	5.628E-02	2.970E-03	0.452
SB-124	602.73			-4.808E-02	5.666E-02	7.164E-02	3.928E-03	-0.671
	645.85			-3.156E-01	6.400E-01	9.932E-01	5.963E-02	-0.318
	722.78			-4.179E-01	6.196E-01	7.911E-01	4.989E-02	-0.528
	1690.97	*		-5.942E-04	8.697E-02	1.443E-01	1.010E-02	-0.004
SB-125	427.87	*		2.566E-02	1.087E-01	1.825E-01	1.109E-02	0.141
	463.37			1.049E+00	5.664E-01	6.239E-01	4.229E-02	1.681
	600.60			-1.123E-01	2.230E-01	3.256E-01	2.099E-02	-0.345
	635.95			2.020E-02	3.235E-01	5.276E-01	3.357E-02	0.038
TE-125M	109.28	*		4.575E+00	1.240E+01	2.073E+01	1.892E+00	0.221
I-126	388.63			3.172E-02	2.970E-01	4.969E-01	2.874E-02	0.064
	666.33	*		-1.003E-01	4.378E-01	6.961E-01	3.602E-02	-0.144
	753.82			2.149E+00	3.342E+00	5.665E+00	3.695E-01	0.379

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	414.70			-1.582E-01	1.312E-01	1.994E-01	1.161E-02	-0.793
	666.50			6.475E-02	1.468E-01	2.455E-01	1.271E-02	0.264
	695.00			-1.955E-02	1.419E-01	2.263E-01	1.267E-02	-0.086
	697.00			3.261E-01	4.826E-01	8.225E-01	4.630E-02	0.397
	720.70	*		6.995E-02	3.109E-01	4.435E-01	2.658E-02	0.158
SB-127	856.80			1.361E+00	1.009E+00	1.668E+00	1.388E-01	0.816
	252.40			-5.853E-01	2.126E+01	3.399E+01	1.421E+01	-0.017
	473.00			3.556E+00	7.539E+00	1.281E+01	1.759E+00	0.278
	685.70	*		-5.271E+00	6.331E+00	9.389E+00	1.151E+00	-0.561
	783.70			1.612E+01	1.745E+01	3.103E+01	4.312E+00	0.519
I-131	80.19			3.018E+00	1.578E+01	1.701E+01	1.580E+00	0.177
	284.31			-1.860E+00	3.221E+00	5.267E+00	3.458E-01	-0.353
	364.49	*		-1.964E-01	2.550E-01	4.047E-01	2.681E-02	-0.485
TE-132	636.99			6.965E-02	3.705E+00	6.019E+00	3.704E-01	0.012
	49.72			5.685E+00	1.602E+02	2.699E+02	3.604E+01	0.021
	111.76			2.416E+01	2.105E+02	3.487E+02	4.301E+01	0.069
BA-133	116.30			1.398E+02	1.804E+02	3.047E+02	3.700E+01	0.459
	228.16	*		-1.348E+00	4.734E+00	7.500E+00	1.227E+00	-0.180
	81.00			1.730E-02	1.640E-01	1.754E-01	2.782E-02	0.099
	276.40			4.287E-01	4.287E-01	6.935E-01	8.733E-02	0.618
	302.85			3.772E-02	1.629E-01	2.428E-01	2.779E-02	0.155
I-133	356.01	*		-1.226E-02	5.458E-02	7.771E-02	8.796E-03	-0.158
	383.85			-1.310E-01	3.378E-01	5.484E-01	5.849E-02	-0.239
	529.87	*		-1.123E+00	3.378E-01	Half-Life	too short	
	875.33			-1.048E+01	3.378E-01	Half-Life	too short	
	1298.22			6.840E+01	3.378E-01	Half-Life	too short	
CS-134	563.25			1.859E-01	4.171E-01	7.040E-01	4.072E-02	0.264
	569.33			-1.765E-01	2.445E-01	3.613E-01	2.100E-02	-0.488
	604.72			4.109E-02	4.405E-02	6.800E-02	3.743E-03	0.604
	795.86	*		8.649E-02	5.262E-02	9.870E-02	7.209E-03	0.876
	801.95			-1.452E-01	4.448E-01	7.229E-01	5.343E-02	-0.201
CS-135	1365.19			-1.299E+00	1.388E+00	1.911E+00	1.487E-01	-0.680
	268.22	*		3.327E-01	2.080E-01	3.209E-01	2.452E-02	1.037
I-135	546.56			1.482E+18	2.080E-01	Half-Life	too short	
	836.80			8.662E+18	2.080E-01	Half-Life	too short	
	1038.76			-3.177E+18	2.080E-01	Half-Life	too short	
	1131.51			-3.176E+16	2.080E-01	Half-Life	too short	
	1260.41	*		8.198E+17	2.080E-01	Half-Life	too short	
	1457.56			5.437E+20	2.080E-01	Half-Life	too short	
	1678.03			-4.045E+18	2.080E-01	Half-Life	too short	
	1791.20			-1.760E+18	2.080E-01	Half-Life	too short	
	153.25			1.977E+00	1.497E+00	2.558E+00	1.966E-01	0.773
	176.60			-3.358E-01	8.601E-01	1.373E+00	9.002E-02	-0.245
CS-136	273.65			-4.155E-01	1.069E+00	1.444E+00	9.888E-02	-0.288
	340.55			2.880E-01	2.900E-01	4.506E-01	2.878E-02	0.639
	818.51			5.735E-02	1.251E-01	2.178E-01	1.665E-02	0.263
	1048.07	*		5.898E-02	1.852E-01	3.151E-01	2.513E-02	0.187
	1235.36			1.503E+00	1.067E+00	1.923E+00	1.959E-01	0.782
BA-137M	661.66	*		5.482E-02	4.651E-02	8.154E-02	4.166E-03	0.672

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-137		661.66	*	5.791E-02	4.913E-02	8.614E-02	4.424E-03	0.672
CE-139		165.86	*	-1.748E-03	3.512E-02	5.704E-02	2.908E-03	-0.031
BA-140		162.66		-1.150E+00	1.419E+00	2.229E+00	1.351E-01	-0.516
		304.85		-1.799E+00	2.580E+00	3.492E+00	9.983E-01	-0.515
		423.72		4.105E-01	3.507E+00	5.847E+00	1.887E+00	0.070
		537.26	*	-9.286E-02	4.658E-01	7.490E-01	2.494E-01	-0.124
LA-140	+	328.76		1.060E+00	7.897E-01	1.002E+00	6.623E-02	1.057
		487.02		6.080E-03	2.391E-01	3.941E-01	2.603E-02	0.015
		815.77		-3.427E-01	5.580E-01	8.804E-01	7.668E-02	-0.389
		1596.21	*	-1.186E-01	1.414E-01	2.019E-01	1.385E-02	-0.587
CE-141		145.44	*	8.714E-02	8.589E-02	1.457E-01	8.220E-03	0.598
CE-143		57.36		-6.891E-02	8.589E-02	Half-Life	too short	
	+	293.27	*	7.482E-02	8.589E-02	Half-Life	too short	
		664.57		-6.071E-02	8.589E-02	Half-Life	too short	
		721.93		-6.485E-02	8.589E-02	Half-Life	too short	
CE-144		80.12		8.134E-01	4.413E+00	4.755E+00	4.359E-01	0.171
		133.52	*	9.958E-02	2.678E-01	3.923E-01	5.418E-02	0.254
PM-144		476.78		-5.066E-02	7.624E-02	1.195E-01	8.254E-03	-0.424
		618.01		2.969E-02	3.865E-02	6.650E-02	3.843E-03	0.446
		696.49	*	1.719E-02	4.011E-02	6.709E-02	3.778E-03	0.256
PR-144		696.51	*	1.311E+00	3.016E+00	5.047E+00	2.837E-01	0.260
		1489.16		-4.206E+00	1.267E+01	1.905E+01	1.359E+00	-0.221
PM-146		453.88	*	-1.367E-02	5.207E-02	7.618E-02	6.472E-03	-0.180
		633.25		-3.319E-01	1.682E+00	2.677E+00	1.006E+00	-0.124
		735.93		-3.185E-02	1.654E-01	2.609E-01	7.144E-02	-0.122
		747.24		-3.068E-02	1.133E-01	1.773E-01	2.376E-02	-0.173
ND-147	+	91.11		1.765E+00	7.018E-01	1.054E+00	1.037E-01	1.675
		319.41		-1.521E+00	6.113E+00	1.011E+01	5.979E-01	-0.150
		531.02	*	-9.635E-01	1.059E+00	1.596E+00	2.155E-01	-0.604
PM-149		285.90	*	-6.271E-04	1.059E+00	Half-Life	too short	
EU-152		121.78		3.149E-02	8.427E-02	1.406E-01	1.077E-02	0.224
		244.70		-9.507E-02	4.101E-01	5.635E-01	3.188E-02	-0.169
		344.28	*	-1.072E-01	1.995E-01	1.781E-01	1.179E-02	-0.602
		778.90		1.453E-01	2.896E-01	5.058E-01	3.510E-02	0.287
	+	964.08		8.211E-01	3.396E-01	7.125E-01	6.071E-02	1.152
		1085.87		-5.951E-02	4.376E-01	7.102E-01	4.997E-02	-0.084
		1112.07		1.474E-02	4.514E-01	6.397E-01	4.252E-02	0.023
		1408.01		1.336E-01	2.276E-01	3.953E-01	2.875E-02	0.338
GD-153		69.67		3.425E+00	2.476E+00	3.844E+00	3.359E-01	0.891
		97.43	*	1.214E-01	1.081E-01	1.660E-01	1.356E-02	0.731
		103.18		-6.885E-02	1.320E-01	2.137E-01	1.597E-02	-0.322
EU-154		123.07		-2.765E-03	6.460E-02	9.812E-02	9.248E-03	-0.028
		723.31		-3.359E-02	2.642E-01	3.614E-01	2.612E-02	-0.093
		873.19		-1.524E-01	3.071E-01	4.863E-01	5.787E-02	-0.313
		996.26		-3.001E-01	4.133E-01	6.286E-01	1.085E-01	-0.477
		1004.73		-4.819E-02	2.329E-01	3.770E-01	4.240E-02	-0.128
		1274.44	*	-1.697E-01	1.454E-01	2.025E-01	2.026E-02	-0.838
EU-155	+	86.55		5.156E-01	1.376E-01	2.254E-01	2.191E-02	2.288
		105.31	*	7.862E-04	1.243E-01	2.053E-01	1.513E-02	0.004

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		1.470E+00	3.920E-01	6.394E-01	6.178E-02	2.300
		197.04		1.163E-01	7.121E-01	1.154E+00	6.141E-02	0.101
		215.65		5.139E-01	1.048E+00	1.522E+00	8.315E-02	0.338
	+	298.57		2.877E-01	1.859E-01	2.541E-01	1.493E-02	1.132
		879.36	*	-2.750E-02	1.740E-01	2.858E-01	2.500E-02	-0.096
	+	962.29		1.661E+00	6.871E-01	1.222E+00	1.044E-01	1.359
		966.15		1.552E+00	3.705E-01	7.117E-01	6.049E-02	2.181
		1177.93		2.866E-01	4.741E-01	8.185E-01	4.657E-02	0.350
	HO-166M	1271.85		3.339E-02	8.805E-01	1.441E+00	9.619E-02	0.023
		80.57		5.487E-02	4.692E-01	5.026E-01	4.621E-02	0.109
TA-182	+	184.41		1.542E-01	6.164E-02	7.989E-02	4.175E-03	1.931
		280.46		-4.252E-02	9.309E-02	1.534E-01	8.935E-03	-0.277
		410.95		2.200E-01	2.778E-01	4.821E-01	2.803E-02	0.456
	+	711.68	*	-8.412E-03	7.005E-02	1.117E-01	6.538E-03	-0.075
		752.31		1.013E-01	3.286E-01	5.425E-01	3.525E-02	0.187
		810.29		4.305E-02	6.480E-02	1.146E-01	8.575E-03	0.376
	+	67.75		-1.634E-02	1.557E-01	2.495E-01	2.172E-02	-0.065
		100.11		1.030E-01	2.118E-01	3.566E-01	2.790E-02	0.289
		152.43		6.411E-01	4.182E-01	7.217E-01	3.814E-02	0.888
		222.11		7.448E-02	4.272E-01	6.935E-01	3.821E-02	0.107
IR-192	+	1121.30		4.845E-01	2.072E-01	3.682E-01	2.394E-02	1.316
		1189.05		-8.610E-02	4.095E-01	6.575E-01	3.815E-02	-0.131
		1221.41	*	-6.281E-02	2.542E-01	4.062E-01	2.493E-02	-0.155
	+	1231.02		-6.688E-01	6.451E-01	9.559E-01	5.963E-02	-0.700
		295.96		1.283E+00	2.501E-01	3.521E-01	2.100E-02	3.644
		308.46		3.109E-02	1.120E-01	1.909E-01	1.138E-02	0.163
	+	316.51	*	7.384E-03	4.140E-02	7.012E-02	4.160E-03	0.105
		468.07		-1.125E-02	9.248E-02	1.305E-01	8.801E-03	-0.086
	HG-203	70.83		2.347E+00	2.119E+00	3.220E+00	5.195E-01	0.729
		72.87		4.098E+00	1.483E+00	2.192E+00	3.430E-01	1.870
BI-207	+	279.20	*	-8.896E-03	4.812E-02	8.043E-02	4.940E-03	-0.111
		72.81		7.617E-01	2.813E-01	4.443E-01	3.918E-02	1.715
		74.97		1.014E+00	1.944E-01	3.114E-01	2.771E-02	3.256
	+	569.70		-2.299E-02	3.742E-02	5.575E-02	3.141E-03	-0.412
		1063.66	*	3.445E-02	6.520E-02	1.125E-01	8.268E-03	0.306
		1770.23		-9.838E-01	6.196E-01	7.194E-01	4.454E-02	-1.368
	PB-210	46.54	*	-3.819E+00	6.128E+00	9.779E+00	7.555E-01	-0.391
		404.85	*	-6.283E-01	9.102E-01	1.364E+00	6.542E-01	-0.461
	PB-211	427.09		1.043E+00	1.846E+00	3.059E+00	1.402E+00	0.341
		832.01		6.148E-02	1.040E+00	1.748E+00	9.046E-01	0.035
BI-212	+	727.33	*	2.567E+00	1.006E+00	1.415E+00	1.537E-01	1.814
		785.37		4.003E+00	3.713E+00	6.712E+00	4.731E-01	0.596
		1620.50		2.600E+00	2.365E+00	4.638E+00	3.146E-01	0.561
	RN-219	271.23		5.528E-01	3.998E-01	5.098E-01	4.090E-02	1.084
		401.81	*	5.161E-01	4.599E-01	8.064E-01	1.083E-01	0.640
		81.07		4.388E-02	3.709E-01	3.972E-01	3.665E-02	0.110
	RA-223	83.79		2.773E-01	1.455E-01	2.500E-01	2.355E-02	1.109
		94.87		8.445E-01	5.958E-01	9.187E-01	7.842E-02	0.919
		144.24		3.453E-01	7.990E-01	1.319E+00	9.102E-02	0.262

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		-1.842E-02	4.452E-01	7.253E-01	4.732E-02	-0.025
	+	269.46		4.295E-01	3.098E-01	3.827E-01	2.309E-02	1.122
		323.87	*	-1.219E-01	8.259E-01	1.191E+00	1.924E-01	-0.102
	+	338.28		5.630E+00	1.932E+00	2.541E+00	2.620E-01	2.216
		79.69		3.359E-01	2.167E+00	2.329E+00	4.077E-01	0.144
		235.96		1.426E+00	2.822E-01	4.506E-01	3.606E-02	3.166
		256.23	*	-8.482E-02	2.997E-01	4.723E-01	4.808E-02	-0.180
	+	299.98		2.084E+00	1.361E+00	1.822E+00	2.009E-01	1.144
		304.50		-8.906E-01	1.950E+00	2.743E+00	4.192E-01	-0.325
		334.37		-8.963E-01	2.462E+00	3.016E+00	4.303E-01	-0.297
TH-227		79.80		4.135E-01	2.854E+00	3.064E+00	6.739E-01	0.135
		235.96		1.426E+00	2.780E-01	4.506E-01	3.258E-02	3.166
		256.23	*	-8.482E-02	2.998E-01	4.723E-01	5.658E-02	-0.180
	+	299.98		2.084E+00	1.361E+00	1.822E+00	2.009E-01	1.144
		304.50		-8.906E-01	1.950E+00	2.743E+00	4.192E-01	-0.325
TH-229		334.37		-8.963E-01	2.462E+00	3.016E+00	4.303E-01	-0.297
		85.43		1.039E+00	2.724E-01	4.673E-01	4.462E-02	2.224
	+	88.47		4.797E-01	1.900E-01	2.984E-01	2.886E-02	1.608
		193.51	*	-1.485E-01	6.193E-01	9.919E-01	5.253E-02	-0.150
	+	210.85		2.684E+00	1.776E+00	1.836E+00	9.966E-02	1.462
PA-231		283.69	*	-1.508E-02	1.578E+00	2.658E+00	3.491E-01	-0.006
		301.36		1.180E+00	6.811E-01	1.103E+00	1.147E-01	1.069
TH-231		81.07		4.388E-02	3.709E-01	3.972E-01	3.665E-02	0.110
		83.79		2.773E-01	1.455E-01	2.500E-01	2.355E-02	1.109
		94.87		8.445E-01	5.958E-01	9.187E-01	7.842E-02	0.919
		144.24		3.453E-01	7.990E-01	1.319E+00	9.102E-02	0.262
PA-233		154.21		-1.842E-02	4.452E-01	7.253E-01	4.732E-02	-0.025
	+	269.46		4.295E-01	3.098E-01	3.827E-01	2.309E-02	1.122
		323.87	*	-1.219E-01	8.259E-01	1.191E+00	1.924E-01	-0.102
	+	338.28		5.630E+00	1.932E+00	2.541E+00	2.620E-01	2.216
	+	300.13		9.431E-01	6.201E-01	8.191E-01	1.099E-01	1.151
		311.90	*	-4.591E-02	7.053E-02	1.141E-01	7.134E-03	-0.402
		340.48		8.933E-01	8.703E-01	1.305E+00	3.032E-01	0.684
PA-234		94.67		5.181E-01	2.228E-01	3.456E-01	4.273E-02	1.499
		98.44		1.654E-01	1.478E-01	1.806E-01	1.006E-01	0.916
		111.00		2.184E-01	2.136E-01	3.635E-01	3.932E-02	0.601
		131.20		1.235E-01	1.408E-01	2.116E-01	1.196E-02	0.584
		569.50		-2.415E-01	3.346E-01	4.944E-01	2.785E-02	-0.488
PA-234M		733.00		-7.218E-02	4.679E-01	6.675E-01	1.426E-01	-0.108
		880.51		-3.204E-03	3.244E-01	5.404E-01	4.737E-02	-0.006
		883.24		4.852E-02	3.273E-01	5.503E-01	3.701E-01	0.088
		926.50		-1.803E-01	1.976E-01	2.884E-01	7.315E-02	-0.625
		946.00	*	-1.190E-01	3.352E-01	5.355E-01	1.007E-01	-0.222
		949.00		3.159E-01	5.056E-01	8.867E-01	7.685E-02	0.356
		766.42		1.733E+01	1.778E+01	2.684E+01	1.354E+01	0.646
		1001.03	*	2.818E+00	5.160E+00	8.947E+00	8.536E-01	0.315
	TH-234	63.29	*	1.515E+00	1.825E+00	3.102E+00	5.707E-01	0.488
	+	92.59		3.392E+00	1.237E+00	1.565E+00	3.473E-01	2.168
U-238		63.29	*	1.515E+00	1.825E+00	3.102E+00	5.707E-01	0.488

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		3.392E+00	1.027E+00	1.565E+00	1.393E-01	2.168
		99.53		1.907E-01	1.950E-01	3.234E-01	2.554E-02	0.590
		103.37		9.658E-03	1.158E-01	1.920E-01	1.430E-02	0.050
		106.12		3.534E-02	9.848E-02	1.647E-01	1.181E-02	0.215
		117.23	*	2.898E-01	4.521E-01	7.626E-01	4.746E-02	0.380
		228.18		-6.829E-02	2.556E-01	4.057E-01	2.253E-02	-0.168
AM-241		277.60		8.028E-02	2.068E-01	3.368E-01	1.958E-02	0.238
		59.54	*	-2.700E-01	2.156E-01	3.428E-01	3.190E-02	-0.787
CM-247		278.00		3.191E-02	8.409E-01	1.421E+00	8.263E-02	0.022
		287.50		8.396E-01	1.530E+00	2.334E+00	1.365E-01	0.360
CF-249		402.40	*	4.032E-02	4.233E-02	7.416E-02	4.299E-03	0.544
		252.80		-1.198E-01	1.159E+00	1.846E+00	1.052E-01	-0.065
		333.37		-3.995E-03	3.373E-01	3.295E-01	1.947E-02	-0.012
CF-251		388.16	*	1.861E-02	4.629E-02	7.877E-02	4.557E-03	0.236
		177.52	*	-1.270E-01	1.490E-01	2.325E-01	1.203E-02	-0.546
		227.38		-2.418E-01	4.184E-01	6.538E-01	3.626E-02	-0.370
		285.41		-1.177E+00	2.393E+00	3.930E+00	2.296E-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]G248513007      *
* Acquisition date   : 20-MAR-2010 11:23:47 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 02:00:01.71           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513007           Analyst initials: MXR1          *
* Batch Number       : 961097              Sample Quantity : 1.2490E+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	2.528E+01	2.563E+00	4.716E-01	0.000E+00
CD-109	4.388E+00	1.146E+00	1.449E+00	0.000E+00
SN-126	4.239E-01	1.107E-01	1.408E-01	0.000E+00
TL-208	6.321E-01	9.811E-02	5.809E-02	0.000E+00
BI-211	4.273E+00	5.766E-01	3.895E-01	0.000E+00
PB-212	1.690E+00	1.684E-01	1.045E-01	0.000E+00
BI-214	1.224E+00	2.010E-01	1.296E-01	0.000E+00
PB-214	1.551E+00	2.254E-01	1.357E-01	0.000E+00
RA-224	4.694E+00	1.348E+00	1.120E+00	0.000E+00
RA-226	1.224E+00	2.010E-01	1.296E-01	0.000E+00
AC-228	1.876E+00	4.504E-01	2.313E-01	0.000E+00
RA-228	1.876E+00	4.504E-01	2.313E-01	0.000E+00
TH-228	1.690E+00	1.684E-01	1.045E-01	0.000E+00
TH-232	1.876E+00	4.504E-01	2.313E-01	0.000E+00
U-235	-1.522E-03	2.364E-01	4.044E-01	0.000E+00
NP-237	1.265E+00	4.204E-01	4.266E-01	0.000E+00
ANH-511	1.541E-01	7.854E-02	5.063E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.962E-01	4.061E-01	6.566E-01	0.000E+00 NOT IDENT.
NA-22	-6.013E-02	5.031E-02	7.182E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.349E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.860E-02	4.914E-02	8.122E-02	0.000E+00 NOT IDENT.
V-48	-2.752E-03	1.110E-01	1.880E-01	0.000E+00 NOT IDENT.
CR-51	-1.382E-01	5.075E-01	8.502E-01	0.000E+00 NOT IDENT.
MN-54	1.173E-02	4.073E-02	7.164E-02	0.000E+00 NOT IDENT.
CO-56	-1.815E-02	4.692E-02	7.775E-02	0.000E+00 NOT IDENT.
CO-57	1.082E-02	2.922E-02	5.142E-02	0.000E+00 NOT IDENT.
CO-58	2.622E-02	4.545E-02	8.204E-02	0.000E+00 NOT IDENT.

FE-59	-4.154E-02	1.170E-01	1.900E-01	0.000E+00	NOT IDENT.
CO-60	-1.008E-02	3.907E-02	6.231E-02	0.000E+00	NOT IDENT.
ZN-65	1.147E-01	1.410E-01	2.219E-01	0.000E+00	NOT IDENT.
SE-75	-3.135E-02	5.983E-02	8.336E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.064E-02	8.716E-02	0.000E+00	NOT IDENT.
Y-88	-1.734E-02	4.021E-02	6.164E-02	0.000E+00	NOT IDENT.
Y-91	2.958E+01	2.891E+01	5.240E+01	0.000E+00	NOT IDENT.
NB-94	-2.696E-02	3.717E-02	5.771E-02	0.000E+00	NOT IDENT.
NB-95	8.007E-02	6.082E-02	1.096E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.119E-01	3.456E-01	0.000E+00	NOT IDENT.
ZR-95	6.312E-02	9.463E-02	1.651E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.014E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.207E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.366E-02	5.055E-02	8.978E-02	0.000E+00	NOT IDENT.
RH-106	-1.184E-01	3.683E-01	6.008E-01	0.000E+00	NOT IDENT.
RU-106	-1.184E-01	3.681E-01	6.008E-01	0.000E+00	NOT IDENT.
AG-108M	-3.437E-03	3.235E-02	5.511E-02	0.000E+00	NOT IDENT.
AG-110M	-4.493E-02	4.293E-02	6.538E-02	0.000E+00	NOT IDENT.
SN-113	-1.619E-02	5.281E-02	8.950E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.458E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	5.878E-02	9.086E-02	1.598E-01	0.000E+00	NOT IDENT.
TE-123M	2.542E-02	3.281E-02	5.799E-02	0.000E+00	NOT IDENT.
SB-124	-5.942E-04	8.523E-02	1.439E-01	0.000E+00	NOT IDENT.
SB-125	2.566E-02	1.065E-01	1.855E-01	0.000E+00	FAIL ABUN
TE-125M	4.575E+00	1.215E+01	2.147E+01	0.000E+00	NOT IDENT.
I-126	-1.003E-01	4.291E-01	7.032E-01	0.000E+00	NOT IDENT.
SB-126	6.995E-02	3.047E-01	4.476E-01	0.000E+00	NOT IDENT.
SB-127	-5.271E+00	6.204E+00	9.482E+00	0.000E+00	NOT IDENT.
I-131	-1.964E-01	2.499E-01	4.123E-01	0.000E+00	NOT IDENT.
TE-132	-1.348E+00	4.639E+00	7.691E+00	0.000E+00	NOT IDENT.
BA-133	-1.226E-02	5.348E-02	7.920E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.492E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.649E-02	5.157E-02	9.947E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	2.038E-01	3.283E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.344E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.898E-02	1.815E-01	3.163E-01	0.000E+00	NOT IDENT.
BA-137M	5.482E-02	4.558E-02	8.239E-02	0.000E+00	NOT IDENT.
CS-137	5.791E-02	4.815E-02	8.703E-02	0.000E+00	NOT IDENT.
CE-139	-1.748E-03	3.441E-02	5.875E-02	0.000E+00	NOT IDENT.
BA-140	-9.286E-02	4.565E-01	7.590E-01	0.000E+00	NOT IDENT.
LA-140	-1.186E-01	1.386E-01	2.015E-01	0.000E+00	FAIL ABUN
CE-141	8.714E-02	8.417E-02	1.503E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.230E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	9.958E-02	2.625E-01	4.052E-01	0.000E+00	NOT IDENT.
PM-144	1.719E-02	3.931E-02	6.774E-02	0.000E+00	NOT IDENT.
PR-144	1.311E+00	2.956E+00	5.095E+00	0.000E+00	NOT IDENT.
PM-146	-1.367E-02	5.103E-02	7.738E-02	0.000E+00	NOT IDENT.
ND-147	-9.635E-01	1.038E+00	1.617E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.163E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.072E-01	1.955E-01	1.816E-01	0.000E+00	FAIL ABUN
GD-153	1.214E-01	1.059E-01	1.722E-01	0.000E+00	NOT IDENT.
EU-154	-1.697E-01	1.425E-01	2.027E-01	0.000E+00	NOT IDENT.
EU-155	7.862E-04	1.218E-01	2.127E-01	0.000E+00	FAIL ABUN
TB-160	-2.750E-02	1.705E-01	2.876E-01	0.000E+00	FAIL ABUN
HO-166M	-8.412E-03	6.865E-02	1.127E-01	0.000E+00	FAIL ABUN
TA-182	-6.281E-02	2.491E-01	4.068E-01	0.000E+00	NOT IDENT.
IR-192	7.384E-03	4.057E-02	7.158E-02	0.000E+00	FAIL ABUN
HG-203	-8.896E-03	4.715E-02	8.224E-02	0.000E+00	NOT IDENT.
BI-207	3.445E-02	6.389E-02	1.130E-01	0.000E+00	FAIL ABUN
PB-210	-3.819E+00	6.005E+00	1.024E+01	0.000E+00	NOT IDENT.
PB-211	-6.283E-01	8.920E-01	1.387E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.857E-01	1.428E+00	0.000E+00	FAIL ABUN
RN-219	5.161E-01	4.507E-01	8.205E-01	0.000E+00	FAIL ABUN
RA-223	-1.219E-01	8.094E-01	1.215E+00	0.000E+00	FAIL ABUN
AC-227	-8.482E-02	2.938E-01	4.835E-01	0.000E+00	FAIL ABUN
TH-227	-8.482E-02	2.938E-01	4.835E-01	0.000E+00	FAIL ABUN
TH-229	-1.485E-01	6.069E-01	1.019E+00	0.000E+00	FAIL ABUN
PA-231	-1.508E-02	1.546E+00	2.718E+00	0.000E+00	NOT IDENT.
TH-231	-1.219E-01	8.094E-01	1.215E+00	0.000E+00	FAIL ABUN
PA-233	-4.591E-02	6.912E-02	1.165E-01	0.000E+00	FAIL ABUN
PA-234	-1.190E-01	3.285E-01	5.384E-01	0.000E+00	NOT IDENT.
PA-234M	2.818E+00	5.057E+00	8.987E+00	0.000E+00	NOT IDENT.
TH-234	1.515E+00	1.789E+00	3.236E+00	0.000E+00	FAIL ABUN
U-238	1.515E+00	1.789E+00	3.236E+00	0.000E+00	FAIL ABUN
NP-239	2.898E-01	4.430E-01	7.890E-01	0.000E+00	NOT IDENT.
AM-241	-2.700E-01	2.112E-01	3.579E-01	0.000E+00	NOT IDENT.
CM-247	4.032E-02	4.148E-02	7.546E-02	0.000E+00	NOT IDENT.
CF-249	1.861E-02	4.537E-02	8.018E-02	0.000E+00	NOT IDENT.

CF-251	-1.270E-01	1.460E-01	2.393E-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]G248513007.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:23:47
Sample ID          : G248513007      Sample quantity   : 1.24900E+02 GRAM
Detector name      : GAM23            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.71  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 961097            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	1460.82	894	10.66*	9.975E-01	2.528E+01	2.528E+01	10.34
CD-109	88.03	272	3.70*	5.215E+00	4.239E+00	4.388E+00	26.66
SN-126	64.28	-----	9.60	2.723E+00	-----	Line Not Found	-----
	86.94	272	8.90	5.215E+00	1.762E+00	1.762E+00	48.44
	87.57	272	37.00*	5.215E+00	4.239E-01	4.239E-01	26.66
TL-208	277.37	-----	6.60	4.139E+00	-----	Line Not Found	-----
	583.19	407	85.00*	2.278E+00	6.321E-01	6.321E-01	15.84
	860.56	61	12.50	1.610E+00	9.174E-01	9.174E-01	51.17
BI-211	72.87	-----	1.23	3.829E+00	-----	Line Not Found	-----
	351.06	632	12.92*	3.443E+00	4.273E+00	4.273E+00	13.77
PB-212	74.82	484	10.28	4.026E+00	3.517E+00	3.517E+00	21.50
	77.11	671	17.10	4.293E+00	2.746E+00	2.746E+00	15.23
	238.63	1137	43.60*	4.639E+00	1.690E+00	1.690E+00	10.17
	300.09	81	3.30	3.898E+00	1.895E+00	1.895E+00	64.91
BI-214	609.32	407	45.49*	2.194E+00	1.224E+00	1.224E+00	16.76
	1120.29	88	14.92	1.259E+00	1.415E+00	1.415E+00	46.50
	1764.49	-----	15.30	8.740E-01	-----	Line Not Found	-----
PB-214	74.82	484	5.80	4.026E+00	6.233E+00	6.234E+00	20.75
	77.11	671	9.70	4.293E+00	4.840E+00	4.841E+00	17.32
	242.00	294	7.25	4.596E+00	2.655E+00	2.655E+00	29.86
	295.22	390	18.42	3.952E+00	1.612E+00	1.612E+00	20.53
	351.93	632	35.60*	3.443E+00	1.551E+00	1.551E+00	14.83
RA-224	240.99	294	4.10*	4.596E+00	4.694E+00	4.694E+00	29.30
RA-226	609.32	407	45.49*	2.194E+00	1.224E+00	1.224E+00	16.76
	1120.29	88	14.92	1.259E+00	1.415E+00	1.415E+00	46.50
	1764.49	-----	15.30	8.740E-01	-----	Line Not Found	-----
AC-228	338.32	189	11.27	3.550E+00	1.419E+00	1.419E+00	52.65
	911.20	246	25.80*	1.527E+00	1.876E+00	1.876E+00	24.50
	968.97	168	15.80	1.442E+00	2.221E+00	2.221E+00	31.07
RA-228	338.32	189	11.27	3.550E+00	1.419E+00	1.419E+00	52.65
	911.20	246	25.80*	1.527E+00	1.876E+00	1.876E+00	24.50
	968.97	168	15.80	1.442E+00	2.221E+00	2.221E+00	31.07

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	484	10.28	4.026E+00	3.517E+00	3.517E+00	19.21
	77.11	671	17.10	4.293E+00	2.746E+00	2.746E+00	15.23
	238.63	1137	43.60*	4.639E+00	1.690E+00	1.690E+00	10.17
	300.09	81	3.30	3.898E+00	1.895E+00	1.895E+00	88.60
TH-232	338.32	189	11.27	3.550E+00	1.419E+00	1.419E+00	33.26
	911.20	246	25.80*	1.527E+00	1.876E+00	1.876E+00	24.50
	968.97	168	15.80	1.442E+00	2.221E+00	2.221E+00	31.07
	89.96	207	3.47	5.405E+00	3.318E+00	3.318E+00	45.83
U-235	93.35	266	5.60	5.580E+00	2.562E+00	2.562E+00	37.09
	143.76	-----	10.96*	6.189E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.887E+00	-----	Line Not Found	-----
	185.72	203	57.20	5.493E+00	1.941E-01	1.941E-01	39.97
NP-237	205.31	-----	5.01	5.150E+00	-----	Line Not Found	-----
	86.48	272	12.40*	5.215E+00	1.265E+00	1.265E+00	33.92
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
ANH-511	511.00	130	100.00*	2.545E+00	1.541E-01	1.541E-01	52.02

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 3
Number of lines tentatively identified by NID 26 89.66%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.528E+01	2.528E+01	0.261E+01	10.34	
CD-109	461.40D	1.04	4.239E+00	4.388E+00	1.170E+00	26.66	
SN-126	2.30E+05Y	1.00	4.239E-01	4.239E-01	1.130E-01	26.66	
TL-208	1.41E+10Y	1.00	6.321E-01	6.321E-01	1.001E-01	15.84	
BI-211	7.04E+08Y	1.00	4.273E+00	4.273E+00	0.588E+00	13.77	
PB-212	1.41E+10Y	1.00	1.690E+00	1.690E+00	0.172E+00	10.17	
BI-214	1600.00Y	1.00	1.224E+00	1.224E+00	0.205E+00	16.76	
PB-214	1600.00Y	1.00	1.551E+00	1.551E+00	0.230E+00	14.83	
RA-224	1.41E+10Y	1.00	4.694E+00	4.694E+00	1.375E+00	29.30	
RA-226	1600.00Y	1.00	1.224E+00	1.224E+00	0.205E+00	16.76	
AC-228	1.41E+10Y	1.00	1.876E+00	1.876E+00	0.460E+00	24.50	
RA-228	1.41E+10Y	1.00	1.876E+00	1.876E+00	0.460E+00	24.50	
TH-228	1.41E+10Y	1.00	1.690E+00	1.690E+00	0.172E+00	10.17	
TH-232	1.41E+10Y	1.00	1.876E+00	1.876E+00	0.460E+00	24.50	
U-235	7.04E+08Y	1.00	1.941E-01	1.941E-01	0.776E-01	39.97	K
NP-237	2.14E+06Y	1.00	1.265E+00	1.265E+00	0.429E+00	33.92	
ANH-511	1.00E+09Y	1.00	1.541E-01	1.541E-01	0.801E-01	52.02	

Total Activity : 5.416E+01 5.431E+01

Grand Total Activity : 5.416E+01 5.431E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G248513007

Page : 4
Acquisition date : 20-MAR-2010 11:23:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.87	71	420	0.97	257.74	253	10	9.93E-03	****	6.32E+00	
0	209.82	127	377	1.27	419.64	413	13	1.76E-02	65.9	5.08E+00	T
0	270.16	84	220	0.94	540.32	534	11	1.17E-02	71.9	4.22E+00	T
0	327.60	75	183	1.06	655.19	650	11	1.03E-02	74.2	3.64E+00	T
0	462.46	100	124	0.95	924.92	916	16	1.39E-02	53.6	2.76E+00	T
0	726.26	107	66	1.77	1452.52	1445	14	1.49E-02	37.6	1.88E+00	T
3	963.33	58	8	2.57	1926.66	1920	23	8.02E-03	40.5	1.45E+00	T
0	1588.00	16	10	1.26	3175.99	3169	10	2.19E-03	90.6	9.36E-01	
0	1762.63	56	4	3.46	3525.25	3517	15	7.72E-03	32.6	8.75E-01	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513007.CNF;1
* Acquisition date   : 20-MAR-2010 11:23:47  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 02:00:01.71          Half life ratio   : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G248513007            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity  : 1.24900E+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	2.528E+01	2.615E+00	4.721E-01	3.531E-02	53.556
CD-109	4.388E+00	1.170E+00	1.395E+00	1.362E-01	3.145
SN-126	4.239E-01	1.130E-01	1.356E-01	1.319E-02	3.126
TL-208	6.321E-01	1.001E-01	5.739E-02	3.717E-03	11.013
BI-211	4.273E+00	5.883E-01	3.821E-01	2.490E-02	11.182
PB-212	1.690E+00	1.718E-01	1.020E-01	7.397E-03	16.571
BI-214	1.224E+00	2.051E-01	1.281E-01	9.713E-03	9.554
PB-214	1.551E+00	2.300E-01	1.331E-01	1.137E-02	11.647
RA-224	4.694E+00	1.375E+00	1.093E+00	6.159E-02	4.295
RA-226	1.224E+00	2.051E-01	1.281E-01	9.713E-03	9.554
AC-228	1.876E+00	4.596E-01	2.299E-01	2.731E-02	8.161
RA-228	1.876E+00	4.596E-01	2.299E-01	2.731E-02	8.161
TH-228	1.690E+00	1.718E-01	1.020E-01	7.397E-03	16.571
TH-232	1.876E+00	4.596E-01	2.299E-01	2.731E-02	8.161
U-235	1.941E-01	7.759E-02	3.920E-01	6.104E-02	0.495
NP-237	1.265E+00	4.290E-01	4.107E-01	9.477E-02	3.080
ANH-511	1.541E-01	8.015E-02	4.993E-02	2.900E-03	3.086

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.962E-01		4.144E-01	6.469E-01	4.394E-02	-0.458

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-6.013E-02		5.134E-02	7.175E-02	4.818E-03	-0.838
NA-24	-2.073E+03		2.729E+03	Half-Life too short		
SC-46	-1.860E-02		5.014E-02	8.072E-02	7.212E-03	-0.230
V-48	-2.752E-03		1.132E-01	1.871E-01	1.557E-02	-0.015
CR-51	-1.382E-01		5.179E-01	8.330E-01	5.454E-02	-0.166
MN-54	1.173E-02		4.156E-02	7.114E-02	5.633E-03	0.165
CO-56	-1.815E-02		4.787E-02	7.722E-02	6.282E-03	-0.235
CO-57	1.082E-02		2.982E-02	4.973E-02	2.932E-03	0.217
CO-58	2.622E-02		4.638E-02	8.143E-02	6.118E-03	0.322
FE-59	-4.154E-02		1.194E-01	1.894E-01	1.458E-02	-0.219
CO-60	-1.008E-02		3.986E-02	6.229E-02	4.573E-03	-0.162
ZN-65	1.147E-01		1.438E-01	2.212E-01	1.461E-02	0.518
SE-75	-3.135E-02		6.105E-02	8.147E-02	4.744E-03	-0.385
SR-85	9.643E-02		5.167E-02	8.596E-02	4.988E-03	1.122
Y-88	-1.734E-02		4.103E-02	6.190E-02	3.645E-03	-0.280
Y-91	2.958E+01		2.950E+01	5.231E+01	3.120E+00	0.565
NB-94	-2.696E-02		3.793E-02	5.717E-02	3.267E-03	-0.472
NB-95	8.007E-02		6.206E-02	1.086E-01	7.302E-03	0.737
NB-95M	5.499E-01		2.162E-01	3.372E-01	2.496E-02	1.631
ZR-95	6.312E-02		9.656E-02	1.637E-01	1.263E-02	0.386
MO-99	-8.916E-06		5.172E-05	Half-Life too short		
TC-99M	-5.799E+19		6.159E+19	Half-Life too short		
RU-103	3.366E-02		5.158E-02	8.850E-02	1.101E-02	0.380
RH-106	-1.184E-01		3.758E-01	5.941E-01	6.781E-02	-0.199
RU-106	-1.184E-01		3.757E-01	5.941E-01	3.192E-02	-0.199
AG-108M	-3.437E-03		3.301E-02	5.422E-02	3.389E-03	-0.063
AG-110M	-4.493E-02		4.380E-02	6.470E-02	3.596E-03	-0.694
SN-113	-1.619E-02		5.388E-02	8.793E-02	5.417E-03	-0.184
CD-115	6.966E-06		7.437E-05	Half-Life too short		
SN-117M	5.878E-02		9.271E-02	1.551E-01	8.058E-03	0.379
TE-123M	2.542E-02		3.348E-02	5.628E-02	2.970E-03	0.452
SB-124	-5.942E-04		8.697E-02	1.443E-01	1.010E-02	-0.004
SB-125	2.566E-02		1.087E-01	1.825E-01	1.109E-02	0.141
TE-125M	4.575E+00		1.240E+01	2.073E+01	1.892E+00	0.221
I-126	-1.003E-01		4.378E-01	6.961E-01	3.602E-02	-0.144
SB-126	6.995E-02		3.109E-01	4.435E-01	2.658E-02	0.158
SB-127	-5.271E+00		6.331E+00	9.389E+00	1.151E+00	-0.561
I-131	-1.964E-01		2.550E-01	4.047E-01	2.681E-02	-0.485
TE-132	-1.348E+00		4.734E+00	7.500E+00	1.227E+00	-0.180
BA-133	-1.226E-02		5.458E-02	7.771E-02	8.796E-03	-0.158
I-133	-1.123E+00		1.782E+00	Half-Life too short		
CS-134	8.649E-02		5.262E-02	9.870E-02	7.209E-03	0.876
CS-135	3.327E-01		2.080E-01	3.209E-01	2.452E-02	1.037
I-135	8.198E+17		1.706E+18	Half-Life too short		
CS-136	5.898E-02		1.852E-01	3.151E-01	2.513E-02	0.187
BA-137M	5.482E-02		4.651E-02	8.154E-02	4.166E-03	0.672
CS-137	5.791E-02		4.913E-02	8.614E-02	4.424E-03	0.672
CE-139	-1.748E-03		3.512E-02	5.704E-02	2.908E-03	-0.031

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	-9.286E-02		4.658E-01	7.490E-01	2.494E-01	-0.124
LA-140	-1.186E-01		1.414E-01	2.019E-01	1.385E-02	-0.587
CE-141	8.714E-02		8.589E-02	1.457E-01	8.220E-03	0.598
CE-143	7.482E-02	+	1.138E-02	Half-Life	too short	
CE-144	9.958E-02		2.678E-01	3.923E-01	5.418E-02	0.254
PM-144	1.719E-02		4.011E-02	6.709E-02	3.778E-03	0.256
PR-144	1.311E+00		3.016E+00	5.047E+00	2.837E-01	0.260
PM-146	-1.367E-02		5.207E-02	7.618E-02	6.472E-03	-0.180
ND-147	-9.635E-01		1.059E+00	1.596E+00	2.155E-01	-0.604
PM-149	-6.271E-04		5.932E-04	Half-Life	too short	
EU-152	-1.072E-01		1.995E-01	1.781E-01	1.179E-02	-0.602
GD-153	1.214E-01		1.081E-01	1.660E-01	1.356E-02	0.731
EU-154	-1.697E-01		1.454E-01	2.025E-01	2.026E-02	-0.838
EU-155	7.862E-04		1.243E-01	2.053E-01	1.513E-02	0.004
TB-160	-2.750E-02		1.740E-01	2.858E-01	2.500E-02	-0.096
HO-166M	-8.412E-03		7.005E-02	1.117E-01	6.538E-03	-0.075
TA-182	-6.281E-02		2.542E-01	4.062E-01	2.493E-02	-0.155
IR-192	7.384E-03		4.140E-02	7.012E-02	4.160E-03	0.105
HG-203	-8.896E-03		4.812E-02	8.043E-02	4.940E-03	-0.111
BI-207	3.445E-02		6.520E-02	1.125E-01	8.268E-03	0.306
PB-210	-3.819E+00		6.128E+00	9.779E+00	7.555E-01	-0.391
PB-211	-6.283E-01		9.102E-01	1.364E+00	6.542E-01	-0.461
BI-212	2.567E+00	+	1.006E+00	1.415E+00	1.537E-01	1.814
RN-219	5.161E-01		4.599E-01	8.064E-01	1.083E-01	0.640
RA-223	-1.219E-01		8.259E-01	1.191E+00	1.924E-01	-0.102
AC-227	-8.482E-02		2.997E-01	4.723E-01	4.808E-02	-0.180
TH-227	-8.482E-02		2.998E-01	4.723E-01	5.658E-02	-0.180
TH-229	-1.485E-01		6.193E-01	9.919E-01	5.253E-02	-0.150
PA-231	-1.508E-02		1.578E+00	2.658E+00	3.491E-01	-0.006
TH-231	-1.219E-01		8.259E-01	1.191E+00	1.924E-01	-0.102
PA-233	-4.591E-02		7.053E-02	1.141E-01	7.134E-03	-0.402
PA-234	-1.190E-01		3.352E-01	5.355E-01	1.007E-01	-0.222
PA-234M	2.818E+00		5.160E+00	8.947E+00	8.536E-01	0.315
TH-234	1.515E+00		1.825E+00	3.102E+00	5.707E-01	0.488
U-238	1.515E+00		1.825E+00	3.102E+00	5.707E-01	0.488
NP-239	2.898E-01		4.521E-01	7.626E-01	4.746E-02	0.380
AM-241	-2.700E-01		2.156E-01	3.428E-01	3.190E-02	-0.787
CM-247	4.032E-02		4.233E-02	7.416E-02	4.299E-03	0.544
CF-249	1.861E-02		4.629E-02	7.877E-02	4.557E-03	0.236
CF-251	-1.270E-01		1.490E-01	2.325E-01	1.203E-02	-0.546

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]G248513007          *
* Acquisition date   : 20-MAR-2010 11:23:47 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 02:00:01.71                               Half life ratio  : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513007                               Analyst initials: MXR1           *
* Batch Number       : 961097                                   Sample Quantity : 1.2490E+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	2.528E+01	2.563E+00	2.360E-01	1.307E+00
CD-109	4.388E+00	1.146E+00	7.249E-01	5.849E-01
SN-126	4.239E-01	1.107E-01	7.046E-02	5.650E-02
TL-208	6.321E-01	9.811E-02	2.906E-02	5.006E-02
BI-211	4.273E+00	5.766E-01	1.949E-01	2.942E-01
PB-212	1.690E+00	1.684E-01	5.228E-02	8.591E-02
BI-214	1.224E+00	2.010E-01	6.484E-02	1.026E-01
PB-214	1.551E+00	2.254E-01	6.790E-02	1.150E-01
RA-224	4.694E+00	1.348E+00	5.603E-01	6.876E-01
RA-226	1.224E+00	2.010E-01	6.484E-02	1.026E-01
AC-228	1.876E+00	4.504E-01	1.157E-01	2.298E-01
RA-228	1.876E+00	4.504E-01	1.157E-01	2.298E-01
TH-228	1.690E+00	1.684E-01	5.228E-02	8.591E-02
TH-232	1.876E+00	4.504E-01	1.157E-01	2.298E-01
U-235	-1.522E-03	2.364E-01	2.023E-01	1.206E-01
NP-237	1.265E+00	4.204E-01	2.134E-01	2.145E-01
ANH-511	1.541E-01	7.854E-02	2.533E-02	4.007E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.962E-01	4.061E-01	3.285E-01	2.072E-01 NOT IDENT.
NA-22	-6.013E-02	5.031E-02	3.593E-02	2.567E-02 NOT IDENT.
NA-24	-2.073E+09	5.349E+09	0.000E+00	2.729E+09 SHORT HLIF
SC-46	-1.860E-02	4.914E-02	4.063E-02	2.507E-02 NOT IDENT.
V-48	-2.752E-03	1.110E-01	9.405E-02	5.662E-02 NOT IDENT.
CR-51	-1.382E-01	5.075E-01	4.254E-01	2.590E-01 NOT IDENT.
MN-54	1.173E-02	4.073E-02	3.584E-02	2.078E-02 NOT IDENT.
CO-56	-1.815E-02	4.692E-02	3.890E-02	2.394E-02 NOT IDENT.
CO-57	1.082E-02	2.922E-02	2.573E-02	1.491E-02 NOT IDENT.
CO-58	2.622E-02	4.545E-02	4.105E-02	2.319E-02 NOT IDENT.

FE-59	-4.154E-02	1.170E-01	9.504E-02	5.968E-02	NOT IDENT.
CO-60	-1.008E-02	3.907E-02	3.118E-02	1.993E-02	NOT IDENT.
ZN-65	1.147E-01	1.410E-01	1.110E-01	7.192E-02	NOT IDENT.
SE-75	-3.135E-02	5.983E-02	4.171E-02	3.053E-02	NOT IDENT.
SR-85	9.643E-02	5.064E-02	4.361E-02	2.583E-02	NOT IDENT.
Y-88	-1.734E-02	4.021E-02	3.084E-02	2.052E-02	NOT IDENT.
Y-91	2.958E+01	2.891E+01	2.622E+01	1.475E+01	NOT IDENT.
NB-94	-2.696E-02	3.717E-02	2.887E-02	1.897E-02	NOT IDENT.
NB-95	8.007E-02	6.082E-02	5.481E-02	3.103E-02	NOT IDENT.
NB-95M	5.499E-01	2.119E-01	1.729E-01	1.081E-01	NOT IDENT.
ZR-95	6.312E-02	9.463E-02	8.258E-02	4.828E-02	NOT IDENT.
MO-99	-8.916E+00	1.014E+02	0.000E+00	5.172E+01	SHORT HLIF
TC-99M	-5.799E+25	1.207E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.366E-02	5.055E-02	4.491E-02	2.579E-02	NOT IDENT.
RH-106	-1.184E-01	3.683E-01	3.006E-01	1.879E-01	NOT IDENT.
RU-106	-1.184E-01	3.681E-01	3.006E-01	1.878E-01	NOT IDENT.
AG-108M	-3.437E-03	3.235E-02	2.757E-02	1.650E-02	NOT IDENT.
AG-110M	-4.493E-02	4.293E-02	3.271E-02	2.190E-02	NOT IDENT.
SN-113	-1.619E-02	5.281E-02	4.478E-02	2.694E-02	NOT IDENT.
CD-115	6.966E+00	1.458E+02	0.000E+00	7.437E+01	SHORT HLIF
SN-117M	5.878E-02	9.086E-02	7.994E-02	4.636E-02	NOT IDENT.
TE-123M	2.542E-02	3.281E-02	2.901E-02	1.674E-02	NOT IDENT.
SB-124	-5.942E-04	8.523E-02	7.199E-02	4.348E-02	NOT IDENT.
SB-125	2.566E-02	1.065E-01	9.283E-02	5.434E-02	FAIL ABUN
TE-125M	4.575E+00	1.215E+01	1.074E+01	6.200E+00	NOT IDENT.
I-126	-1.003E-01	4.291E-01	3.518E-01	2.189E-01	NOT IDENT.
SB-126	6.995E-02	3.047E-01	2.239E-01	1.555E-01	NOT IDENT.
SB-127	-5.271E+00	6.204E+00	4.744E+00	3.165E+00	NOT IDENT.
I-131	-1.964E-01	2.499E-01	2.063E-01	1.275E-01	NOT IDENT.
TE-132	-1.348E+00	4.639E+00	3.848E+00	2.367E+00	NOT IDENT.
BA-133	-1.226E-02	5.348E-02	3.962E-02	2.729E-02	NOT IDENT.
I-133	-1.123E+06	3.492E+06	0.000E+00	1.782E+06	SHORT HLIF
CS-134	8.649E-02	5.157E-02	4.977E-02	2.631E-02	NOT IDENT.
CS-135	3.327E-01	2.038E-01	1.643E-01	1.040E-01	NOT IDENT.
I-135	8.198E+23	3.344E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.898E-02	1.815E-01	1.583E-01	9.261E-02	NOT IDENT.
BA-137M	5.482E-02	4.558E-02	4.122E-02	2.325E-02	NOT IDENT.
CS-137	5.791E-02	4.815E-02	4.354E-02	2.457E-02	NOT IDENT.
CE-139	-1.748E-03	3.441E-02	2.939E-02	1.756E-02	NOT IDENT.
BA-140	-9.286E-02	4.565E-01	3.797E-01	2.329E-01	NOT IDENT.
LA-140	-1.186E-01	1.386E-01	1.008E-01	7.070E-02	FAIL ABUN
CE-141	8.714E-02	8.417E-02	7.521E-02	4.294E-02	NOT IDENT.
CE-143	7.482E+04	2.230E+04	0.000E+00	1.138E+04	SHORT HLIF
CE-144	9.958E-02	2.625E-01	2.027E-01	1.339E-01	NOT IDENT.
PM-144	1.719E-02	3.931E-02	3.389E-02	2.006E-02	NOT IDENT.
PR-144	1.311E+00	2.956E+00	2.549E+00	1.508E+00	NOT IDENT.
PM-146	-1.367E-02	5.103E-02	3.871E-02	2.603E-02	NOT IDENT.
ND-147	-9.635E-01	1.038E+00	8.090E-01	5.295E-01	FAIL ABUN
PM-149	-6.271E+02	1.163E+03	0.000E+00	5.932E+02	SHORT HLIF
EU-152	-1.072E-01	1.955E-01	9.084E-02	9.975E-02	FAIL ABUN
GD-153	1.214E-01	1.059E-01	8.613E-02	5.406E-02	NOT IDENT.
EU-154	-1.697E-01	1.425E-01	1.014E-01	7.271E-02	NOT IDENT.
EU-155	7.862E-04	1.218E-01	1.064E-01	6.213E-02	FAIL ABUN
TB-160	-2.750E-02	1.705E-01	1.439E-01	8.698E-02	FAIL ABUN
HO-166M	-8.412E-03	6.865E-02	5.641E-02	3.503E-02	FAIL ABUN
TA-182	-6.281E-02	2.491E-01	2.035E-01	1.271E-01	NOT IDENT.
IR-192	7.384E-03	4.057E-02	3.581E-02	2.070E-02	FAIL ABUN
HG-203	-8.896E-03	4.715E-02	4.115E-02	2.406E-02	NOT IDENT.
BI-207	3.445E-02	6.389E-02	5.651E-02	3.260E-02	FAIL ABUN
PB-210	-3.819E+00	6.005E+00	5.124E+00	3.064E+00	NOT IDENT.
PB-211	-6.283E-01	8.920E-01	6.941E-01	4.551E-01	NOT IDENT.
BI-212	2.567E+00	9.857E-01	7.142E-01	5.029E-01	FAIL ABUN
RN-219	5.161E-01	4.507E-01	4.105E-01	2.299E-01	FAIL ABUN
RA-223	-1.219E-01	8.094E-01	6.080E-01	4.130E-01	FAIL ABUN
AC-227	-8.482E-02	2.938E-01	2.419E-01	1.499E-01	FAIL ABUN
TH-227	-8.482E-02	2.938E-01	2.419E-01	1.499E-01	FAIL ABUN
TH-229	-1.485E-01	6.069E-01	5.100E-01	3.097E-01	FAIL ABUN
PA-231	-1.508E-02	1.546E+00	1.360E+00	7.890E-01	NOT IDENT.
TH-231	-1.219E-01	8.094E-01	6.080E-01	4.130E-01	FAIL ABUN
PA-233	-4.591E-02	6.912E-02	5.827E-02	3.526E-02	FAIL ABUN
PA-234	-1.190E-01	3.285E-01	2.693E-01	1.676E-01	NOT IDENT.
PA-234M	2.818E+00	5.057E+00	4.496E+00	2.580E+00	NOT IDENT.
TH-234	1.515E+00	1.789E+00	1.619E+00	9.127E-01	FAIL ABUN
U-238	1.515E+00	1.789E+00	1.619E+00	9.127E-01	FAIL ABUN
NP-239	2.898E-01	4.430E-01	3.947E-01	2.260E-01	NOT IDENT.
AM-241	-2.700E-01	2.112E-01	1.791E-01	1.078E-01	NOT IDENT.
CM-247	4.032E-02	4.148E-02	3.775E-02	2.116E-02	NOT IDENT.
CF-249	1.861E-02	4.537E-02	4.012E-02	2.315E-02	NOT IDENT.

CF-251

-1.270E-01

1.460E-01

1.197E-01

7.449E-02 NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
*****

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ENERGY	MDA COUNTS
46.54	326.1620
49.72	305.3075
57.36	0.0000
59.54	402.6959
63.29	360.4512
63.29	360.4512
64.28	386.1132
67.75	406.1422
69.67	369.1216
70.83	393.7804
72.81	467.2270
72.87	467.2667
72.87	467.2667
74.82	441.1385
74.82	441.1385
74.82	441.1385
74.97	441.2293
77.11	442.5191
77.11	442.5191
77.11	442.5191
79.69	391.7524
79.80	391.8090
80.12	391.9756
80.19	392.0117
80.57	392.2082
81.00	392.4297
81.07	392.4659
81.07	392.4659
83.79	353.7050
83.79	353.7050
85.43	354.4460
86.48	354.9174
86.55	354.9498
86.79	355.0557
86.94	355.1234
87.57	355.4043
88.03	355.6090
88.47	355.8038
89.96	356.4601
91.11	356.9640
92.59	357.6062
92.59	357.6062
93.35	357.9350
94.67	334.8593
94.87	364.4020
94.87	364.4020
95.86	350.8587
97.43	289.2945
98.44	289.6362
99.53	315.1721
100.11	320.8159
103.18	361.0849
103.37	336.6934
105.31	352.1417
106.12	342.6416
109.28	334.9702
111.00	312.8958
111.76	337.8487
116.30	299.7789
117.23	296.0970
121.12	304.2751
121.78	312.4663
122.06	312.5558
123.07	325.2055
131.20	327.3077
133.52	321.5798
136.00	365.4728

136.47	360.5739
140.51	0.0000
140.51	0.0000
143.76	347.7434
144.24	326.4722
144.24	326.4722
145.44	308.4468
152.43	278.5321
153.25	291.0751
154.21	321.1740
154.21	321.1740
156.02	340.2445
158.56	282.0978
159.00	273.9343
162.66	320.4220
163.33	311.2656
165.86	291.1362
176.60	291.6230
177.52	304.4367
181.07	0.0000
184.41	279.7186
185.72	270.4961
193.51	292.3239
197.04	266.4585
205.31	296.8390
210.85	272.1932
215.65	235.0981
222.11	240.9426
227.38	259.2484
228.16	251.7574
228.18	251.7610
235.69	310.2232
235.96	306.7734
235.96	306.7734
238.63	217.3193
238.63	217.3193
240.99	217.6592
242.00	181.2835
244.70	204.5251
252.40	213.7398
252.80	219.3330
256.23	210.9313
256.23	210.9313
260.90	0.0000
264.66	189.2809
268.22	168.2212
269.46	183.5716
269.46	183.5716
271.23	193.6327
273.65	222.6460
276.40	173.4278
277.37	186.7044
277.60	191.2292
278.00	202.5275
279.20	195.4669
279.54	187.3980
280.46	192.0068
283.69	173.4094
284.31	186.1217
285.41	183.5301
285.90	0.0000
287.50	158.4100
293.27	0.0000
295.22	181.8555
295.96	181.9336
298.57	182.2046
299.98	154.9984
299.98	154.9984
300.09	141.3315
300.09	141.3315
300.13	141.3353
301.36	133.8298
302.85	141.5529
304.50	156.9203
304.50	156.9203
304.85	167.6184
308.46	145.6659
311.90	163.3854

316.51	149.9970
319.41	158.5310
320.08	160.8437
323.87	161.6891
323.87	161.6891
328.76	176.0098
333.37	153.2272
334.37	157.9535
334.37	157.9535
338.28	138.7290
338.28	138.7290
338.32	138.7308
338.32	138.7308
338.32	138.7308
340.48	161.5711
340.55	161.5775
344.28	172.7871
351.06	148.0864
351.93	135.9623
356.01	145.6417
364.49	141.5479
366.42	0.0000
383.85	138.1359
388.16	126.9653
388.63	133.6785
391.69	135.7858
400.66	123.8791
401.81	103.7681
402.40	109.5636
404.85	152.9851
410.95	112.8924
414.70	133.3843
423.72	121.3150
427.09	110.8063
427.87	119.5962
433.94	107.2460
453.88	105.3733
463.37	85.5802
468.07	100.5919
473.00	90.2246
476.78	112.2124
477.60	113.2444
487.02	93.7395
492.35	0.0000
497.08	82.1081
511.00	82.5650
514.00	75.6065
527.90	0.0000
529.87	0.0000
531.02	98.4351
537.26	88.4974
546.56	0.0000
563.25	81.1486
569.33	98.8313
569.50	98.8383
569.70	95.7564
583.19	63.1162
600.60	96.3052
602.73	98.9823
604.72	76.4593
609.32	83.5449
609.32	83.5449
610.33	81.8331
614.28	81.9459
618.01	73.3240
621.93	83.9121
621.93	83.9121
633.25	80.0245
635.95	76.9369
636.99	79.0723
645.85	83.5383
657.76	97.6714
661.66	80.7890
661.66	80.7890
664.57	0.0000
666.33	100.0770
666.50	83.0464
677.62	83.3473

685.70	80.3503
695.00	78.4411
696.49	68.8031
696.51	68.8031
697.00	66.6636
702.65	79.7072
706.68	80.8868
711.68	71.2932
720.70	72.2152
721.93	0.0000
722.78	99.3585
722.91	99.3630
723.31	99.3764
724.19	88.5593
727.33	66.9360
733.00	65.2397
735.93	64.2100
739.50	0.0000
747.24	67.7065
752.31	65.6221
753.82	63.4644
756.73	64.6148
763.94	114.1410
765.81	80.1628
766.42	87.8652
777.92	0.0000
778.90	56.9557
783.70	64.3945
785.37	59.8240
795.86	47.0810
801.95	59.1862
810.29	49.1300
810.76	50.0636
815.77	63.1330
818.51	51.1026
832.01	52.2300
834.85	57.8715
836.80	0.0000
846.77	61.8079
856.80	51.5145
860.56	46.7326
871.09	51.8490
873.19	54.7078
875.33	0.0000
879.36	57.6330
880.51	55.7614
883.24	52.0179
884.68	60.5534
889.28	63.4695
898.04	43.6772
911.20	41.9232
911.20	41.9232
911.20	41.9232
926.50	57.3950
937.49	63.3118
944.13	46.1230
946.00	52.8751
949.00	45.2186
962.29	54.6091
964.08	58.9101
966.15	58.9411
968.97	53.0424
968.97	53.0424
968.97	53.0424
983.53	49.4913
996.26	58.4070
1001.03	35.0852
1004.73	48.7732
1037.84	58.0109
1038.76	0.0000
1048.07	45.3374
1050.41	40.4328
1050.41	40.4328
1063.66	51.4393
1085.87	47.7266
1099.45	53.8572
1112.07	61.7268
1115.54	66.9224

1120.29	32.6390
1120.29	32.6390
1120.55	32.6403
1121.30	39.5184
1131.51	0.0000
1173.23	58.8001
1177.93	52.7702
1189.05	67.1387
1204.77	53.0728
1221.41	68.6221
1231.02	87.2343
1235.36	54.4427
1238.28	66.8091
1260.41	0.0000
1271.85	41.3981
1274.44	53.8451
1274.54	53.8472
1291.59	36.3672
1298.22	0.0000
1312.11	31.3000
1332.49	26.1892
1365.19	31.6272
1368.63	0.0000
1384.29	27.5107
1408.01	27.6345
1457.56	0.0000
1460.82	12.8799
1489.16	16.1829
1505.03	33.5392
1596.21	23.5561
1620.50	8.5153
1678.03	0.0000
1690.97	11.4873
1764.49	11.8659
1764.49	11.8659
1770.23	29.0855
1771.35	15.5151
1791.20	0.0000
1836.06	14.6924

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513007

Total Uranium Activity	4.5068E+00	ug/g
Total Uranium Counting Unc.	5.3231E+00	ug/g
Total Uranium Tpu	2.7159E-06	ug/g
Total Uranium Mda	4.8176E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513007
*  ANALYST       : MXR1            DETECTOR    : GAM23
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-MAR-2010 11:23:47.18  SAMPLE ALQT: 124.900 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.334E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.325E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.522E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.711E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:26:40.87

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513008.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:24:20
Sample ID          : G248513008 Sample quantity : 1.30460E+02 GRAM
Detector name      : GAM25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.98 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.51*	215	564	0.87	92.59	89	9	2.98E-02	21.9	
2	0	63.31*	204	650	0.68	126.18	122	8	2.84E-02	23.5	
3	2	74.84*	831	427	0.84	149.23	144	17	1.15E-01	5.1	2.71E+00
4	2	77.11*	1328	397	0.81	153.79	144	17	1.84E-01	3.6	
5	2	87.18*	443	420	1.00	173.91	164	19	6.15E-02	8.9	1.75E+00
6	2	89.90	248	408	1.00	179.35	164	19	3.45E-02	14.5	
7	0	92.82*	376	444	1.33	185.19	182	7	5.22E-02	11.3	
8	0	105.82	125	288	1.85	211.19	208	7	1.73E-02	24.2	
9	0	129.21	110	355	0.83	257.97	254	8	1.53E-02	31.2	
10	0	186.03*	235	338	1.13	371.60	367	9	3.26E-02	16.2	
11	0	209.05	168	233	0.74	417.62	414	8	2.34E-02	17.5	
12	8	238.64*	1506	176	1.00	476.81	472	15	2.09E-01	3.0	1.52E+00
13	8	241.60*	332	203	1.59	482.72	472	15	4.62E-02	9.7	
14	0	270.04	132	212	1.00	539.61	534	10	1.83E-02	22.4	
15	0	277.45	74	126	1.31	554.42	552	7	1.03E-02	27.6	
16	0	295.08*	488	235	1.11	589.69	585	10	6.77E-02	7.5	
17	0	300.74	63	216	0.71	601.00	596	9	8.76E-03	44.1	
18	0	328.12	136	194	1.44	655.76	650	13	1.89E-02	22.8	
19	0	338.29	284	184	0.92	676.10	671	11	3.95E-02	11.0	
20	0	351.92*	771	224	1.19	703.35	696	12	1.07E-01	5.3	
21	0	409.58	52	105	1.26	818.67	814	9	7.28E-03	38.2	
22	0	462.84	108	119	1.37	925.18	918	13	1.50E-02	23.0	
23	0	510.89*	107	134	1.99	1021.28	1015	12	1.48E-02	27.3	
24	0	583.27*	399	106	1.42	1166.03	1161	12	5.54E-02	7.4	
25	0	609.24*	611	72	1.47	1217.97	1210	13	8.49E-02	5.0	
26	0	661.64*	252	77	1.56	1322.77	1318	9	3.50E-02	9.4	
27	0	727.25	121	55	1.71	1453.98	1449	10	1.68E-02	14.6	
28	0	768.17	52	61	1.07	1535.83	1532	8	7.24E-03	29.3	
29	0	794.55	83	56	1.83	1588.58	1580	15	1.15E-02	22.7	
30	0	911.31*	284	68	1.55	1822.11	1814	17	3.95E-02	9.0	
31	2	964.38	84	26	2.17	1928.25	1923	20	1.16E-02	17.1	3.12E+00
32	2	968.88*	172	40	1.94	1937.25	1923	20	2.39E-02	10.6	
33	0	1120.02*	161	45	1.48	2239.54	2232	15	2.23E-02	12.2	
34	0	1378.18	31	28	1.38	2755.89	2749	12	4.35E-03	39.0	
35	0	1460.69	1097	26	2.07	2920.92	2911	18	1.52E-01	3.2	
36	0	1764.49*	99	0	2.82	3528.56	3522	13	1.37E-02	10.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:26:44

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513008.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:24:20
 Sample ID : G248513008 Sample quantity : 130.46 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA25 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.98 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	+	1460.82	*	2.671E+01	2.851E+00	5.701E-01	4.856E-02	46.851
CD-109	+	88.03	*	3.789E+00	7.875E-01	7.889E-01	8.478E-02	4.803
SN-126	+	64.28		6.261E-01	3.105E-01	2.711E-01	4.320E-02	2.310
	+	86.94		1.522E+00	6.920E-01	3.153E-01	1.319E-01	4.826
	+	87.57	*	3.660E-01	7.607E-02	7.605E-02	8.155E-03	4.813
BA-137M	+	661.66	*	3.623E-01	7.896E-02	6.387E-02	7.076E-03	5.673
CS-137	+	661.66	*	3.828E-01	8.343E-02	6.748E-02	7.483E-03	5.673
EU-155	+	86.55		4.452E-01	9.269E-02	9.209E-02	9.893E-03	4.835
	+	105.31	*	1.948E-01	9.709E-02	1.207E-01	1.426E-02	1.614
TL-208	+	277.37		6.820E-01	3.886E-01	5.874E-01	8.443E-02	1.161
	+	583.19	*	5.405E-01	1.005E-01	5.950E-02	6.702E-03	9.084
		860.56		4.354E-01	3.317E-01	5.915E-01	6.180E-02	0.736
PB-210	+	46.54	*	1.584E+00	7.115E-01	5.442E-01	5.574E-02	2.911
BI-211		72.87		1.354E+00	1.646E+00	2.466E+00	2.489E-01	0.549
	+	351.06	*	4.422E+00	6.621E-01	3.175E-01	3.346E-02	13.925
PB-212	+	74.82		2.400E+00	4.171E-01	2.749E-01	3.868E-02	8.728
	+	77.11		2.315E+00	2.899E-01	1.666E-01	1.707E-02	13.894
	+	238.63	*	1.861E+00	2.399E-01	8.423E-02	9.623E-03	22.097
	+	300.09		1.241E+00	1.106E+00	1.219E+00	1.529E-01	1.018
BI-214	+	609.32	*	1.610E+00	2.533E-01	1.009E-01	1.222E-02	15.954
	+	1120.29		2.218E+00	5.942E-01	4.762E-01	5.192E-02	4.657
	+	1764.49		1.977E+00	4.481E-01	2.431E-01	2.003E-02	8.134
PB-214	+	74.82		4.253E+00	6.994E-01	4.873E-01	6.282E-02	8.728
	+	77.11		4.081E+00	6.120E-01	2.937E-01	3.864E-02	13.894
	+	242.00		2.496E+00	5.688E-01	4.512E-01	5.422E-02	5.531
	+	295.22		1.691E+00	3.332E-01	2.061E-01	2.642E-02	8.205
	+	351.93	*	1.605E+00	2.561E-01	1.155E-01	1.372E-02	13.889
RA-224	+	240.99	*	4.413E+00	9.728E-01	9.039E-01	9.499E-02	4.882
RA-226	+	609.32	*	1.610E+00	2.533E-01	1.009E-01	1.222E-02	15.954
	+	1120.29		2.218E+00	5.942E-01	4.762E-01	5.192E-02	4.657
	+	1764.49		1.977E+00	4.481E-01	2.431E-01	2.003E-02	8.134
AC-228	+	338.32		1.807E+00	8.586E-01	3.378E-01	1.423E-01	5.351
	+	911.20	*	1.889E+00	4.120E-01	2.308E-01	2.821E-02	8.185
	+	968.97		1.968E+00	6.388E-01	3.425E-01	8.431E-02	5.747

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.807E+00	8.586E-01	3.378E-01	1.423E-01	5.351
	+	911.20	*	1.889E+00	4.120E-01	2.308E-01	2.821E-02	8.185
	+	968.97		1.968E+00	6.388E-01	3.425E-01	8.431E-02	5.747
TH-228	+	74.82		2.400E+00	3.468E-01	2.749E-01	2.812E-02	8.728
	+	77.11		2.315E+00	2.899E-01	1.666E-01	1.707E-02	13.894
	+	238.63	*	1.861E+00	2.399E-01	8.423E-02	9.623E-03	22.097
	+	300.09		1.241E+00	1.335E+00	1.219E+00	7.507E-01	1.018
TH-232	+	338.32		1.807E+00	4.392E-01	3.378E-01	3.521E-02	5.351
	+	911.20	*	1.889E+00	4.120E-01	2.308E-01	2.821E-02	8.185
	+	968.97		1.968E+00	6.388E-01	3.425E-01	8.431E-02	5.747
TH-234	+	63.29	*	1.625E+00	8.230E-01	7.275E-01	1.381E-01	2.233
	+	92.59		2.769E+00	8.971E-01	6.454E-01	1.491E-01	4.291
U-235	+	89.96		2.205E+00	8.501E-01	8.198E-01	2.089E-01	2.690
	+	93.35		2.092E+00	6.923E-01	4.627E-01	1.115E-01	4.521
		143.76	*	1.802E-01	1.686E-01	2.844E-01	5.224E-02	0.634
		163.33		1.458E-01	3.474E-01	5.838E-01	1.065E-01	0.250
	+	185.72		1.842E-01	6.215E-02	5.788E-02	5.420E-03	3.182
		205.31		-3.462E-02	4.677E-01	6.752E-01	1.265E-01	-0.051
NP-237	+	86.48	*	1.092E+00	3.224E-01	2.258E-01	5.313E-02	4.836
		95.86		1.458E-01	6.094E-01	9.508E-01	2.379E-01	0.153
U-238	+	63.29	*	1.625E+00	8.230E-01	7.275E-01	1.381E-01	2.233
	+	92.59		2.769E+00	6.984E-01	6.454E-01	7.091E-02	4.291
ANH-511	+	511.00	*	1.095E-01	6.080E-02	5.079E-02	5.228E-03	2.155

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-1.940E-01	3.661E-01	5.728E-01	6.063E-02	-0.339
NA-22		1274.54	*	3.558E-02	4.537E-02	8.026E-02	6.581E-03	0.443
NA-24		1368.63	*	-7.743E+02	4.537E-02	Half-Life too short		
SC-46		889.28	*	-2.176E-02	4.358E-02	6.729E-02	6.444E-03	-0.323
	+	1120.55		4.003E-01	1.038E-01	1.613E-01	1.386E-02	2.482
V-48		944.13		-4.382E-01	1.367E+00	2.141E+00	2.008E-01	-0.205
		983.53	*	9.893E-02	1.007E-01	1.778E-01	1.648E-02	0.556
		1312.11		-1.338E-02	1.165E-01	1.884E-01	1.535E-02	-0.071
CR-51		320.08	*	2.537E-01	3.938E-01	6.856E-01	7.610E-02	0.370
MN-54		834.85	*	1.768E-04	3.948E-02	6.466E-02	6.561E-03	0.003
CO-56		846.77	*	2.477E-02	4.150E-02	7.156E-02	7.180E-03	0.346
		1037.84		4.048E-01	3.484E-01	6.382E-01	6.051E-02	0.634
		1238.28		2.573E-01	1.171E-01	2.173E-01	1.843E-02	1.184
		1771.35		-1.860E+00	4.689E-01	2.267E-01	1.866E-02	-8.204
CO-57		122.06	*	1.101E-02	1.877E-02	3.234E-02	4.171E-03	0.340
		136.47		7.411E-02	1.672E-01	2.846E-01	3.488E-02	0.260
CO-58		810.76	*	6.994E-03	4.020E-02	6.709E-02	6.961E-03	0.104
FE-59		1099.45	*	-4.606E-02	1.188E-01	1.917E-01	1.805E-02	-0.240
		1291.59		-5.871E-02	1.571E-01	2.481E-01	2.330E-02	-0.237
CO-60		1173.23		3.305E-02	5.181E-02	9.008E-02	7.415E-03	0.367
		1332.49	*	3.235E-03	4.470E-02	7.375E-02	5.989E-03	0.044

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZN-65	1115.54	*		-1.022E-01	1.182E-01	1.506E-01	1.301E-02	-0.678
SE-75	121.12			1.508E-02	9.965E-02	1.692E-01	2.470E-02	0.089
	136.00			3.268E-02	3.287E-02	5.687E-02	6.748E-03	0.575
	264.66	*		-6.354E-03	4.802E-02	6.724E-02	7.369E-03	-0.095
	279.54			4.308E-02	1.141E-01	1.655E-01	1.889E-02	0.260
	400.66			-2.739E-01	2.675E-01	4.111E-01	4.745E-02	-0.666
SR-85	514.00	*		4.634E-02	4.483E-02	6.958E-02	7.179E-03	0.666
Y-88	898.04			-8.626E-03	4.517E-02	7.202E-02	6.850E-03	-0.120
	1836.06	*		-1.544E-02	3.747E-02	5.644E-02	4.612E-03	-0.274
Y-91	1204.77	*		7.387E-01	2.658E+01	4.404E+01	3.624E+00	0.017
NB-94	702.65	*		3.081E-02	3.510E-02	6.182E-02	6.788E-03	0.498
	871.09			-1.861E-02	3.791E-02	5.894E-02	5.765E-03	-0.316
NB-95	765.81	*		4.608E-02	5.673E-02	8.778E-02	9.377E-03	0.525
NB-95M	235.69	*		-1.458E-02	1.317E-01	1.872E-01	2.148E-02	-0.078
ZR-95	724.19			-2.827E-02	1.177E-01	1.649E-01	1.893E-02	-0.171
	756.73	*		-5.566E-02	8.921E-02	1.399E-01	1.605E-02	-0.398
MO-99	140.51			-1.291E-04	8.921E-02	Half-Life	too short	
	181.07			6.378E-05	8.921E-02	Half-Life	too short	
	366.42			-1.986E-04	8.921E-02	Half-Life	too short	
	739.50	*		2.431E-05	8.921E-02	Half-Life	too short	
	777.92			-3.343E-04	8.921E-02	Half-Life	too short	
TC-99M	140.51	*		-8.252E+19	8.921E-02	Half-Life	too short	
RU-103	497.08	*		5.656E-03	4.510E-02	7.391E-02	1.107E-02	0.077
	610.33			1.909E+01	3.878E+00	3.694E+00	6.522E-01	5.169
RH-106	621.93	*		-1.031E-02	3.096E-01	5.193E-01	7.726E-02	-0.020
	1050.41			-1.587E+00	2.563E+00	4.028E+00	3.622E-01	-0.394
RU-106	621.93	*		-1.031E-02	3.096E-01	5.193E-01	5.687E-02	-0.020
	1050.41			-1.587E+00	2.563E+00	4.028E+00	3.622E-01	-0.394
AG-108M	433.94	*		-2.852E-03	2.744E-02	4.475E-02	4.397E-03	-0.064
	614.28			-2.868E-03	3.832E-02	5.575E-02	6.214E-03	-0.051
	722.91			-2.406E-02	4.379E-02	5.890E-02	6.552E-03	-0.409
AG-110M	657.76	*		-5.403E-03	4.000E-02	5.733E-02	6.461E-03	-0.094
	677.62			1.962E-01	3.244E-01	5.649E-01	6.352E-02	0.347
	706.68			-2.330E-02	2.232E-01	3.681E-01	4.110E-02	-0.063
	763.94			9.198E-02	1.823E-01	2.764E-01	3.008E-02	0.333
	884.68			-5.030E-04	4.940E-02	8.032E-02	7.934E-03	-0.006
	937.49			-1.241E-02	1.319E-01	2.117E-01	2.051E-02	-0.059
	1384.29			-7.898E-03	1.871E-01	2.591E-01	2.185E-02	-0.030
	1505.03			-2.486E-01	3.088E-01	4.360E-01	3.615E-02	-0.570
SN-113	391.69	*		-3.533E-02	4.683E-02	7.387E-02	6.900E-03	-0.478
CD-115	260.90			2.779E-05	4.683E-02	Half-Life	too short	
	492.35			1.114E-04	4.683E-02	Half-Life	too short	
	527.90	*		4.132E-05	4.683E-02	Half-Life	too short	
SN-117M	156.02			-9.960E-01	2.790E+00	4.555E+00	4.543E-01	-0.219
	158.56	*		1.858E-03	6.423E-02	1.066E-01	1.035E-02	0.017
TE-123M	159.00	*		1.328E-02	2.326E-02	3.948E-02	3.833E-03	0.336
SB-124	602.73			3.316E-02	4.545E-02	7.153E-02	7.775E-03	0.464
	645.85			-2.081E-01	4.909E-01	7.921E-01	9.050E-02	-0.263
	722.78			-2.470E-01	4.826E-01	6.526E-01	7.219E-02	-0.378

---- Non-Identified Nuclides ----

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SB-125	1690.97	*		-1.615E-02	7.974E-02	1.270E-01	1.101E-02	-0.127
	427.87	*		2.388E-02	8.522E-02	1.429E-01	1.379E-02	0.167
	463.37		+	9.751E-01	4.606E-01	5.361E-01	5.600E-02	1.819
	600.60			7.492E-02	1.802E-01	3.051E-01	3.470E-02	0.246
TE-125M	635.95			-4.729E-03	2.927E-01	4.907E-01	5.672E-02	-0.010
	109.28	*		1.309E+01	8.295E+00	1.341E+01	1.800E+00	0.976
	388.63			8.918E-02	2.554E-01	4.320E-01	3.967E-02	0.206
	666.33	*		2.846E-01	3.962E-01	6.167E-01	6.827E-02	0.461
I-126	753.82			2.771E+00	2.905E+00	5.134E+00	5.521E-01	0.540
	414.70			2.891E-02	1.224E-01	1.905E-01	1.783E-02	0.152
	666.50			9.665E-02	1.385E-01	2.152E-01	2.382E-02	0.449
	695.00			-3.553E-02	1.193E-01	1.938E-01	2.133E-02	-0.183
SB-126	697.00			-2.395E-01	4.276E-01	6.796E-01	7.475E-02	-0.352
	720.70	*		1.415E-01	2.497E-01	3.975E-01	4.338E-02	0.356
	856.80			-8.189E-01	8.506E-01	1.269E+00	1.260E-01	-0.645
	252.40			1.002E+01	1.614E+01	2.582E+01	1.105E+01	0.388
SB-127	473.00			-8.624E-02	6.094E+00	9.927E+00	1.581E+00	-0.009
	685.70	*		3.391E+00	5.595E+00	9.714E+00	1.512E+00	0.349
	783.70			3.995E+00	1.392E+01	2.348E+01	3.753E+00	0.170
	80.19			7.292E-01	5.999E+00	7.606E+00	7.971E-01	0.096
I-131	284.31			7.030E-01	2.798E+00	4.472E+00	5.154E-01	0.157
	364.49	*		5.933E-02	2.024E-01	3.437E-01	3.547E-02	0.173
	636.99			1.687E+00	3.287E+00	5.704E+00	6.531E-01	0.296
	49.72			7.917E+00	1.517E+01	2.317E+01	3.266E+00	0.342
TE-132	111.76			-1.213E+02	1.340E+02	2.131E+02	3.409E+01	-0.569
	116.30			6.836E+01	1.124E+02	1.940E+02	3.149E+01	0.352
	228.16	*		-1.914E+00	3.549E+00	5.527E+00	1.023E+00	-0.346
	81.00			-1.292E-02	6.318E-02	7.824E-02	1.297E-02	-0.165
BA-133	276.40		+	6.312E-01	3.621E-01	5.715E-01	9.008E-02	1.105
	302.85			9.527E-02	1.363E-01	2.131E-01	3.136E-02	0.447
	356.01	*		1.789E-02	4.271E-02	6.493E-02	9.056E-03	0.276
	383.85			2.758E-02	2.778E-01	4.642E-01	5.999E-02	0.059
I-133	529.87	*		-3.225E+00	2.778E-01	Half-Life	too short	
	875.33			4.114E+01	2.778E-01	Half-Life	too short	
	1298.22			-4.654E+01	2.778E-01	Half-Life	too short	
	563.25			3.365E-01	3.705E-01	6.342E-01	6.802E-02	0.531
CS-134	569.33			-1.569E-02	2.057E-01	3.277E-01	3.536E-02	-0.048
	604.72			-5.713E-03	3.578E-02	5.168E-02	5.630E-03	-0.111
	795.86	*	+	1.665E-01	7.745E-02	9.775E-02	1.029E-02	1.704
	801.95			-2.042E-01	4.552E-01	6.843E-01	7.164E-02	-0.298
CS-135	1365.19			1.893E-01	1.221E+00	2.036E+00	1.748E-01	0.093
	268.22	*		9.777E-02	1.541E-01	2.282E-01	2.755E-02	0.428
	546.56			-2.826E+18	1.541E-01	Half-Life	too short	
	836.80			6.952E+17	1.541E-01	Half-Life	too short	
I-135	1038.76			1.003E+19	1.541E-01	Half-Life	too short	
	1131.51			2.672E+18	1.541E-01	Half-Life	too short	
	1260.41	*		-2.049E+18	1.541E-01	Half-Life	too short	
	1457.56			2.967E+20	1.541E-01	Half-Life	too short	
	1678.03			1.636E+18	1.541E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

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CS-136	1791.20			-9.685E+17	1.541E-01	Half-Life	too short	
	153.25			-7.065E-02	1.070E+00	1.737E+00	2.029E-01	-0.041
	176.60			2.387E-01	6.245E-01	1.044E+00	1.045E-01	0.229
	273.65			6.264E-01	9.681E-01	1.152E+00	1.343E-01	0.544
	340.55			1.753E-01	2.290E-01	3.560E-01	3.795E-02	0.492
	818.51			-2.670E-02	1.126E-01	1.804E-01	1.860E-02	-0.148
CE-139	1048.07	*		-6.191E-02	1.490E-01	2.387E-01	2.234E-02	-0.259
	1235.36			-7.642E-01	1.079E+00	1.684E+00	1.933E-01	-0.454
	165.86	*		-5.945E-03	2.490E-02	4.067E-02	3.627E-03	-0.146
BA-140	162.66			-4.997E-01	9.997E-01	1.614E+00	1.584E-01	-0.310
	304.85			9.495E-01	1.977E+00	3.031E+00	9.102E-01	0.313
	423.72			-6.601E-01	2.837E+00	4.583E+00	1.518E+00	-0.144
LA-140	537.26	*		-1.875E-01	4.258E-01	6.542E-01	2.253E-01	-0.287
	328.76		+	1.639E+00	7.675E-01	8.116E-01	8.927E-02	2.019
	487.02			-1.044E-01	2.099E-01	3.280E-01	3.460E-02	-0.318
	815.77			9.737E-02	4.794E-01	8.018E-01	8.960E-02	0.121
CE-141	1596.21	*		1.105E-02	1.429E-01	2.410E-01	2.004E-02	0.046
	145.44	*		-4.822E-02	6.213E-02	9.870E-02	1.098E-02	-0.489
CE-143	57.36			-6.416E-03	6.213E-02	Half-Life	too short	
	293.27	*		3.173E-02	6.213E-02	Half-Life	too short	
	664.57			1.827E-01	6.213E-02	Half-Life	too short	
	721.93			-4.238E-02	6.213E-02	Half-Life	too short	
CE-144	80.12			1.922E-01	1.675E+00	2.123E+00	2.202E-01	0.091
	133.52	*		-1.756E-01	1.643E-01	2.449E-01	4.269E-02	-0.717
PM-144	476.78			3.787E-02	6.481E-02	1.099E-01	1.170E-02	0.345
	618.01			2.776E-02	3.292E-02	5.841E-02	6.500E-03	0.475
PR-144	696.49	*		-2.791E-02	3.519E-02	5.466E-02	6.016E-03	-0.511
	696.51	*		-2.055E+00	2.647E+00	4.120E+00	4.532E-01	-0.499
PM-146	1489.16			-8.357E+00	1.262E+01	1.798E+01	1.489E+00	-0.465
	453.88	*		-2.128E-02	4.325E-02	6.829E-02	7.891E-03	-0.312
	633.25			4.686E-01	1.511E+00	2.574E+00	9.988E-01	0.182
	735.93			-4.191E-02	1.470E-01	2.368E-01	6.816E-02	-0.177
ND-147	747.24			-1.596E-02	9.909E-02	1.616E-01	2.580E-02	-0.099
	91.11		+	1.173E+00	3.648E-01	5.245E-01	6.024E-02	2.236
	319.41			3.391E+00	4.707E+00	8.232E+00	8.847E-01	0.412
	531.02	*		-2.440E-01	9.595E-01	1.516E+00	2.437E-01	-0.161
PM-149	285.90	*		7.567E-04	9.595E-01	Half-Life	too short	
EU-152	121.78			4.227E-02	5.257E-02	9.110E-02	1.254E-02	0.464
	244.70			-2.245E-01	3.138E-01	4.210E-01	4.453E-02	-0.533
	344.28	*		4.654E-02	1.040E-01	1.585E-01	1.702E-02	0.294
	778.90			4.338E-02	2.469E-01	4.134E-01	4.380E-02	0.105
	964.08		+	1.032E+00	3.663E-01	6.122E-01	5.711E-02	1.685
GD-153	1085.87			-6.960E-02	4.269E-01	7.027E-01	6.188E-02	-0.099
	1112.07			3.711E-01	3.451E-01	5.781E-01	5.001E-02	0.642
	1408.01			2.595E-01	1.929E-01	3.628E-01	2.981E-02	0.715
	69.67			-2.523E-02	7.947E-01	1.253E+00	1.253E-01	-0.020
	97.43	*		-7.264E-02	5.706E-02	9.066E-02	1.021E-02	-0.801
	103.18			-4.828E-02	7.811E-02	1.156E-01	1.342E-02	-0.418
EU-154	123.07			-3.056E-03	3.776E-02	6.345E-02	9.390E-03	-0.048

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	723.31		-1.034E-01	1.972E-01	2.659E-01	3.086E-02	-0.389
		873.19		3.253E-01	2.967E-01	5.272E-01	6.719E-02	0.617
		996.26		-1.554E-02	4.126E-01	6.614E-01	1.176E-01	-0.023
		1004.73		-1.994E-01	2.338E-01	3.407E-01	4.110E-02	-0.585
		1274.44	*	6.697E-02	1.313E-01	2.264E-01	2.503E-02	0.296
		86.79		1.270E+00	2.639E-01	3.811E-01	4.071E-02	3.332
		197.04		1.605E-01	5.011E-01	8.295E-01	7.975E-02	0.194
		215.65		-1.771E-01	7.108E-01	1.116E+00	1.117E-01	-0.159
		298.57		-1.089E-01	1.986E-01	2.036E-01	2.240E-02	-0.535
		879.36	*	-1.146E-01	1.522E-01	2.280E-01	2.209E-02	-0.503
		962.29		9.094E-01	7.041E-01	1.123E+00	1.048E-01	0.810
		966.15		1.244E+00	3.101E-01	5.874E-01	5.476E-02	2.118
HO-166M		1177.93		-2.106E-01	4.402E-01	6.996E-01	5.759E-02	-0.301
		1271.85		-7.897E-01	8.080E-01	1.185E+00	9.709E-02	-0.666
		80.57		-4.473E-02	1.803E-01	2.228E-01	2.315E-02	-0.201
		184.41		3.607E-02	3.516E-02	5.623E-02	5.249E-03	0.642
		280.46		3.524E-02	8.052E-02	1.175E-01	1.311E-02	0.300
		410.95	+	3.947E-01	3.036E-01	3.957E-01	3.686E-02	0.998
		711.68	*	-1.074E-02	6.226E-02	1.020E-01	1.117E-02	-0.105
		752.31		8.949E-03	2.888E-01	4.785E-01	5.149E-02	0.019
		810.29		2.098E-03	5.742E-02	9.459E-02	9.801E-03	0.022
		67.75		2.345E-02	4.968E-02	7.975E-02	7.935E-03	0.294
TA-182		100.11		9.726E-02	1.214E-01	2.124E-01	2.426E-02	0.458
		152.43		-2.319E-01	3.000E-01	4.700E-01	4.856E-02	-0.493
		222.11		1.085E-01	3.270E-01	5.369E-01	5.445E-02	0.202
		1121.30	+	1.090E+00	2.827E-01	4.349E-01	3.736E-02	2.506
		1189.05		-6.141E-02	3.591E-01	5.859E-01	4.823E-02	-0.105
		1221.41	*	-7.664E-02	2.404E-01	3.868E-01	3.181E-02	-0.198
		1231.02		-2.634E-01	5.734E-01	9.111E-01	7.489E-02	-0.289
		295.96	+	1.346E+00	2.507E-01	3.316E-01	3.674E-02	4.060
		308.46		2.844E-02	8.917E-02	1.533E-01	1.675E-02	0.186
		316.51	*	-1.757E-02	3.160E-02	5.146E-02	5.558E-03	-0.342
HG-203		468.07		7.138E-02	7.135E-02	1.125E-01	1.177E-02	0.635
		70.83		-2.209E-01	7.622E-01	1.091E+00	1.839E-01	-0.203
		72.87		3.790E-01	4.632E-01	6.901E-01	1.132E-01	0.549
		279.20	*	4.243E-02	4.358E-02	6.581E-02	7.457E-03	0.645
BI-207		72.81		6.307E-02	9.415E-02	1.403E-01	1.416E-02	0.450
		74.97	+	6.919E-01	9.967E-02	1.370E-01	1.393E-02	5.050
		569.70		-9.270E-03	3.124E-02	4.883E-02	5.223E-03	-0.190
		1063.66	*	-1.637E-02	5.325E-02	8.649E-02	7.719E-03	-0.189
PB-211		1770.23		-2.326E-02	3.274E-01	4.465E-01	3.677E-02	-0.052
		404.85	*	1.388E-01	8.124E-01	1.192E+00	5.784E-01	0.116
		427.09		1.766E-01	1.459E+00	2.416E+00	1.122E+00	0.073
		832.01		-5.018E-01	1.104E+00	1.685E+00	8.788E-01	-0.298
BI-212	+	727.33	*	2.543E+00	8.271E-01	1.287E+00	1.818E-01	1.976
		785.37		-7.823E-03	3.172E+00	5.083E+00	5.363E-01	-0.002
RN-219	+	1620.50		3.285E+00	2.540E+00	4.939E+00	4.105E-01	0.665
		271.23		7.261E-01	3.377E-01	4.251E-01	5.252E-02	1.708
		401.81	*	-1.572E-01	4.116E-01	6.641E-01	1.011E-01	-0.237

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-2.813E-02	1.431E-01	1.773E-01	1.846E-02	-0.159
		83.79		1.398E-01	8.592E-02	1.301E-01	1.371E-02	1.074
		94.87		4.420E-01	2.967E-01	4.838E-01	5.377E-02	0.914
		144.24		4.306E-01	5.587E-01	9.453E-01	1.125E-01	0.456
		154.21		3.836E-01	3.244E-01	5.497E-01	5.972E-02	0.698
	+	269.46		5.641E-01	2.607E-01	3.327E-01	3.706E-02	1.696
AC-227		323.87	*	-1.612E-01	6.413E-01	9.324E-01	1.719E-01	-0.173
	+	338.28		7.172E+00	1.845E+00	2.346E+00	3.149E-01	3.057
		79.69		-2.558E-02	7.125E-01	1.024E+00	1.859E-01	-0.025
		235.96		4.080E-02	1.481E-01	2.158E-01	2.564E-02	0.189
		256.23	*	-1.565E-01	2.400E-01	3.673E-01	5.025E-02	-0.426
	+	299.98		1.365E+00	1.220E+00	1.533E+00	2.210E-01	0.890
TH-227		304.50		3.337E-02	1.592E+00	2.383E+00	4.253E-01	0.014
		334.37		1.535E-01	1.916E+00	2.422E+00	4.045E-01	0.063
		79.80		5.640E-02	1.073E+00	1.355E+00	3.053E-01	0.042
		235.96		4.080E-02	1.481E-01	2.158E-01	2.455E-02	0.189
		256.23	*	-1.565E-01	2.402E-01	3.673E-01	5.534E-02	-0.426
	+	299.98		1.365E+00	1.220E+00	1.533E+00	2.210E-01	0.890
TH-229		304.50		3.337E-02	1.592E+00	2.383E+00	4.253E-01	0.014
		334.37		1.535E-01	1.916E+00	2.422E+00	4.045E-01	0.063
		85.43		2.186E-01	1.425E-01	2.150E-01	2.282E-02	1.017
	+	88.47		5.643E-01	1.173E-01	1.477E-01	1.591E-02	3.820
		193.51	*	-2.043E-01	4.476E-01	7.140E-01	6.810E-02	-0.286
		210.85		1.099E+00	8.578E-01	1.331E+00	1.319E-01	0.826
PA-231		283.69	*	-1.147E+00	1.444E+00	2.146E+00	3.476E-01	-0.534
	+	301.36		8.767E-01	7.833E-01	9.576E-01	1.333E-01	0.915
TH-231		81.07		-2.813E-02	1.431E-01	1.773E-01	1.846E-02	-0.159
		83.79		1.398E-01	8.592E-02	1.301E-01	1.371E-02	1.074
		94.87		4.420E-01	2.967E-01	4.838E-01	5.377E-02	0.914
		144.24		4.306E-01	5.587E-01	9.453E-01	1.125E-01	0.456
		154.21		3.836E-01	3.244E-01	5.497E-01	5.972E-02	0.698
	+	269.46		5.641E-01	2.607E-01	3.327E-01	3.706E-02	1.696
PA-233		323.87	*	-1.612E-01	6.413E-01	9.324E-01	1.719E-01	-0.173
	+	338.28		7.172E+00	1.845E+00	2.346E+00	3.149E-01	3.057
	+	300.13		6.175E-01	5.542E-01	6.971E-01	1.138E-01	0.886
		311.90	*	2.920E-02	5.644E-02	9.784E-02	1.081E-02	0.298
		340.48		6.345E-01	6.695E-01	1.028E+00	2.545E-01	0.617
		94.67		1.908E-01	1.137E-01	1.837E-01	2.616E-02	1.038
PA-234		98.44		3.240E-02	6.212E-02	1.020E-01	5.737E-02	0.318
		111.00		-1.525E-01	1.328E-01	2.122E-01	3.137E-02	-0.719
		131.20		6.757E-02	8.332E-02	1.309E-01	1.598E-02	0.516
		569.50		-4.940E-02	2.795E-01	4.416E-01	4.723E-02	-0.112
		733.00		2.330E-01	4.136E-01	6.543E-01	1.515E-01	0.356
		880.51		-8.717E-02	2.740E-01	4.312E-01	4.173E-02	-0.202
PA-234M		883.24		4.545E-02	2.779E-01	4.573E-01	3.081E-01	0.099
		926.50		5.624E-02	1.943E-01	3.224E-01	8.242E-02	0.174
		946.00	*	6.052E-03	3.201E-01	5.186E-01	9.917E-02	0.012
		949.00		3.849E-01	4.775E-01	8.282E-01	7.760E-02	0.465
		766.42		1.693E+01	1.657E+01	2.265E+01	1.158E+01	0.747

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		-1.380E+00	5.579E+00	8.591E+00	8.999E-01	-0.161
	99.53			1.389E-01	1.102E-01	1.918E-01	2.184E-02	0.724
	103.37			-3.513E-02	6.928E-02	1.033E-01	1.200E-02	-0.340
	+	106.12		1.549E-01	7.715E-02	1.061E-01	1.251E-02	1.460
	117.23	*		-1.975E-01	2.890E-01	4.734E-01	5.938E-02	-0.417
	228.18			-1.003E-01	1.911E-01	2.990E-01	3.068E-02	-0.336
AM-241	+	277.60		3.117E-01	1.754E-01	2.751E-01	3.063E-02	1.133
	59.54	*		1.874E-02	5.213E-02	7.739E-02	8.041E-03	0.242
CM-247	+	278.00		1.324E+00	7.448E-01	1.176E+00	1.311E-01	1.125
	287.50			5.987E-01	1.211E+00	1.967E+00	2.184E-01	0.304
	402.40	*		1.388E-02	3.675E-02	6.214E-02	5.727E-03	0.223
CF-249	252.80			4.553E-01	8.405E-01	1.384E+00	1.484E-01	0.329
	333.37			-2.979E-03	2.368E-01	2.545E-01	2.676E-02	-0.012
CF-251	388.16	*		3.256E-02	3.973E-02	6.886E-02	6.332E-03	0.473
	177.52	*		3.463E-03	1.070E-01	1.761E-01	1.616E-02	0.020
	227.38			-2.148E-01	3.198E-01	4.962E-01	5.085E-02	-0.433
	285.41			1.117E+00	2.159E+00	3.512E+00	3.905E-01	0.318

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]G248513008      *
* Acquisition date   : 20-MAR-2010 11:24:20 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 02:00:01.98 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G248513008 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.3046E+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	2.671E+01	2.794E+00	5.706E-01	0.000E+00
CD-109	3.789E+00	7.717E-01	8.263E-01	0.000E+00
SN-126	3.660E-01	7.455E-02	7.966E-02	0.000E+00
BA-137M	3.623E-01	7.738E-02	6.478E-02	0.000E+00
CS-137	3.828E-01	8.177E-02	6.843E-02	0.000E+00
EU-155	1.948E-01	9.515E-02	1.260E-01	0.000E+00
TL-208	5.405E-01	9.852E-02	6.047E-02	0.000E+00
PB-210	1.584E+00	6.973E-01	5.756E-01	0.000E+00
BI-211	4.422E+00	6.488E-01	3.254E-01	0.000E+00
PB-212	1.861E+00	2.351E-01	8.684E-02	0.000E+00
BI-214	1.610E+00	2.483E-01	1.025E-01	0.000E+00
PA-214	1.605E+00	2.510E-01	1.184E-01	0.000E+00
RA-224	4.413E+00	9.533E-01	9.319E-01	0.000E+00
RA-226	1.610E+00	2.483E-01	1.025E-01	0.000E+00
AC-228	1.889E+00	4.038E-01	2.328E-01	0.000E+00
RA-228	1.889E+00	4.038E-01	2.328E-01	0.000E+00
TH-228	1.861E+00	2.351E-01	8.684E-02	0.000E+00
TH-232	1.889E+00	4.038E-01	2.328E-01	0.000E+00
TH-234	1.625E+00	8.065E-01	7.658E-01	0.000E+00
U-235	1.802E-01	1.653E-01	2.956E-01	0.000E+00
NP-237	1.092E+00	3.160E-01	2.366E-01	0.000E+00
U-238	1.625E+00	8.065E-01	7.658E-01	0.000E+00
ANH-511	1.095E-01	5.958E-02	5.173E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.940E-01	3.588E-01	5.840E-01	0.000E+00 NOT IDENT.
NA-22	3.558E-02	4.446E-02	8.051E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.330E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.176E-02	4.271E-02	6.791E-02	0.000E+00 FAIL ABUN

V-48	9.893E-02	9.865E-02	1.791E-01	0.000E+00	NOT IDENT.
CR-51	2.537E-01	3.859E-01	7.036E-01	0.000E+00	NOT IDENT.
MN-54	1.768E-04	3.870E-02	6.532E-02	0.000E+00	NOT IDENT.
CO-56	2.477E-02	4.067E-02	7.228E-02	0.000E+00	NOT IDENT.
CO-57	1.101E-02	1.840E-02	3.370E-02	0.000E+00	NOT IDENT.
CO-58	6.994E-03	3.940E-02	6.781E-02	0.000E+00	NOT IDENT.
FE-59	-4.606E-02	1.164E-01	1.927E-01	0.000E+00	NOT IDENT.
CO-60	3.235E-03	4.381E-02	7.392E-02	0.000E+00	NOT IDENT.
ZN-65	-1.022E-01	1.159E-01	1.514E-01	0.000E+00	NOT IDENT.
SE-75	-6.354E-03	4.706E-02	6.921E-02	0.000E+00	NOT IDENT.
SR-85	4.634E-02	4.393E-02	7.086E-02	0.000E+00	NOT IDENT.
Y-88	-1.544E-02	3.672E-02	5.626E-02	0.000E+00	NOT IDENT.
Y-91	7.387E-01	2.605E+01	4.422E+01	0.000E+00	NOT IDENT.
NB-94	3.081E-02	3.440E-02	6.263E-02	0.000E+00	NOT IDENT.
NB-95	4.608E-02	5.559E-02	8.881E-02	0.000E+00	NOT IDENT.
NB-95M	-1.458E-02	1.291E-01	1.930E-01	0.000E+00	NOT IDENT.
ZR-95	-5.566E-02	8.742E-02	1.415E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.763E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.680E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.656E-03	4.420E-02	7.530E-02	0.000E+00	FAIL ABUN
RH-106	-1.031E-02	3.034E-01	5.272E-01	0.000E+00	NOT IDENT.
RU-106	-1.031E-02	3.034E-01	5.272E-01	0.000E+00	NOT IDENT.
AG-108M	-2.852E-03	2.689E-02	4.570E-02	0.000E+00	NOT IDENT.
AG-110M	-5.403E-03	3.920E-02	5.815E-02	0.000E+00	NOT IDENT.
SN-113	-3.533E-02	4.589E-02	7.557E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.341E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.858E-03	6.294E-02	1.106E-01	0.000E+00	NOT IDENT.
TE-123M	1.328E-02	2.280E-02	4.097E-02	0.000E+00	NOT IDENT.
SB-124	-1.615E-02	7.814E-02	1.268E-01	0.000E+00	NOT IDENT.
SB-125	2.388E-02	8.352E-02	1.459E-01	0.000E+00	FAIL ABUN
TE-125M	1.309E+01	8.129E+00	1.400E+01	0.000E+00	NOT IDENT.
I-126	2.846E-01	3.882E-01	6.254E-01	0.000E+00	NOT IDENT.
SB-126	1.415E-01	2.447E-01	4.026E-01	0.000E+00	NOT IDENT.
SB-127	3.391E+00	5.483E+00	9.845E+00	0.000E+00	NOT IDENT.
I-131	5.933E-02	1.984E-01	3.520E-01	0.000E+00	NOT IDENT.
TE-132	-1.914E+00	3.478E+00	5.703E+00	0.000E+00	NOT IDENT.
BA-133	1.789E-02	4.186E-02	6.652E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.364E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.590E-02	9.883E-02	0.000E+00	FAIL ABUN
CS-135	9.777E-02	1.510E-01	2.349E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.043E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.191E-02	1.460E-01	2.402E-01	0.000E+00	NOT IDENT.
CE-139	-5.945E-03	2.440E-02	4.218E-02	0.000E+00	NOT IDENT.
BA-140	-1.875E-01	4.173E-01	6.657E-01	0.000E+00	NOT IDENT.
LA-140	1.105E-02	1.400E-01	2.409E-01	0.000E+00	FAIL ABUN
CE-141	-4.822E-02	6.089E-02	1.026E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.070E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.756E-01	1.610E-01	2.548E-01	0.000E+00	NOT IDENT.
PM-144	-2.791E-02	3.448E-02	5.539E-02	0.000E+00	NOT IDENT.
PR-144	-2.055E+00	2.594E+00	4.174E+00	0.000E+00	NOT IDENT.
PM-146	-2.128E-02	4.239E-02	6.968E-02	0.000E+00	NOT IDENT.
ND-147	-2.440E-01	9.403E-01	1.543E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.037E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.654E-02	1.019E-01	1.625E-01	0.000E+00	FAIL ABUN
GD-153	-7.264E-02	5.592E-02	9.480E-02	0.000E+00	NOT IDENT.
EU-154	6.697E-02	1.287E-01	2.271E-01	0.000E+00	NOT IDENT.
TB-160	-1.146E-01	1.492E-01	2.301E-01	0.000E+00	FAIL ABUN
HO-166M	-1.074E-02	6.101E-02	1.033E-01	0.000E+00	FAIL ABUN
TA-182	-7.664E-02	2.356E-01	3.883E-01	0.000E+00	FAIL ABUN
IR-192	-1.757E-02	3.097E-02	5.282E-02	0.000E+00	FAIL ABUN
HG-203	4.243E-02	4.271E-02	6.768E-02	0.000E+00	NOT IDENT.
BI-207	-1.637E-02	5.218E-02	8.702E-02	0.000E+00	FAIL ABUN
PB-211	1.388E-01	7.961E-01	1.219E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.105E-01	1.304E+00	0.000E+00	FAIL ABUN
RN-219	-1.572E-01	4.034E-01	6.790E-01	0.000E+00	FAIL ABUN
RA-223	-1.612E-01	6.285E-01	9.567E-01	0.000E+00	FAIL ABUN
AC-227	-1.565E-01	2.352E-01	3.782E-01	0.000E+00	FAIL ABUN
TH-227	-1.565E-01	2.354E-01	3.782E-01	0.000E+00	FAIL ABUN
TH-229	-2.043E-01	4.386E-01	7.387E-01	0.000E+00	FAIL ABUN
PA-231	-1.147E+00	1.415E+00	2.207E+00	0.000E+00	FAIL ABUN
TH-231	-1.612E-01	6.285E-01	9.567E-01	0.000E+00	FAIL ABUN
PA-233	2.920E-02	5.531E-02	1.004E-01	0.000E+00	FAIL ABUN
PA-234	6.052E-03	3.137E-01	5.228E-01	0.000E+00	NOT IDENT.
PA-234M	-1.380E+00	5.468E+00	8.653E+00	0.000E+00	NOT IDENT.
NP-239	-1.975E-01	2.832E-01	4.936E-01	0.000E+00	FAIL ABUN
AM-241	1.874E-02	5.108E-02	8.155E-02	0.000E+00	NOT IDENT.
CM-247	1.388E-02	3.601E-02	6.353E-02	0.000E+00	FAIL ABUN
CF-249	3.256E-02	3.894E-02	7.045E-02	0.000E+00	NOT IDENT.

CF-251	3.463E-03	1.048E-01	1.825E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:26:41.86

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513008.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:24:20
Sample ID          : G248513008           Sample quantity  : 1.30460E+02 GRAM
Detector name      : GAM25                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:01.98  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity        : 5.00000
Batch ID           : 961097               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	1460.82	1097	10.66*	1.108E+00	2.671E+01	2.671E+01	10.67
CD-109	88.03	443	3.70*	9.406E+00	3.660E+00	3.789E+00	20.78
SN-126	64.28	204	9.60	9.778E+00	6.261E-01	6.261E-01	49.59
	86.94	443	8.90	9.406E+00	1.522E+00	1.522E+00	45.48
	87.57	443	37.00*	9.406E+00	3.660E-01	3.660E-01	20.78
BA-137M	661.66	252	89.90*	2.231E+00	3.618E-01	3.623E-01	21.79
CS-137	661.66	252	85.10*	2.231E+00	3.822E-01	3.828E-01	21.80
EU-155	86.55	443	30.70	9.406E+00	4.411E-01	4.452E-01	20.82
	105.31	125	21.10*	8.815E+00	1.930E-01	1.948E-01	49.84
TL-208	277.37	74	6.60	4.737E+00	6.820E-01	6.820E-01	56.99
	583.19	399	85.00*	2.496E+00	5.405E-01	5.405E-01	18.60
	860.56	-----	12.50	1.765E+00	-----	Line Not Found	-----
PB-210	46.54	215	4.25*	9.189E+00	1.581E+00	1.584E+00	44.91
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	771	12.92*	3.886E+00	4.422E+00	4.422E+00	14.97
PB-212	74.82	831	10.28	9.694E+00	2.400E+00	2.400E+00	17.38
	77.11	1328	17.10	9.652E+00	2.315E+00	2.315E+00	12.52
	238.63	1506	43.60*	5.339E+00	1.861E+00	1.861E+00	12.89
	300.09	63	3.30	4.434E+00	1.241E+00	1.241E+00	89.14
BI-214	609.32	611	45.49*	2.401E+00	1.610E+00	1.610E+00	15.73
	1120.29	161	14.92	1.398E+00	2.218E+00	2.218E+00	26.79
	1764.49	99	15.30	9.412E-01	1.977E+00	1.977E+00	22.66
PB-214	74.82	831	5.80	9.694E+00	4.253E+00	4.253E+00	16.44
	77.11	1328	9.70	9.652E+00	4.081E+00	4.081E+00	14.99
	242.00	332	7.25	5.288E+00	2.496E+00	2.496E+00	22.79
	295.22	488	18.42	4.504E+00	1.691E+00	1.691E+00	19.70
	351.93	771	35.60*	3.886E+00	1.605E+00	1.605E+00	15.96
RA-224	240.99	332	4.10*	5.288E+00	4.413E+00	4.413E+00	22.04
RA-226	609.32	611	45.49*	2.401E+00	1.610E+00	1.610E+00	15.73
	1120.29	161	14.92	1.398E+00	2.218E+00	2.218E+00	26.79
	1764.49	99	15.30	9.412E-01	1.977E+00	1.977E+00	22.66
AC-228	338.32	284	11.27	4.018E+00	1.807E+00	1.807E+00	47.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	284	25.80*	1.678E+00	1.889E+00	1.889E+00	21.81
	968.97	172	15.80	1.589E+00	1.968E+00	1.968E+00	32.45
	338.32	284	11.27	4.018E+00	1.807E+00	1.807E+00	47.50
	911.20	284	25.80*	1.678E+00	1.889E+00	1.889E+00	21.81
TH-228	968.97	172	15.80	1.589E+00	1.968E+00	1.968E+00	32.45
	74.82	831	10.28	9.694E+00	2.400E+00	2.400E+00	14.45
	77.11	1328	17.10	9.652E+00	2.315E+00	2.315E+00	12.52
	238.63	1506	43.60*	5.339E+00	1.861E+00	1.861E+00	12.89
TH-232	300.09	63	3.30	4.434E+00	1.241E+00	1.241E+00	107.62
	338.32	284	11.27	4.018E+00	1.807E+00	1.807E+00	24.30
	911.20	284	25.80*	1.678E+00	1.889E+00	1.889E+00	21.81
	968.97	172	15.80	1.589E+00	1.968E+00	1.968E+00	32.45
TH-234	63.29	204	3.70*	9.778E+00	1.625E+00	1.625E+00	50.66
	92.59	376	4.23	9.239E+00	2.769E+00	2.769E+00	32.39
U-235	89.96	248	3.47	9.327E+00	2.205E+00	2.205E+00	38.55
	93.35	376	5.60	9.239E+00	2.092E+00	2.092E+00	33.09
	143.76	-----	10.96*	7.568E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
NP-237	185.72	235	57.20	6.414E+00	1.842E-01	1.842E-01	33.74
	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
	86.48	443	12.40*	9.406E+00	1.092E+00	1.092E+00	29.52
	95.86	-----	2.68	9.143E+00	-----	Line Not Found	-----
U-238	63.29	204	3.70*	9.778E+00	1.625E+00	1.625E+00	50.66
	92.59	376	4.23	9.239E+00	2.769E+00	2.769E+00	25.22
ANH-511	511.00	107	100.00*	2.808E+00	1.095E-01	1.095E-01	55.54

Flag: "*" = Keyline

Total number of lines in spectrum 36
Number of unidentified lines 4
Number of lines tentatively identified by NID 32 88.89%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.671E+01	2.671E+01	0.285E+01	10.67	
CD-109	461.40D	1.04	3.660E+00	3.789E+00	0.787E+00	20.78	
SN-126	2.30E+05Y	1.00	3.660E-01	3.660E-01	0.761E-01	20.78	
BA-137M	30.08Y	1.00	3.618E-01	3.623E-01	0.790E-01	21.79	
CS-137	30.08Y	1.00	3.822E-01	3.828E-01	0.834E-01	21.80	
EU-155	4.75Y	1.01	1.930E-01	1.948E-01	0.971E-01	49.84	
TL-208	1.41E+10Y	1.00	5.405E-01	5.405E-01	1.005E-01	18.60	
PB-210	22.20Y	1.00	1.581E+00	1.584E+00	0.712E+00	44.91	
BI-211	7.04E+08Y	1.00	4.422E+00	4.422E+00	0.662E+00	14.97	
PB-212	1.41E+10Y	1.00	1.861E+00	1.861E+00	0.240E+00	12.89	
BI-214	1600.00Y	1.00	1.610E+00	1.610E+00	0.253E+00	15.73	
PB-214	1600.00Y	1.00	1.605E+00	1.605E+00	0.256E+00	15.96	
RA-224	1.41E+10Y	1.00	4.413E+00	4.413E+00	0.973E+00	22.04	
RA-226	1600.00Y	1.00	1.610E+00	1.610E+00	0.253E+00	15.73	
AC-228	1.41E+10Y	1.00	1.889E+00	1.889E+00	0.412E+00	21.81	
RA-228	1.41E+10Y	1.00	1.889E+00	1.889E+00	0.412E+00	21.81	
TH-228	1.41E+10Y	1.00	1.861E+00	1.861E+00	0.240E+00	12.89	
TH-232	1.41E+10Y	1.00	1.889E+00	1.889E+00	0.412E+00	21.81	
TH-234	4.47E+09Y	1.00	1.625E+00	1.625E+00	0.823E+00	50.66	
U-235	7.04E+08Y	1.00	1.842E-01	1.842E-01	0.621E-01	33.74	K
NP-237	2.14E+06Y	1.00	1.092E+00	1.092E+00	0.322E+00	29.52	
U-238	4.47E+09Y	1.00	1.625E+00	1.625E+00	0.823E+00	50.66	
ANH-511	1.00E+09Y	1.00	1.095E-01	1.095E-01	0.608E-01	55.54	

Total Activity : 6.148E+01 6.161E+01

Grand Total Activity : 6.148E+01 6.161E+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	129.21	110	355	0.83	257.97	254	8	1.53E-02	62.5	8.03E+00	
0	209.05	168	233	0.74	417.62	414	8	2.34E-02	35.0	5.90E+00	
0	270.04	132	212	1.00	539.61	534	10	1.83E-02	44.8	4.84E+00	T
0	328.12	136	194	1.44	655.76	650	13	1.89E-02	45.5	4.12E+00	T
0	409.58	52	105	1.26	818.67	814	9	7.28E-03	76.4	3.41E+00	T
0	462.84	108	119	1.37	925.18	918	13	1.50E-02	46.1	3.06E+00	T
0	727.25	121	55	1.71	1453.98	1449	10	1.68E-02	29.3	2.05E+00	T
0	768.17	52	61	1.07	1535.83	1532	8	7.24E-03	58.6	1.95E+00	
0	794.55	83	56	1.83	1588.58	1580	15	1.15E-02	45.3	1.89E+00	T
2	964.38	84	26	2.17	1928.25	1923	20	1.16E-02	34.3	1.60E+00	T
0	1378.18	31	28	1.38	2755.89	2749	12	4.35E-03	78.0	1.17E+00	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513008.CNF;1
* Acquisition date   : 20-MAR-2010 11:24:20  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 02:00:01.98           Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513008           Analyst initials: MXR1
* Batch Number       : 961097              Sample Quantity : 1.30460E+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	2.671E+01	2.851E+00	5.701E-01	4.856E-02	46.851
CD-109	3.789E+00	7.875E-01	7.889E-01	8.478E-02	4.803
SN-126	3.660E-01	7.607E-02	7.605E-02	8.155E-03	4.813
BA-137M	3.623E-01	7.896E-02	6.387E-02	7.076E-03	5.673
CS-137	3.828E-01	8.343E-02	6.748E-02	7.483E-03	5.673
EU-155	1.948E-01	9.709E-02	1.207E-01	1.426E-02	1.614
TL-208	5.405E-01	1.005E-01	5.950E-02	6.702E-03	9.084
PB-210	1.584E+00	7.115E-01	5.442E-01	5.574E-02	2.911
BI-211	4.422E+00	6.621E-01	3.175E-01	3.346E-02	13.925
PB-212	1.861E+00	2.399E-01	8.423E-02	9.623E-03	22.097
BI-214	1.610E+00	2.533E-01	1.009E-01	1.222E-02	15.954
PB-214	1.605E+00	2.561E-01	1.155E-01	1.372E-02	13.889
RA-224	4.413E+00	9.728E-01	9.039E-01	9.499E-02	4.882
RA-226	1.610E+00	2.533E-01	1.009E-01	1.222E-02	15.954
AC-228	1.889E+00	4.120E-01	2.308E-01	2.821E-02	8.185
RA-228	1.889E+00	4.120E-01	2.308E-01	2.821E-02	8.185
TH-228	1.861E+00	2.399E-01	8.423E-02	9.623E-03	22.097
TH-232	1.889E+00	4.120E-01	2.308E-01	2.821E-02	8.185

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.625E+00	8.230E-01	7.275E-01	1.381E-01	2.233
U-235	1.842E-01	6.215E-02	2.844E-01	5.224E-02	0.648
NP-237	1.092E+00	3.224E-01	2.258E-01	5.313E-02	4.836
U-238	1.625E+00	8.230E-01	7.275E-01	1.381E-01	2.233
ANH-511	1.095E-01	6.080E-02	5.079E-02	5.228E-03	2.155

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.940E-01		3.661E-01	5.728E-01	6.063E-02	-0.339
NA-22	3.558E-02		4.537E-02	8.026E-02	6.581E-03	0.443
NA-24	-7.743E+02		2.209E+03	Half-Life	too short	
SC-46	-2.176E-02		4.358E-02	6.729E-02	6.444E-03	-0.323
V-48	9.893E-02		1.007E-01	1.778E-01	1.648E-02	0.556
CR-51	2.537E-01		3.938E-01	6.856E-01	7.610E-02	0.370
MN-54	1.768E-04		3.948E-02	6.466E-02	6.561E-03	0.003
CO-56	2.477E-02		4.150E-02	7.156E-02	7.180E-03	0.346
CO-57	1.101E-02		1.877E-02	3.234E-02	4.171E-03	0.340
CO-58	6.994E-03		4.020E-02	6.709E-02	6.961E-03	0.104
FE-59	-4.606E-02		1.188E-01	1.917E-01	1.805E-02	-0.240
CO-60	3.235E-03		4.470E-02	7.375E-02	5.989E-03	0.044
ZN-65	-1.022E-01		1.182E-01	1.506E-01	1.301E-02	-0.678
SE-75	-6.354E-03		4.802E-02	6.724E-02	7.369E-03	-0.095
SR-85	4.634E-02		4.483E-02	6.958E-02	7.179E-03	0.666
Y-88	-1.544E-02		3.747E-02	5.644E-02	4.612E-03	-0.274
Y-91	7.387E-01		2.658E+01	4.404E+01	3.624E+00	0.017
NB-94	3.081E-02		3.510E-02	6.182E-02	6.788E-03	0.498
NB-95	4.608E-02		5.673E-02	8.778E-02	9.377E-03	0.525
NB-95M	-1.458E-02		1.317E-01	1.872E-01	2.148E-02	-0.078
ZR-95	-5.566E-02		8.921E-02	1.399E-01	1.605E-02	-0.398
MO-99	2.431E-05		4.471E-05	Half-Life	too short	
TC-99M	-8.252E+19		4.429E+19	Half-Life	too short	
RU-103	5.656E-03		4.510E-02	7.391E-02	1.107E-02	0.077
RH-106	-1.031E-02		3.096E-01	5.193E-01	7.726E-02	-0.020
RU-106	-1.031E-02		3.096E-01	5.193E-01	5.687E-02	-0.020
AG-108M	-2.852E-03		2.744E-02	4.475E-02	4.397E-03	-0.064
AG-110M	-5.403E-03		4.000E-02	5.733E-02	6.461E-03	-0.094
SN-113	-3.533E-02		4.683E-02	7.387E-02	6.900E-03	-0.478
CD-115	4.132E-05		6.841E-05	Half-Life	too short	
SN-117M	1.858E-03		6.423E-02	1.066E-01	1.035E-02	0.017
TE-123M	1.328E-02		2.326E-02	3.948E-02	3.833E-03	0.336
SB-124	-1.615E-02		7.974E-02	1.270E-01	1.101E-02	-0.127
SB-125	2.388E-02		8.522E-02	1.429E-01	1.379E-02	0.167
TE-125M	1.309E+01		8.295E+00	1.341E+01	1.800E+00	0.976
I-126	2.846E-01		3.962E-01	6.167E-01	6.827E-02	0.461
SB-126	1.415E-01		2.497E-01	3.975E-01	4.338E-02	0.356
SB-127	3.391E+00		5.595E+00	9.714E+00	1.512E+00	0.349

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	5.933E-02		2.024E-01	3.437E-01	3.547E-02	0.173
TE-132	-1.914E+00		3.549E+00	5.527E+00	1.023E+00	-0.346
BA-133	1.789E-02		4.271E-02	6.493E-02	9.056E-03	0.276
I-133	-3.225E+00		1.716E+00	Half-Life too short		
CS-134	1.665E-01	+	7.745E-02	9.775E-02	1.029E-02	1.704
CS-135	9.777E-02		1.541E-01	2.282E-01	2.755E-02	0.428
I-135	-2.049E+18		1.553E+18	Half-Life too short		
CS-136	-6.191E-02		1.490E-01	2.387E-01	2.234E-02	-0.259
CE-139	-5.945E-03		2.490E-02	4.067E-02	3.627E-03	-0.146
BA-140	-1.875E-01		4.258E-01	6.542E-01	2.253E-01	-0.287
LA-140	1.105E-02		1.429E-01	2.410E-01	2.004E-02	0.046
CE-141	-4.822E-02		6.213E-02	9.870E-02	1.098E-02	-0.489
CE-143	3.173E-02		5.458E-03	Half-Life too short		
CE-144	-1.756E-01		1.643E-01	2.449E-01	4.269E-02	-0.717
PM-144	-2.791E-02		3.519E-02	5.466E-02	6.016E-03	-0.511
PR-144	-2.055E+00		2.647E+00	4.120E+00	4.532E-01	-0.499
PM-146	-2.128E-02		4.325E-02	6.829E-02	7.891E-03	-0.312
ND-147	-2.440E-01		9.595E-01	1.516E+00	2.437E-01	-0.161
PM-149	7.567E-04		5.293E-04	Half-Life too short		
EU-152	4.654E-02		1.040E-01	1.585E-01	1.702E-02	0.294
GD-153	-7.264E-02		5.706E-02	9.066E-02	1.021E-02	-0.801
EU-154	6.697E-02		1.313E-01	2.264E-01	2.503E-02	0.296
TB-160	-1.146E-01		1.522E-01	2.280E-01	2.209E-02	-0.503
HO-166M	-1.074E-02		6.226E-02	1.020E-01	1.117E-02	-0.105
TA-182	-7.664E-02		2.404E-01	3.868E-01	3.181E-02	-0.198
IR-192	-1.757E-02		3.160E-02	5.146E-02	5.558E-03	-0.342
HG-203	4.243E-02		4.358E-02	6.581E-02	7.457E-03	0.645
BI-207	-1.637E-02		5.325E-02	8.649E-02	7.719E-03	-0.189
PB-211	1.388E-01		8.124E-01	1.192E+00	5.784E-01	0.116
BI-212	2.543E+00	+	8.271E-01	1.287E+00	1.818E-01	1.976
RN-219	-1.572E-01		4.116E-01	6.641E-01	1.011E-01	-0.237
RA-223	-1.612E-01		6.413E-01	9.324E-01	1.719E-01	-0.173
AC-227	-1.565E-01		2.400E-01	3.673E-01	5.025E-02	-0.426
TH-227	-1.565E-01		2.402E-01	3.673E-01	5.534E-02	-0.426
TH-229	-2.043E-01		4.476E-01	7.140E-01	6.810E-02	-0.286
PA-231	-1.147E+00		1.444E+00	2.146E+00	3.476E-01	-0.534
TH-231	-1.612E-01		6.413E-01	9.324E-01	1.719E-01	-0.173
PA-233	2.920E-02		5.644E-02	9.784E-02	1.081E-02	0.298
PA-234	6.052E-03		3.201E-01	5.186E-01	9.917E-02	0.012
PA-234M	-1.380E+00		5.579E+00	8.591E+00	8.999E-01	-0.161
NP-239	-1.975E-01		2.890E-01	4.734E-01	5.938E-02	-0.417
AM-241	1.874E-02		5.213E-02	7.739E-02	8.041E-03	0.242
CM-247	1.388E-02		3.675E-02	6.214E-02	5.727E-03	0.223
CF-249	3.256E-02		3.973E-02	6.886E-02	6.332E-03	0.473
CF-251	3.463E-03		1.070E-01	1.761E-01	1.616E-02	0.020

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]G248513008           *
* Acquisition date   : 20-MAR-2010 11:24:20 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 02:00:01.98           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G248513008              Analyst initials: MXR1         *
* Batch Number       : 961097                  Sample Quantity : 1.3046E+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	2.671E+01	2.794E+00	2.855E-01	1.425E+00
CD-109	3.789E+00	7.717E-01	4.134E-01	3.937E-01
SN-126	3.660E-01	7.455E-02	3.985E-02	3.804E-02
BA-137M	3.623E-01	7.738E-02	3.241E-02	3.948E-02
CS-137	3.828E-01	8.177E-02	3.424E-02	4.172E-02
EU-155	1.948E-01	9.515E-02	6.305E-02	4.854E-02
TL-208	5.405E-01	9.852E-02	3.025E-02	5.027E-02
PB-210	1.584E+00	6.973E-01	2.880E-01	3.558E-01
BI-211	4.422E+00	6.488E-01	1.628E-01	3.310E-01
PB-212	1.861E+00	2.351E-01	4.345E-02	1.199E-01
BI-214	1.610E+00	2.483E-01	5.128E-02	1.267E-01
PB-214	1.605E+00	2.510E-01	5.923E-02	1.280E-01
RA-224	4.413E+00	9.533E-01	4.662E-01	4.864E-01
RA-226	1.610E+00	2.483E-01	5.128E-02	1.267E-01
AC-228	1.889E+00	4.038E-01	1.165E-01	2.060E-01
RA-228	1.889E+00	4.038E-01	1.165E-01	2.060E-01
TH-228	1.861E+00	2.351E-01	4.345E-02	1.199E-01
TH-232	1.889E+00	4.038E-01	1.165E-01	2.060E-01
TH-234	1.625E+00	8.065E-01	3.831E-01	4.115E-01
U-235	1.802E-01	1.653E-01	1.479E-01	8.432E-02
NP-237	1.092E+00	3.160E-01	1.184E-01	1.612E-01
U-238	1.625E+00	8.065E-01	3.831E-01	4.115E-01
ANH-511	1.095E-01	5.958E-02	2.588E-02	3.040E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.940E-01	3.588E-01	2.922E-01	1.831E-01 NOT IDENT.
NA-22	3.558E-02	4.446E-02	4.028E-02	2.268E-02 NOT IDENT.
NA-24	-7.743E+08	4.330E+09	0.000E+00	2.209E+09 SHORT HLIF
SC-46	-2.176E-02	4.271E-02	3.398E-02	2.179E-02 FAIL ABUN

V-48	9.893E-02	9.865E-02	8.962E-02	5.033E-02	NOT IDENT.
CR-51	2.537E-01	3.859E-01	3.520E-01	1.969E-01	NOT IDENT.
MN-54	1.768E-04	3.870E-02	3.268E-02	1.974E-02	NOT IDENT.
CO-56	2.477E-02	4.067E-02	3.616E-02	2.075E-02	NOT IDENT.
CO-57	1.101E-02	1.840E-02	1.686E-02	9.386E-03	NOT IDENT.
CO-58	6.994E-03	3.940E-02	3.393E-02	2.010E-02	NOT IDENT.
FE-59	-4.606E-02	1.164E-01	9.642E-02	5.940E-02	NOT IDENT.
CO-60	3.235E-03	4.381E-02	3.698E-02	2.235E-02	NOT IDENT.
ZN-65	-1.022E-01	1.159E-01	7.576E-02	5.911E-02	NOT IDENT.
SE-75	-6.354E-03	4.706E-02	3.463E-02	2.401E-02	NOT IDENT.
SR-85	4.634E-02	4.393E-02	3.545E-02	2.241E-02	NOT IDENT.
Y-88	-1.544E-02	3.672E-02	2.815E-02	1.873E-02	NOT IDENT.
Y-91	7.387E-01	2.605E+01	2.212E+01	1.329E+01	NOT IDENT.
NB-94	3.081E-02	3.440E-02	3.133E-02	1.755E-02	NOT IDENT.
NB-95	4.608E-02	5.559E-02	4.443E-02	2.836E-02	NOT IDENT.
NB-95M	-1.458E-02	1.291E-01	9.656E-02	6.586E-02	NOT IDENT.
ZR-95	-5.566E-02	8.742E-02	7.081E-02	4.460E-02	NOT IDENT.
MO-99	2.431E+01	8.763E+01	0.000E+00	4.471E+01	SHORT HLIF
TC-99M	-8.252E+25	8.680E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.656E-03	4.420E-02	3.767E-02	2.255E-02	FAIL ABUN
RH-106	-1.031E-02	3.034E-01	2.638E-01	1.548E-01	NOT IDENT.
RU-106	-1.031E-02	3.034E-01	2.638E-01	1.548E-01	NOT IDENT.
AG-108M	-2.852E-03	2.689E-02	2.286E-02	1.372E-02	NOT IDENT.
AG-110M	-5.403E-03	3.920E-02	2.909E-02	2.000E-02	NOT IDENT.
SN-113	-3.533E-02	4.589E-02	3.781E-02	2.342E-02	NOT IDENT.
CD-115	4.132E+01	1.341E+02	0.000E+00	6.841E+01	SHORT HLIF
SN-117M	1.858E-03	6.294E-02	5.534E-02	3.211E-02	NOT IDENT.
TE-123M	1.328E-02	2.280E-02	2.050E-02	1.163E-02	NOT IDENT.
SB-124	-1.615E-02	7.814E-02	6.346E-02	3.987E-02	NOT IDENT.
SB-125	2.388E-02	8.352E-02	7.302E-02	4.261E-02	FAIL ABUN
TE-125M	1.309E+01	8.129E+00	7.003E+00	4.148E+00	NOT IDENT.
I-126	2.846E-01	3.882E-01	3.129E-01	1.981E-01	NOT IDENT.
SB-126	1.415E-01	2.447E-01	2.014E-01	1.248E-01	NOT IDENT.
SB-127	3.391E+00	5.483E+00	4.926E+00	2.798E+00	NOT IDENT.
I-131	5.933E-02	1.984E-01	1.761E-01	1.012E-01	NOT IDENT.
TE-132	-1.914E+00	3.478E+00	2.853E+00	1.775E+00	NOT IDENT.
BA-133	1.789E-02	4.186E-02	3.328E-02	2.136E-02	FAIL ABUN
I-133	-3.225E+06	3.364E+06	0.000E+00	1.716E+06	SHORT HLIF
CS-134	1.665E-01	7.590E-02	4.944E-02	3.873E-02	FAIL ABUN
CS-135	9.777E-02	1.510E-01	1.175E-01	7.705E-02	NOT IDENT.
I-135	-2.049E+24	3.043E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.191E-02	1.460E-01	1.202E-01	7.449E-02	NOT IDENT.
CE-139	-5.945E-03	2.440E-02	2.110E-02	1.245E-02	NOT IDENT.
BA-140	-1.875E-01	4.173E-01	3.331E-01	2.129E-01	NOT IDENT.
LA-140	1.105E-02	1.400E-01	1.205E-01	7.143E-02	FAIL ABUN
CE-141	-4.822E-02	6.089E-02	5.132E-02	3.106E-02	NOT IDENT.
CE-143	3.173E+04	1.070E+04	0.000E+00	5.458E+03	SHORT HLIF
CE-144	-1.756E-01	1.610E-01	1.275E-01	8.216E-02	NOT IDENT.
PM-144	-2.791E-02	3.448E-02	2.771E-02	1.759E-02	NOT IDENT.
PR-144	-2.055E+00	2.594E+00	2.088E+00	1.324E+00	NOT IDENT.
PM-146	-2.128E-02	4.239E-02	3.486E-02	2.163E-02	NOT IDENT.
ND-147	-2.440E-01	9.403E-01	7.720E-01	4.798E-01	FAIL ABUN
PM-149	7.567E+02	1.037E+03	0.000E+00	5.293E+02	SHORT HLIF
EU-152	4.654E-02	1.019E-01	8.130E-02	5.198E-02	FAIL ABUN
GD-153	-7.264E-02	5.592E-02	4.743E-02	2.853E-02	NOT IDENT.
EU-154	6.697E-02	1.287E-01	1.136E-01	6.566E-02	NOT IDENT.
TB-160	-1.146E-01	1.492E-01	1.151E-01	7.611E-02	FAIL ABUN
HO-166M	-1.074E-02	6.101E-02	5.170E-02	3.113E-02	FAIL ABUN
TA-182	-7.664E-02	2.356E-01	1.943E-01	1.202E-01	FAIL ABUN
IR-192	-1.757E-02	3.097E-02	2.642E-02	1.580E-02	FAIL ABUN
HG-203	4.243E-02	4.271E-02	3.386E-02	2.179E-02	NOT IDENT.
BI-207	-1.637E-02	5.218E-02	4.354E-02	2.662E-02	FAIL ABUN
PB-211	1.388E-01	7.961E-01	6.099E-01	4.062E-01	NOT IDENT.
BI-212	2.543E+00	8.105E-01	6.522E-01	4.135E-01	FAIL ABUN
RN-219	-1.572E-01	4.034E-01	3.397E-01	2.058E-01	FAIL ABUN
RA-223	-1.612E-01	6.285E-01	4.786E-01	3.206E-01	FAIL ABUN
AC-227	-1.565E-01	2.352E-01	1.892E-01	1.200E-01	FAIL ABUN
TH-227	-1.565E-01	2.354E-01	1.892E-01	1.201E-01	FAIL ABUN
TH-229	-2.043E-01	4.386E-01	3.696E-01	2.238E-01	FAIL ABUN
PA-231	-1.147E+00	1.415E+00	1.104E+00	7.220E-01	FAIL ABUN
TH-231	-1.612E-01	6.285E-01	4.786E-01	3.206E-01	FAIL ABUN
PA-233	2.920E-02	5.531E-02	5.025E-02	2.822E-02	FAIL ABUN
PA-234	6.052E-03	3.137E-01	2.616E-01	1.601E-01	NOT IDENT.
PA-234M	-1.380E+00	5.468E+00	4.329E+00	2.790E+00	NOT IDENT.
NP-239	-1.975E-01	2.832E-01	2.469E-01	1.445E-01	FAIL ABUN
AM-241	1.874E-02	5.108E-02	4.080E-02	2.606E-02	NOT IDENT.
CM-247	1.388E-02	3.601E-02	3.178E-02	1.837E-02	FAIL ABUN
CF-249	3.256E-02	3.894E-02	3.524E-02	1.987E-02	NOT IDENT.

CF-251	3.463E-03	1.048E-01	9.128E-02	5.349E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	251.4738
49.72	252.2141
57.36	0.0000
59.54	378.1525
63.29	386.9622
63.29	386.9622
64.28	362.0190
67.75	393.2154
69.67	430.8819
70.83	453.2990
72.81	429.5729
72.87	429.6590
72.87	429.6590
74.82	419.3572
74.82	419.3572
74.82	419.3572
74.97	419.5619
77.11	422.4651
77.11	422.4651
77.11	422.4651
79.69	378.0501
79.80	374.1560
80.12	374.5274
80.19	374.6078
80.57	382.3067
81.00	375.5444
81.07	375.6248
81.07	375.6248
83.79	386.0652
83.79	386.0652
85.43	387.9530
86.48	389.1512
86.55	389.2307
86.79	389.5008
86.94	389.6743
87.57	390.3880
88.03	390.9063
88.47	391.4030
89.96	393.0713
91.11	244.5977
92.59	355.8840
92.59	355.8840
93.35	318.9612
94.67	296.1740
94.87	276.1594
94.87	276.1594
95.86	290.8112
97.43	332.6732
98.44	272.4568
99.53	257.9202
100.11	270.2484
103.18	260.3721
103.37	256.6297
105.31	277.3353
106.12	277.9002
109.28	236.8914
111.00	315.4285
111.76	300.2067
116.30	243.1170
117.23	276.5446
121.12	243.1320
121.78	224.6259
122.06	234.6568
123.07	252.3088
131.20	214.6262
133.52	279.8287
136.00	241.8094

136.47	258.7386
140.51	0.0000
140.51	0.0000
143.76	245.6327
144.24	254.3445
144.24	254.3445
145.44	292.7158
152.43	267.0117
153.25	256.8797
154.21	225.6554
154.21	225.6554
156.02	272.6650
158.56	229.4178
159.00	214.1005
162.66	248.6836
163.33	222.6191
165.86	235.3931
176.60	221.8058
177.52	226.1517
181.07	0.0000
184.41	247.4597
185.72	252.5487
193.51	235.1569
197.04	211.6669
205.31	232.1104
210.85	203.9718
215.65	210.1675
222.11	203.5294
227.38	223.3635
228.16	210.6390
228.18	210.6450
235.69	217.7039
235.96	217.7810
235.96	217.7810
238.63	214.7199
238.63	214.7199
240.99	215.3859
242.00	166.7049
244.70	187.1649
252.40	152.7718
252.80	153.9655
256.23	199.4469
256.23	199.4469
260.90	0.0000
264.66	168.1230
268.22	150.0872
269.46	153.7262
269.46	153.7262
271.23	183.1487
273.65	151.0593
276.40	167.0473
277.37	188.5006
277.60	188.5506
278.00	173.6844
279.20	139.9480
279.54	146.9160
280.46	129.7714
283.69	185.2506
284.31	152.9392
285.41	168.2138
285.90	0.0000
287.50	163.9607
293.27	0.0000
295.22	163.2723
295.96	204.2603
298.57	254.2939
299.98	178.2795
299.98	178.2795
300.09	178.3011
300.09	178.3011
300.13	178.3103
301.36	150.2089
302.85	137.6779
304.50	147.8750
304.50	147.8750
304.85	130.8619
308.46	131.1933
311.90	129.8818

316.51	135.9129
319.41	117.3662
320.08	123.7716
323.87	143.6660
323.87	143.6660
328.76	133.0811
333.37	128.2059
334.37	124.6674
334.37	124.6674
338.28	130.6744
338.28	130.6744
338.32	130.6787
338.32	130.6787
338.32	130.6787
340.48	147.5586
340.55	147.5684
344.28	137.7404
351.06	142.5597
351.93	142.6788
356.01	118.3322
364.49	108.5197
366.42	0.0000
383.85	121.0128
388.16	120.5101
388.63	131.1710
391.69	146.9972
400.66	148.1429
401.81	141.4600
402.40	122.0093
404.85	128.3292
410.95	111.6898
414.70	113.0920
423.72	111.2891
427.09	105.6167
427.87	97.7069
433.94	99.1888
453.88	120.0958
463.37	98.4170
468.07	67.4908
473.00	83.6425
476.78	89.0562
477.60	112.9418
487.02	101.2035
492.35	0.0000
497.08	89.3294
511.00	113.5610
514.00	85.0830
527.90	0.0000
529.87	0.0000
531.02	95.7630
537.26	96.1677
546.56	0.0000
563.25	74.7382
569.33	90.4758
569.50	90.4858
569.70	90.4958
583.19	89.0405
600.60	83.0000
602.73	73.5957
604.72	84.2096
609.32	67.8571
609.32	67.8571
610.33	73.9327
614.28	81.6702
618.01	72.7559
621.93	76.5700
621.93	76.5700
633.25	82.5842
635.95	89.1472
636.99	80.0056
645.85	68.3976
657.76	75.9943
661.66	91.3917
661.66	91.3917
664.57	0.0000
666.33	74.7988
666.50	74.8066
677.62	68.6799

685.70	68.9829
695.00	78.8257
696.49	88.3931
696.51	88.3954
697.00	88.4181
702.65	72.4728
706.68	81.2273
711.68	78.5667
720.70	67.3853
721.93	0.0000
722.78	83.5203
722.91	83.5267
723.31	81.9370
724.19	83.5817
727.33	69.5496
733.00	62.2784
735.93	70.8257
739.50	0.0000
747.24	70.2562
752.31	73.3685
753.82	61.6772
756.73	93.1399
763.94	60.6745
765.81	75.5024
766.42	75.5249
777.92	0.0000
778.90	55.5037
783.70	58.6125
785.37	64.0731
795.86	56.6224
801.95	67.6434
810.29	55.3330
810.76	51.3200
815.77	50.4309
818.51	59.5848
832.01	76.2158
834.85	69.1920
836.80	0.0000
846.77	48.0821
856.80	90.4320
860.56	61.7607
871.09	70.3209
873.19	45.5437
875.33	0.0000
879.36	61.2355
880.51	52.9586
883.24	46.7831
884.68	49.9336
889.28	61.4991
898.04	58.5922
911.20	55.7639
911.20	55.7639
911.20	55.7639
926.50	58.2401
937.49	71.2693
944.13	63.9976
946.00	56.5739
949.00	49.1625
962.29	57.3073
964.08	53.7634
966.15	50.5801
968.97	41.2996
968.97	41.2996
968.97	41.2996
983.53	39.0103
996.26	65.3423
1001.03	65.4639
1004.73	67.7429
1037.84	43.3377
1038.76	0.0000
1048.07	47.2065
1050.41	56.5124
1050.41	56.5124
1063.66	55.8594
1085.87	62.8834
1099.45	69.7905
1112.07	44.0516
1115.54	79.6763

1120.29	55.1066
1120.29	55.1066
1120.55	55.1113
1121.30	58.6557
1131.51	0.0000
1173.23	64.8272
1177.93	76.5570
1189.05	71.0069
1204.77	72.3560
1221.41	85.5309
1231.02	87.7687
1235.36	112.5806
1238.28	61.2860
1260.41	0.0000
1271.85	57.9457
1274.44	43.9946
1274.54	38.9952
1291.59	55.2865
1298.22	0.0000
1312.11	40.4622
1332.49	41.7307
1365.19	25.6938
1368.63	0.0000
1384.29	28.3471
1408.01	20.8114
1457.56	0.0000
1460.82	25.3477
1489.16	23.4162
1505.03	32.0691
1596.21	24.3986
1620.50	13.2188
1678.03	0.0000
1690.97	13.4507
1764.49	6.8440
1764.49	6.8440
1770.23	5.1398
1771.35	80.2983
1791.20	0.0000
1836.06	14.9074

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513008

Total Uranium Activity	4.9164E+00	ug/g
Total Uranium Counting Unc.	2.4005E+00	ug/g
Total Uranium Tpu	1.2248E-06	ug/g
Total Uranium Mda	1.1418E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513008
*  ANALYST       : MXR1                             DETECTOR    : GAM25
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 11:24:20.27          SAMPLE ALQT  : 130.460 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.036E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.234E+00
GROSS GAMMA MDA (pCi/GRAM ) : 3.358E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.632E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:27:59.20

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513009.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:27:06
Sample ID          : G248513009      Sample quantity   : 1.25440E+02 GRAM
Detector name      : GAM21           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:25.19 0.3%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID          : 961097           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	46.36*	154	386	0.64	92.71	89	8	2.13E-02	23.6	
2	0	63.13	143	672	0.88	126.23	123	8	1.98E-02	32.5	
3	3	74.85*	764	431	0.83	149.65	146	11	1.06E-01	5.4	2.71E+00
4	3	77.12*	1171	282	0.71	154.18	146	11	1.63E-01	3.6	
5	0	83.98*	139	386	1.48	167.90	165	7	1.93E-02	25.1	
6	4	87.14	437	344	1.03	174.23	171	12	6.07E-02	8.2	2.62E+00
7	4	89.91	262	280	0.85	179.77	171	12	3.64E-02	11.4	
8	0	93.06*	462	497	1.57	186.06	183	11	6.42E-02	10.7	
9	0	128.99	105	293	0.64	257.88	254	8	1.46E-02	30.0	
10	0	185.81*	196	267	1.07	371.48	368	9	2.72E-02	17.0	
11	0	209.05	101	250	0.68	417.94	415	8	1.41E-02	28.5	
12	0	238.49*	1222	172	0.94	476.79	473	7	1.70E-01	3.4	
13	0	241.58	216	241	1.08	482.97	481	8	3.00E-02	14.9	
14	0	269.88	124	175	1.06	539.56	534	11	1.72E-02	22.6	
15	0	294.96*	341	186	0.96	589.70	586	10	4.73E-02	9.2	
16	0	299.58	66	151	0.96	598.94	595	9	9.15E-03	36.0	
17	0	328.08	101	120	1.26	655.91	651	11	1.40E-02	23.4	
18	0	338.17	221	137	0.84	676.10	673	8	3.07E-02	11.3	
19	0	351.75*	672	114	1.14	703.25	698	11	9.33E-02	5.0	
20	0	462.46	78	108	1.39	924.63	919	11	1.09E-02	27.9	
21	0	510.69*	132	88	1.81	1021.09	1013	17	1.83E-02	20.5	
22	0	582.93*	295	64	1.18	1165.55	1159	11	4.09E-02	8.0	
23	0	609.17*	414	72	1.23	1218.03	1213	11	5.75E-02	6.5	
24	0	661.78	138	47	1.61	1323.25	1317	15	1.92E-02	13.6	
25	0	726.99	66	46	1.24	1453.69	1449	10	9.22E-03	22.6	
26	0	767.85	51	53	1.52	1535.42	1531	10	7.01E-03	30.3	
27	0	794.76	40	35	1.50	1589.24	1584	10	5.54E-03	31.9	
28	0	859.76	39	32	1.46	1719.26	1713	11	5.37E-03	32.9	
29	0	910.78	190	54	1.45	1821.34	1816	12	2.64E-02	10.6	
30	1	964.25	32	24	1.78	1928.32	1925	19	4.51E-03	33.1	2.38E+00
31	1	968.66	102	54	1.78	1937.12	1925	19	1.41E-02	16.4	
32	0	1120.06	91	41	1.42	2240.07	2233	15	1.26E-02	18.6	
33	0	1238.46*	52	55	0.69	2476.98	2469	18	7.21E-03	36.3	
34	0	1377.70	23	10	1.54	2755.65	2750	10	3.22E-03	32.9	
35	0	1406.75	24	0	1.22	2813.79	2809	10	3.33E-03	20.4	
36	0	1442.14	14	2	0.97	2884.61	2880	8	1.93E-03	32.2	
37	0	1460.38*	734	20	2.21	2921.13	2913	20	1.02E-01	4.0	
38	0	1764.23*	59	10	1.08	3529.41	3522	13	8.16E-03	17.3	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:28:02

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513009.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:27:06
 Sample ID : G248513009 Sample quantity : 125.44 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA21 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:25.19 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
K-40	+	1460.82	*	2.858E+01	3.344E+00	5.319E-01	4.542E-02	53.730
CD-109	+	88.03	*	4.498E+00	8.466E-01	8.059E-01	7.583E-02	5.581
SN-126	+	64.28		5.437E-01	3.626E-01	3.105E-01	4.601E-02	1.751
	+	86.94		1.806E+00	8.058E-01	3.223E-01	1.338E-01	5.604
	+	87.57	*	4.345E-01	8.178E-02	7.771E-02	7.284E-03	5.591
BA-137M	+	661.66	*	2.953E-01	8.666E-02	7.169E-02	7.918E-03	4.118
CS-137	+	661.66	*	3.119E-01	9.157E-02	7.573E-02	8.374E-03	4.118
TL-208		277.37		6.628E-01	4.006E-01	7.057E-01	8.988E-02	0.939
	+	583.19	*	5.832E-01	1.131E-01	5.925E-02	6.449E-03	9.843
	+	860.56		7.706E-01	5.123E-01	5.983E-01	5.936E-02	1.288
PB-210	+	46.54	*	1.477E+00	7.120E-01	5.978E-01	5.653E-02	2.471
BI-211		72.87		5.130E-01	1.753E+00	2.695E+00	2.256E-01	0.190
	+	351.06	*	5.193E+00	6.998E-01	3.213E-01	2.900E-02	16.162
PB-212	+	74.82		2.687E+00	4.509E-01	3.099E-01	3.999E-02	8.672
	+	77.11		2.480E+00	2.788E-01	1.873E-01	1.615E-02	13.240
	+	238.63	*	1.912E+00	2.311E-01	1.249E-01	1.248E-02	15.311
	+	300.09		1.695E+00	1.233E+00	1.271E+00	1.370E-01	1.334
BI-214	+	609.32	*	1.602E+00	2.815E-01	1.343E-01	1.592E-02	11.928
	+	1120.29		1.964E+00	7.607E-01	5.576E-01	6.015E-02	3.522
	+	1764.49		1.920E+00	6.824E-01	2.866E-01	2.383E-02	6.699
PB-214	+	74.82		4.762E+00	7.529E-01	5.492E-01	6.378E-02	8.672
	+	77.11		4.371E+00	6.095E-01	3.302E-01	3.940E-02	13.240
	+	242.00		2.055E+00	6.497E-01	5.497E-01	5.833E-02	3.739
	+	295.22		1.546E+00	3.326E-01	2.170E-01	2.398E-02	7.125
	+	351.93	*	1.885E+00	2.744E-01	1.170E-01	1.236E-02	16.114
RA-224	+	240.99	*	3.634E+00	1.129E+00	1.096E+00	9.739E-02	3.316
RA-226	+	609.32	*	1.602E+00	2.815E-01	1.343E-01	1.592E-02	11.928
	+	1120.29		1.964E+00	7.607E-01	5.576E-01	6.015E-02	3.522
	+	1764.49		1.920E+00	6.824E-01	2.866E-01	2.383E-02	6.699
AC-228	+	338.32		1.883E+00	8.946E-01	4.083E-01	1.704E-01	4.612
	+	911.20	*	1.940E+00	4.699E-01	2.812E-01	3.289E-02	6.900
	+	968.97		1.799E+00	7.350E-01	5.503E-01	1.343E-01	3.268
RA-228	+	338.32		1.883E+00	8.946E-01	4.083E-01	1.704E-01	4.612
	+	911.20	*	1.940E+00	4.699E-01	2.812E-01	3.289E-02	6.900

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.799E+00	7.350E-01	5.503E-01	1.343E-01	3.268
	+	74.82		2.687E+00	3.688E-01	3.099E-01	2.654E-02	8.672
	+	77.11		2.480E+00	2.788E-01	1.873E-01	1.615E-02	13.240
	+	238.63	*	1.912E+00	2.311E-01	1.249E-01	1.248E-02	15.311
	+	300.09		1.695E+00	1.601E+00	1.271E+00	7.783E-01	1.334
TH-229	+	85.43		3.460E-01	1.767E-01	1.524E-01	1.403E-02	2.271
	+	88.47		6.698E-01	1.261E-01	1.202E-01	1.134E-02	5.571
		193.51	*	9.487E-02	4.828E-01	8.223E-01	6.980E-02	0.115
		210.85		8.279E-01	8.767E-01	1.399E+00	1.213E-01	0.592
TH-232	+	338.32		1.883E+00	4.577E-01	4.083E-01	3.559E-02	4.612
	+	911.20	*	1.940E+00	4.699E-01	2.812E-01	3.289E-02	6.900
	+	968.97		1.799E+00	7.350E-01	5.503E-01	1.343E-01	3.268
TH-234	+	63.29	*	1.411E+00	9.520E-01	8.060E-01	1.454E-01	1.750
	+	92.59		4.080E+00	1.266E+00	5.769E-01	1.298E-01	7.072
U-235	+	89.96		2.797E+00	9.435E-01	8.364E-01	2.086E-01	3.344
	+	93.35		3.082E+00	9.786E-01	4.372E-01	1.028E-01	7.049
		143.76	*	7.015E-02	1.749E-01	2.781E-01	4.924E-02	0.252
		163.33		-1.774E-01	3.783E-01	6.307E-01	1.125E-01	-0.281
	+	185.72		1.877E-01	6.580E-02	5.880E-02	4.935E-03	3.192
		205.31		-1.068E-01	4.719E-01	7.003E-01	1.271E-01	-0.152
NP-237	+	86.48	*	1.296E+00	3.653E-01	2.309E-01	5.296E-02	5.614
		95.86		1.381E-01	6.064E-01	9.129E-01	2.231E-01	0.151
U-238	+	63.29	*	1.411E+00	9.520E-01	8.060E-01	1.454E-01	1.750
	+	92.59		4.080E+00	9.561E-01	5.769E-01	5.553E-02	7.072
ANH-511	+	511.00	*	1.939E-01	8.178E-02	5.190E-02	4.975E-03	3.736

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.656E-01	4.281E-01	7.382E-01	7.231E-02	0.224
NA-22		1274.54	*	-3.089E-03	5.537E-02	8.842E-02	7.253E-03	-0.035
NA-24		1368.63	*	-1.523E+03	5.537E-02	Half-Life too short		
SC-46		889.28	*	-2.040E-02	5.339E-02	8.531E-02	7.586E-03	-0.239
	+	1120.55		3.545E-01	1.352E-01	1.876E-01	1.585E-02	1.890
V-48		944.13		-1.218E+00	1.599E+00	2.410E+00	2.113E-01	-0.505
		983.53	*	1.268E-03	1.423E-01	2.355E-01	2.061E-02	0.005
		1312.11		3.971E-02	1.431E-01	2.395E-01	1.951E-02	0.166
CR-51		320.08	*	2.316E-02	4.335E-01	7.046E-01	6.545E-02	0.033
MN-54		834.85	*	-5.616E-03	5.030E-02	8.364E-02	8.106E-03	-0.067
CO-56		846.77	*	-4.530E-03	4.403E-02	7.291E-02	6.950E-03	-0.062
		1037.84		-2.447E-02	4.049E-01	6.609E-01	6.029E-02	-0.037
	+	1238.28		3.381E-01	2.468E-01	2.656E-01	2.254E-02	1.273
		1771.35		-6.704E-01	4.232E-01	4.150E-01	3.448E-02	-1.616
CO-57		122.06	*	5.040E-03	2.014E-02	3.227E-02	3.708E-03	0.156
		136.47		4.346E-02	1.739E-01	2.761E-01	3.057E-02	0.157
CO-58		810.76	*	1.662E-02	4.990E-02	8.699E-02	8.705E-03	0.191
FE-59		1099.45	*	-1.374E-01	1.438E-01	2.069E-01	1.909E-02	-0.664
		1291.59		-3.267E-02	1.914E-01	3.002E-01	2.821E-02	-0.109

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1173.23			1.583E-02	6.238E-02	1.042E-01	8.586E-03	0.152
	1332.49	*		1.099E-02	5.166E-02	8.912E-02	7.233E-03	0.123
ZN-65	1115.54	*		3.469E-02	1.340E-01	1.974E-01	1.673E-02	0.176
SE-75	121.12			2.801E-02	1.085E-01	1.740E-01	2.327E-02	0.161
	136.00			1.795E-02	3.506E-02	5.646E-02	6.001E-03	0.318
	264.66	*		4.843E-03	4.778E-02	7.098E-02	6.374E-03	0.068
	279.54			-1.227E-01	1.190E-01	1.812E-01	1.673E-02	-0.677
	400.66			2.739E-01	3.192E-01	5.383E-01	5.747E-02	0.509
SR-85	514.00	*		8.068E-03	4.933E-02	7.370E-02	7.092E-03	0.109
Y-88	898.04			2.876E-02	5.840E-02	1.022E-01	8.985E-03	0.281
	1836.06	*		9.561E-03	5.299E-02	8.964E-02	7.402E-03	0.107
Y-91	1204.77	*		1.725E+01	3.444E+01	5.866E+01	4.832E+00	0.294
NB-94	702.65	*		1.265E-02	4.282E-02	7.124E-02	7.759E-03	0.178
	871.09			-5.701E-04	4.430E-02	7.403E-02	6.795E-03	-0.008
NB-95	765.81	*		7.159E-02	6.969E-02	1.104E-01	1.154E-02	0.648
NB-95M	235.69	*		6.319E-03	1.380E-01	2.061E-01	2.081E-02	0.031
ZR-95	724.19			9.007E-02	1.355E-01	2.090E-01	2.374E-02	0.431
	756.73	*		-7.624E-03	1.012E-01	1.609E-01	1.815E-02	-0.047
MO-99	140.51			4.314E-05	1.012E-01	Half-Life	too short	
	181.07			-3.847E-05	1.012E-01	Half-Life	too short	
	366.42			-7.228E-05	1.012E-01	Half-Life	too short	
	739.50	*		-9.678E-06	1.012E-01	Half-Life	too short	
	777.92			3.084E-04	1.012E-01	Half-Life	too short	
TC-99M	140.51	*		2.772E+19	1.012E-01	Half-Life	too short	
RU-103	497.08	*		2.798E-03	5.256E-02	8.821E-02	1.277E-02	0.032
	610.33	+		1.899E+01	4.134E+00	4.556E+00	7.968E-01	4.169
RH-106	621.93	*		-1.337E-01	3.862E-01	6.089E-01	8.960E-02	-0.220
	1050.41			9.413E-01	3.553E+00	6.010E+00	5.198E-01	0.157
RU-106	621.93	*		-1.337E-01	3.860E-01	6.089E-01	6.533E-02	-0.220
	1050.41			9.413E-01	3.553E+00	6.010E+00	5.198E-01	0.157
AG-108M	433.94	*		-7.891E-03	3.347E-02	5.560E-02	4.922E-03	-0.142
	614.28			-2.385E-03	4.449E-02	6.338E-02	6.904E-03	-0.038
	722.91			-3.091E-02	5.234E-02	6.655E-02	7.319E-03	-0.464
AG-110M	657.76	*		-4.493E-03	5.014E-02	7.047E-02	7.905E-03	-0.064
	677.62			-1.666E-01	3.962E-01	6.129E-01	6.860E-02	-0.272
	706.68			2.547E-02	2.754E-01	4.492E-01	4.972E-02	0.057
	763.94			1.753E-02	2.322E-01	3.285E-01	3.503E-02	0.053
	884.68			-2.384E-02	6.193E-02	9.879E-02	9.121E-03	-0.241
	937.49			-9.128E-02	1.421E-01	2.164E-01	1.963E-02	-0.422
	1384.29			8.513E-03	1.891E-01	2.962E-01	2.500E-02	0.029
	1505.03			3.441E-01	3.871E-01	7.293E-01	6.069E-02	0.472
SN-113	391.69	*		-8.894E-03	5.211E-02	8.151E-02	6.713E-03	-0.109
CD-115	260.90			-1.250E-03	5.211E-02	Half-Life	too short	
	492.35			-5.290E-04	5.211E-02	Half-Life	too short	
	527.90	*		2.441E-05	5.211E-02	Half-Life	too short	
SN-117M	156.02			-8.329E-01	2.928E+00	4.959E+00	4.476E-01	-0.168
	158.56	*		-3.534E-02	7.002E-02	1.171E-01	1.031E-02	-0.302
TE-123M	159.00	*		-2.824E-02	2.559E-02	4.143E-02	3.652E-03	-0.682
SB-124	602.73			3.008E-03	4.983E-02	7.950E-02	8.396E-03	0.038

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		645.85		-3.679E-01	6.431E-01	9.946E-01	1.126E-01	-0.370
		722.78		-3.201E-01	5.771E-01	7.391E-01	8.083E-02	-0.433
		1690.97	*	-2.379E-02	1.005E-01	1.537E-01	1.341E-02	-0.155
		427.87	*	-5.086E-02	9.623E-02	1.560E-01	1.349E-02	-0.326
	+	463.37		1.000E+00	5.672E-01	7.260E-01	6.973E-02	1.378
TE-125M		600.60		5.989E-03	2.115E-01	3.481E-01	3.853E-02	0.017
		635.95		-3.751E-02	3.169E-01	5.107E-01	5.827E-02	-0.073
		109.28	*	4.154E+00	8.254E+00	1.347E+01	1.640E+00	0.308
I-126		388.63		5.205E-02	2.790E-01	4.506E-01	3.608E-02	0.116
		666.33	*	1.046E-01	4.514E-01	6.672E-01	7.361E-02	0.157
		753.82		3.168E-01	3.374E+00	5.475E+00	5.777E-01	0.058
SB-126		414.70		-6.259E-02	1.220E-01	1.989E-01	1.649E-02	-0.315
		666.50		2.912E-02	1.574E-01	2.312E-01	2.550E-02	0.126
		695.00		-4.577E-02	1.400E-01	2.180E-01	2.382E-02	-0.210
		697.00		-3.475E-01	5.155E-01	7.705E-01	8.412E-02	-0.451
		720.70	*	-2.886E-02	2.824E-01	4.338E-01	4.681E-02	-0.067
SB-127		856.80		-1.353E-01	9.374E-01	1.334E+00	1.252E-01	-0.101
		252.40		-1.428E+00	1.674E+01	2.750E+01	1.165E+01	-0.052
		473.00		1.709E+00	7.575E+00	1.294E+01	1.993E+00	0.132
		685.70	*	1.470E+00	7.455E+00	1.230E+01	1.910E+00	0.119
		783.70		1.185E+01	1.859E+01	3.167E+01	5.003E+00	0.374
I-131		80.19		4.349E+00	5.044E+00	7.934E+00	7.103E-01	0.548
		284.31		-1.084E+00	2.798E+00	4.447E+00	4.187E-01	-0.244
		364.49	*	-8.710E-02	2.514E-01	3.901E-01	3.495E-02	-0.223
TE-132		636.99		-2.286E+00	3.812E+00	5.817E+00	6.577E-01	-0.393
		49.72		-1.748E+00	1.639E+01	2.540E+01	3.389E+00	-0.069
		111.76		6.449E+01	1.406E+02	2.286E+02	3.418E+01	0.282
BA-133		116.30		-1.950E+00	1.254E+02	1.986E+02	3.014E+01	-0.010
		228.16	*	-3.279E+00	3.786E+00	5.923E+00	1.051E+00	-0.554
		81.00		-3.865E-02	5.606E-02	8.075E-02	1.265E-02	-0.479
		276.40		2.631E-01	3.716E-01	6.315E-01	9.030E-02	0.417
		302.85		-5.808E-02	1.532E-01	2.139E-01	2.837E-02	-0.272
I-133		356.01	*	1.628E-02	4.675E-02	6.925E-02	8.928E-03	0.235
		383.85		-2.004E-01	3.211E-01	4.809E-01	5.804E-02	-0.417
		529.87	*	-3.937E+00	3.211E-01	Half-Life too short		
		875.33		3.984E+01	3.211E-01	Half-Life too short		
		1298.22		-1.771E+02	3.211E-01	Half-Life too short		
CS-134		563.25		-2.674E-01	4.322E-01	6.593E-01	6.754E-02	-0.406
		569.33		1.220E-02	2.337E-01	3.875E-01	4.005E-02	0.031
		604.72		-3.413E-02	4.797E-02	6.244E-02	6.616E-03	-0.547
	+	795.86	*	1.221E-01	7.897E-02	1.237E-01	1.263E-02	0.987
		801.95		-3.828E-01	5.342E-01	8.414E-01	8.524E-02	-0.455
CS-135		1365.19		-8.460E-01	1.596E+00	2.441E+00	2.096E-01	-0.347
		268.22	*	1.629E-01	1.681E-01	2.656E-01	2.720E-02	0.613
		546.56		-1.841E+18	1.681E-01	Half-Life too short		
		836.80		6.678E+18	1.681E-01	Half-Life too short		
		1038.76		7.358E+17	1.681E-01	Half-Life too short		
I-135		1131.51		3.623E+18	1.681E-01	Half-Life too short		
		1260.41	*	2.464E+17	1.681E-01	Half-Life too short		

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CS-136	1457.56			3.653E+20	1.681E-01	Half-Life	too short	
	1678.03			4.356E+18	1.681E-01	Half-Life	too short	
	1791.20			2.099E+18	1.681E-01	Half-Life	too short	
	153.25			1.139E+00	1.110E+00	1.975E+00	2.137E-01	0.577
	176.60			1.761E-01	6.568E-01	1.130E+00	1.040E-01	0.156
	273.65			-2.051E-01	8.291E-01	1.190E+00	1.148E-01	-0.172
	340.55			-4.176E-03	2.588E-01	3.704E-01	3.345E-02	-0.011
	818.51			1.691E-01	1.377E-01	2.586E-01	2.563E-02	0.654
	1048.07	*		1.389E-01	2.203E-01	3.869E-01	3.492E-02	0.359
	1235.36			7.114E-01	1.488E+00	2.207E+00	2.535E-01	0.322
CE-139	165.86	*		3.238E-03	2.582E-02	4.433E-02	3.603E-03	0.073
BA-140	162.66			-1.025E-01	1.086E+00	1.849E+00	1.668E-01	-0.055
LA-140	304.85			-8.114E-01	2.170E+00	3.235E+00	9.498E-01	-0.251
	423.72			-3.887E-01	3.160E+00	5.301E+00	1.741E+00	-0.073
	537.26	*		1.055E-01	5.027E-01	8.467E-01	2.901E-01	0.125
	328.76			1.611E+00	7.684E-01	9.313E-01	8.641E-02	1.730
	487.02			9.941E-02	2.560E-01	4.410E-01	4.316E-02	0.225
CE-141	815.77			-1.807E-01	6.470E-01	1.058E+00	1.145E-01	-0.171
	1596.21	*		-1.486E-01	1.781E-01	2.430E-01	2.032E-02	-0.611
CE-143	145.44	*		-5.017E-02	6.674E-02	9.901E-02	9.928E-03	-0.507
CE-144	57.36			-5.600E-03	6.674E-02	Half-Life	too short	
	293.27	*		1.696E-02	6.674E-02	Half-Life	too short	
	664.57			3.910E-02	6.674E-02	Half-Life	too short	
	721.93			1.143E-02	6.674E-02	Half-Life	too short	
	80.12			1.258E+00	1.411E+00	2.222E+00	1.960E-01	0.566
PM-144	133.52	*		-1.517E-01	1.777E-01	2.620E-01	4.344E-02	-0.579
	476.78			2.603E-02	7.891E-02	1.356E-01	1.337E-02	0.192
PR-144	618.01			2.745E-02	3.754E-02	6.576E-02	7.163E-03	0.417
	696.49	*		-5.398E-02	4.368E-02	6.023E-02	6.581E-03	-0.896
PM-146	696.51	*		-4.037E+00	3.284E+00	4.534E+00	4.951E-01	-0.891
	1489.16			9.226E-01	1.722E+01	2.884E+01	2.397E+00	0.032
ND-147	453.88	*		4.388E-02	4.716E-02	8.458E-02	9.118E-03	0.519
	633.25			5.068E-01	1.689E+00	2.825E+00	1.095E+00	0.179
	735.93			-1.398E-01	1.740E-01	2.433E-01	6.989E-02	-0.575
	747.24			5.146E-02	1.225E-01	2.056E-01	3.256E-02	0.250
	91.11			1.488E+00	3.703E-01	5.144E-01	5.250E-02	2.892
PM-149	319.41			1.009E+00	5.305E+00	8.714E+00	7.718E-01	0.116
	531.02	*		1.954E-01	1.007E+00	1.703E+00	2.669E-01	0.115
EU-152	285.90	*		-8.440E-05	1.007E+00	Half-Life	too short	
GD-153	121.78			-8.323E-03	5.805E-02	9.092E-02	1.133E-02	-0.092
	244.70			-2.166E-01	3.424E-01	4.814E-01	4.285E-02	-0.450
	344.28	*		5.124E-02	1.040E-01	1.733E-01	1.589E-02	0.296
	778.90			1.086E-01	3.459E-01	5.723E-01	5.911E-02	0.190
	964.08			6.188E-01	4.129E-01	7.372E-01	6.459E-02	0.839
GD-153	1085.87			3.179E-01	5.343E-01	9.324E-01	7.981E-02	0.341
	1112.07			1.936E-01	4.156E-01	6.808E-01	5.773E-02	0.284
	1408.01			4.578E-01	1.907E-01	4.554E-01	3.746E-02	1.005
	69.67			-5.700E-01	8.149E-01	1.301E+00	1.067E-01	-0.438
	97.43	*		-7.717E-02	6.450E-02	8.744E-02	8.638E-03	-0.883

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EU-154		103.18		-1.086E-01	8.427E-02	1.243E-01	1.269E-02	-0.874
		123.07		-5.223E-02	4.330E-02	6.258E-02	8.514E-03	-0.835
		723.31		-1.383E-01	2.379E-01	3.029E-01	3.479E-02	-0.457
		873.19		2.585E-02	3.897E-01	6.563E-01	8.061E-02	0.039
		996.26		-5.596E-01	4.473E-01	5.960E-01	1.045E-01	-0.939
EU-155		1004.73		1.668E-01	2.783E-01	4.889E-01	5.727E-02	0.341
		1274.44	*	1.882E-02	1.536E-01	2.517E-01	2.784E-02	0.075
	+	86.55		5.285E-01	9.969E-02	1.385E-01	1.299E-02	3.815
		105.31	*	1.363E-01	8.185E-02	1.396E-01	1.455E-02	0.977
	+	86.79		1.507E+00	2.837E-01	4.141E-01	3.856E-02	3.639
TB-160		197.04		-2.438E-02	5.546E-01	9.327E-01	7.956E-02	-0.026
		215.65		2.862E-01	7.416E-01	1.265E+00	1.103E-01	0.226
	+	298.57		2.573E-01	1.866E-01	2.292E-01	2.045E-02	1.123
		879.36	*	-1.772E-02	1.896E-01	3.137E-01	2.839E-02	-0.056
		962.29		1.256E+00	8.402E-01	1.443E+00	1.264E-01	0.871
HO-166M		966.15		9.264E-01	3.640E-01	6.981E-01	6.116E-02	1.327
		1177.93		1.714E-02	5.173E-01	8.431E-01	6.948E-02	0.020
		1271.85		-1.870E-01	9.286E-01	1.449E+00	1.188E-01	-0.129
		80.57		-7.682E-02	1.581E-01	2.317E-01	2.051E-02	-0.332
	+	184.41		1.491E-01	5.228E-02	5.628E-02	4.714E-03	2.650
TA-182		280.46		-6.470E-02	8.391E-02	1.299E-01	1.158E-02	-0.498
		410.95		1.377E-01	2.977E-01	4.876E-01	4.017E-02	0.282
		711.68	*	-1.673E-02	8.208E-02	1.298E-01	1.407E-02	-0.129
		752.31		-2.703E-01	3.533E-01	5.143E-01	5.434E-02	-0.526
		810.29		-5.872E-03	7.277E-02	1.216E-01	1.215E-02	-0.048
IR-192		67.75		-4.146E-03	5.169E-02	8.492E-02	6.882E-03	-0.049
		100.11		7.144E-02	1.316E-01	2.167E-01	2.173E-02	0.330
		152.43		-5.426E-02	3.538E-01	5.439E-01	5.074E-02	-0.100
		222.11		2.065E-01	3.382E-01	5.823E-01	5.108E-02	0.355
	+	1121.30		9.651E-01	3.682E-01	5.033E-01	4.252E-02	1.918
HG-203		1189.05		-1.060E-01	4.778E-01	7.562E-01	6.232E-02	-0.140
		1221.41	*	9.279E-02	2.792E-01	4.681E-01	3.854E-02	0.198
		1231.02		4.210E-01	7.802E-01	1.177E+00	9.688E-02	0.358
	+	295.96		1.231E+00	2.527E-01	3.581E-01	3.218E-02	3.438
		308.46		2.664E-02	9.861E-02	1.634E-01	1.461E-02	0.163
BI-207		316.51	*	-6.024E-03	3.792E-02	6.080E-02	5.403E-03	-0.099
		468.07		-2.043E-02	8.723E-02	1.329E-01	1.282E-02	-0.154
		70.83		-5.838E-01	7.865E-01	1.145E+00	1.818E-01	-0.510
		72.87		1.436E-01	4.910E-01	7.543E-01	1.161E-01	0.190
		279.20	*	-2.673E-02	4.458E-02	7.013E-02	6.402E-03	-0.381
PB-211		72.81		2.810E-02	1.008E-01	1.549E-01	1.296E-02	0.181
	+	74.97		7.747E-01	1.059E-01	1.549E-01	1.315E-02	5.003
		569.70		-2.260E-02	3.809E-02	5.939E-02	6.082E-03	-0.380
		1063.66	*	2.512E-02	6.305E-02	1.087E-01	9.366E-03	0.231
		1770.23		-3.103E+00	1.114E+00	7.842E-01	6.517E-02	-3.956
BI-212		404.85	*	-5.605E-01	8.817E-01	1.251E+00	6.045E-01	-0.448
		427.09		-1.033E-01	1.613E+00	2.717E+00	1.256E+00	-0.038
		832.01		-3.616E-02	1.289E+00	2.161E+00	1.125E+00	-0.017
BI-212	+	727.33	*	2.096E+00	9.912E-01	1.536E+00	2.153E-01	1.365

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		5.238E-01	4.125E+00	6.686E+00	6.863E-01	0.078
		1620.50		2.722E+00	3.358E+00	6.288E+00	5.259E-01	0.433
RN-219	+	271.23		8.780E-01	4.079E-01	4.369E-01	4.596E-02	2.010
		401.81	*	1.441E-01	4.816E-01	7.809E-01	1.138E-01	0.184
RA-223		81.07		-8.551E-02	1.265E-01	1.831E-01	1.628E-02	-0.467
	+	83.79		2.059E-01	1.052E-01	1.346E-01	1.223E-02	1.530
		94.87		2.696E-01	3.045E-01	4.755E-01	4.632E-02	0.567
		144.24		2.710E-01	5.832E-01	9.320E-01	1.012E-01	0.291
		154.21		1.419E-01	3.443E-01	6.002E-01	5.978E-02	0.236
	+	269.46		6.822E-01	3.148E-01	3.650E-01	3.322E-02	1.869
		323.87	*	7.282E-01	6.805E-01	1.073E+00	1.871E-01	0.679
	+	338.28		7.473E+00	1.923E+00	2.863E+00	3.476E-01	2.610
AC-227		79.69		1.690E-01	7.132E-01	1.088E+00	1.884E-01	0.155
		235.96		-5.784E-02	1.576E-01	2.283E-01	2.407E-02	-0.253
		256.23	*	-2.296E-01	2.555E-01	3.957E-01	4.858E-02	-0.580
	+	299.98		1.864E+00	1.363E+00	1.678E+00	2.167E-01	1.111
		304.50		7.894E-02	1.660E+00	2.580E+00	4.304E-01	0.031
		334.37		1.614E-01	1.960E+00	2.838E+00	4.445E-01	0.057
TH-227		79.80		9.455E-01	9.295E-01	1.443E+00	3.152E-01	0.655
		235.96		-5.784E-02	1.575E-01	2.283E-01	2.276E-02	-0.253
		256.23	*	-2.296E-01	2.559E-01	3.957E-01	5.463E-02	-0.580
	+	299.98		1.864E+00	1.363E+00	1.678E+00	2.167E-01	1.111
		304.50		7.894E-02	1.660E+00	2.580E+00	4.304E-01	0.031
		334.37		1.614E-01	1.960E+00	2.838E+00	4.445E-01	0.057
PA-231		283.69	*	-2.778E-01	1.368E+00	2.204E+00	3.254E-01	-0.126
		301.36		6.945E-01	6.334E-01	9.991E-01	1.235E-01	0.695
TH-231		81.07		-8.551E-02	1.265E-01	1.831E-01	1.628E-02	-0.467
	+	83.79		2.059E-01	1.052E-01	1.346E-01	1.223E-02	1.530
		94.87		2.696E-01	3.045E-01	4.755E-01	4.632E-02	0.567
		144.24		2.710E-01	5.832E-01	9.320E-01	1.012E-01	0.291
		154.21		1.419E-01	3.443E-01	6.002E-01	5.978E-02	0.236
	+	269.46		6.822E-01	3.148E-01	3.650E-01	3.322E-02	1.869
		323.87	*	7.282E-01	6.805E-01	1.073E+00	1.871E-01	0.679
	+	338.28		7.473E+00	1.923E+00	2.863E+00	3.476E-01	2.610
PA-233	+	300.13		8.436E-01	6.199E-01	7.571E-01	1.136E-01	1.114
		311.90	*	1.260E-02	6.289E-02	1.036E-01	9.452E-03	0.122
		340.48		7.876E-02	7.356E-01	1.065E+00	2.566E-01	0.074
PA-234		94.67		2.022E-01	1.174E-01	1.872E-01	2.471E-02	1.080
		98.44		3.911E-02	6.990E-02	1.021E-01	5.718E-02	0.383
		111.00		-2.811E-02	1.429E-01	2.250E-01	3.071E-02	-0.125
		131.20		-1.413E-03	9.192E-02	1.327E-01	1.446E-02	-0.011
		569.50		-1.945E-01	3.384E-01	5.288E-01	5.413E-02	-0.368
		733.00		-1.411E-02	4.710E-01	6.967E-01	1.609E-01	-0.020
		880.51		-9.639E-02	3.380E-01	5.460E-01	4.932E-02	-0.177
		883.24		-1.182E-01	3.480E-01	5.425E-01	3.649E-01	-0.218
		926.50		1.181E-01	2.155E-01	3.777E-01	9.565E-02	0.313
		946.00	*	1.568E-01	4.000E-01	6.902E-01	1.300E-01	0.227
		949.00		6.158E-01	6.200E-01	1.127E+00	9.879E-02	0.546
PA-234M	+	766.42		3.512E+01	2.784E+01	2.945E+01	1.504E+01	1.193

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		3.677E+00	5.970E+00	1.050E+01	1.057E+00	0.350
	99.53			5.271E-02	1.156E-01	1.896E-01	1.896E-02	0.278
	103.37			-8.208E-02	7.552E-02	1.131E-01	1.156E-02	-0.726
	106.12			2.144E-02	6.394E-02	1.038E-01	1.078E-02	0.207
	117.23	*		-1.621E-01	3.232E-01	4.969E-01	5.530E-02	-0.326
	228.18			-1.767E-01	2.025E-01	3.197E-01	2.818E-02	-0.553
	277.60			3.141E-01	1.813E-01	3.238E-01	2.889E-02	0.970
AM-241	59.54	*		7.493E-03	5.153E-02	7.998E-02	6.784E-03	0.094
CM-247	278.00			1.319E+00	7.645E-01	1.366E+00	1.218E-01	0.966
	287.50			4.803E-01	1.150E+00	1.934E+00	1.726E-01	0.248
	402.40	*		5.379E-04	4.498E-02	7.131E-02	5.784E-03	0.008
CF-249	252.80			-5.424E-02	9.053E-01	1.490E+00	1.330E-01	-0.036
	333.37			1.253E-01	2.111E-01	2.967E-01	2.599E-02	0.422
	388.16	*		1.761E-02	4.387E-02	7.208E-02	5.779E-03	0.244
CF-251	177.52	*		3.311E-02	1.150E-01	1.979E-01	1.640E-02	0.167
	227.38			1.538E-02	3.255E-01	5.438E-01	4.791E-02	0.028
	285.41			-5.612E-01	2.022E+00	3.237E+00	2.889E-01	-0.173

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]G248513009      *
* Acquisition date   : 20-MAR-2010 11:27:06 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 02:00:25.19             Half life ratio : 8.000     *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513009              Analyst initials: MXR1        *
* Batch Number       : 961097                  Sample Quantity : 1.2544E+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)	
K-40	2.858E+01	3.277E+00	5.315E-01	0.000E+00
CD-109	4.498E+00	8.296E-01	8.377E-01	0.000E+00
SN-126	4.345E-01	8.014E-02	8.078E-02	0.000E+00
BA-137M	2.953E-01	8.493E-02	7.246E-02	0.000E+00
CS-137	3.119E-01	8.974E-02	7.655E-02	0.000E+00
TL-208	5.832E-01	1.108E-01	6.000E-02	0.000E+00
PB-210	1.477E+00	6.978E-01	6.267E-01	0.000E+00
BI-211	5.193E+00	6.858E-01	3.277E-01	0.000E+00
PB-212	1.912E+00	2.265E-01	1.280E-01	0.000E+00
BI-214	1.602E+00	2.758E-01	1.359E-01	0.000E+00
PB-214	1.885E+00	2.689E-01	1.193E-01	0.000E+00
RA-224	3.634E+00	1.107E+00	1.124E+00	0.000E+00
RA-226	1.602E+00	2.758E-01	1.359E-01	0.000E+00
AC-228	1.940E+00	4.605E-01	2.829E-01	0.000E+00
RA-228	1.940E+00	4.605E-01	2.829E-01	0.000E+00
TH-228	1.912E+00	2.265E-01	1.280E-01	0.000E+00
TH-229	9.487E-02	4.731E-01	8.456E-01	0.000E+00
TH-232	1.940E+00	4.605E-01	2.829E-01	0.000E+00
TH-234	1.411E+00	9.329E-01	8.415E-01	0.000E+00
U-235	7.015E-02	1.714E-01	2.872E-01	0.000E+00
NP-237	1.296E+00	3.580E-01	2.401E-01	0.000E+00
U-238	1.411E+00	9.329E-01	8.415E-01	0.000E+00
ANH-511	1.939E-01	8.015E-02	5.265E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.656E-01	4.195E-01	7.496E-01	0.000E+00 NOT IDENT.
NA-22	-3.089E-03	5.426E-02	8.853E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.912E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.040E-02	5.232E-02	8.586E-02	0.000E+00 FAIL ABUN

V-48	1.268E-03	1.394E-01	2.367E-01	0.000E+00	NOT IDENT.
CR-51	2.316E-02	4.249E-01	7.195E-01	0.000E+00	NOT IDENT.
MN-54	-5.616E-03	4.930E-02	8.426E-02	0.000E+00	NOT IDENT.
CO-56	-4.530E-03	4.315E-02	7.344E-02	0.000E+00	FAIL ABUN
CO-57	5.040E-03	1.974E-02	3.340E-02	0.000E+00	NOT IDENT.
CO-58	1.662E-02	4.890E-02	8.767E-02	0.000E+00	NOT IDENT.
FE-59	-1.374E-01	1.409E-01	2.076E-01	0.000E+00	NOT IDENT.
CO-60	1.099E-02	5.062E-02	8.918E-02	0.000E+00	NOT IDENT.
ZN-65	3.469E-02	1.313E-01	1.980E-01	0.000E+00	NOT IDENT.
SE-75	4.843E-03	4.683E-02	7.268E-02	0.000E+00	NOT IDENT.
SR-85	8.068E-03	4.834E-02	7.476E-02	0.000E+00	NOT IDENT.
Y-88	9.561E-03	5.193E-02	8.928E-02	0.000E+00	NOT IDENT.
Y-91	1.725E+01	3.375E+01	5.878E+01	0.000E+00	NOT IDENT.
NB-94	1.265E-02	4.197E-02	7.195E-02	0.000E+00	NOT IDENT.
NB-95	7.159E-02	6.830E-02	1.114E-01	0.000E+00	NOT IDENT.
NB-95M	6.319E-03	1.352E-01	2.114E-01	0.000E+00	NOT IDENT.
ZR-95	-7.624E-03	9.913E-02	1.623E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.033E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.737E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.798E-03	5.151E-02	8.952E-02	0.000E+00	FAIL ABUN
RH-106	-1.337E-01	3.785E-01	6.160E-01	0.000E+00	NOT IDENT.
RU-106	-1.337E-01	3.783E-01	6.160E-01	0.000E+00	NOT IDENT.
AG-108M	-7.891E-03	3.280E-02	5.654E-02	0.000E+00	NOT IDENT.
AG-110M	-4.493E-03	4.914E-02	7.124E-02	0.000E+00	NOT IDENT.
SN-113	-8.894E-03	5.107E-02	8.300E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.378E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-3.534E-02	6.862E-02	1.208E-01	0.000E+00	NOT IDENT.
TE-123M	-2.824E-02	2.508E-02	4.272E-02	0.000E+00	NOT IDENT.
SB-124	-2.379E-02	9.847E-02	1.533E-01	0.000E+00	NOT IDENT.
SB-125	-5.086E-02	9.430E-02	1.587E-01	0.000E+00	FAIL ABUN
TE-125M	4.154E+00	8.089E+00	1.396E+01	0.000E+00	NOT IDENT.
I-126	1.046E-01	4.424E-01	6.743E-01	0.000E+00	NOT IDENT.
SB-126	-2.886E-02	2.768E-01	4.379E-01	0.000E+00	NOT IDENT.
SB-127	1.470E+00	7.306E+00	1.243E+01	0.000E+00	NOT IDENT.
I-131	-8.710E-02	2.464E-01	3.977E-01	0.000E+00	NOT IDENT.
TE-132	-3.279E+00	3.710E+00	6.077E+00	0.000E+00	NOT IDENT.
BA-133	1.628E-02	4.581E-02	7.061E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.632E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.221E-01	7.739E-02	1.247E-01	0.000E+00	FAIL ABUN
CS-135	1.629E-01	1.647E-01	2.719E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.242E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.389E-01	2.159E-01	3.885E-01	0.000E+00	NOT IDENT.
CE-139	3.238E-03	2.530E-02	4.568E-02	0.000E+00	NOT IDENT.
BA-140	1.055E-01	4.927E-01	8.583E-01	0.000E+00	NOT IDENT.
LA-140	-1.486E-01	1.746E-01	2.425E-01	0.000E+00	FAIL ABUN
CE-141	-5.017E-02	6.540E-02	1.022E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.925E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.517E-01	1.742E-01	2.708E-01	0.000E+00	NOT IDENT.
PM-144	-5.398E-02	4.280E-02	6.084E-02	0.000E+00	NOT IDENT.
PR-144	-4.037E+00	3.218E+00	4.579E+00	0.000E+00	NOT IDENT.
PM-146	4.388E-02	4.621E-02	8.595E-02	0.000E+00	NOT IDENT.
ND-147	1.954E-01	9.870E-01	1.726E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.001E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	5.124E-02	1.019E-01	1.768E-01	0.000E+00	FAIL ABUN
GD-153	-7.717E-02	6.321E-02	9.076E-02	0.000E+00	NOT IDENT.
EU-154	1.882E-02	1.505E-01	2.520E-01	0.000E+00	NOT IDENT.
EU-155	1.363E-01	8.021E-02	1.447E-01	0.000E+00	FAIL ABUN
TB-160	-1.772E-02	1.858E-01	3.157E-01	0.000E+00	FAIL ABUN
HO-166M	-1.673E-02	8.044E-02	1.310E-01	0.000E+00	FAIL ABUN
TA-182	9.279E-02	2.736E-01	4.690E-01	0.000E+00	FAIL ABUN
IR-192	-6.024E-03	3.716E-02	6.210E-02	0.000E+00	FAIL ABUN
HG-203	-2.673E-02	4.369E-02	7.175E-02	0.000E+00	NOT IDENT.
BI-207	2.512E-02	6.179E-02	1.091E-01	0.000E+00	FAIL ABUN
PB-211	-5.605E-01	8.641E-01	1.274E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.714E-01	1.550E+00	0.000E+00	FAIL ABUN
RN-219	1.441E-01	4.719E-01	7.949E-01	0.000E+00	FAIL ABUN
RA-223	7.282E-01	6.669E-01	1.096E+00	0.000E+00	FAIL ABUN
AC-227	-2.296E-01	2.503E-01	4.054E-01	0.000E+00	FAIL ABUN
TH-227	-2.296E-01	2.508E-01	4.054E-01	0.000E+00	FAIL ABUN
PA-231	-2.778E-01	1.340E+00	2.254E+00	0.000E+00	NOT IDENT.
TH-231	7.282E-01	6.669E-01	1.096E+00	0.000E+00	FAIL ABUN
PA-233	1.260E-02	6.163E-02	1.058E-01	0.000E+00	FAIL ABUN
PA-234	1.568E-01	3.920E-01	6.941E-01	0.000E+00	NOT IDENT.
PA-234M	3.677E+00	5.850E+00	1.055E+01	0.000E+00	FAIL ABUN
NP-239	-1.621E-01	3.167E-01	5.145E-01	0.000E+00	NOT IDENT.
AM-241	7.493E-03	5.050E-02	8.357E-02	0.000E+00	NOT IDENT.
CM-247	5.379E-04	4.408E-02	7.259E-02	0.000E+00	NOT IDENT.
CF-249	1.761E-02	4.299E-02	7.341E-02	0.000E+00	NOT IDENT.

CF-251

3.311E-02

1.127E-01

2.038E-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]G248513009.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:27:06
Sample ID          : G248513009          Sample quantity  : 1.25440E+02 GRAM
Detector name      : GAM21              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:25.19  0.3%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 961097             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	1460.82	734	10.66*	7.204E-01	2.858E+01	2.858E+01	11.70
CD-109	88.03	437	3.70*	8.137E+00	4.345E+00	4.498E+00	18.82
SN-126	64.28	143	9.60	8.178E+00	5.437E-01	5.437E-01	66.69
	86.94	437	8.90	8.137E+00	1.806E+00	1.806E+00	44.61
	87.57	437	37.00*	8.137E+00	4.345E-01	4.345E-01	18.82
BA-137M	661.66	138	89.90*	1.562E+00	2.948E-01	2.953E-01	29.35
CS-137	661.66	138	85.10*	1.562E+00	3.115E-01	3.119E-01	29.36
TL-208	277.37	-----	6.60	3.801E+00	-----	Line Not Found	-----
	583.19	295	85.00*	1.778E+00	5.832E-01	5.832E-01	19.39
	860.56	39	12.50	1.202E+00	7.706E-01	7.706E-01	66.49
PB-210	46.54	154	4.25*	7.336E+00	1.474E+00	1.477E+00	48.20
BI-211	72.87	-----	1.23	8.278E+00	-----	Line Not Found	-----
	351.06	672	12.92*	2.997E+00	5.193E+00	5.193E+00	13.48
PB-212	74.82	764	10.28	8.275E+00	2.687E+00	2.687E+00	16.78
	77.11	1171	17.10	8.264E+00	2.480E+00	2.480E+00	11.24
	238.63	1222	43.60*	4.387E+00	1.912E+00	1.912E+00	12.09
	300.09	66	3.30	3.524E+00	1.695E+00	1.695E+00	72.75
BI-214	609.32	414	45.49*	1.699E+00	1.602E+00	1.602E+00	17.57
	1120.29	91	14.92	9.296E-01	1.964E+00	1.964E+00	38.74
	1764.49	59	15.30	5.983E-01	1.920E+00	1.920E+00	35.55
PB-214	74.82	764	5.80	8.275E+00	4.762E+00	4.762E+00	15.81
	77.11	1171	9.70	8.264E+00	4.371E+00	4.371E+00	13.94
	242.00	216	7.25	4.335E+00	2.055E+00	2.055E+00	31.61
	295.22	341	18.42	3.579E+00	1.546E+00	1.546E+00	21.51
	351.93	672	35.60*	2.997E+00	1.885E+00	1.885E+00	14.56
RA-224	240.99	216	4.10*	4.335E+00	3.634E+00	3.634E+00	31.08
RA-226	609.32	414	45.49*	1.699E+00	1.602E+00	1.602E+00	17.57
	1120.29	91	14.92	9.296E-01	1.964E+00	1.964E+00	38.74
	1764.49	59	15.30	5.983E-01	1.920E+00	1.920E+00	35.55
AC-228	338.32	221	11.27	3.120E+00	1.883E+00	1.883E+00	47.50
	911.20	190	25.80*	1.136E+00	1.940E+00	1.940E+00	24.22
	968.97	102	15.80	1.070E+00	1.799E+00	1.799E+00	40.87

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	221	11.27	3.120E+00	1.883E+00	1.883E+00	47.50
	911.20	190	25.80*	1.136E+00	1.940E+00	1.940E+00	24.22
	968.97	102	15.80	1.070E+00	1.799E+00	1.799E+00	40.87
TH-228	74.82	764	10.28	8.275E+00	2.687E+00	2.687E+00	13.72
	77.11	1171	17.10	8.264E+00	2.480E+00	2.480E+00	11.24
	238.63	1222	43.60*	4.387E+00	1.912E+00	1.912E+00	12.09
TH-229	300.09	66	3.30	3.524E+00	1.695E+00	1.695E+00	94.49
	85.43	139	14.70	8.189E+00	3.460E-01	3.460E-01	51.06
	88.47	437	24.00	8.137E+00	6.698E-01	6.698E-01	18.82
TH-232	193.51	-----	4.41*	5.271E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.900E+00	-----	Line Not Found	-----
	338.32	221	11.27	3.120E+00	1.883E+00	1.883E+00	24.30
TH-234	911.20	190	25.80*	1.136E+00	1.940E+00	1.940E+00	24.22
	968.97	102	15.80	1.070E+00	1.799E+00	1.799E+00	40.87
	63.29	143	3.70*	8.178E+00	1.411E+00	1.411E+00	67.48
U-235	92.59	462	4.23	8.018E+00	4.080E+00	4.080E+00	31.02
	89.96	262	3.47	8.085E+00	2.797E+00	2.797E+00	33.74
	93.35	462	5.60	8.018E+00	3.082E+00	3.082E+00	31.75
NP-237	143.76	-----	10.96*	6.567E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.017E+00	-----	Line Not Found	-----
	185.72	196	57.20	5.449E+00	1.877E-01	1.877E-01	35.06
U-238	205.31	-----	5.01	5.015E+00	-----	Line Not Found	-----
	86.48	437	12.40*	8.137E+00	1.296E+00	1.296E+00	28.18
	95.86	-----	2.68	7.953E+00	-----	Line Not Found	-----
ANH-511	63.29	143	3.70*	8.178E+00	1.411E+00	1.411E+00	67.48
	92.59	462	4.23	8.018E+00	4.080E+00	4.080E+00	23.43
	511.00	132	100.00*	2.038E+00	1.939E-01	1.939E-01	42.18

Flag: "*" = Keyline

Total number of lines in spectrum 38
Number of unidentified lines 4
Number of lines tentatively identified by NID 34 89.47%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.858E+01	2.858E+01	0.334E+01	11.70	
CD-109	461.40D	1.04	4.345E+00	4.498E+00	0.847E+00	18.82	
SN-126	2.30E+05Y	1.00	4.345E-01	4.345E-01	0.818E-01	18.82	
BA-137M	30.08Y	1.00	2.948E-01	2.953E-01	0.867E-01	29.35	
CS-137	30.08Y	1.00	3.115E-01	3.119E-01	0.916E-01	29.36	
TL-208	1.41E+10Y	1.00	5.832E-01	5.832E-01	1.131E-01	19.39	
PB-210	22.20Y	1.00	1.474E+00	1.477E+00	0.712E+00	48.20	
BI-211	7.04E+08Y	1.00	5.193E+00	5.193E+00	0.700E+00	13.48	
PB-212	1.41E+10Y	1.00	1.912E+00	1.912E+00	0.231E+00	12.09	
BI-214	1600.00Y	1.00	1.602E+00	1.602E+00	0.281E+00	17.57	
PB-214	1600.00Y	1.00	1.885E+00	1.885E+00	0.274E+00	14.56	
RA-224	1.41E+10Y	1.00	3.634E+00	3.634E+00	1.129E+00	31.08	
RA-226	1600.00Y	1.00	1.602E+00	1.602E+00	0.281E+00	17.57	
AC-228	1.41E+10Y	1.00	1.940E+00	1.940E+00	0.470E+00	24.22	
RA-228	1.41E+10Y	1.00	1.940E+00	1.940E+00	0.470E+00	24.22	
TH-228	1.41E+10Y	1.00	1.912E+00	1.912E+00	0.231E+00	12.09	
TH-229	7340.00Y	1.00	6.698E-01	6.698E-01	1.261E-01	18.82	K
TH-232	1.41E+10Y	1.00	1.940E+00	1.940E+00	0.470E+00	24.22	
TH-234	4.47E+09Y	1.00	1.411E+00	1.411E+00	0.952E+00	67.48	
U-235	7.04E+08Y	1.00	1.877E-01	1.877E-01	0.658E-01	35.06	K
NP-237	2.14E+06Y	1.00	1.296E+00	1.296E+00	0.365E+00	28.18	
U-238	4.47E+09Y	1.00	1.411E+00	1.411E+00	0.952E+00	67.48	
ANH-511	1.00E+09Y	1.00	1.939E-01	1.939E-01	0.818E-01	42.18	

Total Activity : 6.475E+01 6.491E+01

Grand Total Activity : 6.475E+01 6.491E+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	128.99	105	293	0.64	257.88	254	8	1.46E-02	60.0	7.01E+00	
0	209.05	101	250	0.68	417.94	415	8	1.41E-02	57.1	4.94E+00	
0	269.88	124	175	1.06	539.56	534	11	1.72E-02	45.2	3.90E+00	T
0	328.08	101	120	1.26	655.91	651	11	1.40E-02	46.8	3.22E+00	T
0	462.46	78	108	1.39	924.63	919	11	1.09E-02	55.9	2.26E+00	T
0	726.99	66	46	1.24	1453.69	1449	10	9.22E-03	45.2	1.42E+00	T
0	767.85	51	53	1.52	1535.42	1531	10	7.01E-03	60.6	1.34E+00	T
0	794.76	40	35	1.50	1589.24	1584	10	5.54E-03	63.9	1.30E+00	T
1	964.25	32	24	1.78	1928.32	1925	19	4.51E-03	66.1	1.07E+00	T
0	1238.46	52	55	0.69	2476.98	2469	18	7.21E-03	72.5	8.44E-01	T
0	1377.70	23	10	1.54	2755.65	2750	10	3.22E-03	65.7	7.62E-01	
0	1406.75	24	0	1.22	2813.79	2809	10	3.33E-03	40.8	7.47E-01	T
0	1442.14	14	2	0.97	2884.61	2880	8	1.93E-03	64.5	7.29E-01	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513009.CNF;1
* Acquisition date   : 20-MAR-2010 11:27:06  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 02:00:25.19          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513009            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.25440E+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       :
*****

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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	2.858E+01	3.344E+00	5.319E-01	4.542E-02	53.730
CD-109	4.498E+00	8.466E-01	8.059E-01	7.583E-02	5.581
SN-126	4.345E-01	8.178E-02	7.771E-02	7.284E-03	5.591
BA-137M	2.953E-01	8.666E-02	7.169E-02	7.918E-03	4.118
CS-137	3.119E-01	9.157E-02	7.573E-02	8.374E-03	4.118
TL-208	5.832E-01	1.131E-01	5.925E-02	6.449E-03	9.843
PB-210	1.477E+00	7.120E-01	5.978E-01	5.653E-02	2.471
BI-211	5.193E+00	6.998E-01	3.213E-01	2.900E-02	16.162
PB-212	1.912E+00	2.311E-01	1.249E-01	1.248E-02	15.311
BI-214	1.602E+00	2.815E-01	1.343E-01	1.592E-02	11.928
PB-214	1.885E+00	2.744E-01	1.170E-01	1.236E-02	16.114
RA-224	3.634E+00	1.129E+00	1.096E+00	9.739E-02	3.316
RA-226	1.602E+00	2.815E-01	1.343E-01	1.592E-02	11.928
AC-228	1.940E+00	4.699E-01	2.812E-01	3.289E-02	6.900
RA-228	1.940E+00	4.699E-01	2.812E-01	3.289E-02	6.900
TH-228	1.912E+00	2.311E-01	1.249E-01	1.248E-02	15.311
TH-229	6.698E-01	1.261E-01	8.223E-01	6.980E-02	0.815
TH-232	1.940E+00	4.699E-01	2.812E-01	3.289E-02	6.900

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.411E+00	9.520E-01	8.060E-01	1.454E-01	1.750
U-235	1.877E-01	6.580E-02	2.781E-01	4.924E-02	0.675
NP-237	1.296E+00	3.653E-01	2.309E-01	5.296E-02	5.614
U-238	1.411E+00	9.520E-01	8.060E-01	1.454E-01	1.750
ANH-511	1.939E-01	8.178E-02	5.190E-02	4.975E-03	3.736

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.656E-01		4.281E-01	7.382E-01	7.231E-02	0.224
NA-22	-3.089E-03		5.537E-02	8.842E-02	7.253E-03	-0.035
NA-24	-1.523E+03		3.016E+03	Half-Life	too short	
SC-46	-2.040E-02		5.339E-02	8.531E-02	7.586E-03	-0.239
V-48	1.268E-03		1.423E-01	2.355E-01	2.061E-02	0.005
CR-51	2.316E-02		4.335E-01	7.046E-01	6.545E-02	0.033
MN-54	-5.616E-03		5.030E-02	8.364E-02	8.106E-03	-0.067
CO-56	-4.530E-03		4.403E-02	7.291E-02	6.950E-03	-0.062
CO-57	5.040E-03		2.014E-02	3.227E-02	3.708E-03	0.156
CO-58	1.662E-02		4.990E-02	8.699E-02	8.705E-03	0.191
FE-59	-1.374E-01		1.438E-01	2.069E-01	1.909E-02	-0.664
CO-60	1.099E-02		5.166E-02	8.912E-02	7.233E-03	0.123
ZN-65	3.469E-02		1.340E-01	1.974E-01	1.673E-02	0.176
SE-75	4.843E-03		4.778E-02	7.098E-02	6.374E-03	0.068
SR-85	8.068E-03		4.933E-02	7.370E-02	7.092E-03	0.109
Y-88	9.561E-03		5.299E-02	8.964E-02	7.402E-03	0.107
Y-91	1.725E+01		3.444E+01	5.866E+01	4.832E+00	0.294
NB-94	1.265E-02		4.282E-02	7.124E-02	7.759E-03	0.178
NB-95	7.159E-02		6.969E-02	1.104E-01	1.154E-02	0.648
NB-95M	6.319E-03		1.380E-01	2.061E-01	2.081E-02	0.031
ZR-95	-7.624E-03		1.012E-01	1.609E-01	1.815E-02	-0.047
MO-99	-9.678E-06		5.271E-05	Half-Life	too short	
TC-99M	2.772E+19		4.458E+19	Half-Life	too short	
RU-103	2.798E-03		5.256E-02	8.821E-02	1.277E-02	0.032
RH-106	-1.337E-01		3.862E-01	6.089E-01	8.960E-02	-0.220
RU-106	-1.337E-01		3.860E-01	6.089E-01	6.533E-02	-0.220
AG-108M	-7.891E-03		3.347E-02	5.560E-02	4.922E-03	-0.142
AG-110M	-4.493E-03		5.014E-02	7.047E-02	7.905E-03	-0.064
SN-113	-8.894E-03		5.211E-02	8.151E-02	6.713E-03	-0.109
CD-115	2.441E-05		7.031E-05	Half-Life	too short	
SN-117M	-3.534E-02		7.002E-02	1.171E-01	1.031E-02	-0.302
TE-123M	-2.824E-02		2.559E-02	4.143E-02	3.652E-03	-0.682
SB-124	-2.379E-02		1.005E-01	1.537E-01	1.341E-02	-0.155
SB-125	-5.086E-02		9.623E-02	1.560E-01	1.349E-02	-0.326
TE-125M	4.154E+00		8.254E+00	1.347E+01	1.640E+00	0.308
I-126	1.046E-01		4.514E-01	6.672E-01	7.361E-02	0.157
SB-126	-2.886E-02		2.824E-01	4.338E-01	4.681E-02	-0.067
SB-127	1.470E+00		7.455E+00	1.230E+01	1.910E+00	0.119

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-8.710E-02		2.514E-01	3.901E-01	3.495E-02	-0.223
TE-132	-3.279E+00		3.786E+00	5.923E+00	1.051E+00	-0.554
BA-133	1.628E-02		4.675E-02	6.925E-02	8.928E-03	0.235
I-133	-3.937E+00		1.853E+00	Half-Life	too short	
CS-134	1.221E-01	+	7.897E-02	1.237E-01	1.263E-02	0.987
CS-135	1.629E-01		1.681E-01	2.656E-01	2.720E-02	0.613
I-135	2.464E+17		2.164E+18	Half-Life	too short	
CS-136	1.389E-01		2.203E-01	3.869E-01	3.492E-02	0.359
CE-139	3.238E-03		2.582E-02	4.433E-02	3.603E-03	0.073
BA-140	1.055E-01		5.027E-01	8.467E-01	2.901E-01	0.125
LA-140	-1.486E-01		1.781E-01	2.430E-01	2.032E-02	-0.611
CE-141	-5.017E-02		6.674E-02	9.901E-02	9.928E-03	-0.507
CE-143	1.696E-02		4.554E-03	Half-Life	too short	
CE-144	-1.517E-01		1.777E-01	2.620E-01	4.344E-02	-0.579
PM-144	-5.398E-02		4.368E-02	6.023E-02	6.581E-03	-0.896
PR-144	-4.037E+00		3.284E+00	4.534E+00	4.951E-01	-0.891
PM-146	4.388E-02		4.716E-02	8.458E-02	9.118E-03	0.519
ND-147	1.954E-01		1.007E+00	1.703E+00	2.669E-01	0.115
PM-149	-8.440E-05		5.109E-04	Half-Life	too short	
EU-152	5.124E-02		1.040E-01	1.733E-01	1.589E-02	0.296
GD-153	-7.717E-02		6.450E-02	8.744E-02	8.638E-03	-0.883
EU-154	1.882E-02		1.536E-01	2.517E-01	2.784E-02	0.075
EU-155	1.363E-01		8.185E-02	1.396E-01	1.455E-02	0.977
TB-160	-1.772E-02		1.896E-01	3.137E-01	2.839E-02	-0.056
HO-166M	-1.673E-02		8.208E-02	1.298E-01	1.407E-02	-0.129
TA-182	9.279E-02		2.792E-01	4.681E-01	3.854E-02	0.198
IR-192	-6.024E-03		3.792E-02	6.080E-02	5.403E-03	-0.099
HG-203	-2.673E-02		4.458E-02	7.013E-02	6.402E-03	-0.381
BI-207	2.512E-02		6.305E-02	1.087E-01	9.366E-03	0.231
PB-211	-5.605E-01		8.817E-01	1.251E+00	6.045E-01	-0.448
BI-212	2.096E+00	+	9.912E-01	1.536E+00	2.153E-01	1.365
RN-219	1.441E-01		4.816E-01	7.809E-01	1.138E-01	0.184
RA-223	7.282E-01		6.805E-01	1.073E+00	1.871E-01	0.679
AC-227	-2.296E-01		2.555E-01	3.957E-01	4.858E-02	-0.580
TH-227	-2.296E-01		2.559E-01	3.957E-01	5.463E-02	-0.580
PA-231	-2.778E-01		1.368E+00	2.204E+00	3.254E-01	-0.126
TH-231	7.282E-01		6.805E-01	1.073E+00	1.871E-01	0.679
PA-233	1.260E-02		6.289E-02	1.036E-01	9.452E-03	0.122
PA-234	1.568E-01		4.000E-01	6.902E-01	1.300E-01	0.227
PA-234M	3.677E+00		5.970E+00	1.050E+01	1.057E+00	0.350
NP-239	-1.621E-01		3.232E-01	4.969E-01	5.530E-02	-0.326
AM-241	7.493E-03		5.153E-02	7.998E-02	6.784E-03	0.094
CM-247	5.379E-04		4.498E-02	7.131E-02	5.784E-03	0.008
CF-249	1.761E-02		4.387E-02	7.208E-02	5.779E-03	0.244
CF-251	3.311E-02		1.150E-01	1.979E-01	1.640E-02	0.167

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]G248513009          *
* Acquisition date   : 20-MAR-2010 11:27:06 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 02:00:25.19           Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513009           Analyst initials: MXR1          *
* Batch Number       : 961097              Sample Quantity : 1.2544E+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
K-40	2.858E+01	3.277E+00	2.659E-01	1.672E+00
CD-109	4.498E+00	8.296E-01	4.191E-01	4.233E-01
SN-126	4.345E-01	8.014E-02	4.042E-02	4.089E-02
BA-137M	2.953E-01	8.493E-02	3.625E-02	4.333E-02
CS-137	3.119E-01	8.974E-02	3.830E-02	4.578E-02
TL-208	5.832E-01	1.108E-01	3.002E-02	5.656E-02
PB-210	1.477E+00	6.978E-01	3.136E-01	3.560E-01
BI-211	5.193E+00	6.858E-01	1.639E-01	3.499E-01
PB-212	1.912E+00	2.265E-01	6.406E-02	1.156E-01
BI-214	1.602E+00	2.758E-01	6.798E-02	1.407E-01
PB-214	1.885E+00	2.689E-01	5.967E-02	1.372E-01
RA-224	3.634E+00	1.107E+00	5.622E-01	5.647E-01
RA-226	1.602E+00	2.758E-01	6.798E-02	1.407E-01
AC-228	1.940E+00	4.605E-01	1.415E-01	2.350E-01
RA-228	1.940E+00	4.605E-01	1.415E-01	2.350E-01
TH-228	1.912E+00	2.265E-01	6.406E-02	1.156E-01
TH-229	9.487E-02	4.731E-01	4.231E-01	2.414E-01
TH-232	1.940E+00	4.605E-01	1.415E-01	2.350E-01
TH-234	1.411E+00	9.329E-01	4.210E-01	4.760E-01
U-235	7.015E-02	1.714E-01	1.437E-01	8.743E-02
NP-237	1.296E+00	3.580E-01	1.201E-01	1.826E-01
U-238	1.411E+00	9.329E-01	4.210E-01	4.760E-01
ANH-511	1.939E-01	8.015E-02	2.634E-02	4.089E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.656E-01	4.195E-01	3.750E-01	2.140E-01 NOT IDENT.
NA-22	-3.089E-03	5.426E-02	4.429E-02	2.768E-02 NOT IDENT.
NA-24	-1.523E+09	5.912E+09	0.000E+00	3.016E+09 SHORT HLIF
SC-46	-2.040E-02	5.232E-02	4.296E-02	2.670E-02 FAIL ABUN

V-48	1.268E-03	1.394E-01	1.184E-01	7.114E-02	NOT IDENT.
CR-51	2.316E-02	4.249E-01	3.600E-01	2.168E-01	NOT IDENT.
MN-54	-5.616E-03	4.930E-02	4.216E-02	2.515E-02	NOT IDENT.
CO-56	-4.530E-03	4.315E-02	3.674E-02	2.201E-02	FAIL ABUN
CO-57	5.040E-03	1.974E-02	1.671E-02	1.007E-02	NOT IDENT.
CO-58	1.662E-02	4.890E-02	4.386E-02	2.495E-02	NOT IDENT.
FE-59	-1.374E-01	1.409E-01	1.039E-01	7.188E-02	NOT IDENT.
CO-60	1.099E-02	5.062E-02	4.461E-02	2.583E-02	NOT IDENT.
ZN-65	3.469E-02	1.313E-01	9.908E-02	6.700E-02	NOT IDENT.
SE-75	4.843E-03	4.683E-02	3.636E-02	2.389E-02	NOT IDENT.
SR-85	8.068E-03	4.834E-02	3.740E-02	2.466E-02	NOT IDENT.
Y-88	9.561E-03	5.193E-02	4.467E-02	2.650E-02	NOT IDENT.
Y-91	1.725E+01	3.375E+01	2.941E+01	1.722E+01	NOT IDENT.
NB-94	1.265E-02	4.197E-02	3.600E-02	2.141E-02	NOT IDENT.
NB-95	7.159E-02	6.830E-02	5.573E-02	3.485E-02	NOT IDENT.
NB-95M	6.319E-03	1.352E-01	1.058E-01	6.898E-02	NOT IDENT.
ZR-95	-7.624E-03	9.913E-02	8.121E-02	5.058E-02	NOT IDENT.
MO-99	-9.678E+00	1.033E+02	0.000E+00	5.271E+01	SHORT HLIF
TC-99M	2.772E+25	8.737E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.798E-03	5.151E-02	4.479E-02	2.628E-02	FAIL ABUN
RH-106	-1.337E-01	3.785E-01	3.082E-01	1.931E-01	NOT IDENT.
RU-106	-1.337E-01	3.783E-01	3.082E-01	1.930E-01	NOT IDENT.
AG-108M	-7.891E-03	3.280E-02	2.829E-02	1.673E-02	NOT IDENT.
AG-110M	-4.493E-03	4.914E-02	3.564E-02	2.507E-02	NOT IDENT.
SN-113	-8.894E-03	5.107E-02	4.153E-02	2.606E-02	NOT IDENT.
CD-115	2.441E+01	1.378E+02	0.000E+00	7.031E+01	SHORT HLIF
SN-117M	-3.534E-02	6.862E-02	6.043E-02	3.501E-02	NOT IDENT.
TE-123M	-2.824E-02	2.508E-02	2.137E-02	1.279E-02	NOT IDENT.
SB-124	-2.379E-02	9.847E-02	7.668E-02	5.024E-02	NOT IDENT.
SB-125	-5.086E-02	9.430E-02	7.938E-02	4.811E-02	FAIL ABUN
TE-125M	4.154E+00	8.089E+00	6.985E+00	4.127E+00	NOT IDENT.
I-126	1.046E-01	4.424E-01	3.374E-01	2.257E-01	NOT IDENT.
SB-126	-2.886E-02	2.768E-01	2.191E-01	1.412E-01	NOT IDENT.
SB-127	1.470E+00	7.306E+00	6.219E+00	3.728E+00	NOT IDENT.
I-131	-8.710E-02	2.464E-01	1.990E-01	1.257E-01	NOT IDENT.
TE-132	-3.279E+00	3.710E+00	3.040E+00	1.893E+00	NOT IDENT.
BA-133	1.628E-02	4.581E-02	3.533E-02	2.337E-02	NOT IDENT.
I-133	-3.937E+06	3.632E+06	0.000E+00	1.853E+06	SHORT HLIF
CS-134	1.221E-01	7.739E-02	6.239E-02	3.949E-02	FAIL ABUN
CS-135	1.629E-01	1.647E-01	1.360E-01	8.405E-02	NOT IDENT.
I-135	2.464E+23	4.242E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.389E-01	2.159E-01	1.944E-01	1.102E-01	NOT IDENT.
CE-139	3.238E-03	2.530E-02	2.286E-02	1.291E-02	NOT IDENT.
BA-140	1.055E-01	4.927E-01	4.294E-01	2.514E-01	NOT IDENT.
LA-140	-1.486E-01	1.746E-01	1.213E-01	8.907E-02	FAIL ABUN
CE-141	-5.017E-02	6.540E-02	5.114E-02	3.337E-02	NOT IDENT.
CE-143	1.696E+04	8.925E+03	0.000E+00	4.554E+03	SHORT HLIF
CE-144	-1.517E-01	1.742E-01	1.355E-01	8.886E-02	NOT IDENT.
PM-144	-5.398E-02	4.280E-02	3.044E-02	2.184E-02	NOT IDENT.
PR-144	-4.037E+00	3.218E+00	2.291E+00	1.642E+00	NOT IDENT.
PM-146	4.388E-02	4.621E-02	4.300E-02	2.358E-02	NOT IDENT.
ND-147	1.954E-01	9.870E-01	8.637E-01	5.036E-01	FAIL ABUN
PM-149	-8.440E+01	1.001E+03	0.000E+00	5.109E+02	SHORT HLIF
EU-152	5.124E-02	1.019E-01	8.845E-02	5.201E-02	FAIL ABUN
GD-153	-7.717E-02	6.321E-02	4.541E-02	3.225E-02	NOT IDENT.
EU-154	1.882E-02	1.505E-01	1.261E-01	7.679E-02	NOT IDENT.
EU-155	1.363E-01	8.021E-02	7.240E-02	4.093E-02	FAIL ABUN
TB-160	-1.772E-02	1.858E-01	1.580E-01	9.478E-02	FAIL ABUN
HO-166M	-1.673E-02	8.044E-02	6.556E-02	4.104E-02	FAIL ABUN
TA-182	9.279E-02	2.736E-01	2.346E-01	1.396E-01	FAIL ABUN
IR-192	-6.024E-03	3.716E-02	3.107E-02	1.896E-02	FAIL ABUN
HG-203	-2.673E-02	4.369E-02	3.590E-02	2.229E-02	NOT IDENT.
BI-207	2.512E-02	6.179E-02	5.458E-02	3.152E-02	FAIL ABUN
PB-211	-5.605E-01	8.641E-01	6.372E-01	4.408E-01	NOT IDENT.
BI-212	2.096E+00	9.714E-01	7.757E-01	4.956E-01	FAIL ABUN
RN-219	1.441E-01	4.719E-01	3.977E-01	2.408E-01	FAIL ABUN
RA-223	7.282E-01	6.669E-01	5.481E-01	3.402E-01	FAIL ABUN
AC-227	-2.296E-01	2.503E-01	2.028E-01	1.277E-01	FAIL ABUN
TH-227	-2.296E-01	2.508E-01	2.028E-01	1.279E-01	FAIL ABUN
PA-231	-2.778E-01	1.340E+00	1.128E+00	6.839E-01	NOT IDENT.
TH-231	7.282E-01	6.669E-01	5.481E-01	3.402E-01	FAIL ABUN
PA-233	1.260E-02	6.163E-02	5.292E-02	3.144E-02	FAIL ABUN
PA-234	1.568E-01	3.920E-01	3.473E-01	2.000E-01	NOT IDENT.
PA-234M	3.677E+00	5.850E+00	5.279E+00	2.985E+00	FAIL ABUN
NP-239	-1.621E-01	3.167E-01	2.574E-01	1.616E-01	NOT IDENT.
AM-241	7.493E-03	5.050E-02	4.181E-02	2.577E-02	NOT IDENT.
CM-247	5.379E-04	4.408E-02	3.632E-02	2.249E-02	NOT IDENT.
CF-249	1.761E-02	4.299E-02	3.673E-02	2.193E-02	NOT IDENT.

CF-251 3.311E-02 1.127E-01 1.020E-01 5.751E-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
46.54	179.4670
49.72	206.4561
57.36	0.0000
59.54	270.7775
63.29	307.4516
63.29	307.4516
64.28	308.6805
67.75	329.7455
69.67	342.1443
70.83	360.6619
72.81	371.3734
72.87	371.4534
72.87	371.4534
74.82	358.8253
74.82	358.8253
74.82	358.8253
74.97	359.0193
77.11	361.7340
77.11	361.7340
77.11	361.7340
79.69	277.0804
79.80	239.9509
80.12	241.5916
80.19	241.6486
80.57	294.5001
81.00	299.0786
81.07	299.1489
81.07	299.1489
83.79	264.1240
83.79	264.1240
85.43	172.8073
86.48	281.2288
86.55	281.2917
86.79	281.5048
86.94	281.6428
87.57	282.2049
88.03	282.6149
88.47	283.0045
89.96	284.3216
91.11	238.1327
92.59	198.2613
92.59	198.2613
93.35	198.7161
94.67	199.5023
94.87	199.6216
94.87	199.6216
95.86	185.6979
97.43	237.5641
98.44	190.0230
99.53	205.6484
100.11	201.5831
103.18	243.3291
103.37	243.4577
105.31	187.7631
106.12	212.8208
109.28	204.4688
111.00	215.6127
111.76	196.7117
116.30	200.1693
117.23	212.1688
121.12	175.8046
121.78	187.7500
122.06	172.7081
123.07	221.0936
131.20	182.8391
133.52	220.5692
136.00	177.2003

136.47	173.7664
140.51	0.0000
140.51	0.0000
143.76	190.0344
144.24	186.5465
144.24	186.5465
145.44	220.2430
152.43	228.4540
153.25	192.5705
154.21	220.5076
154.21	220.5076
156.02	220.4722
158.56	210.6349
159.00	222.6211
162.66	207.2278
163.33	210.0470
165.86	177.7407
176.60	177.8235
177.52	182.4838
181.07	0.0000
184.41	177.6518
185.72	173.6274
193.51	181.3323
197.04	188.7195
205.31	168.8454
210.85	152.3259
215.65	155.3207
222.11	141.8175
227.38	146.7142
228.16	166.7814
228.18	166.7868
235.69	159.4998
235.96	176.8116
235.96	176.8116
238.63	294.3582
238.63	294.3582
240.99	196.8883
242.00	153.6738
244.70	149.8825
252.40	125.4818
252.80	125.5495
256.23	152.7295
256.23	152.7295
260.90	0.0000
264.66	106.1035
268.22	109.5913
269.46	121.2929
269.46	121.2929
271.23	120.5591
273.65	126.9741
276.40	128.4237
277.37	106.3031
277.60	105.3224
278.00	103.3468
279.20	141.0446
279.54	149.2251
280.46	130.0859
283.69	106.1117
284.31	110.2764
285.41	102.2441
285.90	0.0000
287.50	92.2522
293.27	0.0000
295.22	105.5175
295.96	105.6088
298.57	124.6265
299.98	112.3462
299.98	112.3462
300.09	112.3616
300.09	112.3616
300.13	112.3660
301.36	100.0234
302.85	108.0231
304.50	99.1319
304.50	99.1319
304.85	109.2130
308.46	85.0836
311.90	88.5784

316.51	91.1545
319.41	84.0034
320.08	85.1302
323.87	68.9210
323.87	68.9210
328.76	91.3069
333.37	77.7246
334.37	95.6373
334.37	95.6373
338.28	106.3401
338.28	106.3401
338.32	106.3441
338.32	106.3441
338.32	106.3441
340.48	107.6730
340.55	107.6810
344.28	88.4438
351.06	80.2626
351.93	80.3339
356.01	72.9301
364.49	91.3758
366.42	0.0000
383.85	87.4161
388.16	75.2302
388.63	77.5445
391.69	83.4825
400.66	79.5580
401.81	85.4119
402.40	92.3877
404.85	96.0633
410.95	87.2772
414.70	80.5618
423.72	75.0196
427.09	72.5821
427.87	77.0582
433.94	81.9094
453.88	59.7410
463.37	83.1844
468.07	73.2422
473.00	65.2560
476.78	71.9015
477.60	71.0243
487.02	68.7551
492.35	0.0000
497.08	63.6639
511.00	57.7041
514.00	60.6743
527.90	0.0000
529.87	0.0000
531.02	49.9053
537.26	62.6573
546.56	0.0000
563.25	58.8794
569.33	57.1504
569.50	70.9519
569.70	70.9607
583.19	41.3664
600.60	56.3145
602.73	52.9388
604.72	72.5933
609.32	55.6143
609.32	55.6143
610.33	48.5669
614.28	48.6870
618.01	40.6665
621.93	55.0333
621.93	55.0333
633.25	44.1285
635.95	46.2566
636.99	56.5710
645.85	45.4985
657.76	51.6510
661.66	52.1866
661.66	52.1866
664.57	0.0000
666.33	43.5373
666.50	43.5424
677.62	52.6703

685.70	56.0877
695.00	46.8077
696.49	62.8171
696.51	62.8189
697.00	56.4451
702.65	50.2129
706.68	50.3248
711.68	57.9781
720.70	45.6254
721.93	0.0000
722.78	51.8481
722.91	51.8525
723.31	51.8643
724.19	39.7806
727.33	51.9756
733.00	39.1003
735.93	44.6010
739.50	0.0000
747.24	39.3959
752.31	52.6670
753.82	40.6291
756.73	46.1900
763.94	44.1541
765.81	44.1968
766.42	51.2838
777.92	0.0000
778.90	43.3799
783.70	39.0247
785.37	45.7534
795.86	26.9231
801.95	52.2071
810.29	41.5752
810.76	34.3531
815.77	46.2175
818.51	27.2227
832.01	46.5798
834.85	52.1294
836.80	0.0000
846.77	28.5115
856.80	33.8809
860.56	41.6536
871.09	39.9955
873.19	44.6895
875.33	0.0000
879.36	38.2793
880.51	36.4311
883.24	35.5406
884.68	38.3714
889.28	41.2640
898.04	37.6602
911.20	35.0389
911.20	35.0389
911.20	35.0389
926.50	28.5996
937.49	40.2291
944.13	43.2246
946.00	35.5682
949.00	33.6892
962.29	32.2648
964.08	40.3605
966.15	44.5962
968.97	44.6490
968.97	44.6490
968.97	44.6490
983.53	42.9645
996.26	42.2063
1001.03	32.4538
1004.73	31.5172
1037.84	30.9349
1038.76	0.0000
1048.07	32.0609
1050.41	36.1002
1050.41	36.1002
1063.66	26.2057
1085.87	32.5250
1099.45	48.0121
1112.07	30.7896
1115.54	34.2546

1120.29	30.8818
1120.29	30.8818
1120.55	30.8848
1121.30	30.8936
1131.51	0.0000
1173.23	38.8139
1177.93	37.8264
1189.05	49.5749
1204.77	42.4199
1221.41	39.4606
1231.02	39.2305
1235.36	51.7884
1238.28	43.9729
1260.41	0.0000
1271.85	26.0262
1274.44	24.9620
1274.54	27.1338
1291.59	30.5566
1298.22	0.0000
1312.11	20.8712
1332.49	22.1104
1365.19	22.3330
1368.63	0.0000
1384.29	13.7273
1408.01	9.6952
1457.56	0.0000
1460.82	8.6144
1489.16	14.4733
1505.03	11.6299
1596.21	18.8740
1620.50	9.9972
1678.03	0.0000
1690.97	8.1426
1764.49	3.5530
1764.49	3.5530
1770.23	47.7351
1771.35	21.7981
1791.20	0.0000
1836.06	8.4316

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513009

Total Uranium Activity	4.2293E+00	ug/g
Total Uranium Counting Unc.	2.7766E+00	ug/g
Total Uranium Tpu	1.4166E-06	ug/g
Total Uranium Mda	1.2543E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513009   *
*  ANALYST       : MXR1            DETECTOR    : GAM21        *
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00 *
*  ANALYSIS DATE : 20-MAR-2010 11:27:06.36  SAMPLE ALQT: 125.440 GRAM *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.107E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.463E+00
GROSS GAMMA MDA (pCi/GRAM ) : 5.222E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.525E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:28:52.87

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*****
*                               GEL Laboratories LLC
*                               2040 Savage Road
*                               Charleston, SC 29414
*                               *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513010.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:27:33
Sample ID          : G248513010           Sample quantity  : 1.07280E+02 GRAM
Detector name      : GAM29                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:55.11 0.8%
Energy tolerance   : 1.50000 keV          Analyst Initials  : MXR1
Abundance limit    : 75.00000             Sensitivity        : 5.00000
Batch ID           : 961097               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	63.32*	86	406	1.08	126.88	123	7	1.20E-02	42.2	
2	3	74.90*	448	529	1.40	150.00	143	16	6.23E-02	10.4	3.25E+00
3	3	77.13*	701	386	0.98	154.45	143	16	9.73E-02	5.9	
4	9	87.24*	309	413	1.36	174.65	163	31	4.29E-02	12.7	2.45E+00
5	9	90.01	259	466	1.69	180.20	163	31	3.60E-02	17.9	
6	9	92.75*	302	366	1.46	185.67	163	31	4.19E-02	14.8	
7	0	185.88*	171	333	1.23	371.71	367	9	2.37E-02	22.0	
8	0	209.18	93	303	1.10	418.24	414	9	1.29E-02	35.3	
9	4	238.54*	1078	184	1.10	476.90	471	19	1.50E-01	3.9	1.66E+00
10	4	241.52	382	236	1.83	482.86	471	19	5.31E-02	12.2	
11	0	269.99	117	185	1.32	539.74	536	9	1.62E-02	23.0	
12	0	295.06	459	188	1.26	589.83	585	10	6.37E-02	7.3	
13	0	300.25	99	201	1.31	600.20	596	10	1.37E-02	28.9	
14	0	327.82	73	177	1.21	655.28	652	10	1.02E-02	35.7	
15	0	337.71*	218	266	1.20	675.05	668	14	3.02E-02	17.5	
16	0	351.79*	789	185	1.16	703.19	696	14	1.10E-01	5.2	
17	0	462.70	76	147	1.02	924.82	917	14	1.06E-02	35.7	
18	0	510.83*	107	108	2.19	1021.01	1015	13	1.48E-02	27.6	
19	0	583.19*	331	106	1.55	1165.65	1160	12	4.60E-02	8.6	
20	0	609.16*	554	91	1.41	1217.55	1210	12	7.70E-02	5.6	
21	0	661.49	444	111	1.35	1322.17	1316	13	6.16E-02	6.8	
22	0	727.79*	143	63	2.43	1454.72	1447	21	1.99E-02	16.5	
23	2	768.09	63	76	2.01	1535.28	1526	21	8.80E-03	29.5	1.70E+00
24	2	771.92	39	33	1.73	1542.94	1526	21	5.37E-03	32.8	
25	0	861.24	74	38	1.11	1721.54	1716	13	1.03E-02	21.8	
26	0	911.41*	241	106	1.79	1821.87	1816	16	3.35E-02	11.9	
27	0	934.90	34	52	1.83	1868.85	1863	10	4.70E-03	44.8	
28	0	969.14*	144	46	1.13	1937.32	1933	13	1.99E-02	13.0	
29	0	1120.76*	103	76	1.64	2240.59	2231	17	1.43E-02	22.4	
30	0	1377.99	37	22	1.97	2755.25	2749	11	5.15E-03	29.5	
31	0	1408.00	37	10	0.86	2815.31	2808	14	5.17E-03	24.6	
32	0	1460.80*	1037	20	1.86	2920.96	2911	16	1.44E-01	3.3	
33	0	1729.86*	26	6	1.80	3459.56	3454	11	3.60E-03	28.5	
34	0	1764.79*	84	12	2.43	3529.51	3523	12	1.17E-02	14.8	
35	0	1846.79	21	3	1.77	3693.69	3688	11	2.96E-03	26.3	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513010.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:27:33
Sample ID         : G248513010 Sample quantity : 107.28 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAM29 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:55.11 0.8%
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	+	1460.82	*	2.812E+01	3.566E+00	6.131E-01	6.668E-02	45.865
CD-109	+	88.03	*	5.140E+00	1.395E+00	1.630E+00	1.539E-01	3.153
SN-126	+	64.28		9.227E-01	7.908E-01	1.088E+00	1.614E-01	0.848
	+	86.94		2.064E+00	1.006E+00	6.616E-01	2.747E-01	3.120
	+	87.57	*	4.965E-01	1.348E-01	1.582E-01	1.487E-02	3.139
BA-137M	+	661.66	*	7.242E-01	1.152E-01	7.367E-02	6.039E-03	9.831
CS-137	+	661.66	*	7.651E-01	1.218E-01	7.782E-02	6.393E-03	9.831
TL-208		277.37		6.120E-01	5.057E-01	8.759E-01	1.126E-01	0.699
	+	583.19	*	5.151E-01	1.012E-01	6.962E-02	6.523E-03	7.399
	+	860.56		1.091E+00	4.950E-01	5.839E-01	7.488E-02	1.869
BI-211		72.87		1.370E+01	5.126E+00	7.949E+00	6.569E-01	1.724
	+	351.06	*	5.551E+00	7.838E-01	3.953E-01	3.785E-02	14.042
PB-212	+	74.82		3.146E+00	7.712E-01	7.634E-01	9.798E-02	4.120
	+	77.11		2.824E+00	4.122E-01	4.386E-01	3.735E-02	6.437
	+	238.63	*	1.733E+00	2.189E-01	1.192E-01	1.189E-02	14.539
	+	300.09		2.441E+00	1.434E+00	1.554E+00	1.707E-01	1.571
BI-214	+	609.32	*	1.669E+00	2.527E-01	1.528E-01	1.543E-02	10.920
	+	1120.29		1.606E+00	7.438E-01	5.314E-01	6.203E-02	3.022
	+	1764.49		1.777E+00	5.500E-01	3.285E-01	2.983E-02	5.409
PB-214	+	74.82		5.576E+00	1.330E+00	1.353E+00	1.560E-01	4.120
	+	77.11		4.978E+00	8.347E-01	7.733E-01	9.167E-02	6.437
	+	242.00		3.726E+00	9.883E-01	7.243E-01	7.679E-02	5.144
	+	295.22		2.007E+00	3.692E-01	2.688E-01	3.020E-02	7.465
	+	351.93	*	2.015E+00	3.054E-01	1.438E-01	1.588E-02	14.015
RA-224	+	240.99	*	6.588E+00	1.705E+00	1.277E+00	1.133E-01	5.159
RA-226	+	609.32	*	1.669E+00	2.527E-01	1.528E-01	1.543E-02	10.920
	+	1120.29		1.606E+00	7.438E-01	5.314E-01	6.203E-02	3.022
	+	1764.49		1.777E+00	5.500E-01	3.285E-01	2.983E-02	5.409
AC-228	+	338.32		1.708E+00	9.325E-01	4.869E-01	2.037E-01	3.507
	+	911.20	*	1.812E+00	5.129E-01	3.066E-01	4.670E-02	5.910
	+	968.97		1.860E+00	6.836E-01	7.059E-01	1.830E-01	2.634
RA-228	+	338.32		1.708E+00	9.325E-01	4.869E-01	2.037E-01	3.507
	+	911.20	*	1.812E+00	5.129E-01	3.066E-01	4.670E-02	5.910
	+	968.97		1.860E+00	6.836E-01	7.059E-01	1.830E-01	2.634

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.146E+00	7.088E-01	7.634E-01	6.453E-02	4.120
	+	77.11		2.824E+00	4.122E-01	4.386E-01	3.735E-02	6.437
	+	238.63	*	1.733E+00	2.189E-01	1.192E-01	1.189E-02	14.539
	+	300.09		2.441E+00	2.055E+00	1.554E+00	9.523E-01	1.571
TH-232	+	338.32		1.708E+00	6.194E-01	4.869E-01	4.471E-02	3.507
	+	911.20	*	1.812E+00	5.129E-01	3.066E-01	4.670E-02	5.910
	+	968.97		1.860E+00	6.836E-01	7.059E-01	1.830E-01	2.634
TH-234	+	63.29	*	2.394E+00	2.067E+00	2.863E+00	5.172E-01	0.836
	+	92.59		4.040E+00	1.496E+00	1.327E+00	2.959E-01	3.044
U-235	+	89.96		4.326E+00	1.884E+00	1.650E+00	4.103E-01	2.621
	+	93.35		3.051E+00	1.149E+00	9.972E-01	2.323E-01	3.060
		143.76	*	2.186E-01	2.784E-01	4.539E-01	7.670E-02	0.482
		163.33		-3.503E-01	6.157E-01	9.438E-01	1.675E-01	-0.371
	+	185.72		1.804E-01	8.079E-02	9.021E-02	7.533E-03	2.000
		205.31		1.335E-02	7.160E-01	1.050E+00	1.902E-01	0.013
NP-237	+	86.48	*	1.481E+00	5.082E-01	4.771E-01	1.094E-01	3.105
		95.86		-1.158E-02	1.335E+00	1.908E+00	4.606E-01	-0.006
U-238	+	63.29	*	2.394E+00	2.067E+00	2.863E+00	5.172E-01	0.836
	+	92.59		4.040E+00	1.250E+00	1.327E+00	1.216E-01	3.044
ANH-511	+	511.00	*	1.275E-01	7.127E-02	5.909E-02	5.349E-03	2.158

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.435E-01	4.846E-01	8.019E-01	7.807E-02	0.179
NA-22		1274.54	*	-1.828E-02	5.507E-02	8.930E-02	8.914E-03	-0.205
NA-24		1368.63	*	3.279E+03	5.507E-02	Half-Life too short		
SC-46		889.28	*	-6.376E-03	5.111E-02	8.317E-02	1.086E-02	-0.077
	+	1120.55		2.899E-01	1.328E-01	1.730E-01	1.653E-02	1.676
V-48		944.13		-7.160E-01	1.497E+00	2.339E+00	2.970E-01	-0.306
		983.53	*	-7.690E-02	1.279E-01	1.971E-01	2.391E-02	-0.390
		1312.11		6.873E-02	1.336E-01	2.344E-01	2.488E-02	0.293
CR-51		320.08	*	9.504E-02	6.116E-01	1.020E+00	9.806E-02	0.093
MN-54		834.85	*	-2.842E-02	4.719E-02	7.397E-02	8.718E-03	-0.384
CO-56		846.77	*	-1.977E-02	5.049E-02	8.036E-02	9.690E-03	-0.246
		1037.84		-5.181E-01	4.344E-01	6.204E-01	7.178E-02	-0.835
		1238.28		2.276E-01	1.308E-01	2.313E-01	2.220E-02	0.984
		1771.35		2.082E-01	2.724E-01	4.669E-01	4.217E-02	0.446
CO-57		122.06	*	2.253E-02	3.530E-02	5.853E-02	5.288E-03	0.385
		136.47		-1.480E-01	2.824E-01	4.459E-01	4.142E-02	-0.332
CO-58		810.76	*	3.207E-03	4.906E-02	8.164E-02	9.193E-03	0.039
FE-59		1099.45	*	-1.234E-01	1.221E-01	1.760E-01	1.869E-02	-0.701
		1291.59		4.898E-02	1.591E-01	2.741E-01	3.086E-02	0.179
CO-60		1173.23		1.140E-02	5.855E-02	9.637E-02	8.011E-03	0.118
		1332.49	*	1.888E-02	4.404E-02	7.699E-02	8.444E-03	0.245
ZN-65		1115.54	*	-8.350E-02	1.386E-01	1.768E-01	1.710E-02	-0.472
SE-75		121.12		1.448E-01	1.859E-01	3.094E-01	3.524E-02	0.468
		136.00		-1.476E-02	5.547E-02	8.861E-02	7.734E-03	-0.167

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		-4.676E-02	6.783E-02	9.347E-02	8.475E-03	-0.500
	279.54			6.569E-02	1.489E-01	2.525E-01	2.377E-02	0.260
	400.66			6.626E-02	3.382E-01	5.605E-01	6.392E-02	0.118
SR-85	514.00	*		1.580E-01	6.451E-02	1.059E-01	9.578E-03	1.493
Y-88	898.04			-1.115E-02	5.581E-02	9.022E-02	1.199E-02	-0.124
	1836.06	*		5.269E-04	4.012E-02	6.571E-02	5.619E-03	0.008
Y-91	1204.77	*		2.867E+00	3.232E+01	5.261E+01	4.639E+00	0.055
NB-94	702.65	*		-1.109E-02	4.312E-02	7.062E-02	6.344E-03	-0.157
	871.09			3.239E-02	3.927E-02	6.922E-02	8.739E-03	0.468
NB-95	765.81	*		1.013E-01	6.865E-02	1.109E-01	1.139E-02	0.913
NB-95M	235.69	*		6.943E-01	2.201E-01	3.540E-01	3.565E-02	1.961
ZR-95	724.19			1.266E-01	1.431E-01	2.226E-01	2.244E-02	0.569
	756.73	*		3.358E-02	9.609E-02	1.638E-01	1.779E-02	0.205
MO-99	140.51			-1.180E-04	9.609E-02	Half-Life	too short	
	181.07			-1.381E-04	9.609E-02	Half-Life	too short	
	366.42			5.823E-04	9.609E-02	Half-Life	too short	
	739.50	*		-2.261E-06	9.609E-02	Half-Life	too short	
	777.92			1.524E-04	9.609E-02	Half-Life	too short	
TC-99M	140.51	*		-7.590E+19	9.609E-02	Half-Life	too short	
RU-103	497.08	*		-1.233E-02	6.175E-02	9.623E-02	1.372E-02	-0.128
	610.33	+		1.979E+01	3.930E+00	4.229E+00	6.910E-01	4.678
RH-106	621.93	*		-1.278E-01	3.857E-01	6.315E-01	8.332E-02	-0.202
	1050.41			9.735E-01	3.027E+00	5.087E+00	5.590E-01	0.191
RU-106	621.93	*		-1.278E-01	3.855E-01	6.315E-01	5.383E-02	-0.202
	1050.41			9.735E-01	3.027E+00	5.087E+00	5.590E-01	0.191
AG-108M	433.94	*		-4.512E-03	3.738E-02	6.056E-02	5.666E-03	-0.075
	614.28			2.837E-02	4.815E-02	7.372E-02	6.533E-03	0.385
	722.91			-5.816E-03	4.841E-02	6.844E-02	6.598E-03	-0.085
AG-110M	657.76	*		4.041E-02	5.377E-02	8.295E-02	7.053E-03	0.487
	677.62			-1.872E-01	3.907E-01	6.291E-01	5.504E-02	-0.298
	706.68			-6.207E-02	2.779E-01	4.561E-01	4.241E-02	-0.136
	763.94			2.595E-02	2.278E-01	3.296E-01	3.438E-02	0.079
	884.68			-4.432E-02	5.952E-02	9.050E-02	1.188E-02	-0.490
	937.49			3.017E-02	1.613E-01	2.326E-01	3.024E-02	0.130
	1384.29			1.192E-01	2.202E-01	3.423E-01	3.787E-02	0.348
	1505.03			-5.554E-01	3.586E-01	4.540E-01	4.778E-02	-1.223
SN-113	391.69	*		3.399E-02	6.149E-02	1.039E-01	9.608E-03	0.327
CD-115	260.90			1.183E-04	6.149E-02	Half-Life	too short	
	492.35			7.549E-04	6.149E-02	Half-Life	too short	
	527.90	*		-7.625E-05	6.149E-02	Half-Life	too short	
SN-117M	156.02			-1.418E+00	4.580E+00	7.269E+00	6.037E-01	-0.195
	158.56	*		1.020E-02	1.087E-01	1.753E-01	1.449E-02	0.058
TE-123M	159.00	*		8.638E-04	3.920E-02	6.305E-02	5.241E-03	0.014
SB-124	602.73			3.414E-02	5.979E-02	8.763E-02	7.586E-03	0.390
	645.85			-1.991E-01	6.634E-01	1.087E+00	9.616E-02	-0.183
	722.78			-6.882E-02	5.320E-01	7.512E-01	7.186E-02	-0.092
	1690.97	*		1.895E-03	9.880E-02	1.629E-01	1.613E-02	0.012
SB-125	427.87	*		2.105E-02	1.227E-01	2.025E-01	1.871E-02	0.104
	463.37	+		8.097E-01	5.838E-01	6.699E-01	6.516E-02	1.209

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M I-126	600.60			3.034E-02	2.419E-01	3.694E-01	3.436E-02	0.082
	635.95			-1.644E-01	3.335E-01	5.386E-01	4.918E-02	-0.305
	109.28	*		-1.843E+01	1.469E+01	2.254E+01	2.410E+00	-0.818
	388.63			8.119E-02	3.367E-01	5.599E-01	5.045E-02	0.145
	666.33	*		6.372E-02	4.657E-01	6.812E-01	5.643E-02	0.094
SB-126	753.82			1.259E+00	3.406E+00	5.811E+00	5.822E-01	0.217
	414.70			-1.147E-01	1.590E-01	2.486E-01	2.252E-02	-0.461
	666.50			3.198E-03	1.633E-01	2.359E-01	1.955E-02	0.014
	695.00			-2.324E-02	1.530E-01	2.527E-01	2.232E-02	-0.092
	697.00			1.078E-01	5.281E-01	8.930E-01	7.923E-02	0.121
SB-127	720.70	*		3.484E-01	2.652E-01	4.384E-01	4.095E-02	0.795
	856.80			3.930E-02	1.075E+00	1.531E+00	1.881E-01	0.026
	252.40			1.255E+00	2.223E+01	3.724E+01	1.578E+01	0.034
	473.00			-1.383E+00	9.229E+00	1.486E+01	2.289E+00	-0.093
	685.70	*		-5.792E+00	7.093E+00	1.108E+01	1.549E+00	-0.523
I-131	783.70			-6.634E-01	1.740E+01	2.876E+01	4.615E+00	-0.023
	80.19			-7.499E+00	1.891E+01	1.897E+01	1.682E+00	-0.395
	284.31			1.498E+00	3.837E+00	6.493E+00	6.234E-01	0.231
	364.49	*		1.791E-01	2.949E-01	5.010E-01	4.823E-02	0.358
	636.99			-1.254E+00	3.727E+00	6.091E+00	5.472E-01	-0.206
TE-132	49.72			-1.533E+02	1.424E+02	2.251E+02	3.043E+01	-0.681
	111.76			4.465E+01	2.484E+02	4.062E+02	5.547E+01	0.110
	116.30			-2.081E+02	2.173E+02	3.365E+02	4.606E+01	-0.619
	228.16	*		1.637E+00	5.252E+00	8.905E+00	1.578E+00	0.184
	81.00			-7.806E-02	1.980E-01	1.983E-01	3.097E-02	-0.394
BA-133	276.40			4.131E-01	4.914E-01	8.004E-01	1.153E-01	0.516
	302.85			2.749E-01	1.970E-01	3.067E-01	4.121E-02	0.896
	356.01	*		3.194E-03	5.843E-02	8.381E-02	1.116E-02	0.038
	383.85			2.670E-01	3.855E-01	6.550E-01	8.330E-02	0.408
	529.87	*		1.773E+00	3.855E-01	Half-Life	too short	
I-133	875.33			-9.224E+00	3.855E-01	Half-Life	too short	
	1298.22			5.794E+00	3.855E-01	Half-Life	too short	
	563.25			3.986E-02	4.916E-01	7.967E-01	7.133E-02	0.050
	569.33			1.496E-03	2.473E-01	3.985E-01	3.570E-02	0.004
	604.72			6.519E-02	4.700E-02	7.389E-02	6.402E-03	0.882
CS-134	795.86	*		1.312E-01	5.957E-02	1.111E-01	1.219E-02	1.180
	801.95			-2.414E-01	4.928E-01	7.858E-01	8.713E-02	-0.307
	1365.19			-1.106E+00	1.355E+00	1.993E+00	2.239E-01	-0.555
	268.22	*		3.441E-01	2.397E-01	3.734E-01	3.860E-02	0.921
	546.56			1.715E+18	2.397E-01	Half-Life	too short	
I-135	836.80			7.263E+18	2.397E-01	Half-Life	too short	
	1038.76			-4.713E+18	2.397E-01	Half-Life	too short	
	1131.51			-8.174E+17	2.397E-01	Half-Life	too short	
	1260.41	*		-2.794E+18	2.397E-01	Half-Life	too short	
	1457.56			3.571E+20	2.397E-01	Half-Life	too short	
CS-136	1678.03			-1.817E+17	2.397E-01	Half-Life	too short	
	1791.20			-1.765E+18	2.397E-01	Half-Life	too short	
	153.25			7.667E-01	1.733E+00	2.835E+00	2.849E-01	0.270
	176.60			-1.174E-01	1.047E+00	1.669E+00	1.533E-01	-0.070

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	273.65			-1.169E+00	1.175E+00	1.583E+00	1.548E-01	-0.738
	340.55			9.574E-01	3.736E-01	6.000E-01	5.698E-02	1.596
	818.51			3.362E-02	1.266E-01	2.143E-01	2.450E-02	0.157
	1048.07	*		-1.858E-01	2.074E-01	3.070E-01	3.477E-02	-0.605
	1235.36			3.303E-01	1.206E+00	1.984E+00	2.440E-01	0.166
CE-139	165.86	*		4.477E-02	4.284E-02	7.139E-02	5.818E-03	0.627
BA-140	162.66			-2.133E+00	1.745E+00	2.595E+00	2.286E-01	-0.822
	304.85			-2.185E-01	2.888E+00	4.134E+00	1.217E+00	-0.053
	423.72			1.121E+00	4.071E+00	6.732E+00	2.223E+00	0.167
	537.26	*		5.396E-02	5.488E-01	8.921E-01	3.034E-01	0.060
LA-140	328.76	+		1.095E+00	7.891E-01	1.094E+00	1.057E-01	1.000
	487.02			-1.261E-01	2.627E-01	4.114E-01	3.949E-02	-0.307
	815.77			-1.714E-01	5.605E-01	9.000E-01	1.093E-01	-0.190
	1596.21	*		3.542E-02	1.655E-01	2.806E-01	2.839E-02	0.126
CE-141	145.44	*		1.046E-01	1.005E-01	1.679E-01	1.452E-02	0.623
CE-143	57.36			-1.233E-02	1.005E-01	Half-Life	too short	
	293.27	*		7.406E-02	1.005E-01	Half-Life	too short	
	664.57			5.200E-01	1.005E-01	Half-Life	too short	
	721.93			7.035E-02	1.005E-01	Half-Life	too short	
CE-144	80.12			-1.874E+00	5.292E+00	5.328E+00	4.653E-01	-0.352
	133.52	*		-1.724E-01	2.815E-01	4.421E-01	6.783E-02	-0.390
PM-144	476.78			2.385E-02	8.878E-02	1.467E-01	1.440E-02	0.163
	618.01			9.752E-04	4.008E-02	6.739E-02	5.929E-03	0.014
	696.49	*		1.948E-02	4.278E-02	7.358E-02	6.525E-03	0.265
PR-144	696.51	*		8.029E-01	3.263E+00	5.535E+00	4.905E-01	0.145
	1489.16			-1.046E+01	1.595E+01	2.391E+01	2.530E+00	-0.437
PM-146	453.88	*		1.148E-02	5.732E-02	9.207E-02	1.012E-02	0.125
	633.25			2.236E-01	1.686E+00	2.850E+00	1.088E+00	0.078
	735.93			-2.524E-02	1.987E-01	2.728E-01	7.736E-02	-0.093
	747.24			4.326E-02	1.223E-01	2.083E-01	3.201E-02	0.208
ND-147	91.11	+		2.301E+00	8.543E-01	1.226E+00	1.216E-01	1.877
	319.41			3.654E+00	7.430E+00	1.258E+01	1.157E+00	0.290
	531.02	*		6.626E-01	1.223E+00	2.045E+00	3.103E-01	0.324
PM-149	285.90	*		6.207E-04	1.223E+00	Half-Life	too short	
EU-152	121.78			8.112E-02	9.904E-02	1.651E-01	1.693E-02	0.491
	244.70			4.665E-01	4.452E-01	6.883E-01	6.126E-02	0.678
	344.28	*		-1.518E-01	1.966E-01	2.000E-01	1.930E-02	-0.759
	778.90			7.691E-02	3.206E-01	5.185E-01	5.470E-02	0.148
	964.08			8.151E-01	3.899E-01	6.601E-01	8.199E-02	1.235
	1085.87			-2.247E-01	4.867E-01	7.549E-01	7.770E-02	-0.298
	1112.07			1.938E-01	4.191E-01	6.198E-01	6.035E-02	0.313
	1408.01	+		4.985E-01	2.511E-01	4.154E-01	4.498E-02	1.200
GD-153	69.67			-8.157E-01	2.740E+00	3.906E+00	3.172E-01	-0.209
	97.43	*		7.201E-02	1.249E-01	1.837E-01	1.650E-02	0.392
	103.18			5.551E-02	1.529E-01	2.522E-01	2.238E-02	0.220
EU-154	123.07			3.132E-02	6.999E-02	1.152E-01	1.342E-02	0.272
	723.31			-8.419E-02	2.370E-01	3.263E-01	3.328E-02	-0.258
	873.19			-1.748E-01	3.440E-01	5.389E-01	8.134E-02	-0.324
	996.26			-6.283E-01	5.189E-01	7.367E-01	1.423E-01	-0.853

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		8.057E-02	2.885E-01	4.821E-01	6.821E-02	0.167
		1274.44	*	-4.858E-02	1.557E-01	2.530E-01	3.146E-02	-0.192
		86.55		6.039E-01	1.641E-01	2.556E-01	2.398E-02	2.362
		105.31	*	1.070E-01	1.440E-01	2.402E-01	2.151E-02	0.446
TB-160	+	86.79		1.722E+00	4.676E-01	7.230E-01	6.740E-02	2.382
		197.04		6.394E-01	7.991E-01	1.367E+00	1.158E-01	0.468
		215.65		7.656E-02	1.064E+00	1.748E+00	1.513E-01	0.044
		298.57		2.021E-01	2.908E-01	3.032E-01	2.777E-02	0.667
		879.36	*	6.947E-02	1.749E-01	2.981E-01	3.822E-02	0.233
		962.29		1.120E+00	7.638E-01	1.273E+00	1.584E-01	0.879
		966.15		1.493E+00	3.949E-01	6.750E-01	8.363E-02	2.211
		1177.93		1.480E-02	5.163E-01	8.375E-01	7.025E-02	0.018
HO-166M		1271.85		-4.720E-01	9.796E-01	1.566E+00	1.555E-01	-0.301
		80.57		-2.238E-01	5.644E-01	5.660E-01	4.963E-02	-0.395
		184.41		1.434E-01	6.418E-02	9.653E-02	8.047E-03	1.485
		280.46		-5.328E-02	1.113E-01	1.810E-01	1.647E-02	-0.294
		410.95		3.595E-01	3.273E-01	5.655E-01	5.117E-02	0.636
		711.68	*	3.312E-02	7.312E-02	1.258E-01	1.152E-02	0.263
		752.31		1.449E-02	3.404E-01	5.673E-01	5.666E-02	0.026
		810.29		2.592E-03	6.982E-02	1.159E-01	1.302E-02	0.022
TA-182		67.75		2.865E-02	1.941E-01	2.631E-01	2.119E-02	0.109
		100.11		8.877E-02	2.644E-01	4.046E-01	3.608E-02	0.219
		152.43		1.478E-01	4.868E-01	7.927E-01	6.631E-02	0.186
		222.11		3.204E-01	4.630E-01	7.977E-01	6.952E-02	0.402
	+	1121.30		7.893E-01	3.617E-01	4.678E-01	4.461E-02	1.687
		1189.05		1.938E-01	4.109E-01	6.916E-01	5.924E-02	0.280
		1221.41	*	3.544E-02	2.735E-01	4.463E-01	4.056E-02	0.079
		1231.02		-4.842E-01	6.697E-01	1.012E+00	9.359E-02	-0.478
IR-192	+	295.96		1.598E+00	2.754E-01	4.103E-01	3.781E-02	3.894
		308.46		-7.363E-02	1.326E-01	2.132E-01	1.966E-02	-0.345
		316.51	*	-1.037E-02	5.073E-02	8.316E-02	7.657E-03	-0.125
		468.07		2.562E-02	1.137E-01	1.629E-01	1.581E-02	0.157
HG-203		70.83		3.511E-01	2.293E+00	3.330E+00	5.269E-01	0.105
		72.87		3.834E+00	1.518E+00	2.225E+00	3.413E-01	1.724
		279.20	*	3.499E-02	5.660E-02	9.665E-02	8.996E-03	0.362
		72.81		7.211E-01	2.926E-01	4.524E-01	3.737E-02	1.594
BI-207	+	74.97		9.070E-01	2.041E-01	3.318E-01	2.780E-02	2.734
		569.70		1.952E-02	3.721E-02	6.226E-02	5.505E-03	0.314
		1063.66	*	-2.741E-02	6.845E-02	1.058E-01	1.136E-02	-0.259
		1770.23		1.776E-01	5.040E-01	7.810E-01	7.060E-02	0.227
PB-210		46.54	*	-6.549E-01	4.832E+00	7.895E+00	7.534E-01	-0.083
PB-211		404.85	*	-3.996E-01	1.011E+00	1.589E+00	7.703E-01	-0.251
		427.09		1.286E+00	2.124E+00	3.454E+00	1.601E+00	0.372
		832.01		1.238E-01	1.219E+00	2.028E+00	1.064E+00	0.061
		727.33	*	3.410E+00	1.213E+00	1.400E+00	1.829E-01	2.436
		785.37		1.615E-01	3.600E+00	5.990E+00	6.403E-01	0.027
RN-219	+	1620.50		4.647E+00	3.005E+00	5.871E+00	5.864E-01	0.792
		271.23		8.195E-01	3.864E-01	5.861E-01	6.230E-02	1.398
		401.81	*	3.890E-01	5.231E-01	8.885E-01	1.343E-01	0.438

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-1.760E-01	4.472E-01	4.485E-01	3.951E-02	-0.392
		83.79		2.770E-01	1.697E-01	2.839E-01	2.567E-02	0.976
		94.87		1.763E+00	7.009E-01	1.089E+00	9.870E-02	1.620
		144.24		6.315E-01	9.191E-01	1.503E+00	1.431E-01	0.420
		154.21		4.971E-01	5.190E-01	8.637E-01	7.934E-02	0.575
	+	269.46		6.368E-01	2.984E-01	4.492E-01	4.140E-02	1.418
AC-227		323.87	*	-4.612E-01	9.893E-01	1.367E+00	2.409E-01	-0.337
	+	338.28		6.776E+00	2.524E+00	2.913E+00	3.636E-01	2.326
		79.69		8.573E-02	2.613E+00	2.714E+00	4.689E-01	0.032
		235.96		1.457E+00	2.961E-01	4.610E-01	4.850E-02	3.161
		256.23	*	1.984E-01	3.245E-01	5.550E-01	6.832E-02	0.357
	+	299.98		2.685E+00	1.589E+00	2.183E+00	2.855E-01	1.230
TH-227		304.50		2.655E-03	2.278E+00	3.280E+00	5.518E-01	0.001
		334.37		8.203E-01	3.757E+00	3.709E+00	5.900E-01	0.221
		79.80		-2.259E-01	3.437E+00	3.543E+00	7.728E-01	-0.064
		235.96		1.457E+00	2.919E-01	4.610E-01	4.585E-02	3.161
		256.23	*	1.984E-01	3.247E-01	5.550E-01	7.679E-02	0.357
	+	299.98		2.685E+00	1.589E+00	2.183E+00	2.855E-01	1.230
TH-229		304.50		2.655E-03	2.278E+00	3.280E+00	5.518E-01	0.001
		334.37		8.203E-01	3.757E+00	3.709E+00	5.900E-01	0.221
		85.43		1.171E+00	3.161E-01	5.317E-01	4.887E-02	2.202
	+	88.47		7.654E-01	2.078E-01	3.355E-01	3.157E-02	2.281
		193.51	*	-3.667E-01	7.393E-01	1.153E+00	9.724E-02	-0.318
		210.85		2.373E+00	1.357E+00	2.140E+00	1.842E-01	1.109
PA-231		283.69	*	2.238E-01	1.894E+00	3.167E+00	4.714E-01	0.071
	+	301.36		1.725E+00	1.019E+00	1.373E+00	1.723E-01	1.256
TH-231		81.07		-1.760E-01	4.472E-01	4.485E-01	3.951E-02	-0.392
		83.79		2.770E-01	1.697E-01	2.839E-01	2.567E-02	0.976
		94.87		1.763E+00	7.009E-01	1.089E+00	9.870E-02	1.620
		144.24		6.315E-01	9.191E-01	1.503E+00	1.431E-01	0.420
		154.21		4.971E-01	5.190E-01	8.637E-01	7.934E-02	0.575
	+	269.46		6.368E-01	2.984E-01	4.492E-01	4.140E-02	1.418
PA-233		323.87	*	-4.612E-01	9.893E-01	1.367E+00	2.409E-01	-0.337
	+	338.28		6.776E+00	2.524E+00	2.913E+00	3.636E-01	2.326
	+	300.13		1.215E+00	7.251E-01	9.841E-01	1.491E-01	1.235
		311.90	*	3.190E-02	8.448E-02	1.425E-01	1.342E-02	0.224
		340.48		3.197E+00	1.280E+00	1.726E+00	4.190E-01	1.852
		94.67		8.309E-01	2.742E-01	4.132E-01	5.257E-02	2.011
PA-234		98.44		3.637E-02	1.357E-01	1.943E-01	1.085E-01	0.187
		111.00		8.661E-02	2.482E-01	4.083E-01	5.006E-02	0.212
		131.20		9.378E-02	1.486E-01	2.455E-01	2.154E-02	0.382
		569.50		1.496E-01	3.284E-01	5.469E-01	4.837E-02	0.273
		733.00		-3.963E-01	5.238E-01	6.710E-01	1.516E-01	-0.591
		880.51		-2.489E-02	3.235E-01	5.288E-01	6.794E-02	-0.047
		883.24		-1.432E-01	3.484E-01	5.284E-01	3.588E-01	-0.271
		926.50		-2.308E-01	2.415E-01	3.269E-01	8.842E-02	-0.706
		946.00	*	-1.254E-01	3.669E-01	5.810E-01	1.216E-01	-0.216
		949.00		3.825E-01	5.301E-01	9.228E-01	1.166E-01	0.415
PA-234M		766.42		2.895E+01	2.106E+01	2.791E+01	1.425E+01	1.037

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		6.226E+00	6.617E+00	1.145E+01	1.473E+00	0.544
	99.53			1.584E-01	2.420E-01	3.566E-01	3.185E-02	0.444
	103.37			1.023E-01	1.355E-01	2.263E-01	2.007E-02	0.452
	106.12			8.758E-02	1.130E-01	1.887E-01	1.671E-02	0.464
	117.23	*		-7.978E-01	5.528E-01	8.386E-01	7.490E-02	-0.951
	228.18			9.127E-02	2.833E-01	4.810E-01	4.218E-02	0.190
AM-241	277.60			2.258E-01	2.292E-01	3.964E-01	3.604E-02	0.570
	59.54	*		-1.020E-02	2.291E-01	3.317E-01	2.863E-02	-0.031
CM-247	278.00			5.400E-01	9.758E-01	1.662E+00	1.511E-01	0.325
	287.50			1.286E+00	1.645E+00	2.761E+00	2.520E-01	0.466
CF-249	402.40	*		4.558E-02	4.780E-02	8.232E-02	7.431E-03	0.554
	252.80			1.292E-01	1.198E+00	2.011E+00	1.801E-01	0.064
	333.37			8.539E-02	3.952E-01	3.902E-01	3.585E-02	0.219
CF-251	388.16	*		-1.854E-02	5.358E-02	8.619E-02	7.770E-03	-0.215
	177.52	*		-3.215E-02	1.805E-01	2.868E-01	2.370E-02	-0.112
	227.38			-4.941E-02	4.641E-01	7.752E-01	6.792E-02	-0.064
	285.41			8.436E-01	2.831E+00	4.772E+00	4.353E-01	0.177

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]G248513010
* Acquisition date   : 20-MAR-2010 11:27:33 Detector SN#      :
* Detector ID        : GAM29 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 02:00:55.11 Half life ratio : 8.000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248513010 Analyst initials: MXR1
* Batch Number       : 961097 Sample Quantity : 1.0728E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 23-FEB-2010 10:06:45 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	2.812E+01	3.495E+00	6.092E-01	0.000E+00
CD-109	5.140E+00	1.367E+00	1.647E+00	0.000E+00
SN-126	4.965E-01	1.321E-01	1.598E-01	0.000E+00
BA-137M	7.242E-01	1.129E-01	7.355E-02	0.000E+00
CS-137	7.651E-01	1.193E-01	7.770E-02	0.000E+00
TL-208	5.151E-01	9.922E-02	6.956E-02	0.000E+00
BI-211	5.551E+00	7.682E-01	3.962E-01	0.000E+00
PB-212	1.733E+00	2.145E-01	1.198E-01	0.000E+00
BI-214	1.669E+00	2.477E-01	1.526E-01	0.000E+00
PB-214	2.015E+00	2.993E-01	1.441E-01	0.000E+00
RA-224	6.588E+00	1.671E+00	1.283E+00	0.000E+00
RA-226	1.669E+00	2.477E-01	1.526E-01	0.000E+00
AC-228	1.812E+00	5.027E-01	3.055E-01	0.000E+00
RA-228	1.812E+00	5.027E-01	3.055E-01	0.000E+00
TH-228	1.733E+00	2.145E-01	1.198E-01	0.000E+00
TH-232	1.812E+00	5.027E-01	3.055E-01	0.000E+00
TH-234	2.394E+00	2.025E+00	2.898E+00	0.000E+00
U-235	2.186E-01	2.728E-01	4.573E-01	0.000E+00
NP-237	1.481E+00	4.980E-01	4.822E-01	0.000E+00
U-238	2.394E+00	2.025E+00	2.898E+00	0.000E+00
ANH-511	1.275E-01	6.984E-02	5.909E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.435E-01	4.749E-01	8.022E-01	0.000E+00 NOT IDENT.
NA-22	-1.828E-02	5.396E-02	8.880E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.668E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-6.376E-03	5.009E-02	8.288E-02	0.000E+00 FAIL ABUN
V-48	-7.690E-02	1.254E-01	1.963E-01	0.000E+00 NOT IDENT.
CR-51	9.504E-02	5.994E-01	1.023E+00	0.000E+00 NOT IDENT.

MN-54	-2.842E-02	4.625E-02	7.375E-02	0.000E+00	NOT IDENT.
CO-56	-1.977E-02	4.948E-02	8.011E-02	0.000E+00	NOT IDENT.
CO-57	2.253E-02	3.460E-02	5.903E-02	0.000E+00	NOT IDENT.
CO-58	3.207E-03	4.808E-02	8.140E-02	0.000E+00	NOT IDENT.
FE-59	-1.234E-01	1.196E-01	1.752E-01	0.000E+00	NOT IDENT.
CO-60	1.888E-02	4.316E-02	7.654E-02	0.000E+00	NOT IDENT.
ZN-65	-8.350E-02	1.358E-01	1.760E-01	0.000E+00	NOT IDENT.
SE-75	-4.676E-02	6.648E-02	9.383E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	6.322E-02	1.059E-01	0.000E+00	NOT IDENT.
Y-88	5.269E-04	3.932E-02	6.520E-02	0.000E+00	NOT IDENT.
Y-91	2.867E+00	3.168E+01	5.233E+01	0.000E+00	NOT IDENT.
NB-94	-1.109E-02	4.226E-02	7.048E-02	0.000E+00	NOT IDENT.
NB-95	1.013E-01	6.728E-02	1.106E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.157E-01	3.557E-01	0.000E+00	NOT IDENT.
ZR-95	3.358E-02	9.417E-02	1.634E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.134E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.413E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.233E-02	6.051E-02	9.624E-02	0.000E+00	FAIL ABUN
RU-106	-1.278E-01	3.780E-01	6.307E-01	0.000E+00	NOT IDENT.
RU-106	-1.278E-01	3.778E-01	6.307E-01	0.000E+00	NOT IDENT.
AG-108M	-4.512E-03	3.664E-02	6.062E-02	0.000E+00	NOT IDENT.
AG-110M	4.041E-02	5.269E-02	8.282E-02	0.000E+00	NOT IDENT.
SN-113	3.399E-02	6.026E-02	1.040E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.698E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.020E-02	1.065E-01	1.765E-01	0.000E+00	NOT IDENT.
TE-123M	8.638E-04	3.842E-02	6.349E-02	0.000E+00	NOT IDENT.
SB-124	1.895E-03	9.683E-02	1.617E-01	0.000E+00	NOT IDENT.
SB-125	2.105E-02	1.203E-01	2.027E-01	0.000E+00	FAIL ABUN
TE-125M	-1.843E+01	1.439E+01	2.274E+01	0.000E+00	NOT IDENT.
I-126	6.372E-02	4.564E-01	6.800E-01	0.000E+00	NOT IDENT.
SB-126	3.484E-01	2.599E-01	4.375E-01	0.000E+00	NOT IDENT.
SB-127	-5.792E+00	6.951E+00	1.106E+01	0.000E+00	NOT IDENT.
I-131	1.791E-01	2.890E-01	5.020E-01	0.000E+00	NOT IDENT.
TE-132	1.637E+00	5.147E+00	8.948E+00	0.000E+00	NOT IDENT.
BA-133	3.194E-03	5.727E-02	8.398E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.095E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.838E-02	1.108E-01	0.000E+00	NOT IDENT.
CS-135	3.441E-01	2.349E-01	3.749E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.475E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.858E-01	2.032E-01	3.056E-01	0.000E+00	NOT IDENT.
CE-139	4.477E-02	4.199E-02	7.187E-02	0.000E+00	NOT IDENT.
BA-140	5.396E-02	5.378E-01	8.918E-01	0.000E+00	NOT IDENT.
LA-140	3.542E-02	1.622E-01	2.786E-01	0.000E+00	FAIL ABUN
CE-141	1.046E-01	9.851E-02	1.692E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.163E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.724E-01	2.759E-01	4.456E-01	0.000E+00	NOT IDENT.
PM-144	1.948E-02	4.193E-02	7.344E-02	0.000E+00	NOT IDENT.
PR-144	8.029E-01	3.197E+00	5.524E+00	0.000E+00	NOT IDENT.
PM-146	1.148E-02	5.618E-02	9.213E-02	0.000E+00	NOT IDENT.
ND-147	6.626E-01	1.199E+00	2.044E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.379E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.518E-01	1.926E-01	2.004E-01	0.000E+00	FAIL ABUN
GD-153	7.201E-02	1.224E-01	1.855E-01	0.000E+00	NOT IDENT.
EU-154	-4.858E-02	1.526E-01	2.516E-01	0.000E+00	NOT IDENT.
EU-155	1.070E-01	1.411E-01	2.425E-01	0.000E+00	FAIL ABUN
HB-160	6.947E-02	1.714E-01	2.971E-01	0.000E+00	FAIL ABUN
HO-166M	3.312E-02	7.166E-02	1.255E-01	0.000E+00	FAIL ABUN
TA-182	3.544E-02	2.680E-01	4.439E-01	0.000E+00	FAIL ABUN
IR-192	-1.037E-02	4.972E-02	8.339E-02	0.000E+00	FAIL ABUN
HG-203	3.499E-02	5.547E-02	9.700E-02	0.000E+00	NOT IDENT.
BI-207	-2.741E-02	6.708E-02	1.053E-01	0.000E+00	FAIL ABUN
PB-210	-6.549E-01	4.735E+00	8.008E+00	0.000E+00	NOT IDENT.
PB-211	-3.996E-01	9.907E-01	1.591E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.188E+00	1.397E+00	0.000E+00	FAIL ABUN
RN-219	3.890E-01	5.126E-01	8.897E-01	0.000E+00	FAIL ABUN
RA-223	-4.612E-01	9.695E-01	1.371E+00	0.000E+00	FAIL ABUN
AC-227	1.984E-01	3.180E-01	5.573E-01	0.000E+00	FAIL ABUN
TH-227	1.984E-01	3.182E-01	5.573E-01	0.000E+00	FAIL ABUN
TH-229	-3.667E-01	7.245E-01	1.160E+00	0.000E+00	FAIL ABUN
PA-231	2.238E-01	1.856E+00	3.178E+00	0.000E+00	FAIL ABUN
TH-231	-4.612E-01	9.695E-01	1.371E+00	0.000E+00	FAIL ABUN
PA-233	3.190E-02	8.279E-02	1.429E-01	0.000E+00	FAIL ABUN
PA-234	-1.254E-01	3.596E-01	5.788E-01	0.000E+00	NOT IDENT.
PA-234M	6.226E+00	6.485E+00	1.140E+01	0.000E+00	NOT IDENT.
NP-239	-7.978E-01	5.417E-01	8.460E-01	0.000E+00	NOT IDENT.
AM-241	-1.020E-02	2.246E-01	3.360E-01	0.000E+00	NOT IDENT.
CM-247	4.558E-02	4.684E-02	8.243E-02	0.000E+00	NOT IDENT.
CF-249	-1.854E-02	5.251E-02	8.633E-02	0.000E+00	NOT IDENT.

CF-251 -3.215E-02 1.769E-01 2.886E-01 0.000E+00 NOT IDENT.


```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513010.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:27:33
Sample ID        : G248513010 Sample quantity : 1.07280E+02 GRAM
Detector name    : GAM29 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:55.11 0.8%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 961097 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	1460.82	1037	10.66*	1.210E+00	2.812E+01	2.812E+01	12.68
CD-109	88.03	309	3.70*	5.879E+00	4.965E+00	5.140E+00	27.15
SN-126	64.28	86	9.60	3.404E+00	9.227E-01	9.227E-01	85.70
	86.94	309	8.90	5.879E+00	2.064E+00	2.064E+00	48.72
	87.57	309	37.00*	5.879E+00	4.965E-01	4.965E-01	27.15
BA-137M	661.66	444	89.90*	2.387E+00	7.232E-01	7.242E-01	15.91
CS-137	661.66	444	85.10*	2.387E+00	7.640E-01	7.651E-01	15.92
TL-208	277.37	-----	6.60	4.524E+00	-----	Line Not Found	-----
	583.19	331	85.00*	2.646E+00	5.151E-01	5.151E-01	19.65
	860.56	74	12.50	1.901E+00	1.091E+00	1.091E+00	45.37
BI-211	72.87	-----	1.23	4.632E+00	-----	Line Not Found	-----
	351.06	789	12.92*	3.848E+00	5.551E+00	5.551E+00	14.12
PB-212	74.82	448	10.28	4.853E+00	3.146E+00	3.146E+00	24.52
	77.11	701	17.10	5.078E+00	2.824E+00	2.824E+00	14.60
	238.63	1078	43.60*	4.991E+00	1.733E+00	1.733E+00	12.63
	300.09	99	3.30	4.290E+00	2.441E+00	2.441E+00	58.77
BI-214	609.32	554	45.49*	2.555E+00	1.669E+00	1.669E+00	15.14
	1120.29	103	14.92	1.502E+00	1.606E+00	1.606E+00	46.31
	1764.49	84	15.30	1.081E+00	1.777E+00	1.777E+00	30.96
PB-214	74.82	448	5.80	4.853E+00	5.575E+00	5.576E+00	23.86
	77.11	701	9.70	5.078E+00	4.978E+00	4.978E+00	16.77
	242.00	382	7.25	4.952E+00	3.725E+00	3.726E+00	26.53
	295.22	459	18.42	4.341E+00	2.007E+00	2.007E+00	18.40
	351.93	789	35.60*	3.848E+00	2.015E+00	2.015E+00	15.16
RA-224	240.99	382	4.10*	4.952E+00	6.588E+00	6.588E+00	25.89
RA-226	609.32	554	45.49*	2.555E+00	1.669E+00	1.669E+00	15.14
	1120.29	103	14.92	1.502E+00	1.606E+00	1.606E+00	46.31
	1764.49	84	15.30	1.081E+00	1.777E+00	1.777E+00	30.96
AC-228	338.32	218	11.27	3.958E+00	1.708E+00	1.708E+00	54.61
	911.20	241	25.80*	1.807E+00	1.812E+00	1.812E+00	28.31
	968.97	144	15.80	1.710E+00	1.860E+00	1.860E+00	36.76
RA-228	338.32	218	11.27	3.958E+00	1.708E+00	1.708E+00	54.61

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	241	25.80*	1.807E+00	1.812E+00	1.812E+00	28.31
	968.97	144	15.80	1.710E+00	1.860E+00	1.860E+00	36.76
	74.82	448	10.28	4.853E+00	3.146E+00	3.146E+00	22.53
	77.11	701	17.10	5.078E+00	2.824E+00	2.824E+00	14.60
	238.63	1078	43.60*	4.991E+00	1.733E+00	1.733E+00	12.63
TH-232	300.09	99	3.30	4.290E+00	2.441E+00	2.441E+00	84.20
	338.32	218	11.27	3.958E+00	1.708E+00	1.708E+00	36.28
	911.20	241	25.80*	1.807E+00	1.812E+00	1.812E+00	28.31
	968.97	144	15.80	1.710E+00	1.860E+00	1.860E+00	36.76
TH-234	63.29	86	3.70*	3.404E+00	2.394E+00	2.394E+00	86.32
	92.59	302	4.23	6.176E+00	4.040E+00	4.040E+00	37.03
	89.96	259	3.47	6.039E+00	4.326E+00	4.326E+00	43.56
U-235	93.35	302	5.60	6.176E+00	3.051E+00	3.051E+00	37.64
	143.76	-----	10.96*	6.480E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.173E+00	-----	Line Not Found	-----
	185.72	171	57.20	5.790E+00	1.804E-01	1.804E-01	44.77
	205.31	-----	5.01	5.473E+00	-----	Line Not Found	-----
NP-237	86.48	309	12.40*	5.879E+00	1.481E+00	1.481E+00	34.30
	95.86	-----	2.68	6.306E+00	-----	Line Not Found	-----
U-238	63.29	86	3.70*	3.404E+00	2.394E+00	2.394E+00	86.32
	92.59	302	4.23	6.176E+00	4.040E+00	4.040E+00	30.95
ANH-511	511.00	107	100.00*	2.934E+00	1.275E-01	1.275E-01	55.90

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 7
Number of lines tentatively identified by NID 28 80.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.812E+01	2.812E+01	0.357E+01	12.68	
CD-109	461.40D	1.04	4.965E+00	5.140E+00	1.395E+00	27.15	
SN-126	2.30E+05Y	1.00	4.965E-01	4.965E-01	1.348E-01	27.15	
BA-137M	30.08Y	1.00	7.232E-01	7.242E-01	1.152E-01	15.91	
CS-137	30.08Y	1.00	7.640E-01	7.651E-01	1.218E-01	15.92	
TL-208	1.41E+10Y	1.00	5.151E-01	5.151E-01	1.012E-01	19.65	
BI-211	7.04E+08Y	1.00	5.551E+00	5.551E+00	0.784E+00	14.12	
PB-212	1.41E+10Y	1.00	1.733E+00	1.733E+00	0.219E+00	12.63	
BI-214	1600.00Y	1.00	1.669E+00	1.669E+00	0.253E+00	15.14	
PB-214	1600.00Y	1.00	2.015E+00	2.015E+00	0.305E+00	15.16	
RA-224	1.41E+10Y	1.00	6.588E+00	6.588E+00	1.705E+00	25.89	
RA-226	1600.00Y	1.00	1.669E+00	1.669E+00	0.253E+00	15.14	
AC-228	1.41E+10Y	1.00	1.812E+00	1.812E+00	0.513E+00	28.31	
RA-228	1.41E+10Y	1.00	1.812E+00	1.812E+00	0.513E+00	28.31	
TH-228	1.41E+10Y	1.00	1.733E+00	1.733E+00	0.219E+00	12.63	
TH-232	1.41E+10Y	1.00	1.812E+00	1.812E+00	0.513E+00	28.31	
TH-234	4.47E+09Y	1.00	2.394E+00	2.394E+00	2.067E+00	86.32	
U-235	7.04E+08Y	1.00	1.804E-01	1.804E-01	0.808E-01	44.77	K
NP-237	2.14E+06Y	1.00	1.481E+00	1.481E+00	0.508E+00	34.30	
U-238	4.47E+09Y	1.00	2.394E+00	2.394E+00	2.067E+00	86.32	
ANH-511	1.00E+09Y	1.00	1.275E-01	1.275E-01	0.713E-01	55.90	

Total Activity : 6.855E+01 6.873E+01

Grand Total Activity : 6.855E+01 6.873E+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	209.18	93	303	1.10	418.24	414	9	1.29E-02	70.7	5.41E+00	
0	269.99	117	185	1.32	539.74	536	9	1.62E-02	45.9	4.61E+00	T
0	327.82	73	177	1.21	655.28	652	10	1.02E-02	71.4	4.04E+00	T
0	462.70	76	147	1.02	924.82	917	14	1.06E-02	71.4	3.16E+00	T
0	727.79	143	63	2.43	1454.72	1447	21	1.99E-02	33.1	2.20E+00	T
2	768.09	63	76	2.01	1535.28	1526	21	8.80E-03	59.0	2.10E+00	
2	771.92	39	33	1.73	1542.94	1526	21	5.37E-03	65.6	2.09E+00	
0	934.90	34	52	1.83	1868.85	1863	10	4.70E-03	89.7	1.77E+00	
0	1377.99	37	22	1.97	2755.25	2749	11	5.15E-03	59.0	1.26E+00	
0	1408.00	37	10	0.86	2815.31	2808	14	5.17E-03	49.2	1.24E+00	T
0	1729.86	26	6	1.80	3459.56	3454	11	3.60E-03	57.1	1.09E+00	
0	1846.79	21	3	1.77	3693.69	3688	11	2.96E-03	52.7	1.06E+00	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513010.CNF;1
* Acquisition date   : 20-MAR-2010 11:27:33  Detector SN#      :
* Detector ID        : GAM29                  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 02:00:55.11          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513010            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.07280E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-FEB-2010 10:06:45.9MS 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	2.812E+01	3.566E+00	6.131E-01	6.668E-02	45.865
CD-109	5.140E+00	1.395E+00	1.630E+00	1.539E-01	3.153
SN-126	4.965E-01	1.348E-01	1.582E-01	1.487E-02	3.139
BA-137M	7.242E-01	1.152E-01	7.367E-02	6.039E-03	9.831
CS-137	7.651E-01	1.218E-01	7.782E-02	6.393E-03	9.831
TL-208	5.151E-01	1.012E-01	6.962E-02	6.523E-03	7.399
BI-211	5.551E+00	7.838E-01	3.953E-01	3.785E-02	14.042
PB-212	1.733E+00	2.189E-01	1.192E-01	1.189E-02	14.539
BI-214	1.669E+00	2.527E-01	1.528E-01	1.543E-02	10.920
PB-214	2.015E+00	3.054E-01	1.438E-01	1.588E-02	14.015
RA-224	6.588E+00	1.705E+00	1.277E+00	1.133E-01	5.159
RA-226	1.669E+00	2.527E-01	1.528E-01	1.543E-02	10.920
AC-228	1.812E+00	5.129E-01	3.066E-01	4.670E-02	5.910
RA-228	1.812E+00	5.129E-01	3.066E-01	4.670E-02	5.910
TH-228	1.733E+00	2.189E-01	1.192E-01	1.189E-02	14.539
TH-232	1.812E+00	5.129E-01	3.066E-01	4.670E-02	5.910
TH-234	2.394E+00	2.067E+00	2.863E+00	5.172E-01	0.836
U-235	1.804E-01	8.079E-02	4.539E-01	7.670E-02	0.398

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.481E+00	5.082E-01	4.771E-01	1.094E-01	3.105
U-238	2.394E+00	2.067E+00	2.863E+00	5.172E-01	0.836
ANH-511	1.275E-01	7.127E-02	5.909E-02	5.349E-03	2.158

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.435E-01		4.846E-01	8.019E-01	7.807E-02	0.179
NA-22	-1.828E-02		5.507E-02	8.930E-02	8.914E-03	-0.205
NA-24	3.279E+03		2.381E+03	Half-Life too short		
SC-46	-6.376E-03		5.111E-02	8.317E-02	1.086E-02	-0.077
V-48	-7.690E-02		1.279E-01	1.971E-01	2.391E-02	-0.390
CR-51	9.504E-02		6.116E-01	1.020E+00	9.806E-02	0.093
MN-54	-2.842E-02		4.719E-02	7.397E-02	8.718E-03	-0.384
CO-56	-1.977E-02		5.049E-02	8.036E-02	9.690E-03	-0.246
CO-57	2.253E-02		3.530E-02	5.853E-02	5.288E-03	0.385
CO-58	3.207E-03		4.906E-02	8.164E-02	9.193E-03	0.039
FE-59	-1.234E-01		1.221E-01	1.760E-01	1.869E-02	-0.701
CO-60	1.888E-02		4.404E-02	7.699E-02	8.444E-03	0.245
ZN-65	-8.350E-02		1.386E-01	1.768E-01	1.710E-02	-0.472
SE-75	-4.676E-02		6.783E-02	9.347E-02	8.475E-03	-0.500
SR-85	1.580E-01		6.451E-02	1.059E-01	9.578E-03	1.493
Y-88	5.269E-04		4.012E-02	6.571E-02	5.619E-03	0.008
Y-91	2.867E+00		3.232E+01	5.261E+01	4.639E+00	0.055
NB-94	-1.109E-02		4.312E-02	7.062E-02	6.344E-03	-0.157
NB-95	1.013E-01		6.865E-02	1.109E-01	1.139E-02	0.913
NB-95M	6.943E-01		2.201E-01	3.540E-01	3.565E-02	1.961
ZR-95	3.358E-02		9.609E-02	1.638E-01	1.779E-02	0.205
MO-99	-2.261E-06		5.787E-05	Half-Life too short		
TC-99M	-7.590E+19		7.208E+19	Half-Life too short		
RU-103	-1.233E-02		6.175E-02	9.623E-02	1.372E-02	-0.128
RH-106	-1.278E-01		3.857E-01	6.315E-01	8.332E-02	-0.202
RU-106	-1.278E-01		3.855E-01	6.315E-01	5.383E-02	-0.202
AG-108M	-4.512E-03		3.738E-02	6.056E-02	5.666E-03	-0.075
AG-110M	4.041E-02		5.377E-02	8.295E-02	7.053E-03	0.487
SN-113	3.399E-02		6.149E-02	1.039E-01	9.608E-03	0.327
CD-115	-7.625E-05		8.662E-05	Half-Life too short		
SN-117M	1.020E-02		1.087E-01	1.753E-01	1.449E-02	0.058
TE-123M	8.638E-04		3.920E-02	6.305E-02	5.241E-03	0.014
SB-124	1.895E-03		9.880E-02	1.629E-01	1.613E-02	0.012
SB-125	2.105E-02		1.227E-01	2.025E-01	1.871E-02	0.104
TE-125M	-1.843E+01		1.469E+01	2.254E+01	2.410E+00	-0.818
I-126	6.372E-02		4.657E-01	6.812E-01	5.643E-02	0.094
SB-126	3.484E-01		2.652E-01	4.384E-01	4.095E-02	0.795
SB-127	-5.792E+00		7.093E+00	1.108E+01	1.549E+00	-0.523
I-131	1.791E-01		2.949E-01	5.010E-01	4.823E-02	0.358
TE-132	1.637E+00		5.252E+00	8.905E+00	1.578E+00	0.184

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	3.194E-03		5.843E-02	8.381E-02	1.116E-02	0.038
I-133	1.773E+00		2.089E+00	Half-Life too short		
CS-134	1.312E-01		5.957E-02	1.111E-01	1.219E-02	1.180
CS-135	3.441E-01		2.397E-01	3.734E-01	3.860E-02	0.921
I-135	-2.794E+18		1.773E+18	Half-Life too short		
CS-136	-1.858E-01		2.074E-01	3.070E-01	3.477E-02	-0.605
CE-139	4.477E-02		4.284E-02	7.139E-02	5.818E-03	0.627
BA-140	5.396E-02		5.488E-01	8.921E-01	3.034E-01	0.060
LA-140	3.542E-02		1.655E-01	2.806E-01	2.839E-02	0.126
CE-141	1.046E-01		1.005E-01	1.679E-01	1.452E-02	0.623
CE-143	7.406E-02		1.104E-02	Half-Life too short		
CE-144	-1.724E-01		2.815E-01	4.421E-01	6.783E-02	-0.390
PM-144	1.948E-02		4.278E-02	7.358E-02	6.525E-03	0.265
PR-144	8.029E-01		3.263E+00	5.535E+00	4.905E-01	0.145
PM-146	1.148E-02		5.732E-02	9.207E-02	1.012E-02	0.125
ND-147	6.626E-01		1.223E+00	2.045E+00	3.103E-01	0.324
PM-149	6.207E-04		7.037E-04	Half-Life too short		
EU-152	-1.518E-01		1.966E-01	2.000E-01	1.930E-02	-0.759
GD-153	7.201E-02		1.249E-01	1.837E-01	1.650E-02	0.392
EU-154	-4.858E-02		1.557E-01	2.530E-01	3.146E-02	-0.192
EU-155	1.070E-01		1.440E-01	2.402E-01	2.151E-02	0.446
TB-160	6.947E-02		1.749E-01	2.981E-01	3.822E-02	0.233
HO-166M	3.312E-02		7.312E-02	1.258E-01	1.152E-02	0.263
TA-182	3.544E-02		2.735E-01	4.463E-01	4.056E-02	0.079
IR-192	-1.037E-02		5.073E-02	8.316E-02	7.657E-03	-0.125
HG-203	3.499E-02		5.660E-02	9.665E-02	8.996E-03	0.362
BI-207	-2.741E-02		6.845E-02	1.058E-01	1.136E-02	-0.259
PB-210	-6.549E-01		4.832E+00	7.895E+00	7.534E-01	-0.083
PB-211	-3.996E-01		1.011E+00	1.589E+00	7.703E-01	-0.251
BI-212	3.410E+00	+	1.213E+00	1.400E+00	1.829E-01	2.436
RN-219	3.890E-01		5.231E-01	8.885E-01	1.343E-01	0.438
RA-223	-4.612E-01		9.893E-01	1.367E+00	2.409E-01	-0.337
AC-227	1.984E-01		3.245E-01	5.550E-01	6.832E-02	0.357
TH-227	1.984E-01		3.247E-01	5.550E-01	7.679E-02	0.357
TH-229	-3.667E-01		7.393E-01	1.153E+00	9.724E-02	-0.318
PA-231	2.238E-01		1.894E+00	3.167E+00	4.714E-01	0.071
TH-231	-4.612E-01		9.893E-01	1.367E+00	2.409E-01	-0.337
PA-233	3.190E-02		8.448E-02	1.425E-01	1.342E-02	0.224
PA-234	-1.254E-01		3.669E-01	5.810E-01	1.216E-01	-0.216
PA-234M	6.226E+00		6.617E+00	1.145E+01	1.473E+00	0.544
NP-239	-7.978E-01		5.528E-01	8.386E-01	7.490E-02	-0.951
AM-241	-1.020E-02		2.291E-01	3.317E-01	2.863E-02	-0.031
CM-247	4.558E-02		4.780E-02	8.232E-02	7.431E-03	0.554
CF-249	-1.854E-02		5.358E-02	8.619E-02	7.770E-03	-0.215
CF-251	-3.215E-02		1.805E-01	2.868E-01	2.370E-02	-0.112

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248513010          *
* Acquisition date   : 20-MAR-2010 11:27:33 Detector SN#      :              *
* Detector ID        : GAM29                      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 02:00:55.11             Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513010             Analyst initials: MXR1         *
* Batch Number       : 961097                 Sample Quantity : 1.0728E+02 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-FEB-2010 10:06:45 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	2.812E+01	3.495E+00	3.048E-01	1.783E+00
CD-109	5.140E+00	1.367E+00	8.240E-01	6.977E-01
SN-126	4.965E-01	1.321E-01	7.995E-02	6.740E-02
BA-137M	7.242E-01	1.129E-01	3.680E-02	5.760E-02
CS-137	7.651E-01	1.193E-01	3.887E-02	6.089E-02
TL-208	5.151E-01	9.922E-02	3.480E-02	5.062E-02
BI-211	5.551E+00	7.682E-01	1.982E-01	3.919E-01
PB-212	1.733E+00	2.145E-01	5.992E-02	1.094E-01
BI-214	1.669E+00	2.477E-01	7.637E-02	1.264E-01
PB-214	2.015E+00	2.993E-01	7.208E-02	1.527E-01
RA-224	6.588E+00	1.671E+00	6.416E-01	8.527E-01
RA-226	1.669E+00	2.477E-01	7.637E-02	1.264E-01
AC-228	1.812E+00	5.027E-01	1.528E-01	2.565E-01
RA-228	1.812E+00	5.027E-01	1.528E-01	2.565E-01
TH-228	1.733E+00	2.145E-01	5.992E-02	1.094E-01
TH-232	1.812E+00	5.027E-01	1.528E-01	2.565E-01
TH-234	2.394E+00	2.025E+00	1.450E+00	1.033E+00
U-235	2.186E-01	2.728E-01	2.288E-01	1.392E-01
NP-237	1.481E+00	4.980E-01	2.412E-01	2.541E-01
U-238	2.394E+00	2.025E+00	1.450E+00	1.033E+00
ANH-511	1.275E-01	6.984E-02	2.956E-02	3.564E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.435E-01	4.749E-01	4.013E-01	2.423E-01 NOT IDENT.
NA-22	-1.828E-02	5.396E-02	4.443E-02	2.753E-02 NOT IDENT.
NA-24	3.279E+09	4.668E+09	0.000E+00	2.381E+09 SHORT HLIF
SC-46	-6.376E-03	5.009E-02	4.147E-02	2.555E-02 FAIL ABUN
V-48	-7.690E-02	1.254E-01	9.821E-02	6.396E-02 NOT IDENT.
CR-51	9.504E-02	5.994E-01	5.116E-01	3.058E-01 NOT IDENT.

MN-54	-2.842E-02	4.625E-02	3.690E-02	2.359E-02	NOT IDENT.
CO-56	-1.977E-02	4.948E-02	4.008E-02	2.525E-02	NOT IDENT.
CO-57	2.253E-02	3.460E-02	2.953E-02	1.765E-02	NOT IDENT.
CO-58	3.207E-03	4.808E-02	4.073E-02	2.453E-02	NOT IDENT.
FE-59	-1.234E-01	1.196E-01	8.765E-02	6.104E-02	NOT IDENT.
CO-60	1.888E-02	4.316E-02	3.829E-02	2.202E-02	NOT IDENT.
ZN-65	-8.350E-02	1.358E-01	8.804E-02	6.930E-02	NOT IDENT.
SE-75	-4.676E-02	6.648E-02	4.694E-02	3.392E-02	NOT IDENT.
SR-85	1.580E-01	6.322E-02	5.296E-02	3.225E-02	NOT IDENT.
Y-88	5.269E-04	3.932E-02	3.262E-02	2.006E-02	NOT IDENT.
Y-91	2.867E+00	3.168E+01	2.618E+01	1.616E+01	NOT IDENT.
NB-94	-1.109E-02	4.226E-02	3.526E-02	2.156E-02	NOT IDENT.
NB-95	1.013E-01	6.728E-02	5.536E-02	3.432E-02	NOT IDENT.
NB-95M	6.943E-01	2.157E-01	1.779E-01	1.100E-01	NOT IDENT.
ZR-95	3.358E-02	9.417E-02	8.173E-02	4.805E-02	NOT IDENT.
MO-99	-2.261E+00	1.134E+02	0.000E+00	5.787E+01	SHORT HLIF
TC-99M	-7.590E+25	1.413E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.233E-02	6.051E-02	4.815E-02	3.087E-02	FAIL ABUN
RH-106	-1.278E-01	3.780E-01	3.155E-01	1.929E-01	NOT IDENT.
RU-106	-1.278E-01	3.778E-01	3.155E-01	1.928E-01	NOT IDENT.
AG-108M	-4.512E-03	3.664E-02	3.033E-02	1.869E-02	NOT IDENT.
AG-110M	4.041E-02	5.269E-02	4.144E-02	2.688E-02	NOT IDENT.
SN-113	3.399E-02	6.026E-02	5.205E-02	3.074E-02	NOT IDENT.
CD-115	-7.625E+01	1.698E+02	0.000E+00	8.662E+01	SHORT HLIF
SN-117M	1.020E-02	1.065E-01	8.831E-02	5.433E-02	NOT IDENT.
TE-123M	8.638E-04	3.842E-02	3.176E-02	1.960E-02	NOT IDENT.
SB-124	1.895E-03	9.683E-02	8.089E-02	4.940E-02	NOT IDENT.
SB-125	2.105E-02	1.203E-01	1.014E-01	6.136E-02	FAIL ABUN
TE-125M	-1.843E+01	1.439E+01	1.138E+01	7.344E+00	NOT IDENT.
I-126	6.372E-02	4.564E-01	3.402E-01	2.329E-01	NOT IDENT.
SB-126	3.484E-01	2.599E-01	2.189E-01	1.326E-01	NOT IDENT.
SB-127	-5.792E+00	6.951E+00	5.532E+00	3.546E+00	NOT IDENT.
I-131	1.791E-01	2.890E-01	2.511E-01	1.475E-01	NOT IDENT.
TE-132	1.637E+00	5.147E+00	4.477E+00	2.626E+00	NOT IDENT.
BA-133	3.194E-03	5.727E-02	4.202E-02	2.922E-02	NOT IDENT.
I-133	1.773E+06	4.095E+06	0.000E+00	2.089E+06	SHORT HLIF
CS-134	1.312E-01	5.838E-02	5.545E-02	2.979E-02	NOT IDENT.
CS-135	3.441E-01	2.349E-01	1.875E-01	1.198E-01	NOT IDENT.
I-135	-2.794E+24	3.475E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.858E-01	2.032E-01	1.529E-01	1.037E-01	NOT IDENT.
CE-139	4.477E-02	4.199E-02	3.595E-02	2.142E-02	NOT IDENT.
BA-140	5.396E-02	5.378E-01	4.462E-01	2.744E-01	NOT IDENT.
LA-140	3.542E-02	1.622E-01	1.394E-01	8.274E-02	FAIL ABUN
CE-141	1.046E-01	9.851E-02	8.463E-02	5.026E-02	NOT IDENT.
CE-143	7.406E+04	2.163E+04	0.000E+00	1.104E+04	SHORT HLIF
CE-144	-1.724E-01	2.759E-01	2.229E-01	1.407E-01	NOT IDENT.
PM-144	1.948E-02	4.193E-02	3.674E-02	2.139E-02	NOT IDENT.
PR-144	8.029E-01	3.197E+00	2.764E+00	1.631E+00	NOT IDENT.
PM-146	1.148E-02	5.618E-02	4.609E-02	2.866E-02	NOT IDENT.
ND-147	6.626E-01	1.199E+00	1.023E+00	6.117E-01	FAIL ABUN
PM-149	6.207E+02	1.379E+03	0.000E+00	7.037E+02	SHORT HLIF
EU-152	-1.518E-01	1.926E-01	1.003E-01	9.829E-02	FAIL ABUN
GD-153	7.201E-02	1.224E-01	9.280E-02	6.247E-02	NOT IDENT.
EU-154	-4.858E-02	1.526E-01	1.259E-01	7.786E-02	NOT IDENT.
EU-155	1.070E-01	1.411E-01	1.213E-01	7.198E-02	FAIL ABUN
TB-160	6.947E-02	1.714E-01	1.487E-01	8.744E-02	FAIL ABUN
HO-166M	3.312E-02	7.166E-02	6.281E-02	3.656E-02	FAIL ABUN
TA-182	3.544E-02	2.680E-01	2.221E-01	1.368E-01	FAIL ABUN
IR-192	-1.037E-02	4.972E-02	4.172E-02	2.537E-02	FAIL ABUN
HG-203	3.499E-02	5.547E-02	4.853E-02	2.830E-02	NOT IDENT.
BI-207	-2.741E-02	6.708E-02	5.269E-02	3.422E-02	FAIL ABUN
PB-210	-6.549E-01	4.735E+00	4.006E+00	2.416E+00	NOT IDENT.
PB-211	-3.996E-01	9.907E-01	7.962E-01	5.055E-01	NOT IDENT.
BI-212	3.410E+00	1.188E+00	6.989E-01	6.063E-01	FAIL ABUN
RN-219	3.890E-01	5.126E-01	4.451E-01	2.615E-01	FAIL ABUN
RA-223	-4.612E-01	9.695E-01	6.858E-01	4.947E-01	FAIL ABUN
AC-227	1.984E-01	3.180E-01	2.788E-01	1.622E-01	FAIL ABUN
TH-227	1.984E-01	3.182E-01	2.788E-01	1.624E-01	FAIL ABUN
TH-229	-3.667E-01	7.245E-01	5.802E-01	3.696E-01	FAIL ABUN
PA-231	2.238E-01	1.856E+00	1.590E+00	9.470E-01	FAIL ABUN
TH-231	-4.612E-01	9.695E-01	6.858E-01	4.947E-01	FAIL ABUN
PA-233	3.190E-02	8.279E-02	7.151E-02	4.224E-02	FAIL ABUN
PA-234	-1.254E-01	3.596E-01	2.896E-01	1.835E-01	NOT IDENT.
PA-234M	6.226E+00	6.485E+00	5.703E+00	3.308E+00	NOT IDENT.
NP-239	-7.978E-01	5.417E-01	4.232E-01	2.764E-01	NOT IDENT.
AM-241	-1.020E-02	2.246E-01	1.681E-01	1.146E-01	NOT IDENT.
CM-247	4.558E-02	4.684E-02	4.124E-02	2.390E-02	NOT IDENT.
CF-249	-1.854E-02	5.251E-02	4.319E-02	2.679E-02	NOT IDENT.

CF-251	-3.215E-02	1.769E-01	1.444E-01	9.027E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	397.2628
49.72	472.7949
57.36	0.0000
59.54	439.1791
63.29	489.9719
63.29	489.9719
64.28	516.5533
67.75	527.8762
69.67	557.1652
70.83	543.7122
72.81	551.5852
72.87	551.6294
72.87	551.6294
74.82	546.0686
74.82	546.0686
74.82	546.0686
74.97	546.1788
77.11	547.7297
77.11	547.7297
77.11	547.7297
79.69	544.5298
79.80	544.6060
80.12	544.8306
80.19	544.8800
80.57	545.1437
81.00	545.4444
81.07	545.4918
81.07	545.4918
83.79	448.0312
83.79	448.0312
85.43	448.9450
86.48	449.5251
86.55	449.5638
86.79	449.6953
86.94	449.7797
87.57	450.1253
88.03	450.3765
88.47	450.6160
89.96	451.4253
91.11	452.0441
92.59	452.8349
92.59	452.8349
93.35	453.2395
94.67	389.4415
94.87	389.5312
94.87	389.5312
95.86	393.2676
97.43	344.5234
98.44	359.7719
99.53	348.6484
100.11	366.5131
103.18	378.4795
103.37	364.0388
105.31	368.9688
106.12	359.9314
109.28	423.7798
111.00	368.0851
111.76	379.8903
116.30	395.3491
117.23	408.3544
121.12	324.3734
121.78	330.9303
122.06	341.5980
123.07	340.8807
131.20	379.8525
133.52	388.1689
136.00	348.3400

136.47	357.0695
140.51	0.0000
140.51	0.0000
143.76	328.1443
144.24	323.9662
144.24	323.9662
145.44	330.7981
152.43	331.7438
153.25	333.0673
154.21	314.8215
154.21	314.8215
156.02	353.4950
158.56	319.2681
159.00	315.0110
162.66	369.7353
163.33	356.7680
165.86	311.3082
176.60	335.0843
177.52	336.4365
181.07	0.0000
184.41	348.2816
185.72	337.4575
193.51	339.4390
197.04	295.6985
205.31	300.7976
210.85	291.3555
215.65	285.2267
222.11	246.8318
227.38	282.7008
228.16	270.8716
228.18	270.8751
235.69	254.6268
235.96	254.6721
235.96	254.6721
238.63	254.1858
238.63	254.1858
240.99	254.5738
242.00	254.7394
244.70	198.6797
252.40	218.0507
252.80	216.2326
256.23	212.9407
256.23	212.9407
260.90	0.0000
264.66	223.1548
268.22	215.7599
269.46	203.3130
269.46	203.3130
271.23	220.8805
273.65	265.4395
276.40	214.8326
277.37	206.1659
277.60	210.9461
278.00	222.4000
279.20	213.9972
279.54	214.9897
280.46	235.0932
283.69	212.6476
284.31	206.0464
285.41	204.2666
285.90	0.0000
287.50	192.1947
293.27	0.0000
295.22	174.3752
295.96	249.6692
298.57	250.0342
299.98	206.9218
299.98	206.9218
300.09	182.8704
300.09	182.8704
300.13	182.8750
301.36	174.9739
302.85	154.2324
304.50	178.4938
304.50	178.4938
304.85	178.5277
308.46	195.3201
311.90	184.0625

316.51	206.8560
319.41	190.6430
320.08	199.4671
323.87	207.9948
323.87	207.9948
328.76	199.4055
333.37	181.2693
334.37	181.3641
334.37	181.3641
338.28	177.8007
338.28	177.8007
338.32	177.8029
338.32	177.8029
338.32	177.8029
340.48	185.2113
340.55	196.6919
344.28	206.9187
351.06	146.3289
351.93	146.3921
356.01	145.3687
364.49	145.3121
366.42	0.0000
383.85	143.6546
388.16	170.1181
388.63	155.0527
391.69	146.2001
400.66	140.7307
401.81	133.7144
402.40	129.6969
404.85	180.5618
410.95	140.3719
414.70	169.1368
423.72	148.3329
427.09	135.2339
427.87	143.4795
433.94	128.4454
453.88	130.1183
463.37	150.8658
468.07	137.2599
473.00	139.9737
476.78	127.6354
477.60	128.7251
487.02	114.5072
492.35	0.0000
497.08	120.2385
511.00	113.4720
514.00	104.4017
527.90	0.0000
529.87	0.0000
531.02	103.6569
537.26	113.5385
546.56	0.0000
563.25	115.7094
569.33	98.6226
569.50	86.7070
569.70	86.7129
583.19	92.5765
600.60	101.3593
602.73	89.5542
604.72	78.6409
609.32	119.0635
609.32	119.0635
610.33	128.2678
614.28	88.0723
618.01	95.5343
621.93	94.7394
621.93	94.7394
633.25	82.1736
635.95	95.1857
636.99	90.5950
645.85	93.6416
657.76	92.5447
661.66	94.1245
661.66	94.1245
664.57	0.0000
666.33	86.3996
666.50	88.0054
677.62	92.7339

685.70	107.0559
695.00	98.8925
696.49	84.8035
696.51	90.4570
697.00	94.2423
702.65	103.8479
706.68	100.1945
711.68	76.6824
720.70	45.5664
721.93	0.0000
722.78	74.9056
722.91	74.9088
723.31	89.5764
724.19	81.4540
727.33	63.7299
733.00	84.9371
735.93	65.3934
739.50	0.0000
747.24	77.5063
752.31	80.4966
753.82	75.7389
756.73	73.8841
763.94	79.1233
765.81	77.5175
766.42	77.9431
777.92	0.0000
778.90	67.2140
783.70	77.3649
785.37	68.6931
795.86	52.4015
801.95	69.0167
810.29	65.2811
810.76	62.3659
815.77	60.5015
818.51	54.6875
832.01	71.5549
834.85	86.3242
836.80	0.0000
846.77	68.8892
856.80	74.4326
860.56	72.8145
871.09	46.5563
873.19	68.3865
875.33	0.0000
879.36	52.6140
880.51	56.6011
883.24	61.6102
884.68	65.6106
889.28	63.6979
898.04	71.8242
911.20	77.2150
911.20	77.2150
911.20	77.2150
926.50	75.9661
937.49	60.4578
944.13	63.5858
946.00	63.6152
949.00	49.5154
962.29	54.7471
964.08	45.2080
966.15	48.7109
968.97	137.5281
968.97	137.5281
968.97	137.5281
983.53	70.3182
996.26	94.0458
1001.03	65.4974
1004.73	69.6532
1037.84	77.4231
1038.76	0.0000
1048.07	71.3977
1050.41	48.6600
1050.41	48.6600
1063.66	64.3840
1085.87	63.6658
1099.45	63.8594
1112.07	50.3906
1115.54	77.4456

1120.29	53.6376
1120.29	53.6376
1120.55	53.6417
1121.30	54.1009
1131.51	0.0000
1173.23	67.0195
1177.93	72.4105
1189.05	61.9082
1204.77	79.2453
1221.41	77.3701
1231.02	92.5963
1235.36	92.6768
1238.28	62.5407
1260.41	0.0000
1271.85	63.2757
1274.44	59.5848
1274.54	59.5848
1291.59	40.1700
1298.22	0.0000
1312.11	37.5181
1332.49	30.1328
1365.19	33.1641
1368.63	0.0000
1384.29	28.2911
1408.01	25.0735
1457.56	0.0000
1460.82	23.6284
1489.16	31.0179
1505.03	41.7972
1596.21	25.6717
1620.50	13.8794
1678.03	0.0000
1690.97	16.0458
1764.49	11.1604
1764.49	11.1604
1770.23	8.8855
1771.35	7.1096
1791.20	0.0000
1836.06	13.3351

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513010

Total Uranium Activity	7.2235E+00	ug/g
Total Uranium Counting Unc.	6.0267E+00	ug/g
Total Uranium Tpu	3.0748E-06	ug/g
Total Uranium Mda	4.3152E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513010
*  ANALYST       : MXR1                             DETECTOR    : GAM29
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 11:27:33.14          SAMPLE ALQT  : 107.280 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.139E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.577E+00
GROSS GAMMA MDA (pCi/GRAM )     : 5.428E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.645E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 14:08:54.04

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513011.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 12:08:24
Sample ID          : G248513011      Sample quantity   : 1.14180E+02 GRAM
Detector name      : GAM01            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.14  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 961097           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	63.53*	137	407	1.19	127.79	123	10	1.90E-02	29.8	
2	2	74.93*	417	370	1.31	150.58	144	16	5.79E-02	10.1	4.57E+00
3	2	77.12*	545	337	1.16	154.96	144	16	7.57E-02	7.6	
4	3	87.51*	202	336	1.29	175.72	166	28	2.80E-02	17.8	3.48E+00
5	3	89.91	148	326	1.39	180.53	166	28	2.06E-02	23.8	
6	3	92.74*	236	347	1.45	186.18	166	28	3.28E-02	17.6	
7	0	129.01	58	264	1.40	258.68	256	7	8.12E-03	47.8	
8	0	186.36*	211	357	1.43	373.31	368	11	2.93E-02	19.6	
9	0	209.79	133	318	1.47	420.14	416	12	1.85E-02	28.3	
10	5	239.03*	990	183	1.21	478.60	474	16	1.38E-01	4.0	1.37E+00
11	5	242.08	270	250	1.83	484.69	474	16	3.75E-02	15.8	
12	0	271.63	115	271	2.99	543.76	538	14	1.60E-02	31.7	
13	0	295.70	365	198	1.32	591.86	587	11	5.07E-02	9.1	
14	0	328.55	58	183	0.99	657.53	652	11	8.05E-03	47.2	
15	0	339.23	185	220	1.23	678.88	672	13	2.56E-02	18.2	
16	0	352.48*	622	180	1.51	705.37	700	13	8.63E-02	6.1	
17	0	463.40*	74	75	1.79	927.06	922	10	1.03E-02	25.1	
18	0	511.56*	130	113	2.03	1023.32	1015	19	1.80E-02	24.4	
19	0	583.67*	308	108	1.29	1167.47	1160	14	4.28E-02	9.3	
20	0	609.79*	408	144	1.63	1219.67	1214	15	5.66E-02	8.3	
21	0	662.21	344	128	1.62	1324.44	1318	15	4.77E-02	9.0	
22	0	728.19	68	52	1.68	1456.31	1451	10	9.47E-03	23.5	
23	0	795.60	76	56	1.86	1591.04	1584	17	1.06E-02	25.1	
24	0	911.56*	206	48	2.01	1822.80	1817	12	2.86E-02	10.1	
25	0	969.26*	91	51	1.60	1938.13	1934	9	1.26E-02	18.3	
26	0	1121.08*	93	43	2.08	2241.57	2235	16	1.30E-02	19.4	
27	0	1378.01	35	15	1.52	2755.03	2747	15	4.86E-03	29.5	
28	0	1461.31*	858	17	1.96	2921.51	2911	17	1.19E-01	3.6	
29	0	1509.47	15	4	1.50	3017.74	3012	9	2.14E-03	35.0	
30	0	1765.15*	84	4	2.01	3528.69	3521	14	1.17E-02	12.6	
31	0	1848.98	17	9	1.58	3696.22	3688	12	2.33E-03	43.4	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513011.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 12:08:24
Sample ID         : G248513011 Sample quantity : 114.18 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA1 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.14 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	+	1460.82	*	2.800E+01	3.208E+00	6.359E-01	5.654E-02	44.033
CD-109	+	88.03	*	3.566E+00	1.310E+00	1.407E+00	1.331E-01	2.535
SN-126	+	64.28		1.667E+00	1.024E+00	9.216E-01	1.356E-01	1.809
	+	86.94		1.432E+00	7.824E-01	5.720E-01	2.375E-01	2.504
	+	87.57	*	3.444E-01	1.265E-01	1.366E-01	1.286E-02	2.522
BA-137M	+	661.66	*	6.543E-01	1.290E-01	7.009E-02	5.741E-03	9.335
CS-137	+	661.66	*	6.912E-01	1.364E-01	7.405E-02	6.078E-03	9.335
TL-208		277.37		8.455E-01	5.514E-01	8.695E-01	1.121E-01	0.972
	+	583.19	*	5.563E-01	1.152E-01	7.602E-02	6.895E-03	7.318
		860.56		7.692E-01	3.827E-01	7.233E-01	6.930E-02	1.063
BI-211		72.87		8.324E+00	4.337E+00	6.745E+00	5.532E-01	1.234
	+	351.06	*	4.907E+00	7.443E-01	4.045E-01	3.680E-02	12.131
PB-212	+	74.82		3.200E+00	7.654E-01	6.694E-01	8.571E-02	4.780
	+	77.11		2.393E+00	4.144E-01	3.821E-01	3.242E-02	6.262
	+	238.63	*	1.719E+00	2.216E-01	1.210E-01	1.231E-02	14.200
		300.09		4.746E-01	1.179E+00	1.748E+00	1.909E-01	0.271
BI-214	+	609.32	*	1.428E+00	2.755E-01	1.431E-01	1.418E-02	9.978
	+	1120.29		1.726E+00	6.939E-01	5.804E-01	6.238E-02	2.974
	+	1764.49		2.186E+00	5.798E-01	3.889E-01	3.262E-02	5.620
PB-214	+	74.82		5.672E+00	1.318E+00	1.186E+00	1.364E-01	4.780
	+	77.11		4.218E+00	8.092E-01	6.736E-01	7.971E-02	6.262
	+	242.00		2.847E+00	9.497E-01	7.363E-01	7.938E-02	3.866
	+	295.22		1.763E+00	3.780E-01	2.894E-01	3.239E-02	6.094
	+	351.93	*	1.781E+00	2.874E-01	1.487E-01	1.581E-02	11.973
RA-224	+	240.99	*	5.034E+00	1.654E+00	1.297E+00	1.179E-01	3.880
RA-226	+	609.32	*	1.428E+00	2.755E-01	1.431E-01	1.418E-02	9.978
	+	1120.29		1.726E+00	6.939E-01	5.804E-01	6.238E-02	2.974
	+	1764.49		2.186E+00	5.798E-01	3.889E-01	3.262E-02	5.620
AC-228	+	338.32		1.621E+00	8.987E-01	4.537E-01	1.894E-01	3.573
	+	911.20	*	1.818E+00	4.270E-01	3.087E-01	3.678E-02	5.889
	+	968.97		1.381E+00	6.088E-01	6.154E-01	1.507E-01	2.244
RA-228	+	338.32		1.621E+00	8.987E-01	4.537E-01	1.894E-01	3.573
	+	911.20	*	1.818E+00	4.270E-01	3.087E-01	3.678E-02	5.889
	+	968.97		1.381E+00	6.088E-01	6.154E-01	1.507E-01	2.244

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.200E+00	7.002E-01	6.694E-01	5.628E-02	4.780
	+	77.11		2.393E+00	4.144E-01	3.821E-01	3.242E-02	6.262
	+	238.63	*	1.719E+00	2.216E-01	1.210E-01	1.231E-02	14.200
		300.09		4.746E-01	1.214E+00	1.748E+00	1.071E+00	0.271
TH-232	+	338.32		1.621E+00	6.082E-01	4.537E-01	3.994E-02	3.573
	+	911.20	*	1.818E+00	4.270E-01	3.087E-01	3.678E-02	5.889
	+	968.97		1.381E+00	6.088E-01	6.154E-01	1.507E-01	2.244
TH-234	+	63.29	*	4.324E+00	2.694E+00	2.500E+00	4.491E-01	1.730
	+	92.59		3.342E+00	1.390E+00	1.138E+00	2.535E-01	2.937
U-235	+	89.96		2.621E+00	1.407E+00	1.420E+00	3.530E-01	1.846
	+	93.35		2.525E+00	1.064E+00	8.543E-01	1.988E-01	2.955
		143.76	*	1.589E-02	2.531E-01	4.231E-01	7.157E-02	0.038
		163.33		-1.671E-01	5.336E-01	8.874E-01	1.589E-01	-0.188
	+	185.72		2.350E-01	9.435E-02	8.239E-02	7.159E-03	2.852
		205.31		2.278E-01	6.417E-01	9.635E-01	1.760E-01	0.236
NP-237	+	86.48	*	1.028E+00	4.347E-01	4.128E-01	9.470E-02	2.490
		95.86		3.711E-01	1.217E+00	1.759E+00	4.242E-01	0.211
U-238	+	63.29	*	4.324E+00	2.694E+00	2.500E+00	4.491E-01	1.730
	+	92.59		3.342E+00	1.213E+00	1.138E+00	1.038E-01	2.937
ANH-511	+	511.00	*	1.785E-01	8.844E-02	5.363E-02	4.545E-03	3.328

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	9.453E-02	4.474E-01	7.298E-01	6.638E-02	0.130
NA-22		1274.54	*	1.796E-02	5.518E-02	9.542E-02	8.013E-03	0.188
NA-24		1368.63	*	-1.761E+03	5.518E-02	Half-Life too short		
SC-46		889.28	*	-3.236E-02	5.445E-02	8.334E-02	7.533E-03	-0.388
	+	1120.55		3.117E-01	1.235E-01	1.740E-01	1.462E-02	1.791
V-48		944.13		8.811E-01	1.591E+00	2.736E+00	2.464E-01	0.322
		983.53	*	1.243E-01	1.120E-01	2.047E-01	1.828E-02	0.607
		1312.11		-5.668E-02	1.320E-01	2.076E-01	1.760E-02	-0.273
CR-51		320.08	*	-6.267E-01	5.647E-01	8.322E-01	7.822E-02	-0.753
MN-54		834.85	*	-3.126E-02	5.230E-02	8.123E-02	7.230E-03	-0.385
CO-56		846.77	*	-8.891E-03	5.136E-02	8.270E-02	7.389E-03	-0.108
		1037.84		1.346E-01	4.273E-01	7.148E-01	6.584E-02	0.188
		1238.28		1.474E-01	1.195E-01	2.192E-01	1.874E-02	0.672
		1771.35		6.775E-02	3.280E-01	4.893E-01	4.096E-02	0.138
CO-57		122.06	*	9.326E-03	3.231E-02	5.194E-02	4.572E-03	0.180
		136.47		1.554E-01	2.495E-01	4.328E-01	3.994E-02	0.359
CO-58		810.76	*	-1.367E-02	4.686E-02	7.452E-02	6.593E-03	-0.183
FE-59		1099.45	*	-1.499E-02	1.220E-01	1.935E-01	1.784E-02	-0.077
		1291.59		3.638E-02	1.512E-01	2.598E-01	2.499E-02	0.140
CO-60		1173.23		1.368E-02	5.697E-02	9.774E-02	7.910E-03	0.140
		1332.49	*	1.263E-02	5.242E-02	8.966E-02	7.643E-03	0.141
ZN-65		1115.54	*	1.714E-02	1.185E-01	1.685E-01	1.422E-02	0.102
SE-75		121.12		-8.534E-03	1.717E-01	2.718E-01	3.047E-02	-0.031
		136.00		4.770E-02	4.877E-02	8.559E-02	7.409E-03	0.557

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		4.081E-02	5.938E-02	9.850E-02	9.050E-03	0.414
	279.54			-1.132E-02	1.453E-01	2.387E-01	2.257E-02	-0.047
	400.66			-1.106E-01	3.616E-01	5.642E-01	6.030E-02	-0.196
SR-85	514.00	*		1.536E-01	5.766E-02	1.062E-01	9.002E-03	1.446
Y-88	898.04			-5.983E-02	5.626E-02	8.089E-02	7.359E-03	-0.740
	1836.06	*		1.002E-02	3.688E-02	6.419E-02	5.280E-03	0.156
Y-91	1204.77	*		-3.170E+00	3.146E+01	5.225E+01	4.281E+00	-0.061
NB-94	702.65	*		5.021E-04	4.218E-02	7.004E-02	5.879E-03	0.007
	871.09			7.145E-03	4.232E-02	7.048E-02	6.341E-03	0.101
NB-95	765.81	*		-1.033E-01	6.500E-02	9.229E-02	7.997E-03	-1.119
NB-95M	235.69	*		-4.659E-02	1.894E-01	2.724E-01	2.798E-02	-0.171
ZR-95	724.19			-8.412E-02	1.386E-01	1.831E-01	1.690E-02	-0.460
	756.73	*		-4.103E-03	9.852E-02	1.621E-01	1.545E-02	-0.025
MO-99	140.51			-5.161E-05	9.852E-02	Half-Life	too short	
	181.07			-8.687E-05	9.852E-02	Half-Life	too short	
	366.42			-1.991E-04	9.852E-02	Half-Life	too short	
	739.50	*		-4.017E-05	9.852E-02	Half-Life	too short	
	777.92			-8.617E-06	9.852E-02	Half-Life	too short	
TC-99M	140.51	*		-3.563E+19	9.852E-02	Half-Life	too short	
RU-103	497.08	*		-4.635E-02	5.560E-02	8.148E-02	1.130E-02	-0.569
+	610.33			1.694E+01	3.926E+00	4.454E+00	7.226E-01	3.804
RH-106	621.93	*		1.400E-01	3.453E-01	5.974E-01	7.816E-02	0.234
	1050.41			-1.393E-01	3.452E+00	5.556E+00	4.845E-01	-0.025
RU-106	621.93	*		1.400E-01	3.450E-01	5.974E-01	4.990E-02	0.234
	1050.41			-1.393E-01	3.452E+00	5.556E+00	4.845E-01	-0.025
AG-108M	433.94	*		-1.977E-02	3.831E-02	5.928E-02	5.073E-03	-0.333
	614.28			1.490E-02	4.730E-02	7.126E-02	6.177E-03	0.209
	722.91			-4.532E-02	5.423E-02	6.935E-02	6.080E-03	-0.654
AG-110M	657.76	*		-8.357E-03	5.206E-02	7.391E-02	6.267E-03	-0.113
	677.62			-1.885E-01	3.711E-01	5.872E-01	5.009E-02	-0.321
	706.68			1.235E-02	2.753E-01	4.583E-01	3.972E-02	0.027
	763.94			-2.177E-01	2.218E-01	3.342E-01	2.972E-02	-0.651
	884.68			1.363E-02	5.835E-02	9.790E-02	9.098E-03	0.139
	937.49			7.985E-02	1.457E-01	2.501E-01	2.330E-02	0.319
	1384.29			2.213E-01	1.943E-01	3.445E-01	3.039E-02	0.642
	1505.03			1.444E-01	3.396E-01	5.350E-01	4.632E-02	0.270
SN-113	391.69	*		5.339E-03	5.957E-02	9.719E-02	8.096E-03	0.055
CD-115	260.90			8.360E-05	5.957E-02	Half-Life	too short	
	492.35			-1.553E-04	5.957E-02	Half-Life	too short	
	527.90	*		-6.773E-05	5.957E-02	Half-Life	too short	
SN-117M	156.02			1.837E-01	4.168E+00	7.054E+00	6.007E-01	0.026
	158.56	*		-1.213E-02	1.011E-01	1.699E-01	1.446E-02	-0.071
TE-123M	159.00	*		1.945E-02	3.621E-02	6.235E-02	5.342E-03	0.312
SB-124	602.73			-9.186E-03	5.384E-02	8.381E-02	7.049E-03	-0.110
	645.85			3.042E-02	6.204E-01	1.039E+00	9.119E-02	0.029
	722.78			-3.179E-01	5.657E-01	7.511E-01	6.526E-02	-0.423
	1690.97	*		4.312E-02	1.011E-01	1.797E-01	1.597E-02	0.240
SB-125	427.87	*		1.433E-02	1.210E-01	1.969E-01	1.655E-02	0.073
+	463.37			9.067E-01	4.631E-01	6.786E-01	6.137E-02	1.336

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M I-126	600.60			-9.529E-02	2.128E-01	3.432E-01	3.112E-02	-0.278
	635.95			-3.707E-02	3.023E-01	4.987E-01	4.502E-02	-0.074
	109.28	*		-1.086E+00	1.357E+01	2.153E+01	2.269E+00	-0.050
	388.63			1.286E-01	3.355E-01	5.578E-01	4.518E-02	0.231
	666.33	*		-1.688E-01	4.591E-01	6.324E-01	5.195E-02	-0.267
SB-126	753.82			1.167E+00	3.455E+00	5.876E+00	5.064E-01	0.199
	414.70			-3.536E-02	1.546E-01	2.459E-01	2.010E-02	-0.144
	666.50			-3.169E-02	1.567E-01	2.206E-01	1.813E-02	-0.144
	695.00			3.138E-02	1.538E-01	2.595E-01	2.169E-02	0.121
	697.00			2.821E-02	5.338E-01	8.897E-01	7.445E-02	0.032
SB-127	720.70	*		-5.491E-02	2.796E-01	4.424E-01	3.750E-02	-0.124
	856.80			-2.553E+00	1.081E+00	1.327E+00	1.189E-01	-1.925
	252.40			2.160E+01	2.359E+01	3.784E+01	1.605E+01	0.571
	473.00			-7.233E+00	9.003E+00	1.340E+01	2.012E+00	-0.540
	685.70	*		2.863E-01	6.525E+00	1.088E+01	1.500E+00	0.026
I-131	783.70			6.559E+00	1.874E+01	3.178E+01	4.719E+00	0.206
	80.19			5.479E+00	1.461E+01	1.698E+01	1.503E+00	0.323
	284.31			2.030E+00	3.466E+00	5.897E+00	5.672E-01	0.344
	364.49	*		-4.800E-02	2.786E-01	4.479E-01	4.043E-02	-0.107
	636.99			1.350E+00	3.579E+00	6.166E+00	5.476E-01	0.219
TE-132	49.72			-8.959E+01	1.440E+02	2.275E+02	3.053E+01	-0.394
	111.76			-6.820E+01	2.367E+02	3.715E+02	5.030E+01	-0.184
	116.30			5.018E+01	1.975E+02	3.174E+02	4.303E+01	0.158
	228.16	*		-1.884E+00	4.968E+00	8.101E+00	1.446E+00	-0.233
	81.00			3.355E-02	1.514E-01	1.737E-01	2.712E-02	0.193
BA-133	276.40			7.358E-01	5.233E-01	8.161E-01	1.179E-01	0.902
	302.85			1.329E-01	1.828E-01	3.106E-01	4.152E-02	0.428
	356.01	*		6.673E-02	5.907E-02	9.190E-02	1.189E-02	0.726
	383.85			-9.110E-02	3.887E-01	6.209E-01	7.528E-02	-0.147
	529.87	*		1.603E+00	3.887E-01	Half-Life too short		
I-133	875.33			-3.011E+01	3.887E-01	Half-Life too short		
	1298.22			-3.696E+00	3.887E-01	Half-Life too short		
	563.25			5.023E-01	4.694E-01	8.435E-01	7.223E-02	0.595
	569.33			-1.663E-01	2.337E-01	3.691E-01	3.171E-02	-0.450
	604.72			5.875E-03	4.554E-02	6.726E-02	5.668E-03	0.087
CS-134	795.86	*		2.036E-01	1.039E-01	1.207E-01	1.067E-02	1.687
	801.95			-4.279E-01	5.478E-01	7.109E-01	6.288E-02	-0.602
	1365.19			-4.720E-01	1.484E+00	2.349E+00	2.107E-01	-0.201
	268.22	*		-1.951E-01	2.234E-01	3.015E-01	3.144E-02	-0.647
	546.56			-3.073E+18	2.234E-01	Half-Life too short		
CS-135 I-135	836.80			-1.812E+19	2.234E-01	Half-Life too short		
	1038.76			4.426E+18	2.234E-01	Half-Life too short		
	1131.51			1.480E+18	2.234E-01	Half-Life too short		
	1260.41	*		2.123E+18	2.234E-01	Half-Life too short		
	1457.56			1.256E+20	2.234E-01	Half-Life too short		
CS-136	1678.03			1.539E+18	2.234E-01	Half-Life too short		
	1791.20			1.070E+17	2.234E-01	Half-Life too short		
	153.25			2.197E+00	1.604E+00	2.822E+00	2.876E-01	0.779
	176.60			-4.245E-01	9.098E-01	1.498E+00	1.424E-01	-0.283

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	273.65			-5.937E-01	1.208E+00	1.691E+00	1.665E-01	-0.351
	+	340.55		1.457E+00	5.480E-01	6.063E-01	5.524E-02	2.404
		818.51		1.388E-02	1.216E-01	2.025E-01	1.796E-02	0.069
		1048.07	*	1.626E-01	2.100E-01	3.667E-01	3.336E-02	0.443
		1235.36		-8.813E-02	1.036E+00	1.719E+00	1.982E-01	-0.051
CE-139		165.86	*	2.944E-02	3.818E-02	6.617E-02	5.635E-03	0.445
BA-140		162.66		-6.912E-01	1.526E+00	2.526E+00	2.299E-01	-0.274
		304.85		-1.394E+00	2.768E+00	4.369E+00	1.285E+00	-0.319
		423.72		-3.751E+00	4.106E+00	5.873E+00	1.926E+00	-0.639
		537.26	*	-1.089E-01	5.216E-01	8.633E-01	2.925E-01	-0.126
LA-140	+	328.76		9.646E-01	9.145E-01	1.077E+00	1.009E-01	0.896
		487.02		7.101E-02	2.759E-01	4.510E-01	4.050E-02	0.157
		815.77		-5.745E-02	5.473E-01	8.889E-01	8.738E-02	-0.065
		1596.21	*	-1.168E-01	1.849E-01	2.733E-01	2.358E-02	-0.428
CE-141		145.44	*	4.253E-02	9.362E-02	1.586E-01	1.379E-02	0.268
CE-143		57.36		7.469E-02	9.362E-02	Half-Life	too short	
		293.27	*	1.562E-02	9.362E-02	Half-Life	too short	
		664.57		5.423E-01	9.362E-02	Half-Life	too short	
		721.93		-7.641E-02	9.362E-02	Half-Life	too short	
CE-144		80.12		1.552E+00	4.076E+00	4.740E+00	4.134E-01	0.327
		133.52	*	-3.331E-01	3.056E-01	3.935E-01	6.014E-02	-0.847
PM-144		476.78		3.402E-02	8.153E-02	1.352E-01	1.241E-02	0.252
		618.01		1.348E-02	4.051E-02	6.388E-02	5.505E-03	0.211
		696.49	*	1.871E-02	4.418E-02	7.578E-02	6.344E-03	0.247
PR-144		696.51	*	1.423E+00	3.321E+00	5.699E+00	4.768E-01	0.250
		1489.16		3.555E-01	1.400E+01	2.322E+01	2.010E+00	0.015
PM-146		453.88	*	-1.164E-02	5.394E-02	8.527E-02	8.841E-03	-0.137
		633.25		-1.026E-01	1.577E+00	2.616E+00	9.974E-01	-0.039
		735.93		1.667E-01	1.856E-01	3.213E-01	8.998E-02	0.519
		747.24		-2.115E-02	1.186E-01	1.926E-01	2.806E-02	-0.110
ND-147	+	91.11		1.397E+00	6.787E-01	1.034E+00	1.023E-01	1.351
		319.41		-5.399E+00	6.957E+00	1.056E+01	9.472E-01	-0.511
		531.02	*	-4.904E-01	1.115E+00	1.813E+00	2.697E-01	-0.270
PM-149		285.90	*	-2.012E-04	1.115E+00	Half-Life	too short	
EU-152		121.78		2.102E-02	9.101E-02	1.459E-01	1.467E-02	0.144
		244.70		8.353E-01	4.431E-01	7.186E-01	6.541E-02	1.162
		344.28	*	1.937E-02	1.329E-01	1.926E-01	1.780E-02	0.101
		778.90		-7.612E-02	3.305E-01	5.332E-01	4.647E-02	-0.143
		964.08		4.614E-01	4.206E-01	6.762E-01	6.066E-02	0.682
		1085.87		3.755E-02	5.248E-01	8.527E-01	7.310E-02	0.044
		1112.07		-1.396E-01	3.669E-01	5.631E-01	4.756E-02	-0.248
		1408.01		1.220E-01	2.080E-01	3.734E-01	3.216E-02	0.327
GD-153		69.67		3.840E-01	2.421E+00	3.518E+00	2.822E-01	0.109
		97.43	*	-3.782E-02	1.179E-01	1.644E-01	1.460E-02	-0.230
		103.18		-1.448E-01	1.435E-01	2.176E-01	1.898E-02	-0.666
EU-154		123.07		2.004E-02	6.541E-02	1.051E-01	1.206E-02	0.191
		723.31		-1.373E-01	2.392E-01	3.176E-01	2.978E-02	-0.432
		873.19		1.737E-01	3.501E-01	6.011E-01	7.319E-02	0.289
		996.26		-4.524E-02	4.398E-01	7.051E-01	1.241E-01	-0.064

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		-2.627E-01	2.731E-01	3.909E-01	4.622E-02	-0.672
		1274.44	*	3.576E-02	1.577E-01	2.699E-01	3.024E-02	0.132
		86.55		4.190E-01	1.540E-01	2.244E-01	2.109E-02	1.867
		105.31	*	4.844E-02	1.312E-01	2.126E-01	1.870E-02	0.228
TB-160	+	86.79		1.195E+00	4.391E-01	6.391E-01	5.968E-02	1.870
		197.04		3.977E-02	7.535E-01	1.264E+00	1.112E-01	0.031
		215.65		9.270E-02	1.036E+00	1.530E+00	1.368E-01	0.061
		298.57		3.874E-02	1.734E-01	2.542E-01	2.311E-02	0.152
HO-166M		879.36	*	-1.272E-01	1.746E-01	2.604E-01	2.348E-02	-0.489
		962.29		-5.681E-01	8.095E-01	1.188E+00	1.066E-01	-0.478
		966.15		6.238E-01	3.616E-01	5.981E-01	5.363E-02	1.043
		1177.93		3.848E-02	4.871E-01	8.235E-01	6.678E-02	0.047
		1271.85		-1.007E+00	1.011E+00	1.499E+00	1.256E-01	-0.672
		80.57		4.169E-01	4.113E-01	5.032E-01	4.407E-02	0.829
		184.41		1.523E-01	5.030E-02	8.296E-02	7.199E-03	1.836
		280.46		-1.228E-01	1.070E-01	1.642E-01	1.501E-02	-0.748
		410.95		2.722E-01	3.210E-01	5.473E-01	4.464E-02	0.497
		711.68	*	-5.328E-02	7.540E-02	1.169E-01	9.860E-03	-0.456
		752.31		-1.277E-01	3.439E-01	5.485E-01	4.724E-02	-0.233
		810.29		-4.278E-02	6.675E-02	1.017E-01	8.977E-03	-0.421
TA-182		67.75		-3.417E-03	1.649E-01	2.376E-01	1.883E-02	-0.014
		100.11		4.020E-02	2.381E-01	3.766E-01	3.311E-02	0.107
		152.43		3.243E-01	4.466E-01	7.743E-01	6.597E-02	0.419
		222.11		9.253E-02	4.612E-01	7.752E-01	6.966E-02	0.119
	+	1121.30		8.485E-01	3.363E-01	4.785E-01	4.018E-02	1.773
		1189.05		-4.324E-02	3.956E-01	6.564E-01	5.346E-02	-0.066
		1221.41	*	-2.111E-01	2.674E-01	4.143E-01	3.415E-02	-0.510
		1231.02		-2.064E-01	6.117E-01	9.910E-01	8.196E-02	-0.208
IR-192	+	295.96		1.404E+00	2.871E-01	4.039E-01	3.700E-02	3.476
		308.46		-9.254E-02	1.304E-01	2.044E-01	1.857E-02	-0.453
		316.51	*	2.409E-02	4.518E-02	7.643E-02	6.886E-03	0.315
		468.07		3.402E-02	1.045E-01	1.515E-01	1.369E-02	0.225
HG-203		70.83		2.799E-01	2.029E+00	2.942E+00	4.642E-01	0.095
		72.87		2.331E+00	1.251E+00	1.888E+00	2.891E-01	1.234
		279.20	*	2.339E-02	5.704E-02	9.298E-02	8.697E-03	0.252
		72.81		4.235E-01	2.476E-01	3.827E-01	3.137E-02	1.107
BI-207	+	74.97		9.227E-01	2.016E-01	2.907E-01	2.423E-02	3.174
		569.70		-1.610E-02	3.518E-02	5.682E-02	4.813E-03	-0.283
		1063.66	*	2.774E-02	7.098E-02	1.192E-01	1.034E-02	0.233
		1770.23		1.929E-01	5.577E-01	8.723E-01	7.305E-02	0.221
PB-210		46.54	*	5.207E+00	5.136E+00	8.569E+00	8.026E-01	0.608
PB-211	*	404.85		-5.379E-01	9.865E-01	1.481E+00	7.153E-01	-0.363
		427.09		4.203E-01	2.014E+00	3.283E+00	1.517E+00	0.128
BI-212	+	832.01		-6.600E-01	1.359E+00	2.057E+00	1.068E+00	-0.321
		727.33	*	1.900E+00	9.246E-01	1.459E+00	1.807E-01	1.302
		785.37		2.150E+00	4.162E+00	7.149E+00	6.247E-01	0.301
		1620.50		2.794E+00	3.046E+00	5.709E+00	4.913E-01	0.489
RN-219	+	271.23		8.867E-01	5.703E-01	5.745E-01	6.150E-02	1.543
		401.81	*	3.060E-01	5.389E-01	9.026E-01	1.316E-01	0.339

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-8.239E-02	3.552E-01	3.918E-01	3.448E-02	-0.210
		83.79		2.047E-01	1.708E-01	2.568E-01	2.323E-02	0.797
		94.87		1.429E+00	6.183E-01	9.701E-01	8.724E-02	1.473
		144.24		3.377E-01	8.419E-01	1.424E+00	1.360E-01	0.237
		154.21		3.642E-01	4.892E-01	8.473E-01	7.923E-02	0.430
		269.46		1.788E-01	2.652E-01	4.018E-01	3.741E-02	0.445
		323.87	*	2.811E-01	9.111E-01	1.339E+00	2.343E-01	0.210
	+	338.28		6.432E+00	2.474E+00	2.894E+00	3.532E-01	2.222
AC-227		79.69		7.004E-01	1.754E+00	2.345E+00	4.049E-01	0.299
		235.96		-8.722E-02	2.134E-01	3.036E-01	3.253E-02	-0.287
		256.23	*	-1.144E-01	3.195E-01	5.187E-01	6.444E-02	-0.221
		299.98		7.991E-01	1.278E+00	1.921E+00	2.502E-01	0.416
		304.50		-1.290E+00	2.198E+00	3.478E+00	5.830E-01	-0.371
		334.37		-4.739E-01	3.066E+00	3.626E+00	5.697E-01	-0.131
		79.80		1.119E+00	2.648E+00	3.080E+00	6.716E-01	0.363
		235.96		-8.722E-02	2.134E-01	3.036E-01	3.082E-02	-0.287
TH-227		256.23	*	-1.144E-01	3.195E-01	5.187E-01	7.229E-02	-0.221
		299.98		7.991E-01	1.278E+00	1.921E+00	2.502E-01	0.416
		304.50		-1.290E+00	2.198E+00	3.478E+00	5.830E-01	-0.371
		334.37		-4.739E-01	3.066E+00	3.626E+00	5.697E-01	-0.131
		85.43		8.315E-01	2.673E-01	4.561E-01	4.196E-02	1.823
	+	88.47		5.310E-01	1.951E-01	2.810E-01	2.647E-02	1.890
		193.51	*	-8.883E-02	6.516E-01	1.085E+00	9.509E-02	-0.082
	+	210.85		3.285E+00	1.880E+00	2.077E+00	1.850E-01	1.582
PA-231		283.69	*	1.886E-01	1.718E+00	2.849E+00	4.244E-01	0.066
		301.36		9.127E-01	8.255E-01	1.274E+00	1.590E-01	0.716
		81.07		-8.239E-02	3.552E-01	3.918E-01	3.448E-02	-0.210
TH-231		83.79		2.047E-01	1.708E-01	2.568E-01	2.323E-02	0.797
		94.87		1.429E+00	6.183E-01	9.701E-01	8.724E-02	1.473
		144.24		3.377E-01	8.419E-01	1.424E+00	1.360E-01	0.237
		154.21		3.642E-01	4.892E-01	8.473E-01	7.923E-02	0.430
		269.46		1.788E-01	2.652E-01	4.018E-01	3.741E-02	0.445
		323.87	*	2.811E-01	9.111E-01	1.339E+00	2.343E-01	0.210
	+	338.28		6.432E+00	2.474E+00	2.894E+00	3.532E-01	2.222
		300.13		2.384E-01	5.878E-01	8.707E-01	1.315E-01	0.274
PA-233		311.90	*	2.152E-02	7.583E-02	1.266E-01	1.172E-02	0.170
	+	340.48		4.105E+00	1.795E+00	1.725E+00	4.163E-01	2.379
		94.67		5.534E-01	2.208E-01	3.686E-01	4.671E-02	1.501
PA-234		98.44		-1.349E-02	1.290E-01	1.801E-01	1.005E-01	-0.075
		111.00		6.356E-02	2.312E-01	3.724E-01	4.513E-02	0.171
		131.20		1.147E-01	1.467E-01	2.156E-01	1.863E-02	0.532
		569.50		-1.374E-01	3.126E-01	5.057E-01	4.284E-02	-0.272
		733.00		4.348E-03	5.117E-01	7.353E-01	1.630E-01	0.006
		880.51		-3.955E-03	3.186E-01	5.204E-01	4.694E-02	-0.008
		883.24		-1.502E-02	3.418E-01	5.560E-01	3.741E-01	-0.027
		926.50		2.888E-02	2.233E-01	3.687E-01	9.374E-02	0.078
		946.00	*	4.908E-01	4.021E-01	7.154E-01	1.355E-01	0.686
		949.00		2.868E-01	5.894E-01	1.005E+00	9.043E-02	0.285
		766.42		4.516E+00	1.488E+01	2.486E+01	1.262E+01	0.182
PA-234M								

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		6.640E-01	5.835E+00	9.588E+00	9.773E-01	0.069
	99.53			1.874E-01	2.136E-01	3.333E-01	2.936E-02	0.562
	103.37			-1.119E-01	1.271E-01	1.942E-01	1.693E-02	-0.577
	106.12			3.440E-02	1.041E-01	1.684E-01	1.463E-02	0.204
	117.23	*		-3.885E-01	5.003E-01	7.631E-01	6.648E-02	-0.509
	228.18			-1.013E-01	2.661E-01	4.345E-01	3.921E-02	-0.233
AM-241	277.60			4.470E-01	2.456E-01	3.970E-01	3.631E-02	1.126
CM-247	59.54	*		-1.602E-01	2.236E-01	3.100E-01	2.554E-02	-0.517
	278.00			1.624E+00	1.051E+00	1.675E+00	1.532E-01	0.970
CF-249	287.50			-9.498E-01	1.536E+00	2.435E+00	2.223E-01	-0.390
	402.40	*		3.270E-02	4.878E-02	8.242E-02	6.683E-03	0.397
	252.80			7.426E-01	1.167E+00	1.993E+00	1.819E-01	0.373
	333.37			1.071E-01	3.545E-01	3.819E-01	3.381E-02	0.280
CF-251	388.16	*		6.473E-03	5.394E-02	8.818E-02	7.150E-03	0.073
	177.52	*		2.017E-02	1.569E-01	2.652E-01	2.285E-02	0.076
	227.38			-1.982E-01	4.390E-01	7.145E-01	6.444E-02	-0.277
	285.41			1.124E+00	2.597E+00	4.382E+00	4.002E-01	0.257

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]G248513011
* Acquisition date   : 20-MAR-2010 12:08:24 Detector SN#      :
* Detector ID        : GAM01 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 02:00:01.14 Half life ratio : 8.000
*****
*
*                                     SAMPLE DATA
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248513011 Analyst initials: MXR1
* Batch Number       : 961097 Sample Quantity : 1.1418E+02 GRAM
* Recovery           : 1.00000 Carrier Weight  : 0.00000
*****
*
*                                     QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 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	2.800E+01	3.144E+00	6.332E-01	0.000E+00
CD-109	3.566E+00	1.284E+00	1.437E+00	0.000E+00
SN-126	3.444E-01	1.240E-01	1.395E-01	0.000E+00
BA-137M	6.543E-01	1.265E-01	7.031E-02	0.000E+00
CS-137	6.912E-01	1.336E-01	7.428E-02	0.000E+00
TL-208	5.563E-01	1.129E-01	7.634E-02	0.000E+00
BI-211	4.907E+00	7.294E-01	4.081E-01	0.000E+00
PB-212	1.719E+00	2.172E-01	1.225E-01	0.000E+00
BI-214	1.428E+00	2.699E-01	1.437E-01	0.000E+00
PB-214	1.781E+00	2.817E-01	1.501E-01	0.000E+00
RA-224	5.034E+00	1.621E+00	1.314E+00	0.000E+00
RA-226	1.428E+00	2.699E-01	1.437E-01	0.000E+00
AC-228	1.818E+00	4.185E-01	3.088E-01	0.000E+00
RA-228	1.818E+00	4.185E-01	3.088E-01	0.000E+00
TH-228	1.719E+00	2.172E-01	1.225E-01	0.000E+00
TH-232	1.818E+00	4.185E-01	3.088E-01	0.000E+00
TH-234	4.324E+00	2.640E+00	2.562E+00	0.000E+00
U-235	1.589E-02	2.480E-01	4.304E-01	0.000E+00
NP-237	1.028E+00	4.260E-01	4.218E-01	0.000E+00
U-238	4.324E+00	2.640E+00	2.562E+00	0.000E+00
ANH-511	1.785E-01	8.667E-02	5.392E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	9.453E-02	4.384E-01	7.343E-01	0.000E+00 NOT IDENT.
NA-22	1.796E-02	5.408E-02	9.514E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.173E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.236E-02	5.336E-02	8.337E-02	0.000E+00 FAIL ABUN
V-48	1.243E-01	1.098E-01	2.046E-01	0.000E+00 NOT IDENT.
CR-51	-6.267E-01	5.534E-01	8.404E-01	0.000E+00 NOT IDENT.

MN-54	-3.126E-02	5.125E-02	8.130E-02	0.000E+00	NOT IDENT.
CO-56	-8.891E-03	5.033E-02	8.276E-02	0.000E+00	NOT IDENT.
CO-57	9.326E-03	3.167E-02	5.290E-02	0.000E+00	NOT IDENT.
CO-58	-1.367E-02	4.593E-02	7.461E-02	0.000E+00	NOT IDENT.
FE-59	-1.499E-02	1.195E-01	1.932E-01	0.000E+00	NOT IDENT.
CO-60	1.263E-02	5.137E-02	8.936E-02	0.000E+00	NOT IDENT.
ZN-65	1.714E-02	1.162E-01	1.682E-01	0.000E+00	NOT IDENT.
SE-75	4.081E-02	5.819E-02	9.964E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.651E-02	1.068E-01	0.000E+00	NOT IDENT.
Y-88	1.002E-02	3.614E-02	6.378E-02	0.000E+00	NOT IDENT.
Y-91	-3.170E+00	3.083E+01	5.213E+01	0.000E+00	NOT IDENT.
NB-94	5.021E-04	4.133E-02	7.022E-02	0.000E+00	NOT IDENT.
NB-95	-1.033E-01	6.370E-02	9.245E-02	0.000E+00	NOT IDENT.
NB-95M	-4.659E-02	1.856E-01	2.758E-01	0.000E+00	NOT IDENT.
ZR-95	-4.103E-03	9.655E-02	1.624E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.090E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.327E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.635E-02	5.449E-02	8.195E-02	0.000E+00	FAIL ABUN
RH-106	1.400E-01	3.384E-01	5.996E-01	0.000E+00	NOT IDENT.
RU-106	1.400E-01	3.381E-01	5.996E-01	0.000E+00	NOT IDENT.
AG-108M	-1.977E-02	3.755E-02	5.970E-02	0.000E+00	NOT IDENT.
AG-110M	-8.357E-03	5.102E-02	7.414E-02	0.000E+00	NOT IDENT.
SN-113	5.339E-03	5.838E-02	9.797E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.467E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.213E-02	9.906E-02	1.726E-01	0.000E+00	NOT IDENT.
TE-123M	1.945E-02	3.549E-02	6.336E-02	0.000E+00	NOT IDENT.
SB-124	4.312E-02	9.905E-02	1.787E-01	0.000E+00	NOT IDENT.
SB-125	1.433E-02	1.185E-01	1.983E-01	0.000E+00	FAIL ABUN
TE-125M	-1.086E+00	1.329E+01	2.195E+01	0.000E+00	NOT IDENT.
I-126	-1.688E-01	4.499E-01	6.343E-01	0.000E+00	NOT IDENT.
SB-126	-5.491E-02	2.740E-01	4.434E-01	0.000E+00	NOT IDENT.
SB-127	2.863E-01	6.395E+00	1.091E+01	0.000E+00	NOT IDENT.
I-131	-4.800E-02	2.731E-01	4.518E-01	0.000E+00	NOT IDENT.
TE-132	-1.884E+00	4.869E+00	8.205E+00	0.000E+00	NOT IDENT.
BA-133	6.673E-02	5.789E-02	9.271E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.788E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.018E-01	1.209E-01	0.000E+00	FAIL ABUN
CS-135	-1.951E-01	2.189E-01	3.049E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.596E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.626E-01	2.058E-01	3.662E-01	0.000E+00	FAIL ABUN
CE-139	2.944E-02	3.742E-02	6.721E-02	0.000E+00	NOT IDENT.
BA-140	-1.089E-01	5.112E-01	8.676E-01	0.000E+00	NOT IDENT.
LA-140	-1.168E-01	1.812E-01	2.719E-01	0.000E+00	FAIL ABUN
CE-141	4.253E-02	9.175E-02	1.613E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.096E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.331E-01	2.995E-01	4.005E-01	0.000E+00	NOT IDENT.
PM-144	1.871E-02	4.329E-02	7.598E-02	0.000E+00	NOT IDENT.
PR-144	1.423E+00	3.255E+00	5.714E+00	0.000E+00	NOT IDENT.
PM-146	-1.164E-02	5.287E-02	8.583E-02	0.000E+00	NOT IDENT.
ND-147	-4.904E-01	1.093E+00	1.822E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.311E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	1.937E-02	1.303E-01	1.943E-01	0.000E+00	NOT IDENT.
GD-153	-3.782E-02	1.156E-01	1.678E-01	0.000E+00	NOT IDENT.
EU-154	3.576E-02	1.545E-01	2.691E-01	0.000E+00	NOT IDENT.
EU-155	4.844E-02	1.286E-01	2.169E-01	0.000E+00	FAIL ABUN
TB-160	-1.272E-01	1.711E-01	2.605E-01	0.000E+00	FAIL ABUN
HO-166M	-5.328E-02	7.389E-02	1.172E-01	0.000E+00	NOT IDENT.
TA-182	-2.111E-01	2.620E-01	4.132E-01	0.000E+00	FAIL ABUN
IR-192	2.409E-02	4.428E-02	7.718E-02	0.000E+00	FAIL ABUN
HG-203	2.339E-02	6.590E-02	9.401E-02	0.000E+00	NOT IDENT.
BI-207	2.774E-02	5.956E-02	1.191E-01	0.000E+00	FAIL ABUN
PB-210	5.207E+00	5.033E+00	8.803E+00	0.000E+00	NOT IDENT.
PB-211	-5.379E-01	9.668E-01	1.492E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.062E-01	1.463E+00	0.000E+00	FAIL ABUN
RN-219	3.060E-01	5.281E-01	9.096E-01	0.000E+00	FAIL ABUN
RA-223	2.811E-01	8.929E-01	1.352E+00	0.000E+00	FAIL ABUN
AC-227	-1.144E-01	3.131E-01	5.248E-01	0.000E+00	NOT IDENT.
TH-227	-1.144E-01	3.132E-01	5.248E-01	0.000E+00	NOT IDENT.
TH-229	-8.883E-02	6.386E-01	1.101E+00	0.000E+00	FAIL ABUN
PA-231	1.886E-01	1.684E+00	2.880E+00	0.000E+00	NOT IDENT.
TH-231	2.811E-01	8.929E-01	1.352E+00	0.000E+00	FAIL ABUN
PA-233	2.152E-02	7.431E-02	1.279E-01	0.000E+00	FAIL ABUN
PA-234	4.908E-01	3.940E-01	7.152E-01	0.000E+00	NOT IDENT.
PA-234M	6.640E-01	5.719E+00	9.581E+00	0.000E+00	NOT IDENT.
NP-239	-3.885E-01	4.902E-01	7.776E-01	0.000E+00	NOT IDENT.
AM-241	-1.602E-01	2.191E-01	3.177E-01	0.000E+00	NOT IDENT.
CM-247	3.270E-02	4.781E-02	8.306E-02	0.000E+00	NOT IDENT.
CF-249	6.473E-03	5.286E-02	8.889E-02	0.000E+00	NOT IDENT.

CF-251	2.017E-02	1.538E-01	2.692E-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]G248513011.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 12:08:24
Sample ID          : G248513011 Sample quantity : 1.14180E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.14 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 961097 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	1460.82	858	10.66*	9.454E-01	2.800E+01	2.800E+01	11.46
CD-109	88.03	202	3.70*	5.207E+00	3.444E+00	3.566E+00	36.74
SN-126	64.28	137	9.60	2.808E+00	1.667E+00	1.667E+00	61.43
	86.94	202	8.90	5.207E+00	1.432E+00	1.432E+00	54.64
	87.57	202	37.00*	5.207E+00	3.444E-01	3.444E-01	36.74
BA-137M	661.66	344	89.90*	1.923E+00	6.534E-01	6.543E-01	19.72
CS-137	661.66	344	85.10*	1.923E+00	6.902E-01	6.912E-01	19.73
TL-208	277.37	-----	6.60	3.885E+00	-----	Line Not Found	-----
	583.19	308	85.00*	2.142E+00	5.563E-01	5.563E-01	20.72
	860.56	-----	12.50	1.522E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.944E+00	-----	Line Not Found	-----
	351.06	622	12.92*	3.224E+00	4.907E+00	4.907E+00	15.17
PB-212	74.82	417	10.28	4.163E+00	3.200E+00	3.200E+00	23.92
	77.11	545	17.10	4.381E+00	2.393E+00	2.393E+00	17.32
	238.63	990	43.60*	4.345E+00	1.719E+00	1.719E+00	12.89
	300.09	-----	3.30	3.656E+00	-----	Line Not Found	-----
BI-214	609.32	408	45.49*	2.064E+00	1.428E+00	1.428E+00	19.29
	1120.29	93	14.92	1.193E+00	1.726E+00	1.726E+00	40.20
	1764.49	84	15.30	8.255E-01	2.186E+00	2.186E+00	26.53
PB-214	74.82	417	5.80	4.163E+00	5.672E+00	5.672E+00	23.25
	77.11	545	9.70	4.381E+00	4.218E+00	4.218E+00	19.19
	242.00	270	7.25	4.305E+00	2.847E+00	2.847E+00	33.36
	295.22	365	18.42	3.698E+00	1.763E+00	1.763E+00	21.43
	351.93	622	35.60*	3.224E+00	1.781E+00	1.781E+00	16.14
RA-224	240.99	270	4.10*	4.305E+00	5.034E+00	5.034E+00	32.85
RA-226	609.32	408	45.49*	2.064E+00	1.428E+00	1.428E+00	19.29
	1120.29	93	14.92	1.193E+00	1.726E+00	1.726E+00	40.20
	1764.49	84	15.30	8.255E-01	2.186E+00	2.186E+00	26.53
AC-228	338.32	185	11.27	3.323E+00	1.621E+00	1.621E+00	55.44
	911.20	206	25.80*	1.444E+00	1.818E+00	1.818E+00	23.49
	968.97	91	15.80	1.364E+00	1.381E+00	1.381E+00	44.07
RA-228	338.32	185	11.27	3.323E+00	1.621E+00	1.621E+00	55.44

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	206	25.80*	1.444E+00	1.818E+00	1.818E+00	23.49
	968.97	91	15.80	1.364E+00	1.381E+00	1.381E+00	44.07
	74.82	417	10.28	4.163E+00	3.200E+00	3.200E+00	21.88
	77.11	545	17.10	4.381E+00	2.393E+00	2.393E+00	17.32
	238.63	990	43.60*	4.345E+00	1.719E+00	1.719E+00	12.89
TH-232	300.09	-----	3.30	3.656E+00	-----	Line Not Found	-----
	338.32	185	11.27	3.323E+00	1.621E+00	1.621E+00	37.52
	911.20	206	25.80*	1.444E+00	1.818E+00	1.818E+00	23.49
TH-234	968.97	91	15.80	1.364E+00	1.381E+00	1.381E+00	44.07
	63.29	137	3.70*	2.808E+00	4.324E+00	4.324E+00	62.30
	92.59	236	4.23	5.498E+00	3.342E+00	3.342E+00	41.60
U-235	89.96	148	3.47	5.350E+00	2.621E+00	2.621E+00	53.66
	93.35	236	5.60	5.498E+00	2.525E+00	2.525E+00	42.14
	143.76	-----	10.96*	5.865E+00	-----	Line Not Found	-----
NP-237	163.33	-----	5.08	5.555E+00	-----	Line Not Found	-----
	185.72	211	57.20	5.155E+00	2.350E-01	2.350E-01	40.15
	205.31	-----	5.01	4.840E+00	-----	Line Not Found	-----
U-238	86.48	202	12.40*	5.207E+00	1.028E+00	1.028E+00	42.30
	95.86	-----	2.68	5.636E+00	-----	Line Not Found	-----
ANH-511	63.29	137	3.70*	2.808E+00	4.324E+00	4.324E+00	62.30
	92.59	236	4.23	5.498E+00	3.342E+00	3.342E+00	36.29
	511.00	130	100.00*	2.391E+00	1.785E-01	1.785E-01	49.55

Flag: "*" = Keyline

Total number of lines in spectrum 31
Number of unidentified lines 4
Number of lines tentatively identified by NID 27 87.10%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.800E+01	2.800E+01	0.321E+01	11.46	
CD-109	461.40D	1.04	3.444E+00	3.566E+00	1.310E+00	36.74	
SN-126	2.30E+05Y	1.00	3.444E-01	3.444E-01	1.265E-01	36.74	
BA-137M	30.08Y	1.00	6.534E-01	6.543E-01	1.290E-01	19.72	
CS-137	30.08Y	1.00	6.902E-01	6.912E-01	1.364E-01	19.73	
TL-208	1.41E+10Y	1.00	5.563E-01	5.563E-01	1.152E-01	20.72	
BI-211	7.04E+08Y	1.00	4.907E+00	4.907E+00	0.744E+00	15.17	
PB-212	1.41E+10Y	1.00	1.719E+00	1.719E+00	0.222E+00	12.89	
BI-214	1600.00Y	1.00	1.428E+00	1.428E+00	0.275E+00	19.29	
PB-214	1600.00Y	1.00	1.781E+00	1.781E+00	0.287E+00	16.14	
RA-224	1.41E+10Y	1.00	5.034E+00	5.034E+00	1.654E+00	32.85	
RA-226	1600.00Y	1.00	1.428E+00	1.428E+00	0.275E+00	19.29	
AC-228	1.41E+10Y	1.00	1.818E+00	1.818E+00	0.427E+00	23.49	
RA-228	1.41E+10Y	1.00	1.818E+00	1.818E+00	0.427E+00	23.49	
TH-228	1.41E+10Y	1.00	1.719E+00	1.719E+00	0.222E+00	12.89	
TH-232	1.41E+10Y	1.00	1.818E+00	1.818E+00	0.427E+00	23.49	
TH-234	4.47E+09Y	1.00	4.324E+00	4.324E+00	2.694E+00	62.30	
U-235	7.04E+08Y	1.00	2.350E-01	2.350E-01	0.944E-01	40.15	K
NP-237	2.14E+06Y	1.00	1.028E+00	1.028E+00	0.435E+00	42.30	
U-238	4.47E+09Y	1.00	4.324E+00	4.324E+00	2.694E+00	62.30	
ANH-511	1.00E+09Y	1.00	1.785E-01	1.785E-01	0.884E-01	49.55	
Total Activity :			6.725E+01	6.737E+01			

Grand Total Activity : 6.725E+01 6.737E+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	129.01	58	264	1.40	258.68	256	7	8.12E-03	95.7	6.03E+00	
0	209.79	133	318	1.47	420.14	416	12	1.85E-02	56.5	4.77E+00	T
0	271.63	115	271	2.99	543.76	538	14	1.60E-02	63.4	3.95E+00	T
0	328.55	58	183	0.99	657.53	652	11	8.05E-03	94.3	3.41E+00	T
0	463.40	74	75	1.79	927.06	922	10	1.03E-02	50.3	2.59E+00	T
0	728.19	68	52	1.68	1456.31	1451	10	9.47E-03	47.1	1.77E+00	T
0	795.60	76	56	1.86	1591.04	1584	17	1.06E-02	50.2	1.63E+00	T
0	1378.01	35	15	1.52	2755.03	2747	15	4.86E-03	58.9	9.92E-01	
0	1509.47	15	4	1.50	3017.74	3012	9	2.14E-03	70.0	9.21E-01	
0	1848.98	17	9	1.58	3696.22	3688	12	2.33E-03	86.8	8.04E-01	

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]G248513011.CNF;1
* Acquisition date   : 20-MAR-2010 12:08:24  Detector SN#      :
* Detector ID        : GAM01                  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 02:00:01.14          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513011            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.14180E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS 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	2.800E+01	3.208E+00	6.359E-01	5.654E-02	44.033
CD-109	3.566E+00	1.310E+00	1.407E+00	1.331E-01	2.535
SN-126	3.444E-01	1.265E-01	1.366E-01	1.286E-02	2.522
BA-137M	6.543E-01	1.290E-01	7.009E-02	5.741E-03	9.335
CS-137	6.912E-01	1.364E-01	7.405E-02	6.078E-03	9.335
TL-208	5.563E-01	1.152E-01	7.602E-02	6.895E-03	7.318
BI-211	4.907E+00	7.443E-01	4.045E-01	3.680E-02	12.131
PB-212	1.719E+00	2.216E-01	1.210E-01	1.231E-02	14.200
BI-214	1.428E+00	2.755E-01	1.431E-01	1.418E-02	9.978
PB-214	1.781E+00	2.874E-01	1.487E-01	1.581E-02	11.973
RA-224	5.034E+00	1.654E+00	1.297E+00	1.179E-01	3.880
RA-226	1.428E+00	2.755E-01	1.431E-01	1.418E-02	9.978
AC-228	1.818E+00	4.270E-01	3.087E-01	3.678E-02	5.889
RA-228	1.818E+00	4.270E-01	3.087E-01	3.678E-02	5.889
TH-228	1.719E+00	2.216E-01	1.210E-01	1.231E-02	14.200
TH-232	1.818E+00	4.270E-01	3.087E-01	3.678E-02	5.889
TH-234	4.324E+00	2.694E+00	2.500E+00	4.491E-01	1.730
U-235	2.350E-01	9.435E-02	4.231E-01	7.157E-02	0.555

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.028E+00	4.347E-01	4.128E-01	9.470E-02	2.490
U-238	4.324E+00	2.694E+00	2.500E+00	4.491E-01	1.730
ANH-511	1.785E-01	8.844E-02	5.363E-02	4.545E-03	3.328

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	9.453E-02		4.474E-01	7.298E-01	6.638E-02	0.130
NA-22	1.796E-02		5.518E-02	9.542E-02	8.013E-03	0.188
NA-24	-1.761E+03		2.640E+03	Half-Life too short		
SC-46	-3.236E-02		5.445E-02	8.334E-02	7.533E-03	-0.388
V-48	1.243E-01		1.120E-01	2.047E-01	1.828E-02	0.607
CR-51	-6.267E-01		5.647E-01	8.322E-01	7.822E-02	-0.753
MN-54	-3.126E-02		5.230E-02	8.123E-02	7.230E-03	-0.385
CO-56	-8.891E-03		5.136E-02	8.270E-02	7.389E-03	-0.108
CO-57	9.326E-03		3.231E-02	5.194E-02	4.572E-03	0.180
CO-58	-1.367E-02		4.686E-02	7.452E-02	6.593E-03	-0.183
FE-59	-1.499E-02		1.220E-01	1.935E-01	1.784E-02	-0.077
CO-60	1.263E-02		5.242E-02	8.966E-02	7.643E-03	0.141
ZN-65	1.714E-02		1.185E-01	1.685E-01	1.422E-02	0.102
SE-75	4.081E-02		5.938E-02	9.850E-02	9.050E-03	0.414
SR-85	1.536E-01		5.766E-02	1.062E-01	9.002E-03	1.446
Y-88	1.002E-02		3.688E-02	6.419E-02	5.280E-03	0.156
Y-91	-3.170E+00		3.146E+01	5.225E+01	4.281E+00	-0.061
NB-94	5.021E-04		4.218E-02	7.004E-02	5.879E-03	0.007
NB-95	-1.033E-01		6.500E-02	9.229E-02	7.997E-03	-1.119
NB-95M	-4.659E-02		1.894E-01	2.724E-01	2.798E-02	-0.171
ZR-95	-4.103E-03		9.852E-02	1.621E-01	1.545E-02	-0.025
MO-99	-4.017E-05		5.563E-05	Half-Life too short		
TC-99M	-3.563E+19		6.769E+19	Half-Life too short		
RU-103	-4.635E-02		5.560E-02	8.148E-02	1.130E-02	-0.569
RH-106	1.400E-01		3.453E-01	5.974E-01	7.816E-02	0.234
RU-106	1.400E-01		3.450E-01	5.974E-01	4.990E-02	0.234
AG-108M	-1.977E-02		3.831E-02	5.928E-02	5.073E-03	-0.333
AG-110M	-8.357E-03		5.206E-02	7.391E-02	6.267E-03	-0.113
SN-113	5.339E-03		5.957E-02	9.719E-02	8.096E-03	0.055
CD-115	-6.773E-05		7.485E-05	Half-Life too short		
SN-117M	-1.213E-02		1.011E-01	1.699E-01	1.446E-02	-0.071
TE-123M	1.945E-02		3.621E-02	6.235E-02	5.342E-03	0.312
SB-124	4.312E-02		1.011E-01	1.797E-01	1.597E-02	0.240
SB-125	1.433E-02		1.210E-01	1.969E-01	1.655E-02	0.073
TE-125M	-1.086E+00		1.357E+01	2.153E+01	2.269E+00	-0.050
I-126	-1.688E-01		4.591E-01	6.324E-01	5.195E-02	-0.267
SB-126	-5.491E-02		2.796E-01	4.424E-01	3.750E-02	-0.124
SB-127	2.863E-01		6.525E+00	1.088E+01	1.500E+00	0.026
I-131	-4.800E-02		2.786E-01	4.479E-01	4.043E-02	-0.107
TE-132	-1.884E+00		4.968E+00	8.101E+00	1.446E+00	-0.233

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	6.673E-02		5.907E-02	9.190E-02	1.189E-02	0.726
I-133	1.603E+00		1.932E+00	Half-Life too short		
CS-134	2.036E-01	+	1.039E-01	1.207E-01	1.067E-02	1.687
CS-135	-1.951E-01		2.234E-01	3.015E-01	3.144E-02	-0.647
I-135	2.123E+18		1.835E+18	Half-Life too short		
CS-136	1.626E-01		2.100E-01	3.667E-01	3.336E-02	0.443
CE-139	2.944E-02		3.818E-02	6.617E-02	5.635E-03	0.445
BA-140	-1.089E-01		5.216E-01	8.633E-01	2.925E-01	-0.126
LA-140	-1.168E-01		1.849E-01	2.733E-01	2.358E-02	-0.428
CE-141	4.253E-02		9.362E-02	1.586E-01	1.379E-02	0.268
CE-143	1.562E-02		5.593E-03	Half-Life too short		
CE-144	-3.331E-01		3.056E-01	3.935E-01	6.014E-02	-0.847
PM-144	1.871E-02		4.418E-02	7.578E-02	6.344E-03	0.247
PR-144	1.423E+00		3.321E+00	5.699E+00	4.768E-01	0.250
PM-146	-1.164E-02		5.394E-02	8.527E-02	8.841E-03	-0.137
ND-147	-4.904E-01		1.115E+00	1.813E+00	2.697E-01	-0.270
PM-149	-2.012E-04		6.690E-04	Half-Life too short		
EU-152	1.937E-02		1.329E-01	1.926E-01	1.780E-02	0.101
GD-153	-3.782E-02		1.179E-01	1.644E-01	1.460E-02	-0.230
EU-154	3.576E-02		1.577E-01	2.699E-01	3.024E-02	0.132
EU-155	4.844E-02		1.312E-01	2.126E-01	1.870E-02	0.228
TB-160	-1.272E-01		1.746E-01	2.604E-01	2.348E-02	-0.489
HO-166M	-5.328E-02		7.540E-02	1.169E-01	9.860E-03	-0.456
TA-182	-2.111E-01		2.674E-01	4.143E-01	3.415E-02	-0.510
IR-192	2.409E-02		4.518E-02	7.643E-02	6.886E-03	0.315
HG-203	2.339E-02		5.704E-02	9.298E-02	8.697E-03	0.252
BI-207	2.774E-02		7.098E-02	1.192E-01	1.034E-02	0.233
PB-210	5.207E+00		5.136E+00	8.569E+00	8.026E-01	0.608
PB-211	-5.379E-01		9.865E-01	1.481E+00	7.153E-01	-0.363
BI-212	1.900E+00	+	9.246E-01	1.459E+00	1.807E-01	1.302
RN-219	3.060E-01		5.389E-01	9.026E-01	1.316E-01	0.339
RA-223	2.811E-01		9.111E-01	1.339E+00	2.343E-01	0.210
AC-227	-1.144E-01		3.195E-01	5.187E-01	6.444E-02	-0.221
TH-227	-1.144E-01		3.195E-01	5.187E-01	7.229E-02	-0.221
TH-229	-8.883E-02		6.516E-01	1.085E+00	9.509E-02	-0.082
PA-231	1.886E-01		1.718E+00	2.849E+00	4.244E-01	0.066
TH-231	2.811E-01		9.111E-01	1.339E+00	2.343E-01	0.210
PA-233	2.152E-02		7.583E-02	1.266E-01	1.172E-02	0.170
PA-234	4.908E-01		4.021E-01	7.154E-01	1.355E-01	0.686
PA-234M	6.640E-01		5.835E+00	9.588E+00	9.773E-01	0.069
NP-239	-3.885E-01		5.003E-01	7.631E-01	6.648E-02	-0.509
AM-241	-1.602E-01		2.236E-01	3.100E-01	2.554E-02	-0.517
CM-247	3.270E-02		4.878E-02	8.242E-02	6.683E-03	0.397
CF-249	6.473E-03		5.394E-02	8.818E-02	7.150E-03	0.073
CF-251	2.017E-02		1.569E-01	2.652E-01	2.285E-02	0.076

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]G248513011          *
* Acquisition date   : 20-MAR-2010 12:08:24 Detector SN# :                  *
* Detector ID        : GAM01                      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 02:00:01.14             Half life ratio : 8.000    *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248513011             Analyst initials: MXR1         *
* Batch Number      : 961097                 Sample Quantity : 1.1418E+02 GRAM *
* Recovery          : 1.00000                Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 12-JAN-2010 15:15:52 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	2.800E+01	3.144E+00	3.168E-01	1.604E+00
CD-109	3.566E+00	1.284E+00	7.189E-01	6.550E-01
SN-126	3.444E-01	1.240E-01	6.981E-02	6.327E-02
BA-137M	6.543E-01	1.265E-01	3.518E-02	6.452E-02
CS-137	6.912E-01	1.336E-01	3.716E-02	6.818E-02
TL-208	5.563E-01	1.129E-01	3.819E-02	5.762E-02
BI-211	4.907E+00	7.294E-01	2.042E-01	3.721E-01
PB-212	1.719E+00	2.172E-01	6.130E-02	1.108E-01
BI-214	1.428E+00	2.699E-01	7.187E-02	1.377E-01
PB-214	1.781E+00	2.817E-01	7.508E-02	1.437E-01
RA-224	5.034E+00	1.621E+00	6.572E-01	8.269E-01
RA-226	1.428E+00	2.699E-01	7.187E-02	1.377E-01
AC-228	1.818E+00	4.185E-01	1.545E-01	2.135E-01
RA-228	1.818E+00	4.185E-01	1.545E-01	2.135E-01
TH-228	1.719E+00	2.172E-01	6.130E-02	1.108E-01
TH-232	1.818E+00	4.185E-01	1.545E-01	2.135E-01
TH-234	4.324E+00	2.640E+00	1.282E+00	1.347E+00
U-235	1.589E-02	2.480E-01	2.153E-01	1.265E-01
NP-237	1.028E+00	4.260E-01	2.110E-01	2.174E-01
U-238	4.324E+00	2.640E+00	1.282E+00	1.347E+00
ANH-511	1.785E-01	8.667E-02	2.698E-02	4.422E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	9.453E-02	4.384E-01	3.674E-01	2.237E-01 NOT IDENT.
NA-22	1.796E-02	5.408E-02	4.760E-02	2.759E-02 NOT IDENT.
NA-24	-1.761E+09	5.173E+09	0.000E+00	2.640E+09 SHORT HLIF
SC-46	-3.236E-02	5.336E-02	4.171E-02	2.722E-02 FAIL ABUN
V-48	1.243E-01	1.098E-01	1.024E-01	5.602E-02 NOT IDENT.
CR-51	-6.267E-01	5.534E-01	4.204E-01	2.824E-01 NOT IDENT.

MN-54	-3.126E-02	5.125E-02	4.068E-02	2.615E-02	NOT IDENT.
CO-56	-8.891E-03	5.033E-02	4.141E-02	2.568E-02	NOT IDENT.
CO-57	9.326E-03	3.167E-02	2.647E-02	1.616E-02	NOT IDENT.
CO-58	-1.367E-02	4.593E-02	3.733E-02	2.343E-02	NOT IDENT.
FE-59	-1.499E-02	1.195E-01	9.666E-02	6.098E-02	NOT IDENT.
CO-60	1.263E-02	5.137E-02	4.471E-02	2.621E-02	NOT IDENT.
ZN-65	1.714E-02	1.162E-01	8.417E-02	5.927E-02	NOT IDENT.
SE-75	4.081E-02	5.819E-02	4.985E-02	2.969E-02	NOT IDENT.
SR-85	1.536E-01	5.651E-02	5.341E-02	2.883E-02	NOT IDENT.
Y-88	1.002E-02	3.614E-02	3.191E-02	1.844E-02	NOT IDENT.
Y-91	-3.170E+00	3.083E+01	2.608E+01	1.573E+01	NOT IDENT.
NB-94	5.021E-04	4.133E-02	3.513E-02	2.109E-02	NOT IDENT.
NB-95	-1.033E-01	6.370E-02	4.625E-02	3.250E-02	NOT IDENT.
NB-95M	-4.659E-02	1.856E-01	1.380E-01	9.470E-02	NOT IDENT.
ZR-95	-4.103E-03	9.655E-02	8.125E-02	4.926E-02	NOT IDENT.
MO-99	-4.017E+01	1.090E+02	0.000E+00	5.563E+01	SHORT HLIF
TC-99M	-3.563E+25	1.327E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.635E-02	5.449E-02	4.100E-02	2.780E-02	FAIL ABUN
RH-106	1.400E-01	3.384E-01	3.000E-01	1.726E-01	NOT IDENT.
RU-106	1.400E-01	3.381E-01	3.000E-01	1.725E-01	NOT IDENT.
AG-108M	-1.977E-02	3.755E-02	2.987E-02	1.916E-02	NOT IDENT.
AG-110M	-8.357E-03	5.102E-02	3.709E-02	2.603E-02	NOT IDENT.
SN-113	5.339E-03	5.838E-02	4.901E-02	2.979E-02	NOT IDENT.
CD-115	-6.773E+01	1.467E+02	0.000E+00	7.485E+01	SHORT HLIF
SN-117M	-1.213E-02	9.906E-02	8.636E-02	5.054E-02	NOT IDENT.
TE-123M	1.945E-02	3.549E-02	3.170E-02	1.811E-02	NOT IDENT.
SB-124	4.312E-02	9.905E-02	8.941E-02	5.054E-02	NOT IDENT.
SB-125	1.433E-02	1.185E-01	9.918E-02	6.048E-02	FAIL ABUN
TE-125M	-1.086E+00	1.329E+01	1.098E+01	6.783E+00	NOT IDENT.
I-126	-1.688E-01	4.499E-01	3.173E-01	2.296E-01	NOT IDENT.
SB-126	-5.491E-02	2.740E-01	2.218E-01	1.398E-01	NOT IDENT.
SB-127	2.863E-01	6.395E+00	5.460E+00	3.263E+00	NOT IDENT.
I-131	-4.800E-02	2.731E-01	2.260E-01	1.393E-01	NOT IDENT.
TE-132	-1.884E+00	4.869E+00	4.105E+00	2.484E+00	NOT IDENT.
BA-133	6.673E-02	5.789E-02	4.638E-02	2.954E-02	NOT IDENT.
I-133	1.603E+06	3.788E+06	0.000E+00	1.932E+06	SHORT HLIF
CS-134	2.036E-01	1.018E-01	6.048E-02	5.195E-02	FAIL ABUN
CS-135	-1.951E-01	2.189E-01	1.526E-01	1.117E-01	NOT IDENT.
I-135	2.123E+24	3.596E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.626E-01	2.058E-01	1.832E-01	1.050E-01	FAIL ABUN
CE-139	2.944E-02	3.742E-02	3.363E-02	1.909E-02	NOT IDENT.
BA-140	-1.089E-01	5.112E-01	4.341E-01	2.608E-01	NOT IDENT.
LA-140	-1.168E-01	1.812E-01	1.360E-01	9.244E-02	FAIL ABUN
CE-141	4.253E-02	9.175E-02	8.067E-02	4.681E-02	NOT IDENT.
CE-143	1.562E+04	1.096E+04	0.000E+00	5.593E+03	SHORT HLIF
CE-144	-3.331E-01	2.995E-01	2.004E-01	1.528E-01	NOT IDENT.
PM-144	1.871E-02	4.329E-02	3.801E-02	2.209E-02	NOT IDENT.
PR-144	1.423E+00	3.255E+00	2.859E+00	1.661E+00	NOT IDENT.
PM-146	-1.164E-02	5.287E-02	4.294E-02	2.697E-02	NOT IDENT.
ND-147	-4.904E-01	1.093E+00	9.117E-01	5.577E-01	FAIL ABUN
PM-149	-2.012E+02	1.311E+03	0.000E+00	6.690E+02	SHORT HLIF
EU-152	1.937E-02	1.303E-01	9.722E-02	6.647E-02	NOT IDENT.
GD-153	-3.782E-02	1.156E-01	8.394E-02	5.896E-02	NOT IDENT.
EU-154	3.576E-02	1.545E-01	1.346E-01	7.885E-02	NOT IDENT.
EU-155	4.844E-02	1.286E-01	1.085E-01	6.561E-02	FAIL ABUN
TB-160	-1.272E-01	7.711E-01	1.303E-01	8.729E-02	FAIL ABUN
HO-166M	-5.328E-02	7.389E-02	5.861E-02	3.770E-02	NOT IDENT.
TA-182	-2.111E-01	2.620E-01	2.067E-01	1.337E-01	FAIL ABUN
IR-192	2.409E-02	4.428E-02	3.861E-02	2.259E-02	FAIL ABUN
HG-203	2.339E-02	5.590E-02	4.703E-02	2.852E-02	NOT IDENT.
BI-207	2.774E-02	6.956E-02	5.958E-02	3.549E-02	FAIL ABUN
PB-210	5.207E+00	5.033E+00	4.404E+00	2.568E+00	NOT IDENT.
PB-211	-5.379E-01	9.668E-01	7.464E-01	4.932E-01	NOT IDENT.
BI-212	1.900E+00	9.062E-01	7.318E-01	4.623E-01	FAIL ABUN
RN-219	3.060E-01	5.281E-01	4.551E-01	2.695E-01	FAIL ABUN
RA-223	2.811E-01	8.929E-01	6.766E-01	4.555E-01	FAIL ABUN
AC-227	-1.144E-01	3.131E-01	2.626E-01	1.597E-01	NOT IDENT.
TH-227	-1.144E-01	3.132E-01	2.626E-01	1.598E-01	NOT IDENT.
TH-229	-8.883E-02	6.386E-01	5.509E-01	3.258E-01	FAIL ABUN
PA-231	1.886E-01	1.684E+00	1.441E+00	8.591E-01	NOT IDENT.
TH-231	2.811E-01	8.929E-01	6.766E-01	4.555E-01	FAIL ABUN
PA-233	2.152E-02	7.431E-02	6.397E-02	3.791E-02	FAIL ABUN
PA-234	4.908E-01	3.940E-01	3.578E-01	2.010E-01	NOT IDENT.
PA-234M	6.640E-01	5.719E+00	4.793E+00	2.918E+00	NOT IDENT.
NP-239	-3.885E-01	4.902E-01	3.890E-01	2.501E-01	NOT IDENT.
AM-241	-1.602E-01	2.191E-01	1.590E-01	1.118E-01	NOT IDENT.
CM-247	3.270E-02	4.781E-02	4.155E-02	2.439E-02	NOT IDENT.
CF-249	6.473E-03	5.286E-02	4.447E-02	2.697E-02	NOT IDENT.

CF-251

2.017E-02

1.538E-01

1.347E-01

7.845E-02 NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
*****

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ENERGY	MDA COUNTS
46.54	241.5967
49.72	282.3583
57.36	0.0000
59.54	315.0620
63.29	282.2975
63.29	282.2975
64.28	282.7881
67.75	348.4038
69.67	338.3048
70.83	342.1647
72.81	335.2134
72.87	335.2451
72.87	335.2451
74.82	349.2285
74.82	349.2285
74.82	349.2285
74.97	349.3109
77.11	350.4891
77.11	350.4891
77.11	350.4891
79.69	323.6503
79.80	316.1011
80.12	316.2550
80.19	316.2890
80.57	270.7949
81.00	316.6768
81.07	349.3615
81.07	349.3615
83.79	336.0325
83.79	336.0325
85.43	295.7671
86.48	296.2202
86.55	296.2491
86.79	296.3521
86.94	296.4166
87.57	296.6872
88.03	296.8835
88.47	297.0703
89.96	297.7020
91.11	298.1854
92.59	298.8020
92.59	298.8020
93.35	299.1179
94.67	299.6617
94.87	269.7697
94.87	269.7697
95.86	285.1418
97.43	294.1036
98.44	289.4838
99.53	253.3735
100.11	286.2148
103.18	323.2896
103.37	318.8788
105.31	278.0295
106.12	279.4453
109.28	300.9263
111.00	284.5670
111.76	313.2037
116.30	267.0169
117.23	290.1619
121.12	265.1070
121.78	261.8664
122.06	261.9516
123.07	268.0114
131.20	255.9894
133.52	324.7365
136.00	245.9650

136.47	260.1039
140.51	0.0000
140.51	0.0000
143.76	292.1453
144.24	277.2798
144.24	277.2798
145.44	276.7430
152.43	272.5009
153.25	260.2496
154.21	289.0495
154.21	289.0495
156.02	289.5710
158.56	284.9243
159.00	259.9495
162.66	287.8662
163.33	282.6532
165.86	253.5629
176.60	260.6822
177.52	248.1311
181.07	0.0000
184.41	237.9296
185.72	253.6458
193.51	254.4556
197.04	258.9379
205.31	216.8221
210.85	232.8330
215.65	190.0059
222.11	220.7307
227.38	223.5433
228.16	217.9669
228.18	217.9704
235.69	240.4772
235.96	252.7831
235.96	252.7831
238.63	225.4671
238.63	225.4671
240.99	225.8651
242.00	226.0355
244.70	149.5780
252.40	155.0720
252.80	160.9341
256.23	190.4859
256.23	190.4859
260.90	0.0000
264.66	153.0762
268.22	196.0205
269.46	180.4933
269.46	180.4933
271.23	175.8016
273.65	228.2334
276.40	157.6953
277.37	146.7543
277.60	135.7292
278.00	143.6583
279.20	169.2810
279.54	176.7986
280.46	189.7559
283.69	142.6245
284.31	131.7823
285.41	136.8376
285.90	0.0000
287.50	166.8157
293.27	0.0000
295.22	166.6611
295.96	166.7401
298.57	166.4229
299.98	163.3693
299.98	163.3693
300.09	172.9925
300.09	172.9925
300.13	172.9951
301.36	153.8953
302.85	154.4418
304.50	186.7294
304.50	186.7294
304.85	178.7388
308.46	154.9916
311.90	119.0155

316.51	119.3576
319.41	141.8628
320.08	143.9479
323.87	133.3081
323.87	133.3081
328.76	152.8610
333.37	134.8903
334.37	158.1454
334.37	158.1454
338.28	124.0095
338.28	124.0095
338.32	124.0113
338.32	124.0113
338.32	124.0113
340.48	114.9343
340.55	114.9377
344.28	115.1890
351.06	122.2500
351.93	124.9973
356.01	101.0581
364.49	110.2830
366.42	0.0000
383.85	126.1835
388.16	125.4207
388.63	114.9110
391.69	110.8736
400.66	118.8274
401.81	110.4048
402.40	106.1920
404.85	129.7199
410.95	104.5287
414.70	115.4174
423.72	121.3143
427.09	103.2378
427.87	105.4290
433.94	106.8265
453.88	95.8821
463.37	87.5598
468.07	85.9976
473.00	105.5464
476.78	77.0955
477.60	81.5314
487.02	84.0980
492.35	0.0000
497.08	83.3691
511.00	70.4640
514.00	70.5563
527.90	0.0000
529.87	0.0000
531.02	81.2307
537.26	86.8781
546.56	0.0000
563.25	71.3559
569.33	79.7868
569.50	73.3730
569.70	73.3789
583.19	82.0773
600.60	78.0015
602.73	77.8327
604.72	72.8561
609.32	77.3343
609.32	77.3343
610.33	77.3647
614.28	65.3464
618.01	56.0918
621.93	48.6853
621.93	48.6853
633.25	54.5350
635.95	54.5902
636.99	53.6699
645.85	56.6821
657.76	72.7454
661.66	62.7129
661.66	62.7129
664.57	0.0000
666.33	66.6265
666.50	61.8706
677.62	62.1182

685.70	58.4638
695.00	68.2716
696.49	65.4201
696.51	65.4218
697.00	71.2051
702.65	69.4178
706.68	68.5490
711.68	71.5701
720.70	62.5202
721.93	0.0000
722.78	66.3414
722.91	76.0518
723.31	69.5898
724.19	69.6108
727.33	51.8581
733.00	55.2057
735.93	47.7834
739.50	0.0000
747.24	57.7526
752.31	63.7336
753.82	55.9173
756.73	59.8979
763.94	85.6300
765.81	104.3955
766.42	69.9392
777.92	0.0000
778.90	61.3204
783.70	59.4346
785.37	60.4579
795.86	45.7428
801.95	49.8169
810.29	48.9486
810.76	43.9603
815.77	40.0264
818.51	37.0560
832.01	66.3754
834.85	76.4973
836.80	0.0000
846.77	49.5000
856.80	98.2859
860.56	36.5186
871.09	44.7734
873.19	41.7467
875.33	0.0000
879.36	46.9231
880.51	38.7756
883.24	42.8921
884.68	37.8012
889.28	56.2662
898.04	60.5125
911.20	56.6234
911.20	56.6234
911.20	56.6234
926.50	45.4964
937.49	43.5627
944.13	41.5654
946.00	36.3885
949.00	45.7843
962.29	69.6240
964.08	43.5364
966.15	57.5002
968.97	75.3311
968.97	75.3311
968.97	75.3311
983.53	25.2100
996.26	43.2142
1001.03	36.9371
1004.73	54.9326
1037.84	41.5575
1038.76	0.0000
1048.07	37.3943
1050.41	48.1069
1050.41	48.1069
1063.66	45.0516
1085.87	47.4633
1099.45	38.9654
1112.07	43.4297
1115.54	36.2223

1120.29	45.6914
1120.29	45.6914
1120.55	45.6955
1121.30	45.7037
1131.51	0.0000
1173.23	47.7450
1177.93	48.7170
1189.05	48.8443
1204.77	59.1953
1221.41	65.9211
1231.02	56.7606
1235.36	54.9548
1238.28	45.6703
1260.41	0.0000
1271.85	52.5866
1274.44	36.6450
1274.54	34.7658
1291.59	25.4652
1298.22	0.0000
1312.11	32.2098
1332.49	31.3994
1365.19	24.9103
1368.63	0.0000
1384.29	11.5430
1408.01	17.3994
1457.56	0.0000
1460.82	17.5854
1489.16	13.7539
1505.03	11.8257
1596.21	27.0703
1620.50	12.0850
1678.03	0.0000
1690.97	9.1791
1764.49	10.3300
1764.49	10.3300
1770.23	7.0904
1771.35	8.8647
1791.20	0.0000
1836.06	6.2729

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513011

Total Uranium Activity	1.2872E+01	ug/g
Total Uranium Counting Unc.	7.8549E+00	ug/g
Total Uranium Tpu	4.0076E-06	ug/g
Total Uranium Mda	3.8141E+00	ug/g


```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513011
*  ANALYST       : MXR1                             DETECTOR    : GAM01
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 20-MAR-2010 12:08:24.85          SAMPLE ALQT: 114.180 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.053E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.568E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.247E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.057E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:30:10.10

```
*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513012.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:29:35
Sample ID          : G248513012 Sample quantity : 1.14940E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.76 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	45.93*	208	452	0.88	92.85	88	9	2.88E-02	21.6	
2	0	62.67*	115	683	1.08	126.33	122	9	1.59E-02	43.1	
3	3	74.45*	790	713	1.68	149.87	142	19	1.10E-01	7.8	4.40E+00
4	3	76.69*	998	502	1.18	154.35	142	19	1.39E-01	5.1	
5	2	83.68	112	538	1.29	168.33	162	31	1.55E-02	34.8	2.69E+00
6	2	86.77	386	486	1.35	174.51	162	31	5.36E-02	11.0	
7	2	89.44	266	426	1.39	179.86	162	31	3.69E-02	15.3	
8	2	92.44*	304	328	1.22	185.86	162	31	4.22E-02	12.9	
9	0	128.52	91	352	1.09	258.00	254	9	1.27E-02	38.6	
10	0	185.51*	208	308	1.14	371.96	367	10	2.89E-02	17.9	
11	0	209.10	140	267	1.27	419.13	415	10	1.95E-02	23.3	
12	3	238.24*	1193	172	1.27	477.40	470	26	1.66E-01	3.6	1.01E+00
13	3	241.17	348	244	2.03	483.27	470	26	4.83E-02	14.0	
14	0	269.90	74	262	1.70	540.72	537	11	1.02E-02	44.1	
15	0	276.51	92	247	3.57	553.93	547	13	1.28E-02	36.8	
16	0	294.82*	404	198	1.34	590.55	585	11	5.61E-02	8.5	
17	0	327.63	110	171	1.20	656.13	650	13	1.53E-02	26.3	
18	0	337.71*	261	236	1.47	676.30	670	14	3.62E-02	14.1	
19	0	351.49*	708	202	1.39	703.85	696	16	9.83E-02	5.9	
20	0	462.45*	45	108	1.51	925.69	921	10	6.30E-03	47.8	
21	0	510.59*	151	138	2.17	1021.92	1013	21	2.10E-02	23.4	
22	0	582.66*	323	112	1.27	1165.99	1159	14	4.49E-02	9.1	
23	0	608.72*	435	73	1.55	1218.10	1211	14	6.05E-02	6.5	
24	0	661.03	385	71	1.42	1322.65	1317	11	5.34E-02	6.6	
25	0	726.55	87	81	0.81	1453.61	1446	14	1.21E-02	24.2	
26	0	859.67*	62	45	1.74	1719.67	1712	15	8.55E-03	27.3	
27	0	910.25*	218	76	1.70	1820.75	1812	17	3.03E-02	11.5	
28	0	933.16	36	60	0.91	1866.55	1858	15	5.00E-03	49.8	
29	1	963.83	104	55	2.19	1927.84	1918	24	1.45E-02	16.1	2.78E+00
30	1	968.23	146	28	2.00	1936.62	1918	24	2.03E-02	11.1	
31	0	1119.97*	133	41	1.93	2239.84	2233	16	1.85E-02	14.2	
32	0	1237.29*	52	44	1.79	2474.24	2466	15	7.21E-03	31.7	
33	0	1377.61	24	28	0.63	2754.57	2749	11	3.27E-03	49.4	
34	0	1460.03*	877	51	2.03	2919.21	2908	19	1.22E-01	3.9	
35	0	1763.57	89	5	1.31	3525.48	3516	19	1.24E-02	12.1	

Flag: "*" = Peak area was modified by background subtraction


```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513012.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:29:35
Sample ID         : G248513012 Sample quantity : 114.94 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA5 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.76 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	+	1460.82	*	2.678E+01	2.690E+00	6.827E-01	4.246E-02	39.224
CD-109	+	88.03	*	4.484E+00	1.042E+00	1.052E+00	8.008E-02	4.264
SN-126		64.28		5.322E-01	3.690E-01	5.510E-01	8.211E-02	0.966
	+	86.94		1.801E+00	8.401E-01	4.210E-01	1.733E-01	4.277
	+	87.57	*	4.331E-01	1.007E-01	1.014E-01	7.725E-03	4.270
BA-137M	+	661.66	*	6.938E-01	1.028E-01	8.343E-02	5.486E-03	8.316
CS-137	+	661.66	*	7.329E-01	1.087E-01	8.813E-02	5.814E-03	8.316
TL-208	+	277.37		1.068E+00	7.987E-01	7.447E-01	9.691E-02	1.434
	+	583.19	*	5.497E-01	1.079E-01	6.892E-02	5.062E-03	7.976
	+	860.56		1.011E+00	5.617E-01	5.827E-01	5.912E-02	1.735
PB-210	+	46.54	*	2.103E+00	9.228E-01	9.411E-01	7.259E-02	2.235
BI-211		72.87		1.776E+01	3.324E+00	5.167E+00	4.068E-01	3.436
	+	351.06	*	5.082E+00	7.236E-01	4.017E-01	3.184E-02	12.653
PB-212	+	74.82		3.122E+00	6.257E-01	4.457E-01	5.566E-02	7.004
	+	77.11		2.379E+00	3.054E-01	2.691E-01	2.095E-02	8.837
	+	238.63	*	1.869E+00	2.433E-01	1.103E-01	1.194E-02	16.947
		300.09		1.833E+00	1.163E+00	1.832E+00	1.967E-01	1.000
BI-214	+	609.32	*	1.438E+00	2.218E-01	1.443E-01	1.218E-02	9.964
	+	1120.29		2.316E+00	6.954E-01	5.509E-01	5.293E-02	4.204
	+	1764.49		2.212E+00	5.501E-01	4.446E-01	2.570E-02	4.976
PB-214	+	74.82		5.533E+00	1.064E+00	7.900E-01	8.804E-02	7.004
	+	77.11		4.193E+00	6.399E-01	4.745E-01	5.381E-02	8.837
	+	242.00		3.307E+00	9.988E-01	6.709E-01	7.623E-02	4.929
	+	295.22		1.762E+00	3.582E-01	3.430E-01	3.803E-02	5.136
	+	351.93	*	1.845E+00	2.816E-01	1.461E-01	1.408E-02	12.624
RA-224	+	240.99	*	5.848E+00	1.733E+00	1.182E+00	1.157E-01	4.946
RA-226	+	609.32	*	1.438E+00	2.218E-01	1.443E-01	1.218E-02	9.964
	+	1120.29		2.316E+00	6.954E-01	5.509E-01	5.293E-02	4.204
	+	1764.49		2.212E+00	5.501E-01	4.446E-01	2.570E-02	4.976
AC-228	+	338.32		2.075E+00	1.042E+00	5.053E-01	2.100E-01	4.107
	+	911.20	*	1.826E+00	4.811E-01	2.722E-01	3.456E-02	6.708
	+	968.97		2.117E+00	7.009E-01	4.391E-01	1.082E-01	4.821
RA-228	+	338.32		2.075E+00	1.042E+00	5.053E-01	2.100E-01	4.107
	+	911.20	*	1.826E+00	4.811E-01	2.722E-01	3.456E-02	6.708

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		2.117E+00	7.009E-01	4.391E-01	1.082E-01	4.821
	+	74.82		3.122E+00	5.483E-01	4.457E-01	3.528E-02	7.004
	+	77.11		2.379E+00	3.054E-01	2.691E-01	2.095E-02	8.837
	+	238.63	*	1.869E+00	2.433E-01	1.103E-01	1.194E-02	16.947
		300.09		1.833E+00	1.605E+00	1.832E+00	1.122E+00	1.000
TH-229	+	85.43		1.090E+00	2.534E-01	2.538E-01	1.940E-02	4.296
	+	88.47		4.622E-01	1.463E-01	1.568E-01	1.206E-02	2.948
		193.51	*	-3.526E-01	6.885E-01	1.076E+00	1.075E-01	-0.328
		210.85		2.002E+00	1.276E+00	1.922E+00	1.915E-01	1.042
TH-232	+	338.32		2.075E+00	6.069E-01	5.053E-01	3.961E-02	4.107
	+	911.20	*	1.826E+00	4.811E-01	2.722E-01	3.456E-02	6.708
	+	968.97		2.117E+00	7.009E-01	4.391E-01	1.082E-01	4.821
TH-234	+	63.29	*	1.256E+00	1.108E+00	1.293E+00	2.347E-01	0.972
	+	92.59		3.024E+00	1.026E+00	9.011E-01	1.982E-01	3.356
U-235	+	89.96		3.197E+00	1.252E+00	1.089E+00	2.657E-01	2.934
	+	93.35		2.284E+00	7.905E-01	6.823E-01	1.574E-01	3.348
		143.76	*	-2.424E-04	2.547E-01	4.074E-01	7.771E-02	-0.001
		163.33		9.221E-02	5.225E-01	8.478E-01	1.591E-01	0.109
	+	185.72		2.099E-01	7.802E-02	8.304E-02	8.288E-03	2.527
		205.31		2.142E-01	7.028E-01	9.955E-01	1.874E-01	0.215
NP-237	+	86.48	*	1.292E+00	4.046E-01	3.017E-01	6.733E-02	4.283
		95.86		-7.196E-01	1.047E+00	1.428E+00	3.446E-01	-0.504
U-238	+	63.29	*	1.256E+00	1.108E+00	1.293E+00	2.347E-01	0.972
	+	92.59		3.024E+00	8.218E-01	9.011E-01	7.572E-02	3.356
ANH-511	+	511.00	*	1.938E-01	9.162E-02	5.909E-02	3.782E-03	3.279

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-3.733E-02	4.802E-01	7.798E-01	5.584E-02	-0.048
NA-22		1274.54	*	-7.420E-03	5.383E-02	8.571E-02	4.992E-03	-0.087
NA-24		1368.63	*	-7.103E+03	5.383E-02	Half-Life too short		
SC-46		889.28	*	3.906E-02	5.239E-02	9.239E-02	9.280E-03	0.423
	+	1120.55		4.184E-01	1.224E-01	1.863E-01	1.282E-02	2.245
V-48		944.13		-3.824E-01	1.715E+00	2.770E+00	2.679E-01	-0.138
		983.53	*	-7.200E-03	1.228E-01	2.008E-01	1.839E-02	-0.036
		1312.11		-1.386E-01	1.642E-01	2.395E-01	1.389E-02	-0.579
CR-51		320.08	*	1.608E-01	6.300E-01	1.003E+00	8.860E-02	0.160
MN-54		834.85	*	2.104E-02	4.642E-02	7.998E-02	7.327E-03	0.263
CO-56		846.77	*	-7.708E-02	5.527E-02	7.887E-02	7.376E-03	-0.977
		1037.84		8.076E-03	4.345E-01	7.135E-01	6.288E-02	0.011
	+	1238.28		2.701E-01	1.722E-01	2.369E-01	1.464E-02	1.140
		1771.35		-1.334E-02	3.711E-01	5.162E-01	2.981E-02	-0.026
CO-57		122.06	*	1.637E-02	3.037E-02	5.029E-02	7.135E-03	0.326
		136.47		2.408E-01	2.593E-01	4.322E-01	5.786E-02	0.557
CO-58		810.76	*	-4.474E-03	5.328E-02	8.793E-02	7.739E-03	-0.051
FE-59		1099.45	*	7.206E-02	1.428E-01	2.438E-01	1.973E-02	0.296
		1291.59		-1.227E-01	1.883E-01	2.813E-01	2.090E-02	-0.436

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1173.23			7.172E-03	6.075E-02	9.994E-02	5.797E-03	0.072
	1332.49	*		9.116E-03	4.920E-02	8.133E-02	4.706E-03	0.112
ZN-65	1115.54	*		5.610E-02	1.388E-01	2.046E-01	1.429E-02	0.274
SE-75	121.12			4.606E-02	1.616E-01	2.656E-01	4.149E-02	0.173
	136.00			4.951E-02	5.117E-02	8.540E-02	1.114E-02	0.580
	264.66	*		-6.749E-03	6.614E-02	9.569E-02	9.136E-03	-0.071
	279.54			1.178E-01	1.545E-01	2.358E-01	2.258E-02	0.500
	400.66			4.061E-02	3.544E-01	5.872E-01	5.354E-02	0.069
SR-85	514.00	*		8.199E-02	6.032E-02	9.521E-02	6.103E-03	0.861
Y-88	898.04			5.149E-02	5.587E-02	9.957E-02	1.018E-02	0.517
	1836.06	*		2.521E-03	3.503E-02	5.863E-02	3.354E-03	0.043
Y-91	1204.77	*		2.570E+00	3.326E+01	5.440E+01	3.161E+00	0.047
NB-94	702.65	*		1.439E-02	4.192E-02	7.200E-02	5.152E-03	0.200
	871.09			-1.682E-02	4.377E-02	6.981E-02	6.804E-03	-0.241
NB-95	765.81	*		4.828E-02	6.164E-02	1.083E-01	8.760E-03	0.446
NB-95M	235.69	*		1.365E+00	2.643E-01	4.055E-01	4.442E-02	3.366
ZR-95	724.19			2.655E-01	1.710E-01	2.790E-01	2.315E-02	0.952
	756.73	*		2.607E-02	1.047E-01	1.780E-01	1.588E-02	0.146
MO-99	140.51			-4.576E-05	1.047E-01	Half-Life	too short	
	181.07			1.153E-04	1.047E-01	Half-Life	too short	
	366.42			-2.853E-04	1.047E-01	Half-Life	too short	
	739.50	*		8.961E-06	1.047E-01	Half-Life	too short	
	777.92			-8.715E-05	1.047E-01	Half-Life	too short	
TC-99M	140.51	*		-3.640E+19	1.047E-01	Half-Life	too short	
RU-103	497.08	*		8.916E-03	5.895E-02	9.709E-02	1.232E-02	0.092
	610.33			1.446E+01	3.009E+00	3.980E+00	6.119E-01	3.633
RH-106	621.93	*		3.098E-02	4.216E-01	6.832E-01	8.223E-02	0.045
	1050.41			2.252E+00	3.413E+00	5.933E+00	4.831E-01	0.380
RU-106	621.93	*		3.098E-02	4.216E-01	6.832E-01	4.503E-02	0.045
	1050.41			2.252E+00	3.413E+00	5.933E+00	4.831E-01	0.380
AG-108M	433.94	*		-1.825E-02	3.831E-02	6.082E-02	3.927E-03	-0.300
	614.28			-5.421E-03	5.326E-02	7.312E-02	5.086E-03	-0.074
	722.91			-3.794E-02	5.970E-02	8.014E-02	6.226E-03	-0.473
AG-110M	657.76	*		1.135E-01	6.676E-02	1.063E-01	7.347E-03	1.068
	677.62			-3.931E-01	4.168E-01	6.473E-01	4.603E-02	-0.607
	706.68			7.568E-02	2.632E-01	4.506E-01	3.383E-02	0.168
	763.94			-1.152E-02	2.226E-01	3.698E-01	3.074E-02	-0.031
	884.68			-1.774E-02	6.184E-02	9.937E-02	1.014E-02	-0.179
	937.49			1.490E-02	1.657E-01	2.377E-01	2.384E-02	0.063
	1384.29			5.814E-02	2.405E-01	3.596E-01	2.217E-02	0.162
	1505.03			-2.705E-01	3.666E-01	5.451E-01	3.204E-02	-0.496
SN-113	391.69	*		-1.756E-02	6.115E-02	9.903E-02	6.143E-03	-0.177
CD-115	260.90			-6.516E-04	6.115E-02	Half-Life	too short	
	492.35			-1.892E-04	6.115E-02	Half-Life	too short	
	527.90	*		6.628E-05	6.115E-02	Half-Life	too short	
SN-117M	156.02			-4.116E+00	4.396E+00	6.789E+00	7.486E-01	-0.606
	158.56	*		-4.420E-02	1.029E-01	1.628E-01	1.750E-02	-0.272
TE-123M	159.00	*		-3.747E-03	3.718E-02	5.969E-02	6.414E-03	-0.063
SB-124	602.73			-1.139E-02	6.408E-02	8.734E-02	5.752E-03	-0.130

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		645.85		-1.770E-01	7.407E-01	1.167E+00	8.429E-02	-0.152
		722.78		-2.436E-01	6.271E-01	8.653E-01	6.642E-02	-0.281
	1690.97	*		-8.107E-03	8.678E-02	1.403E-01	8.920E-03	-0.058
	427.87	*		-6.839E-02	1.122E-01	1.763E-01	1.104E-02	-0.388
	463.37			5.127E-01	4.918E-01	6.933E-01	4.913E-02	0.740
TE-125M	600.60			1.472E-01	2.405E-01	3.854E-01	2.851E-02	0.382
	635.95			-3.646E-01	3.675E-01	5.383E-01	4.028E-02	-0.677
	109.28	*		-3.511E+00	1.289E+01	2.028E+01	2.635E+00	-0.173
I-126	388.63			2.185E-01	3.396E-01	5.794E-01	3.448E-02	0.377
	666.33	*		4.177E-01	5.389E-01	8.079E-01	5.365E-02	0.517
	753.82			-2.042E-01	3.738E+00	6.213E+00	4.913E-01	-0.033
SB-126	414.70			-3.725E-02	1.633E-01	2.648E-01	1.577E-02	-0.141
	666.50			1.402E-01	1.883E-01	2.815E-01	1.870E-02	0.498
	695.00			-4.617E-02	1.564E-01	2.563E-01	1.806E-02	-0.180
SB-127	697.00			2.129E-01	5.228E-01	9.024E-01	6.384E-02	0.236
	720.70	*		1.095E-01	3.401E-01	5.080E-01	3.768E-02	0.216
	856.80			1.900E-02	1.117E+00	1.596E+00	1.518E-01	0.012
	252.40			-2.297E+01	2.413E+01	3.523E+01	1.499E+01	-0.652
	473.00			1.793E+00	8.921E+00	1.476E+01	2.058E+00	0.121
I-131	685.70	*		-1.618E+00	7.228E+00	1.191E+01	1.550E+00	-0.136
	783.70			1.947E+01	1.971E+01	3.491E+01	5.116E+00	0.558
	80.19			7.133E+00	1.193E+01	1.296E+01	1.020E+00	0.550
TE-132	284.31			-1.875E+00	3.677E+00	5.952E+00	5.754E-01	-0.315
	364.49	*		3.332E-01	2.852E-01	5.011E-01	3.803E-02	0.665
	636.99			-3.462E+00	4.163E+00	6.198E+00	4.532E-01	-0.559
BA-133	49.72			-3.157E+01	2.832E+01	3.884E+01	4.897E+00	-0.813
	111.76			-1.518E+02	2.176E+02	3.434E+02	5.465E+01	-0.442
	116.30			3.094E+00	1.826E+02	2.976E+02	4.949E+01	0.010
I-133	228.16	*		4.087E+00	4.938E+00	8.498E+00	1.557E+00	0.481
	81.00			3.850E-02	1.248E-01	1.328E-01	1.996E-02	0.290
	276.40			9.888E-01	7.421E-01	8.100E-01	1.179E-01	1.221
CS-134	302.85			-1.486E-01	1.826E-01	2.905E-01	3.832E-02	-0.512
	356.01	*		3.079E-02	5.287E-02	7.971E-02	9.632E-03	0.386
	383.85			1.095E-01	3.995E-01	6.684E-01	7.261E-02	0.164
I-135	529.87	*		-8.205E-01	3.995E-01	Half-Life too short		
	875.33			-8.313E+01	3.995E-01	Half-Life too short		
	1298.22			1.353E+02	3.995E-01	Half-Life too short		
CS-135	563.25			3.533E-01	5.136E-01	8.558E-01	5.684E-02	0.413
	569.33			1.043E-01	2.781E-01	4.511E-01	3.022E-02	0.231
	604.72			-1.032E-02	5.035E-02	6.839E-02	4.523E-03	-0.151
I-135	795.86	*		4.996E-02	6.712E-02	1.150E-01	9.902E-03	0.434
	801.95			-1.798E-01	5.613E-01	9.128E-01	7.934E-02	-0.197
	1365.19			-4.381E-01	1.566E+00	2.419E+00	1.546E-01	-0.181
I-135	268.22	*		3.993E-01	2.303E-01	3.648E-01	3.903E-02	1.095
	546.56			9.497E+18	2.303E-01	Half-Life too short		
	836.80			6.959E+18	2.303E-01	Half-Life too short		
I-135	1038.76			5.835E+17	2.303E-01	Half-Life too short		
	1131.51			2.683E+18	2.303E-01	Half-Life too short		
	1260.41	*		6.146E+18	2.303E-01	Half-Life too short		

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1457.56		6.393E+20	2.303E-01	Half-Life	too short	
		1678.03		4.333E+18	2.303E-01	Half-Life	too short	
		1791.20		-3.607E+18	2.303E-01	Half-Life	too short	
		153.25		2.126E+00	1.641E+00	2.748E+00	3.470E-01	0.774
		176.60		-2.477E-01	9.603E-01	1.525E+00	1.639E-01	-0.162
		273.65		-3.646E-02	1.643E+00	1.600E+00	1.609E-01	-0.023
		340.55		6.286E-01	3.380E-01	5.401E-01	4.397E-02	1.164
		818.51		2.669E-02	1.290E-01	2.187E-01	1.951E-02	0.122
CE-139 BA-140		1048.07	*	-2.857E-02	2.164E-01	3.499E-01	3.000E-02	-0.082
		1235.36		1.268E-01	1.467E+00	2.056E+00	2.036E-01	0.062
		165.86	*	-4.658E-02	3.798E-02	5.735E-02	5.693E-03	-0.812
		162.66		4.198E-01	1.519E+00	2.476E+00	2.670E-01	0.170
		304.85		-3.161E+00	2.815E+00	4.164E+00	1.220E+00	-0.759
		423.72		1.234E-01	3.800E+00	6.251E+00	2.020E+00	0.020
		537.26	*	1.622E-01	5.354E-01	8.844E-01	2.957E-01	0.183
		328.76		1.669E+00	8.902E-01	1.047E+00	9.056E-02	1.594
LA-140	+	487.02		-1.434E-01	2.844E-01	4.472E-01	3.141E-02	-0.321
		815.77		-2.004E-01	6.019E-01	9.680E-01	9.531E-02	-0.207
		1596.21	*	-1.777E-01	1.581E-01	2.100E-01	1.234E-02	-0.846
		145.44	*	-2.693E-03	9.315E-02	1.505E-01	1.840E-02	-0.018
		57.36		2.503E-02	9.315E-02	Half-Life	too short	
		293.27	*	7.160E-02	9.315E-02	Half-Life	too short	
		664.57		1.494E-01	9.315E-02	Half-Life	too short	
		721.93		1.361E-02	9.315E-02	Half-Life	too short	
CE-144		80.12		2.134E+00	3.310E+00	3.609E+00	2.789E-01	0.591
		133.52	*	-8.591E-02	2.840E-01	3.953E-01	7.228E-02	-0.217
		476.78		-4.009E-03	8.778E-02	1.429E-01	1.038E-02	-0.028
PM-144		618.01		9.426E-03	4.468E-02	7.143E-02	4.934E-03	0.132
		696.49	*	1.015E-02	4.392E-02	7.486E-02	5.296E-03	0.136
		696.51	*	7.524E-01	3.300E+00	5.623E+00	3.974E-01	0.134
PR-144		1489.16		-7.184E+00	1.762E+01	2.768E+01	1.626E+00	-0.260
		453.88	*	5.362E-02	5.756E-02	9.932E-02	8.654E-03	0.540
		633.25		-1.636E-01	1.957E+00	3.126E+00	1.181E+00	-0.052
PM-146		735.93		-2.514E-02	1.792E-01	2.957E-01	8.202E-02	-0.085
		747.24		-2.477E-02	1.232E-01	2.023E-01	2.856E-02	-0.122
		91.11		1.971E+00	5.403E-01	9.228E-01	8.215E-02	2.136
		319.41		3.110E+00	7.284E+00	1.235E+01	1.037E+00	0.252
		531.02	*	-1.548E-01	1.318E+00	1.992E+00	2.753E-01	-0.078
		285.90	*	6.776E-05	1.318E+00	Half-Life	too short	
		121.78		6.734E-02	8.526E-02	1.420E-01	2.121E-02	0.474
		244.70		4.389E-03	3.856E-01	6.477E-01	6.315E-02	0.007
EU-152		344.28	*	-3.161E-02	2.188E-01	2.057E-01	1.690E-02	-0.154
		778.90		6.204E-02	3.167E-01	5.366E-01	4.447E-02	0.116
	+	964.08		1.622E+00	5.430E-01	8.268E-01	7.789E-02	1.961
		1085.87		2.008E-01	4.878E-01	8.306E-01	6.253E-02	0.242
		1112.07		3.049E-03	4.557E-01	6.650E-01	4.683E-02	0.005
		1408.01		2.645E-01	2.096E-01	4.045E-01	2.363E-02	0.654
		69.67		-7.921E-01	1.445E+00	2.044E+00	1.626E-01	-0.387
		97.43	*	4.065E-02	9.725E-02	1.424E-01	1.320E-02	0.285
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----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		103.18		-1.254E-01	1.267E-01	1.985E-01	2.053E-02	-0.632
		123.07		2.983E-02	6.610E-02	1.012E-01	1.613E-02	0.295
		723.31		1.267E-02	2.662E-01	3.858E-01	3.260E-02	0.033
		873.19		1.134E-01	3.375E-01	5.766E-01	7.358E-02	0.197
		996.26		-7.104E-02	5.226E-01	7.902E-01	1.395E-01	-0.090
		1004.73		-3.848E-01	2.957E-01	4.186E-01	4.945E-02	-0.919
EU-155		1274.44	*	-1.760E-02	1.523E-01	2.431E-01	2.293E-02	-0.072
	+	86.55		5.268E-01	1.227E-01	1.893E-01	1.463E-02	2.784
		105.31	*	1.111E-01	1.183E-01	1.988E-01	2.153E-02	0.559
TB-160	+	86.79		1.504E+00	3.496E-01	5.405E-01	4.122E-02	2.782
		197.04		2.523E-02	8.142E-01	1.284E+00	1.282E-01	0.020
		215.65		-9.191E-02	1.022E+00	1.624E+00	1.615E-01	-0.057
HO-166M		298.57		2.061E-01	1.804E-01	2.788E-01	2.481E-02	0.739
		879.36	*	-1.544E-02	1.708E-01	2.800E-01	2.767E-02	-0.055
		962.29		2.148E+00	8.624E-01	1.623E+00	1.533E-01	1.324
		966.15		2.057E+00	4.408E-01	8.283E-01	7.781E-02	2.484
		1177.93		-2.806E-01	5.292E-01	8.059E-01	4.676E-02	-0.348
		1271.85		8.049E-01	9.074E-01	1.617E+00	9.398E-02	0.498
		80.57		1.505E-01	3.543E-01	3.804E-01	2.937E-02	0.396
	+	184.41		1.667E-01	6.198E-02	8.468E-02	8.450E-03	1.969
		280.46		-1.493E-02	1.133E-01	1.629E-01	1.508E-02	-0.092
		410.95		-1.402E-02	3.463E-01	5.680E-01	3.371E-02	-0.025
TA-182		711.68	*	-1.953E-02	7.449E-02	1.220E-01	8.891E-03	-0.160
		752.31		1.715E-01	3.550E-01	6.146E-01	4.846E-02	0.279
		810.29		1.244E-02	7.302E-02	1.232E-01	1.081E-02	0.101
		67.75		9.399E-02	1.055E-01	1.350E-01	1.081E-02	0.696
		100.11		1.566E-01	1.930E-01	3.241E-01	3.164E-02	0.483
		152.43		5.047E-01	4.589E-01	7.673E-01	8.752E-02	0.658
		222.11		-3.992E-02	4.427E-01	7.432E-01	7.371E-02	-0.054
	+	1121.30		1.139E+00	3.333E-01	5.026E-01	3.450E-02	2.266
IR-192		1189.05		2.370E-01	4.314E-01	7.364E-01	4.276E-02	0.322
		1221.41	*	1.494E-01	2.733E-01	4.651E-01	2.704E-02	0.321
		1231.02		1.619E-01	7.562E-01	1.079E+00	6.276E-02	0.150
	+	295.96		1.404E+00	2.707E-01	3.903E-01	3.519E-02	3.597
		308.46		-5.459E-02	1.300E-01	2.115E-01	1.843E-02	-0.258
HG-203		316.51	*	9.061E-04	4.899E-02	8.152E-02	6.919E-03	0.011
		468.07		9.675E-03	1.034E-01	1.475E-01	1.044E-02	0.066
		70.83		-7.997E-01	1.283E+00	1.802E+00	2.828E-01	-0.444
		72.87		4.976E+00	1.132E+00	1.448E+00	2.191E-01	3.436
BI-207		279.20	*	4.998E-02	5.934E-02	9.091E-02	8.623E-03	0.550
		72.81		9.875E-01	1.895E-01	2.950E-01	2.323E-02	3.347
	+	74.97		9.001E-01	1.578E-01	2.345E-01	1.835E-02	3.838
		569.70		7.479E-03	4.338E-02	6.938E-02	4.541E-03	0.108
PB-211		1063.66	*	3.416E-03	6.220E-02	1.024E-01	8.111E-03	0.033
		1770.23		1.746E-01	6.240E-01	9.494E-01	5.484E-02	0.184
		404.85	*	-3.599E-01	1.041E+00	1.656E+00	7.947E-01	-0.217
		427.09		-2.359E-01	1.862E+00	3.024E+00	1.386E+00	-0.078
BI-212		832.01		-1.083E+00	1.328E+00	1.827E+00	9.491E-01	-0.593
	+	727.33	*	2.313E+00	1.154E+00	1.507E+00	1.767E-01	1.535

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		5.677E+00	4.182E+00	7.626E+00	6.396E-01	0.744
		1620.50		2.655E+00	2.813E+00	5.335E+00	3.131E-01	0.498
RN-219	+	271.23		5.118E-01	4.547E-01	5.622E-01	6.144E-02	0.910
		401.81	*	-2.952E-01	5.519E-01	8.778E-01	1.183E-01	-0.336
RA-223		81.07		8.415E-02	2.823E-01	3.004E-01	2.317E-02	0.280
	+	83.79		1.862E-01	1.305E-01	1.937E-01	1.486E-02	0.961
		94.87		7.306E-01	5.054E-01	7.685E-01	6.768E-02	0.951
		144.24		8.005E-02	8.488E-01	1.362E+00	1.765E-01	0.059
		154.21		7.015E-01	4.927E-01	8.282E-01	9.826E-02	0.847
	+	269.46		3.976E-01	3.527E-01	4.297E-01	4.124E-02	0.925
		323.87	*	-1.441E-01	9.482E-01	1.352E+00	2.320E-01	-0.107
	+	338.28		8.235E+00	2.507E+00	3.046E+00	3.511E-01	2.704
AC-227		79.69		1.606E+00	1.641E+00	1.809E+00	3.041E-01	0.888
		235.96		2.392E+00	3.816E-01	5.242E-01	5.959E-02	4.564
		256.23	*	1.889E-01	3.223E-01	5.524E-01	7.063E-02	0.342
		299.98		2.039E+00	1.289E+00	2.018E+00	2.598E-01	1.011
		304.50		-3.218E+00	2.173E+00	3.241E+00	5.382E-01	-0.993
		334.37		1.454E+00	3.103E+00	3.697E+00	5.632E-01	0.393
TH-227		79.80		1.830E+00	2.168E+00	2.361E+00	5.064E-01	0.775
		235.96		2.392E+00	3.727E-01	5.242E-01	5.681E-02	4.564
		256.23	*	1.889E-01	3.225E-01	5.524E-01	7.877E-02	0.342
		299.98		2.039E+00	1.289E+00	2.018E+00	2.598E-01	1.011
		304.50		-3.218E+00	2.173E+00	3.241E+00	5.382E-01	-0.993
		334.37		1.454E+00	3.103E+00	3.697E+00	5.632E-01	0.393
PA-231		283.69	*	-6.947E-01	1.841E+00	2.922E+00	4.365E-01	-0.238
		301.36		7.947E-01	7.659E-01	1.261E+00	1.552E-01	0.630
TH-231		81.07		8.415E-02	2.823E-01	3.004E-01	2.317E-02	0.280
	+	83.79		1.862E-01	1.305E-01	1.937E-01	1.486E-02	0.961
		94.87		7.306E-01	5.054E-01	7.685E-01	6.768E-02	0.951
		144.24		8.005E-02	8.488E-01	1.362E+00	1.765E-01	0.059
		154.21		7.015E-01	4.927E-01	8.282E-01	9.826E-02	0.847
	+	269.46		3.976E-01	3.527E-01	4.297E-01	4.124E-02	0.925
		323.87	*	-1.441E-01	9.482E-01	1.352E+00	2.320E-01	-0.107
	+	338.28		8.235E+00	2.507E+00	3.046E+00	3.511E-01	2.704
PA-233		300.13		9.084E-01	5.866E-01	9.113E-01	1.364E-01	0.997
		311.90	*	-3.757E-02	8.090E-02	1.312E-01	1.159E-02	-0.286
		340.48		1.975E+00	1.057E+00	1.547E+00	3.677E-01	1.277
PA-234		94.67		4.474E-01	1.916E-01	2.921E-01	3.654E-02	1.532
		98.44		1.554E-01	1.341E-01	1.580E-01	8.837E-02	0.983
		111.00		-2.825E-02	2.197E-01	3.471E-01	5.062E-02	-0.081
		131.20		-6.654E-02	1.442E-01	1.989E-01	2.671E-02	-0.335
		569.50		1.296E-01	3.797E-01	6.144E-01	4.021E-02	0.211
		733.00		-2.234E-01	5.578E-01	7.624E-01	1.664E-01	-0.293
		880.51		2.690E-02	3.250E-01	5.425E-01	5.371E-02	0.050
		883.24		9.409E-02	3.420E-01	5.717E-01	3.854E-01	0.165
		926.50		-9.690E-02	2.465E-01	3.265E-01	8.402E-02	-0.297
		946.00	*	2.219E-01	4.109E-01	7.058E-01	1.359E-01	0.314
		949.00		2.620E-01	5.772E-01	9.903E-01	9.520E-02	0.265
PA-234M		766.42		1.382E+01	1.651E+01	2.656E+01	1.345E+01	0.520

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		4.704E+00	6.261E+00	1.083E+01	1.106E+00	0.435
	99.53			1.801E-01	1.742E-01	2.853E-01	2.754E-02	0.631
	103.37			-4.449E-03	1.099E-01	1.794E-01	1.861E-02	-0.025
	106.12			5.486E-02	9.605E-02	1.597E-01	1.741E-02	0.343
	117.23	*		-3.617E-01	4.599E-01	7.213E-01	9.485E-02	-0.502
	228.18			2.166E-01	2.595E-01	4.503E-01	4.451E-02	0.481
AM-241	+	277.60		4.882E-01	3.623E-01	3.831E-01	3.565E-02	1.275
CM-247		59.54	*	1.313E-01	8.039E-02	1.239E-01	1.109E-02	1.059
	+	278.00		2.074E+00	1.539E+00	1.630E+00	1.516E-01	1.272
CF-249		287.50		1.034E+00	1.604E+00	2.616E+00	2.388E-01	0.395
		402.40	*	-2.790E-02	5.117E-02	8.154E-02	4.797E-03	-0.342
		252.80		-1.136E+00	1.180E+00	1.883E+00	1.819E-01	-0.603
		333.37		2.432E-01	3.560E-01	3.793E-01	3.031E-02	0.641
CF-251		388.16	*	3.598E-02	5.382E-02	9.192E-02	5.489E-03	0.391
		177.52	*	-1.231E-01	1.678E-01	2.603E-01	2.593E-02	-0.473
		227.38		3.863E-01	4.226E-01	7.354E-01	7.271E-02	0.525
		285.41		-1.685E-01	2.708E+00	4.487E+00	4.113E-01	-0.038

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]G248513012      *
* Acquisition date   : 20-MAR-2010 13:29:35 Detector SN# :                   *
* Detector ID        : GAM05 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 02:00:01.76 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248513012 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.1494E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 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	2.678E+01	2.636E+00	6.800E-01	0.000E+00
CD-109	4.484E+00	1.022E+00	1.076E+00	0.000E+00
SN-126	4.331E-01	9.868E-02	1.038E-01	0.000E+00
BA-137M	6.938E-01	1.008E-01	8.373E-02	0.000E+00
CS-137	7.329E-01	1.065E-01	8.845E-02	0.000E+00
TL-208	5.497E-01	1.057E-01	6.925E-02	0.000E+00
PB-210	2.103E+00	9.043E-01	9.682E-01	0.000E+00
BI-211	5.082E+00	7.091E-01	4.056E-01	0.000E+00
PB-212	1.869E+00	2.384E-01	1.118E-01	0.000E+00
BI-214	1.438E+00	2.173E-01	1.450E-01	0.000E+00
PB-214	1.845E+00	2.760E-01	1.475E-01	0.000E+00
RA-224	5.848E+00	1.699E+00	1.198E+00	0.000E+00
RA-226	1.438E+00	2.173E-01	1.450E-01	0.000E+00
AC-228	1.826E+00	4.715E-01	2.724E-01	0.000E+00
RA-228	1.826E+00	4.715E-01	2.724E-01	0.000E+00
TH-228	1.869E+00	2.384E-01	1.118E-01	0.000E+00
TH-229	-3.526E-01	6.747E-01	1.093E+00	0.000E+00
TH-232	1.826E+00	4.715E-01	2.724E-01	0.000E+00
TH-234	1.256E+00	1.086E+00	1.327E+00	0.000E+00
U-235	-2.424E-04	2.496E-01	4.148E-01	0.000E+00
NP-237	1.292E+00	3.965E-01	3.087E-01	0.000E+00
U-238	1.256E+00	1.086E+00	1.327E+00	0.000E+00
ANH-511	1.938E-01	8.979E-02	5.945E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.733E-02	4.706E-01	7.851E-01	0.000E+00 NOT IDENT.
NA-22	-7.420E-03	5.275E-02	8.548E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.959E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	3.906E-02	5.134E-02	9.246E-02	0.000E+00 FAIL ABUN

V-48	-7.200E-03	1.204E-01	2.007E-01	0.000E+00	NOT IDENT.
CR-51	1.608E-01	6.174E-01	1.013E+00	0.000E+00	NOT IDENT.
MN-54	2.104E-02	4.549E-02	8.009E-02	0.000E+00	NOT IDENT.
CO-56	-7.708E-02	5.417E-02	7.897E-02	0.000E+00	FAIL ABUN
CO-57	1.637E-02	2.977E-02	5.128E-02	0.000E+00	NOT IDENT.
CO-58	-4.474E-03	5.222E-02	8.807E-02	0.000E+00	NOT IDENT.
FE-59	7.206E-02	1.399E-01	2.434E-01	0.000E+00	NOT IDENT.
CO-60	9.116E-03	4.821E-02	8.107E-02	0.000E+00	NOT IDENT.
ZN-65	5.610E-02	1.360E-01	2.043E-01	0.000E+00	NOT IDENT.
SE-75	-6.749E-03	6.482E-02	9.687E-02	0.000E+00	NOT IDENT.
SR-85	8.199E-02	5.911E-02	9.579E-02	0.000E+00	NOT IDENT.
Y-88	2.521E-03	3.433E-02	5.826E-02	0.000E+00	NOT IDENT.
Y-91	2.570E+00	3.260E+01	5.429E+01	0.000E+00	NOT IDENT.
NB-94	1.439E-02	4.108E-02	7.222E-02	0.000E+00	NOT IDENT.
NB-95	4.828E-02	6.040E-02	1.085E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.590E-01	4.110E-01	0.000E+00	NOT IDENT.
ZR-95	2.607E-02	1.026E-01	1.784E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.125E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.630E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	8.916E-03	5.777E-02	9.771E-02	0.000E+00	NOT IDENT.
RH-106	3.098E-02	4.132E-01	6.861E-01	0.000E+00	NOT IDENT.
RU-106	3.098E-02	4.132E-01	6.861E-01	0.000E+00	NOT IDENT.
AG-108M	-1.825E-02	3.754E-02	6.129E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	6.543E-02	1.067E-01	0.000E+00	NOT IDENT.
SN-113	-1.756E-02	5.993E-02	9.988E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.696E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-4.420E-02	1.008E-01	1.656E-01	0.000E+00	NOT IDENT.
TE-123M	-3.747E-03	3.643E-02	6.072E-02	0.000E+00	NOT IDENT.
SB-124	-8.107E-03	8.505E-02	1.395E-01	0.000E+00	NOT IDENT.
SB-125	-6.839E-02	1.100E-01	1.777E-01	0.000E+00	FAIL ABUN
TE-125M	-3.511E+00	1.263E+01	2.070E+01	0.000E+00	NOT IDENT.
I-126	4.177E-01	5.281E-01	8.108E-01	0.000E+00	NOT IDENT.
SB-126	1.095E-01	3.333E-01	5.094E-01	0.000E+00	NOT IDENT.
SB-127	-1.618E+00	7.083E+00	1.195E+01	0.000E+00	NOT IDENT.
I-131	3.332E-01	2.795E-01	5.058E-01	0.000E+00	NOT IDENT.
TE-132	4.087E+00	4.839E+00	8.615E+00	0.000E+00	NOT IDENT.
BA-133	3.079E-02	5.182E-02	8.047E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	4.878E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.996E-02	6.578E-02	1.152E-01	0.000E+00	NOT IDENT.
CS-135	0.000E+00	2.257E-01	3.693E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.424E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.857E-02	2.120E-01	3.496E-01	0.000E+00	NOT IDENT.
CE-139	-4.658E-02	3.722E-02	5.831E-02	0.000E+00	NOT IDENT.
BA-140	1.622E-01	5.247E-01	8.894E-01	0.000E+00	NOT IDENT.
LA-140	-1.777E-01	1.549E-01	2.090E-01	0.000E+00	FAIL ABUN
CE-141	-2.693E-03	9.128E-02	1.532E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.146E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.591E-02	2.783E-01	4.028E-01	0.000E+00	NOT IDENT.
PM-144	1.015E-02	4.304E-02	7.509E-02	0.000E+00	NOT IDENT.
PR-144	7.524E-01	3.234E+00	5.641E+00	0.000E+00	NOT IDENT.
PM-146	5.362E-02	5.641E-02	1.000E-01	0.000E+00	NOT IDENT.
ND-147	-1.548E-01	1.292E+00	2.003E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.332E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-3.161E-02	2.144E-01	2.077E-01	0.000E+00	FAIL ABUN
GD-153	4.065E-02	9.530E-02	1.455E-01	0.000E+00	NOT IDENT.
EU-154	-1.760E-02	1.492E-01	2.425E-01	0.000E+00	NOT IDENT.
EU-155	1.111E-01	1.160E-01	2.030E-01	0.000E+00	FAIL ABUN
TB-160	-1.544E-02	1.674E-01	2.802E-01	0.000E+00	FAIL ABUN
HO-166M	-1.953E-02	7.300E-02	1.224E-01	0.000E+00	FAIL ABUN
TA-182	1.494E-01	2.678E-01	4.640E-01	0.000E+00	FAIL ABUN
IR-192	9.061E-04	4.801E-02	8.238E-02	0.000E+00	FAIL ABUN
HG-203	4.998E-02	5.816E-02	9.199E-02	0.000E+00	NOT IDENT.
BI-207	3.416E-03	6.096E-02	1.023E-01	0.000E+00	FAIL ABUN
PB-211	-3.599E-01	1.020E+00	1.670E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.131E+00	1.511E+00	0.000E+00	FAIL ABUN
RN-219	-2.952E-01	5.409E-01	8.852E-01	0.000E+00	FAIL ABUN
RA-223	-1.441E-01	9.293E-01	1.366E+00	0.000E+00	FAIL ABUN
AC-227	1.889E-01	3.158E-01	5.594E-01	0.000E+00	NOT IDENT.
TH-227	1.889E-01	3.161E-01	5.594E-01	0.000E+00	NOT IDENT.
PA-231	-6.947E-01	1.805E+00	2.957E+00	0.000E+00	NOT IDENT.
TH-231	-1.441E-01	9.293E-01	1.366E+00	0.000E+00	FAIL ABUN
PA-233	-3.757E-02	7.928E-02	1.326E-01	0.000E+00	NOT IDENT.
PA-234	2.219E-01	4.027E-01	7.060E-01	0.000E+00	NOT IDENT.
PA-234M	4.704E+00	6.137E+00	1.082E+01	0.000E+00	NOT IDENT.
NP-239	-3.617E-01	4.507E-01	7.358E-01	0.000E+00	FAIL ABUN
AM-241	0.000E+00	7.878E-02	1.272E-01	0.000E+00	NOT IDENT.
CM-247	-2.790E-02	5.015E-02	8.222E-02	0.000E+00	FAIL ABUN
CF-249	3.598E-02	5.275E-02	9.272E-02	0.000E+00	NOT IDENT.

CF-251

-1.231E-01

1.644E-01

2.645E-01

0.000E+00 NOT IDENT.


```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513012.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:29:35
Sample ID        : G248513012 Sample quantity   : 1.14940E+02 GRAM
Detector name    : GAM05 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.76 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 961097 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	1460.82	877	10.66*	1.004E+00	2.678E+01	2.678E+01	10.04
CD-109	88.03	386	3.70*	7.867E+00	4.331E+00	4.484E+00	23.25
SN-126	64.28	-----	9.60	8.070E+00	-----	Line Not Found	-----
	86.94	386	8.90	7.867E+00	1.801E+00	1.801E+00	46.65
	87.57	386	37.00*	7.867E+00	4.331E-01	4.331E-01	23.25
BA-137M	661.66	385	89.90*	2.017E+00	6.928E-01	6.938E-01	14.82
CS-137	661.66	385	85.10*	2.017E+00	7.318E-01	7.329E-01	14.83
TL-208	277.37	92	6.60	4.271E+00	1.068E+00	1.068E+00	74.77
	583.19	323	85.00*	2.261E+00	5.497E-01	5.497E-01	19.62
	860.56	62	12.50	1.591E+00	1.011E+00	1.011E+00	55.55
PB-210	46.54	208	4.25*	7.601E+00	2.099E+00	2.103E+00	43.88
BI-211	72.87	-----	1.23	8.052E+00	-----	Line Not Found	-----
	351.06	708	12.92*	3.519E+00	5.082E+00	5.082E+00	14.24
PB-212	74.82	790	10.28	8.039E+00	3.122E+00	3.122E+00	20.04
	77.11	998	17.10	8.017E+00	2.379E+00	2.379E+00	12.84
	238.63	1193	43.60*	4.778E+00	1.869E+00	1.869E+00	13.01
	300.09	-----	3.30	4.005E+00	-----	Line Not Found	-----
BI-214	609.32	435	45.49*	2.173E+00	1.438E+00	1.438E+00	15.42
	1120.29	133	14.92	1.258E+00	2.316E+00	2.316E+00	30.02
	1764.49	89	15.30	8.615E-01	2.212E+00	2.212E+00	24.87
PB-214	74.82	790	5.80	8.039E+00	5.533E+00	5.533E+00	19.24
	77.11	998	9.70	8.017E+00	4.193E+00	4.193E+00	15.26
	242.00	348	7.25	4.736E+00	3.307E+00	3.307E+00	30.20
	295.22	404	18.42	4.062E+00	1.762E+00	1.762E+00	20.33
	351.93	708	35.60*	3.519E+00	1.844E+00	1.845E+00	15.27
RA-224	240.99	348	4.10*	4.736E+00	5.848E+00	5.848E+00	29.64
RA-226	609.32	435	45.49*	2.173E+00	1.438E+00	1.438E+00	15.42
	1120.29	133	14.92	1.258E+00	2.316E+00	2.316E+00	30.02
	1764.49	89	15.30	8.615E-01	2.212E+00	2.212E+00	24.87
AC-228	338.32	261	11.27	3.638E+00	2.075E+00	2.075E+00	50.21
	911.20	218	25.80*	1.511E+00	1.826E+00	1.826E+00	26.35
	968.97	146	15.80	1.430E+00	2.117E+00	2.117E+00	33.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	261	11.27	3.638E+00	2.075E+00	2.075E+00	50.21
	911.20	218	25.80*	1.511E+00	1.826E+00	1.826E+00	26.35
	968.97	146	15.80	1.430E+00	2.117E+00	2.117E+00	33.11
TH-228	74.82	790	10.28	8.039E+00	3.122E+00	3.122E+00	17.57
	77.11	998	17.10	8.017E+00	2.379E+00	2.379E+00	12.84
	238.63	1193	43.60*	4.778E+00	1.869E+00	1.869E+00	13.01
	300.09	-----	3.30	4.005E+00	-----	Line Not Found	-----
TH-229	85.43	386	14.70	7.867E+00	1.090E+00	1.090E+00	23.25
	88.47	266	24.00	7.818E+00	4.622E-01	4.622E-01	31.65
	193.51	-----	4.41*	5.516E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.209E+00	-----	Line Not Found	-----
TH-232	338.32	261	11.27	3.638E+00	2.075E+00	2.075E+00	29.25
	911.20	218	25.80*	1.511E+00	1.826E+00	1.826E+00	26.35
	968.97	146	15.80	1.430E+00	2.117E+00	2.117E+00	33.11
TH-234	63.29	115	3.70*	8.061E+00	1.256E+00	1.256E+00	88.18
	92.59	304	4.23	7.759E+00	3.024E+00	3.024E+00	33.94
U-235	89.96	266	3.47	7.818E+00	3.197E+00	3.197E+00	39.16
	93.35	304	5.60	7.759E+00	2.284E+00	2.284E+00	34.61
	143.76	-----	10.96*	6.557E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.119E+00	-----	Line Not Found	-----
	185.72	208	57.20	5.667E+00	2.099E-01	2.099E-01	37.17
	205.31	-----	5.01	5.304E+00	-----	Line Not Found	-----
NP-237	86.48	386	12.40*	7.867E+00	1.292E+00	1.292E+00	31.31
	95.86	-----	2.68	7.688E+00	-----	Line Not Found	-----
U-238	63.29	115	3.70*	8.061E+00	1.256E+00	1.256E+00	88.18
	92.59	304	4.23	7.759E+00	3.024E+00	3.024E+00	27.17
ANH-511	511.00	151	100.00*	2.545E+00	1.938E-01	1.938E-01	47.28

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	1.25E+09Y	1.00	2.678E+01	2.678E+01	0.269E+01	10.04	
CD-109	461.40D	1.04	4.331E+00	4.484E+00	1.042E+00	23.25	
SN-126	2.30E+05Y	1.00	4.331E-01	4.331E-01	1.007E-01	23.25	
BA-137M	30.08Y	1.00	6.928E-01	6.938E-01	1.028E-01	14.82	
CS-137	30.08Y	1.00	7.318E-01	7.329E-01	1.087E-01	14.83	
TL-208	1.41E+10Y	1.00	5.497E-01	5.497E-01	1.079E-01	19.62	
PB-210	22.20Y	1.00	2.099E+00	2.103E+00	0.923E+00	43.88	
BI-211	7.04E+08Y	1.00	5.082E+00	5.082E+00	0.724E+00	14.24	
PB-212	1.41E+10Y	1.00	1.869E+00	1.869E+00	0.243E+00	13.01	
BI-214	1600.00Y	1.00	1.438E+00	1.438E+00	0.222E+00	15.42	
PB-214	1600.00Y	1.00	1.844E+00	1.845E+00	0.282E+00	15.27	
RA-224	1.41E+10Y	1.00	5.848E+00	5.848E+00	1.733E+00	29.64	
RA-226	1600.00Y	1.00	1.438E+00	1.438E+00	0.222E+00	15.42	
AC-228	1.41E+10Y	1.00	1.826E+00	1.826E+00	0.481E+00	26.35	
RA-228	1.41E+10Y	1.00	1.826E+00	1.826E+00	0.481E+00	26.35	
TH-228	1.41E+10Y	1.00	1.869E+00	1.869E+00	0.243E+00	13.01	
TH-229	7340.00Y	1.00	4.622E-01	4.622E-01	1.463E-01	31.65	K
TH-232	1.41E+10Y	1.00	1.826E+00	1.826E+00	0.481E+00	26.35	
TH-234	4.47E+09Y	1.00	1.256E+00	1.256E+00	1.108E+00	88.18	
U-235	7.04E+08Y	1.00	2.099E-01	2.099E-01	0.780E-01	37.17	K
NP-237	2.14E+06Y	1.00	1.292E+00	1.292E+00	0.405E+00	31.31	
U-238	4.47E+09Y	1.00	1.256E+00	1.256E+00	1.108E+00	88.18	
ANH-511	1.00E+09Y	1.00	1.938E-01	1.938E-01	0.916E-01	47.28	

Total Activity : 6.516E+01 6.531E+01

Grand Total Activity : 6.516E+01 6.531E+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
2	83.68	112	538	1.29	168.33	162	31	1.55E-02	69.7	7.92E+00	T
0	128.52	91	352	1.09	258.00	254	9	1.27E-02	77.2	6.92E+00	
0	209.10	140	267	1.27	419.13	415	10	1.95E-02	46.7	5.24E+00	
0	269.90	74	262	1.70	540.72	537	11	1.02E-02	88.2	4.35E+00	T
0	327.63	110	171	1.20	656.13	650	13	1.53E-02	52.6	3.73E+00	T
0	462.45	45	108	1.51	925.69	921	10	6.30E-03	95.6	2.78E+00	T
0	726.55	87	81	0.81	1453.61	1446	14	1.21E-02	48.5	1.85E+00	T
0	933.16	36	60	0.91	1866.55	1858	15	5.00E-03	99.6	1.48E+00	
1	963.83	104	55	2.19	1927.84	1918	24	1.45E-02	32.1	1.44E+00	T
0	1237.29	52	44	1.79	2474.24	2466	15	7.21E-03	63.5	1.15E+00	T
0	1377.61	24	28	0.63	2754.57	2749	11	3.27E-03	98.8	1.05E+00	

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513012.CNF;1
* Acquisition date   : 20-MAR-2010 13:29:35   Detector SN#      :
* Detector ID        : GAM05                  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 02:00:01.76          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248513012             Analyst initials: MXR1
* Batch Number       : 961097                 Sample Quantity  : 1.14940E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS 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	2.678E+01	2.690E+00	6.827E-01	4.246E-02	39.224
CD-109	4.484E+00	1.042E+00	1.052E+00	8.008E-02	4.264
SN-126	4.331E-01	1.007E-01	1.014E-01	7.725E-03	4.270
BA-137M	6.938E-01	1.028E-01	8.343E-02	5.486E-03	8.316
CS-137	7.329E-01	1.087E-01	8.813E-02	5.814E-03	8.316
TL-208	5.497E-01	1.079E-01	6.892E-02	5.062E-03	7.976
PB-210	2.103E+00	9.228E-01	9.411E-01	7.259E-02	2.235
BI-211	5.082E+00	7.236E-01	4.017E-01	3.184E-02	12.653
PB-212	1.869E+00	2.433E-01	1.103E-01	1.194E-02	16.947
BI-214	1.438E+00	2.218E-01	1.443E-01	1.218E-02	9.964
PB-214	1.845E+00	2.816E-01	1.461E-01	1.408E-02	12.624
RA-224	5.848E+00	1.733E+00	1.182E+00	1.157E-01	4.946
RA-226	1.438E+00	2.218E-01	1.443E-01	1.218E-02	9.964
AC-228	1.826E+00	4.811E-01	2.722E-01	3.456E-02	6.708
RA-228	1.826E+00	4.811E-01	2.722E-01	3.456E-02	6.708
TH-228	1.869E+00	2.433E-01	1.103E-01	1.194E-02	16.947
TH-229	4.622E-01	1.463E-01	1.076E+00	1.075E-01	0.429
TH-232	1.826E+00	4.811E-01	2.722E-01	3.456E-02	6.708

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.256E+00	1.108E+00	1.293E+00	2.347E-01	0.972
U-235	2.099E-01	7.802E-02	4.074E-01	7.771E-02	0.515
NP-237	1.292E+00	4.046E-01	3.017E-01	6.733E-02	4.283
U-238	1.256E+00	1.108E+00	1.293E+00	2.347E-01	0.972
ANH-511	1.938E-01	9.162E-02	5.909E-02	3.782E-03	3.279

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.733E-02		4.802E-01	7.798E-01	5.584E-02	-0.048
NA-22	-7.420E-03		5.383E-02	8.571E-02	4.992E-03	-0.087
NA-24	-7.103E+03		3.040E+03	Half-Life too short		
SC-46	3.906E-02		5.239E-02	9.239E-02	9.280E-03	0.423
V-48	-7.200E-03		1.228E-01	2.008E-01	1.839E-02	-0.036
CR-51	1.608E-01		6.300E-01	1.003E+00	8.860E-02	0.160
MN-54	2.104E-02		4.642E-02	7.998E-02	7.327E-03	0.263
CO-56	-7.708E-02		5.527E-02	7.887E-02	7.376E-03	-0.977
CO-57	1.637E-02		3.037E-02	5.029E-02	7.135E-03	0.326
CO-58	-4.474E-03		5.328E-02	8.793E-02	7.739E-03	-0.051
FE-59	7.206E-02		1.428E-01	2.438E-01	1.973E-02	0.296
CO-60	9.116E-03		4.920E-02	8.133E-02	4.706E-03	0.112
ZN-65	5.610E-02		1.388E-01	2.046E-01	1.429E-02	0.274
SE-75	-6.749E-03		6.614E-02	9.569E-02	9.136E-03	-0.071
SR-85	8.199E-02		6.032E-02	9.521E-02	6.103E-03	0.861
Y-88	2.521E-03		3.503E-02	5.863E-02	3.354E-03	0.043
Y-91	2.570E+00		3.326E+01	5.440E+01	3.161E+00	0.047
NB-94	1.439E-02		4.192E-02	7.200E-02	5.152E-03	0.200
NB-95	4.828E-02		6.164E-02	1.083E-01	8.760E-03	0.446
NB-95M	1.365E+00		2.643E-01	4.055E-01	4.442E-02	3.366
ZR-95	2.607E-02		1.047E-01	1.780E-01	1.588E-02	0.146
MO-99	8.961E-06		5.739E-05	Half-Life too short		
TC-99M	-3.640E+19		8.317E+19	Half-Life too short		
RU-103	8.916E-03		5.895E-02	9.709E-02	1.232E-02	0.092
RH-106	3.098E-02		4.216E-01	6.832E-01	8.223E-02	0.045
RU-106	3.098E-02		4.216E-01	6.832E-01	4.503E-02	0.045
AG-108M	-1.825E-02		3.831E-02	6.082E-02	3.927E-03	-0.300
AG-110M	1.135E-01		6.676E-02	1.063E-01	7.347E-03	1.068
SN-113	-1.756E-02		6.115E-02	9.903E-02	6.143E-03	-0.177
CD-115	6.628E-05		8.653E-05	Half-Life too short		
SN-117M	-4.420E-02		1.029E-01	1.628E-01	1.750E-02	-0.272
TE-123M	-3.747E-03		3.718E-02	5.969E-02	6.414E-03	-0.063
SB-124	-8.107E-03		8.678E-02	1.403E-01	8.920E-03	-0.058
SB-125	-6.839E-02		1.122E-01	1.763E-01	1.104E-02	-0.388
TE-125M	-3.511E+00		1.289E+01	2.028E+01	2.635E+00	-0.173
I-126	4.177E-01		5.389E-01	8.079E-01	5.365E-02	0.517
SB-126	1.095E-01		3.401E-01	5.080E-01	3.768E-02	0.216
SB-127	-1.618E+00		7.228E+00	1.191E+01	1.550E+00	-0.136

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	3.332E-01		2.852E-01	5.011E-01	3.803E-02	0.665
TE-132	4.087E+00		4.938E+00	8.498E+00	1.557E+00	0.481
BA-133	3.079E-02		5.287E-02	7.971E-02	9.632E-03	0.386
I-133	-8.205E-01		2.489E+00	Half-Life too short		
CS-134	4.996E-02		6.712E-02	1.150E-01	9.902E-03	0.434
CS-135	3.993E-01		2.303E-01	3.648E-01	3.903E-02	1.095
I-135	6.146E+18		2.257E+18	Half-Life too short		
CS-136	-2.857E-02		2.164E-01	3.499E-01	3.000E-02	-0.082
CE-139	-4.658E-02		3.798E-02	5.735E-02	5.693E-03	-0.812
BA-140	1.622E-01		5.354E-01	8.844E-01	2.957E-01	0.183
LA-140	-1.777E-01		1.581E-01	2.100E-01	1.234E-02	-0.846
CE-141	-2.693E-03		9.315E-02	1.505E-01	1.840E-02	-0.018
CE-143	7.160E-02		1.095E-02	Half-Life too short		
CE-144	-8.591E-02		2.840E-01	3.953E-01	7.228E-02	-0.217
PM-144	1.015E-02		4.392E-02	7.486E-02	5.296E-03	0.136
PR-144	7.524E-01		3.300E+00	5.623E+00	3.974E-01	0.134
PM-146	5.362E-02		5.756E-02	9.932E-02	8.654E-03	0.540
ND-147	-1.548E-01		1.318E+00	1.992E+00	2.753E-01	-0.078
PM-149	6.776E-05		6.797E-04	Half-Life too short		
EU-152	-3.161E-02		2.188E-01	2.057E-01	1.690E-02	-0.154
GD-153	4.065E-02		9.725E-02	1.424E-01	1.320E-02	0.285
EU-154	-1.760E-02		1.523E-01	2.431E-01	2.293E-02	-0.072
EU-155	1.111E-01		1.183E-01	1.988E-01	2.153E-02	0.559
TB-160	-1.544E-02		1.708E-01	2.800E-01	2.767E-02	-0.055
HO-166M	-1.953E-02		7.449E-02	1.220E-01	8.891E-03	-0.160
TA-182	1.494E-01		2.733E-01	4.651E-01	2.704E-02	0.321
IR-192	9.061E-04		4.899E-02	8.152E-02	6.919E-03	0.011
HG-203	4.998E-02		5.934E-02	9.091E-02	8.623E-03	0.550
BI-207	3.416E-03		6.220E-02	1.024E-01	8.111E-03	0.033
PB-211	-3.599E-01		1.041E+00	1.656E+00	7.947E-01	-0.217
BI-212	2.313E+00	+	1.154E+00	1.507E+00	1.767E-01	1.535
RN-219	-2.952E-01		5.519E-01	8.778E-01	1.183E-01	-0.336
RA-223	-1.441E-01		9.482E-01	1.352E+00	2.320E-01	-0.107
AC-227	1.889E-01		3.223E-01	5.524E-01	7.063E-02	0.342
TH-227	1.889E-01		3.225E-01	5.524E-01	7.877E-02	0.342
PA-231	-6.947E-01		1.841E+00	2.922E+00	4.365E-01	-0.238
TH-231	-1.441E-01		9.482E-01	1.352E+00	2.320E-01	-0.107
PA-233	-3.757E-02		8.090E-02	1.312E-01	1.159E-02	-0.286
PA-234	2.219E-01		4.109E-01	7.058E-01	1.359E-01	0.314
PA-234M	4.704E+00		6.261E+00	1.083E+01	1.106E+00	0.435
NP-239	-3.617E-01		4.599E-01	7.213E-01	9.485E-02	-0.502
AM-241	1.313E-01		8.039E-02	1.239E-01	1.109E-02	1.059
CM-247	-2.790E-02		5.117E-02	8.154E-02	4.797E-03	-0.342
CF-249	3.598E-02		5.382E-02	9.192E-02	5.489E-03	0.391
CF-251	-1.231E-01		1.678E-01	2.603E-01	2.593E-02	-0.473

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]G248513012          *
* Acquisition date   : 20-MAR-2010 13:29:35 Detector SN# :                  *
* Detector ID        : GAM05 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 02:00:01.76 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513012 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.1494E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 11-JUN-2009 16:41:00 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	2.678E+01	2.636E+00	3.402E-01	1.345E+00
CD-109	4.484E+00	1.022E+00	5.381E-01	5.212E-01
SN-126	4.331E-01	9.868E-02	5.191E-02	5.035E-02
BA-137M	6.938E-01	1.008E-01	4.189E-02	5.141E-02
CS-137	7.329E-01	1.065E-01	4.425E-02	5.435E-02
TL-208	5.497E-01	1.057E-01	3.465E-02	5.393E-02
PB-210	2.103E+00	9.043E-01	4.844E-01	4.614E-01
BI-211	5.082E+00	7.091E-01	2.029E-01	3.618E-01
PB-212	1.869E+00	2.384E-01	5.592E-02	1.216E-01
BI-214	1.438E+00	2.173E-01	7.252E-02	1.109E-01
PB-214	1.845E+00	2.760E-01	7.381E-02	1.408E-01
RA-224	5.848E+00	1.699E+00	5.994E-01	8.667E-01
RA-226	1.438E+00	2.173E-01	7.252E-02	1.109E-01
AC-228	1.826E+00	4.715E-01	1.363E-01	2.406E-01
RA-228	1.826E+00	4.715E-01	1.363E-01	2.406E-01
TH-228	1.869E+00	2.384E-01	5.592E-02	1.216E-01
TH-229	-3.526E-01	6.747E-01	5.468E-01	3.443E-01
TH-232	1.826E+00	4.715E-01	1.363E-01	2.406E-01
TH-234	1.256E+00	1.086E+00	6.637E-01	5.539E-01
U-235	-2.424E-04	2.496E-01	2.075E-01	1.274E-01
NP-237	1.292E+00	3.965E-01	1.544E-01	2.023E-01
U-238	1.256E+00	1.086E+00	6.637E-01	5.539E-01
ANH-511	1.938E-01	8.979E-02	2.974E-02	4.581E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.733E-02	4.706E-01	3.928E-01	2.401E-01 NOT IDENT.
NA-22	-7.420E-03	5.275E-02	4.277E-02	2.691E-02 NOT IDENT.
NA-24	-7.103E+09	5.959E+09	0.000E+00	3.040E+09 SHORT HLIF
SC-46	3.906E-02	5.134E-02	4.626E-02	2.619E-02 FAIL ABUN

V-48	-7.200E-03	1.204E-01	1.004E-01	6.141E-02	NOT IDENT.
CR-51	1.608E-01	6.174E-01	5.069E-01	3.150E-01	NOT IDENT.
MN-54	2.104E-02	4.549E-02	4.007E-02	2.321E-02	NOT IDENT.
CO-56	-7.708E-02	5.417E-02	3.951E-02	2.764E-02	FAIL ABUN
CO-57	1.637E-02	2.977E-02	2.566E-02	1.519E-02	NOT IDENT.
CO-58	-4.474E-03	5.222E-02	4.406E-02	2.664E-02	NOT IDENT.
FE-59	7.206E-02	1.399E-01	1.218E-01	7.138E-02	NOT IDENT.
CO-60	9.116E-03	4.821E-02	4.056E-02	2.460E-02	NOT IDENT.
ZN-65	5.610E-02	1.360E-01	1.022E-01	6.938E-02	NOT IDENT.
SE-75	-6.749E-03	6.482E-02	4.846E-02	3.307E-02	NOT IDENT.
SR-85	8.199E-02	5.911E-02	4.792E-02	3.016E-02	NOT IDENT.
Y-88	2.521E-03	3.433E-02	2.915E-02	1.752E-02	NOT IDENT.
Y-91	2.570E+00	3.260E+01	2.716E+01	1.663E+01	NOT IDENT.
NB-94	1.439E-02	4.108E-02	3.613E-02	2.096E-02	NOT IDENT.
NB-95	4.828E-02	6.040E-02	5.430E-02	3.082E-02	NOT IDENT.
NB-95M	1.365E+00	2.590E-01	2.056E-01	1.322E-01	NOT IDENT.
ZR-95	2.607E-02	1.026E-01	8.928E-02	5.235E-02	NOT IDENT.
MO-99	8.961E+00	1.125E+02	0.000E+00	5.739E+01	SHORT HLIF
TC-99M	-3.640E+25	1.630E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	8.916E-03	5.777E-02	4.888E-02	2.948E-02	NOT IDENT.
RH-106	3.098E-02	4.132E-01	3.432E-01	2.108E-01	NOT IDENT.
RU-106	3.098E-02	4.132E-01	3.432E-01	2.108E-01	NOT IDENT.
AG-108M	-1.825E-02	3.754E-02	3.066E-02	1.915E-02	NOT IDENT.
AG-110M	1.135E-01	6.543E-02	5.337E-02	3.338E-02	NOT IDENT.
SN-113	-1.756E-02	5.993E-02	4.997E-02	3.058E-02	NOT IDENT.
CD-115	6.628E+01	1.696E+02	0.000E+00	8.653E+01	SHORT HLIF
SN-117M	-4.420E-02	1.008E-01	8.285E-02	5.145E-02	NOT IDENT.
TE-123M	-3.747E-03	3.643E-02	3.038E-02	1.859E-02	NOT IDENT.
SB-124	-8.107E-03	8.505E-02	6.981E-02	4.339E-02	NOT IDENT.
SB-125	-6.839E-02	1.100E-01	8.890E-02	5.612E-02	FAIL ABUN
TE-125M	-3.511E+00	1.263E+01	1.035E+01	6.443E+00	NOT IDENT.
I-126	4.177E-01	5.281E-01	4.056E-01	2.694E-01	NOT IDENT.
SB-126	1.095E-01	3.333E-01	2.548E-01	1.701E-01	NOT IDENT.
SB-127	-1.618E+00	7.083E+00	5.980E+00	3.614E+00	NOT IDENT.
I-131	3.332E-01	2.795E-01	2.530E-01	1.426E-01	NOT IDENT.
TE-132	4.087E+00	4.839E+00	4.310E+00	2.469E+00	NOT IDENT.
BA-133	3.079E-02	5.182E-02	4.026E-02	2.644E-02	FAIL ABUN
I-133	-8.205E+05	4.878E+06	0.000E+00	2.489E+06	SHORT HLIF
CS-134	4.996E-02	6.578E-02	5.763E-02	3.356E-02	NOT IDENT.
CS-135	3.993E-01	2.257E-01	1.847E-01	1.152E-01	NOT IDENT.
I-135	6.146E+24	4.424E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.857E-02	2.120E-01	1.749E-01	1.082E-01	NOT IDENT.
CE-139	-4.658E-02	3.722E-02	2.917E-02	1.899E-02	NOT IDENT.
BA-140	1.622E-01	5.247E-01	4.449E-01	2.677E-01	NOT IDENT.
LA-140	-1.777E-01	1.549E-01	1.045E-01	7.903E-02	FAIL ABUN
CE-141	-2.693E-03	9.128E-02	7.664E-02	4.657E-02	NOT IDENT.
CE-143	7.160E+04	2.146E+04	0.000E+00	1.095E+04	SHORT HLIF
CE-144	-8.591E-02	2.783E-01	2.015E-01	1.420E-01	NOT IDENT.
PM-144	1.015E-02	4.304E-02	3.757E-02	2.196E-02	NOT IDENT.
PR-144	7.524E-01	3.234E+00	2.822E+00	1.650E+00	NOT IDENT.
PM-146	5.362E-02	5.641E-02	5.005E-02	2.878E-02	NOT IDENT.
ND-147	-1.548E-01	1.292E+00	1.002E+00	6.591E-01	FAIL ABUN
PM-149	6.776E+01	1.332E+03	0.000E+00	6.797E+02	SHORT HLIF
EU-152	-3.161E-02	2.144E-01	1.039E-01	1.094E-01	FAIL ABUN
GD-153	4.065E-02	9.530E-02	7.280E-02	4.862E-02	NOT IDENT.
EU-154	-1.760E-02	1.492E-01	1.213E-01	7.613E-02	NOT IDENT.
EU-155	1.111E-01	1.160E-01	1.016E-01	5.917E-02	FAIL ABUN
TB-160	-1.544E-02	1.674E-01	1.402E-01	8.540E-02	FAIL ABUN
HO-166M	-1.953E-02	7.300E-02	6.123E-02	3.724E-02	FAIL ABUN
TA-182	1.494E-01	2.678E-01	2.321E-01	1.367E-01	FAIL ABUN
IR-192	9.061E-04	4.801E-02	4.122E-02	2.449E-02	FAIL ABUN
HG-203	4.998E-02	5.816E-02	4.602E-02	2.967E-02	NOT IDENT.
BI-207	3.416E-03	6.096E-02	5.120E-02	3.110E-02	FAIL ABUN
PB-211	-3.599E-01	1.020E+00	8.355E-01	5.204E-01	NOT IDENT.
BI-212	2.313E+00	1.131E+00	7.562E-01	5.769E-01	FAIL ABUN
RN-219	-2.952E-01	5.409E-01	4.429E-01	2.760E-01	FAIL ABUN
RA-223	-1.441E-01	9.293E-01	6.833E-01	4.741E-01	FAIL ABUN
AC-227	1.889E-01	3.158E-01	2.798E-01	1.611E-01	NOT IDENT.
TH-227	1.889E-01	3.161E-01	2.798E-01	1.613E-01	NOT IDENT.
PA-231	-6.947E-01	1.805E+00	1.479E+00	9.207E-01	NOT IDENT.
TH-231	-1.441E-01	9.293E-01	6.833E-01	4.741E-01	FAIL ABUN
PA-233	-3.757E-02	7.928E-02	6.635E-02	4.045E-02	NOT IDENT.
PA-234	2.219E-01	4.027E-01	3.532E-01	2.054E-01	NOT IDENT.
PA-234M	4.704E+00	6.136E+00	5.414E+00	3.131E+00	NOT IDENT.
NP-239	-3.617E-01	4.507E-01	3.681E-01	2.299E-01	FAIL ABUN
AM-241	1.313E-01	7.878E-02	6.364E-02	4.020E-02	NOT IDENT.
CM-247	-2.790E-02	5.015E-02	4.113E-02	2.559E-02	FAIL ABUN
CF-249	3.598E-02	5.275E-02	4.639E-02	2.691E-02	NOT IDENT.

CF-251	-1.231E-01	1.644E-01	1.323E-01	8.388E-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
46.54	402.5634
49.72	476.5198
57.36	0.0000
59.54	437.4064
63.29	645.6924
63.29	645.6924
64.28	663.7908
67.75	578.0972
69.67	634.1790
70.83	663.5452
72.81	586.2882
72.87	586.3358
72.87	586.3358
74.82	587.8416
74.82	587.8416
74.82	587.8416
74.97	587.9548
77.11	589.5829
77.11	589.5829
77.11	589.5829
79.69	526.1470
79.80	526.2195
80.12	526.4310
80.19	526.4773
80.57	526.7271
81.00	527.0090
81.07	527.0554
81.07	527.0554
83.79	374.9841
83.79	374.9841
85.43	375.7297
86.48	376.2038
86.55	376.2353
86.79	376.3424
86.94	376.4109
87.57	376.6923
88.03	376.8979
88.47	377.0936
89.96	377.7534
91.11	378.2605
92.59	378.9060
92.59	378.9060
93.35	379.2360
94.67	376.5596
94.87	394.5027
94.87	394.5027
95.86	420.9477
97.43	353.3058
98.44	314.5827
99.53	341.5378
100.11	350.0656
103.18	434.1769
103.37	391.2489
105.31	365.3745
106.12	392.3958
109.28	410.1855
111.00	388.2004
111.76	413.3011
116.30	344.6180
117.23	364.6775
121.12	333.7439
121.78	316.2160
122.06	328.8296
123.07	334.3750
131.20	363.9094
133.52	363.0015
136.00	321.5179

136.47	321.6548
140.51	0.0000
140.51	0.0000
143.76	356.7605
144.24	348.3855
144.24	348.3855
145.44	364.7501
152.43	315.4390
153.25	311.3619
154.21	308.3884
154.21	308.3884
156.02	384.1852
158.56	337.5439
159.00	326.8776
162.66	299.7227
163.33	292.3071
165.86	327.6144
176.60	315.0703
177.52	336.0928
181.07	0.0000
184.41	350.3950
185.72	313.7250
193.51	323.5031
197.04	298.7810
205.31	286.0098
210.85	251.2207
215.65	270.0458
222.11	260.3689
227.38	224.9861
228.16	228.7318
228.18	228.7349
235.69	228.0212
235.96	228.0609
235.96	228.0609
238.63	228.4485
238.63	228.4485
240.99	228.7888
242.00	228.9337
244.70	229.3213
252.40	241.4721
252.80	240.6094
256.23	219.8631
256.23	219.8631
260.90	0.0000
264.66	210.4525
268.22	196.9389
269.46	190.8737
269.46	190.8737
271.23	223.6934
273.65	224.0068
276.40	193.2025
277.37	190.1931
277.60	176.1855
278.00	185.5816
279.20	177.9070
279.54	173.2591
280.46	182.7197
283.69	191.9212
284.31	195.3275
285.41	185.1132
285.90	0.0000
287.50	177.5683
293.27	0.0000
295.22	285.0146
295.96	267.8040
298.57	201.9297
299.98	179.9805
299.98	179.9805
300.09	179.9921
300.09	179.9921
300.13	179.9967
301.36	194.3371
302.85	225.8036
304.50	234.5505
304.50	234.5505
304.85	222.2486
308.46	185.5666
311.90	184.0002

316.51	187.3149
319.41	180.8997
320.08	184.3131
323.87	185.4768
323.87	185.4768
328.76	177.9315
333.37	139.7873
334.37	163.9716
334.37	163.9716
338.28	185.5570
338.28	185.5570
338.32	185.5617
338.32	185.5617
338.32	185.5617
340.48	170.9280
340.55	170.9345
344.28	174.4827
351.06	144.9185
351.93	144.9803
356.01	107.2446
364.49	117.4746
366.42	0.0000
383.85	154.1128
388.16	143.5291
388.63	139.6007
391.69	149.7097
400.66	145.3406
401.81	162.3493
402.40	166.3762
404.85	178.5258
410.95	168.0102
414.70	155.2649
423.72	121.6824
427.09	112.7957
427.87	120.8936
433.94	128.2774
453.88	112.0370
463.37	112.4734
468.07	102.4426
473.00	107.7788
476.78	115.1377
477.60	117.2313
487.02	117.6683
492.35	0.0000
497.08	97.4068
511.00	97.9278
514.00	93.8672
527.90	0.0000
529.87	0.0000
531.02	91.3181
537.26	88.3702
546.56	0.0000
563.25	89.2028
569.33	84.0744
569.50	84.0783
569.70	89.4059
583.19	75.9263
600.60	77.9941
602.73	95.0964
604.72	95.1610
609.32	88.1147
609.32	88.1147
610.33	106.1333
614.28	90.0635
618.01	80.0757
621.93	81.2622
621.93	81.2622
633.25	87.0039
635.95	93.6111
636.99	90.3760
645.85	87.3594
657.76	95.0011
661.66	98.7781
661.66	98.7781
664.57	0.0000
666.33	78.7721
666.50	78.7756
677.62	92.8392

685.70	82.9358
695.00	85.9444
696.49	75.8140
696.51	75.8140
697.00	72.1268
702.65	73.1769
706.68	67.7023
711.68	73.3778
720.70	75.0390
721.93	0.0000
722.78	87.8673
722.91	99.0525
723.31	87.8807
724.19	86.3055
727.33	75.1866
733.00	76.9152
735.93	66.4238
739.50	0.0000
747.24	70.3979
752.31	65.8016
753.82	78.9961
756.73	72.4742
763.94	84.8840
765.81	75.4932
766.42	73.6185
777.92	0.0000
778.90	58.7254
783.70	63.5472
785.37	57.8825
795.86	68.5210
801.95	74.3564
810.29	56.3736
810.76	61.1589
815.77	56.4576
818.51	45.9658
832.01	67.2784
834.85	56.7493
836.80	0.0000
846.77	77.1940
856.80	64.6835
860.56	58.1067
871.09	60.2088
873.19	45.6670
875.33	0.0000
879.36	44.7665
880.51	44.7796
883.24	43.8373
884.68	53.5990
889.28	44.8807
898.04	45.9587
911.20	48.7757
911.20	48.7757
911.20	48.7757
926.50	50.6512
937.49	52.4812
944.13	64.2965
946.00	54.4293
949.00	50.5082
962.29	54.6453
964.08	54.6688
966.15	54.6968
968.97	42.6496
968.97	42.6496
968.97	42.6496
983.53	47.9336
996.26	59.0972
1001.03	47.1300
1004.73	75.2731
1037.84	52.5903
1038.76	0.0000
1048.07	55.7542
1050.41	46.6551
1050.41	46.6551
1063.66	42.7263
1085.87	43.9606
1099.45	54.3457
1112.07	57.0673
1115.54	54.6846

1120.29	46.3531
1120.29	46.3531
1120.55	46.3550
1121.30	33.5575
1131.51	0.0000
1173.23	59.3773
1177.93	63.6062
1189.05	54.3465
1204.77	68.1527
1221.41	57.8646
1231.02	61.4400
1235.36	83.1985
1238.28	70.5787
1260.41	0.0000
1271.85	29.7568
1274.44	41.4677
1274.54	41.4677
1291.59	51.2090
1298.22	0.0000
1312.11	55.6965
1332.49	30.1066
1365.19	29.2104
1368.63	0.0000
1384.29	29.3148
1408.01	15.8895
1457.56	0.0000
1460.82	23.1174
1489.16	28.4483
1505.03	30.4286
1596.21	26.0734
1620.50	11.6346
1678.03	0.0000
1690.97	9.8061
1764.49	14.8786
1764.49	14.8786
1770.23	10.4242
1771.35	13.9014
1791.20	0.0000
1836.06	7.0188

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513012

Total Uranium Activity	3.7375E+00	ug/g
Total Uranium Counting Unc.	3.2321E+00	ug/g
Total Uranium Tpu	1.6490E-06	ug/g
Total Uranium Mda	1.9769E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513012
*  ANALYST       : MXR1            DETECTOR    : GAM05
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-MAR-2010 13:29:35.98  SAMPLE ALQT: 114.940 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.120E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.651E+00
GROSS GAMMA MDA (pCi/GRAM ) : 4.803E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.340E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:30:58.28

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513013.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:02
Sample ID          : G248513013          Sample quantity  : 1.18010E+02 GRAM
Detector name      : GAM06                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:01.29  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 961097               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	3	74.76	404	476	1.09	149.09	144	22	5.61E-02	10.2	1.24E+00
2	3	77.12*	575	431	1.15	153.80	144	22	7.99E-02	7.6	
3	0	84.09*	78	329	1.10	167.74	165	6	1.08E-02	38.9	
4	0	87.15	173	483	0.91	173.86	171	7	2.40E-02	22.3	
5	0	93.02*	307	487	1.57	185.59	181	10	4.26E-02	15.2	
6	0	129.01	99	309	0.75	257.53	254	8	1.37E-02	32.5	
7	0	186.12*	148	347	1.20	371.70	367	10	2.06E-02	25.8	
8	0	209.02	134	226	1.51	417.48	413	9	1.86E-02	22.0	
9	4	238.71*	1166	174	1.21	476.84	469	21	1.62E-01	3.5	1.26E+00
10	4	241.83	315	258	1.85	483.07	469	21	4.37E-02	12.7	
11	0	270.40	172	263	2.16	540.19	533	15	2.38E-02	22.0	
12	0	295.33*	359	139	1.19	590.02	585	9	4.99E-02	8.1	
13	0	300.07	48	193	1.23	599.49	596	9	6.73E-03	53.5	
14	0	338.49*	271	224	1.35	676.31	670	14	3.76E-02	13.4	
15	0	352.02*	638	150	1.36	703.37	697	12	8.87E-02	5.6	
16	0	463.03	57	81	1.72	925.32	921	10	7.90E-03	32.3	
17	0	583.34*	359	94	1.30	1165.89	1160	13	4.99E-02	7.9	
18	0	609.42*	418	101	1.52	1218.05	1211	13	5.81E-02	7.1	
19	0	661.80	351	72	1.64	1322.79	1317	11	4.88E-02	7.1	
20	0	728.15	102	59	1.72	1455.48	1449	15	1.42E-02	19.2	
21	0	861.57	78	48	2.24	1722.31	1715	19	1.08E-02	24.2	
22	0	911.29*	237	63	1.69	1821.77	1813	18	3.29E-02	10.4	
23	3	964.36	46	44	2.47	1927.92	1923	33	6.35E-03	31.9	1.82E+00
24	3	969.04*	157	44	1.88	1937.27	1923	33	2.19E-02	11.7	
25	0	1120.35	92	87	0.95	2239.95	2231	20	1.27E-02	26.8	
26	0	1238.90	35	65	2.32	2477.13	2471	12	4.83E-03	49.7	
27	0	1378.29	54	9	1.86	2756.00	2746	19	7.46E-03	19.3	
28	0	1460.81*	865	24	2.05	2921.13	2913	16	1.20E-01	3.7	
29	0	1620.20	15	11	1.51	3240.07	3234	14	2.09E-03	52.5	
30	0	1764.93	79	13	2.30	3529.73	3524	13	1.10E-02	14.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 15:31:00

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513013.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:02
Sample ID        : G248513013 Sample quantity : 118.01 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA6 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.29 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	+	1460.82	*	2.765E+01	3.299E+00	6.316E-01	5.954E-02	43.768
CD-109	+	88.03	*	2.977E+00	1.369E+00	1.706E+00	1.898E-01	1.745
SN-126		64.28		8.985E-01	6.801E-01	1.140E+00	1.765E-01	0.788
	+	86.94		1.195E+00	7.323E-01	6.841E-01	2.868E-01	1.747
	+	87.57	*	2.876E-01	1.323E-01	1.680E-01	1.861E-02	1.712
BA-137M	+	661.66	*	6.512E-01	1.063E-01	7.760E-02	6.280E-03	8.392
CS-137	+	661.66	*	6.880E-01	1.123E-01	8.198E-02	6.649E-03	8.392
TL-208		277.37		2.511E-01	5.410E-01	8.510E-01	1.108E-01	0.295
	+	583.19	*	6.325E-01	1.149E-01	6.874E-02	6.276E-03	9.202
	+	860.56		1.306E+00	6.439E-01	5.437E-01	5.287E-02	2.402
BI-211		72.87		6.719E+00	4.375E+00	6.813E+00	6.548E-01	0.986
	+	351.06	*	5.000E+00	7.284E-01	4.235E-01	3.974E-02	11.807
BI-212	+	727.33	*	2.770E+00	1.119E+00	1.024E+00	1.266E-01	2.704
		785.37		4.236E+00	4.380E+00	7.658E+00	6.721E-01	0.553
	+	1620.50		3.765E+00	3.971E+00	3.386E+00	3.052E-01	1.112
PB-212	+	74.82		3.032E+00	7.444E-01	6.912E-01	9.523E-02	4.386
	+	77.11		2.453E+00	4.465E-01	3.942E-01	3.920E-02	6.223
	+	238.63	*	2.030E+00	2.533E-01	1.146E-01	1.177E-02	17.708
	+	300.09		1.319E+00	1.418E+00	1.564E+00	1.735E-01	0.843
BI-214	+	609.32	*	1.426E+00	2.464E-01	1.486E-01	1.475E-02	9.593
	+	1120.29		1.656E+00	9.066E-01	5.622E-01	6.072E-02	2.946
	+	1764.49		1.993E+00	6.092E-01	3.836E-01	3.307E-02	5.194
PB-214	+	74.82		5.374E+00	1.284E+00	1.225E+00	1.540E-01	4.386
	+	77.11		4.325E+00	8.643E-01	6.950E-01	8.979E-02	6.223
	+	242.00		3.326E+00	9.212E-01	6.976E-01	7.585E-02	4.767
	+	295.22		1.731E+00	3.420E-01	2.787E-01	3.164E-02	6.211
	+	351.93	*	1.815E+00	2.827E-01	1.540E-01	1.676E-02	11.781
RA-224	+	240.99	*	5.880E+00	1.593E+00	1.229E+00	1.130E-01	4.784
RA-226	+	609.32	*	1.426E+00	2.464E-01	1.486E-01	1.475E-02	9.593
	+	1120.29		1.656E+00	9.066E-01	5.622E-01	6.072E-02	2.946
	+	1764.49		1.993E+00	6.092E-01	3.836E-01	3.307E-02	5.194
AC-228	+	338.32		2.359E+00	1.171E+00	4.806E-01	2.010E-01	4.908
	+	911.20	*	2.036E+00	4.891E-01	2.926E-01	3.533E-02	6.959
	+	968.97		2.344E+00	7.948E-01	5.033E-01	1.236E-01	4.657

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		2.359E+00	1.171E+00	4.806E-01	2.010E-01	4.908
	+	911.20	*	2.036E+00	4.891E-01	2.926E-01	3.533E-02	6.959
	+	968.97		2.344E+00	7.948E-01	5.033E-01	1.236E-01	4.657
TH-228	+	74.82		3.032E+00	6.844E-01	6.912E-01	6.791E-02	4.386
	+	77.11		2.453E+00	4.465E-01	3.942E-01	3.920E-02	6.223
	+	238.63	*	2.030E+00	2.533E-01	1.146E-01	1.177E-02	17.708
	+	300.09		1.319E+00	1.626E+00	1.564E+00	9.591E-01	0.843
TH-229	+	85.43		3.400E-01	2.673E-01	3.890E-01	4.205E-02	0.874
	+	88.47		4.433E-01	2.039E-01	2.149E-01	2.374E-02	2.063
		193.51	*	-1.440E-01	6.309E-01	1.054E+00	9.251E-02	-0.137
		210.85		1.939E+00	1.226E+00	1.961E+00	1.757E-01	0.989
TH-232	+	338.32		2.359E+00	6.666E-01	4.806E-01	4.363E-02	4.908
	+	911.20	*	2.036E+00	4.891E-01	2.926E-01	3.533E-02	6.959
	+	968.97		2.344E+00	7.948E-01	5.033E-01	1.236E-01	4.657
NP-237	+	86.48	*	8.580E-01	4.338E-01	4.552E-01	1.077E-01	1.885
		95.86		2.488E-01	1.123E+00	1.651E+00	4.050E-01	0.151

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-3.661E-01	4.502E-01	7.151E-01	6.679E-02	-0.512
NA-22		1274.54	*	2.458E-02	5.791E-02	9.905E-02	8.703E-03	0.248
NA-24		1368.63	*	-5.384E+03	5.791E-02	Half-Life too short		
SC-46		889.28	*	-2.902E-02	5.480E-02	8.318E-02	7.687E-03	-0.349
	+	1120.55		2.992E-01	1.625E-01	1.802E-01	1.526E-02	1.661
V-48		944.13		1.002E+00	1.708E+00	3.002E+00	2.762E-01	0.334
		983.53	*	-7.043E-03	1.297E-01	2.111E-01	1.921E-02	-0.033
		1312.11		-7.368E-02	1.494E-01	2.291E-01	2.066E-02	-0.322
CR-51		320.08	*	-1.336E-01	6.009E-01	9.722E-01	9.359E-02	-0.137
MN-54		834.85	*	2.491E-02	4.996E-02	8.443E-02	7.608E-03	0.295
CO-56		846.77	*	-1.109E-02	5.520E-02	8.747E-02	7.929E-03	-0.127
		1037.84		-2.204E-01	3.730E-01	5.782E-01	5.400E-02	-0.381
	+	1238.28		1.892E-01	1.887E-01	2.566E-01	2.256E-02	0.737
		1771.35		-1.139E-01	3.782E-01	4.878E-01	4.193E-02	-0.234
CO-57		122.06	*	5.427E-03	3.009E-02	4.883E-02	4.112E-03	0.111
		136.47		2.391E-01	2.497E-01	4.161E-01	3.737E-02	0.575
CO-58		810.76	*	-2.546E-02	5.027E-02	7.703E-02	6.871E-03	-0.330
FE-59		1099.45	*	-1.068E-01	1.335E-01	2.028E-01	1.885E-02	-0.526
		1291.59		4.873E-02	1.787E-01	3.015E-01	3.021E-02	0.162
CO-60		1173.23		-1.016E-02	5.864E-02	9.509E-02	7.710E-03	-0.107
		1332.49	*	9.512E-03	4.824E-02	8.078E-02	7.389E-03	0.118
ZN-65		1115.54	*	-3.805E-02	1.361E-01	1.862E-01	1.584E-02	-0.204
SE-75		121.12		1.244E-01	1.609E-01	2.675E-01	2.930E-02	0.465
		136.00		5.652E-02	4.913E-02	8.252E-02	6.921E-03	0.685
		264.66	*	2.957E-02	6.783E-02	1.018E-01	9.505E-03	0.290
		279.54		4.571E-03	1.510E-01	2.499E-01	2.404E-02	0.018
		400.66		1.605E-02	3.611E-01	5.848E-01	6.426E-02	0.027
SR-85		514.00	*	-1.971E-01	6.850E-02	9.335E-02	8.099E-03	-2.111

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-88	898.04			-3.253E-02	5.657E-02	8.527E-02	7.943E-03	-0.381
	1836.06	*		1.372E-02	4.742E-02	8.241E-02	6.888E-03	0.166
Y-91	1204.77	*		-1.226E+01	3.313E+01	5.270E+01	4.384E+00	-0.233
NB-94	702.65	*		1.456E-02	4.386E-02	7.385E-02	6.154E-03	0.197
	871.09			-2.604E-03	4.884E-02	7.079E-02	6.490E-03	-0.037
NB-95	765.81	*		7.641E-03	6.173E-02	1.016E-01	8.821E-03	0.075
NB-95M	235.69	*		5.909E-02	1.826E-01	2.738E-01	2.837E-02	0.216
ZR-95	724.19			1.052E-02	1.470E-01	2.100E-01	1.931E-02	0.050
	756.73	*		-7.129E-02	1.043E-01	1.593E-01	1.518E-02	-0.448
MO-99	140.51			-1.392E-04	1.043E-01	Half-Life	too short	
	181.07			3.367E-05	1.043E-01	Half-Life	too short	
	366.42			8.672E-05	1.043E-01	Half-Life	too short	
	739.50	*		4.116E-05	1.043E-01	Half-Life	too short	
	777.92			-3.439E-04	1.043E-01	Half-Life	too short	
TC-99M	140.51	*		-1.108E+20	1.043E-01	Half-Life	too short	
RU-103	497.08	*		3.921E-02	5.511E-02	9.688E-02	1.357E-02	0.405
	610.33		+	1.693E+01	3.646E+00	4.243E+00	6.886E-01	3.991
RH-106	621.93	*		-3.790E-02	4.051E-01	6.657E-01	8.704E-02	-0.057
	1050.41			7.117E-01	3.251E+00	5.526E+00	4.889E-01	0.129
RU-106	621.93	*		-3.790E-02	4.051E-01	6.657E-01	5.551E-02	-0.057
	1050.41			7.117E-01	3.251E+00	5.526E+00	4.889E-01	0.129
AG-108M	433.94	*		6.552E-03	3.643E-02	5.931E-02	5.270E-03	0.110
	614.28			1.129E-02	4.977E-02	7.338E-02	6.362E-03	0.154
	722.91			4.095E-02	5.326E-02	8.228E-02	7.183E-03	0.498
AG-110M	657.76	*		3.460E-02	4.963E-02	7.672E-02	6.438E-03	0.451
	677.62			-3.484E-02	3.987E-01	6.511E-01	5.501E-02	-0.054
	706.68			-5.505E-02	2.810E-01	4.534E-01	3.904E-02	-0.121
	763.94			-3.330E-01	2.328E-01	3.304E-01	2.942E-02	-1.008
	884.68			4.609E-02	6.561E-02	1.130E-01	1.072E-02	0.408
	937.49			-3.252E-02	1.514E-01	2.494E-01	2.370E-02	-0.130
	1384.29			2.498E-02	2.280E-01	3.249E-01	3.056E-02	0.077
	1505.03			-4.697E-01	4.203E-01	5.585E-01	5.124E-02	-0.841
SN-113	391.69	*		-4.407E-02	6.100E-02	9.350E-02	8.155E-03	-0.471
CD-115	260.90			1.896E-04	6.100E-02	Half-Life	too short	
	492.35			-4.301E-04	6.100E-02	Half-Life	too short	
	527.90	*		5.452E-05	6.100E-02	Half-Life	too short	
SN-117M	156.02			-1.885E+00	4.257E+00	6.612E+00	5.547E-01	-0.285
	158.56	*		6.890E-02	1.044E-01	1.706E-01	1.433E-02	0.404
TE-123M	159.00	*		1.956E-02	3.846E-02	6.242E-02	5.281E-03	0.313
SB-124	602.73			-2.092E-02	6.022E-02	8.337E-02	7.033E-03	-0.251
	645.85			4.687E-02	6.488E-01	1.078E+00	9.399E-02	0.043
	722.78			4.621E-01	5.872E-01	9.087E-01	7.859E-02	0.509
	1690.97	*		-1.464E-02	1.177E-01	1.913E-01	1.760E-02	-0.077
SB-125	427.87	*		2.359E-03	1.228E-01	1.976E-01	1.729E-02	0.012
	463.37		+	6.814E-01	4.451E-01	6.368E-01	5.929E-02	1.070
	600.60			-8.461E-02	2.308E-01	3.646E-01	3.316E-02	-0.232
	635.95			-1.043E-01	3.629E-01	5.863E-01	5.269E-02	-0.178
TE-125M	109.28	*		6.378E-01	1.263E+01	2.028E+01	2.189E+00	0.031
I-126	388.63			2.385E-01	3.383E-01	5.716E-01	4.857E-02	0.417

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	666.33	*		8.351E-02	4.879E-01	7.106E-01	5.770E-02	0.118
	753.82			1.036E+00	3.419E+00	5.736E+00	4.941E-01	0.181
	414.70			1.246E-02	1.488E-01	2.411E-01	2.061E-02	0.052
	666.50			3.755E-02	1.715E-01	2.511E-01	2.039E-02	0.150
	695.00			-8.912E-02	1.599E-01	2.503E-01	2.075E-02	-0.356
	697.00			4.180E-01	5.457E-01	9.483E-01	7.872E-02	0.441
SB-127	720.70	*		1.502E-01	3.099E-01	4.847E-01	4.089E-02	0.310
	856.80			2.756E-01	9.954E-01	1.445E+00	1.316E-01	0.191
	252.40			9.075E+00	2.254E+01	3.769E+01	1.600E+01	0.241
	473.00			1.129E+01	9.266E+00	1.587E+01	2.409E+00	0.711
	685.70	*		2.732E+00	6.743E+00	1.146E+01	1.577E+00	0.238
	783.70			3.424E+01	1.899E+01	3.458E+01	5.149E+00	0.990
I-131	80.19			-1.066E+01	1.185E+01	1.651E+01	1.707E+00	-0.645
	284.31			4.063E-01	3.716E+00	6.172E+00	6.040E-01	0.066
	364.49	*		-3.311E-01	2.974E-01	4.436E-01	4.144E-02	-0.746
TE-132	636.99			-8.119E-01	4.073E+00	6.624E+00	5.856E-01	-0.123
	49.72			-1.208E+02	1.586E+02	2.555E+02	3.602E+01	-0.473
	111.76			-5.428E+01	2.224E+02	3.553E+02	4.856E+01	-0.153
BA-133	116.30			-3.507E+01	1.966E+02	3.145E+02	4.255E+01	-0.112
	228.16	*		-4.343E+00	5.089E+00	8.070E+00	1.445E+00	-0.538
	81.00			-1.525E-01	1.234E-01	1.656E-01	2.736E-02	-0.921
	276.40			3.912E-01	5.100E-01	7.766E-01	1.130E-01	0.504
	302.85			1.074E-01	1.944E-01	2.920E-01	3.945E-02	0.368
	356.01	*		2.257E-03	5.955E-02	8.511E-02	1.119E-02	0.027
I-133	383.85			-2.757E-01	3.921E-01	6.024E-01	7.463E-02	-0.458
	529.87	*		9.437E-01	3.921E-01	Half-Life	too short	
	875.33			-1.444E+01	3.921E-01	Half-Life	too short	
CS-134	1298.22			-9.835E+01	3.921E-01	Half-Life	too short	
	563.25			3.677E-01	4.517E-01	7.959E-01	6.897E-02	0.462
	569.33			-1.071E-01	2.430E-01	3.817E-01	3.314E-02	-0.281
	604.72			1.685E-02	4.549E-02	6.821E-02	5.762E-03	0.247
	795.86	*		5.674E-02	6.071E-02	1.063E-01	9.451E-03	0.534
	801.95			3.403E-01	5.041E-01	8.691E-01	7.740E-02	0.391
CS-135	1365.19			7.661E-01	1.598E+00	2.771E+00	2.646E-01	0.276
	268.22	*		1.748E-01	2.235E-01	3.421E-01	3.613E-02	0.511
I-135	546.56			1.588E+18	2.235E-01	Half-Life	too short	
	836.80			5.553E+18	2.235E-01	Half-Life	too short	
	1038.76			-7.402E+18	2.235E-01	Half-Life	too short	
	1131.51			-5.922E+18	2.235E-01	Half-Life	too short	
	1260.41	*		-1.096E+18	2.235E-01	Half-Life	too short	
	1457.56			3.709E+20	2.235E-01	Half-Life	too short	
	1678.03			-2.008E+18	2.235E-01	Half-Life	too short	
	1791.20			1.521E+18	2.235E-01	Half-Life	too short	
	153.25			2.032E-01	1.596E+00	2.552E+00	2.569E-01	0.080
	176.60			-5.351E-02	9.169E-01	1.551E+00	1.471E-01	-0.035
CS-136	273.65			-1.221E+00	1.146E+00	1.527E+00	1.527E-01	-0.800
	340.55			1.078E+00	3.469E-01	5.826E-01	5.465E-02	1.850
	818.51			4.244E-02	1.313E-01	2.203E-01	1.972E-02	0.193
	1048.07	*		2.420E-01	2.056E-01	3.781E-01	3.486E-02	0.640

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1235.36			7.285E-01	1.369E+00	2.051E+00	2.400E-01	0.355
CE-139	165.86	*		1.918E-02	4.035E-02	6.525E-02	5.518E-03	0.294
BA-140	162.66			-1.159E-02	1.604E+00	2.541E+00	2.293E-01	-0.005
	304.85			-1.155E+00	2.935E+00	4.065E+00	1.198E+00	-0.284
	423.72			-5.545E-01	4.035E+00	6.421E+00	2.112E+00	-0.086
	537.26	*		-4.105E-01	5.220E-01	7.888E-01	2.676E-01	-0.520
LA-140	328.76			7.132E-01	6.382E-01	1.099E+00	1.056E-01	0.649
	487.02			6.192E-02	2.568E-01	4.397E-01	4.051E-02	0.141
	815.77			3.617E-01	6.077E-01	1.044E+00	1.034E-01	0.347
	1596.21	*		1.309E-02	1.469E-01	2.489E-01	2.256E-02	0.053
CE-141	145.44	*		9.798E-02	9.358E-02	1.556E-01	1.323E-02	0.630
CE-143	57.36			-2.712E-02	9.358E-02	Half-Life	too short	
	293.27	*		3.553E-02	9.358E-02	Half-Life	too short	
	664.57			3.326E-01	9.358E-02	Half-Life	too short	
	721.93			1.143E-01	9.358E-02	Half-Life	too short	
CE-144	80.12			-2.869E+00	3.291E+00	4.597E+00	4.701E-01	-0.624
	133.52	*		-1.509E-01	2.868E-01	3.943E-01	5.963E-02	-0.383
PM-144	476.78			-2.878E-02	8.322E-02	1.371E-01	1.291E-02	-0.210
	618.01			7.455E-03	4.121E-02	6.924E-02	5.963E-03	0.108
	696.49	*		1.437E-02	4.606E-02	7.748E-02	6.435E-03	0.185
PR-144	696.51	*		1.096E+00	3.463E+00	5.827E+00	4.835E-01	0.188
	1489.16			-6.660E-01	1.494E+01	2.394E+01	2.199E+00	-0.028
PM-146	453.88	*		6.663E-02	6.144E-02	1.048E-01	1.113E-02	0.636
	633.25			-3.056E-01	1.904E+00	3.104E+00	1.183E+00	-0.098
	735.93			-6.047E-02	2.217E-01	3.180E-01	8.902E-02	-0.190
	747.24			-3.636E-02	1.284E-01	2.043E-01	2.975E-02	-0.178
ND-147	91.11			3.167E-01	8.018E-01	9.458E-01	1.062E-01	0.335
	319.41			-1.237E+00	7.420E+00	1.205E+01	1.110E+00	-0.103
	531.02	*		-2.457E-01	1.181E+00	1.947E+00	2.914E-01	-0.126
PM-149	285.90	*		7.705E-06	1.181E+00	Half-Life	too short	
EU-152	121.78			5.911E-02	8.425E-02	1.398E-01	1.360E-02	0.423
	244.70			7.627E-01	4.245E-01	6.911E-01	6.370E-02	1.103
	344.28	*		-1.609E-01	1.448E-01	1.849E-01	1.759E-02	-0.870
	778.90			-1.035E-01	3.114E-01	4.898E-01	4.283E-02	-0.211
+	964.08			7.332E-01	4.729E-01	7.194E-01	6.585E-02	1.019
	1085.87			-4.080E-02	4.903E-01	8.115E-01	7.035E-02	-0.050
	1112.07			5.324E-01	4.083E-01	6.895E-01	5.875E-02	0.772
	1408.01			2.495E-01	2.147E-01	4.046E-01	3.722E-02	0.617
GD-153	69.67			2.712E-01	2.412E+00	3.582E+00	3.369E-01	0.076
	97.43	*		-5.103E-03	1.079E-01	1.561E-01	1.541E-02	-0.033
	103.18			-5.614E-02	1.374E-01	2.188E-01	2.049E-02	-0.257
EU-154	123.07			-7.066E-02	6.153E-02	9.261E-02	1.036E-02	-0.763
	723.31			1.778E-01	2.351E-01	3.634E-01	3.394E-02	0.489
	873.19			3.805E-03	3.569E-01	5.764E-01	7.092E-02	0.007
	996.26			-4.281E-01	4.611E-01	6.889E-01	1.219E-01	-0.622
	1004.73			-1.765E-01	2.930E-01	4.614E-01	5.511E-02	-0.383
	1274.44	*		8.214E-02	1.611E-01	2.778E-01	3.195E-02	0.296
EU-155	86.55	+		3.498E-01	1.610E-01	2.289E-01	2.522E-02	1.528
	105.31	*		1.693E-01	1.276E-01	2.168E-01	2.018E-02	0.781

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TB-160	+	86.79		9.983E-01	4.592E-01	6.543E-01	7.183E-02	1.526	
		197.04		2.428E-01	7.204E-01	1.205E+00	1.062E-01	0.201	
		215.65		4.897E-01	9.841E-01	1.686E+00	1.518E-01	0.290	
	+	298.57		2.004E-01	2.152E-01	2.711E-01	2.518E-02	0.739	
		879.36	*	-1.002E-01	1.918E-01	2.912E-01	2.680E-02	-0.344	
		962.29		5.071E-01	8.897E-01	1.367E+00	1.252E-01	0.371	
		966.15		1.241E+00	3.640E-01	7.011E-01	6.414E-02	1.769	
		1177.93		8.883E-02	5.040E-01	8.449E-01	6.877E-02	0.105	
		1271.85		-6.672E-02	1.017E+00	1.655E+00	1.450E-01	-0.040	
HO-166M		80.57		-3.662E-01	3.495E-01	4.822E-01	4.953E-02	-0.759	
	184.41		1.092E-01	4.924E-02	8.022E-02	6.956E-03	1.361		
	280.46		-8.429E-02	1.132E-01	1.794E-01	1.671E-02	-0.470		
	410.95		-1.333E-02	3.390E-01	5.363E-01	4.576E-02	-0.025		
	711.68	*	9.352E-02	7.575E-02	1.363E-01	1.143E-02	0.686		
	752.31		8.100E-02	3.371E-01	5.625E-01	4.841E-02	0.144		
	810.29		-5.543E-02	7.189E-02	1.068E-01	9.502E-03	-0.519		
	TA-182		67.75		-7.333E-02	1.488E-01	2.392E-01	2.225E-02	-0.307
		100.11		9.402E-02	2.141E-01	3.542E-01	3.405E-02	0.265	
152.43			1.425E-02	4.446E-01	7.082E-01	5.926E-02	0.020		
222.11			-1.249E-01	4.664E-01	7.718E-01	6.993E-02	-0.162		
+		1121.30		8.145E-01	4.424E-01	4.865E-01	4.118E-02	1.674	
		1189.05		2.467E-01	4.035E-01	7.032E-01	5.776E-02	0.351	
1221.41		*	-6.684E-02	2.667E-01	4.279E-01	3.607E-02	-0.156		
1231.02			-6.503E-01	7.038E-01	9.489E-01	8.059E-02	-0.685		
IR-192		+	295.96		1.379E+00	2.577E-01	3.999E-01	3.742E-02	3.449
	308.46			3.190E-02	1.265E-01	2.109E-01	1.962E-02	0.151	
	*	316.51		2.668E-02	4.893E-02	8.265E-02	7.638E-03	0.323	
		468.07		-1.279E-02	1.084E-01	1.489E-01	1.384E-02	-0.086	
HG-203		70.83		-3.069E-01	2.066E+00	3.027E+00	5.005E-01	-0.101	
	72.87		1.883E+00	1.250E+00	1.909E+00	3.075E-01	0.986		
	279.20	*	3.506E-02	5.661E-02	9.633E-02	9.168E-03	0.364		
BI-207		72.81		3.558E-01	2.508E-01	3.894E-01	3.741E-02	0.914	
	+	74.97		8.742E-01	1.971E-01	2.892E-01	2.825E-02	3.022	
		569.70		-1.883E-03	3.729E-02	6.053E-02	5.183E-03	-0.031	
	*	1063.66		1.446E-02	6.685E-02	1.135E-01	9.966E-03	0.127	
		1770.23		3.277E-01	5.556E-01	9.311E-01	8.007E-02	0.352	
PB-210		46.54	*	4.269E+00	5.653E+00	9.485E+00	9.125E-01	0.450	
PB-211	*	404.85		-3.749E-01	9.997E-01	1.547E+00	7.481E-01	-0.242	
		427.09		7.513E-01	2.009E+00	3.269E+00	1.512E+00	0.230	
		832.01		1.590E-02	1.237E+00	2.006E+00	1.042E+00	0.008	
RN-219	+	271.23		1.321E+00	5.974E-01	6.002E-01	6.506E-02	2.200	
		401.81	*	2.487E-01	5.493E-01	9.111E-01	1.349E-01	0.273	
RA-223		81.07		-3.568E-01	2.753E-01	3.729E-01	3.849E-02	-0.957	
	+	83.79		2.023E-01	1.591E-01	2.472E-01	2.624E-02	0.819	
		94.87		9.467E-01	5.782E-01	9.012E-01	9.144E-02	1.051	
	144.24		6.390E-01	8.607E-01	1.414E+00	1.325E-01	0.452		
	154.21		2.389E-01	4.782E-01	7.772E-01	7.169E-02	0.307		
	+	269.46		1.026E+00	4.610E-01	4.632E-01	4.383E-02	2.215	
		323.87	*	8.940E-03	8.893E-01	1.457E+00	2.568E-01	0.006	

---- Non-Identified Nuclides ----

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AC-227	+	338.28		9.362E+00	2.761E+00	3.170E+00	3.932E-01	2.953
		79.69		-1.005E+00	1.632E+00	2.306E+00	4.166E-01	-0.436
		235.96		2.189E-01	2.147E-01	3.325E-01	3.591E-02	0.658
		256.23	*	-1.842E-01	3.230E-01	5.197E-01	6.508E-02	-0.354
TH-227	+	299.98		1.450E+00	1.563E+00	2.058E+00	2.710E-01	0.705
		304.50		-1.092E-01	2.246E+00	3.226E+00	5.446E-01	-0.034
		334.37		-4.800E-02	2.573E+00	3.678E+00	5.834E-01	-0.013
		79.80		-1.475E+00	2.157E+00	3.019E+00	6.778E-01	-0.489
PA-231		235.96		2.189E-01	2.146E-01	3.325E-01	3.405E-02	0.658
		256.23	*	-1.842E-01	3.232E-01	5.197E-01	7.288E-02	-0.354
	+	299.98		1.450E+00	1.563E+00	2.058E+00	2.710E-01	0.705
		304.50		-1.092E-01	2.246E+00	3.226E+00	5.446E-01	-0.034
TH-231		334.37		-4.800E-02	2.573E+00	3.678E+00	5.834E-01	-0.013
		283.69	*	-7.251E-01	1.856E+00	2.995E+00	4.494E-01	-0.242
	+	301.36		9.318E-01	1.004E+00	1.335E+00	1.687E-01	0.698
		81.07		-3.568E-01	2.753E-01	3.729E-01	3.849E-02	-0.957
PA-233	+	83.79		2.023E-01	1.591E-01	2.472E-01	2.624E-02	0.819
		94.87		9.467E-01	5.782E-01	9.012E-01	9.144E-02	1.051
		144.24		6.390E-01	8.607E-01	1.414E+00	1.325E-01	0.452
		154.21		2.389E-01	4.782E-01	7.772E-01	7.169E-02	0.307
PA-234	+	269.46		1.026E+00	4.610E-01	4.632E-01	4.383E-02	2.215
		323.87	*	8.940E-03	8.893E-01	1.457E+00	2.568E-01	0.006
	+	338.28		9.362E+00	2.761E+00	3.170E+00	3.932E-01	2.953
	+	300.13		6.563E-01	7.092E-01	9.316E-01	1.419E-01	0.705
PA-234M		311.90	*	-3.306E-02	8.336E-02	1.336E-01	1.266E-02	-0.248
		340.48		3.348E+00	1.243E+00	1.677E+00	4.064E-01	1.996
		94.67		5.034E-01	2.231E-01	3.457E-01	4.676E-02	1.456
		98.44		-3.098E-02	1.138E-01	1.719E-01	9.620E-02	-0.180
TH-234		111.00		-4.456E-02	2.220E-01	3.524E-01	4.323E-02	-0.126
		131.20		1.179E-01	1.409E-01	2.108E-01	1.757E-02	0.559
		569.50		-1.194E-01	3.346E-01	5.298E-01	4.537E-02	-0.225
		733.00		-2.257E-01	5.598E-01	7.475E-01	1.656E-01	-0.302
U-235		880.51		1.197E-01	3.650E-01	6.079E-01	5.596E-02	0.197
		883.24		-3.163E-02	3.748E-01	5.978E-01	4.023E-01	-0.053
		926.50		4.321E-02	2.109E-01	3.461E-01	8.824E-02	0.125
		946.00	*	-1.460E-01	4.323E-01	7.035E-01	1.339E-01	-0.208
U-238		949.00		2.856E-01	6.102E-01	1.063E+00	9.766E-02	0.269
		766.42		1.664E+01	1.782E+01	2.698E+01	1.369E+01	0.617
		1001.03	*	2.643E+00	6.211E+00	1.077E+01	1.113E+00	0.245
		63.29	*	1.951E+00	1.852E+00	3.083E+00	5.731E-01	0.633
U-238	+	92.59		4.202E+00	1.347E+00	1.684E+00	1.756E-01	2.496
		89.96		-1.213E+00	1.503E+00	1.588E+00	4.043E-01	-0.764
	+	93.35		3.174E+00	1.224E+00	1.263E+00	3.006E-01	2.512
		143.76	*	2.052E-01	2.572E-01	4.210E-01	7.076E-02	0.487
U-238		163.33		-1.928E-01	5.674E-01	8.825E-01	1.577E-01	-0.218
	+	185.72		1.657E-01	8.674E-02	1.093E-01	9.498E-03	1.516
		205.31		-1.245E-01	6.040E-01	8.832E-01	1.615E-01	-0.141
		63.29	*	1.951E+00	1.852E+00	3.083E+00	5.731E-01	0.633

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.53		-7.585E-02	1.915E-01	3.056E-01	2.954E-02	-0.248
		103.37		-7.233E-02	1.213E-01	1.914E-01	1.789E-02	-0.378
		106.12		8.183E-02	1.003E-01	1.677E-01	1.536E-02	0.488
		117.23	*	-2.035E-01	4.834E-01	7.639E-01	6.560E-02	-0.266
		228.18		-2.443E-01	2.679E-01	4.273E-01	3.892E-02	-0.572
		277.60		1.484E-01	2.356E-01	3.889E-01	3.621E-02	0.382
AM-241		59.54	*	-8.019E-02	2.000E-01	3.265E-01	3.100E-02	-0.246
CM-247		278.00		8.925E-01	9.930E-01	1.660E+00	1.546E-01	0.538
		287.50		-3.963E-01	1.537E+00	2.499E+00	2.326E-01	-0.159
CF-249		402.40	*	1.938E-02	4.990E-02	8.259E-02	7.019E-03	0.235
		252.80		1.815E-01	1.190E+00	1.994E+00	1.845E-01	0.091
		333.37		-6.465E-02	2.734E-01	3.839E-01	3.500E-02	-0.168
CF-251		388.16	*	3.179E-02	5.359E-02	8.992E-02	7.647E-03	0.354
		177.52	*	-1.131E-01	1.564E-01	2.567E-01	2.205E-02	-0.441
		227.38		-2.419E-01	4.376E-01	7.123E-01	6.484E-02	-0.340
ANH-511		285.41		7.398E-01	2.699E+00	4.521E+00	4.210E-01	0.164
		511.00	*	5.834E-02	5.665E-02	1.048E-01	9.093E-03	0.557

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]G248513013
* Acquisition date   : 20-MAR-2010 13:30:02 Detector SN#      :
* Detector ID        : GAM06                               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 02:00:01.29                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248513013                     Analyst initials: MXR1
* Batch Number       : 961097                           Sample Quantity : 1.1801E+02 GRAM
* Recovery           : 1.00000                          Carrier Weight  : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 16-FEB-2010 15:10:04 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	2.765E+01	3.233E+00	6.297E-01	0.000E+00
CD-109	2.977E+00	1.342E+00	1.753E+00	0.000E+00
SN-126	2.876E-01	1.296E-01	1.726E-01	0.000E+00
BA-137M	6.512E-01	1.041E-01	7.805E-02	0.000E+00
CS-137	6.880E-01	1.101E-01	8.245E-02	0.000E+00
TL-208	6.325E-01	1.126E-01	6.923E-02	0.000E+00
BI-211	5.000E+00	7.138E-01	4.288E-01	0.000E+00
BI-212	2.770E+00	1.097E+00	1.029E+00	0.000E+00
PB-212	2.030E+00	2.482E-01	1.166E-01	0.000E+00
BI-214	1.426E+00	2.415E-01	1.496E-01	0.000E+00
PB-214	1.815E+00	2.770E-01	1.560E-01	0.000E+00
RA-224	5.880E+00	1.561E+00	1.250E+00	0.000E+00
RA-226	1.426E+00	2.415E-01	1.496E-01	0.000E+00
AC-228	2.036E+00	4.793E-01	2.932E-01	0.000E+00
RA-228	2.036E+00	4.793E-01	2.932E-01	0.000E+00
TH-228	2.030E+00	2.482E-01	1.166E-01	0.000E+00
TH-229	-1.440E-01	6.182E-01	1.074E+00	0.000E+00
TH-232	2.036E+00	4.793E-01	2.932E-01	0.000E+00
NP-237	8.580E-01	4.251E-01	4.679E-01	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.661E-01	4.412E-01	7.218E-01	0.000E+00 NOT IDENT.
NA-22	2.458E-02	5.675E-02	9.890E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.430E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.902E-02	5.371E-02	8.338E-02	0.000E+00 FAIL ABUN
V-48	-7.043E-03	1.271E-01	2.114E-01	0.000E+00 NOT IDENT.
CR-51	-1.336E-01	5.889E-01	9.855E-01	0.000E+00 NOT IDENT.
MN-54	2.491E-02	4.896E-02	8.469E-02	0.000E+00 NOT IDENT.
CO-56	-1.109E-02	5.409E-02	8.773E-02	0.000E+00 FAIL ABUN

CO-57	5.427E-03	2.949E-02	5.001E-02	0.000E+00	NOT IDENT.
CO-58	-2.546E-02	4.926E-02	7.730E-02	0.000E+00	NOT IDENT.
FE-59	-1.068E-01	1.309E-01	2.028E-01	0.000E+00	NOT IDENT.
CO-60	9.512E-03	4.727E-02	8.062E-02	0.000E+00	NOT IDENT.
ZN-65	-3.805E-02	1.334E-01	1.862E-01	0.000E+00	NOT IDENT.
SE-75	2.957E-02	6.647E-02	1.035E-01	0.000E+00	NOT IDENT.
SR-85	-1.971E-01	6.713E-02	9.414E-02	0.000E+00	NOT IDENT.
Y-88	1.372E-02	4.647E-02	8.195E-02	0.000E+00	NOT IDENT.
Y-91	-1.226E+01	3.247E+01	5.265E+01	0.000E+00	NOT IDENT.
NB-94	1.456E-02	4.298E-02	7.422E-02	0.000E+00	NOT IDENT.
NB-95	7.641E-03	6.050E-02	1.021E-01	0.000E+00	NOT IDENT.
NB-95M	5.909E-02	1.790E-01	2.784E-01	0.000E+00	NOT IDENT.
ZR-95	-7.129E-02	1.022E-01	1.600E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.230E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.604E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.921E-02	5.401E-02	9.774E-02	0.000E+00	FAIL ABUN
RH-106	-3.790E-02	3.970E-01	6.700E-01	0.000E+00	NOT IDENT.
RU-106	-3.790E-02	3.970E-01	6.700E-01	0.000E+00	NOT IDENT.
AG-108M	6.552E-03	3.570E-02	5.992E-02	0.000E+00	NOT IDENT.
AG-110M	3.460E-02	4.864E-02	7.716E-02	0.000E+00	NOT IDENT.
SN-113	-4.407E-02	5.978E-02	9.457E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.694E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	6.890E-02	1.023E-01	1.742E-01	0.000E+00	NOT IDENT.
TE-123M	1.956E-02	3.769E-02	6.375E-02	0.000E+00	NOT IDENT.
SB-124	-1.464E-02	1.153E-01	1.904E-01	0.000E+00	NOT IDENT.
SB-125	2.359E-03	1.203E-01	1.997E-01	0.000E+00	FAIL ABUN
TE-125M	6.378E-01	1.237E+01	2.080E+01	0.000E+00	NOT IDENT.
I-126	8.351E-02	4.782E-01	7.146E-01	0.000E+00	NOT IDENT.
SB-126	1.502E-01	3.037E-01	4.870E-01	0.000E+00	NOT IDENT.
SB-127	2.732E+00	6.608E+00	1.152E+01	0.000E+00	NOT IDENT.
I-131	-3.311E-01	2.914E-01	4.491E-01	0.000E+00	NOT IDENT.
TE-132	-4.343E+00	4.987E+00	8.210E+00	0.000E+00	NOT IDENT.
BA-133	2.257E-03	5.835E-02	8.618E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.265E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.674E-02	5.950E-02	1.067E-01	0.000E+00	NOT IDENT.
CS-135	1.748E-01	2.190E-01	3.475E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.252E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.420E-01	2.015E-01	3.784E-01	0.000E+00	NOT IDENT.
CE-139	1.918E-02	3.954E-02	6.660E-02	0.000E+00	NOT IDENT.
BA-140	-4.105E-01	5.115E-01	7.951E-01	0.000E+00	NOT IDENT.
LA-140	1.309E-02	1.439E-01	2.479E-01	0.000E+00	NOT IDENT.
CE-141	9.798E-02	9.171E-02	1.590E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.364E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.509E-01	2.811E-01	4.034E-01	0.000E+00	NOT IDENT.
PM-144	1.437E-02	4.514E-02	7.788E-02	0.000E+00	NOT IDENT.
PR-144	1.096E+00	3.394E+00	5.857E+00	0.000E+00	NOT IDENT.
PM-146	6.663E-02	6.021E-02	1.058E-01	0.000E+00	NOT IDENT.
ND-147	-2.457E-01	1.157E+00	1.962E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	1.335E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.609E-01	1.419E-01	1.873E-01	0.000E+00	FAIL ABUN
GD-153	-5.103E-03	1.057E-01	1.603E-01	0.000E+00	NOT IDENT.
EU-154	8.214E-02	1.579E-01	2.774E-01	0.000E+00	NOT IDENT.
EU-155	1.693E-01	1.251E-01	2.224E-01	0.000E+00	FAIL ABUN
TB-160	-1.002E-01	1.879E-01	2.920E-01	0.000E+00	FAIL ABUN
HO-166M	9.352E-02	7.423E-02	1.370E-01	0.000E+00	NOT IDENT.
TA-182	-6.684E-02	2.614E-01	4.275E-01	0.000E+00	FAIL ABUN
IR-192	2.668E-02	4.795E-02	8.379E-02	0.000E+00	FAIL ABUN
HG-203	3.506E-02	5.548E-02	9.779E-02	0.000E+00	NOT IDENT.
BI-207	1.446E-02	6.551E-02	1.135E-01	0.000E+00	FAIL ABUN
PB-210	4.269E+00	5.540E+00	9.812E+00	0.000E+00	NOT IDENT.
PB-211	-3.749E-01	9.797E-01	1.564E+00	0.000E+00	NOT IDENT.
RN-219	2.487E-01	5.383E-01	9.213E-01	0.000E+00	FAIL ABUN
RA-223	8.940E-03	8.715E-01	1.477E+00	0.000E+00	FAIL ABUN
AC-227	-1.842E-01	3.165E-01	5.281E-01	0.000E+00	FAIL ABUN
TH-227	-1.842E-01	3.167E-01	5.281E-01	0.000E+00	FAIL ABUN
PA-231	-7.251E-01	1.819E+00	3.040E+00	0.000E+00	FAIL ABUN
TH-231	8.940E-03	8.715E-01	1.477E+00	0.000E+00	FAIL ABUN
PA-233	-3.306E-02	8.169E-02	1.354E-01	0.000E+00	FAIL ABUN
PA-234	-1.460E-01	4.236E-01	7.047E-01	0.000E+00	NOT IDENT.
PA-234M	2.643E+00	6.087E+00	1.079E+01	0.000E+00	NOT IDENT.
TH-234	1.951E+00	1.815E+00	3.180E+00	0.000E+00	FAIL ABUN
U-235	2.052E-01	2.520E-01	4.304E-01	0.000E+00	FAIL ABUN
U-238	1.951E+00	1.815E+00	3.180E+00	0.000E+00	FAIL ABUN
NP-239	-2.035E-01	4.738E-01	7.827E-01	0.000E+00	NOT IDENT.
AM-241	-8.019E-02	1.960E-01	3.370E-01	0.000E+00	NOT IDENT.
CM-247	1.938E-02	4.891E-02	8.351E-02	0.000E+00	NOT IDENT.
CF-249	3.179E-02	5.251E-02	9.096E-02	0.000E+00	NOT IDENT.
CF-251	-1.131E-01	1.533E-01	2.619E-01	0.000E+00	NOT IDENT.

ANH-511	5.834E-02	5.551E-02	1.057E-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]G248513013.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:02
Sample ID          : G248513013           Sample quantity  : 1.18010E+02 GRAM
Detector name      : GAM06                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:01.29  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 961097               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	1460.82	865	10.66*	9.338E-01	2.765E+01	2.765E+01	11.93
CD-109	88.03	173	3.70*	5.172E+00	2.876E+00	2.977E+00	46.00
SN-126	64.28	-----	9.60	2.842E+00	-----	Line Not Found	-----
	86.94	173	8.90	5.172E+00	1.195E+00	1.195E+00	61.25
	87.57	173	37.00*	5.172E+00	2.876E-01	2.876E-01	46.00
BA-137M	661.66	351	89.90*	1.912E+00	6.503E-01	6.512E-01	16.32
CS-137	661.66	351	85.10*	1.912E+00	6.870E-01	6.880E-01	16.33
TL-208	277.37	-----	6.60	3.754E+00	-----	Line Not Found	-----
	583.19	359	85.00*	2.125E+00	6.325E-01	6.325E-01	18.17
	860.56	78	12.50	1.510E+00	1.306E+00	1.306E+00	49.29
BI-211	72.87	-----	1.23	3.914E+00	-----	Line Not Found	-----
	351.06	638	12.92*	3.143E+00	5.000E+00	5.000E+00	14.57
BI-212	727.33	102	6.67*	1.759E+00	2.770E+00	2.770E+00	40.40
	785.37	-----	1.10	1.644E+00	-----	Line Not Found	-----
	1620.50	15	1.47	8.664E-01	3.765E+00	3.765E+00	105.47
PB-212	74.82	404	10.28	4.121E+00	3.032E+00	3.032E+00	24.55
	77.11	575	17.10	4.362E+00	2.453E+00	2.453E+00	18.20
	238.63	1166	43.60*	4.191E+00	2.030E+00	2.030E+00	12.48
	300.09	48	3.30	3.541E+00	1.319E+00	1.319E+00	107.55
BI-214	609.32	418	45.49*	2.050E+00	1.426E+00	1.426E+00	17.28
	1120.29	92	14.92	1.179E+00	1.656E+00	1.656E+00	54.73
	1764.49	79	15.30	8.243E-01	1.992E+00	1.993E+00	30.57
PB-214	74.82	404	5.80	4.121E+00	5.374E+00	5.374E+00	23.90
	77.11	575	9.70	4.362E+00	4.325E+00	4.325E+00	19.98
	242.00	315	7.25	4.152E+00	3.326E+00	3.326E+00	27.70
	295.22	359	18.42	3.583E+00	1.731E+00	1.731E+00	19.76
	351.93	638	35.60*	3.143E+00	1.815E+00	1.815E+00	15.58
RA-224	240.99	315	4.10*	4.152E+00	5.880E+00	5.880E+00	27.09
RA-226	609.32	418	45.49*	2.050E+00	1.426E+00	1.426E+00	17.28
	1120.29	92	14.92	1.179E+00	1.656E+00	1.656E+00	54.73
	1764.49	79	15.30	8.243E-01	1.992E+00	1.993E+00	30.57
AC-228	338.32	271	11.27	3.237E+00	2.359E+00	2.359E+00	49.64

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	237	25.80*	1.433E+00	2.036E+00	2.036E+00	24.02
	968.97	157	15.80	1.352E+00	2.344E+00	2.344E+00	33.91
	338.32	271	11.27	3.237E+00	2.359E+00	2.359E+00	49.64
	911.20	237	25.80*	1.433E+00	2.036E+00	2.036E+00	24.02
TH-228	968.97	157	15.80	1.352E+00	2.344E+00	2.344E+00	33.91
	74.82	404	10.28	4.121E+00	3.032E+00	3.032E+00	22.57
	77.11	575	17.10	4.362E+00	2.453E+00	2.453E+00	18.20
	238.63	1166	43.60*	4.191E+00	2.030E+00	2.030E+00	12.48
TH-229	300.09	48	3.30	3.541E+00	1.319E+00	1.319E+00	123.31
	85.43	78	14.70	4.961E+00	3.400E-01	3.400E-01	78.62
	88.47	173	24.00	5.172E+00	4.433E-01	4.433E-01	46.00
	193.51	-----	4.41*	4.855E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	4.579E+00	-----	Line Not Found	-----
	338.32	271	11.27	3.237E+00	2.359E+00	2.359E+00	28.26
	911.20	237	25.80*	1.433E+00	2.036E+00	2.036E+00	24.02
	968.97	157	15.80	1.352E+00	2.344E+00	2.344E+00	33.91
NP-237	86.48	173	12.40*	5.172E+00	8.580E-01	8.580E-01	50.55
	95.86	-----	2.68	5.611E+00	-----	Line Not Found	-----

Flag: "*" = Keyline

Total number of lines in spectrum 30
Number of unidentified lines 3
Number of lines tentatively identified by NID 27 90.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.765E+01	2.765E+01	0.330E+01	11.93	
CD-109	461.40D	1.04	2.876E+00	2.977E+00	1.369E+00	46.00	
SN-126	2.30E+05Y	1.00	2.876E-01	2.876E-01	1.323E-01	46.00	
BA-137M	30.08Y	1.00	6.503E-01	6.512E-01	1.063E-01	16.32	
CS-137	30.08Y	1.00	6.870E-01	6.880E-01	1.123E-01	16.33	
TL-208	1.41E+10Y	1.00	6.325E-01	6.325E-01	1.149E-01	18.17	
BI-211	7.04E+08Y	1.00	5.000E+00	5.000E+00	0.728E+00	14.57	
BI-212	1.41E+10Y	1.00	2.770E+00	2.770E+00	1.119E+00	40.40	
PB-212	1.41E+10Y	1.00	2.030E+00	2.030E+00	0.253E+00	12.48	
BI-214	1600.00Y	1.00	1.426E+00	1.426E+00	0.246E+00	17.28	
PB-214	1600.00Y	1.00	1.815E+00	1.815E+00	0.283E+00	15.58	
RA-224	1.41E+10Y	1.00	5.880E+00	5.880E+00	1.593E+00	27.09	
RA-226	1600.00Y	1.00	1.426E+00	1.426E+00	0.246E+00	17.28	
AC-228	1.41E+10Y	1.00	2.036E+00	2.036E+00	0.489E+00	24.02	
RA-228	1.41E+10Y	1.00	2.036E+00	2.036E+00	0.489E+00	24.02	
TH-228	1.41E+10Y	1.00	2.030E+00	2.030E+00	0.253E+00	12.48	
TH-229	7340.00Y	1.00	4.433E-01	4.433E-01	2.039E-01	46.00	K
TH-232	1.41E+10Y	1.00	2.036E+00	2.036E+00	0.489E+00	24.02	
NP-237	2.14E+06Y	1.00	8.580E-01	8.580E-01	4.338E-01	50.55	

Total Activity : 6.256E+01 6.267E+01

Grand Total Activity : 6.256E+01 6.267E+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	93.02	307	487	1.57	185.59	181	10	4.26E-02	30.3	5.49E+00	T
0	129.01	99	309	0.75	257.53	254	8	1.37E-02	64.9	5.91E+00	
0	186.12	148	347	1.20	371.70	367	10	2.06E-02	51.6	4.98E+00	T
0	209.02	134	226	1.51	417.48	413	9	1.86E-02	44.0	4.61E+00	
0	270.40	172	263	2.16	540.19	533	15	2.38E-02	43.9	3.82E+00	T
0	463.03	57	81	1.72	925.32	921	10	7.90E-03	64.7	2.55E+00	T
3	964.36	46	44	2.47	1927.92	1923	33	6.35E-03	63.8	1.36E+00	T
0	1238.90	35	65	2.32	2477.13	2471	12	4.83E-03	99.4	1.07E+00	T
0	1378.29	54	9	1.86	2756.00	2746	19	7.46E-03	38.7	9.79E-01	

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]G248513013.CNF;1
* Acquisition date   : 20-MAR-2010 13:30:02  Detector SN#      :
* Detector ID        : GAM06                  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 02:00:01.29          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513013            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.18010E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-FEB-2010 15:10:04.7MS 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	2.765E+01	3.299E+00	6.316E-01	5.954E-02	43.768
CD-109	2.977E+00	1.369E+00	1.706E+00	1.898E-01	1.745
SN-126	2.876E-01	1.323E-01	1.680E-01	1.861E-02	1.712
BA-137M	6.512E-01	1.063E-01	7.760E-02	6.280E-03	8.392
CS-137	6.880E-01	1.123E-01	8.198E-02	6.649E-03	8.392
TL-208	6.325E-01	1.149E-01	6.874E-02	6.276E-03	9.202
BI-211	5.000E+00	7.284E-01	4.235E-01	3.974E-02	11.807
BI-212	2.770E+00	1.119E+00	1.024E+00	1.266E-01	2.704
PB-212	2.030E+00	2.533E-01	1.146E-01	1.177E-02	17.708
BI-214	1.426E+00	2.464E-01	1.486E-01	1.475E-02	9.593
PB-214	1.815E+00	2.827E-01	1.540E-01	1.676E-02	11.781
RA-224	5.880E+00	1.593E+00	1.229E+00	1.130E-01	4.784
RA-226	1.426E+00	2.464E-01	1.486E-01	1.475E-02	9.593
AC-228	2.036E+00	4.891E-01	2.926E-01	3.533E-02	6.959
RA-228	2.036E+00	4.891E-01	2.926E-01	3.533E-02	6.959
TH-228	2.030E+00	2.533E-01	1.146E-01	1.177E-02	17.708
TH-229	4.433E-01	2.039E-01	1.054E+00	9.251E-02	0.421
TH-232	2.036E+00	4.891E-01	2.926E-01	3.533E-02	6.959

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	8.580E-01	4.338E-01	4.552E-01	1.077E-01	1.885

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.661E-01		4.502E-01	7.151E-01	6.679E-02	-0.512
NA-22	2.458E-02		5.791E-02	9.905E-02	8.703E-03	0.248
NA-24	-5.384E+03		3.791E+03	Half-Life	too short	
SC-46	-2.902E-02		5.480E-02	8.318E-02	7.687E-03	-0.349
V-48	-7.043E-03		1.297E-01	2.111E-01	1.921E-02	-0.033
CR-51	-1.336E-01		6.009E-01	9.722E-01	9.359E-02	-0.137
MN-54	2.491E-02		4.996E-02	8.443E-02	7.608E-03	0.295
CO-56	-1.109E-02		5.520E-02	8.747E-02	7.929E-03	-0.127
CO-57	5.427E-03		3.009E-02	4.883E-02	4.112E-03	0.111
CO-58	-2.546E-02		5.027E-02	7.703E-02	6.871E-03	-0.330
FE-59	-1.068E-01		1.335E-01	2.028E-01	1.885E-02	-0.526
CO-60	9.512E-03		4.824E-02	8.078E-02	7.389E-03	0.118
ZN-65	-3.805E-02		1.361E-01	1.862E-01	1.584E-02	-0.204
SE-75	2.957E-02		6.783E-02	1.018E-01	9.505E-03	0.290
SR-85	-1.971E-01		6.850E-02	9.335E-02	8.099E-03	-2.111
Y-88	1.372E-02		4.742E-02	8.241E-02	6.888E-03	0.166
Y-91	-1.226E+01		3.313E+01	5.270E+01	4.384E+00	-0.233
NB-94	1.456E-02		4.386E-02	7.385E-02	6.154E-03	0.197
NB-95	7.641E-03		6.173E-02	1.016E-01	8.821E-03	0.075
NB-95M	5.909E-02		1.826E-01	2.738E-01	2.837E-02	0.216
ZR-95	-7.129E-02		1.043E-01	1.593E-01	1.518E-02	-0.448
MO-99	4.116E-05		6.274E-05	Half-Life	too short	
TC-99M	-1.108E+20		8.183E+19	Half-Life	too short	
RU-103	3.921E-02		5.511E-02	9.688E-02	1.357E-02	0.405
RH-106	-3.790E-02		4.051E-01	6.657E-01	8.704E-02	-0.057
RU-106	-3.790E-02		4.051E-01	6.657E-01	5.551E-02	-0.057
AG-108M	6.552E-03		3.643E-02	5.931E-02	5.270E-03	0.110
AG-110M	3.460E-02		4.963E-02	7.672E-02	6.438E-03	0.451
SN-113	-4.407E-02		6.100E-02	9.350E-02	8.155E-03	-0.471
CD-115	5.452E-05		8.645E-05	Half-Life	too short	
SN-117M	6.890E-02		1.044E-01	1.706E-01	1.433E-02	0.404
TE-123M	1.956E-02		3.846E-02	6.242E-02	5.281E-03	0.313
SB-124	-1.464E-02		1.177E-01	1.913E-01	1.760E-02	-0.077
SB-125	2.359E-03		1.228E-01	1.976E-01	1.729E-02	0.012
TE-125M	6.378E-01		1.263E+01	2.028E+01	2.189E+00	0.031
I-126	8.351E-02		4.879E-01	7.106E-01	5.770E-02	0.118
SB-126	1.502E-01		3.099E-01	4.847E-01	4.089E-02	0.310
SB-127	2.732E+00		6.743E+00	1.146E+01	1.577E+00	0.238
I-131	-3.311E-01		2.974E-01	4.436E-01	4.144E-02	-0.746
TE-132	-4.343E+00		5.089E+00	8.070E+00	1.445E+00	-0.538
BA-133	2.257E-03		5.955E-02	8.511E-02	1.119E-02	0.027
I-133	9.437E-01		2.176E+00	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
CS-134	5.674E-02		6.071E-02	1.063E-01	9.451E-03	0.534
CS-135	1.748E-01		2.235E-01	3.421E-01	3.613E-02	0.511
I-135	-1.096E+18		2.169E+18	Half-Life too short		
CS-136	2.420E-01		2.056E-01	3.781E-01	3.486E-02	0.640
CE-139	1.918E-02		4.035E-02	6.525E-02	5.518E-03	0.294
BA-140	-4.105E-01		5.220E-01	7.888E-01	2.676E-01	-0.520
LA-140	1.309E-02		1.469E-01	2.489E-01	2.256E-02	0.053
CE-141	9.798E-02		9.358E-02	1.556E-01	1.323E-02	0.630
CE-143	3.553E-02		6.960E-03	Half-Life too short		
CE-144	-1.509E-01		2.868E-01	3.943E-01	5.963E-02	-0.383
PM-144	1.437E-02		4.606E-02	7.748E-02	6.435E-03	0.185
PR-144	1.096E+00		3.463E+00	5.827E+00	4.835E-01	0.188
PM-146	6.663E-02		6.144E-02	1.048E-01	1.113E-02	0.636
ND-147	-2.457E-01		1.181E+00	1.947E+00	2.914E-01	-0.126
PM-149	7.705E-06		6.810E-04	Half-Life too short		
EU-152	-1.609E-01		1.448E-01	1.849E-01	1.759E-02	-0.870
GD-153	-5.103E-03		1.079E-01	1.561E-01	1.541E-02	-0.033
EU-154	8.214E-02		1.611E-01	2.778E-01	3.195E-02	0.296
EU-155	1.693E-01		1.276E-01	2.168E-01	2.018E-02	0.781
TB-160	-1.002E-01		1.918E-01	2.912E-01	2.680E-02	-0.344
HO-166M	9.352E-02		7.575E-02	1.363E-01	1.143E-02	0.686
TA-182	-6.684E-02		2.667E-01	4.279E-01	3.607E-02	-0.156
IR-192	2.668E-02		4.893E-02	8.265E-02	7.638E-03	0.323
HG-203	3.506E-02		5.661E-02	9.633E-02	9.168E-03	0.364
BI-207	1.446E-02		6.685E-02	1.135E-01	9.966E-03	0.127
PB-210	4.269E+00		5.653E+00	9.485E+00	9.125E-01	0.450
PB-211	-3.749E-01		9.997E-01	1.547E+00	7.481E-01	-0.242
RN-219	2.487E-01		5.493E-01	9.111E-01	1.349E-01	0.273
RA-223	8.940E-03		8.893E-01	1.457E+00	2.568E-01	0.006
AC-227	-1.842E-01		3.230E-01	5.197E-01	6.508E-02	-0.354
TH-227	-1.842E-01		3.232E-01	5.197E-01	7.288E-02	-0.354
PA-231	-7.251E-01		1.856E+00	2.995E+00	4.494E-01	-0.242
TH-231	8.940E-03		8.893E-01	1.457E+00	2.568E-01	0.006
PA-233	-3.306E-02		8.336E-02	1.336E-01	1.266E-02	-0.248
PA-234	-1.460E-01		4.323E-01	7.035E-01	1.339E-01	-0.208
PA-234M	2.643E+00		6.211E+00	1.077E+01	1.113E+00	0.245
TH-234	1.951E+00		1.852E+00	3.083E+00	5.731E-01	0.633
U-235	2.052E-01		2.572E-01	4.210E-01	7.076E-02	0.487
U-238	1.951E+00		1.852E+00	3.083E+00	5.731E-01	0.633
NP-239	-2.035E-01		4.834E-01	7.639E-01	6.560E-02	-0.266
AM-241	-8.019E-02		2.000E-01	3.265E-01	3.100E-02	-0.246
CM-247	1.938E-02		4.990E-02	8.259E-02	7.019E-03	0.235
CF-249	3.179E-02		5.359E-02	8.992E-02	7.647E-03	0.354
CF-251	-1.131E-01		1.564E-01	2.567E-01	2.205E-02	-0.441
ANH-511	5.834E-02		5.665E-02	1.048E-01	9.093E-03	0.557

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]G248513013          *
* Acquisition date   : 20-MAR-2010 13:30:02 Detector SN# :                  *
* Detector ID        : GAM06                      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 02:00:01.29              Half life ratio : 8.000    *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513013              Analyst initials: MXR1        *
* Batch Number       : 961097                  Sample Quantity : 1.1801E+02 GRAM *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000     *
*****
*                                     QC DATA                               *
*                                     *                                       *
* CALIB. DATE/TIME   : 16-FEB-2010 15:10:04 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	2.765E+01	3.233E+00	3.150E-01	1.650E+00
CD-109	2.977E+00	1.342E+00	8.772E-01	6.847E-01
SN-126	2.876E-01	1.296E-01	8.637E-02	6.614E-02
BA-137M	6.512E-01	1.041E-01	3.905E-02	5.313E-02
CS-137	6.880E-01	1.101E-01	4.125E-02	5.616E-02
TL-208	6.325E-01	1.126E-01	3.463E-02	5.746E-02
BI-211	5.000E+00	7.138E-01	2.145E-01	3.642E-01
BI-212	2.770E+00	1.097E+00	5.149E-01	5.595E-01
PB-212	2.030E+00	2.482E-01	5.832E-02	1.266E-01
BI-214	1.426E+00	2.415E-01	7.486E-02	1.232E-01
PB-214	1.815E+00	2.770E-01	7.803E-02	1.413E-01
RA-224	5.880E+00	1.561E+00	6.253E-01	7.965E-01
RA-226	1.426E+00	2.415E-01	7.486E-02	1.232E-01
AC-228	2.036E+00	4.793E-01	1.467E-01	2.446E-01
RA-228	2.036E+00	4.793E-01	1.467E-01	2.446E-01
TH-228	2.030E+00	2.482E-01	5.832E-02	1.266E-01
TH-229	-1.440E-01	6.182E-01	5.375E-01	3.154E-01
TH-232	2.036E+00	4.793E-01	1.467E-01	2.446E-01
NP-237	8.580E-01	4.251E-01	2.341E-01	2.169E-01

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.661E-01	4.412E-01	3.611E-01	2.251E-01 NOT IDENT.
NA-22	2.458E-02	5.675E-02	4.948E-02	2.895E-02 NOT IDENT.
NA-24	-5.384E+09	7.430E+09	0.000E+00	3.791E+09 SHORT HLIF
SC-46	-2.902E-02	5.371E-02	4.171E-02	2.740E-02 FAIL ABUN
V-48	-7.043E-03	1.271E-01	1.058E-01	6.484E-02 NOT IDENT.
CR-51	-1.336E-01	5.889E-01	4.930E-01	3.005E-01 NOT IDENT.
MN-54	2.491E-02	4.896E-02	4.237E-02	2.498E-02 NOT IDENT.
CO-56	-1.109E-02	5.409E-02	4.389E-02	2.760E-02 FAIL ABUN

CO-57	5.427E-03	2.949E-02	2.502E-02	1.505E-02	NOT IDENT.
CO-58	-2.546E-02	4.926E-02	3.867E-02	2.513E-02	NOT IDENT.
FE-59	-1.068E-01	1.309E-01	1.015E-01	6.677E-02	NOT IDENT.
CO-60	9.512E-03	4.727E-02	4.033E-02	2.412E-02	NOT IDENT.
ZN-65	-3.805E-02	1.334E-01	9.314E-02	6.807E-02	NOT IDENT.
SE-75	2.957E-02	6.647E-02	5.176E-02	3.392E-02	NOT IDENT.
SR-85	-1.971E-01	6.713E-02	4.710E-02	3.425E-02	NOT IDENT.
Y-88	1.372E-02	4.647E-02	4.100E-02	2.371E-02	NOT IDENT.
Y-91	-1.226E+01	3.247E+01	2.634E+01	1.656E+01	NOT IDENT.
NB-94	1.456E-02	4.298E-02	3.713E-02	2.193E-02	NOT IDENT.
NB-95	7.641E-03	6.050E-02	5.106E-02	3.087E-02	NOT IDENT.
NB-95M	5.909E-02	1.790E-01	1.393E-01	9.132E-02	NOT IDENT.
ZR-95	-7.129E-02	1.022E-01	8.003E-02	5.214E-02	NOT IDENT.
MO-99	4.116E+01	1.230E+02	0.000E+00	6.274E+01	SHORT HLIF
TC-99M	-1.108E+26	1.604E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.921E-02	5.401E-02	4.890E-02	2.755E-02	FAIL ABUN
RH-106	-3.790E-02	3.970E-01	3.352E-01	2.025E-01	NOT IDENT.
RU-106	-3.790E-02	3.970E-01	3.352E-01	2.025E-01	NOT IDENT.
AG-108M	6.552E-03	3.570E-02	2.998E-02	1.821E-02	NOT IDENT.
AG-110M	3.460E-02	4.864E-02	3.861E-02	2.481E-02	NOT IDENT.
SN-113	-4.407E-02	5.978E-02	4.731E-02	3.050E-02	NOT IDENT.
CD-115	5.452E+01	1.694E+02	0.000E+00	8.645E+01	SHORT HLIF
SN-117M	6.890E-02	1.023E-01	8.715E-02	5.219E-02	NOT IDENT.
TE-123M	1.956E-02	3.769E-02	3.189E-02	1.923E-02	NOT IDENT.
SB-124	-1.464E-02	1.153E-01	9.528E-02	5.883E-02	NOT IDENT.
SB-125	2.359E-03	1.203E-01	9.990E-02	6.138E-02	FAIL ABUN
TE-125M	6.378E-01	1.237E+01	1.041E+01	6.313E+00	NOT IDENT.
I-126	8.351E-02	4.782E-01	3.575E-01	2.440E-01	NOT IDENT.
SB-126	1.502E-01	3.037E-01	2.436E-01	1.549E-01	NOT IDENT.
SB-127	2.732E+00	6.608E+00	5.764E+00	3.371E+00	NOT IDENT.
I-131	-3.311E-01	2.914E-01	2.247E-01	1.487E-01	NOT IDENT.
TE-132	-4.343E+00	4.987E+00	4.107E+00	2.545E+00	NOT IDENT.
BA-133	2.257E-03	5.835E-02	4.312E-02	2.977E-02	NOT IDENT.
I-133	9.437E+05	4.265E+06	0.000E+00	2.176E+06	SHORT HLIF
CS-134	5.674E-02	5.950E-02	5.338E-02	3.036E-02	NOT IDENT.
CS-135	1.748E-01	2.190E-01	1.738E-01	1.118E-01	NOT IDENT.
I-135	-1.096E+24	4.252E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.420E-01	2.015E-01	1.893E-01	1.028E-01	NOT IDENT.
CE-139	1.918E-02	3.954E-02	3.332E-02	2.017E-02	NOT IDENT.
BA-140	-4.105E-01	5.115E-01	3.978E-01	2.610E-01	NOT IDENT.
LA-140	1.309E-02	1.439E-01	1.240E-01	7.344E-02	NOT IDENT.
CE-141	9.798E-02	9.171E-02	7.957E-02	4.679E-02	NOT IDENT.
CE-143	3.553E+04	1.364E+04	0.000E+00	6.960E+03	SHORT HLIF
CE-144	-1.509E-01	2.811E-01	2.018E-01	1.434E-01	NOT IDENT.
PM-144	1.437E-02	4.514E-02	3.896E-02	2.303E-02	NOT IDENT.
PR-144	1.096E+00	3.394E+00	2.930E+00	1.732E+00	NOT IDENT.
PM-146	6.663E-02	6.021E-02	5.295E-02	3.072E-02	NOT IDENT.
ND-147	-2.457E-01	1.157E+00	9.818E-01	5.904E-01	NOT IDENT.
PM-149	7.705E+00	1.335E+03	0.000E+00	6.810E+02	SHORT HLIF
EU-152	-1.609E-01	1.419E-01	9.369E-02	7.242E-02	FAIL ABUN
GD-153	-5.103E-03	1.057E-01	8.020E-02	5.393E-02	NOT IDENT.
EU-154	8.214E-02	1.579E-01	1.388E-01	8.055E-02	NOT IDENT.
EU-155	1.693E-01	1.251E-01	1.113E-01	6.381E-02	FAIL ABUN
TB-160	-1.002E-01	1.879E-01	1.461E-01	9.589E-02	FAIL ABUN
HO-166M	9.352E-02	7.423E-02	6.855E-02	3.787E-02	NOT IDENT.
TA-182	-6.684E-02	2.614E-01	2.139E-01	1.333E-01	FAIL ABUN
IR-192	2.668E-02	4.795E-02	4.192E-02	2.446E-02	FAIL ABUN
HG-203	3.506E-02	5.548E-02	4.892E-02	2.831E-02	NOT IDENT.
BI-207	1.446E-02	6.551E-02	5.679E-02	3.342E-02	FAIL ABUN
PB-210	4.269E+00	5.540E+00	4.909E+00	2.826E+00	NOT IDENT.
PB-211	-3.749E-01	9.797E-01	7.823E-01	4.999E-01	NOT IDENT.
RN-219	2.487E-01	5.383E-01	4.609E-01	2.746E-01	FAIL ABUN
RA-223	8.940E-03	8.715E-01	7.390E-01	4.446E-01	FAIL ABUN
AC-227	-1.842E-01	3.165E-01	2.642E-01	1.615E-01	FAIL ABUN
TH-227	-1.842E-01	3.167E-01	2.642E-01	1.616E-01	FAIL ABUN
PA-231	-7.251E-01	1.819E+00	1.521E+00	9.281E-01	FAIL ABUN
TH-231	8.940E-03	8.715E-01	7.390E-01	4.446E-01	FAIL ABUN
PA-233	-3.306E-02	8.169E-02	6.776E-02	4.168E-02	FAIL ABUN
PA-234	-1.460E-01	4.236E-01	3.526E-01	2.161E-01	NOT IDENT.
PA-234M	2.643E+00	6.087E+00	5.396E+00	3.106E+00	NOT IDENT.
TH-234	1.951E+00	1.815E+00	1.591E+00	9.258E-01	FAIL ABUN
U-235	2.052E-01	2.520E-01	2.153E-01	1.286E-01	FAIL ABUN
U-238	1.951E+00	1.815E+00	1.591E+00	9.258E-01	FAIL ABUN
NP-239	-2.035E-01	4.738E-01	3.916E-01	2.417E-01	NOT IDENT.
AM-241	-8.019E-02	1.960E-01	1.686E-01	9.998E-02	NOT IDENT.
CM-247	1.938E-02	4.891E-02	4.178E-02	2.495E-02	NOT IDENT.
CF-249	3.179E-02	5.251E-02	4.551E-02	2.679E-02	NOT IDENT.
CF-251	-1.131E-01	1.533E-01	1.310E-01	7.820E-02	NOT IDENT.

ANH-511

5.834E-02

5.551E-02

5.287E-02

2.832E-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
46.54	259.5135
49.72	310.6142
57.36	0.0000
59.54	322.8870
63.29	357.0002
63.29	357.0002
64.28	347.1734
67.75	378.5218
69.67	369.3962
70.83	397.0519
72.81	389.9157
72.87	389.9697
72.87	389.9697
74.82	393.1656
74.82	393.1656
74.82	393.1656
74.97	393.2961
77.11	395.1441
77.11	395.1441
77.11	395.1441
79.69	397.3392
79.80	397.4315
80.12	397.7024
80.19	397.7606
80.57	398.0797
81.00	398.4408
81.07	398.4990
81.07	398.4990
83.79	390.0879
83.79	390.0879
85.43	382.2212
86.48	383.0319
86.55	383.0872
86.79	383.2703
86.94	450.8627
87.57	477.0214
88.03	464.1379
88.47	335.3327
89.96	465.9074
91.11	466.9535
92.59	371.1153
92.59	371.1153
93.35	371.6558
94.67	278.6633
94.87	278.7684
94.87	278.7684
95.86	269.9271
97.43	266.0232
98.44	297.2481
99.53	294.2819
100.11	264.1906
103.18	309.9316
103.37	310.0363
105.31	258.1939
106.12	268.0983
109.28	263.1762
111.00	278.9095
111.76	289.9679
116.30	286.7772
117.23	282.8952
121.12	228.1761
121.78	227.3287
122.06	243.7524
123.07	280.1107
131.20	248.3299
133.52	297.3755
136.00	222.3226

136.47	228.0392
140.51	0.0000
140.51	0.0000
143.76	277.6639
144.24	281.2271
144.24	281.2271
145.44	260.2933
152.43	257.1306
153.25	260.8327
154.21	252.0489
154.21	252.0489
156.02	277.8121
158.56	250.0755
159.00	261.6976
162.66	269.8746
163.33	282.8052
165.86	258.2498
176.60	257.9308
177.52	268.7947
181.07	0.0000
184.41	258.7701
185.72	235.8519
193.51	242.4895
197.04	202.8883
205.31	203.8562
210.85	210.9480
215.65	212.5848
222.11	236.2649
227.38	224.5070
228.16	229.3469
228.18	231.2153
235.69	213.4281
235.96	225.5127
235.96	225.5127
238.63	200.6707
238.63	200.6707
240.99	201.1354
242.00	201.3337
244.70	137.9863
252.40	169.9360
252.80	177.6417
256.23	198.3345
256.23	198.3345
260.90	0.0000
264.66	171.4945
268.22	168.9473
269.46	168.7484
269.46	168.7484
271.23	169.0165
273.65	213.3835
276.40	165.5008
277.37	183.6138
277.60	177.5108
278.00	168.6400
279.20	174.1269
279.54	188.8565
280.46	204.6788
283.69	175.7907
284.31	160.1646
285.41	151.4645
285.90	0.0000
287.50	161.5901
293.27	0.0000
295.22	154.7170
295.96	154.8146
298.57	155.1526
299.98	155.3335
299.98	155.3335
300.09	152.6923
300.09	152.6923
300.13	152.6969
301.36	146.7395
302.85	138.9345
304.50	143.9209
304.50	143.9209
304.85	153.5602
308.46	131.3518
311.90	156.8569

316.51	141.2903
319.41	161.8457
320.08	159.9070
323.87	172.5681
323.87	172.5681
328.76	158.9612
333.37	163.6157
334.37	157.1930
334.37	157.1930
338.28	140.6228
338.28	140.6228
338.32	140.6269
338.32	140.6269
338.32	140.6269
340.48	113.5080
340.55	115.1582
344.28	155.0748
351.06	135.7554
351.93	135.8413
356.01	121.4801
364.49	139.1796
366.42	0.0000
383.85	136.8420
388.16	118.0967
388.63	112.8126
391.69	130.1127
400.66	126.6066
401.81	119.1875
402.40	118.1607
404.85	137.7188
410.95	123.1498
414.70	103.9585
423.72	117.6339
427.09	100.4229
427.87	112.4849
433.94	89.8940
453.88	105.4327
463.37	87.0609
468.07	100.2887
473.00	81.9457
476.78	103.5028
477.60	108.9547
487.02	83.2930
492.35	0.0000
497.08	73.7553
511.00	93.6017
514.00	233.4695
527.90	0.0000
529.87	0.0000
531.02	89.9879
537.26	91.2170
546.56	0.0000
563.25	71.7046
569.33	78.5521
569.50	78.5602
569.70	72.8868
583.19	70.5240
600.60	81.7046
602.73	86.6008
604.72	72.2369
609.32	87.8408
609.32	87.8408
610.33	83.6981
614.28	75.7936
618.01	74.6370
621.93	76.7183
621.93	76.7183
633.25	82.9850
635.95	83.0887
636.99	79.2163
645.85	63.8289
657.76	59.2397
661.66	81.1031
661.66	81.1031
664.57	0.0000
666.33	71.0315
666.50	71.0385
677.62	68.7338

685.70	58.9813
695.00	85.3175
696.49	75.3287
696.51	75.3296
697.00	67.3092
702.65	73.5151
706.68	76.6680
711.68	51.5578
720.70	60.8877
721.93	0.0000
722.78	59.2491
722.91	59.2519
723.31	55.8755
724.19	72.8337
727.33	66.1458
733.00	71.4014
735.93	77.3243
739.50	0.0000
747.24	70.7958
752.31	56.5482
753.82	56.5818
756.73	76.2186
763.94	101.2324
765.81	77.5323
766.42	65.1426
777.92	0.0000
778.90	57.1538
783.70	40.6034
785.37	63.5496
795.86	55.4417
801.95	50.3297
810.29	58.9066
810.76	53.6571
815.77	43.2182
818.51	42.2080
832.01	55.1510
834.85	59.4562
836.80	0.0000
846.77	58.6537
856.80	44.5984
860.56	48.2322
871.09	52.2593
873.19	49.5297
875.33	0.0000
879.36	55.0354
880.51	48.5804
883.24	52.9501
884.68	44.3282
889.28	57.3968
898.04	57.5741
911.20	53.4741
911.20	53.4741
911.20	53.4741
926.50	40.5925
937.49	61.4848
944.13	53.3460
946.00	69.9450
949.00	55.2759
962.29	66.6270
964.08	63.4919
966.15	52.8136
968.97	52.8623
968.97	52.8623
968.97	52.8623
983.53	49.8124
996.26	59.8867
1001.03	49.6702
1004.73	65.6791
1037.84	42.6672
1038.76	0.0000
1048.07	35.1949
1050.41	44.7395
1050.41	44.7395
1063.66	45.8770
1085.87	45.2253
1099.45	57.9688
1112.07	29.9242
1115.54	56.5829

1120.29	44.7179
1120.29	44.7179
1120.55	44.7216
1121.30	44.7310
1131.51	0.0000
1173.23	55.2754
1177.93	51.3949
1189.05	43.6240
1204.77	68.7080
1221.41	60.0220
1231.02	69.5393
1235.36	63.6918
1238.28	46.2265
1260.41	0.0000
1271.85	44.6159
1274.44	37.5435
1274.54	39.5729
1291.59	35.6736
1298.22	0.0000
1312.11	40.9863
1332.49	26.7808
1365.19	22.8477
1368.63	0.0000
1384.29	23.2542
1408.01	14.6927
1457.56	0.0000
1460.82	18.0680
1489.16	16.0480
1505.03	36.5082
1596.21	15.0290
1620.50	8.4984
1678.03	0.0000
1690.97	17.2517
1764.49	10.7019
1764.49	10.7019
1770.23	6.8181
1771.35	15.3446
1791.20	0.0000
1836.06	11.8405

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513013

Total Uranium Activity	5.8984E+00	ug/g
Total Uranium Counting Unc.	5.3996E+00	ug/g
Total Uranium Tpu	2.7549E-06	ug/g
Total Uranium Mda	4.7336E+00	ug/g


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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513013
*  ANALYST       : MXR1           DETECTOR    : GAM06
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 13:30:02.36  SAMPLE ALQT: 118.010 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.087E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.523E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.466E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.169E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:31:44.06

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513014.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:32
Sample ID          : G248513014      Sample quantity   : 1.27070E+02 GRAM
Detector name      : GAM07           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  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID          : 961097           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	63.31*	151	655	1.11	126.27	122	9	2.10E-02	32.1	
2	1	74.78*	630	594	1.11	149.20	144	14	8.75E-02	7.8	3.28E+00
3	1	77.15*	994	477	1.07	153.95	144	14	1.38E-01	4.8	
4	5	87.29*	331	401	1.02	174.23	165	26	4.60E-02	11.2	1.14E+00
5	5	89.96	225	440	1.17	179.57	165	26	3.12E-02	17.0	
6	5	92.92*	380	525	1.46	185.49	165	26	5.28E-02	12.9	
7	0	105.65	78	409	1.36	210.94	208	8	1.08E-02	46.4	
8	0	129.69	129	523	1.04	259.02	254	11	1.80E-02	35.6	
9	0	186.05*	308	452	1.23	371.71	367	12	4.28E-02	15.3	
10	0	209.52	116	279	0.86	418.64	415	8	1.61E-02	26.8	
11	4	238.73*	1654	203	1.13	477.05	469	21	2.30E-01	2.9	1.81E+00
12	4	241.73	363	286	1.68	483.05	469	21	5.04E-02	12.0	
13	0	274.69	292	712	7.61	548.95	536	33	4.06E-02	28.5	
14	0	295.30	579	255	1.29	590.18	583	14	8.04E-02	7.2	
15	0	300.44	155	147	1.90	600.46	596	10	2.16E-02	16.6	
16	0	328.11	93	171	1.35	655.78	651	9	1.29E-02	27.4	
17	0	338.61	331	244	1.23	676.77	672	12	4.59E-02	11.0	
18	0	352.05*	852	232	1.29	703.64	699	12	1.18E-01	5.0	
19	0	409.13	70	115	1.40	817.79	812	10	9.74E-03	31.2	
20	0	463.37	85	141	1.35	926.26	921	11	1.19E-02	29.1	
21	0	510.86*	129	167	1.56	1021.21	1015	14	1.79E-02	25.8	
22	0	583.37*	501	144	1.49	1166.22	1159	14	6.96E-02	6.9	
23	0	609.47*	609	105	1.51	1218.42	1211	14	8.47E-02	5.5	
24	0	662.09	51	70	1.02	1323.65	1320	7	7.06E-03	29.5	
25	0	727.64*	143	93	1.72	1454.73	1446	14	1.99E-02	16.6	
26	0	769.36	66	141	0.65	1538.16	1530	17	9.23E-03	42.6	
27	0	796.23	84	71	1.48	1591.89	1584	15	1.16E-02	24.9	
28	0	861.26	82	63	1.79	1721.92	1716	15	1.14E-02	23.9	
29	0	911.59*	339	70	1.53	1822.57	1815	17	4.71E-02	8.0	
30	0	934.68	29	52	1.11	1868.74	1865	9	4.01E-03	48.7	
31	1	964.86	84	47	1.98	1929.11	1923	21	1.16E-02	19.1	1.62E+00
32	1	969.25*	217	29	1.98	1937.87	1923	21	3.02E-02	8.8	
33	0	1121.13	124	111	1.73	2241.61	2232	20	1.73E-02	22.6	
34	0	1238.85	65	51	1.87	2477.03	2471	12	9.05E-03	25.2	
35	0	1378.05	43	7	1.87	2755.40	2751	9	6.03E-03	18.6	
36	0	1461.35*	1252	31	2.01	2922.00	2913	17	1.74E-01	3.0	
37	0	1729.44*	14	6	1.88	3458.15	3453	9	1.96E-03	45.6	
38	0	1765.22	122	20	1.66	3529.70	3521	16	1.69E-02	12.2	

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]G248513014.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:32
Sample ID         : G248513014 Sample quantity : 127.07 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA7 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	+	1460.82	*	3.073E+01	3.226E+00	5.773E-01	4.957E-02	53.240
CD-109	+	88.03	*	4.005E+00	9.710E-01	1.157E+00	1.090E-01	3.463
SN-126	+	64.28		9.688E-01	6.382E-01	6.355E-01	9.218E-02	1.524
	+	86.94		1.608E+00	7.585E-01	4.670E-01	1.938E-01	3.444
	+	87.57	*	3.869E-01	9.379E-02	1.120E-01	1.049E-02	3.455
BA-137M	+	661.66	*	7.502E-02	4.477E-02	6.966E-02	6.164E-03	1.077
CS-137	+	661.66	*	7.925E-02	4.730E-02	7.359E-02	6.524E-03	1.077
EU-155	+	86.55		4.706E-01	1.142E-01	1.369E-01	1.277E-02	3.437
	+	105.31	*	1.532E-01	1.427E-01	1.686E-01	1.489E-02	0.909
TL-208		277.37		6.902E-01	4.243E-01	7.411E-01	9.218E-02	0.931
	+	583.19	*	7.030E-01	1.174E-01	6.234E-02	5.956E-03	11.277
	+	860.56		1.087E+00	5.307E-01	5.005E-01	4.892E-02	2.173
BI-211		72.87		4.566E+00	3.233E+00	4.970E+00	3.923E-01	0.919
	+	351.06	*	5.295E+00	7.107E-01	3.721E-01	3.339E-02	14.229
PB-212	+	74.82		2.982E+00	5.977E-01	5.027E-01	6.348E-02	5.933
	+	77.11		2.742E+00	3.488E-01	2.940E-01	2.426E-02	9.327
	+	238.63	*	2.283E+00	2.564E-01	9.343E-02	8.982E-03	24.433
	+	300.09		3.355E+00	1.167E+00	1.313E+00	1.377E-01	2.554
BI-214	+	609.32	*	1.657E+00	2.504E-01	1.275E-01	1.325E-02	12.994
	+	1120.29		1.740E+00	8.073E-01	4.891E-01	5.275E-02	3.558
	+	1764.49		2.391E+00	6.174E-01	3.745E-01	3.080E-02	6.385
PB-214	+	74.82		5.286E+00	1.017E+00	8.911E-01	1.007E-01	5.933
	+	77.11		4.835E+00	7.329E-01	5.183E-01	6.048E-02	9.327
	+	242.00		3.040E+00	7.935E-01	5.684E-01	5.829E-02	5.348
	+	295.22		2.210E+00	3.964E-01	2.309E-01	2.481E-02	9.569
	+	351.93	*	1.922E+00	2.789E-01	1.328E-01	1.398E-02	14.476
RA-224	+	240.99	*	5.375E+00	1.368E+00	1.002E+00	8.471E-02	5.366
RA-226	+	609.32	*	1.657E+00	2.504E-01	1.275E-01	1.325E-02	12.994
	+	1120.29		1.740E+00	8.073E-01	4.891E-01	5.275E-02	3.558
	+	1764.49		2.391E+00	6.174E-01	3.745E-01	3.080E-02	6.385
AC-228	+	338.32		2.287E+00	1.079E+00	4.127E-01	1.721E-01	5.540
	+	911.20	*	2.291E+00	4.595E-01	2.330E-01	2.792E-02	9.832
	+	968.97		2.530E+00	7.632E-01	4.130E-01	1.012E-01	6.126
RA-228	+	338.32		2.287E+00	1.079E+00	4.127E-01	1.721E-01	5.540

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	911.20	*	2.291E+00	4.595E-01	2.330E-01	2.792E-02	9.832
	+	968.97		2.530E+00	7.632E-01	4.130E-01	1.012E-01	6.126
TH-228	+	74.82		2.982E+00	5.238E-01	5.027E-01	4.090E-02	5.933
	+	77.11		2.742E+00	3.488E-01	2.940E-01	2.426E-02	9.327
	+	238.63	*	2.283E+00	2.564E-01	9.343E-02	8.982E-03	24.433
	+	300.09		3.355E+00	2.335E+00	1.313E+00	8.039E-01	2.554
TH-232	+	338.32		2.287E+00	5.412E-01	4.127E-01	3.533E-02	5.540
	+	911.20	*	2.291E+00	4.595E-01	2.330E-01	2.792E-02	9.832
	+	968.97		2.530E+00	7.632E-01	4.130E-01	1.012E-01	6.126
TH-234	+	63.29	*	2.514E+00	1.676E+00	1.664E+00	2.960E-01	1.511
	+	92.59		3.780E+00	1.289E+00	9.609E-01	2.142E-01	3.934
U-235	+	89.96		2.761E+00	1.165E+00	1.182E+00	2.937E-01	2.336
	+	93.35		2.855E+00	9.924E-01	7.243E-01	1.687E-01	3.942
		143.76	*	1.436E-01	2.192E-01	3.554E-01	5.956E-02	0.404
		163.33		4.609E-01	4.709E-01	7.680E-01	1.355E-01	0.600
	+	185.72		2.736E-01	8.647E-02	6.883E-02	5.573E-03	3.974
		205.31		1.281E-01	5.767E-01	8.668E-01	1.558E-01	0.148
NP-237	+	86.48	*	1.154E+00	3.700E-01	3.360E-01	7.699E-02	3.436
		95.86		-3.683E-02	9.564E-01	1.384E+00	3.341E-01	-0.027
U-238	+	63.29	*	2.514E+00	1.676E+00	1.664E+00	2.960E-01	1.511
	+	92.59		3.780E+00	1.034E+00	9.609E-01	8.792E-02	3.934
ANH-511	+	511.00	*	1.383E-01	7.235E-02	5.389E-02	4.788E-03	2.565

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	8.526E-02	3.820E-01	6.225E-01	5.873E-02	0.137
NA-22		1274.54	*	1.999E-02	4.928E-02	8.445E-02	6.933E-03	0.237
NA-24		1368.63	*	2.006E+03	4.928E-02	Half-Life too short		
SC-46		889.28	*	-9.099E-03	4.696E-02	7.484E-02	6.858E-03	-0.122
	+	1120.55		3.144E-01	1.443E-01	1.612E-01	1.362E-02	1.950
V-48		944.13		5.439E-01	1.337E+00	2.244E+00	2.040E-01	0.242
		983.53	*	-3.145E-02	8.940E-02	1.375E-01	1.238E-02	-0.229
		1312.11		-2.009E-02	1.243E-01	2.014E-01	1.651E-02	-0.100
CR-51		320.08	*	-3.090E-01	4.877E-01	7.722E-01	6.973E-02	-0.400
MN-54		834.85	*	3.812E-02	4.323E-02	7.517E-02	6.900E-03	0.507
CO-56		846.77	*	-3.951E-03	4.452E-02	7.194E-02	6.605E-03	-0.055
		1037.84		-1.130E-01	3.581E-01	5.841E-01	5.414E-02	-0.194
	+	1238.28		2.732E-01	1.395E-01	2.094E-01	1.770E-02	1.304
		1771.35		3.057E-02	2.499E-01	3.712E-01	3.049E-02	0.082
CO-57		122.06	*	-3.470E-03	2.558E-02	4.089E-02	3.518E-03	-0.085
		136.47		-2.993E-02	2.191E-01	3.484E-01	3.133E-02	-0.086
CO-58		810.76	*	-1.453E-02	4.791E-02	7.625E-02	7.005E-03	-0.191
FE-59		1099.45	*	-5.702E-02	1.157E-01	1.850E-01	1.714E-02	-0.308
		1291.59		3.242E-02	1.581E-01	2.662E-01	2.507E-02	0.122
CO-60		1173.23		-2.575E-02	4.940E-02	7.837E-02	6.378E-03	-0.329
		1332.49	*	1.021E-02	4.308E-02	7.279E-02	5.963E-03	0.140
ZN-65		1115.54	*	1.740E-02	1.034E-01	1.521E-01	1.291E-02	0.114

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75	121.12			-6.176E-03	1.368E-01	2.196E-01	2.431E-02	-0.028
	136.00			1.644E-03	4.332E-02	6.941E-02	5.837E-03	0.024
	264.66	*		1.949E-03	5.257E-02	8.123E-02	6.938E-03	0.024
	279.54			8.924E-02	1.205E-01	2.066E-01	1.822E-02	0.432
	400.66			-3.154E-02	2.958E-01	4.765E-01	5.196E-02	-0.066
SR-85	514.00	*		1.004E-01	5.372E-02	8.910E-02	7.924E-03	1.127
Y-88	898.04			-3.120E-03	4.585E-02	7.387E-02	6.793E-03	-0.042
	1836.06	*		-1.801E-02	3.354E-02	5.108E-02	4.146E-03	-0.353
Y-91	1204.77	*		-6.047E+00	2.610E+01	4.247E+01	3.468E+00	-0.142
NB-94	702.65	*		-1.730E-02	3.766E-02	6.005E-02	5.392E-03	-0.288
	871.09			1.720E-02	3.697E-02	6.265E-02	5.748E-03	0.274
NB-95	765.81	*		6.190E-02	6.035E-02	9.438E-02	8.604E-03	0.656
NB-95M	235.69	*		1.709E-01	1.564E-01	2.436E-01	2.370E-02	0.701
ZR-95	724.19			7.929E-02	1.303E-01	1.973E-01	1.920E-02	0.402
	756.73	*		1.555E-03	9.212E-02	1.477E-01	1.471E-02	0.011
MO-99	140.51			-1.186E-04	9.212E-02	Half-Life	too short	
	181.07			6.461E-05	9.212E-02	Half-Life	too short	
	366.42			-3.652E-04	9.212E-02	Half-Life	too short	
	739.50	*		3.864E-06	9.212E-02	Half-Life	too short	
	777.92			2.967E-05	9.212E-02	Half-Life	too short	
TC-99M	140.51	*		-9.448E+19	9.212E-02	Half-Life	too short	
RU-103	497.08	*		3.952E-02	5.072E-02	8.530E-02	1.203E-02	0.463
	610.33	+		1.968E+01	3.902E+00	3.896E+00	6.437E-01	5.051
RH-106	621.93	*		3.274E-01	3.519E-01	6.195E-01	8.341E-02	0.528
	1050.41			1.077E+00	2.850E+00	4.929E+00	4.328E-01	0.219
RU-106	621.93	*		3.274E-01	3.503E-01	6.195E-01	5.536E-02	0.528
	1050.41			1.077E+00	2.850E+00	4.929E+00	4.328E-01	0.219
AG-108M	433.94	*		-1.921E-02	3.193E-02	4.921E-02	4.362E-03	-0.390
	614.28			3.257E-02	3.911E-02	6.155E-02	5.676E-03	0.529
	722.91			9.902E-03	4.844E-02	7.069E-02	6.571E-03	0.140
AG-110M	657.76	*		1.237E-02	4.393E-02	6.517E-02	5.938E-03	0.190
	677.62			-5.243E-03	3.412E-01	5.644E-01	5.161E-02	-0.009
	706.68			6.760E-03	2.286E-01	3.784E-01	3.491E-02	0.018
	763.94			-4.148E-02	2.186E-01	3.043E-01	2.841E-02	-0.136
	884.68			-1.008E-02	5.616E-02	8.965E-02	8.452E-03	-0.112
	937.49			1.051E-01	1.356E-01	2.090E-01	1.964E-02	0.503
	1384.29			1.297E-01	1.683E-01	2.808E-01	2.388E-02	0.462
	1505.03			-3.343E-01	3.686E-01	5.309E-01	4.438E-02	-0.630
SN-113	391.69	*		-2.623E-02	5.159E-02	8.101E-02	6.963E-03	-0.324
CD-115	260.90			-5.254E-04	5.159E-02	Half-Life	too short	
	492.35			-2.048E-04	5.159E-02	Half-Life	too short	
	527.90	*		-1.973E-05	5.159E-02	Half-Life	too short	
SN-117M	156.02			1.845E+00	3.664E+00	5.944E+00	4.788E-01	0.310
	158.56	*		-2.051E-02	8.864E-02	1.392E-01	1.116E-02	-0.147
TE-123M	159.00	*		-2.194E-02	3.275E-02	5.034E-02	4.061E-03	-0.436
SB-124	602.73			-1.018E-03	5.359E-02	7.764E-02	6.957E-03	-0.013
	645.85			-2.829E-02	5.601E-01	9.269E-01	8.688E-02	-0.031
	722.78			8.651E-02	5.317E-01	7.727E-01	7.125E-02	0.112
	1690.97	*		-1.165E-02	6.911E-02	1.067E-01	9.269E-03	-0.109

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	+	427.87	*	-2.319E-02	9.750E-02	1.548E-01	1.349E-02	-0.150
		463.37		8.157E-01	4.813E-01	6.311E-01	5.912E-02	1.292
		600.60		1.267E-01	1.962E-01	3.409E-01	3.265E-02	0.372
		635.95		-5.225E-02	3.028E-01	4.973E-01	4.769E-02	-0.105
TE-125M		109.28	*	9.949E+00	1.188E+01	1.782E+01	1.879E+00	0.558
I-126	*	388.63		-3.396E-02	2.802E-01	4.519E-01	3.770E-02	-0.075
		666.33		2.598E-01	4.193E-01	6.413E-01	5.686E-02	0.405
		753.82		1.407E+00	3.166E+00	5.377E+00	4.890E-01	0.262
		414.70		6.938E-02	1.297E-01	2.103E-01	1.782E-02	0.330
SB-126		666.50		4.452E-02	1.517E-01	2.248E-01	1.993E-02	0.198
		695.00		9.044E-03	1.436E-01	2.385E-01	2.136E-02	0.038
		697.00		2.669E-01	4.833E-01	8.285E-01	7.425E-02	0.322
		720.70	*	1.489E-01	2.787E-01	4.215E-01	3.804E-02	0.353
SB-127		856.80		1.425E-01	8.689E-01	1.249E+00	1.147E-01	0.114
		252.40		6.643E+00	1.822E+01	3.055E+01	1.292E+01	0.217
		473.00		-1.499E+00	7.204E+00	1.137E+01	1.731E+00	-0.132
		685.70	*	-8.051E+00	6.120E+00	8.865E+00	1.257E+00	-0.908
I-131		783.70		4.955E+00	1.705E+01	2.854E+01	4.313E+00	0.174
		80.19		-6.556E+00	1.160E+01	1.287E+01	1.117E+00	-0.510
		284.31		-5.430E-01	3.558E+00	5.119E+00	4.619E-01	-0.106
		364.49	*	1.597E-02	2.423E-01	3.970E-01	3.581E-02	0.040
TE-132		636.99		-1.862E+00	3.534E+00	5.646E+00	5.339E-01	-0.330
		49.72		-4.483E+01	6.004E+01	9.680E+01	1.268E+01	-0.463
		111.76		1.302E+01	1.868E+02	3.025E+02	4.096E+01	0.043
		116.30		1.745E+02	1.627E+02	2.711E+02	3.665E+01	0.644
BA-133	*	228.16		-2.399E+00	4.472E+00	7.293E+00	1.281E+00	-0.329
		81.00		-7.007E-02	1.214E-01	1.340E-01	2.080E-02	-0.523
		276.40		7.012E-01	3.989E-01	6.935E-01	9.732E-02	1.011
		302.85		8.066E-02	1.694E-01	2.532E-01	3.299E-02	0.319
I-133	*	356.01		4.998E-03	5.201E-02	7.497E-02	9.659E-03	0.067
		383.85		3.823E-01	3.345E-01	5.752E-01	7.049E-02	0.665
		529.87		8.839E-01	3.345E-01	Half-Life	too short	
		875.33		-3.794E+01	3.345E-01	Half-Life	too short	
CS-134		1298.22		-7.242E+01	3.345E-01	Half-Life	too short	
		563.25		-2.113E-01	3.964E-01	6.401E-01	5.790E-02	-0.330
		569.33		-1.660E-01	2.268E-01	3.604E-01	3.272E-02	-0.461
		604.72		-2.045E-02	4.290E-02	5.934E-02	5.328E-03	-0.345
CS-135	+	795.86	*	1.725E-01	8.739E-02	1.071E-01	9.872E-03	1.610
		801.95		-5.381E-01	5.492E-01	6.819E-01	6.278E-02	-0.789
		1365.19		4.880E-01	1.340E+00	2.299E+00	1.990E-01	0.212
		268.22	*	1.777E-01	1.877E-01	2.899E-01	2.859E-02	0.613
I-135		546.56		8.564E+17	1.877E-01	Half-Life	too short	
		836.80		8.181E+18	1.877E-01	Half-Life	too short	
		1038.76		-4.539E+18	1.877E-01	Half-Life	too short	
		1131.51		1.308E+18	1.877E-01	Half-Life	too short	
		1260.41	*	-5.401E+17	1.877E-01	Half-Life	too short	
		1457.56		1.783E+20	1.877E-01	Half-Life	too short	
		1678.03		-1.130E+18	1.877E-01	Half-Life	too short	
		1791.20		-8.698E+18	1.877E-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		153.25		7.093E-01	1.447E+00	2.346E+00	2.308E-01	0.302
		176.60		4.757E-01	7.903E-01	1.369E+00	1.228E-01	0.348
	+	273.65		5.924E+00	3.418E+00	1.332E+00	1.231E-01	4.448
		340.55		1.061E+00	3.037E-01	5.105E-01	4.541E-02	2.079
		818.51		-3.074E-02	1.212E-01	1.934E-01	1.777E-02	-0.159
		1048.07	*	5.298E-02	1.860E-01	3.191E-01	2.921E-02	0.166
CE-139		1235.36		4.306E-01	1.129E+00	1.690E+00	1.937E-01	0.255
		165.86	*	-4.083E-02	3.395E-02	5.049E-02	3.994E-03	-0.809
BA-140		162.66		1.623E+00	1.343E+00	2.232E+00	1.916E-01	0.727
		304.85		1.733E+00	2.447E+00	3.655E+00	1.069E+00	0.474
LA-140		423.72		-4.126E-01	3.122E+00	4.994E+00	1.641E+00	-0.083
		537.26	*	2.755E-01	4.441E-01	7.608E-01	2.587E-01	0.362
	+	328.76		1.224E+00	6.797E-01	9.749E-01	8.840E-02	1.256
		487.02		1.618E-01	2.579E-01	4.297E-01	4.012E-02	0.377
		815.77		-1.742E-01	5.392E-01	8.544E-01	8.652E-02	-0.204
		1596.21	*	-8.114E-02	1.337E-01	1.940E-01	1.623E-02	-0.418
CE-141		145.44	*	6.119E-02	8.028E-02	1.309E-01	1.096E-02	0.468
CE-143		57.36		1.207E-02	8.028E-02	Half-Life	too short	
		293.27	*	4.326E-02	8.028E-02	Half-Life	too short	
		664.57		9.295E-02	8.028E-02	Half-Life	too short	
		721.93		1.217E-02	8.028E-02	Half-Life	too short	
CE-144		80.12		-1.869E+00	3.219E+00	3.566E+00	3.046E-01	-0.524
		133.52	*	1.881E-02	2.316E-01	3.315E-01	5.024E-02	0.057
PM-144		476.78		-2.069E-02	7.167E-02	1.124E-01	1.069E-02	-0.184
		618.01		-4.253E-02	3.563E-02	5.373E-02	4.932E-03	-0.792
PR-144		696.49	*	3.296E-02	4.005E-02	6.978E-02	6.258E-03	0.472
		696.51	*	2.486E+00	3.010E+00	5.246E+00	4.701E-01	0.474
PM-146		1489.16		9.226E+00	1.213E+01	2.217E+01	1.852E+00	0.416
		453.88	*	1.635E-02	4.633E-02	7.633E-02	8.123E-03	0.214
		633.25		4.449E-01	1.541E+00	2.602E+00	9.956E-01	0.171
		735.93		1.513E-01	1.676E-01	2.860E-01	8.056E-02	0.529
ND-147		747.24		1.523E-02	1.104E-01	1.836E-01	2.728E-02	0.083
	+	91.11		1.476E+00	5.244E-01	8.162E-01	8.083E-02	1.809
		319.41		-2.639E+00	5.842E+00	9.353E+00	8.025E-01	-0.282
		531.02	*	-5.340E-01	9.706E-01	1.566E+00	2.369E-01	-0.341
PM-149		285.90	*	-1.101E-03	9.706E-01	Half-Life	too short	
EU-152		121.78		-6.793E-03	7.177E-02	1.149E-01	1.136E-02	-0.059
		244.70		1.391E-01	3.742E-01	5.628E-01	4.766E-02	0.247
		344.28	*	-1.428E-02	1.166E-01	1.656E-01	1.501E-02	-0.086
		778.90		-9.316E-02	2.928E-01	4.673E-01	4.268E-02	-0.199
	+	964.08		1.051E+00	4.118E-01	6.864E-01	6.212E-02	1.532
		1085.87		2.227E-01	4.448E-01	7.739E-01	6.675E-02	0.288
GD-153		1112.07		3.262E-02	3.342E-01	5.071E-01	4.308E-02	0.064
		1408.01		-3.517E-03	2.094E-01	3.426E-01	2.840E-02	-0.010
		69.67		1.422E+00	1.714E+00	2.603E+00	1.994E-01	0.546
		97.43	*	-1.443E-02	9.627E-02	1.379E-01	1.233E-02	-0.105
EU-154		103.18		-6.558E-03	1.224E-01	1.763E-01	1.547E-02	-0.037
		123.07		-2.023E-02	5.286E-02	8.349E-02	9.449E-03	-0.242
		723.31		6.046E-02	2.170E-01	3.190E-01	3.149E-02	0.189

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	873.19		7.252E-02	2.985E-01	4.964E-01	6.107E-02	0.146
		996.26		-2.120E-01	4.313E-01	6.596E-01	1.164E-01	-0.321
		1004.73		-6.219E-03	2.424E-01	3.888E-01	4.617E-02	-0.016
		1274.44	*	7.672E-02	1.374E-01	2.385E-01	2.639E-02	0.322
		86.79		1.343E+00	3.256E-01	5.298E-01	4.914E-02	2.535
		197.04		-1.301E-01	6.290E-01	1.031E+00	8.448E-02	-0.126
		215.65		-1.848E-01	8.483E-01	1.413E+00	1.177E-01	-0.131
		298.57		4.491E-01	1.545E-01	2.232E-01	1.908E-02	2.012
		879.36	*	1.797E-01	1.590E-01	2.841E-01	2.606E-02	0.632
		962.29		3.102E-01	7.984E-01	1.158E+00	1.048E-01	0.268
HO-166M	+	966.15		7.918E-01	3.101E-01	6.051E-01	5.473E-02	1.309
		1177.93		8.084E-02	4.546E-01	7.664E-01	6.241E-02	0.105
		1271.85		5.606E-01	8.746E-01	1.527E+00	1.252E-01	0.367
		80.57		3.117E-01	3.112E-01	3.841E-01	3.299E-02	0.812
		184.41		8.943E-02	4.386E-02	7.124E-02	5.759E-03	1.255
		280.46		5.812E-02	8.952E-02	1.529E-01	1.298E-02	0.380
		410.95		2.741E-01	2.929E-01	4.482E-01	3.787E-02	0.612
		711.68	*	-3.114E-02	6.130E-02	9.666E-02	8.702E-03	-0.322
		752.31		1.602E-01	3.100E-01	5.294E-01	4.814E-02	0.303
		810.29		-7.816E-02	6.982E-02	1.026E-01	9.406E-03	-0.762
TA-182	+	67.75		-1.599E-02	1.125E-01	1.647E-01	1.242E-02	-0.097
		100.11		7.784E-02	1.821E-01	3.001E-01	2.658E-02	0.259
		152.43		3.770E-01	3.971E-01	6.552E-01	5.311E-02	0.575
		222.11		8.298E-02	4.046E-01	6.843E-01	5.729E-02	0.121
		1121.30		8.558E-01	3.928E-01	4.412E-01	3.727E-02	1.939
		1189.05		-1.287E-01	3.649E-01	5.882E-01	4.796E-02	-0.219
		1221.41	*	2.072E-02	2.398E-01	4.002E-01	3.273E-02	0.052
		1231.02		3.386E-01	6.283E-01	1.012E+00	8.280E-02	0.335
		295.96		1.761E+00	2.948E-01	3.772E-01	3.248E-02	4.667
		308.46		-4.274E-02	1.148E-01	1.855E-01	1.597E-02	-0.230
IR-192	+	316.51	*	1.426E-02	3.913E-02	6.568E-02	5.645E-03	0.217
		468.07		5.008E-04	9.008E-02	1.262E-01	1.182E-02	0.004
		70.83		4.205E-01	1.466E+00	2.180E+00	3.401E-01	0.193
		72.87		1.280E+00	9.208E-01	1.393E+00	2.109E-01	0.919
		279.20	*	5.114E-02	4.651E-02	8.077E-02	7.036E-03	0.633
		72.81		2.362E-01	1.853E-01	2.839E-01	2.240E-02	0.832
		74.97		8.600E-01	1.507E-01	2.270E-01	1.830E-02	3.789
		569.70		-1.430E-02	3.363E-02	5.459E-02	4.895E-03	-0.262
		1063.66	*	5.754E-02	5.790E-02	1.046E-01	9.128E-03	0.550
		1770.23		2.058E-01	4.858E-01	7.774E-01	6.386E-02	0.265
PB-210		46.54	*	1.169E+00	1.868E+00	3.180E+00	2.957E-01	0.368
PB-211		404.85	*	3.664E-01	8.881E-01	1.280E+00	6.190E-01	0.286
		427.09		1.948E-01	1.585E+00	2.578E+00	1.192E+00	0.076
		832.01		-9.925E-01	1.281E+00	1.778E+00	9.240E-01	-0.558
BI-212	+	727.33	*	3.082E+00	1.097E+00	1.432E+00	1.826E-01	2.153
		785.37		6.488E+00	3.623E+00	6.643E+00	6.074E-01	0.977
		1620.50		3.718E+00	2.738E+00	5.234E+00	4.373E-01	0.710
RN-219		271.23		8.030E-01	2.795E-01	4.990E-01	5.066E-02	1.609
		401.81	*	-6.247E-01	4.641E-01	6.714E-01	9.897E-02	-0.931

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-1.636E-01	2.737E-01	3.026E-01	2.615E-02	-0.541
		83.79		1.099E-01	1.313E-01	1.978E-01	1.767E-02	0.556
		94.87		1.048E+00	4.758E-01	7.480E-01	6.764E-02	1.401
		144.24		4.923E-01	7.346E-01	1.196E+00	1.109E-01	0.411
		154.21		-1.491E-01	4.355E-01	6.820E-01	6.108E-02	-0.219
		269.46		4.995E-01	2.349E-01	3.802E-01	3.297E-02	1.314
		323.87	*	-1.326E-01	7.767E-01	1.104E+00	1.911E-01	-0.120
AC-227	+	338.28		9.074E+00	2.280E+00	2.835E+00	3.410E-01	3.201
		79.69		-3.586E-01	1.342E+00	1.765E+00	3.031E-01	-0.203
		235.96		3.544E-01	1.766E-01	2.837E-01	2.892E-02	1.249
		256.23	*	-2.395E-01	2.571E-01	4.053E-01	4.847E-02	-0.591
	+	299.98		3.690E+00	1.310E+00	1.761E+00	2.230E-01	2.095
		304.50		1.324E+00	1.884E+00	2.854E+00	4.709E-01	0.464
		334.37		2.551E-01	2.113E+00	3.066E+00	4.770E-01	0.083
TH-227		79.80		-6.032E-01	1.769E+00	2.313E+00	5.028E-01	-0.261
		235.96		3.544E-01	1.762E-01	2.837E-01	2.723E-02	1.249
		256.23	*	-2.395E-01	2.575E-01	4.053E-01	5.481E-02	-0.591
	+	299.98		3.690E+00	1.310E+00	1.761E+00	2.230E-01	2.095
		304.50		1.324E+00	1.884E+00	2.854E+00	4.709E-01	0.464
		334.37		2.551E-01	2.113E+00	3.066E+00	4.770E-01	0.083
		85.43		5.623E-01	2.035E-01	3.476E-01	3.169E-02	1.618
TH-229	+	88.47		5.964E-01	1.446E-01	2.347E-01	2.204E-02	2.541
		193.51	*	2.947E-01	5.433E-01	9.363E-01	7.645E-02	0.315
	+	210.85		2.280E+00	1.235E+00	1.670E+00	1.386E-01	1.366
		283.69	*	1.329E+00	1.683E+00	2.573E+00	3.736E-01	0.516
	+	301.36		2.370E+00	8.370E-01	1.139E+00	1.379E-01	2.080
		81.07		-1.636E-01	2.737E-01	3.026E-01	2.615E-02	-0.541
		83.79		1.099E-01	1.313E-01	1.978E-01	1.767E-02	0.556
PA-231		94.87		1.048E+00	4.758E-01	7.480E-01	6.764E-02	1.401
		144.24		4.923E-01	7.346E-01	1.196E+00	1.109E-01	0.411
		154.21		-1.491E-01	4.355E-01	6.820E-01	6.108E-02	-0.219
		269.46		4.995E-01	2.349E-01	3.802E-01	3.297E-02	1.314
		323.87	*	-1.326E-01	7.767E-01	1.104E+00	1.911E-01	-0.120
	+	338.28		9.074E+00	2.280E+00	2.835E+00	3.410E-01	3.201
	+	300.13		1.670E+00	6.064E-01	8.052E-01	1.191E-01	2.074
PA-233		311.90	*	-1.996E-02	7.014E-02	1.137E-01	1.003E-02	-0.175
		340.48		3.256E+00	1.135E+00	1.470E+00	3.534E-01	2.215
		94.67		5.039E-01	1.868E-01	2.874E-01	3.652E-02	1.753
		98.44		9.256E-02	1.063E-01	1.488E-01	8.307E-02	0.622
		111.00		8.917E-02	1.928E-01	3.023E-01	3.660E-02	0.295
		131.20		4.483E-02	1.255E-01	1.810E-01	1.525E-02	0.248
		569.50		-2.452E-01	3.092E-01	4.889E-01	4.384E-02	-0.502
PA-234		733.00		9.338E-02	4.832E-01	7.036E-01	1.574E-01	0.133
		880.51		2.427E-02	3.051E-01	4.993E-01	4.579E-02	0.049
		883.24		7.738E-02	3.185E-01	5.221E-01	3.513E-01	0.148
		926.50		-1.314E-01	2.040E-01	3.053E-01	7.770E-02	-0.431
		946.00	*	-2.678E-02	3.320E-01	5.321E-01	1.010E-01	-0.050
		949.00		1.904E-01	4.932E-01	8.253E-01	7.494E-02	0.231
		766.42		2.678E+01	2.051E+01	2.540E+01	1.291E+01	1.054
PA-234M		766.42		2.678E+01	2.051E+01	2.540E+01	1.291E+01	1.054

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		1.661E+00	5.398E+00	8.908E+00	9.135E-01	0.186
	99.53			4.479E-02	1.639E-01	2.663E-01	2.363E-02	0.168
	103.37			-3.291E-03	1.089E-01	1.571E-01	1.378E-02	-0.021
	+	106.12		1.218E-01	1.134E-01	1.473E-01	1.283E-02	0.827
	117.23	*		7.754E-02	4.059E-01	6.590E-01	5.670E-02	0.118
	228.18			-1.288E-01	2.361E-01	3.862E-01	3.245E-02	-0.334
AM-241	277.60			3.237E-01	1.924E-01	3.402E-01	2.888E-02	0.952
	59.54	*		1.276E-01	1.249E-01	1.929E-01	1.529E-02	0.662
CM-247	278.00			1.265E+00	8.115E-01	1.430E+00	1.214E-01	0.884
	287.50			8.364E-01	1.360E+00	2.166E+00	1.845E-01	0.386
CF-249	402.40	*		-4.542E-02	4.568E-02	6.278E-02	5.270E-03	-0.723
	252.80			6.269E-01	9.463E-01	1.626E+00	1.380E-01	0.385
	333.37			-1.740E-01	2.758E-01	3.109E-01	2.664E-02	-0.559
CF-251	388.16	*		-1.591E-02	4.415E-02	7.010E-02	5.850E-03	-0.227
	177.52	*		7.751E-02	1.362E-01	2.356E-01	1.889E-02	0.329
	227.38			-2.052E-02	3.868E-01	6.469E-01	5.434E-02	-0.032
	285.41			-1.632E+00	2.590E+00	3.584E+00	3.050E-01	-0.455

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513014      *
* Acquisition date   : 20-MAR-2010 13:30:32 Detector SN#                   *
* Detector ID        : GAM07 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-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248513014 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.2707E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 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	3.073E+01	3.162E+00	5.771E-01	0.000E+00
CD-109	4.005E+00	9.516E-01	1.205E+00	0.000E+00
SN-126	3.869E-01	9.192E-02	1.167E-01	0.000E+00
BA-137M	7.502E-02	4.387E-02	7.048E-02	0.000E+00
CS-137	7.925E-02	4.635E-02	7.446E-02	0.000E+00
EU-155	1.532E-01	1.398E-01	1.752E-01	0.000E+00
TL-208	7.030E-01	1.151E-01	6.320E-02	0.000E+00
BI-211	5.295E+00	6.965E-01	3.801E-01	0.000E+00
PB-212	2.283E+00	2.513E-01	9.598E-02	0.000E+00
BI-214	1.657E+00	2.453E-01	1.292E-01	0.000E+00
PB-214	1.922E+00	2.733E-01	1.356E-01	0.000E+00
RA-224	5.375E+00	1.341E+00	1.029E+00	0.000E+00
RA-226	1.657E+00	2.453E-01	1.292E-01	0.000E+00
AC-228	2.291E+00	4.503E-01	2.346E-01	0.000E+00
RA-228	2.291E+00	4.503E-01	2.346E-01	0.000E+00
TH-228	2.283E+00	2.513E-01	9.598E-02	0.000E+00
TH-232	2.291E+00	4.503E-01	2.346E-01	0.000E+00
TH-234	2.514E+00	1.643E+00	1.742E+00	0.000E+00
U-235	1.436E-01	2.148E-01	3.677E-01	0.000E+00
NP-237	1.154E+00	3.626E-01	3.502E-01	0.000E+00
U-238	2.514E+00	1.643E+00	1.742E+00	0.000E+00
ANH-511	1.383E-01	7.090E-02	5.474E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	8.526E-02	3.743E-01	6.329E-01	0.000E+00 NOT IDENT.
NA-22	1.999E-02	4.829E-02	8.461E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.076E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-9.099E-03	4.602E-02	7.539E-02	0.000E+00 FAIL ABUN
V-48	-3.145E-02	8.761E-02	1.383E-01	0.000E+00 NOT IDENT.

CR-51	-3.090E-01	4.779E-01	7.898E-01	0.000E+00	NOT IDENT.
MN-54	3.812E-02	4.236E-02	7.580E-02	0.000E+00	NOT IDENT.
CO-56	-3.951E-03	4.363E-02	7.252E-02	0.000E+00	FAIL ABUN
CO-57	-3.470E-03	2.507E-02	4.241E-02	0.000E+00	NOT IDENT.
CO-58	-1.453E-02	4.695E-02	7.691E-02	0.000E+00	NOT IDENT.
FE-59	-5.702E-02	1.134E-01	1.857E-01	0.000E+00	NOT IDENT.
CO-60	1.021E-02	4.221E-02	7.288E-02	0.000E+00	NOT IDENT.
ZN-65	1.740E-02	1.013E-01	1.527E-01	0.000E+00	NOT IDENT.
SE-75	1.949E-03	5.152E-02	8.332E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.265E-02	9.050E-02	0.000E+00	NOT IDENT.
Y-88	-1.801E-02	3.287E-02	5.089E-02	0.000E+00	NOT IDENT.
Y-91	-6.047E+00	2.557E+01	4.258E+01	0.000E+00	NOT IDENT.
NB-94	-1.730E-02	3.691E-02	6.071E-02	0.000E+00	NOT IDENT.
NB-95	6.190E-02	5.914E-02	9.529E-02	0.000E+00	NOT IDENT.
NB-95M	1.709E-01	1.533E-01	2.503E-01	0.000E+00	NOT IDENT.
ZR-95	1.555E-03	9.027E-02	1.491E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.909E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.421E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.952E-02	4.971E-02	8.668E-02	0.000E+00	FAIL ABUN
RH-106	3.274E-01	3.448E-01	6.274E-01	0.000E+00	NOT IDENT.
RU-106	3.274E-01	3.433E-01	6.274E-01	0.000E+00	NOT IDENT.
AG-108M	-1.921E-02	3.129E-02	5.011E-02	0.000E+00	NOT IDENT.
AG-110M	1.237E-02	4.305E-02	6.595E-02	0.000E+00	NOT IDENT.
SN-113	-2.623E-02	5.056E-02	8.261E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.373E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.051E-02	8.687E-02	1.439E-01	0.000E+00	NOT IDENT.
TE-123M	-2.194E-02	3.209E-02	5.202E-02	0.000E+00	NOT IDENT.
SB-124	-1.165E-02	6.773E-02	1.065E-01	0.000E+00	NOT IDENT.
SB-125	-2.319E-02	9.555E-02	1.576E-01	0.000E+00	FAIL ABUN
TE-125M	9.949E+00	1.165E+01	1.851E+01	0.000E+00	NOT IDENT.
I-126	2.598E-01	4.109E-01	6.489E-01	0.000E+00	NOT IDENT.
SB-126	1.489E-01	2.732E-01	4.259E-01	0.000E+00	NOT IDENT.
SB-127	-8.051E+00	5.997E+00	8.965E+00	0.000E+00	NOT IDENT.
I-131	1.597E-02	2.374E-01	4.052E-01	0.000E+00	NOT IDENT.
TE-132	-2.399E+00	4.382E+00	7.497E+00	0.000E+00	NOT IDENT.
BA-133	4.998E-03	5.097E-02	7.657E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.467E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.565E-02	1.081E-01	0.000E+00	FAIL ABUN
CS-135	1.777E-01	1.840E-01	2.973E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.673E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.298E-02	1.822E-01	3.206E-01	0.000E+00	FAIL ABUN
CE-139	-4.083E-02	3.327E-02	5.214E-02	0.000E+00	NOT IDENT.
BA-140	2.755E-01	4.353E-01	7.723E-01	0.000E+00	NOT IDENT.
LA-140	-8.114E-02	1.310E-01	1.937E-01	0.000E+00	FAIL ABUN
CE-141	6.119E-02	7.867E-02	1.354E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.397E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.881E-02	2.269E-01	3.434E-01	0.000E+00	NOT IDENT.
PM-144	3.296E-02	3.925E-02	7.056E-02	0.000E+00	NOT IDENT.
PR-144	2.486E+00	2.950E+00	5.304E+00	0.000E+00	NOT IDENT.
PM-146	1.635E-02	4.540E-02	7.767E-02	0.000E+00	NOT IDENT.
ND-147	-5.340E-01	9.512E-01	1.589E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.312E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.428E-02	1.143E-01	1.692E-01	0.000E+00	FAIL ABUN
GD-153	-1.443E-02	9.435E-02	1.434E-01	0.000E+00	NOT IDENT.
EU-154	7.672E-02	1.347E-01	2.389E-01	0.000E+00	NOT IDENT.
TB-160	1.797E-01	1.558E-01	2.863E-01	0.000E+00	FAIL ABUN
HO-166M	-3.114E-02	6.007E-02	9.770E-02	0.000E+00	NOT IDENT.
TA-182	2.072E-02	2.350E-01	4.012E-01	0.000E+00	FAIL ABUN
IR-192	1.426E-02	3.835E-02	6.719E-02	0.000E+00	FAIL ABUN
HG-203	5.114E-02	4.558E-02	8.278E-02	0.000E+00	NOT IDENT.
BI-207	5.754E-02	5.674E-02	1.051E-01	0.000E+00	FAIL ABUN
PB-210	1.169E+00	1.831E+00	3.344E+00	0.000E+00	NOT IDENT.
PB-211	3.664E-01	8.704E-01	1.305E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.075E+00	1.447E+00	0.000E+00	FAIL ABUN
RN-219	-6.247E-01	4.548E-01	6.844E-01	0.000E+00	NOT IDENT.
RA-223	-1.326E-01	7.612E-01	1.129E+00	0.000E+00	FAIL ABUN
AC-227	-2.395E-01	2.520E-01	4.159E-01	0.000E+00	FAIL ABUN
TH-227	-2.395E-01	2.524E-01	4.159E-01	0.000E+00	FAIL ABUN
TH-229	2.947E-01	5.325E-01	9.647E-01	0.000E+00	FAIL ABUN
PA-231	1.329E+00	1.650E+00	2.637E+00	0.000E+00	FAIL ABUN
TH-231	-1.326E-01	7.612E-01	1.129E+00	0.000E+00	FAIL ABUN
PA-233	-1.996E-02	6.874E-02	1.164E-01	0.000E+00	FAIL ABUN
PA-234	-2.678E-02	3.254E-01	5.356E-01	0.000E+00	NOT IDENT.
PA-234M	1.661E+00	5.290E+00	8.958E+00	0.000E+00	NOT IDENT.
NP-239	7.754E-02	3.978E-01	6.840E-01	0.000E+00	FAIL ABUN
AM-241	1.276E-01	1.224E-01	2.021E-01	0.000E+00	NOT IDENT.
CM-247	-4.542E-02	4.476E-02	6.400E-02	0.000E+00	NOT IDENT.
CF-249	-1.591E-02	4.327E-02	7.149E-02	0.000E+00	NOT IDENT.

CF-251	7.751E-02	1.334E-01	2.430E-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]G248513014.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:32
Sample ID          : G248513014 Sample quantity : 1.27070E+02 GRAM
Detector name      : GAM07 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 : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	1252	10.66*	1.129E+00	3.073E+01	3.073E+01	10.50
CD-109	88.03	331	3.70*	6.838E+00	3.869E+00	4.005E+00	24.24
SN-126	64.28	151	9.60	4.800E+00	9.688E-01	9.688E-01	65.88
	86.94	331	8.90	6.838E+00	1.608E+00	1.608E+00	47.16
	87.57	331	37.00*	6.838E+00	3.869E-01	3.869E-01	24.24
BA-137M	661.66	51	89.90*	2.230E+00	7.491E-02	7.502E-02	59.68
CS-137	661.66	51	85.10*	2.230E+00	7.913E-02	7.925E-02	59.68
EU-155	86.55	331	30.70	6.838E+00	4.663E-01	4.706E-01	24.28
	105.31	78	21.10*	7.183E+00	1.518E-01	1.532E-01	93.13
TL-208	277.37	-----	6.60	4.401E+00	-----	Line Not Found	-----
	583.19	501	85.00*	2.476E+00	7.030E-01	7.030E-01	16.71
	860.56	82	12.50	1.782E+00	1.087E+00	1.087E+00	48.81
BI-211	72.87	-----	1.23	5.899E+00	-----	Line Not Found	-----
	351.06	852	12.92*	3.680E+00	5.295E+00	5.295E+00	13.42
PB-212	74.82	630	10.28	6.070E+00	2.982E+00	2.982E+00	20.04
	77.11	994	17.10	6.260E+00	2.742E+00	2.742E+00	12.72
	238.63	1654	43.60*	4.909E+00	2.283E+00	2.283E+00	11.23
	300.09	155	3.30	4.148E+00	3.355E+00	3.355E+00	34.79
BI-214	609.32	609	45.49*	2.389E+00	1.657E+00	1.657E+00	15.11
	1120.29	124	14.92	1.413E+00	1.740E+00	1.740E+00	46.39
	1764.49	122	15.30	9.831E-01	2.391E+00	2.391E+00	25.82
PB-214	74.82	630	5.80	6.070E+00	5.286E+00	5.286E+00	19.23
	77.11	994	9.70	6.260E+00	4.834E+00	4.835E+00	15.16
	242.00	363	7.25	4.865E+00	3.040E+00	3.040E+00	26.10
	295.22	579	18.42	4.201E+00	2.210E+00	2.210E+00	17.94
	351.93	852	35.60*	3.680E+00	1.922E+00	1.922E+00	14.51
RA-224	240.99	363	4.10*	4.865E+00	5.375E+00	5.375E+00	25.45
RA-226	609.32	609	45.49*	2.389E+00	1.657E+00	1.657E+00	15.11
	1120.29	124	14.92	1.413E+00	1.740E+00	1.740E+00	46.39
	1764.49	122	15.30	9.831E-01	2.391E+00	2.391E+00	25.82
AC-228	338.32	331	11.27	3.791E+00	2.287E+00	2.287E+00	47.18
	911.20	339	25.80*	1.695E+00	2.291E+00	2.291E+00	20.06

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	217	15.80	1.606E+00	2.530E+00	2.530E+00	30.17
	338.32	331	11.27	3.791E+00	2.287E+00	2.287E+00	47.18
	911.20	339	25.80*	1.695E+00	2.291E+00	2.291E+00	20.06
TH-228	968.97	217	15.80	1.606E+00	2.530E+00	2.530E+00	30.17
	74.82	630	10.28	6.070E+00	2.982E+00	2.982E+00	17.56
	77.11	994	17.10	6.260E+00	2.742E+00	2.742E+00	12.72
TH-232	238.63	1654	43.60*	4.909E+00	2.283E+00	2.283E+00	11.23
	300.09	155	3.30	4.148E+00	3.355E+00	3.355E+00	69.62
	338.32	331	11.27	3.791E+00	2.287E+00	2.287E+00	23.67
TH-234	911.20	339	25.80*	1.695E+00	2.291E+00	2.291E+00	20.06
	968.97	217	15.80	1.606E+00	2.530E+00	2.530E+00	30.17
	63.29	151	3.70*	4.800E+00	2.514E+00	2.514E+00	66.68
U-235	92.59	380	4.23	7.022E+00	3.780E+00	3.780E+00	34.09
	89.96	225	3.47	6.936E+00	2.761E+00	2.761E+00	42.19
	93.35	380	5.60	7.022E+00	2.855E+00	2.855E+00	34.76
NP-237	143.76	-----	10.96*	6.691E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.279E+00	-----	Line Not Found	-----
	185.72	308	57.20	5.813E+00	2.736E-01	2.736E-01	31.61
U-238	205.31	-----	5.01	5.451E+00	-----	Line Not Found	-----
	86.48	331	12.40*	6.838E+00	1.154E+00	1.154E+00	32.05
	95.86	-----	2.68	7.087E+00	-----	Line Not Found	-----
ANH-511	63.29	151	3.70*	4.800E+00	2.514E+00	2.514E+00	66.68
	92.59	380	4.23	7.022E+00	3.780E+00	3.780E+00	27.37
	511.00	129	100.00*	2.756E+00	1.383E-01	1.383E-01	52.33

Flag: "*" = Keyline

Total number of lines in spectrum 38
Number of unidentified lines 6
Number of lines tentatively identified by NID 32 84.21%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.073E+01	3.073E+01	0.323E+01	10.50	
CD-109	461.40D	1.04	3.869E+00	4.005E+00	0.971E+00	24.24	
SN-126	2.30E+05Y	1.00	3.869E-01	3.869E-01	0.938E-01	24.24	
BA-137M	30.08Y	1.00	7.491E-02	7.502E-02	4.477E-02	59.68	
CS-137	30.08Y	1.00	7.913E-02	7.925E-02	4.730E-02	59.68	
EU-155	4.75Y	1.01	1.518E-01	1.532E-01	1.427E-01	93.13	
TL-208	1.41E+10Y	1.00	7.030E-01	7.030E-01	1.174E-01	16.71	
BI-211	7.04E+08Y	1.00	5.295E+00	5.295E+00	0.711E+00	13.42	
PB-212	1.41E+10Y	1.00	2.283E+00	2.283E+00	0.256E+00	11.23	
BI-214	1600.00Y	1.00	1.657E+00	1.657E+00	0.250E+00	15.11	
PB-214	1600.00Y	1.00	1.922E+00	1.922E+00	0.279E+00	14.51	
RA-224	1.41E+10Y	1.00	5.375E+00	5.375E+00	1.368E+00	25.45	
RA-226	1600.00Y	1.00	1.657E+00	1.657E+00	0.250E+00	15.11	
AC-228	1.41E+10Y	1.00	2.291E+00	2.291E+00	0.459E+00	20.06	
RA-228	1.41E+10Y	1.00	2.291E+00	2.291E+00	0.459E+00	20.06	
TH-228	1.41E+10Y	1.00	2.283E+00	2.283E+00	0.256E+00	11.23	
TH-232	1.41E+10Y	1.00	2.291E+00	2.291E+00	0.459E+00	20.06	
TH-234	4.47E+09Y	1.00	2.514E+00	2.514E+00	1.676E+00	66.68	
U-235	7.04E+08Y	1.00	2.736E-01	2.736E-01	0.865E-01	31.61	K
NP-237	2.14E+06Y	1.00	1.154E+00	1.154E+00	0.370E+00	32.05	
U-238	4.47E+09Y	1.00	2.514E+00	2.514E+00	1.676E+00	66.68	
ANH-511	1.00E+09Y	1.00	1.383E-01	1.383E-01	0.724E-01	52.33	
Total Activity :			6.994E+01	7.007E+01			

Grand Total Activity : 6.994E+01 7.007E+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	129.69	129	523	1.04	259.02	254	11	1.80E-02	71.3	6.96E+00	
0	209.52	116	279	0.86	418.64	415	8	1.61E-02	53.5	5.38E+00	T
0	274.69	292	712	7.61	548.95	536	33	4.06E-02	57.0	4.43E+00	T
0	328.11	93	171	1.35	655.78	651	9	1.29E-02	54.8	3.88E+00	T
0	409.13	70	115	1.40	817.79	812	10	9.74E-03	62.4	3.28E+00	
0	463.37	85	141	1.35	926.26	921	11	1.19E-02	58.3	2.98E+00	T
0	727.64	143	93	1.72	1454.73	1446	14	1.99E-02	33.2	2.06E+00	T
0	769.36	66	141	0.65	1538.16	1530	17	9.23E-03	85.3	1.96E+00	
0	796.23	84	71	1.48	1591.89	1584	15	1.16E-02	49.8	1.91E+00	T
0	934.68	29	52	1.11	1868.74	1865	9	4.01E-03	97.4	1.66E+00	
1	964.86	84	47	1.98	1929.11	1923	21	1.16E-02	38.1	1.61E+00	T
0	1238.85	65	51	1.87	2477.03	2471	12	9.05E-03	50.4	1.30E+00	T
0	1378.05	43	7	1.87	2755.40	2751	9	6.03E-03	37.2	1.18E+00	
0	1729.44	14	6	1.88	3458.15	3453	9	1.96E-03	91.3	9.97E-01	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513014.CNF;1
* Acquisition date   : 20-MAR-2010 13:30:32  Detector SN#      :
* Detector ID        : GAM07                  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-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513014            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.27070E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58.0MS 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	3.073E+01	3.226E+00	5.773E-01	4.957E-02	53.240
CD-109	4.005E+00	9.710E-01	1.157E+00	1.090E-01	3.463
SN-126	3.869E-01	9.379E-02	1.120E-01	1.049E-02	3.455
BA-137M	7.502E-02	4.477E-02	6.966E-02	6.164E-03	1.077
CS-137	7.925E-02	4.730E-02	7.359E-02	6.524E-03	1.077
EU-155	1.532E-01	1.427E-01	1.686E-01	1.489E-02	0.909
TL-208	7.030E-01	1.174E-01	6.234E-02	5.956E-03	11.277
BI-211	5.295E+00	7.107E-01	3.721E-01	3.339E-02	14.229
PB-212	2.283E+00	2.564E-01	9.343E-02	8.982E-03	24.433
BI-214	1.657E+00	2.504E-01	1.275E-01	1.325E-02	12.994
PB-214	1.922E+00	2.789E-01	1.328E-01	1.398E-02	14.476
RA-224	5.375E+00	1.368E+00	1.002E+00	8.471E-02	5.366
RA-226	1.657E+00	2.504E-01	1.275E-01	1.325E-02	12.994
AC-228	2.291E+00	4.595E-01	2.330E-01	2.792E-02	9.832
RA-228	2.291E+00	4.595E-01	2.330E-01	2.792E-02	9.832
TH-228	2.283E+00	2.564E-01	9.343E-02	8.982E-03	24.433
TH-232	2.291E+00	4.595E-01	2.330E-01	2.792E-02	9.832
TH-234	2.514E+00	1.676E+00	1.664E+00	2.960E-01	1.511

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.736E-01	8.647E-02	3.554E-01	5.956E-02	0.770
NP-237	1.154E+00	3.700E-01	3.360E-01	7.699E-02	3.436
U-238	2.514E+00	1.676E+00	1.664E+00	2.960E-01	1.511
ANH-511	1.383E-01	7.235E-02	5.389E-02	4.788E-03	2.565

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.526E-02		3.820E-01	6.225E-01	5.873E-02	0.137
NA-22	1.999E-02		4.928E-02	8.445E-02	6.933E-03	0.237
NA-24	2.006E+03		2.590E+03	Half-Life	too short	
SC-46	-9.099E-03		4.696E-02	7.484E-02	6.858E-03	-0.122
V-48	-3.145E-02		8.940E-02	1.375E-01	1.238E-02	-0.229
CR-51	-3.090E-01		4.877E-01	7.722E-01	6.973E-02	-0.400
MN-54	3.812E-02		4.323E-02	7.517E-02	6.900E-03	0.507
CO-56	-3.951E-03		4.452E-02	7.194E-02	6.605E-03	-0.055
CO-57	-3.470E-03		2.558E-02	4.089E-02	3.518E-03	-0.085
CO-58	-1.453E-02		4.791E-02	7.625E-02	7.005E-03	-0.191
FE-59	-5.702E-02		1.157E-01	1.850E-01	1.714E-02	-0.308
CO-60	1.021E-02		4.308E-02	7.279E-02	5.963E-03	0.140
ZN-65	1.740E-02		1.034E-01	1.521E-01	1.291E-02	0.114
SE-75	1.949E-03		5.257E-02	8.123E-02	6.938E-03	0.024
SR-85	1.004E-01		5.372E-02	8.910E-02	7.924E-03	1.127
Y-88	-1.801E-02		3.354E-02	5.108E-02	4.146E-03	-0.353
Y-91	-6.047E+00		2.610E+01	4.247E+01	3.468E+00	-0.142
NB-94	-1.730E-02		3.766E-02	6.005E-02	5.392E-03	-0.288
NB-95	6.190E-02		6.035E-02	9.438E-02	8.604E-03	0.656
NB-95M	1.709E-01		1.564E-01	2.436E-01	2.370E-02	0.701
ZR-95	1.555E-03		9.212E-02	1.477E-01	1.471E-02	0.011
MO-99	3.864E-06		5.056E-05	Half-Life	too short	
TC-99M	-9.448E+19		7.248E+19	Half-Life	too short	
RU-103	3.952E-02		5.072E-02	8.530E-02	1.203E-02	0.463
RH-106	3.274E-01		3.519E-01	6.195E-01	8.341E-02	0.528
RU-106	3.274E-01		3.503E-01	6.195E-01	5.536E-02	0.528
AG-108M	-1.921E-02		3.193E-02	4.921E-02	4.362E-03	-0.390
AG-110M	1.237E-02		4.393E-02	6.517E-02	5.938E-03	0.190
SN-113	-2.623E-02		5.159E-02	8.101E-02	6.963E-03	-0.324
CD-115	-1.973E-05		7.004E-05	Half-Life	too short	
SN-117M	-2.051E-02		8.864E-02	1.392E-01	1.116E-02	-0.147
TE-123M	-2.194E-02		3.275E-02	5.034E-02	4.061E-03	-0.436
SB-124	-1.165E-02		6.911E-02	1.067E-01	9.269E-03	-0.109
SB-125	-2.319E-02		9.750E-02	1.548E-01	1.349E-02	-0.150
TE-125M	9.949E+00		1.188E+01	1.782E+01	1.879E+00	0.558
I-126	2.598E-01		4.193E-01	6.413E-01	5.686E-02	0.405
SB-126	1.489E-01		2.787E-01	4.215E-01	3.804E-02	0.353
SB-127	-8.051E+00		6.120E+00	8.865E+00	1.257E+00	-0.908
I-131	1.597E-02		2.423E-01	3.970E-01	3.581E-02	0.040

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	-2.399E+00		4.472E+00	7.293E+00	1.281E+00	-0.329
BA-133	4.998E-03		5.201E-02	7.497E-02	9.659E-03	0.067
I-133	8.839E-01		1.769E+00	Half-Life	too short	
CS-134	1.725E-01	+	8.739E-02	1.071E-01	3.872E-03	1.610
CS-135	1.777E-01		1.877E-01	2.899E-01	2.859E-02	0.613
I-135	-5.401E+17		1.874E+18	Half-Life	too short	
CS-136	5.298E-02		1.860E-01	3.191E-01	2.921E-02	0.166
CE-139	-4.083E-02		3.395E-02	5.049E-02	3.994E-03	-0.809
BA-140	2.755E-01		4.441E-01	7.608E-01	2.587E-01	0.362
LA-140	-8.114E-02		1.337E-01	1.940E-01	1.623E-02	-0.418
CE-141	6.119E-02		8.028E-02	1.309E-01	1.096E-02	0.468
CE-143	4.326E-02		7.126E-03	Half-Life	too short	
CE-144	1.881E-02		2.316E-01	3.315E-01	5.024E-02	0.057
PM-144	3.296E-02		4.005E-02	6.978E-02	6.258E-03	0.472
PR-144	2.486E+00		3.010E+00	5.246E+00	4.701E-01	0.474
PM-146	1.635E-02		4.633E-02	7.633E-02	8.123E-03	0.214
ND-147	-5.340E-01		9.706E-01	1.566E+00	2.369E-01	-0.341
PM-149	-1.101E-03		6.694E-04	Half-Life	too short	
EU-152	-1.428E-02		1.166E-01	1.656E-01	1.501E-02	-0.086
GD-153	-1.443E-02		9.627E-02	1.379E-01	1.233E-02	-0.105
EU-154	7.672E-02		1.374E-01	2.385E-01	2.639E-02	0.322
TB-160	1.797E-01		1.590E-01	2.841E-01	2.606E-02	0.632
HO-166M	-3.114E-02		6.130E-02	9.666E-02	8.702E-03	-0.322
TA-182	2.072E-02		2.398E-01	4.002E-01	3.273E-02	0.052
IR-192	1.426E-02		3.913E-02	6.568E-02	5.645E-03	0.217
HG-203	5.114E-02		4.651E-02	8.077E-02	7.036E-03	0.633
BI-207	5.754E-02		5.790E-02	1.046E-01	9.128E-03	0.550
PB-210	1.169E+00		1.868E+00	3.180E+00	2.957E-01	0.368
PB-211	3.664E-01		8.881E-01	1.280E+00	6.190E-01	0.286
BI-212	3.082E+00	+	1.097E+00	1.432E+00	1.826E-01	2.153
RN-219	-6.247E-01		4.641E-01	6.714E-01	9.897E-02	-0.931
RA-223	-1.326E-01		7.767E-01	1.104E+00	1.911E-01	-0.120
AC-227	-2.395E-01		2.571E-01	4.053E-01	4.847E-02	-0.591
TH-227	-2.395E-01		2.575E-01	4.053E-01	5.481E-02	-0.591
TH-229	2.947E-01		5.433E-01	9.363E-01	7.645E-02	0.315
PA-231	1.329E+00		1.683E+00	2.573E+00	3.736E-01	0.516
TH-231	-1.326E-01		7.767E-01	1.104E+00	1.911E-01	-0.120
PA-233	-1.996E-02		7.014E-02	1.137E-01	1.003E-02	-0.175
PA-234	-2.678E-02		3.320E-01	5.321E-01	1.010E-01	-0.050
PA-234M	1.661E+00		5.398E+00	8.908E+00	9.135E-01	0.186
NP-239	7.754E-02		4.059E-01	6.590E-01	5.670E-02	0.118
AM-241	1.276E-01		1.249E-01	1.929E-01	1.529E-02	0.662
CM-247	-4.542E-02		4.568E-02	6.278E-02	5.270E-03	-0.723
CF-249	-1.591E-02		4.415E-02	7.010E-02	5.850E-03	-0.227
CF-251	7.751E-02		1.362E-01	2.356E-01	1.889E-02	0.329

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248513014          *
* Acquisition date   : 20-MAR-2010 13:30:32 Detector SN# :                  *
* Detector ID        : GAM07 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-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513014 Analyst initials: MXR1                  *
* Batch Number       : 961097 Sample Quantity : 1.2707E+02 GRAM          *
* Recovery            : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 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	3.073E+01	3.162E+00	2.887E-01	1.613E+00
CD-109	4.005E+00	9.516E-01	6.031E-01	4.855E-01
SN-126	3.869E-01	9.192E-02	5.838E-02	4.690E-02
BA-137M	7.502E-02	4.387E-02	3.526E-02	2.238E-02
CS-137	7.925E-02	4.635E-02	3.725E-02	2.365E-02
EU-155	1.532E-01	1.398E-01	8.766E-02	7.133E-02
TL-208	7.030E-01	1.151E-01	3.162E-02	5.872E-02
BI-211	5.295E+00	6.965E-01	1.902E-01	3.554E-01
PB-212	2.283E+00	2.513E-01	4.802E-02	1.282E-01
BI-214	1.657E+00	2.453E-01	6.463E-02	1.252E-01
PB-214	1.922E+00	2.733E-01	6.784E-02	1.394E-01
RA-224	5.375E+00	1.341E+00	5.147E-01	6.841E-01
RA-226	1.657E+00	2.453E-01	6.463E-02	1.252E-01
AC-228	2.291E+00	4.503E-01	1.174E-01	2.297E-01
RA-228	2.291E+00	4.503E-01	1.174E-01	2.297E-01
TH-228	2.283E+00	2.513E-01	4.802E-02	1.282E-01
TH-232	2.291E+00	4.503E-01	1.174E-01	2.297E-01
TH-234	2.514E+00	1.643E+00	8.715E-01	8.380E-01
U-235	1.436E-01	2.148E-01	1.840E-01	1.096E-01
NP-237	1.154E+00	3.626E-01	1.752E-01	1.850E-01
U-238	2.514E+00	1.643E+00	8.715E-01	8.380E-01
ANH-511	1.383E-01	7.090E-02	2.739E-02	3.618E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	8.526E-02	3.743E-01	3.167E-01	1.910E-01 NOT IDENT.
NA-22	1.999E-02	4.829E-02	4.233E-02	2.464E-02 NOT IDENT.
NA-24	2.006E+09	5.076E+09	0.000E+00	2.590E+09 SHORT HLIF
SC-46	-9.099E-03	4.602E-02	3.772E-02	2.348E-02 FAIL ABUN
V-48	-3.145E-02	8.761E-02	6.921E-02	4.470E-02 NOT IDENT.

CR-51	-3.090E-01	4.779E-01	3.952E-01	2.438E-01	NOT IDENT.
MN-54	3.812E-02	4.236E-02	3.792E-02	2.161E-02	NOT IDENT.
CO-56	-3.951E-03	4.363E-02	3.628E-02	2.226E-02	FAIL ABUN
CO-57	-3.470E-03	2.507E-02	2.122E-02	1.279E-02	NOT IDENT.
CO-58	-1.453E-02	4.695E-02	3.848E-02	2.395E-02	NOT IDENT.
FE-59	-5.702E-02	1.134E-01	9.292E-02	5.785E-02	NOT IDENT.
CO-60	1.021E-02	4.221E-02	3.646E-02	2.154E-02	NOT IDENT.
ZN-65	1.740E-02	1.013E-01	7.640E-02	5.168E-02	NOT IDENT.
SE-75	1.949E-03	5.152E-02	4.168E-02	2.629E-02	NOT IDENT.
SR-85	1.004E-01	5.265E-02	4.528E-02	2.686E-02	NOT IDENT.
Y-88	-1.801E-02	3.287E-02	2.546E-02	1.677E-02	NOT IDENT.
Y-91	-6.047E+00	2.557E+01	2.130E+01	1.305E+01	NOT IDENT.
NB-94	-1.730E-02	3.691E-02	3.037E-02	1.883E-02	NOT IDENT.
NB-95	6.190E-02	5.914E-02	4.767E-02	3.017E-02	NOT IDENT.
NB-95M	1.709E-01	1.533E-01	1.252E-01	7.822E-02	NOT IDENT.
ZR-95	1.555E-03	9.027E-02	7.461E-02	4.606E-02	NOT IDENT.
MO-99	3.864E+00	9.909E+01	0.000E+00	5.056E+01	SHORT HLIF
TC-99M	-9.448E+25	1.421E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.952E-02	4.971E-02	4.337E-02	2.536E-02	FAIL ABUN
RH-106	3.274E-01	3.448E-01	3.139E-01	1.759E-01	NOT IDENT.
RU-106	3.274E-01	3.433E-01	3.139E-01	1.752E-01	NOT IDENT.
AG-108M	-1.921E-02	3.129E-02	2.507E-02	1.596E-02	NOT IDENT.
AG-110M	1.237E-02	4.305E-02	3.299E-02	2.196E-02	NOT IDENT.
SN-113	-2.623E-02	5.056E-02	4.133E-02	2.580E-02	NOT IDENT.
CD-115	-1.973E+01	1.373E+02	0.000E+00	7.004E+01	SHORT HLIF
SN-117M	-2.051E-02	8.687E-02	7.197E-02	4.432E-02	NOT IDENT.
TE-123M	-2.194E-02	3.209E-02	2.602E-02	1.637E-02	NOT IDENT.
SB-124	-1.165E-02	6.773E-02	5.327E-02	3.455E-02	NOT IDENT.
SB-125	-2.319E-02	9.555E-02	7.887E-02	4.875E-02	FAIL ABUN
TE-125M	9.949E+00	1.165E+01	9.262E+00	5.942E+00	NOT IDENT.
I-126	2.598E-01	4.109E-01	3.246E-01	2.096E-01	NOT IDENT.
SB-126	1.489E-01	2.732E-01	2.131E-01	1.394E-01	NOT IDENT.
SB-127	-8.051E+00	5.997E+00	4.485E+00	3.060E+00	NOT IDENT.
I-131	1.597E-02	2.374E-01	2.027E-01	1.211E-01	NOT IDENT.
TE-132	-2.399E+00	4.382E+00	3.751E+00	2.236E+00	NOT IDENT.
BA-133	4.998E-03	5.097E-02	3.831E-02	2.600E-02	NOT IDENT.
I-133	8.839E+05	3.467E+06	0.000E+00	1.769E+06	SHORT HLIF
CS-134	1.725E-01	8.565E-02	5.409E-02	4.370E-02	FAIL ABUN
CS-135	1.777E-01	1.840E-01	1.487E-01	9.387E-02	NOT IDENT.
I-135	-5.401E+23	3.673E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.298E-02	1.822E-01	1.604E-01	9.298E-02	FAIL ABUN
CE-139	-4.083E-02	3.327E-02	2.609E-02	1.697E-02	NOT IDENT.
BA-140	2.755E-01	4.353E-01	3.864E-01	2.221E-01	NOT IDENT.
LA-140	-8.114E-02	1.310E-01	9.691E-02	6.686E-02	FAIL ABUN
CE-141	6.119E-02	7.867E-02	6.775E-02	4.014E-02	NOT IDENT.
CE-143	4.326E+04	1.397E+04	0.000E+00	7.126E+03	SHORT HLIF
CE-144	1.881E-02	2.269E-01	1.718E-01	1.158E-01	NOT IDENT.
PM-144	3.296E-02	3.925E-02	3.530E-02	2.002E-02	NOT IDENT.
PR-144	2.486E+00	2.950E+00	2.654E+00	1.505E+00	NOT IDENT.
PM-146	1.635E-02	4.540E-02	3.886E-02	2.316E-02	NOT IDENT.
ND-147	-5.340E-01	9.512E-01	7.952E-01	4.853E-01	FAIL ABUN
PM-149	-1.101E+03	1.312E+03	0.000E+00	6.694E+02	SHORT HLIF
EU-152	-1.428E-02	1.143E-01	8.465E-02	5.831E-02	FAIL ABUN
GD-153	-1.443E-02	9.435E-02	7.177E-02	4.814E-02	NOT IDENT.
EU-154	7.672E-02	1.347E-01	1.195E-01	6.871E-02	NOT IDENT.
TB-160	1.797E-01	1.558E-01	1.432E-01	7.951E-02	FAIL ABUN
HO-166M	-3.114E-02	6.007E-02	4.888E-02	3.065E-02	NOT IDENT.
TA-182	2.072E-02	2.350E-01	2.007E-01	1.199E-01	FAIL ABUN
IR-192	1.426E-02	3.835E-02	3.361E-02	1.956E-02	FAIL ABUN
HG-203	5.114E-02	4.558E-02	4.142E-02	2.326E-02	NOT IDENT.
BI-207	5.754E-02	5.674E-02	5.258E-02	2.895E-02	FAIL ABUN
PB-210	1.169E+00	1.831E+00	1.673E+00	9.340E-01	NOT IDENT.
PB-211	3.664E-01	8.704E-01	6.528E-01	4.441E-01	NOT IDENT.
BI-212	3.082E+00	1.075E+00	7.238E-01	5.487E-01	FAIL ABUN
RN-219	-6.247E-01	4.548E-01	3.424E-01	2.320E-01	NOT IDENT.
RA-223	-1.326E-01	7.612E-01	5.648E-01	3.884E-01	FAIL ABUN
AC-227	-2.395E-01	2.520E-01	2.081E-01	1.285E-01	FAIL ABUN
TH-227	-2.395E-01	2.524E-01	2.081E-01	1.288E-01	FAIL ABUN
TH-229	2.947E-01	5.325E-01	4.826E-01	2.717E-01	FAIL ABUN
PA-231	1.329E+00	1.650E+00	1.319E+00	8.417E-01	FAIL ABUN
TH-231	-1.326E-01	7.612E-01	5.648E-01	3.884E-01	FAIL ABUN
PA-233	-1.996E-02	6.874E-02	5.821E-02	3.507E-02	FAIL ABUN
PA-234	-2.678E-02	3.254E-01	2.679E-01	1.660E-01	NOT IDENT.
PA-234M	1.661E+00	5.290E+00	4.482E+00	2.699E+00	NOT IDENT.
NP-239	7.754E-02	3.978E-01	3.422E-01	2.029E-01	FAIL ABUN
AM-241	1.276E-01	1.224E-01	1.011E-01	6.244E-02	NOT IDENT.
CM-247	-4.542E-02	4.476E-02	3.202E-02	2.284E-02	NOT IDENT.
CF-249	-1.591E-02	4.327E-02	3.577E-02	2.208E-02	NOT IDENT.

CF-251	7.751E-02	1.334E-01	1.216E-01	6.809E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	331.4341
49.72	385.5573
57.36	0.0000
59.54	394.0968
63.29	462.2913
63.29	462.2913
64.28	479.5506
67.75	533.7698
69.67	512.0846
70.83	538.7778
72.81	577.0664
72.87	577.1396
72.87	577.1396
74.82	522.1017
74.82	522.1017
74.82	522.1017
74.97	522.2601
77.11	524.5039
77.11	524.5039
77.11	524.5039
79.69	497.7111
79.80	497.8182
80.12	518.4590
80.19	518.5291
80.57	390.7070
81.00	519.3384
81.07	519.4084
81.07	519.4084
83.79	485.2468
83.79	485.2468
85.43	425.1224
86.48	425.9499
86.55	426.0047
86.79	426.1900
86.94	426.3100
87.57	426.8006
88.03	427.1586
88.47	427.5018
89.96	428.6516
91.11	429.5338
92.59	430.6583
92.59	430.6583
93.35	431.2332
94.67	349.2269
94.87	336.8151
94.87	336.8151
95.86	368.7760
97.43	374.4879
98.44	317.7578
99.53	350.5538
100.11	343.5180
103.18	333.6172
103.37	333.7214
105.31	339.5581
106.12	349.0472
109.28	312.8373
111.00	321.7255
111.76	336.0633
116.30	287.5930
117.23	313.9808
121.12	292.9326
121.78	291.0372
122.06	295.5186
123.07	319.9799
131.20	319.8359
133.52	299.2511
136.00	309.1641

136.47	311.5877
140.51	0.0000
140.51	0.0000
143.76	309.0057
144.24	310.3259
144.24	310.3259
145.44	301.7999
152.43	299.9595
153.25	329.8402
154.21	354.1491
154.21	354.1491
156.02	301.3049
158.56	307.9719
159.00	328.7549
162.66	266.9331
163.33	268.2993
165.86	326.8560
176.60	285.0494
177.52	287.9810
181.07	0.0000
184.41	301.5255
185.72	278.2117
193.51	265.3699
197.04	274.4340
205.31	285.1113
210.85	250.3280
215.65	269.6192
222.11	271.3207
227.38	267.1451
228.16	276.5919
228.18	276.5987
235.69	232.5261
235.96	216.1831
235.96	216.1831
238.63	212.0435
238.63	212.0435
240.99	212.5008
242.00	212.6965
244.70	207.3908
252.40	179.6877
252.80	169.3448
256.23	206.8598
256.23	206.8598
260.90	0.0000
264.66	191.1591
268.22	188.6681
269.46	193.4728
269.46	193.4728
271.23	176.8434
273.65	177.2000
276.40	177.6042
277.37	177.7446
277.60	177.7783
278.00	177.8373
279.20	178.0114
279.54	178.0619
280.46	178.1938
283.69	156.9125
284.31	186.5244
285.41	188.2442
285.90	0.0000
287.50	158.4322
293.27	0.0000
295.22	169.3354
295.96	169.4329
298.57	78.6011
299.98	171.5393
299.98	171.5393
300.09	171.5526
300.09	171.5526
300.13	171.5579
301.36	168.5694
302.85	171.9198
304.50	148.4493
304.50	148.4493
304.85	148.4883
308.46	186.1239
311.90	175.6901

316.51	148.4089
319.41	165.6986
320.08	175.7664
323.87	165.0414
323.87	165.0414
328.76	160.8057
333.37	193.6113
334.37	167.9158
334.37	167.9158
338.28	164.9450
338.28	164.9450
338.32	164.9500
338.32	164.9500
338.32	164.9500
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340.55	137.8448
344.28	147.9617
351.06	166.6315
351.93	160.3970
356.01	137.6935
364.49	129.8318
366.42	0.0000
383.85	125.2350
388.16	144.4203
388.63	138.1835
391.69	144.7467
400.66	138.1841
401.81	161.5073
402.40	156.2880
404.85	120.1436
410.95	108.7078
414.70	110.6603
423.72	112.3347
427.09	106.1301
427.87	116.9036
433.94	121.6298
453.88	106.7105
463.37	128.0848
468.07	108.8830
473.00	101.2567
476.78	108.0847
477.60	97.1000
487.02	114.2342
492.35	0.0000
497.08	89.2053
511.00	116.8191
514.00	108.0007
527.90	0.0000
529.87	0.0000
531.02	100.7753
537.26	86.5205
546.56	0.0000
563.25	108.8475
569.33	112.8679
569.50	112.8768
569.70	99.9343
583.19	91.2625
600.60	92.0042
602.73	104.9356
604.72	114.4368
609.32	101.7958
609.32	101.7958
610.33	99.0143
614.28	67.7019
618.01	106.9279
621.93	76.7819
621.93	76.7819
633.25	80.0276
635.95	90.6141
636.99	99.2443
645.85	77.5967
657.76	80.2429
661.66	103.2017
661.66	103.2017
664.57	0.0000
666.33	78.9252
666.50	88.5962
677.62	79.6237

685.70	98.4035
695.00	100.7393
696.49	84.1628
696.51	84.1628
697.00	89.0738
702.65	98.1104
706.68	78.6172
711.68	75.8213
720.70	72.4722
721.93	0.0000
722.78	87.3672
722.91	87.3715
723.31	84.0890
724.19	85.7674
727.33	81.2493
733.00	79.4453
735.93	66.6123
739.50	0.0000
747.24	78.8901
752.31	74.0416
753.82	77.0884
756.73	77.1748
763.94	92.1277
765.81	78.7828
766.42	78.8019
777.92	0.0000
778.90	80.8574
783.70	82.0165
785.37	58.7632
795.86	64.0782
801.95	93.4436
810.29	92.0237
810.76	75.6766
815.77	66.5948
818.51	65.6344
832.01	91.7161
834.85	68.0818
836.80	0.0000
846.77	61.1174
856.80	57.1740
860.56	65.9217
871.09	54.3220
873.19	54.3613
875.33	0.0000
879.36	43.9995
880.51	58.6893
883.24	57.6949
884.68	64.0202
889.28	65.1711
898.04	56.9294
911.20	55.0608
911.20	55.0608
911.20	55.0608
926.50	71.3020
937.49	46.2808
944.13	51.3738
946.00	59.9730
949.00	55.7426
962.29	84.3269
964.08	73.6035
966.15	58.2029
968.97	58.2543
968.97	58.2543
968.97	58.2543
983.53	40.0975
996.26	73.9832
1001.03	59.9266
1004.73	62.1768
1037.84	61.5148
1038.76	0.0000
1048.07	61.7029
1050.41	56.2145
1050.41	56.2145
1063.66	49.0341
1085.87	58.6600
1099.45	69.1702
1112.07	49.2487
1115.54	51.5112

1120.29	56.4160
1120.29	56.4160
1120.55	56.4185
1121.30	56.4307
1131.51	0.0000
1173.23	70.5975
1177.93	71.6431
1189.05	73.7729
1204.77	71.1937
1221.41	78.2710
1231.02	76.2051
1235.36	74.8138
1238.28	81.5254
1260.41	0.0000
1271.85	48.9441
1274.44	47.0176
1274.54	49.9562
1291.59	49.1862
1298.22	0.0000
1312.11	45.4815
1332.49	36.7666
1365.19	29.0437
1368.63	0.0000
1384.29	19.6182
1408.01	37.4306
1457.56	0.0000
1460.82	25.5981
1489.16	13.3957
1505.03	45.4985
1596.21	24.2522
1620.50	14.8368
1678.03	0.0000
1690.97	9.6753
1764.49	16.8267
1764.49	16.8267
1770.23	9.8262
1771.35	9.8284
1791.20	0.0000
1836.06	11.3705

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513014

Total Uranium Activity	7.5442E+00	ug/g
Total Uranium Counting Unc.	4.8876E+00	ug/g
Total Uranium Tpu	2.4937E-06	ug/g
Total Uranium Mda	2.5942E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513014
*  ANALYST       : MXR1                             DETECTOR    : GAM07
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 13:30:32.12          SAMPLE ALQT  : 127.070 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.219E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.692E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.691E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.285E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:32:28.89

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513015.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:59
Sample ID          : G248513015      Sample quantity      : 1.26350E+02 GRAM
Detector name      : GAM11           Detector geometry    : CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time  : 0 02:00:01.88  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials   : MXR1
Abundance limit    : 75.00000        Sensitivity        : 5.00000
Batch ID          : 961097           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	46.66*	61	368	0.71	92.17	89	7	8.51E-03	55.1	
2	0	63.25*	110	605	0.96	125.37	121	9	1.53E-02	42.2	
3	3	74.84*	557	466	0.96	148.57	144	13	7.74E-02	7.5	2.33E+00
4	3	77.13*	897	404	0.96	153.16	144	13	1.25E-01	5.0	
5	3	87.25	298	445	0.94	173.41	163	20	4.14E-02	12.5	5.39E+00
6	3	90.02	146	388	0.78	178.95	163	20	2.03E-02	21.1	
7	0	93.10*	415	490	1.27	185.12	182	10	5.77E-02	11.5	
8	0	128.98	96	421	0.90	256.94	253	9	1.33E-02	40.1	
9	0	186.11*	264	392	1.29	371.29	367	10	3.67E-02	15.9	
10	0	209.33	116	359	0.94	417.75	413	9	1.61E-02	30.9	
11	6	238.69*	1529	209	0.95	476.53	472	15	2.12E-01	3.0	2.94E+00
12	6	241.71	369	248	1.57	482.57	472	15	5.12E-02	10.3	
13	0	270.23	144	233	1.24	539.64	534	12	2.00E-02	22.8	
14	0	277.63	51	159	0.98	554.46	550	7	7.03E-03	43.8	
15	0	295.28*	514	160	1.07	589.78	585	9	7.14E-02	6.3	
16	0	300.16	120	172	1.18	599.54	595	10	1.66E-02	22.5	
17	0	328.09	97	129	0.98	655.45	652	8	1.34E-02	22.9	
18	0	338.50*	305	260	1.15	676.28	672	11	4.23E-02	12.0	
19	0	352.06*	825	231	1.14	703.41	698	12	1.15E-01	5.1	
20	0	452.56	31	83	1.19	904.55	901	8	4.32E-03	53.6	
21	1	461.91	35	78	1.36	923.25	918	15	4.93E-03	52.3	5.43E-01
22	1	463.38	98	83	1.33	926.21	918	15	1.36E-02	19.7	
23	0	510.95*	164	141	1.68	1021.40	1015	12	2.28E-02	18.9	
24	0	583.46*	480	130	1.35	1166.50	1162	11	6.66E-02	6.6	
25	0	609.55*	599	75	1.35	1218.71	1212	12	8.32E-02	5.1	
26	0	661.78	311	137	1.53	1323.24	1315	17	4.32E-02	10.3	
27	0	728.09*	93	87	1.03	1455.92	1450	11	1.30E-02	22.2	
28	0	768.70	83	41	2.15	1537.18	1532	11	1.15E-02	18.5	
29	0	786.54*	25	50	1.03	1572.87	1568	8	3.44E-03	55.2	
30	0	860.99	61	41	1.17	1721.84	1716	11	8.45E-03	24.1	
31	0	911.66*	279	61	1.35	1823.23	1818	13	3.87E-02	8.4	
32	1	965.18*	86	68	1.73	1930.32	1921	29	1.20E-02	19.2	1.52E+00
33	1	969.49	174	52	1.74	1938.95	1921	29	2.42E-02	11.1	
34	0	1120.82	141	66	1.94	2241.73	2233	19	1.96E-02	16.2	
35	0	1240.72	44	111	1.03	2481.61	2474	18	6.06E-03	58.9	
36	0	1378.38	61	19	2.53	2757.00	2749	15	8.50E-03	20.0	
37	0	1461.62*	1302	9	1.99	2923.52	2914	21	1.81E-01	2.9	
38	0	1588.94	41	3	1.97	3178.22	3171	12	5.63E-03	18.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1765.78*	94	9	2.10	3531.94	3526	13	1.31E-02	12.7	
40	0	1848.51	26	7	1.78	3697.43	3690	13	3.54E-03	28.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 15:32:31

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513015.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:59
Sample ID        : G248513015 Sample quantity : 126.35 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.88 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	+	1460.82	*	2.963E+01	3.071E+00	4.145E-01	3.584E-02	71.467
CD-109	+	88.03	*	3.651E+00	9.751E-01	1.169E+00	1.108E-01	3.124
SN-126	+	64.28		7.983E-01	6.831E-01	5.812E-01	8.431E-02	1.373
	+	86.94		1.466E+00	7.106E-01	4.730E-01	1.964E-01	3.100
	+	87.57	*	3.526E-01	9.419E-02	1.132E-01	1.068E-02	3.114
BA-137M	+	661.66	*	4.285E-01	9.710E-02	5.547E-02	5.249E-03	7.726
CS-137	+	661.66	*	4.527E-01	1.026E-01	5.860E-02	5.553E-03	7.726
TL-208	+	277.37		4.877E-01	4.361E-01	6.189E-01	1.106E-01	0.788
	+	583.19	*	6.301E-01	1.070E-01	5.891E-02	6.357E-03	10.696
	+	860.56		7.510E-01	3.706E-01	3.984E-01	4.148E-02	1.885
PB-210	+	46.54	*	2.799E+00	3.096E+00	3.248E+00	2.996E-01	0.862
BI-211	+	72.87		2.633E+00	2.706E+00	4.100E+00	3.256E-01	0.642
	+	351.06	*	4.839E+00	8.063E-01	3.039E-01	4.010E-02	15.922
BI-212	+	727.33	*	1.870E+00	8.674E-01	7.422E-01	9.805E-02	2.520
	+	785.37		3.217E+00	3.565E+00	4.945E+00	4.843E-01	0.651
	+	1620.50		2.184E+00	2.511E+00	4.635E+00	3.892E-01	0.471
PB-212	+	74.82		2.779E+00	5.438E-01	4.460E-01	5.648E-02	6.230
	+	77.11		2.587E+00	3.370E-01	2.586E-01	2.149E-02	10.004
	+	238.63	*	2.000E+00	3.055E-01	8.787E-02	1.234E-02	22.765
	+	300.09		2.443E+00	1.166E+00	1.100E+00	1.772E-01	2.220
BI-214	+	609.32	*	1.524E+00	2.321E-01	1.078E-01	1.223E-02	14.132
	+	1120.29		1.840E+00	6.276E-01	3.723E-01	4.038E-02	4.944
	+	1764.49		1.710E+00	4.571E-01	2.679E-01	2.207E-02	6.383
PB-214	+	74.82		4.925E+00	9.231E-01	7.906E-01	8.965E-02	6.230
	+	77.11		4.561E+00	7.032E-01	4.559E-01	5.337E-02	10.004
	+	242.00		2.927E+00	7.395E-01	5.347E-01	7.829E-02	5.474
	+	295.22		1.858E+00	3.849E-01	1.895E-01	3.110E-02	9.801
	+	351.93	*	1.756E+00	3.082E-01	1.105E-01	1.577E-02	15.887
RA-224	+	240.99	*	5.175E+00	1.273E+00	9.421E-01	1.262E-01	5.493
RA-226	+	609.32	*	1.524E+00	2.321E-01	1.078E-01	1.223E-02	14.132
	+	1120.29		1.840E+00	6.276E-01	3.723E-01	4.038E-02	4.944
	+	1764.49		1.710E+00	4.571E-01	2.679E-01	2.207E-02	6.383
AC-228	+	338.32		1.990E+00	9.794E-01	3.639E-01	1.564E-01	5.469
	+	911.20	*	1.753E+00	3.665E-01	1.866E-01	2.332E-02	9.394

----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	968.97		1.883E+00	6.253E-01	3.174E-01	7.842E-02	5.931
	+	338.32		1.990E+00	9.794E-01	3.639E-01	1.564E-01	5.469
	+	911.20	*	1.753E+00	3.665E-01	1.866E-01	2.332E-02	9.394
TH-228	+	968.97		1.883E+00	6.253E-01	3.174E-01	7.842E-02	5.931
	+	74.82		2.779E+00	4.730E-01	4.460E-01	3.653E-02	6.230
	+	77.11		2.587E+00	3.370E-01	2.586E-01	2.149E-02	10.004
TH-232	+	238.63	*	2.000E+00	3.055E-01	8.787E-02	1.234E-02	22.765
	+	300.09		2.443E+00	1.879E+00	1.100E+00	6.868E-01	2.220
	+	338.32		1.990E+00	5.472E-01	3.639E-01	4.908E-01	5.469
TH-234	+	911.20	*	1.753E+00	3.665E-01	1.866E-01	2.332E-02	9.394
	+	968.97		1.883E+00	6.253E-01	3.174E-01	7.842E-02	5.931
	+	63.29	*	2.071E+00	1.785E+00	1.551E+00	2.759E-01	1.335
U-235	+	92.59		4.123E+00	1.322E+00	8.816E-01	1.965E-01	4.676
	+	89.96		1.802E+00	8.831E-01	1.189E+00	2.957E-01	1.516
	+	93.35		3.114E+00	1.021E+00	5.748E-01	1.338E-01	5.418
NP-237	+	143.76	*	5.004E-02	1.841E-01	3.073E-01	5.264E-02	0.163
	+	163.33		1.671E-01	3.804E-01	6.459E-01	1.192E-01	0.259
	+	185.72		2.232E-01	7.478E-02	6.113E-02	6.483E-03	3.652
U-238	+	205.31		-1.249E-01	5.296E-01	7.615E-01	1.501E-01	-0.164
	+	86.48	*	1.052E+00	3.573E-01	3.406E-01	7.814E-02	3.089
	+	95.86		-9.927E-02	8.510E-01	1.204E+00	2.904E-01	-0.082
ANH-511	+	63.29	*	2.071E+00	1.785E+00	1.551E+00	2.759E-01	1.335
	+	92.59		4.123E+00	1.023E+00	8.816E-01	8.061E-02	4.676
	+	511.00	*	1.649E-01	6.466E-02	4.514E-02	4.827E-03	3.652

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	6.212E-02	3.284E-01	5.552E-01	6.283E-02	0.112
NA-22		1274.54	*	3.607E-02	4.221E-02	7.462E-02	6.128E-03	0.483
NA-24		1368.63	*	4.425E+02	4.221E-02	Half-Life too short		
SC-46		889.28	*	3.488E-03	3.823E-02	6.467E-02	6.370E-03	0.054
V-48	+	1120.55		3.325E-01	1.112E-01	1.381E-01	1.178E-02	2.407
		944.13		8.019E-01	1.058E+00	1.895E+00	1.833E-01	0.423
		983.53	*	5.843E-02	9.710E-02	1.701E-01	1.613E-02	0.344
CR-51		1312.11		-1.017E-01	1.143E-01	1.650E-01	1.360E-02	-0.616
		320.08	*	1.526E-01	4.278E-01	6.991E-01	1.014E-01	0.218
		834.85	*	-5.265E-03	3.538E-02	5.894E-02	5.804E-03	-0.089
CO-56		846.77	*	-1.410E-02	3.735E-02	6.068E-02	5.979E-03	-0.232
		1037.84		-6.736E-03	3.167E-01	5.235E-01	5.019E-02	-0.013
		1238.28		1.881E-01	1.182E-01	1.930E-01	1.624E-02	0.975
CO-57		1771.35		-4.424E-02	2.409E-01	3.218E-01	2.648E-02	-0.137
		122.06	*	-8.892E-03	2.195E-02	3.665E-02	3.100E-03	-0.243
		136.47		1.841E-02	1.775E-01	3.010E-01	2.824E-02	0.061
CO-58		810.76	*	-4.016E-02	4.254E-02	6.116E-02	6.022E-03	-0.657
FE-59		1099.45	*	4.397E-02	1.024E-01	1.753E-01	1.647E-02	0.251
CO-60		1291.59		-4.682E-02	1.414E-01	2.198E-01	2.074E-02	-0.213
		1173.23		-1.785E-02	4.468E-02	7.041E-02	5.657E-03	-0.254

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		-1.555E-02	3.732E-02	5.706E-02	4.715E-03	-0.272
ZN-65	1115.54	*		-4.223E-02	9.651E-02	1.288E-01	1.105E-02	-0.328
SE-75	121.12			-4.388E-02	1.172E-01	1.960E-01	2.148E-02	-0.224
	136.00			-9.134E-03	3.535E-02	5.905E-02	5.200E-03	-0.155
	264.66	*		2.512E-02	4.820E-02	7.228E-02	1.063E-02	0.348
	279.54			2.604E-02	1.241E-01	1.813E-01	2.839E-02	0.144
	400.66			1.691E-01	2.558E-01	4.472E-01	5.711E-02	0.378
SR-85	514.00	*		6.262E-02	4.376E-02	7.133E-02	7.619E-03	0.878
Y-88	898.04			1.022E-02	3.920E-02	6.727E-02	6.647E-03	0.152
	1836.06	*		-1.993E-02	3.253E-02	4.630E-02	3.759E-03	-0.430
Y-91	1204.77	*		-7.583E+00	2.472E+01	3.930E+01	3.181E+00	-0.193
NB-94	702.65	*		-1.501E-02	3.445E-02	5.372E-02	5.159E-03	-0.279
	871.09			-2.400E-02	2.874E-02	4.394E-02	4.331E-03	-0.546
NB-95	765.81	*		1.641E-02	4.980E-02	7.263E-02	7.090E-03	0.226
NB-95M	235.69	*		-5.463E-02	1.452E-01	2.066E-01	2.887E-02	-0.264
ZR-95	724.19			2.352E-02	9.492E-02	1.384E-01	1.428E-02	0.170
	756.73	*		4.925E-02	8.174E-02	1.379E-01	1.455E-02	0.357
MO-99	140.51			-1.157E-04	8.174E-02	Half-Life	too short	
	181.07			-7.513E-05	8.174E-02	Half-Life	too short	
	366.42			-6.113E-04	8.174E-02	Half-Life	too short	
	739.50	*		-1.434E-04	8.174E-02	Half-Life	too short	
	777.92			-6.186E-05	8.174E-02	Half-Life	too short	
TC-99M	140.51	*		-9.224E+19	8.174E-02	Half-Life	too short	
RU-103	497.08	*		-1.870E-02	4.046E-02	6.474E-02	9.946E-03	-0.289
	610.33			1.809E+01	3.606E+00	3.569E+00	6.116E-01	5.069
RH-106	621.93	*		-1.502E-02	3.084E-01	5.024E-01	7.101E-02	-0.030
	1050.41			-8.981E-01	2.578E+00	4.122E+00	3.742E-01	-0.218
RU-106	621.93	*		-1.502E-02	3.084E-01	5.024E-01	4.983E-02	-0.030
	1050.41			-8.981E-01	2.578E+00	4.122E+00	3.742E-01	-0.218
AG-108M	433.94	*		-3.891E-04	2.589E-02	4.347E-02	4.783E-03	-0.009
	614.28			-3.302E-03	3.652E-02	5.183E-02	5.309E-03	-0.064
	722.91			-1.249E-02	3.754E-02	5.051E-02	5.006E-03	-0.247
AG-110M	657.76	*		7.022E-03	3.712E-02	5.410E-02	5.272E-03	0.130
	677.62			-1.391E-01	2.966E-01	4.603E-01	4.486E-02	-0.302
	706.68			1.192E-01	2.310E-01	3.882E-01	3.820E-02	0.307
	763.94			4.993E-02	1.694E-01	2.467E-01	2.459E-02	0.202
	884.68			-3.094E-02	4.630E-02	7.259E-02	7.328E-03	-0.426
	937.49			-3.625E-02	1.118E-01	1.813E-01	1.809E-02	-0.200
	1384.29			1.541E-01	1.273E-01	2.287E-01	1.960E-02	0.674
	1505.03			-1.564E-01	2.623E-01	4.015E-01	3.378E-02	-0.390
SN-113	391.69	*		6.910E-03	4.146E-02	7.091E-02	7.713E-03	0.097
CD-115	260.90			-3.455E-04	4.146E-02	Half-Life	too short	
	492.35			1.706E-04	4.146E-02	Half-Life	too short	
	527.90	*		1.237E-05	4.146E-02	Half-Life	too short	
SN-117M	156.02			-9.555E-01	2.987E+00	4.937E+00	4.622E-01	-0.194
	158.56	*		-2.642E-02	7.408E-02	1.206E-01	1.140E-02	-0.219
TE-123M	159.00	*		-7.396E-03	2.684E-02	4.386E-02	4.173E-03	-0.169
SB-124	602.73			-1.510E-02	4.536E-02	6.605E-02	6.676E-03	-0.229
	645.85			-1.470E-01	5.381E-01	8.571E-01	8.657E-02	-0.171

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		722.78		-1.626E-01	4.114E-01	5.481E-01	5.393E-02	-0.297
		1690.97	*	-8.015E-02	6.890E-02	8.136E-02	7.087E-03	-0.985
		427.87	*	2.946E-02	8.302E-02	1.428E-01	1.557E-02	0.206
	+	463.37		8.815E-01	3.621E-01	5.937E-01	6.719E-02	1.485
		600.60		3.354E-02	1.723E-01	2.866E-01	3.059E-02	0.117
TE-125M		635.95		1.273E-01	2.675E-01	4.529E-01	4.707E-02	0.281
		109.28	*	2.853E+00	8.901E+00	1.538E+01	1.606E+00	0.186
I-126		388.63		1.993E-01	2.477E-01	4.368E-01	4.738E-02	0.456
		666.33	*	1.472E-01	3.842E-01	5.694E-01	5.397E-02	0.258
SB-126		753.82		1.501E+00	2.782E+00	4.682E+00	4.559E-01	0.320
		414.70		6.820E-03	1.115E-01	1.887E-01	2.026E-02	0.036
		666.50		4.689E-02	1.342E-01	1.982E-01	1.879E-02	0.237
		695.00		7.445E-02	1.142E-01	1.935E-01	1.854E-02	0.385
		697.00		-5.533E-01	4.139E-01	5.791E-01	5.551E-02	-0.955
SB-127		720.70	*	-4.950E-02	2.003E-01	3.157E-01	3.049E-02	-0.157
		856.80		-3.247E-01	7.516E-01	1.038E+00	1.023E-01	-0.313
		252.40		-1.888E+01	1.862E+01	2.537E+01	1.109E+01	-0.744
		473.00		-2.215E+00	6.153E+00	9.990E+00	1.646E+00	-0.222
		685.70	*	-6.252E+00	5.296E+00	7.499E+00	1.094E+00	-0.834
I-131		783.70		-9.794E+00	1.707E+01	2.200E+01	3.413E+00	-0.445
		80.19		7.010E+00	8.489E+00	1.132E+01	9.889E-01	0.619
		284.31		-9.428E-01	2.790E+00	4.401E+00	6.888E-01	-0.214
TE-132		364.49	*	-1.562E-02	2.281E-01	3.594E-01	4.529E-02	-0.043
		636.99		-1.305E+00	3.161E+00	4.981E+00	5.110E-01	-0.262
		49.72		2.491E+01	7.033E+01	1.062E+02	1.392E+01	0.235
		111.76		2.924E+01	1.567E+02	2.691E+02	3.621E+01	0.109
BA-133		116.30		-1.219E+02	1.337E+02	2.176E+02	2.922E+01	-0.560
		228.16	*	-6.035E-01	3.839E+00	6.233E+00	1.246E+00	-0.097
		81.00		-4.983E-02	8.259E-02	1.146E-01	1.782E-02	-0.435
	+	276.40		4.515E-01	4.047E-01	5.777E-01	1.096E-01	0.781
		302.85		5.053E-02	1.407E-01	2.069E-01	3.680E-02	0.244
I-133		356.01	*	-2.325E-02	4.561E-02	6.090E-02	9.698E-03	-0.382
		383.85		1.110E-01	2.724E-01	4.720E-01	6.743E-02	0.235
		529.87	*	3.019E-01	2.724E-01	Half-Life too short		
		875.33		1.636E+01	2.724E-01	Half-Life too short		
CS-134		1298.22		5.129E+01	2.724E-01	Half-Life too short		
		563.25		-2.412E-01	3.526E-01	5.492E-01	5.761E-02	-0.439
		569.33		-1.347E-01	1.988E-01	3.077E-01	3.224E-02	-0.438
		604.72		-3.657E-03	3.548E-02	5.038E-02	5.092E-03	-0.073
		795.86	*	8.858E-02	4.691E-02	8.524E-02	8.409E-03	1.039
CS-135		801.95		2.931E-02	3.721E-01	6.003E-01	5.919E-02	0.049
		1365.19		-2.813E-01	1.188E+00	1.854E+00	1.617E-01	-0.152
		268.22	*	-3.117E-02	1.622E-01	2.307E-01	3.619E-02	-0.135
I-135		546.56		-8.032E+18	1.622E-01	Half-Life too short		
		836.80		-2.550E+18	1.622E-01	Half-Life too short		
		1038.76		-2.239E+18	1.622E-01	Half-Life too short		
		1131.51		-1.955E+18	1.622E-01	Half-Life too short		
		1260.41	*	-3.091E+18	1.622E-01	Half-Life too short		
		1457.56		5.687E+19	1.622E-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	1678.03			1.573E+18	1.622E-01	Half-Life	too short	
	1791.20			-1.364E+18	1.622E-01	Half-Life	too short	
	153.25			7.360E-01	1.138E+00	1.955E+00	2.116E-01	0.376
	176.60			3.137E-01	6.778E-01	1.149E+00	1.259E-01	0.273
	273.65			-5.772E-02	9.287E-01	1.045E+00	1.630E-01	-0.055
	340.55			5.325E-01	2.571E-01	4.058E-01	5.521E-02	1.312
CE-139	818.51			-3.004E-02	1.198E-01	1.868E-01	1.840E-02	-0.161
	1048.07	*		-3.146E-02	1.559E-01	2.528E-01	2.388E-02	-0.124
	1235.36			4.339E-01	8.957E-01	1.342E+00	1.534E-01	0.323
	165.86	*		-3.810E-03	2.654E-02	4.404E-02	4.280E-03	-0.087
	162.66			3.506E-02	1.085E+00	1.817E+00	1.839E-01	0.019
	304.85			1.440E+00	2.145E+00	3.169E+00	1.002E+00	0.454
BA-140	423.72			-8.425E-01	2.823E+00	4.640E+00	1.555E+00	-0.182
	537.26	*		1.510E-01	3.961E-01	6.680E-01	2.302E-01	0.226
	328.76			1.201E+00	5.766E-01	8.171E-01	1.160E-01	1.469
	487.02			1.562E-01	1.979E-01	3.468E-01	3.881E-02	0.450
	815.77			-2.579E-02	5.227E-01	8.313E-01	8.920E-02	-0.031
	1596.21	*		-3.623E-02	1.240E-01	1.869E-01	1.572E-02	-0.194
CE-141	145.44	*		9.287E-03	6.572E-02	1.112E-01	1.019E-02	0.084
CE-143	57.36			9.618E-03	6.572E-02	Half-Life	too short	
	293.27	*		1.518E-02	6.572E-02	Half-Life	too short	
	664.57			1.240E-01	6.572E-02	Half-Life	too short	
	721.93			-1.777E-02	6.572E-02	Half-Life	too short	
	80.12			1.941E+00	2.356E+00	3.141E+00	2.702E-01	0.618
	133.52	*		-9.716E-02	1.889E-01	2.781E-01	4.261E-02	-0.349
PM-144	476.78			1.199E-02	6.017E-02	1.018E-01	1.159E-02	0.118
	618.01			1.786E-02	3.041E-02	5.206E-02	5.296E-03	0.343
	696.49	*		-3.632E-02	3.441E-02	4.982E-02	4.778E-03	-0.729
	696.51	*		-2.745E+00	2.585E+00	3.739E+00	3.584E-01	-0.734
	1489.16			4.061E+00	1.064E+01	1.890E+01	1.589E+00	0.215
	453.88	*		4.415E-02	4.769E-02	7.012E-02	8.712E-03	0.630
PM-146	633.25			6.845E-01	1.384E+00	2.312E+00	8.894E-01	0.296
	735.93			1.256E-01	1.440E-01	2.431E-01	6.898E-02	0.517
	747.24			-1.891E-02	9.443E-02	1.491E-01	2.276E-02	-0.127
	91.11			9.638E-01	4.182E-01	6.597E-01	6.541E-02	1.461
	319.41			1.423E+00	5.269E+00	8.569E+00	1.222E+00	0.166
	531.02	*		-4.398E-01	9.025E-01	1.435E+00	2.322E-01	-0.306
PM-149	285.90	*		-7.447E-04	9.025E-01	Half-Life	too short	
EU-152	121.78			-1.489E-02	6.164E-02	1.037E-01	1.012E-02	-0.144
	244.70			-1.425E-01	3.118E-01	4.367E-01	5.936E-02	-0.326
	344.28	*		6.287E-02	1.028E-01	1.528E-01	2.071E-02	0.411
	778.90			1.644E-01	2.553E-01	4.331E-01	4.238E-02	0.380
	964.08			1.008E+00	3.989E-01	5.825E-01	5.582E-02	1.731
	1085.87			1.205E-01	3.712E-01	6.313E-01	5.565E-02	0.191
GD-153	1112.07			7.665E-02	2.709E-01	4.356E-01	3.747E-02	0.176
	1408.01			1.430E-01	1.806E-01	3.199E-01	2.673E-02	0.447
	69.67			-8.430E-01	1.439E+00	2.215E+00	1.706E-01	-0.381
	97.43	*		-3.964E-02	8.760E-02	1.209E-01	1.074E-02	-0.328
	103.18			-1.505E-01	9.466E-02	1.508E-01	1.308E-02	-0.998

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		123.07		5.110E-03	4.357E-02	7.431E-02	8.349E-03	0.069
		723.31		-9.889E-05	1.675E-01	2.363E-01	2.469E-02	0.000
		873.19		-4.795E-02	2.381E-01	3.919E-01	5.023E-02	-0.122
		996.26		-1.173E-01	3.377E-01	5.413E-01	9.675E-02	-0.217
		1004.73		-1.247E-01	1.894E-01	2.919E-01	3.561E-02	-0.427
EU-155		1274.44	*	1.030E-01	1.195E-01	2.110E-01	2.334E-02	0.488
	+	86.55		4.289E-01	1.147E-01	1.647E-01	1.547E-02	2.604
		105.31	*	9.719E-02	8.776E-02	1.556E-01	1.357E-02	0.625
TB-160	+	86.79		1.224E+00	3.270E-01	4.783E-01	4.467E-02	2.560
		197.04		-1.455E-01	5.589E-01	9.006E-01	1.004E-01	-0.162
		215.65		3.211E-01	7.570E-01	1.267E+00	1.530E-01	0.253
		298.57		1.716E-01	1.485E-01	1.892E-01	2.831E-02	0.907
		879.36	*	-1.002E-02	1.391E-01	2.321E-01	2.287E-02	-0.043
		962.29		3.295E-01	5.722E-01	9.025E-01	8.656E-02	0.365
	+	966.15		7.592E-01	3.004E-01	4.798E-01	4.593E-02	1.582
		1177.93		2.845E-01	4.023E-01	6.980E-01	5.615E-02	0.408
		1271.85		8.173E-02	7.389E-01	1.216E+00	9.971E-02	0.067
		80.57		5.000E-02	2.621E-01	3.348E-01	2.895E-02	0.149
HO-166M		184.41		4.036E-02	3.699E-02	5.930E-02	6.252E-03	0.681
		280.46		8.785E-02	9.033E-02	1.381E-01	2.134E-02	0.636
		410.95		6.339E-02	2.448E-01	4.188E-01	4.494E-02	0.151
		711.68	*	2.236E-02	6.255E-02	1.040E-01	1.002E-02	0.215
		752.31		-8.237E-02	2.862E-01	4.488E-01	4.369E-02	-0.184
TA-182		810.29		-4.860E-02	5.932E-02	8.667E-02	8.517E-03	-0.561
		67.75		4.176E-02	9.390E-02	1.511E-01	1.144E-02	0.276
		100.11		2.158E-01	1.574E-01	2.808E-01	2.465E-02	0.768
		152.43		5.921E-02	3.171E-01	5.362E-01	4.955E-02	0.110
		222.11		-5.321E-02	3.329E-01	5.415E-01	6.716E-02	-0.098
	+	1121.30		9.050E-01	3.026E-01	3.760E-01	3.204E-02	2.407
		1189.05		-2.842E-01	3.296E-01	4.945E-01	3.988E-02	-0.575
		1221.41	*	-7.189E-02	2.183E-01	3.445E-01	2.799E-02	-0.209
		1231.02		-1.847E-01	4.741E-01	7.448E-01	6.062E-02	-0.248
	+	295.96		1.480E+00	2.915E-01	3.326E-01	5.014E-02	4.451
IR-192		308.46		-2.083E-02	9.552E-02	1.508E-01	2.213E-02	-0.138
		316.51	*	3.069E-04	3.631E-02	5.814E-02	8.357E-03	0.005
		468.07		-2.631E-02	7.560E-02	1.074E-01	1.213E-02	-0.245
HG-203		70.83		-9.709E-01	1.338E+00	1.860E+00	2.906E-01	-0.522
		72.87		7.379E-01	7.641E-01	1.149E+00	1.743E-01	0.642
		279.20	*	2.728E-02	4.782E-02	7.143E-02	1.115E-02	0.382
BI-207		72.81		1.424E-01	1.555E-01	2.352E-01	1.867E-02	0.606
	+	74.97		8.013E-01	1.360E-01	2.034E-01	1.651E-02	3.940
		569.70		-2.903E-02	3.111E-02	4.705E-02	4.882E-03	-0.617
		1063.66	*	-3.873E-02	4.911E-02	7.433E-02	6.676E-03	-0.521
		1770.23		-4.269E-02	4.801E-01	6.639E-01	5.464E-02	-0.064
		404.85	*	-6.805E-01	7.795E-01	1.124E+00	5.488E-01	-0.605
PB-211		427.09		1.251E+00	1.526E+00	2.504E+00	1.170E+00	0.500
		832.01		-5.119E-01	1.020E+00	1.488E+00	7.750E-01	-0.344
RN-219	+	271.23		8.315E-01	4.018E-01	4.162E-01	6.673E-02	1.998
		401.81	*	3.106E-01	3.966E-01	6.945E-01	1.123E-01	0.447

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-1.088E-01	1.864E-01	2.597E-01	2.259E-02	-0.419
		83.79		-1.686E-02	1.233E-01	1.763E-01	1.585E-02	-0.096
		94.87		4.939E-01	4.144E-01	6.279E-01	5.657E-02	0.787
		144.24		1.573E-02	6.168E-01	1.020E+00	1.015E-01	0.015
		154.21		7.290E-02	3.406E-01	5.761E-01	5.801E-02	0.127
	+	269.46		6.460E-01	3.103E-01	3.263E-01	4.907E-02	1.980
		323.87	*	8.912E-02	6.856E-01	9.849E-01	2.029E-01	0.090
AC-227	+	338.28		7.898E+00	2.272E+00	2.626E+00	4.180E-01	3.007
		79.69		-1.650E-01	1.197E+00	1.494E+00	2.571E-01	-0.110
		235.96		2.915E-02	1.572E-01	2.320E-01	3.321E-02	0.126
		256.23	*	-1.180E-02	2.214E-01	3.585E-01	5.923E-02	-0.033
	+	299.98		2.687E+00	1.296E+00	1.591E+00	2.800E-01	1.689
		304.50		1.113E+00	1.654E+00	2.477E+00	5.059E-01	0.449
		334.37		-1.398E-01	1.900E+00	2.676E+00	5.042E-01	-0.052
TH-227		79.80		-7.665E-02	1.582E+00	1.988E+00	4.326E-01	-0.039
		235.96		2.915E-02	1.572E-01	2.320E-01	3.224E-02	0.126
		256.23	*	-1.180E-02	2.214E-01	3.585E-01	6.341E-02	-0.033
	+	299.98		2.687E+00	1.296E+00	1.591E+00	2.800E-01	1.689
		304.50		1.113E+00	1.654E+00	2.477E+00	5.059E-01	0.449
		334.37		-1.398E-01	1.900E+00	2.676E+00	5.042E-01	-0.052
		85.43		-1.393E-01	2.015E-01	2.791E-01	2.562E-02	-0.499
TH-229	+	88.47		5.436E-01	1.452E-01	1.931E-01	1.824E-02	2.816
		193.51	*	-1.471E-01	4.857E-01	7.922E-01	8.694E-02	-0.186
		210.85		1.245E+00	9.101E-01	1.432E+00	1.694E-01	0.870
		283.69	*	2.734E-02	1.352E+00	2.183E+00	4.225E-01	0.013
	+	301.36		1.726E+00	8.303E-01	9.597E-01	1.647E-01	1.799
		81.07		-1.088E-01	1.864E-01	2.597E-01	2.259E-02	-0.419
		83.79		-1.686E-02	1.233E-01	1.763E-01	1.585E-02	-0.096
PA-231		94.87		4.939E-01	4.144E-01	6.279E-01	5.657E-02	0.787
		144.24		1.573E-02	6.168E-01	1.020E+00	1.015E-01	0.015
		154.21		7.290E-02	3.406E-01	5.761E-01	5.801E-02	0.127
	+	269.46		6.460E-01	3.103E-01	3.263E-01	4.907E-02	1.980
		323.87	*	8.912E-02	6.856E-01	9.849E-01	2.029E-01	0.090
	+	338.28		7.898E+00	2.272E+00	2.626E+00	4.180E-01	3.007
	+	300.13		1.216E+00	5.939E-01	7.185E-01	1.378E-01	1.693
TH-231		311.90	*	-3.364E-02	5.909E-02	9.062E-02	1.330E-02	-0.371
		340.48		1.716E+00	8.341E-01	1.174E+00	3.070E-01	1.462
		94.67		2.512E-01	1.553E-01	2.367E-01	3.002E-02	1.062
		98.44		6.979E-02	9.388E-02	1.366E-01	7.627E-02	0.511
		111.00		-1.318E-02	1.548E-01	2.634E-01	3.164E-02	-0.050
		131.20		-4.133E-03	9.712E-02	1.475E-01	1.273E-02	-0.028
		569.50		-2.376E-01	2.772E-01	4.225E-01	4.385E-02	-0.562
PA-233		733.00		-2.691E-02	4.277E-01	5.977E-01	1.353E-01	-0.045
		880.51		5.696E-02	2.540E-01	4.352E-01	4.288E-02	0.131
		883.24		-4.615E-03	2.606E-01	4.367E-01	2.943E-01	-0.011
		926.50		5.774E-02	1.612E-01	2.774E-01	7.126E-02	0.208
		946.00	*	-2.152E-01	2.684E-01	4.055E-01	7.813E-02	-0.531
		949.00		-5.945E-02	3.909E-01	6.424E-01	6.200E-02	-0.093
		766.42		8.376E+00	1.312E+01	1.879E+01	9.573E+00	0.446
PA-234M								

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		4.060E+00	4.365E+00	7.815E+00	8.314E-01	0.520
	99.53			1.701E-01	1.410E-01	2.485E-01	2.186E-02	0.685
	103.37			-1.373E-01	8.406E-02	1.336E-01	1.158E-02	-1.028
	106.12			1.961E-02	7.102E-02	1.227E-01	1.055E-02	0.160
	117.23	*		-1.298E-01	3.303E-01	5.530E-01	4.679E-02	-0.235
	228.18			-3.673E-02	2.036E-01	3.303E-01	4.200E-02	-0.111
AM-241	+	277.60		2.229E-01	1.983E-01	2.841E-01	4.373E-02	0.785
CM-247	59.54	*		4.899E-02	1.227E-01	1.837E-01	1.444E-02	0.267
	+	278.00		9.468E-01	8.421E-01	1.248E+00	1.924E-01	0.759
CF-249	287.50			9.119E-01	1.172E+00	1.962E+00	2.998E-01	0.465
	402.40	*		2.844E-02	3.586E-02	6.311E-02	6.754E-03	0.451
	252.80			-4.351E-01	8.708E-01	1.372E+00	1.924E-01	-0.317
	333.37			8.255E-03	1.818E-01	2.765E-01	3.788E-02	0.030
CF-251	388.16	*		2.005E-02	3.881E-02	6.753E-02	7.345E-03	0.297
	177.52	*		3.752E-02	1.171E-01	1.974E-01	2.018E-02	0.190
	227.38			1.222E-01	3.295E-01	5.490E-01	6.959E-02	0.223
	285.41			-1.542E+00	2.099E+00	3.212E+00	4.924E-01	-0.480

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]G248513015      *
* Acquisition date   : 20-MAR-2010 13:30:59 Detector SN#      :              *
* Detector ID        : GAM11                      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 02:00:01.88           Half life ratio  : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513015           Analyst initials: MXR1          *
* Batch Number       : 961097              Sample Quantity : 1.2635E+02 GRAM   *
* Recovery           : 1.00000             Carrier Weight  : 0.00000         *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                                    *
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22 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	2.963E+01	3.010E+00	4.143E-01	0.000E+00
CD-109	3.651E+00	9.556E-01	1.217E+00	0.000E+00
SN-126	3.526E-01	9.230E-02	1.179E-01	0.000E+00
BA-137M	4.285E-01	9.516E-02	5.610E-02	0.000E+00
CS-137	4.527E-01	1.006E-01	5.926E-02	0.000E+00
TL-208	6.301E-01	1.049E-01	5.969E-02	0.000E+00
PB-210	2.799E+00	3.034E+00	3.410E+00	0.000E+00
BI-211	4.839E+00	7.902E-01	3.102E-01	0.000E+00
BI-212	1.870E+00	8.501E-01	7.496E-01	0.000E+00
PB-212	2.000E+00	2.994E-01	9.019E-02	0.000E+00
BI-214	1.524E+00	2.275E-01	1.092E-01	0.000E+00
PB-214	1.756E+00	3.021E-01	1.128E-01	0.000E+00
RA-224	5.175E+00	1.247E+00	9.669E-01	0.000E+00
RA-226	1.524E+00	2.275E-01	1.092E-01	0.000E+00
AC-228	1.753E+00	3.591E-01	1.878E-01	0.000E+00
RA-228	1.753E+00	3.591E-01	1.878E-01	0.000E+00
TH-228	2.000E+00	2.994E-01	9.019E-02	0.000E+00
TH-232	1.753E+00	3.591E-01	1.878E-01	0.000E+00
TH-234	2.071E+00	1.749E+00	1.622E+00	0.000E+00
U-235	5.004E-02	1.804E-01	3.177E-01	0.000E+00
NP-237	1.052E+00	3.501E-01	3.547E-01	0.000E+00
U-238	2.071E+00	1.749E+00	1.622E+00	0.000E+00
ANH-511	1.649E-01	6.337E-02	4.583E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	6.212E-02	3.218E-01	5.642E-01	0.000E+00 NOT IDENT.
NA-22	3.607E-02	4.137E-02	7.473E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.572E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	3.488E-03	3.746E-02	6.512E-02	0.000E+00 FAIL ABUN

V-48	5.843E-02	9.516E-02	1.710E-01	0.000E+00	NOT IDENT.
CR-51	1.526E-01	4.193E-01	7.146E-01	0.000E+00	NOT IDENT.
MN-54	-5.265E-03	3.467E-02	5.941E-02	0.000E+00	NOT IDENT.
CO-56	-1.410E-02	3.660E-02	6.115E-02	0.000E+00	NOT IDENT.
CO-57	-8.892E-03	2.151E-02	3.798E-02	0.000E+00	NOT IDENT.
CO-58	-4.016E-02	4.169E-02	6.167E-02	0.000E+00	NOT IDENT.
FE-59	4.397E-02	1.003E-01	1.759E-01	0.000E+00	NOT IDENT.
CO-60	-1.555E-02	3.658E-02	5.711E-02	0.000E+00	NOT IDENT.
ZN-65	-4.223E-02	9.458E-02	1.292E-01	0.000E+00	NOT IDENT.
SE-75	2.512E-02	4.723E-02	7.408E-02	0.000E+00	NOT IDENT.
SR-85	6.262E-02	4.288E-02	7.241E-02	0.000E+00	NOT IDENT.
Y-88	-1.993E-02	3.188E-02	4.612E-02	0.000E+00	NOT IDENT.
Y-91	-7.583E+00	2.422E+01	3.939E+01	0.000E+00	NOT IDENT.
NB-94	-1.501E-02	3.376E-02	5.429E-02	0.000E+00	NOT IDENT.
NB-95	1.641E-02	4.880E-02	7.330E-02	0.000E+00	NOT IDENT.
NB-95M	-5.463E-02	1.423E-01	2.121E-01	0.000E+00	NOT IDENT.
ZR-95	4.925E-02	8.010E-02	1.392E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.174E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.195E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.870E-02	3.965E-02	6.575E-02	0.000E+00	FAIL ABUN
RH-106	-1.502E-02	3.023E-01	5.085E-01	0.000E+00	NOT IDENT.
RU-106	-1.502E-02	3.023E-01	5.085E-01	0.000E+00	NOT IDENT.
AG-108M	-3.891E-04	2.537E-02	4.423E-02	0.000E+00	NOT IDENT.
AG-110M	7.022E-03	3.638E-02	5.472E-02	0.000E+00	NOT IDENT.
SN-113	6.910E-03	4.063E-02	7.227E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.245E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.642E-02	7.260E-02	1.245E-01	0.000E+00	NOT IDENT.
TE-123M	-7.396E-03	2.630E-02	4.527E-02	0.000E+00	NOT IDENT.
SB-124	-8.015E-02	6.752E-02	8.114E-02	0.000E+00	NOT IDENT.
SB-125	2.946E-02	8.136E-02	1.454E-01	0.000E+00	FAIL ABUN
TE-125M	2.853E+00	8.723E+00	1.596E+01	0.000E+00	NOT IDENT.
I-126	1.472E-01	3.765E-01	5.758E-01	0.000E+00	NOT IDENT.
SB-126	-4.950E-02	1.963E-01	3.189E-01	0.000E+00	NOT IDENT.
SB-127	-6.252E+00	5.190E+00	7.580E+00	0.000E+00	NOT IDENT.
I-131	-1.562E-02	2.236E-01	3.667E-01	0.000E+00	NOT IDENT.
TE-132	-6.035E-01	3.762E+00	6.401E+00	0.000E+00	NOT IDENT.
BA-133	-2.325E-02	4.469E-02	6.215E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.156E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.597E-02	8.597E-02	0.000E+00	NOT IDENT.
CS-135	-3.117E-02	1.589E-01	2.364E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.632E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.146E-02	1.528E-01	2.540E-01	0.000E+00	NOT IDENT.
CE-139	-3.810E-03	2.601E-02	4.544E-02	0.000E+00	NOT IDENT.
BA-140	1.510E-01	3.882E-01	6.777E-01	0.000E+00	NOT IDENT.
LA-140	-3.623E-02	1.215E-01	1.866E-01	0.000E+00	FAIL ABUN
CE-141	9.287E-03	6.441E-02	1.149E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.394E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.716E-02	1.852E-01	2.878E-01	0.000E+00	NOT IDENT.
PM-144	-3.632E-02	3.372E-02	5.035E-02	0.000E+00	NOT IDENT.
PR-144	-2.745E+00	2.533E+00	3.779E+00	0.000E+00	NOT IDENT.
PM-146	4.415E-02	4.673E-02	7.131E-02	0.000E+00	FAIL ABUN
ND-147	-4.398E-01	8.844E-01	1.456E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.054E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	6.287E-02	1.007E-01	1.560E-01	0.000E+00	FAIL ABUN
GD-153	-3.964E-02	8.585E-02	1.257E-01	0.000E+00	NOT IDENT.
EU-154	1.030E-01	1.171E-01	2.113E-01	0.000E+00	NOT IDENT.
EU-155	9.719E-02	8.600E-02	1.615E-01	0.000E+00	FAIL ABUN
TB-160	-1.002E-02	1.363E-01	2.337E-01	0.000E+00	FAIL ABUN
HO-166M	2.236E-02	6.130E-02	1.051E-01	0.000E+00	NOT IDENT.
TA-182	-7.189E-02	2.139E-01	3.453E-01	0.000E+00	FAIL ABUN
IR-192	3.069E-04	3.558E-02	5.943E-02	0.000E+00	FAIL ABUN
HG-203	2.728E-02	4.687E-02	7.316E-02	0.000E+00	NOT IDENT.
BI-207	-3.873E-02	4.813E-02	7.464E-02	0.000E+00	FAIL ABUN
PB-211	-6.805E-01	7.639E-01	1.145E+00	0.000E+00	NOT IDENT.
RN-219	3.106E-01	3.887E-01	7.075E-01	0.000E+00	FAIL ABUN
RA-223	8.912E-02	6.719E-01	1.007E+00	0.000E+00	FAIL ABUN
AC-227	-1.180E-02	2.169E-01	3.676E-01	0.000E+00	FAIL ABUN
TH-227	-1.180E-02	2.169E-01	3.676E-01	0.000E+00	FAIL ABUN
TH-229	-1.471E-01	4.760E-01	8.156E-01	0.000E+00	FAIL ABUN
PA-231	2.734E-02	1.324E+00	2.235E+00	0.000E+00	FAIL ABUN
TH-231	8.912E-02	6.719E-01	1.007E+00	0.000E+00	FAIL ABUN
PA-233	-3.364E-02	5.791E-02	9.266E-02	0.000E+00	FAIL ABUN
PA-234	-2.152E-01	2.630E-01	4.080E-01	0.000E+00	NOT IDENT.
PA-234M	4.060E+00	4.278E+00	7.856E+00	0.000E+00	NOT IDENT.
NP-239	-1.298E-01	3.237E-01	5.734E-01	0.000E+00	FAIL ABUN
AM-241	4.899E-02	1.202E-01	1.923E-01	0.000E+00	NOT IDENT.
CM-247	2.844E-02	3.514E-02	6.430E-02	0.000E+00	FAIL ABUN
CF-249	2.005E-02	3.803E-02	6.883E-02	0.000E+00	NOT IDENT.

CF-251	3.752E-02	1.147E-01	2.034E-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]G248513015.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:30:59
Sample ID          : G248513015 Sample quantity : 1.26350E+02 GRAM
Detector name      : GAM11 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.88 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	1302	10.66*	1.225E+00	2.963E+01	2.963E+01	10.37
CD-109	88.03	298	3.70*	6.792E+00	3.526E+00	3.651E+00	26.71
SN-126	64.28	110	9.60	4.276E+00	7.983E-01	7.983E-01	85.57
	86.94	298	8.90	6.792E+00	1.466E+00	1.466E+00	48.47
	87.57	298	37.00*	6.792E+00	3.526E-01	3.526E-01	26.71
BA-137M	661.66	311	89.90*	2.403E+00	4.279E-01	4.285E-01	22.66
CS-137	661.66	311	85.10*	2.403E+00	4.521E-01	4.527E-01	22.66
TL-208	277.37	51	6.60	4.673E+00	4.877E-01	4.877E-01	89.41
	583.19	480	85.00*	2.660E+00	6.301E-01	6.301E-01	16.98
	860.56	61	12.50	1.926E+00	7.510E-01	7.510E-01	49.35
PB-210	46.54	61	4.25*	1.534E+00	2.793E+00	2.799E+00	110.62
BI-211	72.87	-----	1.23	5.576E+00	-----	Line Not Found	-----
	351.06	825	12.92*	3.920E+00	4.839E+00	4.839E+00	16.66
BI-212	727.33	93	6.67*	2.220E+00	1.870E+00	1.870E+00	46.38
	785.37	25	1.10	2.081E+00	3.217E+00	3.217E+00	110.83
	1620.50	-----	1.47	1.134E+00	-----	Line Not Found	-----
PB-212	74.82	557	10.28	5.793E+00	2.779E+00	2.779E+00	19.57
	77.11	897	17.10	6.024E+00	2.587E+00	2.587E+00	13.03
	238.63	1529	43.60*	5.209E+00	2.000E+00	2.000E+00	15.27
	300.09	120	3.30	4.413E+00	2.443E+00	2.443E+00	47.71
BI-214	609.32	599	45.49*	2.569E+00	1.524E+00	1.524E+00	15.23
	1120.29	141	14.92	1.530E+00	1.840E+00	1.840E+00	34.10
	1764.49	94	15.30	1.070E+00	1.710E+00	1.710E+00	26.74
PB-214	74.82	557	5.80	5.793E+00	4.925E+00	4.925E+00	18.74
	77.11	897	9.70	6.024E+00	4.561E+00	4.561E+00	15.42
	242.00	369	7.25	5.163E+00	2.927E+00	2.927E+00	25.27
	295.22	514	18.42	4.466E+00	1.858E+00	1.858E+00	20.72
	351.93	825	35.60*	3.920E+00	1.756E+00	1.756E+00	17.55
RA-224	240.99	369	4.10*	5.163E+00	5.175E+00	5.175E+00	24.59
RA-226	609.32	599	45.49*	2.569E+00	1.524E+00	1.524E+00	15.23
	1120.29	141	14.92	1.530E+00	1.840E+00	1.840E+00	34.10
	1764.49	94	15.30	1.070E+00	1.710E+00	1.710E+00	26.74

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AC-228	338.32	305	11.27	4.037E+00	1.990E+00	1.990E+00	49.21
	911.20	279	25.80*	1.833E+00	1.753E+00	1.753E+00	20.91
	968.97	174	15.80	1.737E+00	1.883E+00	1.883E+00	33.22
RA-228	338.32	305	11.27	4.037E+00	1.990E+00	1.990E+00	49.21
	911.20	279	25.80*	1.833E+00	1.753E+00	1.753E+00	20.91
	968.97	174	15.80	1.737E+00	1.883E+00	1.883E+00	33.22
TH-228	74.82	557	10.28	5.793E+00	2.779E+00	2.779E+00	17.02
	77.11	897	17.10	6.024E+00	2.587E+00	2.587E+00	13.03
	238.63	1529	43.60*	5.209E+00	2.000E+00	2.000E+00	15.27
TH-232	300.09	120	3.30	4.413E+00	2.443E+00	2.443E+00	76.90
	338.32	305	11.27	4.037E+00	1.990E+00	1.990E+00	27.49
	911.20	279	25.80*	1.833E+00	1.753E+00	1.753E+00	20.91
TH-234	968.97	174	15.80	1.737E+00	1.883E+00	1.883E+00	33.22
	63.29	110	3.70*	4.276E+00	2.071E+00	2.071E+00	86.19
	92.59	415	4.23	7.072E+00	4.123E+00	4.123E+00	32.08
U-235	89.96	146	3.47	6.938E+00	1.802E+00	1.802E+00	49.00
	93.35	415	5.60	7.072E+00	3.114E+00	3.114E+00	32.78
	143.76	-----	10.96*	7.034E+00	-----	Line Not Found	-----
NP-237	163.33	-----	5.08	6.630E+00	-----	Line Not Found	-----
	185.72	264	57.20	6.151E+00	2.232E-01	2.232E-01	33.50
	205.31	-----	5.01	5.777E+00	-----	Line Not Found	-----
U-238	86.48	298	12.40*	6.792E+00	1.052E+00	1.052E+00	33.96
	95.86	-----	2.68	7.169E+00	-----	Line Not Found	-----
	63.29	110	3.70*	4.276E+00	2.071E+00	2.071E+00	86.19
ANH-511	92.59	415	4.23	7.072E+00	4.123E+00	4.123E+00	24.81
	511.00	164	100.00*	2.953E+00	1.649E-01	1.649E-01	39.22

Flag: "*" = Keyline

Total number of lines in spectrum 40
Number of unidentified lines 8
Number of lines tentatively identified by NID 32 80.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.963E+01	2.963E+01	0.307E+01	10.37	
CD-109	461.40D	1.04	3.526E+00	3.651E+00	0.975E+00	26.71	
SN-126	2.30E+05Y	1.00	3.526E-01	3.526E-01	0.942E-01	26.71	
BA-137M	30.08Y	1.00	4.279E-01	4.285E-01	0.971E-01	22.66	
CS-137	30.08Y	1.00	4.521E-01	4.527E-01	1.026E-01	22.66	
TL-208	1.41E+10Y	1.00	6.301E-01	6.301E-01	1.070E-01	16.98	
PB-210	22.20Y	1.00	2.793E+00	2.799E+00	3.096E+00	110.62	
BI-211	7.04E+08Y	1.00	4.839E+00	4.839E+00	0.806E+00	16.66	
BI-212	1.41E+10Y	1.00	1.870E+00	1.870E+00	0.867E+00	46.38	
PB-212	1.41E+10Y	1.00	2.000E+00	2.000E+00	0.305E+00	15.27	
BI-214	1600.00Y	1.00	1.524E+00	1.524E+00	0.232E+00	15.23	
PB-214	1600.00Y	1.00	1.756E+00	1.756E+00	0.308E+00	17.55	
RA-224	1.41E+10Y	1.00	5.175E+00	5.175E+00	1.273E+00	24.59	
RA-226	1600.00Y	1.00	1.524E+00	1.524E+00	0.232E+00	15.23	
AC-228	1.41E+10Y	1.00	1.753E+00	1.753E+00	0.366E+00	20.91	
RA-228	1.41E+10Y	1.00	1.753E+00	1.753E+00	0.366E+00	20.91	
TH-228	1.41E+10Y	1.00	2.000E+00	2.000E+00	0.305E+00	15.27	
TH-232	1.41E+10Y	1.00	1.753E+00	1.753E+00	0.366E+00	20.91	
TH-234	4.47E+09Y	1.00	2.071E+00	2.071E+00	1.785E+00	86.19	
U-235	7.04E+08Y	1.00	2.232E-01	2.232E-01	0.748E-01	33.50	K
NP-237	2.14E+06Y	1.00	1.052E+00	1.052E+00	0.357E+00	33.96	
U-238	4.47E+09Y	1.00	2.071E+00	2.071E+00	1.785E+00	86.19	
ANH-511	1.00E+09Y	1.00	1.649E-01	1.649E-01	0.647E-01	39.22	

Total Activity : 6.934E+01 6.947E+01

Grand Total Activity : 6.934E+01 6.947E+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	128.98	96	421	0.90	256.94	253	9	1.33E-02	80.1	7.29E+00	
0	209.33	116	359	0.94	417.75	413	9	1.61E-02	61.8	5.70E+00	
0	270.23	144	233	1.24	539.64	534	12	2.00E-02	45.6	4.77E+00	T
0	328.09	97	129	0.98	655.45	652	8	1.34E-02	45.9	4.13E+00	T
0	452.56	31	83	1.19	904.55	901	8	4.32E-03	****	3.24E+00	T
1	461.91	35	78	1.36	923.25	918	15	4.93E-03	****	3.19E+00	
1	463.38	98	83	1.33	926.21	918	15	1.36E-02	39.5	3.19E+00	T
0	768.70	83	41	2.15	1537.18	1532	11	1.15E-02	37.1	2.12E+00	
1	965.18	86	68	1.73	1930.32	1921	29	1.20E-02	38.4	1.74E+00	T
0	1240.72	44	111	1.03	2481.61	2474	18	6.06E-03	****	1.40E+00	
0	1378.38	61	19	2.53	2757.00	2749	15	8.50E-03	40.1	1.28E+00	
0	1588.94	41	3	1.97	3178.22	3171	12	5.63E-03	35.9	1.15E+00	
0	1848.51	26	7	1.78	3697.43	3690	13	3.54E-03	57.2	1.04E+00	

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513015.CNF;1
* Acquisition date   : 20-MAR-2010 13:30:59   Detector SN#      :
* Detector ID        : GAM11                  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 02:00:01.88          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00   Nuclide Library  : SOLID
* Sample ID          : G248513015             Analyst initials: MXR1
* Batch Number       : 961097                 Sample Quantity  : 1.26350E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22.2MS 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	2.963E+01	3.071E+00	4.145E-01	3.584E-02	71.467
CD-109	3.651E+00	9.751E-01	1.169E+00	1.108E-01	3.124
SN-126	3.526E-01	9.419E-02	1.132E-01	1.068E-02	3.114
BA-137M	4.285E-01	9.710E-02	5.547E-02	5.249E-03	7.726
CS-137	4.527E-01	1.026E-01	5.860E-02	5.553E-03	7.726
TL-208	6.301E-01	1.070E-01	5.891E-02	6.357E-03	10.696
PB-210	2.799E+00	3.096E+00	3.248E+00	2.996E-01	0.862
BI-211	4.839E+00	8.063E-01	3.039E-01	4.010E-02	15.922
BI-212	1.870E+00	8.674E-01	7.422E-01	9.805E-02	2.520
PB-212	2.000E+00	3.055E-01	8.787E-02	1.234E-02	22.765
BI-214	1.524E+00	2.321E-01	1.078E-01	1.223E-02	14.132
PB-214	1.756E+00	3.082E-01	1.105E-01	1.577E-02	15.887
RA-224	5.175E+00	1.273E+00	9.421E-01	1.262E-01	5.493
RA-226	1.524E+00	2.321E-01	1.078E-01	1.223E-02	14.132
AC-228	1.753E+00	3.665E-01	1.866E-01	2.332E-02	9.394
RA-228	1.753E+00	3.665E-01	1.866E-01	2.332E-02	9.394
TH-228	2.000E+00	3.055E-01	8.787E-02	1.234E-02	22.765
TH-232	1.753E+00	3.665E-01	1.866E-01	2.332E-02	9.394

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	2.071E+00	1.785E+00	1.551E+00	2.759E-01	1.335
U-235	2.232E-01	7.478E-02	3.073E-01	5.264E-02	0.727
NP-237	1.052E+00	3.573E-01	3.406E-01	7.814E-02	3.089
U-238	2.071E+00	1.785E+00	1.551E+00	2.759E-01	1.335
ANH-511	1.649E-01	6.466E-02	4.514E-02	4.827E-03	3.652

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	6.212E-02		3.284E-01	5.552E-01	6.283E-02	0.112
NA-22	3.607E-02		4.221E-02	7.462E-02	6.128E-03	0.483
NA-24	4.425E+02		2.332E+03	Half-Life too short		
SC-46	3.488E-03		3.823E-02	6.467E-02	6.370E-03	0.054
V-48	5.843E-02		9.710E-02	1.701E-01	1.613E-02	0.344
CR-51	1.526E-01		4.278E-01	6.991E-01	1.014E-01	0.218
MN-54	-5.265E-03		3.538E-02	5.894E-02	5.804E-03	-0.089
CO-56	-1.410E-02		3.735E-02	6.068E-02	5.979E-03	-0.232
CO-57	-8.892E-03		2.195E-02	3.665E-02	3.100E-03	-0.243
CO-58	-4.016E-02		4.254E-02	6.116E-02	6.022E-03	-0.657
FE-59	4.397E-02		1.024E-01	1.753E-01	1.647E-02	0.251
CO-60	-1.555E-02		3.732E-02	5.706E-02	4.715E-03	-0.272
ZN-65	-4.223E-02		9.651E-02	1.288E-01	1.105E-02	-0.328
SE-75	2.512E-02		4.820E-02	7.228E-02	1.063E-02	0.348
SR-85	6.262E-02		4.376E-02	7.133E-02	7.619E-03	0.878
Y-88	-1.993E-02		3.253E-02	4.630E-02	3.759E-03	-0.430
Y-91	-7.583E+00		2.472E+01	3.930E+01	3.181E+00	-0.193
NB-94	-1.501E-02		3.445E-02	5.372E-02	5.159E-03	-0.279
NB-95	1.641E-02		4.980E-02	7.263E-02	7.090E-03	0.226
NB-95M	-5.463E-02		1.452E-01	2.066E-01	2.887E-02	-0.264
ZR-95	4.925E-02		8.174E-02	1.379E-01	1.455E-02	0.357
MO-99	-1.434E-04		4.681E-05	Half-Life too short		
TC-99M	-9.224E+19		6.096E+19	Half-Life too short		
RU-103	-1.870E-02		4.046E-02	6.474E-02	9.946E-03	-0.289
RH-106	-1.502E-02		3.084E-01	5.024E-01	7.101E-02	-0.030
RU-106	-1.502E-02		3.084E-01	5.024E-01	4.983E-02	-0.030
AG-108M	-3.891E-04		2.589E-02	4.347E-02	4.783E-03	-0.009
AG-110M	7.022E-03		3.712E-02	5.410E-02	5.272E-03	0.130
SN-113	6.910E-03		4.146E-02	7.091E-02	7.713E-03	0.097
CD-115	1.237E-05		6.350E-05	Half-Life too short		
SN-117M	-2.642E-02		7.408E-02	1.206E-01	1.140E-02	-0.219
TE-123M	-7.396E-03		2.684E-02	4.386E-02	4.173E-03	-0.169
SB-124	-8.015E-02		6.890E-02	8.136E-02	7.087E-03	-0.985
SB-125	2.946E-02		8.302E-02	1.428E-01	1.557E-02	0.206
TE-125M	2.853E+00		8.901E+00	1.538E+01	1.606E+00	0.186
I-126	1.472E-01		3.842E-01	5.694E-01	5.397E-02	0.258
SB-126	-4.950E-02		2.003E-01	3.157E-01	3.049E-02	-0.157
SB-127	-6.252E+00		5.296E+00	7.499E+00	1.094E+00	-0.834

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-1.562E-02		2.281E-01	3.594E-01	4.529E-02	-0.043
TE-132	-6.035E-01		3.839E+00	6.233E+00	1.246E+00	-0.097
BA-133	-2.325E-02		4.561E-02	6.090E-02	9.698E-03	-0.382
I-133	3.019E-01		1.610E+00	Half-Life too short		
CS-134	8.858E-02		4.691E-02	8.524E-02	8.409E-03	1.039
CS-135	-3.117E-02		1.622E-01	2.307E-01	3.619E-02	-0.135
I-135	-3.091E+18		1.853E+18	Half-Life too short		
CS-136	-3.146E-02		1.559E-01	2.528E-01	2.388E-02	-0.124
CE-139	-3.810E-03		2.654E-02	4.404E-02	4.280E-03	-0.087
BA-140	1.510E-01		3.961E-01	6.680E-01	2.302E-01	0.226
LA-140	-3.623E-02		1.240E-01	1.869E-01	1.572E-02	-0.194
CE-141	9.287E-03		6.572E-02	1.112E-01	1.019E-02	0.084
CE-143	1.518E-02		4.283E-03	Half-Life too short		
CE-144	-9.716E-02		1.889E-01	2.781E-01	4.261E-02	-0.349
PM-144	-3.632E-02		3.441E-02	4.982E-02	4.778E-03	-0.729
PR-144	-2.745E+00		2.585E+00	3.739E+00	3.584E-01	-0.734
PM-146	4.415E-02	+	4.769E-02	7.012E-02	8.712E-03	0.630
ND-147	-4.398E-01		9.025E-01	1.435E+00	2.322E-01	-0.306
PM-149	-7.447E-04		5.378E-04	Half-Life too short		
EU-152	6.287E-02		1.028E-01	1.528E-01	2.071E-02	0.411
GD-153	-3.964E-02		8.760E-02	1.209E-01	1.074E-02	-0.328
EU-154	1.030E-01		1.195E-01	2.110E-01	2.334E-02	0.488
EU-155	9.719E-02		8.776E-02	1.556E-01	1.357E-02	0.625
TB-160	-1.002E-02		1.391E-01	2.321E-01	2.287E-02	-0.043
HO-166M	2.236E-02		6.255E-02	1.040E-01	1.002E-02	0.215
TA-182	-7.189E-02		2.183E-01	3.445E-01	2.799E-02	-0.209
IR-192	3.069E-04		3.631E-02	5.814E-02	8.357E-03	0.005
HG-203	2.728E-02		4.782E-02	7.143E-02	1.115E-02	0.382
BI-207	-3.873E-02		4.911E-02	7.433E-02	6.676E-03	-0.521
PB-211	-6.805E-01		7.795E-01	1.124E+00	5.488E-01	-0.605
RN-219	3.106E-01		3.966E-01	6.945E-01	1.123E-01	0.447
RA-223	8.912E-02		6.856E-01	9.849E-01	2.029E-01	0.090
AC-227	-1.180E-02		2.214E-01	3.585E-01	5.923E-02	-0.033
TH-227	-1.180E-02		2.214E-01	3.585E-01	6.341E-02	-0.033
TH-229	-1.471E-01		4.857E-01	7.922E-01	8.694E-02	-0.186
PA-231	2.734E-02		1.352E+00	2.183E+00	4.225E-01	0.013
TH-231	8.912E-02		6.856E-01	9.849E-01	2.029E-01	0.090
PA-233	-3.364E-02		5.909E-02	9.062E-02	1.330E-02	-0.371
PA-234	-2.152E-01		2.684E-01	4.055E-01	7.813E-02	-0.531
PA-234M	4.060E+00		4.365E+00	7.815E+00	8.314E-01	0.520
NP-239	-1.298E-01		3.303E-01	5.530E-01	4.679E-02	-0.235
AM-241	4.899E-02		1.227E-01	1.837E-01	1.444E-02	0.267
CM-247	2.844E-02		3.586E-02	6.311E-02	6.754E-03	0.451
CF-249	2.005E-02		3.881E-02	6.753E-02	7.345E-03	0.297
CF-251	3.752E-02		1.171E-01	1.974E-01	2.018E-02	0.190

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]G248513015          *
* Acquisition date   : 20-MAR-2010 13:30:59 Detector SN# :                  *
* Detector ID        : GAM11 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 02:00:01.88 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513015 Analyst initials: MXR1                  *
* Batch Number       : 961097 Sample Quantity : 1.2635E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22 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	2.963E+01	3.010E+00	2.073E-01	1.536E+00
CD-109	3.651E+00	9.556E-01	6.086E-01	4.876E-01
SN-126	3.526E-01	9.230E-02	5.898E-02	4.709E-02
BA-137M	4.285E-01	9.516E-02	2.807E-02	4.855E-02
CS-137	4.527E-01	1.006E-01	2.965E-02	5.130E-02
TL-208	6.301E-01	1.049E-01	2.986E-02	5.351E-02
PB-210	2.799E+00	3.034E+00	1.706E+00	1.548E+00
BI-211	4.839E+00	7.902E-01	1.552E-01	4.031E-01
BI-212	1.870E+00	8.501E-01	3.750E-01	4.337E-01
PB-212	2.000E+00	2.994E-01	4.512E-02	1.527E-01
BI-214	1.524E+00	2.275E-01	5.462E-02	1.161E-01
PB-214	1.756E+00	3.021E-01	5.645E-02	1.541E-01
RA-224	5.175E+00	1.247E+00	4.837E-01	6.364E-01
RA-226	1.524E+00	2.275E-01	5.462E-02	1.161E-01
AC-228	1.753E+00	3.591E-01	9.397E-02	1.832E-01
RA-228	1.753E+00	3.591E-01	9.397E-02	1.832E-01
TH-228	2.000E+00	2.994E-01	4.512E-02	1.527E-01
TH-232	1.753E+00	3.591E-01	9.397E-02	1.832E-01
TH-234	2.071E+00	1.749E+00	8.116E-01	8.926E-01
U-235	5.004E-02	1.804E-01	1.589E-01	9.206E-02
NP-237	1.052E+00	3.501E-01	1.774E-01	1.786E-01
U-238	2.071E+00	1.749E+00	8.116E-01	8.926E-01
ANH-511	1.649E-01	6.337E-02	2.293E-02	3.233E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	6.212E-02	3.218E-01	2.823E-01	1.642E-01 NOT IDENT.
NA-22	3.607E-02	4.137E-02	3.739E-02	2.111E-02 NOT IDENT.
NA-24	4.425E+08	4.572E+09	0.000E+00	2.332E+09 SHORT HLIF
SC-46	3.488E-03	3.746E-02	3.258E-02	1.911E-02 FAIL ABUN

V-48	5.843E-02	9.516E-02	8.556E-02	4.855E-02	NOT IDENT.
CR-51	1.526E-01	4.193E-01	3.575E-01	2.139E-01	NOT IDENT.
MN-54	-5.265E-03	3.467E-02	2.972E-02	1.769E-02	NOT IDENT.
CO-56	-1.410E-02	3.660E-02	3.059E-02	1.868E-02	NOT IDENT.
CO-57	-8.892E-03	2.151E-02	1.900E-02	1.097E-02	NOT IDENT.
CO-58	-4.016E-02	4.169E-02	3.085E-02	2.127E-02	NOT IDENT.
FE-59	4.397E-02	1.003E-01	8.802E-02	5.120E-02	NOT IDENT.
CO-60	-1.555E-02	3.658E-02	2.857E-02	1.866E-02	NOT IDENT.
ZN-65	-4.223E-02	9.458E-02	6.465E-02	4.825E-02	NOT IDENT.
SE-75	2.512E-02	4.723E-02	3.706E-02	2.410E-02	NOT IDENT.
SR-85	6.262E-02	4.288E-02	3.622E-02	2.188E-02	NOT IDENT.
Y-88	-1.993E-02	3.188E-02	2.308E-02	1.627E-02	NOT IDENT.
Y-91	-7.583E+00	2.422E+01	1.971E+01	1.236E+01	NOT IDENT.
NB-94	-1.501E-02	3.376E-02	2.716E-02	1.722E-02	NOT IDENT.
NB-95	1.641E-02	4.880E-02	3.667E-02	2.490E-02	NOT IDENT.
NB-95M	-5.463E-02	1.423E-01	1.061E-01	7.259E-02	NOT IDENT.
ZR-95	4.925E-02	8.010E-02	6.966E-02	4.087E-02	NOT IDENT.
MO-99	-1.434E+02	9.174E+01	0.000E+00	4.681E+01	SHORT HLIF
TC-99M	-9.224E+25	1.195E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.870E-02	3.965E-02	3.289E-02	2.023E-02	FAIL ABUN
RH-106	-1.502E-02	3.023E-01	2.544E-01	1.542E-01	NOT IDENT.
RU-106	-1.502E-02	3.023E-01	2.544E-01	1.542E-01	NOT IDENT.
AG-108M	-3.891E-04	2.537E-02	2.213E-02	1.294E-02	NOT IDENT.
AG-110M	7.022E-03	3.638E-02	2.737E-02	1.856E-02	NOT IDENT.
SN-113	6.910E-03	4.063E-02	3.616E-02	2.073E-02	NOT IDENT.
CD-115	1.237E+01	1.245E+02	0.000E+00	6.350E+01	SHORT HLIF
SN-117M	-2.642E-02	7.260E-02	6.229E-02	3.704E-02	NOT IDENT.
TE-123M	-7.396E-03	2.630E-02	2.265E-02	1.342E-02	NOT IDENT.
SB-124	-8.015E-02	6.752E-02	4.059E-02	3.445E-02	NOT IDENT.
SB-125	2.946E-02	8.136E-02	7.272E-02	4.151E-02	FAIL ABUN
TE-125M	2.853E+00	8.723E+00	7.984E+00	4.451E+00	NOT IDENT.
I-126	1.472E-01	3.765E-01	2.881E-01	1.921E-01	NOT IDENT.
SB-126	-4.950E-02	1.963E-01	1.595E-01	1.002E-01	NOT IDENT.
SB-127	-6.252E+00	5.190E+00	3.792E+00	2.648E+00	NOT IDENT.
I-131	-1.562E-02	2.236E-01	1.835E-01	1.141E-01	NOT IDENT.
TE-132	-6.035E-01	3.762E+00	3.203E+00	1.919E+00	NOT IDENT.
BA-133	-2.325E-02	4.469E-02	3.109E-02	2.280E-02	FAIL ABUN
I-133	3.019E+05	3.156E+06	0.000E+00	1.610E+06	SHORT HLIF
CS-134	8.858E-02	4.597E-02	4.301E-02	2.345E-02	NOT IDENT.
CS-135	-3.117E-02	1.589E-01	1.183E-01	8.109E-02	NOT IDENT.
I-135	-3.091E+24	3.632E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.146E-02	1.528E-01	1.271E-01	7.794E-02	NOT IDENT.
CE-139	-3.810E-03	2.601E-02	2.273E-02	1.327E-02	NOT IDENT.
BA-140	1.510E-01	3.882E-01	3.390E-01	1.980E-01	NOT IDENT.
LA-140	-3.623E-02	1.215E-01	9.336E-02	6.200E-02	FAIL ABUN
CE-141	9.287E-03	6.441E-02	5.750E-02	3.286E-02	NOT IDENT.
CE-143	1.518E+04	8.394E+03	0.000E+00	4.283E+03	SHORT HLIF
CE-144	-9.716E-02	1.852E-01	1.440E-01	9.447E-02	NOT IDENT.
PM-144	-3.632E-02	3.372E-02	2.519E-02	1.720E-02	NOT IDENT.
PR-144	-2.745E+00	2.533E+00	1.891E+00	1.292E+00	NOT IDENT.
PM-146	4.415E-02	4.673E-02	3.567E-02	2.384E-02	FAIL ABUN
ND-147	-4.398E-01	8.844E-01	7.285E-01	4.512E-01	FAIL ABUN
PM-149	-7.447E+02	1.054E+03	0.000E+00	5.378E+02	SHORT HLIF
EU-152	6.287E-02	1.007E-01	7.806E-02	5.138E-02	FAIL ABUN
GD-153	-3.964E-02	8.585E-02	6.287E-02	4.380E-02	NOT IDENT.
EU-154	1.030E-01	1.171E-01	1.057E-01	5.975E-02	NOT IDENT.
EU-155	9.719E-02	8.600E-02	8.081E-02	4.388E-02	FAIL ABUN
TB-160	-1.002E-02	1.363E-01	1.169E-01	6.955E-02	FAIL ABUN
HO-166M	2.236E-02	6.130E-02	5.258E-02	3.127E-02	NOT IDENT.
TA-182	-7.189E-02	2.139E-01	1.728E-01	1.091E-01	FAIL ABUN
IR-192	3.069E-04	3.558E-02	2.973E-02	1.815E-02	FAIL ABUN
HG-203	2.728E-02	4.687E-02	3.660E-02	2.391E-02	NOT IDENT.
BI-207	-3.873E-02	4.813E-02	3.734E-02	2.456E-02	FAIL ABUN
PB-211	-6.805E-01	7.639E-01	5.730E-01	3.897E-01	NOT IDENT.
RN-219	3.106E-01	3.887E-01	3.540E-01	1.983E-01	FAIL ABUN
RA-223	8.912E-02	6.719E-01	5.036E-01	3.428E-01	FAIL ABUN
AC-227	-1.180E-02	2.169E-01	1.839E-01	1.107E-01	FAIL ABUN
TH-227	-1.180E-02	2.169E-01	1.839E-01	1.107E-01	FAIL ABUN
TH-229	-1.471E-01	4.760E-01	4.080E-01	2.429E-01	FAIL ABUN
PA-231	2.734E-02	1.324E+00	1.118E+00	6.758E-01	FAIL ABUN
TH-231	8.912E-02	6.719E-01	5.036E-01	3.428E-01	FAIL ABUN
PA-233	-3.364E-02	5.791E-02	4.636E-02	2.955E-02	FAIL ABUN
PA-234	-2.152E-01	2.630E-01	2.041E-01	1.342E-01	NOT IDENT.
PA-234M	4.060E+00	4.278E+00	3.930E+00	2.183E+00	NOT IDENT.
NP-239	-1.298E-01	3.237E-01	2.869E-01	1.652E-01	FAIL ABUN
AM-241	4.899E-02	1.202E-01	9.621E-02	6.133E-02	NOT IDENT.
CM-247	2.844E-02	3.514E-02	3.217E-02	1.793E-02	FAIL ABUN
CF-249	2.005E-02	3.803E-02	3.443E-02	1.940E-02	NOT IDENT.

CF-251

3.752E-02

1.147E-01

1.018E-01

5.853E-02 NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
*****

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ENERGY	MDA COUNTS
46.54	228.4034
49.72	227.2763
57.36	0.0000
59.54	287.4807
63.29	316.6855
63.29	316.6855
64.28	320.6568
67.75	348.5825
69.67	387.7960
70.83	398.3778
72.81	353.3592
72.87	353.4142
72.87	353.4142
74.82	369.4169
74.82	369.4169
74.82	369.4169
74.97	369.5598
77.11	371.5783
77.11	371.5783
77.11	371.5783
79.69	328.4292
79.80	328.5170
80.12	285.5793
80.19	285.6283
80.57	324.3329
81.00	357.5432
81.07	357.6044
81.07	357.6044
83.79	422.9036
83.79	422.9036
85.43	424.5453
86.48	425.5901
86.55	425.6594
86.79	425.8939
86.94	426.0432
87.57	426.6642
88.03	427.1172
88.47	427.5490
89.96	429.0016
91.11	216.6995
92.59	362.3608
92.59	362.3608
93.35	272.2272
94.67	273.0177
94.87	273.1369
94.87	273.1369
95.86	286.9958
97.43	314.6001
98.44	282.7500
99.53	271.6979
100.11	264.4970
103.18	323.4688
103.37	323.5957
105.31	250.4275
106.12	283.8864
109.28	268.6235
111.00	281.5111
111.76	275.0724
116.30	274.8777
117.23	259.7725
121.12	264.2681
121.78	260.2210
122.06	266.4701
123.07	250.3286
131.20	251.7337
133.52	256.7520
136.00	256.0425

136.47	242.8039
140.51	0.0000
140.51	0.0000
143.76	267.5028
144.24	273.1548
144.24	273.1548
145.44	270.0445
152.43	249.1334
153.25	243.0071
154.21	253.5044
154.21	253.5044
156.02	262.5290
158.56	248.6928
159.00	246.0707
162.66	238.0794
163.33	228.9672
165.86	228.8791
176.60	224.7814
177.52	230.7892
181.07	0.0000
184.41	233.9305
185.72	243.0227
193.51	243.5786
197.04	230.0085
205.31	250.7150
210.85	204.6283
215.65	214.3287
222.11	201.8432
227.38	196.9859
228.16	211.3918
228.18	212.4123
235.69	249.0735
235.96	229.1566
235.96	229.1566
238.63	208.7552
238.63	208.7552
240.99	209.3004
242.00	209.5317
244.70	169.2580
252.40	191.0159
252.80	172.2997
256.23	150.9155
256.23	150.9155
260.90	0.0000
264.66	149.0667
268.22	171.8877
269.46	149.7953
269.46	149.7953
271.23	150.0621
273.65	140.8220
276.40	141.2087
277.37	191.1343
277.60	167.0798
278.00	167.1465
279.20	168.9523
279.54	169.0068
280.46	144.9948
283.69	151.9152
284.31	160.6315
285.41	171.5933
285.90	0.0000
287.50	139.4980
293.27	0.0000
295.22	127.4522
295.96	114.4592
298.57	118.0173
299.98	134.5838
299.98	134.5838
300.09	134.5988
300.09	134.5988
300.13	134.6038
301.36	154.4769
302.85	130.0048
304.50	123.6099
304.50	123.6099
304.85	123.6488
308.46	134.5321
311.90	136.0577

316.51	141.0637
319.41	131.4032
320.08	128.1373
323.87	135.8322
323.87	135.8322
328.76	122.9380
333.37	140.6717
334.37	150.6058
334.37	150.6058
338.28	143.7483
338.28	143.7483
338.32	143.7535
338.32	143.7535
338.32	143.7535
340.48	127.5742
340.55	127.5810
344.28	114.3282
351.06	124.6940
351.93	124.7827
356.01	130.9427
364.49	123.7427
366.42	0.0000
383.85	112.7109
388.16	121.9145
388.63	115.7724
391.69	105.4106
400.66	113.2508
401.81	114.2402
402.40	111.6104
404.85	148.4846
410.95	132.0748
414.70	114.4155
423.72	114.2452
427.09	91.7963
427.87	95.4831
433.94	91.3223
453.88	81.4620
463.37	88.4972
468.07	100.1696
473.00	92.8034
476.78	87.3918
477.60	88.3774
487.02	78.5053
492.35	0.0000
497.08	84.7127
511.00	93.1199
514.00	83.0955
527.90	0.0000
529.87	0.0000
531.02	95.2126
537.26	80.9356
546.56	0.0000
563.25	96.9951
569.33	93.3517
569.50	99.3195
569.70	99.3317
583.19	93.0653
600.60	83.8435
602.73	93.0388
604.72	84.2283
609.32	83.2162
609.32	83.2162
610.33	64.9824
614.28	76.5127
618.01	66.2636
621.93	77.6351
621.93	77.6351
633.25	66.7873
635.95	69.9652
636.99	86.4738
645.85	81.6906
657.76	64.9080
661.66	75.0388
661.66	75.0388
664.57	0.0000
666.33	76.8815
666.50	76.8883
677.62	71.4220

685.70	81.1898
695.00	56.1313
696.49	83.7253
696.51	83.7278
697.00	86.9273
702.65	90.3462
706.68	81.9981
711.68	75.7842
720.70	62.1649
721.93	0.0000
722.78	63.5125
722.91	63.5161
723.31	58.3761
724.19	53.2464
727.33	63.4293
733.00	72.4295
735.93	53.9627
739.50	0.0000
747.24	67.2543
752.31	79.3648
753.82	64.1855
756.73	67.5363
763.94	57.6968
765.81	66.4926
766.42	66.5111
777.92	0.0000
778.90	57.1924
783.70	77.5887
785.37	67.2772
795.86	42.0971
801.95	55.5328
810.29	71.3301
810.76	72.4585
815.77	65.9069
818.51	70.4539
832.01	68.5952
834.85	67.5494
836.80	0.0000
846.77	56.1088
856.80	59.0602
860.56	48.2279
871.09	52.0835
873.19	46.6396
875.33	0.0000
879.36	54.0853
880.51	48.6064
883.24	51.4117
884.68	58.7891
889.28	50.6118
898.04	48.0111
911.20	40.8284
911.20	40.8284
911.20	40.8284
926.50	46.6626
937.49	63.7185
944.13	35.6946
946.00	54.5180
949.00	47.9906
962.29	48.8525
964.08	39.7380
966.15	39.7667
968.97	39.8077
968.97	39.8077
968.97	39.8077
983.53	47.6355
996.26	55.5050
1001.03	45.0528
1004.73	52.7885
1037.84	51.4499
1038.76	0.0000
1048.07	53.5740
1050.41	59.4661
1050.41	59.4661
1063.66	56.7907
1085.87	47.3414
1099.45	51.5125
1112.07	38.5419
1115.54	56.4232

1120.29	37.8942
1120.29	37.8942
1120.55	37.8961
1121.30	37.9054
1131.51	0.0000
1173.23	63.8644
1177.93	56.8477
1189.05	73.3359
1204.77	72.6571
1221.41	74.0426
1231.02	66.0031
1235.36	53.3494
1238.28	65.4517
1260.41	0.0000
1271.85	43.8252
1274.44	36.5483
1274.54	36.5483
1291.59	47.2170
1298.22	0.0000
1312.11	49.5979
1332.49	36.0802
1365.19	29.9756
1368.63	0.0000
1384.29	8.9669
1408.01	24.9024
1457.56	0.0000
1460.82	15.3638
1489.16	14.7357
1505.03	27.7380
1596.21	21.5448
1620.50	19.0055
1678.03	0.0000
1690.97	16.4134
1764.49	10.0907
1764.49	10.0907
1770.23	13.4710
1771.35	11.7896
1791.20	0.0000
1836.06	14.9384

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513015

Total Uranium Activity	6.1851E+00	ug/g
Total Uranium Counting Unc.	5.2053E+00	ug/g
Total Uranium Tpu	2.6558E-06	ug/g
Total Uranium Mda	2.4157E+00	ug/g


```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513015
*  ANALYST       : MXR1            DETECTOR    : GAM11
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 13:30:59.22  SAMPLE ALQT: 126.350 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.137E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.612E+00
GROSS GAMMA MDA (pCi/GRAM ) : 4.291E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.083E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:33:16.32

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513016.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:31:27
Sample ID          : G248513016 Sample quantity : 1.20710E+02 GRAM
Detector name      : GAM12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.55 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 961097 Detector SN# :
Matrix Spike ID   : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.59*	89	339	1.05	92.39	88	8	1.24E-02	37.8	
2	0	63.16*	130	540	0.75	125.53	121	9	1.81E-02	34.1	
3	3	74.84*	392	423	1.00	148.90	144	20	5.44E-02	9.6	1.57E+00
4	3	77.12	761	355	0.95	153.47	144	20	1.06E-01	5.4	
5	4	87.21*	328	441	1.50	173.65	164	25	4.55E-02	13.1	2.47E+00
6	4	89.94	215	343	1.21	179.11	164	25	2.99E-02	16.3	
7	4	92.80*	371	392	1.32	184.84	164	25	5.15E-02	11.2	
8	0	186.06*	243	317	1.46	371.38	367	9	3.38E-02	15.6	
9	0	209.43	105	332	1.39	418.14	413	10	1.46E-02	33.9	
10	2	238.64*	1330	176	1.14	476.56	470	17	1.85E-01	3.3	3.65E+00
11	2	241.62	311	232	1.52	482.53	470	17	4.31E-02	11.3	
12	0	270.56	74	299	1.09	540.41	534	12	1.03E-02	48.0	
13	0	295.16*	497	196	1.18	589.62	584	12	6.90E-02	7.3	
14	0	299.66	41	158	1.33	598.63	596	8	5.66E-03	55.5	
15	0	328.55	134	184	1.14	656.41	651	12	1.86E-02	22.2	
16	0	338.27*	245	162	1.16	675.85	671	9	3.40E-02	11.6	
17	0	351.91*	649	176	1.05	703.13	698	11	9.02E-02	5.6	
18	0	463.18	70	157	1.12	925.68	920	12	9.77E-03	37.5	
19	0	510.92*	128	97	1.49	1021.15	1016	12	1.77E-02	21.2	
20	0	583.30*	379	124	1.20	1165.92	1159	13	5.26E-02	8.0	
21	0	609.28*	472	116	1.39	1217.87	1210	14	6.56E-02	6.8	
22	0	661.70	669	91	1.49	1322.70	1316	15	9.30E-02	4.9	
23	0	727.29	126	48	1.25	1453.88	1448	13	1.74E-02	14.5	
24	0	911.24*	267	59	1.74	1821.70	1816	13	3.71E-02	8.7	
25	0	934.05	42	30	2.28	1867.32	1862	10	5.78E-03	29.7	
26	0	965.49	41	56	1.06	1930.17	1923	10	5.72E-03	34.1	
27	0	969.05*	177	17	1.29	1937.30	1933	11	2.46E-02	9.1	
28	0	1120.52*	126	38	1.26	2240.14	2234	12	1.76E-02	13.6	
29	0	1238.50*	85	29	2.95	2476.01	2469	15	1.18E-02	18.2	
30	0	1408.08	28	15	4.02	2815.00	2807	15	3.89E-03	35.6	
31	0	1460.75*	978	27	2.11	2920.30	2910	18	1.36E-01	3.5	
32	0	1730.07	20	12	2.00	3458.60	3453	10	2.82E-03	39.2	
33	0	1764.50*	87	11	1.96	3527.42	3519	15	1.21E-02	14.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 15:33:20

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513016.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:31:27
Sample ID         : G248513016 Sample quantity : 120.71 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA12 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.55 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	+	1460.82	*	2.654E+01	3.028E+00	5.617E-01	5.095E-02	47.244
CD-109	+	88.03	*	5.144E+00	1.428E+00	1.303E+00	1.227E-01	3.947
SN-126	+	64.28		1.325E+00	9.238E-01	8.713E-01	1.267E-01	1.521
	+	86.94		2.066E+00	1.013E+00	5.290E-01	2.195E-01	3.905
	+	87.57	*	4.969E-01	1.379E-01	1.264E-01	1.185E-02	3.930
BA-137M	+	661.66	*	1.090E+00	1.452E-01	7.177E-02	6.403E-03	15.185
CS-137	+	661.66	*	1.151E+00	1.536E-01	7.582E-02	6.776E-03	15.185
TL-208		277.37		3.949E-01	4.540E-01	7.782E-01	9.773E-02	0.507
	+	583.19	*	5.867E-01	1.095E-01	6.950E-02	6.610E-03	8.441
		860.56		8.079E-01	3.779E-01	6.985E-01	7.441E-02	1.157
PB-210	+	46.54	*	6.546E+00	4.988E+00	5.633E+00	5.204E-01	1.162
BI-211		72.87		4.308E+00	4.105E+00	6.281E+00	5.029E-01	0.686
	+	351.06	*	4.439E+00	6.382E-01	3.841E-01	3.423E-02	11.557
PB-212	+	74.82		2.600E+00	5.968E-01	6.414E-01	8.142E-02	4.054
	+	77.11		2.897E+00	3.963E-01	3.687E-01	3.077E-02	7.856
	+	238.63	*	2.028E+00	2.374E-01	1.067E-01	1.033E-02	19.009
	+	300.09		9.670E-01	1.078E+00	1.411E+00	1.493E-01	0.685
BI-214	+	609.32	*	1.416E+00	2.418E-01	1.203E-01	1.249E-02	11.773
	+	1120.29		1.966E+00	5.758E-01	5.287E-01	5.792E-02	3.718
	+	1764.49		1.868E+00	5.490E-01	4.283E-01	3.625E-02	4.361
PB-214	+	74.82		4.609E+00	1.025E+00	1.137E+00	1.293E-01	4.054
	+	77.11		5.107E+00	8.157E-01	6.500E-01	7.626E-02	7.856
	+	242.00		2.875E+00	7.142E-01	6.211E-01	6.412E-02	4.628
	+	295.22		2.088E+00	3.783E-01	2.382E-01	2.583E-02	8.766
	+	351.93	*	1.611E+00	2.481E-01	1.350E-01	1.414E-02	11.932
RA-224	+	240.99	*	5.083E+00	1.228E+00	1.144E+00	9.764E-02	4.445
RA-226	+	609.32	*	1.416E+00	2.418E-01	1.203E-01	1.249E-02	11.773
	+	1120.29		1.966E+00	5.758E-01	5.287E-01	5.792E-02	3.718
	+	1764.49		1.868E+00	5.490E-01	4.283E-01	3.625E-02	4.361
AC-228	+	338.32		1.864E+00	8.890E-01	4.586E-01	1.912E-01	4.064
	+	911.20	*	1.997E+00	4.313E-01	2.473E-01	3.174E-02	8.075
	+	968.97		2.286E+00	7.042E-01	3.716E-01	9.234E-02	6.152
RA-228	+	338.32		1.864E+00	8.890E-01	4.586E-01	1.912E-01	4.064
	+	911.20	*	1.997E+00	4.313E-01	2.473E-01	3.174E-02	8.075

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		2.286E+00	7.042E-01	3.716E-01	9.234E-02	6.152
	+	74.82		2.600E+00	5.414E-01	6.414E-01	5.285E-02	4.054
	+	77.11		2.897E+00	3.963E-01	3.687E-01	3.077E-02	7.856
	+	238.63	*	2.028E+00	2.374E-01	1.067E-01	1.033E-02	19.009
	+	300.09		9.670E-01	1.225E+00	1.411E+00	8.639E-01	0.685
TH-232	+	338.32		1.864E+00	4.600E-01	4.586E-01	3.918E-02	4.064
	+	911.20	*	1.997E+00	4.313E-01	2.473E-01	3.174E-02	8.075
	+	968.97		2.286E+00	7.042E-01	3.716E-01	9.234E-02	6.152
TH-234	+	63.29	*	3.439E+00	2.423E+00	2.307E+00	4.111E-01	1.490
	+	92.59		4.668E+00	1.473E+00	1.061E+00	2.361E-01	4.399
U-235	+	89.96		3.382E+00	1.387E+00	1.320E+00	3.278E-01	2.563
	+	93.35		3.526E+00	1.138E+00	7.918E-01	1.840E-01	4.453
		143.76	*	1.333E-01	2.294E-01	3.727E-01	6.209E-02	0.358
		163.33		1.856E-01	5.137E-01	8.182E-01	1.444E-01	0.227
	+	185.72		2.415E-01	7.768E-02	7.486E-02	6.082E-03	3.226
		205.31		3.770E-02	6.155E-01	8.994E-01	1.618E-01	0.042
NP-237	+	86.48	*	1.483E+00	5.158E-01	3.815E-01	8.742E-02	3.887
		95.86		-3.790E-01	1.125E+00	1.596E+00	3.842E-01	-0.237
U-238	+	63.29	*	3.439E+00	2.423E+00	2.307E+00	4.111E-01	1.490
	+	92.59		4.668E+00	1.127E+00	1.061E+00	9.587E-02	4.399
ANH-511	+	511.00	*	1.509E-01	6.534E-02	5.491E-02	4.804E-03	2.748

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.489E-02	4.179E-01	6.651E-01	6.170E-02	-0.037
NA-22		1274.54	*	1.784E-02	5.231E-02	8.894E-02	7.585E-03	0.201
NA-24		1368.63	*	-1.522E+02	5.231E-02	Half-Life too short		
SC-46		889.28	*	-1.046E-02	5.081E-02	8.052E-02	8.249E-03	-0.130
	+	1120.55		3.551E-01	1.013E-01	1.680E-01	1.455E-02	2.114
V-48		944.13		-8.111E-01	1.409E+00	2.121E+00	2.135E-01	-0.382
		983.53	*	1.550E-02	1.083E-01	1.844E-01	1.813E-02	0.084
		1312.11		2.482E-02	1.233E-01	2.073E-01	1.797E-02	0.120
CR-51		320.08	*	-2.551E-01	5.262E-01	8.390E-01	7.615E-02	-0.304
MN-54		834.85	*	1.032E-02	4.659E-02	7.710E-02	7.695E-03	0.134
CO-56		846.77	*	1.007E-02	4.630E-02	7.679E-02	7.711E-03	0.131
		1037.84		-2.156E-01	3.458E-01	5.393E-01	5.311E-02	-0.400
	+	1238.28		3.943E-01	1.472E-01	2.298E-01	1.981E-02	1.716
		1771.35		-1.472E+00	5.264E-01	5.742E-01	4.851E-02	-2.563
CO-57		122.06	*	9.567E-03	2.852E-02	4.655E-02	3.860E-03	0.206
		136.47		7.010E-02	2.310E-01	3.746E-01	3.280E-02	0.187
CO-58		810.76	*	-8.326E-03	4.993E-02	8.008E-02	7.904E-03	-0.104
FE-59		1099.45	*	-9.831E-02	1.180E-01	1.800E-01	1.721E-02	-0.546
		1291.59		-1.385E-01	1.563E-01	2.291E-01	2.235E-02	-0.605
CO-60		1173.23		-5.385E-02	5.301E-02	7.913E-02	6.386E-03	-0.681
		1332.49	*	1.125E-02	4.311E-02	7.297E-02	6.387E-03	0.154
ZN-65		1115.54	*	-2.698E-02	1.176E-01	1.630E-01	1.423E-02	-0.165
SE-75		121.12		4.428E-02	1.519E-01	2.474E-01	2.679E-02	0.179

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		1.604E-02	4.535E-02	7.371E-02	6.009E-03	0.218
		264.66	*	-2.823E-02	5.675E-02	7.957E-02	6.906E-03	-0.355
		279.54		1.873E-02	1.314E-01	2.190E-01	1.970E-02	0.085
		400.66		3.114E-02	3.228E-01	5.255E-01	5.640E-02	0.059
SR-85		514.00	*	8.568E-02	5.621E-02	9.184E-02	8.045E-03	0.933
Y-88		898.04		-3.585E-02	5.094E-02	7.611E-02	7.854E-03	-0.471
		1836.06	*	1.118E-02	4.275E-02	7.410E-02	6.135E-03	0.151
Y-91		1204.77	*	-8.187E+00	2.838E+01	4.571E+01	3.755E+00	-0.179
NB-94		702.65	*	-5.797E-03	3.786E-02	6.155E-02	5.663E-03	-0.094
		871.09		1.548E-02	3.798E-02	6.403E-02	6.506E-03	0.242
NB-95		765.81	*	5.964E-03	5.484E-02	9.049E-02	8.684E-03	0.066
NB-95M		235.69	*	1.253E-01	1.664E-01	2.552E-01	2.498E-02	0.491
ZR-95		724.19		7.800E-02	1.224E-01	1.871E-01	1.874E-02	0.417
		756.73	*	1.857E-02	8.873E-02	1.459E-01	1.512E-02	0.127
MO-99		140.51		-4.836E-05	8.873E-02	Half-Life	too short	
		181.07		9.213E-05	8.873E-02	Half-Life	too short	
		366.42		1.707E-04	8.873E-02	Half-Life	too short	
		739.50	*	-6.033E-05	8.873E-02	Half-Life	too short	
		777.92		-2.223E-04	8.873E-02	Half-Life	too short	
TC-99M		140.51	*	-3.859E+19	8.873E-02	Half-Life	too short	
RU-103		497.08	*	2.608E-03	5.215E-02	8.822E-02	1.236E-02	0.030
	+	610.33		1.682E+01	3.594E+00	3.878E+00	6.407E-01	4.336
RH-106		621.93	*	1.461E-01	3.591E-01	6.142E-01	8.273E-02	0.238
		1050.41		-1.915E+00	2.706E+00	4.174E+00	3.895E-01	-0.459
RU-106		621.93	*	1.461E-01	3.588E-01	6.142E-01	5.494E-02	0.238
		1050.41		-1.915E+00	2.706E+00	4.174E+00	3.895E-01	-0.459
AG-108M		433.94	*	-1.640E-02	3.417E-02	5.299E-02	4.591E-03	-0.309
		614.28		3.513E-02	4.433E-02	6.920E-02	6.379E-03	0.508
		722.91		-5.593E-03	4.769E-02	6.687E-02	6.412E-03	-0.084
AG-110M		657.76	*	1.770E-02	5.154E-02	7.652E-02	7.020E-03	0.231
		677.62		7.780E-02	3.586E-01	6.024E-01	5.584E-02	0.129
		706.68		6.146E-02	2.433E-01	4.086E-01	3.865E-02	0.150
		763.94		1.060E-02	1.918E-01	3.154E-01	3.090E-02	0.034
		884.68		-7.574E-03	6.054E-02	9.674E-02	1.012E-02	-0.078
		937.49		4.317E-02	1.345E-01	1.963E-01	2.035E-02	0.220
		1384.29		-1.007E-01	1.873E-01	2.835E-01	2.559E-02	-0.355
		1505.03		-2.955E-02	3.157E-01	5.048E-01	4.455E-02	-0.059
SN-113		391.69	*	-7.086E-03	5.487E-02	8.817E-02	7.381E-03	-0.080
CD-115		260.90		8.364E-04	5.487E-02	Half-Life	too short	
		492.35		2.875E-04	5.487E-02	Half-Life	too short	
		527.90	*	-1.961E-04	5.487E-02	Half-Life	too short	
SN-117M		156.02		1.091E+00	3.996E+00	6.423E+00	5.125E-01	0.170
		158.56	*	-7.084E-02	9.605E-02	1.468E-01	1.170E-02	-0.483
TE-123M		159.00	*	-1.231E-02	3.384E-02	5.271E-02	4.232E-03	-0.234
SB-124		602.73		-2.613E-02	4.928E-02	6.665E-02	5.960E-03	-0.392
		645.85		-3.645E-01	5.811E-01	9.086E-01	8.556E-02	-0.401
		722.78		-8.143E-02	5.235E-01	7.305E-01	6.950E-02	-0.111
		1690.97	*	-2.935E-03	8.499E-02	1.409E-01	1.266E-02	-0.021
SB-125		427.87	*	1.152E-02	1.129E-01	1.832E-01	1.559E-02	0.063

---- Non-Identified Nuclides ----

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	+	463.37		7.394E-01	5.584E-01	6.655E-01	6.121E-02	1.111
		600.60		-2.586E-02	1.998E-01	3.206E-01	3.063E-02	-0.081
		635.95		-1.097E-01	3.126E-01	5.037E-01	4.845E-02	-0.218
TE-125M		109.28	*	7.881E+00	1.235E+01	2.045E+01	2.106E+00	0.385
I-126		388.63		6.409E-02	3.058E-01	5.024E-01	4.081E-02	0.128
		666.33	*	3.157E-01	4.332E-01	6.702E-01	6.001E-02	0.471
		753.82		6.509E-01	3.142E+00	5.238E+00	4.989E-01	0.124
SB-126		414.70		-8.967E-04	1.444E-01	2.330E-01	1.923E-02	-0.004
		666.50		9.595E-02	1.506E-01	2.310E-01	2.069E-02	0.415
		695.00		1.402E-02	1.408E-01	2.339E-01	2.140E-02	0.060
		697.00		-9.112E-02	4.740E-01	7.687E-01	7.043E-02	-0.119
		720.70	*	2.314E-01	2.784E-01	4.353E-01	4.056E-02	0.531
		856.80		-1.897E+00	9.808E-01	1.279E+00	1.290E-01	-1.483
SB-127		252.40		4.284E+00	2.008E+01	3.364E+01	1.424E+01	0.127
		473.00		-1.295E-01	7.964E+00	1.273E+01	1.926E+00	-0.010
		685.70	*	2.281E+00	5.995E+00	1.019E+01	1.456E+00	0.224
		783.70		1.705E+01	1.816E+01	3.155E+01	4.876E+00	0.541
I-131		80.19		-1.336E+01	1.112E+01	1.524E+01	1.333E+00	-0.877
		284.31		2.757E+00	3.410E+00	5.855E+00	5.375E-01	0.471
		364.49	*	-1.352E-01	2.750E-01	4.336E-01	3.864E-02	-0.312
		636.99		-1.480E+00	3.643E+00	5.843E+00	5.543E-01	-0.253
TE-132		49.72		-7.437E+01	1.179E+02	1.696E+02	2.235E+01	-0.438
		111.76		1.167E+02	2.163E+02	3.511E+02	4.686E+01	0.332
		116.30		1.022E+02	1.789E+02	2.948E+02	3.928E+01	0.347
		228.16	*	-7.933E-01	4.537E+00	7.530E+00	1.325E+00	-0.105
BA-133		81.00		8.072E-02	1.275E-01	1.545E-01	2.403E-02	0.523
		276.40		3.259E-01	4.532E-01	7.211E-01	1.020E-01	0.452
		302.85		-1.906E-02	1.787E-01	2.562E-01	3.355E-02	-0.074
		356.01	*	-2.410E-02	5.348E-02	7.308E-02	9.375E-03	-0.330
		383.85		1.399E-01	3.490E-01	5.800E-01	7.031E-02	0.241
I-133		529.87	*	-1.266E-02	3.490E-01	Half-Life	too short	
		875.33		-2.789E+01	3.490E-01	Half-Life	too short	
		1298.22		4.737E+01	3.490E-01	Half-Life	too short	
CS-134		563.25		-5.023E-02	3.972E-01	6.580E-01	5.903E-02	-0.076
		569.33		1.002E-01	2.232E-01	3.845E-01	3.467E-02	0.261
		604.72		-2.831E-03	4.002E-02	5.739E-02	5.144E-03	-0.049
		795.86	*	8.370E-02	6.041E-02	1.078E-01	1.059E-02	0.776
		801.95		-3.426E-01	5.235E-01	8.056E-01	7.933E-02	-0.425
		1365.19		2.944E-01	1.422E+00	2.390E+00	2.193E-01	0.123
CS-135		268.22	*	1.321E-01	2.027E-01	3.057E-01	3.053E-02	0.432
I-135		546.56		-2.254E+18	2.027E-01	Half-Life	too short	
		836.80		2.371E+19	2.027E-01	Half-Life	too short	
		1038.76		-6.881E+17	2.027E-01	Half-Life	too short	
		1131.51		2.718E+17	2.027E-01	Half-Life	too short	
		1260.41	*	-1.352E+17	2.027E-01	Half-Life	too short	
		1457.56		3.616E+20	2.027E-01	Half-Life	too short	
		1678.03		-7.869E+18	2.027E-01	Half-Life	too short	
		1791.20		-7.166E+18	2.027E-01	Half-Life	too short	
CS-136		153.25		9.634E-01	1.508E+00	2.462E+00	2.400E-01	0.391

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	176.60			-2.796E-01	8.472E-01	1.418E+00	1.276E-01	-0.197
	273.65			-5.919E-01	1.048E+00	1.465E+00	1.377E-01	-0.404
	340.55			5.243E-01	3.212E-01	4.990E-01	4.427E-02	1.051
	818.51			1.187E-01	1.272E-01	2.242E-01	2.222E-02	0.529
	1048.07	*		8.663E-02	1.708E-01	2.994E-01	2.903E-02	0.289
	1235.36			1.102E+00	1.138E+00	1.791E+00	2.073E-01	0.615
CE-139	165.86	*		2.551E-02	3.590E-02	5.866E-02	4.670E-03	0.435
BA-140	162.66			-2.508E-01	1.465E+00	2.280E+00	1.959E-01	-0.110
	304.85			-9.504E-01	2.682E+00	3.746E+00	1.097E+00	-0.254
	423.72			3.364E+00	3.786E+00	6.195E+00	2.033E+00	0.543
	537.26	*		-4.156E-01	4.889E-01	7.351E-01	2.497E-01	-0.565
LA-140	328.76	+		1.947E+00	8.812E-01	1.061E+00	9.641E-02	1.835
	487.02			-2.637E-01	2.666E-01	3.915E-01	3.596E-02	-0.674
	815.77			-4.417E-01	5.779E-01	8.664E-01	9.334E-02	-0.510
	1596.21	*		-1.139E-01	1.782E-01	2.608E-01	2.285E-02	-0.437
CE-141	145.44	*		8.250E-02	8.144E-02	1.355E-01	1.110E-02	0.609
CE-143	57.36			-1.005E-02	8.144E-02	Half-Life	too short	
	293.27	*		4.902E-02	8.144E-02	Half-Life	too short	
	664.57			4.993E-01	8.144E-02	Half-Life	too short	
	721.93			-1.903E-02	8.144E-02	Half-Life	too short	
CE-144	80.12			-3.641E+00	3.089E+00	4.239E+00	3.650E-01	-0.859
	133.52	*		-5.214E-02	2.268E-01	3.590E-01	5.387E-02	-0.145
PM-144	476.78			-4.487E-02	7.984E-02	1.220E-01	1.142E-02	-0.368
	618.01			-3.213E-04	3.779E-02	6.275E-02	5.762E-03	-0.005
	696.49	*		-2.587E-02	4.034E-02	6.289E-02	5.764E-03	-0.411
PR-144	696.51	*		-1.964E+00	3.030E+00	4.721E+00	4.324E-01	-0.416
	1489.16			-8.311E+00	1.402E+01	2.037E+01	1.798E+00	-0.408
PM-146	453.88	*		-2.546E-02	5.519E-02	8.569E-02	8.987E-03	-0.297
	633.25			1.310E+00	1.687E+00	2.838E+00	1.086E+00	0.462
	735.93			5.744E-03	1.434E-01	2.362E-01	6.679E-02	0.024
	747.24			-3.811E-02	1.083E-01	1.716E-01	2.593E-02	-0.222
ND-147	91.11	+		1.809E+00	6.171E-01	9.868E-01	9.696E-02	1.833
	319.41			-1.048E+00	6.343E+00	1.031E+01	8.901E-01	-0.102
	531.02	*		2.341E-01	1.064E+00	1.812E+00	2.729E-01	0.129
PM-149	285.90	*		4.494E-04	1.064E+00	Half-Life	too short	
EU-152	121.78			4.165E-02	8.020E-02	1.319E-01	1.268E-02	0.316
	244.70			-2.982E-01	4.152E-01	5.789E-01	4.954E-02	-0.515
	344.28	*		-4.441E-02	1.154E-01	1.842E-01	1.663E-02	-0.241
	778.90			-1.359E-01	2.978E-01	4.658E-01	4.506E-02	-0.292
	964.08	+		5.733E-01	3.949E-01	6.547E-01	6.516E-02	0.876
	1085.87			-4.457E-01	4.428E-01	6.608E-01	5.954E-02	-0.675
	1112.07			-1.010E-01	3.531E-01	5.427E-01	4.750E-02	-0.186
	1408.01	+		3.749E-01	2.688E-01	3.919E-01	3.455E-02	0.957
GD-153	69.67			5.363E-02	2.228E+00	3.283E+00	2.554E-01	0.016
	97.43	*		-8.096E-02	1.039E-01	1.545E-01	1.351E-02	-0.524
	103.18			-7.672E-02	1.270E-01	2.002E-01	1.704E-02	-0.383
EU-154	123.07			3.097E-03	5.824E-02	9.383E-02	1.040E-02	0.033
	723.31			5.267E-02	2.093E-01	3.070E-01	3.115E-02	0.172
	873.19			-2.051E-01	3.177E-01	4.775E-01	6.237E-02	-0.430

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EU-155	+	996.26		-3.516E-01	4.057E-01	6.158E-01	1.112E-01	-0.571
		1004.73		-2.386E-02	2.633E-01	4.380E-01	5.452E-02	-0.054
		1274.44	*	5.631E-02	1.483E-01	2.529E-01	2.858E-02	0.223
		86.55		6.044E-01	1.679E-01	2.179E-01	2.035E-02	2.774
		105.31	*	1.020E-01	1.229E-01	2.052E-01	1.756E-02	0.497
TB-160	+	86.79		1.725E+00	4.789E-01	6.221E-01	5.776E-02	2.773
		197.04		2.027E-01	6.583E-01	1.115E+00	9.164E-02	0.182
		215.65		-1.905E-01	9.111E-01	1.516E+00	1.269E-01	-0.126
		298.57		1.469E-01	1.635E-01	2.384E-01	2.068E-02	0.616
		879.36	*	3.966E-02	1.685E-01	2.792E-01	2.848E-02	0.142
	+	962.29		1.136E+00	7.921E-01	1.274E+00	1.269E-01	0.891
		966.15		4.317E-01	2.974E-01	6.189E-01	6.152E-02	0.698
		1177.93		-1.101E-02	4.452E-01	7.356E-01	5.953E-02	-0.015
		1271.85		2.763E-01	9.107E-01	1.543E+00	1.313E-01	0.179
		80.57		-4.466E-01	3.284E-01	4.451E-01	3.851E-02	-1.003
HO-166M		184.41		6.924E-02	4.906E-02	7.947E-02	6.447E-03	0.871
		280.46		-1.499E-01	1.013E-01	1.536E-01	1.332E-02	-0.976
		410.95		4.337E-01	3.061E-01	5.332E-01	4.388E-02	0.813
		711.68	*	-3.624E-02	6.783E-02	1.063E-01	9.842E-03	-0.341
		752.31		-1.030E-01	3.162E-01	5.030E-01	4.786E-02	-0.205
TA-182		810.29		-1.885E-02	7.064E-02	1.123E-01	1.106E-02	-0.168
		67.75		-9.070E-02	1.365E-01	2.080E-01	1.592E-02	-0.436
		100.11		-3.644E-02	2.034E-01	3.275E-01	2.824E-02	-0.111
		152.43		1.702E-01	4.143E-01	6.710E-01	5.361E-02	0.254
		222.11		-9.669E-02	4.106E-01	6.809E-01	5.734E-02	-0.142
	+	1121.30		9.667E-01	2.756E-01	4.560E-01	3.947E-02	2.120
		1189.05		-2.510E-01	3.652E-01	5.636E-01	4.589E-02	-0.445
		1221.41	*	9.450E-03	2.477E-01	4.104E-01	3.402E-02	0.023
		1231.02		-1.285E-01	6.638E-01	9.173E-01	7.642E-02	-0.140
		295.96		1.663E+00	2.818E-01	3.857E-01	3.370E-02	4.312
IR-192	+	308.46		-1.136E-02	1.158E-01	1.895E-01	1.649E-02	-0.060
		316.51	*	-1.535E-02	4.252E-02	6.834E-02	5.916E-03	-0.225
		468.07		4.139E-02	9.755E-02	1.420E-01	1.306E-02	0.292
		70.83		2.013E+00	1.894E+00	2.880E+00	4.512E-01	0.699
		72.87		1.207E+00	1.161E+00	1.760E+00	2.676E-01	0.686
HG-203		279.20	*	2.277E-02	5.047E-02	8.531E-02	7.582E-03	0.267
		72.81		2.100E-01	2.353E-01	3.582E-01	2.866E-02	0.586
		74.97		7.498E-01	1.559E-01	2.611E-01	2.133E-02	2.871
		569.70		1.099E-02	3.407E-02	5.822E-02	5.183E-03	0.189
		1063.66	*	1.224E-02	6.130E-02	1.042E-01	9.599E-03	0.118
PB-211		1770.23		-5.905E-02	6.732E-01	9.820E-01	8.298E-02	-0.060
		404.85	*	-6.449E-01	9.433E-01	1.373E+00	6.635E-01	-0.470
		427.09		1.169E-01	1.891E+00	3.058E+00	1.413E+00	0.038
		832.01		-7.874E-01	1.242E+00	1.786E+00	9.306E-01	-0.441
		727.33	*	2.983E+00	9.489E-01	1.400E+00	1.818E-01	2.131
BI-212	+	785.37		4.416E+00	3.892E+00	6.881E+00	6.682E-01	0.642
		1620.50		1.977E+00	2.223E+00	4.181E+00	3.651E-01	0.473
		271.23		4.999E-01	4.830E-01	5.198E-01	5.345E-02	0.962
		401.81	*	2.127E-01	4.853E-01	8.057E-01	1.177E-01	0.264

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		1.791E-01	2.873E-01	3.489E-01	3.036E-02	0.513
		83.79		3.018E-01	1.524E-01	2.382E-01	2.136E-02	1.267
		94.87		8.616E-01	5.756E-01	8.893E-01	7.901E-02	0.969
		144.24		3.520E-01	7.721E-01	1.252E+00	1.139E-01	0.281
		154.21		3.571E-01	4.594E-01	7.535E-01	6.682E-02	0.474
AC-227	+	269.46		3.884E-01	3.747E-01	3.966E-01	3.498E-02	0.979
		323.87	*	7.191E-01	8.599E-01	1.303E+00	2.257E-01	0.552
	+	338.28		7.396E+00	1.929E+00	2.796E+00	3.360E-01	2.645
		79.69		-2.046E+00	1.539E+00	2.046E+00	3.521E-01	-1.000
		235.96		3.917E-01	1.976E-01	3.164E-01	3.244E-02	1.238
TH-227		256.23	*	-1.408E-01	2.773E-01	4.484E-01	5.399E-02	-0.314
	+	299.98		1.064E+00	1.188E+00	1.707E+00	2.175E-01	0.623
		304.50		4.292E-01	2.032E+00	2.983E+00	4.937E-01	0.144
		334.37		1.847E+00	2.962E+00	3.323E+00	5.169E-01	0.556
		79.80		-2.607E+00	2.057E+00	2.707E+00	5.891E-01	-0.963
TH-229		235.96		3.917E-01	1.971E-01	3.164E-01	3.057E-02	1.238
		256.23	*	-1.408E-01	2.775E-01	4.484E-01	6.097E-02	-0.314
	+	299.98		1.064E+00	1.188E+00	1.707E+00	2.175E-01	0.623
		304.50		4.292E-01	2.032E+00	2.983E+00	4.937E-01	0.144
		334.37		1.847E+00	2.962E+00	3.323E+00	5.169E-01	0.556
PA-231		85.43		7.690E-01	2.652E-01	4.206E-01	3.843E-02	1.828
	+	88.47		7.660E-01	2.126E-01	2.720E-01	2.549E-02	2.817
		193.51	*	-4.796E-01	5.567E-01	9.024E-01	7.392E-02	-0.531
	+	210.85		2.296E+00	1.566E+00	1.776E+00	1.480E-01	1.293
		283.69	*	1.037E+00	1.649E+00	2.803E+00	4.097E-01	0.370
TH-231		301.36		7.201E-01	7.285E-01	1.120E+00	1.365E-01	0.643
		81.07		1.791E-01	2.873E-01	3.489E-01	3.036E-02	0.513
		83.79		3.018E-01	1.524E-01	2.382E-01	2.136E-02	1.267
		94.87		8.616E-01	5.756E-01	8.893E-01	7.901E-02	0.969
		144.24		3.520E-01	7.721E-01	1.252E+00	1.139E-01	0.281
PA-233		154.21		3.571E-01	4.594E-01	7.535E-01	6.682E-02	0.474
	+	269.46		3.884E-01	3.747E-01	3.966E-01	3.498E-02	0.979
		323.87	*	7.191E-01	8.599E-01	1.303E+00	2.257E-01	0.552
	+	338.28		7.396E+00	1.929E+00	2.796E+00	3.360E-01	2.645
	+	300.13		4.813E-01	5.388E-01	7.731E-01	1.149E-01	0.623
PA-234		311.90	*	-4.106E-02	7.270E-02	1.154E-01	1.027E-02	-0.356
		340.48		1.751E+00	9.974E-01	1.442E+00	3.466E-01	1.214
		94.67		4.822E-01	2.209E-01	3.412E-01	4.298E-02	1.413
		98.44		1.217E-01	1.207E-01	1.703E-01	9.504E-02	0.715
		111.00		-3.713E-02	2.151E-01	3.448E-01	4.100E-02	-0.108
PA-234M		131.20		-7.705E-03	1.214E-01	1.940E-01	1.579E-02	-0.040
		569.50		1.304E-01	3.049E-01	5.246E-01	4.670E-02	0.249
		733.00		1.289E-01	4.189E-01	6.199E-01	1.395E-01	0.208
		880.51		1.176E-01	3.159E-01	5.302E-01	5.411E-02	0.222
		883.24		5.602E-02	3.387E-01	5.536E-01	3.734E-01	0.101
PA-234M		926.50		-1.578E-01	2.299E-01	3.143E-01	8.121E-02	-0.502
		946.00	*	5.242E-02	3.340E-01	5.464E-01	1.064E-01	0.096
		949.00		4.898E-01	4.863E-01	8.609E-01	8.644E-02	0.569
		766.42		1.965E+00	1.365E+01	2.253E+01	1.147E+01	0.087

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		1.684E+00	5.746E+00	9.855E+00	1.077E+00	0.171
	99.53			1.089E-01	1.783E-01	2.966E-01	2.565E-02	0.367
	103.37			2.299E-02	1.108E-01	1.812E-01	1.541E-02	0.127
	106.12			5.596E-02	9.662E-02	1.599E-01	1.349E-02	0.350
	117.23	*		4.600E-02	4.372E-01	7.077E-01	5.864E-02	0.065
	228.18			-4.388E-02	2.402E-01	3.986E-01	3.373E-02	-0.110
AM-241	277.60			1.844E-01	2.063E-01	3.550E-01	3.076E-02	0.519
	59.54	*		7.420E-02	1.863E-01	2.819E-01	2.221E-02	0.263
	278.00			5.552E-01	8.728E-01	1.487E+00	1.288E-01	0.373
CM-247	287.50			-8.230E-01	1.389E+00	2.218E+00	1.924E-01	-0.371
	402.40	*		1.949E-02	4.503E-02	7.481E-02	6.110E-03	0.261
	252.80			1.972E-01	1.064E+00	1.788E+00	1.536E-01	0.110
CF-249	333.37			2.000E-01	3.017E-01	3.421E-01	2.931E-02	0.585
	388.16	*		1.447E-02	4.688E-02	7.751E-02	6.301E-03	0.187
CF-251	177.52	*		-9.213E-02	1.447E-01	2.388E-01	1.923E-02	-0.386
	227.38			7.362E-02	3.895E-01	6.575E-01	5.560E-02	0.112
	285.41			4.098E-01	2.470E+00	4.118E+00	3.572E-01	0.100

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]G248513016      *
* Acquisition date   : 20-MAR-2010 13:31:27 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 02:00:01.55             Half life ratio  : 8.000    *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513016              Analyst initials: MXR1         *
* Batch Number       : 961097                  Sample Quantity : 1.2071E+02 GRAM *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 25-FEB-2010 20:55:17 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	2.654E+01	2.967E+00	5.605E-01	0.000E+00
CD-109	5.144E+00	1.399E+00	1.345E+00	0.000E+00
SN-126	4.969E-01	1.352E-01	1.305E-01	0.000E+00
BA-137M	1.090E+00	1.423E-01	7.231E-02	0.000E+00
CS-137	1.151E+00	1.505E-01	7.639E-02	0.000E+00
TL-208	5.867E-01	1.073E-01	7.013E-02	0.000E+00
PB-210	6.546E+00	4.889E+00	5.856E+00	0.000E+00
BI-211	4.439E+00	6.255E-01	3.900E-01	0.000E+00
PB-212	2.028E+00	2.327E-01	1.088E-01	0.000E+00
BI-214	1.416E+00	2.370E-01	1.213E-01	0.000E+00
PB-214	1.611E+00	2.431E-01	1.371E-01	0.000E+00
RA-224	5.083E+00	1.203E+00	1.166E+00	0.000E+00
RA-226	1.416E+00	2.370E-01	1.213E-01	0.000E+00
AC-228	1.997E+00	4.226E-01	2.482E-01	0.000E+00
RA-228	1.997E+00	4.226E-01	2.482E-01	0.000E+00
TH-228	2.028E+00	2.327E-01	1.088E-01	0.000E+00
TH-232	1.997E+00	4.226E-01	2.482E-01	0.000E+00
TH-234	3.439E+00	2.375E+00	2.390E+00	0.000E+00
U-235	1.333E-01	2.248E-01	3.824E-01	0.000E+00
NP-237	1.483E+00	5.055E-01	3.937E-01	0.000E+00
U-238	3.439E+00	2.375E+00	2.390E+00	0.000E+00
ANH-511	1.509E-01	6.403E-02	5.550E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.489E-02	4.095E-01	6.727E-01	0.000E+00 NOT IDENT.
NA-22	1.784E-02	5.126E-02	8.889E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.953E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.046E-02	4.980E-02	8.084E-02	0.000E+00 FAIL ABUN
V-48	1.550E-02	1.062E-01	1.848E-01	0.000E+00 NOT IDENT.

CR-51	-2.551E-01	5.157E-01	8.528E-01	0.000E+00	NOT IDENT.
MN-54	1.032E-02	4.565E-02	7.746E-02	0.000E+00	NOT IDENT.
CO-56	1.007E-02	4.538E-02	7.714E-02	0.000E+00	FAIL ABUN
CO-57	9.567E-03	2.795E-02	4.786E-02	0.000E+00	NOT IDENT.
CO-58	-8.326E-03	4.893E-02	8.048E-02	0.000E+00	NOT IDENT.
FE-59	-9.831E-02	1.157E-01	1.802E-01	0.000E+00	NOT IDENT.
CO-60	1.125E-02	4.225E-02	7.289E-02	0.000E+00	NOT IDENT.
ZN-65	-2.698E-02	1.152E-01	1.632E-01	0.000E+00	NOT IDENT.
SE-75	-2.823E-02	5.561E-02	8.106E-02	0.000E+00	NOT IDENT.
SR-85	8.568E-02	5.509E-02	9.282E-02	0.000E+00	NOT IDENT.
Y-88	1.118E-02	4.190E-02	7.372E-02	0.000E+00	NOT IDENT.
Y-91	-8.187E+00	2.781E+01	4.572E+01	0.000E+00	NOT IDENT.
NB-94	-5.797E-03	3.710E-02	6.197E-02	0.000E+00	NOT IDENT.
NB-95	5.964E-03	5.375E-02	9.101E-02	0.000E+00	NOT IDENT.
NB-95M	1.253E-01	1.631E-01	2.604E-01	0.000E+00	NOT IDENT.
ZR-95	1.857E-02	8.696E-02	1.467E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.491E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.454E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.608E-03	5.110E-02	8.919E-02	0.000E+00	FAIL ABUN
RH-106	1.461E-01	3.519E-01	6.193E-01	0.000E+00	NOT IDENT.
RU-106	1.461E-01	3.516E-01	6.193E-01	0.000E+00	NOT IDENT.
AG-108M	-1.640E-02	3.349E-02	5.366E-02	0.000E+00	NOT IDENT.
AG-110M	1.770E-02	5.051E-02	7.710E-02	0.000E+00	NOT IDENT.
SN-113	-7.086E-03	5.377E-02	8.940E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.615E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-7.084E-02	9.413E-02	1.504E-01	0.000E+00	NOT IDENT.
TE-123M	-1.231E-02	3.316E-02	5.402E-02	0.000E+00	NOT IDENT.
SB-124	-2.935E-03	8.329E-02	1.404E-01	0.000E+00	NOT IDENT.
SB-125	1.152E-02	1.107E-01	1.856E-01	0.000E+00	FAIL ABUN
TE-125M	7.881E+00	1.210E+01	2.105E+01	0.000E+00	NOT IDENT.
I-126	3.157E-01	4.245E-01	6.752E-01	0.000E+00	NOT IDENT.
SB-126	2.314E-01	2.729E-01	4.381E-01	0.000E+00	NOT IDENT.
SB-127	2.281E+00	5.875E+00	1.027E+01	0.000E+00	NOT IDENT.
I-131	-1.352E-01	2.695E-01	4.400E-01	0.000E+00	NOT IDENT.
TE-132	-7.933E-01	4.446E+00	7.685E+00	0.000E+00	NOT IDENT.
BA-133	-2.410E-02	5.241E-02	7.419E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.813E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.370E-02	5.920E-02	1.084E-01	0.000E+00	NOT IDENT.
CS-135	1.321E-01	1.986E-01	3.114E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.627E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.663E-02	1.674E-01	3.000E-01	0.000E+00	NOT IDENT.
CE-139	2.551E-02	3.518E-02	6.009E-02	0.000E+00	NOT IDENT.
BA-140	-4.156E-01	4.791E-01	7.425E-01	0.000E+00	NOT IDENT.
LA-140	-1.139E-01	1.746E-01	2.599E-01	0.000E+00	FAIL ABUN
CE-141	8.250E-02	7.981E-02	1.390E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.555E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.214E-02	2.223E-01	3.687E-01	0.000E+00	NOT IDENT.
PM-144	-2.587E-02	3.953E-02	6.332E-02	0.000E+00	NOT IDENT.
PR-144	-1.964E+00	2.969E+00	4.753E+00	0.000E+00	NOT IDENT.
PM-146	-2.546E-02	5.408E-02	8.673E-02	0.000E+00	NOT IDENT.
ND-147	2.341E-01	1.042E+00	1.830E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.227E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-4.441E-02	1.131E-01	1.871E-01	0.000E+00	FAIL ABUN
GD-153	-8.096E-02	1.018E-01	1.593E-01	0.000E+00	NOT IDENT.
EU-154	5.631E-02	1.453E-01	2.528E-01	0.000E+00	NOT IDENT.
EU-155	1.020E-01	1.205E-01	2.114E-01	0.000E+00	FAIL ABUN
TB-160	3.966E-02	1.651E-01	2.804E-01	0.000E+00	FAIL ABUN
HO-166M	-3.624E-02	6.648E-02	1.070E-01	0.000E+00	NOT IDENT.
TA-182	9.450E-03	2.428E-01	4.104E-01	0.000E+00	FAIL ABUN
IR-192	-1.535E-02	4.167E-02	6.947E-02	0.000E+00	FAIL ABUN
HG-203	2.277E-02	4.946E-02	8.685E-02	0.000E+00	NOT IDENT.
BI-207	1.224E-02	6.008E-02	1.043E-01	0.000E+00	FAIL ABUN
PB-211	-6.449E-01	9.244E-01	1.392E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.299E-01	1.409E+00	0.000E+00	FAIL ABUN
RN-219	2.127E-01	4.756E-01	8.167E-01	0.000E+00	FAIL ABUN
RA-223	7.191E-01	8.427E-01	1.324E+00	0.000E+00	FAIL ABUN
AC-227	-1.408E-01	2.718E-01	4.569E-01	0.000E+00	FAIL ABUN
TH-227	-1.408E-01	2.719E-01	4.569E-01	0.000E+00	FAIL ABUN
TH-229	-4.796E-01	5.455E-01	9.227E-01	0.000E+00	FAIL ABUN
PA-231	1.037E+00	1.616E+00	2.854E+00	0.000E+00	NOT IDENT.
TH-231	7.191E-01	8.427E-01	1.324E+00	0.000E+00	FAIL ABUN
PA-233	-4.106E-02	7.124E-02	1.173E-01	0.000E+00	FAIL ABUN
PA-234	5.242E-02	3.274E-01	5.481E-01	0.000E+00	NOT IDENT.
PA-234M	1.684E+00	5.631E+00	9.879E+00	0.000E+00	NOT IDENT.
NP-239	4.600E-02	4.284E-01	7.279E-01	0.000E+00	NOT IDENT.
AM-241	7.420E-02	1.826E-01	2.922E-01	0.000E+00	NOT IDENT.
CM-247	1.949E-02	4.413E-02	7.583E-02	0.000E+00	NOT IDENT.
CF-249	1.447E-02	4.594E-02	7.860E-02	0.000E+00	NOT IDENT.

CF-251	-9.213E-02	1.418E-01	2.444E-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]G248513016.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:31:27
Sample ID          : G248513016 Sample quantity : 1.20710E+02 GRAM
Detector name      : GAM12 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.55 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	978	10.66*	1.075E+00	2.654E+01	2.654E+01	11.41
CD-109	88.03	328	3.70*	5.543E+00	4.969E+00	5.144E+00	27.76
SN-126	64.28	130	9.60	3.186E+00	1.325E+00	1.325E+00	69.70
	86.94	328	8.90	5.543E+00	2.066E+00	2.066E+00	49.06
	87.57	328	37.00*	5.543E+00	4.969E-01	4.969E-01	27.76
BA-137M	661.66	669	89.90*	2.127E+00	1.088E+00	1.090E+00	13.33
CS-137	661.66	669	85.10*	2.127E+00	1.150E+00	1.151E+00	13.34
TL-208	277.37	-----	6.60	4.202E+00	-----	Line Not Found	-----
	583.19	379	85.00*	2.364E+00	5.867E-01	5.867E-01	18.67
	860.56	-----	12.50	1.694E+00	-----	Line Not Found	-----
PB-210	46.54	89	4.25*	1.001E+00	6.533E+00	6.546E+00	76.20
BI-211	72.87	-----	1.23	4.356E+00	-----	Line Not Found	-----
	351.06	649	12.92*	3.521E+00	4.439E+00	4.439E+00	14.38
PB-212	74.82	392	10.28	4.559E+00	2.600E+00	2.600E+00	22.95
	77.11	761	17.10	4.778E+00	2.897E+00	2.897E+00	13.68
	238.63	1330	43.60*	4.676E+00	2.028E+00	2.028E+00	11.71
	300.09	41	3.30	3.971E+00	9.670E-01	9.670E-01	111.45
BI-214	609.32	472	45.49*	2.280E+00	1.416E+00	1.416E+00	17.08
	1120.29	126	14.92	1.341E+00	1.966E+00	1.966E+00	29.29
	1764.49	87	15.30	9.452E-01	1.868E+00	1.868E+00	29.40
PB-214	74.82	392	5.80	4.559E+00	4.609E+00	4.609E+00	22.25
	77.11	761	9.70	4.778E+00	5.107E+00	5.107E+00	15.97
	242.00	311	7.25	4.636E+00	2.875E+00	2.875E+00	24.84
	295.22	497	18.42	4.016E+00	2.088E+00	2.088E+00	18.12
	351.93	649	35.60*	3.521E+00	1.611E+00	1.611E+00	15.40
RA-224	240.99	311	4.10*	4.636E+00	5.083E+00	5.083E+00	24.16
RA-226	609.32	472	45.49*	2.280E+00	1.416E+00	1.416E+00	17.08
	1120.29	126	14.92	1.341E+00	1.966E+00	1.966E+00	29.29
	1764.49	87	15.30	9.452E-01	1.868E+00	1.868E+00	29.40
AC-228	338.32	245	11.27	3.627E+00	1.864E+00	1.864E+00	47.70
	911.20	267	25.80*	1.611E+00	1.997E+00	1.997E+00	21.60
	968.97	177	15.80	1.525E+00	2.286E+00	2.286E+00	30.81

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	245	11.27	3.627E+00	1.864E+00	1.864E+00	47.70
	911.20	267	25.80*	1.611E+00	1.997E+00	1.997E+00	21.60
	968.97	177	15.80	1.525E+00	2.286E+00	2.286E+00	30.81
TH-228	74.82	392	10.28	4.559E+00	2.600E+00	2.600E+00	20.82
	77.11	761	17.10	4.778E+00	2.897E+00	2.897E+00	13.68
	238.63	1330	43.60*	4.676E+00	2.028E+00	2.028E+00	11.71
TH-232	300.09	41	3.30	3.971E+00	9.670E-01	9.670E-01	126.72
	338.32	245	11.27	3.627E+00	1.864E+00	1.864E+00	24.68
	911.20	267	25.80*	1.611E+00	1.997E+00	1.997E+00	21.60
TH-234	968.97	177	15.80	1.525E+00	2.286E+00	2.286E+00	30.81
	63.29	130	3.70*	3.186E+00	3.439E+00	3.439E+00	70.46
	92.59	371	4.23	5.836E+00	4.668E+00	4.668E+00	31.56
U-235	89.96	215	3.47	5.696E+00	3.382E+00	3.382E+00	41.02
	93.35	371	5.60	5.836E+00	3.526E+00	3.526E+00	32.28
	143.76	-----	10.96*	6.165E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.865E+00	-----	Line Not Found	-----
	185.72	243	57.20	5.481E+00	2.415E-01	2.415E-01	32.17
	205.31	-----	5.01	5.165E+00	-----	Line Not Found	-----
NP-237	86.48	328	12.40*	5.543E+00	1.483E+00	1.483E+00	34.79
	95.86	-----	2.68	5.962E+00	-----	Line Not Found	-----
U-238	63.29	130	3.70*	3.186E+00	3.439E+00	3.439E+00	70.46
	92.59	371	4.23	5.836E+00	4.668E+00	4.668E+00	24.14
ANH-511	511.00	128	100.00*	2.633E+00	1.509E-01	1.509E-01	43.31

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 2
Number of lines tentatively identified by NID 31 93.94%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.654E+01	2.654E+01	0.303E+01	11.41	
CD-109	461.40D	1.04	4.969E+00	5.144E+00	1.428E+00	27.76	
SN-126	2.30E+05Y	1.00	4.969E-01	4.969E-01	1.379E-01	27.76	
BA-137M	30.08Y	1.00	1.088E+00	1.090E+00	0.145E+00	13.33	
CS-137	30.08Y	1.00	1.150E+00	1.151E+00	0.154E+00	13.34	
TL-208	1.41E+10Y	1.00	5.867E-01	5.867E-01	1.095E-01	18.67	
PB-210	22.20Y	1.00	6.533E+00	6.546E+00	4.988E+00	76.20	
BI-211	7.04E+08Y	1.00	4.439E+00	4.439E+00	0.638E+00	14.38	
PB-212	1.41E+10Y	1.00	2.028E+00	2.028E+00	0.237E+00	11.71	
BI-214	1600.00Y	1.00	1.416E+00	1.416E+00	0.242E+00	17.08	
PB-214	1600.00Y	1.00	1.611E+00	1.611E+00	0.248E+00	15.40	
RA-224	1.41E+10Y	1.00	5.083E+00	5.083E+00	1.228E+00	24.16	
RA-226	1600.00Y	1.00	1.416E+00	1.416E+00	0.242E+00	17.08	
AC-228	1.41E+10Y	1.00	1.997E+00	1.997E+00	0.431E+00	21.60	
RA-228	1.41E+10Y	1.00	1.997E+00	1.997E+00	0.431E+00	21.60	
TH-228	1.41E+10Y	1.00	2.028E+00	2.028E+00	0.237E+00	11.71	
TH-232	1.41E+10Y	1.00	1.997E+00	1.997E+00	0.431E+00	21.60	
TH-234	4.47E+09Y	1.00	3.439E+00	3.439E+00	2.423E+00	70.46	
U-235	7.04E+08Y	1.00	2.415E-01	2.415E-01	0.777E-01	32.17	K
NP-237	2.14E+06Y	1.00	1.483E+00	1.483E+00	0.516E+00	34.79	
U-238	4.47E+09Y	1.00	3.439E+00	3.439E+00	2.423E+00	70.46	
ANH-511	1.00E+09Y	1.00	1.509E-01	1.509E-01	0.653E-01	43.31	

Total Activity : 7.413E+01 7.432E+01

Grand Total Activity : 7.413E+01 7.432E+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	209.43	105	332	1.39	418.14	413	10	1.46E-02	67.7	5.10E+00	T
0	270.56	74	299	1.09	540.41	534	12	1.03E-02	96.1	4.28E+00	T
0	328.55	134	184	1.14	656.41	651	12	1.86E-02	44.3	3.71E+00	T
0	463.18	70	157	1.12	925.68	920	12	9.77E-03	74.9	2.85E+00	T
0	727.29	126	48	1.25	1453.88	1448	13	1.74E-02	29.0	1.96E+00	T
0	934.05	42	30	2.28	1867.32	1862	10	5.78E-03	59.5	1.58E+00	
0	965.49	41	56	1.06	1930.17	1923	10	5.72E-03	68.2	1.53E+00	T
0	1238.50	85	29	2.95	2476.01	2469	15	1.18E-02	36.3	1.23E+00	T
0	1408.08	28	15	4.02	2815.00	2807	15	3.89E-03	71.2	1.11E+00	T
0	1730.07	20	12	2.00	3458.60	3453	10	2.82E-03	78.4	9.56E-01	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513016.CNF;1
* Acquisition date   : 20-MAR-2010 13:31:27  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 02:00:01.55             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513016             Analyst initials: MXR1
* Batch Number       : 961097                 Sample Quantity : 1.20710E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 25-FEB-2010 20:55:17.3MS 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	2.654E+01	3.028E+00	5.617E-01	5.095E-02	47.244
CD-109	5.144E+00	1.428E+00	1.303E+00	1.227E-01	3.947
SN-126	4.969E-01	1.379E-01	1.264E-01	1.185E-02	3.930
BA-137M	1.090E+00	1.452E-01	7.177E-02	6.403E-03	15.185
CS-137	1.151E+00	1.536E-01	7.582E-02	6.776E-03	15.185
TL-208	5.867E-01	1.095E-01	6.950E-02	6.610E-03	8.441
PB-210	6.546E+00	4.988E+00	5.633E+00	5.204E-01	1.162
BI-211	4.439E+00	6.382E-01	3.841E-01	3.423E-02	11.557
PB-212	2.028E+00	2.374E-01	1.067E-01	1.033E-02	19.009
BI-214	1.416E+00	2.418E-01	1.203E-01	1.249E-02	11.773
PB-214	1.611E+00	2.481E-01	1.350E-01	1.414E-02	11.932
RA-224	5.083E+00	1.228E+00	1.144E+00	9.764E-02	4.445
RA-226	1.416E+00	2.418E-01	1.203E-01	1.249E-02	11.773
AC-228	1.997E+00	4.313E-01	2.473E-01	3.174E-02	8.075
RA-228	1.997E+00	4.313E-01	2.473E-01	3.174E-02	8.075
TH-228	2.028E+00	2.374E-01	1.067E-01	1.033E-02	19.009
TH-232	1.997E+00	4.313E-01	2.473E-01	3.174E-02	8.075
TH-234	3.439E+00	2.423E+00	2.307E+00	4.111E-01	1.490

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.415E-01	7.768E-02	3.727E-01	6.209E-02	0.648
NP-237	1.483E+00	5.158E-01	3.815E-01	8.742E-02	3.887
U-238	3.439E+00	2.423E+00	2.307E+00	4.111E-01	1.490
ANH-511	1.509E-01	6.534E-02	5.491E-02	4.804E-03	2.748

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.489E-02		4.179E-01	6.651E-01	6.170E-02	-0.037
NA-22	1.784E-02		5.231E-02	8.894E-02	7.585E-03	0.201
NA-24	-1.522E+02		3.037E+03	Half-Life too short		
SC-46	-1.046E-02		5.081E-02	8.052E-02	8.249E-03	-0.130
V-48	1.550E-02		1.083E-01	1.844E-01	1.813E-02	0.084
CR-51	-2.551E-01		5.262E-01	8.390E-01	7.615E-02	-0.304
MN-54	1.032E-02		4.659E-02	7.710E-02	7.695E-03	0.134
CO-56	1.007E-02		4.630E-02	7.297E-02	7.711E-03	0.131
CO-57	9.567E-03		2.852E-02	4.655E-02	3.860E-03	0.206
CO-58	-8.326E-03		4.993E-02	8.008E-02	7.904E-03	-0.104
FE-59	-9.831E-02		1.180E-01	1.800E-01	1.721E-02	-0.546
CO-60	1.125E-02		4.311E-02	7.297E-02	6.387E-03	0.154
ZN-65	-2.698E-02		1.176E-01	1.630E-01	1.423E-02	-0.165
SE-75	-2.823E-02		5.675E-02	7.957E-02	6.906E-03	-0.355
SR-85	8.568E-02		5.621E-02	9.184E-02	8.045E-03	0.933
Y-88	1.118E-02		4.275E-02	7.410E-02	6.135E-03	0.151
Y-91	-8.187E+00		2.838E+01	4.571E+01	3.755E+00	-0.179
NB-94	-5.797E-03		3.786E-02	6.155E-02	5.663E-03	-0.094
NB-95	5.964E-03		5.484E-02	9.049E-02	8.684E-03	0.066
NB-95M	1.253E-01		1.664E-01	2.552E-01	2.498E-02	0.491
ZR-95	1.857E-02		8.873E-02	1.459E-01	1.512E-02	0.127
MO-99	-6.033E-05		4.842E-05	Half-Life too short		
TC-99M	-3.859E+19		7.416E+19	Half-Life too short		
RU-103	2.608E-03		5.215E-02	8.822E-02	1.236E-02	0.030
RH-106	1.461E-01		3.591E-01	6.142E-01	8.273E-02	0.238
RU-106	1.461E-01		3.588E-01	6.142E-01	5.494E-02	0.238
AG-108M	-1.640E-02		3.417E-02	5.299E-02	4.591E-03	-0.309
AG-110M	1.770E-02		5.154E-02	7.652E-02	7.020E-03	0.231
SN-113	-7.086E-03		5.487E-02	8.817E-02	7.381E-03	-0.080
CD-115	-1.961E-04		8.242E-05	Half-Life too short		
SN-117M	-7.084E-02		9.605E-02	1.468E-01	1.170E-02	-0.483
TE-123M	-1.231E-02		3.384E-02	5.271E-02	4.232E-03	-0.234
SB-124	-2.935E-03		8.499E-02	1.409E-01	1.266E-02	-0.021
SB-125	1.152E-02		1.129E-01	1.832E-01	1.559E-02	0.063
TE-125M	7.881E+00		1.235E+01	2.045E+01	2.106E+00	0.385
I-126	3.157E-01		4.332E-01	6.702E-01	6.001E-02	0.471
SB-126	2.314E-01		2.784E-01	4.353E-01	4.056E-02	0.531
SB-127	2.281E+00		5.995E+00	1.019E+01	1.456E+00	0.224
I-131	-1.352E-01		2.750E-01	4.336E-01	3.864E-02	-0.312

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	-7.933E-01		4.537E+00	7.530E+00	1.325E+00	-0.105
BA-133	-2.410E-02		5.348E-02	7.308E-02	9.375E-03	-0.330
I-133	-1.266E-02		1.945E+00	Half-Life too short		
CS-134	8.370E-02		6.041E-02	1.078E-01	1.059E-02	0.776
CS-135	1.321E-01		2.027E-01	3.057E-01	3.053E-02	0.432
I-135	-1.352E+17		1.851E+18	Half-Life too short		
CS-136	8.663E-02		1.708E-01	2.994E-01	2.903E-02	0.289
CE-139	2.551E-02		3.590E-02	5.866E-02	4.670E-03	0.435
BA-140	-4.156E-01		4.889E-01	7.351E-01	2.497E-01	-0.565
LA-140	-1.139E-01		1.782E-01	2.608E-01	2.285E-02	-0.437
CE-141	8.250E-02		8.144E-02	1.355E-01	1.110E-02	0.609
CE-143	4.902E-02		7.934E-03	Half-Life too short		
CE-144	-5.214E-02		2.268E-01	3.590E-01	5.387E-02	-0.145
PM-144	-2.587E-02		4.034E-02	6.289E-02	5.764E-03	-0.411
PR-144	-1.964E+00		3.030E+00	4.721E+00	4.324E-01	-0.416
PM-146	-2.546E-02		5.519E-02	8.569E-02	8.987E-03	-0.297
ND-147	2.341E-01		1.064E+00	1.812E+00	2.729E-01	0.129
PM-149	4.494E-04		6.260E-04	Half-Life too short		
EU-152	-4.441E-02		1.154E-01	1.842E-01	1.663E-02	-0.241
GD-153	-8.096E-02		1.039E-01	1.545E-01	1.351E-02	-0.524
EU-154	5.631E-02		1.483E-01	2.529E-01	2.858E-02	0.223
EU-155	1.020E-01		1.229E-01	2.052E-01	1.756E-02	0.497
TB-160	3.966E-02		1.685E-01	2.792E-01	2.848E-02	0.142
HO-166M	-3.624E-02		6.783E-02	1.063E-01	9.842E-03	-0.341
TA-182	9.450E-03		2.477E-01	4.104E-01	3.402E-02	0.023
IR-192	-1.535E-02		4.252E-02	6.834E-02	5.916E-03	-0.225
HG-203	2.277E-02		5.047E-02	8.531E-02	7.582E-03	0.267
BI-207	1.224E-02		6.130E-02	1.042E-01	9.599E-03	0.118
PB-211	-6.449E-01		9.433E-01	1.373E+00	6.635E-01	-0.470
BI-212	2.983E+00	+	9.489E-01	1.400E+00	1.818E-01	2.131
RN-219	2.127E-01		4.853E-01	8.057E-01	1.177E-01	0.264
RA-223	7.191E-01		8.599E-01	1.303E+00	2.257E-01	0.552
AC-227	-1.408E-01		2.773E-01	4.484E-01	5.399E-02	-0.314
TH-227	-1.408E-01		2.775E-01	4.484E-01	6.097E-02	-0.314
TH-229	-4.796E-01		5.567E-01	9.024E-01	7.392E-02	-0.531
PA-231	1.037E+00		1.649E+00	2.803E+00	4.097E-01	0.370
TH-231	7.191E-01		8.599E-01	1.303E+00	2.257E-01	0.552
PA-233	-4.106E-02		7.270E-02	1.154E-01	1.027E-02	-0.356
PA-234	5.242E-02		3.340E-01	5.464E-01	1.064E-01	0.096
PA-234M	1.684E+00		5.746E+00	9.855E+00	1.077E+00	0.171
NP-239	4.600E-02		4.372E-01	7.077E-01	5.864E-02	0.065
AM-241	7.420E-02		1.863E-01	2.819E-01	2.221E-02	0.263
CM-247	1.949E-02		4.503E-02	7.481E-02	6.110E-03	0.261
CF-249	1.447E-02		4.688E-02	7.751E-02	6.301E-03	0.187
CF-251	-9.213E-02		1.447E-01	2.388E-01	1.923E-02	-0.386

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]G248513016          *
* Acquisition date   : 20-MAR-2010 13:31:27 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 02:00:01.55 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513016 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.2071E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 25-FEB-2010 20:55:17 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	2.654E+01	2.967E+00	2.804E-01	1.514E+00
CD-109	5.144E+00	1.399E+00	6.730E-01	7.140E-01
SN-126	4.969E-01	1.352E-01	6.529E-02	6.897E-02
BA-137M	1.090E+00	1.423E-01	3.618E-02	7.262E-02
CS-137	1.151E+00	1.505E-01	3.822E-02	7.678E-02
TL-208	5.867E-01	1.073E-01	3.509E-02	5.476E-02
PB-210	6.546E+00	4.889E+00	2.930E+00	2.494E+00
BI-211	4.439E+00	6.255E-01	1.951E-01	3.191E-01
PB-212	2.028E+00	2.327E-01	5.444E-02	1.187E-01
BI-214	1.416E+00	2.370E-01	6.069E-02	1.209E-01
PB-214	1.611E+00	2.431E-01	6.858E-02	1.240E-01
RA-224	5.083E+00	1.203E+00	5.835E-01	6.140E-01
RA-226	1.416E+00	2.370E-01	6.069E-02	1.209E-01
AC-228	1.997E+00	4.226E-01	1.242E-01	2.156E-01
RA-228	1.997E+00	4.226E-01	1.242E-01	2.156E-01
TH-228	2.028E+00	2.327E-01	5.444E-02	1.187E-01
TH-232	1.997E+00	4.226E-01	1.242E-01	2.156E-01
TH-234	3.439E+00	2.375E+00	1.196E+00	1.212E+00
U-235	1.333E-01	2.248E-01	1.913E-01	1.147E-01
NP-237	1.483E+00	5.055E-01	1.970E-01	2.579E-01
U-238	3.439E+00	2.375E+00	1.196E+00	1.212E+00
ANH-511	1.509E-01	6.403E-02	2.776E-02	3.267E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.489E-02	4.095E-01	3.366E-01	2.089E-01 NOT IDENT.
NA-22	1.784E-02	5.126E-02	4.447E-02	2.616E-02 NOT IDENT.
NA-24	-1.522E+08	5.953E+09	0.000E+00	3.037E+09 SHORT HLIF
SC-46	-1.046E-02	4.980E-02	4.044E-02	2.541E-02 FAIL ABUN
V-48	1.550E-02	1.062E-01	9.248E-02	5.416E-02 NOT IDENT.

CR-51	-2.551E-01	5.157E-01	4.266E-01	2.631E-01	NOT IDENT.
MN-54	1.032E-02	4.565E-02	3.876E-02	2.329E-02	NOT IDENT.
CO-56	1.007E-02	4.538E-02	3.859E-02	2.315E-02	FAIL ABUN
CO-57	9.567E-03	2.795E-02	2.394E-02	1.426E-02	NOT IDENT.
CO-58	-8.326E-03	4.893E-02	4.027E-02	2.496E-02	NOT IDENT.
FE-59	-9.831E-02	1.157E-01	9.016E-02	5.902E-02	NOT IDENT.
CO-60	1.125E-02	4.225E-02	3.647E-02	2.155E-02	NOT IDENT.
ZN-65	-2.698E-02	1.152E-01	8.166E-02	5.880E-02	NOT IDENT.
SE-75	-2.823E-02	5.561E-02	4.055E-02	2.837E-02	NOT IDENT.
SR-85	8.568E-02	5.509E-02	4.644E-02	2.811E-02	NOT IDENT.
Y-88	1.118E-02	4.190E-02	3.688E-02	2.138E-02	NOT IDENT.
Y-91	-8.187E+00	2.781E+01	2.287E+01	1.419E+01	NOT IDENT.
NB-94	-5.797E-03	3.710E-02	3.100E-02	1.893E-02	NOT IDENT.
NB-95	5.964E-03	5.375E-02	4.553E-02	2.742E-02	NOT IDENT.
NB-95M	1.253E-01	1.631E-01	1.303E-01	8.320E-02	NOT IDENT.
ZR-95	1.857E-02	8.696E-02	7.342E-02	4.437E-02	NOT IDENT.
MO-99	-6.033E+01	9.491E+01	0.000E+00	4.842E+01	SHORT HLIF
TC-99M	-3.859E+25	1.454E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.608E-03	5.110E-02	4.462E-02	2.607E-02	FAIL ABUN
RH-106	1.461E-01	3.519E-01	3.098E-01	1.795E-01	NOT IDENT.
RU-106	1.461E-01	3.516E-01	3.098E-01	1.794E-01	NOT IDENT.
AG-108M	-1.640E-02	3.349E-02	2.685E-02	1.708E-02	NOT IDENT.
AG-110M	1.770E-02	5.051E-02	3.857E-02	2.577E-02	NOT IDENT.
SN-113	-7.086E-03	5.377E-02	4.472E-02	2.743E-02	NOT IDENT.
CD-115	-1.961E+02	1.615E+02	0.000E+00	8.242E+01	SHORT HLIF
SN-117M	-7.084E-02	9.413E-02	7.525E-02	4.803E-02	NOT IDENT.
TE-123M	-1.231E-02	3.316E-02	2.703E-02	1.692E-02	NOT IDENT.
SB-124	-2.935E-03	8.329E-02	7.023E-02	4.249E-02	NOT IDENT.
SB-125	1.152E-02	1.107E-01	9.283E-02	5.647E-02	FAIL ABUN
TE-125M	7.881E+00	1.210E+01	1.053E+01	6.175E+00	NOT IDENT.
I-126	3.157E-01	4.245E-01	3.378E-01	2.166E-01	NOT IDENT.
SB-126	2.314E-01	2.729E-01	2.192E-01	1.392E-01	NOT IDENT.
SB-127	2.281E+00	5.875E+00	5.136E+00	2.998E+00	NOT IDENT.
I-131	-1.352E-01	2.695E-01	2.201E-01	1.375E-01	NOT IDENT.
TE-132	-7.933E-01	4.446E+00	3.845E+00	2.268E+00	NOT IDENT.
BA-133	-2.410E-02	5.241E-02	3.712E-02	2.674E-02	NOT IDENT.
I-133	-1.266E+04	3.813E+06	0.000E+00	1.945E+06	SHORT HLIF
CS-134	8.370E-02	5.920E-02	5.422E-02	3.021E-02	NOT IDENT.
CS-135	1.321E-01	1.986E-01	1.558E-01	1.014E-01	NOT IDENT.
I-135	-1.352E+23	3.627E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.663E-02	1.674E-01	1.501E-01	8.541E-02	NOT IDENT.
CE-139	2.551E-02	3.518E-02	3.006E-02	1.795E-02	NOT IDENT.
BA-140	-4.156E-01	4.791E-01	3.715E-01	2.445E-01	NOT IDENT.
LA-140	-1.139E-01	1.746E-01	1.300E-01	8.910E-02	FAIL ABUN
CE-141	8.250E-02	7.981E-02	6.954E-02	4.072E-02	NOT IDENT.
CE-143	4.902E+04	1.555E+04	0.000E+00	7.934E+03	SHORT HLIF
CE-144	-5.214E-02	2.223E-01	1.845E-01	1.134E-01	NOT IDENT.
PM-144	-2.587E-02	3.953E-02	3.168E-02	2.017E-02	NOT IDENT.
PR-144	-1.964E+00	2.969E+00	2.378E+00	1.515E+00	NOT IDENT.
PM-146	-2.546E-02	5.408E-02	4.339E-02	2.759E-02	NOT IDENT.
ND-147	2.341E-01	1.042E+00	9.157E-01	5.318E-01	FAIL ABUN
PM-149	4.494E+02	1.227E+03	0.000E+00	6.260E+02	SHORT HLIF
EU-152	-4.441E-02	1.131E-01	9.360E-02	5.771E-02	FAIL ABUN
GD-153	-8.096E-02	1.018E-01	7.969E-02	5.195E-02	NOT IDENT.
EU-154	5.631E-02	1.453E-01	1.265E-01	7.414E-02	NOT IDENT.
EU-155	1.020E-01	1.205E-01	1.057E-01	6.146E-02	FAIL ABUN
TB-160	3.966E-02	1.651E-01	1.403E-01	8.425E-02	FAIL ABUN
HO-166M	-3.624E-02	6.648E-02	5.353E-02	3.392E-02	NOT IDENT.
TA-182	9.450E-03	2.428E-01	2.053E-01	1.239E-01	FAIL ABUN
IR-192	-1.535E-02	4.167E-02	3.476E-02	2.126E-02	FAIL ABUN
HG-203	2.277E-02	4.946E-02	4.345E-02	2.523E-02	NOT IDENT.
BI-207	1.224E-02	6.008E-02	5.220E-02	3.065E-02	FAIL ABUN
PB-211	-6.449E-01	9.244E-01	6.964E-01	4.717E-01	NOT IDENT.
BI-212	2.983E+00	9.299E-01	7.050E-01	4.745E-01	FAIL ABUN
RN-219	2.127E-01	4.756E-01	4.086E-01	2.427E-01	FAIL ABUN
RA-223	7.191E-01	8.427E-01	6.622E-01	4.299E-01	FAIL ABUN
AC-227	-1.408E-01	2.718E-01	2.286E-01	1.387E-01	FAIL ABUN
TH-227	-1.408E-01	2.719E-01	2.286E-01	1.387E-01	FAIL ABUN
TH-229	-4.796E-01	5.455E-01	4.616E-01	2.783E-01	FAIL ABUN
PA-231	1.037E+00	1.616E+00	1.428E+00	8.243E-01	NOT IDENT.
TH-231	7.191E-01	8.427E-01	6.622E-01	4.299E-01	FAIL ABUN
PA-233	-4.106E-02	7.124E-02	5.871E-02	3.635E-02	FAIL ABUN
PA-234	5.242E-02	3.274E-01	2.742E-01	1.670E-01	NOT IDENT.
PA-234M	1.684E+00	5.631E+00	4.942E+00	2.873E+00	NOT IDENT.
NP-239	4.600E-02	4.284E-01	3.642E-01	2.186E-01	NOT IDENT.
AM-241	7.420E-02	1.826E-01	1.462E-01	9.315E-02	NOT IDENT.
CM-247	1.949E-02	4.413E-02	3.794E-02	2.252E-02	NOT IDENT.
CF-249	1.447E-02	4.594E-02	3.933E-02	2.344E-02	NOT IDENT.

CF-251	-9.213E-02	1.418E-01	1.223E-01	7.233E-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
46.54	270.5259
49.72	294.6725
57.36	0.0000
59.54	332.7822
63.29	357.7844
63.29	357.7844
64.28	371.8423
67.75	404.1404
69.67	413.6149
70.83	386.3264
72.81	467.3835
72.87	467.4430
72.87	467.4430
74.82	431.7744
74.82	431.7744
74.82	431.7744
74.97	431.9123
77.11	433.8458
77.11	433.8458
77.11	433.8458
79.69	436.1405
79.80	436.2368
80.12	436.5193
80.19	436.5806
80.57	436.9135
81.00	298.6386
81.07	298.6805
81.07	298.6805
83.79	321.7404
83.79	321.7404
85.43	322.7690
86.48	323.4210
86.55	323.4643
86.79	323.6117
86.94	323.7062
87.57	324.0939
88.03	324.3775
88.47	324.6467
89.96	325.5567
91.11	326.2537
92.59	327.1429
92.59	327.1429
93.35	322.9179
94.67	336.2016
94.87	336.3214
94.87	336.3214
95.86	330.6518
97.43	346.9777
98.44	267.6237
99.53	275.4953
100.11	295.7726
103.18	315.3260
103.37	285.7901
105.31	298.4110
106.12	299.8789
109.28	297.1736
111.00	323.7351
111.76	282.2747
116.30	261.6177
117.23	261.9993
121.12	253.7748
121.78	249.6686
122.06	256.3195
123.07	274.1904
131.20	300.7179
133.52	278.4276
136.00	248.2390

136.47	251.7464
140.51	0.0000
140.51	0.0000
143.76	256.5441
144.24	263.4666
144.24	263.4666
145.44	240.2100
152.43	265.2062
153.25	273.4644
154.21	279.5104
154.21	279.5104
156.02	284.7350
158.56	293.6901
159.00	269.7466
162.66	267.5278
163.33	256.2110
165.86	248.9065
176.60	283.2142
177.52	287.0408
181.07	0.0000
184.41	302.4667
185.72	263.9877
193.51	253.7396
197.04	224.1194
205.31	254.2606
210.85	216.2802
215.65	252.4099
222.11	236.5059
227.38	215.4521
228.16	226.7693
228.18	226.7730
235.69	221.6838
235.96	221.7417
235.96	221.7417
238.63	226.2482
238.63	226.2482
240.99	226.7520
242.00	207.9434
244.70	228.1055
252.40	184.4637
252.80	185.4830
256.23	190.8279
256.23	190.8279
260.90	0.0000
264.66	172.2684
268.22	177.4330
269.46	191.1388
269.46	191.1388
271.23	211.9252
273.65	226.3178
276.40	192.9252
277.37	187.5784
277.60	185.6695
278.00	189.6233
279.20	185.9231
279.54	185.9755
280.46	228.0193
283.69	162.1955
284.31	163.2567
285.41	169.2779
285.90	0.0000
287.50	179.3727
293.27	0.0000
295.22	148.3529
295.96	148.4401
298.57	138.4683
299.98	182.1919
299.98	182.1919
300.09	163.1957
300.09	163.1957
300.13	153.6938
301.36	161.7731
302.85	166.7311
304.50	151.0491
304.50	151.0491
304.85	168.5856
308.46	151.5199
311.90	159.9243

316.51	156.4832
319.41	155.8254
320.08	165.9618
323.87	146.8730
323.87	146.8730
328.76	181.2288
333.37	125.9753
334.37	134.2015
334.37	134.2015
338.28	168.0313
338.28	168.0313
338.32	168.0364
338.32	168.0364
338.32	168.0364
340.48	160.1305
340.55	160.1400
344.28	159.7538
351.06	146.5371
351.93	136.9492
356.01	135.4862
364.49	146.4691
366.42	0.0000
383.85	125.2518
388.16	123.4984
388.63	129.8730
391.69	129.0758
400.66	131.9581
401.81	122.4718
402.40	125.7135
404.85	153.6548
410.95	117.8300
414.70	129.9195
423.72	107.9773
427.09	125.5121
427.87	123.4072
433.94	112.9994
453.88	137.4416
463.37	114.9830
468.07	99.3303
473.00	98.9422
476.78	113.6372
477.60	99.2002
487.02	122.1344
492.35	0.0000
497.08	97.3490
511.00	99.9003
514.00	101.5762
527.90	0.0000
529.87	0.0000
531.02	89.0288
537.26	103.1270
546.56	0.0000
563.25	84.8970
569.33	81.4096
569.50	81.4159
569.70	81.4244
583.19	93.2669
600.60	83.3846
602.73	77.6571
604.72	77.7289
609.32	74.3990
609.32	74.3990
610.33	84.2941
614.28	71.7023
618.01	84.2768
621.93	71.9550
621.93	71.9550
633.25	65.5778
635.95	81.1063
636.99	85.0072
645.85	74.6783
657.76	89.3705
661.66	89.8505
661.66	89.8505
664.57	0.0000
666.33	66.8719
666.50	66.8769
677.62	68.8379

685.70	61.1811
695.00	78.2632
696.49	87.2352
696.51	87.2352
697.00	78.3288
702.65	77.5201
706.68	69.6873
711.68	75.8163
720.70	55.0712
721.93	0.0000
722.78	71.8206
722.91	71.8241
723.31	63.4818
724.19	60.1626
727.33	57.2282
733.00	46.9606
735.93	49.3673
739.50	0.0000
747.24	66.7944
752.31	72.0002
753.82	63.9244
756.73	58.9190
763.94	74.3652
765.81	80.5372
766.42	83.6156
777.92	0.0000
778.90	69.6751
783.70	65.6969
785.37	63.6847
795.86	67.0313
801.95	89.9248
810.29	68.4315
810.76	65.3333
815.77	66.4938
818.51	45.7606
832.01	73.1616
834.85	72.1906
836.80	0.0000
846.77	50.4363
856.80	102.2905
860.56	49.6300
871.09	46.6340
873.19	58.3354
875.33	0.0000
879.36	48.8952
880.51	47.8521
883.24	54.2834
884.68	59.6353
889.28	61.8629
898.04	63.1196
911.20	50.5078
911.20	50.5078
911.20	50.5078
926.50	64.8105
937.49	39.7515
944.13	55.4114
946.00	46.7478
949.00	36.9999
962.29	54.6472
964.08	83.8411
966.15	27.3578
968.97	38.3359
968.97	38.3359
968.97	38.3359
983.53	46.7687
996.26	61.6879
1001.03	55.3259
1004.73	65.5456
1037.84	49.4309
1038.76	0.0000
1048.07	39.2930
1050.41	50.5547
1050.41	50.5547
1063.66	52.6367
1085.87	61.4982
1099.45	61.7442
1112.07	53.7700
1115.54	57.2583

1120.29	53.5140
1120.29	53.5140
1120.55	54.4742
1121.30	42.6055
1131.51	0.0000
1173.23	70.8049
1177.93	57.3003
1189.05	63.3179
1204.77	68.4790
1221.41	67.8040
1231.02	65.8669
1235.36	55.7957
1238.28	53.3013
1260.41	0.0000
1271.85	45.8035
1274.44	45.8334
1274.54	45.8353
1291.59	48.0371
1298.22	0.0000
1312.11	33.1974
1332.49	29.3221
1365.19	27.5197
1368.63	0.0000
1384.29	34.8149
1408.01	27.8042
1457.56	0.0000
1460.82	19.8079
1489.16	23.0841
1505.03	23.1664
1596.21	34.3750
1620.50	8.6380
1678.03	0.0000
1690.97	12.2079
1764.49	18.3443
1764.49	18.3443
1770.23	16.6956
1771.35	74.4308
1791.20	0.0000
1836.06	13.5264

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513016

Total Uranium Activity	1.0292E+01	ug/g
Total Uranium Counting Unc.	7.0652E+00	ug/g
Total Uranium Tpu	3.6047E-06	ug/g
Total Uranium Mda	3.5589E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513016
*  ANALYST       : MXR1                             DETECTOR    : GAM12
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 13:31:27.51          SAMPLE ALQT  : 120.710 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.169E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.547E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.263E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.068E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:34:07.84

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513017.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:31:54
Sample ID          : G248513017 Sample quantity : 1.22600E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.41 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	63.97*	104	528	1.36	126.88	122	12	1.44E-02	46.3	
2	2	74.96*	399	548	1.60	148.84	142	18	5.54E-02	13.0	2.43E+00
3	2	77.29*	511	379	1.20	153.50	142	18	7.10E-02	8.2	
4	3	87.50	179	516	1.28	173.92	168	25	2.48E-02	22.3	2.33E+00
5	3	90.07	130	461	1.27	179.05	168	25	1.81E-02	30.1	
6	3	93.00*	263	487	1.68	184.91	168	25	3.66E-02	18.7	
7	0	185.95*	254	474	1.60	370.80	362	14	3.52E-02	19.8	
8	0	209.03*	118	316	1.72	416.96	413	9	1.64E-02	29.1	
9	3	238.71*	1350	240	1.29	476.33	469	19	1.88E-01	3.5	6.35E-01
10	3	241.70	318	281	2.04	482.31	469	19	4.41E-02	16.5	
11	0	270.37	120	256	1.75	539.64	535	11	1.67E-02	27.4	
12	1	295.39*	480	156	1.70	589.68	581	28	6.66E-02	6.8	1.61E+00
13	1	300.21*	125	152	1.74	599.32	581	28	1.74E-02	21.1	
14	0	328.59	115	192	1.20	656.08	650	12	1.59E-02	26.0	
15	0	338.25	335	194	1.26	675.39	669	12	4.65E-02	10.0	
16	0	351.99*	698	267	1.37	702.87	696	15	9.69E-02	6.5	
17	0	462.89	100	144	1.12	924.69	918	14	1.39E-02	27.2	
18	0	510.69*	93	158	1.82	1020.28	1013	15	1.29E-02	35.4	
19	0	583.18*	432	126	1.71	1165.26	1159	16	5.99E-02	7.8	
20	0	609.19*	504	107	1.44	1217.30	1211	14	7.00E-02	6.3	
21	0	661.63	106	105	1.35	1322.19	1316	14	1.47E-02	22.9	
22	0	727.39*	91	71	1.26	1453.71	1449	12	1.27E-02	22.0	
23	0	795.23	74	46	2.01	1589.42	1584	11	1.02E-02	21.7	
24	0	860.99	83	95	1.71	1720.95	1714	19	1.15E-02	30.2	
25	0	910.91*	320	51	1.76	1820.81	1813	18	4.45E-02	7.7	
26	0	969.15*	128	107	1.51	1937.31	1930	16	1.78E-02	21.1	
27	0	1119.88*	130	45	1.36	2238.83	2231	15	1.81E-02	14.7	
28	0	1376.95	32	9	1.82	2753.10	2749	9	4.40E-03	24.7	
29	0	1401.23	19	20	1.05	2801.68	2791	14	2.66E-03	55.4	
30	0	1460.35	1046	33	2.04	2919.96	2910	17	1.45E-01	3.3	
31	0	1510.70	26	26	0.95	3020.69	3013	16	3.60E-03	51.8	
32	0	1589.04	34	21	1.33	3177.44	3171	16	4.78E-03	33.7	
33	0	1629.41	17	6	1.39	3258.19	3253	11	2.39E-03	35.9	
34	0	1661.54	14	9	0.93	3322.48	3315	11	1.87E-03	49.5	
35	0	1728.57	22	3	1.76	3456.59	3449	12	3.00E-03	27.0	
36	0	1764.27*	91	10	1.80	3528.03	3521	16	1.27E-02	14.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 15:34:11

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513017.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:31:54
 Sample ID : G248513017 Sample quantity : 122.60 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA15 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.41 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	+	1460.82	*	3.109E+01	3.687E+00	7.349E-01	7.222E-02	42.302
CD-109	+	88.03	*	3.436E+00	1.589E+00	1.846E+00	2.292E-01	1.861
SN-126	+	64.28		1.736E+00	1.633E+00	1.504E+00	2.546E-01	1.155
	+	86.94		1.380E+00	8.476E-01	7.551E-01	3.192E-01	1.827
	+	87.57	*	3.319E-01	1.534E-01	1.797E-01	2.223E-02	1.847
BA-137M	+	661.66	*	1.828E-01	8.500E-02	7.675E-02	6.309E-03	2.382
CS-137	+	661.66	*	1.931E-01	8.980E-02	8.107E-02	6.679E-03	2.382
TL-208		277.37		6.223E-01	5.676E-01	9.343E-01	1.321E-01	0.666
	+	583.19	*	7.097E-01	1.281E-01	7.091E-02	6.485E-03	10.009
	+	860.56		1.291E+00	7.903E-01	5.926E-01	5.793E-02	2.178
BI-211		72.87		2.301E+01	6.538E+00	1.001E+01	1.146E+00	2.298
	+	351.06	*	5.264E+00	8.601E-01	4.721E-01	4.702E-02	11.150
PB-212	+	74.82		3.664E+00	1.101E+00	8.644E-01	1.302E-01	4.239
	+	77.11		2.610E+00	5.244E-01	4.821E-01	5.589E-02	5.414
	+	238.63	*	2.305E+00	3.190E-01	1.303E-01	1.557E-02	17.689
	+	300.09		3.315E+00	1.455E+00	1.718E+00	2.091E-01	1.929
BI-214	+	609.32	*	1.603E+00	2.586E-01	1.600E-01	1.594E-02	10.017
	+	1120.29		2.180E+00	6.811E-01	6.309E-01	6.832E-02	3.456
	+	1764.49		2.131E+00	6.264E-01	4.211E-01	3.692E-02	5.061
PB-214	+	74.82		6.494E+00	1.917E+00	1.532E+00	2.141E-01	4.239
	+	77.11		4.602E+00	9.994E-01	8.500E-01	1.209E-01	5.414
	+	242.00		3.291E+00	1.163E+00	7.921E-01	9.868E-02	4.154
	+	295.22		2.250E+00	4.163E-01	3.039E-01	3.788E-02	7.403
	+	351.93	*	1.910E+00	3.295E-01	1.717E-01	1.951E-02	11.129
RA-224	+	240.99	*	5.819E+00	2.028E+00	1.396E+00	1.540E-01	4.168
RA-226	+	609.32	*	1.603E+00	2.586E-01	1.600E-01	1.594E-02	10.017
	+	1120.29		2.180E+00	6.811E-01	6.309E-01	6.832E-02	3.456
	+	1764.49		2.131E+00	6.264E-01	4.211E-01	3.692E-02	5.061
AC-228	+	338.32		2.816E+00	1.309E+00	5.481E-01	2.301E-01	5.138
	+	911.20	*	2.544E+00	5.000E-01	2.746E-01	3.326E-02	9.264
	+	968.97		1.761E+00	8.593E-01	5.862E-01	1.440E-01	3.004
RA-228	+	338.32		2.816E+00	1.309E+00	5.481E-01	2.301E-01	5.138
	+	911.20	*	2.544E+00	5.000E-01	2.746E-01	3.326E-02	9.264
	+	968.97		1.761E+00	8.593E-01	5.862E-01	1.440E-01	3.004

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.664E+00	1.043E+00	8.644E-01	9.995E-02	4.239
	+	77.11		2.610E+00	5.244E-01	4.821E-01	5.589E-02	5.414
	+	238.63	*	2.305E+00	3.190E-01	1.303E-01	1.557E-02	17.689
	+	300.09		3.315E+00	2.472E+00	1.718E+00	1.057E+00	1.929
TH-232	+	338.32		2.816E+00	6.267E-01	5.481E-01	5.403E-02	5.138
	+	911.20	*	2.544E+00	5.000E-01	2.746E-01	3.326E-02	9.264
	+	968.97		1.761E+00	8.593E-01	5.862E-01	1.440E-01	3.004
TH-234	+	63.29	*	4.505E+00	4.262E+00	4.161E+00	8.251E-01	1.083
	+	92.59		3.937E+00	1.740E+00	1.462E+00	3.423E-01	2.694
U-235	+	89.96		2.474E+00	1.624E+00	1.846E+00	4.801E-01	1.340
	+	93.35		2.974E+00	1.330E+00	1.094E+00	2.661E-01	2.718
		143.76	*	6.945E-03	2.890E-01	4.623E-01	8.227E-02	0.015
		163.33		1.062E-02	6.247E-01	1.006E+00	1.910E-01	0.011
	+	185.72		2.795E-01	1.147E-01	9.508E-02	1.029E-02	2.939
		205.31		-1.002E-01	8.350E-01	1.153E+00	2.233E-01	-0.087
NP-237	+	86.48	*	9.904E-01	5.027E-01	5.464E-01	1.327E-01	1.813
		95.86		7.651E-01	1.539E+00	2.242E+00	5.612E-01	0.341
U-238	+	63.29	*	4.505E+00	4.262E+00	4.161E+00	8.251E-01	1.083
	+	92.59		3.937E+00	1.545E+00	1.462E+00	1.699E-01	2.694
ANH-511	+	511.00	*	1.173E-01	8.359E-02	6.459E-02	5.581E-03	1.816

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	7.543E-02	4.962E-01	8.169E-01	7.593E-02	0.092
NA-22		1274.54	*	-5.381E-02	5.590E-02	7.982E-02	7.251E-03	-0.674
NA-24		1368.63	*	-5.116E+02	5.590E-02	Half-Life too short		
SC-46		889.28	*	1.197E-02	5.936E-02	9.346E-02	8.685E-03	0.128
	+	1120.55		3.938E-01	1.202E-01	1.854E-01	1.577E-02	2.125
V-48		944.13		-2.615E-01	1.551E+00	2.512E+00	2.322E-01	-0.104
		983.53	*	-4.136E-02	1.283E-01	2.041E-01	1.866E-02	-0.203
		1312.11		-6.137E-02	1.552E-01	2.388E-01	2.250E-02	-0.257
CR-51		320.08	*	-3.234E-01	6.286E-01	1.015E+00	1.077E-01	-0.319
MN-54		834.85	*	1.730E-03	5.250E-02	8.723E-02	7.916E-03	0.020
CO-56		846.77	*	-2.381E-03	5.234E-02	8.635E-02	7.879E-03	-0.028
		1037.84		-4.049E-01	4.108E-01	5.994E-01	5.621E-02	-0.675
		1238.28		1.455E-01	1.361E-01	2.372E-01	2.132E-02	0.613
		1771.35		1.300E-01	3.054E-01	4.838E-01	4.227E-02	0.269
CO-57		122.06	*	-2.452E-02	3.649E-02	5.760E-02	5.802E-03	-0.426
		136.47		2.071E-01	2.981E-01	4.943E-01	5.252E-02	0.419
CO-58		810.76	*	-3.119E-02	5.631E-02	8.673E-02	7.798E-03	-0.360
FE-59		1099.45	*	1.656E-02	1.488E-01	2.451E-01	2.286E-02	0.068
		1291.59		-4.676E-02	1.912E-01	3.004E-01	3.103E-02	-0.156
CO-60		1173.23		-9.978E-03	6.189E-02	9.908E-02	8.065E-03	-0.101
		1332.49	*	-5.410E-02	5.420E-02	7.587E-02	7.294E-03	-0.713
ZN-65		1115.54	*	3.537E-02	1.305E-01	1.890E-01	1.615E-02	0.187
SE-75		121.12		5.460E-03	1.931E-01	3.142E-01	3.849E-02	0.017
		136.00		4.470E-02	5.842E-02	9.713E-02	9.833E-03	0.460

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		-5.119E-02	7.819E-02	1.089E-01	1.194E-02	-0.470
	279.54			2.214E-01	1.603E-01	2.805E-01	3.106E-02	0.789
	400.66			-1.564E-01	3.643E-01	5.830E-01	6.388E-02	-0.268
SR-85	514.00	*		1.107E-01	6.572E-02	1.044E-01	9.020E-03	1.061
Y-88	898.04			-4.646E-03	5.337E-02	8.738E-02	8.182E-03	-0.053
	1836.06	*		-5.099E-03	3.725E-02	5.913E-02	4.980E-03	-0.086
Y-91	1204.77	*		5.826E+00	3.310E+01	5.448E+01	4.592E+00	0.107
NB-94	702.65	*		-1.724E-02	4.100E-02	6.638E-02	5.604E-03	-0.260
	871.09			4.213E-02	4.499E-02	7.396E-02	6.821E-03	0.570
NB-95	765.81	*		5.346E-02	6.633E-02	1.158E-01	1.015E-02	0.462
NB-95M	235.69	*		5.670E-01	2.456E-01	3.839E-01	4.626E-02	1.477
ZR-95	724.19			1.908E-01	1.430E-01	2.325E-01	2.159E-02	0.821
	756.73	*		-3.133E-03	1.014E-01	1.662E-01	1.597E-02	-0.019
MO-99	140.51			-5.493E-05	1.014E-01	Half-Life	too short	
	181.07			-7.198E-05	1.014E-01	Half-Life	too short	
	366.42			8.178E-04	1.014E-01	Half-Life	too short	
	739.50	*		-1.059E-04	1.014E-01	Half-Life	too short	
	777.92			-2.931E-04	1.014E-01	Half-Life	too short	
TC-99M	140.51	*		-4.386E+19	1.014E-01	Half-Life	too short	
RU-103	497.08	*		5.373E-03	6.163E-02	1.009E-01	1.410E-02	0.053
+	610.33			1.903E+01	3.926E+00	4.317E+00	7.018E-01	4.409
RH-106	621.93	*		1.184E-01	4.386E-01	7.195E-01	9.437E-02	0.165
	1050.41			-5.546E-01	3.444E+00	5.548E+00	4.929E-01	-0.100
RU-106	621.93	*		1.184E-01	4.384E-01	7.195E-01	6.046E-02	0.165
	1050.41			-5.546E-01	3.444E+00	5.548E+00	4.929E-01	-0.100
AG-108M	433.94	*		3.397E-02	4.259E-02	7.282E-02	6.436E-03	0.466
	614.28			4.486E-02	5.311E-02	8.005E-02	6.982E-03	0.560
	722.91			-2.868E-02	5.270E-02	7.104E-02	6.271E-03	-0.404
AG-110M	657.76	*		-5.736E-03	5.520E-02	7.916E-02	6.737E-03	-0.072
	677.62			-3.327E-01	3.812E-01	5.924E-01	5.074E-02	-0.562
	706.68			-5.178E-02	2.734E-01	4.509E-01	3.930E-02	-0.115
	763.94			-9.533E-02	2.345E-01	3.796E-01	3.410E-02	-0.251
	884.68			-3.622E-02	6.352E-02	9.924E-02	9.461E-03	-0.365
	937.49			-1.884E-01	1.471E-01	2.109E-01	2.015E-02	-0.893
	1384.29			9.288E-02	2.140E-01	3.488E-01	3.433E-02	0.266
	1505.03			4.002E-01	4.522E-01	7.402E-01	7.074E-02	0.541
SN-113	391.69	*		1.857E-03	6.635E-02	1.094E-01	9.498E-03	0.017
CD-115	260.90			1.651E-03	6.635E-02	Half-Life	too short	
	492.35			-3.423E-04	6.635E-02	Half-Life	too short	
	527.90	*		-2.186E-05	6.635E-02	Half-Life	too short	
SN-117M	156.02			3.553E+00	4.976E+00	8.217E+00	8.565E-01	0.432
	158.56	*		-3.340E-02	1.206E-01	1.922E-01	2.015E-02	-0.174
TE-123M	159.00	*		2.256E-02	4.276E-02	7.022E-02	7.400E-03	0.321
SB-124	602.73			-1.335E-02	6.864E-02	9.341E-02	7.917E-03	-0.143
	645.85			-2.933E-01	7.336E-01	1.139E+00	1.004E-01	-0.258
	722.78			-3.367E-01	5.787E-01	7.761E-01	6.789E-02	-0.434
	1690.97	*		-1.203E-03	1.140E-01	1.877E-01	1.768E-02	-0.006
SB-125	427.87	*		2.035E-02	1.283E-01	2.123E-01	1.848E-02	0.096
+	463.37			1.138E+00	6.287E-01	7.415E-01	6.870E-02	1.535

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M		600.60		1.395E-01	2.476E-01	4.045E-01	3.692E-02	0.345
		635.95		-1.519E-01	3.605E-01	5.584E-01	5.063E-02	-0.272
		109.28	*	-7.625E+00	1.578E+01	2.523E+01	3.003E+00	-0.302
		388.63		1.442E-01	3.598E-01	6.051E-01	5.149E-02	0.238
I-126		666.33	*	1.888E-01	4.874E-01	7.336E-01	6.049E-02	0.257
		753.82		1.955E+00	3.339E+00	5.817E+00	5.062E-01	0.336
		414.70		-1.848E-01	1.746E-01	2.681E-01	2.279E-02	-0.689
		666.50		6.032E-02	1.703E-01	2.555E-01	2.107E-02	0.236
SB-126		695.00		6.037E-02	1.604E-01	2.753E-01	2.313E-02	0.219
		697.00		1.549E-01	5.486E-01	9.356E-01	7.871E-02	0.166
		720.70	*	-1.209E-01	3.073E-01	4.413E-01	3.767E-02	-0.274
		856.80		9.172E-01	1.078E+00	1.685E+00	1.545E-01	0.544
SB-127		252.40		-1.790E+01	2.558E+01	3.954E+01	1.695E+01	-0.453
		473.00		-1.355E+01	9.698E+00	1.396E+01	2.115E+00	-0.971
		685.70	*	5.391E+00	7.546E+00	1.318E+01	1.823E+00	0.409
		783.70		1.518E+01	1.895E+01	3.317E+01	4.954E+00	0.458
I-131		80.19		-1.279E+01	1.627E+01	2.253E+01	2.670E+00	-0.568
		284.31		-2.864E+00	4.061E+00	6.525E+00	7.290E-01	-0.439
		364.49	*	9.926E-02	3.098E-01	5.206E-01	5.058E-02	0.191
		636.99		-2.048E+00	4.174E+00	6.428E+00	5.734E-01	-0.319
TE-132		49.72		1.638E+02	3.281E+02	5.542E+02	9.496E+01	0.296
		111.76		1.370E+02	2.666E+02	4.413E+02	6.436E+01	0.310
		116.30		-1.346E+02	2.290E+02	3.629E+02	5.270E+01	-0.371
		228.16	*	1.004E-01	5.783E+00	9.733E+00	1.845E+00	0.010
BA-133		81.00		-3.434E-01	2.157E-01	2.252E-01	3.940E-02	-1.525
		276.40		4.137E-01	5.669E-01	8.555E-01	1.332E-01	0.484
		302.85		2.280E-01	2.141E-01	3.287E-01	4.730E-02	0.694
		356.01	*	7.356E-02	6.324E-02	9.787E-02	1.322E-02	0.752
I-133		383.85		7.107E-02	4.137E-01	6.878E-01	8.564E-02	0.103
		529.87	*	-2.472E+00	4.137E-01	Half-Life	too short	
		875.33		9.487E+00	4.137E-01	Half-Life	too short	
		1298.22		3.346E+02	4.137E-01	Half-Life	too short	
CS-134		563.25		-3.599E-02	5.002E-01	8.047E-01	6.971E-02	-0.045
		569.33		1.131E-01	2.674E-01	4.374E-01	3.799E-02	0.259
		604.72		-1.524E-02	5.417E-02	7.302E-02	6.199E-03	-0.209
		795.86	*	1.769E-01	7.849E-02	1.239E-01	1.110E-02	1.427
CS-135		801.95		-4.197E-01	6.286E-01	8.639E-01	7.756E-02	-0.486
		1365.19		-2.106E-01	1.607E+00	2.646E+00	2.643E-01	-0.080
		268.22	*	5.145E-01	2.610E-01	4.124E-01	4.949E-02	1.248
		546.56		1.553E+18	2.610E-01	Half-Life	too short	
I-135		836.80		1.436E+19	2.610E-01	Half-Life	too short	
		1038.76		-5.841E+18	2.610E-01	Half-Life	too short	
		1131.51		2.807E+18	2.610E-01	Half-Life	too short	
		1260.41	*	1.619E+18	2.610E-01	Half-Life	too short	
CS-136		1457.56		6.392E+20	2.610E-01	Half-Life	too short	
		1678.03		-1.093E+18	2.610E-01	Half-Life	too short	
		1791.20		-2.178E+18	2.610E-01	Half-Life	too short	
		153.25		2.122E+00	1.894E+00	3.157E+00	3.717E-01	0.672
		176.60		5.687E-02	1.105E+00	1.778E+00	2.042E-01	0.032

---- Non-Identified Nuclides ----

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	273.65			-1.844E+00	1.333E+00	1.746E+00	2.001E-01	-1.056
	340.55			1.608E+00	4.278E-01	6.979E-01	7.053E-02	2.304
	818.51			1.463E-01	1.425E-01	2.553E-01	2.303E-02	0.573
	1048.07	*		1.165E-01	2.196E-01	3.759E-01	3.480E-02	0.310
	1235.36			1.180E+00	1.259E+00	2.171E+00	2.571E-01	0.543
CE-139	165.86	*		6.976E-03	4.431E-02	7.173E-02	7.657E-03	0.097
BA-140	162.66			2.049E-01	1.777E+00	2.874E+00	3.181E-01	0.071
	304.85			-9.691E-01	3.181E+00	4.474E+00	1.337E+00	-0.217
	423.72			-3.623E+00	4.427E+00	6.634E+00	2.181E+00	-0.546
	537.26	*		-1.279E-01	5.248E-01	8.318E-01	2.821E-01	-0.154
LA-140	328.76	+		1.847E+00	9.801E-01	1.205E+00	1.264E-01	1.532
	487.02			-1.039E-01	2.863E-01	4.544E-01	4.167E-02	-0.229
	815.77			-1.586E-01	6.375E-01	1.035E+00	1.032E-01	-0.153
	1596.21	*		4.739E-02	1.913E-01	2.849E-01	2.671E-02	0.166
CE-141	145.44	*		3.043E-02	1.052E-01	1.698E-01	1.755E-02	0.179
CE-143	57.36			-4.393E-02	1.052E-01	Half-Life	too short	
	293.27	*		6.832E-02	1.052E-01	Half-Life	too short	
	664.57			1.393E-01	1.052E-01	Half-Life	too short	
	721.93			-6.295E-02	1.052E-01	Half-Life	too short	
CE-144	80.12			-3.027E+00	4.530E+00	6.316E+00	7.423E-01	-0.479
	133.52	*		-4.092E-01	2.980E-01	4.450E-01	7.180E-02	-0.920
PM-144	476.78			1.571E-02	8.917E-02	1.471E-01	1.379E-02	0.107
	618.01			-2.931E-02	4.787E-02	7.107E-02	6.161E-03	-0.412
	696.49	*		-3.902E-03	4.575E-02	7.613E-02	6.407E-03	-0.051
PR-144	696.51	*		2.958E-01	3.397E+00	5.720E+00	4.811E-01	0.052
	1489.16			-3.371E+00	1.390E+01	2.215E+01	2.122E+00	-0.152
PM-146	453.88	*		-2.739E-02	5.755E-02	9.103E-02	9.626E-03	-0.301
	633.25			-5.094E-01	1.876E+00	2.930E+00	1.118E+00	-0.174
	735.93			-9.606E-02	1.964E-01	2.962E-01	8.302E-02	-0.324
	747.24			7.774E-02	1.191E-01	2.079E-01	3.039E-02	0.374
ND-147	91.11	+		1.323E+00	8.148E-01	1.282E+00	1.588E-01	1.032
	319.41			-5.049E+00	7.680E+00	1.229E+01	1.259E+00	-0.411
	531.02	*		-2.500E-01	1.183E+00	1.887E+00	2.823E-01	-0.132
PM-149	285.90	*		7.583E-04	1.183E+00	Half-Life	too short	
EU-152	121.78			-6.339E-02	1.028E-01	1.626E-01	1.819E-02	-0.390
	244.70			7.222E-01	5.189E-01	8.093E-01	8.921E-02	0.892
	344.28	*		-7.143E-02	1.733E-01	2.264E-01	2.305E-02	-0.315
	778.90			-1.486E-01	3.401E-01	5.461E-01	4.819E-02	-0.272
	964.08			5.696E-01	4.422E-01	7.065E-01	6.497E-02	0.806
	1085.87			1.076E-01	5.141E-01	8.556E-01	7.450E-02	0.126
	1112.07			-1.728E-03	4.558E-01	6.359E-01	5.441E-02	-0.003
	1408.01			2.465E-02	2.210E-01	3.527E-01	3.399E-02	0.070
GD-153	69.67			-1.513E+00	4.720E+00	4.793E+00	5.471E-01	-0.316
	97.43	*		-2.712E-02	1.397E-01	1.973E-01	2.177E-02	-0.137
	103.18			-2.085E-01	1.667E-01	2.571E-01	2.719E-02	-0.811
EU-154	123.07			-6.814E-03	7.229E-02	1.170E-01	1.460E-02	-0.058
	723.31			-1.262E-02	2.375E-01	3.399E-01	3.206E-02	-0.037
	873.19			-8.731E-02	3.473E-01	5.606E-01	6.921E-02	-0.156
	996.26			-3.672E-01	4.716E-01	7.089E-01	1.256E-01	-0.518

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EU-155	+	1004.73		1.886E-01	2.826E-01	4.891E-01	5.857E-02	0.386
		1274.44	*	-1.464E-01	1.568E-01	2.240E-01	2.626E-02	-0.654
		86.55		4.037E-01	1.867E-01	2.785E-01	3.435E-02	1.450
		105.31	*	-5.628E-02	1.531E-01	2.463E-01	2.594E-02	-0.229
TB-160	+	86.79		1.152E+00	5.327E-01	7.952E-01	9.777E-02	1.449
		197.04		6.393E-02	8.834E-01	1.417E+00	1.545E-01	0.045
		215.65		-9.485E-01	1.138E+00	1.795E+00	1.975E-01	-0.528
		298.57		5.088E-01	1.883E-01	3.342E-01	3.536E-02	1.522
HO-166M		879.36	*	-1.546E-02	1.710E-01	2.801E-01	2.592E-02	-0.055
		962.29		9.854E-01	8.757E-01	1.366E+00	1.257E-01	0.721
		966.15		1.392E+00	4.387E-01	7.502E-01	6.896E-02	1.855
		1177.93		3.380E-01	5.117E-01	8.796E-01	7.197E-02	0.384
		1271.85		-6.242E-01	9.018E-01	1.329E+00	1.203E-01	-0.470
		80.57		-6.911E-01	5.274E-01	6.504E-01	7.663E-02	-1.063
		184.41		1.304E-01	5.725E-02	9.696E-02	1.048E-02	1.345
		280.46		-1.112E-01	1.195E-01	1.899E-01	2.051E-02	-0.586
		410.95		4.348E-01	3.533E-01	6.152E-01	5.222E-02	0.707
		711.68	*	4.698E-02	8.150E-02	1.415E-01	1.201E-02	0.332
		752.31		1.218E-01	3.246E-01	5.575E-01	4.847E-02	0.219
		810.29		-3.215E-02	7.885E-02	1.232E-01	1.105E-02	-0.261
TA-182		67.75		6.526E-03	2.486E-01	3.354E-01	3.828E-02	0.019
		100.11		2.283E-01	2.890E-01	4.484E-01	4.840E-02	0.509
		152.43		8.403E-01	5.261E-01	8.887E-01	9.190E-02	0.946
		222.11		-4.425E-01	4.991E-01	8.061E-01	8.883E-02	-0.549
IR-192	+	1121.30		1.072E+00	3.271E-01	5.040E-01	4.284E-02	2.127
		1189.05		1.866E-01	4.223E-01	7.127E-01	5.904E-02	0.262
		1221.41	*	-3.183E-02	2.867E-01	4.601E-01	3.949E-02	-0.069
		1231.02		-3.236E-01	7.063E-01	1.099E+00	9.529E-02	-0.294
HG-203	+	295.96		1.792E+00	3.110E-01	4.393E-01	4.687E-02	4.080
		308.46		2.032E-02	1.559E-01	2.377E-01	2.488E-02	0.085
		316.51	*	-3.389E-02	5.057E-02	8.083E-02	8.334E-03	-0.419
		468.07		9.673E-02	1.043E-01	1.599E-01	1.479E-02	0.605
BI-207	+	70.83		9.759E-01	3.016E+00	4.132E+00	7.323E-01	0.236
		72.87		6.447E+00	2.013E+00	2.805E+00	4.844E-01	2.298
		279.20	*	9.945E-02	6.117E-02	1.077E-01	1.183E-02	0.924
		72.81		1.258E+00	3.722E-01	5.712E-01	6.541E-02	2.202
PB-210	+	74.97		1.056E+00	3.004E-01	3.926E-01	4.519E-02	2.691
		569.70		-7.411E-03	4.206E-02	6.590E-02	5.645E-03	-0.112
		1063.66	*	-5.495E-02	7.224E-02	1.094E-01	9.648E-03	-0.502
		1770.23		3.917E-02	6.132E-01	8.759E-01	7.657E-02	0.045
PB-211		46.54	*	-7.355E+00	1.387E+01	2.239E+01	2.757E+00	-0.328
		404.85	*	-4.032E-01	1.042E+00	1.645E+00	7.957E-01	-0.245
		427.09		-1.742E-01	2.121E+00	3.457E+00	1.599E+00	-0.050
		832.01		-4.857E-02	1.357E+00	2.243E+00	1.165E+00	-0.022
RN-219	+	727.33	*	2.289E+00	1.047E+00	1.506E+00	1.871E-01	1.520
		785.37		2.036E+00	4.139E+00	7.127E+00	6.310E-01	0.286
		1620.50		4.414E+00	3.253E+00	6.175E+00	5.747E-01	0.715
		271.23		9.016E-01	5.060E-01	6.479E-01	7.917E-02	1.392
		401.81	*	-1.934E-01	5.503E-01	8.845E-01	1.307E-01	-0.219

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-7.762E-01	4.771E-01	5.090E-01	6.014E-02	-1.525
		83.79		-1.987E-02	2.600E-01	3.137E-01	3.772E-02	-0.063
		94.87		2.949E+00	8.334E-01	1.276E+00	1.445E-01	2.311
		144.24		-1.882E-01	9.745E-01	1.546E+00	1.708E-01	-0.122
		154.21		1.174E-01	5.737E-01	9.322E-01	1.032E-01	0.126
	+	269.46		7.005E-01	3.914E-01	4.960E-01	5.473E-02	1.412
		323.87	*	4.941E-01	1.038E+00	1.540E+00	2.795E-01	0.321
AC-227	+	338.28		1.117E+01	2.660E+00	3.442E+00	4.469E-01	3.247
		79.69		2.728E+00	2.272E+00	3.362E+00	6.382E-01	0.811
		235.96		1.215E+00	3.172E-01	4.832E-01	6.004E-02	2.514
		256.23	*	-7.470E-02	3.522E-01	5.841E-01	8.083E-02	-0.128
	+	299.98		3.646E+00	1.622E+00	2.249E+00	3.170E-01	1.621
		304.50		-6.498E-01	2.486E+00	3.519E+00	6.186E-01	-0.185
		334.37		4.795E+00	3.575E+00	4.062E+00	6.645E-01	1.180
TH-227		79.80		-4.038E-01	2.971E+00	4.258E+00	9.873E-01	-0.095
		235.96		1.215E+00	3.145E-01	4.832E-01	5.771E-02	2.514
		256.23	*	-7.470E-02	3.522E-01	5.841E-01	8.885E-02	-0.128
	+	299.98		3.646E+00	1.622E+00	2.249E+00	3.170E-01	1.621
		304.50		-6.498E-01	2.486E+00	3.519E+00	6.186E-01	-0.185
		334.37		4.795E+00	3.575E+00	4.062E+00	6.645E-01	1.180
		85.43		7.482E-01	3.757E-01	5.689E-01	6.920E-02	1.315
TH-229	+	88.47		5.117E-01	2.365E-01	3.599E-01	4.436E-02	1.422
		193.51	*	-7.340E-01	7.839E-01	1.198E+00	1.303E-01	-0.613
		210.85		2.920E+00	1.468E+00	2.302E+00	2.528E-01	1.268
		283.69	*	-1.121E+00	2.002E+00	3.238E+00	5.163E-01	-0.346
	+	301.36		2.342E+00	1.038E+00	1.472E+00	1.999E-01	1.591
		81.07		-7.762E-01	4.771E-01	5.090E-01	6.014E-02	-1.525
		83.79		-1.987E-02	2.600E-01	3.137E-01	3.772E-02	-0.063
PA-231		94.87		2.949E+00	8.334E-01	1.276E+00	1.445E-01	2.311
		144.24		-1.882E-01	9.745E-01	1.546E+00	1.708E-01	-0.122
		154.21		1.174E-01	5.737E-01	9.322E-01	1.032E-01	0.126
	+	269.46		7.005E-01	3.914E-01	4.960E-01	5.473E-02	1.412
		323.87	*	4.941E-01	1.038E+00	1.540E+00	2.795E-01	0.321
	+	338.28		1.117E+01	2.660E+00	3.442E+00	4.469E-01	3.247
	+	300.13		1.650E+00	7.445E-01	1.016E+00	1.630E-01	1.623
PA-233		311.90	*	1.983E-02	8.965E-02	1.506E-01	1.593E-02	0.132
		340.48		4.781E+00	1.622E+00	1.991E+00	4.882E-01	2.402
		94.67		9.163E-01	2.951E-01	4.754E-01	6.861E-02	1.927
		98.44		4.761E-03	1.496E-01	2.138E-01	1.202E-01	0.022
		111.00		2.457E-01	2.622E-01	4.387E-01	5.824E-02	0.560
		131.20		1.537E-02	1.515E-01	2.466E-01	2.476E-02	0.062
		569.50		-1.110E-02	3.731E-01	5.912E-01	5.064E-02	-0.019
PA-234		733.00		4.405E-01	5.149E-01	8.009E-01	1.777E-01	0.550
		880.51		-6.031E-04	3.255E-01	5.378E-01	4.980E-02	-0.001
		883.24		-3.123E-01	4.132E-01	5.387E-01	3.626E-01	-0.580
		926.50		-1.089E-01	2.276E-01	3.493E-01	8.911E-02	-0.312
		946.00	*	-8.011E-02	3.857E-01	6.222E-01	1.186E-01	-0.129
		949.00		-3.903E-02	6.036E-01	9.877E-01	9.121E-02	-0.040
		766.42		1.104E+01	1.717E+01	2.817E+01	1.430E+01	0.392
PA-234M		766.42		1.104E+01	1.717E+01	2.817E+01	1.430E+01	0.392

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		1.443E-01	6.293E+00	1.021E+01	1.059E+00	0.014
	99.53			1.209E-01	2.696E-01	3.929E-01	4.260E-02	0.308
	103.37			-1.030E-01	1.447E-01	2.293E-01	2.422E-02	-0.449
	106.12			-1.083E-02	1.214E-01	1.974E-01	2.055E-02	-0.055
	117.23	*		2.733E-01	5.528E-01	9.156E-01	9.241E-02	0.298
	228.18			6.616E-03	3.064E-01	5.157E-01	5.689E-02	0.013
AM-241	277.60			3.594E-01	2.543E-01	4.255E-01	4.607E-02	0.845
	59.54	*		3.484E-01	3.566E-01	5.422E-01	6.365E-02	0.642
CM-247	278.00			1.410E+00	1.054E+00	1.805E+00	1.953E-01	0.781
	287.50			1.819E+00	1.906E+00	2.928E+00	3.139E-01	0.621
CF-249	402.40	*		-1.188E-02	5.062E-02	8.203E-02	6.937E-03	-0.145
	252.80			-5.070E-01	1.285E+00	2.113E+00	2.323E-01	-0.240
	333.37			3.903E-01	3.650E-01	4.085E-01	4.071E-02	0.955
CF-251	388.16	*		-4.821E-03	5.708E-02	9.354E-02	7.974E-03	-0.052
	177.52	*		-5.026E-02	1.964E-01	3.004E-01	3.233E-02	-0.167
	227.38			1.097E-01	4.979E-01	8.443E-01	9.313E-02	0.130
	285.41			7.057E-01	3.019E+00	5.089E+00	5.469E-01	0.139

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]G248513017      *
* Acquisition date   : 20-MAR-2010 13:31:54 Detector SN#   :                *
* Detector ID        : GAM15                      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 02:00:01.41              Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G248513017              Analyst initials: MXR1         *
* Batch Number       : 961097                  Sample Quantity : 1.2260E+02 GRAM  *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 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	3.109E+01	3.613E+00	7.337E-01	0.000E+00
CD-109	3.436E+00	1.557E+00	1.911E+00	0.000E+00
SN-126	3.319E-01	1.504E-01	1.860E-01	0.000E+00
BA-137M	1.828E-01	8.330E-02	7.742E-02	0.000E+00
CS-137	1.931E-01	8.800E-02	8.179E-02	0.000E+00
TL-208	7.097E-01	1.255E-01	7.165E-02	0.000E+00
BI-211	5.264E+00	8.429E-01	4.802E-01	0.000E+00
PB-212	2.305E+00	3.127E-01	1.332E-01	0.000E+00
BI-214	1.603E+00	2.534E-01	1.616E-01	0.000E+00
PB-214	1.910E+00	3.229E-01	1.746E-01	0.000E+00
RA-224	5.819E+00	1.988E+00	1.427E+00	0.000E+00
RA-226	1.603E+00	2.534E-01	1.616E-01	0.000E+00
AC-228	2.544E+00	4.900E-01	2.758E-01	0.000E+00
RA-228	2.544E+00	4.900E-01	2.758E-01	0.000E+00
TH-228	2.305E+00	3.127E-01	1.332E-01	0.000E+00
TH-232	2.544E+00	4.900E-01	2.758E-01	0.000E+00
TH-234	4.505E+00	4.177E+00	4.324E+00	0.000E+00
U-235	6.945E-03	2.832E-01	4.756E-01	0.000E+00
NP-237	9.904E-01	4.927E-01	5.656E-01	0.000E+00
U-238	4.505E+00	4.177E+00	4.324E+00	0.000E+00
ANH-511	1.173E-01	8.192E-02	6.538E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	7.543E-02	4.863E-01	8.276E-01	0.000E+00 NOT IDENT.
NA-22	-5.381E-02	5.478E-02	7.983E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	6.023E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.197E-02	5.817E-02	9.392E-02	0.000E+00 FAIL ABUN
V-48	-4.136E-02	1.257E-01	2.049E-01	0.000E+00 NOT IDENT.
CR-51	-3.234E-01	6.160E-01	1.033E+00	0.000E+00 NOT IDENT.

MN-54	1.730E-03	5.145E-02	8.774E-02	0.000E+00	NOT IDENT.
CO-56	-2.381E-03	5.130E-02	8.683E-02	0.000E+00	NOT IDENT.
CO-57	-2.452E-02	3.576E-02	5.937E-02	0.000E+00	NOT IDENT.
CO-58	-3.119E-02	5.519E-02	8.727E-02	0.000E+00	NOT IDENT.
FE-59	1.656E-02	1.459E-01	2.456E-01	0.000E+00	NOT IDENT.
CO-60	-5.410E-02	5.311E-02	7.584E-02	0.000E+00	NOT IDENT.
ZN-65	3.537E-02	1.279E-01	1.894E-01	0.000E+00	NOT IDENT.
SE-75	-5.119E-02	7.663E-02	1.112E-01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	6.440E-02	1.057E-01	0.000E+00	NOT IDENT.
Y-88	-5.099E-03	3.651E-02	5.885E-02	0.000E+00	NOT IDENT.
Y-91	5.826E+00	3.244E+01	5.453E+01	0.000E+00	NOT IDENT.
NB-94	-1.724E-02	4.018E-02	6.691E-02	0.000E+00	NOT IDENT.
NB-95	5.346E-02	6.501E-02	1.166E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.407E-01	3.925E-01	0.000E+00	NOT IDENT.
ZR-95	-3.133E-03	9.934E-02	1.674E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.145E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.845E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.373E-03	6.040E-02	1.022E-01	0.000E+00	FAIL ABUN
RH-106	1.184E-01	4.298E-01	7.264E-01	0.000E+00	NOT IDENT.
RU-106	1.184E-01	4.296E-01	7.264E-01	0.000E+00	NOT IDENT.
AG-108M	3.397E-02	4.174E-02	7.387E-02	0.000E+00	NOT IDENT.
AG-110M	-5.736E-03	5.410E-02	7.987E-02	0.000E+00	NOT IDENT.
SN-113	1.857E-03	6.503E-02	1.111E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.788E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-3.340E-02	1.182E-01	1.974E-01	0.000E+00	NOT IDENT.
TE-123M	2.256E-02	4.190E-02	7.214E-02	0.000E+00	NOT IDENT.
SB-124	-1.203E-03	1.117E-01	1.870E-01	0.000E+00	NOT IDENT.
SB-125	2.035E-02	1.257E-01	2.154E-01	0.000E+00	FAIL ABUN
TE-125M	-7.625E+00	1.546E+01	2.604E+01	0.000E+00	NOT IDENT.
I-126	1.888E-01	4.776E-01	7.400E-01	0.000E+00	NOT IDENT.
SB-126	-1.209E-01	3.011E-01	4.447E-01	0.000E+00	NOT IDENT.
SB-127	5.391E+00	7.395E+00	1.329E+01	0.000E+00	NOT IDENT.
I-131	9.926E-02	3.036E-01	5.292E-01	0.000E+00	NOT IDENT.
TE-132	1.004E-01	5.667E+00	9.954E+00	0.000E+00	NOT IDENT.
BA-133	7.356E-02	6.197E-02	9.953E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.382E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.692E-02	1.247E-01	0.000E+00	FAIL ABUN
CS-135	0.000E+00	2.557E-01	4.209E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.556E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.165E-01	2.152E-01	3.769E-01	0.000E+00	NOT IDENT.
CE-139	6.976E-03	4.342E-02	7.365E-02	0.000E+00	NOT IDENT.
BA-140	-1.279E-01	5.143E-01	8.414E-01	0.000E+00	NOT IDENT.
LA-140	4.739E-02	1.874E-01	2.841E-01	0.000E+00	FAIL ABUN
CE-141	3.043E-02	1.031E-01	1.746E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.074E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.092E-01	2.920E-01	4.582E-01	0.000E+00	NOT IDENT.
PM-144	-3.902E-03	4.484E-02	7.675E-02	0.000E+00	NOT IDENT.
PR-144	2.958E-01	3.329E+00	5.767E+00	0.000E+00	NOT IDENT.
PM-146	-2.739E-02	5.640E-02	9.228E-02	0.000E+00	NOT IDENT.
ND-147	-2.500E-01	1.160E+00	1.909E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.501E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-7.143E-02	1.698E-01	2.304E-01	0.000E+00	NOT IDENT.
GD-153	-2.712E-02	1.369E-01	2.039E-01	0.000E+00	NOT IDENT.
EU-154	-1.464E-01	1.536E-01	2.240E-01	0.000E+00	NOT IDENT.
EU-155	-5.628E-02	1.500E-01	2.543E-01	0.000E+00	FAIL ABUN
HB-160	-1.546E-02	1.676E-01	2.815E-01	0.000E+00	FAIL ABUN
HO-166M	4.698E-02	7.987E-02	1.426E-01	0.000E+00	NOT IDENT.
TA-182	-3.183E-02	2.810E-01	4.605E-01	0.000E+00	FAIL ABUN
IR-192	-3.389E-02	4.956E-02	8.232E-02	0.000E+00	FAIL ABUN
HG-203	9.945E-02	5.995E-02	1.098E-01	0.000E+00	NOT IDENT.
BI-207	-5.495E-02	7.079E-02	1.096E-01	0.000E+00	FAIL ABUN
PB-210	-7.355E+00	1.359E+01	2.336E+01	0.000E+00	NOT IDENT.
PB-211	-4.032E-01	1.021E+00	1.670E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.026E+00	1.517E+00	0.000E+00	FAIL ABUN
RN-219	-1.934E-01	5.393E-01	8.980E-01	0.000E+00	FAIL ABUN
RA-223	4.941E-01	1.017E+00	1.568E+00	0.000E+00	FAIL ABUN
AC-227	-7.470E-02	3.451E-01	5.965E-01	0.000E+00	FAIL ABUN
TH-227	-7.470E-02	3.452E-01	5.965E-01	0.000E+00	FAIL ABUN
TH-229	-7.340E-01	7.683E-01	1.227E+00	0.000E+00	FAIL ABUN
PA-231	-1.121E+00	1.962E+00	3.302E+00	0.000E+00	FAIL ABUN
TH-231	4.941E-01	1.017E+00	1.568E+00	0.000E+00	FAIL ABUN
PA-233	1.983E-02	8.786E-02	1.534E-01	0.000E+00	FAIL ABUN
PA-234	-8.011E-02	3.780E-01	6.248E-01	0.000E+00	NOT IDENT.
PA-234M	1.443E-01	6.167E+00	1.025E+01	0.000E+00	NOT IDENT.
NP-239	2.733E-01	5.418E-01	9.443E-01	0.000E+00	NOT IDENT.
AM-241	3.484E-01	3.494E-01	5.639E-01	0.000E+00	NOT IDENT.
CM-247	-1.188E-02	4.961E-02	8.329E-02	0.000E+00	NOT IDENT.
CF-249	-4.821E-03	5.594E-02	9.502E-02	0.000E+00	NOT IDENT.

CF-251	-5.026E-02	1.925E-01	3.082E-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]G248513017.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:31:54
Sample ID          : G248513017 Sample quantity : 1.22600E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.41 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	1046	10.66*	9.664E-01	3.109E+01	3.109E+01	11.86
CD-109	88.03	179	3.70*	4.460E+00	3.319E+00	3.436E+00	46.23
SN-126	64.28	104	9.60	1.903E+00	1.736E+00	1.736E+00	94.04
	86.94	179	8.90	4.460E+00	1.380E+00	1.380E+00	61.43
	87.57	179	37.00*	4.460E+00	3.319E-01	3.319E-01	46.23
BA-137M	661.66	106	89.90*	1.982E+00	1.825E-01	1.828E-01	46.51
CS-137	661.66	106	85.10*	1.982E+00	1.928E-01	1.931E-01	46.51
TL-208	277.37	-----	6.60	3.705E+00	-----	Line Not Found	-----
	583.19	432	85.00*	2.191E+00	7.097E-01	7.097E-01	18.04
	860.56	83	12.50	1.575E+00	1.291E+00	1.291E+00	61.23
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	698	12.92*	3.141E+00	5.264E+00	5.264E+00	16.34
PB-212	74.82	399	10.28	3.244E+00	3.664E+00	3.664E+00	30.05
	77.11	511	17.10	3.504E+00	2.610E+00	2.610E+00	20.09
	238.63	1350	43.60*	4.115E+00	2.305E+00	2.305E+00	13.84
	300.09	125	3.30	3.506E+00	3.315E+00	3.315E+00	43.91
BI-214	609.32	504	45.49*	2.117E+00	1.603E+00	1.603E+00	16.14
	1120.29	130	14.92	1.227E+00	2.180E+00	2.180E+00	31.24
	1764.49	91	15.30	8.554E-01	2.131E+00	2.131E+00	29.39
PB-214	74.82	399	5.80	3.244E+00	6.494E+00	6.494E+00	29.52
	77.11	511	9.70	3.504E+00	4.602E+00	4.602E+00	21.72
	242.00	318	7.25	4.079E+00	3.291E+00	3.291E+00	35.33
	295.22	480	18.42	3.546E+00	2.250E+00	2.250E+00	18.50
	351.93	698	35.60*	3.141E+00	1.910E+00	1.910E+00	17.25
RA-224	240.99	318	4.10*	4.079E+00	5.819E+00	5.819E+00	34.85
RA-226	609.32	504	45.49*	2.117E+00	1.603E+00	1.603E+00	16.14
	1120.29	130	14.92	1.227E+00	2.180E+00	2.180E+00	31.24
	1764.49	91	15.30	8.554E-01	2.131E+00	2.131E+00	29.39
AC-228	338.32	335	11.27	3.228E+00	2.816E+00	2.816E+00	46.49
	911.20	320	25.80*	1.495E+00	2.544E+00	2.544E+00	19.66
	968.97	128	15.80	1.409E+00	1.761E+00	1.761E+00	48.79
RA-228	338.32	335	11.27	3.228E+00	2.816E+00	2.816E+00	46.49

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	320	25.80*	1.495E+00	2.544E+00	2.544E+00	19.66
	968.97	128	15.80	1.409E+00	1.761E+00	1.761E+00	48.79
	74.82	399	10.28	3.244E+00	3.664E+00	3.664E+00	28.46
	77.11	511	17.10	3.504E+00	2.610E+00	2.610E+00	20.09
TH-232	238.63	1350	43.60*	4.115E+00	2.305E+00	2.305E+00	13.84
	300.09	125	3.30	3.506E+00	3.315E+00	3.315E+00	74.59
	338.32	335	11.27	3.228E+00	2.816E+00	2.816E+00	22.26
	911.20	320	25.80*	1.495E+00	2.544E+00	2.544E+00	19.66
TH-234	968.97	128	15.80	1.409E+00	1.761E+00	1.761E+00	48.79
	63.29	104	3.70*	1.903E+00	4.505E+00	4.505E+00	94.60
	92.59	263	4.23	4.841E+00	3.937E+00	3.937E+00	44.19
U-235	89.96	130	3.47	4.649E+00	2.474E+00	2.474E+00	65.66
	93.35	263	5.60	4.841E+00	2.974E+00	2.974E+00	44.71
	143.76	-----	10.96*	5.506E+00	-----	Line Not Found	-----
NP-237	163.33	-----	5.08	5.224E+00	-----	Line Not Found	-----
	185.72	254	57.20	4.858E+00	2.795E-01	2.795E-01	41.05
	205.31	-----	5.01	4.560E+00	-----	Line Not Found	-----
U-238	86.48	179	12.40*	4.460E+00	9.904E-01	9.904E-01	50.76
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
ANH-511	63.29	104	3.70*	1.903E+00	4.505E+00	4.505E+00	94.60
	92.59	263	4.23	4.841E+00	3.937E+00	3.937E+00	39.24
	511.00	93	100.00*	2.420E+00	1.173E-01	1.173E-01	71.26

Flag: "*" = Keyline

Total number of lines in spectrum 36
Number of unidentified lines 8
Number of lines tentatively identified by NID 28 77.78%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.109E+01	3.109E+01	0.369E+01	11.86	
CD-109	461.40D	1.04	3.319E+00	3.436E+00	1.589E+00	46.23	
SN-126	2.30E+05Y	1.00	3.319E-01	3.319E-01	1.534E-01	46.23	
BA-137M	30.08Y	1.00	1.825E-01	1.828E-01	0.850E-01	46.51	
CS-137	30.08Y	1.00	1.928E-01	1.931E-01	0.898E-01	46.51	
TL-208	1.41E+10Y	1.00	7.097E-01	7.097E-01	1.281E-01	18.04	
BI-211	7.04E+08Y	1.00	5.264E+00	5.264E+00	0.860E+00	16.34	
PB-212	1.41E+10Y	1.00	2.305E+00	2.305E+00	0.319E+00	13.84	
BI-214	1600.00Y	1.00	1.603E+00	1.603E+00	0.259E+00	16.14	
PB-214	1600.00Y	1.00	1.910E+00	1.910E+00	0.329E+00	17.25	
RA-224	1.41E+10Y	1.00	5.819E+00	5.819E+00	2.028E+00	34.85	
RA-226	1600.00Y	1.00	1.603E+00	1.603E+00	0.259E+00	16.14	
AC-228	1.41E+10Y	1.00	2.544E+00	2.544E+00	0.500E+00	19.66	
RA-228	1.41E+10Y	1.00	2.544E+00	2.544E+00	0.500E+00	19.66	
TH-228	1.41E+10Y	1.00	2.305E+00	2.305E+00	0.319E+00	13.84	
TH-232	1.41E+10Y	1.00	2.544E+00	2.544E+00	0.500E+00	19.66	
TH-234	4.47E+09Y	1.00	4.505E+00	4.505E+00	4.262E+00	94.60	
U-235	7.04E+08Y	1.00	2.795E-01	2.795E-01	1.147E-01	41.05	K
NP-237	2.14E+06Y	1.00	9.904E-01	9.904E-01	5.027E-01	50.76	
U-238	4.47E+09Y	1.00	4.505E+00	4.505E+00	4.262E+00	94.60	
ANH-511	1.00E+09Y	1.00	1.173E-01	1.173E-01	0.836E-01	71.26	
Total Activity :			7.466E+01	7.478E+01			

Grand Total Activity : 7.466E+01 7.478E+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	209.03	118	316	1.72	416.96	413	9	1.64E-02	58.2	4.51E+00	
0	270.37	120	256	1.75	539.64	535	11	1.67E-02	54.8	3.77E+00	T
0	328.59	115	192	1.20	656.08	650	12	1.59E-02	52.0	3.29E+00	T
0	462.89	100	144	1.12	924.69	918	14	1.39E-02	54.5	2.60E+00	T
0	727.39	91	71	1.26	1453.71	1449	12	1.27E-02	44.0	1.83E+00	T
0	795.23	74	46	2.01	1589.42	1584	11	1.02E-02	43.5	1.69E+00	T
0	1376.95	32	9	1.82	2753.10	2749	9	4.40E-03	49.4	1.01E+00	
0	1401.23	19	20	1.05	2801.68	2791	14	2.66E-03	****	1.00E+00	
0	1510.70	26	26	0.95	3020.69	3013	16	3.60E-03	****	9.41E-01	
0	1589.04	34	21	1.33	3177.44	3171	16	4.78E-03	67.5	9.08E-01	
0	1629.41	17	6	1.39	3258.19	3253	11	2.39E-03	71.7	8.93E-01	
0	1661.54	14	9	0.93	3322.48	3315	11	1.87E-03	99.0	8.83E-01	
0	1728.57	22	3	1.76	3456.59	3449	12	3.00E-03	54.0	8.64E-01	

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]G248513017.CNF;1
* Acquisition date   : 20-MAR-2010 13:31:54  Detector SN#      :
* Detector ID        : GAM15                  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 02:00:01.41          Half life ratio   : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G248513017            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity  : 1.22600E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32.11MS 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	3.109E+01	3.687E+00	7.349E-01	7.222E-02	42.302
CD-109	3.436E+00	1.589E+00	1.846E+00	2.292E-01	1.861
SN-126	3.319E-01	1.534E-01	1.797E-01	2.223E-02	1.847
BA-137M	1.828E-01	8.500E-02	7.675E-02	6.309E-03	2.382
CS-137	1.931E-01	8.980E-02	8.107E-02	6.679E-03	2.382
TL-208	7.097E-01	1.281E-01	7.091E-02	6.485E-03	10.009
BI-211	5.264E+00	8.601E-01	4.721E-01	4.702E-02	11.150
PB-212	2.305E+00	3.190E-01	1.303E-01	1.557E-02	17.689
BI-214	1.603E+00	2.586E-01	1.600E-01	1.594E-02	10.017
PB-214	1.910E+00	3.295E-01	1.717E-01	1.951E-02	11.129
RA-224	5.819E+00	2.028E+00	1.396E+00	1.540E-01	4.168
RA-226	1.603E+00	2.586E-01	1.600E-01	1.594E-02	10.017
AC-228	2.544E+00	5.000E-01	2.746E-01	3.326E-02	9.264
RA-228	2.544E+00	5.000E-01	2.746E-01	3.326E-02	9.264
TH-228	2.305E+00	3.190E-01	1.303E-01	1.557E-02	17.689
TH-232	2.544E+00	5.000E-01	2.746E-01	3.326E-02	9.264
TH-234	4.505E+00	4.262E+00	4.161E+00	8.251E-01	1.083
U-235	2.795E-01	1.147E-01	4.623E-01	8.227E-02	0.605

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	9.904E-01	5.027E-01	5.464E-01	1.327E-01	1.813
U-238	4.505E+00	4.262E+00	4.161E+00	8.251E-01	1.083
ANH-511	1.173E-01	8.359E-02	6.459E-02	5.581E-03	1.816

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.543E-02		4.962E-01	8.169E-01	7.593E-02	0.092
NA-22	-5.381E-02		5.590E-02	7.982E-02	7.251E-03	-0.674
NA-24	-5.116E+02		3.073E+03	Half-Life	too short	
SC-46	1.197E-02		5.936E-02	9.346E-02	8.685E-03	0.128
V-48	-4.136E-02		1.283E-01	2.041E-01	1.866E-02	-0.203
CR-51	-3.234E-01		6.286E-01	1.015E+00	1.077E-01	-0.319
MN-54	1.730E-03		5.250E-02	8.723E-02	7.916E-03	0.020
CO-56	-2.381E-03		5.234E-02	8.635E-02	7.879E-03	-0.028
CO-57	-2.452E-02		3.649E-02	5.760E-02	5.802E-03	-0.426
CO-58	-3.119E-02		5.631E-02	8.673E-02	7.798E-03	-0.360
FE-59	1.656E-02		1.488E-01	2.451E-01	2.286E-02	0.068
CO-60	-5.410E-02		5.420E-02	7.587E-02	7.294E-03	-0.713
ZN-65	3.537E-02		1.305E-01	1.890E-01	1.615E-02	0.187
SE-75	-5.119E-02		7.819E-02	1.089E-01	1.194E-02	-0.470
SR-85	1.107E-01		6.572E-02	1.044E-01	9.020E-03	1.061
Y-88	-5.099E-03		3.725E-02	5.913E-02	4.980E-03	-0.086
Y-91	5.826E+00		3.310E+01	5.448E+01	4.592E+00	0.107
NB-94	-1.724E-02		4.100E-02	6.638E-02	5.604E-03	-0.260
NB-95	5.346E-02		6.633E-02	1.158E-01	1.015E-02	0.462
NB-95M	5.670E-01		2.456E-01	3.839E-01	4.626E-02	1.477
ZR-95	-3.133E-03		1.014E-01	1.662E-01	1.597E-02	-0.019
MO-99	-1.059E-04		5.842E-05	Half-Life	too short	
TC-99M	-4.386E+19		9.413E+19	Half-Life	too short	
RU-103	5.373E-03		6.163E-02	1.009E-01	1.410E-02	0.053
RH-106	1.184E-01		4.386E-01	7.195E-01	9.437E-02	0.165
RU-106	1.184E-01		4.384E-01	7.195E-01	6.046E-02	0.165
AG-108M	3.397E-02		4.259E-02	7.282E-02	6.436E-03	0.466
AG-110M	-5.736E-03		5.520E-02	7.916E-02	6.737E-03	-0.072
SN-113	1.857E-03		6.635E-02	1.094E-01	9.498E-03	0.017
CD-115	-2.186E-05		9.122E-05	Half-Life	too short	
SN-117M	-3.340E-02		1.206E-01	1.922E-01	2.015E-02	-0.174
TE-123M	2.256E-02		4.276E-02	7.022E-02	7.400E-03	0.321
SB-124	-1.203E-03		1.140E-01	1.877E-01	1.768E-02	-0.006
SB-125	2.035E-02		1.283E-01	2.123E-01	1.848E-02	0.096
TE-125M	-7.625E+00		1.578E+01	2.523E+01	3.003E+00	-0.302
I-126	1.888E-01		4.874E-01	7.336E-01	6.049E-02	0.257
SB-126	-1.209E-01		3.073E-01	4.413E-01	3.767E-02	-0.274
SB-127	5.391E+00		7.546E+00	1.318E+01	1.823E+00	0.409
I-131	9.926E-02		3.098E-01	5.206E-01	5.058E-02	0.191
TE-132	1.004E-01		5.783E+00	9.733E+00	1.845E+00	0.010

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	7.356E-02		6.324E-02	9.787E-02	1.322E-02	0.752
I-133	-2.472E+00		2.236E+00	Half-Life too short		
CS-134	1.769E-01	+	7.849E-02	1.239E-01	1.110E-02	1.427
CS-135	5.145E-01		2.610E-01	4.124E-01	4.949E-02	1.248
I-135	1.619E+18		2.324E+18	Half-Life too short		
CS-136	1.165E-01		2.196E-01	3.759E-01	3.480E-02	0.310
CE-139	6.976E-03		4.431E-02	7.173E-02	7.657E-03	0.097
BA-140	-1.279E-01		5.248E-01	8.318E-01	2.821E-01	-0.154
LA-140	4.739E-02		1.913E-01	2.849E-01	2.671E-02	0.166
CE-141	3.043E-02		1.052E-01	1.698E-01	1.755E-02	0.179
CE-143	6.832E-02		1.058E-02	Half-Life too short		
CE-144	-4.092E-01		2.980E-01	4.450E-01	7.180E-02	-0.920
PM-144	-3.902E-03		4.575E-02	7.613E-02	6.407E-03	-0.051
PR-144	2.958E-01		3.397E+00	5.720E+00	4.811E-01	0.052
PM-146	-2.739E-02		5.755E-02	9.103E-02	9.626E-03	-0.301
ND-147	-2.500E-01		1.183E+00	1.887E+00	2.823E-01	-0.132
PM-149	7.583E-04		7.660E-04	Half-Life too short		
EU-152	-7.143E-02		1.733E-01	2.264E-01	2.305E-02	-0.315
GD-153	-2.712E-02		1.397E-01	1.973E-01	2.177E-02	-0.137
EU-154	-1.464E-01		1.568E-01	2.240E-01	2.626E-02	-0.654
EU-155	-5.628E-02		1.531E-01	2.463E-01	2.594E-02	-0.229
TB-160	-1.546E-02		1.710E-01	2.801E-01	2.592E-02	-0.055
HO-166M	4.698E-02		8.150E-02	1.415E-01	1.201E-02	0.332
TA-182	-3.183E-02		2.867E-01	4.601E-01	3.949E-02	-0.069
IR-192	-3.389E-02		5.057E-02	8.083E-02	8.334E-03	-0.419
HG-203	9.945E-02		6.117E-02	1.077E-01	1.183E-02	0.924
BI-207	-5.495E-02		7.224E-02	1.094E-01	9.648E-03	-0.502
PB-210	-7.355E+00		1.387E+01	2.239E+01	2.757E+00	-0.328
PB-211	-4.032E-01		1.042E+00	1.645E+00	7.957E-01	-0.245
BI-212	2.289E+00	+	1.047E+00	1.506E+00	1.871E-01	1.520
RN-219	-1.934E-01		5.503E-01	8.845E-01	1.307E-01	-0.219
RA-223	4.941E-01		1.038E+00	1.540E+00	2.795E-01	0.321
AC-227	-7.470E-02		3.522E-01	5.841E-01	8.083E-02	-0.128
TH-227	-7.470E-02		3.522E-01	5.841E-01	8.885E-02	-0.128
TH-229	-7.340E-01		7.839E-01	1.198E+00	1.303E-01	-0.613
PA-231	-1.121E+00		2.002E+00	3.238E+00	5.163E-01	-0.346
TH-231	4.941E-01		1.038E+00	1.540E+00	2.795E-01	0.321
PA-233	1.983E-02		8.965E-02	1.506E-01	1.593E-02	0.132
PA-234	-8.011E-02		3.857E-01	6.222E-01	1.186E-01	-0.129
PA-234M	1.443E-01		6.293E+00	1.021E+01	1.059E+00	0.014
NP-239	2.733E-01		5.528E-01	9.156E-01	9.241E-02	0.298
AM-241	3.484E-01		3.566E-01	5.422E-01	6.365E-02	0.642
CM-247	-1.188E-02		5.062E-02	8.203E-02	6.937E-03	-0.145
CF-249	-4.821E-03		5.708E-02	9.354E-02	7.974E-03	-0.052
CF-251	-5.026E-02		1.964E-01	3.004E-01	3.233E-02	-0.167

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]G248513017          *
* Acquisition date   : 20-MAR-2010 13:31:54 Detector SN#      :              *
* Detector ID        : GAM15                      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 02:00:01.41           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513017           Analyst initials: MXR1          *
* Batch Number       : 961097              Sample Quantity : 1.2260E+02 GRAM  *
* Recovery           : 1.00000             Carrier Weight  : 0.00000         *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 3-FEB-2010 11:04:32 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	3.109E+01	3.613E+00	3.671E-01	1.843E+00
CD-109	3.436E+00	1.557E+00	9.559E-01	7.943E-01
SN-126	3.319E-01	1.504E-01	9.304E-02	7.672E-02
BA-137M	1.828E-01	8.330E-02	3.873E-02	4.250E-02
CS-137	1.931E-01	8.800E-02	4.092E-02	4.490E-02
TL-208	7.097E-01	1.255E-01	3.585E-02	6.403E-02
BI-211	5.264E+00	8.429E-01	2.402E-01	4.301E-01
PB-212	2.305E+00	3.127E-01	6.663E-02	1.595E-01
BI-214	1.603E+00	2.534E-01	8.084E-02	1.293E-01
PB-214	1.910E+00	3.229E-01	8.736E-02	1.647E-01
RA-224	5.819E+00	1.988E+00	7.139E-01	1.014E+00
RA-226	1.603E+00	2.534E-01	8.084E-02	1.293E-01
AC-228	2.544E+00	4.900E-01	1.380E-01	2.500E-01
RA-228	2.544E+00	4.900E-01	1.380E-01	2.500E-01
TH-228	2.305E+00	3.127E-01	6.663E-02	1.595E-01
TH-232	2.544E+00	4.900E-01	1.380E-01	2.500E-01
TH-234	4.505E+00	4.177E+00	2.163E+00	2.131E+00
U-235	6.945E-03	2.832E-01	2.379E-01	1.445E-01
NP-237	9.904E-01	4.927E-01	2.830E-01	2.514E-01
U-238	4.505E+00	4.177E+00	2.163E+00	2.131E+00
ANH-511	1.173E-01	8.192E-02	3.271E-02	4.180E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	7.543E-02	4.863E-01	4.141E-01	2.481E-01 NOT IDENT.
NA-22	-5.381E-02	5.478E-02	3.994E-02	2.795E-02 NOT IDENT.
NA-24	-5.116E+08	6.023E+09	0.000E+00	3.073E+09 SHORT HLIF
SC-46	1.197E-02	5.817E-02	4.699E-02	2.968E-02 FAIL ABUN
V-48	-4.136E-02	1.257E-01	1.025E-01	6.416E-02 NOT IDENT.
CR-51	-3.234E-01	6.160E-01	5.169E-01	3.143E-01 NOT IDENT.

MN-54	1.730E-03	5.145E-02	4.389E-02	2.625E-02	NOT IDENT.
CO-56	-2.381E-03	5.130E-02	4.344E-02	2.617E-02	NOT IDENT.
CO-57	-2.452E-02	3.576E-02	2.970E-02	1.824E-02	NOT IDENT.
CO-58	-3.119E-02	5.519E-02	4.366E-02	2.816E-02	NOT IDENT.
FE-59	1.656E-02	1.459E-01	1.229E-01	7.441E-02	NOT IDENT.
CO-60	-5.410E-02	5.311E-02	3.794E-02	2.710E-02	NOT IDENT.
ZN-65	3.537E-02	1.279E-01	9.473E-02	6.524E-02	NOT IDENT.
SE-75	-5.119E-02	7.663E-02	5.562E-02	3.910E-02	NOT IDENT.
SR-85	1.107E-01	6.440E-02	5.287E-02	3.286E-02	NOT IDENT.
Y-88	-5.099E-03	3.651E-02	2.944E-02	1.863E-02	NOT IDENT.
Y-91	5.826E+00	3.244E+01	2.728E+01	1.655E+01	NOT IDENT.
NB-94	-1.724E-02	4.018E-02	3.348E-02	2.050E-02	NOT IDENT.
NB-95	5.346E-02	6.501E-02	5.833E-02	3.317E-02	NOT IDENT.
NB-95M	5.670E-01	2.407E-01	1.964E-01	1.228E-01	NOT IDENT.
ZR-95	-3.133E-03	9.934E-02	8.375E-02	5.068E-02	NOT IDENT.
MO-99	-1.059E+02	1.145E+02	0.000E+00	5.842E+01	SHORT HLIF
TC-99M	-4.386E+25	1.845E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.373E-03	6.040E-02	5.111E-02	3.081E-02	FAIL ABUN
RH-106	1.184E-01	4.298E-01	3.634E-01	2.193E-01	NOT IDENT.
RU-106	1.184E-01	4.296E-01	3.634E-01	2.192E-01	NOT IDENT.
AG-108M	3.397E-02	4.174E-02	3.696E-02	2.130E-02	NOT IDENT.
AG-110M	-5.736E-03	5.410E-02	3.996E-02	2.760E-02	NOT IDENT.
SN-113	1.857E-03	6.503E-02	5.557E-02	3.318E-02	NOT IDENT.
CD-115	-2.186E+01	1.788E+02	0.000E+00	9.122E+01	SHORT HLIF
SN-117M	-3.340E-02	1.182E-01	9.877E-02	6.031E-02	NOT IDENT.
TE-123M	2.256E-02	4.190E-02	3.609E-02	2.138E-02	NOT IDENT.
SB-124	-1.203E-03	1.117E-01	9.357E-02	5.701E-02	NOT IDENT.
SB-125	2.035E-02	1.257E-01	1.077E-01	6.416E-02	FAIL ABUN
TE-125M	-7.625E+00	1.546E+01	1.303E+01	7.889E+00	NOT IDENT.
I-126	1.888E-01	4.776E-01	3.702E-01	2.437E-01	NOT IDENT.
SB-126	-1.209E-01	3.011E-01	2.225E-01	1.536E-01	NOT IDENT.
SB-127	5.391E+00	7.395E+00	6.649E+00	3.773E+00	NOT IDENT.
I-131	9.926E-02	3.036E-01	2.648E-01	1.549E-01	NOT IDENT.
TE-132	1.004E-01	5.667E+00	4.980E+00	2.892E+00	NOT IDENT.
BA-133	7.356E-02	6.197E-02	4.979E-02	3.162E-02	NOT IDENT.
I-133	-2.472E+06	4.382E+06	0.000E+00	2.236E+06	SHORT HLIF
CS-134	1.769E-01	7.692E-02	6.238E-02	3.925E-02	FAIL ABUN
CS-135	5.145E-01	2.557E-01	2.106E-01	1.305E-01	NOT IDENT.
I-135	1.619E+24	4.556E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.165E-01	2.152E-01	1.886E-01	1.098E-01	NOT IDENT.
CE-139	6.976E-03	4.342E-02	3.685E-02	2.215E-02	NOT IDENT.
BA-140	-1.279E-01	5.143E-01	4.210E-01	2.624E-01	NOT IDENT.
LA-140	4.739E-02	1.874E-01	1.421E-01	9.563E-02	FAIL ABUN
CE-141	3.043E-02	1.031E-01	8.737E-02	5.258E-02	NOT IDENT.
CE-143	6.832E+04	2.074E+04	0.000E+00	1.058E+04	SHORT HLIF
CE-144	-4.092E-01	2.920E-01	2.292E-01	1.490E-01	NOT IDENT.
PM-144	-3.902E-03	4.484E-02	3.840E-02	2.288E-02	NOT IDENT.
PR-144	2.958E-01	3.329E+00	2.885E+00	1.699E+00	NOT IDENT.
PM-146	-2.739E-02	5.640E-02	4.617E-02	2.878E-02	NOT IDENT.
ND-147	-2.500E-01	1.160E+00	9.552E-01	5.917E-01	FAIL ABUN
PM-149	7.583E+02	1.501E+03	0.000E+00	7.660E+02	SHORT HLIF
EU-152	-7.143E-02	1.698E-01	1.153E-01	8.664E-02	NOT IDENT.
GD-153	-2.712E-02	1.369E-01	1.020E-01	6.985E-02	NOT IDENT.
EU-154	-1.464E-01	1.536E-01	1.121E-01	7.838E-02	NOT IDENT.
EU-155	-5.628E-02	1.500E-01	1.272E-01	7.654E-02	FAIL ABUN
TB-160	-1.546E-02	1.676E-01	1.408E-01	8.550E-02	FAIL ABUN
HO-166M	4.698E-02	7.987E-02	7.132E-02	4.075E-02	NOT IDENT.
TA-182	-3.183E-02	2.810E-01	2.304E-01	1.434E-01	FAIL ABUN
IR-192	-3.389E-02	4.956E-02	4.118E-02	2.529E-02	FAIL ABUN
HG-203	9.945E-02	5.995E-02	5.494E-02	3.059E-02	NOT IDENT.
BI-207	-5.495E-02	7.079E-02	5.485E-02	3.612E-02	FAIL ABUN
PB-210	-7.355E+00	1.359E+01	1.169E+01	6.935E+00	NOT IDENT.
PB-211	-4.032E-01	1.021E+00	8.356E-01	5.211E-01	NOT IDENT.
BI-212	2.289E+00	1.026E+00	7.592E-01	5.237E-01	FAIL ABUN
RN-219	-1.934E-01	5.393E-01	4.493E-01	2.752E-01	FAIL ABUN
RA-223	4.941E-01	1.017E+00	7.844E-01	5.191E-01	FAIL ABUN
AC-227	-7.470E-02	3.451E-01	2.984E-01	1.761E-01	FAIL ABUN
TH-227	-7.470E-02	3.452E-01	2.984E-01	1.761E-01	FAIL ABUN
TH-229	-7.340E-01	7.683E-01	6.141E-01	3.920E-01	FAIL ABUN
PA-231	-1.121E+00	1.962E+00	1.652E+00	1.001E+00	FAIL ABUN
TH-231	4.941E-01	1.017E+00	7.844E-01	5.191E-01	FAIL ABUN
PA-233	1.983E-02	8.786E-02	7.674E-02	4.483E-02	FAIL ABUN
PA-234	-8.011E-02	3.780E-01	3.126E-01	1.929E-01	NOT IDENT.
PA-234M	1.443E-01	6.167E+00	5.127E+00	3.146E+00	NOT IDENT.
NP-239	2.733E-01	5.418E-01	4.724E-01	2.764E-01	NOT IDENT.
AM-241	3.484E-01	3.494E-01	2.821E-01	1.783E-01	NOT IDENT.
CM-247	-1.188E-02	4.961E-02	4.167E-02	2.531E-02	NOT IDENT.
CF-249	-4.821E-03	5.594E-02	4.754E-02	2.854E-02	NOT IDENT.

CF-251	-5.026E-02	1.925E-01	1.542E-01	9.821E-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
46.54	318.6649
49.72	284.0598
57.36	0.0000
59.54	295.3332
63.29	386.8566
63.29	386.8566
64.28	387.4125
67.75	387.3613
69.67	425.8564
70.83	414.6840
72.81	395.9961
72.87	396.0274
72.87	396.0274
74.82	405.9888
74.82	405.9888
74.82	405.9888
74.97	406.0699
77.11	407.2057
77.11	407.2057
77.11	407.2057
79.69	460.2990
79.80	517.9096
80.12	518.1192
80.19	518.1647
80.57	546.0146
81.00	584.3320
81.07	584.3832
81.07	584.3832
83.79	516.7517
83.79	516.7517
85.43	481.3035
86.48	434.1682
86.55	434.2061
86.79	434.3294
86.94	434.4099
87.57	434.7388
88.03	434.9788
88.47	435.2073
89.96	435.9768
91.11	436.5670
92.59	437.3201
92.59	437.3201
93.35	437.7048
94.67	438.3707
94.87	366.2402
94.87	366.2402
95.86	412.2816
97.43	370.5695
98.44	374.2579
99.53	364.8943
100.11	349.3008
103.18	431.2521
103.37	402.5857
105.31	400.3416
106.12	394.5078
109.28	422.7002
111.00	350.9839
111.76	371.9840
116.30	384.1221
117.23	333.4265
121.12	348.3147
121.78	371.5675
122.06	374.8113
123.07	355.2682
131.20	388.6669
133.52	415.9674
136.00	336.2925

136.47	342.8055
140.51	0.0000
140.51	0.0000
143.76	367.4920
144.24	377.2655
144.24	377.2655
145.44	341.2885
152.43	321.8324
153.25	348.9837
154.21	389.1536
154.21	389.1536
156.02	360.5983
158.56	377.5943
159.00	338.7665
162.66	344.1334
163.33	350.8391
165.86	337.4093
176.60	340.2924
177.52	346.4969
181.07	0.0000
184.41	344.5421
185.72	344.8824
193.51	359.1093
197.04	331.0524
205.31	349.8336
210.85	283.6538
215.65	314.2057
222.11	294.9121
227.38	284.1097
228.16	292.4560
228.18	292.4599
235.69	318.9193
235.96	318.9746
235.96	318.9746
238.63	269.6818
238.63	269.6818
240.99	270.0874
242.00	270.2614
244.70	231.7410
252.40	243.3408
252.80	231.3690
256.23	242.0582
256.23	242.0582
260.90	0.0000
264.66	247.0206
268.22	207.0657
269.46	218.1234
269.46	218.1234
271.23	201.1951
273.65	301.4408
276.40	217.4477
277.37	207.7865
277.60	192.5529
278.00	196.2490
279.20	190.8502
279.54	193.7084
280.46	246.4981
283.69	221.5030
284.31	221.5833
285.41	205.6816
285.90	0.0000
287.50	177.9028
293.27	0.0000
295.22	194.4847
295.96	194.5648
298.57	194.8476
299.98	194.9977
299.98	194.9977
300.09	195.0103
300.09	195.0103
300.13	195.0153
301.36	195.1454
302.85	168.3121
304.50	190.7129
304.50	190.7129
304.85	190.7495
308.46	182.9321
311.90	184.7753

316.51	188.1093
319.41	198.0110
320.08	196.1558
323.87	184.6640
323.87	184.6640
328.76	203.8087
333.37	125.8677
334.37	125.9327
334.37	125.9327
338.28	196.0697
338.28	196.0697
338.32	196.0746
338.32	196.0746
338.32	196.0746
340.48	176.5307
340.55	176.5362
344.28	200.5583
351.06	181.6997
351.93	181.7769
356.01	128.9359
364.49	143.5637
366.42	0.0000
383.85	155.8041
388.16	165.0658
388.63	151.1762
391.69	159.3574
400.66	154.0113
401.81	150.0879
402.40	149.1273
404.85	169.3321
410.95	141.6627
414.70	183.1597
423.72	162.6686
427.09	140.6459
427.87	138.6690
433.94	130.9133
453.88	133.0437
463.37	98.6332
468.07	92.6455
473.00	147.4984
476.78	115.6996
477.60	121.9367
487.02	118.2472
492.35	0.0000
497.08	109.3425
511.00	120.4026
514.00	110.0584
527.90	0.0000
529.87	0.0000
531.02	95.9988
537.26	96.2210
546.56	0.0000
563.25	109.9429
569.33	89.8570
569.50	100.5612
569.70	102.7078
583.19	85.9961
600.60	96.1285
602.73	117.2412
604.72	119.1255
609.32	117.1415
609.32	117.1415
610.33	117.5454
614.28	85.1072
618.01	114.8277
621.93	92.5869
621.93	92.5869
633.25	88.5621
635.95	90.8279
636.99	94.1444
645.85	95.5152
657.76	99.1890
661.66	91.9556
661.66	91.9556
664.57	0.0000
666.33	82.0933
666.50	82.0988
677.62	85.0277

685.70	85.2430
695.00	90.1343
696.49	95.7536
696.51	91.1054
697.00	90.1896
702.65	87.5513
706.68	87.6603
711.68	84.9904
720.70	81.4775
721.93	0.0000
722.78	85.1416
722.91	85.1453
723.31	78.7295
724.19	67.5000
727.33	72.3889
733.00	58.0091
735.93	83.5409
739.50	0.0000
747.24	62.2980
752.31	62.3906
753.82	62.4175
756.73	70.9900
763.94	110.0268
765.81	98.6976
766.42	102.5112
777.92	0.0000
778.90	83.8249
783.70	68.6777
785.37	76.3444
795.86	68.9136
801.95	87.7266
810.29	74.9563
810.76	75.9269
815.77	69.2944
818.51	52.9735
832.01	82.1691
834.85	88.0359
836.80	0.0000
846.77	63.0851
856.80	58.3887
860.56	67.2130
871.09	43.9563
873.19	60.5948
875.33	0.0000
879.36	49.9250
880.51	50.9188
883.24	67.6130
884.68	65.6778
889.28	62.8125
898.04	58.0349
911.20	55.2697
911.20	55.2697
911.20	55.2697
926.50	62.4181
937.49	76.4987
944.13	57.7168
946.00	61.7250
949.00	67.7496
962.29	61.6867
964.08	66.8571
966.15	84.0410
968.97	84.0991
968.97	84.0991
968.97	84.0991
983.53	60.2820
996.26	68.5271
1001.03	61.5423
1004.73	54.5273
1037.84	61.0547
1038.76	0.0000
1048.07	55.0789
1050.41	61.2329
1050.41	61.2329
1063.66	71.6520
1085.87	55.5513
1099.45	69.1319
1112.07	56.7612
1115.54	53.2533

1120.29	65.7462
1120.29	65.7462
1120.55	65.7514
1121.30	69.3164
1131.51	0.0000
1173.23	69.1904
1177.93	54.5687
1189.05	56.7993
1204.77	70.7022
1221.41	76.2393
1231.02	85.9373
1235.36	76.4561
1238.28	73.3125
1260.41	0.0000
1271.85	44.9258
1274.44	53.5095
1274.54	54.5818
1291.59	51.5430
1298.22	0.0000
1312.11	48.5156
1332.49	48.7061
1365.19	33.6056
1368.63	0.0000
1384.29	26.2305
1408.01	25.1482
1457.56	0.0000
1460.82	28.2610
1489.16	18.1399
1505.03	23.4558
1596.21	20.4199
1620.50	13.6680
1678.03	0.0000
1690.97	17.7746
1764.49	14.9843
1764.49	14.9843
1770.23	12.2479
1771.35	8.7500
1791.20	0.0000
1836.06	10.0987

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513017

Total Uranium Activity	1.3405E+01	ug/g
Total Uranium Counting Unc.	1.2426E+01	ug/g
Total Uranium Tpu	6.3399E-06	ug/g
Total Uranium Mda	6.4373E+00	ug/g


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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID : G248513017
*  ANALYST       : MXR1            DETECTOR  : GAM15
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 13:31:54.37 SAMPLE ALQT: 122.600 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.219E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.864E+00
GROSS GAMMA MDA (pCi/GRAM ) : 6.302E+00
GROSS GAMMA DLC (pCi/GRAM ) : 3.068E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:34:56.21

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513018.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:32:20
Sample ID          : G248513018 Sample quantity : 1.24000E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.21 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	63.32*	86	532	0.92	126.82	123	8	1.19E-02	49.0	
2	4	74.87*	535	452	0.81	149.93	146	12	7.43E-02	7.4	2.54E+00
3	4	77.13*	856	393	0.90	154.45	146	12	1.19E-01	5.0	
4	6	87.21	393	241	1.04	174.60	172	21	5.46E-02	7.2	2.17E+00
5	6	90.00	208	390	1.09	180.20	172	21	2.89E-02	17.2	
6	6	92.97*	455	469	1.56	186.14	172	21	6.33E-02	10.4	
7	0	128.78	187	516	1.07	257.74	252	11	2.60E-02	24.6	
8	0	154.13	78	289	1.02	308.45	306	7	1.09E-02	37.7	
9	0	185.69*	261	471	1.36	371.58	365	11	3.63E-02	17.7	
10	0	209.41	200	297	1.06	419.02	415	9	2.78E-02	17.1	
11	6	238.53*	1871	248	0.98	477.25	473	16	2.60E-01	2.7	3.41E+00
12	6	241.53	376	315	1.47	483.25	473	16	5.23E-02	10.6	
13	0	270.19	204	244	1.24	540.58	535	12	2.83E-02	16.9	
14	0	277.48*	104	152	1.15	555.15	552	8	1.45E-02	23.0	
15	0	295.03*	491	199	1.17	590.24	587	9	6.83E-02	6.8	
16	0	300.13	116	225	1.12	600.45	596	9	1.61E-02	25.2	
17	0	328.00	128	158	1.10	656.19	652	9	1.78E-02	19.8	
18	0	337.98*	298	185	1.20	676.15	672	8	4.14E-02	9.2	
19	0	351.76*	932	199	1.13	703.72	697	14	1.29E-01	4.6	
20	0	409.14	56	87	1.78	818.45	815	7	7.81E-03	30.9	
21	0	462.81	83	137	0.93	925.78	922	10	1.15E-02	28.4	
22	0	510.75*	150	195	1.53	1021.66	1014	17	2.09E-02	24.9	
23	0	583.05*	511	152	1.39	1166.24	1159	15	7.09E-02	7.0	
24	0	609.09*	640	112	1.25	1218.31	1214	11	8.88E-02	5.1	
25	0	726.95*	125	62	1.20	1453.99	1449	10	1.74E-02	15.1	
26	0	768.25	63	96	1.28	1536.57	1530	12	8.75E-03	33.6	
27	0	794.80	56	73	1.14	1589.67	1584	10	7.84E-03	31.2	
28	0	860.65	84	56	1.11	1721.33	1716	12	1.17E-02	21.2	
29	0	910.96*	371	54	1.48	1821.92	1816	13	5.15E-02	6.7	
30	1	964.38	64	44	1.76	1928.73	1921	29	8.94E-03	23.3	2.09E+00
31	1	968.67	227	27	1.69	1937.32	1921	29	3.15E-02	8.0	
32	0	1120.34*	117	94	1.91	2240.57	2235	16	1.62E-02	21.1	
33	0	1377.53	51	37	1.56	2754.74	2747	17	7.15E-03	30.8	
34	0	1460.36*	1330	25	1.88	2920.32	2910	19	1.85E-01	2.9	
35	0	1631.80	17	21	2.01	3263.03	3252	14	2.30E-03	63.9	
36	0	1729.09	33	11	3.11	3457.51	3451	19	4.52E-03	29.0	
37	0	1764.01*	100	7	1.96	3527.31	3521	13	1.39E-02	11.9	
38	0	1847.28*	18	13	1.81	3693.75	3689	10	2.46E-03	48.5	

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]G248513018.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:32:20
Sample ID         : G248513018 Sample quantity : 124.00 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA16 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.21 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	+	1460.82	*	3.126E+01	3.292E+00	4.925E-01	4.329E-02	63.479
CD-109	+	88.03	*	5.319E+00	9.182E-01	1.157E+00	1.115E-01	4.598
SN-126	+	64.28		7.629E-01	7.563E-01	7.806E-01	1.137E-01	0.977
	+	86.94		2.136E+00	9.394E-01	5.407E-01	2.247E-01	3.951
	+	87.57	*	5.138E-01	8.869E-02	1.123E-01	1.076E-02	4.577
TL-208	+	277.37		1.017E+00	4.917E-01	5.879E-01	8.833E-02	1.730
	+	583.19	*	6.817E-01	1.172E-01	6.100E-02	6.040E-03	11.176
	+	860.56		1.066E+00	4.639E-01	4.589E-01	4.593E-02	2.322
BI-211		72.87		2.545E+00	3.303E+00	5.246E+00	4.264E-01	0.485
	+	351.06	*	5.542E+00	7.940E-01	3.070E-01	3.357E-02	18.051
PB-212	+	74.82		3.080E+00	6.020E-01	5.688E-01	7.270E-02	5.415
	+	77.11		2.823E+00	3.696E-01	3.264E-01	2.773E-02	8.650
	+	238.63	*	2.485E+00	3.240E-01	9.740E-02	1.157E-02	25.518
	+	300.09		2.396E+00	1.249E+00	1.270E+00	1.676E-01	1.886
BI-214	+	609.32	*	1.653E+00	2.440E-01	1.083E-01	1.150E-02	15.262
	+	1120.29		1.563E+00	6.803E-01	5.044E-01	5.440E-02	3.099
	+	1764.49		1.874E+00	4.707E-01	2.998E-01	2.481E-02	6.252
PB-214	+	74.82		5.460E+00	1.022E+00	1.008E+00	1.157E-01	5.415
	+	77.11		4.978E+00	7.701E-01	5.755E-01	6.813E-02	8.650
	+	242.00		3.032E+00	7.446E-01	5.925E-01	7.391E-02	5.118
	+	295.22		1.800E+00	3.457E-01	2.222E-01	2.993E-02	8.100
	+	351.93	*	2.011E+00	3.088E-01	1.117E-01	1.365E-02	18.011
RA-224	+	240.99	*	5.362E+00	1.279E+00	1.044E+00	1.151E-01	5.135
RA-226	+	609.32	*	1.653E+00	2.440E-01	1.083E-01	1.150E-02	15.262
	+	1120.29		1.563E+00	6.803E-01	5.044E-01	5.440E-02	3.099
	+	1764.49		1.874E+00	4.707E-01	2.998E-01	2.481E-02	6.252
AC-228	+	338.32		1.972E+00	9.089E-01	3.799E-01	1.605E-01	5.192
	+	911.20	*	2.385E+00	4.324E-01	2.431E-01	2.968E-02	9.808
	+	968.97		2.518E+00	7.400E-01	3.581E-01	8.806E-02	7.034
RA-228	+	338.32		1.972E+00	9.089E-01	3.799E-01	1.605E-01	5.192
	+	911.20	*	2.385E+00	4.324E-01	2.431E-01	2.968E-02	9.808
	+	968.97		2.518E+00	7.400E-01	3.581E-01	8.806E-02	7.034
TH-228	+	74.82		3.080E+00	5.233E-01	5.688E-01	4.763E-02	5.415
	+	77.11		2.823E+00	3.696E-01	3.264E-01	2.773E-02	8.650

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	2.485E+00	3.240E-01	9.740E-02	1.157E-02	25.518
	+	300.09		2.396E+00	1.910E+00	1.270E+00	7.841E-01	1.886
TH-232	+	338.32		1.972E+00	4.220E-01	3.799E-01	4.147E-02	5.192
	+	911.20	*	2.385E+00	4.324E-01	2.431E-01	2.968E-02	9.808
	+	968.97		2.518E+00	7.400E-01	3.581E-01	8.806E-02	7.034
TH-234	+	63.29	*	1.979E+00	1.973E+00	2.038E+00	3.633E-01	0.971
	+	92.59		4.935E+00	1.504E+00	9.413E-01	2.101E-01	5.242
U-235	+	89.96		2.823E+00	1.199E+00	1.171E+00	2.917E-01	2.411
	+	93.35		3.728E+00	1.164E+00	7.074E-01	1.648E-01	5.269
		143.76	*	1.289E-01	2.053E-01	3.431E-01	5.807E-02	0.376
		163.33		2.698E-01	4.248E-01	7.149E-01	1.297E-01	0.377
	+	185.72		2.251E-01	8.252E-02	6.732E-02	6.431E-03	3.343
		205.31		9.087E-01	5.560E-01	8.465E-01	1.598E-01	1.073
NP-237	+	86.48	*	1.533E+00	4.164E-01	3.899E-01	8.970E-02	3.932
		95.86		-4.723E-01	8.957E-01	1.318E+00	3.179E-01	-0.358
U-238	+	63.29	*	1.979E+00	1.973E+00	2.038E+00	3.633E-01	0.971
	+	92.59		4.935E+00	1.121E+00	9.413E-01	8.670E-02	5.242
ANH-511	+	511.00	*	1.536E-01	7.773E-02	4.815E-02	4.579E-03	3.189

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	3.101E-02	3.687E-01	6.143E-01	6.213E-02	0.050
NA-22		1274.54	*	6.539E-03	4.806E-02	7.898E-02	6.572E-03	0.083
NA-24		1368.63	*	3.703E+03	4.806E-02	Half-Life too short		
SC-46		889.28	*	4.928E-02	4.290E-02	7.803E-02	7.377E-03	0.632
	+	1120.55		2.823E-01	1.214E-01	1.519E-01	1.284E-02	1.858
V-48		944.13		-8.762E-02	1.137E+00	1.877E+00	1.753E-01	-0.047
		983.53	*	2.803E-03	9.763E-02	1.622E-01	1.493E-02	0.017
		1312.11		5.414E-03	1.171E-01	1.904E-01	1.599E-02	0.028
CR-51		320.08	*	2.989E-02	4.498E-01	7.150E-01	8.355E-02	0.042
MN-54		834.85	*	3.336E-02	4.144E-02	7.328E-02	6.883E-03	0.455
CO-56		846.77	*	4.133E-02	4.258E-02	7.666E-02	7.214E-03	0.539
		1037.84		8.014E-02	3.406E-01	5.741E-01	5.392E-02	0.140
		1238.28		1.919E-01	1.127E-01	2.035E-01	1.726E-02	0.943
		1771.35		-2.099E-02	2.278E-01	3.268E-01	2.700E-02	-0.064
CO-57		122.06	*	3.437E-03	2.468E-02	4.156E-02	3.453E-03	0.083
		136.47		-5.229E-03	2.042E-01	3.398E-01	3.086E-02	-0.015
CO-58		810.76	*	-5.247E-02	3.977E-02	5.823E-02	5.455E-03	-0.901
FE-59		1099.45	*	1.842E-02	1.084E-01	1.808E-01	1.680E-02	0.102
		1291.59		-4.281E-02	1.512E-01	2.374E-01	2.267E-02	-0.180
CO-60		1173.23		-1.695E-02	4.740E-02	7.482E-02	6.016E-03	-0.227
		1332.49	*	-1.856E-02	3.920E-02	5.930E-02	5.002E-03	-0.313
ZN-65		1115.54	*	-1.298E-02	1.060E-01	1.480E-01	1.257E-02	-0.088
SE-75		121.12		-9.826E-03	1.324E-01	2.212E-01	2.399E-02	-0.044
		136.00		8.250E-03	4.026E-02	6.761E-02	5.739E-03	0.122
		264.66	*	2.706E-02	4.877E-02	7.256E-02	8.468E-03	0.373
		279.54		3.897E-02	1.267E-01	1.840E-01	2.253E-02	0.212

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		-4.092E-02	2.496E-01	4.142E-01	4.812E-02	-0.099
SR-85		514.00	*	4.605E-02	4.388E-02	6.946E-02	6.605E-03	0.663
Y-88		898.04		-2.340E-02	4.359E-02	6.645E-02	6.311E-03	-0.352
		1836.06	*	-4.099E-03	3.939E-02	6.356E-02	5.160E-03	-0.064
Y-91		1204.77	*	-1.926E+00	2.466E+01	3.990E+01	3.244E+00	-0.048
NB-94		702.65	*	2.737E-02	3.424E-02	5.857E-02	5.295E-03	0.467
		871.09		-2.110E-03	3.181E-02	5.289E-02	4.992E-03	-0.040
NB-95		765.81	*	-2.103E-03	6.108E-02	8.476E-02	7.835E-03	-0.025
NB-95M		235.69	*	5.388E-02	1.539E-01	2.262E-01	2.693E-02	0.238
ZR-95		724.19		9.304E-02	1.098E-01	1.689E-01	1.657E-02	0.551
		756.73	*	-1.970E-02	8.450E-02	1.323E-01	1.332E-02	-0.149
MO-99		140.51		-1.218E-04	8.450E-02	Half-Life	too short	
		181.07		1.706E-05	8.450E-02	Half-Life	too short	
		366.42		1.468E-04	8.450E-02	Half-Life	too short	
		739.50	*	4.033E-05	8.450E-02	Half-Life	too short	
		777.92		-2.108E-04	8.450E-02	Half-Life	too short	
TC-99M		140.51	*	-9.736E+19	8.450E-02	Half-Life	too short	
RU-103		497.08	*	-2.463E-02	4.554E-02	7.205E-02	1.047E-02	-0.342
	+	610.33		1.963E+01	3.841E+00	3.805E+00	6.340E-01	5.159
RH-106		621.93	*	-3.057E-02	3.077E-01	4.958E-01	6.744E-02	-0.062
		1050.41		1.181E+00	2.572E+00	4.422E+00	3.931E-01	0.267
RU-106		621.93	*	-3.057E-02	3.077E-01	4.958E-01	4.533E-02	-0.062
		1050.41		1.181E+00	2.572E+00	4.422E+00	3.931E-01	0.267
AG-108M		433.94	*	-1.133E-02	2.899E-02	4.709E-02	4.556E-03	-0.241
		614.28		-9.897E-03	4.103E-02	5.684E-02	5.373E-03	-0.174
		722.91		5.620E-03	3.983E-02	5.681E-02	5.326E-03	0.099
AG-110M		657.76	*	-8.422E-02	4.331E-02	5.852E-02	5.357E-03	-1.439
		677.62		-2.405E-01	3.285E-01	4.950E-01	4.545E-02	-0.486
		706.68		-1.222E-01	2.284E-01	3.502E-01	3.254E-02	-0.349
		763.94		1.933E-01	1.917E-01	2.978E-01	2.817E-02	0.649
		884.68		-5.114E-02	4.969E-02	7.457E-02	7.235E-03	-0.686
		937.49		-8.294E-03	1.221E-01	2.020E-01	1.950E-02	-0.041
		1384.29		-9.489E-02	1.808E-01	2.217E-01	1.936E-02	-0.428
		1505.03		-5.311E-01	3.196E-01	4.106E-01	3.511E-02	-1.293
SN-113		391.69	*	-3.335E-03	4.517E-02	7.553E-02	7.169E-03	-0.044
CD-115		260.90		-7.062E-04	4.517E-02	Half-Life	too short	
		492.35		2.750E-04	4.517E-02	Half-Life	too short	
		527.90	*	-4.708E-05	4.517E-02	Half-Life	too short	
SN-117M		156.02		8.221E-01	3.674E+00	5.509E+00	4.859E-01	0.149
		158.56	*	-2.458E-02	9.103E-02	1.327E-01	1.178E-02	-0.185
TE-123M		159.00	*	-8.353E-03	3.117E-02	4.850E-02	4.338E-03	-0.172
SB-124		602.73		4.268E-02	4.539E-02	7.639E-02	7.066E-03	0.559
		645.85		-1.615E-02	5.573E-01	9.008E-01	8.528E-02	-0.018
		722.78		-3.066E-03	4.453E-01	6.233E-01	5.797E-02	-0.005
		1690.97	*	-1.051E-02	6.456E-02	1.028E-01	9.024E-03	-0.102
SB-125		427.87	*	5.202E-02	8.893E-02	1.537E-01	1.468E-02	0.338
	+	463.37		7.559E-01	4.364E-01	5.832E-01	5.880E-02	1.296
		600.60		1.125E-01	1.905E-01	3.228E-01	3.182E-02	0.348
		635.95		-8.281E-02	2.572E-01	4.048E-01	3.937E-02	-0.205

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28	*		-2.579E+00	1.005E+01	1.675E+01	1.735E+00	-0.154
I-126	388.63			-4.209E-03	2.510E-01	4.214E-01	3.942E-02	-0.010
	666.33	*		2.331E-01	3.814E-01	6.430E-01	5.719E-02	0.362
	753.82			6.626E-01	3.026E+00	4.931E+00	4.541E-01	0.134
SB-126	414.70			1.048E-01	1.141E-01	2.009E-01	1.878E-02	0.522
	666.50			1.369E-01	1.284E-01	2.231E-01	1.984E-02	0.614
	695.00			-1.257E-01	1.350E-01	2.004E-01	1.806E-02	-0.627
	697.00			4.864E-01	4.367E-01	7.619E-01	6.871E-02	0.638
	720.70	*		-1.554E-02	2.352E-01	3.460E-01	3.150E-02	-0.045
	856.80			4.121E-01	7.900E-01	1.225E+00	1.154E-01	0.336
SB-127	252.40			5.682E-01	1.797E+01	2.894E+01	1.243E+01	0.020
	473.00			3.436E+00	6.849E+00	1.170E+01	1.833E+00	0.294
	685.70	*		2.223E+00	5.840E+00	9.699E+00	1.378E+00	0.229
	783.70			1.611E+01	1.679E+01	2.856E+01	4.342E+00	0.564
I-131	80.19			1.606E+00	8.735E+00	1.355E+01	1.207E+00	0.119
	284.31			-2.530E-01	2.998E+00	4.760E+00	5.865E-01	-0.053
	364.49	*		-8.555E-02	2.193E-01	3.611E-01	3.839E-02	-0.237
	636.99			1.438E-01	2.843E+00	4.634E+00	4.443E-01	0.031
TE-132	49.72			-4.333E+01	9.912E+01	1.521E+02	2.007E+01	-0.285
	111.76			7.637E+01	1.758E+02	3.000E+02	4.015E+01	0.255
	116.30			1.061E+01	1.534E+02	2.582E+02	3.446E+01	0.041
	228.16	*		-6.857E-04	4.108E+00	6.649E+00	1.247E+00	0.000
BA-133	81.00			-7.984E-02	8.845E-02	1.381E-01	2.162E-02	-0.578
+	276.40			9.412E-01	4.593E-01	6.259E-01	1.023E-01	1.504
	302.85			1.698E-01	1.584E-01	2.396E-01	3.655E-02	0.708
	356.01	*		8.139E-03	4.358E-02	6.598E-02	9.385E-03	0.123
	383.85			-1.145E-01	2.849E-01	4.669E-01	6.104E-02	-0.245
I-133	529.87	*		2.322E-01	2.849E-01	Half-Life	too short	
	875.33			-1.796E+01	2.849E-01	Half-Life	too short	
	1298.22			-1.795E+02	2.849E-01	Half-Life	too short	
CS-134	563.25			7.619E-02	3.748E-01	6.226E-01	5.905E-02	0.122
	569.33			7.027E-02	2.085E-01	3.375E-01	3.205E-02	0.208
	604.72			-1.253E-02	4.007E-02	5.525E-02	5.115E-03	-0.227
+	795.86	*		1.103E-01	6.960E-02	1.026E-01	9.616E-03	1.076
	801.95			-2.893E-01	4.013E-01	6.347E-01	5.951E-02	-0.456
	1365.19			2.885E-01	1.218E+00	2.027E+00	1.800E-01	0.142
CS-135	268.22	*		1.661E-01	1.696E-01	2.576E-01	3.285E-02	0.645
I-135	546.56			-3.152E+18	1.696E-01	Half-Life	too short	
	836.80			4.032E+18	1.696E-01	Half-Life	too short	
	1038.76			1.232E+18	1.696E-01	Half-Life	too short	
	1131.51			-1.347E+18	1.696E-01	Half-Life	too short	
	1260.41	*		-2.502E+17	1.696E-01	Half-Life	too short	
	1457.56			4.345E+20	1.696E-01	Half-Life	too short	
	1678.03			7.461E+18	1.696E-01	Half-Life	too short	
	1791.20			2.339E+18	1.696E-01	Half-Life	too short	
CS-136	153.25	+		2.057E+00	1.565E+00	2.189E+00	2.275E-01	0.940
	176.60			-5.082E-01	7.669E-01	1.221E+00	1.241E-01	-0.416
	273.65			1.129E+00	9.340E-01	1.195E+00	1.484E-01	0.945
	340.55			1.491E-01	2.343E-01	3.656E-01	4.069E-02	0.408

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		2.292E-02	1.034E-01	1.772E-01	1.662E-02	0.129
		1048.07	*	3.431E-02	1.684E-01	2.828E-01	2.620E-02	0.121
		1235.36		1.371E+00	1.011E+00	1.788E+00	2.052E-01	0.767
BA-137M		661.66	*	4.807E-02	4.529E-02	7.619E-02	6.761E-03	0.631
CS-137		661.66	*	5.078E-02	4.785E-02	8.048E-02	7.155E-03	0.631
CE-139		165.86	*	-1.721E-02	2.964E-02	4.755E-02	4.312E-03	-0.362
BA-140		162.66		4.867E-01	1.228E+00	2.059E+00	1.965E-01	0.236
		304.85		-2.903E-01	2.316E+00	3.231E+00	9.788E-01	-0.090
		423.72		-8.374E-01	2.984E+00	4.876E+00	1.614E+00	-0.172
		537.26	*	1.961E-01	4.221E-01	7.080E-01	2.417E-01	0.277
LA-140	+	328.76		1.615E+00	6.676E-01	9.038E-01	1.042E-01	1.787
		487.02		7.760E-02	2.047E-01	3.476E-01	3.476E-02	0.223
		815.77		3.596E-01	4.582E-01	8.210E-01	8.455E-02	0.438
		1596.21	*	-1.115E-02	1.356E-01	2.230E-01	1.900E-02	-0.050
CE-141		145.44	*	2.996E-02	7.366E-02	1.241E-01	1.086E-02	0.241
CE-143		57.36		-1.234E-02	7.366E-02	Half-Life	too short	
		293.27	*	3.882E-02	7.366E-02	Half-Life	too short	
		664.57		-1.061E-01	7.366E-02	Half-Life	too short	
		721.93		6.831E-03	7.366E-02	Half-Life	too short	
CE-144		80.12		4.807E-01	2.426E+00	3.765E+00	3.305E-01	0.128
		133.52	*	-2.917E-02	2.163E-01	3.212E-01	4.869E-02	-0.091
PM-144		476.78		-3.445E-03	6.540E-02	1.080E-01	1.100E-02	-0.032
		618.01		-6.030E-03	3.334E-02	5.342E-02	5.020E-03	-0.113
		696.49	*	2.061E-02	3.706E-02	6.224E-02	5.616E-03	0.331
PR-144		696.51	*	1.532E+00	2.784E+00	4.674E+00	4.214E-01	0.328
		1489.16		-2.749E+00	1.191E+01	1.923E+01	1.644E+00	-0.143
PM-146		453.88	*	4.316E-02	4.334E-02	7.607E-02	8.592E-03	0.567
		633.25		3.468E-01	1.404E+00	2.316E+00	8.871E-01	0.150
		735.93		-1.052E-01	1.492E-01	2.183E-01	6.154E-02	-0.482
		747.24		-7.625E-02	9.366E-02	1.363E-01	2.035E-02	-0.559
ND-147	+	91.11		1.510E+00	5.414E-01	7.798E-01	7.800E-02	1.936
		319.41		-3.465E+00	5.589E+00	8.459E+00	9.606E-01	-0.410
		531.02	*	3.903E-01	8.955E-01	1.518E+00	2.348E-01	0.257
PM-149		285.90	*	-1.487E-04	8.955E-01	Half-Life	too short	
EU-152		121.78		-5.700E-03	6.944E-02	1.160E-01	1.117E-02	-0.049
		244.70		-1.991E-01	3.692E-01	5.091E-01	5.661E-02	-0.391
		344.28	*	3.358E-03	9.222E-02	1.565E-01	1.748E-02	0.021
		778.90		-1.929E-01	2.764E-01	4.112E-01	3.815E-02	-0.469
	+	964.08		7.699E-01	3.655E-01	6.120E-01	5.678E-02	1.258
		1085.87		-2.281E-01	4.139E-01	6.441E-01	5.591E-02	-0.354
		1112.07		-1.680E-01	3.079E-01	4.777E-01	4.064E-02	-0.352
		1408.01		2.488E-02	2.130E-01	3.470E-01	2.955E-02	0.072
GD-153		69.67		-1.263E+00	1.696E+00	2.841E+00	2.239E-01	-0.444
		97.43	*	-9.122E-02	8.998E-02	1.296E-01	1.151E-02	-0.704
		103.18		-7.591E-02	1.039E-01	1.701E-01	1.466E-02	-0.446
EU-154		123.07		-7.280E-03	5.134E-02	8.156E-02	9.065E-03	-0.089
		723.31		2.418E-02	1.807E-01	2.576E-01	2.561E-02	0.094
		873.19		-1.341E-02	2.629E-01	4.377E-01	5.472E-02	-0.031
		996.26		-1.282E-01	3.659E-01	5.849E-01	1.038E-01	-0.219

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		1.742E-01	2.138E-01	3.779E-01	4.538E-02	0.461
		1274.44	*	-2.405E-02	1.395E-01	2.223E-01	2.478E-02	-0.108
		86.55		6.250E-01	1.082E-01	1.936E-01	1.848E-02	3.229
		105.31	*	7.022E-02	9.892E-02	1.709E-01	1.478E-02	0.411
TB-160	+	86.79		1.784E+00	3.079E-01	5.582E-01	5.301E-02	3.195
		197.04		-2.205E-01	6.240E-01	9.902E-01	9.751E-02	-0.223
		215.65		4.977E-01	8.192E-01	1.365E+00	1.412E-01	0.365
		298.57		1.926E-01	1.882E-01	2.300E-01	2.700E-02	0.837
HO-166M	+	879.36	*	5.175E-02	1.442E-01	2.488E-01	2.350E-02	0.208
		962.29		1.050E+00	6.346E-01	1.075E+00	9.975E-02	0.977
		966.15		1.281E+00	3.017E-01	5.782E-01	5.360E-02	2.215
		1177.93		-3.473E-01	4.016E-01	5.991E-01	4.825E-02	-0.580
		1271.85		4.417E-01	8.056E-01	1.378E+00	1.144E-01	0.321
		80.57		6.418E-02	2.566E-01	3.990E-01	3.521E-02	0.161
		184.41		1.788E-01	6.556E-02	6.783E-02	6.457E-03	2.636
		280.46		-1.694E-02	9.361E-02	1.310E-01	1.572E-02	-0.129
		410.95		3.993E-02	2.591E-01	3.872E-01	3.615E-02	0.103
		711.68	*	-3.348E-02	6.351E-02	9.731E-02	8.829E-03	-0.344
		752.31		9.408E-02	2.807E-01	4.626E-01	4.259E-02	0.203
		810.29		-7.109E-02	5.686E-02	8.429E-02	7.880E-03	-0.843
TA-182		67.75		-9.391E-02	1.235E-01	1.840E-01	1.424E-02	-0.510
		100.11		2.561E-01	1.783E-01	3.143E-01	2.748E-02	0.815
		152.43		1.442E-01	3.892E-01	5.888E-01	5.145E-02	0.245
		222.11		2.319E-02	3.674E-01	5.974E-01	6.282E-02	0.039
		1121.30		7.685E-01	3.305E-01	4.053E-01	3.422E-02	1.896
		1189.05		-2.167E-01	3.521E-01	5.419E-01	4.382E-02	-0.400
		1221.41	*	-2.802E-01	2.062E-01	2.879E-01	2.354E-02	-0.973
		1231.02		1.050E-02	5.416E-01	8.823E-01	7.238E-02	0.012
IR-192	+	295.96		1.434E+00	2.596E-01	3.432E-01	4.059E-02	4.178
		308.46		-2.790E-02	1.020E-01	1.589E-01	1.844E-02	-0.176
		316.51	*	-1.170E-02	3.682E-02	5.703E-02	6.518E-03	-0.205
		468.07		-5.933E-02	8.455E-02	1.149E-01	1.157E-02	-0.516
HG-203		70.83		1.744E+00	1.569E+00	2.500E+00	3.929E-01	0.698
		72.87		7.131E-01	9.302E-01	1.470E+00	2.244E-01	0.485
		279.20	*	4.660E-02	4.726E-02	7.174E-02	8.731E-03	0.650
BI-207	+	72.81		1.512E-01	1.905E-01	3.028E-01	2.460E-02	0.499
		74.97		8.881E-01	1.505E-01	2.427E-01	2.016E-02	3.659
		569.70		1.757E-02	3.216E-02	5.281E-02	4.958E-03	0.333
		1063.66	*	5.830E-02	5.806E-02	1.033E-01	9.108E-03	0.564
PB-210		1770.23		2.417E-01	3.698E-01	6.413E-01	5.300E-02	0.377
		46.54	*	1.601E+00	3.332E+00	5.348E+00	4.944E-01	0.299
PB-211		404.85	*	-1.972E-02	7.921E-01	1.167E+00	5.662E-01	-0.017
		427.09		6.299E-01	1.545E+00	2.598E+00	1.206E+00	0.242
BI-212	+	832.01		2.085E-01	1.086E+00	1.840E+00	9.566E-01	0.113
		727.33	*	2.561E+00	8.389E-01	1.281E+00	1.642E-01	1.999
		785.37		4.080E+00	3.518E+00	6.351E+00	5.902E-01	0.643
		1620.50		3.365E+00	2.852E+00	5.335E+00	4.533E-01	0.631
RN-219	+	271.23		1.193E+00	4.310E-01	4.766E-01	6.220E-02	2.502
		401.81	*	1.775E-01	3.914E-01	6.724E-01	1.027E-01	0.264

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-1.830E-01	1.986E-01	3.120E-01	2.769E-02	-0.587
		83.79		8.284E-02	1.262E-01	1.973E-01	1.807E-02	0.420
		94.87		7.314E-01	4.393E-01	7.143E-01	6.460E-02	1.024
		144.24		2.419E-01	6.879E-01	1.144E+00	1.095E-01	0.211
	+	154.21		6.145E-01	4.668E-01	6.623E-01	6.351E-02	0.928
	+	269.46		9.266E-01	3.313E-01	3.682E-01	4.377E-02	2.517
AC-227		323.87	*	2.777E-01	6.974E-01	1.011E+00	1.899E-01	0.275
	+	338.28		7.827E+00	1.800E+00	2.649E+00	3.657E-01	2.955
		79.69		2.223E-01	1.191E+00	1.848E+00	3.195E-01	0.120
		235.96		8.710E-02	1.713E-01	2.537E-01	3.120E-02	0.343
		256.23	*	-4.687E-02	2.676E-01	4.258E-01	6.042E-02	-0.110
	+	299.98		2.636E+00	1.387E+00	1.781E+00	2.668E-01	1.480
TH-227		304.50		3.614E-01	1.840E+00	2.637E+00	4.821E-01	0.137
		334.37		-3.833E-01	1.720E+00	2.530E+00	4.309E-01	-0.151
		79.80		3.224E-01	1.572E+00	2.438E+00	5.322E-01	0.132
		235.96		8.710E-02	1.713E-01	2.537E-01	2.996E-02	0.343
		256.23	*	-4.687E-02	2.676E-01	4.258E-01	6.613E-02	-0.110
	+	299.98		2.636E+00	1.387E+00	1.781E+00	2.668E-01	1.480
TH-229		304.50		3.614E-01	1.840E+00	2.637E+00	4.821E-01	0.137
		334.37		-3.833E-01	1.720E+00	2.530E+00	4.309E-01	-0.151
		85.43		2.195E-01	2.068E-01	3.275E-01	3.059E-02	0.670
	+	88.47		7.921E-01	1.367E-01	2.237E-01	2.145E-02	3.541
		193.51	*	4.234E-02	5.257E-01	8.624E-01	8.412E-02	0.049
	+	210.85		3.795E+00	1.353E+00	1.533E+00	1.566E-01	2.475
PA-231		283.69	*	-3.405E-01	1.460E+00	2.296E+00	3.852E-01	-0.148
	+	301.36		1.693E+00	8.886E-01	1.119E+00	1.622E-01	1.513
TH-231		81.07		-1.830E-01	1.986E-01	3.120E-01	2.769E-02	-0.587
		83.79		8.284E-02	1.262E-01	1.973E-01	1.807E-02	0.420
		94.87		7.314E-01	4.393E-01	7.143E-01	6.460E-02	1.024
		144.24		2.419E-01	6.879E-01	1.144E+00	1.095E-01	0.211
	+	154.21		6.145E-01	4.668E-01	6.623E-01	6.351E-02	0.928
	+	269.46		9.266E-01	3.313E-01	3.682E-01	4.377E-02	2.517
PA-233		323.87	*	2.777E-01	6.974E-01	1.011E+00	1.899E-01	0.275
	+	338.28		7.827E+00	1.800E+00	2.649E+00	3.657E-01	2.955
	+	300.13		1.193E+00	6.341E-01	8.039E-01	1.352E-01	1.483
		311.90	*	3.818E-02	6.470E-02	1.062E-01	1.242E-02	0.359
		340.48		5.151E-01	6.734E-01	1.044E+00	2.605E-01	0.494
		94.67		2.426E-01	1.598E-01	2.788E-01	3.544E-02	0.870
PA-234		98.44		1.037E-01	1.105E-01	1.509E-01	8.425E-02	0.687
		111.00		-8.748E-02	1.761E-01	2.903E-01	3.465E-02	-0.301
		131.20		1.020E-01	1.122E-01	1.754E-01	1.467E-02	0.582
		569.50		1.099E-01	2.863E-01	4.650E-01	4.366E-02	0.236
		733.00		-6.371E-02	3.756E-01	5.724E-01	1.282E-01	-0.111
		880.51		1.939E-01	2.702E-01	4.793E-01	4.528E-02	0.405
		883.24		-1.094E-01	2.863E-01	4.456E-01	3.000E-01	-0.245
		926.50		9.091E-02	1.828E-01	3.149E-01	8.045E-02	0.289
		946.00	*	-1.059E-01	2.934E-01	4.698E-01	8.976E-02	-0.225
		949.00		3.516E-01	4.365E-01	7.758E-01	7.236E-02	0.453
PA-234M		766.42		9.417E+00	1.628E+01	2.297E+01	1.168E+01	0.410

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		-2.506E+00	4.736E+00	7.509E+00	7.818E-01	-0.334
	99.53			2.027E-01	1.577E-01	2.769E-01	2.429E-02	0.732
	103.37			-3.153E-02	9.134E-02	1.521E-01	1.310E-02	-0.207
	106.12			-1.078E-03	7.927E-02	1.336E-01	1.138E-02	-0.008
	117.23	*		-3.131E-01	3.797E-01	6.149E-01	5.118E-02	-0.509
AM-241	228.18			-1.044E-03	2.176E-01	3.520E-01	3.759E-02	-0.003
	277.60	+		4.648E-01	2.208E-01	3.215E-01	3.848E-02	1.446
	59.54	*		-1.865E-02	1.719E-01	2.451E-01	1.923E-02	-0.076
CM-247	278.00	+		1.974E+00	9.376E-01	1.378E+00	1.651E-01	1.432
	287.50			7.418E-01	1.247E+00	2.052E+00	2.443E-01	0.361
	402.40	*		1.618E-02	3.668E-02	6.304E-02	5.860E-03	0.257
CF-249	252.80			-1.057E-01	9.783E-01	1.564E+00	1.772E-01	-0.068
	333.37			4.303E-02	2.080E-01	2.707E-01	2.988E-02	0.159
	388.16	*		-1.089E-03	3.986E-02	6.688E-02	6.269E-03	-0.016
CF-251	177.52	*		-2.658E-02	1.301E-01	2.117E-01	1.979E-02	-0.126
	227.38			6.717E-02	3.594E-01	5.870E-01	6.256E-02	0.114
	285.41			-8.523E-01	2.243E+00	3.495E+00	4.170E-01	-0.244

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]G248513018      *
* Acquisition date   : 20-MAR-2010 13:32:20 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 02:00:02.21           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513018           Analyst initials: MXR1          *
* Batch Number       : 961097              Sample Quantity : 1.2400E+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	3.126E+01	3.226E+00	4.919E-01	0.000E+00
CD-109	5.319E+00	8.998E-01	1.200E+00	0.000E+00
SN-126	5.138E-01	8.691E-02	1.164E-01	0.000E+00
TL-208	6.817E-01	1.148E-01	6.170E-02	0.000E+00
BI-211	5.542E+00	7.781E-01	3.127E-01	0.000E+00
PB-212	2.485E+00	3.175E-01	9.971E-02	0.000E+00
BI-214	1.653E+00	2.391E-01	1.095E-01	0.000E+00
PB-214	2.011E+00	3.026E-01	1.137E-01	0.000E+00
RA-224	5.362E+00	1.254E+00	1.069E+00	0.000E+00
RA-226	1.653E+00	2.391E-01	1.095E-01	0.000E+00
AC-228	2.385E+00	4.238E-01	2.444E-01	0.000E+00
RA-228	2.385E+00	4.238E-01	2.444E-01	0.000E+00
TH-228	2.485E+00	3.175E-01	9.971E-02	0.000E+00
TH-232	2.385E+00	4.238E-01	2.444E-01	0.000E+00
TH-234	1.979E+00	1.933E+00	2.123E+00	0.000E+00
U-235	1.289E-01	2.012E-01	3.536E-01	0.000E+00
NP-237	1.533E+00	4.080E-01	4.045E-01	0.000E+00
U-238	1.979E+00	1.933E+00	2.123E+00	0.000E+00
ANH-511	1.536E-01	7.617E-02	4.879E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	3.101E-02	3.614E-01	6.231E-01	0.000E+00 NOT IDENT.
NA-22	6.539E-03	4.710E-02	7.903E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.964E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	4.928E-02	4.204E-02	7.848E-02	0.000E+00 FAIL ABUN
V-48	2.803E-03	9.567E-02	1.629E-01	0.000E+00 NOT IDENT.
CR-51	2.989E-02	4.408E-01	7.291E-01	0.000E+00 NOT IDENT.
MN-54	3.336E-02	4.061E-02	7.376E-02	0.000E+00 NOT IDENT.
CO-56	4.133E-02	4.173E-02	7.715E-02	0.000E+00 NOT IDENT.

CO-57	3.437E-03	2.418E-02	4.292E-02	0.000E+00	NOT IDENT.
CO-58	-5.247E-02	3.898E-02	5.863E-02	0.000E+00	NOT IDENT.
FE-59	1.842E-02	1.063E-01	1.813E-01	0.000E+00	NOT IDENT.
CO-60	-1.856E-02	3.842E-02	5.930E-02	0.000E+00	NOT IDENT.
ZN-65	-1.298E-02	1.039E-01	1.483E-01	0.000E+00	NOT IDENT.
SE-75	2.706E-02	4.779E-02	7.418E-02	0.000E+00	NOT IDENT.
SR-85	4.605E-02	4.301E-02	7.038E-02	0.000E+00	NOT IDENT.
Y-88	-4.099E-03	3.861E-02	6.328E-02	0.000E+00	NOT IDENT.
Y-91	-1.926E+00	2.417E+01	3.996E+01	0.000E+00	NOT IDENT.
NB-94	2.737E-02	3.356E-02	5.909E-02	0.000E+00	NOT IDENT.
NB-95	-2.103E-03	5.986E-02	8.542E-02	0.000E+00	NOT IDENT.
NB-95M	5.388E-02	1.508E-01	2.316E-01	0.000E+00	NOT IDENT.
ZR-95	-1.970E-02	8.281E-02	1.334E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.674E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.324E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.463E-02	4.463E-02	7.304E-02	0.000E+00	FAIL ABUN
RH-106	-3.057E-02	3.016E-01	5.010E-01	0.000E+00	NOT IDENT.
RU-106	-3.057E-02	3.016E-01	5.010E-01	0.000E+00	NOT IDENT.
AG-108M	-1.133E-02	2.841E-02	4.782E-02	0.000E+00	NOT IDENT.
AG-110M	-8.422E-02	4.244E-02	5.910E-02	0.000E+00	NOT IDENT.
SN-113	-3.335E-03	4.427E-02	7.681E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.277E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.458E-02	8.921E-02	1.366E-01	0.000E+00	NOT IDENT.
TE-123M	-8.353E-03	3.055E-02	4.992E-02	0.000E+00	NOT IDENT.
SB-124	-1.051E-02	6.326E-02	1.025E-01	0.000E+00	NOT IDENT.
SB-125	5.202E-02	8.715E-02	1.561E-01	0.000E+00	FAIL ABUN
TE-125M	-2.579E+00	9.845E+00	1.732E+01	0.000E+00	NOT IDENT.
I-126	2.331E-01	3.738E-01	6.492E-01	0.000E+00	NOT IDENT.
SB-126	-1.554E-02	2.305E-01	3.490E-01	0.000E+00	NOT IDENT.
SB-127	2.223E+00	5.723E+00	9.789E+00	0.000E+00	NOT IDENT.
I-131	-8.555E-02	2.149E-01	3.676E-01	0.000E+00	NOT IDENT.
TE-132	-6.857E-04	4.026E+00	6.810E+00	0.000E+00	NOT IDENT.
BA-133	8.139E-03	4.271E-02	6.719E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.345E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.821E-02	1.033E-01	0.000E+00	FAIL ABUN
CS-135	1.661E-01	1.662E-01	2.633E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.833E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.431E-02	1.650E-01	2.838E-01	0.000E+00	FAIL ABUN
BA-137M	4.807E-02	4.438E-02	7.693E-02	0.000E+00	NOT IDENT.
CS-137	5.078E-02	4.689E-02	8.127E-02	0.000E+00	NOT IDENT.
CE-139	-1.721E-02	2.904E-02	4.891E-02	0.000E+00	NOT IDENT.
BA-140	1.961E-01	4.137E-01	7.170E-01	0.000E+00	NOT IDENT.
LA-140	-1.115E-02	1.329E-01	2.225E-01	0.000E+00	FAIL ABUN
CE-141	2.996E-02	7.219E-02	1.279E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.293E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.917E-02	2.120E-01	3.313E-01	0.000E+00	NOT IDENT.
PM-144	2.061E-02	3.632E-02	6.281E-02	0.000E+00	NOT IDENT.
PR-144	1.532E+00	2.728E+00	4.716E+00	0.000E+00	NOT IDENT.
PM-146	4.316E-02	4.247E-02	7.721E-02	0.000E+00	NOT IDENT.
ND-147	3.903E-01	8.776E-01	1.537E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.123E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	3.358E-03	9.037E-02	1.594E-01	0.000E+00	FAIL ABUN
GD-153	-9.122E-02	8.818E-02	1.342E-01	0.000E+00	NOT IDENT.
EU-154	-2.405E-02	1.367E-01	2.225E-01	0.000E+00	NOT IDENT.
EU-155	7.022E-02	9.694E-02	1.769E-01	0.000E+00	FAIL ABUN
TB-160	5.175E-02	1.413E-01	2.502E-01	0.000E+00	FAIL ABUN
HO-166M	-3.348E-02	6.224E-02	9.816E-02	0.000E+00	FAIL ABUN
TA-182	-2.802E-01	2.021E-01	2.883E-01	0.000E+00	FAIL ABUN
IR-192	-1.170E-02	3.609E-02	5.817E-02	0.000E+00	FAIL ABUN
HG-203	4.660E-02	4.632E-02	7.329E-02	0.000E+00	NOT IDENT.
BI-207	5.830E-02	5.690E-02	1.037E-01	0.000E+00	FAIL ABUN
PB-210	1.601E+00	3.266E+00	5.592E+00	0.000E+00	NOT IDENT.
PB-211	-1.972E-02	7.763E-01	1.186E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.221E-01	1.292E+00	0.000E+00	FAIL ABUN
RN-219	1.775E-01	3.835E-01	6.836E-01	0.000E+00	FAIL ABUN
RA-223	2.777E-01	6.835E-01	1.031E+00	0.000E+00	FAIL ABUN
AC-227	-4.687E-02	2.622E-01	4.355E-01	0.000E+00	FAIL ABUN
TH-227	-4.687E-02	2.622E-01	4.355E-01	0.000E+00	FAIL ABUN
TH-229	4.234E-02	5.152E-01	8.853E-01	0.000E+00	FAIL ABUN
PA-231	-3.405E-01	1.431E+00	2.345E+00	0.000E+00	FAIL ABUN
TH-231	2.777E-01	6.835E-01	1.031E+00	0.000E+00	FAIL ABUN
PA-233	3.818E-02	6.341E-02	1.083E-01	0.000E+00	FAIL ABUN
PA-234	-1.059E-01	2.875E-01	4.721E-01	0.000E+00	NOT IDENT.
PA-234M	-2.506E+00	4.641E+00	7.539E+00	0.000E+00	NOT IDENT.
NP-239	-3.131E-01	3.721E-01	6.354E-01	0.000E+00	FAIL ABUN
AM-241	-1.865E-02	1.685E-01	2.555E-01	0.000E+00	NOT IDENT.
CM-247	1.618E-02	3.595E-02	6.408E-02	0.000E+00	FAIL ABUN
CF-249	-1.089E-03	3.907E-02	6.802E-02	0.000E+00	NOT IDENT.

CF-251	-2.658E-02	1.275E-01	2.176E-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]G248513018.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:32:20
Sample ID          : G248513018 Sample quantity : 1.24000E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.21 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	1330	10.66*	1.208E+00	3.126E+01	3.126E+01	10.53
CD-109	88.03	393	3.70*	6.256E+00	5.138E+00	5.319E+00	17.26
SN-126	64.28	86	9.60	3.535E+00	7.629E-01	7.629E-01	99.13
	86.94	393	8.90	6.256E+00	2.136E+00	2.136E+00	43.98
	87.57	393	37.00*	6.256E+00	5.138E-01	5.138E-01	17.26
TL-208	277.37	104	6.60	4.693E+00	1.017E+00	1.017E+00	48.36
	583.19	511	85.00*	2.668E+00	6.817E-01	6.817E-01	17.19
	860.56	84	12.50	1.919E+00	1.066E+00	1.066E+00	43.53
BI-211	72.87	-----	1.23	4.872E+00	-----	Line Not Found	-----
	351.06	932	12.92*	3.941E+00	5.542E+00	5.542E+00	14.33
PB-212	74.82	535	10.28	5.112E+00	3.080E+00	3.080E+00	19.54
	77.11	856	17.10	5.365E+00	2.823E+00	2.823E+00	13.09
	238.63	1871	43.60*	5.226E+00	2.485E+00	2.485E+00	13.04
	300.09	116	3.30	4.432E+00	2.396E+00	2.396E+00	52.13
BI-214	609.32	640	45.49*	2.575E+00	1.653E+00	1.653E+00	14.76
	1120.29	117	14.92	1.516E+00	1.563E+00	1.563E+00	43.52
	1764.49	100	15.30	1.056E+00	1.874E+00	1.874E+00	25.11
PB-214	74.82	535	5.80	5.112E+00	5.459E+00	5.460E+00	18.71
	77.11	856	9.70	5.365E+00	4.977E+00	4.978E+00	15.47
	242.00	376	7.25	5.181E+00	3.032E+00	3.032E+00	24.56
	295.22	491	18.42	4.488E+00	1.800E+00	1.800E+00	19.21
	351.93	932	35.60*	3.941E+00	2.011E+00	2.011E+00	15.35
RA-224	240.99	376	4.10*	5.181E+00	5.362E+00	5.362E+00	23.86
RA-226	609.32	640	45.49*	2.575E+00	1.653E+00	1.653E+00	14.76
	1120.29	117	14.92	1.516E+00	1.563E+00	1.563E+00	43.52
	1764.49	100	15.30	1.056E+00	1.874E+00	1.874E+00	25.11
AC-228	338.32	298	11.27	4.060E+00	1.972E+00	1.972E+00	46.08
	911.20	371	25.80*	1.825E+00	2.385E+00	2.385E+00	18.13
	968.97	227	15.80	1.727E+00	2.518E+00	2.518E+00	29.38
RA-228	338.32	298	11.27	4.060E+00	1.972E+00	1.972E+00	46.08
	911.20	371	25.80*	1.825E+00	2.385E+00	2.385E+00	18.13
	968.97	227	15.80	1.727E+00	2.518E+00	2.518E+00	29.38

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	535	10.28	5.112E+00	3.080E+00	3.080E+00	16.99
	77.11	856	17.10	5.365E+00	2.823E+00	2.823E+00	13.09
	238.63	1871	43.60*	5.226E+00	2.485E+00	2.485E+00	13.04
	300.09	116	3.30	4.432E+00	2.396E+00	2.396E+00	79.71
TH-232	338.32	298	11.27	4.060E+00	1.972E+00	1.972E+00	21.40
	911.20	371	25.80*	1.825E+00	2.385E+00	2.385E+00	18.13
	968.97	227	15.80	1.727E+00	2.518E+00	2.518E+00	29.38
TH-234	63.29	86	3.70*	3.535E+00	1.979E+00	1.979E+00	99.67
	92.59	455	4.23	6.605E+00	4.935E+00	4.935E+00	30.48
U-235	89.96	208	3.47	6.438E+00	2.823E+00	2.823E+00	42.48
	93.35	455	5.60	6.605E+00	3.728E+00	3.728E+00	31.23
	143.76	-----	10.96*	6.943E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.588E+00	-----	Line Not Found	-----
NP-237	185.72	261	57.20	6.149E+00	2.251E-01	2.251E-01	36.67
	205.31	-----	5.01	5.780E+00	-----	Line Not Found	-----
	86.48	393	12.40*	6.256E+00	1.533E+00	1.533E+00	27.16
	95.86	-----	2.68	6.742E+00	-----	Line Not Found	-----
U-238	63.29	86	3.70*	3.535E+00	1.979E+00	1.979E+00	99.67
	92.59	455	4.23	6.605E+00	4.935E+00	4.935E+00	22.71
ANH-511	511.00	150	100.00*	2.965E+00	1.536E-01	1.536E-01	50.62

Flag: "*" = Keyline

Total number of lines in spectrum 38
Number of unidentified lines 7
Number of lines tentatively identified by NID 31 81.58%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.126E+01	3.126E+01	0.329E+01	10.53	
CD-109	461.40D	1.04	5.138E+00	5.319E+00	0.918E+00	17.26	
SN-126	2.30E+05Y	1.00	5.138E-01	5.138E-01	0.887E-01	17.26	
TL-208	1.41E+10Y	1.00	6.817E-01	6.817E-01	1.172E-01	17.19	
BI-211	7.04E+08Y	1.00	5.542E+00	5.542E+00	0.794E+00	14.33	
PB-212	1.41E+10Y	1.00	2.485E+00	2.485E+00	0.324E+00	13.04	
BI-214	1600.00Y	1.00	1.653E+00	1.653E+00	0.244E+00	14.76	
PB-214	1600.00Y	1.00	2.011E+00	2.011E+00	0.309E+00	15.35	
RA-224	1.41E+10Y	1.00	5.362E+00	5.362E+00	1.279E+00	23.86	
RA-226	1600.00Y	1.00	1.653E+00	1.653E+00	0.244E+00	14.76	
AC-228	1.41E+10Y	1.00	2.385E+00	2.385E+00	0.432E+00	18.13	
RA-228	1.41E+10Y	1.00	2.385E+00	2.385E+00	0.432E+00	18.13	
TH-228	1.41E+10Y	1.00	2.485E+00	2.485E+00	0.324E+00	13.04	
TH-232	1.41E+10Y	1.00	2.385E+00	2.385E+00	0.432E+00	18.13	
TH-234	4.47E+09Y	1.00	1.979E+00	1.979E+00	1.973E+00	99.67	
U-235	7.04E+08Y	1.00	2.251E-01	2.251E-01	0.825E-01	36.67	K
NP-237	2.14E+06Y	1.00	1.533E+00	1.533E+00	0.416E+00	27.16	
U-238	4.47E+09Y	1.00	1.979E+00	1.979E+00	1.973E+00	99.67	
ANH-511	1.00E+09Y	1.00	1.536E-01	1.536E-01	0.777E-01	50.62	
Total Activity :			7.181E+01	7.200E+01			

Grand Total Activity : 7.181E+01 7.200E+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	128.78	187	516	1.07	257.74	252	11	2.60E-02	49.1	7.13E+00	
0	154.13	78	289	1.02	308.45	306	7	1.09E-02	75.4	6.76E+00	T
0	209.41	200	297	1.06	419.02	415	9	2.78E-02	34.2	5.71E+00	T
0	270.19	204	244	1.24	540.58	535	12	2.83E-02	33.7	4.78E+00	T
0	328.00	128	158	1.10	656.19	652	9	1.78E-02	39.7	4.15E+00	T
0	409.14	56	87	1.78	818.45	815	7	7.81E-03	61.8	3.52E+00	
0	462.81	83	137	0.93	925.78	922	10	1.15E-02	56.8	3.20E+00	T
0	726.95	125	62	1.20	1453.99	1449	10	1.74E-02	30.1	2.22E+00	T
0	768.25	63	96	1.28	1536.57	1530	12	8.75E-03	67.1	2.12E+00	
0	794.80	56	73	1.14	1589.67	1584	10	7.84E-03	62.4	2.06E+00	T
1	964.38	64	44	1.76	1928.73	1921	29	8.94E-03	46.6	1.73E+00	T
0	1377.53	51	37	1.56	2754.74	2747	17	7.15E-03	61.5	1.27E+00	
0	1631.80	17	21	2.01	3263.03	3252	14	2.30E-03	***	1.11E+00	
0	1729.09	33	11	3.11	3457.51	3451	19	4.52E-03	58.0	1.07E+00	
0	1847.28	18	13	1.81	3693.75	3689	10	2.46E-03	96.9	1.03E+00	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513018.CNF;1
* Acquisition date   : 20-MAR-2010 13:32:20  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 02:00:02.21          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513018            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.24000E+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	3.126E+01	3.292E+00	4.925E-01	4.329E-02	63.479
CD-109	5.319E+00	9.182E-01	1.157E+00	1.115E-01	4.598
SN-126	5.138E-01	8.869E-02	1.123E-01	1.076E-02	4.577
TL-208	6.817E-01	1.172E-01	6.100E-02	6.040E-03	11.176
BI-211	5.542E+00	7.940E-01	3.070E-01	3.357E-02	18.051
PB-212	2.485E+00	3.240E-01	9.740E-02	1.157E-02	25.518
BI-214	1.653E+00	2.440E-01	1.083E-01	1.150E-02	15.262
PB-214	2.011E+00	3.088E-01	1.117E-01	1.365E-02	18.011
RA-224	5.362E+00	1.279E+00	1.044E+00	1.151E-01	5.135
RA-226	1.653E+00	2.440E-01	1.083E-01	1.150E-02	15.262
AC-228	2.385E+00	4.324E-01	2.431E-01	2.968E-02	9.808
RA-228	2.385E+00	4.324E-01	2.431E-01	2.968E-02	9.808
TH-228	2.485E+00	3.240E-01	9.740E-02	1.157E-02	25.518
TH-232	2.385E+00	4.324E-01	2.431E-01	2.968E-02	9.808
TH-234	1.979E+00	1.973E+00	2.038E+00	3.633E-01	0.971
U-235	2.251E-01	8.252E-02	3.431E-01	5.807E-02	0.656
NP-237	1.533E+00	4.164E-01	3.899E-01	8.970E-02	3.932
U-238	1.979E+00	1.973E+00	2.038E+00	3.633E-01	0.971

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.536E-01	7.773E-02	4.815E-02	4.579E-03	3.189

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.101E-02		3.687E-01	6.143E-01	6.213E-02	0.050
NA-22	6.539E-03		4.806E-02	7.898E-02	6.572E-03	0.083
NA-24	3.703E+03		2.532E+03	Half-Life	too short	
SC-46	4.928E-02		4.290E-02	7.803E-02	7.377E-03	0.632
V-48	2.803E-03		9.763E-02	1.622E-01	1.493E-02	0.017
CR-51	2.989E-02		4.498E-01	7.150E-01	8.355E-02	0.042
MN-54	3.336E-02		4.144E-02	7.328E-02	6.883E-03	0.455
CO-56	4.133E-02		4.258E-02	7.666E-02	7.214E-03	0.539
CO-57	3.437E-03		2.468E-02	4.156E-02	3.453E-03	0.083
CO-58	-5.247E-02		3.977E-02	5.823E-02	5.455E-03	-0.901
FE-59	1.842E-02		1.084E-01	1.808E-01	1.680E-02	0.102
CO-60	-1.856E-02		3.920E-02	5.930E-02	5.002E-03	-0.313
ZN-65	-1.298E-02		1.060E-01	1.480E-01	1.257E-02	-0.088
SE-75	2.706E-02		4.877E-02	7.256E-02	8.468E-03	0.373
SR-85	4.605E-02		4.388E-02	6.946E-02	6.605E-03	0.663
Y-88	-4.099E-03		3.939E-02	6.356E-02	5.160E-03	-0.064
Y-91	-1.926E+00		2.466E+01	3.990E+01	3.244E+00	-0.048
NB-94	2.737E-02		3.424E-02	5.857E-02	5.295E-03	0.467
NB-95	-2.103E-03		6.108E-02	8.476E-02	7.835E-03	-0.025
NB-95M	5.388E-02		1.539E-01	2.262E-01	2.693E-02	0.238
ZR-95	-1.970E-02		8.450E-02	1.323E-01	1.332E-02	-0.149
MO-99	4.033E-05		4.936E-05	Half-Life	too short	
TC-99M	-9.736E+19		6.754E+19	Half-Life	too short	
RU-103	-2.463E-02		4.554E-02	7.205E-02	1.047E-02	-0.342
RH-106	-3.057E-02		3.077E-01	4.958E-01	6.744E-02	-0.062
RU-106	-3.057E-02		3.077E-01	4.958E-01	4.533E-02	-0.062
AG-108M	-1.133E-02		2.899E-02	4.709E-02	4.556E-03	-0.241
AG-110M	-8.422E-02		4.331E-02	5.852E-02	5.357E-03	-1.439
SN-113	-3.335E-03		4.517E-02	7.553E-02	7.169E-03	-0.044
CD-115	-4.708E-05		6.515E-05	Half-Life	too short	
SN-117M	-2.458E-02		9.103E-02	1.327E-01	1.178E-02	-0.185
TE-123M	-8.353E-03		3.117E-02	4.850E-02	4.338E-03	-0.172
SB-124	-1.051E-02		6.456E-02	1.028E-01	9.024E-03	-0.102
SB-125	5.202E-02		8.893E-02	1.537E-01	1.468E-02	0.338
TE-125M	-2.579E+00		1.005E+01	1.675E+01	1.735E+00	-0.154
I-126	2.331E-01		3.814E-01	6.430E-01	5.719E-02	0.362
SB-126	-1.554E-02		2.352E-01	3.460E-01	3.150E-02	-0.045
SB-127	2.223E+00		5.840E+00	9.699E+00	1.378E+00	0.229
I-131	-8.555E-02		2.193E-01	3.611E-01	3.839E-02	-0.237
TE-132	-6.857E-04		4.108E+00	6.649E+00	1.247E+00	0.000
BA-133	8.139E-03		4.358E-02	6.598E-02	9.385E-03	0.123
I-133	2.322E-01		1.707E+00	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
CS-134	1.103E-01	+	6.960E-02	1.026E-01	9.616E-03	1.076
CS-135	1.661E-01		1.696E-01	2.576E-01	3.285E-02	0.645
I-135	-2.502E+17		1.956E+18	Half-Life too short		
CS-136	3.431E-02		1.684E-01	2.828E-01	2.620E-02	0.121
BA-137M	4.807E-02		4.529E-02	7.619E-02	6.761E-03	0.631
CS-137	5.078E-02		4.785E-02	8.048E-02	7.155E-03	0.631
CE-139	-1.721E-02		2.964E-02	4.755E-02	4.312E-03	-0.362
BA-140	1.961E-01		4.221E-01	7.080E-01	2.417E-01	0.277
LA-140	-1.115E-02		1.356E-01	2.230E-01	1.900E-02	-0.050
CE-141	2.996E-02		7.366E-02	1.241E-01	1.086E-02	0.241
CE-143	3.882E-02		6.599E-03	Half-Life too short		
CE-144	-2.917E-02		2.163E-01	3.212E-01	4.869E-02	-0.091
PM-144	2.061E-02		3.706E-02	6.224E-02	5.616E-03	0.331
PR-144	1.532E+00		2.784E+00	4.674E+00	4.214E-01	0.328
PM-146	4.316E-02		4.334E-02	7.607E-02	8.592E-03	0.567
ND-147	3.903E-01		8.955E-01	1.518E+00	2.348E-01	0.257
PM-149	-1.487E-04		5.732E-04	Half-Life too short		
EU-152	3.358E-03		9.222E-02	1.565E-01	1.748E-02	0.021
GD-153	-9.122E-02		8.998E-02	1.296E-01	1.151E-02	-0.704
EU-154	-2.405E-02		1.395E-01	2.223E-01	2.478E-02	-0.108
EU-155	7.022E-02		9.892E-02	1.709E-01	1.478E-02	0.411
TB-160	5.175E-02		1.442E-01	2.488E-01	2.350E-02	0.208
HO-166M	-3.348E-02		6.351E-02	9.731E-02	8.829E-03	-0.344
TA-182	-2.802E-01		2.062E-01	2.879E-01	2.354E-02	-0.973
IR-192	-1.170E-02		3.682E-02	5.703E-02	6.518E-03	-0.205
HG-203	4.660E-02		4.726E-02	7.174E-02	8.731E-03	0.650
BI-207	5.830E-02		5.806E-02	1.033E-01	9.108E-03	0.564
PB-210	1.601E+00		3.332E+00	5.348E+00	4.944E-01	0.299
PB-211	-1.972E-02		7.921E-01	1.167E+00	5.662E-01	-0.017
BI-212	2.561E+00	+	8.389E-01	1.281E+00	1.642E-01	1.999
RN-219	1.775E-01		3.914E-01	6.724E-01	1.027E-01	0.264
RA-223	2.777E-01		6.974E-01	1.011E+00	1.899E-01	0.275
AC-227	-4.687E-02		2.676E-01	4.258E-01	6.042E-02	-0.110
TH-227	-4.687E-02		2.676E-01	4.258E-01	6.613E-02	-0.110
TH-229	4.234E-02		5.257E-01	8.624E-01	8.412E-02	0.049
PA-231	-3.405E-01		1.460E+00	2.296E+00	3.852E-01	-0.148
TH-231	2.777E-01		6.974E-01	1.011E+00	1.899E-01	0.275
PA-233	3.818E-02		6.470E-02	1.062E-01	1.242E-02	0.359
PA-234	-1.059E-01		2.934E-01	4.698E-01	8.976E-02	-0.225
PA-234M	-2.506E+00		4.736E+00	7.509E+00	7.818E-01	-0.334
NP-239	-3.131E-01		3.797E-01	6.149E-01	5.118E-02	-0.509
AM-241	-1.865E-02		1.719E-01	2.451E-01	1.923E-02	-0.076
CM-247	1.618E-02		3.668E-02	6.304E-02	5.860E-03	0.257
CF-249	-1.089E-03		3.986E-02	6.688E-02	6.269E-03	-0.016
CF-251	-2.658E-02		1.301E-01	2.117E-01	1.979E-02	-0.126

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248513018
* Acquisition date   : 20-MAR-2010 13:32:20 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 02:00:02.21 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248513018 Analyst initials: MXR1
* Batch Number       : 961097 Sample Quantity : 1.2400E+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	3.126E+01	3.226E+00	2.461E-01	1.646E+00
CD-109	5.319E+00	8.998E-01	6.004E-01	4.591E-01
SN-126	5.138E-01	8.691E-02	5.825E-02	4.434E-02
TL-208	6.817E-01	1.148E-01	3.087E-02	5.859E-02
BI-211	5.542E+00	7.781E-01	1.564E-01	3.970E-01
PB-212	2.485E+00	3.175E-01	4.988E-02	1.620E-01
BI-214	1.653E+00	2.391E-01	5.477E-02	1.220E-01
PB-214	2.011E+00	3.026E-01	5.690E-02	1.544E-01
RA-224	5.362E+00	1.254E+00	5.347E-01	6.397E-01
RA-226	1.653E+00	2.391E-01	5.477E-02	1.220E-01
AC-228	2.385E+00	4.238E-01	1.223E-01	2.162E-01
TH-228	2.385E+00	4.238E-01	1.223E-01	2.162E-01
TH-232	2.385E+00	4.238E-01	1.223E-01	2.162E-01
TH-234	1.979E+00	1.933E+00	1.062E+00	9.865E-01
U-235	1.289E-01	2.012E-01	1.769E-01	1.026E-01
NP-237	1.533E+00	4.080E-01	2.024E-01	2.082E-01
U-238	1.979E+00	1.933E+00	1.062E+00	9.865E-01
ANH-511	1.536E-01	7.617E-02	2.441E-02	3.886E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	3.101E-02	3.614E-01	3.117E-01	1.844E-01 NOT IDENT.
NA-22	6.539E-03	4.710E-02	3.954E-02	2.403E-02 NOT IDENT.
NA-24	3.703E+09	4.964E+09	0.000E+00	2.532E+09 SHORT HLIF
SC-46	4.928E-02	4.204E-02	3.926E-02	2.145E-02 FAIL ABUN
V-48	2.803E-03	9.567E-02	8.152E-02	4.881E-02 NOT IDENT.
CR-51	2.989E-02	4.408E-01	3.647E-01	2.249E-01 NOT IDENT.
MN-54	3.336E-02	4.061E-02	3.690E-02	2.072E-02 NOT IDENT.
CO-56	4.133E-02	4.173E-02	3.860E-02	2.129E-02 NOT IDENT.

CO-57	3.437E-03	2.418E-02	2.147E-02	1.234E-02	NOT IDENT.
CO-58	-5.247E-02	3.898E-02	2.933E-02	1.989E-02	NOT IDENT.
FE-59	1.842E-02	1.063E-01	9.070E-02	5.421E-02	NOT IDENT.
CO-60	-1.856E-02	3.842E-02	2.967E-02	1.960E-02	NOT IDENT.
ZN-65	-1.298E-02	1.039E-01	7.421E-02	5.299E-02	NOT IDENT.
SE-75	2.706E-02	4.779E-02	3.711E-02	2.438E-02	NOT IDENT.
SR-85	4.605E-02	4.301E-02	3.521E-02	2.194E-02	NOT IDENT.
Y-88	-4.099E-03	3.861E-02	3.166E-02	1.970E-02	NOT IDENT.
Y-91	-1.926E+00	2.417E+01	1.999E+01	1.233E+01	NOT IDENT.
NB-94	2.737E-02	3.356E-02	2.956E-02	1.712E-02	NOT IDENT.
NB-95	-2.103E-03	5.986E-02	4.273E-02	3.054E-02	NOT IDENT.
NB-95M	5.388E-02	1.508E-01	1.159E-01	7.696E-02	NOT IDENT.
ZR-95	-1.970E-02	8.281E-02	6.674E-02	4.225E-02	NOT IDENT.
MO-99	4.033E+01	9.674E+01	0.000E+00	4.936E+01	SHORT HLIF
TC-99M	-9.736E+25	1.324E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.463E-02	4.463E-02	3.654E-02	2.277E-02	FAIL ABUN
RH-106	-3.057E-02	3.016E-01	2.507E-01	1.539E-01	NOT IDENT.
RU-106	-3.057E-02	3.016E-01	2.507E-01	1.539E-01	NOT IDENT.
AG-108M	-1.133E-02	2.841E-02	2.392E-02	1.450E-02	NOT IDENT.
AG-110M	-8.422E-02	4.244E-02	2.957E-02	2.166E-02	NOT IDENT.
SN-113	-3.335E-03	4.427E-02	3.843E-02	2.259E-02	NOT IDENT.
CD-115	-4.708E+01	1.277E+02	0.000E+00	6.515E+01	SHORT HLIF
SN-117M	-2.458E-02	8.921E-02	6.832E-02	4.552E-02	NOT IDENT.
TE-123M	-8.353E-03	3.055E-02	2.498E-02	1.558E-02	NOT IDENT.
SB-124	-1.051E-02	6.326E-02	5.126E-02	3.228E-02	NOT IDENT.
SB-125	5.202E-02	8.715E-02	7.812E-02	4.446E-02	FAIL ABUN
TE-125M	-2.579E+00	9.845E+00	8.665E+00	5.023E+00	NOT IDENT.
I-126	2.331E-01	3.738E-01	3.248E-01	1.907E-01	NOT IDENT.
SB-126	-1.554E-02	2.305E-01	1.746E-01	1.176E-01	NOT IDENT.
SB-127	2.223E+00	5.723E+00	4.897E+00	2.920E+00	NOT IDENT.
I-131	-8.555E-02	2.149E-01	1.839E-01	1.096E-01	NOT IDENT.
TE-132	-6.857E-04	4.026E+00	3.407E+00	2.054E+00	NOT IDENT.
BA-133	8.139E-03	4.271E-02	3.361E-02	2.179E-02	FAIL ABUN
I-133	2.322E+05	3.345E+06	0.000E+00	1.707E+06	SHORT HLIF
CS-134	1.103E-01	6.821E-02	5.168E-02	3.480E-02	FAIL ABUN
CS-135	1.661E-01	1.662E-01	1.317E-01	8.480E-02	NOT IDENT.
I-135	-2.502E+23	3.833E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.431E-02	1.650E-01	1.420E-01	8.420E-02	FAIL ABUN
BA-137M	4.807E-02	4.438E-02	3.849E-02	2.265E-02	NOT IDENT.
CS-137	5.078E-02	4.689E-02	4.066E-02	2.392E-02	NOT IDENT.
CE-139	-1.721E-02	2.904E-02	2.447E-02	1.482E-02	NOT IDENT.
BA-140	1.961E-01	4.137E-01	3.587E-01	2.110E-01	NOT IDENT.
LA-140	-1.115E-02	1.329E-01	1.113E-01	6.778E-02	FAIL ABUN
CE-141	2.996E-02	7.219E-02	6.400E-02	3.683E-02	NOT IDENT.
CE-143	3.882E+04	1.293E+04	0.000E+00	6.599E+03	SHORT HLIF
CE-144	-2.917E-02	2.120E-01	1.658E-01	1.082E-01	NOT IDENT.
PM-144	2.061E-02	3.632E-02	3.142E-02	1.853E-02	NOT IDENT.
PR-144	1.532E+00	2.728E+00	2.359E+00	1.392E+00	NOT IDENT.
PM-146	4.316E-02	4.247E-02	3.863E-02	2.167E-02	NOT IDENT.
ND-147	3.903E-01	8.776E-01	7.692E-01	4.478E-01	FAIL ABUN
PM-149	-1.487E+02	1.123E+03	0.000E+00	5.732E+02	SHORT HLIF
EU-152	3.358E-03	9.037E-02	7.974E-02	4.611E-02	FAIL ABUN
GD-153	-9.122E-02	8.818E-02	6.714E-02	4.499E-02	NOT IDENT.
EU-154	-2.405E-02	1.367E-01	1.113E-01	6.974E-02	NOT IDENT.
EU-155	7.022E-02	9.694E-02	8.849E-02	4.946E-02	FAIL ABUN
TB-160	5.175E-02	1.413E-01	1.252E-01	7.211E-02	FAIL ABUN
HO-166M	-3.348E-02	6.224E-02	4.911E-02	3.176E-02	FAIL ABUN
TA-182	-2.802E-01	2.021E-01	1.442E-01	1.031E-01	FAIL ABUN
IR-192	-1.170E-02	3.609E-02	2.910E-02	1.841E-02	FAIL ABUN
HG-203	4.660E-02	4.632E-02	3.667E-02	2.363E-02	NOT IDENT.
BI-207	5.830E-02	5.690E-02	5.186E-02	2.903E-02	FAIL ABUN
PB-210	1.601E+00	3.266E+00	2.798E+00	1.666E+00	NOT IDENT.
PB-211	-1.972E-02	7.763E-01	5.934E-01	3.960E-01	NOT IDENT.
BI-212	2.561E+00	8.221E-01	6.465E-01	4.194E-01	FAIL ABUN
RN-219	1.775E-01	3.835E-01	3.420E-01	1.957E-01	FAIL ABUN
RA-223	2.777E-01	6.835E-01	5.158E-01	3.487E-01	FAIL ABUN
AC-227	-4.687E-02	2.622E-01	2.179E-01	1.338E-01	FAIL ABUN
TH-227	-4.687E-02	2.622E-01	2.179E-01	1.338E-01	FAIL ABUN
TH-229	4.234E-02	5.152E-01	4.429E-01	2.629E-01	FAIL ABUN
PA-231	-3.405E-01	1.431E+00	1.173E+00	7.302E-01	FAIL ABUN
TH-231	2.777E-01	6.835E-01	5.158E-01	3.487E-01	FAIL ABUN
PA-233	3.818E-02	6.341E-02	5.420E-02	3.235E-02	FAIL ABUN
PA-234	-1.059E-01	2.875E-01	2.362E-01	1.467E-01	NOT IDENT.
PA-234M	-2.506E+00	4.641E+00	3.772E+00	2.368E+00	NOT IDENT.
NP-239	-3.131E-01	3.721E-01	3.179E-01	1.898E-01	FAIL ABUN
AM-241	-1.865E-02	1.685E-01	1.278E-01	8.595E-02	NOT IDENT.
CM-247	1.618E-02	3.595E-02	3.206E-02	1.834E-02	FAIL ABUN
CF-249	-1.089E-03	3.907E-02	3.403E-02	1.993E-02	NOT IDENT.

CF-251

-2.658E-02

1.275E-01

1.089E-01

6.503E-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
46.54	226.8956
49.72	265.9436
57.36	0.0000
59.54	345.1265
63.29	357.5987
63.29	357.5987
64.28	384.0581
67.75	422.7542
69.67	456.9073
70.83	389.4985
72.81	448.1431
72.87	448.2054
72.87	448.2054
74.82	449.8248
74.82	449.8248
74.82	449.8248
74.97	449.9817
77.11	452.1870
77.11	452.1870
77.11	452.1870
79.69	369.3186
79.80	369.4087
80.12	368.3844
80.19	368.4413
80.57	361.0410
81.00	418.7400
81.07	418.8046
81.07	418.8046
83.79	373.9237
83.79	373.9237
85.43	357.0518
86.48	454.1324
86.55	454.1990
86.79	454.4253
86.94	454.5717
87.57	343.4412
88.03	343.7686
88.47	344.0820
89.96	345.1348
91.11	345.9404
92.59	346.9711
92.59	346.9711
93.35	347.4975
94.67	348.4076
94.87	281.9237
94.87	281.9237
95.86	314.2991
97.43	344.5238
98.44	287.8835
99.53	294.7161
100.11	285.2360
103.18	312.8802
103.37	297.7459
105.31	285.3109
106.12	310.9717
109.28	310.9345
111.00	325.5228
111.76	294.0905
116.30	295.4942
117.23	310.6688
121.12	291.4256
121.78	288.9659
122.06	285.3944
123.07	288.4679
131.20	277.8699
133.52	294.4487
136.00	288.9439

136.47	294.8369
140.51	0.0000
140.51	0.0000
143.76	290.4089
144.24	300.2035
144.24	300.2035
145.44	303.6145
152.43	273.6780
153.25	298.7696
154.21	305.4939
154.21	305.4939
156.02	280.9072
158.56	295.1083
159.00	298.5151
162.66	273.6251
163.33	259.0939
165.86	273.8103
176.60	295.6962
177.52	278.9813
181.07	0.0000
184.41	282.4001
185.72	282.8542
193.51	258.9142
197.04	269.2414
205.31	216.3179
210.85	230.1989
215.65	232.9979
222.11	227.2390
227.38	226.3905
228.16	225.5131
228.18	225.5174
235.69	249.2616
235.96	249.3325
235.96	249.3325
238.63	248.4007
238.63	248.4007
240.99	248.9952
242.00	249.2490
244.70	223.9573
252.40	186.4207
252.80	198.4904
256.23	211.1880
256.23	211.1880
260.90	0.0000
264.66	143.9504
268.22	156.0518
269.46	162.8807
269.46	162.8807
271.23	163.1469
273.65	116.7941
276.40	175.6334
277.37	167.4164
277.60	167.4530
278.00	164.1638
279.20	142.5400
279.54	159.3587
280.46	169.5652
283.69	172.8646
284.31	171.8355
285.41	180.9973
285.90	0.0000
287.50	155.4297
293.27	0.0000
295.22	170.0928
295.96	187.2229
298.57	187.6425
299.98	174.2075
299.98	174.2075
300.09	174.2230
300.09	174.2230
300.13	174.2292
301.36	177.8328
302.85	142.1041
304.50	156.0202
304.50	156.0202
304.85	156.0674
308.46	146.7943
311.90	135.7149

316.51	143.1606
319.41	155.0738
320.08	140.1057
323.87	128.9241
323.87	128.9241
328.76	141.6758
333.37	124.0548
334.37	136.3352
334.37	136.3352
338.28	152.2626
338.28	152.2626
338.32	152.2679
338.32	152.2679
338.32	152.2679
340.48	146.8746
340.55	146.8822
344.28	138.1020
351.06	123.6929
351.93	123.7735
356.01	121.4767
364.49	131.2365
366.42	0.0000
383.85	131.2646
388.16	132.5789
388.63	128.0499
391.69	123.7424
400.66	116.2120
401.81	112.6121
402.40	118.1973
404.85	124.3163
410.95	111.4563
414.70	100.5628
423.72	121.7738
427.09	109.8392
427.87	101.4412
433.94	115.0433
453.88	98.3620
463.37	115.2704
468.07	123.3086
473.00	96.6232
476.78	102.6535
477.60	108.5171
487.02	86.7171
492.35	0.0000
497.08	102.9108
511.00	102.7479
514.00	85.5035
527.90	0.0000
529.87	0.0000
531.02	77.9286
537.26	86.2152
546.56	0.0000
563.25	92.5052
569.33	85.6611
569.50	85.6688
569.70	82.6191
583.19	96.5474
600.60	92.2185
602.73	84.1664
604.72	104.6606
609.32	81.1730
609.32	81.1730
610.33	79.9617
614.28	93.4719
618.01	86.7437
621.93	74.3455
621.93	74.3455
633.25	70.5393
635.95	70.6313
636.99	62.2284
645.85	80.4949
657.76	138.4583
661.66	99.2297
661.66	99.2297
664.57	0.0000
666.33	90.8884
666.50	76.9944
677.62	85.9839

685.70	75.5115
695.00	106.1557
696.49	79.1264
696.51	79.1286
697.00	68.3026
702.65	69.5605
706.68	89.2821
711.68	85.1125
720.70	67.1881
721.93	0.0000
722.78	66.6633
722.91	63.1582
723.31	63.1687
724.19	61.4380
727.33	77.3395
733.00	61.6704
735.93	74.9789
739.50	0.0000
747.24	68.6885
752.31	65.5035
753.82	76.6543
756.73	78.9715
763.94	62.4719
765.81	100.0316
766.42	101.8457
777.92	0.0000
778.90	79.6908
783.70	73.0972
785.37	75.6226
795.86	58.7634
801.95	77.9375
810.29	74.5567
810.76	71.8426
815.77	44.6479
818.51	51.0795
832.01	77.9381
834.85	74.3495
836.80	0.0000
846.77	52.5580
856.80	52.4485
860.56	61.1725
871.09	52.1076
873.19	52.1473
875.33	0.0000
879.36	50.3996
880.51	46.6858
883.24	58.8825
884.68	67.3295
889.28	47.7727
898.04	59.1994
911.20	66.0881
911.20	66.0881
911.20	66.0881
926.50	55.0561
937.49	68.6074
944.13	47.7539
946.00	57.3413
949.00	45.9211
962.29	48.0518
964.08	48.0811
966.15	48.1152
968.97	48.1616
968.97	48.1616
968.97	48.1616
983.53	51.3011
996.26	61.2389
1001.03	62.3094
1004.73	46.7895
1037.84	53.2037
1038.76	0.0000
1048.07	54.3662
1050.41	47.4820
1050.41	47.4820
1063.66	52.6480
1085.87	65.0159
1099.45	57.2505
1112.07	61.5034
1115.54	60.5566

1120.29	65.6982
1120.29	65.6982
1120.55	65.7014
1121.30	65.7173
1131.51	0.0000
1173.23	66.7297
1177.93	69.9025
1189.05	75.2813
1204.77	65.2610
1221.41	75.9728
1231.02	75.1324
1235.36	72.0861
1238.28	71.1012
1260.41	0.0000
1271.85	44.3174
1274.44	59.1336
1274.54	52.7979
1291.59	51.9788
1298.22	0.0000
1312.11	40.5290
1332.49	37.5276
1365.19	25.9500
1368.63	0.0000
1384.29	30.7834
1408.01	39.3451
1457.56	0.0000
1460.82	20.2965
1489.16	21.3622
1505.03	45.6803
1596.21	24.7474
1620.50	16.7031
1678.03	0.0000
1690.97	9.7160
1764.49	11.8384
1764.49	11.8384
1770.23	5.0795
1771.35	10.3731
1791.20	0.0000
1836.06	17.0131

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513018

Total Uranium Activity	5.9485E+00	ug/g
Total Uranium Counting Unc.	5.7528E+00	ug/g
Total Uranium Tpu	2.9351E-06	ug/g
Total Uranium Mda	3.1605E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097                          SAMPLE ID   : G248513018
*  ANALYST       : MXR1                             DETECTOR    : GAM16
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 13:32:20.93          SAMPLE ALQT  : 124.000 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.204E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.518E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.299E+00
GROSS GAMMA DLC       (pCi/GRAM ) : 2.089E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:35:39.98

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513019.CNF;1
Sample date   : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:32:49
Sample ID     : G248513019 Sample quantity : 1.39590E+02 GRAM
Detector name : GAM17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.19 0.1%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 961097 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	46.49*	166	482	0.88	92.60	88	9	2.31E-02	26.1	
2	0	63.42*	237	813	1.09	126.49	122	10	3.29E-02	23.9	
3	4	74.94*	799	500	0.92	149.53	145	20	1.11E-01	5.4	2.25E+00
4	4	77.21*	1394	482	0.97	154.06	145	20	1.94E-01	3.8	
5	4	81.22	96	310	0.83	162.08	145	20	1.34E-02	31.7	
6	5	84.23*	210	407	1.47	168.11	165	27	2.92E-02	17.3	3.15E+00
7	5	87.40*	508	491	1.47	174.47	165	27	7.05E-02	9.1	
8	5	89.98*	292	307	1.03	179.61	165	27	4.06E-02	11.4	
9	5	93.03*	514	429	1.49	185.71	165	27	7.14E-02	9.1	
10	0	128.60	155	508	1.33	256.89	251	12	2.15E-02	30.2	
11	0	186.05*	268	352	1.39	371.84	367	10	3.72E-02	14.8	
12	0	209.46*	134	286	1.07	418.68	414	9	1.86E-02	24.8	
13	7	238.70*	1520	192	1.04	477.17	471	18	2.11E-01	3.0	1.91E+00
14	7	241.60	383	284	1.85	482.98	471	18	5.32E-02	13.8	
15	0	270.38	150	209	1.13	540.55	536	10	2.09E-02	19.9	
16	0	277.67*	57	173	1.23	555.15	552	9	7.85E-03	44.6	
17	0	295.28*	456	170	1.18	590.39	585	11	6.34E-02	7.3	
18	0	299.94	121	162	1.15	599.70	596	9	1.68E-02	21.0	
19	0	328.09	51	200	1.27	656.02	651	10	7.03E-03	54.1	
20	0	338.28*	290	196	1.12	676.42	670	11	4.03E-02	11.1	
21	0	351.88*	729	207	1.13	703.63	697	14	1.01E-01	5.6	
22	0	409.53	56	101	1.44	818.99	815	9	7.81E-03	35.1	
23	0	462.80	69	95	1.18	925.58	921	9	9.62E-03	28.0	
24	0	510.84*	155	129	1.39	1021.71	1015	14	2.15E-02	19.7	
25	0	583.15*	409	113	1.46	1166.40	1161	12	5.68E-02	7.4	
26	0	609.30*	461	107	1.24	1218.74	1212	13	6.40E-02	6.6	
27	0	727.55	90	78	1.91	1455.37	1448	13	1.25E-02	22.8	
28	0	768.59	43	49	1.52	1537.49	1534	8	5.97E-03	32.3	
29	0	794.99*	47	52	1.06	1590.33	1584	11	6.56E-03	34.1	
30	0	860.61	35	47	1.92	1721.66	1717	9	4.85E-03	39.3	
31	0	910.97*	299	28	1.47	1822.45	1818	11	4.15E-02	6.8	
32	4	963.96	72	33	2.44	1928.49	1922	22	1.00E-02	23.2	1.75E+00
33	4	968.65*	205	40	1.70	1937.88	1922	22	2.85E-02	9.0	
34	0	1120.24	121	80	1.19	2241.28	2234	14	1.68E-02	18.2	
35	0	1460.34*	974	10	1.85	2922.04	2912	20	1.35E-01	3.3	
36	0	1728.85	29	5	1.17	3459.56	3454	11	3.97E-03	24.5	
37	0	1764.25	86	15	1.75	3530.44	3522	15	1.19E-02	14.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 15:35:42

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513019.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:32:49
Sample ID        : G248513019 Sample quantity : 139.59 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.19 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
    
```

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	+	1460.82	*	3.157E+01	3.497E+00	5.709E-01	5.069E-02	55.294
CD-109	+	88.03	*	5.723E+00	1.180E+00	9.087E-01	8.870E-02	6.298
SN-126	+	64.28		9.783E-01	4.925E-01	4.134E-01	6.599E-02	2.366
	+	86.94		2.298E+00	1.043E+00	3.637E-01	1.513E-01	6.319
	+	87.57	*	5.528E-01	1.140E-01	8.764E-02	8.552E-03	6.307
TL-208	+	277.37		6.460E-01	5.821E-01	6.569E-01	8.486E-02	0.983
	+	583.19	*	7.139E-01	1.252E-01	7.278E-02	6.876E-03	9.808
	+	860.56		6.031E-01	4.771E-01	6.447E-01	6.064E-02	0.935
PB-210	+	46.54	*	1.668E+00	8.892E-01	7.929E-01	8.548E-02	2.104
BI-211		72.87		2.456E+00	2.347E+00	3.686E+00	3.604E-01	0.666
	+	351.06	*	5.216E+00	7.626E-01	3.669E-01	3.424E-02	14.219
PB-212	+	74.82		3.076E+00	5.400E-01	4.064E-01	5.601E-02	7.568
	+	77.11		3.232E+00	3.985E-01	2.455E-01	2.393E-02	13.168
	+	238.63	*	2.332E+00	2.741E-01	1.030E-01	1.044E-02	22.629
	+	300.09		2.941E+00	1.278E+00	1.357E+00	1.492E-01	2.167
BI-214	+	609.32	*	1.570E+00	2.626E-01	1.379E-01	1.410E-02	11.380
	+	1120.29		2.231E+00	8.454E-01	5.625E-01	6.041E-02	3.967
	+	1764.49		2.242E+00	6.833E-01	3.600E-01	3.044E-02	6.229
PB-214	+	74.82		5.452E+00	9.066E-01	7.204E-01	9.061E-02	7.568
	+	77.11		5.698E+00	8.451E-01	4.327E-01	5.525E-02	13.168
	+	242.00		3.569E+00	1.058E+00	6.274E-01	6.742E-02	5.688
	+	295.22		1.968E+00	3.639E-01	2.381E-01	2.681E-02	8.264
	+	351.93	*	1.893E+00	2.958E-01	1.335E-01	1.446E-02	14.183
RA-223	+	81.07		2.560E-01	1.642E-01	2.377E-01	2.315E-02	1.077
	+	83.79		3.406E-01	1.225E-01	1.366E-01	1.331E-02	2.494
		94.87		9.588E-01	4.338E-01	7.000E-01	7.064E-02	1.370
		144.24		5.327E-02	7.580E-01	1.215E+00	1.339E-01	0.044
		154.21		4.314E-01	4.398E-01	7.434E-01	7.526E-02	0.580
	+	269.46		7.992E-01	3.266E-01	3.251E-01	3.031E-02	2.458
		323.87	*	1.562E-01	8.098E-01	1.196E+00	2.102E-01	0.131
	+	338.28		9.114E+00	2.321E+00	1.809E+00	2.235E-01	5.038
RA-224	+	240.99	*	6.311E+00	1.835E+00	1.105E+00	9.996E-02	5.709
RA-226	+	609.32	*	1.570E+00	2.626E-01	1.379E-01	1.410E-02	11.380
	+	1120.29		2.231E+00	8.454E-01	5.625E-01	6.041E-02	3.967

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	+	1764.49		2.242E+00	6.833E-01	3.600E-01	3.044E-02	6.229
	+	338.32		2.297E+00	1.088E+00	4.560E-01	1.906E-01	5.037
	+	911.20	*	2.634E+00	4.742E-01	2.756E-01	3.222E-02	9.557
RA-228	+	968.97		3.133E+00	9.503E-01	5.183E-01	1.265E-01	6.044
	+	338.32		2.297E+00	1.088E+00	4.560E-01	1.906E-01	5.037
	+	911.20	*	2.634E+00	4.742E-01	2.756E-01	3.222E-02	9.557
TH-228	+	968.97		3.133E+00	9.503E-01	5.183E-01	1.265E-01	6.044
	+	74.82		3.076E+00	4.510E-01	4.064E-01	3.996E-02	7.568
	+	77.11		3.232E+00	3.985E-01	2.455E-01	2.393E-02	13.168
TH-229	+	238.63	*	2.332E+00	2.741E-01	1.030E-01	1.044E-02	22.629
	+	300.09		2.941E+00	2.186E+00	1.357E+00	8.319E-01	2.167
	+	85.43		5.723E-01	2.058E-01	2.192E-01	2.137E-02	2.611
TH-231	+	88.47		8.522E-01	1.757E-01	1.355E-01	1.325E-02	6.290
	+	193.51	*	-8.720E-01	5.825E-01	8.611E-01	7.447E-02	-1.013
	+	210.85		2.906E+00	1.465E+00	1.498E+00	1.321E-01	1.939
TH-232	+	81.07		2.560E-01	1.642E-01	2.377E-01	2.315E-02	1.077
	+	83.79		3.406E-01	1.225E-01	1.366E-01	1.331E-02	2.494
	+	94.87		9.588E-01	4.338E-01	7.000E-01	7.064E-02	1.370
TH-234	+	144.24		5.327E-02	7.580E-01	1.215E+00	1.339E-01	0.044
	+	154.21		4.314E-01	4.398E-01	7.434E-01	7.526E-02	0.580
	+	269.46		7.992E-01	3.266E-01	3.251E-01	3.031E-02	2.458
U-235	+	323.87	*	1.562E-01	8.098E-01	1.196E+00	2.102E-01	0.131
	+	338.28		9.114E+00	2.321E+00	1.809E+00	2.235E-01	5.038
	+	338.32		2.297E+00	5.517E-01	4.560E-01	4.108E-02	5.037
U-238	+	911.20	*	2.634E+00	4.742E-01	2.756E-01	3.222E-02	9.557
	+	968.97		3.133E+00	9.503E-01	5.183E-01	1.265E-01	6.044
	+	63.29	*	2.538E+00	1.304E+00	1.073E+00	2.041E-01	2.366
ANH-511	+	92.59		4.962E+00	1.440E+00	7.791E-01	1.764E-01	3.369
	+	89.96		3.415E+00	1.160E+00	9.415E-01	2.361E-01	3.627
	+	93.35		3.748E+00	1.117E+00	5.900E-01	1.395E-01	6.353
NP-237	+	143.76	*	3.562E-02	2.237E-01	3.597E-01	6.404E-02	0.099
	+	163.33		1.766E-01	4.810E-01	7.944E-01	1.424E-01	0.222
	+	185.72		2.621E-01	8.090E-02	6.976E-02	5.974E-03	3.758
U-238	+	205.31		4.544E-01	5.987E-01	8.843E-01	1.611E-01	0.514
	+	86.48	*	1.649E+00	4.851E-01	2.607E-01	6.028E-02	6.328
	+	95.86		-3.880E-01	8.390E-01	1.220E+00	2.999E-01	-0.318
SC-46	+	63.29	*	2.538E+00	1.304E+00	1.073E+00	2.041E-01	2.366
	+	92.59		4.962E+00	1.028E+00	7.791E-01	7.773E-02	6.369
	+	511.00	*	2.024E-01	8.166E-02	6.205E-02	5.542E-03	3.262

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-4.810E-02	4.378E-01	7.119E-01	6.772E-02	-0.068
NA-22		1274.54	*	-2.227E-02	5.775E-02	8.836E-02	7.444E-03	-0.252
NA-24		1368.63	*	-1.871E+03	5.775E-02	Half-Life too short		
SC-46		889.28	*	-8.315E-03	5.406E-02	8.813E-02	7.715E-03	-0.094
	+	1120.55		4.031E-01	1.503E-01	2.091E-01	1.754E-02	1.928

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
V-48	944.13			-6.947E-01	1.757E+00	2.785E+00	2.437E-01	-0.249
	983.53	*		3.092E-02	1.329E-01	2.232E-01	1.947E-02	0.138
	1312.11			1.462E-03	1.568E-01	2.632E-01	2.234E-02	0.006
CR-51	320.08	*		1.070E-01	4.909E-01	8.359E-01	7.977E-02	0.128
MN-54	834.85	*		3.631E-02	5.327E-02	9.310E-02	8.186E-03	0.390
CO-56	846.77	*		-1.723E-02	5.293E-02	8.515E-02	7.485E-03	-0.202
	1037.84			-2.098E-03	4.205E-01	6.870E-01	6.241E-02	-0.003
	1238.28			1.705E-01	1.355E-01	2.402E-01	2.064E-02	0.710
	1771.35			-6.460E-02	3.314E-01	5.206E-01	4.397E-02	-0.124
CO-57	122.06	*		7.411E-03	2.505E-02	4.191E-02	4.910E-03	0.177
	136.47			-8.269E-02	2.168E-01	3.502E-01	3.940E-02	-0.236
CO-58	810.76	*		-4.079E-02	5.690E-02	8.866E-02	7.808E-03	-0.460
FE-59	1099.45	*		3.498E-02	1.379E-01	2.302E-01	2.113E-02	0.152
	1291.59			1.167E-02	1.707E-01	2.774E-01	2.673E-02	0.042
CO-60	1173.23			2.788E-03	6.565E-02	1.067E-01	8.713E-03	0.026
	1332.49	*		9.948E-03	5.837E-02	9.800E-02	8.352E-03	0.102
ZN-65	1115.54	*		5.624E-02	1.293E-01	1.933E-01	1.627E-02	0.291
SE-75	121.12			-1.161E-01	1.367E-01	2.163E-01	2.937E-02	-0.537
	136.00			-9.328E-03	4.249E-02	6.920E-02	7.485E-03	-0.135
	264.66	*		-6.657E-02	5.781E-02	7.939E-02	7.295E-03	-0.838
	279.54			8.503E-02	1.343E-01	2.100E-01	1.993E-02	0.405
	400.66			1.830E-01	3.162E-01	5.425E-01	5.957E-02	0.337
SR-85	514.00	*		5.939E-02	5.506E-02	8.675E-02	7.751E-03	0.685
Y-88	898.04			9.847E-03	5.463E-02	9.195E-02	8.076E-03	0.107
	1836.06	*		-1.406E-02	4.569E-02	6.924E-02	5.774E-03	-0.203
Y-91	1204.77	*		-5.021E+00	3.476E+01	5.536E+01	4.569E+00	-0.091
NB-94	702.65	*		2.033E-02	4.647E-02	8.057E-02	6.911E-03	0.252
	871.09			1.214E-02	4.385E-02	7.459E-02	6.546E-03	0.163
NB-95	765.81	*		2.641E-02	6.747E-02	1.025E-01	8.954E-03	0.258
NB-95M	235.69	*		6.150E-02	1.647E-01	2.395E-01	2.450E-02	0.257
ZR-95	724.19			-3.448E-02	1.490E-01	2.126E-01	1.991E-02	-0.162
	756.73	*		2.904E-02	1.012E-01	1.734E-01	1.667E-02	0.167
MO-99	140.51			-1.625E-05	1.012E-01	Half-Life	too short	
	181.07			6.643E-05	1.012E-01	Half-Life	too short	
	366.42			-9.870E-05	1.012E-01	Half-Life	too short	
	739.50	*		-7.726E-05	1.012E-01	Half-Life	too short	
	777.92			-9.011E-05	1.012E-01	Half-Life	too short	
TC-99M	140.51	*		-1.300E+19	1.012E-01	Half-Life	too short	
RU-103	497.08	*		1.891E-02	5.600E-02	9.380E-02	1.327E-02	0.202
	610.33			1.864E+01	3.932E+00	4.280E+00	7.025E-01	4.356
RH-106	621.93	*		9.901E-02	4.066E-01	6.675E-01	8.878E-02	0.148
	1050.41			1.026E+00	3.469E+00	5.833E+00	5.020E-01	0.176
RU-106	621.93	*		9.901E-02	4.065E-01	6.675E-01	5.799E-02	0.148
	1050.41			1.026E+00	3.469E+00	5.833E+00	5.020E-01	0.176
AG-108M	433.94	*		4.518E-02	3.446E-02	6.156E-02	5.517E-03	0.734
	614.28			1.971E-02	4.826E-02	7.113E-02	6.407E-03	0.277
	722.91			1.353E-02	5.504E-02	8.274E-02	7.377E-03	0.163
AG-110M	657.76	*		-2.803E-02	5.249E-02	8.028E-02	6.997E-03	-0.349
	677.62			-4.858E-02	4.491E-01	7.106E-01	6.210E-02	-0.068

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		706.68		2.054E-02	2.991E-01	5.060E-01	4.473E-02	0.041
		763.94		-8.168E-03	2.273E-01	3.297E-01	2.956E-02	-0.025
		884.68		-2.599E-02	6.781E-02	1.081E-01	9.768E-03	-0.240
		937.49		-1.525E-01	1.805E-01	2.757E-01	2.498E-02	-0.553
		1384.29		-3.117E-02	2.084E-01	3.414E-01	3.009E-02	-0.091
		1505.03		-5.207E-01	4.008E-01	5.317E-01	4.598E-02	-0.979
SN-113		391.69	*	1.752E-02	5.596E-02	9.473E-02	8.230E-03	0.185
CD-115		260.90		-3.569E-04	5.596E-02	Half-Life	too short	
		492.35		3.130E-05	5.596E-02	Half-Life	too short	
		527.90	*	1.128E-05	5.596E-02	Half-Life	too short	
SN-117M		156.02		-1.292E+00	3.835E+00	6.171E+00	5.682E-01	-0.209
		158.56	*	-5.697E-02	8.987E-02	1.423E-01	1.279E-02	-0.400
TE-123M		159.00	*	-2.826E-03	3.198E-02	5.196E-02	4.677E-03	-0.054
SB-124		602.73		-5.274E-02	6.518E-02	8.303E-02	7.292E-03	-0.635
		645.85		-3.395E-02	7.157E-01	1.143E+00	1.033E-01	-0.030
		722.78		3.958E-02	6.162E-01	9.086E-01	8.029E-02	0.044
		1690.97	*	-2.517E-03	7.926E-02	1.290E-01	1.151E-02	-0.020
SB-125		427.87	*	6.251E-02	1.112E-01	1.902E-01	1.676E-02	0.329
	+	463.37		7.936E-01	4.508E-01	6.742E-01	6.375E-02	1.177
		600.60		2.195E-01	2.264E-01	3.920E-01	3.691E-02	0.560
		635.95		-7.092E-02	3.713E-01	5.861E-01	5.454E-02	-0.121
TE-125M		109.28	*	-4.664E+00	9.999E+00	1.628E+01	2.025E+00	-0.287
I-126		388.63		-8.197E-02	3.204E-01	5.244E-01	4.438E-02	-0.156
		666.33	*	5.977E-01	4.488E-01	7.932E-01	6.697E-02	0.754
		753.82		1.945E+00	3.655E+00	6.375E+00	5.554E-01	0.305
SB-126		414.70		-1.507E-02	1.554E-01	2.239E-01	1.920E-02	-0.067
		666.50		2.602E-01	1.536E-01	2.784E-01	2.351E-02	0.935
		695.00		6.500E-02	1.445E-01	2.522E-01	2.157E-02	0.258
		697.00		-2.183E-01	5.228E-01	8.518E-01	7.291E-02	-0.256
		720.70	*	1.168E-01	3.269E-01	4.979E-01	4.299E-02	0.235
		856.80		-2.140E-01	1.166E+00	1.642E+00	1.443E-01	-0.130
SB-127		252.40		3.208E+00	2.014E+01	3.221E+01	1.366E+01	0.100
		473.00		-1.368E+00	8.753E+00	1.420E+01	2.170E+00	-0.096
		685.70	*	3.103E+00	7.320E+00	1.211E+01	1.687E+00	0.256
		783.70		2.103E+01	2.022E+01	3.594E+01	5.351E+00	0.585
I-131	+	80.19		1.077E+01	6.910E+00	1.122E+01	1.105E+00	0.960
		284.31		-3.309E-02	3.167E+00	5.363E+00	5.184E-01	-0.006
		364.49	*	-7.407E-02	2.603E-01	4.266E-01	3.967E-02	-0.174
		636.99		4.868E-01	4.194E+00	6.799E+00	6.230E-01	0.072
TE-132		49.72		-4.720E-01	2.190E+01	3.383E+01	4.894E+00	-0.014
		111.76		6.353E+01	1.804E+02	3.000E+02	4.557E+01	0.212
		116.30		1.591E+01	1.584E+02	2.635E+02	4.058E+01	0.060
		228.16	*	-1.530E+00	4.749E+00	7.449E+00	1.329E+00	-0.205
BA-133	+	81.00		1.131E-01	7.398E-02	1.138E-01	1.840E-02	0.993
	+	276.40		5.980E-01	5.402E-01	6.752E-01	9.763E-02	0.886
		302.85		7.691E-02	1.697E-01	2.609E-01	3.505E-02	0.295
		356.01	*	2.195E-02	5.164E-02	7.868E-02	1.032E-02	0.279
		383.85		-8.969E-02	3.481E-01	5.695E-01	7.041E-02	-0.157
I-133		529.87	*	2.607E-01	3.481E-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-134		875.33		2.167E+01	3.481E-01	Half-Life	too short	
		1298.22		-3.478E+01	3.481E-01	Half-Life	too short	
		563.25		3.675E-01	5.117E-01	8.696E-01	7.815E-02	0.423
		569.33		1.240E-01	2.554E-01	4.289E-01	3.863E-02	0.289
		604.72		-1.882E-02	4.826E-02	6.473E-02	5.692E-03	-0.291
+ 795.86 *				1.254E-01	8.624E-02	1.283E-01	1.133E-02	0.978
		801.95		-6.313E-01	5.235E-01	7.728E-01	6.822E-02	-0.817
		1365.19		5.970E-01	1.362E+00	2.422E+00	2.171E-01	0.246
CS-135		268.22	*	1.991E-01	2.065E-01	3.103E-01	3.238E-02	0.642
I-135		546.56		-1.967E+18	2.065E-01	Half-Life	too short	
		836.80		2.049E+19	2.065E-01	Half-Life	too short	
		1038.76		-1.062E+19	2.065E-01	Half-Life	too short	
		1131.51		-6.118E+17	2.065E-01	Half-Life	too short	
		1260.41	*	-4.287E+18	2.065E-01	Half-Life	too short	
		1457.56		4.678E+20	2.065E-01	Half-Life	too short	
		1678.03		3.054E+16	2.065E-01	Half-Life	too short	
		1791.20		-8.595E+18	2.065E-01	Half-Life	too short	
CS-136		153.25		1.034E+00	1.454E+00	2.438E+00	2.675E-01	0.424
		176.60		8.145E-02	8.337E-01	1.358E+00	1.273E-01	0.060
		273.65		6.825E-01	1.050E+00	1.257E+00	1.241E-01	0.543
		340.55		6.009E-01	2.925E-01	4.852E-01	4.521E-02	1.238
		818.51		-1.180E-01	1.481E-01	2.279E-01	2.007E-02	-0.518
1048.07 *				-1.684E-01	2.249E-01	3.379E-01	3.036E-02	-0.499
		1235.36		9.629E-01	1.273E+00	2.173E+00	2.513E-01	0.443
		661.66	*	-2.765E-02	5.240E-02	8.019E-02	6.755E-03	-0.345
BA-137M		661.66	*	-2.921E-02	5.536E-02	8.471E-02	7.150E-03	-0.345
CE-139		165.86	*	9.614E-03	3.372E-02	5.557E-02	4.633E-03	0.173
BA-140		162.66		1.286E+00	1.367E+00	2.309E+00	2.126E-01	0.557
		304.85		1.086E+00	2.453E+00	3.748E+00	1.103E+00	0.290
		423.72		8.932E-01	3.670E+00	6.143E+00	2.021E+00	0.145
537.26 *				-2.270E-01	4.985E-01	7.690E-01	2.614E-01	-0.295
		328.76		7.616E-01	8.275E-01	1.000E+00	9.542E-02	0.762
		487.02		1.719E-01	2.328E-01	4.032E-01	3.794E-02	0.426
		815.77		2.844E-01	6.294E-01	1.091E+00	1.067E-01	0.261
		1596.21	*	-1.909E-01	1.667E-01	2.167E-01	1.871E-02	-0.881
CE-141		145.44	*	5.647E-02	7.989E-02	1.344E-01	1.371E-02	0.420
CE-143		57.36		3.134E-03	7.989E-02	Half-Life	too short	
		293.27	*	2.522E-02	7.989E-02	Half-Life	too short	
		664.57		-7.394E-02	7.989E-02	Half-Life	too short	
721.93				-1.411E-02	7.989E-02	Half-Life	too short	
		80.12		2.986E+00	1.916E+00	3.101E+00	3.020E-01	0.963
		133.52	*	-2.297E-02	2.330E-01	3.412E-01	5.700E-02	-0.067
PM-144		476.78		-9.867E-04	8.113E-02	1.329E-01	1.275E-02	-0.007
		618.01		-1.657E-02	4.126E-02	6.393E-02	5.723E-03	-0.259
696.49 *				-1.353E-02	4.307E-02	7.078E-02	6.061E-03	-0.191
		696.51	*	-1.006E+00	3.238E+00	5.322E+00	4.554E-01	-0.189
PR-144		1489.16		-5.163E+00	1.746E+01	2.769E+01	2.394E+00	-0.186
		453.88	*	-4.044E-03	5.264E-02	8.614E-02	9.236E-03	-0.047
PM-146		633.25		-7.551E-01	1.943E+00	2.979E+00	1.138E+00	-0.254

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	735.93		7.175E-02	1.922E-01	3.304E-01	9.266E-02	0.217
		747.24		-9.518E-04	1.262E-01	2.115E-01	3.095E-02	-0.004
		91.11		1.827E+00	4.599E-01	7.187E-01	7.573E-02	2.541
		319.41		-2.711E-01	5.820E+00	9.768E+00	8.910E-01	-0.028
PM-149	*	531.02		5.314E-01	1.155E+00	1.943E+00	2.941E-01	0.274
		285.90		-6.196E-05	1.155E+00	Half-Life too short		
EU-152		121.78		-3.254E-02	7.232E-02	1.171E-01	1.483E-02	-0.278
		244.70		-1.421E-02	3.945E-01	5.564E-01	5.043E-02	-0.026
		344.28		-5.629E-02	1.082E-01	1.754E-01	1.659E-02	-0.321
		778.90		-2.633E-01	3.259E-01	5.036E-01	4.409E-02	-0.523
	+	964.08		1.183E+00	5.575E-01	8.272E-01	7.229E-02	1.430
		1085.87		-5.498E-02	5.173E-01	8.331E-01	7.089E-02	-0.066
		1112.07		2.833E-02	4.318E-01	6.661E-01	5.610E-02	0.043
		1408.01		1.742E-01	2.487E-01	4.479E-01	3.854E-02	0.389
GD-153		69.67		-1.031E+00	1.173E+00	1.838E+00	1.804E-01	-0.561
		97.43	*	-3.515E-02	8.622E-02	1.265E-01	1.293E-02	-0.278
		103.18		-1.124E-01	1.039E-01	1.646E-01	1.734E-02	-0.683
EU-154		123.07		5.282E-02	5.640E-02	8.719E-02	1.203E-02	0.606
		723.31		2.904E-03	2.455E-01	3.600E-01	3.424E-02	0.008
		873.19		-1.723E-01	3.626E-01	5.718E-01	6.866E-02	-0.301
		996.26		-2.034E-01	4.709E-01	7.356E-01	1.288E-01	-0.277
		1004.73		-1.893E-01	2.786E-01	4.223E-01	4.938E-02	-0.448
		1274.44	*	-2.014E-02	1.586E-01	2.509E-01	2.816E-02	-0.080
		86.55		6.724E-01	1.389E-01	1.703E-01	1.674E-02	3.949
		105.31	*	7.124E-02	9.894E-02	1.688E-01	1.813E-02	0.422
TB-160	+	86.79		1.919E+00	3.957E-01	4.866E-01	4.746E-02	3.944
		197.04		3.826E-01	6.959E-01	1.133E+00	9.841E-02	0.338
		215.65		1.471E-01	9.070E-01	1.466E+00	1.299E-01	0.100
		298.57		4.470E-01	1.923E-01	2.515E-01	2.308E-02	1.777
		879.36	*	-5.602E-02	2.030E-01	3.275E-01	2.871E-02	-0.171
		962.29		1.290E+00	8.780E-01	1.455E+00	1.272E-01	0.887
		966.15		1.679E+00	4.137E-01	7.934E-01	6.933E-02	2.116
		1177.93		-2.177E-01	5.595E-01	8.704E-01	7.121E-02	-0.250
		1271.85		-4.529E-01	1.003E+00	1.520E+00	1.278E-01	-0.298
		80.57		3.208E-01	2.058E-01	3.330E-01	3.243E-02	0.963
HO-166M	+	184.41		5.563E-02	4.462E-02	6.954E-02	5.945E-03	0.800
		280.46		2.563E-02	1.000E-01	1.526E-01	1.402E-02	0.168
		410.95		5.334E-01	3.771E-01	4.904E-01	4.193E-02	1.088
		711.68	*	3.474E-03	7.815E-02	1.320E-01	1.136E-02	0.026
		752.31		-5.352E-02	3.502E-01	5.795E-01	5.047E-02	-0.092
		810.29		-3.090E-02	7.854E-02	1.263E-01	1.110E-02	-0.245
		67.75		6.061E-02	7.576E-02	1.188E-01	1.170E-02	0.510
		100.11		8.298E-02	1.716E-01	2.911E-01	3.018E-02	0.285
TA-182		152.43		-3.041E-02	4.096E-01	6.676E-01	6.346E-02	-0.046
		222.11		2.999E-01	4.147E-01	6.869E-01	6.123E-02	0.437
		1121.30		1.097E+00	4.092E-01	5.565E-01	4.668E-02	1.972
		1189.05		-1.909E-01	4.664E-01	7.237E-01	5.943E-02	-0.264
	+	1221.41	*	-8.195E-02	2.989E-01	4.697E-01	3.896E-02	-0.174
		1231.02		1.743E-02	7.237E-01	1.169E+00	9.722E-02	0.015

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IR-192	+	295.96		1.568E+00	2.719E-01	3.759E-01	3.474E-02	4.171
		308.46		-6.218E-02	1.109E-01	1.808E-01	1.663E-02	-0.344
		316.51	*	-3.930E-02	3.983E-02	6.284E-02	5.749E-03	-0.625
HG-203		468.07		-8.130E-02	9.859E-02	1.384E-01	1.308E-02	-0.587
		70.83		-1.212E-01	1.071E+00	1.624E+00	2.715E-01	-0.075
		72.87		6.882E-01	6.637E-01	1.033E+00	1.674E-01	0.666
BI-207	+	279.20	*	5.080E-02	5.180E-02	8.257E-02	7.751E-03	0.615
		72.81		1.335E-01	1.348E-01	2.114E-01	2.067E-02	0.632
		74.97		8.869E-01	1.296E-01	1.901E-01	1.856E-02	4.664
PB-211		569.70		2.583E-02	3.820E-02	6.509E-02	5.788E-03	0.397
		1063.66	*	1.275E-02	6.184E-02	1.033E-01	8.855E-03	0.123
		1770.23		1.379E-01	6.019E-01	9.070E-01	7.661E-02	0.152
BI-212	+	404.85	*	-2.550E-01	9.738E-01	1.374E+00	6.646E-01	-0.186
		427.09		3.752E-01	1.834E+00	3.058E+00	1.415E+00	0.123
		832.01		-9.927E-01	1.441E+00	2.095E+00	1.087E+00	-0.474
RN-219	+	727.33	*	2.483E+00	1.173E+00	1.520E+00	1.896E-01	1.634
		785.37		5.066E+00	4.277E+00	7.730E+00	6.774E-01	0.655
		1620.50		4.449E+00	3.373E+00	6.537E+00	5.633E-01	0.681
AC-227	+	271.23		1.029E+00	4.239E-01	5.274E-01	5.653E-02	1.950
		401.81	*	2.606E-01	4.837E-01	8.266E-01	1.223E-01	0.315
		79.69		-1.367E+00	1.045E+00	1.453E+00	2.590E-01	-0.941
TH-227	+	235.96		1.274E-01	1.848E-01	2.736E-01	2.920E-02	0.466
		256.23	*	-1.622E-01	2.927E-01	4.479E-01	5.560E-02	-0.362
		299.98		3.235E+00	1.424E+00	1.976E+00	2.587E-01	1.637
PA-231	+	304.50		1.144E+00	1.908E+00	2.959E+00	4.977E-01	0.387
		334.37		3.849E-01	2.166E+00	3.246E+00	5.136E-01	0.119
		79.80		1.920E+00	1.290E+00	1.929E+00	4.291E-01	0.995
PA-233	+	235.96		1.274E-01	1.848E-01	2.736E-01	2.765E-02	0.466
		256.23	*	-1.622E-01	2.929E-01	4.479E-01	6.238E-02	-0.362
		299.98		3.235E+00	1.424E+00	1.976E+00	2.587E-01	1.637
PA-234	+	304.50		1.144E+00	1.908E+00	2.959E+00	4.977E-01	0.387
		334.37		3.849E-01	2.166E+00	3.246E+00	5.136E-01	0.119
		283.69	*	-1.127E-01	1.573E+00	2.571E+00	3.837E-01	-0.044
PA-234M	+	301.36		2.078E+00	9.116E-01	1.228E+00	1.541E-01	1.693
		300.13		1.464E+00	6.541E-01	8.976E-01	1.361E-01	1.631
		311.90	*	2.894E-02	7.011E-02	1.208E-01	1.133E-02	0.240
PA-234		340.48		2.017E+00	9.563E-01	1.414E+00	3.423E-01	1.426
		94.67		5.066E-01	1.725E-01	2.707E-01	3.643E-02	1.872
		98.44		1.535E-01	1.210E-01	1.458E-01	8.173E-02	1.053
PA-234M	+	111.00		-4.625E-02	1.737E-01	2.852E-01	3.959E-02	-0.162
		131.20		-1.934E-02	1.204E-01	1.758E-01	1.952E-02	-0.110
		569.50		2.082E-01	3.438E-01	5.827E-01	5.181E-02	0.357
PA-234M		733.00		-8.115E-02	5.610E-01	8.063E-01	1.791E-01	-0.101
		880.51		1.579E-02	3.775E-01	6.278E-01	5.503E-02	0.025
		883.24		3.347E-01	4.265E-01	6.524E-01	4.387E-01	0.513
PA-234M	+	926.50		-1.664E-01	2.295E-01	3.437E-01	8.702E-02	-0.484
		946.00	*	5.969E-02	4.157E-01	6.936E-01	1.306E-01	0.086
		949.00		-8.205E-03	6.151E-01	1.012E+00	8.850E-02	-0.008
PA-234M		766.42		1.633E+01	1.871E+01	2.694E+01	1.368E+01	0.606

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		4.627E+00	5.904E+00	1.039E+01	1.043E+00	0.445
	99.53			1.558E-01	1.505E-01	2.592E-01	2.679E-02	0.601
	103.37			-9.229E-02	9.243E-02	1.470E-01	1.551E-02	-0.628
	106.12			7.766E-02	7.973E-02	1.369E-01	1.465E-02	0.567
	117.23	*		-3.180E-02	3.813E-01	6.294E-01	7.169E-02	-0.051
AM-241	228.18			-8.221E-02	2.512E-01	3.943E-01	3.533E-02	-0.208
	277.60	+		2.953E-01	2.647E-01	3.344E-01	3.069E-02	0.883
CM-247	59.54	*		5.800E-03	7.113E-02	1.087E-01	1.154E-02	0.053
CF-249	278.00	+		1.254E+00	1.124E+00	1.475E+00	1.354E-01	0.850
	287.50			1.247E-01	1.357E+00	2.308E+00	2.120E-01	0.054
	402.40	*		5.437E-03	4.468E-02	7.466E-02	6.341E-03	0.073
CF-251	252.80			2.607E-01	1.073E+00	1.728E+00	1.573E-01	0.151
	333.37			-1.477E-02	2.645E-01	3.290E-01	2.975E-02	-0.045
CF-251	388.16	*		1.421E-02	4.885E-02	8.259E-02	6.995E-03	0.172
	177.52	*		-6.352E-03	1.454E-01	2.353E-01	1.993E-02	-0.027
	227.38			-1.504E-01	4.217E-01	6.615E-01	5.922E-02	-0.227
	285.41			4.990E-02	2.367E+00	4.015E+00	3.688E-01	0.012

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]G248513019      *
* Acquisition date   : 20-MAR-2010 13:32:49 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 02:00:10.19 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID          : G248513019 Analyst initials: MXR1          *
* Batch Number       : 961097 Sample Quantity : 1.3959E+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	3.157E+01	3.427E+00	5.730E-01	0.000E+00
CD-109	5.723E+00	1.156E+00	9.646E-01	0.000E+00
SN-126	5.528E-01	1.117E-01	9.304E-02	0.000E+00
TL-208	7.139E-01	1.227E-01	7.445E-02	0.000E+00
PB-210	1.668E+00	8.714E-01	8.518E-01	0.000E+00
BI-211	5.216E+00	7.473E-01	3.791E-01	0.000E+00
PB-212	2.332E+00	2.686E-01	1.073E-01	0.000E+00
BI-214	1.570E+00	2.574E-01	1.410E-01	0.000E+00
PB-214	1.893E+00	2.899E-01	1.379E-01	0.000E+00
RA-223	1.562E-01	7.936E-01	1.238E+00	0.000E+00
RA-224	6.311E+00	1.798E+00	1.151E+00	0.000E+00
RA-226	1.570E+00	2.574E-01	1.410E-01	0.000E+00
AC-228	2.634E+00	4.647E-01	2.794E-01	0.000E+00
RA-228	2.634E+00	4.647E-01	2.794E-01	0.000E+00
TH-228	2.332E+00	2.686E-01	1.073E-01	0.000E+00
TH-229	-8.720E-01	5.709E-01	9.004E-01	0.000E+00
TH-231	1.562E-01	7.936E-01	1.238E+00	0.000E+00
TH-232	2.634E+00	4.647E-01	2.794E-01	0.000E+00
TH-234	2.538E+00	1.278E+00	1.146E+00	0.000E+00
U-235	3.562E-02	2.193E-01	3.783E-01	0.000E+00
NP-237	1.649E+00	4.754E-01	2.768E-01	0.000E+00
U-238	2.538E+00	1.278E+00	1.146E+00	0.000E+00
ANH-511	2.024E-01	8.002E-02	6.364E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-4.810E-02	4.291E-01	7.312E-01	0.000E+00 NOT IDENT.
NA-22	-2.227E-02	5.659E-02	8.894E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.889E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-8.315E-03	5.298E-02	8.937E-02	0.000E+00 FAIL ABUN

V-48	3.092E-02	1.303E-01	2.259E-01	0.000E+00	NOT IDENT.
CR-51	1.070E-01	4.811E-01	8.655E-01	0.000E+00	NOT IDENT.
MN-54	3.631E-02	5.220E-02	9.454E-02	0.000E+00	NOT IDENT.
CO-56	-1.723E-02	5.187E-02	8.644E-02	0.000E+00	NOT IDENT.
CO-57	7.411E-03	2.454E-02	4.421E-02	0.000E+00	NOT IDENT.
CO-58	-4.079E-02	5.577E-02	9.008E-02	0.000E+00	NOT IDENT.
FE-59	3.498E-02	1.352E-01	2.324E-01	0.000E+00	NOT IDENT.
CO-60	9.948E-03	5.720E-02	9.855E-02	0.000E+00	NOT IDENT.
ZN-65	5.624E-02	1.267E-01	1.951E-01	0.000E+00	NOT IDENT.
SE-75	-6.657E-02	5.665E-02	8.250E-02	0.000E+00	NOT IDENT.
SR-85	5.939E-02	5.396E-02	8.897E-02	0.000E+00	NOT IDENT.
Y-88	-1.406E-02	4.477E-02	6.916E-02	0.000E+00	NOT IDENT.
Y-91	-5.021E+00	3.406E+01	5.578E+01	0.000E+00	NOT IDENT.
NB-94	2.033E-02	4.554E-02	8.210E-02	0.000E+00	NOT IDENT.
NB-95	2.641E-02	6.612E-02	1.043E-01	0.000E+00	NOT IDENT.
NB-95M	6.150E-02	1.614E-01	2.495E-01	0.000E+00	NOT IDENT.
ZR-95	2.904E-02	9.915E-02	1.764E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.159E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.321E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.891E-02	5.488E-02	9.626E-02	0.000E+00	FAIL ABUN
RH-106	9.901E-02	3.985E-01	6.819E-01	0.000E+00	NOT IDENT.
RU-106	9.901E-02	3.984E-01	6.819E-01	0.000E+00	NOT IDENT.
AG-108M	4.518E-02	3.377E-02	6.335E-02	0.000E+00	NOT IDENT.
AG-110M	-2.803E-02	5.144E-02	8.192E-02	0.000E+00	NOT IDENT.
SN-113	1.752E-02	5.484E-02	9.768E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.681E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-5.697E-02	8.807E-02	1.493E-01	0.000E+00	NOT IDENT.
TE-123M	-2.826E-03	3.134E-02	5.454E-02	0.000E+00	NOT IDENT.
SB-124	-2.517E-03	7.768E-02	1.291E-01	0.000E+00	NOT IDENT.
SB-125	6.251E-02	1.089E-01	1.957E-01	0.000E+00	FAIL ABUN
TE-125M	-4.664E+00	9.799E+00	1.721E+01	0.000E+00	NOT IDENT.
I-126	5.977E-01	4.398E-01	8.092E-01	0.000E+00	NOT IDENT.
SB-126	1.168E-01	3.204E-01	5.072E-01	0.000E+00	NOT IDENT.
SB-127	3.103E+00	7.174E+00	1.235E+01	0.000E+00	NOT IDENT.
I-131	-7.407E-02	2.551E-01	4.405E-01	0.000E+00	FAIL ABUN
TE-132	-1.530E+00	4.654E+00	7.763E+00	0.000E+00	NOT IDENT.
BA-133	2.195E-02	5.061E-02	8.129E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	4.267E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.254E-01	8.451E-02	1.304E-01	0.000E+00	FAIL ABUN
CS-135	1.991E-01	2.024E-01	3.224E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.817E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.684E-01	2.204E-01	3.415E-01	0.000E+00	NOT IDENT.
BA-137M	-2.765E-02	5.136E-02	8.182E-02	0.000E+00	NOT IDENT.
CS-137	-2.921E-02	5.425E-02	8.643E-02	0.000E+00	NOT IDENT.
CE-139	9.614E-03	3.304E-02	5.828E-02	0.000E+00	NOT IDENT.
BA-140	-2.270E-01	4.885E-01	7.879E-01	0.000E+00	NOT IDENT.
LA-140	-1.909E-01	1.634E-01	2.171E-01	0.000E+00	FAIL ABUN
CE-141	5.647E-02	7.829E-02	1.413E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.089E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.297E-02	2.284E-01	3.593E-01	0.000E+00	FAIL ABUN
PM-144	-1.353E-02	4.221E-02	7.214E-02	0.000E+00	NOT IDENT.
PR-144	-1.006E+00	3.173E+00	5.425E+00	0.000E+00	NOT IDENT.
PM-146	-4.044E-03	5.159E-02	8.856E-02	0.000E+00	NOT IDENT.
ND-147	5.314E-01	1.132E+00	1.991E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.181E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.629E-02	1.060E-01	1.813E-01	0.000E+00	FAIL ABUN
GD-153	-3.515E-02	8.450E-02	1.340E-01	0.000E+00	NOT IDENT.
EU-154	-2.014E-02	1.555E-01	2.525E-01	0.000E+00	NOT IDENT.
EU-155	7.124E-02	9.697E-02	1.786E-01	0.000E+00	FAIL ABUN
TB-160	-5.602E-02	1.989E-01	3.322E-01	0.000E+00	FAIL ABUN
HO-166M	3.474E-03	7.659E-02	1.345E-01	0.000E+00	FAIL ABUN
TA-182	-8.195E-02	2.929E-01	4.731E-01	0.000E+00	FAIL ABUN
IR-192	-3.930E-02	3.903E-02	6.508E-02	0.000E+00	FAIL ABUN
HG-203	5.080E-02	5.076E-02	8.571E-02	0.000E+00	NOT IDENT.
BI-207	1.275E-02	6.060E-02	1.044E-01	0.000E+00	FAIL ABUN
PB-211	-2.550E-01	9.543E-01	1.416E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.150E+00	1.547E+00	0.000E+00	FAIL ABUN
RN-219	2.606E-01	4.740E-01	8.519E-01	0.000E+00	FAIL ABUN
AC-227	-1.622E-01	2.868E-01	4.658E-01	0.000E+00	FAIL ABUN
TH-227	-1.622E-01	2.870E-01	4.658E-01	0.000E+00	FAIL ABUN
PA-231	-1.127E-01	1.542E+00	2.668E+00	0.000E+00	FAIL ABUN
PA-233	2.894E-02	6.871E-02	1.251E-01	0.000E+00	FAIL ABUN
PA-234	5.969E-02	4.074E-01	7.025E-01	0.000E+00	NOT IDENT.
PA-234M	4.627E+00	5.786E+00	1.051E+01	0.000E+00	NOT IDENT.
NP-239	-3.180E-02	3.737E-01	6.645E-01	0.000E+00	FAIL ABUN
AM-241	5.800E-03	6.970E-02	1.162E-01	0.000E+00	NOT IDENT.
CM-247	5.437E-03	4.379E-02	7.695E-02	0.000E+00	FAIL ABUN
CF-249	1.421E-02	4.787E-02	8.518E-02	0.000E+00	NOT IDENT.

CF-251	-6.352E-03	1.425E-01	2.464E-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]G248513019.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:32:49
Sample ID          : G248513019 Sample quantity : 1.39590E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:10.19 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 961097 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	1460.82	974	10.66*	7.780E-01	3.157E+01	3.157E+01	11.08
CD-109	88.03	508	3.70*	6.673E+00	5.528E+00	5.723E+00	20.62
SN-126	64.28	237	9.60	6.778E+00	9.783E-01	9.783E-01	50.35
	86.94	508	8.90	6.673E+00	2.298E+00	2.298E+00	45.40
	87.57	508	37.00*	6.673E+00	5.528E-01	5.528E-01	20.62
TL-208	277.37	57	6.60	3.564E+00	6.460E-01	6.460E-01	90.10
	583.19	409	85.00*	1.811E+00	7.139E-01	7.139E-01	17.53
	860.56	35	12.50	1.246E+00	6.031E-01	6.031E-01	79.11
PB-210	46.54	166	4.25*	6.311E+00	1.665E+00	1.668E+00	53.29
BI-211	72.87	-----	1.23	6.803E+00	-----	Line Not Found	-----
	351.06	729	12.92*	2.908E+00	5.216E+00	5.216E+00	14.62
PB-212	74.82	799	10.28	6.795E+00	3.076E+00	3.076E+00	17.56
	77.11	1394	17.10	6.781E+00	3.232E+00	3.232E+00	12.33
	238.63	1520	43.60*	4.021E+00	2.332E+00	2.332E+00	11.75
	300.09	121	3.30	3.342E+00	2.941E+00	2.941E+00	43.44
BI-214	609.32	461	45.49*	1.736E+00	1.570E+00	1.570E+00	16.73
	1120.29	121	14.92	9.769E-01	2.231E+00	2.231E+00	37.89
	1764.49	86	15.30	6.715E-01	2.242E+00	2.242E+00	30.48
PB-214	74.82	799	5.80	6.795E+00	5.452E+00	5.452E+00	16.63
	77.11	1394	9.70	6.781E+00	5.698E+00	5.698E+00	14.83
	242.00	383	7.25	3.984E+00	3.569E+00	3.569E+00	29.65
	295.22	456	18.42	3.386E+00	1.968E+00	1.968E+00	18.49
	351.93	729	35.60*	2.908E+00	1.893E+00	1.893E+00	15.63
RA-223	81.07	96	15.00	6.747E+00	2.560E-01	2.560E-01	64.15
	83.79	210	24.70	6.714E+00	3.406E-01	3.406E-01	35.96
	94.87	-----	5.69	6.560E+00	-----	Line Not Found	-----
	144.24	-----	3.27	5.583E+00	-----	Line Not Found	-----
	154.21	-----	5.70	5.385E+00	-----	Line Not Found	-----
	269.46	150	13.90	3.643E+00	7.992E-01	7.992E-01	40.87
	323.87	-----	3.99*	3.128E+00	-----	Line Not Found	-----
	338.28	290	2.84	3.011E+00	9.114E+00	9.114E+00	25.46
RA-224	240.99	383	4.10*	3.984E+00	6.311E+00	6.311E+00	29.08

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-226	609.32	461	45.49*	1.736E+00	1.570E+00	1.570E+00	16.73
	1120.29	121	14.92	9.769E-01	2.231E+00	2.231E+00	37.89
	1764.49	86	15.30	6.715E-01	2.242E+00	2.242E+00	30.48
AC-228	338.32	290	11.27	3.011E+00	2.297E+00	2.297E+00	47.36
	911.20	299	25.80*	1.181E+00	2.634E+00	2.634E+00	18.00
	968.97	205	15.80	1.116E+00	3.133E+00	3.133E+00	30.34
RA-228	338.32	290	11.27	3.011E+00	2.297E+00	2.297E+00	47.36
	911.20	299	25.80*	1.181E+00	2.634E+00	2.634E+00	18.00
	968.97	205	15.80	1.116E+00	3.133E+00	3.133E+00	30.34
TH-228	74.82	799	10.28	6.795E+00	3.076E+00	3.076E+00	14.66
	77.11	1394	17.10	6.781E+00	3.232E+00	3.232E+00	12.33
	238.63	1520	43.60*	4.021E+00	2.332E+00	2.332E+00	11.75
	300.09	121	3.30	3.342E+00	2.941E+00	2.941E+00	74.32
TH-229	85.43	210	14.70	6.714E+00	5.723E-01	5.723E-01	35.96
	88.47	508	24.00	6.673E+00	8.522E-01	8.522E-01	20.62
	193.51	-----	4.41*	4.680E+00	-----	Line Not Found	-----
	210.85	134	2.80	4.429E+00	2.906E+00	2.906E+00	50.42
TH-231	81.07	96	15.00	6.747E+00	2.560E-01	2.560E-01	64.15
	83.79	210	24.70	6.714E+00	3.406E-01	3.406E-01	35.96
	94.87	-----	5.69	6.560E+00	-----	Line Not Found	-----
	144.24	-----	3.27	5.583E+00	-----	Line Not Found	-----
	154.21	-----	5.70	5.385E+00	-----	Line Not Found	-----
	269.46	150	13.90	3.643E+00	7.992E-01	7.992E-01	40.87
	323.87	-----	3.99*	3.128E+00	-----	Line Not Found	-----
	338.28	290	2.84	3.011E+00	9.114E+00	9.114E+00	25.46
TH-232	338.32	290	11.27	3.011E+00	2.297E+00	2.297E+00	24.02
	911.20	299	25.80*	1.181E+00	2.634E+00	2.634E+00	18.00
	968.97	205	15.80	1.116E+00	3.133E+00	3.133E+00	30.34
TH-234	63.29	237	3.70*	6.778E+00	2.538E+00	2.538E+00	51.39
	92.59	514	4.23	6.590E+00	4.962E+00	4.962E+00	29.03
U-235	89.96	292	3.47	6.637E+00	3.415E+00	3.415E+00	33.95
	93.35	514	5.60	6.590E+00	3.748E+00	3.748E+00	29.81
	143.76	-----	10.96*	5.592E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
	185.72	268	57.20	4.804E+00	2.621E-01	2.621E-01	30.86
	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
NP-237	86.48	508	12.40*	6.673E+00	1.649E+00	1.649E+00	29.41
	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
U-238	63.29	237	3.70*	6.778E+00	2.538E+00	2.538E+00	51.39
	92.59	514	4.23	6.590E+00	4.962E+00	4.962E+00	20.72
ANH-511	511.00	155	100.00*	2.057E+00	2.024E-01	2.024E-01	40.34

Flag: "*" = Keyline

Total number of lines in spectrum 37
Number of unidentified lines 3
Number of lines tentatively identified by NID 34 91.89%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.157E+01	3.157E+01	0.350E+01	11.08	
CD-109	461.40D	1.04	5.528E+00	5.723E+00	1.180E+00	20.62	
SN-126	2.30E+05Y	1.00	5.528E-01	5.528E-01	1.140E-01	20.62	
TL-208	1.41E+10Y	1.00	7.139E-01	7.139E-01	1.252E-01	17.53	
PB-210	22.20Y	1.00	1.665E+00	1.668E+00	0.889E+00	53.29	
BI-211	7.04E+08Y	1.00	5.216E+00	5.216E+00	0.763E+00	14.62	
PB-212	1.41E+10Y	1.00	2.332E+00	2.332E+00	0.274E+00	11.75	
BI-214	1600.00Y	1.00	1.570E+00	1.570E+00	0.263E+00	16.73	
PB-214	1600.00Y	1.00	1.893E+00	1.893E+00	0.296E+00	15.63	
RA-223	7.04E+08Y	1.00	3.406E-01	3.406E-01	1.225E-01	35.96	K
RA-224	1.41E+10Y	1.00	6.311E+00	6.311E+00	1.835E+00	29.08	
RA-226	1600.00Y	1.00	1.570E+00	1.570E+00	0.263E+00	16.73	
AC-228	1.41E+10Y	1.00	2.634E+00	2.634E+00	0.474E+00	18.00	
RA-228	1.41E+10Y	1.00	2.634E+00	2.634E+00	0.474E+00	18.00	
TH-228	1.41E+10Y	1.00	2.332E+00	2.332E+00	0.274E+00	11.75	
TH-229	7340.00Y	1.00	8.522E-01	8.522E-01	1.757E-01	20.62	K
TH-231	7.04E+08Y	1.00	3.406E-01	3.406E-01	1.225E-01	35.96	K
TH-232	1.41E+10Y	1.00	2.634E+00	2.634E+00	0.474E+00	18.00	
TH-234	4.47E+09Y	1.00	2.538E+00	2.538E+00	1.304E+00	51.39	
U-235	7.04E+08Y	1.00	2.621E-01	2.621E-01	0.809E-01	30.86	K
NP-237	2.14E+06Y	1.00	1.649E+00	1.649E+00	0.485E+00	29.41	
U-238	4.47E+09Y	1.00	2.538E+00	2.538E+00	1.304E+00	51.39	
ANH-511	1.00E+09Y	1.00	2.024E-01	2.024E-01	0.817E-01	40.34	

Total Activity : 7.788E+01 7.807E+01

Grand Total Activity : 7.788E+01 7.807E+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	128.60	155	508	1.33	256.89	251	12	2.15E-02	60.4	5.90E+00	
0	328.09	51	200	1.27	656.02	651	10	7.03E-03	****	3.09E+00	T
0	409.53	56	101	1.44	818.99	815	9	7.81E-03	70.2	2.53E+00	T
0	462.80	69	95	1.18	925.58	921	9	9.62E-03	56.0	2.26E+00	T
0	727.55	90	78	1.91	1455.37	1448	13	1.25E-02	45.6	1.46E+00	T
0	768.59	43	49	1.52	1537.49	1534	8	5.97E-03	64.5	1.39E+00	
0	794.99	47	52	1.06	1590.33	1584	11	6.56E-03	68.2	1.34E+00	T
4	963.96	72	33	2.44	1928.49	1922	22	1.00E-02	46.3	1.12E+00	T
0	1728.85	29	5	1.17	3459.56	3454	11	3.97E-03	49.1	6.82E-01	

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]G248513019.CNF;1  *
* Acquisition date   : 20-MAR-2010 13:32:49  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 02:00:10.19           Half life ratio  : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G248513019           Analyst initials: MXR1          *
* Batch Number       : 961097               Sample Quantity : 1.39590E+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	3.157E+01	3.497E+00	5.709E-01	5.069E-02	55.294
CD-109	5.723E+00	1.180E+00	9.087E-01	8.870E-02	6.298
SN-126	5.528E-01	1.140E-01	8.764E-02	8.552E-03	6.307
TL-208	7.139E-01	1.252E-01	7.278E-02	6.876E-03	9.808
PB-210	1.668E+00	8.892E-01	7.929E-01	8.548E-02	2.104
BI-211	5.216E+00	7.626E-01	3.669E-01	3.424E-02	14.219
PB-212	2.332E+00	2.741E-01	1.030E-01	1.044E-02	22.629
BI-214	1.570E+00	2.626E-01	1.379E-01	1.410E-02	11.380
PB-214	1.893E+00	2.958E-01	1.335E-01	1.446E-02	14.183
RA-223	3.406E-01	1.225E-01	1.196E+00	2.102E-01	0.285
RA-224	6.311E+00	1.835E+00	1.105E+00	9.996E-02	5.709
RA-226	1.570E+00	2.626E-01	1.379E-01	1.410E-02	11.380
AC-228	2.634E+00	4.742E-01	2.756E-01	3.222E-02	9.557
RA-228	2.634E+00	4.742E-01	2.756E-01	3.222E-02	9.557
TH-228	2.332E+00	2.741E-01	1.030E-01	1.044E-02	22.629
TH-229	8.522E-01	1.757E-01	8.611E-01	7.447E-02	0.990
TH-231	3.406E-01	1.225E-01	1.196E+00	2.102E-01	0.285
TH-232	2.634E+00	4.742E-01	2.756E-01	3.222E-02	9.557

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	2.538E+00	1.304E+00	1.073E+00	2.041E-01	2.366
U-235	2.621E-01	8.090E-02	3.597E-01	6.404E-02	0.729
NP-237	1.649E+00	4.851E-01	2.607E-01	6.028E-02	6.328
U-238	2.538E+00	1.304E+00	1.073E+00	2.041E-01	2.366
ANH-511	2.024E-01	8.166E-02	6.205E-02	5.542E-03	3.262

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.810E-02		4.378E-01	7.119E-01	6.772E-02	-0.068
NA-22	-2.227E-02		5.775E-02	8.836E-02	7.444E-03	-0.252
NA-24	-1.871E+03		3.005E+03	Half-Life too short		
SC-46	-8.315E-03		5.406E-02	8.813E-02	7.715E-03	-0.094
V-48	3.092E-02		1.329E-01	2.232E-01	1.947E-02	0.138
CR-51	1.070E-01		4.909E-01	8.359E-01	7.977E-02	0.128
MN-54	3.631E-02		5.327E-02	9.310E-02	8.186E-03	0.390
CO-56	-1.723E-02		5.293E-02	8.515E-02	7.485E-03	-0.202
CO-57	7.411E-03		2.505E-02	4.191E-02	4.910E-03	0.177
CO-58	-4.079E-02		5.690E-02	8.866E-02	7.808E-03	-0.460
FE-59	3.498E-02		1.379E-01	2.302E-01	2.113E-02	0.152
CO-60	9.948E-03		5.837E-02	9.800E-02	8.352E-03	0.102
ZN-65	5.624E-02		1.293E-01	1.933E-01	1.627E-02	0.291
SE-75	-6.657E-02		5.781E-02	7.939E-02	7.295E-03	-0.838
SR-85	5.939E-02		5.506E-02	8.675E-02	7.751E-03	0.685
Y-88	-1.406E-02		4.569E-02	6.924E-02	5.774E-03	-0.203
Y-91	-5.021E+00		3.476E+01	5.536E+01	4.569E+00	-0.091
NB-94	2.033E-02		4.647E-02	8.057E-02	6.911E-03	0.252
NB-95	2.641E-02		6.747E-02	1.025E-01	8.954E-03	0.258
NB-95M	6.150E-02		1.647E-01	2.395E-01	2.450E-02	0.257
ZR-95	2.904E-02		1.012E-01	1.734E-01	1.667E-02	0.167
MO-99	-7.726E-05		5.916E-05	Half-Life too short		
TC-99M	-1.300E+19		6.738E+19	Half-Life too short		
RU-103	1.891E-02		5.600E-02	9.380E-02	1.327E-02	0.202
RH-106	9.901E-02		4.066E-01	6.675E-01	8.878E-02	0.148
RU-106	9.901E-02		4.065E-01	6.675E-01	5.799E-02	0.148
AG-108M	4.518E-02		3.446E-02	6.156E-02	5.517E-03	0.734
AG-110M	-2.803E-02		5.249E-02	8.028E-02	6.997E-03	-0.349
SN-113	1.752E-02		5.596E-02	9.473E-02	8.230E-03	0.185
CD-115	1.128E-05		8.575E-05	Half-Life too short		
SN-117M	-5.697E-02		8.987E-02	1.423E-01	1.279E-02	-0.400
TE-123M	-2.826E-03		3.198E-02	5.196E-02	4.677E-03	-0.054
SB-124	-2.517E-03		7.926E-02	1.290E-01	1.151E-02	-0.020
SB-125	6.251E-02		1.112E-01	1.902E-01	1.676E-02	0.329
TE-125M	-4.664E+00		9.999E+00	1.628E+01	2.025E+00	-0.287
I-126	5.977E-01		4.488E-01	7.932E-01	6.697E-02	0.754
SB-126	1.168E-01		3.269E-01	4.979E-01	4.299E-02	0.235
SB-127	3.103E+00		7.320E+00	1.211E+01	1.687E+00	0.256

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-7.407E-02		2.603E-01	4.266E-01	3.967E-02	-0.174
TE-132	-1.530E+00		4.749E+00	7.449E+00	1.329E+00	-0.205
BA-133	2.195E-02		5.164E-02	7.868E-02	1.032E-02	0.279
I-133	2.607E-01		2.177E+00	Half-Life	too short	
CS-134	1.254E-01	+	8.624E-02	1.283E-01	1.133E-02	0.978
CS-135	1.991E-01		2.065E-01	3.103E-01	3.238E-02	0.642
I-135	-4.287E+18		2.458E+18	Half-Life	too short	
CS-136	-1.684E-01		2.249E-01	3.379E-01	3.036E-02	-0.499
BA-137M	-2.765E-02		5.240E-02	8.019E-02	6.755E-03	-0.345
CS-137	-2.921E-02		5.536E-02	8.471E-02	7.150E-03	-0.345
CE-139	9.614E-03		3.372E-02	5.557E-02	4.633E-03	0.173
BA-140	-2.270E-01		4.985E-01	7.690E-01	2.614E-01	-0.295
LA-140	-1.909E-01		1.667E-01	2.167E-01	1.871E-02	-0.881
CE-141	5.647E-02		7.989E-02	1.344E-01	1.371E-02	0.420
CE-143	2.522E-02		5.554E-03	Half-Life	too short	
CE-144	-2.297E-02		2.330E-01	3.412E-01	5.700E-02	-0.067
PM-144	-1.353E-02		4.307E-02	7.078E-02	6.061E-03	-0.191
PR-144	-1.006E+00		3.238E+00	5.322E+00	4.554E-01	-0.189
PM-146	-4.044E-03		5.264E-02	8.614E-02	9.236E-03	-0.047
ND-147	5.314E-01		1.155E+00	1.943E+00	2.941E-01	0.274
PM-149	-6.196E-05		6.027E-04	Half-Life	too short	
EU-152	-5.629E-02		1.082E-01	1.754E-01	1.659E-02	-0.321
GD-153	-3.515E-02		8.622E-02	1.265E-01	1.293E-02	-0.278
EU-154	-2.014E-02		1.586E-01	2.509E-01	2.816E-02	-0.080
EU-155	7.124E-02		9.894E-02	1.688E-01	1.813E-02	0.422
TB-160	-5.602E-02		2.030E-01	3.275E-01	2.871E-02	-0.171
HO-166M	3.474E-03		7.815E-02	1.320E-01	1.136E-02	0.026
TA-182	-8.195E-02		2.989E-01	4.697E-01	3.896E-02	-0.174
IR-192	-3.930E-02		3.983E-02	6.284E-02	5.749E-03	-0.625
HG-203	5.080E-02		5.180E-02	8.257E-02	7.751E-03	0.615
BI-207	1.275E-02		6.184E-02	1.033E-01	8.855E-03	0.123
PB-211	-2.550E-01		9.738E-01	1.374E+00	6.646E-01	-0.186
BI-212	2.483E+00	+	1.173E+00	1.520E+00	1.896E-01	1.634
RN-219	2.606E-01		4.837E-01	8.266E-01	1.223E-01	0.315
AC-227	-1.622E-01		2.927E-01	4.479E-01	5.560E-02	-0.362
TH-227	-1.622E-01		2.929E-01	4.479E-01	6.238E-02	-0.362
PA-231	-1.127E-01		1.573E+00	2.571E+00	3.837E-01	-0.044
PA-233	2.894E-02		7.011E-02	1.208E-01	1.133E-02	0.240
PA-234	5.969E-02		4.157E-01	6.936E-01	1.306E-01	0.086
PA-234M	4.627E+00		5.904E+00	1.039E+01	1.043E+00	0.445
NP-239	-3.180E-02		3.813E-01	6.294E-01	7.169E-02	-0.051
AM-241	5.800E-03		7.113E-02	1.087E-01	1.154E-02	0.053
CM-247	5.437E-03		4.468E-02	7.466E-02	6.341E-03	0.073
CF-249	1.421E-02		4.885E-02	8.259E-02	6.995E-03	0.172
CF-251	-6.352E-03		1.454E-01	2.353E-01	1.993E-02	-0.027

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]G248513019          *
* Acquisition date   : 20-MAR-2010 13:32:49 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 02:00:10.19                               Half life ratio  : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513019                               Analyst initials: MXR1          *
* Batch Number       : 961097                                   Sample Quantity : 1.3959E+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	3.157E+01	3.427E+00	2.867E-01	1.748E+00
CD-109	5.723E+00	1.156E+00	4.826E-01	5.900E-01
SN-126	5.528E-01	1.117E-01	4.655E-02	5.699E-02
TL-208	7.139E-01	1.227E-01	3.725E-02	6.258E-02
PB-210	1.668E+00	8.714E-01	4.262E-01	4.446E-01
BI-211	5.216E+00	7.473E-01	1.897E-01	3.813E-01
PB-212	2.332E+00	2.686E-01	5.368E-02	1.370E-01
BI-214	1.570E+00	2.574E-01	7.053E-02	1.313E-01
PB-214	1.893E+00	2.899E-01	6.901E-02	1.479E-01
RA-223	1.562E-01	7.936E-01	6.194E-01	4.049E-01
RA-224	6.311E+00	1.798E+00	5.758E-01	9.175E-01
RA-226	1.570E+00	2.574E-01	7.053E-02	1.313E-01
AC-228	2.634E+00	4.647E-01	1.398E-01	2.371E-01
RA-228	2.634E+00	4.647E-01	1.398E-01	2.371E-01
TH-228	2.332E+00	2.686E-01	5.368E-02	1.370E-01
TH-229	-8.720E-01	5.709E-01	4.505E-01	2.913E-01
TH-231	1.562E-01	7.936E-01	6.194E-01	4.049E-01
TH-232	2.634E+00	4.647E-01	1.398E-01	2.371E-01
TH-234	2.538E+00	1.278E+00	5.732E-01	6.522E-01
U-235	3.562E-02	2.193E-01	1.892E-01	1.119E-01
NP-237	1.649E+00	4.754E-01	1.385E-01	2.425E-01
U-238	2.538E+00	1.278E+00	5.732E-01	6.522E-01
ANH-511	2.024E-01	8.002E-02	3.184E-02	4.083E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-4.810E-02	4.291E-01	3.658E-01	2.189E-01 NOT IDENT.
NA-22	-2.227E-02	5.659E-02	4.450E-02	2.887E-02 NOT IDENT.
NA-24	-1.871E+09	5.889E+09	0.000E+00	3.005E+09 SHORT HLIF
SC-46	-8.315E-03	5.298E-02	4.471E-02	2.703E-02 FAIL ABUN

V-48	3.092E-02	1.303E-01	1.130E-01	6.645E-02	NOT IDENT.
CR-51	1.070E-01	4.811E-01	4.330E-01	2.454E-01	NOT IDENT.
MN-54	3.631E-02	5.220E-02	4.730E-02	2.664E-02	NOT IDENT.
CO-56	-1.723E-02	5.187E-02	4.324E-02	2.647E-02	NOT IDENT.
CO-57	7.411E-03	2.454E-02	2.212E-02	1.252E-02	NOT IDENT.
CO-58	-4.079E-02	5.577E-02	4.507E-02	2.845E-02	NOT IDENT.
FE-59	3.498E-02	1.352E-01	1.163E-01	6.897E-02	NOT IDENT.
CO-60	9.948E-03	5.720E-02	4.930E-02	2.918E-02	NOT IDENT.
ZN-65	5.624E-02	1.267E-01	9.761E-02	6.466E-02	NOT IDENT.
SE-75	-6.657E-02	5.665E-02	4.128E-02	2.890E-02	NOT IDENT.
SR-85	5.939E-02	5.396E-02	4.451E-02	2.753E-02	NOT IDENT.
Y-88	-1.406E-02	4.477E-02	3.460E-02	2.284E-02	NOT IDENT.
Y-91	-5.021E+00	3.406E+01	2.791E+01	1.738E+01	NOT IDENT.
NB-94	2.033E-02	4.554E-02	4.108E-02	2.324E-02	NOT IDENT.
NB-95	2.641E-02	6.612E-02	5.217E-02	3.374E-02	NOT IDENT.
NB-95M	6.150E-02	1.614E-01	1.248E-01	8.237E-02	NOT IDENT.
ZR-95	2.904E-02	9.915E-02	8.828E-02	5.059E-02	NOT IDENT.
MO-99	-7.726E+01	1.159E+02	0.000E+00	5.916E+01	SHORT HLIF
TC-99M	-1.300E+25	1.321E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.891E-02	5.488E-02	4.816E-02	2.800E-02	FAIL ABUN
RH-106	9.901E-02	3.985E-01	3.412E-01	2.033E-01	NOT IDENT.
RU-106	9.901E-02	3.984E-01	3.412E-01	2.032E-01	NOT IDENT.
AG-108M	4.518E-02	3.377E-02	3.169E-02	1.723E-02	NOT IDENT.
AG-110M	-2.803E-02	5.144E-02	4.099E-02	2.624E-02	NOT IDENT.
SN-113	1.752E-02	5.484E-02	4.887E-02	2.798E-02	NOT IDENT.
CD-115	1.128E+01	1.681E+02	0.000E+00	8.575E+01	SHORT HLIF
SN-117M	-5.697E-02	8.807E-02	7.471E-02	4.493E-02	NOT IDENT.
TE-123M	-2.826E-03	3.134E-02	2.729E-02	1.599E-02	NOT IDENT.
SB-124	-2.517E-03	7.768E-02	6.458E-02	3.963E-02	NOT IDENT.
SB-125	6.251E-02	1.089E-01	9.793E-02	5.559E-02	FAIL ABUN
TE-125M	-4.664E+00	9.799E+00	8.609E+00	5.000E+00	NOT IDENT.
I-126	5.977E-01	4.398E-01	4.049E-01	2.244E-01	NOT IDENT.
SB-126	1.168E-01	3.204E-01	2.537E-01	1.635E-01	NOT IDENT.
SB-127	3.103E+00	7.174E+00	6.178E+00	3.660E+00	NOT IDENT.
I-131	-7.407E-02	2.551E-01	2.204E-01	1.302E-01	FAIL ABUN
TE-132	-1.530E+00	4.654E+00	3.884E+00	2.374E+00	NOT IDENT.
BA-133	2.195E-02	5.061E-02	4.067E-02	2.582E-02	FAIL ABUN
I-133	2.607E+05	4.267E+06	0.000E+00	2.177E+06	SHORT HLIF
CS-134	1.254E-01	8.451E-02	6.522E-02	4.312E-02	FAIL ABUN
CS-135	1.991E-01	2.024E-01	1.613E-01	1.033E-01	NOT IDENT.
I-135	-4.287E+24	4.817E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.684E-01	2.204E-01	1.708E-01	1.124E-01	NOT IDENT.
BA-137M	-2.765E-02	5.136E-02	4.093E-02	2.620E-02	NOT IDENT.
CS-137	-2.921E-02	5.425E-02	4.324E-02	2.768E-02	NOT IDENT.
CE-139	9.614E-03	3.304E-02	2.915E-02	1.686E-02	NOT IDENT.
BA-140	-2.270E-01	4.885E-01	3.942E-01	2.492E-01	NOT IDENT.
LA-140	-1.909E-01	1.634E-01	1.086E-01	8.336E-02	FAIL ABUN
CE-141	5.647E-02	7.829E-02	7.070E-02	3.995E-02	NOT IDENT.
CE-143	2.522E+04	1.089E+04	0.000E+00	5.554E+03	SHORT HLIF
CE-144	-2.297E-02	2.284E-01	1.798E-01	1.165E-01	FAIL ABUN
PM-144	-1.353E-02	4.221E-02	3.609E-02	2.153E-02	NOT IDENT.
PR-144	-1.006E+00	3.173E+00	2.714E+00	1.619E+00	NOT IDENT.
PM-146	-4.044E-03	5.159E-02	4.431E-02	2.632E-02	NOT IDENT.
ND-147	5.314E-01	1.132E+00	9.962E-01	5.774E-01	FAIL ABUN
PM-149	-6.196E+01	1.181E+03	0.000E+00	6.027E+02	SHORT HLIF
EU-152	-5.629E-02	1.060E-01	9.072E-02	5.410E-02	FAIL ABUN
GD-153	-3.515E-02	8.450E-02	6.705E-02	4.311E-02	NOT IDENT.
EU-154	-2.014E-02	1.555E-01	1.263E-01	7.932E-02	NOT IDENT.
EU-155	7.124E-02	9.697E-02	8.933E-02	4.947E-02	FAIL ABUN
TB-160	-5.602E-02	1.989E-01	1.662E-01	1.015E-01	FAIL ABUN
HO-166M	3.474E-03	7.659E-02	6.727E-02	3.907E-02	FAIL ABUN
TA-182	-8.195E-02	2.929E-01	2.367E-01	1.495E-01	FAIL ABUN
IR-192	-3.930E-02	3.903E-02	3.256E-02	1.991E-02	FAIL ABUN
HG-203	5.080E-02	5.076E-02	4.288E-02	2.590E-02	NOT IDENT.
BI-207	1.275E-02	6.060E-02	5.221E-02	3.092E-02	FAIL ABUN
PB-211	-2.550E-01	9.543E-01	7.083E-01	4.869E-01	NOT IDENT.
BI-212	2.483E+00	1.150E+00	7.741E-01	5.865E-01	FAIL ABUN
RN-219	2.606E-01	4.740E-01	4.262E-01	2.418E-01	FAIL ABUN
AC-227	-1.622E-01	2.868E-01	2.330E-01	1.463E-01	FAIL ABUN
TH-227	-1.622E-01	2.870E-01	2.330E-01	1.464E-01	FAIL ABUN
PA-231	-1.127E-01	1.542E+00	1.335E+00	7.867E-01	FAIL ABUN
PA-233	2.894E-02	6.871E-02	6.258E-02	3.505E-02	FAIL ABUN
PA-234	5.969E-02	4.074E-01	3.515E-01	2.079E-01	NOT IDENT.
PA-234M	4.627E+00	5.786E+00	5.260E+00	2.952E+00	NOT IDENT.
NP-239	-3.180E-02	3.737E-01	3.325E-01	1.907E-01	FAIL ABUN
AM-241	5.800E-03	6.970E-02	5.815E-02	3.556E-02	NOT IDENT.
CM-247	5.437E-03	4.379E-02	3.850E-02	2.234E-02	FAIL ABUN
CF-249	1.421E-02	4.787E-02	4.262E-02	2.443E-02	NOT IDENT.

CF-251	-6.352E-03	1.425E-01	1.233E-01	7.268E-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
46.54	288.4090
49.72	310.0412
57.36	0.0000
59.54	429.8014
63.29	462.6446
63.29	462.6446
64.28	463.7743
67.75	480.8770
69.67	572.2335
70.83	542.8960
72.81	531.9825
72.87	532.0554
72.87	532.0554
74.82	515.5840
74.82	515.5840
74.82	515.5840
74.97	515.7568
77.11	518.1826
77.11	518.1826
77.11	518.1826
79.69	521.0654
79.80	521.1855
80.12	521.5400
80.19	521.6162
80.57	522.0352
81.00	522.5098
81.07	370.1650
81.07	370.1650
83.79	328.4683
83.79	328.4683
85.43	297.9859
86.48	298.6200
86.55	298.6614
86.79	298.8038
86.94	298.8949
87.57	299.2723
88.03	299.5471
88.47	299.8087
89.96	300.6895
91.11	301.3650
92.59	302.2292
92.59	302.2292
93.35	302.6696
94.67	303.4295
94.87	303.5437
94.87	303.5437
95.86	318.1259
97.43	342.9537
98.44	276.0018
99.53	301.0124
100.11	316.3979
103.18	330.4644
103.37	328.6818
105.31	287.9924
106.12	286.4987
109.28	302.4283
111.00	296.5981
111.76	276.7969
116.30	285.6777
117.23	267.6866
121.12	287.9194
121.78	282.3603
122.06	253.1615
123.07	239.3714
131.20	289.9857
133.52	280.5542
136.00	273.5986

136.47	279.7835
140.51	0.0000
140.51	0.0000
143.76	278.7065
144.24	286.9785
144.24	286.9785
145.44	276.3297
152.43	307.6321
153.25	286.4885
154.21	283.7881
154.21	283.7881
156.02	311.1804
158.56	287.5031
159.00	264.9868
162.66	247.6114
163.33	265.4531
165.86	253.8366
176.60	250.9503
177.52	261.7870
181.07	0.0000
184.41	260.2439
185.72	235.5948
193.51	268.9387
197.04	236.5393
205.31	207.6647
210.85	218.7917
215.65	221.5695
222.11	199.7699
227.38	241.0291
228.16	227.8191
228.18	227.8232
235.69	207.6075
235.96	207.6638
235.96	207.6638
238.63	208.7780
238.63	208.7780
240.99	209.2617
242.00	209.4687
244.70	178.7993
252.40	166.9679
252.80	167.0303
256.23	189.3772
256.23	189.3772
260.90	0.0000
264.66	194.3252
268.22	160.1437
269.46	174.2615
269.46	174.2615
271.23	148.3583
273.65	111.9473
276.40	138.5224
277.37	153.0311
277.60	153.0630
278.00	155.3990
279.20	144.8412
279.54	144.8840
280.46	150.6307
283.69	152.2639
284.31	156.2565
285.41	159.0559
285.90	0.0000
287.50	160.2282
293.27	0.0000
295.22	141.1427
295.96	141.2321
298.57	107.2284
299.98	143.1372
299.98	143.1372
300.09	143.1519
300.09	143.1519
300.13	143.1567
301.36	153.3318
302.85	142.0442
304.50	126.4334
304.50	126.4334
304.85	129.3442
308.46	145.0390
311.90	130.9903

316.51	145.0781
319.41	127.2360
320.08	130.9395
323.87	131.3328
323.87	131.3328
328.76	130.3689
333.37	139.6542
334.37	141.2320
334.37	141.2320
338.28	153.0895
338.28	153.0895
338.32	153.0946
338.32	153.0946
338.32	153.0946
340.48	127.1104
340.55	127.1167
344.28	138.0346
351.06	121.9730
351.93	122.0509
356.01	110.6423
364.49	122.2301
366.42	0.0000
383.85	126.7656
388.16	125.2292
388.63	140.5692
391.69	117.8650
400.66	108.9377
401.81	109.9870
402.40	118.7171
404.85	122.1954
410.95	91.6272
414.70	107.4200
423.72	109.6125
427.09	103.9637
427.87	101.0716
433.94	77.8175
453.88	106.7029
463.37	96.2813
468.07	116.6655
473.00	106.9187
476.78	96.0350
477.60	96.0814
487.02	63.0482
492.35	0.0000
497.08	82.8416
511.00	104.1031
514.00	79.2908
527.90	0.0000
529.87	0.0000
531.02	76.0677
537.26	81.5491
546.56	0.0000
563.25	92.1985
569.33	78.6656
569.50	74.4199
569.70	71.2386
583.19	80.2872
600.60	68.0219
602.73	102.0285
604.72	86.5479
609.32	75.8981
609.32	75.8981
610.33	81.5753
614.28	66.0807
618.01	77.3031
621.93	68.7217
621.93	68.7217
633.25	82.2464
635.95	80.1556
636.99	74.7008
645.85	73.9049
657.76	98.7045
661.66	99.9893
661.66	99.9893
664.57	0.0000
666.33	59.0071
666.50	51.2180
677.62	80.5649

685.70	64.0067
695.00	60.4341
696.49	74.9128
696.51	74.9148
697.00	77.6394
702.65	83.2582
706.68	85.2150
711.68	71.7693
720.70	65.3556
721.93	0.0000
722.78	76.0620
722.91	71.5021
723.31	71.5136
724.19	80.6732
727.33	74.0727
733.00	71.8043
735.93	64.2424
739.50	0.0000
747.24	66.3873
752.31	66.5244
753.82	62.8668
756.73	62.0159
763.94	61.8864
765.81	68.1252
766.42	65.0457
777.92	0.0000
778.90	68.1702
783.70	56.1372
785.37	53.3651
795.86	54.8370
801.95	65.9600
810.29	66.1719
810.76	70.9113
815.77	48.3118
818.51	66.3804
832.01	74.3438
834.85	65.8347
836.80	0.0000
846.77	55.5857
856.80	67.3340
860.56	64.5366
871.09	48.3459
873.19	56.1238
875.33	0.0000
879.36	59.1578
880.51	55.3009
883.24	39.8168
884.68	59.2695
889.28	52.5551
898.04	46.8598
911.20	45.1150
911.20	45.1150
911.20	45.1150
926.50	56.1998
937.49	87.0912
944.13	62.4894
946.00	54.5891
949.00	56.6312
962.29	49.8975
964.08	53.9222
966.15	53.9591
968.97	53.3424
968.97	53.3424
968.97	53.3424
983.53	47.2341
996.26	53.4839
1001.03	41.4384
1004.73	55.6539
1037.84	43.9700
1038.76	0.0000
1048.07	59.4981
1050.41	46.1953
1050.41	46.1953
1063.66	36.0767
1085.87	48.7740
1099.45	46.8896
1112.07	49.6802
1115.54	41.8789

1120.29	42.9859
1120.29	42.9859
1120.55	42.9879
1121.30	43.6971
1131.51	0.0000
1173.23	61.7439
1177.93	65.0240
1189.05	66.2958
1204.77	67.6604
1221.41	70.1257
1231.02	69.2281
1235.36	66.0605
1238.28	56.3596
1260.41	0.0000
1271.85	43.7441
1274.44	39.3961
1274.54	43.7754
1291.59	29.6802
1298.22	0.0000
1312.11	41.4423
1332.49	36.1039
1365.19	16.8010
1368.63	0.0000
1384.29	29.0726
1408.01	25.4685
1457.56	0.0000
1460.82	14.3286
1489.16	24.0397
1505.03	35.7083
1596.21	25.6096
1620.50	12.8720
1678.03	0.0000
1690.97	7.0353
1764.49	8.7448
1764.49	8.7448
1770.23	8.7549
1771.35	14.3025
1791.20	0.0000
1836.06	12.4165

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513019

Total Uranium Activity	7.5676E+00	ug/g
Total Uranium Counting Unc.	3.8046E+00	ug/g
Total Uranium Tpu	1.9411E-06	ug/g
Total Uranium Mda	1.7076E+00	ug/g


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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                                   *
*                               CHARLESTON , SC 29417                             *
*                               GROSS GAMMA REPORT                               *
*
*****
*
*  BATCH ID      : 961097                SAMPLE ID   : G248513019                *
*  ANALYST       : MXR1                  DETECTOR    : GAM17                    *
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 20-MAR-2010 13:32:49.08  SAMPLE ALQT: 139.590 GRAM          *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.244E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.621E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.467E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.170E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:39:27.10

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513020.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:38:54
Sample ID          : G248513020      Sample quantity   : 1.22660E+02 GRAM
Detector name      : GAM18           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.70 0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 961097          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	2	74.89*	421	421	1.18	148.91	142	21	5.85E-02	9.8	2.86E+00
2	2	77.27	762	408	1.16	153.65	142	21	1.06E-01	5.9	
3	4	87.24	389	479	1.48	173.59	163	27	5.40E-02	11.3	1.12E+00
4	4	90.02	198	460	1.45	179.15	163	27	2.75E-02	21.6	
5	4	92.90*	335	443	1.48	184.90	163	27	4.65E-02	13.7	
6	0	129.07	65	390	1.41	257.23	253	8	9.06E-03	53.9	
7	0	185.77*	417	565	1.54	370.58	363	16	5.79E-02	13.9	
8	0	209.47	138	395	0.98	417.95	414	9	1.91E-02	27.4	
9	4	238.67*	1649	220	1.24	476.35	471	20	2.29E-01	2.9	1.54E+00
10	4	241.64*	438	255	1.64	482.28	471	20	6.08E-02	10.8	
11	0	270.61*	98	294	1.46	540.21	534	10	1.37E-02	34.8	
12	0	277.35	66	253	0.97	553.67	549	9	9.14E-03	45.4	
13	0	295.19*	504	250	1.25	589.35	584	11	7.00E-02	7.7	
14	0	300.34	145	207	1.75	599.65	595	11	2.01E-02	21.1	
15	0	327.74	108	207	1.68	654.43	650	10	1.50E-02	26.6	
16	0	338.19*	387	179	1.28	675.33	670	11	5.38E-02	8.5	
17	0	351.74*	970	270	1.32	702.41	695	15	1.35E-01	5.0	
18	0	409.52	79	151	1.81	817.94	813	10	1.10E-02	31.2	
19	0	462.48	181	173	1.74	923.83	916	15	2.52E-02	17.4	
20	0	511.11*	144	300	2.48	1021.06	1012	22	2.00E-02	34.8	
21	0	582.84*	602	136	1.61	1164.47	1156	16	8.36E-02	6.0	
22	0	608.92*	689	182	1.59	1216.62	1209	13	9.57E-02	5.7	
23	0	661.19	724	155	1.43	1321.13	1314	14	1.01E-01	5.2	
24	0	726.96	171	118	1.84	1452.64	1446	16	2.37E-02	16.1	
25	0	769.84	118	131	4.63	1538.37	1530	20	1.64E-02	25.8	
26	0	799.93	242	160	10.49	1598.55	1580	44	3.36E-02	19.5	
27	0	860.14*	118	94	1.79	1718.94	1712	17	1.63E-02	21.3	
28	0	910.64*	399	106	1.73	1819.93	1812	16	5.55E-02	7.8	
29	0	969.21	187	212	1.54	1937.05	1928	18	2.59E-02	20.4	
30	0	1000.34*	40	60	2.28	1999.30	1992	14	5.50E-03	45.7	
31	0	1119.39	185	89	1.66	2237.34	2228	16	2.57E-02	13.5	
32	0	1238.38	77	97	2.36	2475.30	2469	15	1.08E-02	30.4	
33	0	1376.79	55	44	1.34	2752.08	2742	16	7.60E-03	30.3	
34	0	1459.66*	1832	50	2.53	2917.80	2905	25	2.55E-01	2.6	
35	0	1509.40	34	26	2.16	3017.28	3009	17	4.65E-03	38.6	
36	0	1620.44	42	17	0.71	3239.35	3231	22	5.77E-03	29.5	
37	0	1763.41*	141	35	2.56	3525.27	3517	17	1.95E-02	13.5	
38	0	1845.49	29	20	1.22	3689.43	3680	17	4.01E-03	40.9	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 15:39:29

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513020.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:38:54
Sample ID         : G248513020 Sample quantity : 122.66 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA18 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.70 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	+	1460.82	*	2.778E+01	2.546E+00	3.909E-01	2.966E-02	71.062
CD-109	+	88.03	*	5.171E+00	1.263E+00	1.100E+00	1.017E-01	4.700
SN-126		64.28		6.972E-01	5.535E-01	9.351E-01	1.382E-01	0.746
	+	86.94		2.076E+00	9.810E-01	4.486E-01	1.860E-01	4.628
	+	87.57	*	4.994E-01	1.220E-01	1.069E-01	9.853E-03	4.670
BA-137M	+	661.66	*	6.876E-01	8.892E-02	5.438E-02	4.146E-03	12.643
CS-137	+	661.66	*	7.264E-01	9.402E-02	5.745E-02	4.390E-03	12.643
TL-208	+	277.37		4.875E-01	4.454E-01	5.118E-01	5.490E-02	0.952
	+	583.19	*	5.507E-01	7.928E-02	4.872E-02	3.813E-03	11.303
	+	860.56		9.877E-01	4.346E-01	3.601E-01	4.027E-02	2.743
BI-211		72.87		6.412E+00	3.508E+00	5.556E+00	4.587E-01	1.154
	+	351.06	*	4.212E+00	4.971E-01	2.636E-01	1.693E-02	15.977
BI-212	+	727.33	*	2.348E+00	8.087E-01	6.747E-01	8.381E-02	3.479
		785.37		1.886E+00	2.846E+00	4.681E+00	4.424E-01	0.403
	+	1620.50		4.882E+00	2.897E+00	3.039E+00	2.055E-01	1.606
PB-212	+	74.82		2.549E+00	5.953E-01	5.464E-01	7.006E-02	4.665
	+	77.11		2.595E+00	3.767E-01	3.093E-01	2.621E-02	8.391
	+	238.63	*	1.704E+00	1.582E-01	7.653E-02	5.517E-03	22.267
	+	300.09		2.244E+00	9.661E-01	9.898E-01	8.266E-02	2.267
BI-214	+	609.32	*	1.215E+00	1.759E-01	9.630E-02	8.655E-03	12.618
	+	1120.29		1.624E+00	4.666E-01	3.547E-01	3.415E-02	4.578
	+	1764.49		1.658E+00	4.584E-01	2.194E-01	1.334E-02	7.558
PB-214	+	74.82		4.518E+00	1.024E+00	9.686E-01	1.116E-01	4.665
	+	77.11		4.575E+00	7.637E-01	5.452E-01	6.448E-02	8.391
	+	242.00		2.737E+00	6.295E-01	4.647E-01	3.736E-02	5.889
	+	295.22		1.387E+00	2.450E-01	1.874E-01	1.627E-02	7.398
	+	351.93	*	1.529E+00	1.991E-01	9.586E-02	8.114E-03	15.947
RA-224	+	240.99	*	4.839E+00	1.077E+00	8.193E-01	4.564E-02	5.906
RA-226	+	609.32	*	1.215E+00	1.759E-01	9.630E-02	8.655E-03	12.618
	+	1120.29		1.624E+00	4.666E-01	3.547E-01	3.415E-02	4.578
	+	1764.49		1.658E+00	4.584E-01	2.194E-01	1.334E-02	7.558
AC-228	+	338.32		1.885E+00	8.412E-01	3.301E-01	1.361E-01	5.710
	+	911.20	*	1.704E+00	3.527E-01	1.838E-01	2.489E-02	9.272
	+	968.97		1.370E+00	6.556E-01	3.985E-01	9.941E-02	3.437

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.885E+00	8.412E-01	3.301E-01	1.361E-01	5.710
	+	911.20	*	1.704E+00	3.527E-01	1.838E-01	2.489E-02	9.272
	+	968.97		1.370E+00	6.556E-01	3.985E-01	9.941E-02	3.437
TH-228	+	74.82		2.549E+00	5.421E-01	5.464E-01	4.609E-02	4.665
	+	77.11		2.595E+00	3.767E-01	3.093E-01	2.621E-02	8.391
	+	238.63	*	1.704E+00	1.582E-01	7.653E-02	5.517E-03	22.267
	+	300.09		2.244E+00	1.663E+00	9.898E-01	6.025E-01	2.267
TH-232	+	338.32		1.885E+00	3.400E-01	3.301E-01	1.910E-02	5.710
	+	911.20	*	1.704E+00	3.527E-01	1.838E-01	2.489E-02	9.272
	+	968.97		1.370E+00	6.556E-01	3.985E-01	9.941E-02	3.437
U-235	+	89.96		2.599E+00	1.293E+00	1.105E+00	2.731E-01	2.352
	+	93.35		2.629E+00	9.397E-01	6.593E-01	1.516E-01	3.988
		143.76	*	4.941E-02	1.910E-01	3.037E-01	4.736E-02	0.163
		163.33		1.318E-01	3.810E-01	6.510E-01	1.081E-01	0.202
	+	185.72		2.916E-01	8.266E-02	5.471E-02	2.910E-03	5.329
		205.31		-7.257E-02	4.634E-01	6.729E-01	1.135E-01	-0.108
NP-237	+	86.48	*	1.490E+00	4.796E-01	3.242E-01	7.413E-02	4.597
		95.86		-2.621E-01	9.439E-01	1.350E+00	3.210E-01	-0.194
ANH-511	+	511.00	*	1.025E-01	7.172E-02	3.955E-02	2.612E-03	2.591

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.068E-01	2.998E-01	5.044E-01	3.654E-02	0.212
NA-22		1274.54	*	-5.241E-02	3.888E-02	5.656E-02	3.848E-03	-0.927
NA-24		1368.63	*	-3.631E+03	3.888E-02	Half-Life too short		
SC-46		889.28	*	-1.929E-02	3.708E-02	5.818E-02	6.490E-03	-0.332
	+	1120.55		2.934E-01	8.196E-02	1.151E-01	7.948E-03	2.550
V-48		944.13		4.618E-01	9.875E-01	1.664E+00	1.762E-01	0.277
		983.53	*	-1.791E-03	8.089E-02	1.307E-01	1.293E-02	-0.014
		1312.11		3.827E-02	8.517E-02	1.455E-01	1.060E-02	0.263
CR-51		320.08	*	-2.787E-01	3.993E-01	6.187E-01	3.977E-02	-0.451
MN-54		834.85	*	1.590E-02	3.379E-02	5.713E-02	5.852E-03	0.278
CO-56		846.77	*	9.736E-04	3.520E-02	5.791E-02	6.045E-03	0.017
		1037.84		5.416E-02	2.586E-01	4.397E-01	4.070E-02	0.123
	+	1238.28		2.030E-01	1.241E-01	1.589E-01	1.059E-02	1.277
		1771.35		-1.935E-01	2.334E-01	2.592E-01	1.566E-02	-0.747
CO-57		122.06	*	2.293E-03	2.348E-02	3.784E-02	2.241E-03	0.061
		136.47		-2.663E-02	1.931E-01	3.056E-01	1.996E-02	-0.087
CO-58		810.76	*	-2.816E-02	3.633E-02	4.634E-02	4.575E-03	-0.608
FE-59		1099.45	*	-7.754E-05	8.546E-02	1.423E-01	1.171E-02	-0.001
		1291.59		2.534E-02	1.145E-01	1.914E-01	1.609E-02	0.132
CO-60		1173.23		1.689E-02	3.588E-02	6.142E-02	3.394E-03	0.275
		1332.49	*	-1.355E-02	3.211E-02	5.028E-02	3.799E-03	-0.270
ZN-65		1115.54	*	1.578E-01	8.619E-02	1.438E-01	1.013E-02	1.097
SE-75		121.12		1.210E-01	1.214E-01	2.026E-01	1.859E-02	0.597
		136.00		-5.839E-03	3.786E-02	5.990E-02	3.413E-03	-0.097
		264.66	*	3.653E-02	4.452E-02	6.715E-02	3.842E-03	0.544

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		279.54		6.500E-02	1.110E-01	1.641E-01	1.015E-02	0.396
		400.66		-6.181E-02	2.253E-01	3.715E-01	3.373E-02	-0.166
SR-85		514.00	*	9.393E-02	3.797E-02	6.885E-02	4.561E-03	1.364
Y-88		898.04		-7.670E-03	3.882E-02	6.246E-02	7.080E-03	-0.123
		1836.06	*	-1.121E-02	3.346E-02	4.269E-02	2.431E-03	-0.263
Y-91		1204.77	*	1.134E+01	2.049E+01	3.505E+01	2.072E+00	0.324
NB-94		702.65	*	1.004E-02	2.933E-02	4.988E-02	4.093E-03	0.201
		871.09		4.268E-03	2.649E-02	4.394E-02	4.766E-03	0.097
NB-95		765.81	*	6.856E-02	4.598E-02	7.315E-02	6.691E-03	0.937
NB-95M		235.69	*	9.194E-02	1.328E-01	1.992E-01	1.466E-02	0.462
ZR-95		724.19		2.524E-01	1.034E-01	1.727E-01	1.598E-02	1.462
		756.73	*	3.856E-02	6.292E-02	1.085E-01	1.071E-02	0.356
MO-99		140.51		-2.909E-04	6.292E-02	Half-Life	too short	
		181.07		-1.003E-04	6.292E-02	Half-Life	too short	
		366.42		9.891E-05	6.292E-02	Half-Life	too short	
		739.50	*	4.808E-05	6.292E-02	Half-Life	too short	
		777.92		-1.472E-04	6.292E-02	Half-Life	too short	
TC-99M		140.51	*	-2.352E+20	6.292E-02	Half-Life	too short	
RU-103		497.08	*	-6.903E-03	3.718E-02	6.040E-02	7.714E-03	-0.114
	+	610.33		1.443E+01	2.793E+00	2.826E+00	4.431E-01	5.107
RH-106		621.93	*	9.883E-02	2.760E-01	4.550E-01	5.675E-02	0.217
		1050.41		6.438E-01	2.026E+00	3.469E+00	2.964E-01	0.186
RU-106		621.93	*	9.883E-02	2.758E-01	4.550E-01	3.348E-02	0.217
		1050.41		6.438E-01	2.026E+00	3.469E+00	2.964E-01	0.186
AG-108M		433.94	*	-2.284E-02	2.526E-02	3.983E-02	2.568E-03	-0.573
		614.28		1.024E-02	3.376E-02	4.829E-02	3.690E-03	0.212
		722.91		1.477E-02	3.493E-02	5.201E-02	4.567E-03	0.284
AG-110M		657.76	*	1.119E-01	3.885E-02	6.653E-02	5.248E-03	1.681
		677.62		4.141E-02	2.577E-01	4.359E-01	3.538E-02	0.095
		706.68		-4.216E-03	1.865E-01	3.108E-01	2.648E-02	-0.014
		763.94		1.499E-01	1.501E-01	2.333E-01	2.180E-02	0.642
		884.68		-1.077E-02	4.410E-02	7.078E-02	7.992E-03	-0.152
		937.49		-8.821E-02	1.028E-01	1.558E-01	1.705E-02	-0.566
		1384.29		2.119E-02	1.466E-01	2.153E-01	1.666E-02	0.098
		1505.03		1.515E-01	2.655E-01	4.112E-01	2.952E-02	0.368
SN-113		391.69	*	7.913E-03	3.891E-02	6.587E-02	4.040E-03	0.120
CD-115		260.90		-1.247E-03	3.891E-02	Half-Life	too short	
		492.35		-3.745E-05	3.891E-02	Half-Life	too short	
		527.90	*	4.127E-05	3.891E-02	Half-Life	too short	
SN-117M		156.02		-1.518E+00	2.877E+00	4.785E+00	2.556E-01	-0.317
		158.56	*	-1.155E-02	7.125E-02	1.174E-01	6.242E-03	-0.098
TE-123M		159.00	*	-7.097E-03	2.580E-02	4.233E-02	2.284E-03	-0.168
SB-124		602.73		-3.286E-02	4.691E-02	6.106E-02	4.416E-03	-0.538
		645.85		-3.519E-01	4.485E-01	6.771E-01	5.472E-02	-0.520
		722.78		1.424E-01	3.833E-01	5.683E-01	4.944E-02	0.251
		1690.97	*	-5.739E-02	6.353E-02	8.934E-02	6.188E-03	-0.642
SB-125		427.87	*	1.986E-02	7.532E-02	1.271E-01	7.934E-03	0.156
	+	463.37		1.161E+00	4.133E-01	4.943E-01	3.527E-02	2.349
		600.60		-1.153E-01	1.788E-01	2.543E-01	2.026E-02	-0.453

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M I-126	635.95			2.045E-01	2.245E-01	3.832E-01	3.162E-02	0.534
	109.28	*		-5.488E+00	1.011E+01	1.596E+01	1.437E+00	-0.344
	388.63			-5.910E-02	2.205E-01	3.650E-01	2.098E-02	-0.162
	666.33	*		1.994E-01	3.345E-01	5.075E-01	3.901E-02	0.393
SB-126	753.82			1.089E-01	2.220E+00	3.696E+00	3.313E-01	0.029
	414.70			5.484E-02	1.079E-01	1.626E-01	9.615E-03	0.337
	666.50			6.450E-02	1.168E-01	1.767E-01	1.359E-02	0.365
	695.00			6.721E-02	1.017E-01	1.763E-01	1.427E-02	0.381
SB-127	697.00			-1.266E-01	3.620E-01	5.920E-01	4.808E-02	-0.214
	720.70	*		8.740E-03	2.147E-01	3.091E-01	2.618E-02	0.028
	856.80			1.302E+00	7.252E-01	1.180E+00	1.251E-01	1.104
	252.40			-1.954E+00	1.530E+01	2.492E+01	1.042E+01	-0.078
I-131	473.00			-1.927E+00	5.554E+00	8.966E+00	1.253E+00	-0.215
	685.70	*		-8.269E-01	4.472E+00	7.389E+00	1.005E+00	-0.112
	783.70			8.403E+00	1.284E+01	2.187E+01	3.343E+00	0.384
	80.19			3.611E-01	9.399E+00	1.387E+01	1.219E+00	0.026
TE-132	284.31			-1.784E+00	2.508E+00	3.926E+00	2.535E-01	-0.454
	364.49	*		-2.311E-01	1.876E-01	2.950E-01	1.932E-02	-0.783
	636.99			3.914E-01	2.557E+00	4.158E+00	3.370E-01	0.094
	49.72			-1.002E+02	1.396E+02	2.280E+02	2.967E+01	-0.440
BA-133 +	111.76			4.160E+00	1.788E+02	2.889E+02	3.554E+01	0.014
	116.30			-7.570E+01	1.480E+02	2.325E+02	2.825E+01	-0.326
	228.16	*		-7.164E-02	3.571E+00	5.898E+00	9.661E-01	-0.012
	81.00			6.789E-02	1.175E-01	1.425E-01	2.218E-02	0.477
I-133	276.40			4.512E-01	4.133E-01	5.517E-01	6.918E-02	0.818
	302.85			6.266E-02	1.298E-01	1.897E-01	2.158E-02	0.330
	356.01	*		-4.686E-03	3.906E-02	5.379E-02	6.060E-03	-0.087
	383.85			3.450E-02	2.557E-01	4.319E-01	4.595E-02	0.080
CS-134	529.87	*		9.166E-01	2.557E-01	Half-Life	too short	
	875.33			-5.167E+00	2.557E-01	Half-Life	too short	
	1298.22			-6.285E+01	2.557E-01	Half-Life	too short	
	563.25			1.788E-01	3.040E-01	5.122E-01	3.619E-02	0.349
CS-135 I-135	569.33			-1.514E-01	1.697E-01	2.550E-01	1.823E-02	-0.594
	604.72			3.178E-02	3.513E-02	5.248E-02	3.816E-03	0.606
	795.86	*		9.692E-02	4.111E-02	7.567E-02	7.319E-03	1.281
	801.95			2.181E-03	3.432E-01	5.622E-01	5.485E-02	0.004
CS-136	1365.19			5.259E-01	1.097E+00	1.808E+00	1.440E-01	0.291
	268.22	*		1.495E-01	1.617E-01	2.434E-01	1.839E-02	0.614
	546.56			-2.713E+18	1.617E-01	Half-Life	too short	
	836.80			1.305E+19	1.617E-01	Half-Life	too short	
I-135	1038.76			-4.440E+17	1.617E-01	Half-Life	too short	
	1131.51			1.479E+16	1.617E-01	Half-Life	too short	
	1260.41	*		-7.167E+17	1.617E-01	Half-Life	too short	
	1457.56			7.506E+20	1.617E-01	Half-Life	too short	
CS-136	1678.03			-4.024E+18	1.617E-01	Half-Life	too short	
	1791.20			-3.473E+18	1.617E-01	Half-Life	too short	
	153.25			4.158E-01	1.106E+00	1.902E+00	1.475E-01	0.219
	176.60			4.520E-01	6.462E-01	1.114E+00	7.407E-02	0.406
	273.65			-3.081E-01	1.054E+00	1.044E+00	7.051E-02	-0.295

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		340.55		7.307E-01	2.327E-01	3.822E-01	2.399E-02	1.912
		818.51		4.524E-02	9.009E-02	1.537E-01	1.536E-02	0.294
		1048.07	*	-2.383E-02	1.261E-01	2.077E-01	1.863E-02	-0.115
		1235.36		1.339E+00	9.336E-01	1.458E+00	1.486E-01	0.919
CE-139		165.86	*	4.253E-03	2.688E-02	4.566E-02	2.397E-03	0.093
BA-140		162.66		4.099E-02	1.087E+00	1.841E+00	1.138E-01	0.022
		304.85		-1.546E-01	1.908E+00	2.679E+00	7.651E-01	-0.058
		423.72		-2.939E-01	2.465E+00	4.075E+00	1.317E+00	-0.072
		537.26	*	1.769E-01	3.520E-01	5.844E-01	1.957E-01	0.303
LA-140	+	328.76		1.007E+00	5.398E-01	7.339E-01	4.765E-02	1.372
		487.02		1.268E-01	1.765E-01	3.025E-01	2.158E-02	0.419
		815.77		-8.325E-02	4.679E-01	6.487E-01	7.021E-02	-0.128
		1596.21	*	-6.320E-02	1.104E-01	1.714E-01	1.176E-02	-0.369
CE-141		145.44	*	2.070E-02	6.979E-02	1.111E-01	6.346E-03	0.186
CE-143		57.36		-1.732E-02	6.979E-02	Half-Life	too short	
		293.27	*	4.094E-02	6.979E-02	Half-Life	too short	
		664.57		3.270E-01	6.979E-02	Half-Life	too short	
		721.93		2.293E-02	6.979E-02	Half-Life	too short	
CE-144		80.12		1.809E-01	2.612E+00	3.861E+00	3.343E-01	0.047
		133.52	*	-5.490E-02	1.924E-01	2.875E-01	3.975E-02	-0.191
PM-144		476.78		-7.777E-03	5.505E-02	9.006E-02	6.615E-03	-0.086
		618.01		-5.960E-03	2.860E-02	4.549E-02	3.466E-03	-0.131
		696.49	*	-1.481E-02	2.997E-02	4.856E-02	3.944E-03	-0.305
PR-144		696.51	*	-1.116E+00	2.252E+00	3.649E+00	2.961E-01	-0.306
		1489.16		-1.537E+01	1.026E+01	1.287E+01	9.300E-01	-1.194
PM-146		453.88	*	2.587E-02	3.760E-02	6.292E-02	5.496E-03	0.411
		633.25		-2.581E-01	1.211E+00	1.913E+00	7.260E-01	-0.135
		735.93		-7.617E-02	1.278E-01	1.842E-01	5.166E-02	-0.414
		747.24		2.757E-02	7.684E-02	1.305E-01	1.923E-02	0.211
ND-147	+	91.11		1.390E+00	6.152E-01	7.907E-01	7.443E-02	1.758
		319.41		-2.945E+00	4.831E+00	7.524E+00	4.349E-01	-0.391
		531.02	*	1.617E-01	7.556E-01	1.252E+00	1.746E-01	0.129
PM-149		285.90	*	-3.525E-05	7.556E-01	Half-Life	too short	
EU-152		121.78		2.840E-02	6.590E-02	1.077E-01	8.265E-03	0.264
		244.70		1.081E-01	2.967E-01	4.379E-01	2.446E-02	0.247
		344.28	*	-5.884E-02	1.031E-01	1.264E-01	8.244E-03	-0.465
		778.90		-1.298E-01	2.618E-01	3.539E-01	3.309E-02	-0.367
		964.08		4.638E-01	3.114E-01	4.830E-01	4.947E-02	0.960
		1085.87		-1.578E-01	3.040E-01	4.855E-01	3.761E-02	-0.325
		1112.07		2.683E-02	2.723E-01	3.920E-01	2.790E-02	0.068
		1408.01		6.967E-02	1.538E-01	2.607E-01	1.936E-02	0.267
GD-153		69.67		1.619E+00	2.055E+00	3.104E+00	2.519E-01	0.522
		97.43	*	-2.852E-02	9.615E-02	1.376E-01	1.076E-02	-0.207
		103.18		-8.365E-02	1.103E-01	1.732E-01	1.249E-02	-0.483
EU-154		123.07		-1.325E-02	4.699E-02	7.440E-02	7.026E-03	-0.178
		723.31		1.449E-01	1.635E-01	2.519E-01	2.365E-02	0.575
		873.19		-1.613E-02	2.286E-01	3.722E-01	5.071E-02	-0.043
		996.26		6.783E-02	3.231E-01	4.580E-01	8.245E-02	0.148
		1004.73		2.331E-02	1.905E-01	2.671E-01	3.283E-02	0.087

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1274.44	*	-1.559E-01	1.104E-01	1.585E-01	1.595E-02	-0.983
		86.55		6.075E-01	1.485E-01	1.889E-01	1.740E-02	3.217
		105.31	*	8.926E-02	1.003E-01	1.679E-01	1.200E-02	0.532
TB-160	+	86.79		1.734E+00	4.234E-01	5.416E-01	4.955E-02	3.201
		197.04		-4.772E-01	5.308E-01	8.415E-01	4.519E-02	-0.567
		215.65		-2.582E-02	7.297E-01	1.169E+00	6.381E-02	-0.022
		298.57		2.417E-01	1.551E-01	1.858E-01	1.067E-02	1.301
		879.36	*	1.765E-03	1.290E-01	2.112E-01	2.321E-02	0.008
		962.29		4.781E-01	6.083E-01	9.025E-01	9.271E-02	0.530
HO-166M	+	966.15		1.354E+00	3.359E-01	5.362E-01	5.472E-02	2.525
		1177.93		-1.830E-01	3.173E-01	5.021E-01	2.804E-02	-0.364
		1271.85		-1.752E-01	6.405E-01	1.028E+00	6.948E-02	-0.170
		80.57		2.174E-01	3.360E-01	4.105E-01	3.566E-02	0.530
		184.41		2.317E-01	6.567E-02	6.293E-02	3.343E-03	3.681
		280.46		2.722E-02	8.010E-02	1.167E-01	6.658E-03	0.233
		410.95		4.354E-01	2.730E-01	3.745E-01	2.204E-02	1.163
		711.68	*	-2.927E-02	5.046E-02	8.093E-02	6.745E-03	-0.362
		752.31		-1.104E-01	2.201E-01	3.522E-01	3.149E-02	-0.314
		810.29		-4.383E-02	5.199E-02	6.584E-02	6.482E-03	-0.666
TA-182	+	67.75		-5.380E-03	1.251E-01	2.038E-01	1.638E-02	-0.026
		100.11		1.077E-01	1.854E-01	3.076E-01	2.312E-02	0.350
		152.43		-1.930E-01	3.398E-01	5.234E-01	2.816E-02	-0.369
		222.11		9.115E-02	3.136E-01	5.256E-01	2.885E-02	0.173
		1121.30		6.686E-01	1.706E-01	3.061E-01	2.108E-02	2.184
		1189.05		-1.228E-01	2.703E-01	4.321E-01	2.471E-02	-0.284
		1221.41	*	4.913E-02	1.710E-01	2.874E-01	1.758E-02	0.171
		1231.02		2.732E-01	4.856E-01	7.203E-01	4.493E-02	0.379
IR-192	+	295.96		1.105E+00	1.818E-01	2.710E-01	1.581E-02	4.076
		308.46		3.354E-02	8.790E-02	1.448E-01	8.438E-03	0.232
		316.51	*	3.912E-03	3.214E-02	5.215E-02	3.025E-03	0.075
		468.07		4.134E-02	6.451E-02	9.741E-02	6.951E-03	0.424
HG-203	+	70.83		-1.691E+00	1.789E+00	2.466E+00	3.901E-01	-0.686
		72.87		1.797E+00	1.010E+00	1.557E+00	2.388E-01	1.154
		279.20	*	3.654E-02	4.242E-02	6.374E-02	3.843E-03	0.573
BI-207	+	72.81		3.383E-01	2.009E-01	3.171E-01	2.617E-02	1.067
		74.97		7.350E-01	1.561E-01	2.383E-01	1.992E-02	3.085
		569.70		-1.696E-02	2.583E-02	3.946E-02	2.765E-03	-0.430
		1063.66	*	3.357E-02	4.706E-02	8.215E-02	6.780E-03	0.409
		1770.23		-1.406E-01	3.872E-01	4.903E-01	2.966E-02	-0.287
PB-210		46.54	*	7.714E+00	5.428E+00	9.283E+00	7.117E-01	0.831
PB-211		404.85	*	4.199E-02	6.702E-01	9.785E-01	4.694E-01	0.043
		427.09		-3.529E-01	1.270E+00	2.065E+00	9.466E-01	-0.171
RN-219	+	832.01		3.461E-01	8.672E-01	1.433E+00	7.473E-01	0.242
		271.23		4.397E-01	3.082E-01	3.952E-01	3.140E-02	1.113
		401.81	*	2.148E-02	3.396E-01	5.699E-01	7.662E-02	0.038
RA-223		81.07		1.490E-01	2.648E-01	3.215E-01	2.804E-02	0.464
		83.79		2.818E-01	1.319E-01	2.072E-01	1.847E-02	1.360
		94.87		6.760E-01	4.691E-01	7.261E-01	5.912E-02	0.931
		144.24		1.465E-01	6.377E-01	1.013E+00	7.046E-02	0.145

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		3.002E-01	3.279E-01	5.732E-01	3.786E-02	0.524
	+	269.46		3.416E-01	2.388E-01	3.041E-01	1.803E-02	1.123
		323.87	*	3.610E-01	6.183E-01	9.021E-01	1.453E-01	0.400
	+	338.28		7.481E+00	1.490E+00	2.107E+00	2.158E-01	3.551
		79.69		3.275E-01	1.292E+00	1.926E+00	3.320E-01	0.170
		235.96		3.720E-01	1.598E-01	2.534E-01	2.019E-02	1.468
		256.23	*	5.801E-02	2.142E-01	3.553E-01	3.599E-02	0.163
	+	299.98		2.468E+00	1.077E+00	1.369E+00	1.500E-01	1.803
		304.50		-3.522E-01	1.510E+00	2.095E+00	3.190E-01	-0.168
		334.37		3.020E-01	1.781E+00	2.349E+00	3.340E-01	0.129
TH-227		79.80		3.632E-01	1.700E+00	2.528E+00	5.507E-01	0.144
		235.96		3.720E-01	1.593E-01	2.534E-01	1.822E-02	1.468
		256.23	*	5.801E-02	2.142E-01	3.553E-01	4.241E-02	0.163
	+	299.98		2.468E+00	1.077E+00	1.369E+00	1.500E-01	1.803
		304.50		-3.522E-01	1.510E+00	2.095E+00	3.190E-01	-0.168
TH-229		334.37		3.020E-01	1.781E+00	2.349E+00	3.340E-01	0.129
		85.43		7.252E-01	2.233E-01	3.598E-01	3.252E-02	2.016
	+	88.47		7.700E-01	1.880E-01	2.335E-01	2.139E-02	3.297
		193.51	*	1.972E-01	4.727E-01	7.776E-01	4.163E-02	0.254
	+	210.85		2.072E+00	1.143E+00	1.488E+00	8.086E-02	1.393
PA-231		283.69	*	-3.044E-01	1.217E+00	1.953E+00	2.554E-01	-0.156
	+	301.36		1.586E+00	6.894E-01	8.513E-01	8.782E-02	1.863
TH-231		81.07		1.490E-01	2.648E-01	3.215E-01	2.804E-02	0.464
		83.79		2.818E-01	1.319E-01	2.072E-01	1.847E-02	1.360
		94.87		6.760E-01	4.691E-01	7.261E-01	5.912E-02	0.931
		144.24		1.465E-01	6.377E-01	1.013E+00	7.046E-02	0.145
	+	154.21		3.002E-01	3.279E-01	5.732E-01	3.786E-02	0.524
PA-233		269.46		3.416E-01	2.388E-01	3.041E-01	1.803E-02	1.123
		323.87	*	3.610E-01	6.183E-01	9.021E-01	1.453E-01	0.400
	+	338.28		7.481E+00	1.490E+00	2.107E+00	2.158E-01	3.551
	+	300.13		1.117E+00	4.948E-01	6.211E-01	8.301E-02	1.798
		311.90	*	-1.607E-02	5.604E-02	8.907E-02	5.458E-03	-0.180
PA-234		340.48		2.249E+00	8.321E-01	1.097E+00	2.546E-01	2.050
		94.67		3.520E-01	1.777E-01	2.754E-01	3.331E-02	1.278
		98.44		4.078E-02	9.301E-02	1.492E-01	8.305E-02	0.273
		111.00		3.787E-02	1.731E-01	2.819E-01	3.024E-02	0.134
		131.20		7.873E-02	1.057E-01	1.564E-01	8.901E-03	0.503
PA-234M		569.50		-1.588E-01	2.287E-01	3.483E-01	2.441E-02	-0.456
		733.00		-1.062E-01	3.372E-01	4.659E-01	1.035E-01	-0.228
		880.51		1.974E-01	2.351E-01	4.068E-01	4.476E-02	0.485
		883.24		9.779E-02	2.555E-01	4.153E-01	2.807E-01	0.235
		926.50		-4.734E-02	1.436E-01	2.266E-01	5.921E-02	-0.209
		946.00	*	1.137E-01	2.406E-01	4.043E-01	7.975E-02	0.281
		949.00		-1.981E-01	3.854E-01	6.002E-01	6.303E-02	-0.330
	+	766.42		1.494E+01	1.364E+01	1.792E+01	9.107E+00	0.834
	+	1001.03	*	5.618E+00	5.174E+00	6.792E+00	7.327E-01	0.827
		63.29	*	2.518E+00	1.562E+00	2.604E+00	4.691E-01	0.967
TH-234		92.59		3.481E+00	1.222E+00	1.304E+00	2.872E-01	2.669
U-238		63.29	*	2.518E+00	1.562E+00	2.604E+00	4.691E-01	0.967

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		3.481E+00	9.956E-01	1.304E+00	1.104E-01	2.669
		99.53		1.230E-01	1.627E-01	2.716E-01	2.058E-02	0.453
		103.37		-7.018E-02	9.823E-02	1.546E-01	1.112E-02	-0.454
		106.12		3.970E-02	7.995E-02	1.319E-01	9.170E-03	0.301
		117.23	*	-6.526E-01	3.709E-01	5.468E-01	3.377E-02	-1.193
		228.18		-3.795E-03	1.890E-01	3.121E-01	1.722E-02	-0.012
AM-241	+	277.60		2.228E-01	2.026E-01	2.736E-01	1.558E-02	0.814
CM-247		59.54	*	-2.491E-02	1.744E-01	2.902E-01	2.406E-02	-0.086
	+	278.00		9.463E-01	8.603E-01	1.166E+00	6.642E-02	0.812
CF-249		287.50		4.725E-02	1.059E+00	1.725E+00	9.867E-02	0.027
		402.40	*	-7.515E-05	3.204E-02	5.220E-02	3.039E-03	-0.001
		252.80		-1.945E-01	8.055E-01	1.306E+00	7.338E-02	-0.149
		333.37		1.503E-01	2.342E-01	2.545E-01	1.472E-02	0.590
CF-251		388.16	*	-5.563E-03	3.462E-02	5.761E-02	3.312E-03	-0.097
		177.52	*	9.837E-02	1.103E-01	1.914E-01	1.012E-02	0.514
		227.38		-2.083E-02	3.040E-01	5.011E-01	2.763E-02	-0.042
		285.41		-8.648E-01	1.851E+00	2.937E+00	1.679E-01	-0.294

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]G248513020      *
* Acquisition date   : 20-MAR-2010 13:38:54 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 02:00:01.70 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248513020 Analyst initials: MXR1                  *
* Batch Number       : 961097 Sample Quantity : 1.2266E+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	2.778E+01	2.495E+00	3.903E-01	0.000E+00
CD-109	5.171E+00	1.237E+00	1.139E+00	0.000E+00
SN-126	4.994E-01	1.195E-01	1.107E-01	0.000E+00
BA-137M	6.876E-01	8.714E-02	5.487E-02	0.000E+00
CS-137	7.264E-01	9.213E-02	5.796E-02	0.000E+00
TL-208	5.507E-01	7.769E-02	4.923E-02	0.000E+00
BI-211	4.212E+00	4.871E-01	2.682E-01	0.000E+00
BI-212	2.348E+00	7.926E-01	6.799E-01	0.000E+00
PB-212	1.704E+00	1.551E-01	7.823E-02	0.000E+00
BI-214	1.215E+00	1.724E-01	9.726E-02	0.000E+00
PB-214	1.529E+00	1.952E-01	9.750E-02	0.000E+00
RA-224	4.839E+00	1.056E+00	8.374E-01	0.000E+00
RA-226	1.215E+00	1.724E-01	9.726E-02	0.000E+00
AC-228	1.704E+00	3.456E-01	1.846E-01	0.000E+00
RA-228	1.704E+00	3.456E-01	1.846E-01	0.000E+00
TH-228	1.704E+00	1.551E-01	7.823E-02	0.000E+00
TH-232	1.704E+00	3.456E-01	1.846E-01	0.000E+00
U-235	4.941E-02	1.872E-01	3.124E-01	0.000E+00
NP-237	1.490E+00	4.701E-01	3.356E-01	0.000E+00
ANH-511	1.025E-01	7.029E-02	4.003E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.068E-01	2.938E-01	5.111E-01	0.000E+00 NOT IDENT.
NA-22	-5.241E-02	3.810E-02	5.657E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.199E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.929E-02	3.634E-02	5.847E-02	0.000E+00 FAIL ABUN
V-48	-1.791E-03	7.927E-02	1.312E-01	0.000E+00 NOT IDENT.
CR-51	-2.787E-01	3.913E-01	6.301E-01	0.000E+00 NOT IDENT.
MN-54	1.590E-02	3.311E-02	5.746E-02	0.000E+00 NOT IDENT.

CO-56	9.736E-04	3.450E-02	5.823E-02	0.000E+00	FAIL ABUN
CO-57	2.293E-03	2.301E-02	3.901E-02	0.000E+00	NOT IDENT.
CO-58	-2.816E-02	3.560E-02	4.663E-02	0.000E+00	NOT IDENT.
FE-59	-7.754E-05	8.375E-02	1.426E-01	0.000E+00	NOT IDENT.
CO-60	-1.355E-02	3.147E-02	5.026E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	8.447E-02	1.441E-01	0.000E+00	NOT IDENT.
SE-75	3.653E-02	4.363E-02	6.855E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.721E-02	6.969E-02	0.000E+00	NOT IDENT.
Y-88	-1.121E-02	3.279E-02	4.249E-02	0.000E+00	NOT IDENT.
Y-91	1.134E+01	2.008E+01	3.508E+01	0.000E+00	NOT IDENT.
NB-94	1.004E-02	2.874E-02	5.029E-02	0.000E+00	NOT IDENT.
NB-95	6.856E-02	4.506E-02	7.366E-02	0.000E+00	NOT IDENT.
NB-95M	9.194E-02	1.301E-01	2.036E-01	0.000E+00	NOT IDENT.
ZR-95	3.856E-02	6.166E-02	1.092E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.238E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.613E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.903E-03	3.644E-02	6.116E-02	0.000E+00	FAIL ABUN
RH-106	9.883E-02	2.704E-01	4.594E-01	0.000E+00	NOT IDENT.
RU-106	9.883E-02	2.703E-01	4.594E-01	0.000E+00	NOT IDENT.
AG-108M	-2.284E-02	2.475E-02	4.041E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	3.807E-02	6.713E-02	0.000E+00	NOT IDENT.
SN-113	7.913E-03	3.813E-02	6.691E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.058E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.155E-02	6.983E-02	1.207E-01	0.000E+00	NOT IDENT.
TE-123M	-7.097E-03	2.528E-02	4.349E-02	0.000E+00	NOT IDENT.
SB-124	-5.739E-02	6.226E-02	8.902E-02	0.000E+00	NOT IDENT.
SB-125	1.986E-02	7.381E-02	1.290E-01	0.000E+00	FAIL ABUN
TE-125M	-5.488E+00	9.911E+00	1.648E+01	0.000E+00	NOT IDENT.
I-126	1.994E-01	3.278E-01	5.119E-01	0.000E+00	NOT IDENT.
SB-126	8.740E-03	2.104E-01	3.115E-01	0.000E+00	NOT IDENT.
SB-127	-8.269E-01	4.382E+00	7.451E+00	0.000E+00	NOT IDENT.
I-131	-2.311E-01	1.838E-01	2.999E-01	0.000E+00	NOT IDENT.
TE-132	-7.164E-02	3.500E+00	6.032E+00	0.000E+00	NOT IDENT.
BA-133	-4.686E-03	3.828E-02	5.470E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.789E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.028E-02	7.615E-02	0.000E+00	NOT IDENT.
CS-135	1.495E-01	1.584E-01	2.484E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.826E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.383E-02	1.236E-01	2.083E-01	0.000E+00	NOT IDENT.
CE-139	4.253E-03	2.634E-02	4.689E-02	0.000E+00	NOT IDENT.
BA-140	1.769E-01	3.449E-01	5.911E-01	0.000E+00	NOT IDENT.
LA-140	-6.320E-02	1.082E-01	1.709E-01	0.000E+00	FAIL ABUN
CE-141	2.070E-02	6.839E-02	1.143E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.248E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.490E-02	1.886E-01	2.960E-01	0.000E+00	NOT IDENT.
PM-144	-1.481E-02	2.937E-02	4.896E-02	0.000E+00	NOT IDENT.
PR-144	-1.116E+00	2.207E+00	3.679E+00	0.000E+00	NOT IDENT.
PM-146	2.587E-02	3.684E-02	6.379E-02	0.000E+00	NOT IDENT.
ND-147	1.617E-01	7.405E-01	1.266E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.220E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.884E-02	1.010E-01	1.286E-01	0.000E+00	NOT IDENT.
GD-153	-2.852E-02	9.423E-02	1.422E-01	0.000E+00	NOT IDENT.
EU-154	-1.559E-01	1.082E-01	1.585E-01	0.000E+00	NOT IDENT.
EU-155	8.926E-02	9.832E-02	1.734E-01	0.000E+00	FAIL ABUN
TB-160	1.765E-03	1.264E-01	2.123E-01	0.000E+00	FAIL ABUN
HO-166M	-2.927E-02	4.945E-02	8.157E-02	0.000E+00	FAIL ABUN
TA-182	4.913E-02	1.675E-01	2.876E-01	0.000E+00	NOT IDENT.
IR-192	3.912E-03	3.150E-02	5.311E-02	0.000E+00	FAIL ABUN
HG-203	3.654E-02	4.157E-02	6.502E-02	0.000E+00	NOT IDENT.
BI-207	3.357E-02	4.612E-02	8.236E-02	0.000E+00	FAIL ABUN
PB-210	7.714E+00	5.319E+00	9.684E+00	0.000E+00	NOT IDENT.
PB-211	4.199E-02	6.568E-01	9.934E-01	0.000E+00	NOT IDENT.
RN-219	2.148E-02	3.328E-01	5.786E-01	0.000E+00	FAIL ABUN
RA-223	3.610E-01	6.059E-01	9.185E-01	0.000E+00	FAIL ABUN
AC-227	5.801E-02	2.099E-01	3.629E-01	0.000E+00	FAIL ABUN
TH-227	5.801E-02	2.099E-01	3.629E-01	0.000E+00	FAIL ABUN
TH-229	1.972E-01	4.633E-01	7.970E-01	0.000E+00	FAIL ABUN
PA-231	-3.044E-01	1.192E+00	1.992E+00	0.000E+00	FAIL ABUN
TH-231	3.610E-01	6.059E-01	9.185E-01	0.000E+00	FAIL ABUN
PA-233	-1.607E-02	5.492E-02	9.073E-02	0.000E+00	FAIL ABUN
PA-234	1.137E-01	2.358E-01	4.059E-01	0.000E+00	NOT IDENT.
PA-234M	5.618E+00	5.071E+00	6.815E+00	0.000E+00	FAIL ABUN
TH-234	2.518E+00	1.531E+00	2.707E+00	0.000E+00	FAIL ABUN
U-238	2.518E+00	1.531E+00	2.707E+00	0.000E+00	FAIL ABUN
NP-239	-6.526E-01	3.635E-01	5.640E-01	0.000E+00	FAIL ABUN
AM-241	-2.491E-02	1.709E-01	3.018E-01	0.000E+00	NOT IDENT.
CM-247	-7.515E-05	3.140E-02	5.300E-02	0.000E+00	FAIL ABUN
CF-249	-5.563E-03	3.393E-02	5.852E-02	0.000E+00	NOT IDENT.

CF-251	9.837E-02	1.081E-01	1.964E-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]G248513020.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:38:54
Sample ID         : G248513020 Sample quantity : 1.22660E+02 GRAM
Detector name     : GAM18 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.70 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 961097 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	1460.82	1832	10.66*	1.894E+00	2.778E+01	2.778E+01	9.17
CD-109	88.03	389	3.70*	6.441E+00	4.994E+00	5.171E+00	24.42
SN-126	64.28	-----	9.60	3.245E+00	-----	Line Not Found	-----
	86.94	389	8.90	6.441E+00	2.076E+00	2.076E+00	47.25
	87.57	389	37.00*	6.441E+00	4.994E-01	4.994E-01	24.42
BA-137M	661.66	724	89.90*	3.589E+00	6.866E-01	6.876E-01	12.93
CS-137	661.66	724	85.10*	3.589E+00	7.253E-01	7.264E-01	12.94
TL-208	277.37	66	6.60	6.259E+00	4.875E-01	4.875E-01	91.37
	583.19	602	85.00*	3.935E+00	5.507E-01	5.507E-01	14.40
	860.56	118	12.50	2.916E+00	9.877E-01	9.877E-01	44.00
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	970	12.92*	5.453E+00	4.212E+00	4.212E+00	11.80
BI-212	727.33	171	6.67*	3.338E+00	2.348E+00	2.348E+00	34.45
	785.37	-----	1.10	3.140E+00	-----	Line Not Found	-----
	1620.50	42	1.47	1.770E+00	4.882E+00	4.882E+00	59.34
PB-212	74.82	421	10.28	4.921E+00	2.549E+00	2.549E+00	23.35
	77.11	762	17.10	5.256E+00	2.595E+00	2.595E+00	14.52
	238.63	1649	43.60*	6.793E+00	1.704E+00	1.704E+00	9.29
	300.09	145	3.30	5.982E+00	2.244E+00	2.244E+00	43.06
BI-214	609.32	689	45.49*	3.813E+00	1.215E+00	1.215E+00	14.48
	1120.29	185	14.92	2.335E+00	1.624E+00	1.624E+00	28.73
	1764.49	141	15.30	1.695E+00	1.658E+00	1.658E+00	27.65
PB-214	74.82	421	5.80	4.921E+00	4.518E+00	4.518E+00	22.66
	77.11	762	9.70	5.256E+00	4.574E+00	4.575E+00	16.70
	242.00	438	7.25	6.749E+00	2.737E+00	2.737E+00	23.00
	295.22	504	18.42	6.041E+00	1.387E+00	1.387E+00	17.67
	351.93	970	35.60*	5.453E+00	1.529E+00	1.529E+00	13.03
RA-224	240.99	438	4.10*	6.749E+00	4.839E+00	4.839E+00	22.26
RA-226	609.32	689	45.49*	3.813E+00	1.215E+00	1.215E+00	14.48
	1120.29	185	14.92	2.335E+00	1.624E+00	1.624E+00	28.73
	1764.49	141	15.30	1.695E+00	1.658E+00	1.658E+00	27.65
AC-228	338.32	387	11.27	5.581E+00	1.885E+00	1.885E+00	44.62

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	399	25.80*	2.780E+00	1.704E+00	1.704E+00	20.70
	968.97	187	15.80	2.638E+00	1.370E+00	1.370E+00	47.86
	338.32	387	11.27	5.581E+00	1.885E+00	1.885E+00	44.62
	911.20	399	25.80*	2.780E+00	1.704E+00	1.704E+00	20.70
TH-228	968.97	187	15.80	2.638E+00	1.370E+00	1.370E+00	47.86
	74.82	421	10.28	4.921E+00	2.549E+00	2.549E+00	21.26
	77.11	762	17.10	5.256E+00	2.595E+00	2.595E+00	14.52
	238.63	1649	43.60*	6.793E+00	1.704E+00	1.704E+00	9.29
TH-232	300.09	145	3.30	5.982E+00	2.244E+00	2.244E+00	74.10
	338.32	387	11.27	5.581E+00	1.885E+00	1.885E+00	18.04
	911.20	399	25.80*	2.780E+00	1.704E+00	1.704E+00	20.70
	968.97	187	15.80	2.638E+00	1.370E+00	1.370E+00	47.86
U-235	89.96	198	3.47	6.708E+00	2.599E+00	2.599E+00	49.77
	93.35	335	5.60	6.954E+00	2.629E+00	2.629E+00	35.74
	143.76	-----	10.96*	8.222E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.005E+00	-----	Line Not Found	-----
NP-237	185.72	417	57.20	7.651E+00	2.916E-01	2.916E-01	28.35
	205.31	-----	5.01	7.323E+00	-----	Line Not Found	-----
	86.48	389	12.40*	6.441E+00	1.490E+00	1.490E+00	32.19
	95.86	-----	2.68	7.180E+00	-----	Line Not Found	-----
ANH-511	511.00	144	100.00*	4.308E+00	1.025E-01	1.025E-01	70.00

Flag: "*" = Keyline

Total number of lines in spectrum 38
Number of unidentified lines 6
Number of lines tentatively identified by NID 32 84.21%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.778E+01	2.778E+01	0.255E+01	9.17	
CD-109	461.40D	1.04	4.994E+00	5.171E+00	1.263E+00	24.42	
SN-126	2.30E+05Y	1.00	4.994E-01	4.994E-01	1.220E-01	24.42	
BA-137M	30.08Y	1.00	6.866E-01	6.876E-01	0.889E-01	12.93	
CS-137	30.08Y	1.00	7.253E-01	7.264E-01	0.940E-01	12.94	
TL-208	1.41E+10Y	1.00	5.507E-01	5.507E-01	0.793E-01	14.40	
BI-211	7.04E+08Y	1.00	4.212E+00	4.212E+00	0.497E+00	11.80	
BI-212	1.41E+10Y	1.00	2.348E+00	2.348E+00	0.809E+00	34.45	
PB-212	1.41E+10Y	1.00	1.704E+00	1.704E+00	0.158E+00	9.29	
BI-214	1600.00Y	1.00	1.215E+00	1.215E+00	0.176E+00	14.48	
PB-214	1600.00Y	1.00	1.529E+00	1.529E+00	0.199E+00	13.03	
RA-224	1.41E+10Y	1.00	4.839E+00	4.839E+00	1.077E+00	22.26	
RA-226	1600.00Y	1.00	1.215E+00	1.215E+00	0.176E+00	14.48	
AC-228	1.41E+10Y	1.00	1.704E+00	1.704E+00	0.353E+00	20.70	
RA-228	1.41E+10Y	1.00	1.704E+00	1.704E+00	0.353E+00	20.70	
TH-228	1.41E+10Y	1.00	1.704E+00	1.704E+00	0.158E+00	9.29	
TH-232	1.41E+10Y	1.00	1.704E+00	1.704E+00	0.353E+00	20.70	
U-235	7.04E+08Y	1.00	2.916E-01	2.916E-01	0.827E-01	28.35	K
NP-237	2.14E+06Y	1.00	1.490E+00	1.490E+00	0.480E+00	32.19	
ANH-511	1.00E+09Y	1.00	1.025E-01	1.025E-01	0.717E-01	70.00	

Total Activity : 6.100E+01 6.117E+01

Grand Total Activity : 6.100E+01 6.117E+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	129.07	65	390	1.41	257.23	253	8	9.06E-03	****	8.25E+00	
0	209.47	138	395	0.98	417.95	414	9	1.91E-02	54.9	7.25E+00	T
0	270.61	98	294	1.46	540.21	534	10	1.37E-02	69.6	6.35E+00	T
0	327.74	108	207	1.68	654.43	650	10	1.50E-02	53.2	5.69E+00	T
0	409.52	79	151	1.81	817.94	813	10	1.10E-02	62.4	4.97E+00	T
0	462.48	181	173	1.74	923.83	916	15	2.52E-02	34.9	4.60E+00	T
0	769.84	118	131	4.63	1538.37	1530	20	1.64E-02	51.6	3.19E+00	
0	799.93	242	160	10.49	1598.55	1580	44	3.36E-02	38.9	3.09E+00	
0	1000.34	40	60	2.28	1999.30	1992	14	5.50E-03	91.5	2.57E+00	T
0	1238.38	77	97	2.36	2475.30	2469	15	1.08E-02	60.8	2.15E+00	T
0	1376.79	55	44	1.34	2752.08	2742	16	7.60E-03	60.6	1.98E+00	
0	1509.40	34	26	2.16	3017.28	3009	17	4.65E-03	77.2	1.85E+00	
0	1845.49	29	20	1.22	3689.43	3680	17	4.01E-03	81.8	1.66E+00	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248513020.CNF;1
* Acquisition date   : 20-MAR-2010 13:38:54  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 02:00:01.70          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248513020            Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.22660E+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	2.778E+01	2.546E+00	3.909E-01	2.966E-02	71.062
CD-109	5.171E+00	1.263E+00	1.100E+00	1.017E-01	4.700
SN-126	4.994E-01	1.220E-01	1.069E-01	9.853E-03	4.670
BA-137M	6.876E-01	8.892E-02	5.438E-02	4.146E-03	12.643
CS-137	7.264E-01	9.402E-02	5.745E-02	4.390E-03	12.643
TL-208	5.507E-01	7.928E-02	4.872E-02	3.813E-03	11.303
BI-211	4.212E+00	4.971E-01	2.636E-01	1.693E-02	15.977
BI-212	2.348E+00	8.087E-01	6.747E-01	8.381E-02	3.479
PB-212	1.704E+00	1.582E-01	7.653E-02	5.517E-03	22.267
BI-214	1.215E+00	1.759E-01	9.630E-02	8.655E-03	12.618
PB-214	1.529E+00	1.991E-01	9.586E-02	8.114E-03	15.947
RA-224	4.839E+00	1.077E+00	8.193E-01	4.564E-02	5.906
RA-226	1.215E+00	1.759E-01	9.630E-02	8.655E-03	12.618
AC-228	1.704E+00	3.527E-01	1.838E-01	2.489E-02	9.272
RA-228	1.704E+00	3.527E-01	1.838E-01	2.489E-02	9.272
TH-228	1.704E+00	1.582E-01	7.653E-02	5.517E-03	22.267
TH-232	1.704E+00	3.527E-01	1.838E-01	2.489E-02	9.272
U-235	2.916E-01	8.266E-02	3.037E-01	4.736E-02	0.960

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.490E+00	4.796E-01	3.242E-01	7.413E-02	4.597
ANH-511	1.025E-01	7.172E-02	3.955E-02	2.612E-03	2.591

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.068E-01		2.998E-01	5.044E-01	3.654E-02	0.212
NA-22	-5.241E-02		3.888E-02	5.656E-02	3.848E-03	-0.927
NA-24	-3.631E+03		2.652E+03	Half-Life	too short	
SC-46	-1.929E-02		3.708E-02	5.818E-02	6.490E-03	-0.332
V-48	-1.791E-03		8.089E-02	1.307E-01	1.293E-02	-0.014
CR-51	-2.787E-01		3.993E-01	6.187E-01	3.977E-02	-0.451
MN-54	1.590E-02		3.379E-02	5.713E-02	5.852E-03	0.278
CO-56	9.736E-04		3.520E-02	5.791E-02	6.045E-03	0.017
CO-57	2.293E-03		2.348E-02	3.784E-02	2.241E-03	0.061
CO-58	-2.816E-02		3.633E-02	4.634E-02	4.575E-03	-0.608
FE-59	-7.754E-05		8.546E-02	1.423E-01	1.171E-02	-0.001
CO-60	-1.355E-02		3.211E-02	5.028E-02	3.799E-03	-0.270
ZN-65	1.578E-01		8.619E-02	1.438E-01	1.013E-02	1.097
SE-75	3.653E-02		4.452E-02	6.715E-02	3.842E-03	0.544
SR-85	9.393E-02		3.797E-02	6.885E-02	4.561E-03	1.364
Y-88	-1.121E-02		3.346E-02	4.269E-02	2.431E-03	-0.263
Y-91	1.134E+01		2.049E+01	3.505E+01	2.072E+00	0.324
NB-94	1.004E-02		2.933E-02	4.988E-02	4.093E-03	0.201
NB-95	6.856E-02		4.598E-02	7.315E-02	6.691E-03	0.937
NB-95M	9.194E-02		1.328E-01	1.992E-01	1.466E-02	0.462
ZR-95	3.856E-02		6.292E-02	1.085E-01	1.071E-02	0.356
MO-99	4.808E-05		3.693E-05	Half-Life	too short	
TC-99M	-2.352E+20		8.231E+19	Half-Life	too short	
RU-103	-6.903E-03		3.718E-02	6.040E-02	7.714E-03	-0.114
RH-106	9.883E-02		2.760E-01	4.550E-01	5.675E-02	0.217
RU-106	9.883E-02		2.758E-01	4.550E-01	3.348E-02	0.217
AG-108M	-2.284E-02		2.526E-02	3.983E-02	2.568E-03	-0.573
AG-110M	1.119E-01		3.885E-02	6.653E-02	5.248E-03	1.681
SN-113	7.913E-03		3.891E-02	6.587E-02	4.040E-03	0.120
CD-115	4.127E-05		5.396E-05	Half-Life	too short	
SN-117M	-1.155E-02		7.125E-02	1.174E-01	6.242E-03	-0.098
TE-123M	-7.097E-03		2.580E-02	4.233E-02	2.284E-03	-0.168
SB-124	-5.739E-02		6.353E-02	8.934E-02	6.188E-03	-0.642
SB-125	1.986E-02		7.532E-02	1.271E-01	7.934E-03	0.156
TE-125M	-5.488E+00		1.011E+01	1.596E+01	1.437E+00	-0.344
I-126	1.994E-01		3.345E-01	5.075E-01	3.901E-02	0.393
SB-126	8.740E-03		2.147E-01	3.091E-01	2.618E-02	0.028
SB-127	-8.269E-01		4.472E+00	7.389E+00	1.005E+00	-0.112
I-131	-2.311E-01		1.876E-01	2.950E-01	1.932E-02	-0.783
TE-132	-7.164E-02		3.571E+00	5.898E+00	9.661E-01	-0.012
BA-133	-4.686E-03		3.906E-02	5.379E-02	6.060E-03	-0.087

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	9.166E-01		1.423E+00	Half-Life too short		
CS-134	9.692E-02		4.111E-02	7.567E-02	7.319E-03	1.281
CS-135	1.495E-01		1.617E-01	2.434E-01	1.839E-02	0.614
I-135	-7.167E+17		1.442E+18	Half-Life too short		
CS-136	-2.383E-02		1.261E-01	2.077E-01	1.863E-02	-0.115
CE-139	4.253E-03		2.688E-02	4.566E-02	2.397E-03	0.093
BA-140	1.769E-01		3.520E-01	5.844E-01	1.957E-01	0.303
LA-140	-6.320E-02		1.104E-01	1.714E-01	1.176E-02	-0.369
CE-141	2.070E-02		6.979E-02	1.111E-01	6.346E-03	0.186
CE-143	4.094E-02		6.366E-03	Half-Life too short		
CE-144	-5.490E-02		1.924E-01	2.875E-01	3.975E-02	-0.191
PM-144	-1.481E-02		2.997E-02	4.856E-02	3.944E-03	-0.305
PR-144	-1.116E+00		2.252E+00	3.649E+00	2.961E-01	-0.306
PM-146	2.587E-02		3.760E-02	6.292E-02	5.496E-03	0.411
ND-147	1.617E-01		7.556E-01	1.252E+00	1.746E-01	0.129
PM-149	-3.525E-05		4.704E-04	Half-Life too short		
EU-152	-5.884E-02		1.031E-01	1.264E-01	8.244E-03	-0.465
GD-153	-2.852E-02		9.615E-02	1.376E-01	1.076E-02	-0.207
EU-154	-1.559E-01		1.104E-01	1.585E-01	1.595E-02	-0.983
EU-155	8.926E-02		1.003E-01	1.679E-01	1.200E-02	0.532
TB-160	1.765E-03		1.290E-01	2.112E-01	2.321E-02	0.008
HO-166M	-2.927E-02		5.046E-02	8.093E-02	6.745E-03	-0.362
TA-182	4.913E-02		1.710E-01	2.874E-01	1.758E-02	0.171
IR-192	3.912E-03		3.214E-02	5.215E-02	3.025E-03	0.075
HG-203	3.654E-02		4.242E-02	6.374E-02	3.843E-03	0.573
BI-207	3.357E-02		4.706E-02	8.215E-02	6.780E-03	0.409
PB-210	7.714E+00		5.428E+00	9.283E+00	7.117E-01	0.831
PB-211	4.199E-02		6.702E-01	9.785E-01	4.694E-01	0.043
RN-219	2.148E-02		3.396E-01	5.699E-01	7.662E-02	0.038
RA-223	3.610E-01		6.183E-01	9.021E-01	1.453E-01	0.400
AC-227	5.801E-02		2.142E-01	3.553E-01	3.599E-02	0.163
TH-227	5.801E-02		2.142E-01	3.553E-01	4.241E-02	0.163
TH-229	1.972E-01		4.727E-01	7.776E-01	4.163E-02	0.254
PA-231	-3.044E-01		1.217E+00	1.953E+00	2.554E-01	-0.156
TH-231	3.610E-01		6.183E-01	9.021E-01	1.453E-01	0.400
PA-233	-1.607E-02		5.604E-02	8.907E-02	5.458E-03	-0.180
PA-234	1.137E-01		2.406E-01	4.043E-01	7.975E-02	0.281
PA-234M	5.618E+00	+	5.174E+00	6.792E+00	7.327E-01	0.827
TH-234	2.518E+00		1.562E+00	2.604E+00	4.691E-01	0.967
U-238	2.518E+00		1.562E+00	2.604E+00	4.691E-01	0.967
NP-239	-6.526E-01		3.709E-01	5.468E-01	3.377E-02	-1.193
AM-241	-2.491E-02		1.744E-01	2.902E-01	2.406E-02	-0.086
CM-247	-7.515E-05		3.204E-02	5.220E-02	3.039E-03	-0.001
CF-249	-5.563E-03		3.462E-02	5.761E-02	3.312E-03	-0.097
CF-251	9.837E-02		1.103E-01	1.914E-01	1.012E-02	0.514

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]G248513020          *
* Acquisition date   : 20-MAR-2010 13:38:54 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 02:00:01.70                               Half life ratio  : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248513020                               Analyst initials: MXR1         *
* Batch Number       : 961097                                   Sample Quantity : 1.2266E+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	2.778E+01	2.495E+00	1.952E-01	1.273E+00
CD-109	5.171E+00	1.237E+00	5.697E-01	6.313E-01
SN-126	4.994E-01	1.195E-01	5.538E-02	6.098E-02
BA-137M	6.876E-01	8.714E-02	2.745E-02	4.446E-02
CS-137	7.264E-01	9.213E-02	2.900E-02	4.701E-02
TL-208	5.507E-01	7.769E-02	2.463E-02	3.964E-02
BI-211	4.212E+00	4.871E-01	1.342E-01	2.485E-01
BI-212	2.348E+00	7.926E-01	3.401E-01	4.044E-01
PB-212	1.704E+00	1.551E-01	3.914E-02	7.912E-02
BI-214	1.215E+00	1.724E-01	4.866E-02	8.796E-02
PB-214	1.529E+00	1.952E-01	4.878E-02	9.957E-02
RA-224	4.839E+00	1.056E+00	4.189E-01	5.386E-01
RA-226	1.215E+00	1.724E-01	4.866E-02	8.796E-02
AC-228	1.704E+00	3.456E-01	9.237E-02	1.763E-01
RA-228	1.704E+00	3.456E-01	9.237E-02	1.763E-01
TH-228	1.704E+00	1.551E-01	3.914E-02	7.912E-02
TH-232	1.704E+00	3.456E-01	9.237E-02	1.763E-01
U-235	4.941E-02	1.872E-01	1.563E-01	9.550E-02
NP-237	1.490E+00	4.701E-01	1.679E-01	2.398E-01
ANH-511	1.025E-01	7.029E-02	2.003E-02	3.586E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.068E-01	2.938E-01	2.557E-01	1.499E-01 NOT IDENT.
NA-22	-5.241E-02	3.810E-02	2.830E-02	1.944E-02 NOT IDENT.
NA-24	-3.631E+09	5.199E+09	0.000E+00	2.652E+09 SHORT HLIF
SC-46	-1.929E-02	3.634E-02	2.925E-02	1.854E-02 FAIL ABUN
V-48	-1.791E-03	7.927E-02	6.563E-02	4.044E-02 NOT IDENT.
CR-51	-2.787E-01	3.913E-01	3.152E-01	1.996E-01 NOT IDENT.
MN-54	1.590E-02	3.311E-02	2.875E-02	1.689E-02 NOT IDENT.

CO-56	9.736E-04	3.450E-02	2.913E-02	1.760E-02	FAIL ABUN
CO-57	2.293E-03	2.301E-02	1.951E-02	1.174E-02	NOT IDENT.
CO-58	-2.816E-02	3.560E-02	2.333E-02	1.817E-02	NOT IDENT.
FE-59	-7.754E-05	8.375E-02	7.134E-02	4.273E-02	NOT IDENT.
CO-60	-1.355E-02	3.147E-02	2.514E-02	1.605E-02	NOT IDENT.
ZN-65	1.578E-01	8.447E-02	7.207E-02	4.310E-02	NOT IDENT.
SE-75	3.653E-02	4.363E-02	3.430E-02	2.226E-02	NOT IDENT.
SR-85	9.393E-02	3.721E-02	3.487E-02	1.898E-02	NOT IDENT.
Y-88	-1.121E-02	3.279E-02	2.126E-02	1.673E-02	NOT IDENT.
Y-91	1.134E+01	2.008E+01	1.755E+01	1.024E+01	NOT IDENT.
NB-94	1.004E-02	2.874E-02	2.516E-02	1.466E-02	NOT IDENT.
NB-95	6.856E-02	4.506E-02	3.685E-02	2.299E-02	NOT IDENT.
NB-95M	9.194E-02	1.301E-01	1.019E-01	6.639E-02	NOT IDENT.
ZR-95	3.856E-02	6.166E-02	5.465E-02	3.146E-02	NOT IDENT.
MO-99	4.808E+01	7.238E+01	0.000E+00	3.693E+01	SHORT HLIF
TC-99M	-2.352E+26	1.613E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.903E-03	3.644E-02	3.060E-02	1.859E-02	FAIL ABUN
RH-106	9.883E-02	2.704E-01	2.298E-01	1.380E-01	NOT IDENT.
RU-106	9.883E-02	2.703E-01	2.298E-01	1.379E-01	NOT IDENT.
AG-108M	-2.284E-02	2.475E-02	2.021E-02	1.263E-02	NOT IDENT.
AG-110M	1.119E-01	3.807E-02	3.358E-02	1.943E-02	NOT IDENT.
SN-113	7.913E-03	3.813E-02	3.347E-02	1.945E-02	NOT IDENT.
CD-115	4.127E+01	1.058E+02	0.000E+00	5.396E+01	SHORT HLIF
SN-117M	-1.155E-02	6.983E-02	6.037E-02	3.563E-02	NOT IDENT.
TE-123M	-7.097E-03	2.528E-02	2.176E-02	1.290E-02	NOT IDENT.
SB-124	-5.739E-02	6.226E-02	4.454E-02	3.176E-02	NOT IDENT.
SB-125	1.986E-02	7.381E-02	6.452E-02	3.766E-02	FAIL ABUN
TE-125M	-5.488E+00	9.911E+00	8.245E+00	5.056E+00	NOT IDENT.
I-126	1.994E-01	3.278E-01	2.561E-01	1.672E-01	NOT IDENT.
SB-126	8.740E-03	2.104E-01	1.559E-01	1.073E-01	NOT IDENT.
SB-127	-8.269E-01	4.382E+00	3.728E+00	2.236E+00	NOT IDENT.
I-131	-2.311E-01	1.838E-01	1.500E-01	9.379E-02	NOT IDENT.
TE-132	-7.164E-02	3.500E+00	3.018E+00	1.786E+00	NOT IDENT.
BA-133	-4.686E-03	3.828E-02	2.737E-02	1.953E-02	FAIL ABUN
I-133	9.166E+05	2.789E+06	0.000E+00	1.423E+06	SHORT HLIF
CS-134	9.692E-02	4.028E-02	3.810E-02	2.055E-02	NOT IDENT.
CS-135	1.495E-01	1.584E-01	1.243E-01	8.083E-02	NOT IDENT.
I-135	-7.167E+23	2.826E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.383E-02	1.236E-01	1.042E-01	6.304E-02	NOT IDENT.
CE-139	4.253E-03	2.634E-02	2.346E-02	1.344E-02	NOT IDENT.
BA-140	1.769E-01	3.449E-01	2.957E-01	1.760E-01	NOT IDENT.
LA-140	-6.320E-02	1.082E-01	8.550E-02	5.522E-02	FAIL ABUN
CE-141	2.070E-02	6.839E-02	5.719E-02	3.489E-02	NOT IDENT.
CE-143	4.094E+04	1.248E+04	0.000E+00	6.366E+03	SHORT HLIF
CE-144	-5.490E-02	1.886E-01	1.481E-01	9.622E-02	NOT IDENT.
PM-144	-1.481E-02	2.937E-02	2.449E-02	1.498E-02	NOT IDENT.
PR-144	-1.116E+00	2.207E+00	1.840E+00	1.126E+00	NOT IDENT.
PM-146	2.587E-02	3.684E-02	3.191E-02	1.880E-02	NOT IDENT.
ND-147	1.617E-01	7.405E-01	6.335E-01	3.778E-01	FAIL ABUN
PM-149	-3.525E+01	9.220E+02	0.000E+00	4.704E+02	SHORT HLIF
EU-152	-5.884E-02	1.010E-01	6.435E-02	5.153E-02	NOT IDENT.
GD-153	-2.852E-02	9.423E-02	7.115E-02	4.807E-02	NOT IDENT.
EU-154	-1.559E-01	1.082E-01	7.932E-02	5.520E-02	NOT IDENT.
EU-155	8.926E-02	9.832E-02	8.676E-02	5.017E-02	FAIL ABUN
TB-160	1.765E-03	1.264E-01	1.062E-01	6.450E-02	FAIL ABUN
HO-166M	-2.927E-02	4.945E-02	4.081E-02	2.523E-02	FAIL ABUN
TA-182	4.913E-02	1.675E-01	1.439E-01	8.548E-02	NOT IDENT.
IR-192	3.912E-03	3.150E-02	2.657E-02	1.607E-02	FAIL ABUN
HG-203	3.654E-02	4.157E-02	3.253E-02	2.121E-02	NOT IDENT.
BI-207	3.357E-02	4.612E-02	4.120E-02	2.353E-02	FAIL ABUN
PB-210	7.714E+00	5.319E+00	4.845E+00	2.714E+00	NOT IDENT.
PB-211	4.199E-02	6.568E-01	4.970E-01	3.351E-01	NOT IDENT.
RN-219	2.148E-02	3.328E-01	2.895E-01	1.698E-01	FAIL ABUN
RA-223	3.610E-01	6.059E-01	4.595E-01	3.091E-01	FAIL ABUN
AC-227	5.801E-02	2.099E-01	1.815E-01	1.071E-01	FAIL ABUN
TH-227	5.801E-02	2.099E-01	1.815E-01	1.071E-01	FAIL ABUN
TH-229	1.972E-01	4.633E-01	3.987E-01	2.364E-01	FAIL ABUN
PA-231	-3.044E-01	1.192E+00	9.964E-01	6.084E-01	FAIL ABUN
TH-231	3.610E-01	6.059E-01	4.595E-01	3.091E-01	FAIL ABUN
PA-233	-1.607E-02	5.492E-02	4.539E-02	2.802E-02	FAIL ABUN
PA-234	1.137E-01	2.358E-01	2.031E-01	1.203E-01	NOT IDENT.
PA-234M	5.618E+00	5.071E+00	3.409E+00	2.587E+00	FAIL ABUN
TH-234	2.518E+00	1.531E+00	1.354E+00	7.810E-01	FAIL ABUN
U-238	2.518E+00	1.531E+00	1.354E+00	7.810E-01	FAIL ABUN
NP-239	-6.526E-01	3.635E-01	2.822E-01	1.854E-01	FAIL ABUN
AM-241	-2.491E-02	1.709E-01	1.510E-01	8.719E-02	NOT IDENT.
CM-247	-7.515E-05	3.140E-02	2.652E-02	1.602E-02	FAIL ABUN
CF-249	-5.563E-03	3.393E-02	2.928E-02	1.731E-02	NOT IDENT.

CF-251	9.837E-02	1.081E-01	9.827E-02	5.515E-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
46.54	262.3129
49.72	307.9338
57.36	0.0000
59.54	331.5581
63.29	322.6515
63.29	322.6515
64.28	329.4015
67.75	371.4465
69.67	349.6401
70.83	427.7559
72.81	373.4707
72.87	373.5391
72.87	373.5391
74.82	375.7383
74.82	375.7383
74.82	375.7383
74.97	375.9063
77.11	378.2852
77.11	378.2852
77.11	378.2852
79.69	381.1113
79.80	381.2305
80.12	381.5781
80.19	381.6523
80.57	337.2913
81.00	337.6999
81.07	337.7672
81.07	337.7672
83.79	320.7545
83.79	320.7545
85.43	322.1927
86.48	323.1060
86.55	323.1678
86.79	323.3725
86.94	323.5042
87.57	324.0486
88.03	324.4451
88.47	324.8221
89.96	326.0945
91.11	327.0695
92.59	328.3159
92.59	328.3159
93.35	328.9514
94.67	336.2480
94.87	336.4169
94.87	336.4169
95.86	349.6828
97.43	383.8082
98.44	358.6902
99.53	351.2783
100.11	358.0521
103.18	376.5016
103.37	377.7256
105.31	315.8490
106.12	331.3080
109.28	355.0972
111.00	332.8502
111.76	353.8480
116.30	326.9644
117.23	359.1835
121.12	257.8966
121.78	291.2199
122.06	303.4852
123.07	314.0381
131.20	299.0659
133.52	321.3523
136.00	322.2137

136.47	325.8984
140.51	0.0000
140.51	0.0000
143.76	332.6722
144.24	330.6680
144.24	330.6680
145.44	318.7371
152.43	356.5300
153.25	323.7895
154.21	302.4172
154.21	302.4172
156.02	339.4198
158.56	309.1072
159.00	311.1045
162.66	335.2594
163.33	328.5139
165.86	323.6325
176.60	292.8763
177.52	285.1010
181.07	0.0000
184.41	282.6128
185.72	283.1725
193.51	307.1225
197.04	329.1964
205.31	309.7279
210.85	276.9154
215.65	306.8737
222.11	273.7340
227.38	281.4763
228.16	289.5842
228.18	289.5909
235.69	301.8369
235.96	308.2628
235.96	308.2628
238.63	253.7734
238.63	253.7734
240.99	254.5117
242.00	254.8262
244.70	226.9036
252.40	239.8902
252.80	238.9962
256.23	228.8226
256.23	228.8226
260.90	0.0000
264.66	204.4769
268.22	254.5769
269.46	248.7612
269.46	248.7612
271.23	233.4629
273.65	251.9936
276.40	238.6723
277.37	220.6741
277.60	220.7294
278.00	222.4871
279.20	217.7907
279.54	217.8707
280.46	208.1024
283.69	218.2260
284.31	230.9109
285.41	225.9536
285.90	0.0000
287.50	219.1190
293.27	0.0000
295.22	214.7776
295.96	186.1729
298.57	186.6777
299.98	188.6485
299.98	188.6485
300.09	188.6702
300.09	188.6702
300.13	188.6756
301.36	185.5102
302.85	187.4995
304.50	196.3507
304.50	196.3507
304.85	189.5889
308.46	189.6398
311.90	210.7203

316.51	195.4859
319.41	216.6229
320.08	223.2662
323.87	182.7554
323.87	182.7554
328.76	229.0837
333.37	175.6396
334.37	195.5838
334.37	195.5838
338.28	212.8430
338.28	212.8430
338.32	212.8519
338.32	212.8519
338.32	212.8519
340.48	182.1184
340.55	182.1284
344.28	197.3954
351.06	170.7266
351.93	170.8596
356.01	164.9868
364.49	195.1436
366.42	0.0000
383.85	190.1509
388.16	194.5259
388.63	194.6032
391.69	171.0573
400.66	184.4286
401.81	174.3458
402.40	176.1910
404.85	166.6738
410.95	139.3142
414.70	144.4388
423.72	160.3251
427.09	162.6462
427.87	151.3217
433.94	179.7543
453.88	150.9641
463.37	152.4428
468.07	120.9275
473.00	143.6546
476.78	147.9840
477.60	140.1730
487.02	126.1907
492.35	0.0000
497.08	133.0666
511.00	143.4049
514.00	143.6892
527.90	0.0000
529.87	0.0000
531.02	119.7108
537.26	124.2997
546.56	0.0000
563.25	121.1090
569.33	135.1823
569.50	127.8587
569.70	127.8766
583.19	131.0265
600.60	154.7882
602.73	167.4490
604.72	144.4559
609.32	137.6857
609.32	137.6857
610.33	125.2429
614.28	121.9385
618.01	134.7748
621.93	118.8650
621.93	118.8650
633.25	119.6169
635.95	94.7463
636.99	105.6983
645.85	121.5418
657.76	105.4820
661.66	151.4531
661.66	151.4531
664.57	0.0000
666.33	124.9419
666.50	124.9529
677.62	109.5111

685.70	113.6999
695.00	115.1824
696.49	141.5103
696.51	141.5133
697.00	140.6097
702.65	132.5547
706.68	130.9403
711.68	126.5465
720.70	113.8354
721.93	0.0000
722.78	109.0713
722.91	109.0783
723.31	109.0993
724.19	101.0008
727.33	111.3538
733.00	101.4398
735.93	109.5949
739.50	0.0000
747.24	92.2559
752.31	108.8572
753.82	101.2231
756.73	91.7104
763.94	91.3316
765.81	108.0326
766.42	116.3770
777.92	0.0000
778.90	120.4026
783.70	103.6299
785.37	102.1443
795.86	80.6153
801.95	80.8372
810.29	89.9052
810.76	84.8354
815.77	90.1270
818.51	80.4463
832.01	100.9096
834.85	115.0398
836.80	0.0000
846.77	94.5202
856.80	76.1729
860.56	84.9656
871.09	75.1849
873.19	85.4202
875.33	0.0000
879.36	93.7969
880.51	77.5215
883.24	88.8426
884.68	100.1354
889.28	106.4692
898.04	104.7994
911.20	85.7373
911.20	85.7373
911.20	85.7373
926.50	86.2658
937.49	115.8712
944.13	71.1695
946.00	72.2695
949.00	99.6193
962.29	117.4498
964.08	113.9150
966.15	137.5326
968.97	136.3224
968.97	136.3224
968.97	136.3224
983.53	77.5729
996.26	69.5562
1001.03	80.6830
1004.73	69.7762
1037.84	73.4150
1038.76	0.0000
1048.07	77.4188
1050.41	72.8149
1050.41	72.8149
1063.66	90.0435
1085.87	82.2392
1099.45	87.3730
1112.07	75.1135
1115.54	68.5168

1120.29	75.3223
1120.29	75.3223
1120.55	75.3305
1121.30	77.0242
1131.51	0.0000
1173.23	79.8179
1177.93	98.4637
1189.05	102.7295
1204.77	98.3294
1221.41	97.8571
1231.02	98.8942
1235.36	114.6661
1238.28	123.4656
1260.41	0.0000
1271.85	79.3113
1274.44	103.4850
1274.54	102.4838
1291.59	65.6438
1298.22	0.0000
1312.11	47.7540
1332.49	59.2825
1365.19	45.7404
1368.63	0.0000
1384.29	45.1810
1408.01	39.6792
1457.56	0.0000
1460.82	30.7184
1489.16	44.8242
1505.03	35.0091
1596.21	44.1442
1620.50	30.8926
1678.03	0.0000
1690.97	27.4899
1764.49	15.9766
1764.49	15.9766
1770.23	21.3294
1771.35	28.4470
1791.20	0.0000
1836.06	23.4461

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248513020

Total Uranium Activity	7.5131E+00	ug/g
Total Uranium Counting Unc.	4.5550E+00	ug/g
Total Uranium Tpu	2.3240E-06	ug/g
Total Uranium Mda	4.0293E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G248513020
*  ANALYST       : MXR1            DETECTOR    : GAM18
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 20-MAR-2010 13:38:54.92  SAMPLE ALQT: 122.660 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.062E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.415E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.884E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.398E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:36:23.64

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                          *
*                                     Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061452.CNF;1
Sample date        : 8-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 13:33:46
Sample ID          : G1202061452      Sample quantity   : 1.39590E+02 GRAM
Detector name      : GAM19             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.66  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 961097             Detector SN#      :
Matrix Spike ID    :                    LCS ID           : 1032-A
*****
No peaks were found
```


VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 15:36:26

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061452.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 8-MAR-2010 00:00:00   Acquisition date : 20-MAR-2010 13:33:46
Sample ID        : G1202061452           Sample quantity  : 139.59 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name    : GAMMA19               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:00.66   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

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	2.039E-02	1.376E-01	2.326E-01	1.578E-02	0.088
NA-22		1274.54	*	2.670E-03	1.869E-02	3.197E-02	2.133E-03	0.084
NA-24		1368.63	*	-7.362E-03	1.869E-02	Half-Life too short		
K-40		1460.82	*	2.276E-01	2.300E-01	4.425E-01	3.296E-02	0.514
SC-46		889.28	*	-4.499E-03	2.111E-02	3.280E-02	2.850E-03	-0.137
		1120.55		-3.523E-03	2.072E-02	3.350E-02	2.113E-03	-0.105
V-48		944.13		6.990E-02	4.194E-01	6.947E-01	5.852E-02	0.101
		983.53	*	2.359E-04	3.118E-02	5.015E-02	4.032E-03	0.005
		1312.11		-1.313E-02	3.575E-02	5.470E-02	3.893E-03	-0.240
CR-51		320.08	*	-4.028E-02	1.782E-01	2.925E-01	1.890E-02	-0.138
MN-54		834.85	*	-1.575E-03	1.970E-02	3.147E-02	2.503E-03	-0.050
CO-56		846.77	*	4.809E-03	2.122E-02	3.461E-02	2.808E-03	0.139
		1037.84		-5.220E-03	1.490E-01	2.484E-01	1.973E-02	-0.021
		1238.28		1.720E-02	3.881E-02	6.909E-02	4.539E-03	0.249
		1771.35		5.854E-02	1.774E-01	3.097E-01	1.867E-02	0.189
CO-57		122.06	*	4.724E-03	1.142E-02	1.923E-02	1.148E-03	0.246
		136.47		-1.452E-02	9.153E-02	1.465E-01	9.651E-03	-0.099
CO-58		810.76	*	1.848E-02	2.006E-02	3.710E-02	2.843E-03	0.498
FE-59		1099.45	*	1.982E-02	4.049E-02	7.340E-02	5.507E-03	0.270
		1291.59		8.100E-03	5.043E-02	8.663E-02	7.173E-03	0.093
CO-60		1173.23		-1.093E-02	2.262E-02	3.230E-02	1.770E-03	-0.338
		1332.49	*	1.578E-02	2.293E-02	4.243E-02	3.127E-03	0.372
ZN-65		1115.54	*	-7.442E-03	3.920E-02	6.321E-02	4.041E-03	-0.118
SE-75		121.12		1.024E-02	5.925E-02	9.787E-02	9.010E-03	0.105
		136.00		-7.017E-03	1.802E-02	2.825E-02	1.628E-03	-0.248
		264.66	*	-7.746E-03	2.110E-02	3.439E-02	2.001E-03	-0.225
		279.54		-3.949E-02	5.546E-02	8.182E-02	5.129E-03	-0.483
		400.66		-1.144E-01	1.245E-01	1.841E-01	1.647E-02	-0.621
SR-85		514.00	*	-4.932E-02	3.314E-02	4.868E-02	2.875E-03	-1.013
Y-88		898.04		-2.205E-03	2.442E-02	3.883E-02	3.437E-03	-0.057
		1836.06	*	-4.250E-03	1.958E-02	2.966E-02	1.693E-03	-0.143
Y-91		1204.77	*	-5.593E+00	8.140E+00	1.147E+01	6.697E-01	-0.488
NB-94		702.65	*	1.116E-02	1.934E-02	3.383E-02	2.131E-03	0.330
		871.09		-1.712E-02	2.068E-02	2.875E-02	2.426E-03	-0.596

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	765.81	*		-3.650E-03	1.775E-02	2.775E-02	1.961E-03	-0.132
NB-95M	235.69	*		-4.293E-02	5.862E-02	8.704E-02	6.469E-03	-0.493
ZR-95	724.19			-7.997E-03	4.015E-02	6.313E-02	4.726E-03	-0.127
	756.73	*		1.174E-02	3.023E-02	5.263E-02	4.234E-03	0.223
MO-99	140.51			2.228E+00	5.473E+00	9.135E+00	2.085E+00	0.244
	181.07			-2.800E+00	4.597E+00	6.972E+00	1.221E+00	-0.402
	366.42			1.415E+01	2.685E+01	4.721E+01	2.687E+00	0.300
	739.50	*		1.188E+00	3.583E+00	6.102E+00	9.039E-01	0.195
	777.92			2.228E+00	9.535E+00	1.607E+01	1.160E+00	0.139
TC-99M	140.51	*		6.322E+06	9.535E+00	Half-Life too short		
RU-103	497.08	*		-3.868E-03	2.136E-02	3.454E-02	4.305E-03	-0.112
	610.33			3.876E-02	4.344E-01	7.049E-01	1.064E-01	0.055
RH-106	621.93	*		-1.089E-01	1.650E-01	2.431E-01	2.836E-02	-0.448
	1050.41			-1.485E-01	1.343E+00	2.210E+00	1.607E-01	-0.067
RU-106	621.93	*		-1.089E-01	1.646E-01	2.431E-01	1.433E-02	-0.448
	1050.41			-1.485E-01	1.343E+00	2.210E+00	1.607E-01	-0.067
AG-108M	433.94	*		7.143E-03	1.497E-02	2.621E-02	1.608E-03	0.273
	614.28			-1.711E-02	1.886E-02	2.693E-02	1.700E-03	-0.636
	722.91			-9.294E-03	1.657E-02	2.419E-02	1.669E-03	-0.384
CD-109	88.03	*		-3.942E-01	3.288E-01	4.849E-01	4.343E-02	-0.813
AG-110M	657.76	*		-1.044E-02	1.802E-02	2.685E-02	1.666E-03	-0.389
	677.62			-5.941E-02	1.530E-01	2.341E-01	1.488E-02	-0.254
	706.68			-9.628E-02	1.208E-01	1.742E-01	1.164E-02	-0.553
	763.94			-2.502E-02	7.321E-02	1.116E-01	8.185E-03	-0.224
	884.68			-8.204E-03	2.656E-02	4.049E-02	3.605E-03	-0.203
	937.49			-1.946E-02	6.148E-02	9.347E-02	8.226E-03	-0.208
	1384.29			3.306E-02	8.018E-02	1.442E-01	1.092E-02	0.229
	1505.03			3.655E-02	1.430E-01	2.500E-01	1.761E-02	0.146
SN-113	391.69	*		-7.289E-03	2.081E-02	3.322E-02	1.982E-03	-0.219
CD-115	260.90			-1.729E+01	3.317E+01	5.005E+01	2.874E+00	-0.346
	492.35			-5.129E+00	8.728E+00	1.328E+01	7.796E-01	-0.386
	527.90	*		-9.166E-01	2.675E+00	4.096E+00	2.424E-01	-0.224
SN-117M	156.02			2.718E-01	8.954E-01	1.488E+00	7.973E-02	0.183
	158.56	*		5.702E-03	2.213E-02	3.662E-02	1.949E-03	0.156
TE-123M	159.00	*		4.752E-03	1.322E-02	2.204E-02	1.190E-03	0.216
SB-124	602.73			-7.648E-04	2.263E-02	3.699E-02	2.190E-03	-0.021
	645.85			2.539E-02	2.742E-01	4.541E-01	2.981E-02	0.056
	722.78			-9.417E-02	1.611E-01	2.338E-01	1.589E-02	-0.403
	1690.97	*		-3.168E-02	4.540E-02	5.799E-02	3.988E-03	-0.546
SB-125	427.87	*		3.511E-02	4.632E-02	8.335E-02	4.956E-03	0.421
	463.37			2.859E-02	1.262E-01	2.151E-01	1.449E-02	0.133
	600.60			-4.253E-02	1.095E-01	1.716E-01	1.170E-02	-0.248
	635.95			-8.248E-02	1.476E-01	2.219E-01	1.523E-02	-0.372
TE-125M	109.28	*		-1.043E+00	3.968E+00	6.320E+00	5.694E-01	-0.165
I-126	388.63			8.308E-03	6.977E-02	1.179E-01	6.579E-03	0.070
	666.33	*		5.077E-02	1.021E-01	1.782E-01	1.047E-02	0.285
	753.82			4.596E-01	7.122E-01	1.285E+00	8.890E-02	0.358
SB-126	414.70			1.574E-02	3.179E-02	5.585E-02	3.160E-03	0.282
	666.50			1.570E-02	3.461E-02	6.007E-02	3.531E-03	0.261

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	695.00			-2.126E-02	3.515E-02	5.200E-02	3.228E-03	-0.409
	697.00			-3.362E-02	1.265E-01	1.984E-01	1.237E-02	-0.169
	720.70	*		-5.462E-02	5.944E-02	8.057E-02	5.248E-03	-0.678
	856.80			-6.096E-02	2.086E-01	3.195E-01	2.636E-02	-0.191
SN-126	64.28			1.954E-01	2.437E-01	3.904E-01	5.701E-02	0.501
	86.94			-2.442E-02	1.318E-01	2.122E-01	8.787E-02	-0.115
	87.57	*		-1.370E-02	3.121E-02	4.934E-02	4.401E-03	-0.278
SB-127	252.40			4.549E-01	1.475E+00	2.406E+00	9.825E-01	0.189
	473.00			2.029E-01	5.487E-01	9.468E-01	9.804E-02	0.214
	685.70	*		-1.555E-01	4.357E-01	6.717E-01	5.882E-02	-0.231
	783.70			1.043E+00	1.102E+00	2.041E+00	2.198E-01	0.511
I-131	80.19			3.097E-01	1.316E+00	2.201E+00	1.834E-01	0.141
	284.31			1.983E-02	5.972E-01	1.008E+00	6.466E-02	0.020
	364.49	*		-1.663E-02	4.988E-02	8.048E-02	5.117E-03	-0.207
	636.99			-3.580E-01	7.026E-01	1.067E+00	6.993E-02	-0.335
TE-132	49.72			-4.773E-01	4.224E+00	6.924E+00	6.326E-01	-0.069
	111.76			-4.516E-01	8.237E+00	1.337E+01	1.164E+00	-0.034
	116.30			2.301E-01	7.361E+00	1.203E+01	1.021E+00	0.019
	228.16	*		1.187E-01	2.144E-01	3.599E-01	4.998E-02	0.330
BA-133	81.00			2.316E-02	3.377E-02	5.822E-02	8.948E-03	0.398
	276.40			-6.992E-02	1.683E-01	2.723E-01	3.427E-02	-0.257
	302.85			-6.889E-02	7.208E-02	1.096E-01	1.251E-02	-0.628
	356.01	*		-1.680E-02	2.048E-02	3.096E-02	3.480E-03	-0.543
	383.85			-2.470E-02	1.446E-01	2.364E-01	2.497E-02	-0.104
I-133	529.87	*		-1.988E-04	1.446E-01	Half-Life too short		
	875.33			4.876E-03	1.446E-01	Half-Life too short		
	1298.22			-2.074E-02	1.446E-01	Half-Life too short		
CS-134	563.25			-2.178E-01	2.141E-01	3.072E-01	1.860E-02	-0.709
	569.33			9.714E-02	1.317E-01	2.264E-01	1.383E-02	0.429
	604.72			-1.036E-02	2.060E-02	3.186E-02	1.895E-03	-0.325
	795.86	*		8.052E-03	2.058E-02	3.569E-02	2.684E-03	0.226
	801.95			4.488E-02	1.908E-01	3.220E-01	2.441E-02	0.139
	1365.19			-1.951E-01	6.913E-01	1.075E+00	8.379E-02	-0.181
CS-135	268.22	*		2.246E-02	7.717E-02	1.333E-01	1.017E-02	0.169
I-135	546.56			3.471E+06	7.717E-02	Half-Life too short		
	836.80			1.327E+07	7.717E-02	Half-Life too short		
	1038.76			5.218E+06	7.717E-02	Half-Life too short		
	1131.51			-2.869E+06	7.717E-02	Half-Life too short		
	1260.41	*		1.848E+06	7.717E-02	Half-Life too short		
	1457.56			-1.636E+06	7.717E-02	Half-Life too short		
	1678.03			1.504E+06	7.717E-02	Half-Life too short		
	1791.20			-1.281E+06	7.717E-02	Half-Life too short		
CS-136	153.25			3.657E-02	3.273E-01	5.352E-01	4.153E-02	0.068
	176.60			3.981E-02	2.082E-01	3.415E-01	2.265E-02	0.117
	273.65			4.780E-04	2.152E-01	3.627E-01	2.472E-02	0.001
	340.55			1.072E-02	5.846E-02	9.967E-02	6.230E-03	0.108
	818.51			2.574E-02	3.366E-02	6.119E-02	4.740E-03	0.421
	1048.07	*		-3.943E-03	4.983E-02	8.246E-02	6.367E-03	-0.048
	1235.36			-1.536E-01	2.317E-01	3.408E-01	3.449E-02	-0.451

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-137M	661.66	*		1.087E-03	1.811E-02	2.986E-02	1.739E-03	0.036
CS-137	661.66	*		1.148E-03	1.913E-02	3.154E-02	1.844E-03	0.036
CE-139	165.86	*		7.320E-03	1.362E-02	2.304E-02	1.203E-03	0.318
BA-140	162.66			1.895E-02	3.651E-01	5.625E-01	3.469E-02	0.034
	304.85			2.988E-01	5.853E-01	1.018E+00	2.910E-01	0.293
	423.72			5.344E-01	8.917E-01	1.551E+00	5.003E-01	0.345
	537.26	*		-7.866E-03	1.378E-01	2.256E-01	7.520E-02	-0.035
LA-140	328.76			-2.007E-02	1.297E-01	2.142E-01	1.394E-02	-0.094
	487.02			4.894E-03	6.008E-02	1.004E-01	6.648E-03	0.049
	815.77			5.126E-02	1.534E-01	2.618E-01	2.309E-02	0.196
	1596.21	*		6.075E-02	4.096E-02	8.853E-02	5.991E-03	0.686
CE-141	145.44	*		-6.734E-03	2.743E-02	4.353E-02	2.507E-03	-0.155
CE-143	57.36			-1.089E-04	2.743E-02	Half-Life	too short	
	293.27	*		1.784E-06	2.743E-02	Half-Life	too short	
	664.57			-1.114E-04	2.743E-02	Half-Life	too short	
	721.93			-1.167E-04	2.743E-02	Half-Life	too short	
CE-144	80.12			1.871E-01	8.796E-01	1.469E+00	1.217E-01	0.127
	133.52	*		1.961E-02	8.893E-02	1.471E-01	2.039E-02	0.133
PM-144	476.78			2.741E-02	2.898E-02	5.389E-02	3.714E-03	0.509
	618.01			8.077E-03	1.595E-02	2.800E-02	1.750E-03	0.288
	696.49	*		-2.303E-03	1.787E-02	2.860E-02	1.781E-03	-0.081
PR-144	696.51	*		-1.646E-01	1.337E+00	2.141E+00	1.333E-01	-0.077
	1489.16			3.544E+00	7.682E+00	1.388E+01	9.841E-01	0.255
PM-146	453.88	*		2.149E-03	2.229E-02	3.737E-02	3.156E-03	0.058
	633.25			1.002E-01	7.825E-01	1.302E+00	4.905E-01	0.077
	735.93			1.039E-02	7.423E-02	1.234E-01	3.392E-02	0.084
	747.24			2.099E-02	5.201E-02	8.955E-02	1.218E-02	0.234
ND-147	91.11			1.834E-01	1.019E-01	1.840E-01	1.700E-02	0.997
	319.41			-1.193E-01	1.483E+00	2.469E+00	1.435E-01	-0.048
	531.02	*		1.421E-02	2.469E-01	4.101E-01	5.567E-02	0.035
PM-149	285.90	*		7.175E+00	2.105E+01	3.644E+01	5.162E+00	0.197
EU-152	121.78			1.360E-02	3.331E-02	5.605E-02	4.323E-03	0.243
	244.70			-8.197E-02	1.639E-01	2.488E-01	1.414E-02	-0.329
	344.28	*		5.706E-03	4.470E-02	7.585E-02	4.933E-03	0.075
	778.90			-5.192E-02	1.353E-01	2.055E-01	1.486E-02	-0.253
	964.08			-5.447E-02	1.291E-01	1.902E-01	1.566E-02	-0.286
	1085.87			9.970E-02	2.011E-01	3.624E-01	2.465E-02	0.275
	1112.07			7.813E-02	1.264E-01	2.357E-01	1.516E-02	0.332
	1408.01			3.578E-02	1.138E-01	1.985E-01	1.442E-02	0.180
GD-153	69.67			4.079E-01	6.333E-01	1.094E+00	8.418E-02	0.373
	97.43	*		7.083E-03	3.627E-02	6.026E-02	4.686E-03	0.118
	103.18			-7.757E-03	4.811E-02	7.751E-02	5.613E-03	-0.100
EU-154	123.07			1.871E-03	2.344E-02	3.840E-02	3.638E-03	0.049
	723.31			-4.056E-02	7.752E-02	1.145E-01	8.767E-03	-0.354
	873.19			-3.247E-02	1.737E-01	2.724E-01	3.211E-02	-0.119
	996.26			-9.207E-02	1.904E-01	2.759E-01	4.726E-02	-0.334
	1004.73			-6.433E-02	1.034E-01	1.541E-01	1.703E-02	-0.418
	1274.44	*		2.551E-03	5.438E-02	9.116E-02	9.094E-03	0.028
EU-155	86.55			1.036E-02	3.796E-02	6.350E-02	5.658E-03	0.163

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TB-160	105.31	*		7.687E-03	4.538E-02	7.515E-02	5.403E-03	0.102
	86.79			1.785E-02	9.745E-02	1.620E-01	1.433E-02	0.110
	197.04			-1.134E-01	3.033E-01	4.468E-01	2.421E-02	-0.254
	215.65			-4.926E-01	3.567E-01	4.906E-01	2.715E-02	-1.004
	298.57			6.991E-02	5.522E-02	1.023E-01	5.946E-03	0.684
	879.36	*		-6.637E-04	8.267E-02	1.333E-01	1.140E-02	-0.005
	962.29			9.064E-03	2.465E-01	3.989E-01	3.292E-02	0.023
	966.15			-7.093E-02	8.849E-02	1.187E-01	9.749E-03	-0.598
	1177.93			-4.223E-02	1.329E-01	2.057E-01	1.138E-02	-0.205
	1271.85			3.169E-01	2.899E-01	5.848E-01	3.875E-02	0.542
HO-166M	80.57			3.817E-02	9.712E-02	1.644E-01	1.368E-02	0.232
	184.41			-4.194E-03	1.901E-02	3.131E-02	1.670E-03	-0.134
	280.46			-1.753E-02	3.994E-02	6.442E-02	3.732E-03	-0.272
	410.95			-8.719E-02	1.159E-01	1.748E-01	9.861E-03	-0.499
	711.68	*		2.723E-02	3.381E-02	6.095E-02	3.904E-03	0.447
	752.31			-9.599E-03	1.283E-01	2.057E-01	1.419E-02	-0.047
	810.29			3.415E-02	3.106E-02	5.867E-02	4.478E-03	0.582
	67.75			-8.448E-02	4.763E-02	6.559E-02	5.005E-03	-1.288
	100.11			-3.963E-02	8.267E-02	1.237E-01	9.292E-03	-0.320
	152.43			-2.637E-02	1.492E-01	2.376E-01	1.286E-02	-0.111
TA-182	222.11			6.044E-03	1.771E-01	2.848E-01	1.586E-02	0.021
	1121.30			1.042E-02	5.765E-02	9.949E-02	6.264E-03	0.105
	1189.05			-6.209E-02	1.290E-01	1.941E-01	1.098E-02	-0.320
	1221.41	*		-6.827E-03	8.276E-02	1.356E-01	8.177E-03	-0.050
	1231.02			8.665E-02	2.158E-01	3.821E-01	2.347E-02	0.227
	295.96			-4.342E-02	5.413E-02	8.465E-02	5.000E-03	-0.513
	308.46			9.434E-03	4.899E-02	8.369E-02	4.923E-03	0.113
	316.51	*		7.144E-03	1.721E-02	3.000E-02	1.753E-03	0.238
	468.07			-2.177E-02	3.381E-02	5.147E-02	3.456E-03	-0.423
	70.83			-5.691E-02	4.939E-01	8.051E-01	1.256E-01	-0.071
HG-203	72.87			7.632E-02	2.706E-01	4.545E-01	6.869E-02	0.168
	279.20	*		-9.675E-03	1.853E-02	2.777E-02	1.698E-03	-0.348
BI-207	72.81			2.566E-03	6.618E-02	1.091E-01	8.549E-03	0.024
	74.97			1.280E-03	4.118E-02	6.391E-02	5.079E-03	0.020
	569.70			1.276E-02	2.068E-02	3.516E-02	2.087E-03	0.363
TL-208	1063.66	*		2.948E-02	2.975E-02	5.654E-02	4.014E-03	0.521
	1770.23			-1.437E-01	3.520E-01	5.194E-01	3.133E-02	-0.277
	277.37			-9.053E-02	1.927E-01	2.913E-01	3.139E-02	-0.311
	583.19	*		1.210E-02	2.243E-02	3.695E-02	2.507E-03	0.328
	860.56			-4.125E-02	1.325E-01	2.009E-01	1.799E-02	-0.205
PB-210	46.54	*		6.916E-02	1.528E+00	2.406E+00	1.814E-01	0.029
BI-211	72.87			3.184E-01	1.128E+00	1.896E+00	1.486E-01	0.168
	351.06	*		4.001E-02	1.105E-01	1.770E-01	1.130E-02	0.226
PB-211	404.85	*		-3.640E-02	3.604E-01	5.926E-01	2.842E-01	-0.061
	427.09			2.244E-01	8.014E-01	1.362E+00	6.240E-01	0.165
BI-212	832.01			-2.174E-01	5.139E-01	7.489E-01	3.875E-01	-0.290
	727.33	*		1.243E-01	2.419E-01	4.249E-01	4.739E-02	0.293
	785.37			7.638E-01	1.572E+00	2.745E+00	2.008E-01	0.278
	1620.50			-1.857E-01	1.478E+00	2.352E+00	1.571E-01	-0.079

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PB-212	74.82			3.667E-02	1.420E-01	2.240E-01	2.813E-02	0.164
	77.11			-3.174E-02	7.278E-02	1.151E-01	9.300E-03	-0.276
	238.63	*		-9.301E-03	3.322E-02	5.126E-02	3.733E-03	-0.181
	300.09			-5.456E-02	4.059E-01	6.742E-01	5.663E-02	-0.081
BI-214	609.32	*		2.273E-02	4.393E-02	7.458E-02	5.910E-03	0.305
	1120.29			-4.936E-02	1.240E-01	1.910E-01	1.758E-02	-0.258
	1764.49			4.723E-02	1.507E-01	2.633E-01	1.595E-02	0.179
PB-214	74.82			6.500E-02	2.517E-01	3.971E-01	4.456E-02	0.164
	77.11			-5.596E-02	1.284E-01	2.029E-01	2.343E-02	-0.276
	242.00			-1.376E-01	1.881E-01	2.802E-01	2.271E-02	-0.491
	295.22			-4.453E-03	7.224E-02	1.208E-01	1.055E-02	-0.037
	351.93	*		6.065E-03	3.968E-02	6.211E-02	5.240E-03	0.098
RN-219	271.23			1.769E-02	1.156E-01	1.973E-01	1.581E-02	0.090
	401.81	*		-5.434E-02	1.957E-01	3.151E-01	4.208E-02	-0.172
RA-223	81.07			5.292E-02	7.627E-02	1.320E-01	1.104E-02	0.401
	83.79			6.818E-03	5.202E-02	8.061E-02	6.916E-03	0.085
	94.87			-1.180E-02	2.032E-01	3.311E-01	2.667E-02	-0.036
	144.24			-1.716E-01	3.312E-01	5.043E-01	3.529E-02	-0.340
	154.21			1.926E-02	1.705E-01	2.788E-01	1.847E-02	0.069
	269.46			-2.558E-03	8.780E-02	1.476E-01	8.889E-03	-0.017
	323.87	*		9.345E-02	3.253E-01	5.595E-01	9.019E-02	0.167
	338.28			3.844E-01	4.738E-01	8.498E-01	8.701E-02	0.452
RA-224	240.99	*		2.186E-01	3.132E-01	5.323E-01	3.016E-02	0.411
RA-226	609.32	*		2.273E-02	4.393E-02	7.458E-02	5.910E-03	0.305
	1120.29			-4.936E-02	1.240E-01	1.910E-01	1.758E-02	-0.258
	1764.49			4.723E-02	1.507E-01	2.633E-01	1.595E-02	0.179
AC-227	79.69			-1.373E-02	4.456E-01	7.295E-01	1.244E-01	-0.019
	235.96			-5.801E-02	7.337E-02	1.083E-01	8.696E-03	-0.536
	256.23	*		1.251E-01	1.361E-01	2.351E-01	2.394E-02	0.532
	299.98			-6.461E-02	4.460E-01	7.400E-01	8.137E-02	-0.087
	304.50			-3.448E-03	8.317E-01	1.397E+00	2.130E-01	-0.002
	334.37			-2.265E-01	8.893E-01	1.453E+00	2.066E-01	-0.156
TH-227	79.80			-2.343E-02	5.867E-01	9.599E-01	2.077E-01	-0.024
	235.96			-5.801E-02	7.334E-02	1.083E-01	7.863E-03	-0.536
	256.23	*		1.251E-01	1.363E-01	2.351E-01	2.817E-02	0.532
	299.98			-6.461E-02	4.460E-01	7.400E-01	8.137E-02	-0.087
	304.50			-3.448E-03	8.317E-01	1.397E+00	2.130E-01	-0.002
	334.37			-2.265E-01	8.893E-01	1.453E+00	2.066E-01	-0.156
AC-228	338.32			9.638E-02	1.254E-01	2.140E-01	8.822E-02	0.450
	911.20	*		-2.981E-02	8.325E-02	1.197E-01	1.395E-02	-0.249
	968.97			-1.211E-02	1.152E-01	1.916E-01	4.638E-02	-0.063
RA-228	338.32			9.638E-02	1.254E-01	2.140E-01	8.822E-02	0.450
	911.20	*		-2.981E-02	8.325E-02	1.197E-01	1.395E-02	-0.249
	968.97			-1.211E-02	1.152E-01	1.916E-01	4.638E-02	-0.063
TH-228	74.82			3.667E-02	1.420E-01	2.240E-01	1.798E-02	0.164
	77.11			-3.174E-02	7.278E-02	1.151E-01	9.300E-03	-0.276
	238.63	*		-9.301E-03	3.322E-02	5.126E-02	3.733E-03	-0.181
	300.09			-5.456E-02	4.073E-01	6.742E-01	4.105E-01	-0.081
TH-229	85.43			8.563E-03	8.561E-02	1.323E-01	1.154E-02	0.065

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	88.47			-1.220E-01	5.482E-02	7.306E-02	6.494E-03	-1.670
	193.51	*		6.445E-02	2.364E-01	3.904E-01	2.106E-02	0.165
	210.85			4.323E-01	4.033E-01	7.099E-01	3.909E-02	0.609
PA-231	283.69	*		2.080E-01	7.110E-01	1.227E+00	1.610E-01	0.169
	301.36			-6.961E-02	2.850E-01	4.684E-01	4.850E-02	-0.149
TH-231	81.07			5.292E-02	7.627E-02	1.320E-01	1.104E-02	0.401
	83.79			6.818E-03	5.202E-02	8.061E-02	6.916E-03	0.085
	94.87			-1.180E-02	2.032E-01	3.311E-01	2.667E-02	-0.036
	144.24			-1.716E-01	3.312E-01	5.043E-01	3.529E-02	-0.340
	154.21			1.926E-02	1.705E-01	2.788E-01	1.847E-02	0.069
	269.46			-2.558E-03	8.780E-02	1.476E-01	8.889E-03	-0.017
	323.87	*		9.345E-02	3.253E-01	5.595E-01	9.019E-02	0.167
	338.28			3.844E-01	4.738E-01	8.498E-01	8.701E-02	0.452
TH-232	338.32			9.638E-02	1.191E-01	2.140E-01	1.237E-02	0.450
	911.20	*		-2.981E-02	8.325E-02	1.197E-01	1.395E-02	-0.249
	968.97			-1.211E-02	1.152E-01	1.916E-01	4.638E-02	-0.063
PA-233	300.13			-2.640E-02	2.022E-01	3.358E-01	4.499E-02	-0.079
	311.90	*		-7.720E-03	3.241E-02	5.315E-02	3.282E-03	-0.145
	340.48			5.015E-02	2.853E-01	4.857E-01	1.127E-01	0.103
PA-234	94.67			2.145E-02	7.675E-02	1.279E-01	1.539E-02	0.168
	98.44			-3.808E-03	4.283E-02	6.629E-02	3.689E-02	-0.057
	111.00			-7.119E-02	8.098E-02	1.212E-01	1.305E-02	-0.588
	131.20			-4.831E-03	4.846E-02	7.808E-02	4.494E-03	-0.062
	569.50			1.374E-01	1.823E-01	3.139E-01	1.863E-02	0.438
	733.00			1.277E-01	1.867E-01	3.328E-01	7.159E-02	0.384
	880.51			2.810E-02	1.650E-01	2.708E-01	2.320E-02	0.104
	883.24			-4.514E-02	1.584E-01	2.381E-01	1.600E-01	-0.190
	926.50			-1.005E-02	9.142E-02	1.442E-01	3.642E-02	-0.070
	946.00	*		-7.735E-03	1.685E-01	2.690E-01	5.021E-02	-0.029
	949.00			2.015E-01	2.406E-01	4.398E-01	3.685E-02	0.458
PA-234M	766.42			1.465E+00	4.701E+00	7.973E+00	4.026E+00	0.184
	1001.03	*		-1.904E+00	2.591E+00	3.950E+00	3.677E-01	-0.482
TH-234	63.29	*		6.462E-01	6.550E-01	1.052E+00	1.881E-01	0.614
	92.59			-2.042E-01	3.563E-01	5.618E-01	1.234E-01	-0.363
U-235	89.96			-4.429E-01	3.853E-01	5.537E-01	1.364E-01	-0.800
	93.35			-2.422E-01	2.716E-01	4.139E-01	9.500E-02	-0.585
	143.76	*		-9.098E-03	9.938E-02	1.571E-01	2.454E-02	-0.058
	163.33			-2.984E-02	2.269E-01	3.439E-01	5.710E-02	-0.087
	185.72			1.121E-02	2.358E-02	4.072E-02	2.176E-03	0.275
	205.31			-2.178E-01	2.360E-01	3.412E-01	5.760E-02	-0.638
NP-237	86.48	*		2.804E-02	9.395E-02	1.572E-01	3.575E-02	0.178
	95.86			-1.053E+00	5.154E-01	6.052E-01	1.438E-01	-1.740
U-238	63.29	*		6.462E-01	6.550E-01	1.052E+00	1.881E-01	0.614
	92.59			-2.042E-01	3.539E-01	5.618E-01	4.677E-02	-0.363
NP-239	99.53			-4.024E-02	7.797E-02	1.164E-01	8.809E-03	-0.346
	103.37			8.220E-03	4.318E-02	7.166E-02	5.177E-03	0.115
	106.12			-1.780E-03	3.576E-02	5.813E-02	4.070E-03	-0.031
	117.23	*		-8.333E-02	1.857E-01	2.910E-01	1.815E-02	-0.286
	228.18			6.167E-02	1.102E-01	1.854E-01	1.039E-02	0.333

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	277.60			-4.900E-02	8.735E-02	1.307E-01	7.561E-03	-0.375
AM-241	59.54		*	-8.336E-02	6.314E-02	9.240E-02	7.608E-03	-0.902
CM-247	278.00			-3.484E-01	3.785E-01	5.456E-01	3.158E-02	-0.639
	287.50			1.241E-01	6.313E-01	1.080E+00	6.271E-02	0.115
	402.40		*	-5.880E-03	1.881E-02	3.022E-02	1.695E-03	-0.195
CF-249	252.80			1.162E-01	5.246E-01	8.553E-01	4.888E-02	0.136
	333.37			9.440E-03	8.924E-02	1.510E-01	8.747E-03	0.063
	388.16		*	7.090E-03	1.920E-02	3.332E-02	1.860E-03	0.213
CF-251	177.52		*	3.679E-02	6.233E-02	1.056E-01	5.588E-03	0.348
	227.38			1.328E-01	1.857E-01	3.160E-01	1.770E-02	0.420
	285.41			2.889E-01	1.127E+00	1.938E+00	1.124E-01	0.149
ANH-511	511.00		*	-3.078E-02	3.325E-02	6.219E-02	3.670E-03	-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]G1202061452      *
* Acquisition date   : 20-MAR-2010 13:33:46 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 02:00:00.66 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 8-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202061452 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.3959E+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

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)
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---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)	
BE-7	2.039E-02	1.349E-01	2.389E-01	0.000E+00 NOT IDENT.
NA-22	2.670E-03	1.832E-02	3.218E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.582E+04	0.000E+00	0.000E+00 SHORT HLIF
K-40	2.276E-01	2.254E-01	4.442E-01	0.000E+00 NOT IDENT.
SC-46	-4.499E-03	2.069E-02	3.326E-02	0.000E+00 NOT IDENT.
V-48	2.359E-04	3.056E-02	5.075E-02	0.000E+00 NOT IDENT.
CR-51	-4.028E-02	1.747E-01	3.028E-01	0.000E+00 NOT IDENT.
MN-54	-1.575E-03	1.930E-02	3.195E-02	0.000E+00 NOT IDENT.
CO-56	4.809E-03	2.080E-02	3.513E-02	0.000E+00 NOT IDENT.
CO-57	4.724E-03	1.119E-02	2.029E-02	0.000E+00 NOT IDENT.
CO-58	1.848E-02	1.966E-02	3.769E-02	0.000E+00 NOT IDENT.
FE-59	1.982E-02	3.968E-02	7.411E-02	0.000E+00 NOT IDENT.
CO-60	1.578E-02	2.247E-02	4.266E-02	0.000E+00 NOT IDENT.
ZN-65	-7.442E-03	3.841E-02	6.380E-02	0.000E+00 NOT IDENT.
SE-75	-7.746E-03	2.068E-02	3.574E-02	0.000E+00 NOT IDENT.
SR-85	-4.932E-02	3.247E-02	4.993E-02	0.000E+00 NOT IDENT.
Y-88	-4.250E-03	1.918E-02	2.962E-02	0.000E+00 NOT IDENT.
Y-91	-5.593E+00	7.977E+00	1.156E+01	0.000E+00 NOT IDENT.
NB-94	1.116E-02	1.896E-02	3.447E-02	0.000E+00 NOT IDENT.
NB-95	-3.650E-03	1.740E-02	2.823E-02	0.000E+00 NOT IDENT.
NB-95M	-4.293E-02	5.745E-02	9.066E-02	0.000E+00 NOT IDENT.
ZR-95	1.174E-02	2.962E-02	5.355E-02	0.000E+00 NOT IDENT.
MO-99	1.188E+00	3.511E+00	6.212E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	1.522E+13	0.000E+00	0.000E+00 SHORT HLIF
RU-103	-3.868E-03	2.093E-02	3.545E-02	0.000E+00 NOT IDENT.
RH-106	-1.089E-01	1.617E-01	2.483E-01	0.000E+00 NOT IDENT.

RU-106	-1.089E-01	1.613E-01	2.483E-01	0.000E+00	NOT IDENT.
AG-108M	7.143E-03	1.467E-02	2.697E-02	0.000E+00	NOT IDENT.
CD-109	-3.942E-01	3.222E-01	5.147E-01	0.000E+00	NOT IDENT.
AG-110M	-1.044E-02	1.766E-02	2.740E-02	0.000E+00	NOT IDENT.
SN-113	-7.289E-03	2.039E-02	3.426E-02	0.000E+00	NOT IDENT.
CD-115	-9.166E-01	2.622E+00	4.198E+00	0.000E+00	NOT IDENT.
SN-117M	5.702E-03	2.169E-02	3.843E-02	0.000E+00	NOT IDENT.
TE-123M	4.752E-03	1.295E-02	2.313E-02	0.000E+00	NOT IDENT.
SB-124	-3.168E-02	4.449E-02	5.803E-02	0.000E+00	NOT IDENT.
SB-125	3.511E-02	4.539E-02	8.580E-02	0.000E+00	NOT IDENT.
TE-125M	-1.043E+00	3.889E+00	6.681E+00	0.000E+00	NOT IDENT.
I-126	5.077E-02	1.001E-01	1.817E-01	0.000E+00	NOT IDENT.
SB-126	-5.462E-02	5.826E-02	8.206E-02	0.000E+00	NOT IDENT.
SN-126	-1.370E-02	3.058E-02	5.238E-02	0.000E+00	NOT IDENT.
SB-127	-1.555E-01	4.270E-01	6.849E-01	0.000E+00	NOT IDENT.
I-131	-1.663E-02	4.888E-02	8.311E-02	0.000E+00	NOT IDENT.
TE-132	1.187E-01	2.101E-01	3.751E-01	0.000E+00	NOT IDENT.
BA-133	-1.680E-02	2.007E-02	3.199E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.051E+02	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.052E-03	2.017E-02	3.628E-02	0.000E+00	NOT IDENT.
CS-135	2.246E-02	7.563E-02	1.385E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.788E+12	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.943E-03	4.883E-02	8.334E-02	0.000E+00	NOT IDENT.
BA-137M	1.087E-03	1.775E-02	3.046E-02	0.000E+00	NOT IDENT.
CS-137	1.148E-03	1.875E-02	3.218E-02	0.000E+00	NOT IDENT.
CE-139	7.320E-03	1.335E-02	2.417E-02	0.000E+00	NOT IDENT.
BA-140	-7.866E-03	1.351E-01	2.312E-01	0.000E+00	NOT IDENT.
LA-140	6.075E-02	4.014E-02	8.868E-02	0.000E+00	NOT IDENT.
CE-141	-6.734E-03	2.688E-02	4.577E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.635E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.961E-02	8.715E-02	1.550E-01	0.000E+00	NOT IDENT.
PM-144	-2.303E-03	1.751E-02	2.915E-02	0.000E+00	NOT IDENT.
PR-144	-1.646E-01	1.310E+00	2.182E+00	0.000E+00	NOT IDENT.
PM-146	2.149E-03	2.184E-02	3.842E-02	0.000E+00	NOT IDENT.
ND-147	1.421E-02	2.419E-01	4.203E-01	0.000E+00	NOT IDENT.
PM-149	7.175E+00	2.063E+01	3.781E+01	0.000E+00	NOT IDENT.
EU-152	5.706E-03	4.381E-02	7.842E-02	0.000E+00	NOT IDENT.
GD-153	7.083E-03	3.555E-02	6.384E-02	0.000E+00	NOT IDENT.
EU-154	2.551E-03	5.329E-02	9.176E-02	0.000E+00	NOT IDENT.
EU-155	7.687E-03	4.447E-02	7.950E-02	0.000E+00	NOT IDENT.
TB-160	-6.637E-04	8.102E-02	1.352E-01	0.000E+00	NOT IDENT.
HO-166M	2.723E-02	3.313E-02	6.210E-02	0.000E+00	NOT IDENT.
TA-182	-6.827E-03	8.111E-02	1.366E-01	0.000E+00	NOT IDENT.
IR-192	7.144E-03	1.687E-02	3.106E-02	0.000E+00	NOT IDENT.
HG-203	-9.675E-03	1.816E-02	2.883E-02	0.000E+00	NOT IDENT.
BI-207	2.948E-02	2.916E-02	5.712E-02	0.000E+00	NOT IDENT.
TL-208	1.210E-02	2.198E-02	3.780E-02	0.000E+00	NOT IDENT.
PB-210	6.916E-02	1.497E+00	2.585E+00	0.000E+00	NOT IDENT.
BI-211	4.001E-02	1.083E-01	1.829E-01	0.000E+00	NOT IDENT.
PB-211	-3.640E-02	3.532E-01	6.107E-01	0.000E+00	NOT IDENT.
BI-212	1.243E-01	2.370E-01	4.327E-01	0.000E+00	NOT IDENT.
PB-212	-9.301E-03	3.256E-02	5.338E-02	0.000E+00	NOT IDENT.
BI-214	2.273E-02	4.305E-02	7.623E-02	0.000E+00	NOT IDENT.
PB-214	6.065E-03	3.888E-02	6.418E-02	0.000E+00	NOT IDENT.
RN-219	-5.434E-02	1.918E-01	3.248E-01	0.000E+00	NOT IDENT.
RA-223	9.345E-02	3.188E-01	5.792E-01	0.000E+00	NOT IDENT.
RA-224	2.186E-01	3.070E-01	5.542E-01	0.000E+00	NOT IDENT.
RA-226	2.273E-02	4.305E-02	7.623E-02	0.000E+00	NOT IDENT.
AC-227	1.251E-01	1.334E-01	2.444E-01	0.000E+00	NOT IDENT.
TH-227	1.251E-01	1.336E-01	2.444E-01	0.000E+00	NOT IDENT.
AC-228	-2.981E-02	8.159E-02	1.213E-01	0.000E+00	NOT IDENT.
RA-228	-2.981E-02	8.159E-02	1.213E-01	0.000E+00	NOT IDENT.
TH-228	-9.301E-03	3.256E-02	5.338E-02	0.000E+00	NOT IDENT.
TH-229	6.445E-02	2.317E-01	4.082E-01	0.000E+00	NOT IDENT.
PA-231	2.080E-01	6.968E-01	1.274E+00	0.000E+00	NOT IDENT.
TH-231	9.345E-02	3.188E-01	5.792E-01	0.000E+00	NOT IDENT.
TH-232	-2.981E-02	8.159E-02	1.213E-01	0.000E+00	NOT IDENT.
PA-233	-7.720E-03	3.176E-02	5.505E-02	0.000E+00	NOT IDENT.
PA-234	-7.735E-03	1.652E-01	2.724E-01	0.000E+00	NOT IDENT.
PA-234M	-1.904E+00	2.539E+00	3.996E+00	0.000E+00	NOT IDENT.
TH-234	6.462E-01	6.419E-01	1.124E+00	0.000E+00	NOT IDENT.
U-235	-9.098E-03	9.739E-02	1.653E-01	0.000E+00	NOT IDENT.
NP-237	2.804E-02	9.207E-02	1.669E-01	0.000E+00	NOT IDENT.
U-238	6.462E-01	6.419E-01	1.124E+00	0.000E+00	NOT IDENT.
NP-239	-8.333E-02	1.820E-01	3.072E-01	0.000E+00	NOT IDENT.
AM-241	-8.336E-02	6.188E-02	9.881E-02	0.000E+00	NOT IDENT.
CM-247	-5.880E-03	1.843E-02	3.115E-02	0.000E+00	NOT IDENT.
CF-249	7.090E-03	1.881E-02	3.437E-02	0.000E+00	NOT IDENT.

CF-251	3.679E-02	6.108E-02	1.106E-01	0.000E+00 NOT IDENT.
ANH-511	-3.078E-02	3.259E-02	6.379E-02	0.000E+00 NOT IDENT.


```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061452.CNF;1
Sample date        : 8-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 13:33:46
Sample ID          : G1202061452      Sample quantity   : 1.39590E+02 GRAM
Detector name      : GAM19             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.66  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 961097            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****
```

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202061452

Page : 2
Acquisition date : 20-MAR-2010 13:33:46

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202061452

Page : 3
Acquisition date : 20-MAR-2010 13:33:46

None

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061452.CNF;1
* Acquisition date   : 20-MAR-2010 13:33:46   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 02:00:00.66          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 8-MAR-2010 00:00:00.   Nuclide Library : SOLID
* Sample ID          : G1202061452            Analyst initials: MXR1
* Batch Number       : 961097                 Sample Quantity : 1.39590E+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   :
*****

```

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.039E-02		1.376E-01	2.326E-01	1.578E-02	0.088
NA-22	2.670E-03		1.869E-02	3.197E-02	2.133E-03	0.084
NA-24	-7.362E-03		1.317E-02	Half-Life too short		
K-40	2.276E-01		2.300E-01	4.425E-01	3.296E-02	0.514
SC-46	-4.499E-03		2.111E-02	3.280E-02	2.850E-03	-0.137
V-48	2.359E-04		3.118E-02	5.015E-02	4.032E-03	0.005
CR-51	-4.028E-02		1.782E-01	2.925E-01	1.890E-02	-0.138
MN-54	-1.575E-03		1.970E-02	3.147E-02	2.503E-03	-0.050
CO-56	4.809E-03		2.122E-02	3.461E-02	2.808E-03	0.139
CO-57	4.724E-03		1.142E-02	1.923E-02	1.148E-03	0.246
CO-58	1.848E-02		2.006E-02	3.710E-02	2.843E-03	0.498
FE-59	1.982E-02		4.049E-02	7.340E-02	5.507E-03	0.270
CO-60	1.578E-02		2.293E-02	4.243E-02	3.127E-03	0.372
ZN-65	-7.442E-03		3.920E-02	6.321E-02	4.041E-03	-0.118
SE-75	-7.746E-03		2.110E-02	3.439E-02	2.001E-03	-0.225
SR-85	-4.932E-02		3.314E-02	4.868E-02	2.875E-03	-1.013
Y-88	-4.250E-03		1.958E-02	2.966E-02	1.693E-03	-0.143

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	-5.593E+00		8.140E+00	1.147E+01	6.697E-01	-0.488
NB-94	1.116E-02		1.934E-02	3.383E-02	2.131E-03	0.330
NB-95	-3.650E-03		1.775E-02	2.775E-02	1.961E-03	-0.132
NB-95M	-4.293E-02		5.862E-02	8.704E-02	6.469E-03	-0.493
ZR-95	1.174E-02		3.023E-02	5.263E-02	4.234E-03	0.223
MO-99	1.188E+00		3.583E+00	6.102E+00	9.039E-01	0.195
TC-99M	6.322E+06		7.767E+06	Half-Life too short		
RU-103	-3.868E-03		2.136E-02	3.454E-02	4.305E-03	-0.112
RH-106	-1.089E-01		1.650E-01	2.431E-01	2.836E-02	-0.448
RU-106	-1.089E-01		1.646E-01	2.431E-01	1.433E-02	-0.448
AG-108M	7.143E-03		1.497E-02	2.621E-02	1.608E-03	0.273
CD-109	-3.942E-01		3.288E-01	4.849E-01	4.343E-02	-0.813
AG-110M	-1.044E-02		1.802E-02	2.685E-02	1.666E-03	-0.389
SN-113	-7.289E-03		2.081E-02	3.322E-02	1.982E-03	-0.219
CD-115	-9.166E-01		2.675E+00	4.096E+00	2.424E-01	-0.224
SN-117M	5.702E-03		2.213E-02	3.662E-02	1.949E-03	0.156
TE-123M	4.752E-03		1.322E-02	2.204E-02	1.190E-03	0.216
SB-124	-3.168E-02		4.540E-02	5.799E-02	3.988E-03	-0.546
SB-125	3.511E-02		4.632E-02	8.335E-02	4.956E-03	0.421
TE-125M	-1.043E+00		3.968E+00	6.320E+00	5.694E-01	-0.165
I-126	5.077E-02		1.021E-01	1.782E-01	1.047E-02	0.285
SB-126	-5.462E-02		5.944E-02	8.057E-02	5.248E-03	-0.678
SN-126	-1.370E-02		3.121E-02	4.934E-02	4.401E-03	-0.278
SB-127	-1.555E-01		4.357E-01	6.717E-01	5.882E-02	-0.231
I-131	-1.663E-02		4.988E-02	8.048E-02	5.117E-03	-0.207
TE-132	1.187E-01		2.144E-01	3.599E-01	4.998E-02	0.330
BA-133	-1.680E-02		2.048E-02	3.096E-02	3.480E-03	-0.543
I-133	-1.988E-04		2.067E-04	Half-Life too short		
CS-134	8.052E-03		2.058E-02	3.569E-02	2.684E-03	0.226
CS-135	2.246E-02		7.717E-02	1.333E-01	1.017E-02	0.169
I-135	1.848E+06		2.443E+06	Half-Life too short		
CS-136	-3.943E-03		4.983E-02	8.246E-02	6.367E-03	-0.048
BA-137M	1.087E-03		1.811E-02	2.986E-02	1.739E-03	0.036
CS-137	1.148E-03		1.913E-02	3.154E-02	1.844E-03	0.036
CE-139	7.320E-03		1.362E-02	2.304E-02	1.203E-03	0.318
BA-140	-7.866E-03		1.378E-01	2.256E-01	7.520E-02	-0.035
LA-140	6.075E-02		4.096E-02	8.853E-02	5.991E-03	0.686
CE-141	-6.734E-03		2.743E-02	4.353E-02	2.507E-03	-0.155
CE-143	1.784E-06		8.342E-06	Half-Life too short		
CE-144	1.961E-02		8.893E-02	1.471E-01	2.039E-02	0.133
PM-144	-2.303E-03		1.787E-02	2.860E-02	1.781E-03	-0.081
PR-144	-1.646E-01		1.337E+00	2.141E+00	1.333E-01	-0.077
PM-146	2.149E-03		2.229E-02	3.737E-02	3.156E-03	0.058
ND-147	1.421E-02		2.469E-01	4.101E-01	5.567E-02	0.035
PM-149	7.175E+00		2.105E+01	3.644E+01	5.162E+00	0.197
EU-152	5.706E-03		4.470E-02	7.585E-02	4.933E-03	0.075
GD-153	7.083E-03		3.627E-02	6.026E-02	4.686E-03	0.118
EU-154	2.551E-03		5.438E-02	9.116E-02	9.094E-03	0.028

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	7.687E-03		4.538E-02	7.515E-02	5.403E-03	0.102
TB-160	-6.637E-04		8.267E-02	1.333E-01	1.140E-02	-0.005
HO-166M	2.723E-02		3.381E-02	6.095E-02	3.904E-03	0.447
TA-182	-6.827E-03		8.276E-02	1.356E-01	8.177E-03	-0.050
IR-192	7.144E-03		1.721E-02	3.000E-02	1.753E-03	0.238
HG-203	-9.675E-03		1.853E-02	2.777E-02	1.698E-03	-0.348
BI-207	2.948E-02		2.975E-02	5.654E-02	4.014E-03	0.521
TL-208	1.210E-02		2.243E-02	3.695E-02	2.507E-03	0.328
PB-210	6.916E-02		1.528E+00	2.406E+00	1.814E-01	0.029
BI-211	4.001E-02		1.105E-01	1.770E-01	1.130E-02	0.226
PB-211	-3.640E-02		3.604E-01	5.926E-01	2.842E-01	-0.061
BI-212	1.243E-01		2.419E-01	4.249E-01	4.739E-02	0.293
PB-212	-9.301E-03		3.322E-02	5.126E-02	3.733E-03	-0.181
BI-214	2.273E-02		4.393E-02	7.458E-02	5.910E-03	0.305
PB-214	6.065E-03		3.968E-02	6.211E-02	5.240E-03	0.098
RN-219	-5.434E-02		1.957E-01	3.151E-01	4.208E-02	-0.172
RA-223	9.345E-02		3.253E-01	5.595E-01	9.019E-02	0.167
RA-224	2.186E-01		3.132E-01	5.323E-01	3.016E-02	0.411
RA-226	2.273E-02		4.393E-02	7.458E-02	5.910E-03	0.305
AC-227	1.251E-01		1.361E-01	2.351E-01	2.394E-02	0.532
TH-227	1.251E-01		1.363E-01	2.351E-01	2.817E-02	0.532
AC-228	-2.981E-02		8.325E-02	1.197E-01	1.395E-02	-0.249
RA-228	-2.981E-02		8.325E-02	1.197E-01	1.395E-02	-0.249
TH-228	-9.301E-03		3.322E-02	5.126E-02	3.733E-03	-0.181
TH-229	6.445E-02		2.364E-01	3.904E-01	2.106E-02	0.165
PA-231	2.080E-01		7.110E-01	1.227E+00	1.610E-01	0.169
TH-231	9.345E-02		3.253E-01	5.595E-01	9.019E-02	0.167
TH-232	-2.981E-02		8.325E-02	1.197E-01	1.395E-02	-0.249
PA-233	-7.720E-03		3.241E-02	5.315E-02	3.282E-03	-0.145
PA-234	-7.735E-03		1.685E-01	2.690E-01	5.021E-02	-0.029
PA-234M	-1.904E+00		2.591E+00	3.950E+00	3.677E-01	-0.482
TH-234	6.462E-01		6.550E-01	1.052E+00	1.881E-01	0.614
U-235	-9.098E-03		9.938E-02	1.571E-01	2.454E-02	-0.058
NP-237	2.804E-02		9.395E-02	1.572E-01	3.575E-02	0.178
U-238	6.462E-01		6.550E-01	1.052E+00	1.881E-01	0.614
NP-239	-8.333E-02		1.857E-01	2.910E-01	1.815E-02	-0.286
AM-241	-8.336E-02		6.314E-02	9.240E-02	7.608E-03	-0.902
CM-247	-5.880E-03		1.881E-02	3.022E-02	1.695E-03	-0.195
CF-249	7.090E-03		1.920E-02	3.332E-02	1.860E-03	0.213
CF-251	3.679E-02		6.233E-02	1.056E-01	5.588E-03	0.348
ANH-511	-3.078E-02		3.325E-02	6.219E-02	3.670E-03	-0.495

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]G1202061452          *
* Acquisition date   : 20-MAR-2010 13:33:46 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 02:00:00.66             Half life ratio : 8.000       *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 8-MAR-2010 00:00:00 Nuclide Library : SOLID           *
* Sample ID          : G1202061452             Analyst initials: MXR1         *
* Batch Number       : 961097                  Sample Quantity : 1.3959E+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

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act Error	DLC (pCi/GRAM)	TPU
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---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.039E-02	1.349E-01	1.195E-01	6.882E-02 NOT IDENT.
NA-22	2.670E-03	1.832E-02	1.610E-02	9.347E-03 NOT IDENT.
NA-24	-7.362E+03	2.582E+04	0.000E+00	1.317E+04 SHORT HLIF
K-40	2.276E-01	2.254E-01	2.222E-01	1.150E-01 NOT IDENT.
SC-46	-4.499E-03	2.069E-02	1.664E-02	1.056E-02 NOT IDENT.
V-48	2.359E-04	3.056E-02	2.539E-02	1.559E-02 NOT IDENT.
CR-51	-4.028E-02	1.747E-01	1.515E-01	8.912E-02 NOT IDENT.
MN-54	-1.575E-03	1.930E-02	1.599E-02	9.849E-03 NOT IDENT.
CO-56	4.809E-03	2.080E-02	1.758E-02	1.061E-02 NOT IDENT.
CO-57	4.724E-03	1.119E-02	1.015E-02	5.710E-03 NOT IDENT.
CO-58	1.848E-02	1.966E-02	1.886E-02	1.003E-02 NOT IDENT.
FE-59	1.982E-02	3.968E-02	3.708E-02	2.025E-02 NOT IDENT.
CO-60	1.578E-02	2.247E-02	2.134E-02	1.146E-02 NOT IDENT.
ZN-65	-7.442E-03	3.841E-02	3.192E-02	1.960E-02 NOT IDENT.
SE-75	-7.746E-03	2.068E-02	1.788E-02	1.055E-02 NOT IDENT.
SR-85	-4.932E-02	3.247E-02	2.498E-02	1.657E-02 NOT IDENT.
Y-88	-4.250E-03	1.918E-02	1.482E-02	9.788E-03 NOT IDENT.
Y-91	-5.593E+00	7.977E+00	5.784E+00	4.070E+00 NOT IDENT.
NB-94	1.116E-02	1.896E-02	1.725E-02	9.672E-03 NOT IDENT.
NB-95	-3.650E-03	1.740E-02	1.412E-02	8.876E-03 NOT IDENT.
NB-95M	-4.293E-02	5.745E-02	4.536E-02	2.931E-02 NOT IDENT.
ZR-95	1.174E-02	2.962E-02	2.679E-02	1.511E-02 NOT IDENT.
MO-99	1.188E+00	3.511E+00	3.108E+00	1.791E+00 NOT IDENT.
TC-99M	6.322E+12	1.522E+13	0.000E+00	7.767E+12 SHORT HLIF
RU-103	-3.868E-03	2.093E-02	1.773E-02	1.068E-02 NOT IDENT.
RH-106	-1.089E-01	1.617E-01	1.242E-01	8.248E-02 NOT IDENT.

RU-106	-1.089E-01	1.613E-01	1.242E-01	8.230E-02	NOT IDENT.
AG-108M	7.143E-03	1.467E-02	1.349E-02	7.483E-03	NOT IDENT.
CD-109	-3.942E-01	3.222E-01	2.575E-01	1.644E-01	NOT IDENT.
AG-110M	-1.044E-02	1.766E-02	1.371E-02	9.008E-03	NOT IDENT.
SN-113	-7.289E-03	2.039E-02	1.714E-02	1.040E-02	NOT IDENT.
CD-115	-9.166E-01	2.622E+00	2.100E+00	1.338E+00	NOT IDENT.
SN-117M	5.702E-03	2.169E-02	1.923E-02	1.107E-02	NOT IDENT.
TE-123M	4.752E-03	1.295E-02	1.157E-02	6.610E-03	NOT IDENT.
SB-124	-3.168E-02	4.449E-02	2.903E-02	2.270E-02	NOT IDENT.
SB-125	3.511E-02	4.539E-02	4.292E-02	2.316E-02	NOT IDENT.
TE-125M	-1.043E+00	3.889E+00	3.343E+00	1.984E+00	NOT IDENT.
I-126	5.077E-02	1.001E-01	9.093E-02	5.107E-02	NOT IDENT.
SB-126	-5.462E-02	5.826E-02	4.105E-02	2.972E-02	NOT IDENT.
SN-126	-1.370E-02	3.058E-02	2.620E-02	1.560E-02	NOT IDENT.
SB-127	-1.555E-01	4.270E-01	3.426E-01	2.179E-01	NOT IDENT.
I-131	-1.663E-02	4.888E-02	4.158E-02	2.494E-02	NOT IDENT.
TE-132	1.187E-01	2.101E-01	1.876E-01	1.072E-01	NOT IDENT.
BA-133	-1.680E-02	2.007E-02	1.600E-02	1.024E-02	NOT IDENT.
I-133	-1.988E+02	4.051E+02	0.000E+00	2.067E+02	SHORT HLIF
CS-134	8.052E-03	2.017E-02	1.815E-02	1.029E-02	NOT IDENT.
CS-135	2.246E-02	7.563E-02	6.927E-02	3.859E-02	NOT IDENT.
I-135	1.848E+12	4.788E+12	0.000E+00	2.443E+12	SHORT HLIF
CS-136	-3.943E-03	4.883E-02	4.170E-02	2.492E-02	NOT IDENT.
BA-137M	1.087E-03	1.775E-02	1.524E-02	9.054E-03	NOT IDENT.
CS-137	1.148E-03	1.875E-02	1.610E-02	9.565E-03	NOT IDENT.
CE-139	7.320E-03	1.335E-02	1.209E-02	6.811E-03	NOT IDENT.
BA-140	-7.866E-03	1.351E-01	1.157E-01	6.891E-02	NOT IDENT.
LA-140	6.075E-02	4.014E-02	4.437E-02	2.048E-02	NOT IDENT.
CE-141	-6.734E-03	2.688E-02	2.290E-02	1.372E-02	NOT IDENT.
CE-143	1.784E+00	1.635E+01	0.000E+00	8.342E+00	SHORT HLIF
CE-144	1.961E-02	8.715E-02	7.753E-02	4.447E-02	NOT IDENT.
PM-144	-2.303E-03	1.751E-02	1.458E-02	8.935E-03	NOT IDENT.
PR-144	-1.646E-01	1.310E+00	1.092E+00	6.683E-01	NOT IDENT.
PM-146	2.149E-03	2.184E-02	1.922E-02	1.114E-02	NOT IDENT.
ND-147	1.421E-02	2.419E-01	2.103E-01	1.234E-01	NOT IDENT.
PM-149	7.175E+00	2.063E+01	1.892E+01	1.053E+01	NOT IDENT.
EU-152	5.706E-03	4.381E-02	3.923E-02	2.235E-02	NOT IDENT.
GD-153	7.083E-03	3.555E-02	3.194E-02	1.814E-02	NOT IDENT.
EU-154	2.551E-03	5.329E-02	4.591E-02	2.719E-02	NOT IDENT.
EU-155	7.687E-03	4.447E-02	3.978E-02	2.269E-02	NOT IDENT.
TB-160	-6.637E-04	8.102E-02	6.764E-02	4.133E-02	NOT IDENT.
HO-166M	2.723E-02	3.313E-02	3.107E-02	1.690E-02	NOT IDENT.
TA-182	-6.827E-03	8.111E-02	6.835E-02	4.138E-02	NOT IDENT.
IR-192	7.144E-03	1.687E-02	1.554E-02	8.607E-03	NOT IDENT.
HG-203	-9.675E-03	1.816E-02	1.442E-02	9.265E-03	NOT IDENT.
BI-207	2.948E-02	2.916E-02	2.858E-02	1.488E-02	NOT IDENT.
TL-208	1.210E-02	2.198E-02	1.891E-02	1.121E-02	NOT IDENT.
PB-210	6.916E-02	1.497E+00	1.293E+00	7.638E-01	NOT IDENT.
BI-211	4.001E-02	1.083E-01	9.151E-02	5.523E-02	NOT IDENT.
PB-211	-3.640E-02	3.532E-01	3.055E-01	1.802E-01	NOT IDENT.
BI-212	1.243E-01	2.370E-01	2.165E-01	1.209E-01	NOT IDENT.
PB-212	-9.301E-03	3.256E-02	2.671E-02	1.661E-02	NOT IDENT.
BI-214	2.273E-02	4.305E-02	3.814E-02	2.196E-02	NOT IDENT.
PB-214	6.065E-03	3.888E-02	3.211E-02	1.984E-02	NOT IDENT.
RN-219	-5.434E-02	1.918E-01	1.625E-01	9.787E-02	NOT IDENT.
RA-223	9.345E-02	3.188E-01	2.898E-01	1.626E-01	NOT IDENT.
RA-224	2.186E-01	3.070E-01	2.773E-01	1.566E-01	NOT IDENT.
RA-226	2.273E-02	4.305E-02	3.814E-02	2.196E-02	NOT IDENT.
AC-227	1.251E-01	1.334E-01	1.223E-01	6.804E-02	NOT IDENT.
TH-227	1.251E-01	1.336E-01	1.223E-01	6.815E-02	NOT IDENT.
AC-228	-2.981E-02	8.159E-02	6.068E-02	4.163E-02	NOT IDENT.
RA-228	-2.981E-02	8.159E-02	6.068E-02	4.163E-02	NOT IDENT.
TH-228	-9.301E-03	3.256E-02	2.671E-02	1.661E-02	NOT IDENT.
TH-229	6.445E-02	2.317E-01	2.042E-01	1.182E-01	NOT IDENT.
PA-231	2.080E-01	6.968E-01	6.373E-01	3.555E-01	NOT IDENT.
TH-231	9.345E-02	3.188E-01	2.898E-01	1.626E-01	NOT IDENT.
TH-232	-2.981E-02	8.159E-02	6.068E-02	4.163E-02	NOT IDENT.
PA-233	-7.720E-03	3.176E-02	2.754E-02	1.621E-02	NOT IDENT.
PA-234	-7.735E-03	1.652E-01	1.363E-01	8.427E-02	NOT IDENT.
PA-234M	-1.904E+00	2.539E+00	1.999E+00	1.296E+00	NOT IDENT.
TH-234	6.462E-01	6.419E-01	5.621E-01	3.275E-01	NOT IDENT.
U-235	-9.098E-03	9.739E-02	8.268E-02	4.969E-02	NOT IDENT.
NP-237	2.804E-02	9.207E-02	8.349E-02	4.698E-02	NOT IDENT.
U-238	6.462E-01	6.419E-01	5.621E-01	3.275E-01	NOT IDENT.
NP-239	-8.333E-02	1.820E-01	1.537E-01	9.287E-02	NOT IDENT.
AM-241	-8.336E-02	6.188E-02	4.944E-02	3.157E-02	NOT IDENT.
CM-247	-5.880E-03	1.843E-02	1.558E-02	9.406E-03	NOT IDENT.
CF-249	7.090E-03	1.881E-02	1.719E-02	9.599E-03	NOT IDENT.

CF-251	3.679E-02	6.108E-02	5.536E-02	3.116E-02	NOT IDENT.
ANH-511	-3.078E-02	3.259E-02	3.191E-02	1.663E-02	NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
*****

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ENERGY	MDA COUNTS
46.54	70.9463
49.72	78.0473
57.36	0.0000
59.54	100.6127
63.29	68.3299
63.29	68.3299
64.28	74.3471
67.75	112.4082
69.67	67.7722
70.83	85.8084
72.81	80.9734
72.87	74.9797
72.87	74.9797
74.82	70.1100
74.82	70.1100
74.82	70.1100
74.97	75.1285
77.11	80.2966
77.11	80.2966
77.11	80.2966
79.69	73.4433
79.80	73.4509
80.12	69.4462
80.19	69.4506
80.57	68.4674
81.00	63.4576
81.07	63.4614
81.07	63.4614
83.79	77.7517
83.79	77.7517
85.43	77.8630
86.48	80.9705
86.55	80.9753
86.79	80.9918
86.94	89.1028
87.57	91.1773
88.03	107.4286
88.47	141.9402
89.96	127.9077
91.11	82.3058
92.59	73.2511
92.59	73.2511
93.35	79.4053
94.67	99.8741
94.87	96.8326
94.87	96.8326
95.86	139.7557
97.43	73.5417
98.44	73.6015
99.53	80.8275
100.11	78.8176
103.18	75.9297
103.37	68.7574
105.31	68.8609
106.12	69.9320
109.28	70.1004
111.00	82.5775
111.76	70.2308
116.30	70.4656
117.23	81.9199
121.12	69.6703
121.78	67.6221
122.06	66.5950
123.07	70.8077
131.20	77.4891
133.52	68.1713
136.00	77.7386

136.47	70.4069
140.51	73.7550
140.51	0.0000
143.76	69.6864
144.24	73.9328
144.24	73.9328
145.44	78.2174
152.43	66.8837
153.25	64.7934
154.21	64.8316
154.21	64.8316
156.02	64.9037
158.56	66.0699
159.00	68.2192
162.66	68.3691
163.33	71.6026
165.86	62.0772
176.60	67.8488
177.52	63.5743
181.07	84.2151
184.41	69.2285
185.72	55.2062
193.51	56.5279
197.04	79.5062
205.31	79.8521
210.85	50.4613
215.65	80.2748
222.11	68.3986
227.38	61.9396
228.16	59.7501
228.18	59.7505
235.69	75.5138
235.96	77.7449
235.96	77.7449
238.63	64.4991
238.63	64.4991
240.99	59.0043
242.00	83.5361
244.70	66.9131
252.40	59.3173
252.80	62.6862
256.23	51.5726
256.23	51.5726
260.90	64.0398
264.66	56.7192
268.22	55.9075
269.46	57.7422
269.46	57.7422
271.23	57.7867
273.65	56.9438
276.40	57.9172
277.37	53.4147
277.60	53.4198
278.00	59.7682
279.20	51.6444
279.54	57.0891
280.46	54.3918
283.69	49.0206
284.31	53.5732
285.41	54.5068
285.90	51.7919
287.50	53.6459
293.27	0.0000
295.22	60.2045
295.96	72.9971
298.57	43.8457
299.98	60.3225
299.98	60.3225
300.09	60.3257
300.09	60.3257
300.13	60.3265
301.36	60.3571
302.85	65.8837
304.50	54.0248
304.50	54.0248
304.85	44.8746
308.46	50.4426
311.90	50.5125

316.51	44.1650
319.41	51.5850
320.08	51.5983
323.87	46.1389
323.87	46.1389
328.76	51.7740
333.37	46.3092
334.37	54.6657
334.37	54.6657
338.28	40.8289
338.28	40.8289
338.32	40.8294
338.32	40.8294
338.32	40.8294
340.48	41.7914
340.55	41.7925
344.28	36.2716
351.06	34.4987
351.93	35.4427
356.01	47.6400
364.49	48.7246
366.42	37.5068
383.85	38.6847
388.16	32.1282
388.63	34.0238
391.69	36.8986
400.66	44.6052
401.81	37.0271
402.40	40.8332
404.85	38.9665
410.95	39.9995
414.70	29.5605
423.72	31.5619
427.09	34.4694
427.87	28.7322
433.94	29.7486
453.88	34.7682
463.37	27.1226
468.07	38.8032
473.00	31.0898
476.78	17.5085
477.60	22.3776
487.02	28.2959
492.35	33.2276
497.08	37.1896
511.00	40.2908
514.00	128.8468
527.90	24.6881
529.87	0.0000
531.02	27.6753
537.26	37.6261
546.56	0.0000
563.25	45.8787
569.33	23.9766
569.50	23.9777
569.70	25.9771
583.19	26.0724
600.60	43.3191
602.73	39.3114
604.72	46.3919
609.32	26.2533
609.32	26.2533
610.33	30.3003
614.28	36.3973
618.01	20.2402
621.93	30.3911
621.93	30.3911
633.25	26.4151
635.95	30.5002
636.99	31.5252
645.85	28.5380
657.76	28.6228
661.66	23.5346
661.66	23.5346
664.57	0.0000
666.33	22.5371
666.50	22.5382
677.62	23.6267

685.70	25.7312
695.00	28.8835
696.49	25.7983
696.51	25.7983
697.00	28.8976
702.65	25.8362
706.68	35.1704
711.68	20.7129
720.70	24.9082
721.93	0.0000
722.78	20.7666
722.91	20.7676
723.31	21.8080
724.19	19.7348
727.33	16.6309
733.00	15.6119
735.93	19.7886
739.50	21.8895
747.24	19.8401
752.31	17.7720
753.82	12.5493
756.73	12.5575
763.94	19.9147
765.81	17.8259
766.42	13.6335
777.92	17.8741
778.90	23.1365
783.70	13.6862
785.37	16.8504
795.86	13.7227
801.95	15.8547
810.29	12.7066
810.76	13.7671
815.77	18.0222
818.51	13.7900
832.01	21.2764
834.85	22.3535
836.80	0.0000
846.77	13.8728
856.80	20.3178
860.56	17.1230
871.09	28.9584
873.19	25.7520
875.33	0.0000
879.36	23.6355
880.51	17.1938
883.24	20.4287
884.68	20.4347
889.28	20.4538
898.04	23.7252
911.20	20.5442
911.20	20.5442
911.20	20.5442
926.50	17.3527
937.49	21.7378
944.13	16.3242
946.00	19.5965
949.00	13.0720
962.29	17.4738
964.08	18.5722
966.15	20.7655
968.97	10.9351
968.97	10.9351
968.97	10.9351
983.53	14.2549
996.26	19.7851
1001.03	13.7518
1004.73	19.2658
1037.84	15.6919
1038.76	0.0000
1048.07	18.4953
1050.41	18.5026
1050.41	18.5026
1063.66	13.9105
1085.87	13.9655
1099.45	11.1992
1112.07	8.4177
1115.54	14.9740

1120.29	14.9863
1120.29	14.9863
1120.55	14.0503
1121.30	12.1785
1131.51	0.0000
1173.23	15.1217
1177.93	11.3501
1189.05	15.1615
1204.77	14.2511
1221.41	14.2896
1231.02	14.3121
1235.36	21.9602
1238.28	14.3286
1260.41	0.0000
1271.85	4.8020
1274.44	10.5685
1274.54	9.6082
1291.59	8.6704
1298.22	0.0000
1312.11	13.5306
1332.49	10.6643
1365.19	12.6662
1368.63	0.0000
1384.29	7.8171
1408.01	12.7472
1457.56	0.0000
1460.82	8.8931
1489.16	7.9368
1505.03	6.9604
1596.21	2.0138
1620.50	10.1013
1678.03	0.0000
1690.97	9.1758
1764.49	8.2331
1764.49	8.2331
1770.23	12.3584
1771.35	9.2699
1791.20	0.0000
1836.06	6.2295

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202061452

Total Uranium Activity	1.9181E+00	ug/g
Total Uranium Counting Unc.	1.9102E+00	ug/g
Total Uranium Tpu	9.7458E-07	ug/g
Total Uranium Mda	1.6727E+00	ug/g

THERE ARE NO PEAKS !

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 15:37:07.08

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061453.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:34:25
Sample ID          : G1202061453      Sample quantity   : 1.14030E+02 GRAM
Detector name      : GAM22            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:02.32  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 961097           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	63.26*	124	485	1.09	126.78	124	7	1.72E-02	32.0	
2	4	74.81	651	603	1.24	149.85	143	17	9.04E-02	7.4	1.60E+00
3	4	77.14*	853	518	1.00	154.50	143	17	1.19E-01	5.7	
4	0	87.19	357	465	1.37	174.58	172	6	4.96E-02	10.9	
5	4	89.89	197	239	0.86	179.99	178	14	2.74E-02	11.9	2.57E+00
6	4	92.90*	344	644	1.50	185.99	178	14	4.78E-02	15.3	
7	0	129.03	76	417	0.91	258.19	254	7	1.05E-02	46.1	
8	0	185.87*	301	569	1.17	371.75	367	11	4.18E-02	17.1	
9	0	209.47	171	349	1.25	418.91	415	8	2.38E-02	20.5	
10	2	238.74*	1919	333	1.22	477.39	472	17	2.66E-01	2.8	5.35E+00
11	2	241.80	478	382	1.63	483.52	472	17	6.64E-02	9.8	
12	0	269.95*	132	340	0.99	539.77	535	10	1.83E-02	28.1	
13	0	295.22*	661	396	1.37	590.26	582	14	9.19E-02	7.5	
14	0	299.92	165	306	1.85	599.66	596	11	2.30E-02	21.8	
15	0	338.43*	448	439	1.42	676.62	669	16	6.22E-02	11.6	
16	0	351.99*	1128	270	1.23	703.71	697	13	1.57E-01	4.3	
17	0	462.87*	196	179	1.79	925.31	919	15	2.72E-02	16.7	
18	0	511.05*	217	253	2.12	1021.60	1013	18	3.01E-02	21.0	
19	0	583.26*	635	161	1.56	1165.94	1158	13	8.81E-02	5.9	
20	0	609.43*	787	169	1.50	1218.24	1213	12	1.09E-01	5.0	
21	0	661.68	432	207	1.57	1322.69	1316	16	6.00E-02	8.8	
22	0	727.80	194	126	1.72	1454.86	1449	15	2.69E-02	14.7	
23	0	767.99	97	133	1.38	1535.21	1528	14	1.35E-02	27.1	
24	0	794.71	84	112	1.95	1588.63	1580	14	1.17E-02	28.9	
25	0	861.86	109	126	2.03	1722.87	1715	18	1.51E-02	27.1	
26	0	911.07*	461	102	1.74	1821.27	1812	18	6.40E-02	7.2	
27	0	934.23	69	145	2.30	1867.57	1857	20	9.56E-03	44.5	
28	1	964.72	124	142	2.43	1928.54	1921	24	1.72E-02	21.7	2.62E+00
29	1	969.31*	309	108	2.49	1937.71	1921	24	4.30E-02	10.0	
30	0	1120.59*	214	91	2.64	2240.21	2233	14	2.97E-02	12.0	
31	0	1238.83	97	113	1.44	2476.67	2469	15	1.35E-02	26.1	
32	0	1460.91*	1964	72	2.81	2920.85	2907	24	2.73E-01	2.5	
33	0	1764.55*	138	33	2.80	3528.30	3519	19	1.91E-02	14.2	

Flag: "*" = Peak area was modified by background subtraction


```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061453.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:34:25
Sample ID         : G1202061453 Sample quantity : 114.03 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.32 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	+	1460.82	*	3.177E+01	3.328E+00	5.811E-01	5.323E-02	54.676
CD-109	+	88.03	*	4.403E+00	1.044E+00	1.289E+00	1.223E-01	3.417
SN-126	+	64.28		9.819E-01	6.448E-01	7.604E-01	1.104E-01	1.291
	+	86.94		1.768E+00	8.290E-01	5.924E-01	2.460E-01	2.985
	+	87.57	*	4.253E-01	1.008E-01	1.348E-01	1.272E-02	3.156
BA-137M	+	661.66	*	4.412E-01	9.076E-02	5.347E-02	5.638E-03	8.251
CS-137	+	661.66	*	4.660E-01	9.591E-02	5.648E-02	5.964E-03	8.251
TL-208		277.37		7.691E-01	4.482E-01	7.372E-01	1.226E-01	1.043
	+	583.19	*	6.254E-01	9.992E-02	5.543E-02	6.006E-03	11.281
	+	860.56		9.790E-01	5.421E-01	4.526E-01	5.272E-02	2.163
BI-211		72.87		7.446E+00	3.211E+00	5.523E+00	4.421E-01	1.348
	+	351.06	*	5.322E+00	7.700E-01	3.395E-01	3.961E-02	15.676
PB-212	+	74.82		3.379E+00	6.593E-01	5.529E-01	7.022E-02	6.112
	+	77.11		2.541E+00	3.594E-01	3.185E-01	2.663E-02	7.978
	+	238.63	*	2.159E+00	3.113E-01	1.023E-01	1.356E-02	21.102
	+	300.09		2.786E+00	1.280E+00	1.264E+00	1.853E-01	2.205
BI-214	+	609.32	*	1.495E+00	2.299E-01	1.227E-01	1.432E-02	12.186
	+	1120.29		2.009E+00	5.306E-01	5.086E-01	5.644E-02	3.950
	+	1764.49		1.727E+00	5.099E-01	3.227E-01	2.688E-02	5.352
PB-214	+	74.82		5.990E+00	1.119E+00	9.801E-01	1.115E-01	6.112
	+	77.11		4.479E+00	7.334E-01	5.614E-01	6.594E-02	7.978
	+	242.00		3.259E+00	7.831E-01	6.214E-01	8.594E-02	5.244
	+	295.22		1.980E+00	4.207E-01	2.407E-01	3.611E-02	8.226
	+	351.93	*	1.931E+00	2.991E-01	1.234E-01	1.589E-02	15.647
RA-224	+	240.99	*	5.762E+00	1.344E+00	1.096E+00	1.372E-01	5.259
RA-226	+	609.32	*	1.495E+00	2.299E-01	1.227E-01	1.432E-02	12.186
	+	1120.29		2.009E+00	5.306E-01	5.086E-01	5.644E-02	3.950
	+	1764.49		1.727E+00	5.099E-01	3.227E-01	2.688E-02	5.352
AC-228	+	338.32		2.369E+00	1.148E+00	3.846E-01	1.635E-01	6.161
	+	911.20	*	2.109E+00	4.163E-01	2.172E-01	2.942E-02	9.707
	+	968.97		2.435E+00	7.822E-01	3.743E-01	9.411E-02	6.504
RA-228	+	338.32		2.369E+00	1.148E+00	3.846E-01	1.635E-01	6.161
	+	911.20	*	2.109E+00	4.163E-01	2.172E-01	2.942E-02	9.707
	+	968.97		2.435E+00	7.822E-01	3.743E-01	9.411E-02	6.504

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.379E+00	5.728E-01	5.529E-01	4.560E-02	6.112
	+	77.11		2.541E+00	3.594E-01	3.185E-01	2.663E-02	7.978
	+	238.63	*	2.159E+00	3.113E-01	1.023E-01	1.356E-02	21.102
	+	300.09		2.786E+00	2.112E+00	1.264E+00	7.842E-01	2.205
TH-232	+	338.32		2.369E+00	6.178E-01	3.846E-01	4.574E-02	6.161
	+	911.20	*	2.109E+00	4.163E-01	2.172E-01	2.942E-02	9.707
	+	968.97		2.435E+00	7.822E-01	3.743E-01	9.411E-02	6.504
TH-234	+	63.29	*	2.548E+00	1.694E+00	2.123E+00	3.778E-01	1.200
	+	92.59		3.404E+00	1.286E+00	9.510E-01	2.118E-01	3.579
U-235	+	89.96		2.437E+00	8.404E-01	1.552E+00	3.859E-01	1.570
	+	93.35		2.571E+00	9.866E-01	7.150E-01	1.663E-01	3.596
		143.76	*	-8.553E-02	2.202E-01	3.585E-01	6.127E-02	-0.239
		163.33		4.324E-01	4.738E-01	7.865E-01	1.454E-01	0.550
	+	185.72		2.278E-01	8.152E-02	7.282E-02	7.625E-03	3.128
		205.31		2.753E-01	5.975E-01	8.753E-01	1.706E-01	0.315
NP-237	+	86.48	*	1.269E+00	4.016E-01	4.209E-01	9.658E-02	3.015
		95.86		-2.273E-01	1.051E+00	1.493E+00	3.596E-01	-0.152
U-238	+	63.29	*	2.548E+00	1.694E+00	2.123E+00	3.778E-01	1.200
	+	92.59		3.404E+00	1.084E+00	9.510E-01	8.650E-02	3.579
ANH-511	+	511.00	*	1.661E-01	7.166E-02	4.644E-02	4.653E-03	3.576

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	2.508E-02	3.812E-01	6.098E-01	6.363E-02	0.041
NA-22		1274.54	*	-3.736E-02	4.468E-02	6.934E-02	5.976E-03	-0.539
NA-24		1368.63	*	-2.443E+03	4.468E-02	Half-Life too short		
SC-46		889.28	*	-2.929E-02	4.527E-02	7.192E-02	8.051E-03	-0.407
	+	1120.55		3.630E-01	9.271E-02	1.424E-01	1.259E-02	2.549
V-48		944.13		-2.099E-01	1.486E+00	2.214E+00	2.401E-01	-0.095
		983.53	*	-5.187E-02	9.322E-02	1.464E-01	1.536E-02	-0.354
		1312.11		1.216E-02	9.296E-02	1.553E-01	1.368E-02	0.078
CR-51		320.08	*	4.581E-03	4.825E-01	8.076E-01	1.045E-01	0.006
MN-54		834.85	*	-4.357E-02	3.841E-02	5.928E-02	6.585E-03	-0.735
CO-56		846.77	*	-1.453E-02	4.418E-02	7.214E-02	8.031E-03	-0.201
		1037.84		-3.972E-01	3.388E-01	5.022E-01	5.175E-02	-0.791
	+	1238.28		2.729E-01	1.444E-01	1.920E-01	1.664E-02	1.421
		1771.35		8.935E-02	2.821E-01	4.165E-01	3.460E-02	0.215
CO-57		122.06	*	-9.114E-03	2.836E-02	4.438E-02	3.660E-03	-0.205
		136.47		-5.889E-02	2.253E-01	3.777E-01	3.501E-02	-0.156
CO-58		810.76	*	-2.123E-02	4.256E-02	6.896E-02	7.636E-03	-0.308
FE-59		1099.45	*	-1.318E-01	1.083E-01	1.593E-01	1.561E-02	-0.827
		1291.59		-2.203E-02	1.409E-01	2.302E-01	2.269E-02	-0.096
CO-60		1173.23		7.108E-03	4.245E-02	7.159E-02	5.758E-03	0.099
		1332.49	*	-4.138E-03	3.898E-02	6.366E-02	5.676E-03	-0.065
ZN-65		1115.54	*	3.919E-02	1.153E-01	1.638E-01	1.461E-02	0.239
SE-75		121.12		-3.229E-02	1.507E-01	2.369E-01	2.558E-02	-0.136
		136.00		-1.334E-02	4.378E-02	7.331E-02	6.363E-03	-0.182

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		3.789E-02	5.708E-02	8.296E-02	1.117E-02	0.457
	279.54			1.130E-01	1.302E-01	2.141E-01	3.040E-02	0.528
	400.66			-1.157E-01	2.774E-01	4.457E-01	5.205E-02	-0.260
SR-85	514.00	*		1.864E-01	5.368E-02	8.664E-02	8.693E-03	2.151
Y-88	898.04			-3.513E-02	4.488E-02	7.035E-02	7.904E-03	-0.499
	1836.06	*		-1.117E-02	3.461E-02	5.433E-02	4.393E-03	-0.206
Y-91	1204.77	*		1.918E+00	2.372E+01	3.967E+01	3.261E+00	0.048
NB-94	702.65	*		7.555E-03	3.466E-02	5.727E-02	6.137E-03	0.132
	871.09			-2.500E-02	3.809E-02	5.259E-02	5.875E-03	-0.475
NB-95	765.81	*		9.713E-02	5.690E-02	8.818E-02	9.643E-03	1.101
NB-95M	235.69	*		1.995E-01	1.781E-01	2.633E-01	3.484E-02	0.758
ZR-95	724.19			1.876E-01	1.301E-01	1.985E-01	2.260E-02	0.945
	756.73	*		6.180E-02	8.159E-02	1.378E-01	1.604E-02	0.448
MO-99	140.51			-2.715E-05	8.159E-02	Half-Life	too short	
	181.07			-3.713E-05	8.159E-02	Half-Life	too short	
	366.42			2.330E-05	8.159E-02	Half-Life	too short	
	739.50	*		1.156E-05	8.159E-02	Half-Life	too short	
	777.92			-2.300E-04	8.159E-02	Half-Life	too short	
TC-99M	140.51	*		-2.178E+19	8.159E-02	Half-Life	too short	
RU-103	497.08	*		-7.061E-03	4.888E-02	7.803E-02	1.157E-02	-0.090
	610.33	+		1.775E+01	3.558E+00	3.296E+00	5.721E-01	5.387
RH-106	621.93	*		-3.786E-02	3.273E-01	5.370E-01	7.791E-02	-0.071
	1050.41			-1.598E+00	2.647E+00	4.127E+00	4.028E-01	-0.387
RU-106	621.93	*		-3.786E-02	3.273E-01	5.370E-01	5.609E-02	-0.071
	1050.41			-1.598E+00	2.647E+00	4.127E+00	4.028E-01	-0.387
AG-108M	433.94	*		-1.112E-02	3.149E-02	5.039E-02	4.959E-03	-0.221
	614.28			2.294E-02	3.881E-02	5.771E-02	6.151E-03	0.397
	722.91			3.181E-02	4.472E-02	6.586E-02	7.254E-03	0.483
AG-110M	657.76	*		6.282E-02	4.313E-02	6.703E-02	7.205E-03	0.937
	677.62			1.130E-01	3.108E-01	5.201E-01	5.626E-02	0.217
	706.68			-9.232E-02	2.261E-01	3.598E-01	3.933E-02	-0.257
	763.94			-1.651E-02	1.983E-01	2.726E-01	3.030E-02	-0.061
	884.68			-5.287E-03	5.837E-02	8.959E-02	1.022E-02	-0.059
	937.49			8.543E-02	1.453E-01	2.148E-01	2.395E-02	0.398
	1384.29			-2.577E-01	1.777E-01	2.525E-01	2.313E-02	-1.021
	1505.03			2.557E-01	3.243E-01	5.622E-01	5.000E-02	0.455
SN-113	391.69	*		-3.031E-02	4.872E-02	7.761E-02	7.412E-03	-0.391
CD-115	260.90			1.300E-04	4.872E-02	Half-Life	too short	
	492.35			1.712E-04	4.872E-02	Half-Life	too short	
	527.90	*		-7.363E-05	4.872E-02	Half-Life	too short	
SN-117M	156.02			-2.842E+00	3.510E+00	5.703E+00	5.347E-01	-0.498
	158.56	*		-1.903E-02	8.555E-02	1.420E-01	1.347E-02	-0.134
TE-123M	159.00	*		-4.459E-03	3.088E-02	5.141E-02	4.909E-03	-0.087
SB-124	602.73			3.282E-02	5.006E-02	7.461E-02	7.750E-03	0.440
	645.85			-3.100E-02	5.344E-01	8.763E-01	9.569E-02	-0.035
	722.78			3.193E-01	4.905E-01	7.195E-01	7.879E-02	0.444
	1690.97	*		1.790E-02	8.055E-02	1.370E-01	1.222E-02	0.131
SB-125	427.87	*		4.118E-03	9.867E-02	1.614E-01	1.565E-02	0.026
	463.37	+		1.355E+00	4.748E-01	5.713E-01	5.911E-02	2.372

---- Non-Identified Nuclides ----

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TE-125M	600.60			-3.083E-01	2.121E-01	2.933E-01	3.202E-02	-1.051
	635.95			-2.374E-01	2.619E-01	4.049E-01	4.481E-02	-0.586
	109.28		*	-4.339E+00	1.171E+01	1.844E+01	1.901E+00	-0.235
	388.63			3.130E-01	2.653E-01	4.577E-01	4.334E-02	0.684
I-126	666.33		*	1.457E-01	3.693E-01	5.376E-01	5.680E-02	0.271
	753.82			4.849E-01	2.827E+00	4.632E+00	5.048E-01	0.105
	414.70			-5.148E-02	1.268E-01	2.033E-01	1.924E-02	-0.253
	666.50			3.044E-02	1.282E-01	1.842E-01	1.947E-02	0.165
SB-126	695.00			2.368E-02	1.258E-01	2.077E-01	2.220E-02	0.114
	697.00			-2.326E-01	4.441E-01	7.030E-01	7.518E-02	-0.331
	720.70		*	4.257E-01	2.600E-01	4.025E-01	4.340E-02	1.058
	856.80			8.796E-01	8.129E-01	1.264E+00	1.410E-01	0.696
SB-127	252.40			1.509E+01	2.119E+01	3.349E+01	1.454E+01	0.450
	473.00			1.521E+00	6.967E+00	1.140E+01	1.808E+00	0.133
	685.70		*	-1.629E+00	5.353E+00	8.581E+00	1.315E+00	-0.190
	783.70			1.216E+01	1.555E+01	2.610E+01	4.253E+00	0.466
I-131	80.19			1.062E+00	1.005E+01	1.472E+01	1.292E+00	0.072
	284.31			-8.850E-01	3.278E+00	5.169E+00	7.328E-01	-0.171
	364.49		*	1.469E-01	2.467E-01	4.180E-01	4.655E-02	0.351
	636.99			-1.448E+00	2.970E+00	4.739E+00	5.191E-01	-0.306
TE-132	49.72			-6.828E+01	9.574E+01	1.561E+02	2.052E+01	-0.438
	111.76			-5.687E+01	2.039E+02	3.218E+02	4.295E+01	-0.177
	116.30			-4.072E+01	1.789E+02	2.821E+02	3.755E+01	-0.144
	228.16		*	-3.631E+00	4.677E+00	7.304E+00	1.429E+00	-0.497
BA-133	81.00			-8.888E-02	1.085E-01	1.514E-01	2.359E-02	-0.587
	276.40			2.939E-01	4.250E-01	6.713E-01	1.197E-01	0.438
	302.85			8.745E-02	1.699E-01	2.547E-01	4.202E-02	0.343
	356.01		*	-4.887E-03	4.761E-02	6.804E-02	1.002E-02	-0.072
I-133	383.85			-8.852E-02	3.123E-01	5.074E-01	6.705E-02	-0.174
	529.87		*	2.297E+00	3.123E-01	Half-Life	too short	
	875.33			5.428E+01	3.123E-01	Half-Life	too short	
	1298.22			-6.571E+00	3.123E-01	Half-Life	too short	
CS-134	563.25			1.737E-01	3.787E-01	6.446E-01	6.650E-02	0.270
	569.33			-1.402E-01	2.161E-01	3.340E-01	3.463E-02	-0.420
	604.72			4.238E-02	3.975E-02	6.065E-02	6.314E-03	0.699
	795.86		*	1.178E-01	6.925E-02	8.726E-02	9.659E-03	1.350
+ CS-135	801.95			-7.442E-01	4.735E-01	6.064E-01	6.715E-02	-1.227
	1365.19			-6.427E-01	1.291E+00	2.026E+00	1.888E-01	-0.317
	268.22		*	3.023E-01	2.030E-01	3.011E-01	4.355E-02	1.004
	546.56			-8.390E+18	2.030E-01	Half-Life	too short	
I-135	836.80			2.480E+18	2.030E-01	Half-Life	too short	
	1038.76			-6.865E+18	2.030E-01	Half-Life	too short	
	1131.51			2.020E+18	2.030E-01	Half-Life	too short	
	1260.41		*	-2.029E+18	2.030E-01	Half-Life	too short	
CS-136	1457.56			6.576E+20	2.030E-01	Half-Life	too short	
	1678.03			3.672E+18	2.030E-01	Half-Life	too short	
	1791.20			2.400E+18	2.030E-01	Half-Life	too short	
	153.25			1.146E+00	1.352E+00	2.319E+00	2.509E-01	0.494
	176.60			4.011E-01	8.271E-01	1.393E+00	1.523E-01	0.288

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	273.65			-2.477E+00	1.121E+00	1.288E+00	1.837E-01	-1.923
	340.55			1.497E+00	3.427E-01	5.221E-01	6.289E-02	2.867
	818.51			7.154E-04	1.119E-01	1.871E-01	2.075E-02	0.004
	1048.07	*		-1.256E-01	1.674E-01	2.579E-01	2.610E-02	-0.487
	1235.36			1.547E+00	1.130E+00	1.740E+00	2.019E-01	0.889
CE-139	165.86	*		-2.491E-02	3.378E-02	5.483E-02	5.377E-03	-0.454
BA-140	162.66			5.247E-01	1.346E+00	2.227E+00	2.268E-01	0.236
	304.85			1.404E+00	2.440E+00	3.631E+00	1.123E+00	0.387
	423.72			1.814E+00	3.311E+00	5.458E+00	1.809E+00	0.332
	537.26	*		-1.745E-01	4.196E-01	6.798E-01	2.334E-01	-0.257
LA-140	328.76			7.114E-01	5.138E-01	8.881E-01	1.123E-01	0.801
	487.02			-7.337E-02	2.247E-01	3.555E-01	3.685E-02	-0.206
	815.77			1.733E-01	4.966E-01	8.472E-01	1.006E-01	0.205
	1596.21	*		-2.308E-01	1.460E-01	2.052E-01	1.799E-02	-1.125
CE-141	145.44	*		4.715E-02	7.526E-02	1.290E-01	1.175E-02	0.365
CE-143	57.36			-1.487E-02	7.526E-02	Half-Life	too short	
	293.27	*		6.290E-02	7.526E-02	Half-Life	too short	
	664.57			5.308E-01	7.526E-02	Half-Life	too short	
	721.93			9.225E-02	7.526E-02	Half-Life	too short	
CE-144	80.12			3.408E-01	2.790E+00	4.089E+00	3.535E-01	0.083
	133.52	*		-2.195E-01	2.188E-01	3.417E-01	5.208E-02	-0.642
PM-144	476.78			-1.901E-02	6.979E-02	1.095E-01	1.150E-02	-0.174
	618.01			-1.150E-02	3.363E-02	5.321E-02	5.660E-03	-0.216
	696.49	*		-1.248E-03	3.619E-02	5.901E-02	6.312E-03	-0.021
PR-144	696.51	*		-9.369E-02	2.720E+00	4.435E+00	4.741E-01	-0.021
	1489.16			-6.277E+00	1.295E+01	1.997E+01	1.778E+00	-0.314
PM-146	453.88	*		-4.779E-03	4.562E-02	7.365E-02	8.469E-03	-0.065
	633.25			-1.104E+00	1.439E+00	2.154E+00	8.328E-01	-0.512
	735.93			9.903E-02	1.744E-01	2.518E-01	7.247E-02	0.393
	747.24			-2.664E-02	9.806E-02	1.562E-01	2.502E-02	-0.171
ND-147	91.11	+		1.303E+00	3.376E-01	8.728E-01	8.630E-02	1.493
	319.41			-2.529E+00	5.861E+00	9.620E+00	1.218E+00	-0.263
	531.02	*		8.093E-01	9.702E-01	1.677E+00	2.659E-01	0.483
PM-149	285.90	*		5.995E-04	9.702E-01	Half-Life	too short	
EU-152	121.78			-3.014E-02	8.004E-02	1.250E-01	1.196E-02	-0.241
	244.70			2.289E-01	3.927E-01	5.718E-01	7.240E-02	0.400
	344.28	*		5.528E-02	1.305E-01	1.704E-01	2.047E-02	0.324
	778.90			-1.532E-01	2.821E-01	4.397E-01	4.825E-02	-0.348
	964.08	+		1.049E+00	4.692E-01	6.109E-01	6.519E-02	1.717
	1085.87			3.881E-02	3.919E-01	6.419E-01	5.980E-02	0.060
	1112.07			2.398E-01	3.616E-01	5.311E-01	4.759E-02	0.451
	1408.01			2.123E-01	1.922E-01	3.416E-01	3.054E-02	0.621
GD-153	69.67			3.534E-01	1.865E+00	2.770E+00	2.150E-01	0.128
	97.43	*		-9.090E-02	1.049E-01	1.440E-01	1.266E-02	-0.631
	103.18			-1.159E-01	1.235E-01	1.908E-01	1.630E-02	-0.607
EU-154	123.07			-3.004E-03	5.550E-02	8.774E-02	9.722E-03	-0.034
	723.31			2.024E-01	2.065E-01	3.091E-01	3.556E-02	0.655
	873.19			-7.271E-02	2.844E-01	4.555E-01	6.312E-02	-0.160
	996.26			-1.602E-01	3.579E-01	5.668E-01	1.042E-01	-0.283

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		-1.331E-01	2.241E-01	3.503E-01	4.522E-02	-0.380
		1274.44	*	-1.063E-01	1.263E-01	1.954E-01	2.222E-02	-0.544
		86.55		5.174E-01	1.228E-01	1.973E-01	1.856E-02	2.622
		105.31	*	1.159E-01	1.139E-01	1.884E-01	1.617E-02	0.615
TB-160	+	86.79		1.477E+00	3.500E-01	5.602E-01	5.239E-02	2.636
		197.04		1.260E-01	7.050E-01	1.143E+00	1.243E-01	0.110
		215.65		1.240E-01	8.754E-01	1.438E+00	1.662E-01	0.086
		298.57		4.233E-01	1.929E-01	2.389E-01	3.201E-02	1.772
	+	879.36	*	-9.618E-03	1.571E-01	2.598E-01	2.906E-02	-0.037
		962.29		1.792E+00	7.120E-01	1.162E+00	1.241E-01	1.543
		966.15		7.900E-01	3.533E-01	6.126E-01	6.525E-02	1.290
		1177.93		1.536E-02	3.739E-01	6.253E-01	5.045E-02	0.025
HO-166M	+	1271.85		-4.746E-01	8.117E-01	1.228E+00	1.055E-01	-0.387
		80.57		1.300E-02	2.973E-01	4.341E-01	3.772E-02	0.030
		184.41		1.810E-01	6.476E-02	7.485E-02	7.804E-03	2.418
		280.46		-1.353E-01	1.005E-01	1.486E-01	2.076E-02	-0.911
	+	410.95		5.859E-02	2.637E-01	4.361E-01	4.117E-02	0.134
		711.68	*	1.314E-02	6.155E-02	1.016E-01	1.092E-02	0.129
		752.31		-4.924E-02	2.789E-01	4.471E-01	4.870E-02	-0.110
		810.29		-9.202E-03	5.879E-02	9.743E-02	1.077E-02	-0.094
TA-182	+	67.75		-4.879E-02	1.180E-01	1.827E-01	1.394E-02	-0.267
		100.11		1.770E-01	1.986E-01	3.285E-01	2.847E-02	0.539
		152.43		3.793E-01	3.789E-01	6.533E-01	6.027E-02	0.581
		222.11		8.033E-02	4.186E-01	6.871E-01	8.108E-02	0.117
	+	1121.30		9.880E-01	2.524E-01	3.902E-01	3.446E-02	2.532
		1189.05		-4.820E-02	3.028E-01	4.992E-01	4.060E-02	-0.097
		1221.41	*	2.105E-01	2.155E-01	3.765E-01	3.130E-02	0.559
		1231.02		2.521E-01	5.922E-01	8.671E-01	7.257E-02	0.291
IR-192	+	295.96		1.578E+00	3.195E-01	3.336E-01	4.513E-02	4.729
		308.46		-5.974E-02	1.111E-01	1.820E-01	2.382E-02	-0.328
		316.51	*	-1.720E-02	3.948E-02	6.484E-02	8.286E-03	-0.265
		468.07		2.220E-02	8.355E-02	1.191E-01	1.233E-02	0.186
HG-203	+	70.83		2.580E-01	1.590E+00	2.356E+00	3.689E-01	0.109
		72.87		2.087E+00	9.392E-01	1.548E+00	2.353E-01	1.348
		279.20	*	6.210E-02	5.029E-02	8.324E-02	1.177E-02	0.746
		72.81		3.803E-01	1.829E-01	3.140E-01	2.511E-02	1.211
BI-207	+	74.97		9.744E-01	1.648E-01	2.420E-01	1.979E-02	4.026
		569.70		-1.057E-02	3.255E-02	5.119E-02	5.258E-03	-0.206
		1063.66	*	1.798E-03	5.402E-02	8.825E-02	8.472E-03	0.020
		1770.23		1.153E+00	6.343E-01	1.101E+00	9.148E-02	1.048
PB-210		46.54	*	2.339E+00	3.242E+00	5.450E+00	5.020E-01	0.429
PB-211	+	404.85	*	-5.778E-01	8.096E-01	1.201E+00	5.828E-01	-0.481
		427.09		3.403E-02	1.655E+00	2.705E+00	1.256E+00	0.013
		832.01		-1.168E+00	1.163E+00	1.532E+00	8.014E-01	-0.763
		727.33	*	2.865E+00	9.335E-01	1.178E+00	1.656E-01	2.432
BI-212	+	785.37		2.963E+00	3.507E+00	5.542E+00	6.091E-01	0.535
		1620.50		2.264E+00	2.466E+00	4.439E+00	3.870E-01	0.510
RN-219	+	271.23		6.399E-01	3.715E-01	4.617E-01	6.822E-02	1.386
		401.81	*	-2.226E-01	4.243E-01	6.765E-01	1.037E-01	-0.329

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223	81.07			-2.029E-01	2.439E-01	3.423E-01	2.991E-02	-0.593
	83.79			1.071E-01	1.432E-01	2.129E-01	1.920E-02	0.503
	94.87			1.429E+00	5.331E-01	8.323E-01	7.442E-02	1.717
	144.24			-1.792E-01	7.298E-01	1.195E+00	1.181E-01	-0.150
	154.21			1.784E-01	4.012E-01	6.815E-01	6.862E-02	0.262
	269.46			4.972E-01	2.875E-01	3.686E-01	5.060E-02	1.349
AC-227	323.87	*		-4.972E-01	7.342E-01	1.185E+00	2.316E-01	-0.420
	338.28	+		9.402E+00	2.577E+00	2.588E+00	3.776E-01	3.633
	79.69			5.118E-01	1.336E+00	1.976E+00	3.404E-01	0.259
	235.96			6.512E-01	2.259E-01	3.341E-01	4.540E-02	1.949
	256.23	*		-2.277E-01	2.807E-01	4.332E-01	6.749E-02	-0.526
	299.98	+		3.064E+00	1.425E+00	1.743E+00	2.841E-01	1.758
TH-227	304.50			8.732E-01	1.899E+00	2.840E+00	5.485E-01	0.308
	334.37			2.068E-01	1.978E+00	2.884E+00	5.111E-01	0.072
	79.80			7.765E-01	1.768E+00	2.614E+00	5.693E-01	0.297
	235.96			6.512E-01	2.248E-01	3.341E-01	4.393E-02	1.949
	256.23	*		-2.277E-01	2.811E-01	4.332E-01	7.282E-02	-0.526
	299.98	+		3.064E+00	1.425E+00	1.743E+00	2.841E-01	1.758
TH-229	304.50			8.732E-01	1.899E+00	2.840E+00	5.485E-01	0.308
	334.37			2.068E-01	1.978E+00	2.884E+00	5.111E-01	0.072
	85.43			5.316E-01	2.451E-01	3.766E-01	3.464E-02	1.412
	88.47	+		6.557E-01	1.554E-01	2.505E-01	2.366E-02	2.618
	193.51	*		-4.912E-01	5.786E-01	9.217E-01	9.906E-02	-0.533
	210.85	+		2.801E+00	1.191E+00	1.727E+00	1.965E-01	1.622
PA-231	283.69	*		-1.677E+00	1.655E+00	2.479E+00	4.509E-01	-0.676
	301.36	+		1.969E+00	9.126E-01	1.107E+00	1.753E-01	1.778
TH-231	81.07			-2.029E-01	2.439E-01	3.423E-01	2.991E-02	-0.593
	83.79			1.071E-01	1.432E-01	2.129E-01	1.920E-02	0.503
	94.87			1.429E+00	5.331E-01	8.323E-01	7.442E-02	1.717
	144.24			-1.792E-01	7.298E-01	1.195E+00	1.181E-01	-0.150
	154.21			1.784E-01	4.012E-01	6.815E-01	6.862E-02	0.262
	269.46	+		4.972E-01	2.875E-01	3.686E-01	5.060E-02	1.349
PA-233	323.87	*		-4.972E-01	7.342E-01	1.185E+00	2.316E-01	-0.420
	338.28	+		9.402E+00	2.577E+00	2.588E+00	3.776E-01	3.633
	300.13	+		1.387E+00	6.535E-01	7.945E-01	1.430E-01	1.745
	311.90	*		6.327E-02	6.948E-02	1.198E-01	1.570E-02	0.528
	340.48			4.468E+00	1.403E+00	1.490E+00	3.782E-01	2.999
	94.67			6.505E-01	2.083E-01	3.142E-01	3.970E-02	2.071
PA-234	98.44			6.014E-02	1.067E-01	1.590E-01	8.873E-02	0.378
	111.00			6.528E-02	1.962E-01	3.169E-01	3.769E-02	0.206
	131.20			3.460E-02	1.209E-01	1.833E-01	1.553E-02	0.189
	569.50			-9.628E-02	2.901E-01	4.563E-01	4.686E-02	-0.211
	733.00			4.876E-02	4.417E-01	6.206E-01	1.436E-01	0.079
	880.51			1.208E-01	2.948E-01	5.010E-01	5.603E-02	0.241
	883.24			-2.873E-02	3.338E-01	5.122E-01	3.463E-01	-0.056
	926.50			-7.248E-02	2.013E-01	2.722E-01	7.126E-02	-0.266
	946.00	*		-2.455E-02	3.242E-01	5.320E-01	1.057E-01	-0.046
	949.00			5.053E-01	4.559E-01	7.987E-01	8.630E-02	0.633
PA-234M	766.42			2.080E+01	1.740E+01	2.136E+01	1.093E+01	0.974

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		3.425E+00	4.683E+00	7.886E+00	9.037E-01	0.434
	99.53			1.937E-01	1.749E-01	2.910E-01	2.529E-02	0.666
	103.37			-7.824E-02	1.088E-01	1.697E-01	1.449E-02	-0.461
	106.12			4.633E-02	9.198E-02	1.498E-01	1.267E-02	0.309
	117.23	*		-3.203E-01	4.360E-01	6.722E-01	5.554E-02	-0.476
	228.18			-1.931E-01	2.459E-01	3.866E-01	4.651E-02	-0.499
AM-241	277.60			3.244E-01	2.041E-01	3.392E-01	4.728E-02	0.956
	59.54	*		6.985E-02	1.609E-01	2.443E-01	1.910E-02	0.286
CM-247	278.00			1.876E+00	8.811E-01	1.466E+00	2.045E-01	1.280
	287.50			2.249E-01	1.523E+00	2.258E+00	3.107E-01	0.100
	402.40	*		-4.403E-02	3.897E-02	6.005E-02	5.633E-03	-0.733
CF-249	252.80			7.144E-01	1.075E+00	1.774E+00	2.301E-01	0.403
	333.37			-1.164E-01	2.201E-01	3.084E-01	3.732E-02	-0.377
CF-251	388.16	*		4.449E-02	4.182E-02	7.184E-02	6.820E-03	0.619
	177.52	*		-6.858E-02	1.421E-01	2.317E-01	2.360E-02	-0.296
	227.38			-2.374E-01	4.000E-01	6.351E-01	7.622E-02	-0.374
	285.41			2.354E+00	2.401E+00	3.964E+00	5.478E-01	0.594

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]G1202061453      *
* Acquisition date   : 20-MAR-2010 13:34:25 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 02:00:02.32 Half life ratio : 8.000           *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G1202061453 Analyst initials: MXR1                 *
* Batch Number      : 961097 Sample Quantity : 1.1403E+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	3.177E+01	3.262E+00	5.786E-01	0.000E+00
CD-109	4.403E+00	1.023E+00	1.316E+00	0.000E+00
SN-126	4.253E-01	9.880E-02	1.376E-01	0.000E+00
BA-137M	4.412E-01	8.895E-02	5.363E-02	0.000E+00
CS-137	4.660E-01	9.400E-02	5.665E-02	0.000E+00
TL-208	6.254E-01	9.792E-02	5.566E-02	0.000E+00
BI-211	5.322E+00	7.546E-01	3.425E-01	0.000E+00
PB-212	2.159E+00	3.051E-01	1.036E-01	0.000E+00
BI-214	1.495E+00	2.253E-01	1.231E-01	0.000E+00
PB-214	1.931E+00	2.931E-01	1.245E-01	0.000E+00
RA-224	5.762E+00	1.317E+00	1.109E+00	0.000E+00
RA-226	1.495E+00	2.253E-01	1.231E-01	0.000E+00
AC-228	2.109E+00	4.080E-01	2.172E-01	0.000E+00
RA-228	2.109E+00	4.080E-01	2.172E-01	0.000E+00
TH-228	2.159E+00	3.051E-01	1.036E-01	0.000E+00
TH-232	2.109E+00	4.080E-01	2.172E-01	0.000E+00
TH-234	2.548E+00	1.660E+00	2.174E+00	0.000E+00
U-235	-8.553E-02	2.158E-01	3.645E-01	0.000E+00
NP-237	1.269E+00	3.936E-01	4.300E-01	0.000E+00
U-238	2.548E+00	1.660E+00	2.174E+00	0.000E+00
ANH-511	1.661E-01	7.022E-02	4.669E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.508E-02	3.735E-01	6.134E-01	0.000E+00 NOT IDENT.
NA-22	-3.736E-02	4.378E-02	6.913E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.291E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.929E-02	4.436E-02	7.194E-02	0.000E+00 FAIL ABUN
V-48	-5.187E-02	9.136E-02	1.463E-01	0.000E+00 NOT IDENT.
CR-51	4.581E-03	4.729E-01	8.154E-01	0.000E+00 NOT IDENT.

MN-54	-4.357E-02	3.764E-02	5.933E-02	0.000E+00	NOT IDENT.
CO-56	-1.453E-02	4.330E-02	7.219E-02	0.000E+00	FAIL ABUN
CO-57	-9.114E-03	2.779E-02	4.520E-02	0.000E+00	NOT IDENT.
CO-58	-2.123E-02	4.171E-02	6.904E-02	0.000E+00	NOT IDENT.
FE-59	-1.318E-01	1.061E-01	1.591E-01	0.000E+00	NOT IDENT.
CO-60	-4.138E-03	3.820E-02	6.344E-02	0.000E+00	NOT IDENT.
ZN-65	3.919E-02	1.129E-01	1.635E-01	0.000E+00	NOT IDENT.
SE-75	3.789E-02	5.594E-02	8.390E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.261E-02	8.710E-02	0.000E+00	NOT IDENT.
Y-88	-1.117E-02	3.392E-02	5.398E-02	0.000E+00	NOT IDENT.
Y-91	1.918E+00	2.324E+01	3.957E+01	0.000E+00	NOT IDENT.
NB-94	7.555E-03	3.397E-02	5.741E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.576E-02	8.832E-02	0.000E+00	NOT IDENT.
NB-95M	1.995E-01	1.745E-01	2.666E-01	0.000E+00	NOT IDENT.
ZR-95	6.180E-02	7.996E-02	1.381E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.270E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.448E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.061E-03	4.790E-02	7.847E-02	0.000E+00	FAIL ABUN
RH-106	-3.786E-02	3.208E-01	5.389E-01	0.000E+00	NOT IDENT.
RU-106	-3.786E-02	3.208E-01	5.389E-01	0.000E+00	NOT IDENT.
AG-108M	-1.112E-02	3.086E-02	5.073E-02	0.000E+00	NOT IDENT.
AG-110M	6.282E-02	4.227E-02	6.724E-02	0.000E+00	NOT IDENT.
SN-113	-3.031E-02	4.775E-02	7.822E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.338E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.903E-02	8.384E-02	1.443E-01	0.000E+00	NOT IDENT.
TE-123M	-4.459E-03	3.027E-02	5.223E-02	0.000E+00	NOT IDENT.
SB-124	1.790E-02	7.894E-02	1.362E-01	0.000E+00	NOT IDENT.
SB-125	4.118E-03	9.669E-02	1.625E-01	0.000E+00	FAIL ABUN
TE-125M	-4.339E+00	1.147E+01	1.880E+01	0.000E+00	NOT IDENT.
I-126	1.457E-01	3.619E-01	5.392E-01	0.000E+00	NOT IDENT.
SB-126	0.000E+00	2.548E-01	4.034E-01	0.000E+00	NOT IDENT.
SB-127	-1.629E+00	5.246E+00	8.604E+00	0.000E+00	NOT IDENT.
I-131	1.469E-01	2.418E-01	4.216E-01	0.000E+00	NOT IDENT.
TE-132	-3.631E+00	4.584E+00	7.396E+00	0.000E+00	NOT IDENT.
BA-133	-4.887E-03	4.665E-02	6.863E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.508E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.786E-02	8.738E-02	0.000E+00	FAIL ABUN
CS-135	3.023E-01	1.989E-01	3.045E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.619E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.256E-01	1.641E-01	2.576E-01	0.000E+00	NOT IDENT.
CE-139	-2.491E-02	3.311E-02	5.568E-02	0.000E+00	NOT IDENT.
BA-140	-1.745E-01	4.112E-01	6.831E-01	0.000E+00	NOT IDENT.
LA-140	-2.308E-01	1.431E-01	2.042E-01	0.000E+00	NOT IDENT.
CE-141	4.715E-02	7.376E-02	1.312E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.933E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.195E-01	2.144E-01	3.477E-01	0.000E+00	NOT IDENT.
PM-144	-1.248E-03	3.546E-02	5.916E-02	0.000E+00	NOT IDENT.
PR-144	-9.369E-02	2.665E+00	4.446E+00	0.000E+00	NOT IDENT.
PM-146	-4.779E-03	4.470E-02	7.413E-02	0.000E+00	NOT IDENT.
ND-147	8.093E-01	9.508E-01	1.685E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.206E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	5.528E-02	1.279E-01	1.719E-01	0.000E+00	FAIL ABUN
GD-153	-9.090E-02	1.028E-01	1.469E-01	0.000E+00	NOT IDENT.
EU-154	-1.063E-01	1.237E-01	1.948E-01	0.000E+00	NOT IDENT.
EU-155	1.159E-01	1.116E-01	1.922E-01	0.000E+00	FAIL ABUN
TB-160	-9.618E-03	1.539E-01	2.599E-01	0.000E+00	FAIL ABUN
HO-166M	1.314E-02	6.032E-02	1.018E-01	0.000E+00	FAIL ABUN
TA-182	2.105E-01	2.112E-01	3.755E-01	0.000E+00	FAIL ABUN
IR-192	-1.720E-02	3.869E-02	6.547E-02	0.000E+00	FAIL ABUN
HG-203	6.210E-02	4.929E-02	8.415E-02	0.000E+00	NOT IDENT.
BI-207	1.798E-03	5.294E-02	8.813E-02	0.000E+00	FAIL ABUN
PB-210	2.339E+00	3.177E+00	5.598E+00	0.000E+00	NOT IDENT.
PB-211	-5.778E-01	7.934E-01	1.210E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.149E-01	1.180E+00	0.000E+00	FAIL ABUN
RN-219	-2.226E-01	4.158E-01	6.816E-01	0.000E+00	FAIL ABUN
RA-223	-4.972E-01	7.195E-01	1.196E+00	0.000E+00	FAIL ABUN
AC-227	-2.277E-01	2.751E-01	4.383E-01	0.000E+00	FAIL ABUN
TH-227	-2.277E-01	2.755E-01	4.383E-01	0.000E+00	FAIL ABUN
TH-229	-4.912E-01	5.671E-01	9.348E-01	0.000E+00	FAIL ABUN
PA-231	-1.677E+00	1.622E+00	2.506E+00	0.000E+00	FAIL ABUN
TH-231	-4.972E-01	7.195E-01	1.196E+00	0.000E+00	FAIL ABUN
PA-233	6.327E-02	6.809E-02	1.210E-01	0.000E+00	FAIL ABUN
PA-234	-2.455E-02	3.177E-01	5.318E-01	0.000E+00	NOT IDENT.
PA-234M	3.425E+00	4.589E+00	7.880E+00	0.000E+00	NOT IDENT.
NP-239	-3.203E-01	4.273E-01	6.848E-01	0.000E+00	NOT IDENT.
AM-241	6.985E-02	1.577E-01	2.504E-01	0.000E+00	NOT IDENT.
CM-247	-4.403E-02	3.819E-02	6.051E-02	0.000E+00	NOT IDENT.
CF-249	4.449E-02	4.099E-02	7.240E-02	0.000E+00	NOT IDENT.

CF-251 -6.858E-02 1.392E-01 2.351E-01 0.000E+00 NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061453.CNF;1
Sample date        : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 13:34:25
Sample ID          : G1202061453          Sample quantity  : 1.14030E+02 GRAM
Detector name      : GAM22                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:02.32  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity        : 5.00000
Batch ID           : 961097               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	1460.82	1964	10.66*	1.909E+00	3.177E+01	3.177E+01	10.48
CD-109	88.03	357	3.70*	7.478E+00	4.253E+00	4.403E+00	23.70
SN-126	64.28	124	9.60	4.329E+00	9.819E-01	9.819E-01	65.67
	86.94	357	8.90	7.478E+00	1.768E+00	1.768E+00	46.88
	87.57	357	37.00*	7.478E+00	4.253E-01	4.253E-01	23.70
BA-137M	661.66	432	89.90*	3.590E+00	4.405E-01	4.412E-01	20.57
CS-137	661.66	432	85.10*	3.590E+00	4.654E-01	4.660E-01	20.58
TL-208	277.37	-----	6.60	6.182E+00	-----	Line Not Found	-----
	583.19	635	85.00*	3.930E+00	6.254E-01	6.254E-01	15.98
	860.56	109	12.50	2.919E+00	9.790E-01	9.790E-01	55.37
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	1128	12.92*	5.401E+00	5.322E+00	5.322E+00	14.47
PB-212	74.82	651	10.28	6.166E+00	3.379E+00	3.379E+00	19.51
	77.11	853	17.10	6.465E+00	2.541E+00	2.541E+00	14.14
	238.63	1919	43.60*	6.708E+00	2.159E+00	2.159E+00	14.42
	300.09	165	3.30	5.918E+00	2.786E+00	2.786E+00	45.96
BI-214	609.32	787	45.49*	3.811E+00	1.495E+00	1.495E+00	15.38
	1120.29	214	14.92	2.345E+00	2.009E+00	2.009E+00	26.41
	1764.49	138	15.30	1.716E+00	1.727E+00	1.727E+00	29.53
PB-214	74.82	651	5.80	6.166E+00	5.990E+00	5.990E+00	18.68
	77.11	853	9.70	6.465E+00	4.479E+00	4.479E+00	16.37
	242.00	478	7.25	6.663E+00	3.259E+00	3.259E+00	24.03
	295.22	661	18.42	5.970E+00	1.980E+00	1.980E+00	21.25
	351.93	1128	35.60*	5.401E+00	1.931E+00	1.931E+00	15.48
RA-224	240.99	478	4.10*	6.663E+00	5.762E+00	5.762E+00	23.32
RA-226	609.32	787	45.49*	3.811E+00	1.495E+00	1.495E+00	15.38
	1120.29	214	14.92	2.345E+00	2.009E+00	2.009E+00	26.41
	1764.49	138	15.30	1.716E+00	1.727E+00	1.727E+00	29.53
AC-228	338.32	448	11.27	5.525E+00	2.369E+00	2.369E+00	48.43
	911.20	461	25.80*	2.789E+00	2.109E+00	2.109E+00	19.74
	968.97	309	15.80	2.648E+00	2.435E+00	2.435E+00	32.13
RA-228	338.32	448	11.27	5.525E+00	2.369E+00	2.369E+00	48.43

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	461	25.80*	2.789E+00	2.109E+00	2.109E+00	19.74
	968.97	309	15.80	2.648E+00	2.435E+00	2.435E+00	32.13
	74.82	651	10.28	6.166E+00	3.379E+00	3.379E+00	16.95
	77.11	853	17.10	6.465E+00	2.541E+00	2.541E+00	14.14
	238.63	1919	43.60*	6.708E+00	2.159E+00	2.159E+00	14.42
TH-232	300.09	165	3.30	5.918E+00	2.786E+00	2.786E+00	75.82
	338.32	448	11.27	5.525E+00	2.369E+00	2.369E+00	26.08
	911.20	461	25.80*	2.789E+00	2.109E+00	2.109E+00	19.74
	968.97	309	15.80	2.648E+00	2.435E+00	2.435E+00	32.13
TH-234	63.29	124	3.70*	4.329E+00	2.548E+00	2.548E+00	66.47
	92.59	344	4.23	7.872E+00	3.404E+00	3.404E+00	37.77
	89.96	197	3.47	7.679E+00	2.437E+00	2.437E+00	34.49
U-235	93.35	344	5.60	7.872E+00	2.571E+00	2.571E+00	38.37
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
	185.72	301	57.20	7.607E+00	2.278E-01	2.278E-01	35.79
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
NP-237	86.48	357	12.40*	7.478E+00	1.269E+00	1.269E+00	31.65
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	124	3.70*	4.329E+00	2.548E+00	2.548E+00	66.47
	92.59	344	4.23	7.872E+00	3.404E+00	3.404E+00	31.83
ANH-511	511.00	217	100.00*	4.297E+00	1.661E-01	1.661E-01	43.14

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	1.25E+09Y	1.00	3.177E+01	3.177E+01	0.333E+01	10.48	
CD-109	461.40D	1.04	4.253E+00	4.403E+00	1.044E+00	23.70	
SN-126	2.30E+05Y	1.00	4.253E-01	4.253E-01	1.008E-01	23.70	
BA-137M	30.08Y	1.00	4.405E-01	4.412E-01	0.908E-01	20.57	
CS-137	30.08Y	1.00	4.654E-01	4.660E-01	0.959E-01	20.58	
TL-208	1.41E+10Y	1.00	6.254E-01	6.254E-01	0.999E-01	15.98	
BI-211	7.04E+08Y	1.00	5.322E+00	5.322E+00	0.770E+00	14.47	
PB-212	1.41E+10Y	1.00	2.159E+00	2.159E+00	0.311E+00	14.42	
BI-214	1600.00Y	1.00	1.495E+00	1.495E+00	0.230E+00	15.38	
PB-214	1600.00Y	1.00	1.931E+00	1.931E+00	0.299E+00	15.48	
RA-224	1.41E+10Y	1.00	5.762E+00	5.762E+00	1.344E+00	23.32	
RA-226	1600.00Y	1.00	1.495E+00	1.495E+00	0.230E+00	15.38	
AC-228	1.41E+10Y	1.00	2.109E+00	2.109E+00	0.416E+00	19.74	
RA-228	1.41E+10Y	1.00	2.109E+00	2.109E+00	0.416E+00	19.74	
TH-228	1.41E+10Y	1.00	2.159E+00	2.159E+00	0.311E+00	14.42	
TH-232	1.41E+10Y	1.00	2.109E+00	2.109E+00	0.416E+00	19.74	
TH-234	4.47E+09Y	1.00	2.548E+00	2.548E+00	1.694E+00	66.47	
U-235	7.04E+08Y	1.00	2.278E-01	2.278E-01	0.815E-01	35.79	K
NP-237	2.14E+06Y	1.00	1.269E+00	1.269E+00	0.402E+00	31.65	
U-238	4.47E+09Y	1.00	2.548E+00	2.548E+00	1.694E+00	66.47	
ANH-511	1.00E+09Y	1.00	1.661E-01	1.661E-01	0.717E-01	43.14	
Total Activity :			7.139E+01	7.154E+01			

Grand Total Activity : 7.139E+01 7.154E+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	129.03	76	417	0.91	258.19	254	7	1.05E-02	92.1	8.53E+00	
0	209.47	171	349	1.25	418.91	415	8	2.38E-02	41.0	7.18E+00	T
0	269.95	132	340	0.99	539.77	535	10	1.83E-02	56.2	6.28E+00	T
0	462.87	196	179	1.79	925.31	919	15	2.72E-02	33.5	4.58E+00	T
0	727.80	194	126	1.72	1454.86	1449	15	2.69E-02	29.4	3.34E+00	T
0	767.99	97	133	1.38	1535.21	1528	14	1.35E-02	54.2	3.20E+00	
0	794.71	84	112	1.95	1588.63	1580	14	1.17E-02	57.7	3.12E+00	T
0	934.23	69	145	2.30	1867.57	1857	20	9.56E-03	89.0	2.73E+00	
1	964.72	124	142	2.43	1928.54	1921	24	1.72E-02	43.4	2.66E+00	T
0	1238.83	97	113	1.44	2476.67	2469	15	1.35E-02	52.2	2.16E+00	T

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061453.CNF;1
* Acquisition date   : 20-MAR-2010 13:34:25  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 02:00:02.32          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 25-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G1202061453          Analyst initials  : MXR1
* Batch Number       : 961097               Sample Quantity   : 1.14030E+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	3.177E+01	3.328E+00	5.811E-01	5.323E-02	54.676
CD-109	4.403E+00	1.044E+00	1.289E+00	1.223E-01	3.417
SN-126	4.253E-01	1.008E-01	1.348E-01	1.272E-02	3.156
BA-137M	4.412E-01	9.076E-02	5.347E-02	5.638E-03	8.251
CS-137	4.660E-01	9.591E-02	5.648E-02	5.964E-03	8.251
TL-208	6.254E-01	9.992E-02	5.543E-02	6.006E-03	11.281
BI-211	5.322E+00	7.700E-01	3.395E-01	3.961E-02	15.676
PB-212	2.159E+00	3.113E-01	1.023E-01	1.356E-02	21.102
BI-214	1.495E+00	2.299E-01	1.227E-01	1.432E-02	12.186
PB-214	1.931E+00	2.991E-01	1.234E-01	1.589E-02	15.647
RA-224	5.762E+00	1.344E+00	1.096E+00	1.372E-01	5.259
RA-226	1.495E+00	2.299E-01	1.227E-01	1.432E-02	12.186
AC-228	2.109E+00	4.163E-01	2.172E-01	2.942E-02	9.707
RA-228	2.109E+00	4.163E-01	2.172E-01	2.942E-02	9.707
TH-228	2.159E+00	3.113E-01	1.023E-01	1.356E-02	21.102
TH-232	2.109E+00	4.163E-01	2.172E-01	2.942E-02	9.707
TH-234	2.548E+00	1.694E+00	2.123E+00	3.778E-01	1.200
U-235	2.278E-01	8.152E-02	3.585E-01	6.127E-02	0.635

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.269E+00	4.016E-01	4.209E-01	9.658E-02	3.015
U-238	2.548E+00	1.694E+00	2.123E+00	3.778E-01	1.200
ANH-511	1.661E-01	7.166E-02	4.644E-02	4.653E-03	3.576

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.508E-02		3.812E-01	6.098E-01	6.363E-02	0.041
NA-22	-3.736E-02		4.468E-02	6.934E-02	5.976E-03	-0.539
NA-24	-2.443E+03		2.700E+03	Half-Life	too short	
SC-46	-2.929E-02		4.527E-02	7.192E-02	8.051E-03	-0.407
V-48	-5.187E-02		9.322E-02	1.464E-01	1.536E-02	-0.354
CR-51	4.581E-03		4.825E-01	8.076E-01	1.045E-01	0.006
MN-54	-4.357E-02		3.841E-02	5.928E-02	6.585E-03	-0.735
CO-56	-1.453E-02		4.418E-02	7.214E-02	8.031E-03	-0.201
CO-57	-9.114E-03		2.836E-02	4.438E-02	3.660E-03	-0.205
CO-58	-2.123E-02		4.256E-02	6.896E-02	7.636E-03	-0.308
FE-59	-1.318E-01		1.083E-01	1.593E-01	1.561E-02	-0.827
CO-60	-4.138E-03		3.898E-02	6.366E-02	5.676E-03	-0.065
ZN-65	3.919E-02		1.153E-01	1.638E-01	1.461E-02	0.239
SE-75	3.789E-02		5.708E-02	8.296E-02	1.117E-02	0.457
SR-85	1.864E-01		5.368E-02	8.664E-02	8.693E-03	2.151
Y-88	-1.117E-02		3.461E-02	5.433E-02	4.393E-03	-0.206
Y-91	1.918E+00		2.372E+01	3.967E+01	3.261E+00	0.048
NB-94	7.555E-03		3.466E-02	5.727E-02	6.137E-03	0.132
NB-95	9.713E-02		5.690E-02	8.818E-02	9.643E-03	1.101
NB-95M	1.995E-01		1.781E-01	2.633E-01	3.484E-02	0.758
ZR-95	6.180E-02		8.159E-02	1.378E-01	1.604E-02	0.448
MO-99	1.156E-05		4.729E-05	Half-Life	too short	
TC-99M	-2.178E+19		7.387E+19	Half-Life	too short	
RU-103	-7.061E-03		4.888E-02	7.803E-02	1.157E-02	-0.090
RH-106	-3.786E-02		3.273E-01	5.370E-01	7.791E-02	-0.071
RU-106	-3.786E-02		3.273E-01	5.370E-01	5.609E-02	-0.071
AG-108M	-1.112E-02		3.149E-02	5.039E-02	4.959E-03	-0.221
AG-110M	6.282E-02		4.313E-02	6.703E-02	7.205E-03	0.937
SN-113	-3.031E-02		4.872E-02	7.761E-02	7.412E-03	-0.391
CD-115	-7.363E-05		6.826E-05	Half-Life	too short	
SN-117M	-1.903E-02		8.555E-02	1.420E-01	1.347E-02	-0.134
TE-123M	-4.459E-03		3.088E-02	5.141E-02	4.909E-03	-0.087
SB-124	1.790E-02		8.055E-02	1.370E-01	1.222E-02	0.131
SB-125	4.118E-03		9.867E-02	1.614E-01	1.565E-02	0.026
TE-125M	-4.339E+00		1.171E+01	1.844E+01	1.901E+00	-0.235
I-126	1.457E-01		3.693E-01	5.376E-01	5.680E-02	0.271
SB-126	4.257E-01		2.600E-01	4.025E-01	4.340E-02	1.058
SB-127	-1.629E+00		5.353E+00	8.581E+00	1.315E+00	-0.190
I-131	1.469E-01		2.467E-01	4.180E-01	4.655E-02	0.351
TE-132	-3.631E+00		4.677E+00	7.304E+00	1.429E+00	-0.497

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-4.887E-03		4.761E-02	6.804E-02	1.002E-02	-0.072
I-133	2.297E+00		1.790E+00	Half-Life too short		
CS-134	1.178E-01	+	6.925E-02	8.726E-02	9.659E-03	1.350
CS-135	3.023E-01		2.030E-01	3.011E-01	4.355E-02	1.004
I-135	-2.029E+18		1.846E+18	Half-Life too short		
CS-136	-1.256E-01		1.674E-01	2.579E-01	2.610E-02	-0.487
CE-139	-2.491E-02		3.378E-02	5.483E-02	5.377E-03	-0.454
BA-140	-1.745E-01		4.196E-01	6.798E-01	2.334E-01	-0.257
LA-140	-2.308E-01		1.460E-01	2.052E-01	1.799E-02	-1.125
CE-141	4.715E-02		7.526E-02	1.290E-01	1.175E-02	0.365
CE-143	6.290E-02		9.861E-03	Half-Life too short		
CE-144	-2.195E-01		2.188E-01	3.417E-01	5.208E-02	-0.642
PM-144	-1.248E-03		3.619E-02	5.901E-02	6.312E-03	-0.021
PR-144	-9.369E-02		2.720E+00	4.435E+00	4.741E-01	-0.021
PM-146	-4.779E-03		4.562E-02	7.365E-02	8.469E-03	-0.065
ND-147	8.093E-01		9.702E-01	1.677E+00	2.659E-01	0.483
PM-149	5.995E-04		6.154E-04	Half-Life too short		
EU-152	5.528E-02		1.305E-01	1.704E-01	2.047E-02	0.324
GD-153	-9.090E-02		1.049E-01	1.440E-01	1.266E-02	-0.631
EU-154	-1.063E-01		1.263E-01	1.954E-01	2.222E-02	-0.544
EU-155	1.159E-01		1.139E-01	1.884E-01	1.617E-02	0.615
TB-160	-9.618E-03		1.571E-01	2.598E-01	2.906E-02	-0.037
HO-166M	1.314E-02		6.155E-02	1.016E-01	1.092E-02	0.129
TA-182	2.105E-01		2.155E-01	3.765E-01	3.130E-02	0.559
IR-192	-1.720E-02		3.948E-02	6.484E-02	8.286E-03	-0.265
HG-203	6.210E-02		5.029E-02	8.324E-02	1.177E-02	0.746
BI-207	1.798E-03		5.402E-02	8.825E-02	8.472E-03	0.020
PB-210	2.339E+00		3.242E+00	5.450E+00	5.020E-01	0.429
PB-211	-5.778E-01		8.096E-01	1.201E+00	5.828E-01	-0.481
BI-212	2.865E+00	+	9.335E-01	1.178E+00	1.656E-01	2.432
RN-219	-2.226E-01		4.243E-01	6.765E-01	1.037E-01	-0.329
RA-223	-4.972E-01		7.342E-01	1.185E+00	2.316E-01	-0.420
AC-227	-2.277E-01		2.807E-01	4.332E-01	6.749E-02	-0.526
TH-227	-2.277E-01		2.811E-01	4.332E-01	7.282E-02	-0.526
TH-229	-4.912E-01		5.786E-01	9.217E-01	9.906E-02	-0.533
PA-231	-1.677E+00		1.655E+00	2.479E+00	4.509E-01	-0.676
TH-231	-4.972E-01		7.342E-01	1.185E+00	2.316E-01	-0.420
PA-233	6.327E-02		6.948E-02	1.198E-01	1.570E-02	0.528
PA-234	-2.455E-02		3.242E-01	5.320E-01	1.057E-01	-0.046
PA-234M	3.425E+00		4.683E+00	7.886E+00	9.037E-01	0.434
NP-239	-3.203E-01		4.360E-01	6.722E-01	5.554E-02	-0.476
AM-241	6.985E-02		1.609E-01	2.443E-01	1.910E-02	0.286
CM-247	-4.403E-02		3.897E-02	6.005E-02	5.633E-03	-0.733
CF-249	4.449E-02		4.182E-02	7.184E-02	6.820E-03	0.619
CF-251	-6.858E-02		1.421E-01	2.317E-01	2.360E-02	-0.296

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]G1202061453          *
* Acquisition date   : 20-MAR-2010 13:34:25 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 02:00:02.32             Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202061453             Analyst initials: MXR1         *
* Batch Number       : 961097                  Sample Quantity : 1.1403E+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	3.177E+01	3.262E+00	2.895E-01	1.664E+00
CD-109	4.403E+00	1.023E+00	6.585E-01	5.219E-01
SN-126	4.253E-01	9.880E-02	6.886E-02	5.041E-02
BA-137M	4.412E-01	8.895E-02	2.683E-02	4.538E-02
CS-137	4.660E-01	9.400E-02	2.834E-02	4.796E-02
TL-208	6.254E-01	9.792E-02	2.785E-02	4.996E-02
BI-211	5.322E+00	7.546E-01	1.713E-01	3.850E-01
PB-212	2.159E+00	3.051E-01	5.182E-02	1.557E-01
BI-214	1.495E+00	2.253E-01	6.161E-02	1.150E-01
PB-214	1.931E+00	2.931E-01	6.230E-02	1.495E-01
RA-224	5.762E+00	1.317E+00	5.549E-01	6.719E-01
RA-226	1.495E+00	2.253E-01	6.161E-02	1.150E-01
AC-228	2.109E+00	4.080E-01	1.087E-01	2.082E-01
RA-228	2.109E+00	4.080E-01	1.087E-01	2.082E-01
TH-228	2.159E+00	3.051E-01	5.182E-02	1.557E-01
TH-232	2.109E+00	4.080E-01	1.087E-01	2.082E-01
TH-234	2.548E+00	1.660E+00	1.088E+00	8.468E-01
U-235	-8.553E-02	2.158E-01	1.824E-01	1.101E-01
NP-237	1.269E+00	3.936E-01	2.151E-01	2.008E-01
U-238	2.548E+00	1.660E+00	1.088E+00	8.468E-01
ANH-511	1.661E-01	7.022E-02	2.336E-02	3.583E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.508E-02	3.735E-01	3.069E-01	1.906E-01 NOT IDENT.
NA-22	-3.736E-02	4.378E-02	3.458E-02	2.234E-02 NOT IDENT.
NA-24	-2.443E+09	5.291E+09	0.000E+00	2.700E+09 SHORT HLIF
SC-46	-2.929E-02	4.436E-02	3.599E-02	2.263E-02 FAIL ABUN
V-48	-5.187E-02	9.136E-02	7.321E-02	4.661E-02 NOT IDENT.
CR-51	4.581E-03	4.729E-01	4.079E-01	2.413E-01 NOT IDENT.

MN-54	-4.357E-02	3.764E-02	2.968E-02	1.920E-02	NOT IDENT.
CO-56	-1.453E-02	4.330E-02	3.612E-02	2.209E-02	FAIL ABUN
CO-57	-9.114E-03	2.779E-02	2.261E-02	1.418E-02	NOT IDENT.
CO-58	-2.123E-02	4.171E-02	3.454E-02	2.128E-02	NOT IDENT.
FE-59	-1.318E-01	1.061E-01	7.957E-02	5.414E-02	NOT IDENT.
CO-60	-4.138E-03	3.820E-02	3.174E-02	1.949E-02	NOT IDENT.
ZN-65	3.919E-02	1.129E-01	8.180E-02	5.763E-02	NOT IDENT.
SE-75	3.789E-02	5.594E-02	4.198E-02	2.854E-02	NOT IDENT.
SR-85	1.864E-01	5.261E-02	4.358E-02	2.684E-02	NOT IDENT.
Y-88	-1.117E-02	3.392E-02	2.701E-02	1.731E-02	NOT IDENT.
Y-91	1.918E+00	2.324E+01	1.979E+01	1.186E+01	NOT IDENT.
NB-94	7.555E-03	3.397E-02	2.872E-02	1.733E-02	NOT IDENT.
NB-95	9.713E-02	5.576E-02	4.419E-02	2.845E-02	NOT IDENT.
NB-95M	1.995E-01	1.745E-01	1.334E-01	8.906E-02	NOT IDENT.
ZR-95	6.180E-02	7.996E-02	6.908E-02	4.080E-02	NOT IDENT.
MO-99	1.156E+01	9.270E+01	0.000E+00	4.729E+01	SHORT HLIF
TC-99M	-2.178E+25	1.448E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.061E-03	4.790E-02	3.926E-02	2.444E-02	FAIL ABUN
RH-106	-3.786E-02	3.208E-01	2.696E-01	1.637E-01	NOT IDENT.
RU-106	-3.786E-02	3.208E-01	2.696E-01	1.637E-01	NOT IDENT.
AG-108M	-1.112E-02	3.086E-02	2.538E-02	1.575E-02	NOT IDENT.
AG-110M	6.282E-02	4.227E-02	3.364E-02	2.157E-02	NOT IDENT.
SN-113	-3.031E-02	4.775E-02	3.913E-02	2.436E-02	NOT IDENT.
CD-115	-7.363E+01	1.338E+02	0.000E+00	6.826E+01	SHORT HLIF
SN-117M	-1.903E-02	8.384E-02	7.220E-02	4.278E-02	NOT IDENT.
TE-123M	-4.459E-03	3.027E-02	2.613E-02	1.544E-02	NOT IDENT.
SB-124	1.790E-02	7.894E-02	6.816E-02	4.028E-02	NOT IDENT.
SB-125	4.118E-03	9.669E-02	8.129E-02	4.933E-02	FAIL ABUN
TE-125M	-4.339E+00	1.147E+01	9.406E+00	5.853E+00	NOT IDENT.
I-126	1.457E-01	3.619E-01	2.697E-01	1.846E-01	NOT IDENT.
SB-126	4.257E-01	2.548E-01	2.018E-01	1.300E-01	NOT IDENT.
SB-127	-1.629E+00	5.246E+00	4.304E+00	2.676E+00	NOT IDENT.
I-131	1.469E-01	2.418E-01	2.109E-01	1.233E-01	NOT IDENT.
TE-132	-3.631E+00	4.584E+00	3.700E+00	2.339E+00	NOT IDENT.
BA-133	-4.887E-03	4.665E-02	3.434E-02	2.380E-02	NOT IDENT.
I-133	2.297E+06	3.508E+06	0.000E+00	1.790E+06	SHORT HLIF
CS-134	1.178E-01	6.786E-02	4.371E-02	3.462E-02	FAIL ABUN
CS-135	3.023E-01	1.989E-01	1.523E-01	1.015E-01	NOT IDENT.
I-135	-2.029E+24	3.619E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.256E-01	1.641E-01	1.289E-01	8.370E-02	NOT IDENT.
CE-139	-2.491E-02	3.311E-02	2.786E-02	1.689E-02	NOT IDENT.
BA-140	-1.745E-01	4.112E-01	3.417E-01	2.098E-01	NOT IDENT.
LA-140	-2.308E-01	1.431E-01	1.022E-01	7.300E-02	NOT IDENT.
CE-141	4.715E-02	7.376E-02	6.564E-02	3.763E-02	NOT IDENT.
CE-143	6.290E+04	1.933E+04	0.000E+00	9.861E+03	SHORT HLIF
CE-144	-2.195E-01	2.144E-01	1.740E-01	1.094E-01	NOT IDENT.
PM-144	-1.248E-03	3.546E-02	2.960E-02	1.809E-02	NOT IDENT.
PR-144	-9.369E-02	2.665E+00	2.224E+00	1.360E+00	NOT IDENT.
PM-146	-4.779E-03	4.470E-02	3.709E-02	2.281E-02	NOT IDENT.
ND-147	8.093E-01	9.508E-01	8.431E-01	4.851E-01	FAIL ABUN
PM-149	5.995E+02	1.206E+03	0.000E+00	6.154E+02	SHORT HLIF
EU-152	5.528E-02	1.279E-01	8.600E-02	6.525E-02	FAIL ABUN
GD-153	-9.090E-02	1.028E-01	7.349E-02	5.245E-02	NOT IDENT.
EU-154	-1.063E-01	1.237E-01	9.748E-02	6.313E-02	NOT IDENT.
EU-155	1.159E-01	1.116E-01	9.613E-02	5.693E-02	FAIL ABUN
TB-160	-9.618E-03	1.539E-01	1.300E-01	7.854E-02	FAIL ABUN
HO-166M	1.314E-02	6.032E-02	5.095E-02	3.077E-02	FAIL ABUN
TA-182	2.105E-01	2.112E-01	1.878E-01	1.077E-01	FAIL ABUN
IR-192	-1.720E-02	3.869E-02	3.275E-02	1.974E-02	FAIL ABUN
HG-203	6.210E-02	4.929E-02	4.210E-02	2.515E-02	NOT IDENT.
BI-207	1.798E-03	5.294E-02	4.409E-02	2.701E-02	FAIL ABUN
PB-210	2.339E+00	3.177E+00	2.800E+00	1.621E+00	NOT IDENT.
PB-211	-5.778E-01	7.934E-01	6.052E-01	4.048E-01	NOT IDENT.
BI-212	2.865E+00	9.149E-01	5.906E-01	4.668E-01	FAIL ABUN
RN-219	-2.226E-01	4.158E-01	3.410E-01	2.122E-01	FAIL ABUN
RA-223	-4.972E-01	7.195E-01	5.984E-01	3.671E-01	FAIL ABUN
AC-227	-2.277E-01	2.751E-01	2.193E-01	1.404E-01	FAIL ABUN
TH-227	-2.277E-01	2.755E-01	2.193E-01	1.405E-01	FAIL ABUN
TH-229	-4.912E-01	5.671E-01	4.677E-01	2.893E-01	FAIL ABUN
PA-231	-1.677E+00	1.622E+00	1.254E+00	8.275E-01	FAIL ABUN
TH-231	-4.972E-01	7.195E-01	5.984E-01	3.671E-01	FAIL ABUN
PA-233	6.327E-02	6.809E-02	6.052E-02	3.474E-02	FAIL ABUN
PA-234	-2.455E-02	3.177E-01	2.661E-01	1.621E-01	NOT IDENT.
PA-234M	3.425E+00	4.589E+00	3.942E+00	2.342E+00	NOT IDENT.
NP-239	-3.203E-01	4.273E-01	3.426E-01	2.180E-01	NOT IDENT.
AM-241	6.985E-02	1.577E-01	1.253E-01	8.046E-02	NOT IDENT.
CM-247	-4.403E-02	3.819E-02	3.027E-02	1.949E-02	NOT IDENT.
CF-249	4.449E-02	4.099E-02	3.622E-02	2.091E-02	NOT IDENT.

CF-251 -6.858E-02 1.392E-01 1.176E-01 7.104E-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
46.54	329.7212
49.72	385.9638
57.36	0.0000
59.54	407.1471
63.29	494.5819
63.29	494.5819
64.28	462.8512
67.75	503.9977
69.67	479.4771
70.83	496.3840
72.81	520.8690
72.87	520.9772
72.87	520.9772
74.82	524.4274
74.82	524.4274
74.82	524.4274
74.97	524.6913
77.11	528.4213
77.11	528.4213
77.11	528.4213
79.69	503.5928
79.80	503.7699
80.12	538.2112
80.19	538.3310
80.57	538.9807
81.00	601.5741
81.07	601.7076
81.07	601.7076
83.79	541.3112
83.79	541.3112
85.43	518.9451
86.48	640.1233
86.55	640.2568
86.79	659.6072
86.94	659.9077
87.57	598.0313
88.03	515.1055
88.47	515.7770
89.96	730.9719
91.11	424.1060
92.59	425.9101
92.59	425.9101
93.35	426.8315
94.67	412.3184
94.87	412.5488
94.87	412.5488
95.86	455.7048
97.43	488.5210
98.44	424.4467
99.53	408.0734
100.11	413.0701
103.18	476.8861
103.37	463.9322
105.31	403.2993
106.12	436.2520
109.28	456.5095
111.00	410.2719
111.76	451.4751
116.30	441.7226
117.23	433.5976
121.12	410.0122
121.78	420.9908
122.06	420.1116
123.07	395.7075
131.20	414.4675
133.52	454.4027
136.00	445.1103

136.47	457.1372
140.51	0.0000
140.51	0.0000
143.76	456.8433
144.24	441.8926
144.24	441.8926
145.44	394.8560
152.43	390.2054
153.25	400.0408
154.21	407.2433
154.21	407.2433
156.02	436.4526
158.56	414.3424
159.00	408.1588
162.66	394.9862
163.33	373.8659
165.86	457.6921
176.60	411.6241
177.52	441.1716
181.07	0.0000
184.41	452.1727
185.72	428.7411
193.51	442.1096
197.04	419.7270
205.31	401.3575
210.85	351.0818
215.65	382.6344
222.11	403.7796
227.38	410.9601
228.16	418.6999
228.18	418.7122
235.69	424.3302
235.96	431.2250
235.96	431.2250
238.63	382.4901
238.63	382.4901
240.99	383.7025
242.00	384.2190
244.70	316.9992
252.40	317.3964
252.80	319.7114
256.23	343.8203
256.23	343.8203
260.90	0.0000
264.66	276.2300
268.22	300.2686
269.46	300.7237
269.46	300.7237
271.23	301.3708
273.65	450.7262
276.40	335.6772
277.37	290.7282
277.60	303.0135
278.00	284.2813
279.20	308.0408
279.54	308.1634
280.46	380.8883
283.69	335.3806
284.31	307.6546
285.41	267.7226
285.90	0.0000
287.50	311.4160
293.27	0.0000
295.22	299.0665
295.96	213.1495
298.57	213.7748
299.98	259.6659
299.98	259.6659
300.09	259.7007
300.09	259.7007
300.13	259.7111
301.36	284.3996
302.85	290.9610
304.50	264.0228
304.50	264.0228
304.85	258.0179
308.46	298.8913
311.90	261.2361

316.51	282.0090
319.41	284.7421
320.08	279.3530
323.87	340.3036
323.87	340.3036
328.76	284.7172
333.37	297.3966
334.37	255.1685
334.37	255.1685
338.28	244.7945
338.28	244.7945
338.32	244.8071
338.32	244.8071
338.32	244.8071
340.48	236.1440
340.55	237.7472
344.28	236.2459
351.06	240.2313
351.93	240.4358
356.01	222.0769
364.49	230.6960
366.42	0.0000
383.85	241.8048
388.16	203.9465
388.63	197.0646
391.69	237.5235
400.66	231.3617
401.81	234.6155
402.40	246.8243
404.85	250.3795
410.95	237.4877
414.70	237.2294
423.72	215.4371
427.09	223.2435
427.87	219.2688
433.94	216.2252
453.88	211.2929
463.37	190.6194
468.07	173.5955
473.00	174.9587
476.78	187.2278
477.60	183.0610
487.02	190.8195
492.35	0.0000
497.08	187.8862
511.00	170.0270
514.00	148.4019
527.90	0.0000
529.87	0.0000
531.02	164.0757
537.26	179.6692
546.56	0.0000
563.25	174.2782
569.33	174.0161
569.50	160.7205
569.70	158.8389
583.19	146.3726
600.60	215.3064
602.73	168.1408
604.72	163.3481
609.32	193.0573
609.32	193.0573
610.33	167.2538
614.28	140.8301
618.01	163.6016
621.93	161.1272
621.93	161.1272
633.25	150.3425
635.95	147.6116
636.99	139.7693
645.85	143.4814
657.76	134.1468
661.66	126.6896
661.66	126.6896
664.57	0.0000
666.33	127.8869
666.50	127.8998
677.62	128.8423

685.70	136.5490
695.00	156.7042
696.49	161.9571
696.51	161.9603
697.00	177.3820
702.65	156.3263
706.68	165.9395
711.68	141.5795
720.70	103.2437
721.93	0.0000
722.78	142.5614
722.91	142.5698
723.31	142.6004
724.19	158.7144
727.33	178.6237
733.00	136.1543
735.93	125.5957
739.50	0.0000
747.24	135.8001
752.31	138.2627
753.82	134.1417
756.73	126.9360
763.94	151.0541
765.81	132.9796
766.42	140.3064
777.92	0.0000
778.90	157.2193
783.70	132.9307
785.37	125.8865
795.86	114.6152
801.95	152.8552
810.29	128.4389
810.76	135.9151
815.77	114.7741
818.51	120.5281
832.01	149.4950
834.85	159.1065
836.80	0.0000
846.77	139.1532
856.80	98.1851
860.56	116.6873
871.09	120.5881
873.19	116.5737
875.33	0.0000
879.36	125.8326
880.51	119.1692
883.24	126.0473
884.68	124.2016
889.28	142.7814
898.04	133.6418
911.20	104.2086
911.20	104.2086
911.20	104.2086
926.50	109.7891
937.49	127.5285
944.13	132.7195
946.00	129.4626
949.00	97.9590
962.29	107.9456
964.08	104.5386
966.15	104.6265
968.97	104.7455
968.97	104.7455
968.97	104.7455
983.53	99.3401
996.26	113.9616
1001.03	85.8849
1004.73	116.3657
1037.84	124.0132
1038.76	0.0000
1048.07	120.3788
1050.41	117.3955
1050.41	117.3955
1063.66	109.6970
1085.87	103.2953
1099.45	133.1657
1112.07	101.3828
1115.54	129.1907

1120.29	135.2188
1120.29	135.2188
1120.55	140.5146
1121.30	146.0999
1131.51	0.0000
1173.23	104.5096
1177.93	111.2804
1189.05	109.8049
1204.77	125.6111
1221.41	126.3040
1231.02	133.0977
1235.36	152.0851
1238.28	136.6221
1260.41	0.0000
1271.85	106.0062
1274.44	111.9327
1274.54	111.9362
1291.59	93.9463
1298.22	0.0000
1312.11	54.1658
1332.49	73.3338
1365.19	73.0579
1368.63	0.0000
1384.29	94.6053
1408.01	57.7654
1457.56	0.0000
1460.82	59.6674
1489.16	51.8417
1505.03	58.3157
1596.21	73.9650
1620.50	40.0757
1678.03	0.0000
1690.97	29.1325
1764.49	30.6392
1764.49	30.6392
1770.23	30.2846
1771.35	28.5109
1791.20	0.0000
1836.06	31.1505

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202061453

Total Uranium Activity	7.5397E+00	ug/g
Total Uranium Counting Unc.	4.9385E+00	ug/g
Total Uranium Tpu	2.5196E-06	ug/g
Total Uranium Mda	3.2375E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 961097          SAMPLE ID   : G1202061453   *
*  ANALYST       : MXR1            DETECTOR    : GAM22         *
*  SAMPLE DATE   : 25-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00 *
*  ANALYSIS DATE: 20-MAR-2010 13:34:25.21  SAMPLE ALQT: 114.030 GRAM *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.184E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.373E+00
GROSS GAMMA MDA (pCi/GRAM ) : 3.028E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.477E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:15:40.34

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061454.CNF;1
Sample date        : 8-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 12:14:55
Sample ID          : G1202061454      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM20            Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:18.04 0.5%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 961097           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	59.65	4045	1082	1.11	119.29	113	11	1.12E+00	2.2	
2	0	63.82*	81	346	0.93	127.62	125	7	2.25E-02	40.4	
3	3	74.96*	200	388	1.11	149.86	146	12	5.56E-02	18.1	9.51E-01
4	3	77.21	269	326	1.02	154.36	146	12	7.47E-02	12.5	
5	0	88.15*	1536	650	1.05	176.20	171	11	4.27E-01	4.1	
6	0	93.15*	92	355	1.17	186.19	182	9	2.55E-02	40.1	
7	0	121.88	230	386	0.93	243.56	238	11	6.40E-02	17.8	
8	0	186.32*	120	365	1.75	372.26	366	12	3.34E-02	33.6	
9	2	238.73*	542	198	1.21	476.94	471	18	1.51E-01	6.2	1.02E+00
10	2	241.52	133	247	1.48	482.51	471	18	3.68E-02	25.0	
11	0	295.43	158	247	1.23	590.21	583	13	4.39E-02	22.0	
12	0	338.37	118	196	1.22	676.01	671	10	3.29E-02	23.9	
13	0	352.01	208	252	1.13	703.25	697	12	5.77E-02	16.8	
14	0	511.34*	85	162	2.34	1021.63	1015	14	2.37E-02	35.5	
15	0	583.54*	163	117	1.29	1165.93	1161	11	4.54E-02	15.1	
16	0	609.86*	180	139	1.26	1218.54	1212	14	5.00E-02	15.9	
17	0	662.06	2747	97	1.51	1322.90	1316	15	7.63E-01	2.1	
18	0	727.91	69	70	2.02	1454.55	1449	11	1.90E-02	26.7	
19	0	911.78*	150	103	1.57	1822.24	1817	11	4.17E-02	15.7	
20	0	970.09*	64	99	1.88	1938.87	1933	11	1.77E-02	33.1	
21	0	1174.07	1931	55	1.69	2346.95	2340	15	5.36E-01	2.4	
22	0	1333.38	1789	20	1.88	2665.78	2659	14	4.97E-01	2.4	
23	0	1378.75	13	2	1.49	2756.60	2753	7	3.70E-03	31.9	
24	0	1388.77	9	4	1.02	2776.67	2772	7	2.56E-03	47.4	
25	0	1461.61	29	6	2.01	2922.48	2916	12	8.06E-03	25.1	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061454.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 8-MAR-2010 00:00:00   Acquisition date : 20-MAR-2010 12:14:55
Sample ID         : G1202061454           Sample quantity  : 155.44 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA20               Detector geometry: CAN
Elapsed live time : 0 01:00:00.00         Elapsed real time: 0 01:00:18.04   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	+	1460.82	*	1.049E+00	5.346E-01	3.640E-01	3.174E-02	2.882
CO-57	+	122.06	*	1.817E-01	6.636E-02	5.498E-02	4.589E-03	3.305
		136.47		1.232E-01	3.016E-01	4.916E-01	4.445E-02	0.251
CO-60	+	1173.23		6.271E+00	5.890E-01	9.809E-02	7.886E-03	63.928
	+	1332.49	*	6.446E+00	6.241E-01	7.228E-02	6.054E-03	89.186
CD-109	+	88.03	*	2.928E+01	3.673E+00	1.849E+00	1.748E-01	15.835
SN-126	+	64.28		8.649E-01	7.100E-01	8.760E-01	1.268E-01	0.987
	+	86.94		1.194E+01	5.059E+00	7.595E-01	3.153E-01	15.726
	+	87.57	*	2.873E+00	3.604E-01	1.820E-01	1.711E-02	15.790
BA-137M	+	661.66	*	6.069E+00	6.586E-01	1.008E-01	1.012E-02	60.201
CS-137	+	661.66	*	6.411E+00	6.965E-01	1.065E-01	1.070E-02	60.202
TL-208		277.37		3.360E-01	6.044E-01	1.033E+00	1.391E-01	0.325
	+	583.19	*	3.447E-01	1.099E-01	9.653E-02	9.915E-03	3.570
		860.56		5.822E-01	5.594E-01	9.886E-01	1.047E-01	0.589
BI-211		72.87		2.947E+00	4.033E+00	6.098E+00	4.816E-01	0.483
	+	351.06	*	1.957E+00	6.831E-01	5.491E-01	5.262E-02	3.565
PB-212	+	74.82		1.553E+00	5.940E-01	7.203E-01	9.100E-02	2.156
	+	77.11		1.213E+00	3.204E-01	4.192E-01	3.467E-02	2.894
	+	238.63	*	1.145E+00	1.867E-01	1.476E-01	1.576E-02	7.761
		300.09		5.813E-03	1.449E+00	2.119E+00	2.444E-01	0.003
PB-214	+	74.82		2.752E+00	1.041E+00	1.277E+00	1.444E-01	2.156
	+	77.11		2.139E+00	5.918E-01	7.390E-01	8.632E-02	2.894
	+	242.00		1.697E+00	8.706E-01	8.972E-01	1.012E-01	1.891
	+	295.22		9.189E-01	4.183E-01	3.356E-01	3.964E-02	2.738
	+	351.93	*	7.104E-01	2.510E-01	1.997E-01	2.206E-02	3.557
RA-224	+	240.99	*	3.001E+00	1.530E+00	1.581E+00	1.529E-01	1.898
AC-228	+	338.32		1.240E+00	7.890E-01	6.346E-01	2.657E-01	1.955
	+	911.20	*	1.512E+00	5.101E-01	4.911E-01	6.172E-02	3.080
	+	968.97		1.103E+00	7.800E-01	8.775E-01	2.171E-01	1.257
RA-228	+	338.32		1.240E+00	7.890E-01	6.346E-01	2.657E-01	1.955
	+	911.20	*	1.512E+00	5.101E-01	4.911E-01	6.172E-02	3.080
	+	968.97		1.103E+00	7.800E-01	8.775E-01	2.171E-01	1.257
TH-228	+	74.82		1.553E+00	5.747E-01	7.203E-01	5.867E-02	2.156
	+	77.11		1.213E+00	3.204E-01	4.192E-01	3.467E-02	2.894

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.145E+00	1.867E-01	1.476E-01	1.576E-02	7.761
		300.09		5.813E-03	1.449E+00	2.119E+00	1.301E+00	0.003
TH-232	+	338.32		1.240E+00	6.051E-01	6.346E-01	5.946E-02	1.955
	+	911.20	*	1.512E+00	5.101E-01	4.911E-01	6.172E-02	3.080
	+	968.97		1.103E+00	7.800E-01	8.775E-01	2.171E-01	1.257
TH-234	+	63.29	*	2.244E+00	1.857E+00	2.133E+00	3.789E-01	1.052
	+	92.59		1.458E+00	1.213E+00	1.141E+00	2.544E-01	1.278
U-238	+	63.29	*	2.244E+00	1.857E+00	2.133E+00	3.789E-01	1.052
	+	92.59		1.458E+00	1.176E+00	1.141E+00	1.042E-01	1.278
AM-241	+	59.54	*	1.336E+01	1.201E+00	4.082E-01	3.194E-02	32.721
ANH-511	+	511.00	*	1.379E-01	9.868E-02	8.574E-02	7.989E-03	1.609

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-1.754E-01	5.913E-01	9.413E-01	9.147E-02	-0.186
NA-22		1274.54	*	-4.238E-02	4.532E-02	6.034E-02	4.998E-03	-0.702
NA-24		1368.63	*	-1.495E-02	4.532E-02	Half-Life too short		
SC-46		889.28	*	-2.740E-02	7.902E-02	1.273E-01	1.269E-02	-0.215
		1120.55		4.440E-02	9.108E-02	1.536E-01	1.314E-02	0.289
V-48		944.13		-2.499E-01	1.831E+00	2.987E+00	2.915E-01	-0.084
		983.53	*	-1.752E-01	1.262E-01	1.818E-01	1.738E-02	-0.964
		1312.11		2.750E-03	8.000E-02	1.294E-01	1.080E-02	0.021
CR-51		320.08	*	-8.197E-02	5.693E-01	9.362E-01	9.380E-02	-0.088
MN-54		834.85	*	2.114E-02	6.701E-02	1.136E-01	1.147E-02	0.186
CO-56		846.77	*	3.769E-02	7.207E-02	1.238E-01	1.248E-02	0.304
		1037.84		2.641E-01	5.621E-01	9.536E-01	9.192E-02	0.277
		1238.28		1.096E-01	9.529E-02	1.743E-01	1.475E-02	0.629
		1771.35		-3.882E-01	3.578E-01	4.598E-01	3.771E-02	-0.844
CO-58		810.76	*	-8.574E-02	7.282E-02	1.096E-01	1.113E-02	-0.782
FE-59		1099.45	*	-1.196E-01	1.726E-01	2.647E-01	2.496E-02	-0.452
		1291.59		-6.143E-02	1.299E-01	1.920E-01	1.826E-02	-0.320
ZN-65		1115.54	*	-1.257E-02	1.652E-01	2.671E-01	2.299E-02	-0.047
SE-75	+	121.12		9.418E-01	3.501E-01	3.956E-01	4.302E-02	2.381
		136.00		4.276E-02	5.723E-02	9.463E-02	7.997E-03	0.452
		264.66	*	-2.503E-02	6.887E-02	1.130E-01	1.119E-02	-0.221
		279.54		-7.197E-02	1.734E-01	2.831E-01	2.899E-02	-0.254
		400.66		5.685E-02	4.342E-01	7.168E-01	7.847E-02	0.079
SR-85		514.00	*	1.176E-01	7.626E-02	1.202E-01	1.122E-02	0.978
Y-88		898.04		-2.677E-02	9.282E-02	1.504E-01	1.501E-02	-0.178
		1836.06	*	4.435E-03	4.505E-02	7.557E-02	6.097E-03	0.059
Y-91		1204.77	*	-1.648E+01	2.581E+01	3.833E+01	3.113E+00	-0.430
NB-94		702.65	*	-4.421E-02	5.414E-02	8.501E-02	8.601E-03	-0.520
		871.09		3.002E-02	6.743E-02	1.148E-01	1.150E-02	0.262
NB-95		765.81	*	1.888E-02	6.747E-02	1.147E-01	1.166E-02	0.165
NB-95M		235.69	*	-5.514E-02	1.986E-01	2.891E-01	3.112E-02	-0.191
ZR-95		724.19		-4.049E-02	1.618E-01	2.292E-01	2.468E-02	-0.177
		756.73	*	3.102E-02	1.208E-01	2.053E-01	2.245E-02	0.151

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99	140.51			-2.773E+00	1.615E+01	2.546E+01	6.028E+00	-0.109
	181.07			-5.478E+00	1.490E+01	2.030E+01	3.845E+00	-0.270
	366.42			-1.393E+01	8.842E+01	1.442E+02	1.282E+01	-0.097
	739.50	*		-1.899E-01	1.004E+01	1.675E+01	2.788E+00	-0.011
	777.92			-1.749E+01	3.340E+01	5.345E+01	5.431E+00	-0.327
TC-99M	140.51	*		-6.519E+06	3.340E+01	Half-Life	too short	
RU-103	497.08	*		6.292E-02	6.916E-02	1.176E-01	1.688E-02	0.535
	610.33	+		7.242E+00	2.607E+00	3.067E+00	5.223E-01	2.361
RH-106	621.93	*		-4.202E-02	5.192E-01	8.234E-01	1.163E-01	-0.051
	1050.41			1.700E+00	5.003E+00	8.386E+00	7.655E-01	0.203
RU-106	621.93	*		-4.202E-02	5.192E-01	8.234E-01	8.150E-02	-0.051
	1050.41			1.700E+00	5.003E+00	8.386E+00	7.655E-01	0.203
AG-108M	433.94	*		8.983E-04	5.960E-02	9.730E-02	8.769E-03	0.009
	614.28			2.265E-02	6.446E-02	9.329E-02	9.437E-03	0.243
	722.91			-1.397E-02	6.833E-02	9.729E-02	1.010E-02	-0.144
AG-110M	657.76	*		4.522E-02	6.537E-02	1.021E-01	1.046E-02	0.443
	677.62			2.029E-01	5.035E-01	8.695E-01	8.943E-02	0.233
	706.68			-3.463E-02	3.351E-01	5.573E-01	5.760E-02	-0.062
	763.94			-3.628E-01	2.774E-01	4.139E-01	4.290E-02	-0.876
	884.68			1.089E-01	1.008E-01	1.777E-01	1.817E-02	0.613
	937.49			2.253E-02	2.457E-01	4.070E-01	4.095E-02	0.055
	1384.29			-1.526E-04	2.558E-01	2.745E-01	2.379E-02	-0.001
	1505.03			4.405E-02	3.435E-01	5.845E-01	4.955E-02	0.075
SN-113	391.69	*		1.405E-02	7.762E-02	1.286E-01	1.109E-02	0.109
CD-115	260.90			3.240E+01	9.437E+01	1.605E+02	1.579E+01	0.202
	492.35			3.009E+00	3.155E+01	5.141E+01	4.725E+00	0.059
	527.90	*		-2.142E+00	9.151E+00	1.451E+01	1.368E+00	-0.148
SN-117M	156.02			1.530E+00	2.714E+00	4.442E+00	3.819E-01	0.344
	158.56	*		-2.578E-02	6.750E-02	1.051E-01	9.067E-03	-0.245
TE-123M	159.00	*		-2.042E-02	4.060E-02	6.279E-02	5.455E-03	-0.325
SB-124	602.73			2.826E-02	6.574E-02	1.014E-01	9.960E-03	0.279
	645.85			7.168E-01	8.281E-01	1.468E+00	1.529E-01	0.488
	722.78			-1.242E-01	6.667E-01	9.513E-01	9.809E-02	-0.131
	1690.97	*		-1.749E-03	9.977E-02	1.643E-01	1.431E-02	-0.011
SB-125	427.87	*		9.647E-02	1.715E-01	2.885E-01	2.552E-02	0.334
	463.37			1.087E-01	5.235E-01	8.608E-01	8.266E-02	0.126
	600.60			-4.509E-02	2.872E-01	4.537E-01	4.706E-02	-0.099
	635.95			-1.635E-01	4.435E-01	7.279E-01	7.689E-02	-0.225
TE-125M	109.28	*		6.328E+00	1.235E+01	2.039E+01	2.114E+00	0.310
I-126	388.63			1.018E-01	2.519E-01	4.227E-01	3.560E-02	0.241
	666.33	*		1.336E-01	3.506E-01	5.330E-01	5.355E-02	0.251
	753.82			-1.321E+00	2.552E+00	4.082E+00	4.148E-01	-0.323
SB-126	414.70			2.460E-02	1.234E-01	2.040E-01	1.748E-02	0.121
	666.50			4.010E-02	1.192E-01	1.804E-01	1.813E-02	0.222
	695.00			-1.400E-02	1.098E-01	1.825E-01	1.844E-02	-0.077
	697.00			-2.111E-01	3.701E-01	5.938E-01	6.003E-02	-0.355
	720.70	*		1.480E-02	2.174E-01	3.459E-01	3.507E-02	0.043
	856.80			-1.148E+00	8.087E-01	1.188E+00	1.195E-01	-0.966
SB-127	252.40			-2.529E-01	4.103E+00	6.854E+00	2.850E+00	-0.037

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131		473.00		-6.348E-01	2.116E+00	3.374E+00	4.197E-01	-0.188
		685.70	*	4.344E-01	1.309E+00	2.250E+00	2.670E-01	0.193
		783.70		2.938E+00	3.923E+00	6.839E+00	8.800E-01	0.430
		80.19		3.480E+00	5.050E+00	7.595E+00	6.541E-01	0.458
		284.31		-2.855E-01	1.901E+00	3.145E+00	3.239E-01	-0.091
TE-132		364.49	*	8.646E-02	1.569E-01	2.661E-01	2.491E-02	0.325
		636.99		-7.604E-01	2.038E+00	3.342E+00	3.466E-01	-0.228
		49.72		6.932E+00	1.430E+01	2.392E+01	2.315E+00	0.290
		111.76		-1.455E+00	2.498E+01	4.016E+01	4.083E+00	-0.036
		116.30		7.279E-01	2.501E+01	3.592E+01	3.633E+00	0.020
BA-133		228.16	*	-2.839E-01	6.249E-01	1.028E+00	1.631E-01	-0.276
		81.00		-2.646E-02	1.360E-01	1.959E-01	3.045E-02	-0.135
		276.40		3.737E-01	5.599E-01	9.594E-01	1.435E-01	0.390
		302.85		2.436E-01	2.279E-01	3.945E-01	5.471E-02	0.618
		356.01	*	7.664E-03	7.973E-02	1.162E-01	1.542E-02	0.066
I-133		383.85		-7.782E-02	5.048E-01	8.214E-01	1.015E-01	-0.095
		529.87	*	-6.814E-04	5.048E-01	Half-Life	too short	
		875.33		-1.983E-02	5.048E-01	Half-Life	too short	
		1298.22		8.772E-04	5.048E-01	Half-Life	too short	
		563.25		-5.521E-01	6.470E-01	9.702E-01	9.413E-02	-0.569
CS-134		569.33		-8.503E-02	3.487E-01	5.498E-01	5.368E-02	-0.155
		604.72		-6.188E-03	6.437E-02	8.885E-02	8.748E-03	-0.070
		795.86	*	7.992E-02	8.545E-02	1.503E-01	1.534E-02	0.532
		801.95		3.827E-01	7.721E-01	1.325E+00	1.349E-01	0.289
		1365.19		4.624E-03	1.218E+00	2.046E+00	1.804E-01	0.002
CS-135		268.22	*	-1.306E-01	2.498E-01	4.065E-01	4.504E-02	-0.321
		546.56		-4.003E+07	2.498E-01	Half-Life	too short	
		836.80		-4.916E+07	2.498E-01	Half-Life	too short	
		1038.76		4.383E+07	2.498E-01	Half-Life	too short	
		1131.51		-1.128E+07	2.498E-01	Half-Life	too short	
I-135		1260.41	*	-1.848E+06	2.498E-01	Half-Life	too short	
		1457.56		-1.611E+07	2.498E-01	Half-Life	too short	
		1678.03		1.647E+06	2.498E-01	Half-Life	too short	
		1791.20		-3.011E+06	2.498E-01	Half-Life	too short	
		153.25		-1.292E-01	1.048E+00	1.658E+00	1.694E-01	-0.078
CS-136		176.60		6.828E-01	6.413E-01	1.066E+00	1.038E-01	0.641
		273.65		-3.933E-01	7.061E-01	1.146E+00	1.210E-01	-0.343
		340.55		4.099E-01	2.292E-01	3.698E-01	3.564E-02	1.109
		818.51		-4.756E-02	1.264E-01	2.043E-01	2.069E-02	-0.233
		1048.07	*	-5.010E-02	1.820E-01	2.908E-01	2.758E-02	-0.172
CE-139		1235.36		-4.846E-01	5.287E-01	7.381E-01	8.454E-02	-0.657
		165.86	*	2.150E-02	4.282E-02	6.965E-02	6.081E-03	0.309
		162.66		-2.262E-01	1.047E+00	1.644E+00	1.522E-01	-0.138
		304.85		-4.145E-01	1.913E+00	3.136E+00	9.293E-01	-0.132
		423.72		-3.261E+00	3.299E+00	4.779E+00	1.572E+00	-0.682
BA-140		537.26	*	-1.913E-01	3.869E-01	5.925E-01	2.023E-01	-0.323
		328.76		2.757E-01	4.276E-01	7.293E-01	7.259E-02	0.378
		487.02		-9.230E-02	2.192E-01	3.451E-01	3.332E-02	-0.267
		815.77		2.274E-01	5.362E-01	9.166E-01	1.009E-01	0.248

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1596.21		*	4.096E-02	9.434E-02	1.674E-01	1.413E-02	0.245
CE-141	145.44		*	-2.803E-02	8.286E-02	1.299E-01	1.121E-02	-0.216
CE-143	57.36			1.643E-03	8.286E-02	Half-Life	too short	
	293.27		*	7.741E-05	8.286E-02	Half-Life	too short	
	664.57			1.871E-02	8.286E-02	Half-Life	too short	
	721.93			-9.519E-05	8.286E-02	Half-Life	too short	
CE-144	80.12			2.227E+00	3.398E+00	5.104E+00	4.372E-01	0.436
	133.52		*	-1.449E-01	2.904E-01	4.525E-01	6.854E-02	-0.320
PM-144	476.78			9.418E-02	1.226E-01	2.077E-01	2.033E-02	0.454
	618.01			2.286E-02	5.265E-02	8.702E-02	8.782E-03	0.263
	696.49		*	-1.854E-02	5.499E-02	8.994E-02	9.092E-03	-0.206
PR-144	696.51		*	-1.386E+00	4.109E+00	6.722E+00	6.794E-01	-0.206
	1489.16			1.162E+01	1.261E+01	2.481E+01	2.103E+00	0.468
PM-146	453.88		*	-2.415E-02	8.107E-02	1.295E-01	1.402E-02	-0.186
	633.25			-1.401E-01	2.447E+00	3.884E+00	1.496E+00	-0.036
	735.93			6.213E-02	2.309E-01	3.930E-01	1.122E-01	0.158
	747.24			-1.074E-03	1.551E-01	2.590E-01	4.025E-02	-0.004
ND-147	91.11			2.562E-01	3.889E-01	4.676E-01	4.628E-02	0.548
	319.41			2.516E+00	4.568E+00	7.784E+00	7.489E-01	0.323
	531.02		*	3.340E-01	8.689E-01	1.438E+00	2.220E-01	0.232
PM-149	285.90		*	-3.598E+01	6.611E+01	1.067E+02	1.739E+01	-0.337
EU-152	121.78			5.264E-01	1.939E-01	2.258E-01	2.182E-02	2.331
	244.70			3.582E-01	5.631E-01	8.648E-01	8.390E-02	0.414
	344.28		*	-1.551E-01	1.663E-01	2.487E-01	2.426E-02	-0.623
	778.90			-2.040E-01	4.620E-01	7.442E-01	7.561E-02	-0.274
	964.08			-4.046E-01	6.963E-01	9.365E-01	9.048E-02	-0.432
	1085.87			7.144E-01	8.039E-01	1.392E+00	1.233E-01	0.513
	1112.07			1.993E-01	5.851E-01	9.775E-01	8.436E-02	0.204
	1408.01			-1.311E-02	2.053E-01	3.403E-01	2.875E-02	-0.039
GD-153	69.67			5.157E-01	2.037E+00	3.366E+00	2.575E-01	0.153
	97.43		*	-4.885E-02	1.142E-01	1.604E-01	1.422E-02	-0.305
	103.18			2.952E-02	1.403E-01	2.291E-01	1.982E-02	0.129
EU-154	123.07			3.721E-01	1.386E-01	1.591E-01	1.772E-02	2.339
	723.31			-5.853E-02	3.070E-01	4.376E-01	4.768E-02	-0.134
	873.19			2.895E-01	5.410E-01	9.261E-01	1.199E-01	0.313
	996.26			-2.448E-01	7.090E-01	1.129E+00	2.023E-01	-0.217
	1004.73			-5.236E-03	4.326E-01	7.084E-01	8.678E-02	-0.007
	1274.44		*	-1.318E-01	1.307E-01	1.706E-01	1.897E-02	-0.773
EU-155	86.55			1.557E+00	2.488E-01	3.644E-01	3.413E-02	4.272
	105.31		*	-9.686E-02	1.407E-01	2.193E-01	1.906E-02	-0.442
TB-160	86.79			9.013E+00	1.131E+00	1.051E+00	9.784E-02	8.577
	197.04			1.969E-01	7.983E-01	1.365E+00	1.250E-01	0.144
	215.65			5.021E-01	1.108E+00	1.904E+00	1.788E-01	0.264
	298.57			-1.020E-01	1.976E-01	2.780E-01	2.732E-02	-0.367
	879.36		*	5.027E-02	2.695E-01	4.514E-01	4.514E-02	0.111
	962.29			-2.497E-01	1.120E+00	1.765E+00	1.706E-01	-0.142
	966.15			-2.327E-02	4.417E-01	6.253E-01	6.035E-02	-0.037
	1177.93			2.225E+00	7.717E-01	1.371E+00	1.104E-01	1.623
	1271.85			-3.139E-01	6.568E-01	9.606E-01	7.943E-02	-0.327

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	80.57			2.284E-01	3.771E-01	5.647E-01	4.864E-02	0.404
	184.41			4.475E-02	5.355E-02	8.635E-02	7.756E-03	0.518
	280.46			-5.771E-02	1.350E-01	2.201E-01	2.190E-02	-0.262
	410.95			7.331E-02	4.569E-01	7.537E-01	6.432E-02	0.097
	711.68	*		-2.506E-02	9.779E-02	1.606E-01	1.627E-02	-0.156
	752.31			-5.235E-01	4.411E-01	6.593E-01	6.699E-02	-0.794
	810.29			-1.102E-01	1.145E-01	1.762E-01	1.786E-02	-0.625
	67.75			4.042E-02	1.406E-01	2.093E-01	1.573E-02	0.193
TA-182	100.11			7.675E-02	2.201E-01	3.620E-01	3.169E-02	0.212
	152.43			-1.355E-01	4.775E-01	7.489E-01	6.405E-02	-0.181
	222.11			2.729E-01	5.502E-01	9.451E-01	8.946E-02	0.289
	1121.30			1.154E-01	2.518E-01	4.239E-01	3.623E-02	0.272
	1189.05			2.150E-01	3.886E-01	6.688E-01	5.405E-02	0.322
	1221.41	*		-4.137E-02	2.006E-01	3.146E-01	2.567E-02	-0.132
	1231.02			-1.990E-01	4.343E-01	6.490E-01	5.310E-02	-0.307
	295.96			6.629E-01	2.987E-01	3.362E-01	3.330E-02	1.972
IR-192	308.46			-3.000E-03	1.523E-01	2.526E-01	2.470E-02	-0.012
	316.51	*		-1.579E-02	5.430E-02	8.857E-02	8.565E-03	-0.178
	468.07			5.164E-02	1.340E-01	2.222E-01	2.136E-02	0.232
	70.83			3.942E-01	1.726E+00	2.551E+00	3.980E-01	0.155
HG-203	72.87			7.056E-01	9.699E-01	1.460E+00	2.211E-01	0.483
	279.20	*		-1.275E-02	5.962E-02	9.841E-02	9.987E-03	-0.130
BI-207	72.81			1.534E-01	2.316E-01	3.492E-01	2.756E-02	0.439
	74.97			4.475E-01	1.655E-01	2.447E-01	1.976E-02	1.828
	569.70			-2.443E-03	5.304E-02	8.487E-02	8.199E-03	-0.029
	1063.66	*		-6.401E-02	1.075E-01	1.671E-01	1.509E-02	-0.383
	1770.23			-1.152E+00	7.896E-01	9.340E-01	7.662E-02	-1.233
PB-210	46.54	*		-2.627E-01	3.947E+00	6.546E+00	6.015E-01	-0.040
PB-211	404.85	*		-8.521E-01	1.371E+00	2.062E+00	9.973E-01	-0.413
	427.09			1.775E+00	3.011E+00	4.892E+00	2.264E+00	0.363
	832.01			1.483E+00	2.034E+00	3.289E+00	1.714E+00	0.451
BI-212	727.33	*		2.204E+00	1.216E+00	1.694E+00	2.297E-01	1.302
	785.37			-6.001E-01	5.725E+00	9.465E+00	9.613E-01	-0.063
	1620.50			-4.560E-01	2.718E+00	4.351E+00	3.664E-01	-0.105
BI-214	609.32	*		7.350E-01	2.471E-01	3.114E-01	3.478E-02	2.360
	1120.29			5.249E-01	5.385E-01	9.376E-01	1.019E-01	0.560
	1764.49			7.819E-01	3.734E-01	7.802E-01	6.409E-02	1.002
RN-219	271.23			3.757E-01	3.710E-01	6.447E-01	7.324E-02	0.583
	401.81	*		2.185E-01	7.210E-01	1.200E+00	1.773E-01	0.182
RA-223	81.07			-7.299E-02	3.078E-01	4.425E-01	3.835E-02	-0.165
	83.79			8.421E-02	1.867E-01	2.773E-01	2.485E-02	0.304
	94.87			8.894E-01	5.668E-01	8.926E-01	8.030E-02	0.996
	144.24			-1.204E-01	9.345E-01	1.488E+00	1.411E-01	-0.081
	154.21			1.356E-01	5.385E-01	8.681E-01	8.163E-02	0.156
	269.46			3.780E-02	2.918E-01	4.904E-01	4.927E-02	0.077
	323.87	*		-9.113E-01	1.101E+00	1.725E+00	3.074E-01	-0.528
	338.28			4.922E+00	2.437E+00	3.227E+00	4.072E-01	1.525
RA-226	609.32	*		7.350E-01	2.471E-01	3.114E-01	3.478E-02	2.360
	1120.29			5.249E-01	5.385E-01	9.376E-01	1.019E-01	0.560

---- Non-Identified Nuclides ----

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AC-227	1764.49			7.819E-01	3.734E-01	7.802E-01	6.409E-02	1.002
	79.69			2.105E-01	1.736E+00	2.543E+00	4.370E-01	0.083
	235.96			-2.317E-02	2.548E-01	3.756E-01	4.201E-02	-0.062
	256.23	*		2.684E-01	3.919E-01	6.752E-01	8.725E-02	0.398
	299.98			-4.907E-02	1.591E+00	2.321E+00	3.143E-01	-0.021
TH-227	304.50			-3.926E-01	2.657E+00	4.380E+00	7.516E-01	-0.090
	334.37			-2.350E+00	3.176E+00	4.316E+00	6.925E-01	-0.545
	79.80			1.175E+00	2.250E+00	3.342E+00	7.267E-01	0.352
	235.96			-2.317E-02	2.548E-01	3.756E-01	3.999E-02	-0.062
	256.23	*		2.684E-01	3.923E-01	6.752E-01	9.711E-02	0.398
TH-229	299.98			-4.907E-02	1.591E+00	2.321E+00	3.143E-01	-0.021
	304.50			-3.926E-01	2.657E+00	4.380E+00	7.516E-01	-0.090
	334.37			-2.350E+00	3.176E+00	4.316E+00	6.925E-01	-0.545
	85.43			4.280E-01	3.249E-01	4.970E-01	4.547E-02	0.861
	88.47			4.429E+00	5.557E-01	5.767E-01	5.432E-02	7.681
PA-231	193.51	*		-2.829E-02	7.741E-01	1.310E+00	1.193E-01	-0.022
	210.85			7.987E-02	1.317E+00	2.230E+00	2.081E-01	0.036
	283.69	*		-3.713E-01	2.315E+00	3.827E+00	5.893E-01	-0.097
	301.36			4.224E-01	9.598E-01	1.517E+00	1.975E-01	0.279
	81.07			-7.299E-02	3.078E-01	4.425E-01	3.835E-02	-0.165
TH-231	83.79			8.421E-02	1.867E-01	2.773E-01	2.485E-02	0.304
	94.87			8.894E-01	5.668E-01	8.926E-01	8.030E-02	0.996
	144.24			-1.204E-01	9.345E-01	1.488E+00	1.411E-01	-0.081
	154.21			1.356E-01	5.385E-01	8.681E-01	8.163E-02	0.156
	269.46			3.780E-02	2.918E-01	4.904E-01	4.927E-02	0.077
PA-233	323.87	*		-9.113E-01	1.101E+00	1.725E+00	3.074E-01	-0.528
	338.28			4.922E+00	2.437E+00	3.227E+00	4.072E-01	1.525
	300.13			1.202E-02	7.216E-01	1.056E+00	1.643E-01	0.011
	311.90	*		6.922E-02	1.032E-01	1.770E-01	1.756E-02	0.391
	340.48			2.173E+00	1.233E+00	1.838E+00	4.473E-01	1.182
PA-234	94.67			3.263E-01	2.182E-01	3.383E-01	4.288E-02	0.964
	98.44			3.747E-02	1.130E-01	1.827E-01	1.020E-01	0.205
	111.00			-1.429E-01	2.459E-01	3.842E-01	4.601E-02	-0.372
	131.20			-5.811E-02	1.518E-01	2.386E-01	1.995E-02	-0.243
	569.50			-1.175E-01	4.818E-01	7.596E-01	7.338E-02	-0.155
PA-234M	733.00			8.977E-02	6.628E-01	9.786E-01	2.235E-01	0.092
	880.51			3.728E-01	5.663E-01	9.773E-01	9.768E-02	0.381
	883.24			-2.367E-01	6.274E-01	9.761E-01	6.580E-01	-0.242
	926.50			-1.810E-02	3.686E-01	6.052E-01	1.556E-01	-0.030
	946.00	*		-1.156E-01	6.861E-01	1.116E+00	2.155E-01	-0.104
U-235	949.00			1.171E-02	1.019E+00	1.678E+00	1.634E-01	0.007
	766.42			1.477E+01	1.964E+01	3.199E+01	1.632E+01	0.462
	1001.03	*		2.297E+00	9.285E+00	1.561E+01	1.670E+00	0.147
	89.96			9.483E+00	2.873E+00	2.565E+00	6.378E-01	3.697
	93.35			1.101E+00	9.191E-01	1.126E+00	2.621E-01	0.978
	143.76	*		2.406E-02	2.764E-01	4.448E-01	7.505E-02	0.054
	163.33			-1.342E-01	6.538E-01	1.027E+00	1.847E-01	-0.131
	185.72			1.644E-01	1.116E-01	1.203E-01	1.083E-02	1.367
	205.31			-8.390E-01	7.217E-01	1.129E+00	2.085E-01	-0.743

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	86.48	*		3.324E+00	9.034E-01	8.626E-01	1.978E-01	3.853
	95.86			-1.056E-01	1.178E+00	1.692E+00	4.078E-01	-0.062
NP-239	99.53			-7.054E-02	2.086E-01	3.317E-01	2.912E-02	-0.213
	103.37			1.315E-02	1.288E-01	2.093E-01	1.809E-02	0.063
	106.12			3.826E-02	1.080E-01	1.773E-01	1.519E-02	0.216
	117.23	*		-4.244E-02	5.920E-01	8.442E-01	7.071E-02	-0.050
	228.18			-1.432E-01	3.261E-01	5.375E-01	5.125E-02	-0.266
CM-247	277.60			1.588E-01	2.751E-01	4.709E-01	4.685E-02	0.337
	278.00			6.152E-01	1.175E+00	2.006E+00	1.996E-01	0.307
	287.50			2.691E+00	1.941E+00	3.427E+00	3.396E-01	0.785
	402.40	*		2.724E-02	6.613E-02	1.108E-01	9.366E-03	0.246
	252.80			-1.156E-01	1.465E+00	2.446E+00	2.390E-01	-0.047
CF-249	333.37			-2.205E-02	3.240E-01	4.682E-01	4.420E-02	-0.047
	388.16	*		1.532E-02	7.063E-02	1.173E-01	9.893E-03	0.131
CF-251	177.52	*		7.831E-02	1.922E-01	3.103E-01	2.758E-02	0.252
	227.38			-5.203E-01	5.545E-01	8.913E-01	8.490E-02	-0.584
	285.41			-1.290E+00	3.545E+00	5.796E+00	5.751E-01	-0.223

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]G1202061454      *
* Acquisition date   : 20-MAR-2010 12:14:55 Detector SN#                   *
* Detector ID        : GAM20 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 01:00:18.04 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 8-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202061454 Analyst initials: MXR1                 *
* Batch Number       : 961097 Sample Quantity : 1.5544E+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	1.049E+00	5.239E-01	3.671E-01	0.000E+00
CO-57	1.817E-01	6.504E-02	5.922E-02	0.000E+00
CO-60	6.446E+00	6.116E-01	7.308E-02	0.000E+00
CD-109	2.928E+01	3.599E+00	2.007E+00	0.000E+00
SN-126	2.873E+00	3.532E-01	1.976E-01	0.000E+00
BA-137M	6.069E+00	6.454E-01	1.039E-01	0.000E+00
CS-137	6.411E+00	6.826E-01	1.098E-01	0.000E+00
TL-208	3.447E-01	1.077E-01	9.986E-02	0.000E+00
BI-211	1.957E+00	6.695E-01	5.757E-01	0.000E+00
PB-212	1.145E+00	1.830E-01	1.563E-01	0.000E+00
PB-214	7.104E-01	2.460E-01	2.094E-01	0.000E+00
RA-224	3.001E+00	1.499E+00	1.674E+00	0.000E+00
AC-228	1.512E+00	4.999E-01	5.018E-01	0.000E+00
RA-228	1.512E+00	4.999E-01	5.018E-01	0.000E+00
TH-228	1.145E+00	1.830E-01	1.563E-01	0.000E+00
TH-232	1.512E+00	4.999E-01	5.018E-01	0.000E+00
TH-234	2.244E+00	1.820E+00	2.335E+00	0.000E+00
U-238	2.244E+00	1.820E+00	2.335E+00	0.000E+00
AM-241	1.336E+01	1.177E+00	4.474E-01	0.000E+00
ANH-511	1.379E-01	9.670E-02	8.900E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.754E-01	5.794E-01	9.788E-01	0.000E+00 NOT IDENT.
NA-22	-4.238E-02	4.441E-02	6.108E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.719E+04	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.740E-02	7.744E-02	1.302E-01	0.000E+00 NOT IDENT.
V-48	-1.752E-01	1.237E-01	1.854E-01	0.000E+00 NOT IDENT.
CR-51	-8.197E-02	5.580E-01	9.840E-01	0.000E+00 NOT IDENT.
MN-54	2.114E-02	6.567E-02	1.164E-01	0.000E+00 NOT IDENT.

CO-56	3.769E-02	7.063E-02	1.268E-01	0.000E+00	NOT IDENT.
CO-58	-8.574E-02	7.137E-02	1.124E-01	0.000E+00	NOT IDENT.
FE-59	-1.196E-01	1.692E-01	2.691E-01	0.000E+00	NOT IDENT.
ZN-65	-1.257E-02	1.619E-01	2.714E-01	0.000E+00	NOT IDENT.
SE-75	-2.503E-02	6.749E-02	1.194E-01	0.000E+00	FAIL ABUN
SR-85	1.176E-01	7.473E-02	1.247E-01	0.000E+00	NOT IDENT.
Y-88	4.435E-03	4.415E-02	7.572E-02	0.000E+00	NOT IDENT.
Y-91	-1.648E+01	2.530E+01	3.887E+01	0.000E+00	NOT IDENT.
NB-94	-4.421E-02	5.306E-02	8.749E-02	0.000E+00	NOT IDENT.
NB-95	1.888E-02	6.612E-02	1.178E-01	0.000E+00	NOT IDENT.
NB-95M	-5.514E-02	1.947E-01	3.063E-01	0.000E+00	NOT IDENT.
ZR-95	3.102E-02	1.184E-01	2.108E-01	0.000E+00	NOT IDENT.
MO-99	-1.899E-01	9.835E+00	1.721E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.721E+13	0.000E+00	0.000E+00	SHORT HLIF
RU-103	6.292E-02	6.777E-02	1.222E-01	0.000E+00	FAIL ABUN
RH-106	-4.202E-02	5.088E-01	8.503E-01	0.000E+00	NOT IDENT.
RU-106	-4.202E-02	5.088E-01	8.503E-01	0.000E+00	NOT IDENT.
AG-108M	8.983E-04	5.840E-02	1.014E-01	0.000E+00	NOT IDENT.
AG-110M	4.522E-02	6.406E-02	1.052E-01	0.000E+00	NOT IDENT.
SN-113	1.405E-02	7.607E-02	1.345E-01	0.000E+00	NOT IDENT.
CD-115	-2.142E+00	8.968E+00	1.505E+01	0.000E+00	NOT IDENT.
SN-117M	-2.578E-02	6.615E-02	1.124E-01	0.000E+00	NOT IDENT.
TE-123M	-2.042E-02	3.979E-02	6.718E-02	0.000E+00	NOT IDENT.
SB-124	-1.749E-03	9.778E-02	1.650E-01	0.000E+00	NOT IDENT.
SB-125	9.647E-02	1.680E-01	3.009E-01	0.000E+00	NOT IDENT.
TE-125M	6.328E+00	1.210E+01	2.202E+01	0.000E+00	NOT IDENT.
I-126	1.336E-01	3.436E-01	5.494E-01	0.000E+00	NOT IDENT.
SB-126	1.480E-02	2.131E-01	3.557E-01	0.000E+00	NOT IDENT.
SB-127	4.344E-01	1.283E+00	2.317E+00	0.000E+00	NOT IDENT.
I-131	8.646E-02	1.538E-01	2.787E-01	0.000E+00	NOT IDENT.
TE-132	-2.839E-01	6.124E-01	1.089E+00	0.000E+00	NOT IDENT.
BA-133	7.664E-03	7.814E-02	1.218E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.355E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.992E-02	8.374E-02	1.542E-01	0.000E+00	NOT IDENT.
CS-135	-1.306E-01	2.448E-01	4.291E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.021E+13	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.010E-02	1.784E-01	2.960E-01	0.000E+00	NOT IDENT.
CE-139	2.150E-02	4.197E-02	7.445E-02	0.000E+00	NOT IDENT.
BA-140	-1.913E-01	3.791E-01	6.142E-01	0.000E+00	NOT IDENT.
LA-140	4.096E-02	9.245E-02	1.684E-01	0.000E+00	NOT IDENT.
CE-141	-2.803E-02	8.120E-02	1.393E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.713E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.449E-01	2.846E-01	4.863E-01	0.000E+00	NOT IDENT.
PM-144	-1.854E-02	5.389E-02	9.259E-02	0.000E+00	NOT IDENT.
PR-144	-1.386E+00	4.027E+00	6.920E+00	0.000E+00	NOT IDENT.
PM-146	-2.415E-02	7.945E-02	1.349E-01	0.000E+00	NOT IDENT.
ND-147	3.340E-01	8.515E-01	1.491E+00	0.000E+00	NOT IDENT.
PM-149	-3.598E+01	6.479E+01	1.125E+02	0.000E+00	NOT IDENT.
EU-152	-1.551E-01	1.630E-01	2.609E-01	0.000E+00	FAIL ABUN
GD-153	-4.885E-02	1.120E-01	1.737E-01	0.000E+00	NOT IDENT.
EU-154	-1.318E-01	1.280E-01	1.727E-01	0.000E+00	FAIL ABUN
EU-155	-9.686E-02	1.379E-01	2.371E-01	0.000E+00	NOT IDENT.
TB-160	5.027E-02	2.641E-01	4.618E-01	0.000E+00	FAIL ABUN
HO-166M	-2.506E-02	9.583E-02	1.653E-01	0.000E+00	NOT IDENT.
TA-182	-4.137E-02	1.966E-01	3.189E-01	0.000E+00	NOT IDENT.
IR-192	-1.579E-02	5.321E-02	9.311E-02	0.000E+00	FAIL ABUN
HG-203	-1.275E-02	5.843E-02	1.038E-01	0.000E+00	NOT IDENT.
BI-207	-6.401E-02	1.054E-01	1.701E-01	0.000E+00	FAIL ABUN
PB-210	-2.627E-01	3.868E+00	7.217E+00	0.000E+00	NOT IDENT.
PB-211	-8.521E+00	1.343E+00	2.154E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.192E+00	1.742E+00	0.000E+00	FAIL ABUN
BI-214	0.000E+00	2.422E-01	3.217E-01	0.000E+00	FAIL ABUN
RN-219	2.185E-01	7.066E-01	1.254E+00	0.000E+00	NOT IDENT.
RA-223	-9.113E-01	1.079E+00	1.812E+00	0.000E+00	FAIL ABUN
RA-226	0.000E+00	2.422E-01	3.217E-01	0.000E+00	FAIL ABUN
AC-227	2.684E-01	3.841E-01	7.137E-01	0.000E+00	NOT IDENT.
TH-227	2.684E-01	3.845E-01	7.137E-01	0.000E+00	NOT IDENT.
TH-229	-2.829E-02	7.586E-01	1.394E+00	0.000E+00	FAIL ABUN
PA-231	-3.713E-01	2.269E+00	4.035E+00	0.000E+00	NOT IDENT.
TH-231	-9.113E-01	1.079E+00	1.812E+00	0.000E+00	FAIL ABUN
PA-233	6.922E-02	1.011E-01	1.861E-01	0.000E+00	NOT IDENT.
PA-234	-1.156E-01	6.723E-01	1.139E+00	0.000E+00	NOT IDENT.
PA-234M	2.297E+00	9.100E+00	1.591E+01	0.000E+00	NOT IDENT.
U-235	2.406E-02	2.708E-01	4.772E-01	0.000E+00	FAIL ABUN
NP-237	0.000E+00	8.853E-01	9.370E-01	0.000E+00	NOT IDENT.
NP-239	-4.244E-02	5.801E-01	9.102E-01	0.000E+00	NOT IDENT.
CM-247	2.724E-02	6.481E-02	1.157E-01	0.000E+00	NOT IDENT.
CF-249	1.532E-02	6.921E-02	1.227E-01	0.000E+00	NOT IDENT.

CF-251	7.831E-02	1.883E-01	3.311E-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]G1202061454.CNF;1
Sample date        : 8-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 12:14:55
Sample ID          : G1202061454          Sample quantity  : 1.55440E+02 GRAM
Detector name      : GAM20                Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00        Elapsed real time: 0 01:00:18.04  0.5%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity        : 5.00000
Batch ID           : 961097               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	1460.82	29	10.66*	1.253E+00	1.049E+00	1.049E+00	50.96
CO-57	122.06	230	85.60*	7.380E+00	1.760E-01	1.817E-01	36.52
	136.47	-----	10.68	7.171E+00	-----	Line Not Found	-----
CO-60	1173.23	1931	99.85	1.496E+00	6.243E+00	6.271E+00	9.39
	1332.49	1789	99.98*	1.346E+00	6.417E+00	6.446E+00	9.68
CD-109	88.03	1536	3.70*	6.980E+00	2.873E+01	2.928E+01	12.55
SN-126	64.28	81	9.60	4.713E+00	8.649E-01	8.649E-01	82.09
	86.94	1536	8.90	6.980E+00	1.194E+01	1.194E+01	42.35
	87.57	1536	37.00*	6.980E+00	2.873E+00	2.873E+00	12.55
BA-137M	661.66	2747	89.90*	2.434E+00	6.064E+00	6.069E+00	10.85
CS-137	661.66	2747	85.10*	2.434E+00	6.406E+00	6.411E+00	10.86
TL-208	277.37	-----	6.60	4.721E+00	-----	Line Not Found	-----
	583.19	163	85.00*	2.695E+00	3.447E-01	3.447E-01	31.88
	860.56	-----	12.50	1.954E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.845E+00	-----	Line Not Found	-----
	351.06	208	12.92*	3.969E+00	1.957E+00	1.957E+00	34.90
PB-212	74.82	200	10.28	6.055E+00	1.553E+00	1.553E+00	38.25
	77.11	269	17.10	6.260E+00	1.213E+00	1.213E+00	26.41
	238.63	542	43.60*	5.247E+00	1.145E+00	1.145E+00	16.31
	300.09	-----	3.30	4.461E+00	-----	Line Not Found	-----
PB-214	74.82	200	5.80	6.055E+00	2.752E+00	2.752E+00	37.84
	77.11	269	9.70	6.260E+00	2.139E+00	2.139E+00	27.67
	242.00	133	7.25	5.205E+00	1.697E+00	1.697E+00	51.30
	295.22	158	18.42	4.512E+00	9.188E-01	9.189E-01	45.52
	351.93	208	35.60*	3.969E+00	7.104E-01	7.104E-01	35.33
RA-224	240.99	133	4.10*	5.205E+00	3.001E+00	3.001E+00	50.97
AC-228	338.32	118	11.27	4.086E+00	1.240E+00	1.240E+00	63.61
	911.20	150	25.80*	1.859E+00	1.512E+00	1.512E+00	33.73
	968.97	64	15.80	1.763E+00	1.103E+00	1.103E+00	70.70
RA-228	338.32	118	11.27	4.086E+00	1.240E+00	1.240E+00	63.61
	911.20	150	25.80*	1.859E+00	1.512E+00	1.512E+00	33.73
	968.97	64	15.80	1.763E+00	1.103E+00	1.103E+00	70.70

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	200	10.28	6.055E+00	1.553E+00	1.553E+00	37.01
	77.11	269	17.10	6.260E+00	1.213E+00	1.213E+00	26.41
	238.63	542	43.60*	5.247E+00	1.145E+00	1.145E+00	16.31
	300.09	-----	3.30	4.461E+00	-----	Line Not Found	-----
TH-232	338.32	118	11.27	4.086E+00	1.240E+00	1.240E+00	48.79
	911.20	150	25.80*	1.859E+00	1.512E+00	1.512E+00	33.73
	968.97	64	15.80	1.763E+00	1.103E+00	1.103E+00	70.70
TH-234	63.29	81	3.70*	4.713E+00	2.244E+00	2.244E+00	82.74
	92.59	92	4.23	7.179E+00	1.458E+00	1.458E+00	83.18
U-238	63.29	81	3.70*	4.713E+00	2.244E+00	2.244E+00	82.74
	92.59	92	4.23	7.179E+00	1.458E+00	1.458E+00	80.65
AM-241	59.54	4045	35.90*	4.075E+00	1.335E+01	1.336E+01	9.00
ANH-511	511.00	85	100.00*	2.991E+00	1.379E-01	1.379E-01	71.55

Flag: "*" = Keyline

Total number of lines in spectrum 25
Number of unidentified lines 2
Number of lines tentatively identified by NID 23 92.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	1.049E+00	1.049E+00	0.535E+00	50.96	
CO-57	271.74D	1.03	1.760E-01	1.817E-01	0.664E-01	36.52	
CO-60	5.27Y	1.00	6.417E+00	6.446E+00	0.624E+00	9.68	
CD-109	461.40D	1.02	2.873E+01	2.928E+01	0.367E+01	12.55	
SN-126	2.30E+05Y	1.00	2.873E+00	2.873E+00	0.360E+00	12.55	
BA-137M	30.08Y	1.00	6.064E+00	6.069E+00	0.659E+00	10.85	
CS-137	30.08Y	1.00	6.406E+00	6.411E+00	0.697E+00	10.86	
TL-208	1.41E+10Y	1.00	3.447E-01	3.447E-01	1.099E-01	31.88	
BI-211	7.04E+08Y	1.00	1.957E+00	1.957E+00	0.683E+00	34.90	
PB-212	1.41E+10Y	1.00	1.145E+00	1.145E+00	0.187E+00	16.31	
PB-214	1600.00Y	1.00	7.104E-01	7.104E-01	2.510E-01	35.33	
RA-224	1.41E+10Y	1.00	3.001E+00	3.001E+00	1.530E+00	50.97	
AC-228	1.41E+10Y	1.00	1.512E+00	1.512E+00	0.510E+00	33.73	
RA-228	1.41E+10Y	1.00	1.512E+00	1.512E+00	0.510E+00	33.73	
TH-228	1.41E+10Y	1.00	1.145E+00	1.145E+00	0.187E+00	16.31	
TH-232	1.41E+10Y	1.00	1.512E+00	1.512E+00	0.510E+00	33.73	
TH-234	4.47E+09Y	1.00	2.244E+00	2.244E+00	1.857E+00	82.74	
U-238	4.47E+09Y	1.00	2.244E+00	2.244E+00	1.857E+00	82.74	
AM-241	432.60Y	1.00	1.335E+01	1.336E+01	0.120E+01	9.00	
ANH-511	1.00E+09Y	1.00	1.379E-01	1.379E-01	0.987E-01	71.55	
Total Activity :			8.254E+01	8.313E+01			

Grand Total Activity : 8.254E+01 8.313E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202061454

Page : 4
Acquisition date : 20-MAR-2010 12:14:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.32	120	365	1.75	372.26	366	12	3.34E-02	67.3	6.17E+00	T
0	609.86	180	139	1.26	1218.54	1212	14	5.00E-02	31.7	2.60E+00	T
0	727.91	69	70	2.02	1454.55	1449	11	1.90E-02	53.5	2.25E+00	T
0	1378.75	13	2	1.49	2756.60	2753	7	3.70E-03	63.7	1.31E+00	
0	1388.77	9	4	1.02	2776.67	2772	7	2.56E-03	94.8	1.30E+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]G1202061454.CNF;1
* Acquisition date   : 20-MAR-2010 12:14:55   Detector SN#      :
* Detector ID        : GAM20                  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 01:00:18.04          Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 8-MAR-2010 00:00:00.   Nuclide Library : SOLID
* Sample ID          : G1202061454           Analyst initials: MXR1
* Batch Number       : 961097                Sample Quantity : 1.55440E+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	1.049E+00	5.346E-01	3.640E-01	3.174E-02	2.882
CO-57	1.817E-01	6.636E-02	5.498E-02	4.589E-03	3.305
CO-60	6.446E+00	6.241E-01	7.228E-02	6.054E-03	89.186
CD-109	2.928E+01	3.673E+00	1.849E+00	1.748E-01	15.835
SN-126	2.873E+00	3.604E-01	1.820E-01	1.711E-02	15.790
BA-137M	6.069E+00	6.586E-01	1.008E-01	1.012E-02	60.201
CS-137	6.411E+00	6.965E-01	1.065E-01	1.070E-02	60.202
TL-208	3.447E-01	1.099E-01	9.653E-02	9.915E-03	3.570
BI-211	1.957E+00	6.831E-01	5.491E-01	5.262E-02	3.565
PB-212	1.145E+00	1.867E-01	1.476E-01	1.576E-02	7.761
PB-214	7.104E-01	2.510E-01	1.997E-01	2.206E-02	3.557
RA-224	3.001E+00	1.530E+00	1.581E+00	1.529E-01	1.898
AC-228	1.512E+00	5.101E-01	4.911E-01	6.172E-02	3.080
RA-228	1.512E+00	5.101E-01	4.911E-01	6.172E-02	3.080
TH-228	1.145E+00	1.867E-01	1.476E-01	1.576E-02	7.761
TH-232	1.512E+00	5.101E-01	4.911E-01	6.172E-02	3.080
TH-234	2.244E+00	1.857E+00	2.133E+00	3.789E-01	1.052
U-238	2.244E+00	1.857E+00	2.133E+00	3.789E-01	1.052

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-241	1.336E+01	1.201E+00	4.082E-01	3.194E-02	32.721
ANH-511	1.379E-01	9.868E-02	8.574E-02	7.989E-03	1.609

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.754E-01		5.913E-01	9.413E-01	9.147E-02	-0.186
NA-22	-4.238E-02		4.532E-02	6.034E-02	4.998E-03	-0.702
NA-24	-1.495E-02		1.898E-02	Half-Life too short		
SC-46	-2.740E-02		7.902E-02	1.273E-01	1.269E-02	-0.215
V-48	-1.752E-01		1.262E-01	1.818E-01	1.738E-02	-0.964
CR-51	-8.197E-02		5.693E-01	9.362E-01	9.380E-02	-0.088
MN-54	2.114E-02		6.701E-02	1.136E-01	1.147E-02	0.186
CO-56	3.769E-02		7.207E-02	1.238E-01	1.248E-02	0.304
CO-58	-8.574E-02		7.282E-02	1.096E-01	1.113E-02	-0.782
FE-59	-1.196E-01		1.726E-01	2.647E-01	2.496E-02	-0.452
ZN-65	-1.257E-02		1.652E-01	2.671E-01	2.299E-02	-0.047
SE-75	-2.503E-02		6.887E-02	1.130E-01	1.119E-02	-0.221
SR-85	1.176E-01		7.626E-02	1.202E-01	1.122E-02	0.978
Y-88	4.435E-03		4.505E-02	7.557E-02	6.097E-03	0.059
Y-91	-1.648E+01		2.581E+01	3.833E+01	3.113E+00	-0.430
NB-94	-4.421E-02		5.414E-02	8.501E-02	8.601E-03	-0.520
NB-95	1.888E-02		6.747E-02	1.147E-01	1.166E-02	0.165
NB-95M	-5.514E-02		1.986E-01	2.891E-01	3.112E-02	-0.191
ZR-95	3.102E-02		1.208E-01	2.053E-01	2.245E-02	0.151
MO-99	-1.899E-01		1.004E+01	1.675E+01	2.788E+00	-0.011
TC-99M	-6.519E+06		1.899E+07	Half-Life too short		
RU-103	6.292E-02		6.916E-02	1.176E-01	1.688E-02	0.535
RH-106	-4.202E-02		5.192E-01	8.234E-01	1.163E-01	-0.051
RU-106	-4.202E-02		5.192E-01	8.234E-01	8.150E-02	-0.051
AG-108M	8.983E-04		5.960E-02	9.730E-02	8.769E-03	0.009
AG-110M	4.522E-02		6.537E-02	1.021E-01	1.046E-02	0.443
SN-113	1.405E-02		7.762E-02	1.286E-01	1.109E-02	0.109
CD-115	-2.142E+00		9.151E+00	1.451E+01	1.368E+00	-0.148
SN-117M	-2.578E-02		6.750E-02	1.051E-01	9.067E-03	-0.245
TE-123M	-2.042E-02		4.060E-02	6.279E-02	5.455E-03	-0.325
SB-124	-1.749E-03		9.977E-02	1.643E-01	1.431E-02	-0.011
SB-125	9.647E-02		1.715E-01	2.885E-01	2.552E-02	0.334
TE-125M	6.328E+00		1.235E+01	2.039E+01	2.114E+00	0.310
I-126	1.336E-01		3.506E-01	5.330E-01	5.355E-02	0.251
SB-126	1.480E-02		2.174E-01	3.459E-01	3.507E-02	0.043
SB-127	4.344E-01		1.309E+00	2.250E+00	2.670E-01	0.193
I-131	8.646E-02		1.569E-01	2.661E-01	2.491E-02	0.325
TE-132	-2.839E-01		6.249E-01	1.028E+00	1.631E-01	-0.276
BA-133	7.664E-03		7.973E-02	1.162E-01	1.542E-02	0.066
I-133	-6.814E-04		6.915E-04	Half-Life too short		
CS-134	7.992E-02		8.545E-02	1.503E-01	1.534E-02	0.532

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135	-1.306E-01		2.498E-01	4.065E-01	4.504E-02	-0.321
I-135	-1.848E+06		5.210E+06	Half-Life too short		
CS-136	-5.010E-02		1.820E-01	2.908E-01	2.758E-02	-0.172
CE-139	2.150E-02		4.282E-02	6.965E-02	6.081E-03	0.309
BA-140	-1.913E-01		3.869E-01	5.925E-01	2.023E-01	-0.323
LA-140	4.096E-02		9.434E-02	1.674E-01	1.413E-02	0.245
CE-141	-2.803E-02		8.286E-02	1.299E-01	1.121E-02	-0.216
CE-143	7.741E-05		2.915E-05	Half-Life too short		
CE-144	-1.449E-01		2.904E-01	4.525E-01	6.854E-02	-0.320
PM-144	-1.854E-02		5.499E-02	8.994E-02	9.092E-03	-0.206
PR-144	-1.386E+00		4.109E+00	6.722E+00	6.794E-01	-0.206
PM-146	-2.415E-02		8.107E-02	1.295E-01	1.402E-02	-0.186
ND-147	3.340E-01		8.689E-01	1.438E+00	2.220E-01	0.232
PM-149	-3.598E+01		6.611E+01	1.067E+02	1.739E+01	-0.337
EU-152	-1.551E-01		1.663E-01	2.487E-01	2.426E-02	-0.623
GD-153	-4.885E-02		1.142E-01	1.604E-01	1.422E-02	-0.305
EU-154	-1.318E-01		1.307E-01	1.706E-01	1.897E-02	-0.773
EU-155	-9.686E-02		1.407E-01	2.193E-01	1.906E-02	-0.442
TB-160	5.027E-02		2.695E-01	4.514E-01	4.514E-02	0.111
HO-166M	-2.506E-02		9.779E-02	1.606E-01	1.627E-02	-0.156
TA-182	-4.137E-02		2.006E-01	3.146E-01	2.567E-02	-0.132
IR-192	-1.579E-02		5.430E-02	8.857E-02	8.565E-03	-0.178
HG-203	-1.275E-02		5.962E-02	9.841E-02	9.987E-03	-0.130
BI-207	-6.401E-02		1.075E-01	1.671E-01	1.509E-02	-0.383
PB-210	-2.627E-01		3.947E+00	6.546E+00	6.015E-01	-0.040
PB-211	-8.521E-01		1.371E+00	2.062E+00	9.973E-01	-0.413
BI-212	2.204E+00	+	1.216E+00	1.694E+00	2.297E-01	1.302
BI-214	7.350E-01	+	2.471E-01	3.114E-01	3.478E-02	2.360
RN-219	2.185E-01		7.210E-01	1.200E+00	1.773E-01	0.182
RA-223	-9.113E-01		1.101E+00	1.725E+00	3.074E-01	-0.528
RA-226	7.350E-01	+	2.471E-01	3.114E-01	3.478E-02	2.360
AC-227	2.684E-01		3.919E-01	6.752E-01	8.725E-02	0.398
TH-227	2.684E-01		3.923E-01	6.752E-01	9.711E-02	0.398
TH-229	-2.829E-02		7.741E-01	1.310E+00	1.193E-01	-0.022
PA-231	-3.713E-01		2.315E+00	3.827E+00	5.893E-01	-0.097
TH-231	-9.113E-01		1.101E+00	1.725E+00	3.074E-01	-0.528
PA-233	6.922E-02		1.032E-01	1.770E-01	1.756E-02	0.391
PA-234	-1.156E-01		6.861E-01	1.116E+00	2.155E-01	-0.104
PA-234M	2.297E+00		9.285E+00	1.561E+01	1.670E+00	0.147
U-235	2.406E-02		2.764E-01	4.448E-01	7.505E-02	0.054
NP-237	3.324E+00		9.034E-01	8.626E-01	1.978E-01	3.853
NP-239	-4.244E-02		5.920E-01	8.442E-01	7.071E-02	-0.050
CM-247	2.724E-02		6.613E-02	1.108E-01	9.366E-03	0.246
CF-249	1.532E-02		7.063E-02	1.173E-01	9.893E-03	0.131
CF-251	7.831E-02		1.922E-01	3.103E-01	2.758E-02	0.252

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]G1202061454          *
* Acquisition date   : 20-MAR-2010 12:14:55 Detector SN#      :              *
* Detector ID        : GAM20                      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 01:00:18.04           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 8-MAR-2010 00:00:00 Nuclide Library : SOLID            *
* Sample ID          : G1202061454           Analyst initials: MXR1          *
* Batch Number       : 961097                Sample Quantity : 1.5544E+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	1.049E+00	5.239E-01	1.837E-01	2.673E-01
CO-57	1.817E-01	6.504E-02	2.963E-02	3.318E-02
CO-60	6.446E+00	6.116E-01	3.656E-02	3.120E-01
CD-109	2.928E+01	3.599E+00	1.004E+00	1.836E+00
SN-126	2.873E+00	3.532E-01	9.885E-02	1.802E-01
BA-137M	6.069E+00	6.454E-01	5.199E-02	3.293E-01
CS-137	6.411E+00	6.826E-01	5.492E-02	3.483E-01
TL-208	3.447E-01	1.077E-01	4.996E-02	5.495E-02
BI-211	1.957E+00	6.695E-01	2.880E-01	3.416E-01
PB-212	1.145E+00	1.830E-01	7.818E-02	9.336E-02
PB-214	7.104E-01	2.460E-01	1.047E-01	1.255E-01
RA-224	3.001E+00	1.499E+00	8.376E-01	7.648E-01
AC-228	1.512E+00	4.999E-01	2.511E-01	2.550E-01
RA-228	1.512E+00	4.999E-01	2.511E-01	2.550E-01
TH-228	1.145E+00	1.830E-01	7.818E-02	9.336E-02
TH-232	1.512E+00	4.999E-01	2.511E-01	2.550E-01
TH-234	2.244E+00	1.820E+00	1.168E+00	9.283E-01
U-238	2.244E+00	1.820E+00	1.168E+00	9.283E-01
AM-241	1.336E+01	1.177E+00	2.238E-01	6.007E-01
ANH-511	1.379E-01	9.670E-02	4.453E-02	4.934E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.754E-01	5.794E-01	4.897E-01	2.956E-01 NOT IDENT.
NA-22	-4.238E-02	4.441E-02	3.056E-02	2.266E-02 NOT IDENT.
NA-24	-1.495E+04	3.719E+04	0.000E+00	1.898E+04 SHORT HLIF
SC-46	-2.740E-02	7.744E-02	6.512E-02	3.951E-02 NOT IDENT.
V-48	-1.752E-01	1.237E-01	9.277E-02	6.310E-02 NOT IDENT.
CR-51	-8.197E-02	5.580E-01	4.923E-01	2.847E-01 NOT IDENT.
MN-54	2.114E-02	6.567E-02	5.821E-02	3.351E-02 NOT IDENT.

CO-56	3.769E-02	7.063E-02	6.341E-02	3.603E-02	NOT IDENT.
CO-58	-8.574E-02	7.137E-02	5.623E-02	3.641E-02	NOT IDENT.
FE-59	-1.196E-01	1.692E-01	1.346E-01	8.631E-02	NOT IDENT.
ZN-65	-1.257E-02	1.619E-01	1.358E-01	8.258E-02	NOT IDENT.
SE-75	-2.503E-02	6.749E-02	5.972E-02	3.444E-02	FAIL ABUN
SR-85	1.176E-01	7.473E-02	6.241E-02	3.813E-02	NOT IDENT.
Y-88	4.435E-03	4.415E-02	3.788E-02	2.252E-02	NOT IDENT.
Y-91	-1.648E+01	2.530E+01	1.945E+01	1.291E+01	NOT IDENT.
NB-94	-4.421E-02	5.306E-02	4.377E-02	2.707E-02	NOT IDENT.
NB-95	1.888E-02	6.612E-02	5.894E-02	3.374E-02	NOT IDENT.
NB-95M	-5.514E-02	1.947E-01	1.532E-01	9.932E-02	NOT IDENT.
ZR-95	3.102E-02	1.184E-01	1.055E-01	6.039E-02	NOT IDENT.
MO-99	-1.899E-01	9.835E+00	8.612E+00	5.018E+00	NOT IDENT.
TC-99M	-6.519E+12	3.721E+13	0.000E+00	1.899E+13	SHORT HLIF
RU-103	6.292E-02	6.777E-02	6.114E-02	3.458E-02	FAIL ABUN
RH-106	-4.202E-02	5.088E-01	4.254E-01	2.596E-01	NOT IDENT.
RU-106	-4.202E-02	5.088E-01	4.254E-01	2.596E-01	NOT IDENT.
AG-108M	8.983E-04	5.840E-02	5.075E-02	2.980E-02	NOT IDENT.
AG-110M	4.522E-02	6.406E-02	5.266E-02	3.268E-02	NOT IDENT.
SN-113	1.405E-02	7.607E-02	6.727E-02	3.881E-02	NOT IDENT.
CD-115	-2.142E+00	8.968E+00	7.531E+00	4.576E+00	NOT IDENT.
SN-117M	-2.578E-02	6.615E-02	5.624E-02	3.375E-02	NOT IDENT.
TE-123M	-2.042E-02	3.979E-02	3.361E-02	2.030E-02	NOT IDENT.
SB-124	-1.749E-03	9.778E-02	8.256E-02	4.989E-02	NOT IDENT.
SB-125	9.647E-02	1.680E-01	1.505E-01	8.573E-02	NOT IDENT.
TE-125M	6.328E+00	1.210E+01	1.102E+01	6.175E+00	NOT IDENT.
I-126	1.336E-01	3.436E-01	2.749E-01	1.753E-01	NOT IDENT.
SB-126	1.480E-02	2.131E-01	1.780E-01	1.087E-01	NOT IDENT.
SB-127	4.344E-01	1.283E+00	1.159E+00	6.546E-01	NOT IDENT.
I-131	8.646E-02	1.538E-01	1.394E-01	7.846E-02	NOT IDENT.
TE-132	-2.839E-01	6.124E-01	5.451E-01	3.125E-01	NOT IDENT.
BA-133	7.664E-03	7.814E-02	6.093E-02	3.986E-02	NOT IDENT.
I-133	-6.814E+02	1.355E+03	0.000E+00	6.915E+02	SHORT HLIF
CS-134	7.992E-02	8.374E-02	7.714E-02	4.273E-02	NOT IDENT.
CS-135	-1.306E-01	2.448E-01	2.147E-01	1.249E-01	NOT IDENT.
I-135	-1.848E+12	1.021E+13	0.000E+00	5.210E+12	SHORT HLIF
CS-136	-5.010E-02	1.784E-01	1.481E-01	9.101E-02	NOT IDENT.
CE-139	2.150E-02	4.197E-02	3.724E-02	2.141E-02	NOT IDENT.
BA-140	-1.913E-01	3.791E-01	3.073E-01	1.934E-01	NOT IDENT.
LA-140	4.096E-02	9.245E-02	8.426E-02	4.717E-02	NOT IDENT.
CE-141	-2.803E-02	8.120E-02	6.967E-02	4.143E-02	NOT IDENT.
CE-143	7.741E+01	5.713E+01	0.000E+00	2.915E+01	SHORT HLIF
CE-144	-1.449E-01	2.846E-01	2.433E-01	1.452E-01	NOT IDENT.
PM-144	-1.854E-02	5.389E-02	4.632E-02	2.749E-02	NOT IDENT.
PR-144	-1.386E+00	4.027E+00	3.462E+00	2.055E+00	NOT IDENT.
PM-146	-2.415E-02	7.945E-02	6.749E-02	4.054E-02	NOT IDENT.
ND-147	3.340E-01	8.515E-01	7.460E-01	4.344E-01	NOT IDENT.
PM-149	-3.598E+01	6.479E+01	5.629E+01	3.306E+01	NOT IDENT.
EU-152	-1.551E-01	1.630E-01	1.305E-01	8.316E-02	FAIL ABUN
GD-153	-4.885E-02	1.120E-01	8.689E-02	5.712E-02	NOT IDENT.
EU-154	-1.318E-01	1.280E-01	8.642E-02	6.533E-02	FAIL ABUN
EU-155	-9.686E-02	1.379E-01	1.186E-01	7.035E-02	NOT IDENT.
TB-160	5.027E-02	2.641E-01	2.310E-01	1.347E-01	FAIL ABUN
HO-166M	-2.506E-02	9.583E-02	8.269E-02	4.889E-02	NOT IDENT.
TA-182	-4.137E-02	1.966E-01	1.595E-01	1.003E-01	NOT IDENT.
IR-192	-1.579E-02	5.321E-02	4.658E-02	2.715E-02	FAIL ABUN
HG-203	-1.275E-02	5.843E-02	5.192E-02	2.981E-02	NOT IDENT.
BI-207	-6.401E-02	1.054E-01	8.508E-02	5.376E-02	FAIL ABUN
PB-210	-2.627E-01	3.868E+00	3.610E+00	1.974E+00	NOT IDENT.
PB-211	-8.521E-01	1.343E+00	1.077E+00	6.084E-01	NOT IDENT.
BI-212	2.204E+00	1.192E+00	8.713E-01	6.081E-01	FAIL ABUN
BI-214	7.350E-01	2.422E-01	1.609E-01	1.236E-01	FAIL ABUN
RN-219	2.185E-01	7.066E-01	6.274E-01	3.605E-01	NOT IDENT.
RA-223	-9.113E-01	1.079E+00	9.065E-01	5.504E-01	FAIL ABUN
RA-226	7.350E-01	2.422E-01	1.609E-01	1.236E-01	FAIL ABUN
AC-227	2.684E-01	3.841E-01	3.571E-01	1.960E-01	NOT IDENT.
TH-227	2.684E-01	3.845E-01	3.571E-01	1.962E-01	NOT IDENT.
TH-229	-2.829E-02	7.586E-01	6.977E-01	3.870E-01	FAIL ABUN
PA-231	-3.713E-01	2.269E+00	2.019E+00	1.158E+00	NOT IDENT.
TH-231	-9.113E-01	1.079E+00	9.065E-01	5.504E-01	FAIL ABUN
PA-233	6.922E-02	1.011E-01	9.313E-02	5.161E-02	NOT IDENT.
PA-234	-1.156E-01	6.723E-01	5.700E-01	3.430E-01	NOT IDENT.
PA-234M	2.297E+00	9.100E+00	7.960E+00	4.643E+00	NOT IDENT.
U-235	2.406E-02	2.708E-01	2.387E-01	1.382E-01	FAIL ABUN
NP-237	3.324E+00	8.853E-01	4.688E-01	4.517E-01	NOT IDENT.
NP-239	-4.244E-02	5.801E-01	4.554E-01	2.960E-01	NOT IDENT.
CM-247	2.724E-02	6.481E-02	5.790E-02	3.307E-02	NOT IDENT.
CF-249	1.532E-02	6.921E-02	6.137E-02	3.531E-02	NOT IDENT.

CF-251	7.831E-02	1.883E-01	1.657E-01	9.608E-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
46.54	509.6452
49.72	603.1807
57.36	0.0000
59.54	700.8039
63.29	265.3649
63.29	265.3649
64.28	320.2110
67.75	326.7206
69.67	354.7300
70.83	368.1524
72.81	337.1805
72.87	337.2141
72.87	337.2141
74.82	396.7219
74.82	396.7219
74.82	396.7219
74.97	396.8183
77.11	398.1824
77.11	398.1824
77.11	398.1824
79.69	365.7107
79.80	339.4256
80.12	339.5944
80.19	339.6311
80.57	349.1421
81.00	391.2987
81.07	391.3410
81.07	391.3410
83.79	388.2893
83.79	388.2893
85.43	400.1895
86.48	485.3589
86.55	485.4109
86.79	485.5812
86.94	433.9875
87.57	434.3891
88.03	434.6828
88.47	434.9618
89.96	302.1431
91.11	302.6426
92.59	236.9385
92.59	236.9385
93.35	237.1937
94.67	215.4551
94.87	191.7452
94.87	191.7452
95.86	218.9857
97.43	229.0023
98.44	210.2088
99.53	241.3549
100.11	224.5191
103.18	226.5105
103.37	229.7738
105.31	262.5032
106.12	222.0232
109.28	222.9287
111.00	251.4775
111.76	237.6743
116.30	236.3020
117.23	218.6241
121.12	224.0238
121.78	224.2000
122.06	224.2751
123.07	248.0938
131.20	265.3662
133.52	268.2792
136.00	234.5611

136.47	244.6936
140.51	241.3081
140.51	0.0000
143.76	221.9745
144.24	229.9410
144.24	229.9410
145.44	239.2198
152.43	228.5281
153.25	230.9838
154.21	215.3445
154.21	215.3445
156.02	199.8441
158.56	223.1239
159.00	238.0271
162.66	244.6097
163.33	247.0583
165.86	213.2707
176.60	196.9308
177.52	212.1708
181.07	225.0827
184.41	217.0189
185.72	226.0374
193.51	241.7255
197.04	237.1601
205.31	260.2340
210.85	248.9066
215.65	226.5197
222.11	237.6455
227.38	254.0662
228.16	226.9840
228.18	226.0799
235.69	230.8744
235.96	244.0744
235.96	244.0744
238.63	226.0844
238.63	226.0844
240.99	226.4895
242.00	226.6629
244.70	198.6191
252.40	190.5066
252.80	191.4883
256.23	177.1302
256.23	177.1302
260.90	178.6582
264.66	194.9999
268.22	217.0044
269.46	208.7665
269.46	208.7665
271.23	180.9051
273.65	216.8903
276.40	182.4966
277.37	183.5593
277.60	181.7061
278.00	184.5814
279.20	202.6385
279.54	205.5160
280.46	198.0975
283.69	187.1870
284.31	187.2655
285.41	195.9229
285.90	200.7233
287.50	145.9635
293.27	0.0000
295.22	154.3370
295.96	154.4112
298.57	200.1236
299.98	192.6637
299.98	192.6637
300.09	192.6760
300.09	192.6760
300.13	192.6822
301.36	178.5518
302.85	161.8079
304.50	185.9423
304.50	185.9423
304.85	186.9424
308.46	169.1196
311.90	149.2670

316.51	165.1553
319.41	150.9393
320.08	170.3630
323.87	198.9003
323.87	198.9003
328.76	169.3298
333.37	160.8269
334.37	179.6735
334.37	179.6735
338.28	169.3281
338.28	169.3281
338.32	169.3334
338.32	169.3334
338.32	169.3334
340.48	137.9941
340.55	137.9984
344.28	175.1273
351.06	157.7905
351.93	157.8711
356.01	155.0797
364.49	141.1268
366.42	161.1793
383.85	152.7028
388.16	154.0692
388.63	145.0437
391.69	153.3568
400.66	145.9841
401.81	150.1296
402.40	148.1476
404.85	177.8038
410.95	168.1799
414.70	165.4459
423.72	174.4228
427.09	151.0823
427.87	149.0865
433.94	176.3568
453.88	160.3963
463.37	160.0855
468.07	166.7346
473.00	177.6362
476.78	129.5145
477.60	147.4725
487.02	134.3658
492.35	128.3317
497.08	107.3510
511.00	130.4860
514.00	118.2366
527.90	117.4524
529.87	0.0000
531.02	107.9010
537.26	98.4537
546.56	0.0000
563.25	123.6075
569.33	111.8551
569.50	111.8613
569.70	104.1933
583.19	97.0503
600.60	92.1744
602.73	84.4725
604.72	103.2275
609.32	96.9484
609.32	96.9484
610.33	96.9882
614.28	82.1756
618.01	79.3875
621.93	85.1080
621.93	85.1080
633.25	88.8509
635.95	92.7704
636.99	91.9071
645.85	84.9810
657.76	81.7273
661.66	96.3963
661.66	96.3963
664.57	0.0000
666.33	81.9866
666.50	81.9910
677.62	78.6640

685.70	75.2254
695.00	91.1230
696.49	91.1714
696.51	91.1714
697.00	93.0280
702.65	97.8300
706.68	84.1039
711.68	85.1786
720.70	84.7493
721.93	0.0000
722.78	85.1967
722.91	85.2012
723.31	83.6631
724.19	86.7868
727.33	72.6089
733.00	69.9518
735.93	70.0214
739.50	72.9098
747.24	74.0394
752.31	89.1854
753.82	83.5939
756.73	82.7363
763.94	111.2069
765.81	84.8716
766.42	75.4570
777.92	97.5181
778.90	94.7070
783.70	83.4732
785.37	98.7035
795.86	86.6588
801.95	96.3692
810.29	110.9731
810.76	110.0333
815.77	85.2909
818.51	101.6705
832.01	85.7255
834.85	88.6937
836.80	0.0000
846.77	81.2786
856.80	122.2901
860.56	83.5624
871.09	84.8038
873.19	79.0047
875.33	0.0000
879.36	89.8999
880.51	86.0191
883.24	110.5474
884.68	82.2117
889.28	103.8831
898.04	127.7339
911.20	110.1400
911.20	110.1400
911.20	110.1400
926.50	101.0487
937.49	115.2778
944.13	124.4568
946.00	120.5362
949.00	119.6426
962.29	131.2071
964.08	138.5022
966.15	113.5353
968.97	118.6367
968.97	118.6367
968.97	118.6367
983.53	103.6790
996.26	91.9176
1001.03	89.0012
1004.73	93.1388
1037.84	68.4296
1038.76	0.0000
1048.07	84.9980
1050.41	78.8987
1050.41	78.8987
1063.66	97.6765
1085.87	78.5865
1099.45	93.3794
1112.07	78.0615
1115.54	84.3816

1120.29	68.8359
1120.29	68.8359
1120.55	79.2693
1121.30	78.2410
1131.51	0.0000
1173.23	42.2578
1177.93	47.5928
1189.05	33.9328
1204.77	42.5723
1221.41	28.8483
1231.02	25.6992
1235.36	38.5875
1238.28	24.6688
1260.41	0.0000
1271.85	19.4537
1274.44	27.0349
1274.54	25.9535
1291.59	23.8810
1298.22	0.0000
1312.11	19.6269
1332.49	18.6187
1365.19	12.8675
1368.63	0.0000
1384.29	14.7643
1408.01	17.6200
1457.56	0.0000
1460.82	4.6869
1489.16	5.6560
1505.03	16.0752
1596.21	12.5091
1620.50	12.5657
1678.03	0.0000
1690.97	11.7485
1764.49	6.9422
1764.49	6.9422
1770.23	27.7961
1771.35	21.8442
1791.20	0.0000
1836.06	10.0387

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202061454

Total Uranium Activity	6.6871E+00	ug/g
Total Uranium Counting Unc.	5.4146E+00	ug/g
Total Uranium Tpu	2.7625E-06	ug/g
Total Uranium Mda	3.4766E+00	ug/g


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*****
*
*                               GEL Laboratories LLC
*                               2040 SAVAGE ROAD
*                               CHARLESTON ,SC 29417
*                               GROSS GAMMA REPORT
*
*****
*
* BATCH ID      : 961097          SAMPLE ID   : G1202061454
* ANALYST       : MXR1           DETECTOR    : GAM20
* SAMPLE DATE   : 8-MAR-2010 00:00:00.00  COUNT TIME : 0 01:00:00.00
* ANALYSIS DATE: 20-MAR-2010 12:14:55.28  SAMPLE ALQT: 155.440 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.757E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.647E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.069E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.975E+00

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Radiochemistry Batch Checklist, Rev10

Batch# 964062 Product: H₂ Date: 3/29/10

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)			N/A
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%.			N/A
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 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:

Secondary Review Performed By:

LANL

3/20 - 3/31

Page 891 of 1212

Tritium Que Sheet

11-MAR-10

VAC

Batch #: 964062

Analyst: KXK2

First Client Due Date 31-MAR-10

Internal Due Date: 20-MAR-10

Spike Isotope: Hydrogen-3

Spike Code: 0134-K

Expiration Date: 3/11/11

Vol: 0.1

LCS Isotope: Hydrogen-3

LCS Code: 0134-K

Expiration Date: 3/11/11

Vol: 0.1

Prep Date: 3/24/10

Initials: VVJ

Pipet ID: 2970968

Witness: 3/24/10

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)	total moisture Die vol (mL)
248513001-1	RE36-10-7407	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	42	1		385.94	274.79	111.15
248513002-1	RE36-10-7421	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	43	2		399.20	339.12	59.48
248513003-1	RE36-10-7422	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	44	3		536.19	505.09	31.10
248513004-1	RE36-10-7451	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	45	4		239.34	145.04	94.30
248513005-1	RE36-10-7449	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	46	5		374.57	307.90	66.67
248513006-1	RE36-10-7445	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	47	6		338.09	251.88	86.21
248513007-1	RE36-10-7450	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	48	7		504.41	454.98	49.43
248513008-1	RE36-10-7444	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	49	8		430.67	342.38	88.29
248513009-1	RE36-10-7448	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	50	9		525.41	433.99	91.42
248513010-1	RE36-10-7447	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	51	10		391.82	280.15	111.67
248513011-1	RE36-10-7443	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	52	11		302.72	226.74	75.98
248513012-1	RE36-10-7452	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	53	12		362.02	272.24	89.78
248513013-1	RE36-10-7437	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	54	13		310.11	259.81	50.24
248513014-1	RE36-10-7440	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	55	14		533.17	490.53	43.24
248513015-1	RE36-10-7435	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	56	15		326.11	279.95	98.16
248513016-1	RE36-10-7441	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	57	16		275.95	214.41	61.54
248513017-1	RE36-10-7442	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	58	17		362.96	315.05	47.91
248513018-1	RE36-10-7436	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	59	18		456.21	359.04	97.17
248513019-1	RE36-10-7438	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	60	19		482.71	457.13	25.58
248513020-1	RE36-10-7439	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	61	20		420.73	345.00	75.73
1202068225-1	MB for batch 964062	MB		.25 pCi/mL SOIL		QC ACCOUNT		10	32	21		20.06	0	20.00
1202068226-1	RE36-10-7439(248513020DUP)	DUP		.25 pCi/mL SOIL		QC ACCOUNT	25-FEB-10	10	33	20		420.73	345.00	75.73
1202068227-1	LCS for batch 964062	LCS		.25 pCi/mL SOIL		QC ACCOUNT		10	34	22		20.00	0	20.00

* 24 3/24/10

Bkg Rack # 41, 22

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 : Ecosciint Ultra (10 mL sample/13 mL Ecosciint Ultra)
Data Reviewed By: [Signature]

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

DATE	3/29/2010	INITIALS	KXK2	BATCH NUMBER	964062	
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
248513001	385.94	0.288	111.15	274.79	10	
248513002	399.20	0.149	59.48	339.72	10	
248513003	536.19	0.058	31.10	505.09	10	
248513004	239.34	0.394	94.30	145.04	10	
248513005	374.57	0.178	66.67	307.90	10	
248513006	338.09	0.255	86.21	251.88	10	
248513007	504.41	0.098	49.43	454.98	10	
248513008	430.67	0.205	88.29	342.38	10	
248513009	525.41	0.174	91.42	433.99	10	
248513010	391.82	0.285	111.67	280.15	10	
248513011	302.72	0.251	75.98	226.74	10	
248513012	362.02	0.248	89.78	272.24	10	
248513013	310.11	0.162	50.24	259.87	10	
248513014	533.77	0.081	43.24	490.53	10	
248513015	326.11	0.301	98.16	227.95	10	
248513016	275.95	0.223	61.54	214.41	10	
248513017	362.96	0.132	47.91	315.05	10	
248513018	456.21	0.213	97.17	359.04	10	
248513019	482.71	0.053	25.58	457.13	10	
248513020	420.73	0.180	75.73	345.00	10	
MB	20.00	1.000	20.00	0.00	10	
DUP	420.73	0.180	75.73	345.00	10	
LCS	20.00	1.000	20.00	0.00	10	

Prep Logbook

The Determination of Tritium

Batch ID: 964062 Verified by: Lab SOP: GL-RAD-A-002 REV# 18
 Analyst: Kelly Gainey Instrument: No instrument-manual method
 Method: GL-RAD-A-002

Sample ID	Run Date	Vacuum Flask Rig # (g)	Allquot Flask Rig # (g)	Prepped Allquot In scintillation vial (mL)
248513001	24-MAR-2010 10:06:00	1	385.94	10
248513002	24-MAR-2010 10:06:00	2	399.2	10
248513003	24-MAR-2010 10:06:00	3	536.19	10
248513004	24-MAR-2010 10:06:00	4	239.34	10
248513005	24-MAR-2010 10:06:00	5	374.57	10
248513006	24-MAR-2010 10:06:00	6	338.09	10
248513007	24-MAR-2010 10:06:00	7	504.41	10
248513008	24-MAR-2010 10:06:00	8	430.67	10
248513009	24-MAR-2010 10:06:00	9	525.41	10
248513010	24-MAR-2010 10:06:00	10	391.82	10
248513011	24-MAR-2010 10:06:00	11	302.72	10
248513012	24-MAR-2010 10:06:00	12	362.02	10
248513013	24-MAR-2010 10:06:00	13	310.11	10
248513014	24-MAR-2010 10:06:00	14	533.77	10
248513015	24-MAR-2010 10:06:00	15	326.11	10
248513016	24-MAR-2010 10:06:00	16	275.95	10
248513017	24-MAR-2010 10:06:00	17	362.96	10
248513018	24-MAR-2010 10:06:00	18	456.21	10
248513019	24-MAR-2010 10:06:00	19	482.71	10
248513020	24-MAR-2010 10:06:00	20	420.73	10
1202068225 MB	24-MAR-2010 10:06:00	21	20	10
1202068226 DUP (248513020)	24-MAR-2010 10:06:00	20	420.73	10
1202068227 LCS	24-MAR-2010 10:06:00	22	20	10

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1202068227	4 Bottles: stock, LSC, Rad II, and Bioassay	0134-K	.1	mL	
REGENT Ali		Brown Colorant for Calibrations	1158135	10	uL	
REGENT Ali		ecosint ultra scintillation solution	1265067.3	13	mL	

T964062r

Tritium Solid

Filename : H3VAC.XLS
File type : Excel
Version # : 1.2.6

Batch : 964062
Analyst : KKK2
Prep Date : 3/24/2010

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry: 10mL DW/13mL
Eosoint Ultra

Spike SN :
Spike Exp Date :
Spike Activity (dpm/ml):
Spike Volume Added:

N/A
N/A
N/A
N/A

LCS SN : 0134-K
LCS Exp Date : 3/11/2011
LCS Activity (dpm/ml): 2452.66
LCS Volume Added: 0.10

Procedure Code : LSC_VH3S
Paramname : Tritium
Required MDC : 250
Half-life of Tritium : 12.32
pCi/L
years

Pipet, 0.1 ml Stddev : +/-
Pipet, 0.5 ml Stddev : +/-
Pipet, 1.0 ml Stddev : +/-
Pipet, 5.0 ml Stddev : +/-

0.000701 ml
0.002564 ml
0.005480 ml
0.025728 ml

Sample Characteristics									
Pos.	Sample ID	Wet Sample Weight (g)	Total Moisture L	Sample Aliquot In Vial L	Sample Aliquot Stdev. L	Dry Sample Weight (g)	% Moisture of Sample	Rig number	Sample Date/Time
1	248513001.1	385.94	0.1112	0.0100	2.5729E-05	274.79	28.80%	1	2/25/2010 12:00
2	248513002.1	399.20	0.0595	0.0100	2.5729E-05	339.72	14.80%	2	2/25/2010 12:00
3	248513003.1	536.19	0.0311	0.0100	2.5729E-05	505.09	5.80%	3	2/25/2010 12:00
4	248513004.1	239.34	0.0943	0.0100	2.5729E-05	145.04	39.40%	4	2/25/2010 12:00
5	248513005.1	374.57	0.0667	0.0100	2.5729E-05	307.90	17.80%	5	2/25/2010 12:00
6	248513006.1	338.09	0.0862	0.0100	2.5729E-05	251.88	25.50%	6	2/25/2010 12:00
7	248513007.1	504.41	0.0494	0.0100	2.5729E-05	454.98	9.80%	7	2/25/2010 12:00
8	248513008.1	430.67	0.0883	0.0100	2.5729E-05	342.38	20.50%	8	2/25/2010 12:00
9	248513009.1	525.41	0.0914	0.0100	2.5729E-05	433.99	17.40%	9	2/25/2010 12:00
10	248513010.1	391.82	0.1117	0.0100	2.5729E-05	280.15	28.50%	10	2/25/2010 12:00
11	248513011.1	302.72	0.0760	0.0100	2.5729E-05	226.74	25.10%	11	2/25/2010 12:00
12	248513012.1	362.02	0.0898	0.0100	2.5729E-05	272.24	24.80%	12	2/25/2010 12:00
13	248513013.1	310.11	0.0502	0.0100	2.5729E-05	259.87	18.20%	13	2/25/2010 12:00
14	248513014.1	533.77	0.0432	0.0100	2.5729E-05	490.53	8.10%	14	2/25/2010 12:00
15	248513015.1	326.11	0.0982	0.0100	2.5729E-05	227.95	30.10%	15	2/25/2010 12:00
16	248513016.1	275.95	0.0615	0.0100	2.5729E-05	214.41	22.30%	16	2/25/2010 12:00
17	248513017.1	362.96	0.0479	0.0100	2.5729E-05	315.05	13.20%	17	2/25/2010 12:00
18	248513018.1	458.21	0.0972	0.0100	2.5729E-05	358.04	21.30%	18	2/25/2010 12:00
19	248513019.1	482.71	0.0256	0.0100	2.5729E-05	457.13	5.30%	19	2/25/2010 12:00
20	248513020.1	420.73	0.0757	0.0100	2.5729E-05	345.00	18.00%	20	2/25/2010 12:00
21	1202068225.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	21	3/24/2010 0:00
22	1202068226.1	420.73	0.0757	0.0100	2.5729E-05	345.00	18.00%	22	2/25/2010 12:00
23	1202068227.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	23	3/24/2010 0:00

Count raw Data				Background				Calibration Data				Detector				Backgrounds			
Pos.	Rack	Position #	Counting Time (min.)	Quench#	Gross cpm	Count Time (min.)	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Error (cpm/dpm)	Detector Efficiency (cpm/dpm)	Rack Position #	Count Start Date/Time	Count End Date/Time	Count Start Date/Time	Count End Date/Time
1	42		40.0287	747.03	1.78	1.20	3/27/2010 13:58	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2485	0.00782	0.2485	41	3/27/2010 13:16		3/27/2010 13:16	
2	43		40.0287	745.37	1.76	1.20	3/27/2010 14:41	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2487	0.00782	0.2487	41	3/27/2010 13:16		3/27/2010 13:16	
3	44		40.0286	746.88	1.68	1.20	3/27/2010 15:23	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2483	0.00782	0.2483	41	3/27/2010 13:16		3/27/2010 13:16	
4	45		40.0287	750.19	1.58	1.20	3/27/2010 16:06	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2549	0.00782	0.2549	41	3/27/2010 13:16		3/27/2010 13:16	
5	46		40.0287	746.03	1.45	1.20	3/27/2010 16:48	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2479	0.00782	0.2479	41	3/27/2010 13:16		3/27/2010 13:16	
6	47		40.0287	746.72	1.61	1.20	3/27/2010 17:31	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2524	0.00782	0.2524	41	3/27/2010 13:16		3/27/2010 13:16	
7	48		40.0287	747.2	1.66	1.20	3/27/2010 18:13	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2488	0.00782	0.2488	41	3/27/2010 13:16		3/27/2010 13:16	
8	49		40.0287	746.32	1.81	1.20	3/27/2010 18:56	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2483	0.00782	0.2483	41	3/27/2010 13:16		3/27/2010 13:16	
9	50		40.0287	749.5	1.38	1.20	3/27/2010 19:38	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2537	0.00782	0.2537	41	3/27/2010 13:16		3/27/2010 13:16	
10	51		40.0287	746.87	1.91	1.20	3/27/2010 20:21	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2483	0.00782	0.2483	41	3/27/2010 13:16		3/27/2010 13:16	
11	52		40.0287	748.53	1.27	1.20	3/27/2010 21:03	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2538	0.00782	0.2538	41	3/27/2010 13:16		3/27/2010 13:16	
12	53		40.0286	747.41	1.84	1.20	3/27/2010 21:46	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2502	0.00782	0.2502	41	3/27/2010 13:16		3/27/2010 13:16	
13	24		40.0287	747.1	1.99	1.35	3/29/2010 19:55	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2497	0.00782	0.2497	23	3/29/2010 19:13		3/29/2010 19:13	
14	55		40.0286	752.14	1.68	1.20	3/27/2010 23:11	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2581	0.00782	0.2581	41	3/27/2010 13:16		3/27/2010 13:16	
15	56		40.0286	747.46	1.96	1.20	3/27/2010 23:54	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2503	0.00782	0.2503	41	3/27/2010 13:16		3/27/2010 13:16	
16	57		40.0129	751.49	1.68	1.20	3/28/2010 0:36	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2570	0.00782	0.2570	41	3/27/2010 13:16		3/27/2010 13:16	
17	58		40.0286	749.57	1.78	1.20	3/28/2010 1:19	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2538	0.00782	0.2538	41	3/27/2010 13:16		3/27/2010 13:16	
18	59		40.0286	749.93	1.55	1.20	3/28/2010 2:01	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2544	0.00782	0.2544	41	3/27/2010 13:16		3/27/2010 13:16	
19	60		40.0286	749.44	1.71	1.20	3/28/2010 2:44	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2536	0.00782	0.2536	41	3/27/2010 13:16		3/27/2010 13:16	
20	25		40.0287	748.73	1.78	1.35	3/29/2010 20:38	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2524	0.00782	0.2524	23	3/29/2010 19:13		3/29/2010 19:13	
21	32		40.0286	749.1	1.07	1.20	3/28/2010 4:10	0.989	LSCORANGE	7/23/2009	7/31/2010	0.2530	0.00782	0.2530	41	3/27/2010 13:16		3/27/2010 13:16	
22	33		40.0285	751.26	1.68	1.20	3/28/2010 4:52	0.985	LSCORANGE	7/23/2009	7/31/2010	0.2567	0.00782	0.2567	41	3/27/2010 13:16		3/27/2010 13:16	
23	34		15.0286	750.5	34.86	1.20	3/28/2010 5:35	0.989	LSCORANGE	7/23/2009	7/31/2010	0.2554	0.00782	0.2554	41	3/27/2010 13:16		3/27/2010 13:16	

Notes:

1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (cpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - APD changed to 0% due to activity below MDC for 12020688228.1

Pos.	Results		Critical Level	Required MDC	MDC	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	1 SIGMA		1 SIGMA		Sample QC	Sample Type	RPD	RER	Nonthal pCVL	Recovery
	pCVL	pCVL								pCV/L	Total Prop. Uncertainty	pCV/L	pCV/L						
1	103.4823	73.0453	250	159.6815	105.1816	0.471	0.590	0.273	49.4768	50.0182	SAMPLE								
2	104.6413	73.8777	250	161.5012	102.7119	0.486	0.560	0.272	49.8755	50.3860	SAMPLE								
3	103.5686	73.1203	250	159.8455	87.1361	0.268	0.480	0.268	48.6826	49.0993	SAMPLE								
4	101.3039	71.5214	250	158.3503	67.4744	0.694	0.380	0.264	46.7937	47.0291	SAMPLE								
5	104.1705	73.5452	250	160.7745	46.6472	1.028	0.250	0.257	46.9782	47.0887	SAMPLE								
6	102.2962	72.2220	250	157.8818	73.6144	0.646	0.410	0.265	47.5063	47.7814	SAMPLE								
7	103.3462	72.9633	250	158.5023	83.3282	0.581	0.460	0.267	48.4190	48.7656	SAMPLE								
8	103.9859	73.4008	250	160.4698	111.1604	0.450	0.610	0.274	49.9704	50.5668	SAMPLE								
9	101.7687	71.8496	250	157.0676	32.1082	1.410	0.180	0.254	45.2858	45.3410	SAMPLE								
10	103.5788	73.1275	250	159.8614	128.9017	0.393	0.710	0.279	50.8048	51.3947	SAMPLE								
11	101.7494	71.8360	250	157.0379	12.4842	3.548	0.070	0.248	44.3015	44.3101	SAMPLE								
12	103.2020	72.8515	250	158.2789	115.7704	0.431	0.640	0.276	49.8498	50.4977	SAMPLE								
13	109.7243	77.4663	250	168.5219	116.0476	0.451	0.640	0.289	52.3767	52.9867	SAMPLE								
14	100.0283	70.6209	250	154.3616	84.1576	0.559	0.480	0.269	47.0281	47.3920	SAMPLE								
15	103.1686	72.8379	250	159.2283	137.4329	0.370	0.760	0.281	50.8077	51.7015	SAMPLE								
16	100.4822	70.9271	250	155.0553	84.6138	0.559	0.480	0.268	47.2329	47.5983	SAMPLE								
17	101.7253	71.8189	250	157.0006	103.4156	0.471	0.580	0.273	48.6492	49.1795	SAMPLE								
18	101.4841	71.8486	250	158.6284	62.2580	0.749	0.350	0.282	48.6233	48.8245	SAMPLE								
19	101.8138	71.8814	250	157.1373	97.0136	0.529	0.510	0.270	48.1162	48.5320	SAMPLE								
20	108.5298	76.6230	250	166.9873	77.1207	0.680	0.430	0.280	50.1515	50.4393	SAMPLE								
21	101.6290	71.7510	250	156.8521	-23.1574	1.832	-0.130	0.238	42.4198	42.4210	SAMPLE								
22	100.6050	71.0280	250	155.2716	84.6427	0.559	0.480	0.268	47.2892	47.6652	MB	248513020.1	DUP	0.0%	0.0383	5524.0148	107.5%		
23	136.2800	96.2149	250	227.6595	6940.3588	0.046	33.660	1.533	270.5290	494.3565	LCS		LCS						

REGISTRY

SAT 27 MAR 2010 13:14

*** DIRECTORY PATH :S:\LSC\O\DA\964062A0 ***

PARAMETER GROUP: 8
ID: H-3 (2)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	41	BKG	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	42	248513001	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	43	248513002	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	44	248513003	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	45	248513004	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	46	248513005	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
7	47	248513006	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
8	48	248513007	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
9	49	248513008	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
10	50	248513009	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
11	51	248513010	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
12	52	248513011	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
13	53	248513012	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
14	54	248513013	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
15	55	248513014	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
16	56	248513015	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
17	57	248513016	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
18	58	248513017	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
19	59	248513018	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
20	60	248513019	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
21	31	248513020	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
22	32	1202068225	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
23	33	1202068226	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
24	34	1202068227	15:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA INPUT TRIGG. INHIBIT
1 LRSUM DCOS G
2 GSUM G

MEMORY SPLIT
L*R
L*R

WINDOW	CHANNELS	MCA	HALF
1	50- 175	1	2
2	5- 320	1	2
3	1- 1024	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1. POS	2. ID	3. CTIME	4. SQP	5. CPM1	6. CPM2	7. CPM3
SEND SPECTRA		12				

Page 1

REGISTRY

RESOLUTION OF SPECTRA 1024
LISTING Y
INSTRUMENT NUMBER 1

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
Q014101N.001	27 MAR 2010	13:57				
41	BKG	40:01.780	752.79	1.20	2.19	6.80
Q024201N.001	27 MAR 2010	14:39				
42	248513001	40:01.780	747.03	1.78	3.22	8.00
Q034301N.001	27 MAR 2010	15:22				
43	248513002	40:01.780	745.37	1.76	3.01	7.82
Q044401N.001	27 MAR 2010	16:04				
44	248513003	40:01.773	746.88	1.68	2.83	7.97
Q054501N.001	27 MAR 2010	16:47				
45	248513004	40:01.780	750.19	1.58	2.96	7.61
Q064601N.001	27 MAR 2010	17:29				
46	248513005	40:01.780	746.03	1.45	2.96	7.59
Q074701N.001	27 MAR 2010	18:12				
47	248513006	40:01.780	748.72	1.61	2.91	7.51
Q084801N.001	27 MAR 2010	18:54				
48	248513007	40:01.779	747.20	1.66	2.96	7.15
Q094901N.001	27 MAR 2010	19:37				
49	248513008	40:01.779	746.32	1.81	3.32	8.02
Q105001N.001	27 MAR 2010	20:19				
50	248513009	40:01.779	749.50	1.38	2.45	6.69
Q115101N.001	27 MAR 2010	21:02				
51	248513010	40:01.779	746.87	1.91	3.32	8.51
Q125201N.001	27 MAR 2010	21:44				
52	248513011	40:01.779	749.53	1.27	2.50	7.82
Q135301N.001	27 MAR 2010	22:27				
53	248513012	40:01.778	747.41	1.84	3.17	8.25
Q145401N.001	27 MAR 2010	23:10				
54	248513013	40:01.772	748.31	2.42	4.09	8.74
Q155501N.001	27 MAR 2010	23:52				
55	248513014	40:01.778	752.14	1.68	3.09	7.90
Q165601N.001	28 MAR 2010	0:35				
56	248513015	40:01.778	747.46	1.96	3.14	7.95
Q175701N.001	28 MAR 2010	1:17				
57	248513016	40:00.771	751.49	1.68	2.91	7.49
Q185801N.001	28 MAR 2010	2:00				
58	248513017	40:01.777	749.57	1.78	3.22	8.38
Q195901N.001	28 MAR 2010	2:42				
59	248513018	40:01.777	749.93	1.55	2.88	7.82
Q206001N.001	28 MAR 2010	3:25				
60	248513019	40:01.777	749.44	1.71	3.24	8.54
Q213101N.001	28 MAR 2010	4:08				
31	248513020	40:01.777	747.24	2.12	3.24	7.90
Q223201N.001	28 MAR 2010	4:51				
32	1202068225	40:01.776	749.10	1.07	2.48	7.33
Q233301N.001	28 MAR 2010	5:33				
33	1202068226	40:01.770	751.26	1.68	3.06	8.18
Q243401N.001	28 MAR 2010	5:51				
34	1202068227	15:01.776	750.50	34.86	37.93	42.35

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
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s:\sc\files\orange\964062A0\U964062A0.xls

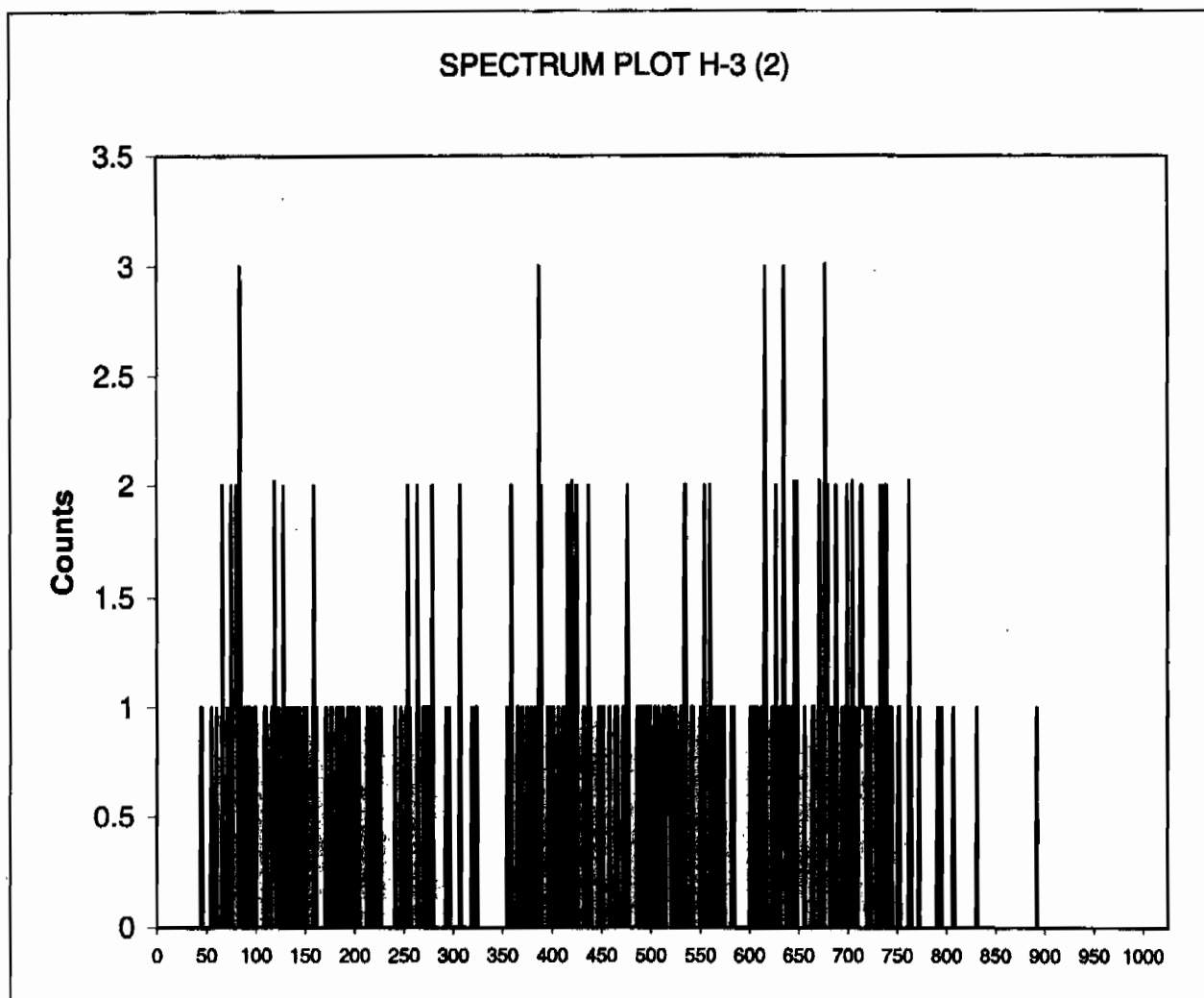
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

1, BKG, 40.02967:
752.79
50-175

Channel Counts



31	0
32	0
33	0
34	0
35	0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
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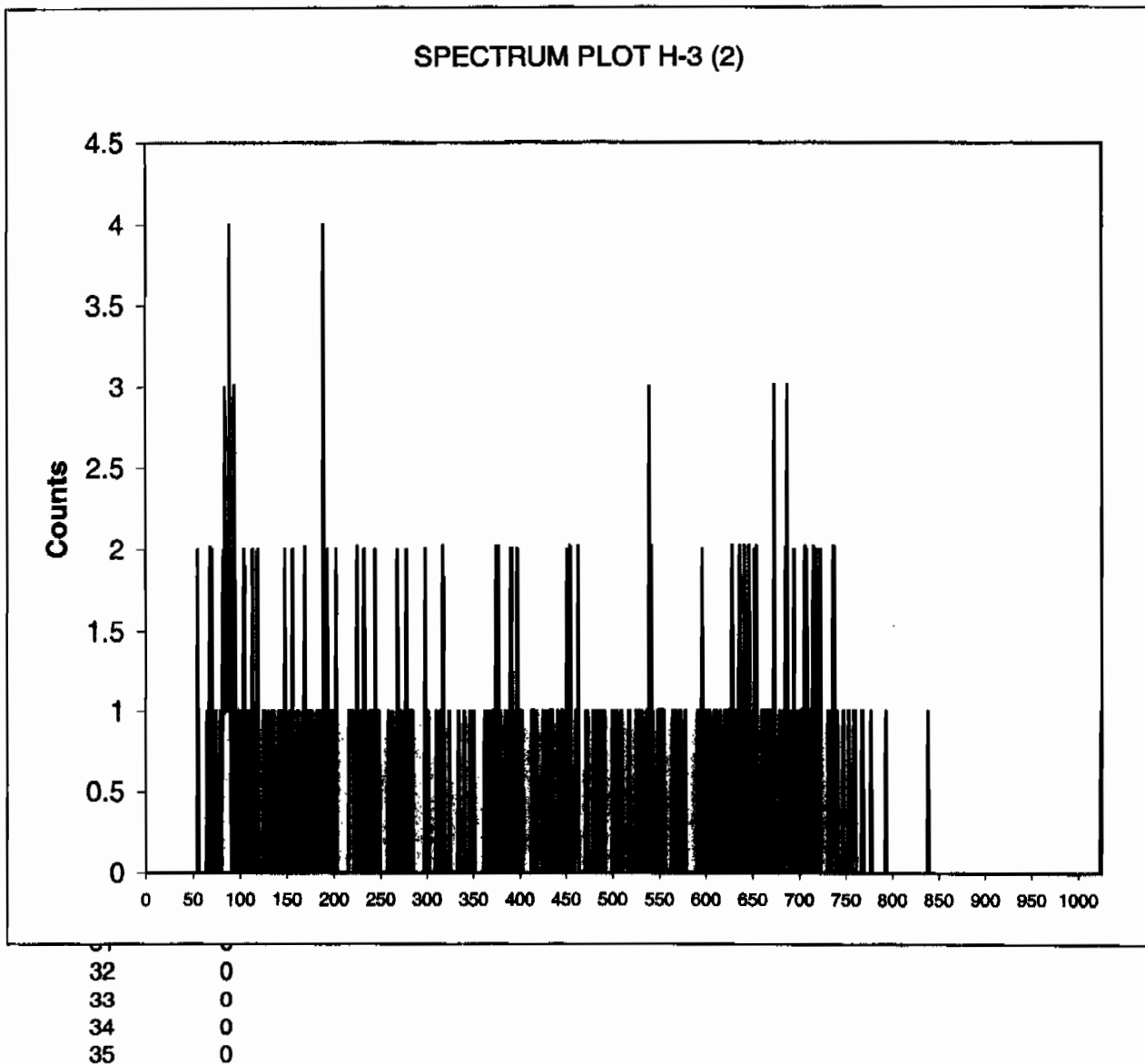
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

2, 248513001, 40.02967:
747.03
50-175

Channel Counts

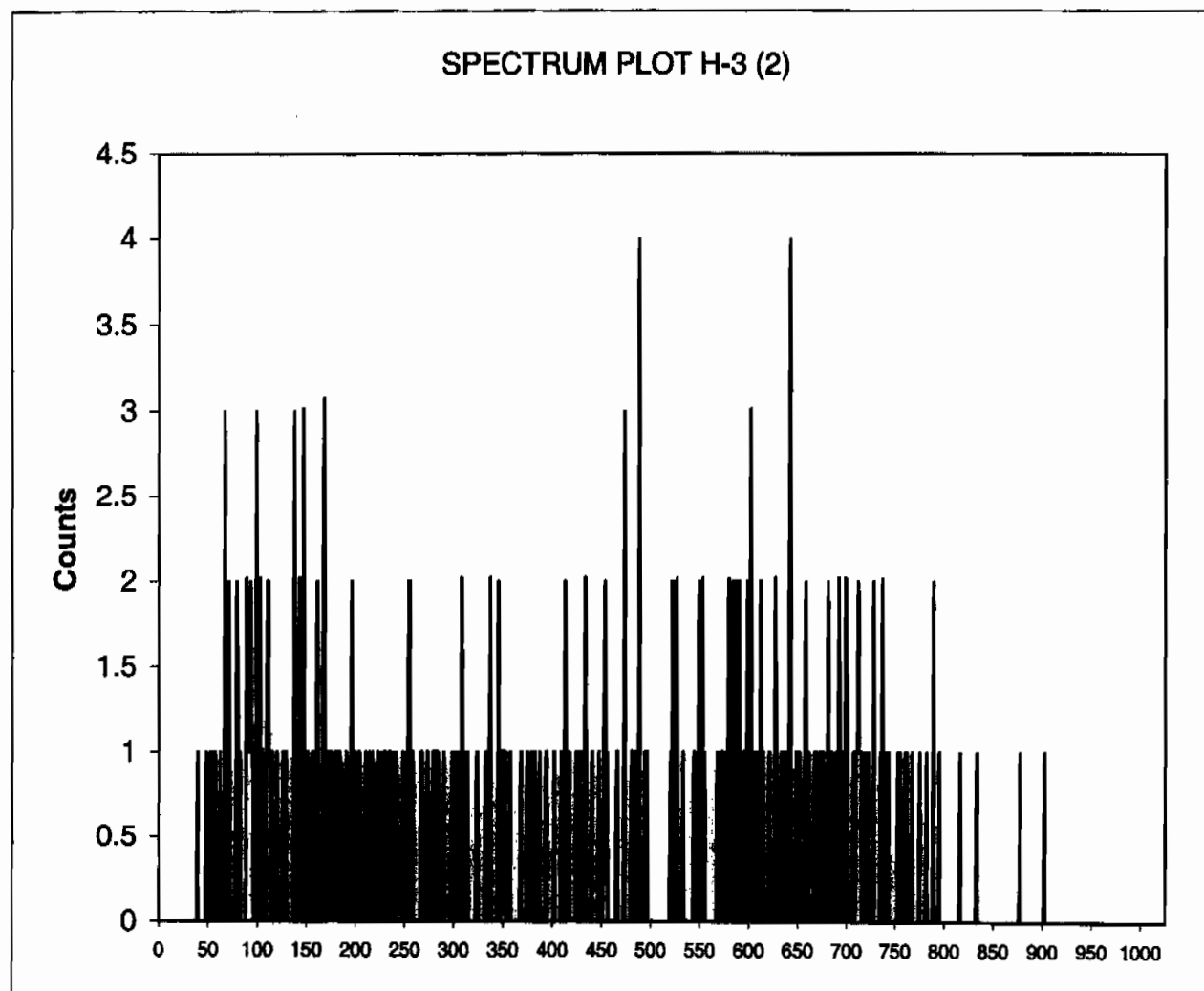


Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\sc\files\orange\964062A0\SQ034301N.001.xls
File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 3, 248513002, 40.02967:
Quench: 745.37
Start, End, X-Axis 50-175

Channel Counts



32 0
33 0
34 0
35 0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
s:\sc\files\orange\964062A0\SQ044401N.001.xls
s:\sc\files\orange\964062A0\U964062A0.xls

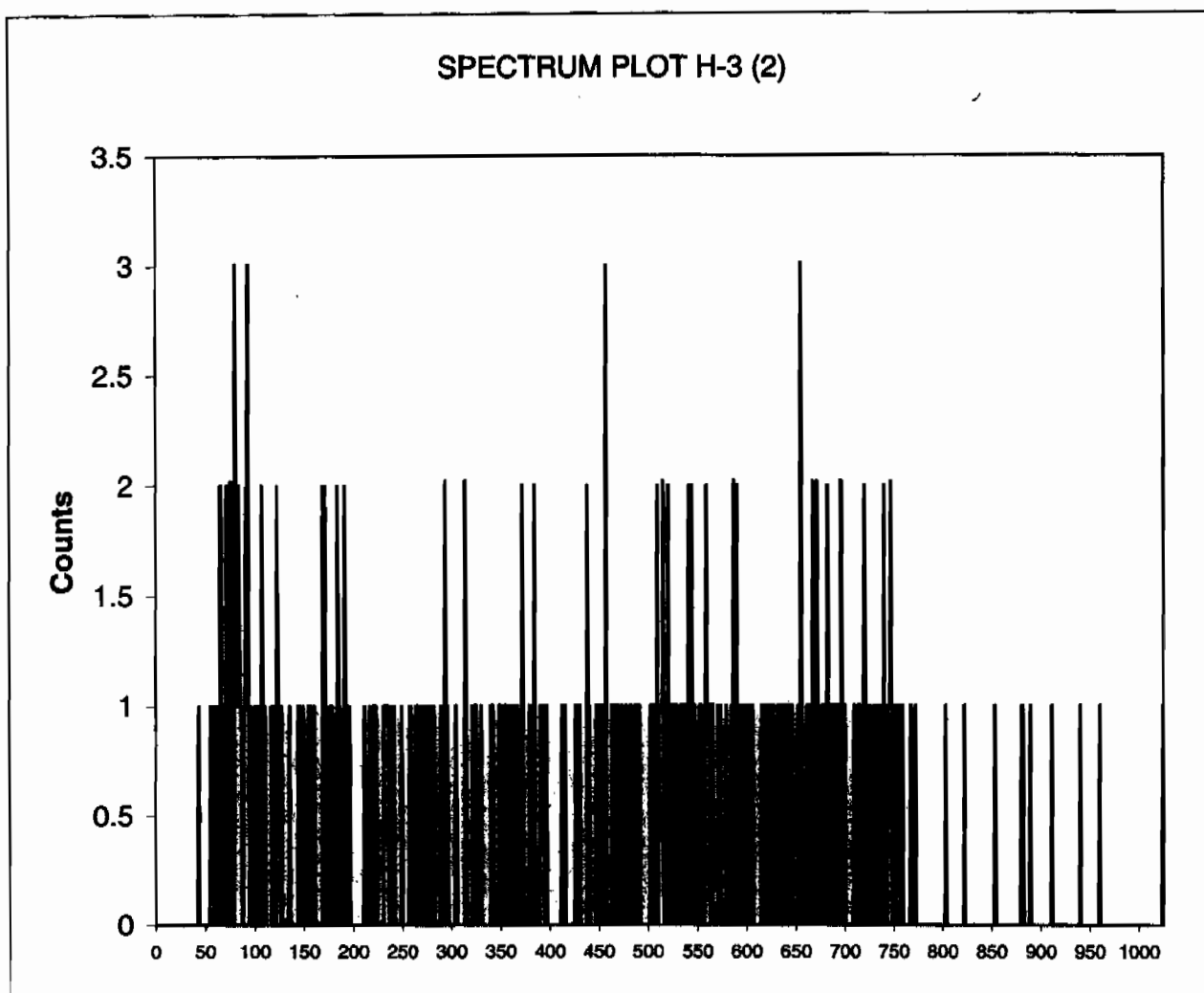
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

4, 248513003, 40.02955:
746.88
50-175

Channel Counts



32 0
33 0
34 0
35 0

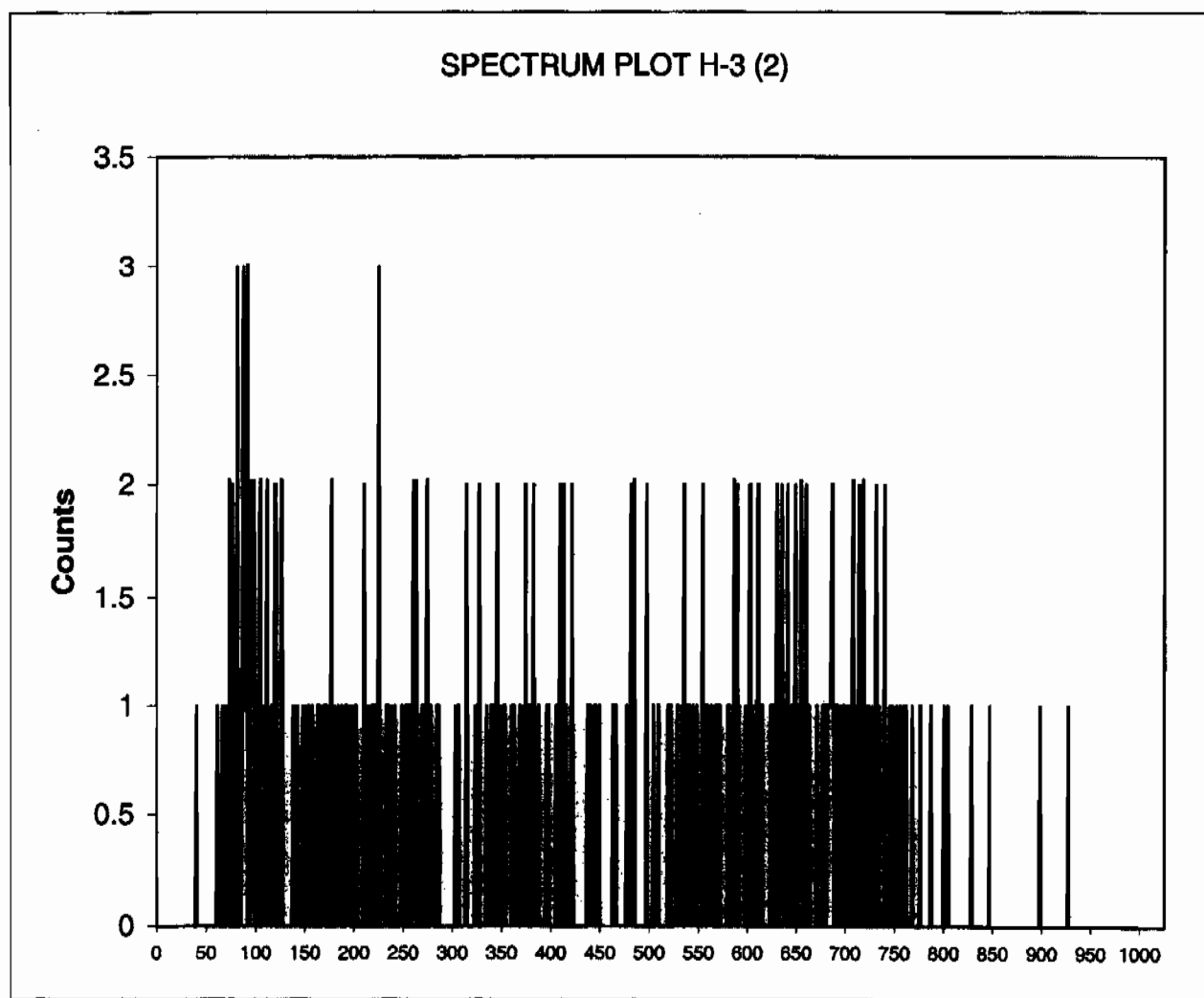
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
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s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 5, 248513004, 40.02967:
Quench: 750.19
Start, End, X-Axis 50-175

Channel Counts



32 0
33 0
34 0
35 0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
s:\sc\files\orange\964062A0\SQ064601N.001.xls
s:\sc\files\orange\964062A0\U964062A0.xls

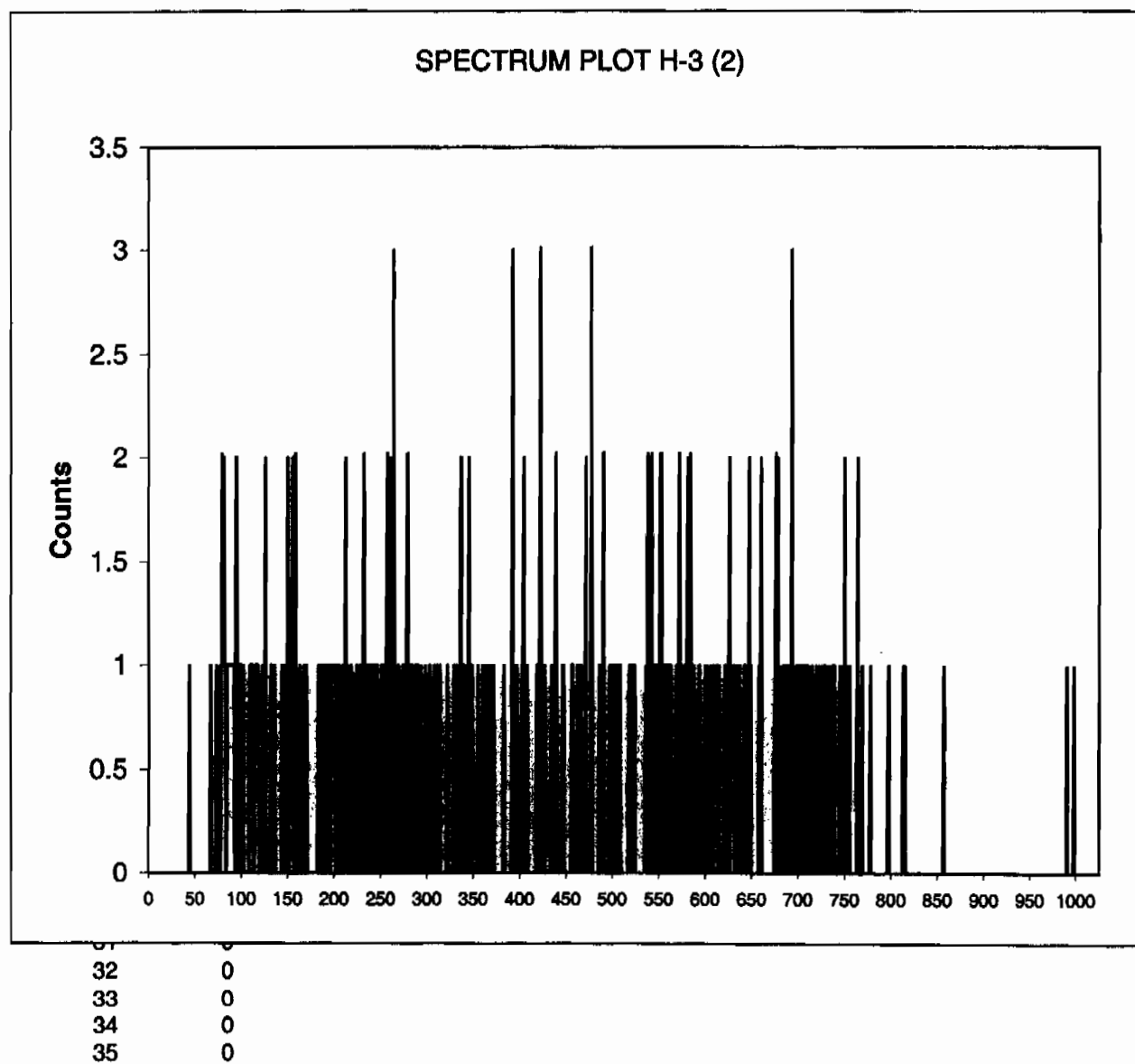
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

6, 248513005, 40.02967:
746.03
50-175

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
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s:\sc\files\orange\964062A0\U964062A0.xls

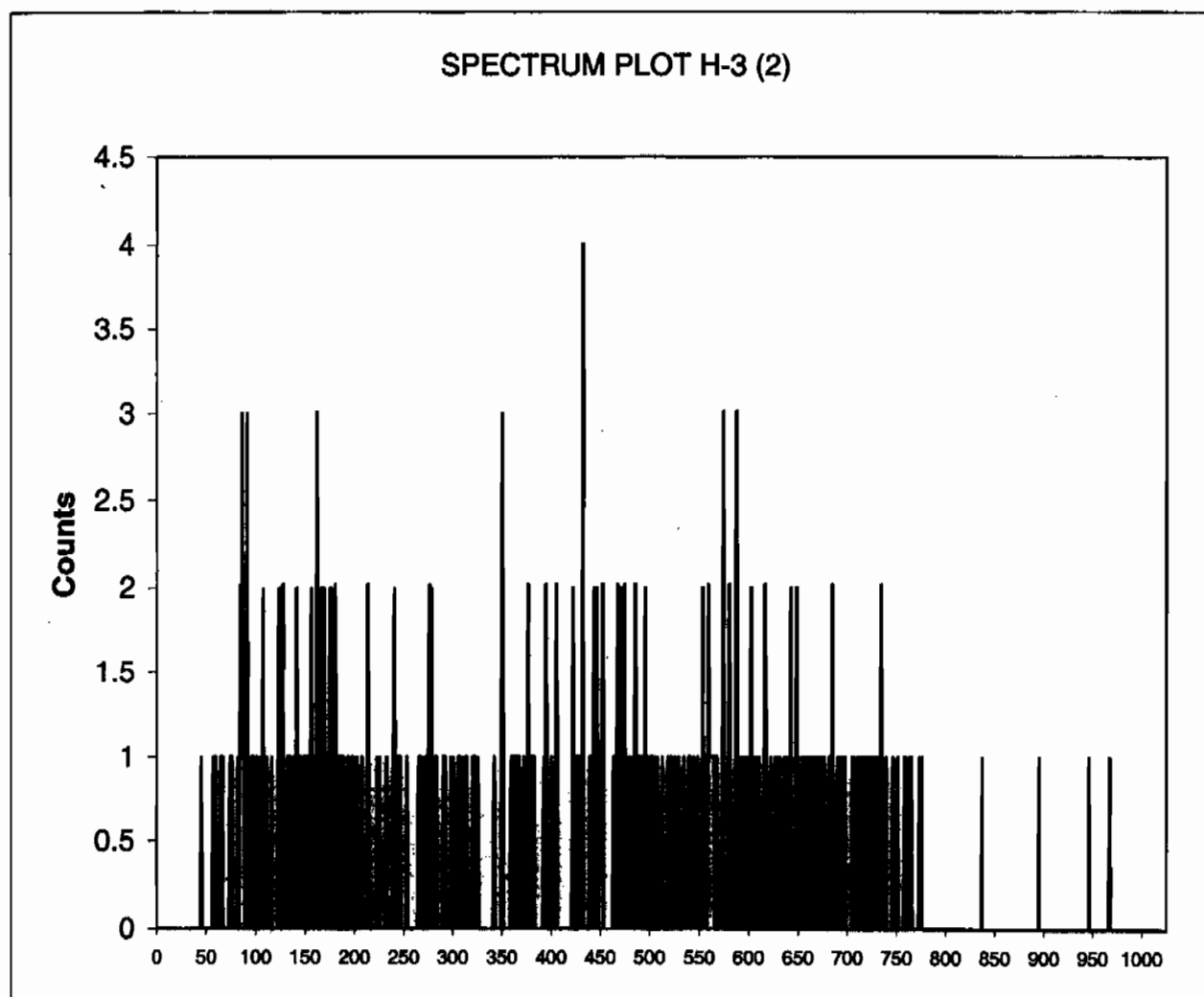
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

7, 248513006, 40.02967:
748.72
50-175

Channel Counts



32 0
33 0
34 0
35 0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
s:\sc\files\orange\964062A0\SQ084801N.001.xls
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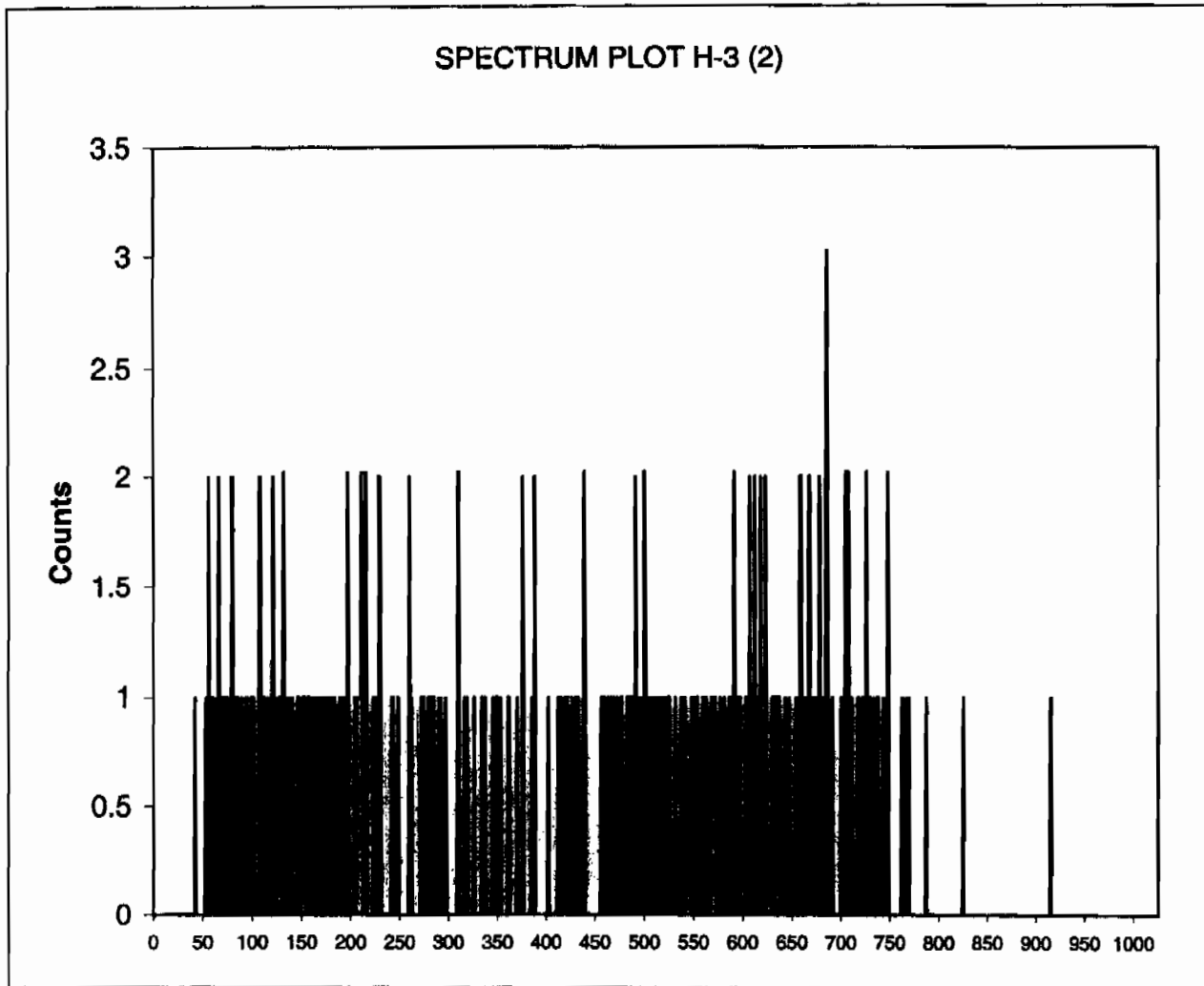
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

8, 248513007, 40.02965:
747.2
50-175

Channel Counts



32	0
33	0
34	0
35	0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
s:\sc\files\orange\964062A0\SQ094901N.001.xls
s:\sc\files\orange\964062A0\U964062A0.xls

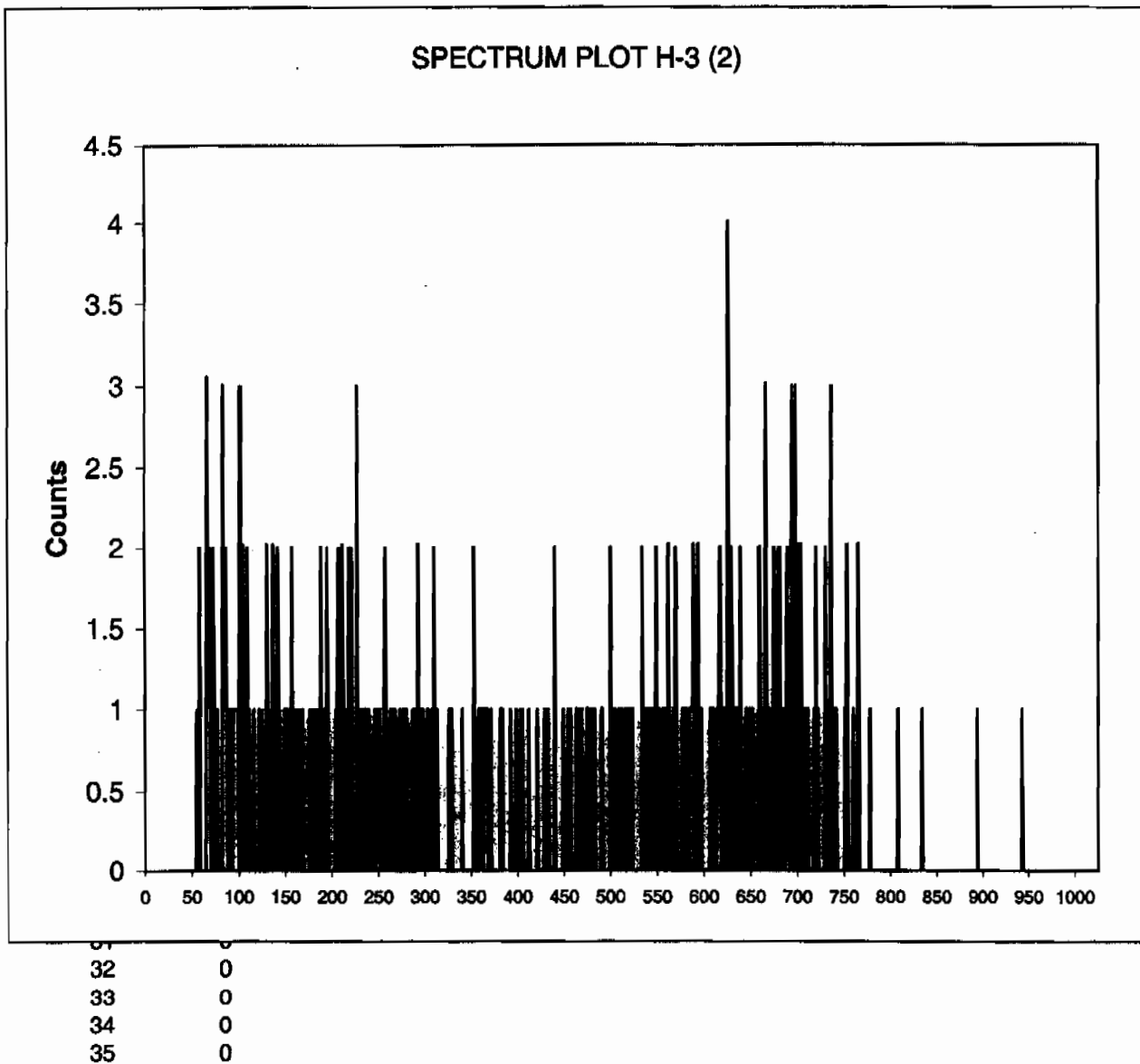
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

9, 248513008, 40.02965:
746.32
50-175

Channel Counts

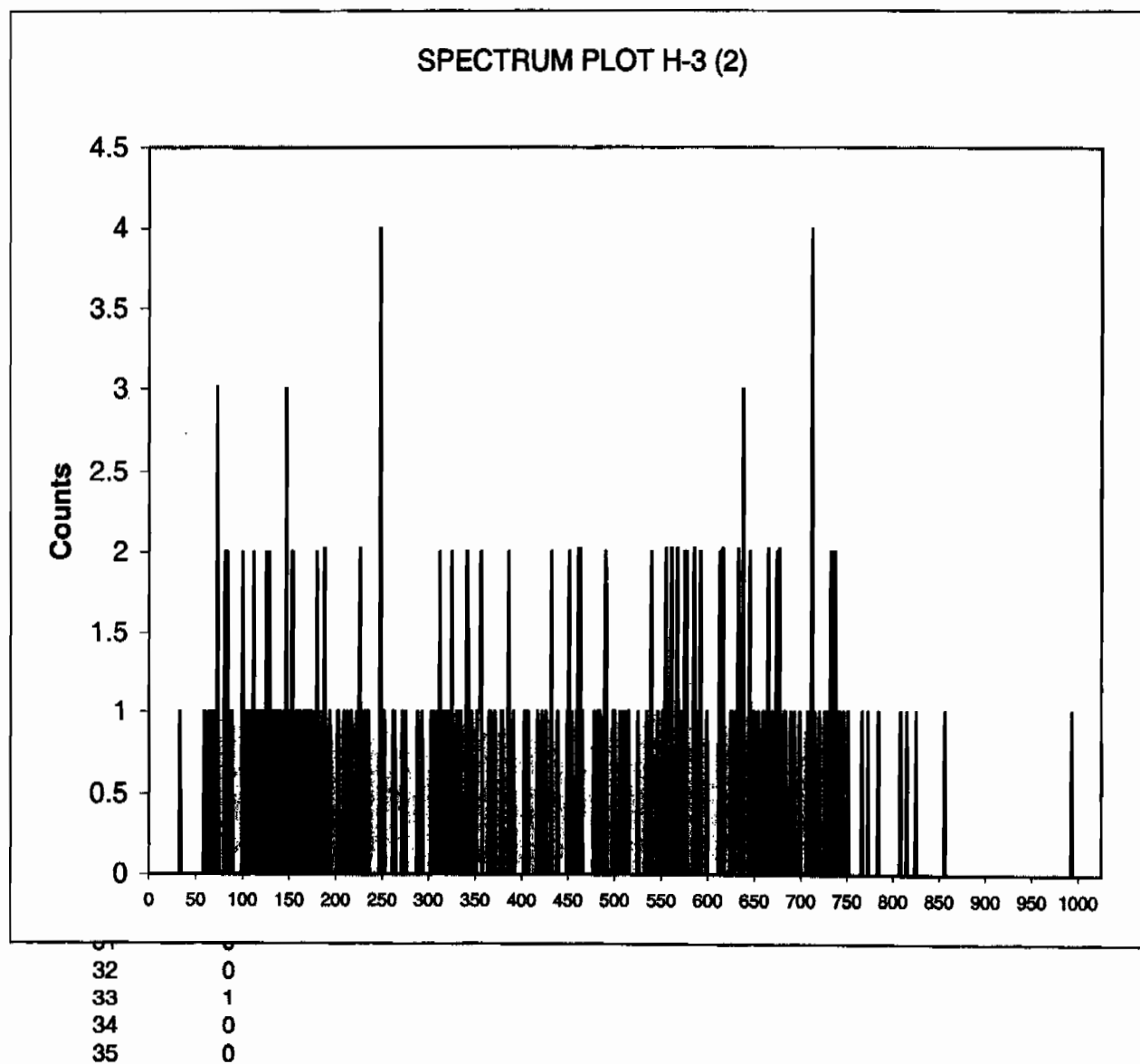


Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\sc\files\orange\964062A0\SQ105001N.001.xls
File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 10, 248513009, 40.02965:
Quench: 749.5
Start, End, X-Axis 50-175

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
s:\sc\files\orange\964062A0\SQ115101N.001.xls
s:\sc\files\orange\964062A0\U964062A0.xls

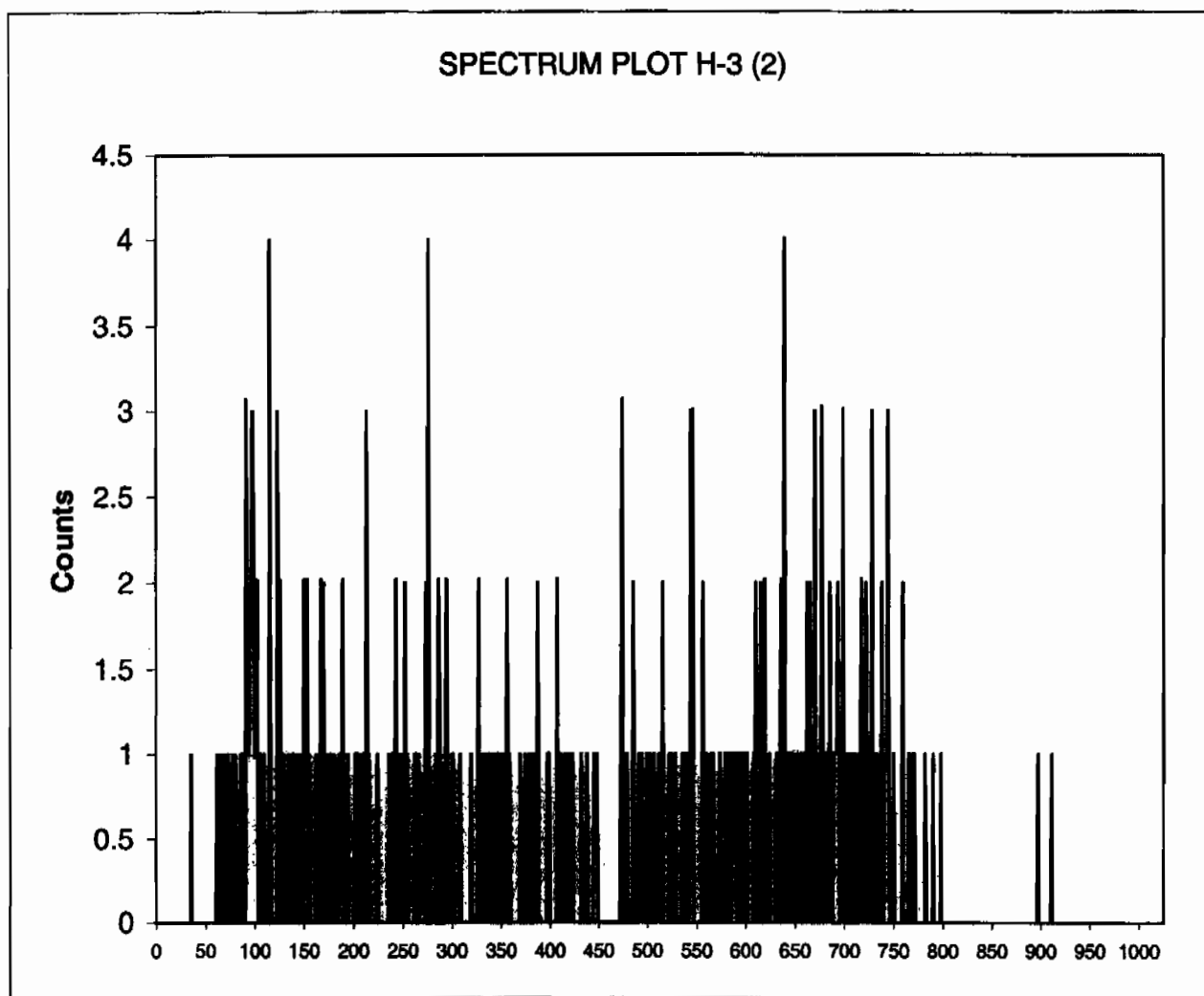
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

11, 248513010, 40.02965:
746.87
50-175

Channel Counts



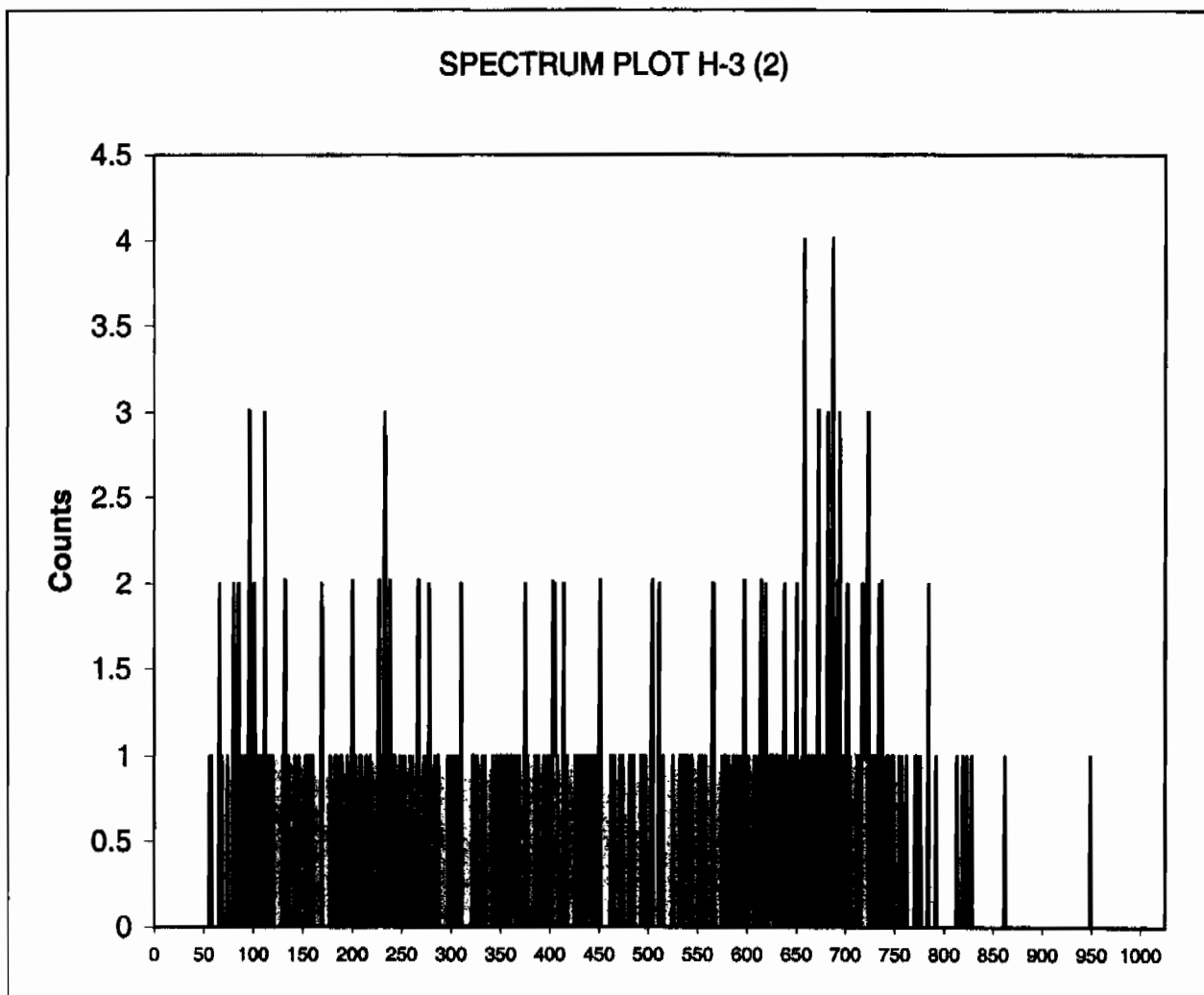
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33	0
34	0
35	1

Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\sc\files\orange\964062A0\SQ125201N.001.xls
File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 12, 248513011, 40.02965:
Quench: 749.53
Start, End, X-Axis 50-175

Channel Counts



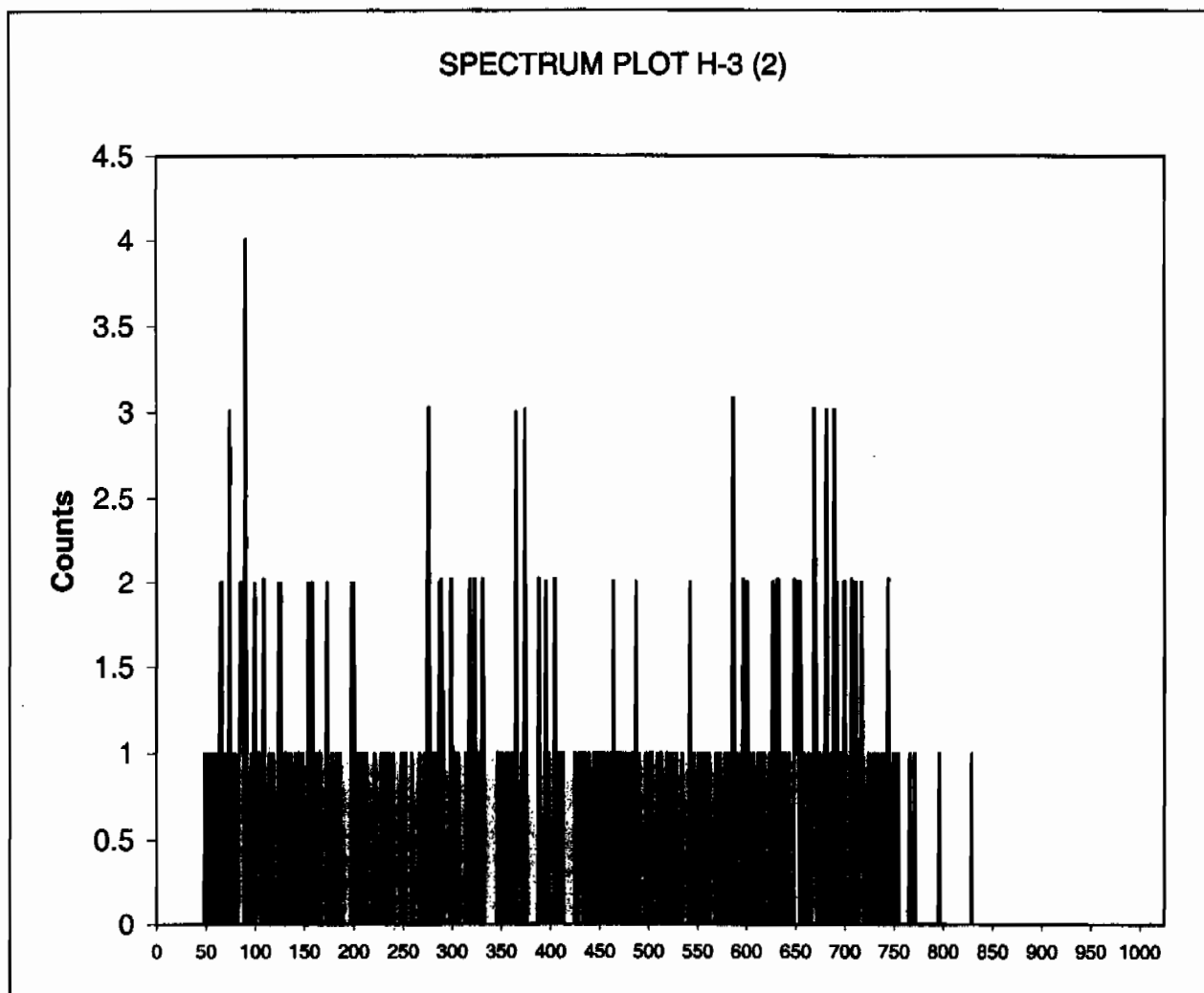
32 0
33 0
34 0
35 0

Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\sc\files\orange\964062A0\SQ135301N.001.xls
File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 13, 248513012, 40.02963:
Quench: 747.41
Start, End, X-Axis 50-175

Channel Counts



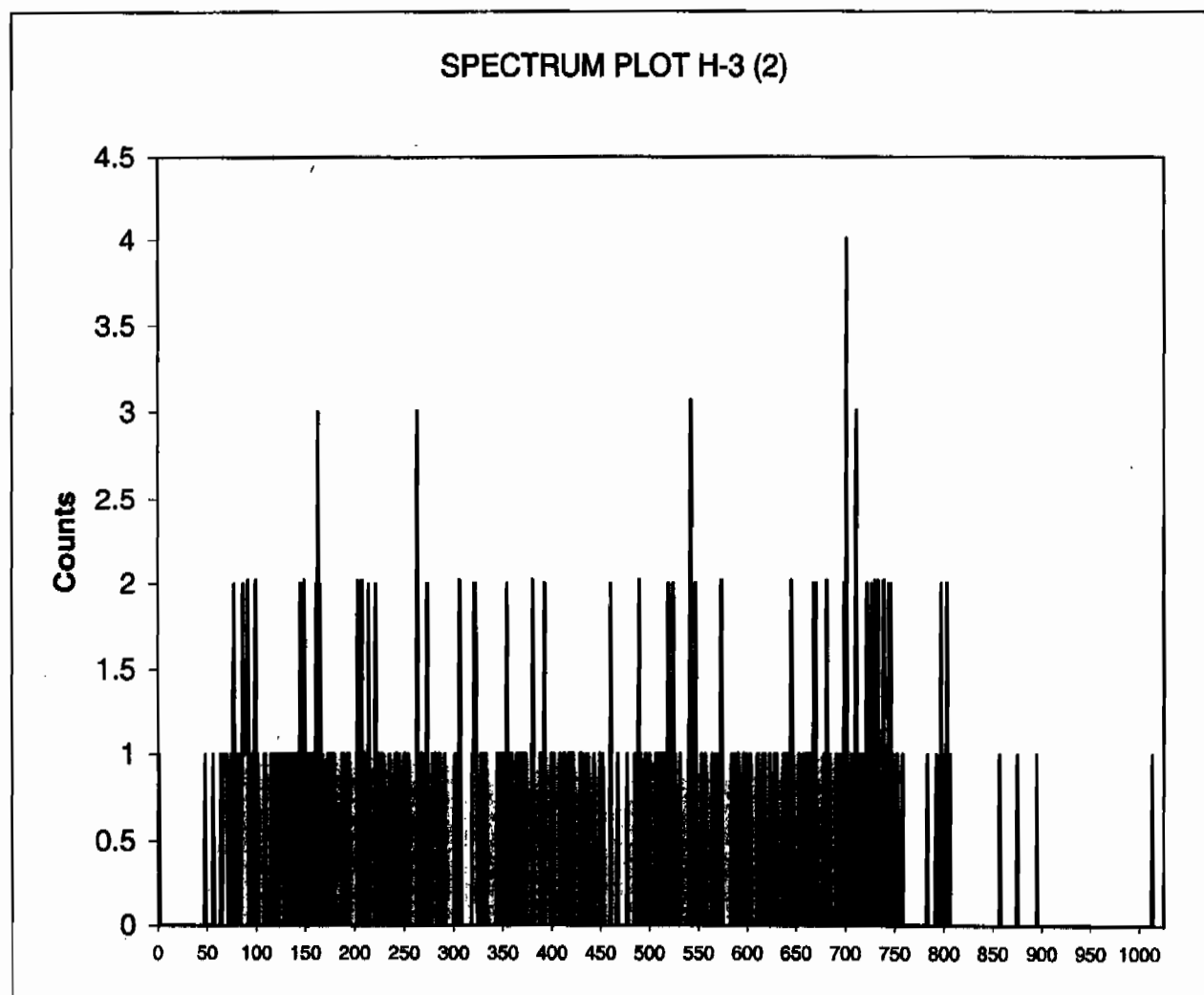
32 0
33 0
34 0
35 0

Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\sc\files\orange\964062A0\SQ155501N.001.xls
File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 15, 248513014, 40.02963:
Quench: 752.14
Start, End, X-Axis 50-175

Channel Counts



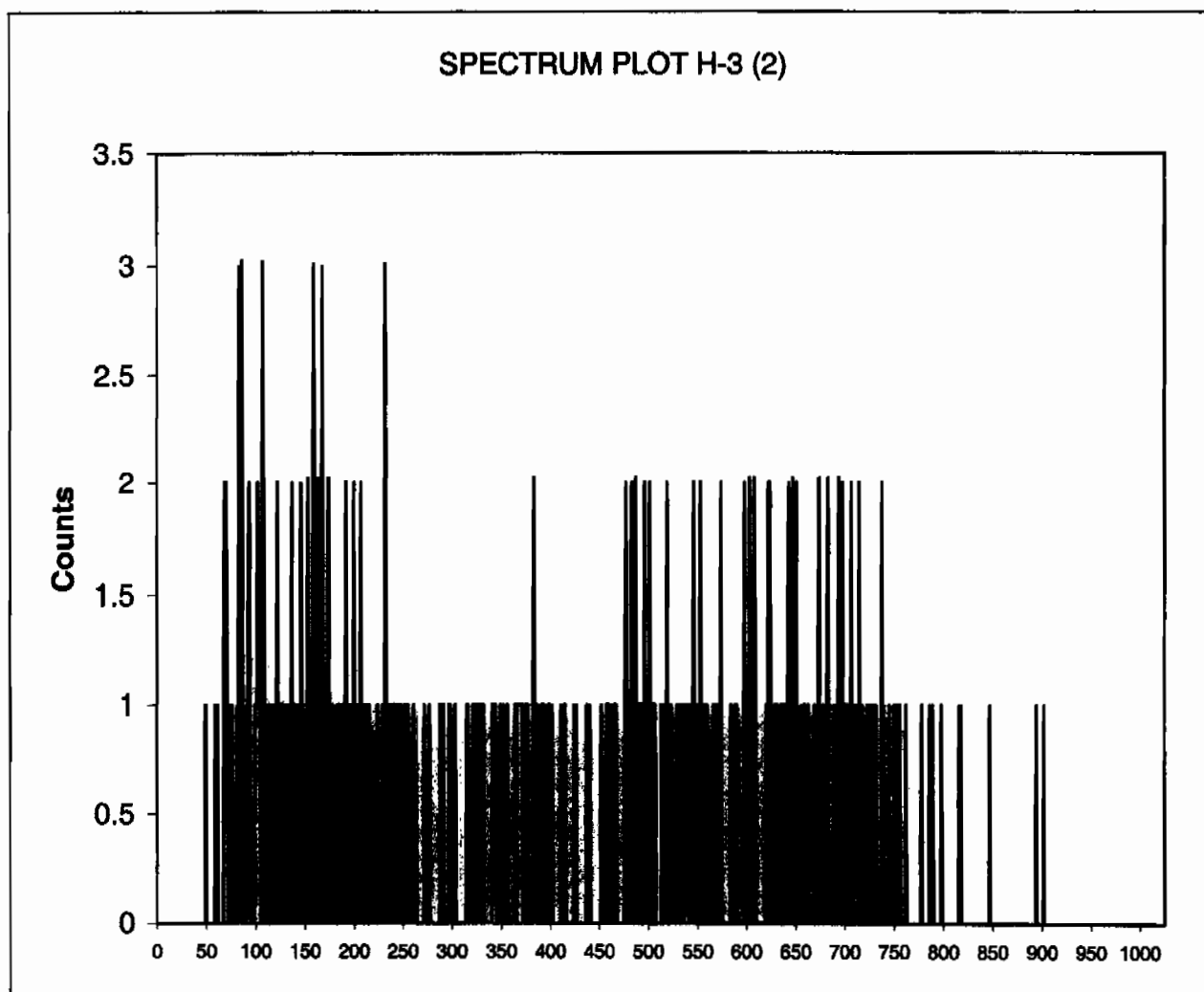
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34	0
35	0

Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\scfiles\orange\964062A0\SQ165601N.001.xls
File Info: s:\scfiles\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 16, 248513015, 40.02963:
Quench: 747.46
Start, End, X-Axis 50-175

Channel Counts



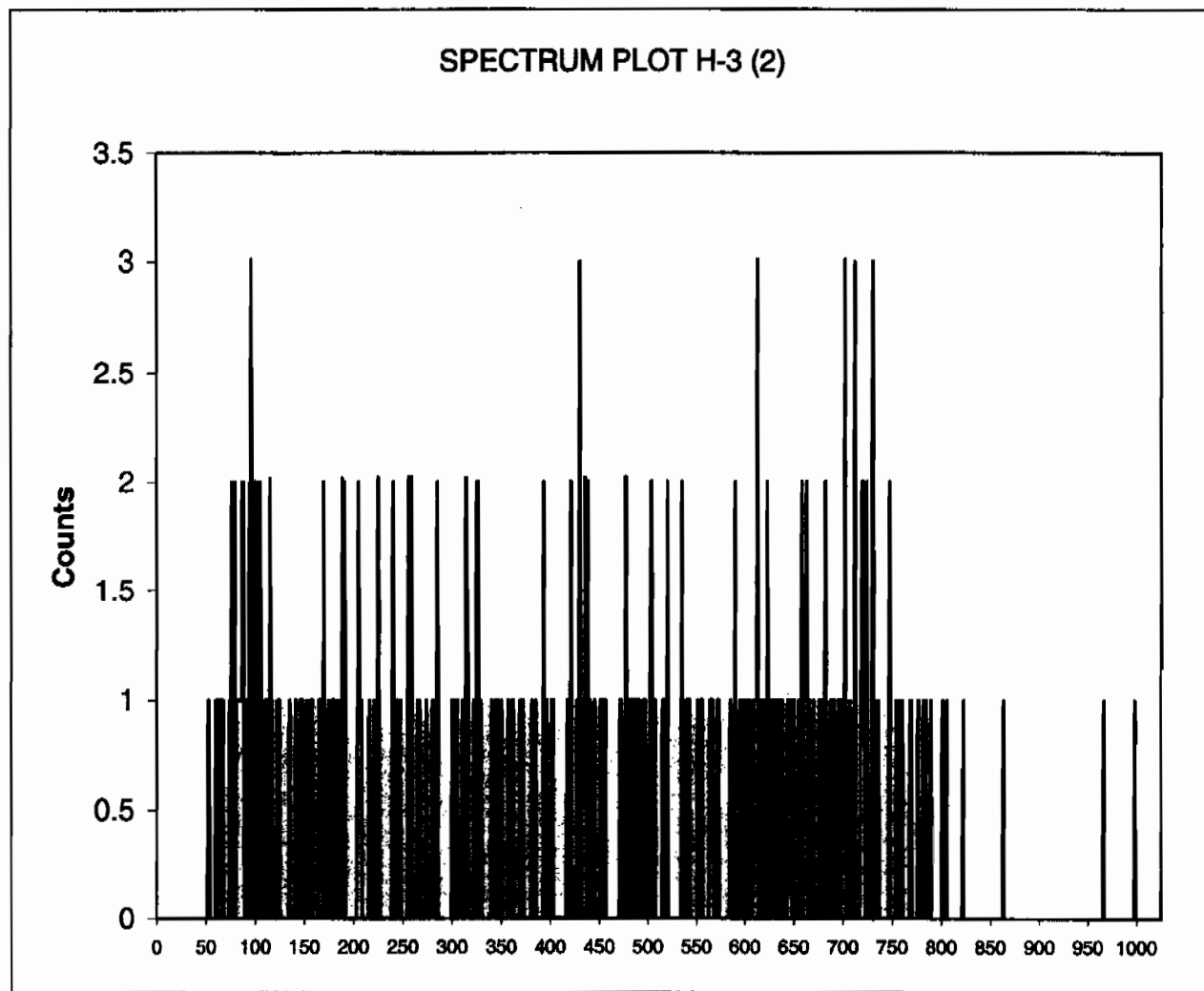
32 0
33 0
34 0
35 0

Instrument Type: Quantulus
 Data Capture Date: SAT 27 MAR 2010 13:14
 FileName: s:\sc\files\orange\964062A0\SQ175701N.001.xls
 File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
 Comments: ORANGE

Sample, Rack-Pos, Time: 17, 248513016, 40.01285:
 Quench: 751.49
 Start, End, X-Axis 50-175

Channel Counts



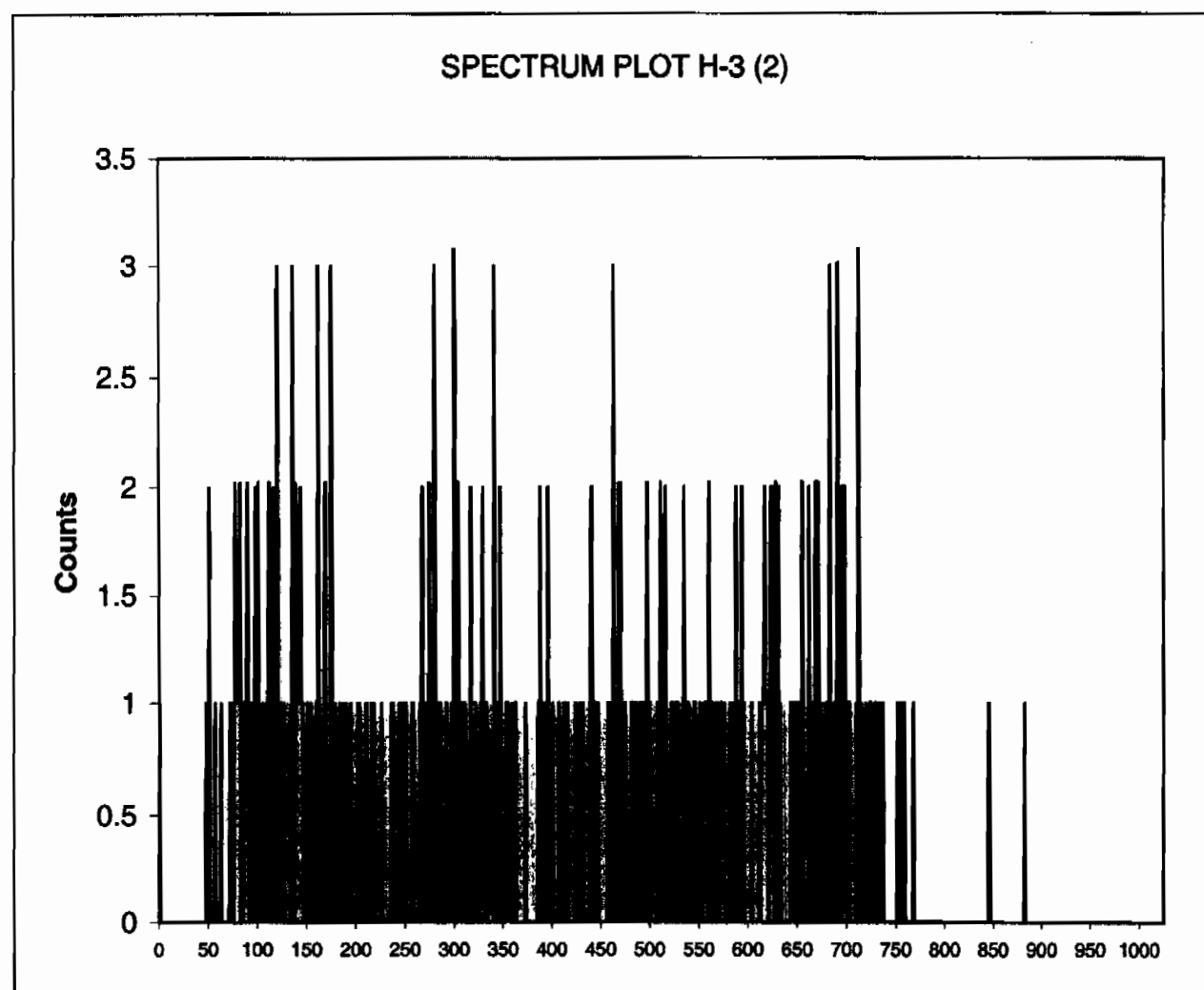
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32	0
33	0
34	0
35	0

Instrument Type: Quantulus
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File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 18, 248513017, 40.02962:
Quench: 749.57
Start, End, X-Axis: 50-175

Channel Counts



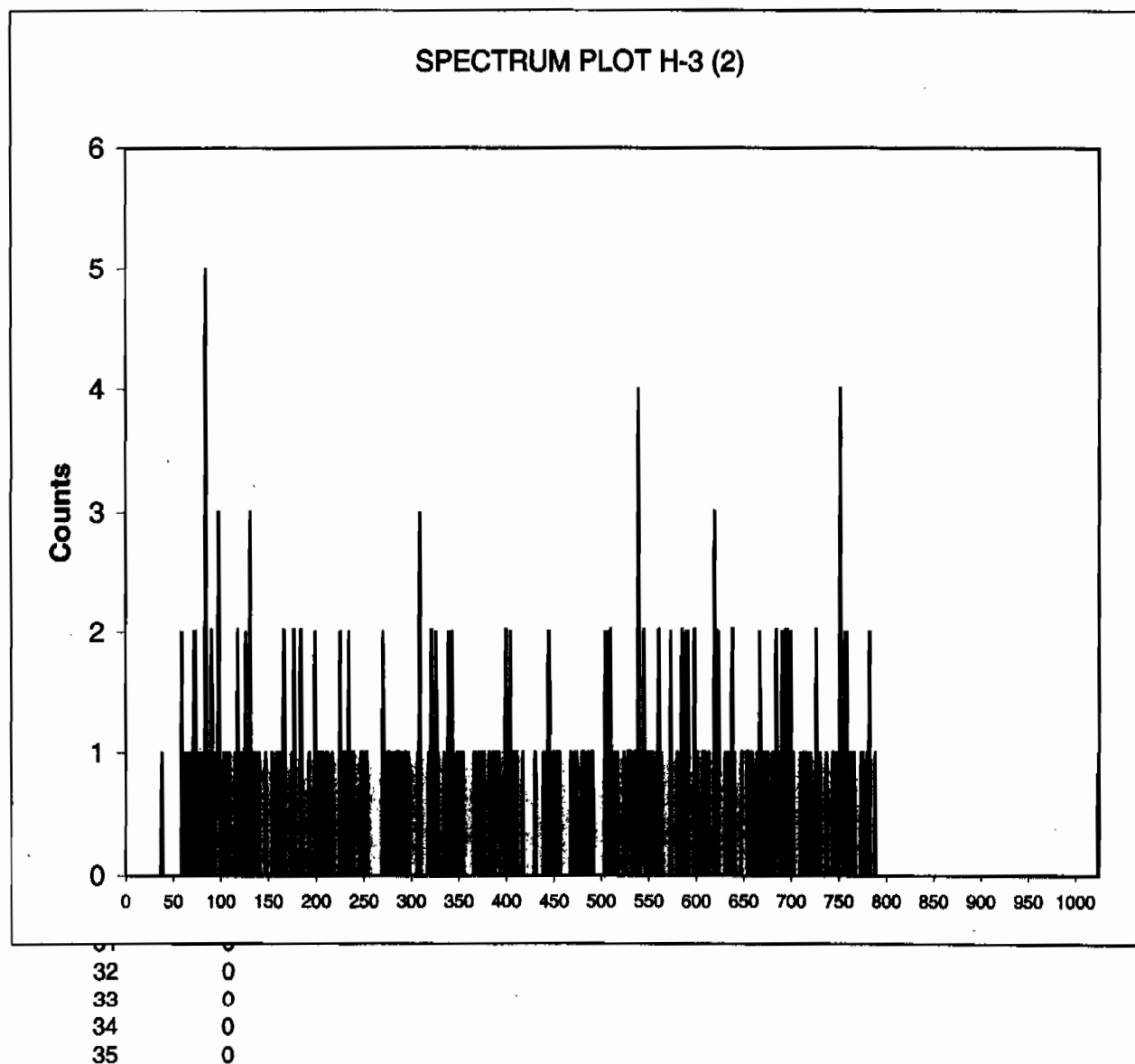
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32	0
33	0
34	0
35	0

Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\sc\files\orange\964062A0\SQ195901N.001.xls
File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 19, 248513018, 40.02962:
Quench: 749.93
Start, End, X-Axis 50-175

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
s:\sc\files\orange\964062A0\SQ206001N.001.xls
s:\sc\files\orange\964062A0\U964062A0.xls

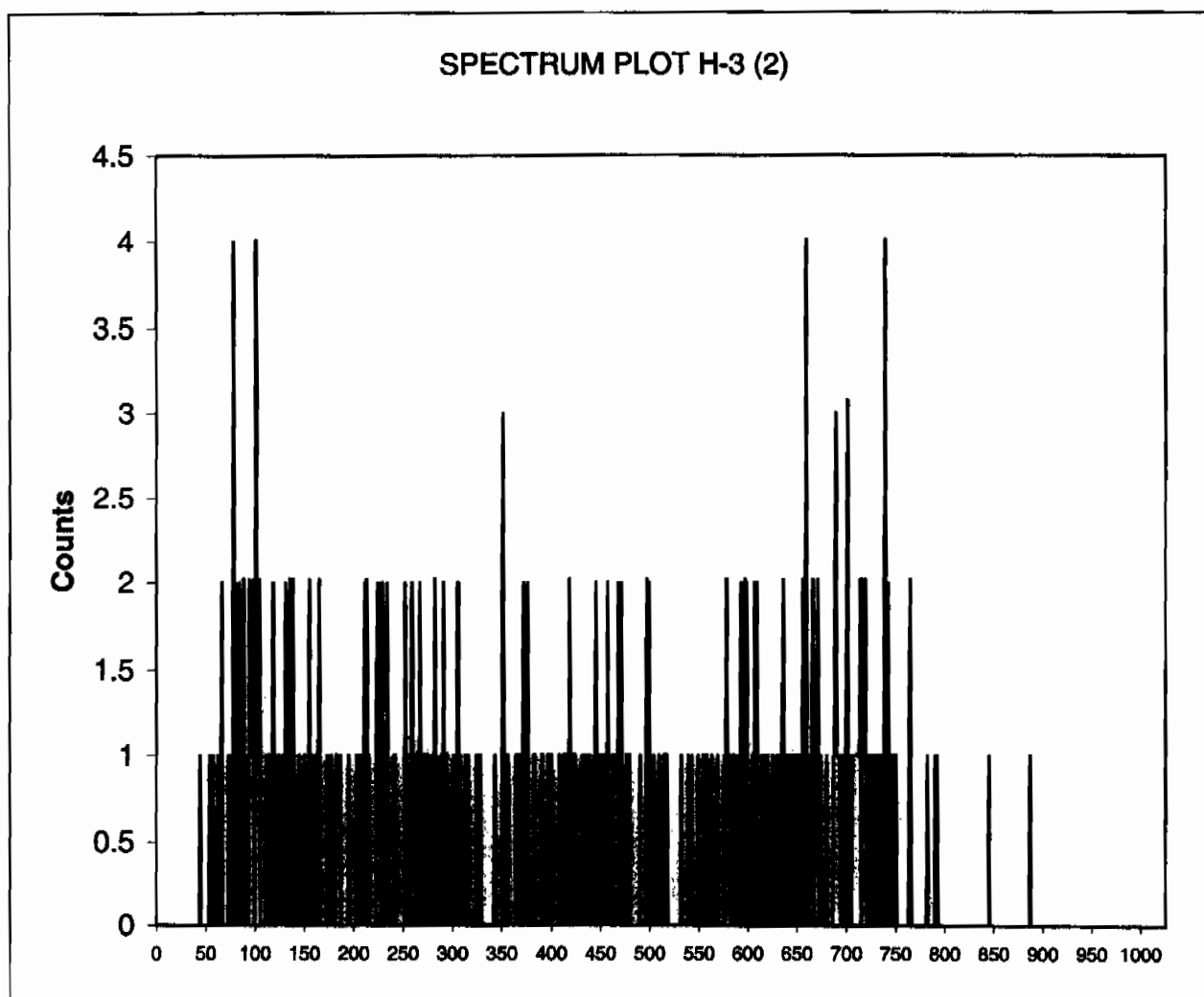
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

20, 248513019, 40.02962:
749.44
50-175

Channel Counts



32 0
33 0
34 0
35 0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 27 MAR 2010 13:14
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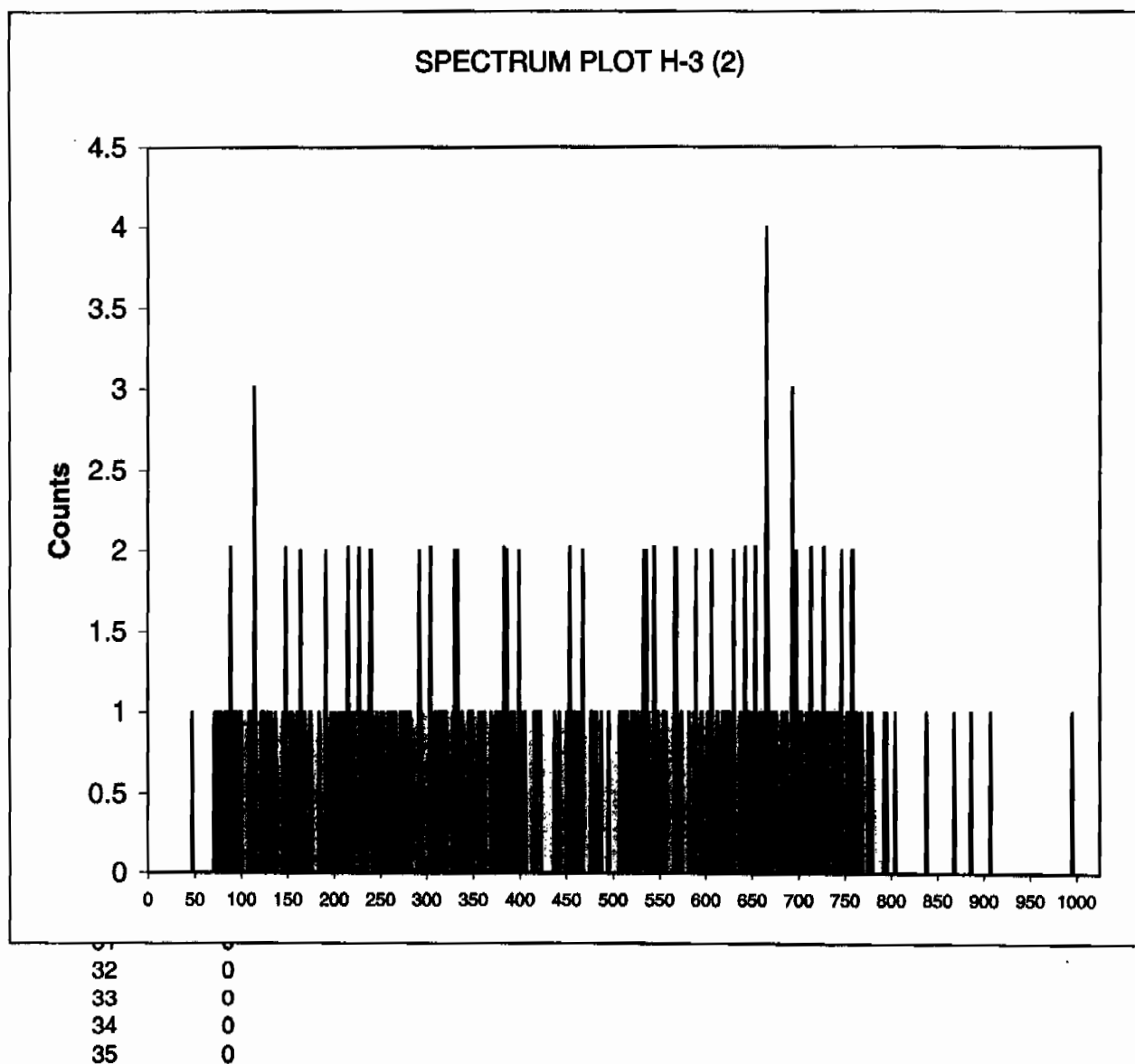
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

22, 1202068225, 40.0296:
749.1
50-175

Channel Counts

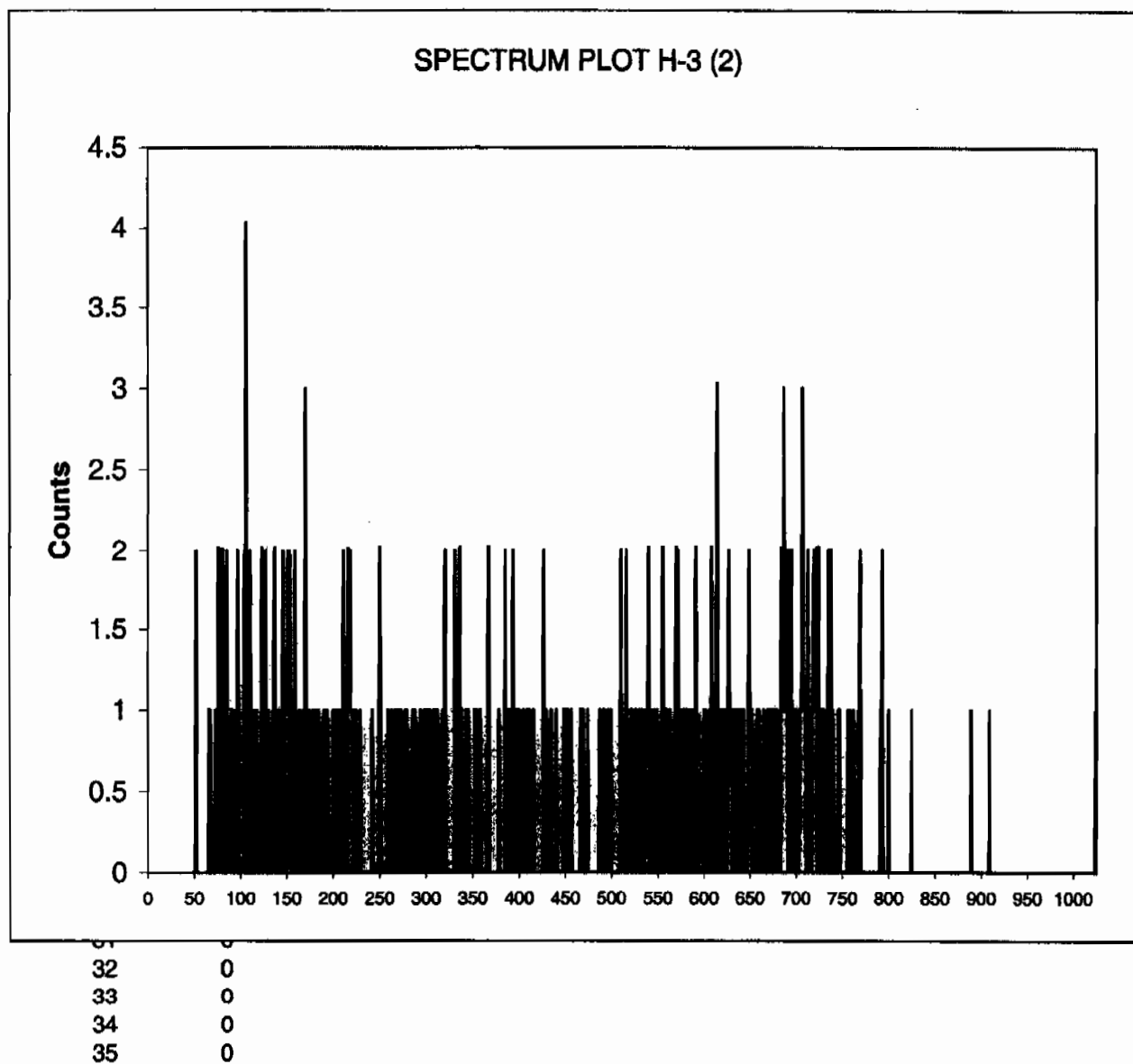


Instrument Type: Quantulus
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File Info: s:\sc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 23, 1202068226, 40.0295:
Quench: 751.26
Start, End, X-Axis 50-175

Channel Counts

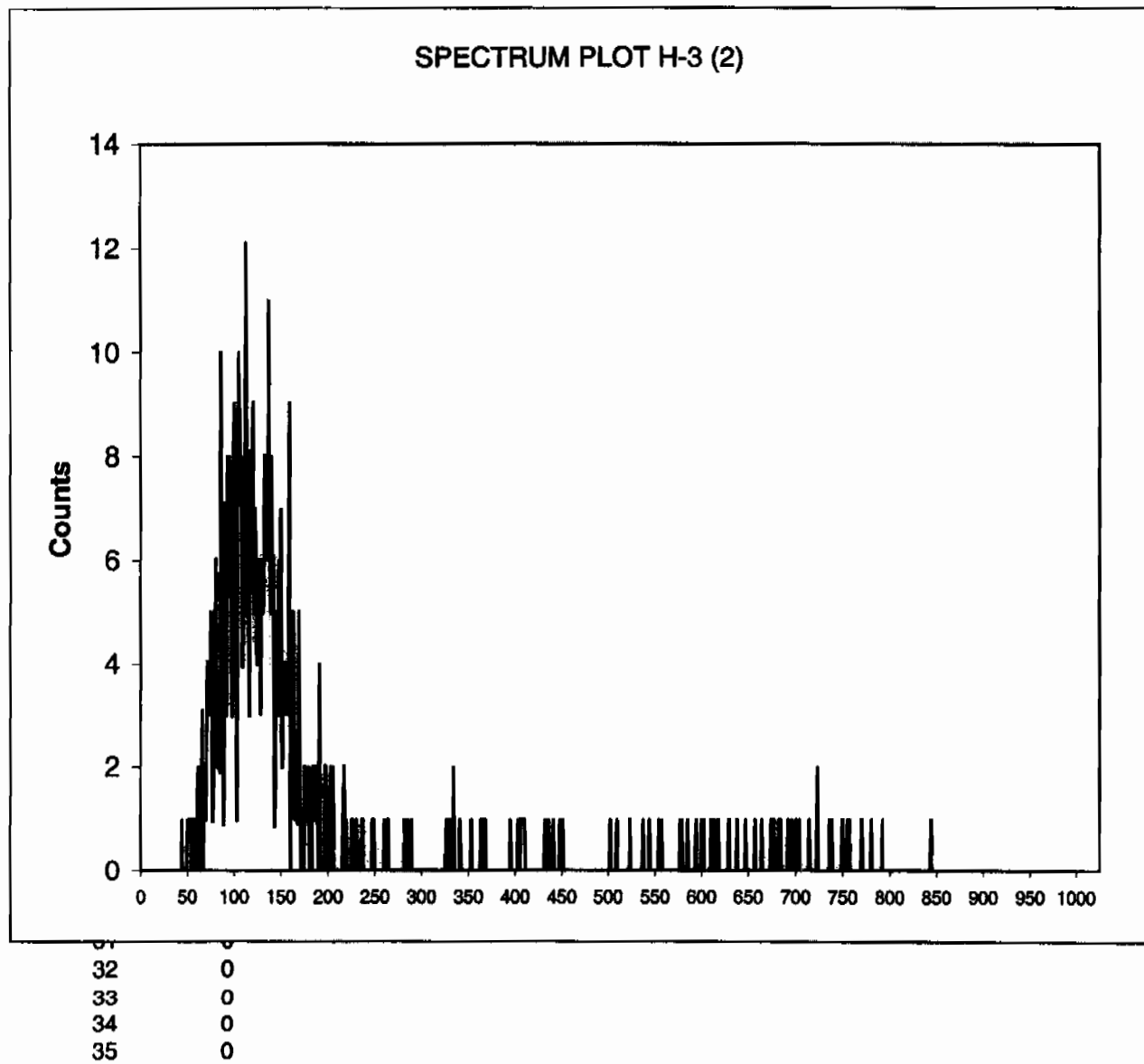


Instrument Type: Quantulus
Data Capture Date: SAT 27 MAR 2010 13:14
FileName: s:\lsc\files\orange\964062A0\SQ243401N.001.xls
File Info: s:\lsc\files\orange\964062A0\U964062A0.xls

ID: H-3 (2)
Comments: ORANGE

Sample, Rack-Pos, Time: 24, 1202068227, 15.0296:
Quench: 750.5
Start, End, X-Axis 50-175

Channel Counts



REGISTRY

MON 29 MAR 2010 19:11

*** DIRECTORY PATH :S:\LSC\O\DA\964062A1 ***

PARAMETER GROUP: 8
ID: H-3 (1)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	23	BKG	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	24	248513013	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	25	248513020	40:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA INPUT	TRIGG.	INHIBIT	MEMORY SPLIT
1 LRSUM	DCOS	G	L*R
2 GSUM	G		L*R

WINDOW	CHANNELS	MCA	HALF
1	50- 175	1	2
2	5- 320	1	2
3	1- 1024	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1. POS	2. ID	3. CTIME	4. SQP	5. CPM1	6. CPM2	7. CPM3
SEND SPECTRA 12						
RESOLUTION OF SPECTRA 1024						
LISTING Y						
INSTRUMENT NUMBER 1						

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
Q012301N.001	29 MAR 2010	19:54				
23	BKG	40:01.780	749.67	1.35	2.60	7.95
Q022401N.001	29 MAR 2010	20:36				
24	248513013	40:01.780	747.10	1.99	3.24	8.20
Q032501N.001	29 MAR 2010	21:19				
25	248513020	40:01.780	748.73	1.78	3.24	8.02

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 29 MAR 2010 19:11
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s:\sc\files\orange\964062A1\U964062A1.xls

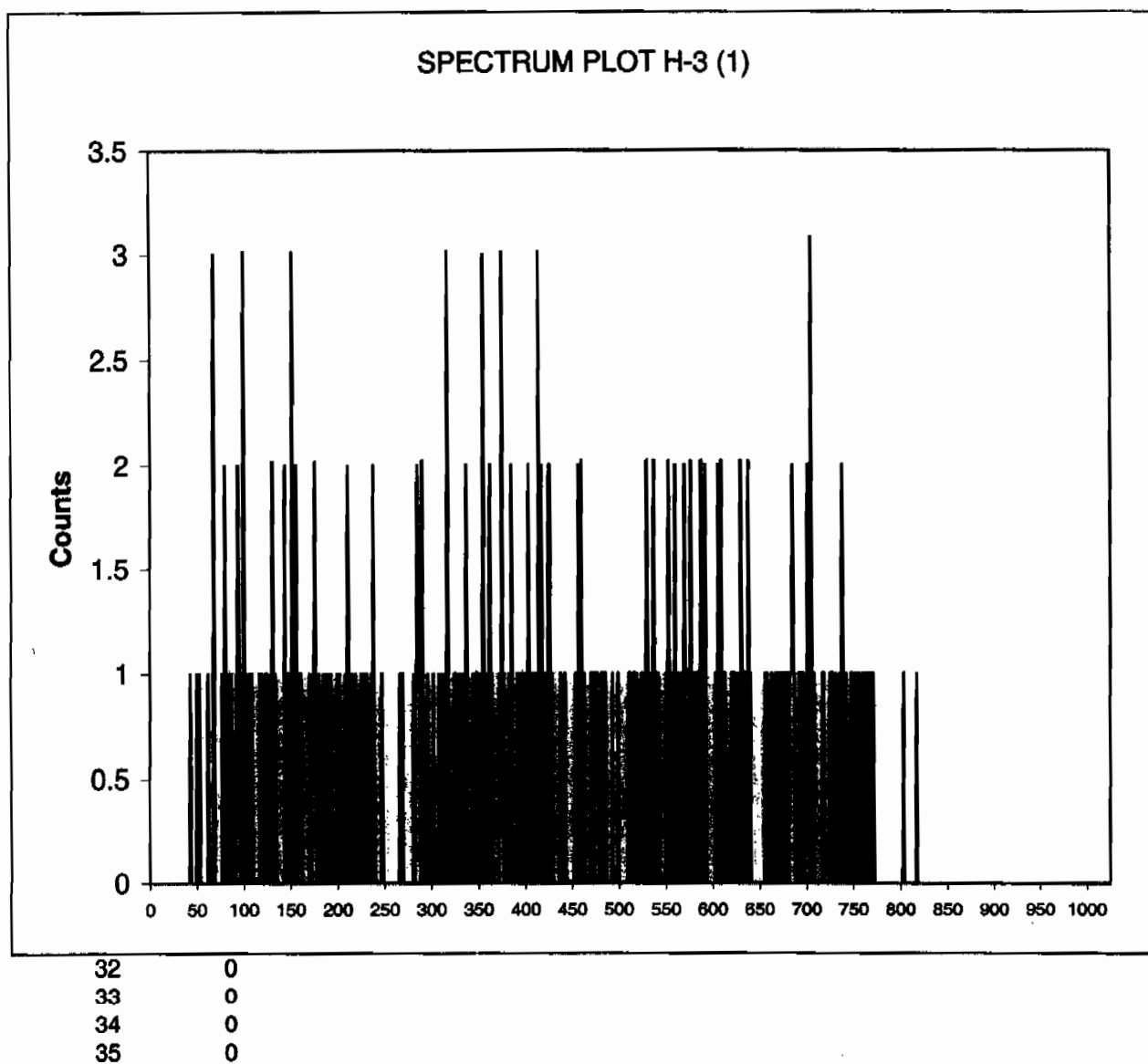
ID:
Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

1, BKG, 40.02967:
749.67
50-175

Channel Counts



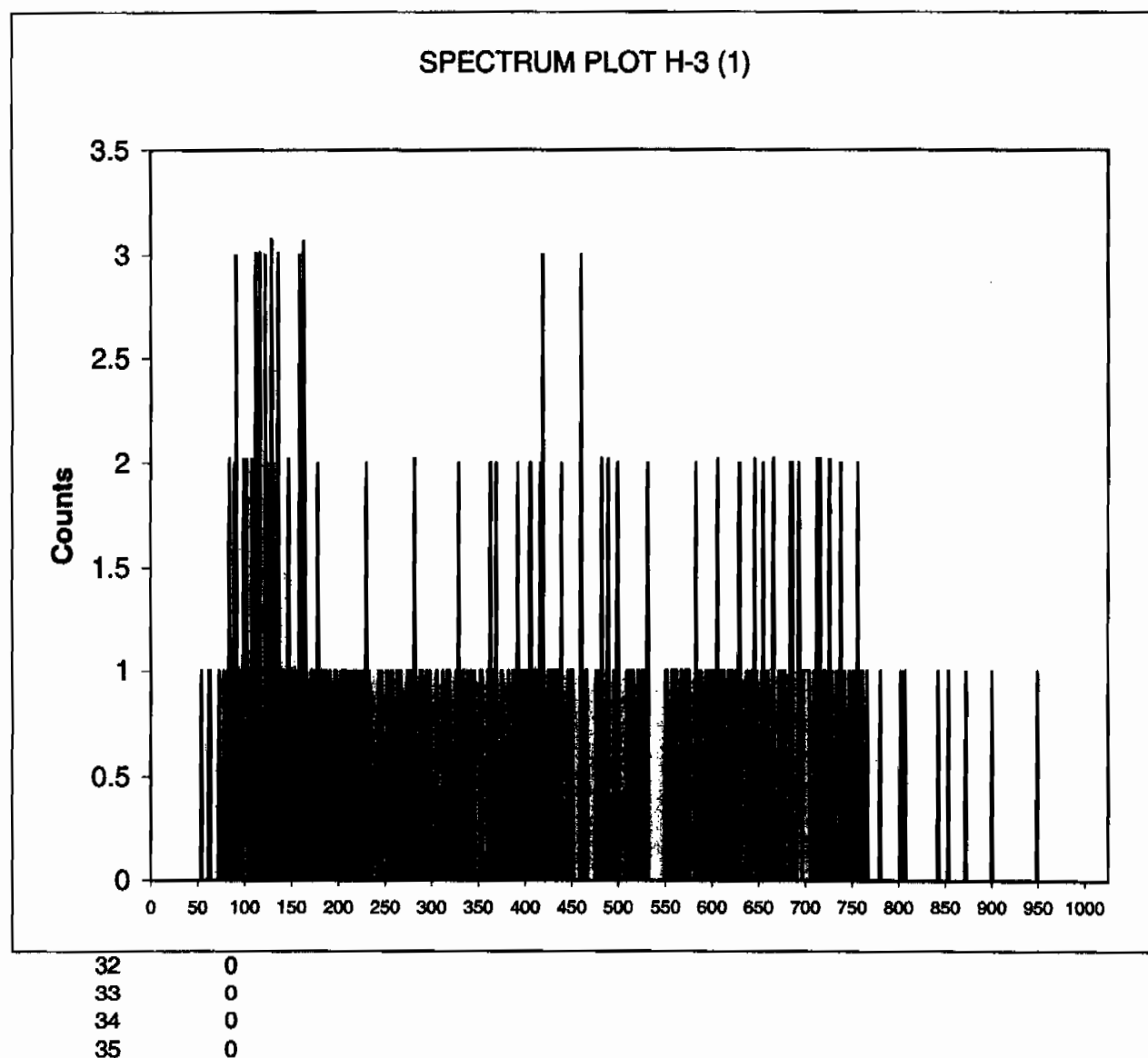
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ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 2, 248513013, 40.02967:
Quench: 747.1
Start, End, X-Axis 50-175

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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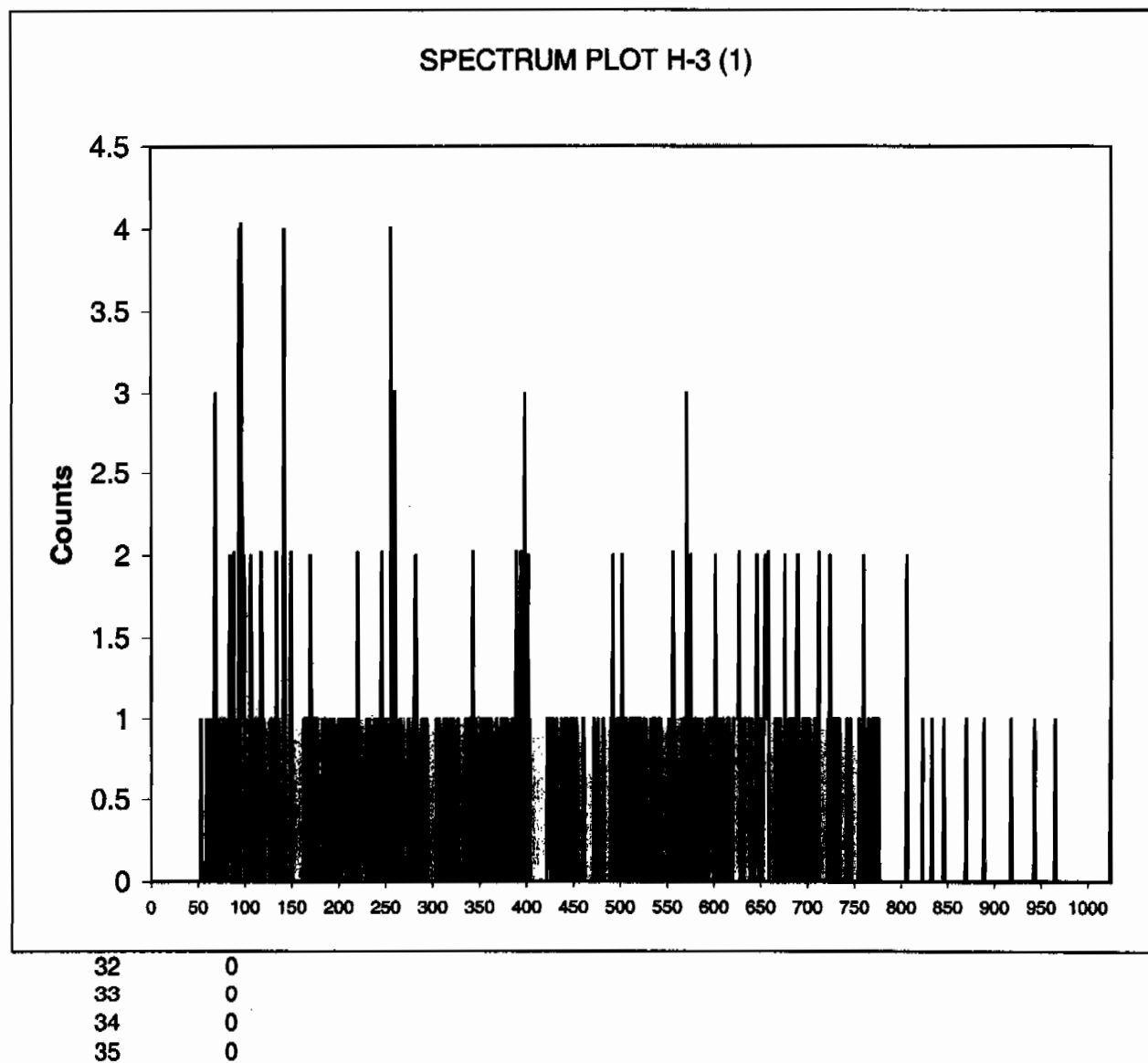
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Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

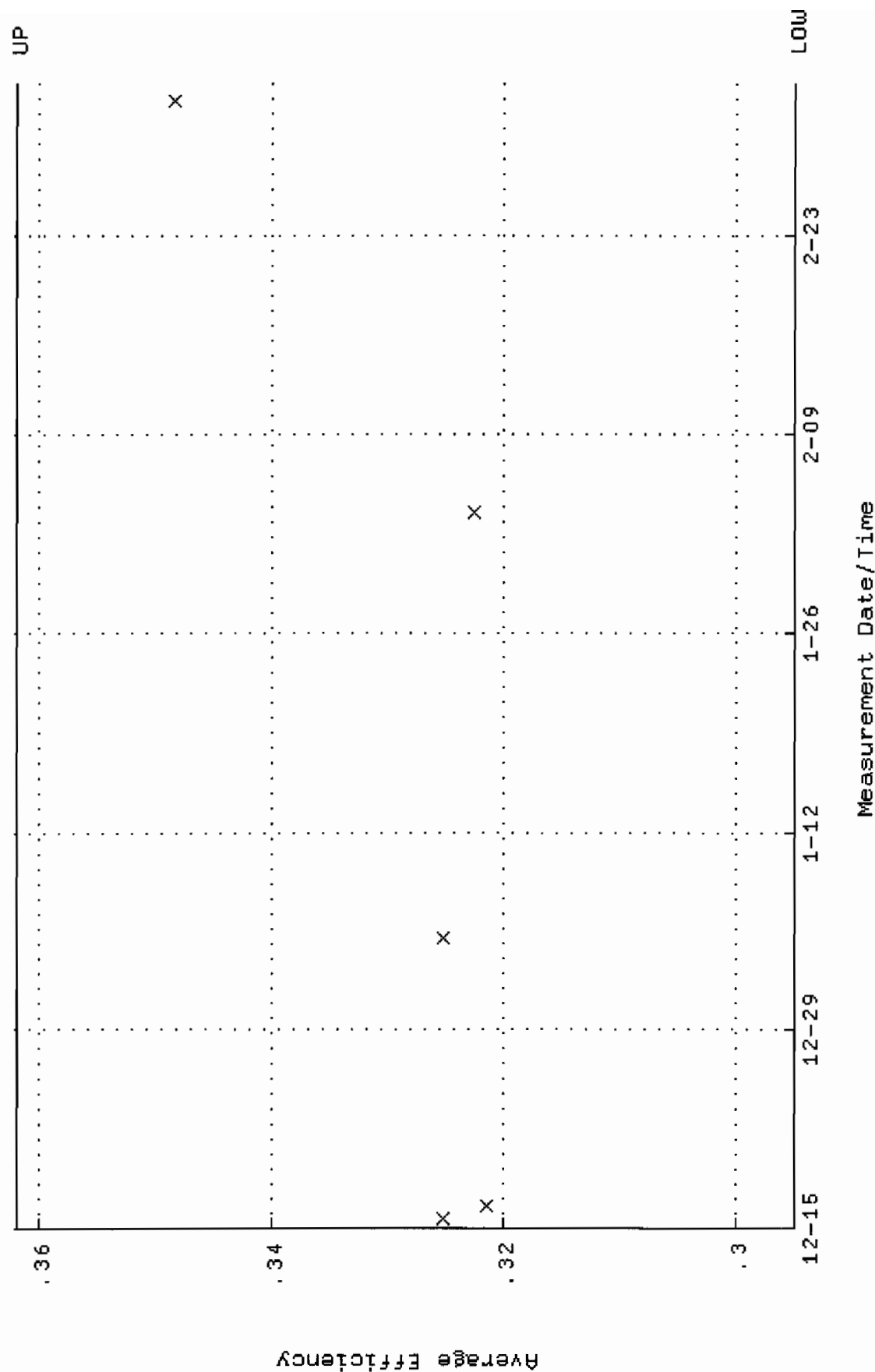
3, 248513020, 40.02967:
748.73
50-175

Channel Counts

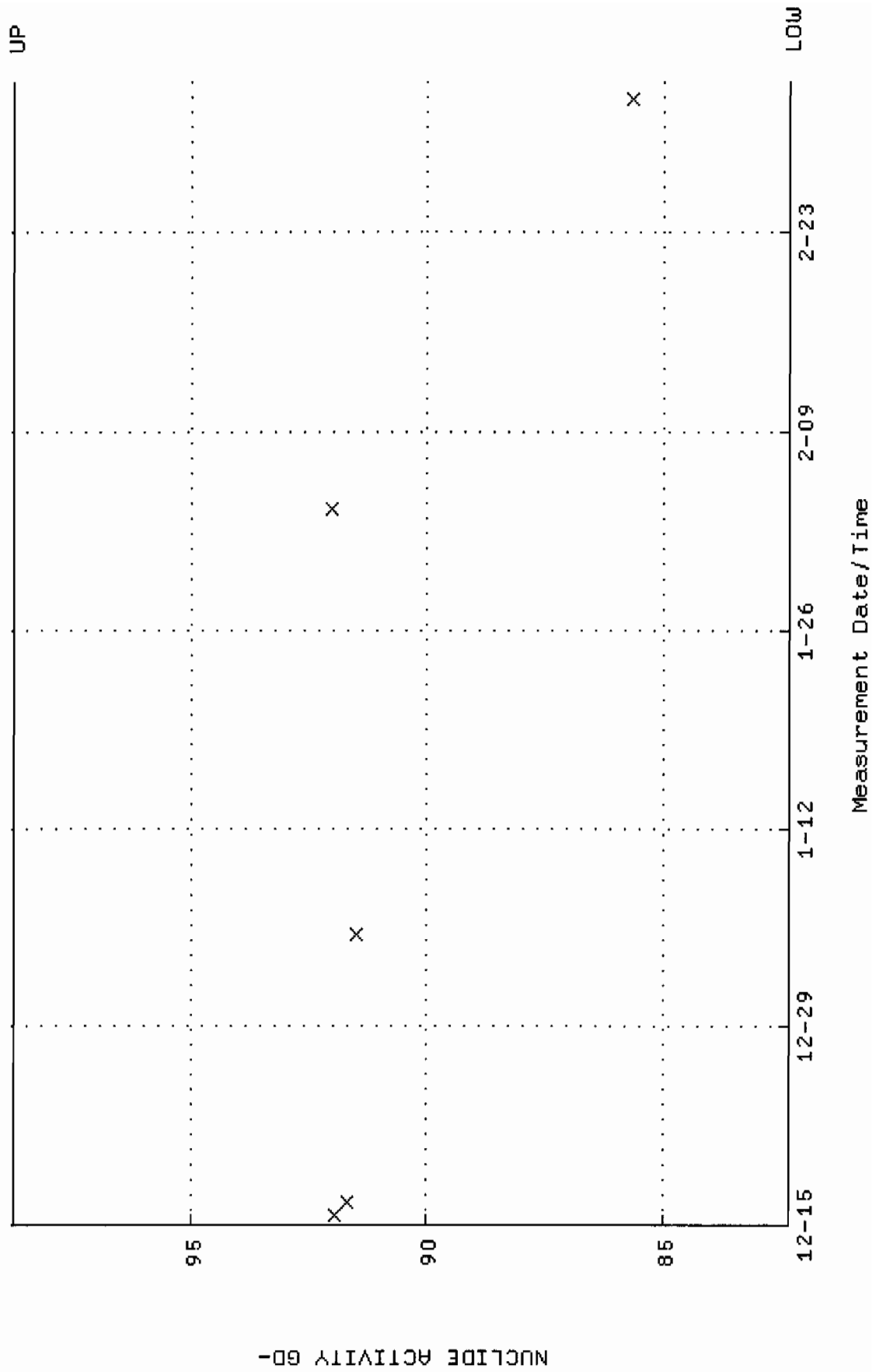


BACKGROUND AND EFFICIENCY DATA

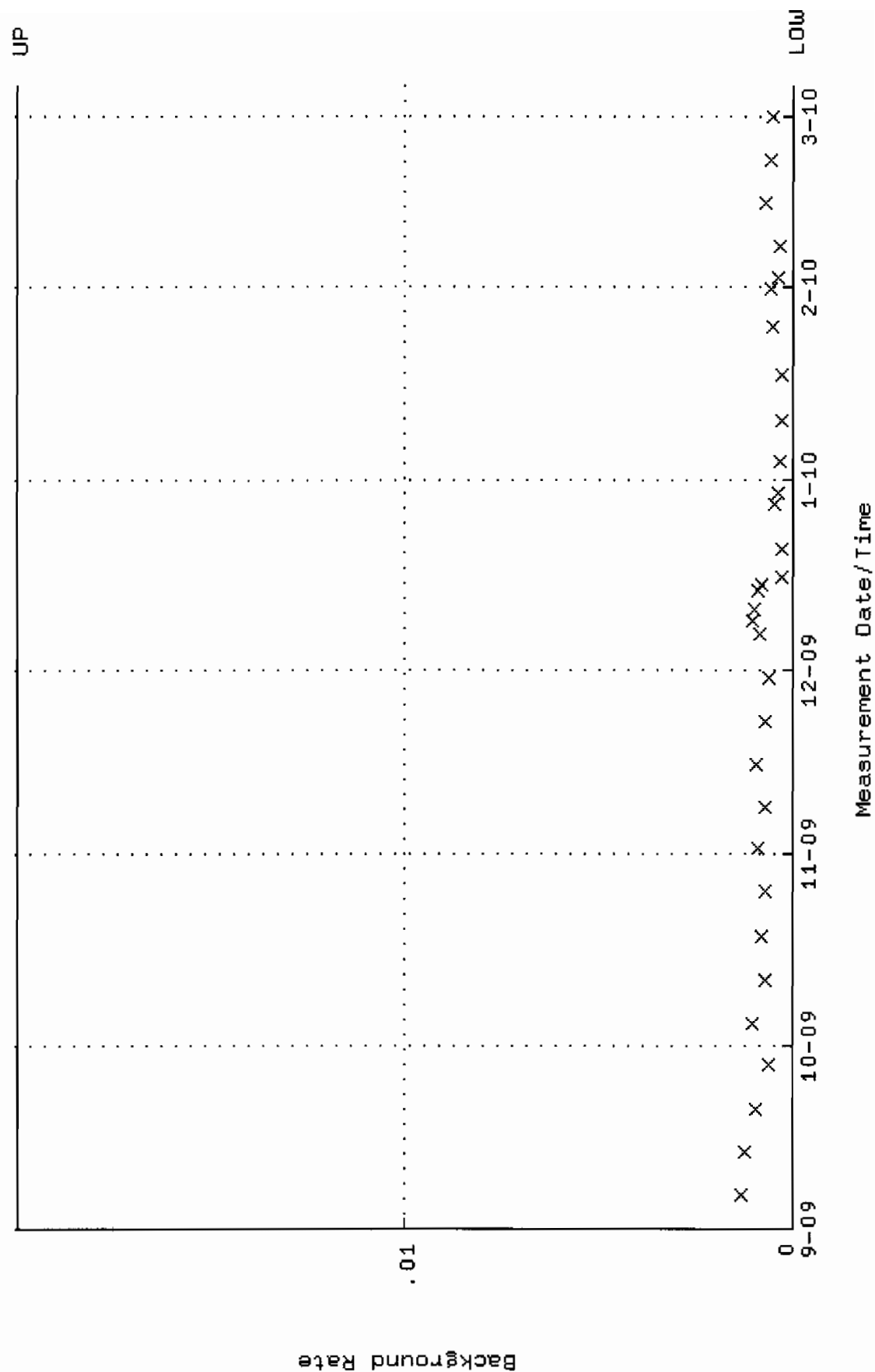
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;7
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294900 through 0.361886



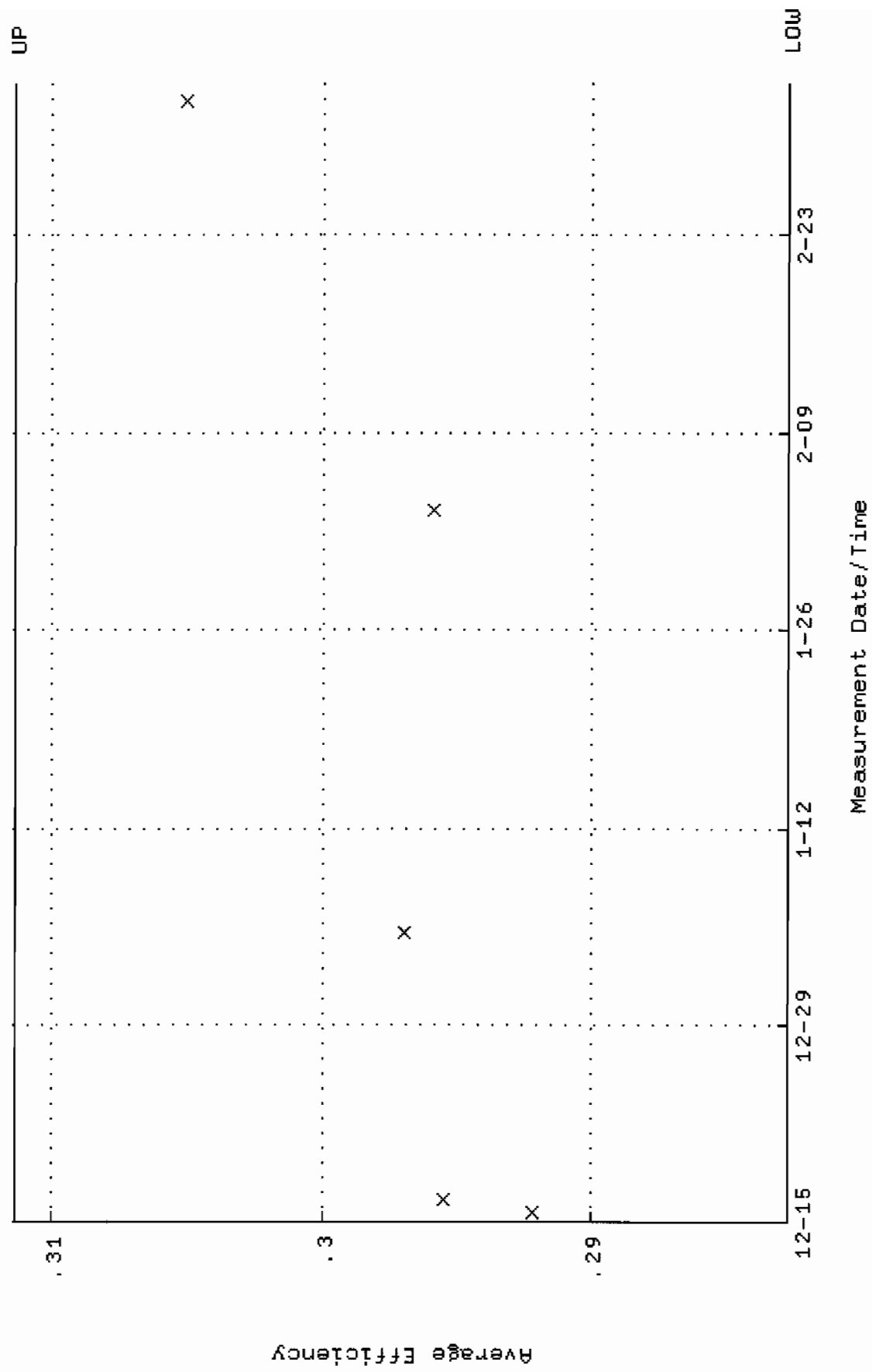
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;7
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.3264 through 98.7414



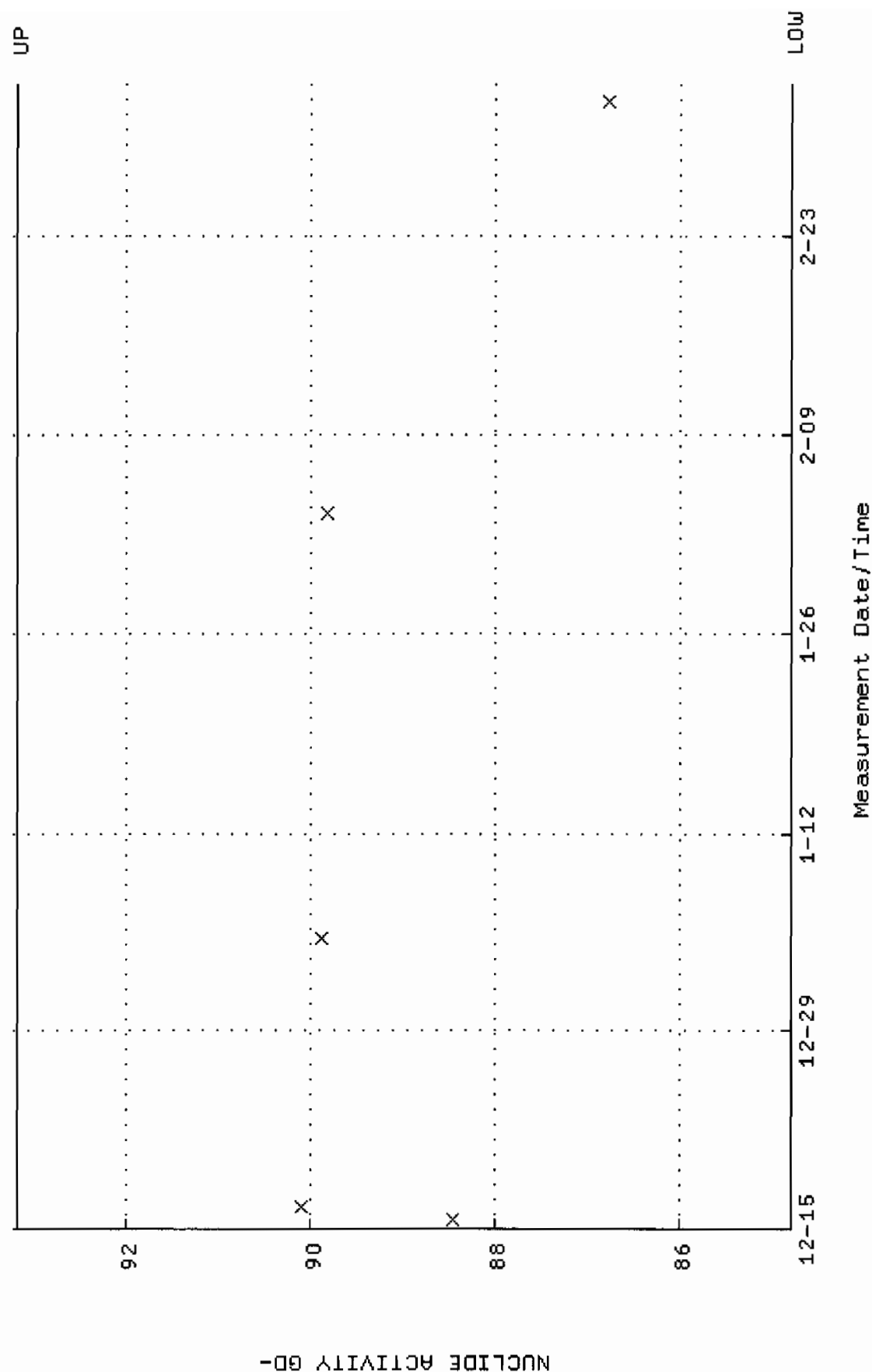
QA filename : DKA100:[ENV_ALPHA.QA.B]B001.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



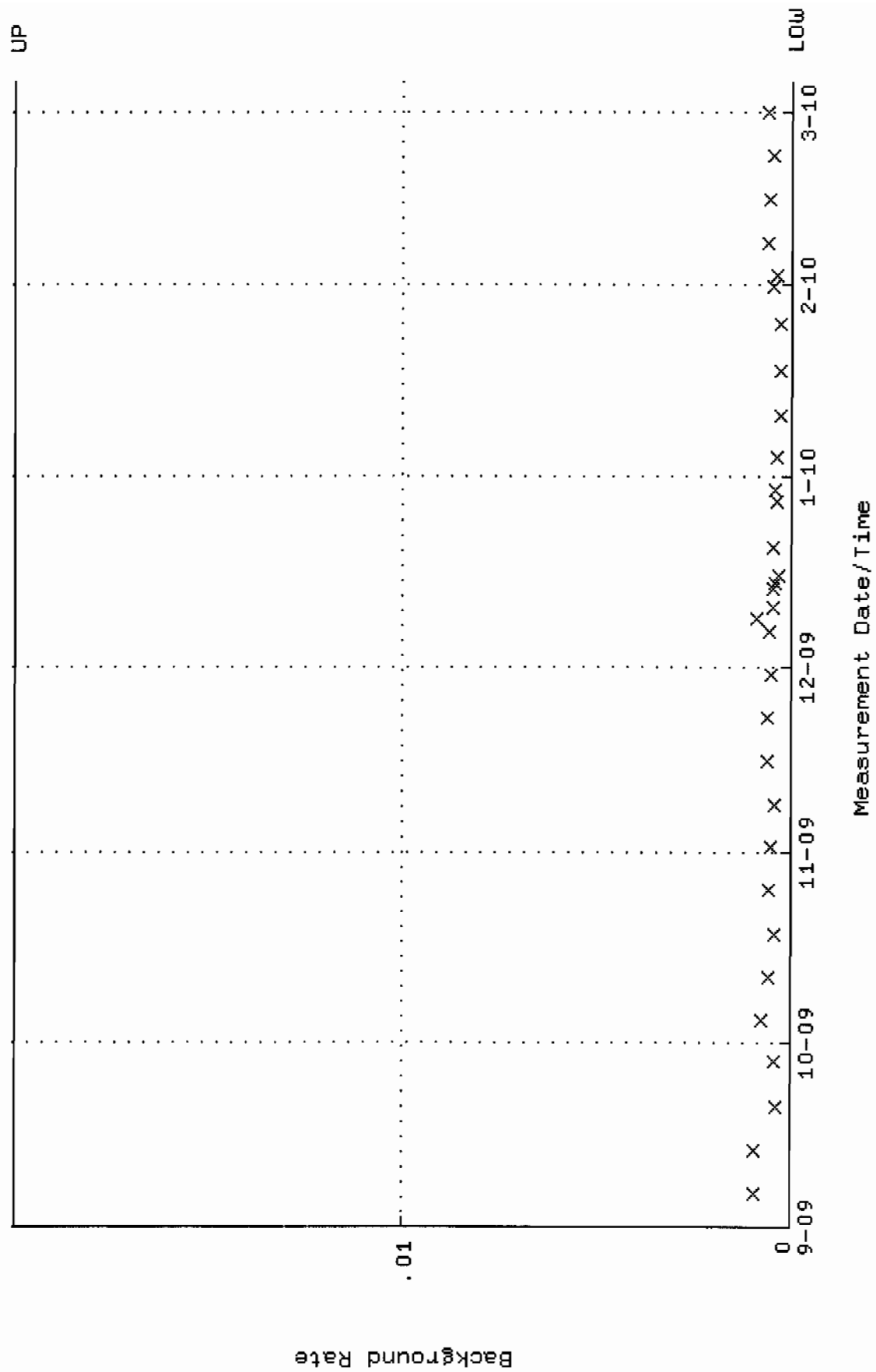
QA filename : DKA100:[ENV_ALPHA.QA.W]W002.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.282705 through 0.311367



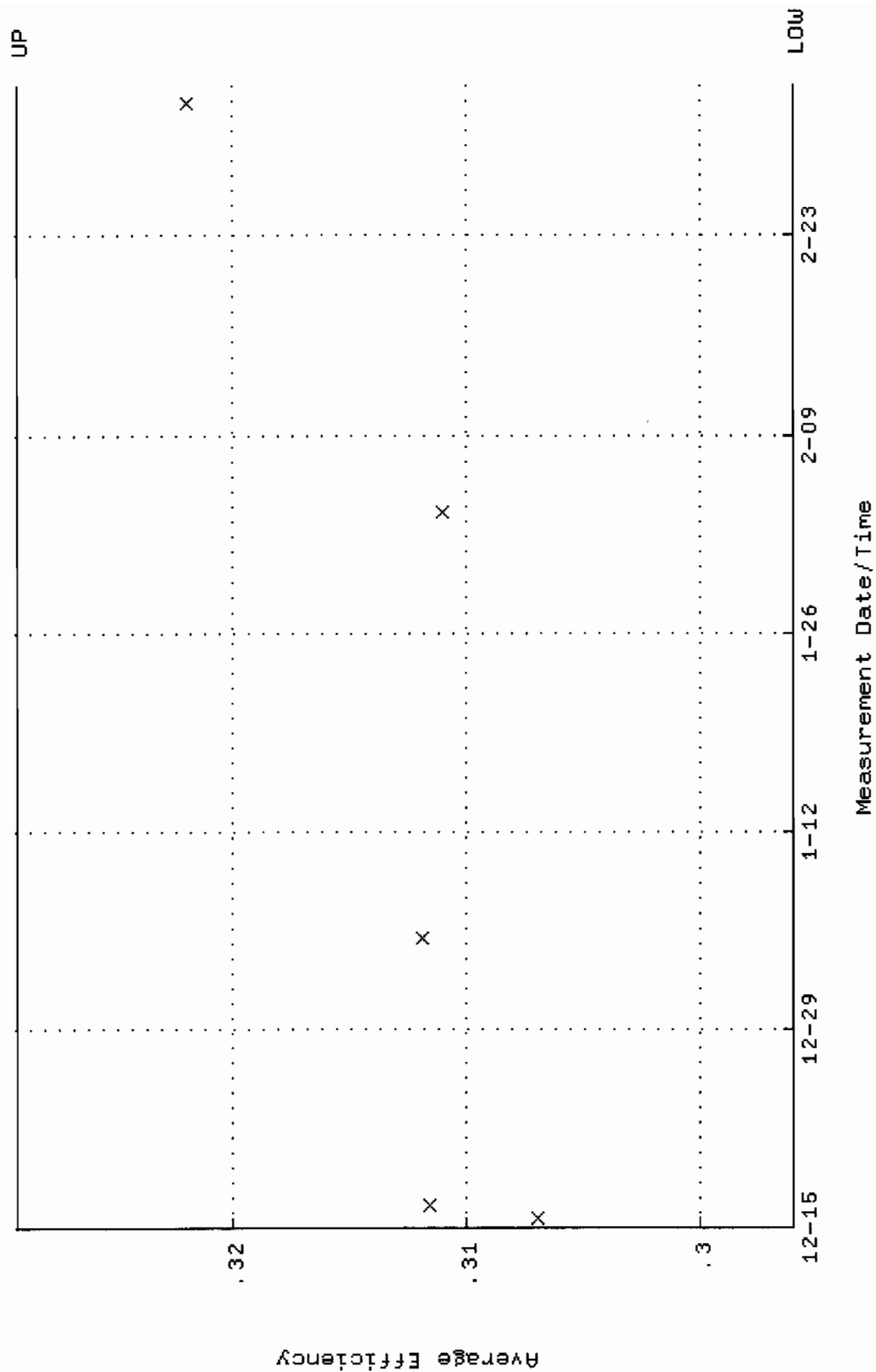
QA filename : DKA100:[ENV_ALPHA.QA.W]w002.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.7927 through 93.2014



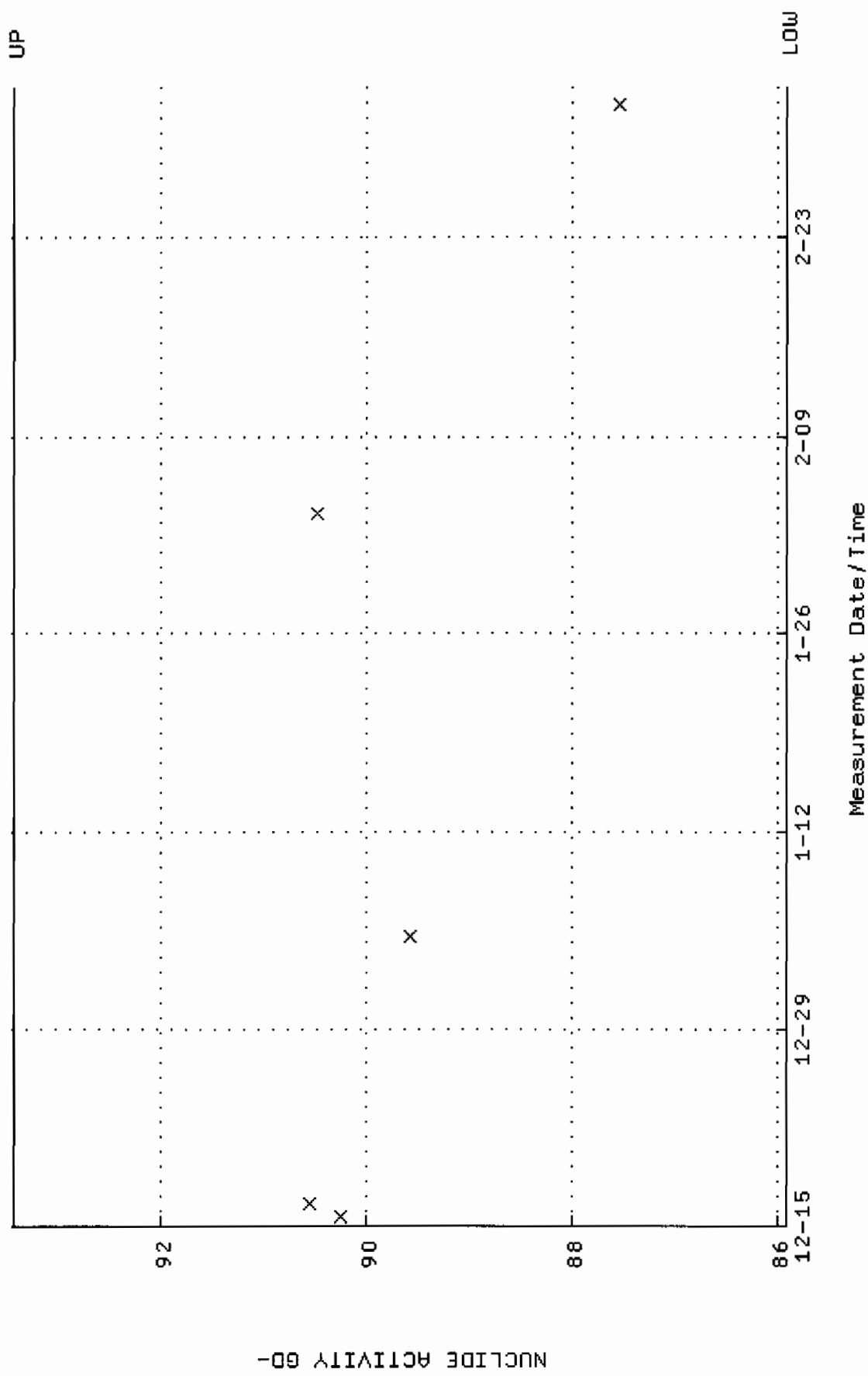
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 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



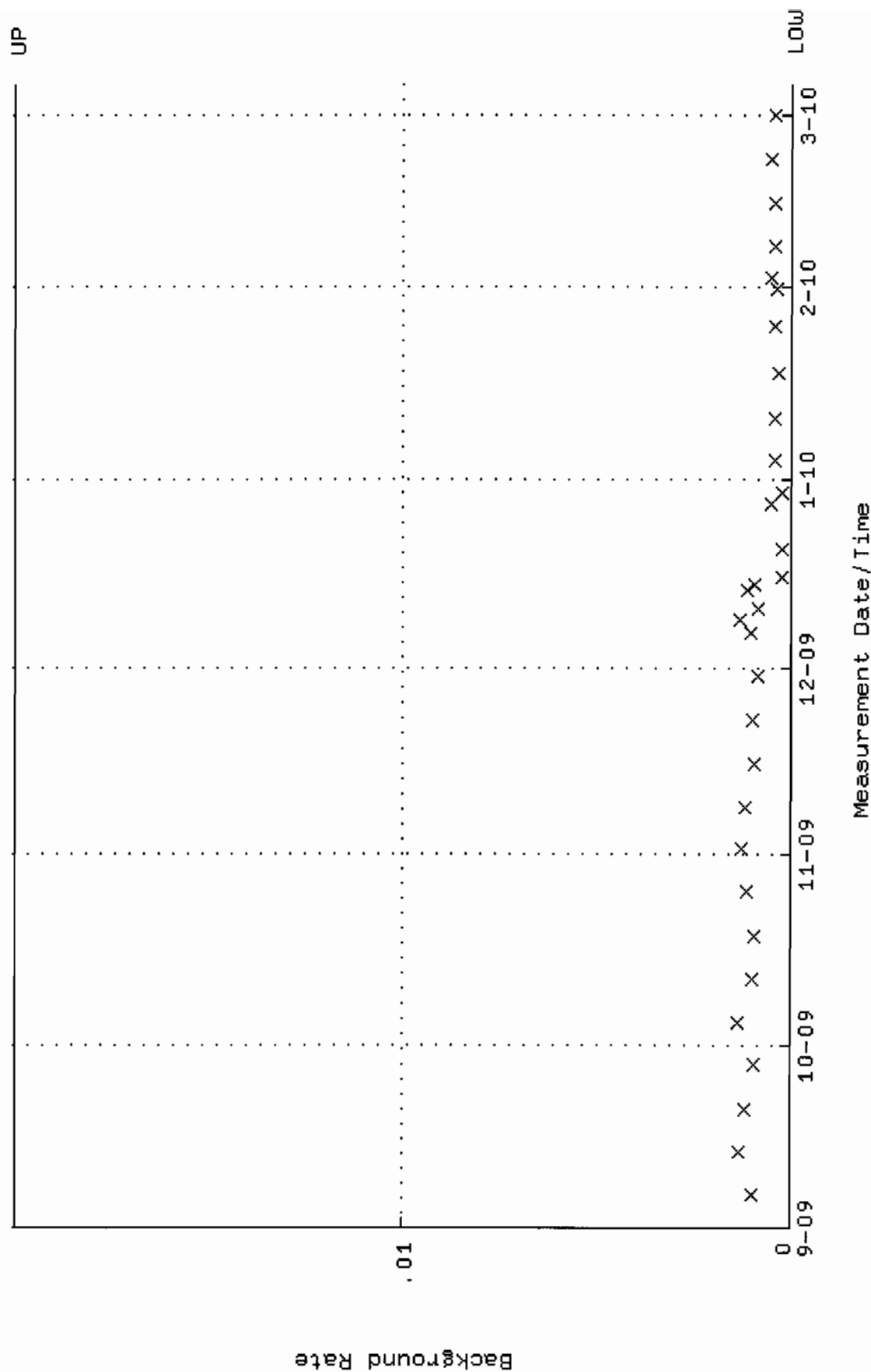
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.295986 through 0.329192



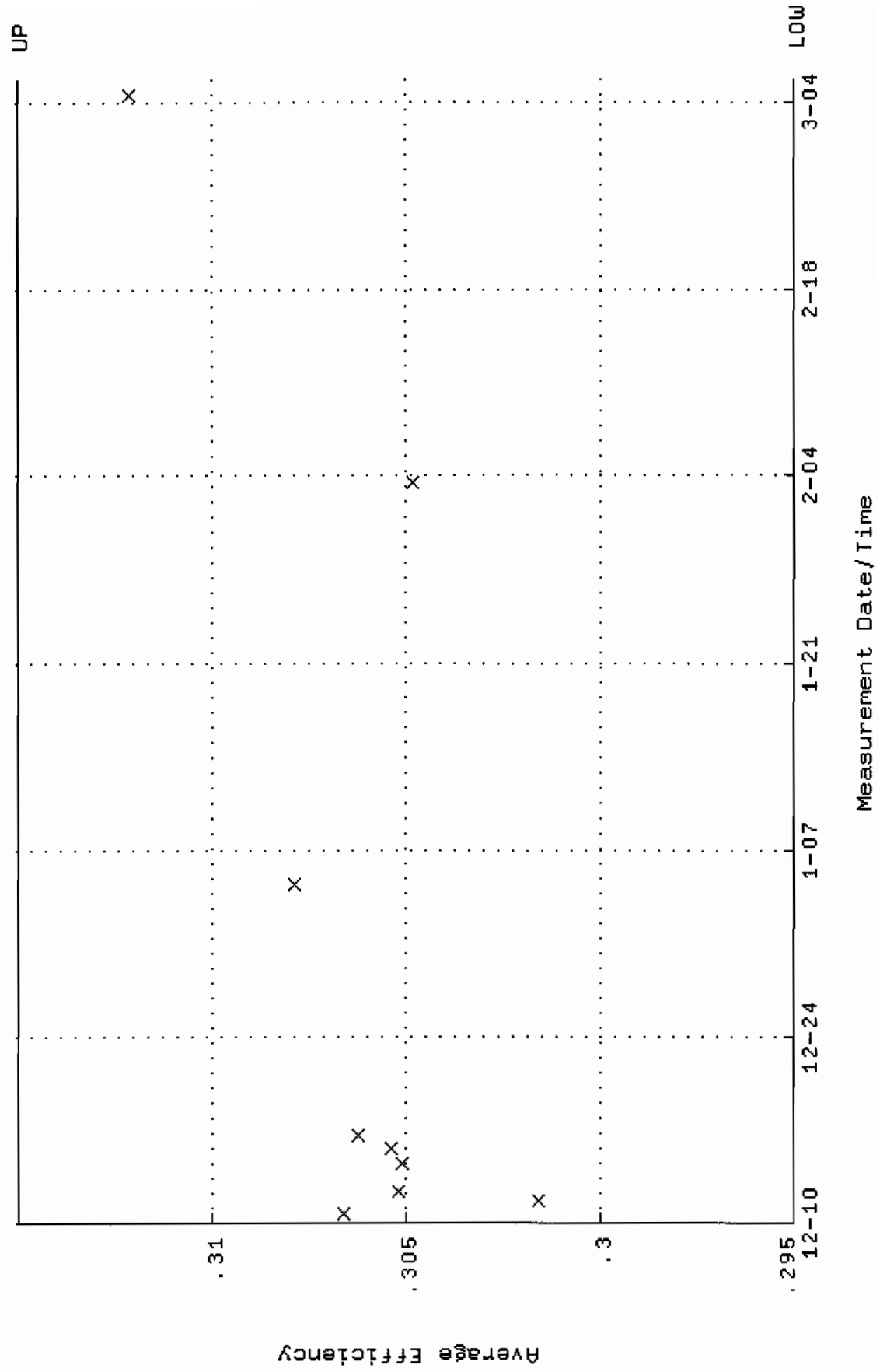
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.9157 through 93.4313



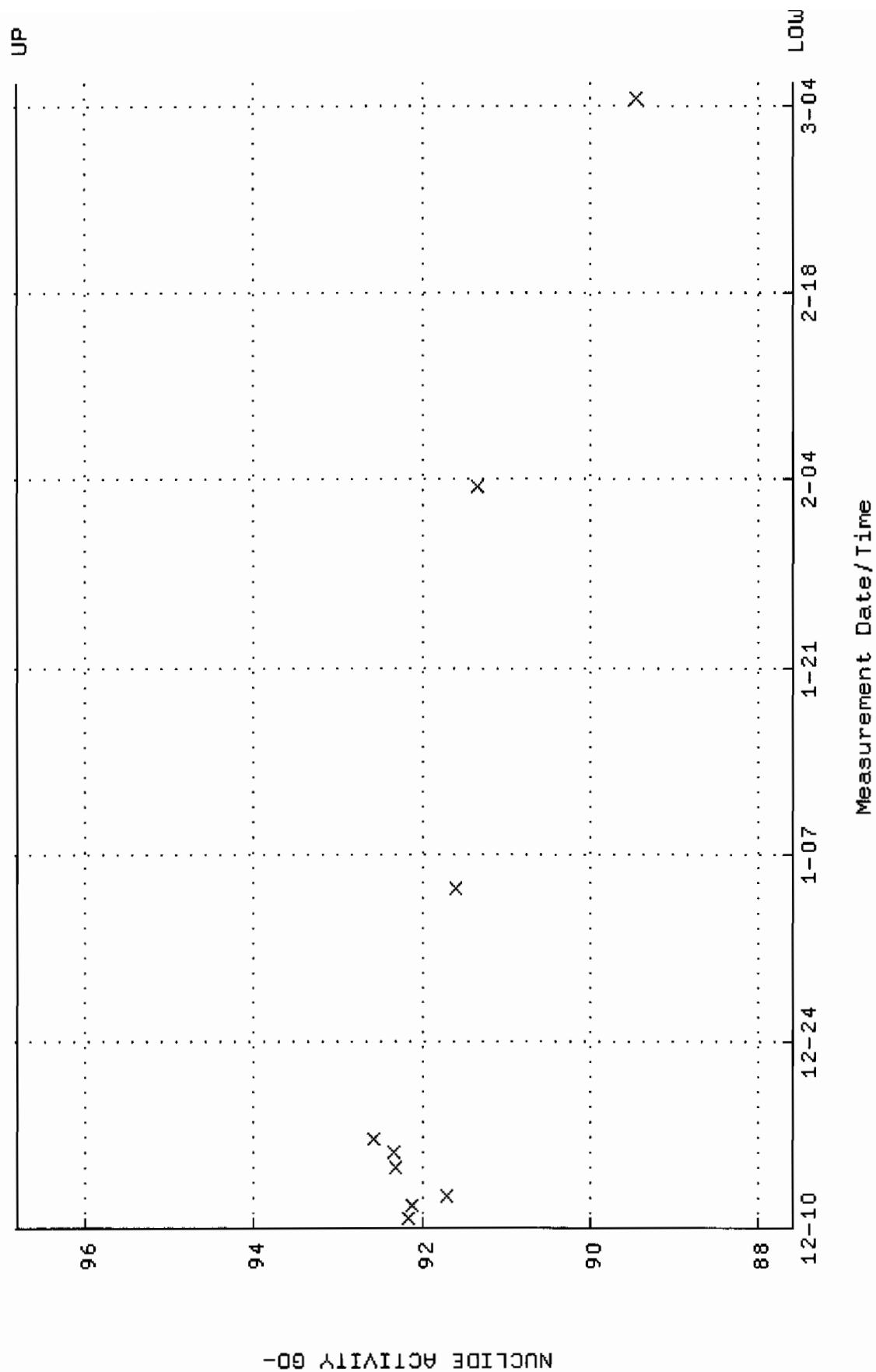
QA filename : DKA100:[ENV_ALPHA.QA.B]B003.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



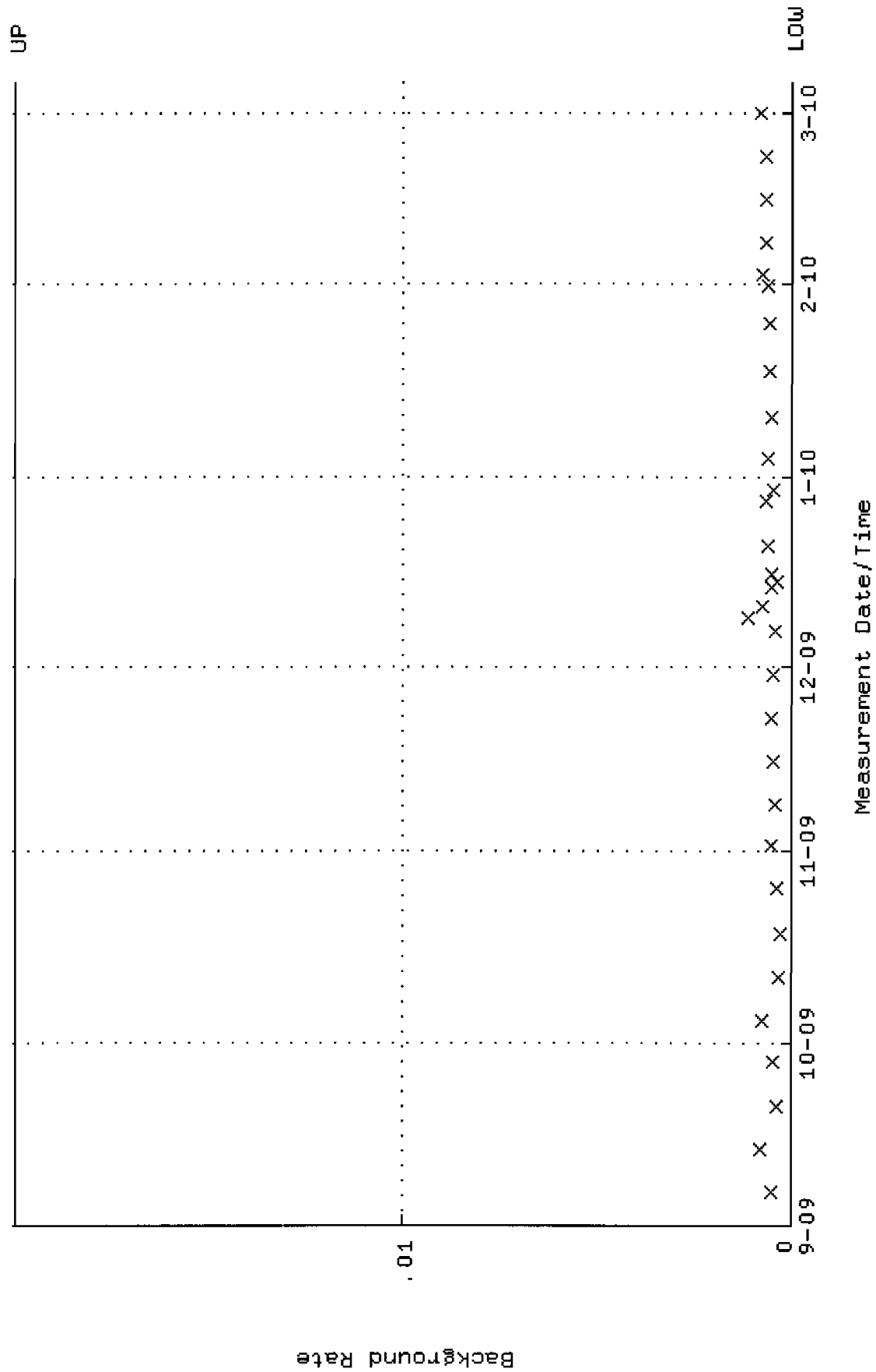
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294995 through 0.314995



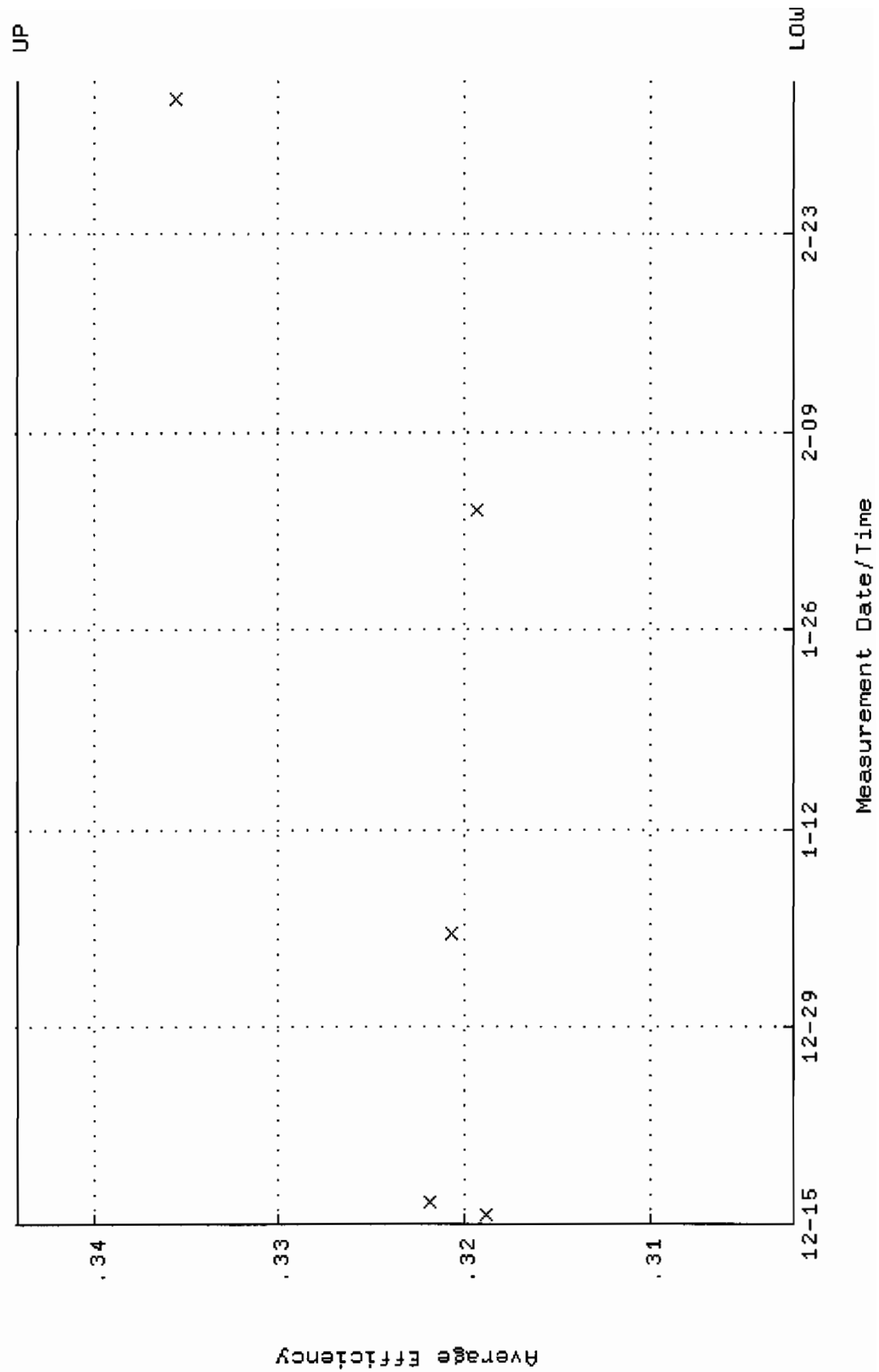
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.5863 through 96.8059



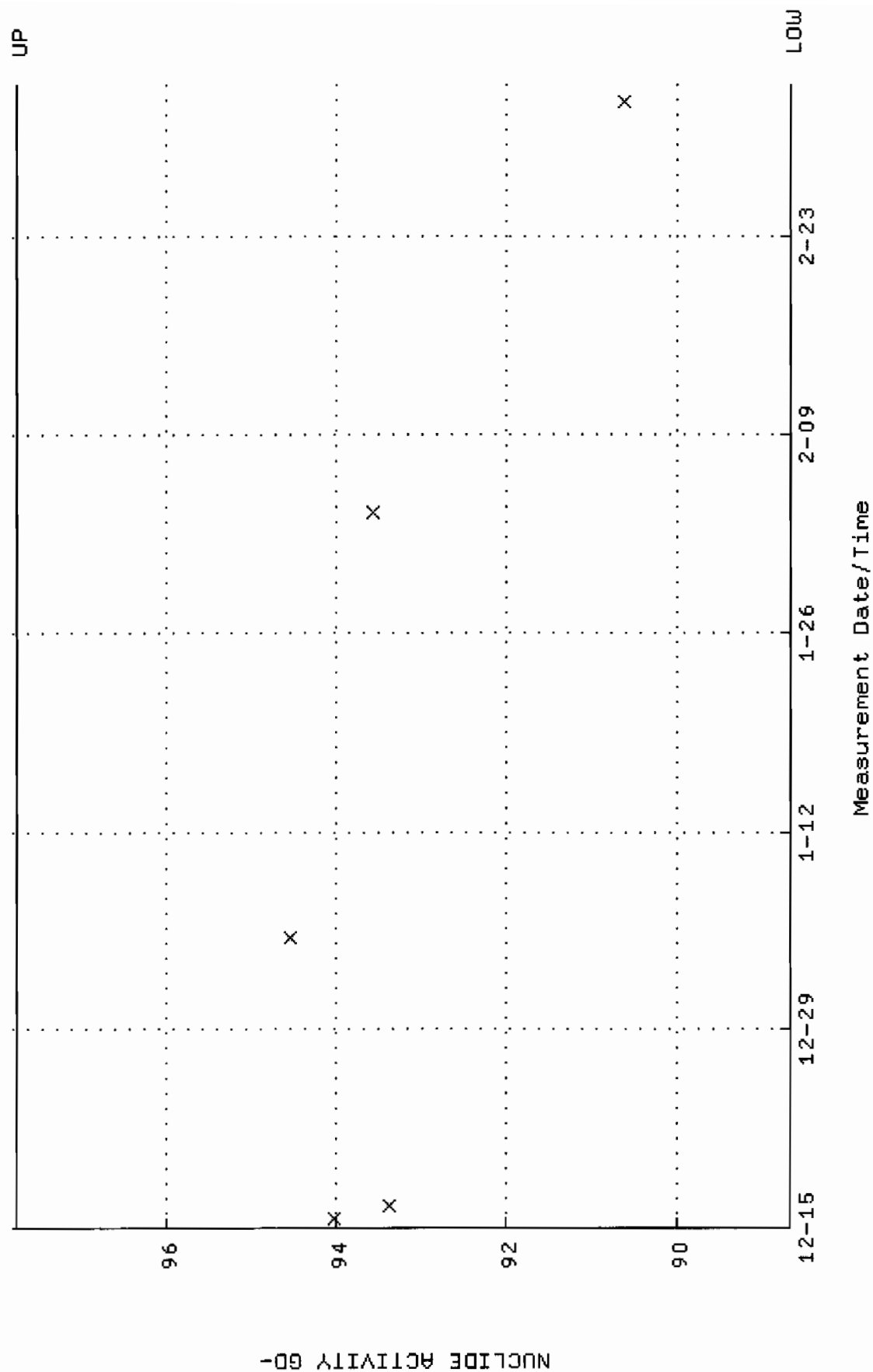
QA filename : DKA100:[ENV_ALPHA.QA.B]B004.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



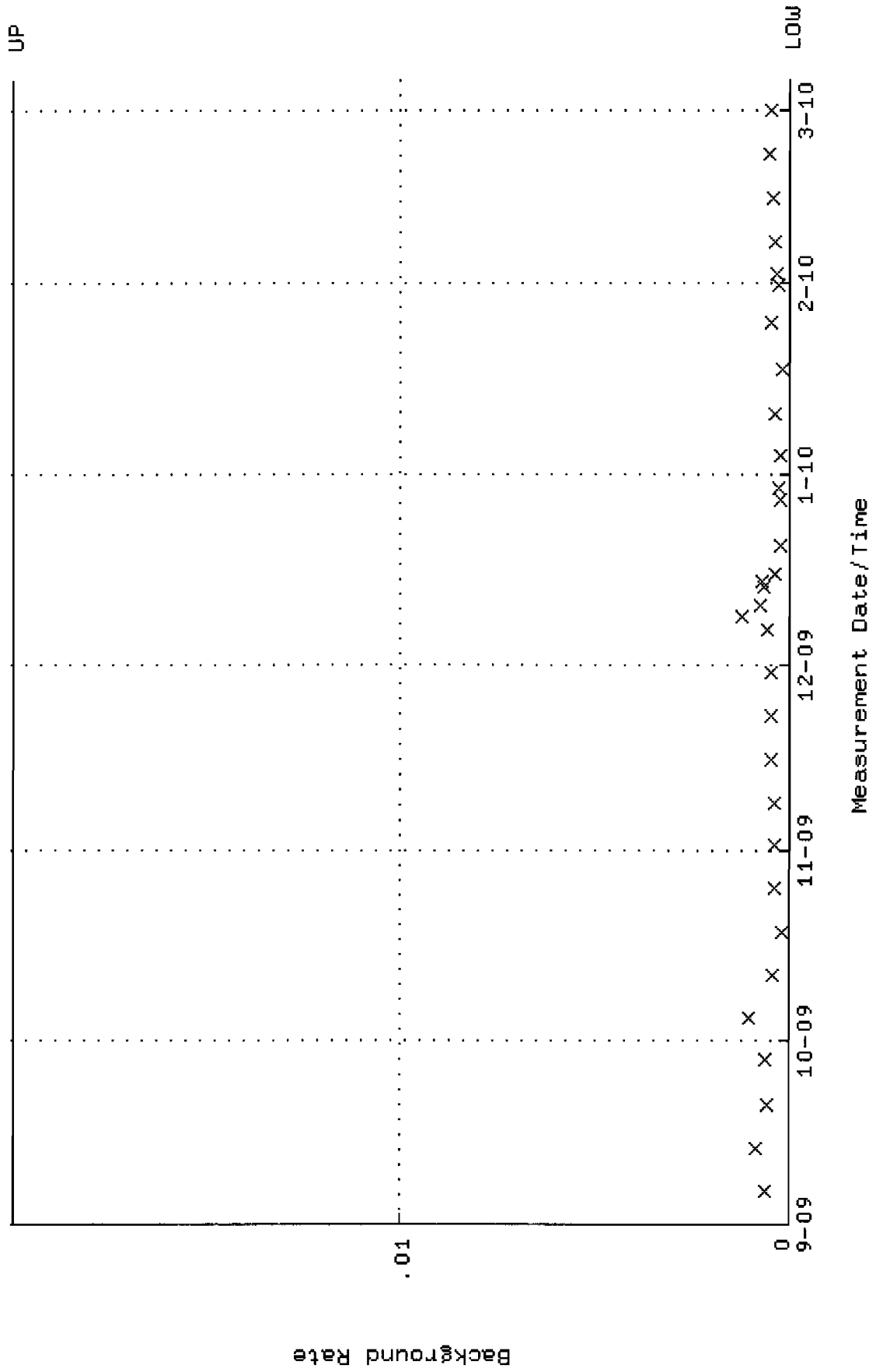
QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.302314 through 0.344088



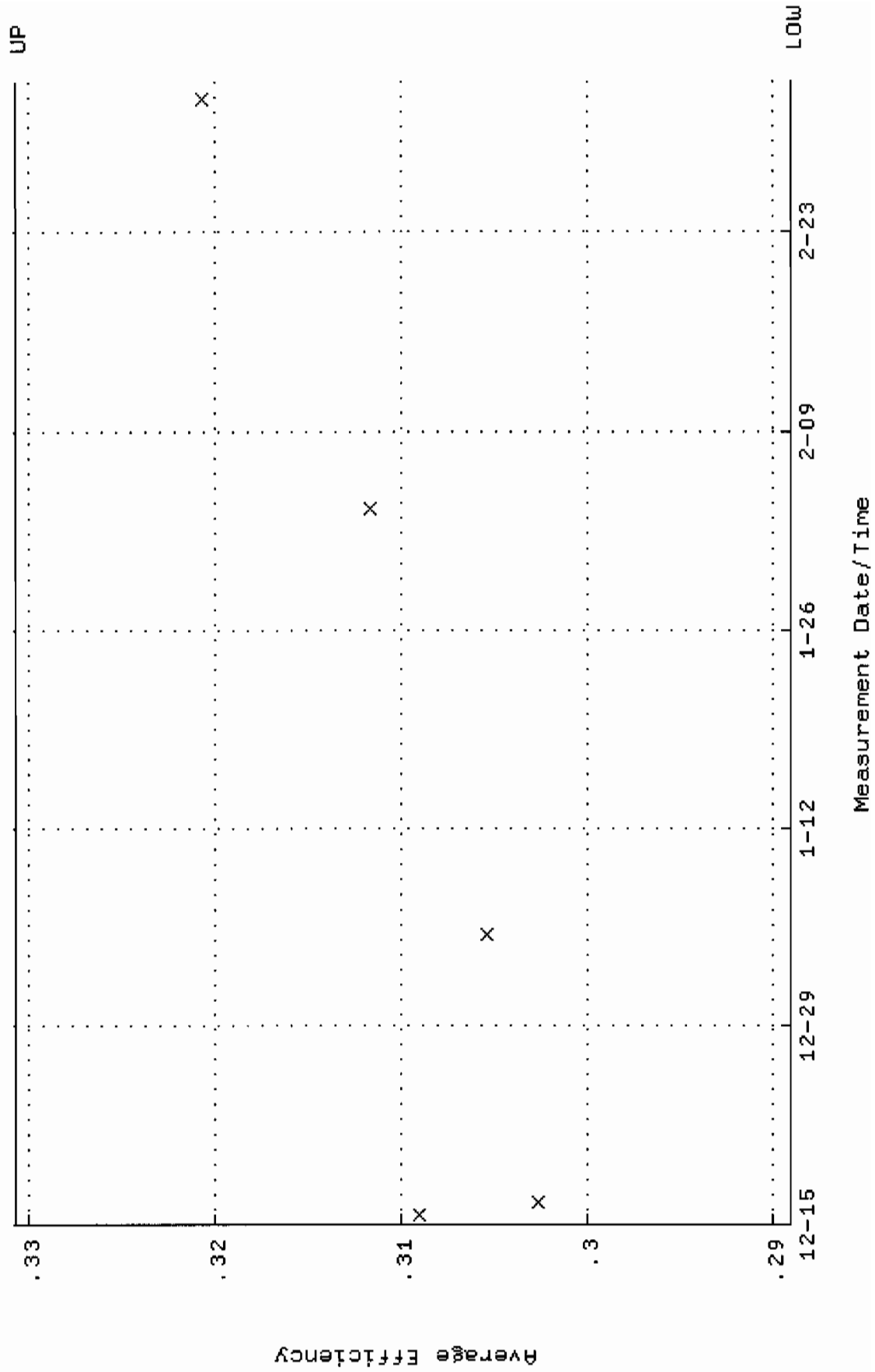
QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;6
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.6685 through 97.7693



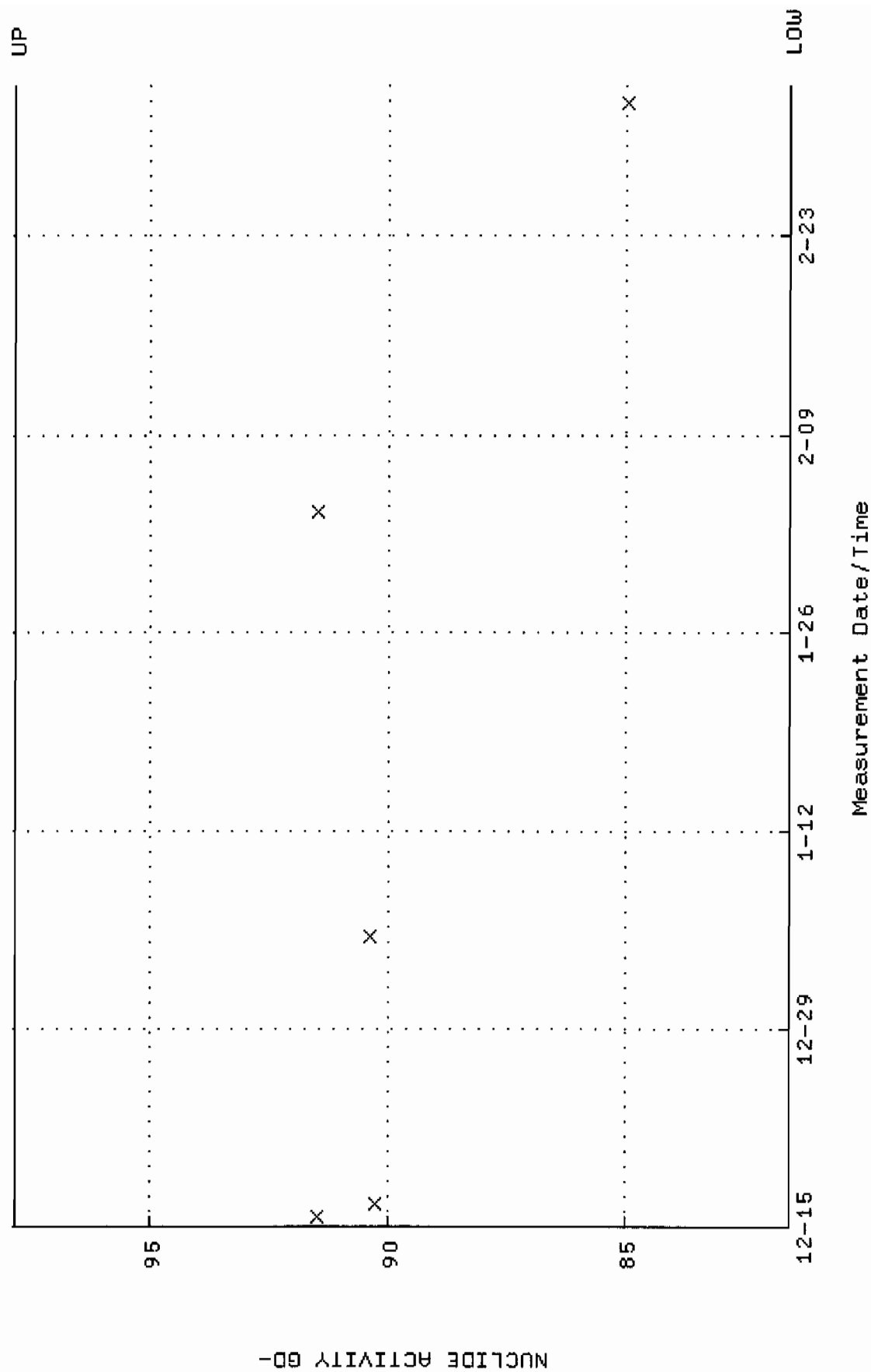
QA filename : DKA100:[ENV_ALPHA.QA.B]B005.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



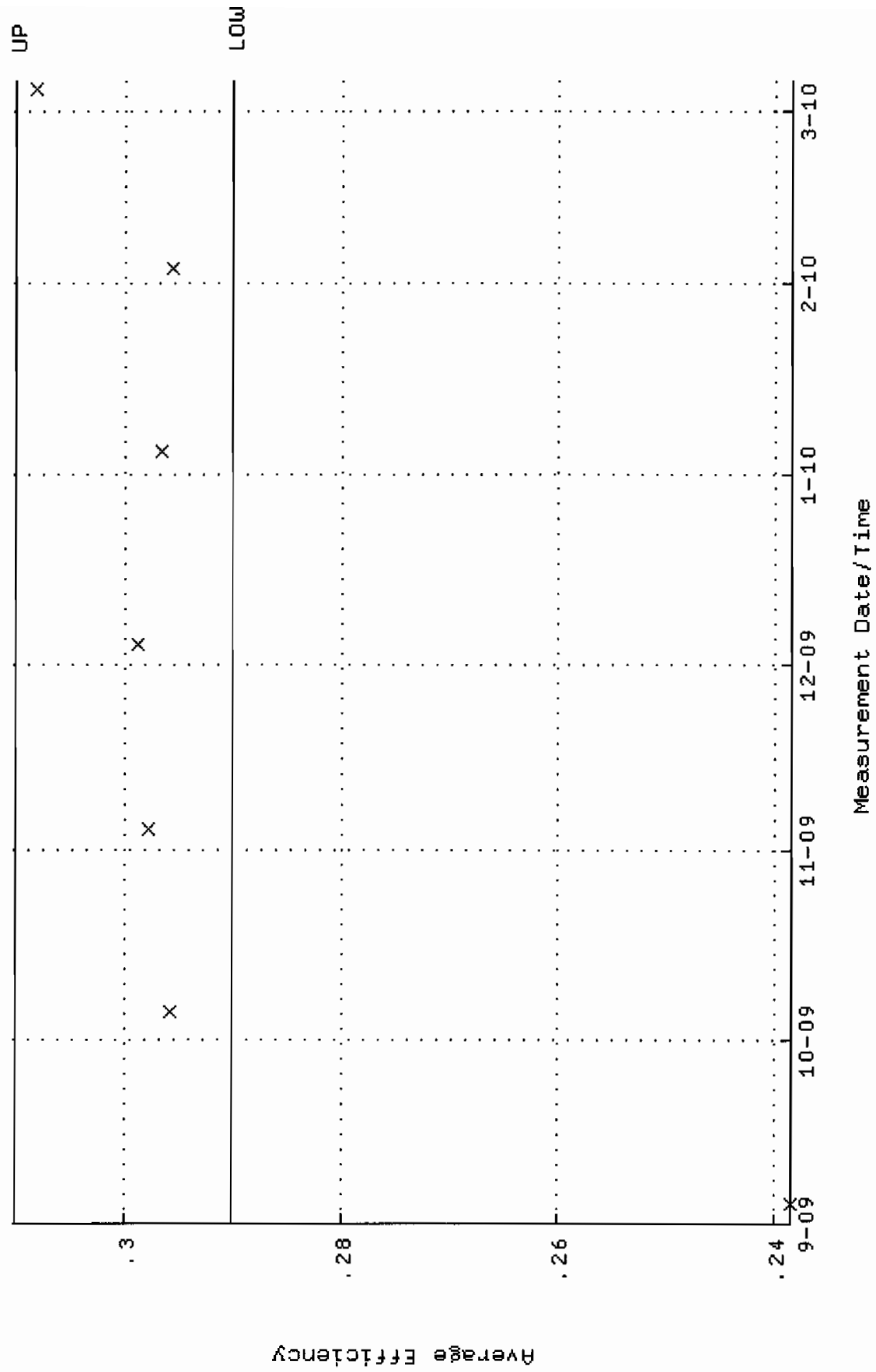
QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.288996 through 0.330714



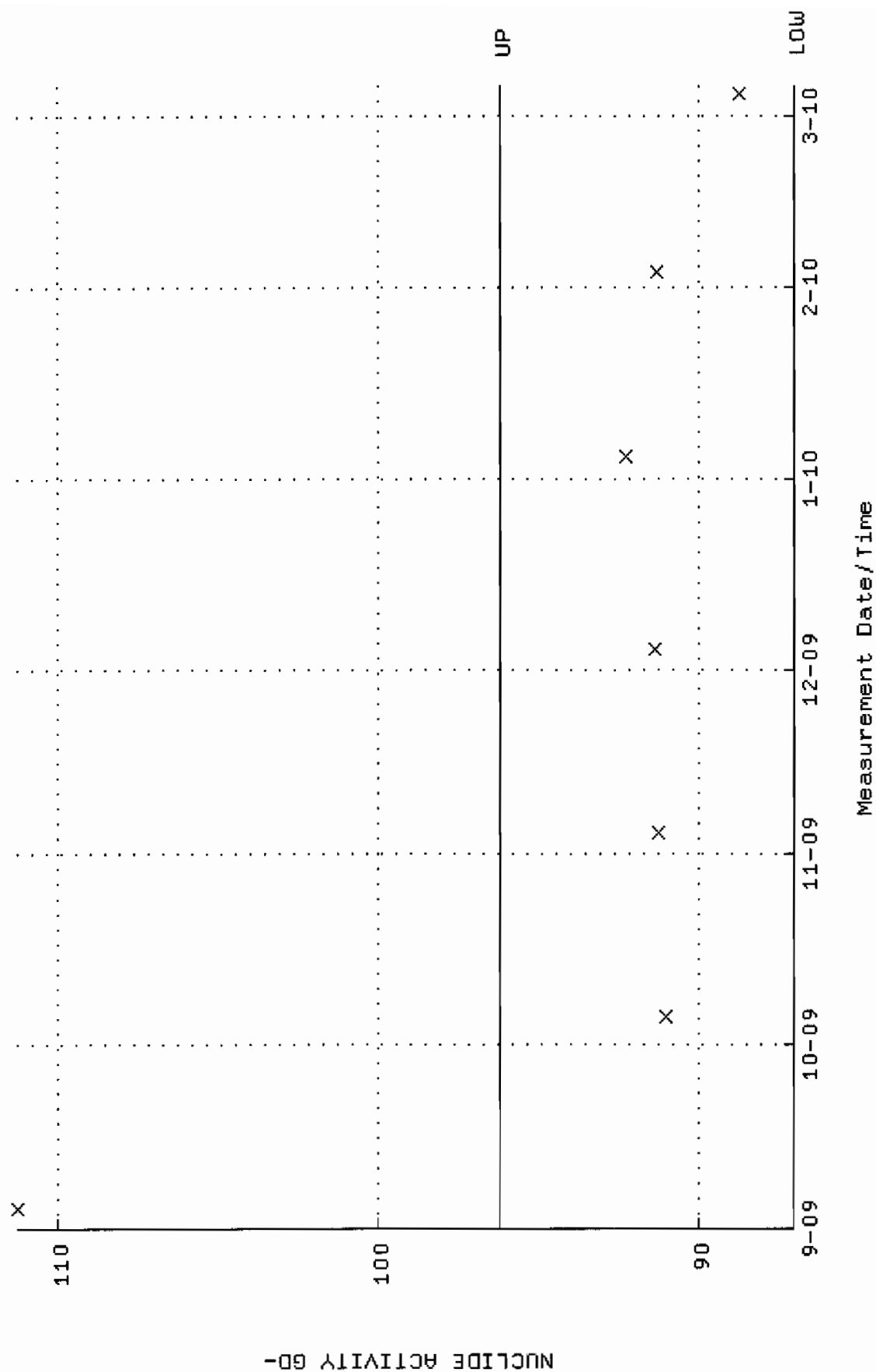
QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF;6
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5567 through 97.8515



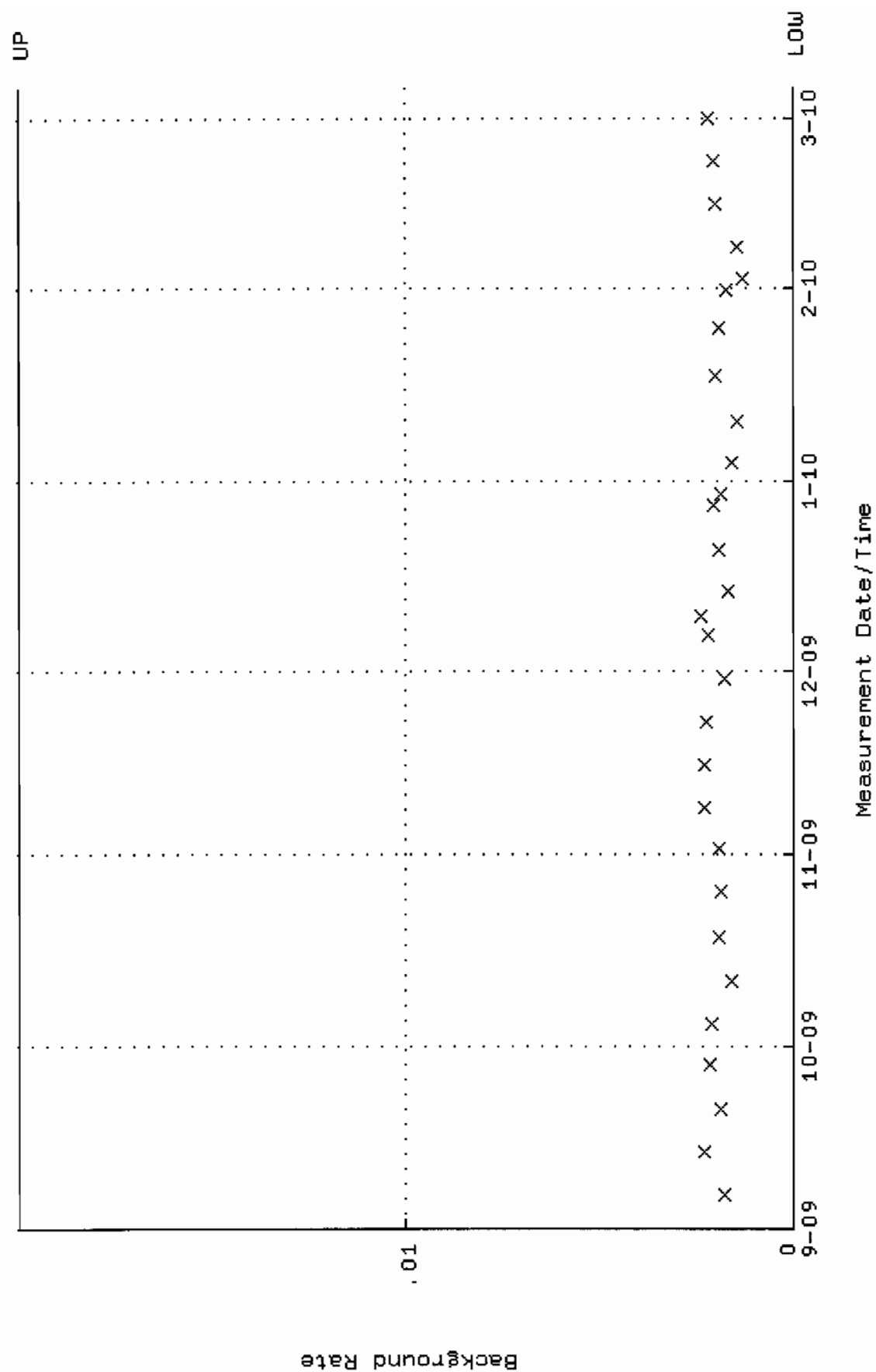
QA filename : DKA100:[ENV-ALPHA.QA.W]W007.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.290108 through 0.310108



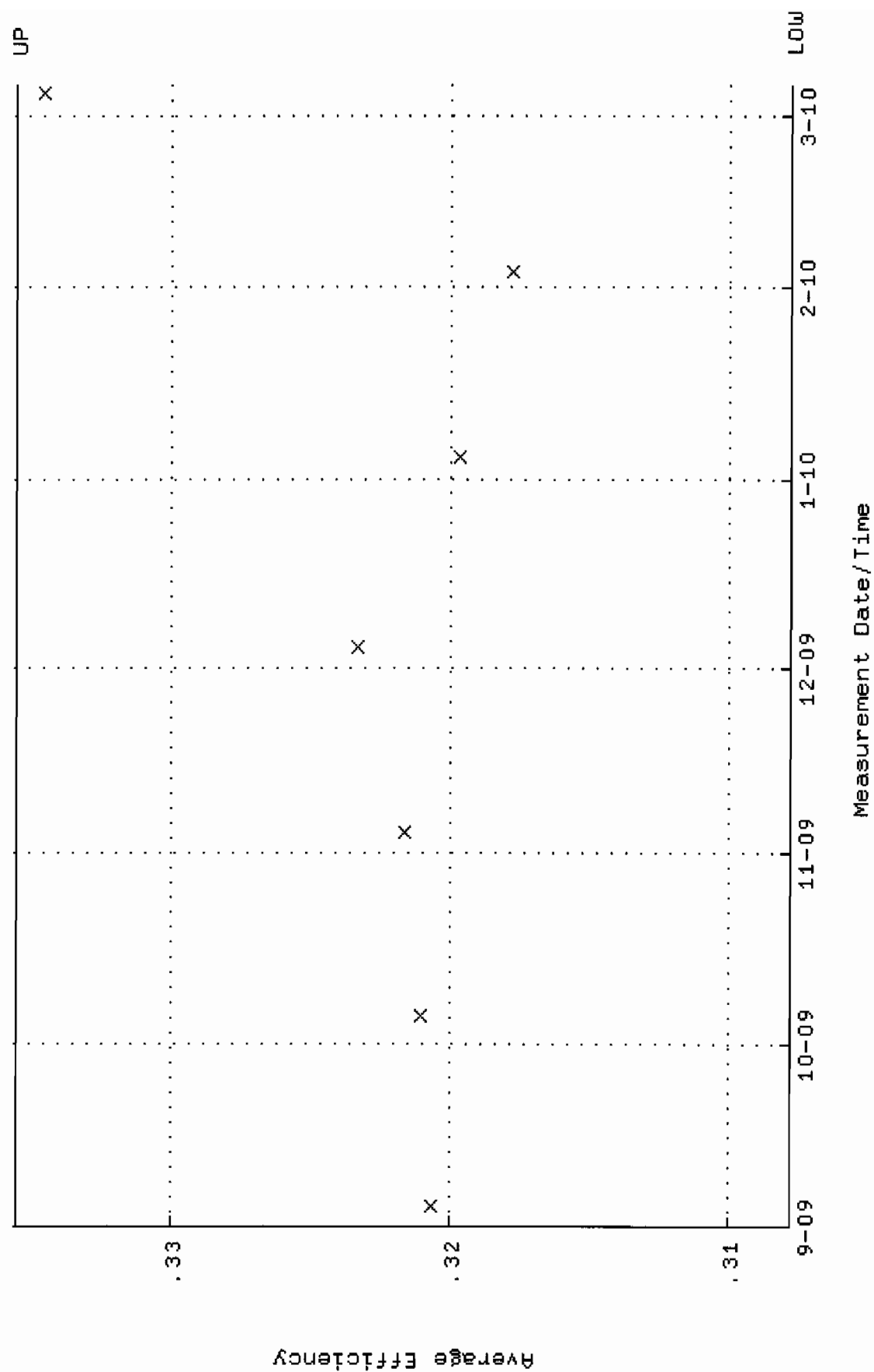
QA filename : DKA100:[ENV_ALPHA.QA.W]W007.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.0687 through 96.2339



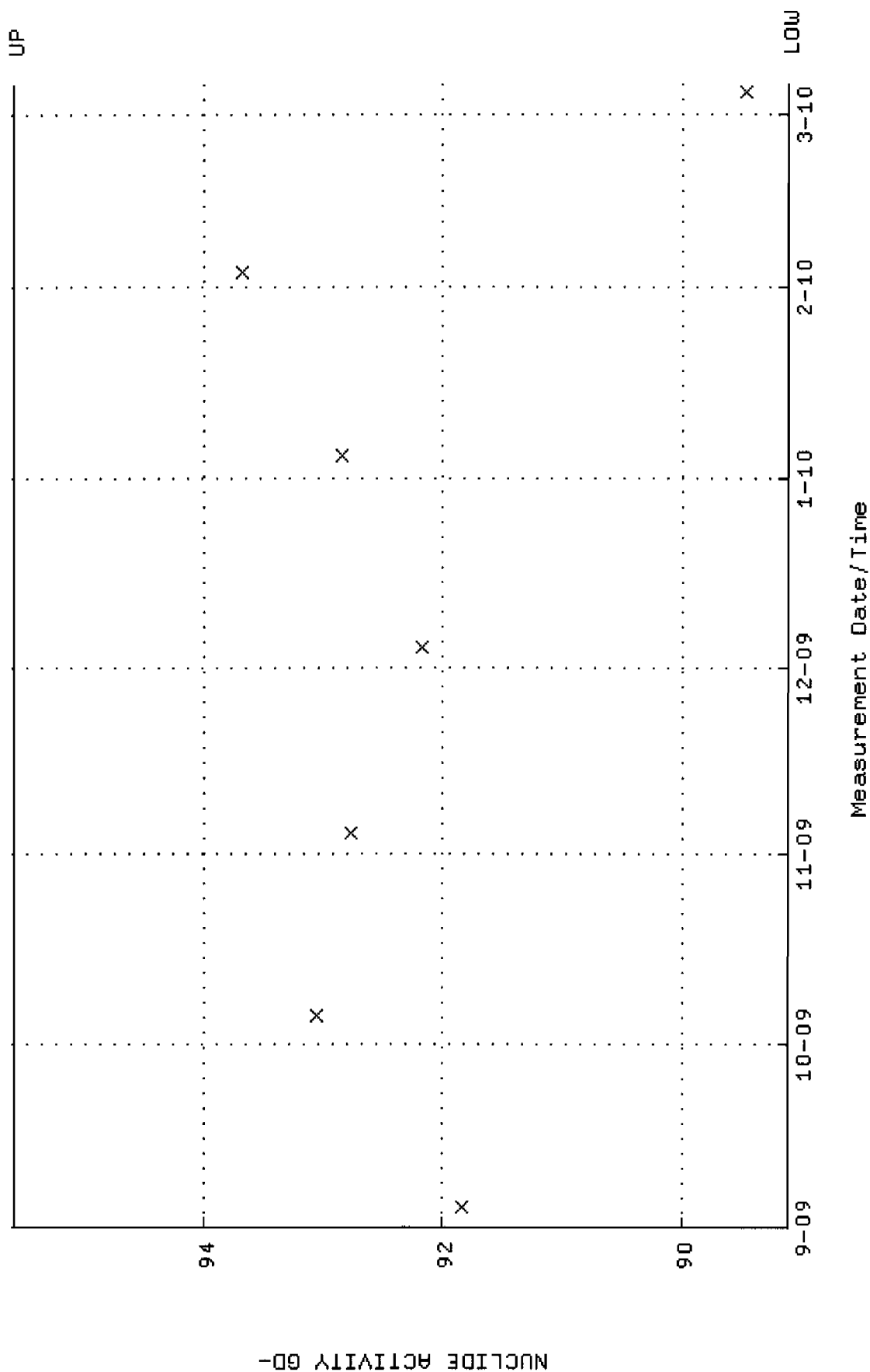
QA filename : DKA100:[ENV_ALPHA.QA.B]B007.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



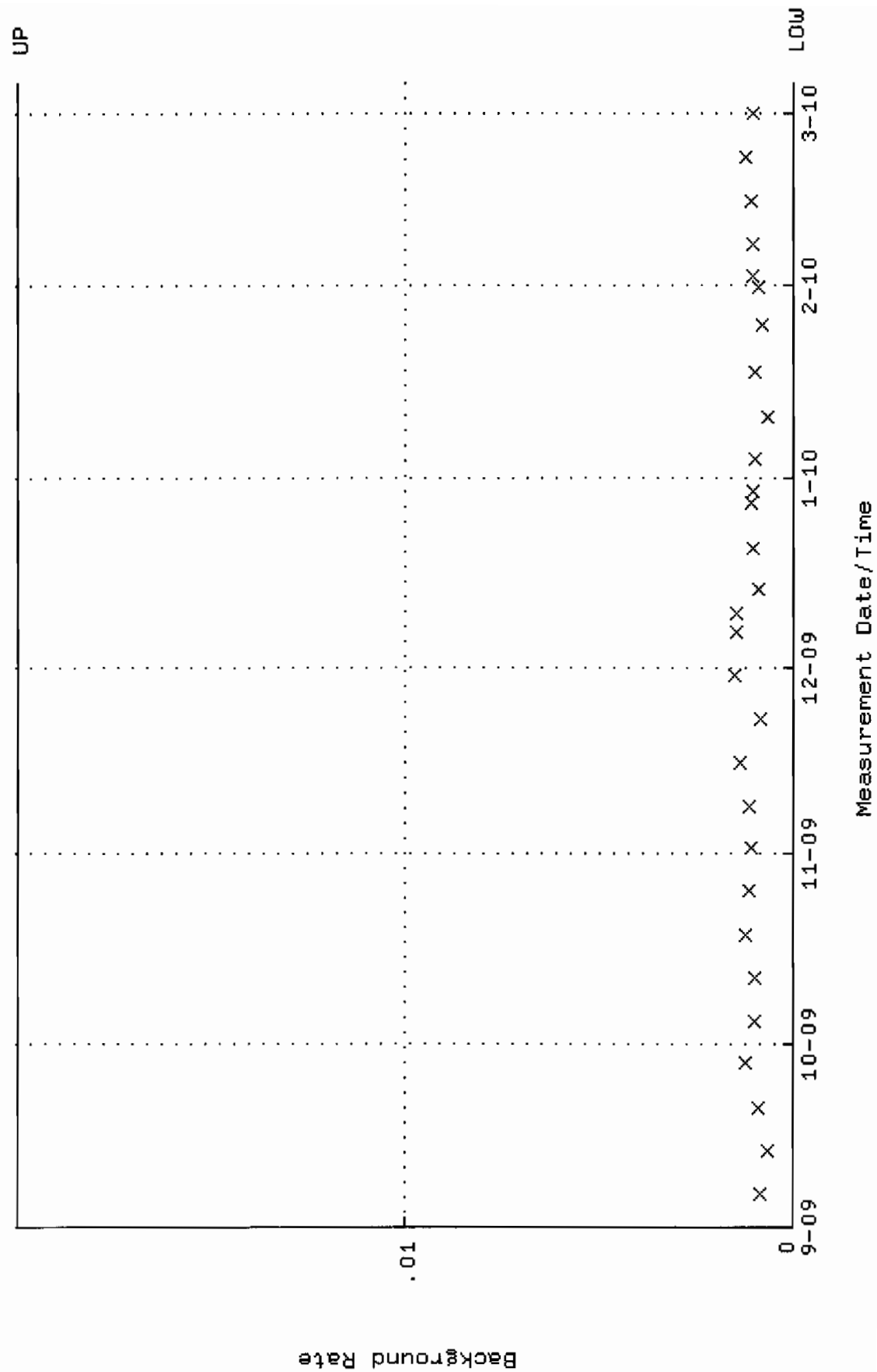
QA filename : DKA100:[ENV_ALPHA.QA.W]W008.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
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 Lower/Upper Lmts: 0.307754 through 0.335576



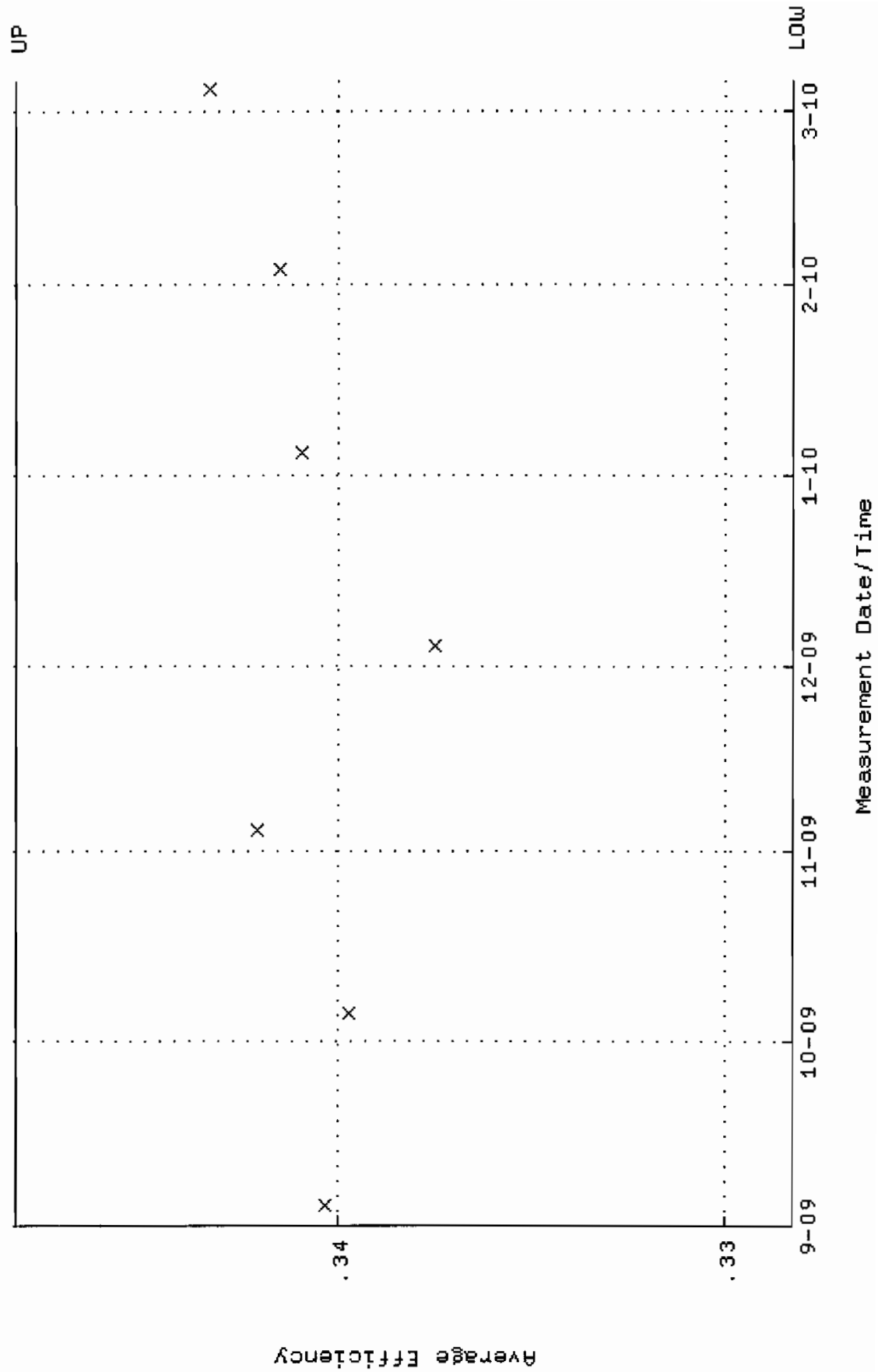
QA filename : DKA100:[ENV_ALPHA.QA.W]W008.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1115 through 95.5851



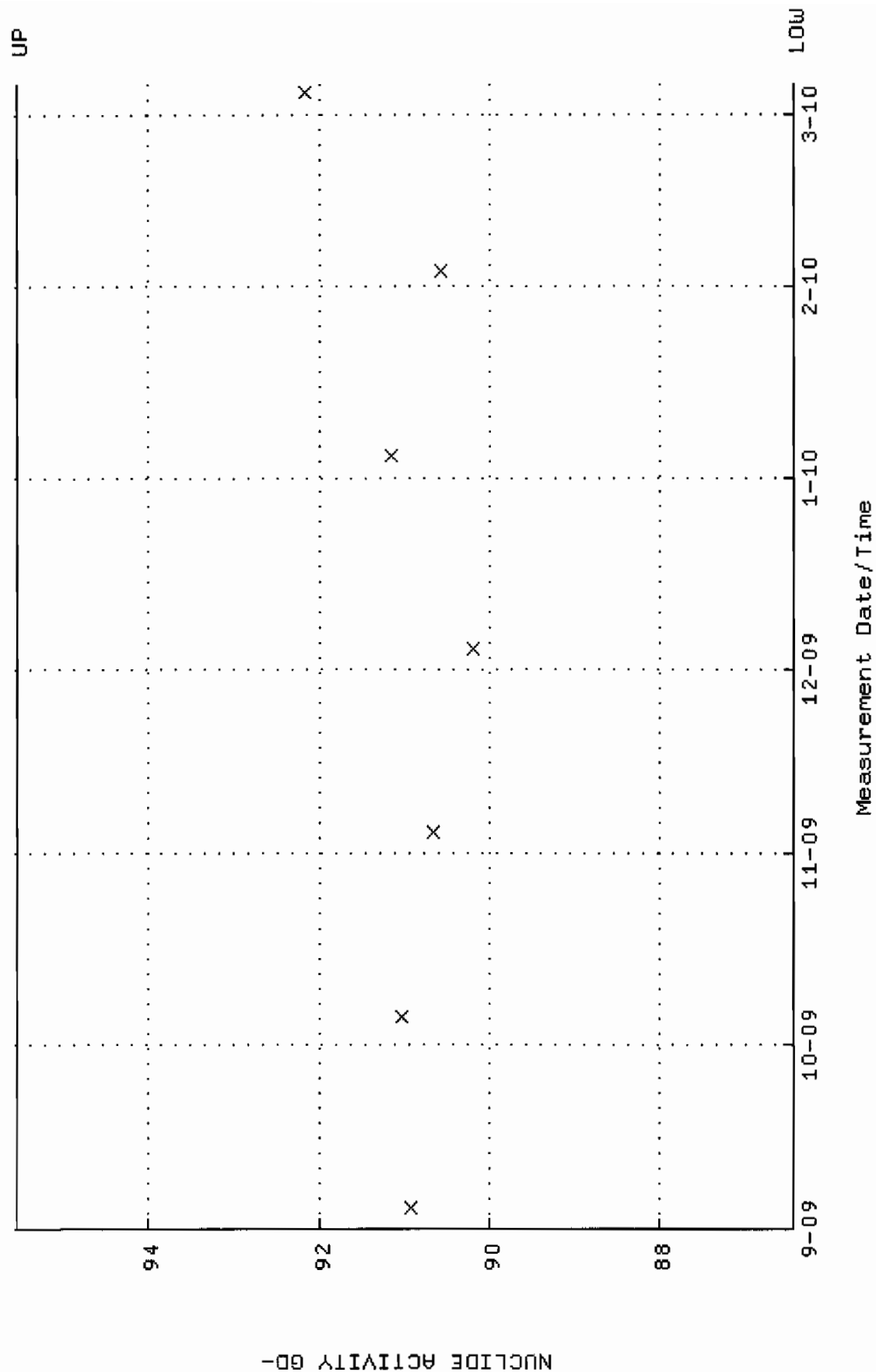
QA filename : DKA100:[ENV_ALPHA.QA.B]B008.QAF;1
 Parameter Name : BACKRATE (Background Rate)
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



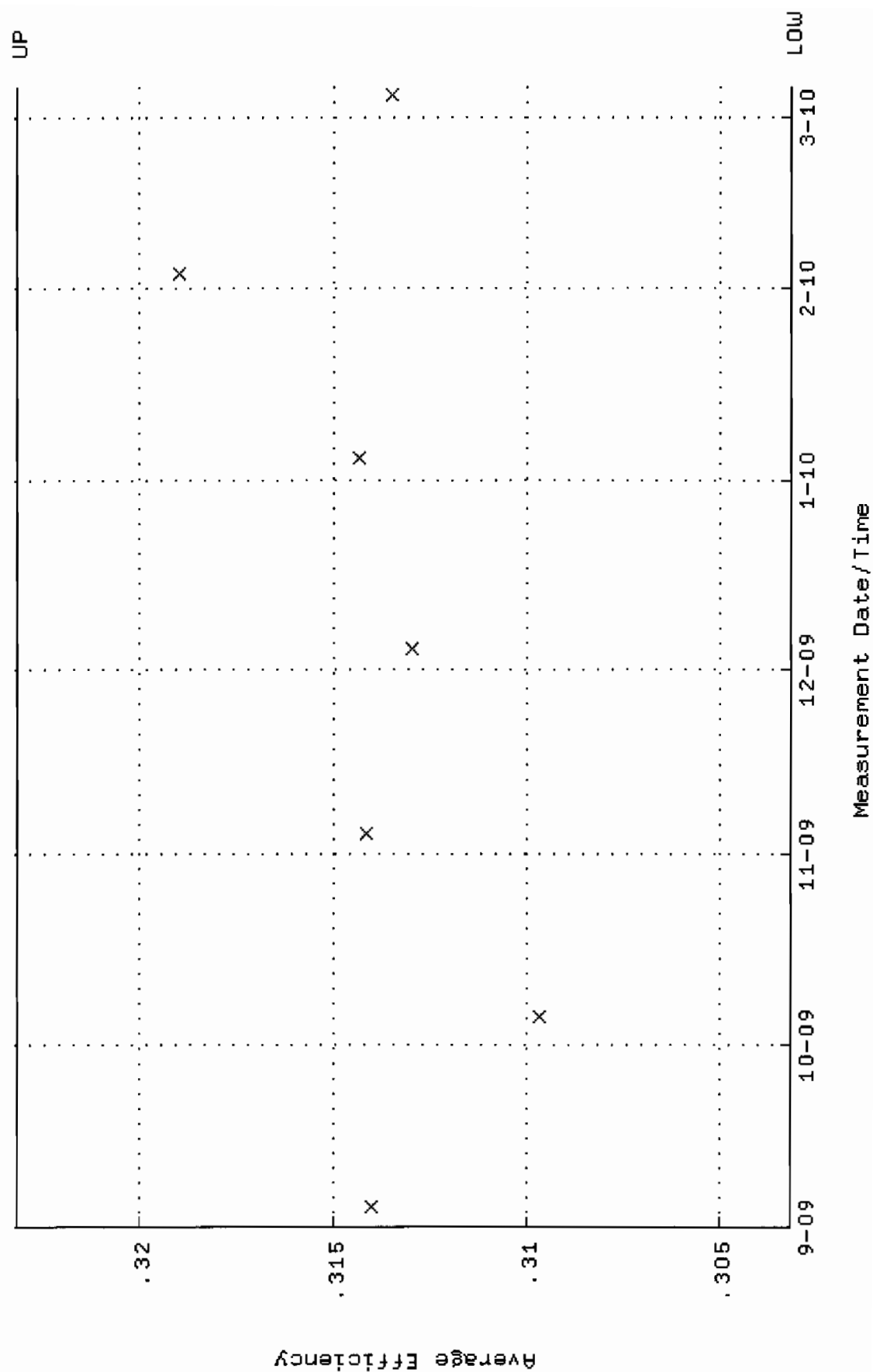
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 Parameter Name : AVRGEFF (Average Efficiency)
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 Lower/Upper Lmts: 0.328261 through 0.348261



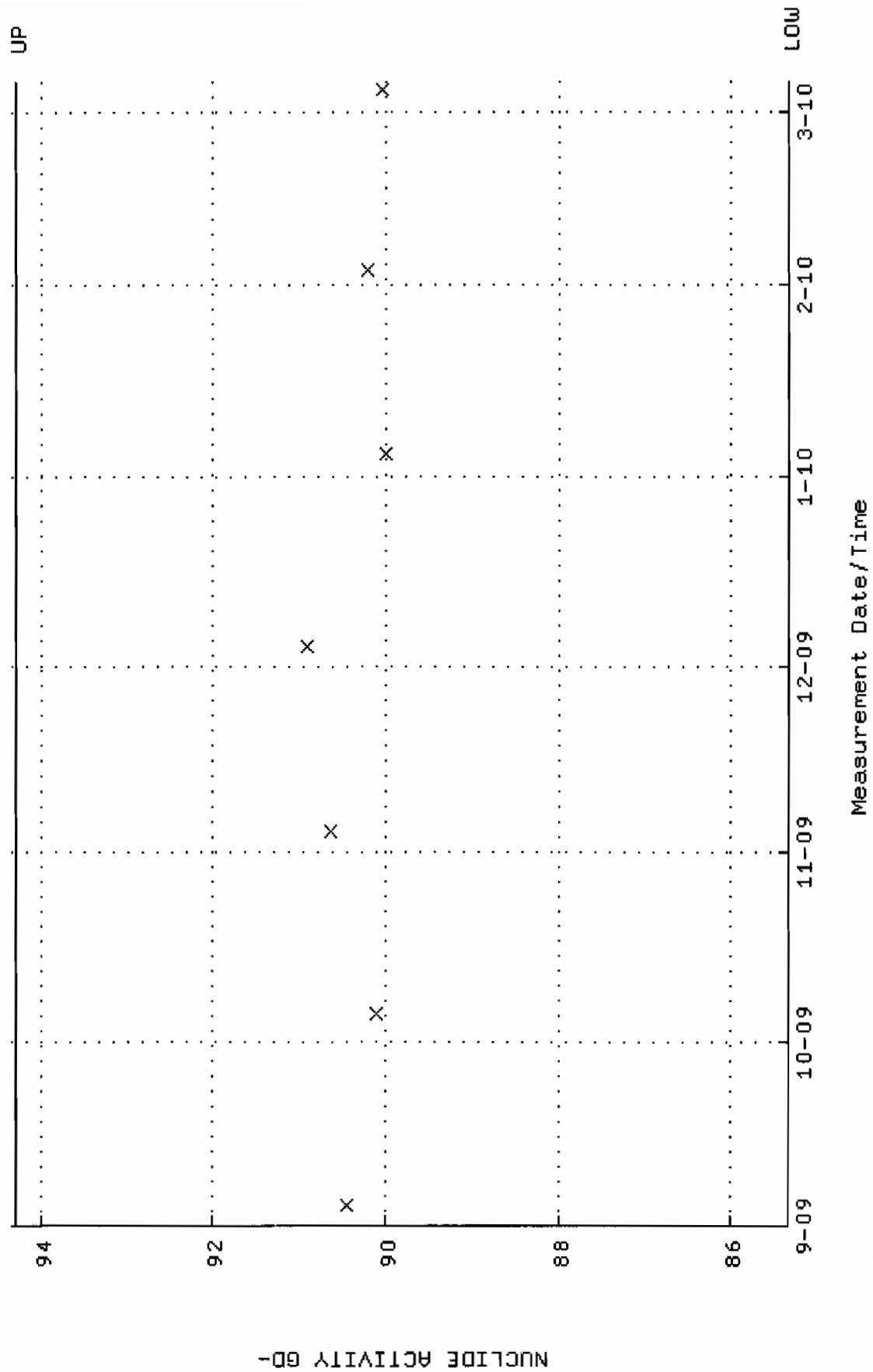
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.4475 through 95.5473



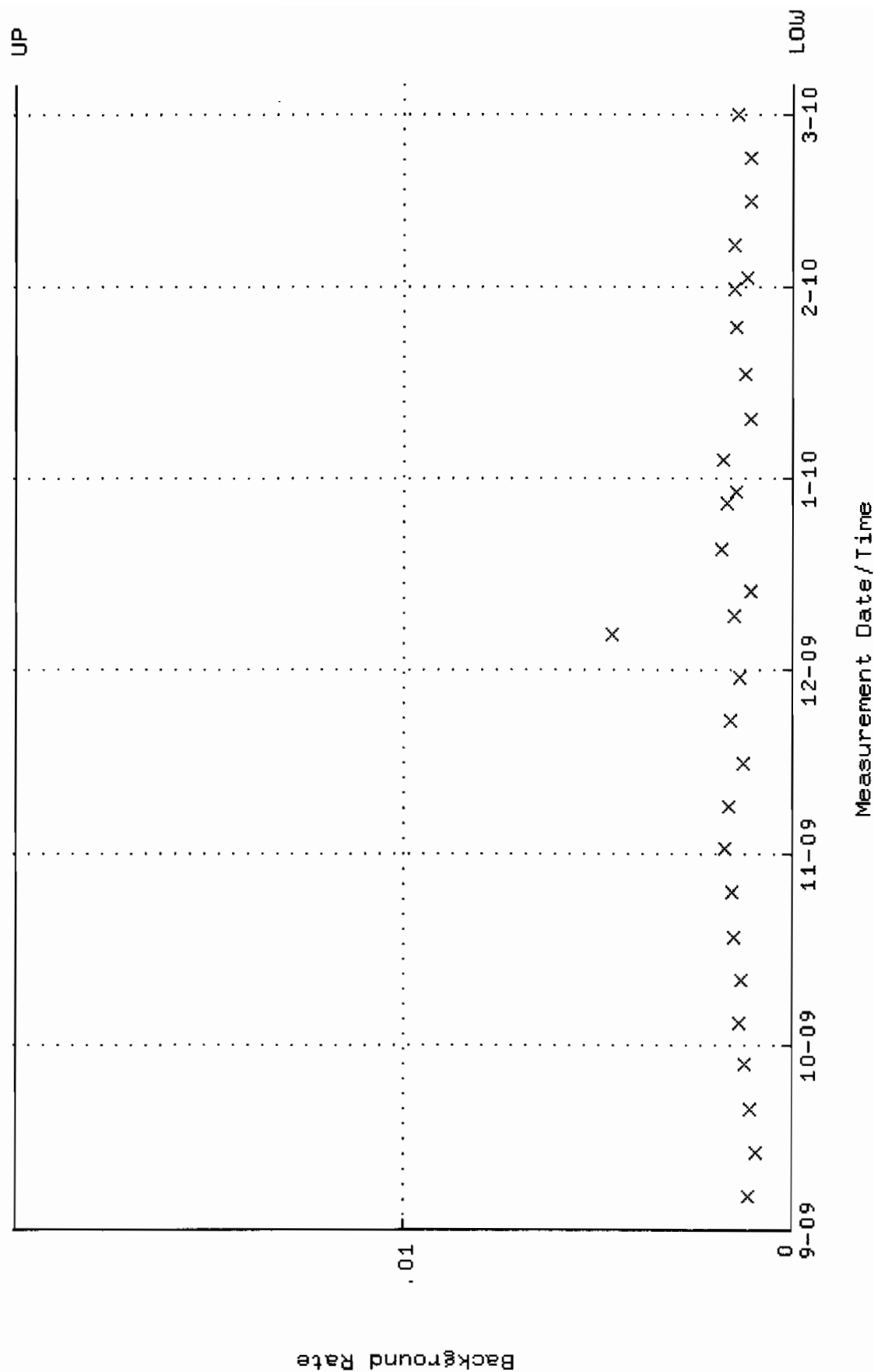
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.303169 through 0.323169



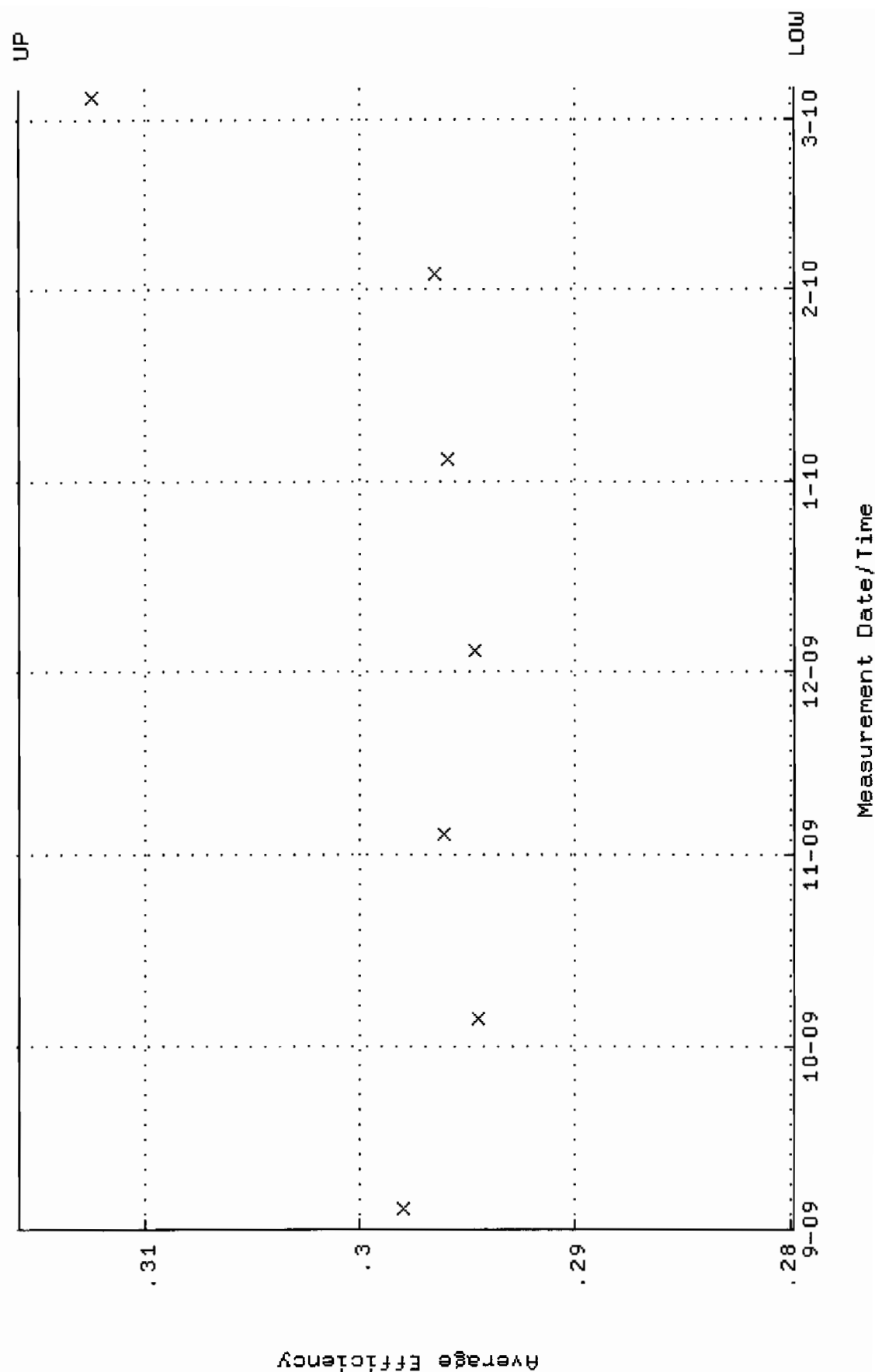
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.3273 through 94.3091



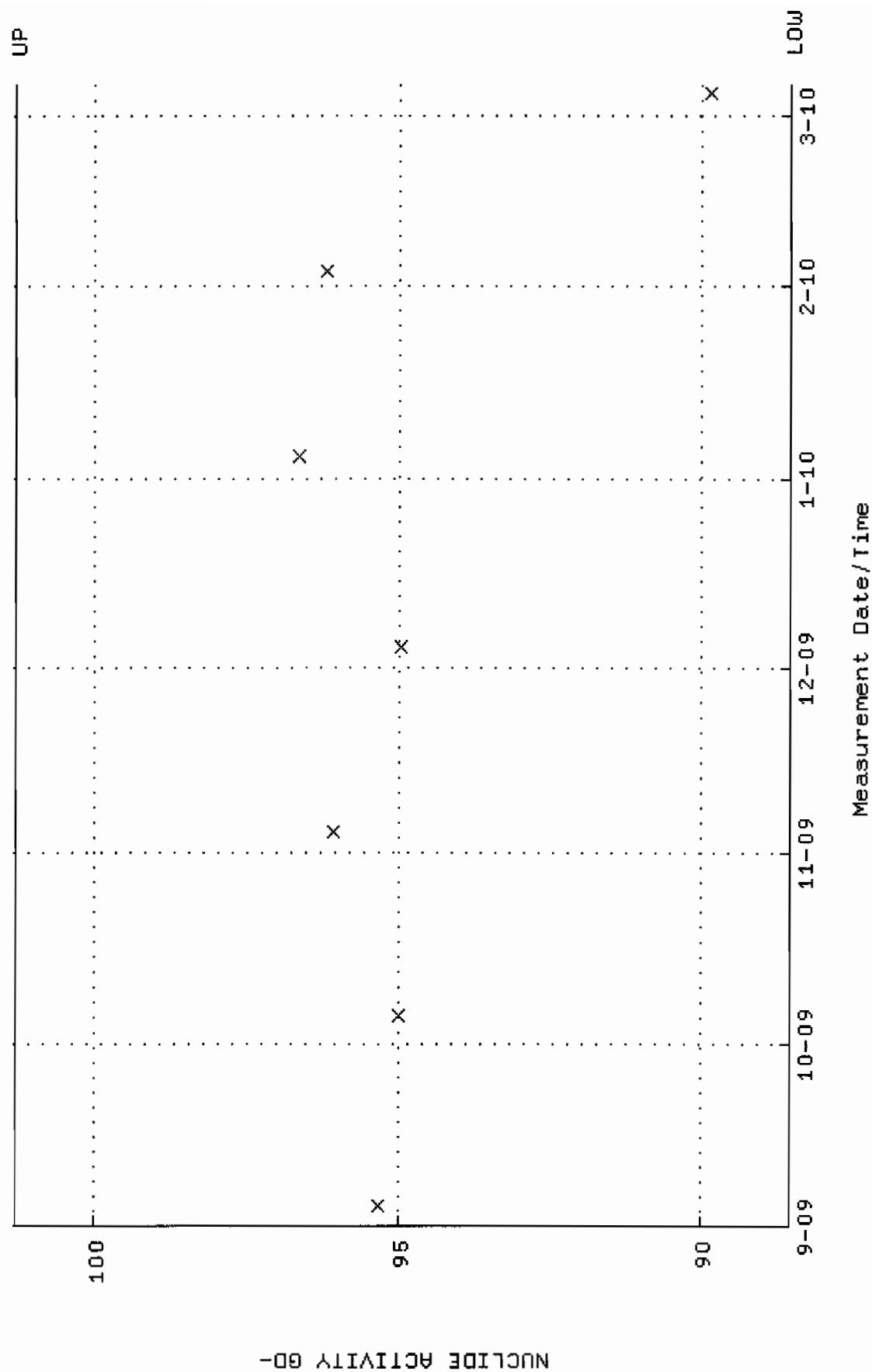
QA filename : DKA100:[ENV_ALPHA.QA.B]B010.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



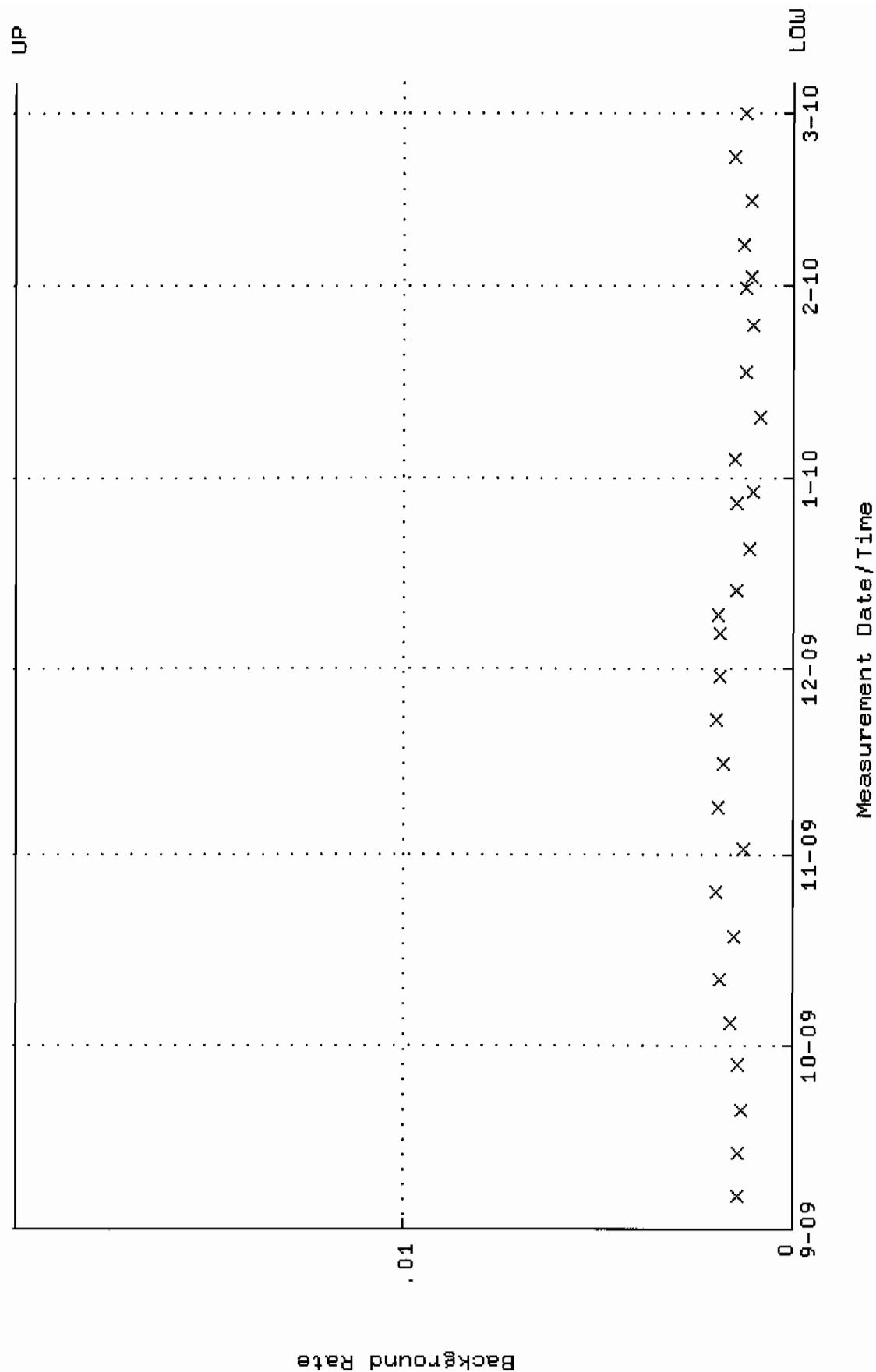
QA filename : DKA100:[ENV_ALPHA.QA.W]W011.QAF; 4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.279805 through 0.315875



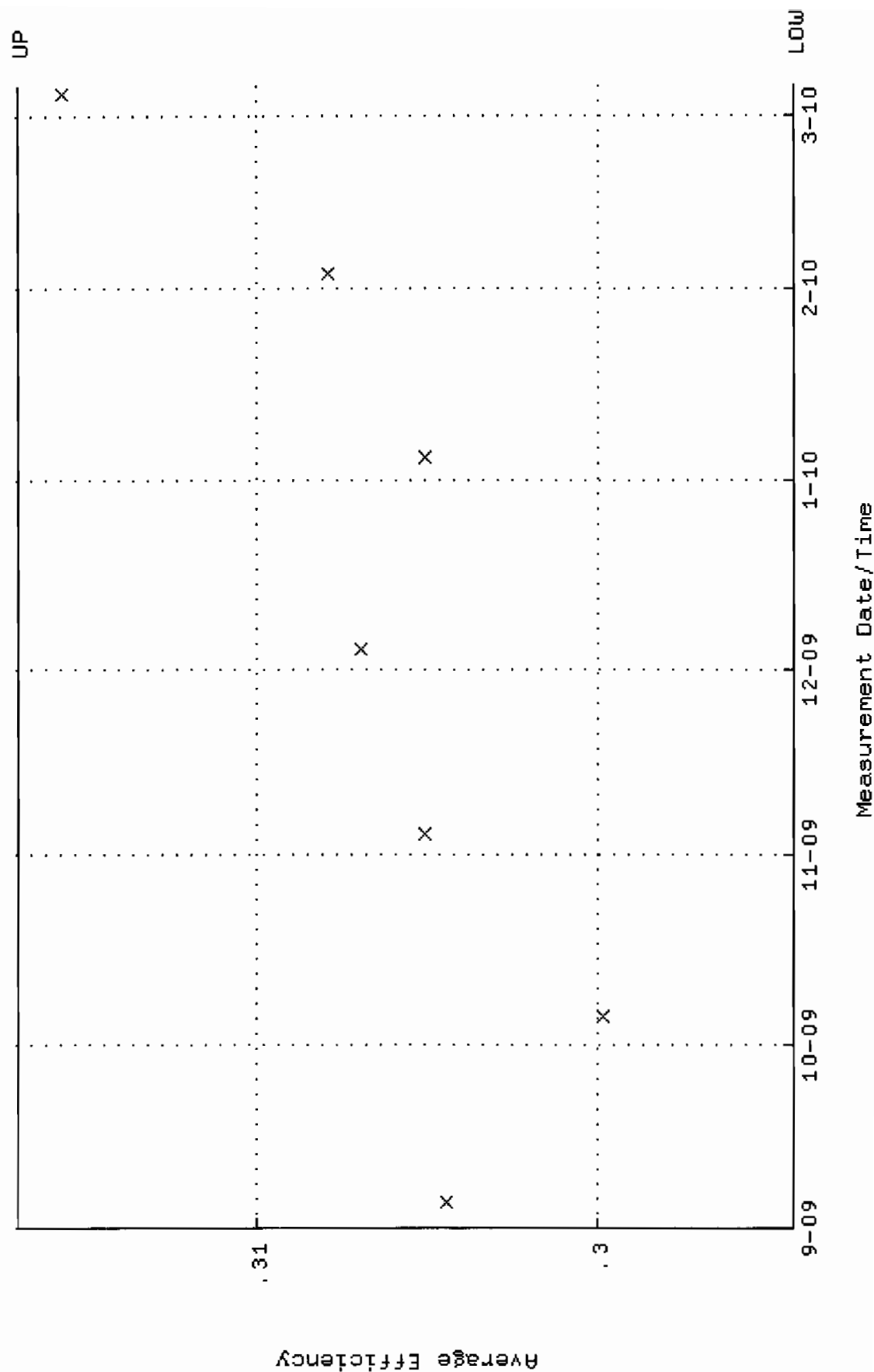
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.5390 through 101.289



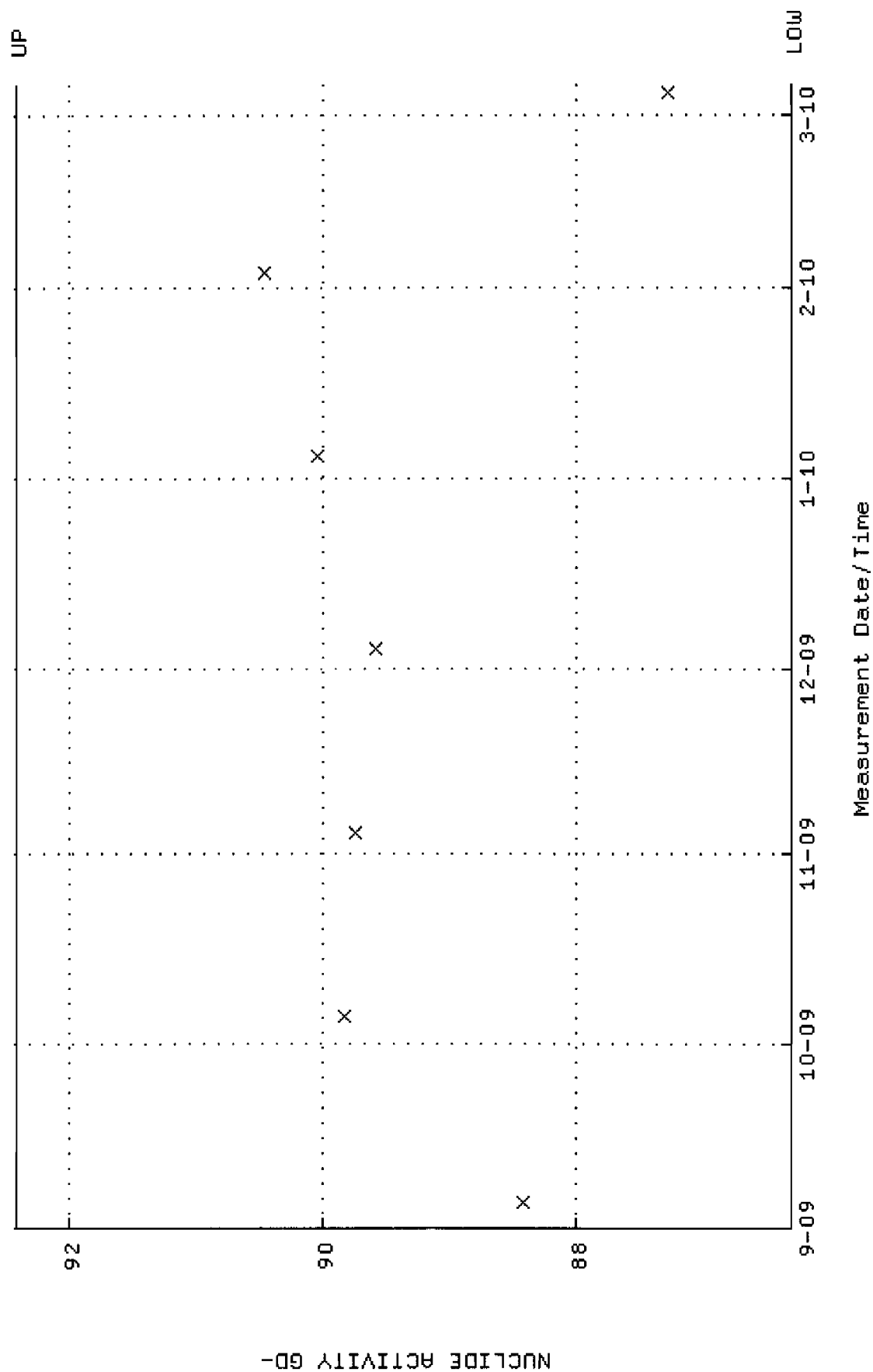
QA filename : DKA100:[ENV_ALPHA.QA.B]B011.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



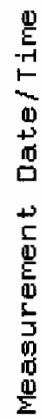
QA filename : DKA100:[ENV_ALPHA.QA.W]W028.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294270 through 0.317026



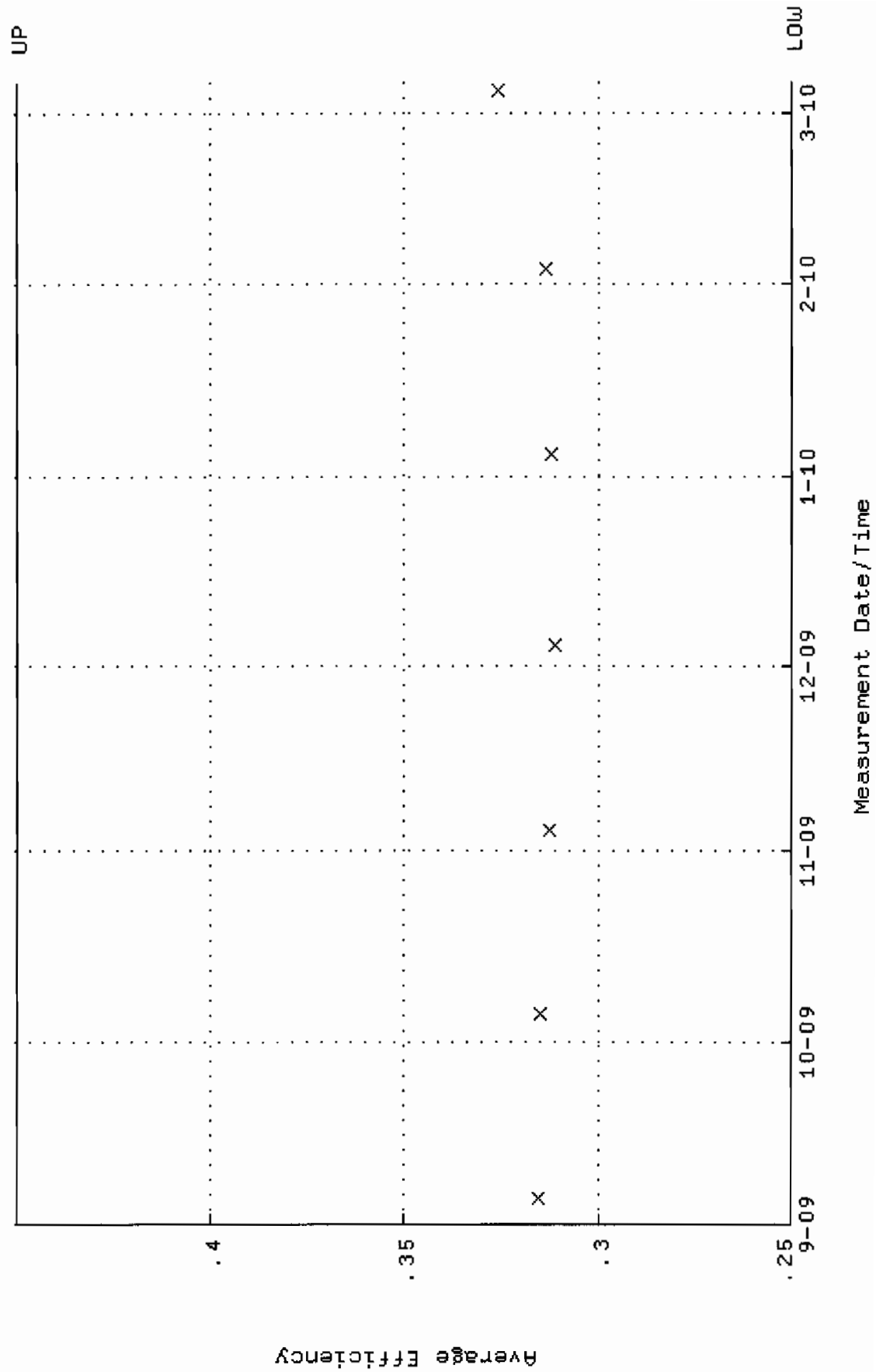
QA filename : DKA100:[ENV_ALPHA.QA.W]W028.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.3036 through 92.4168



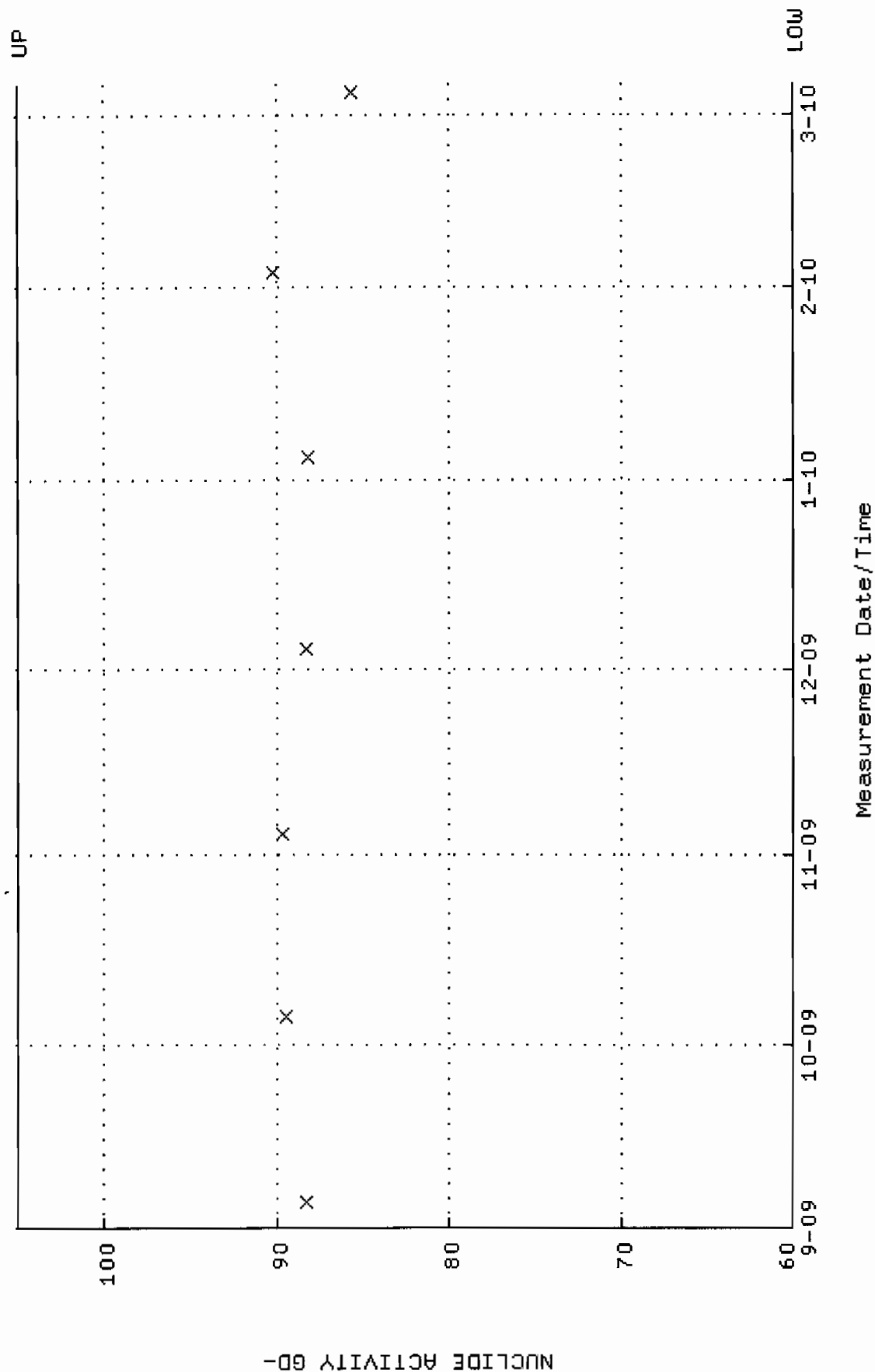
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



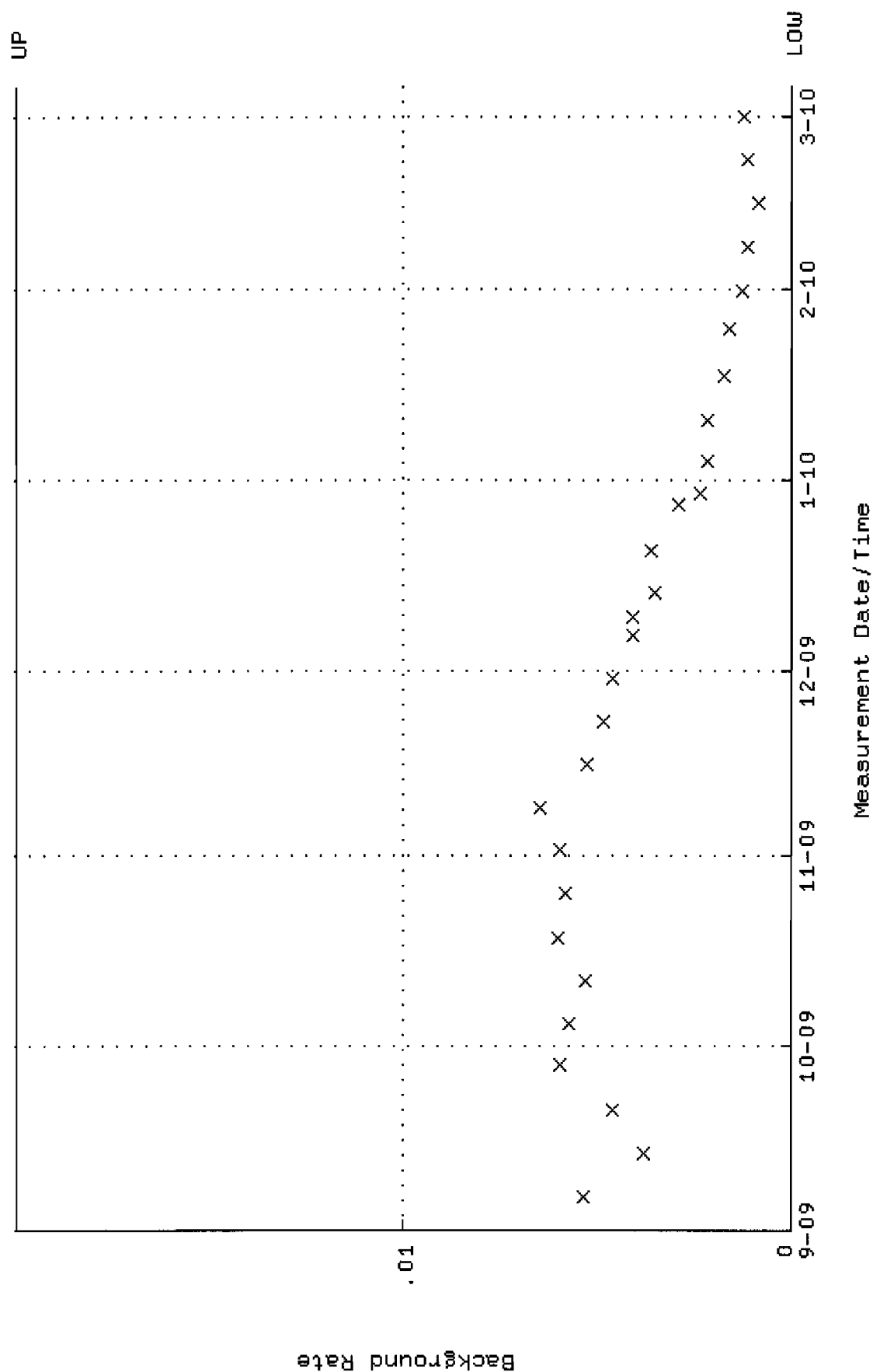
QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



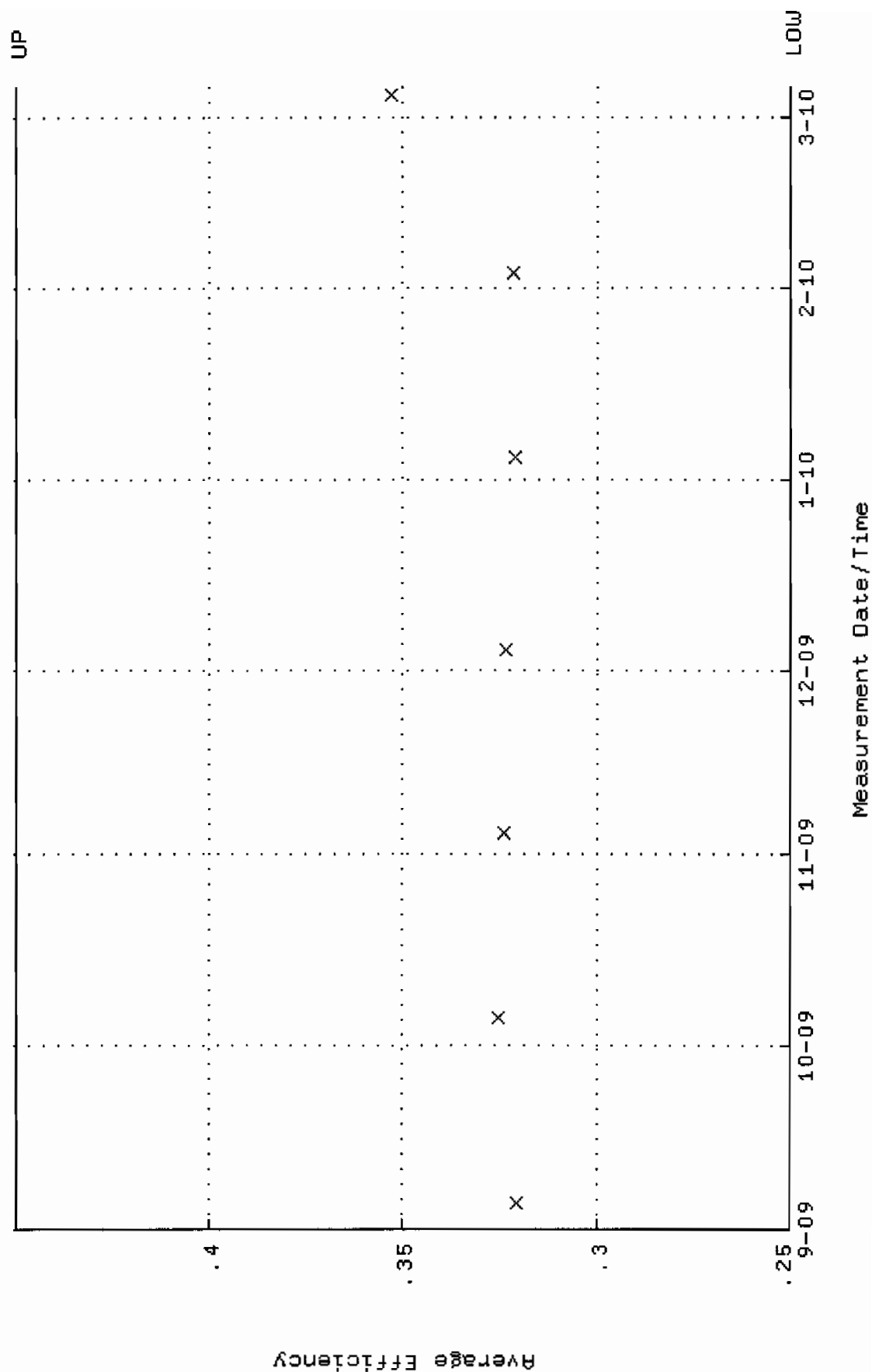
QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000



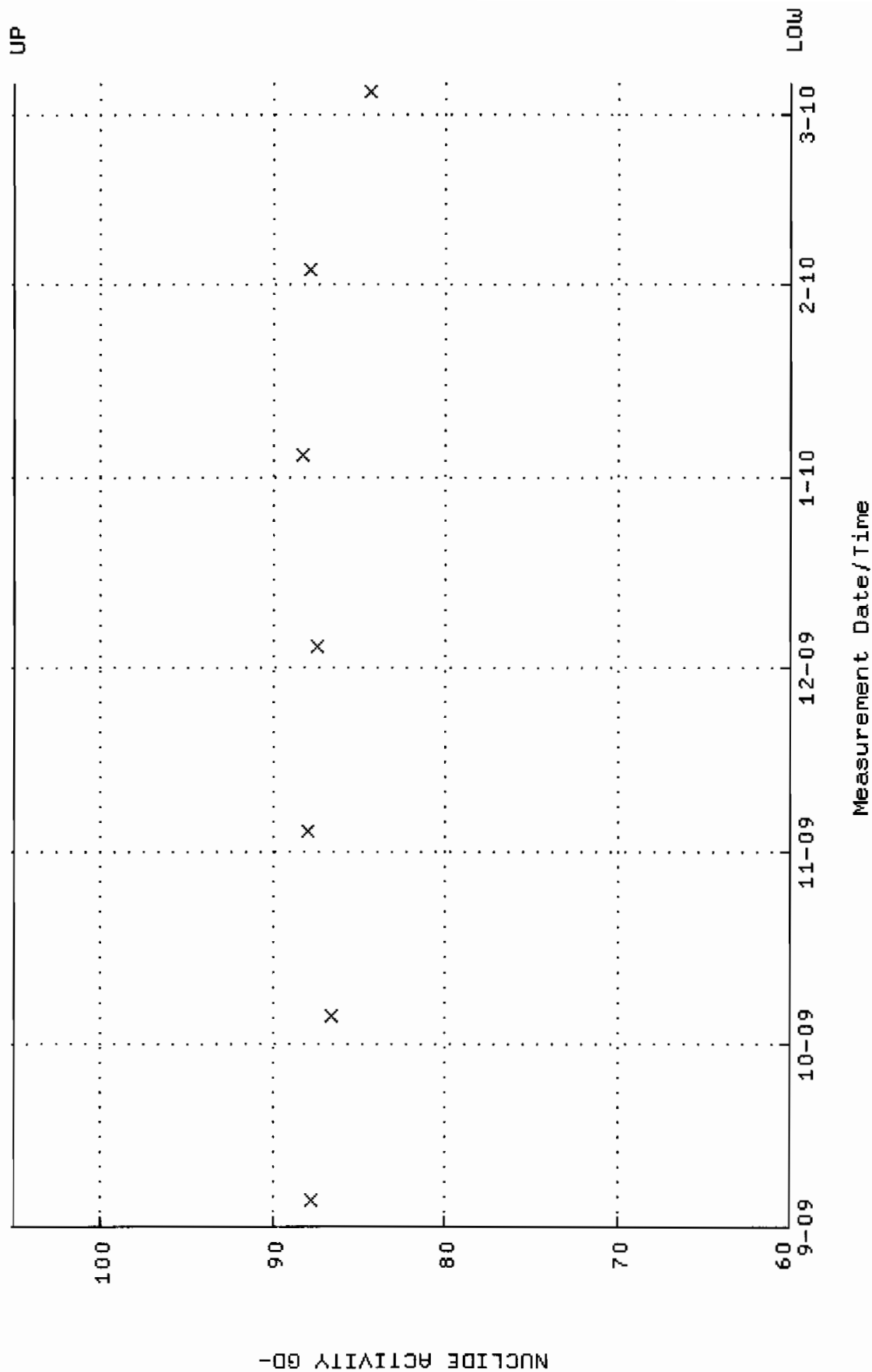
QA filename : DKA100:[ENV_ALPHA.QA.B]B029.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



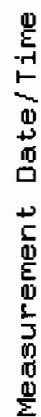
QA filename : DKA100:[ENV_ALPHA.QA.W]W030.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



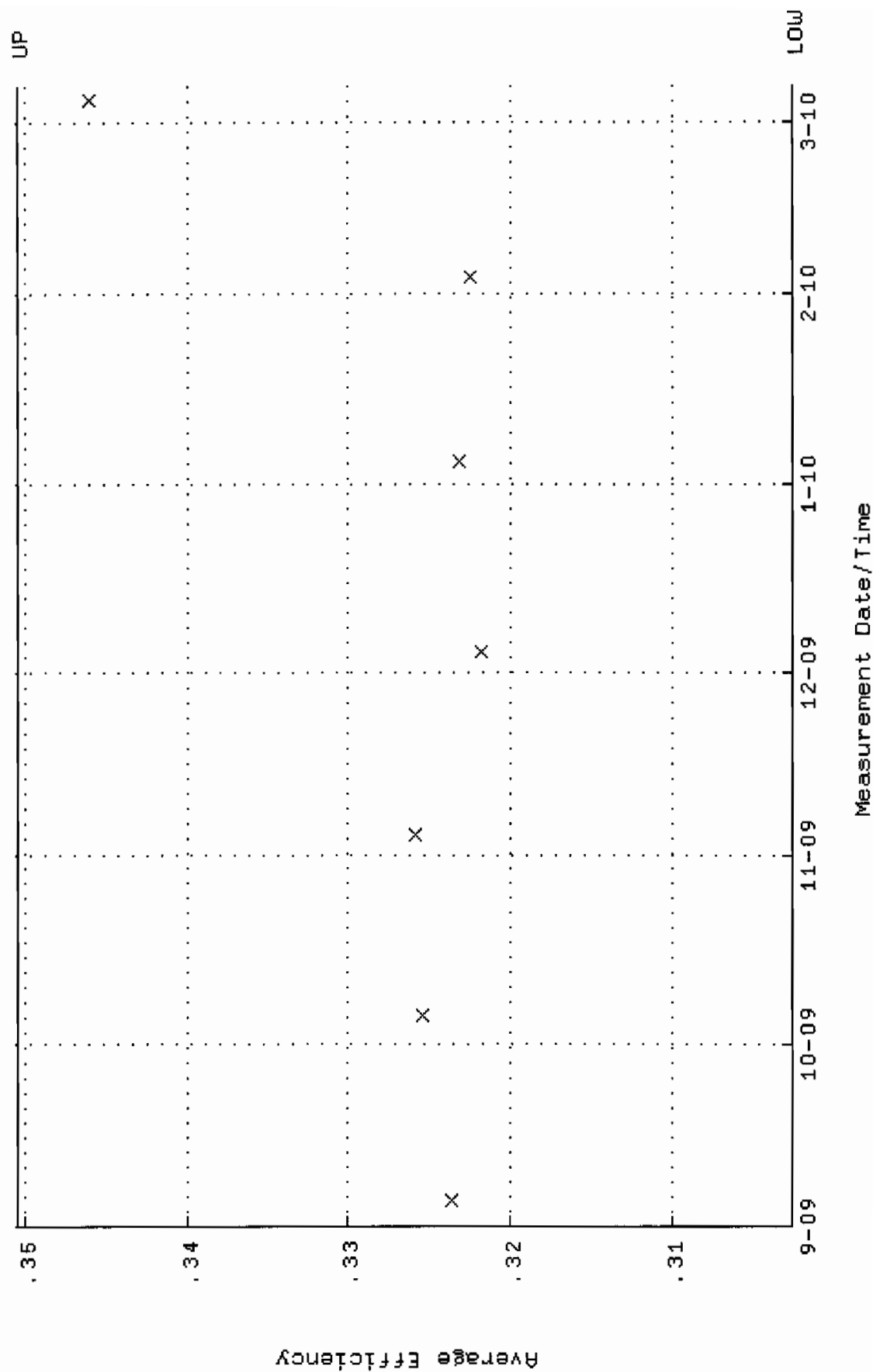
QA filename : DKA100:[ENV_ALPHA.QA.W]W030.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



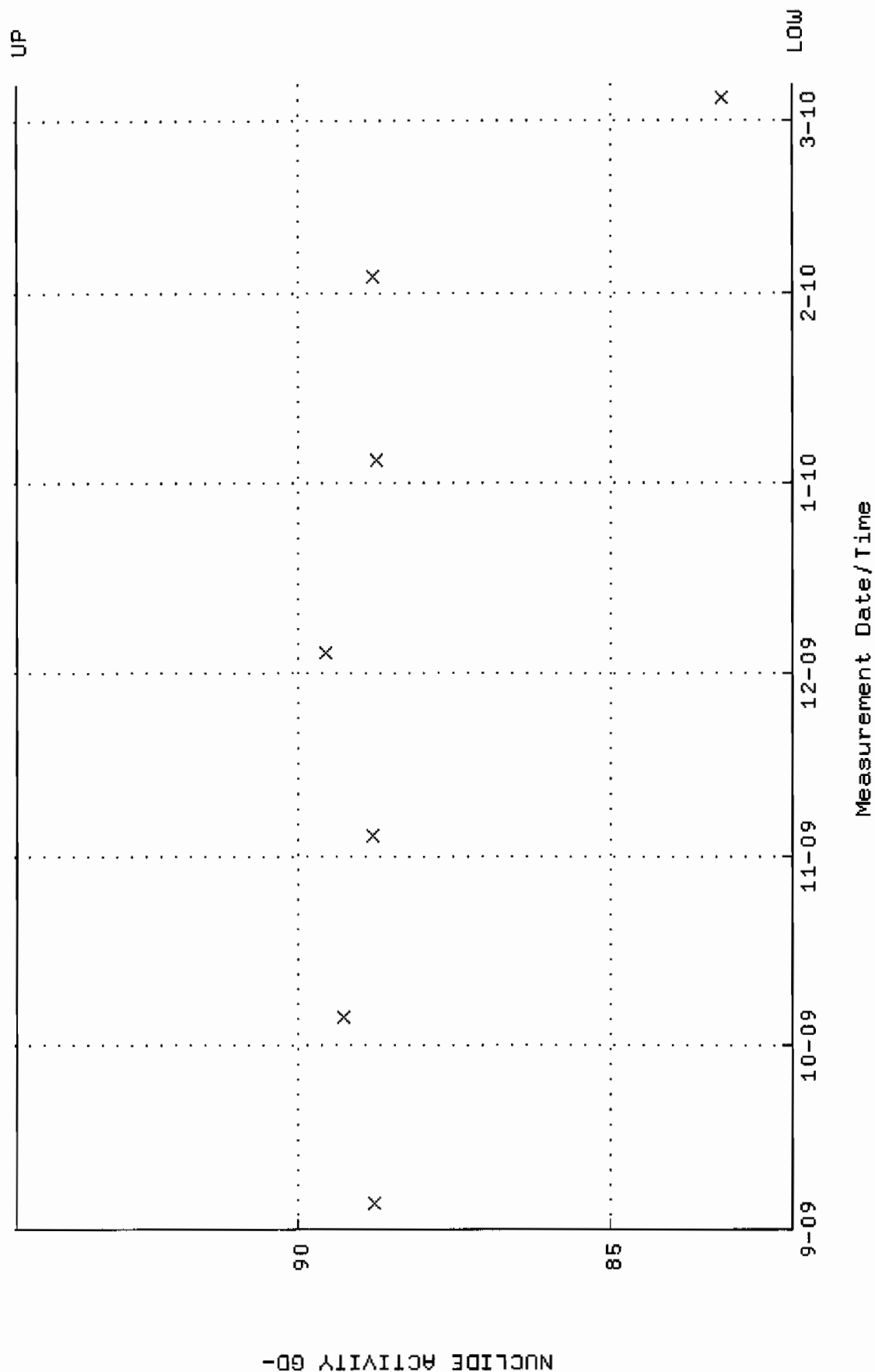
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



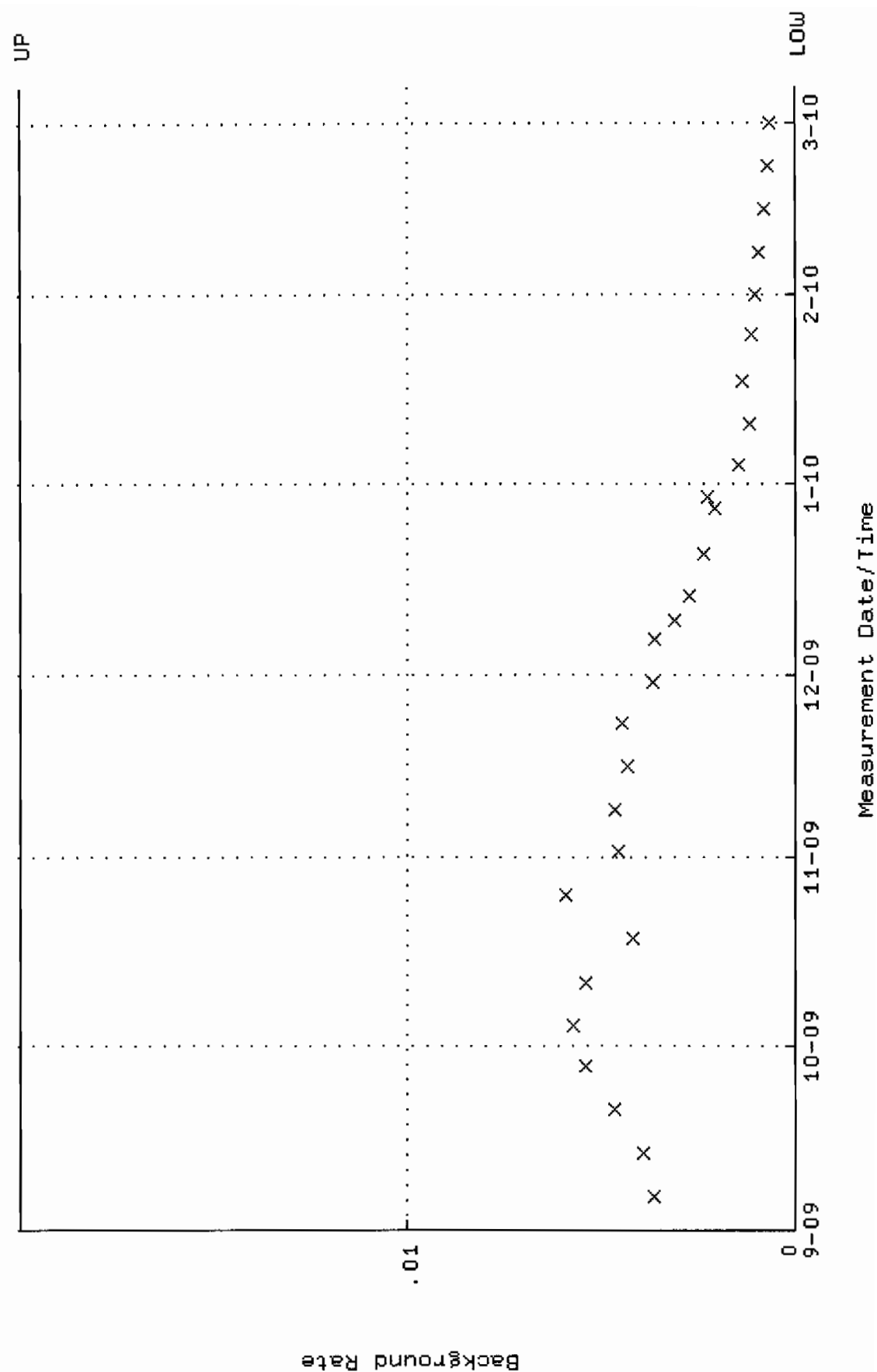
QA filename : DKA100:[ENV_ALPHA.QA.W]W036.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:09 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.302527 through 0.350457



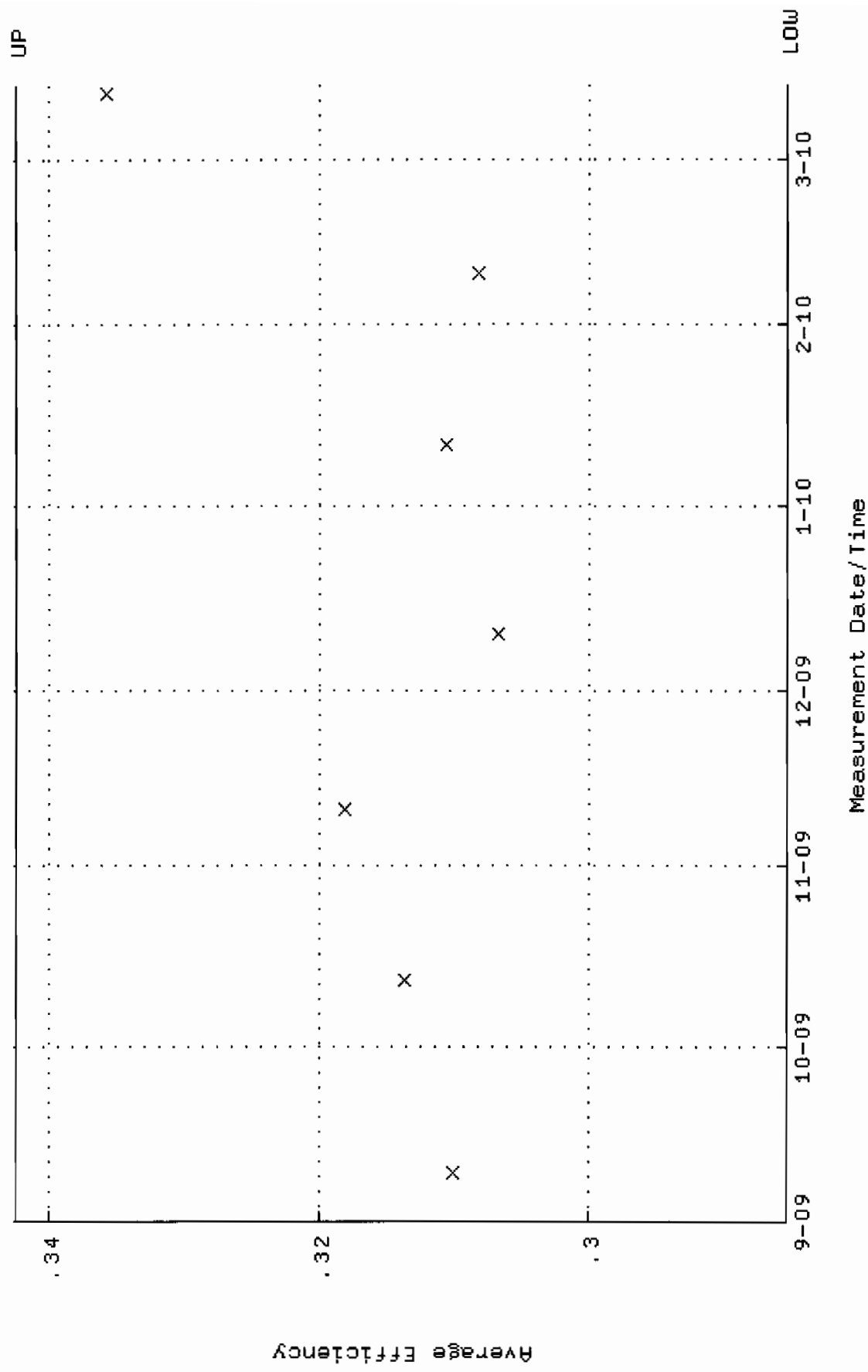
QA filename : DKA100:[ENV_ALPHA.QA.W]W036.QAF;2
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:09 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.0564 through 94.5140



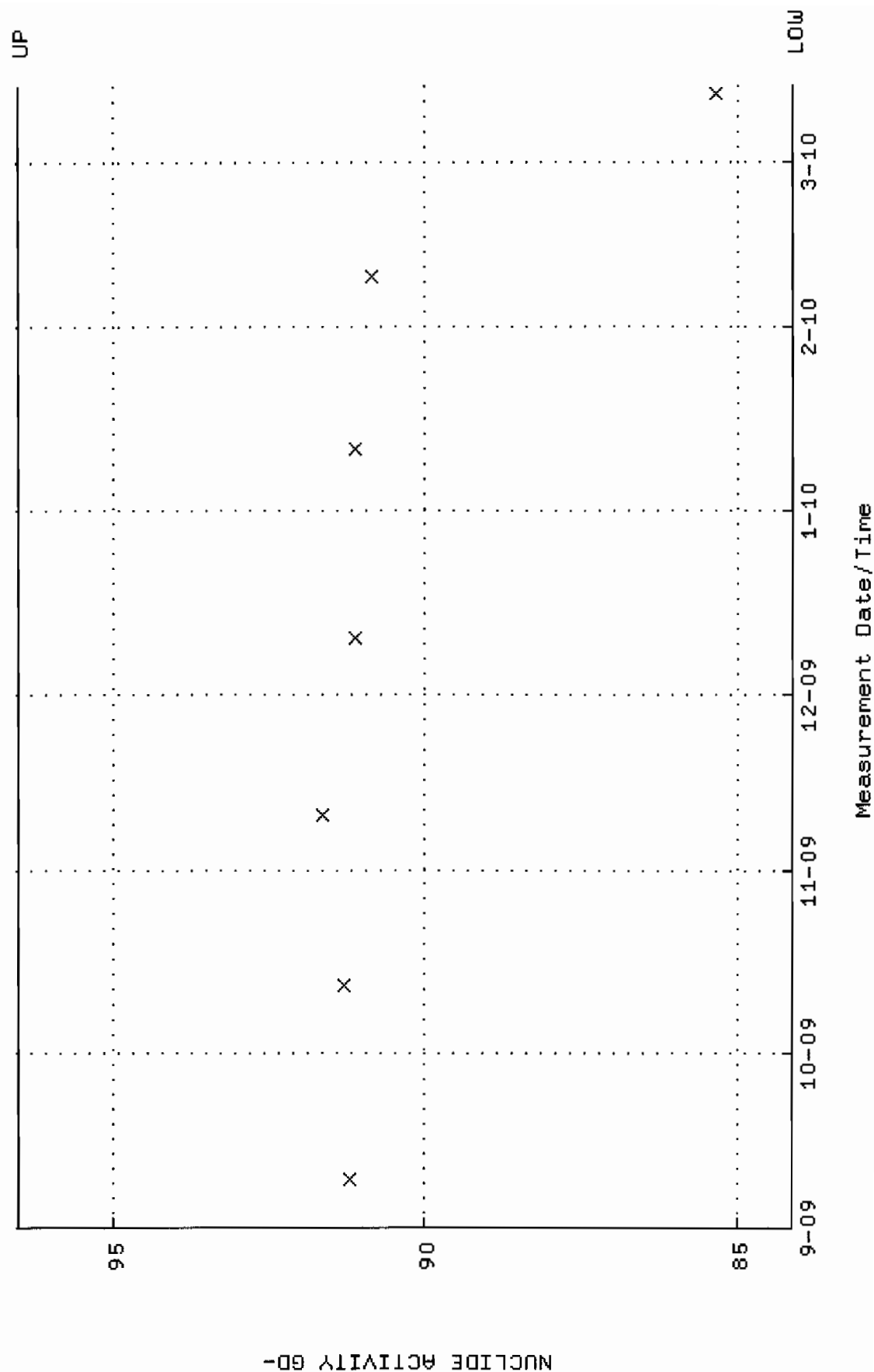
QA filename : DKA100:[ENV_ALPHA.QA.B]B036.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:04 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W065.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.285385 through 0.342467



QA filename : DKA100:[ENV_ALPHA.QA.W]w065.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.1135 through 96.5061

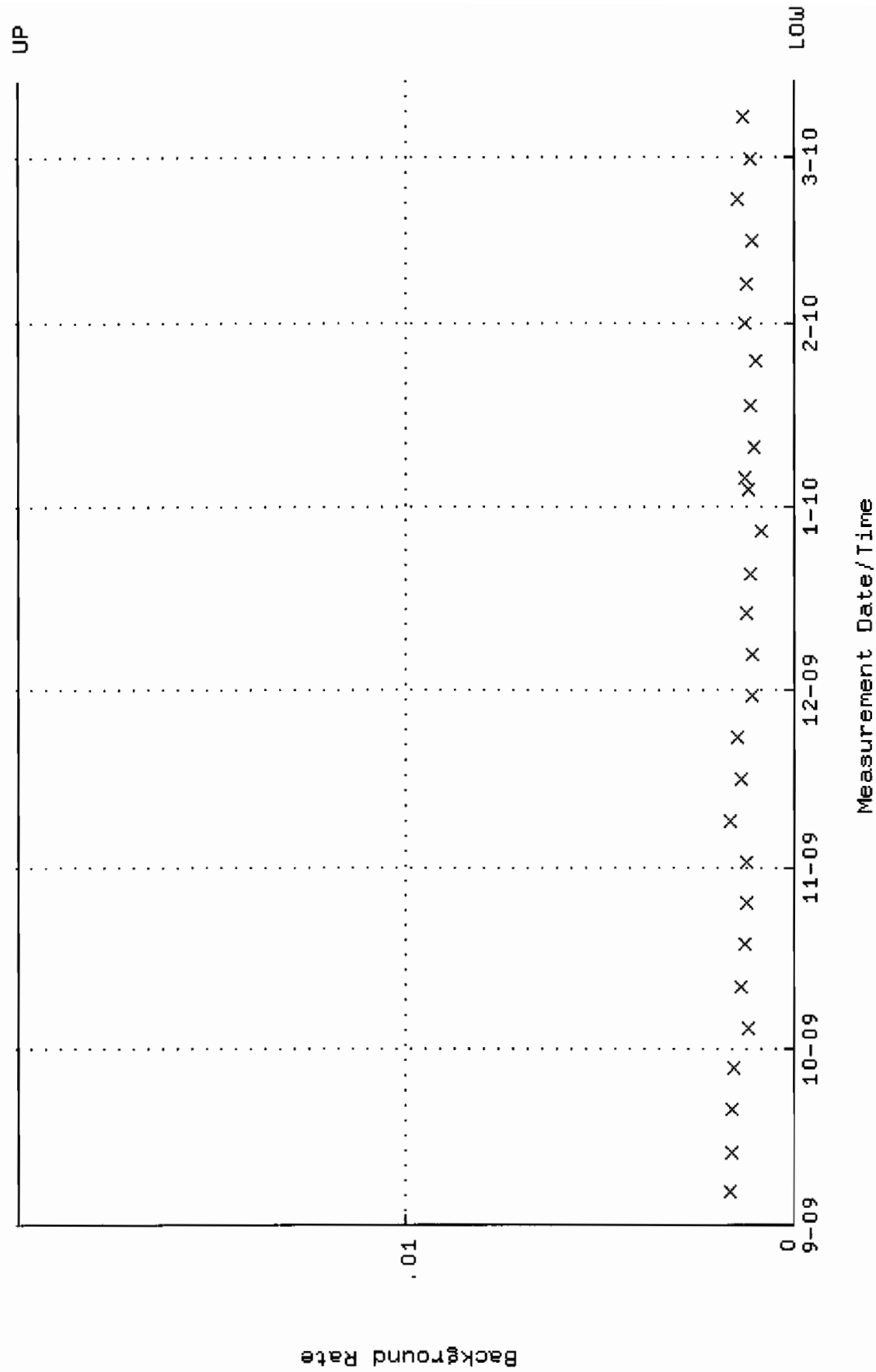


QA filename : DKA100:[ENV_ALPHA.QA.B]B0665.QAF;1

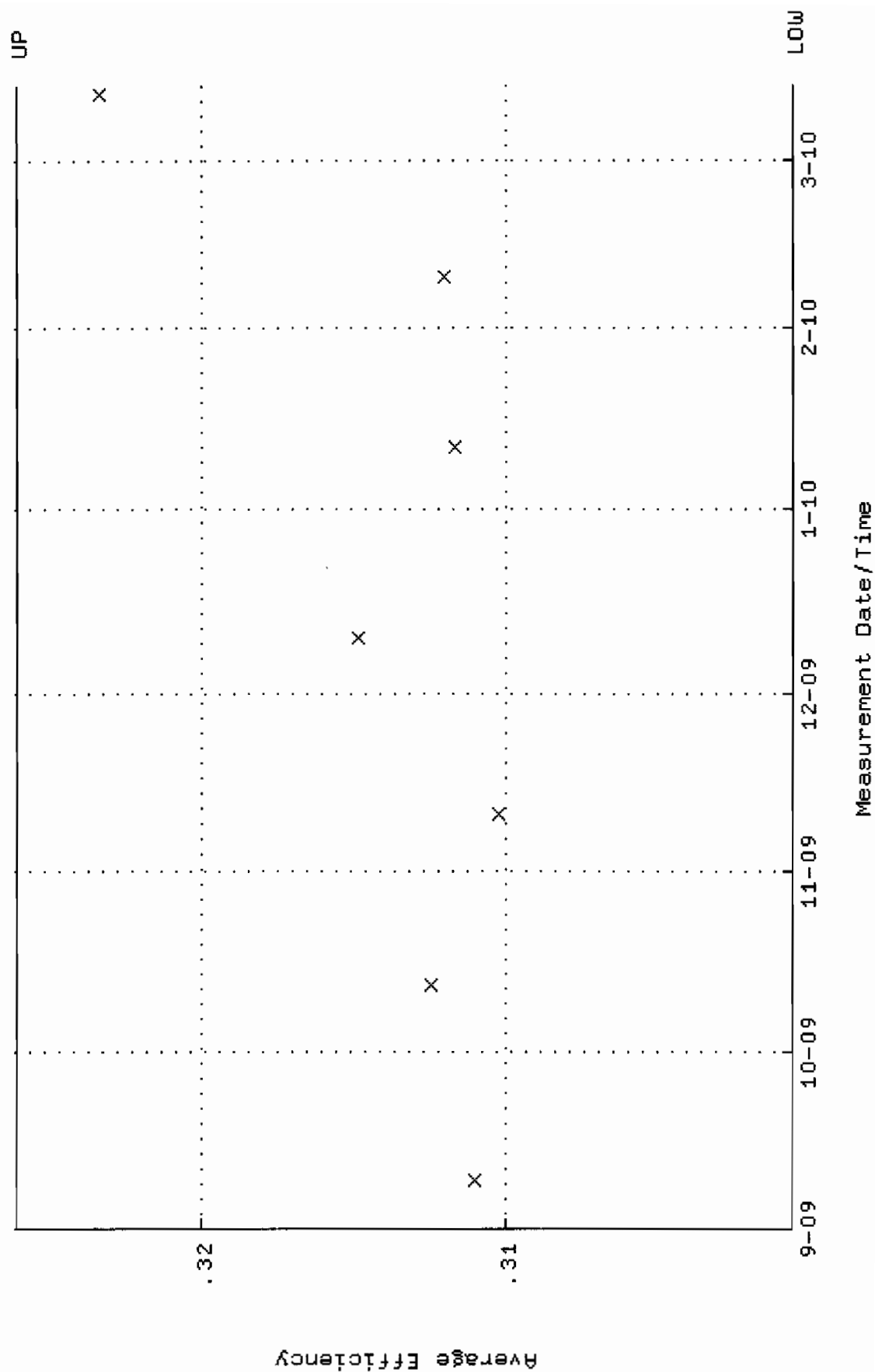
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00

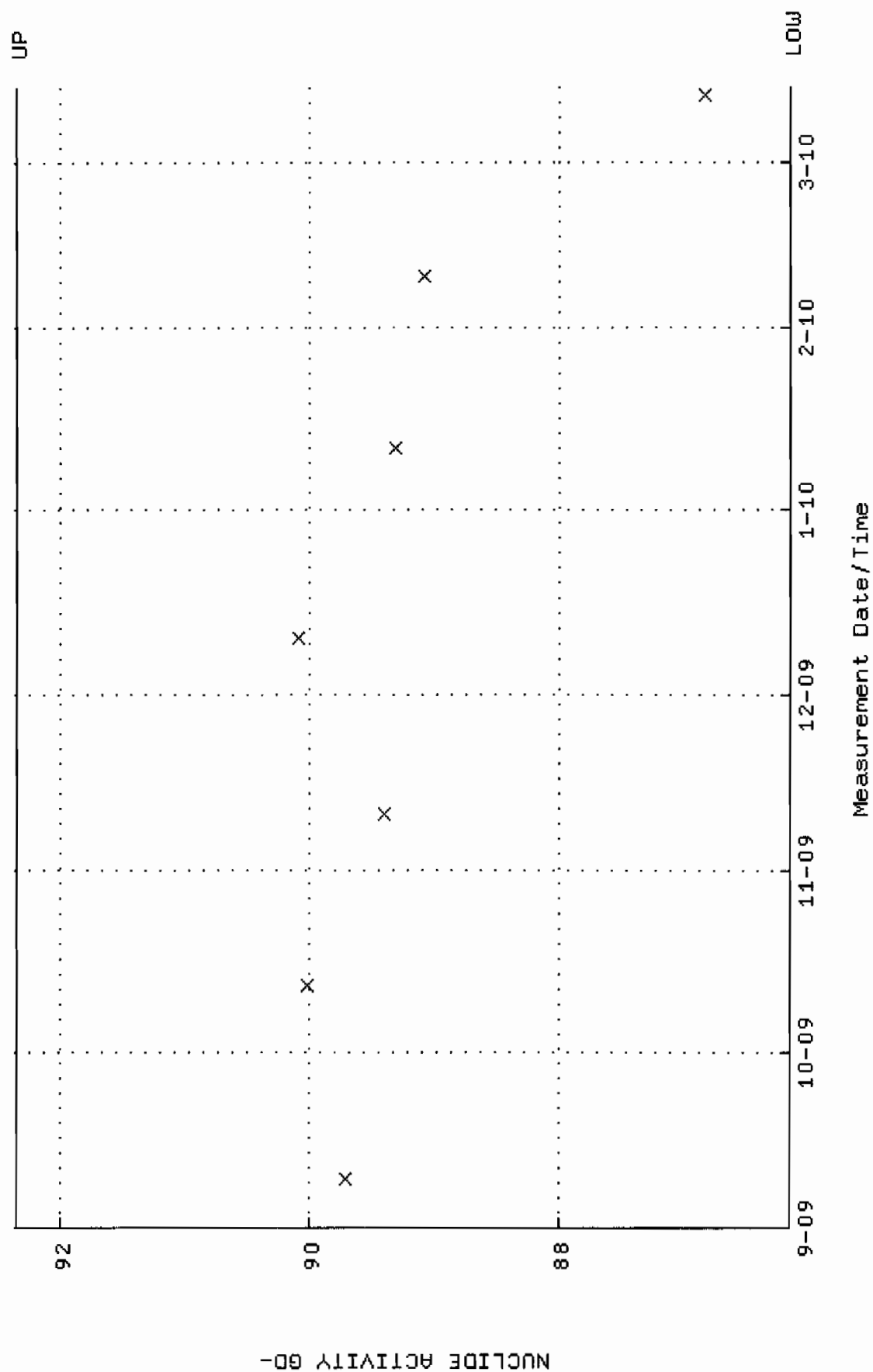
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W066.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.300663 through 0.326009



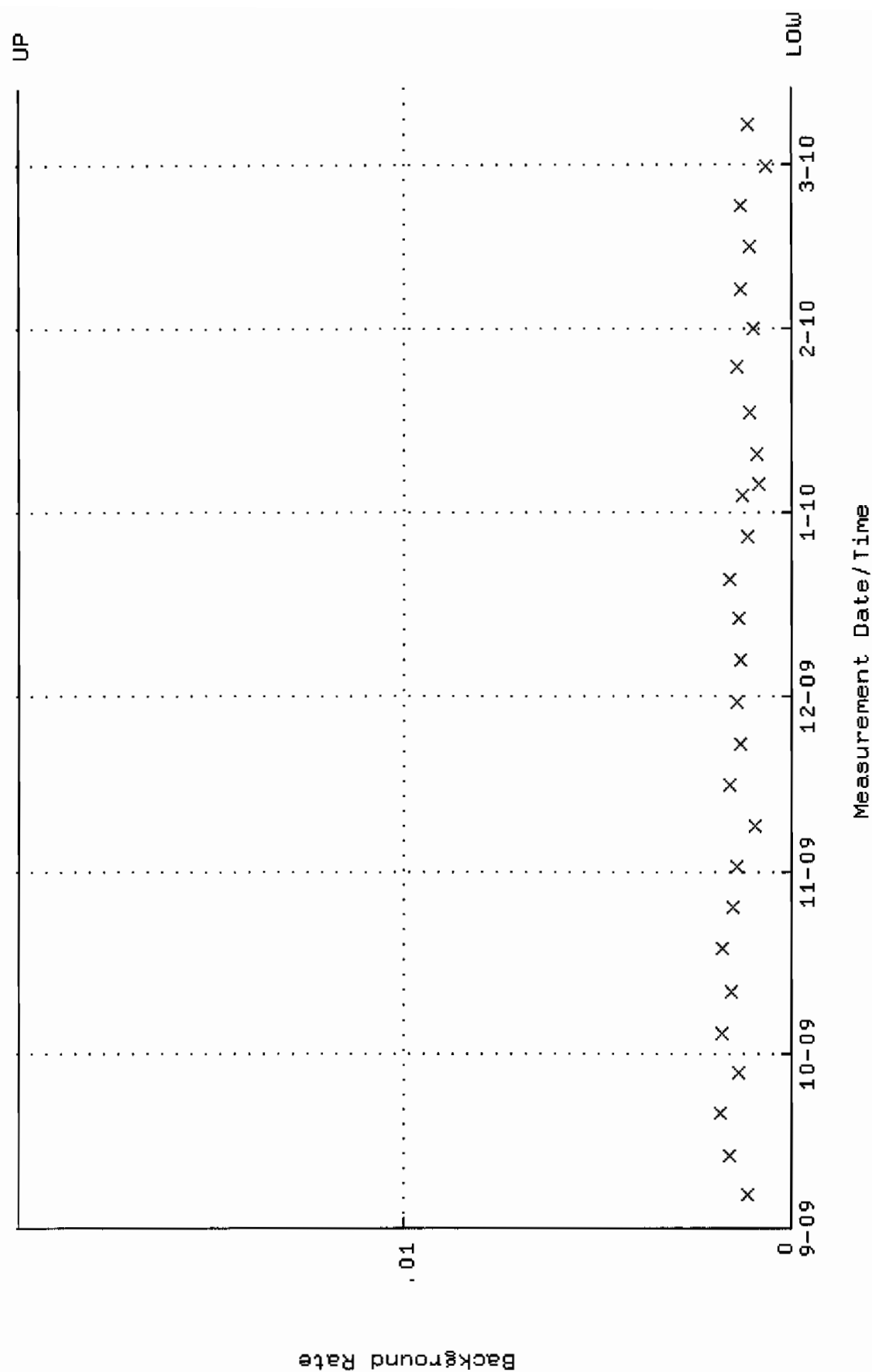
QA filename : DKA100:[ENV_ALPHA.QA.W]W066.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1435 through 92.3575



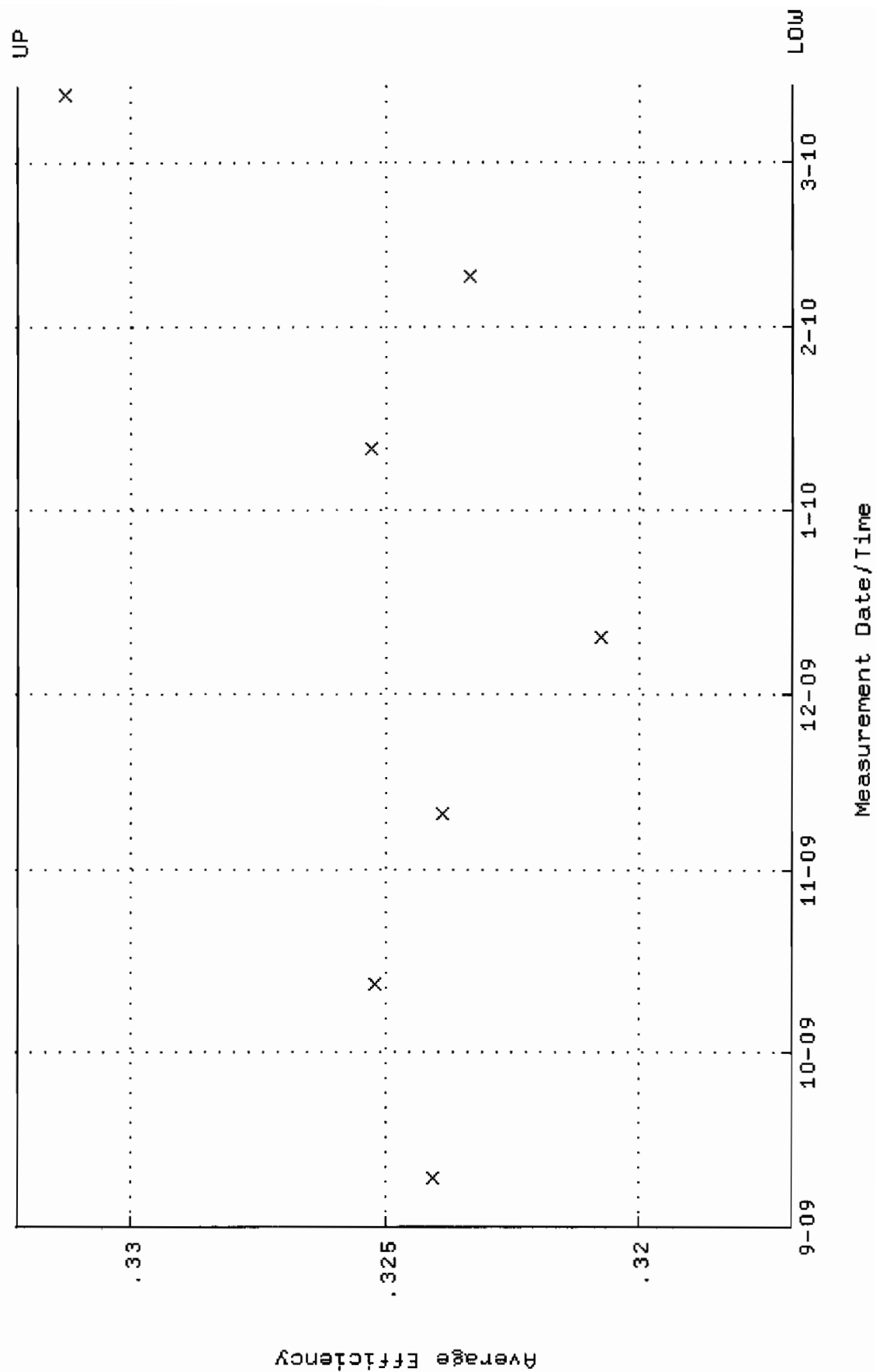

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QA filename      : DKA100:[ENV-ALPHA.QA.B]B066.QAF;1
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

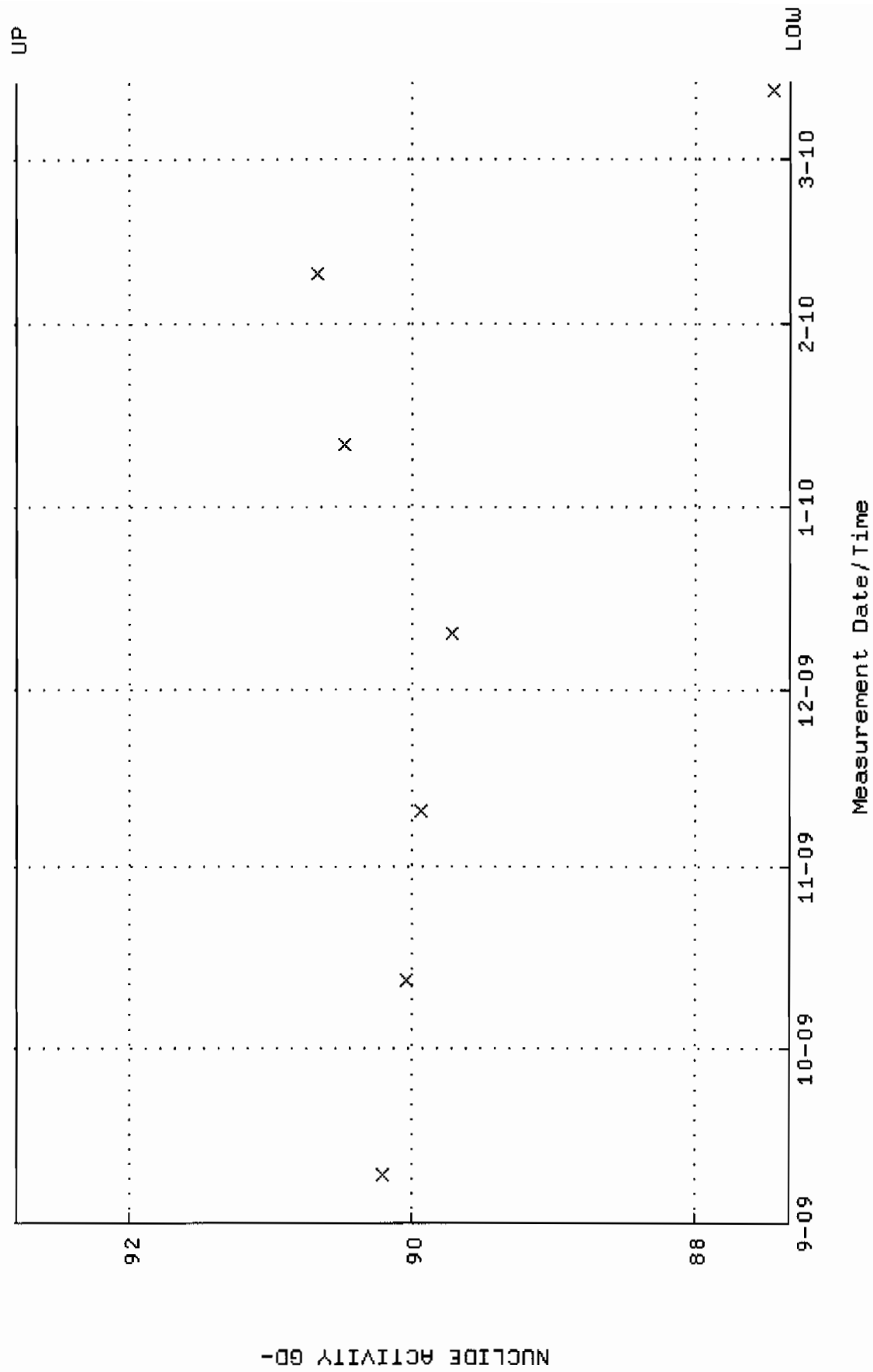
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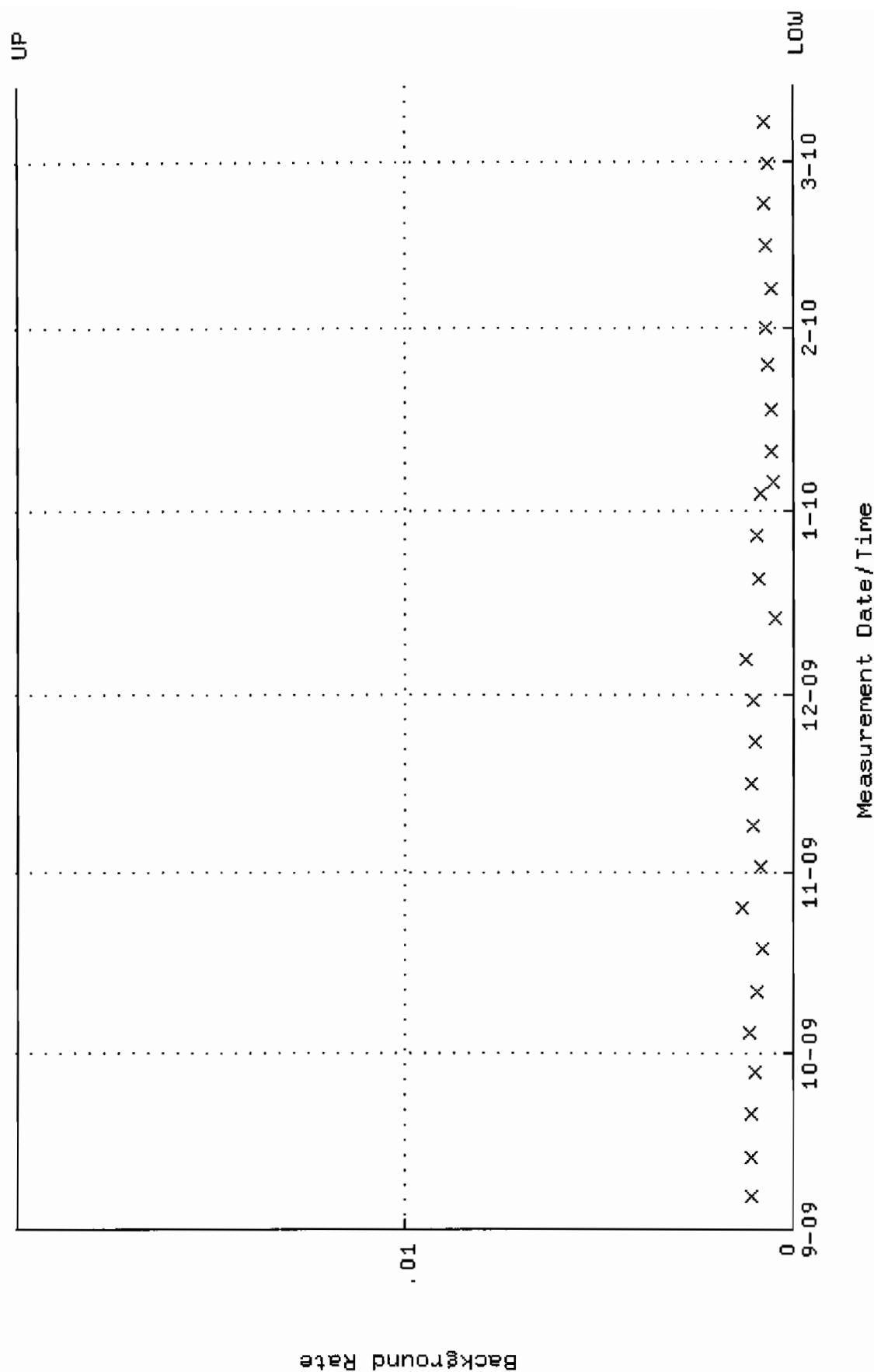
QA filename : DKA100:[ENV_ALPHA.QA.W]W067.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.317012 through 0.332214



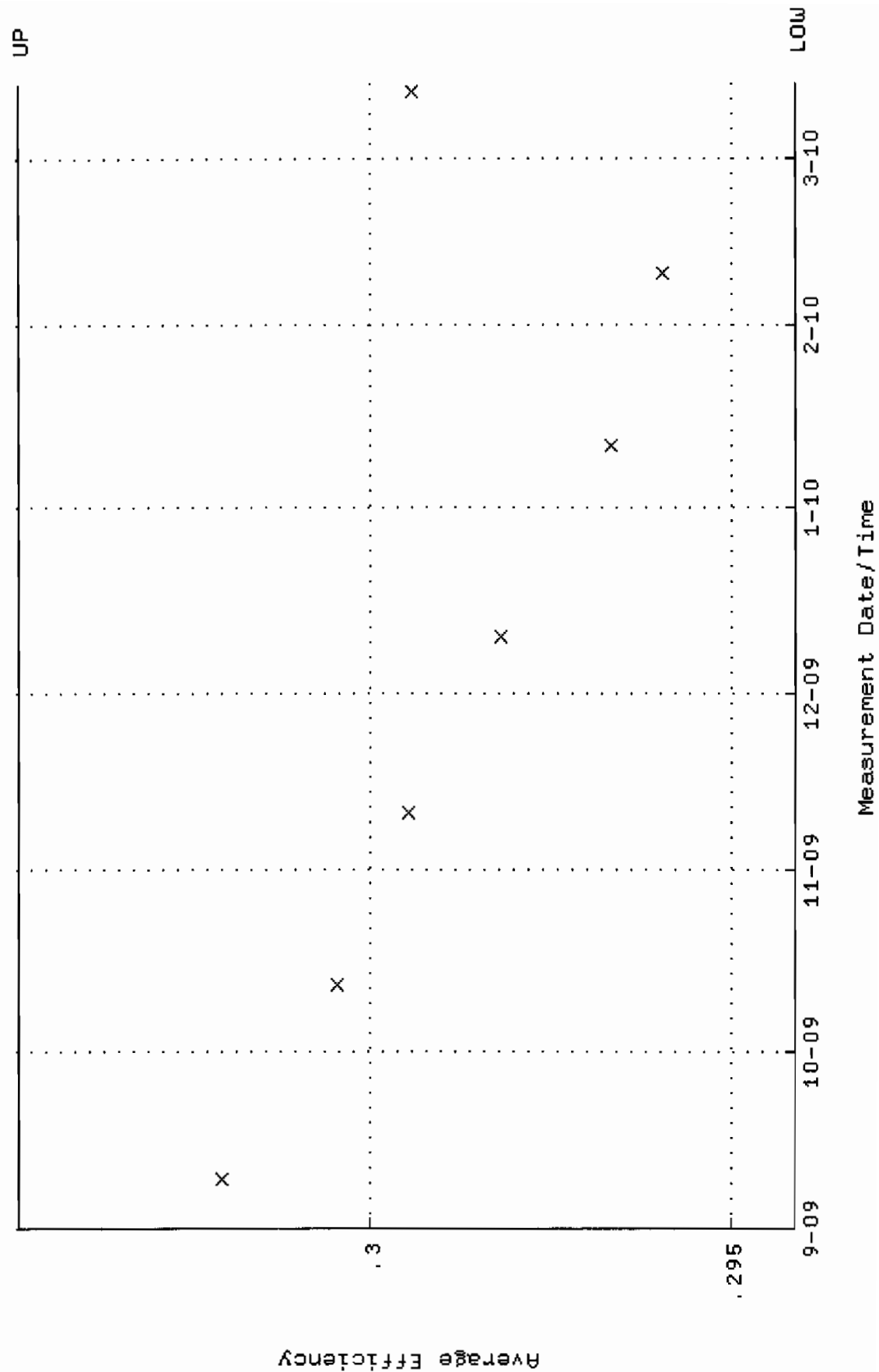
QA filename : DKA100:[ENV_ALPHA.QA.W]W067.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.3271 through 92.8001



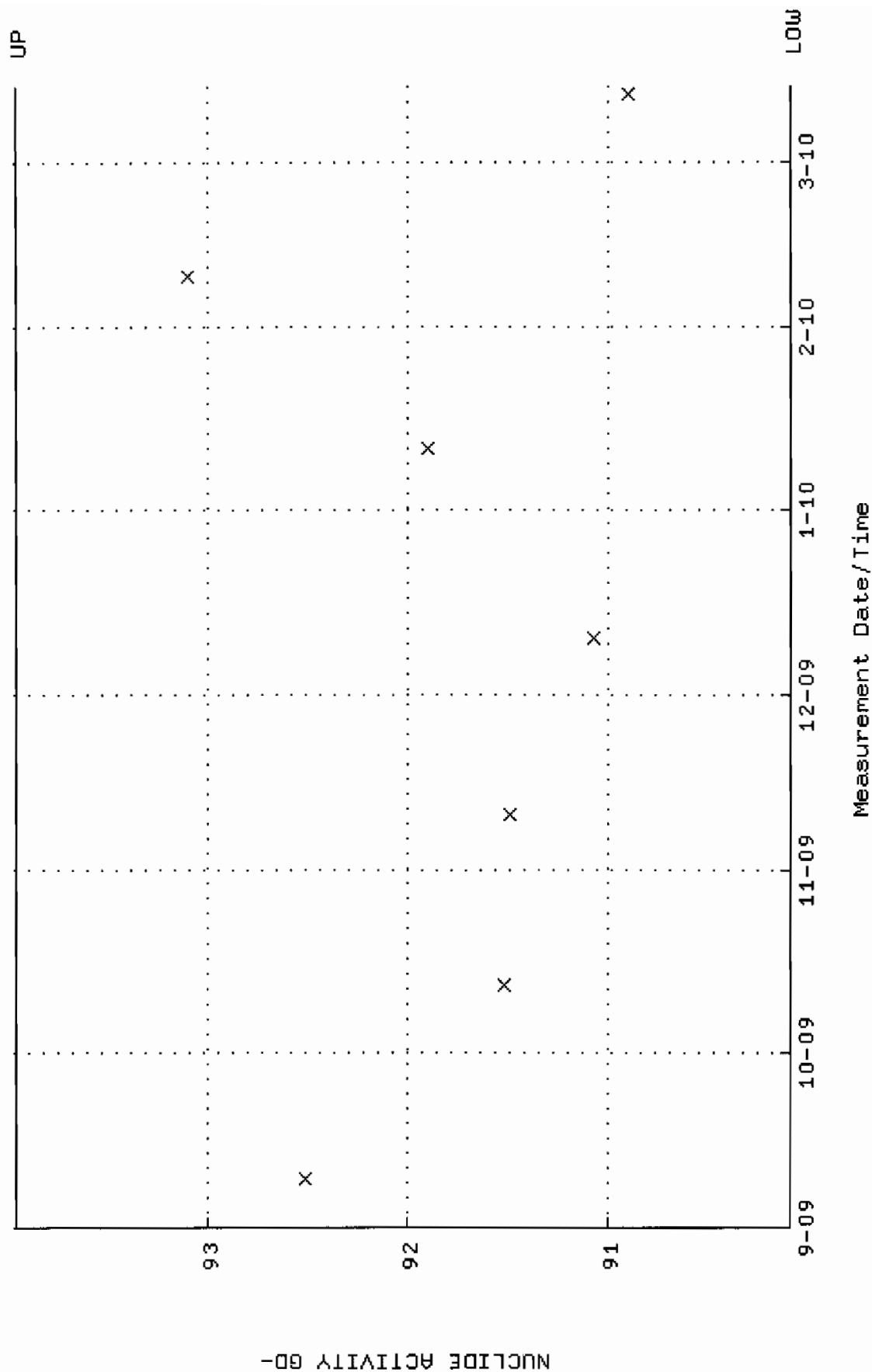
QA filename : DKA100:[ENV_ALPHA.QA.B]B067.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W068.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294113 through 0.304839



QA filename : DKA100:[ENV_ALPHA.QA.W]w068.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.0941 through 93.9543

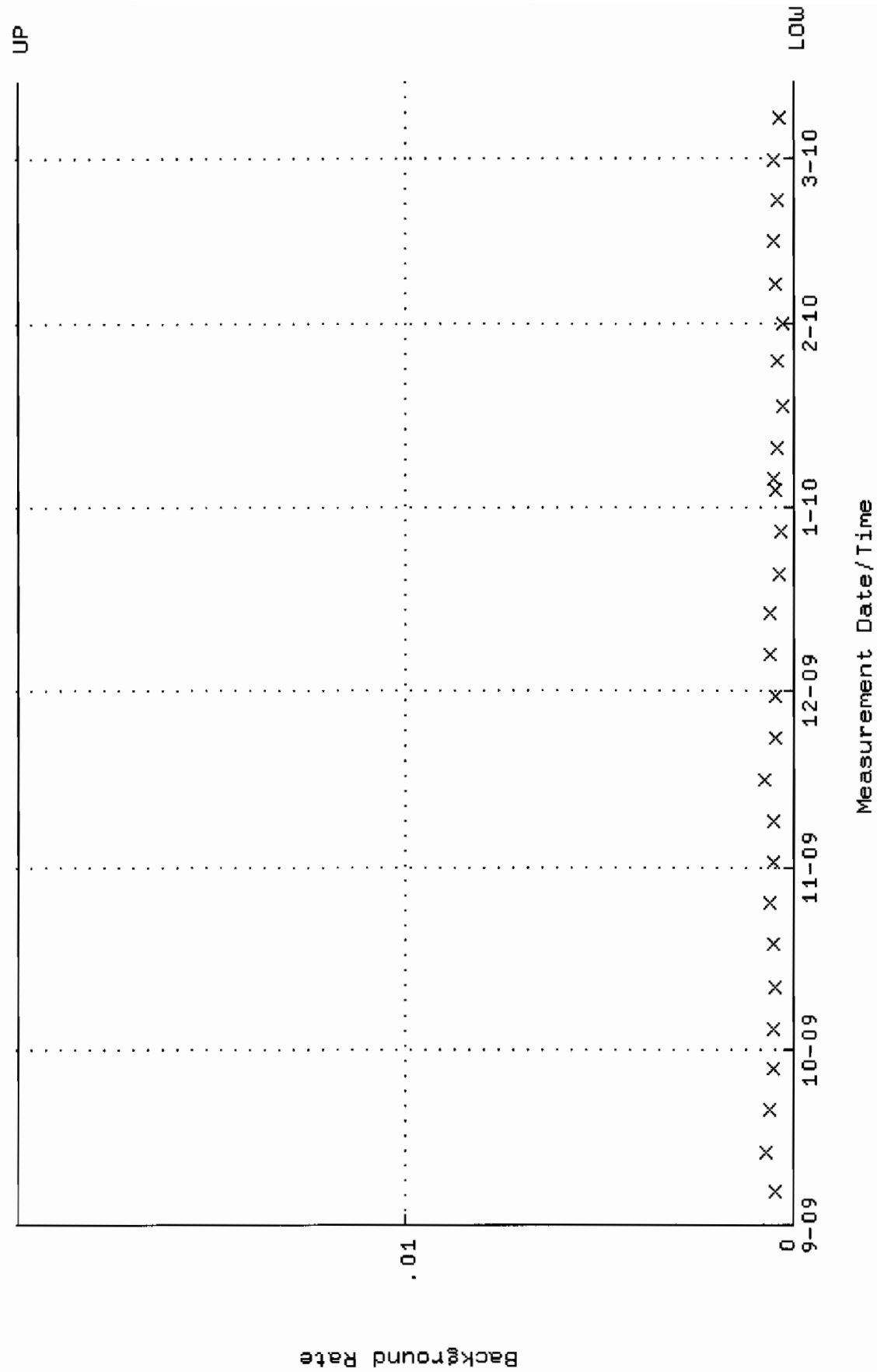


QA filename : DKA100:[ENV_ALPHA.QA.B]B068.QAF;1

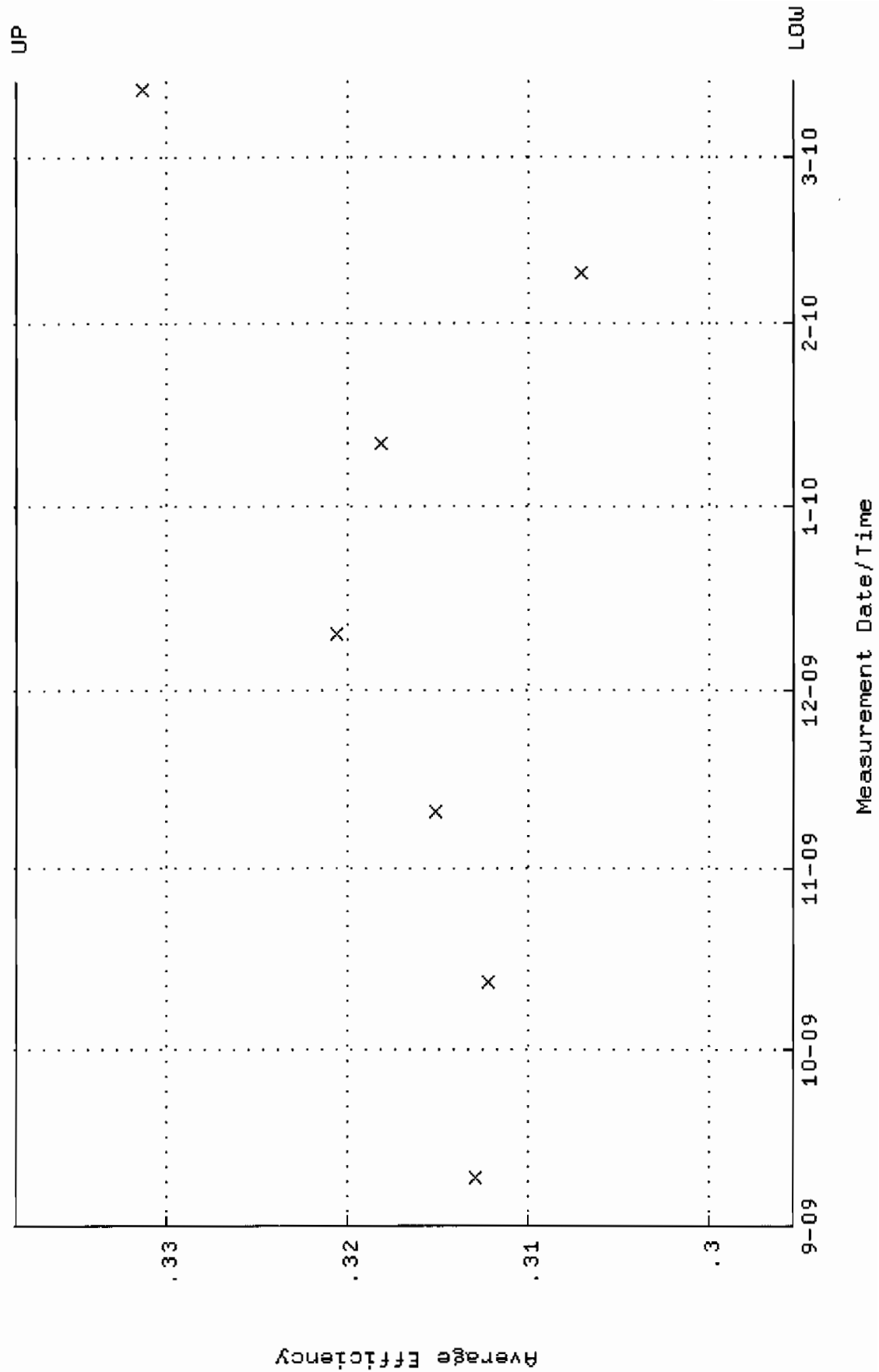
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00

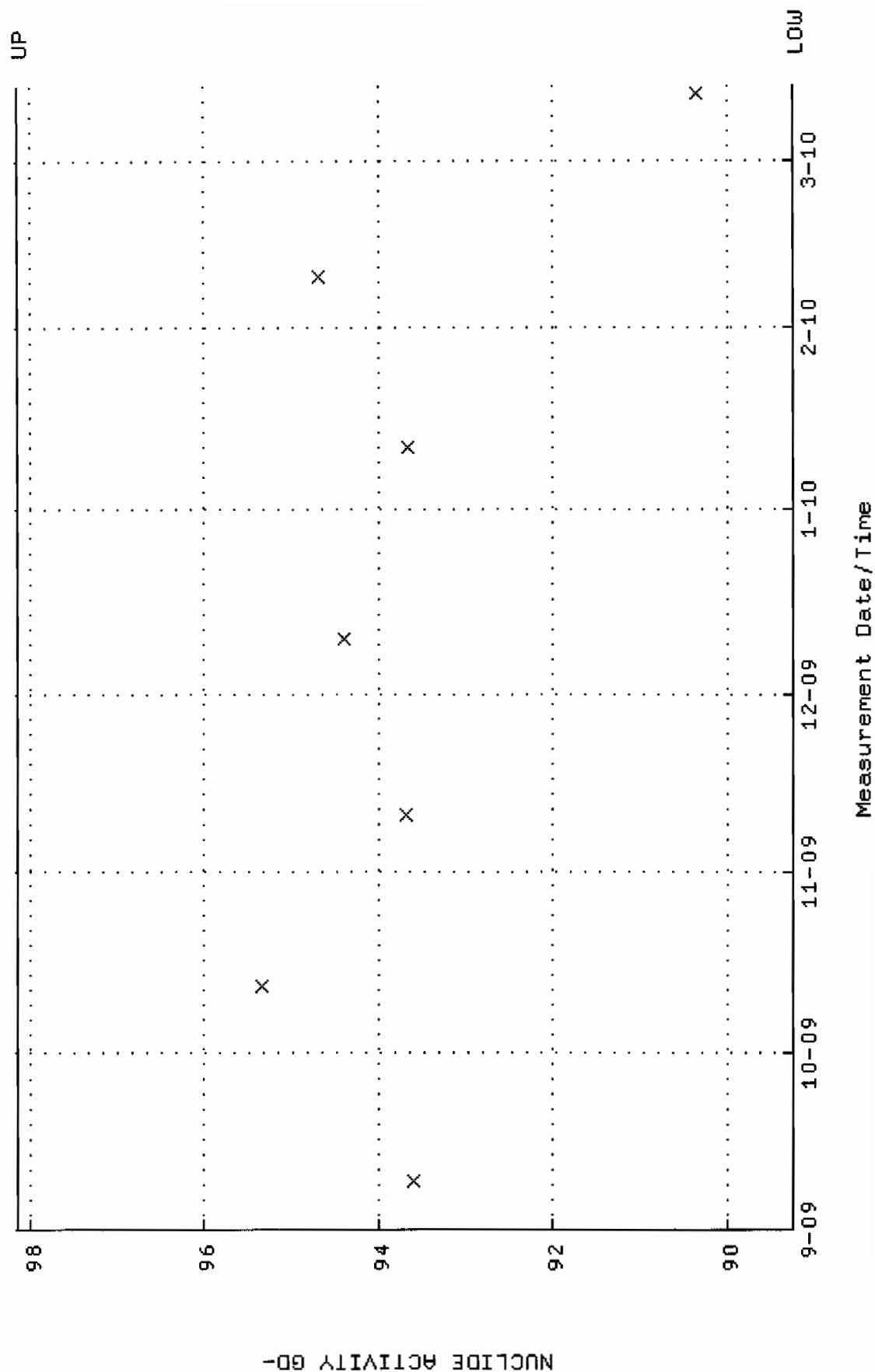
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



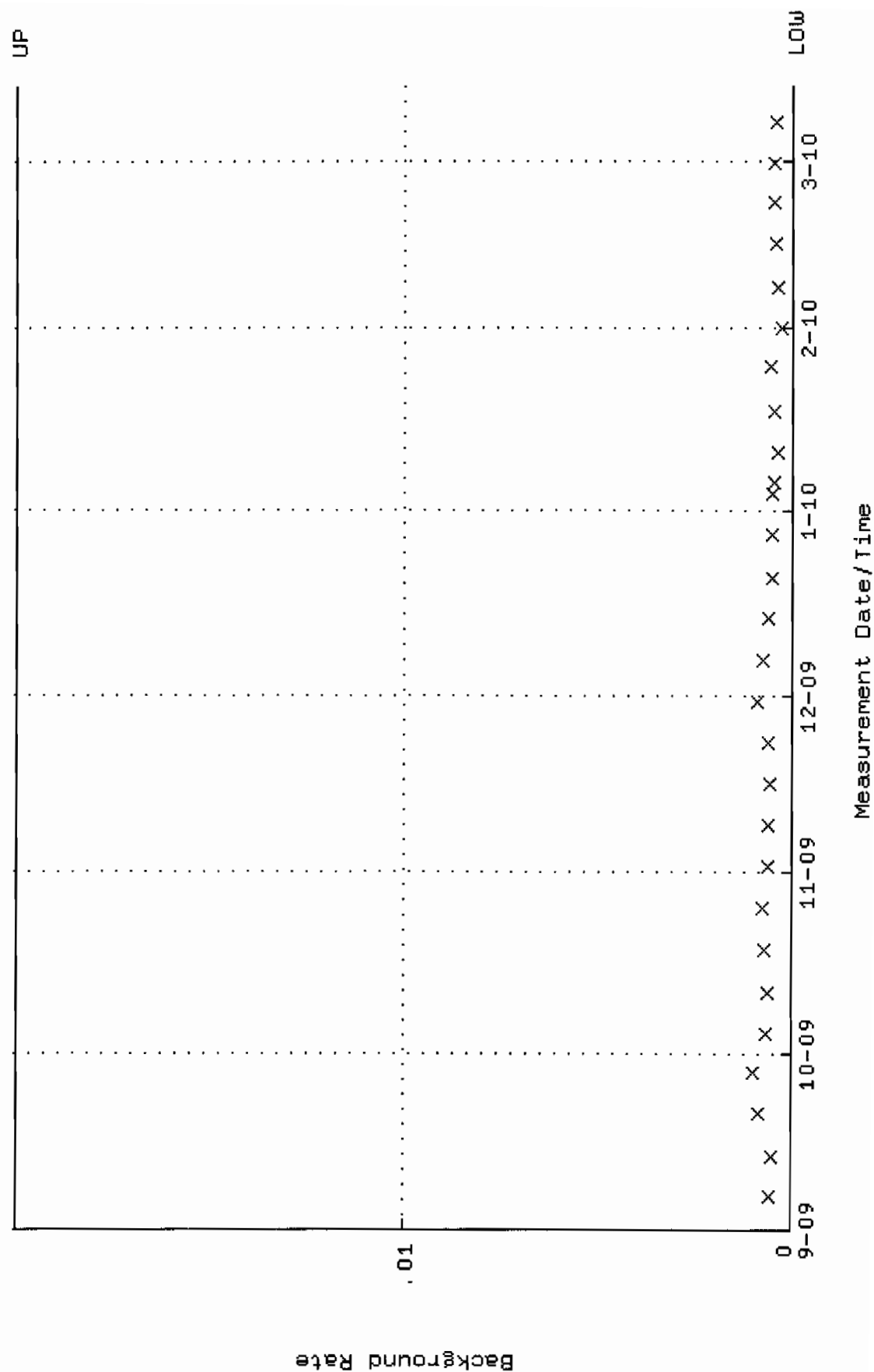
QA filename : DKA100:[ENV_ALPHA.QA.W]W069.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.295353 through 0.338329



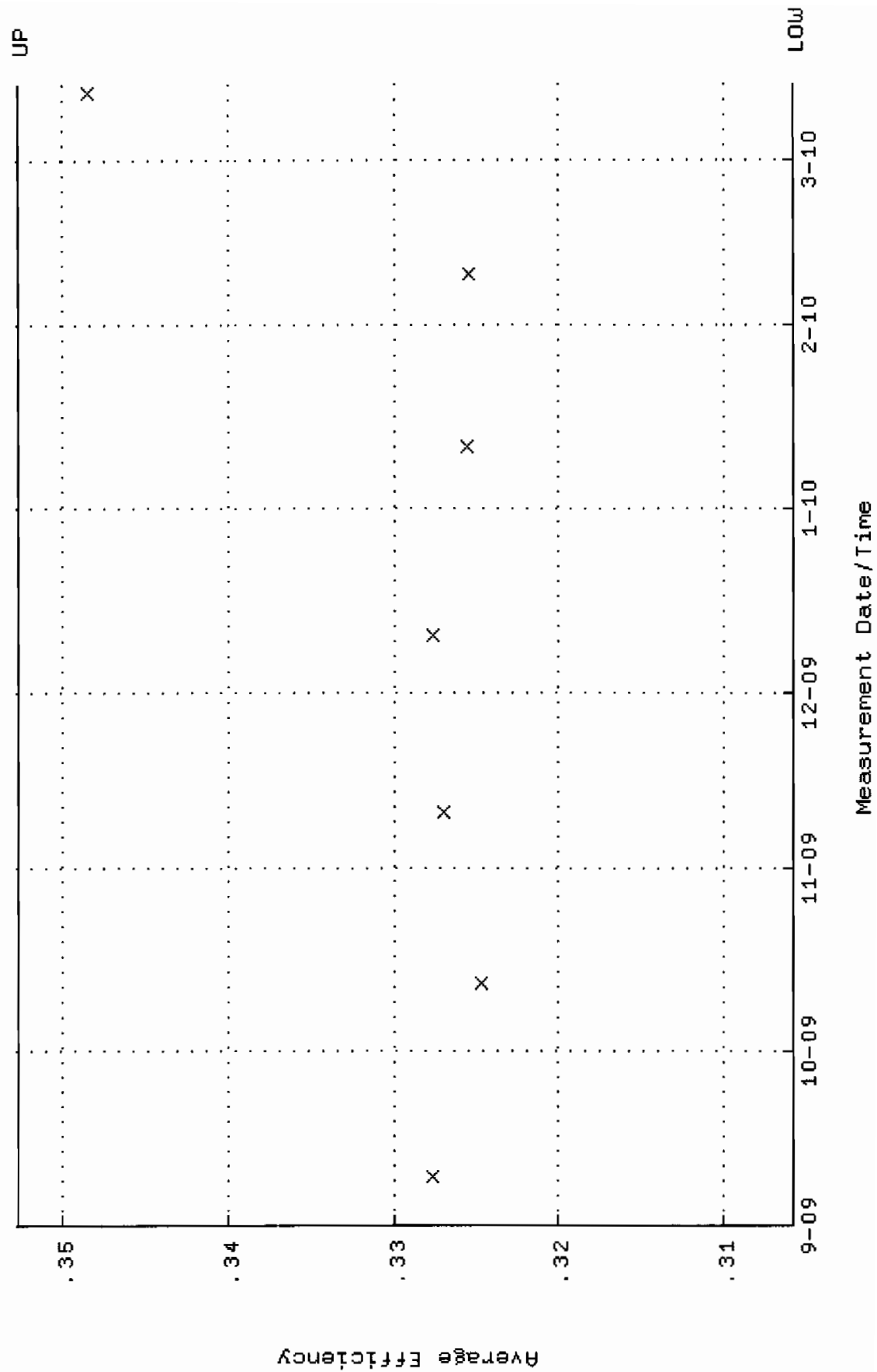
QA filename : DKA100:[ENV_ALPHA.QA.W]W069.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.2430 through 98.1406



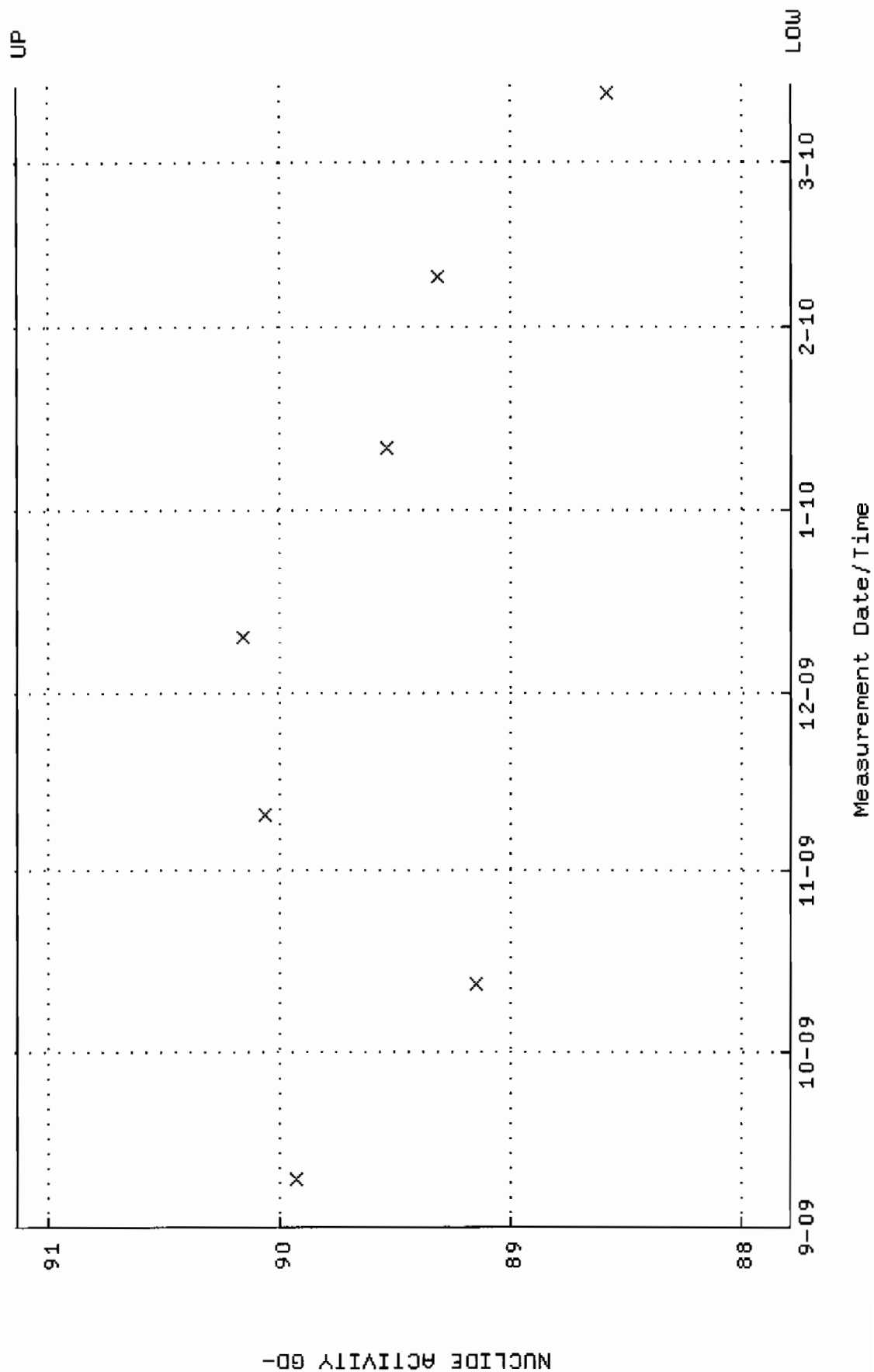
QA filename : DKA100:[ENV_ALPHA.QA.B]B069.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]w090.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.305824 through 0.352694



QA filename : DKA100:[ENV_ALPHA.QA.W]W090.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7860 through 91.1302

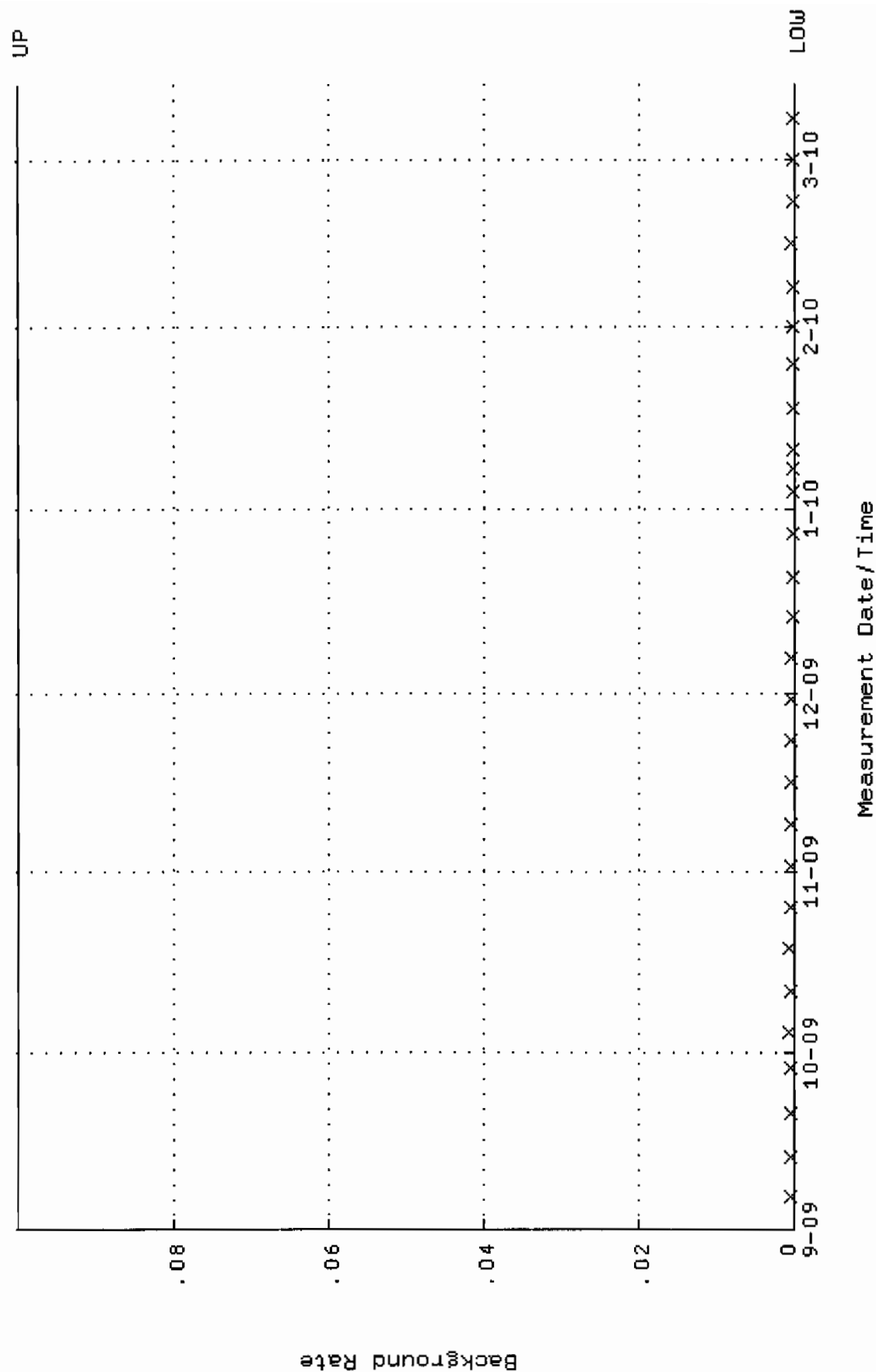


QA filename : DKA100:[ENV_ALPHA.QA.B]B090.QAF;2

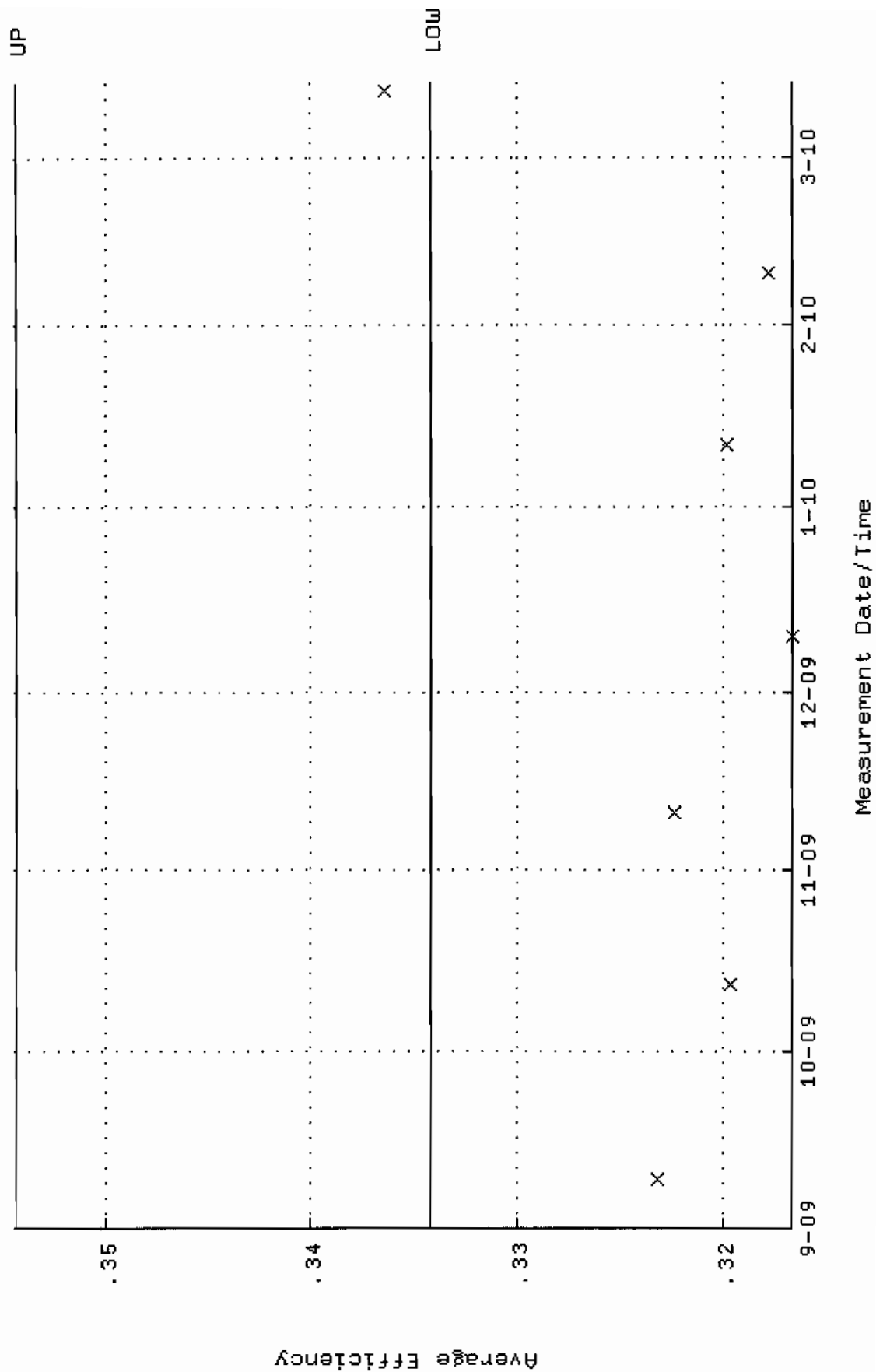
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00

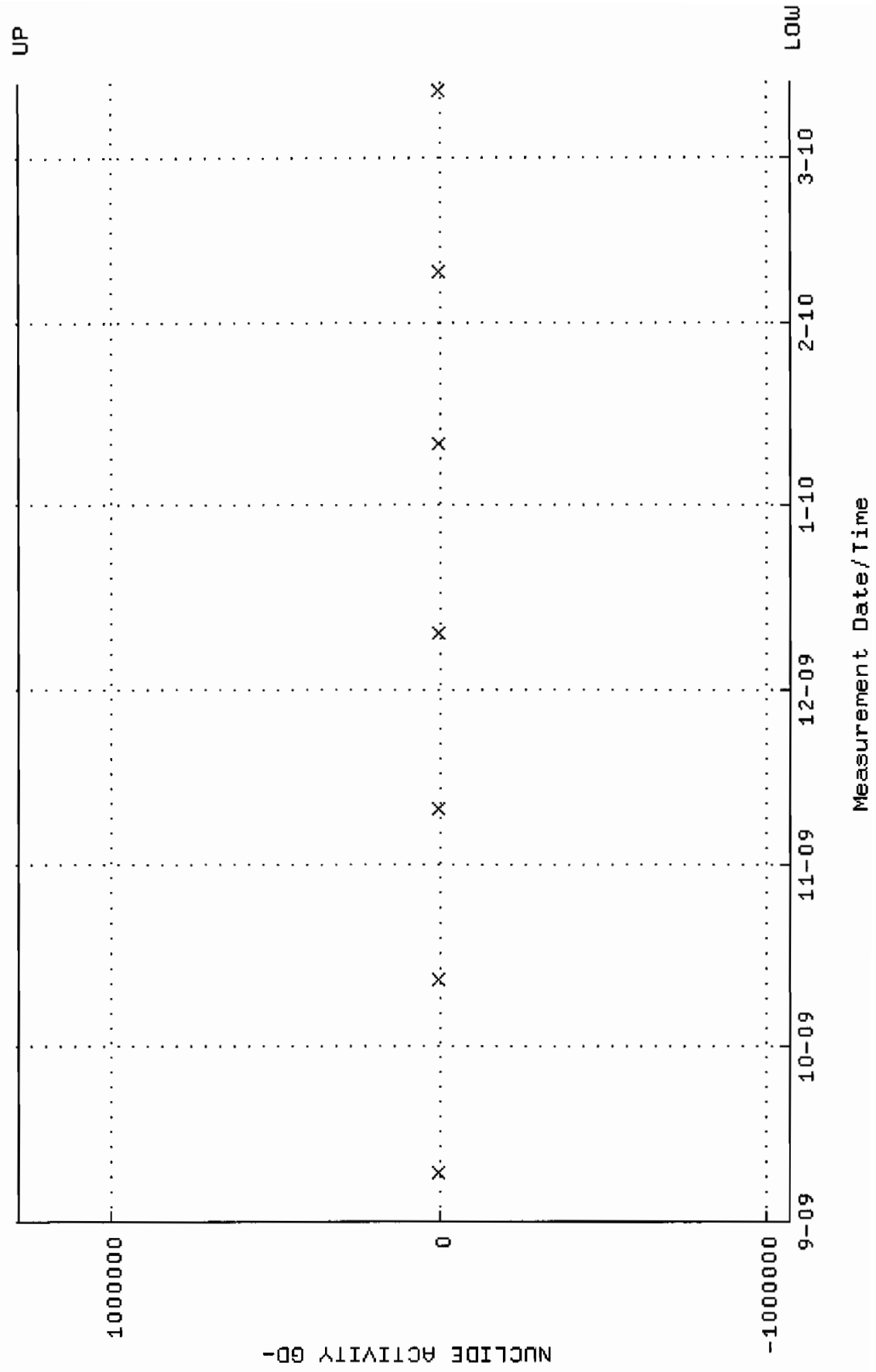
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W093.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.334257 through 0.354343



QA filename : DKA100:[ENV_ALPHA.QA.W]W093.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: -1.071934E+06 through 1.28428E+06

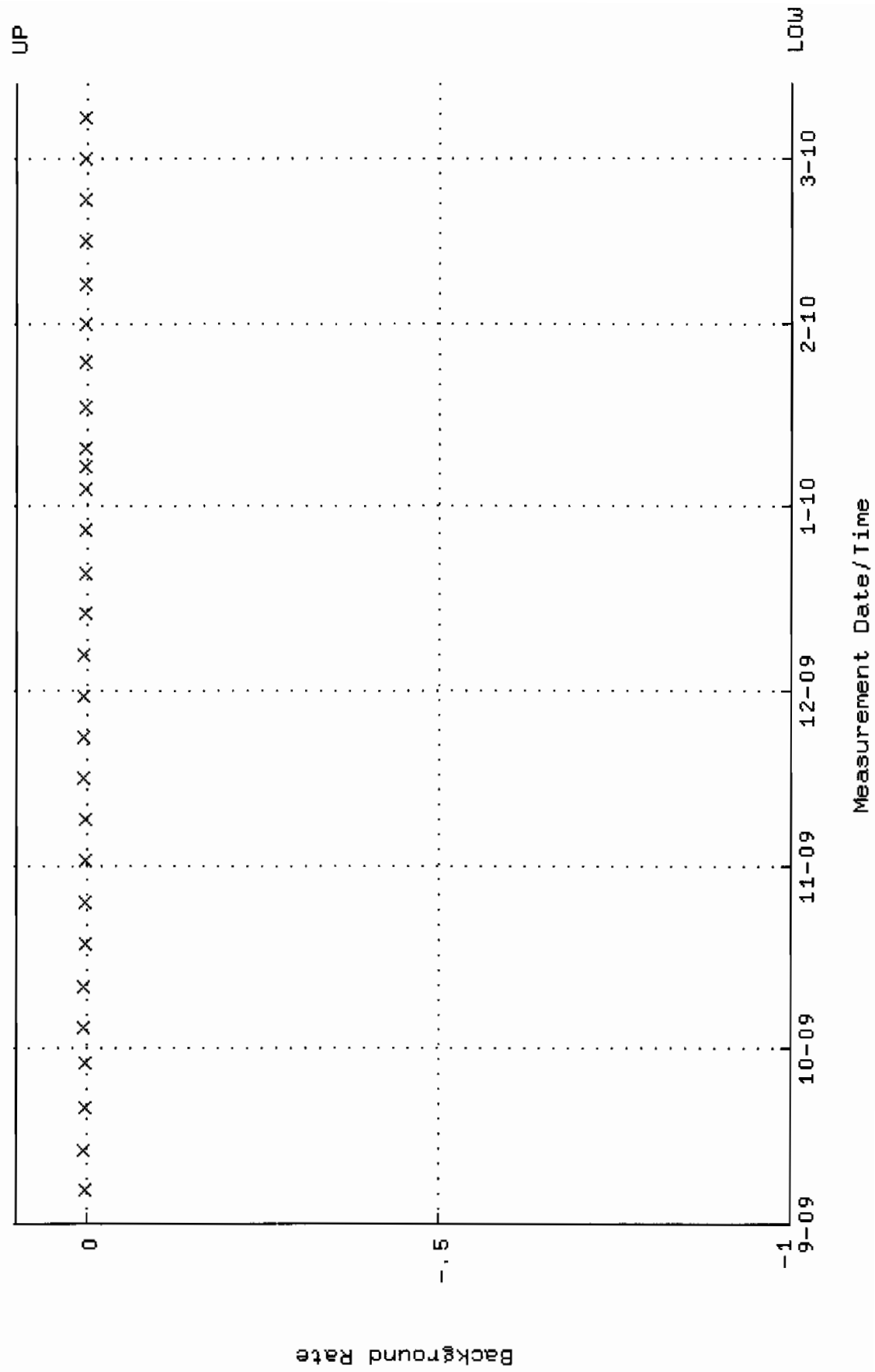


QA filename : DKA100:[ENV_ALPHA.QA.B]B093.QAF;1

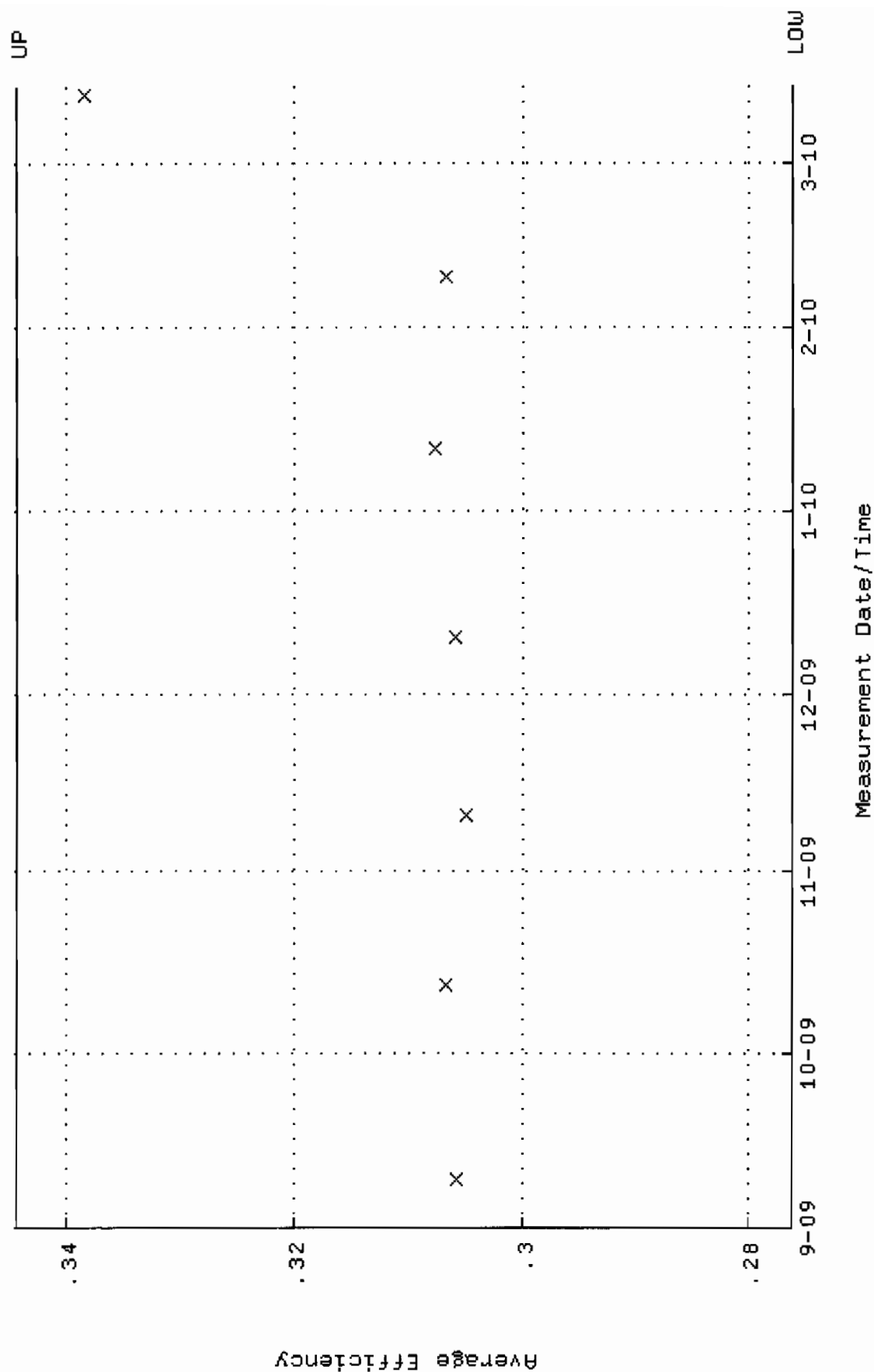
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00

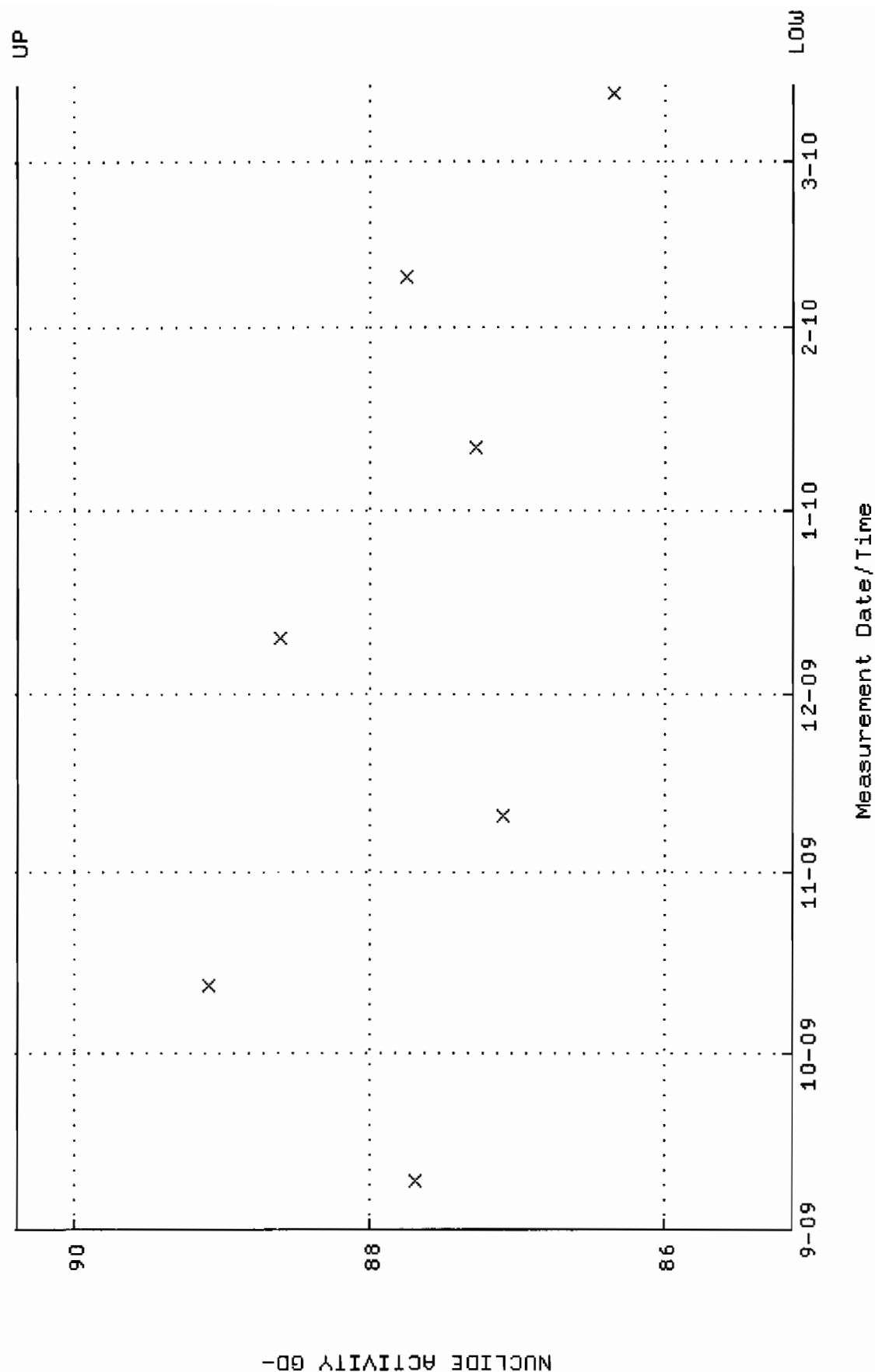
Lower/Upper Lmts: -1.00000 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W094.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.276224 through 0.344338



QA filename : DKA100:[ENV_ALPHA.QA.W]W094.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.1305 through 90.3863

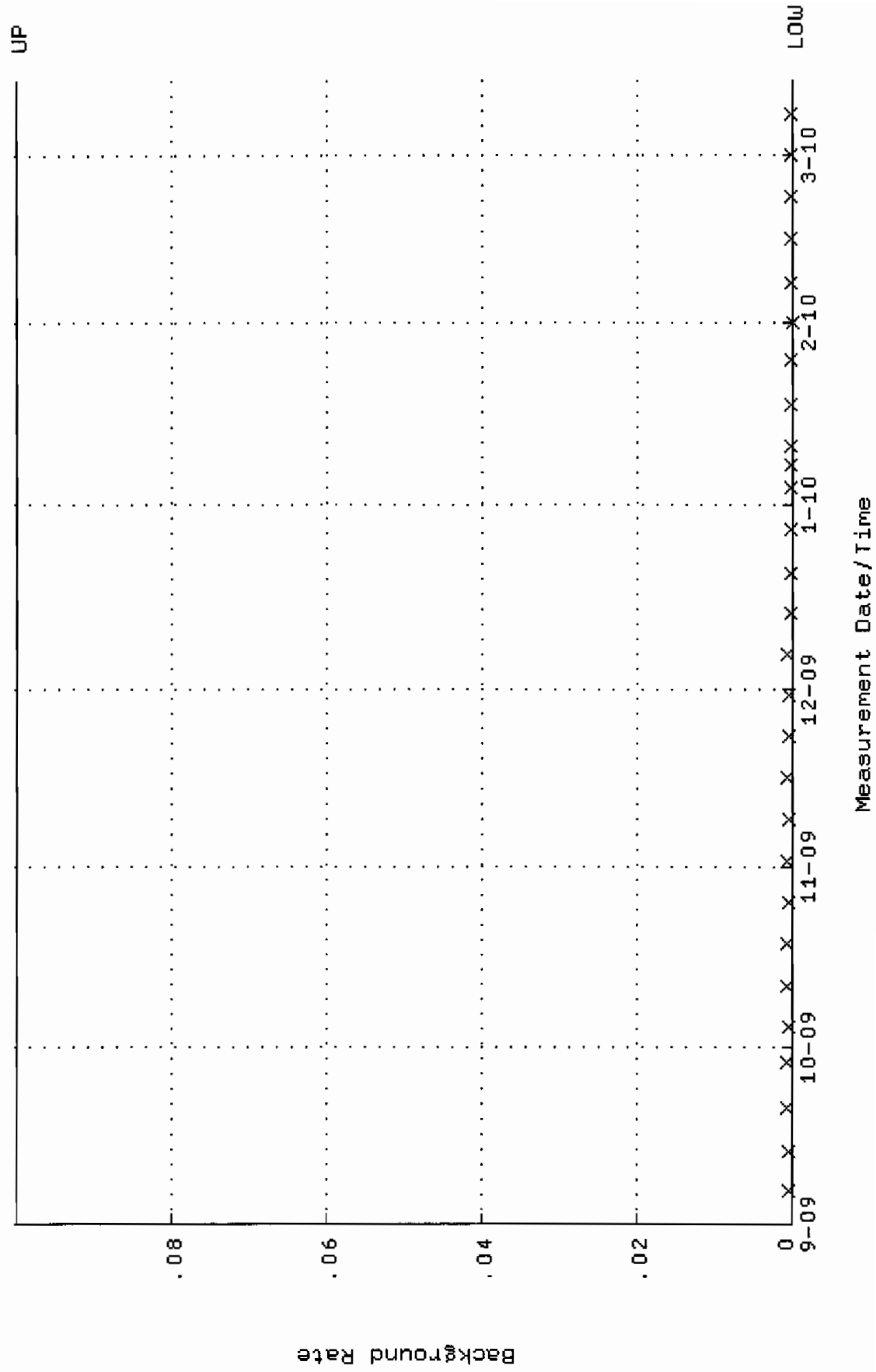


QA filename : DKA100:[ENV_ALPHA.QA.B]B094.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

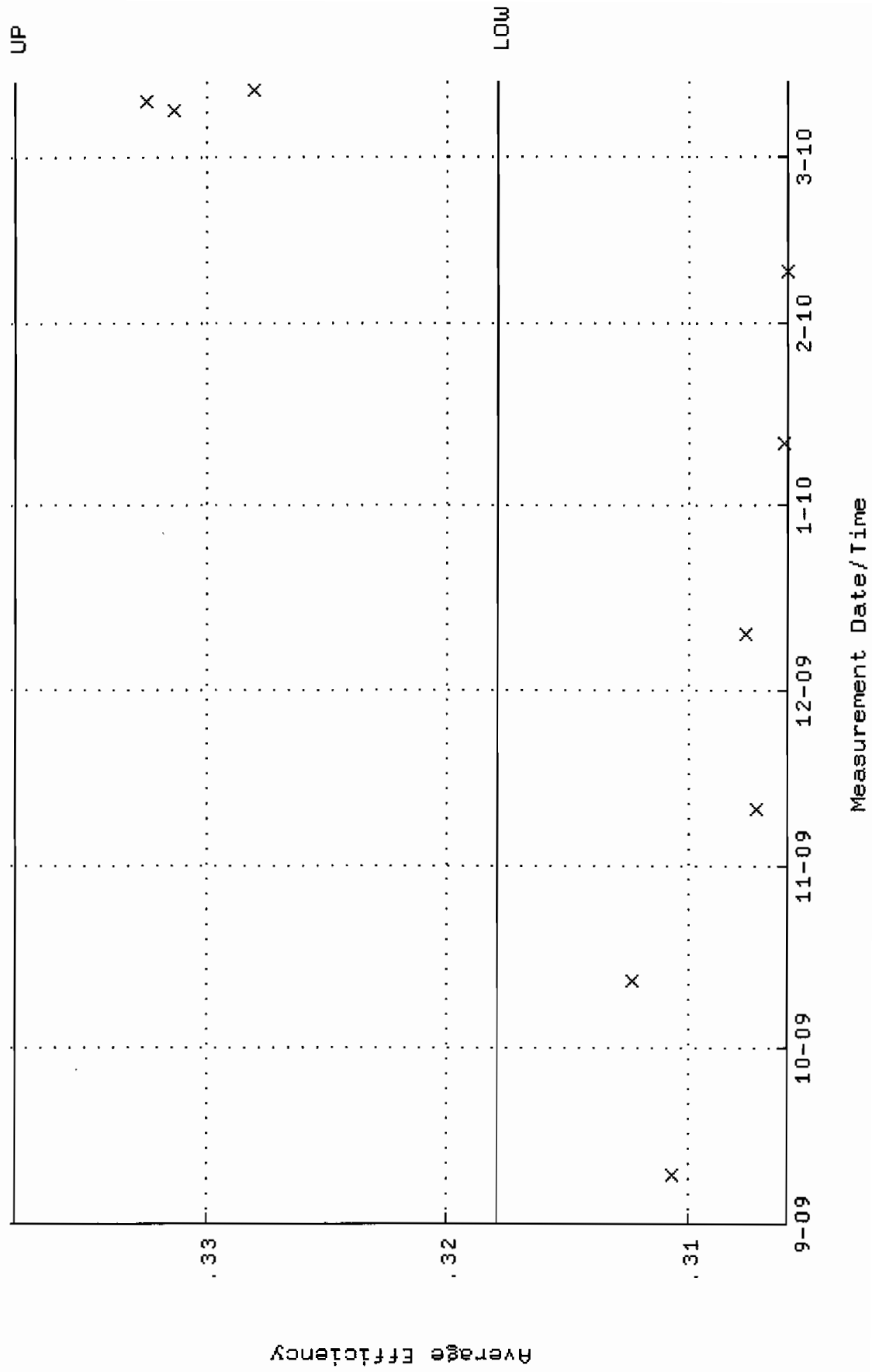


QA filename : DKA100:[ENV_ALPHA.QA.W]W096.QAF;2

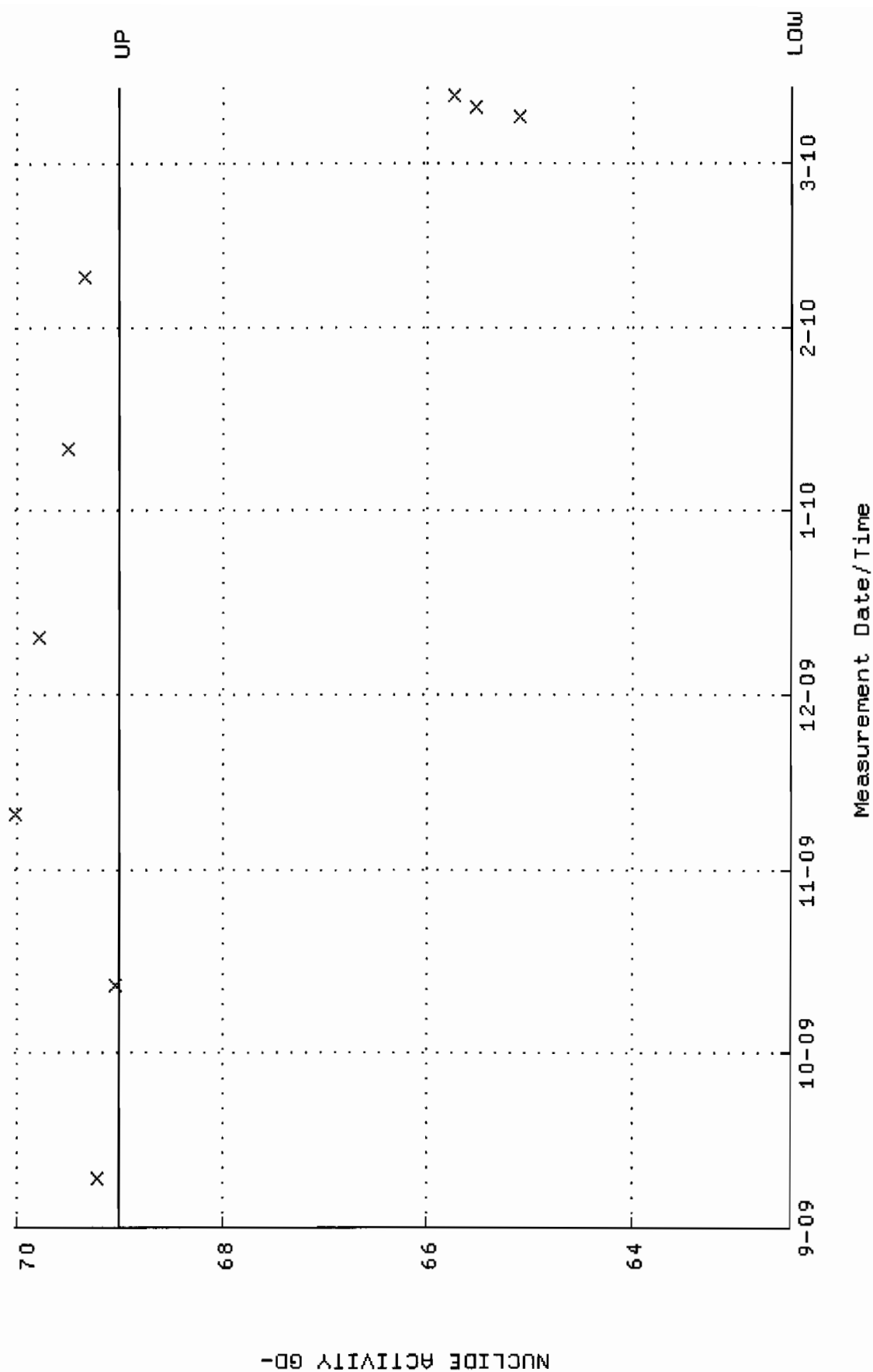
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00

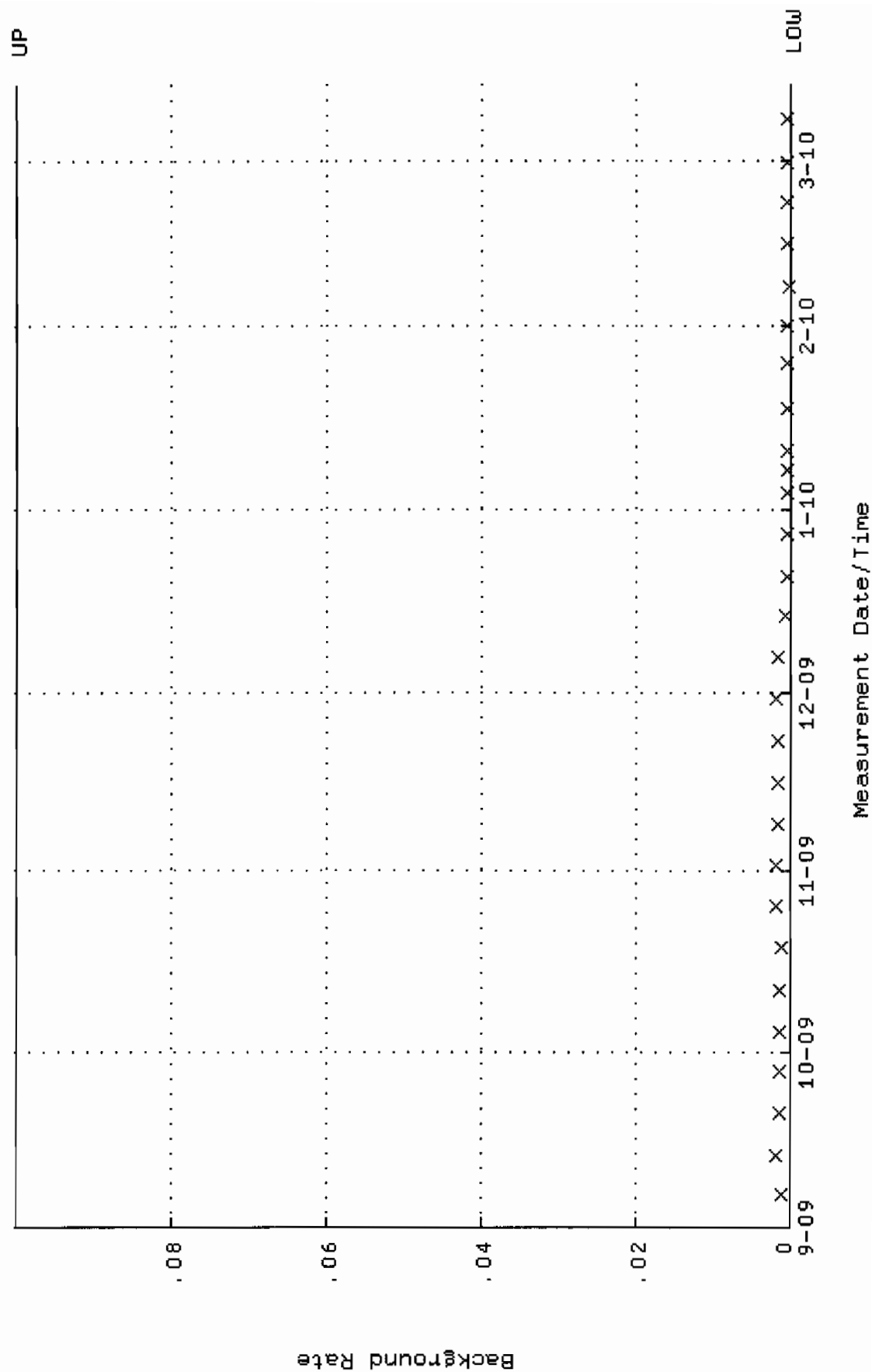
Lower/Upper Lmts: 0.317970 through 0.337970



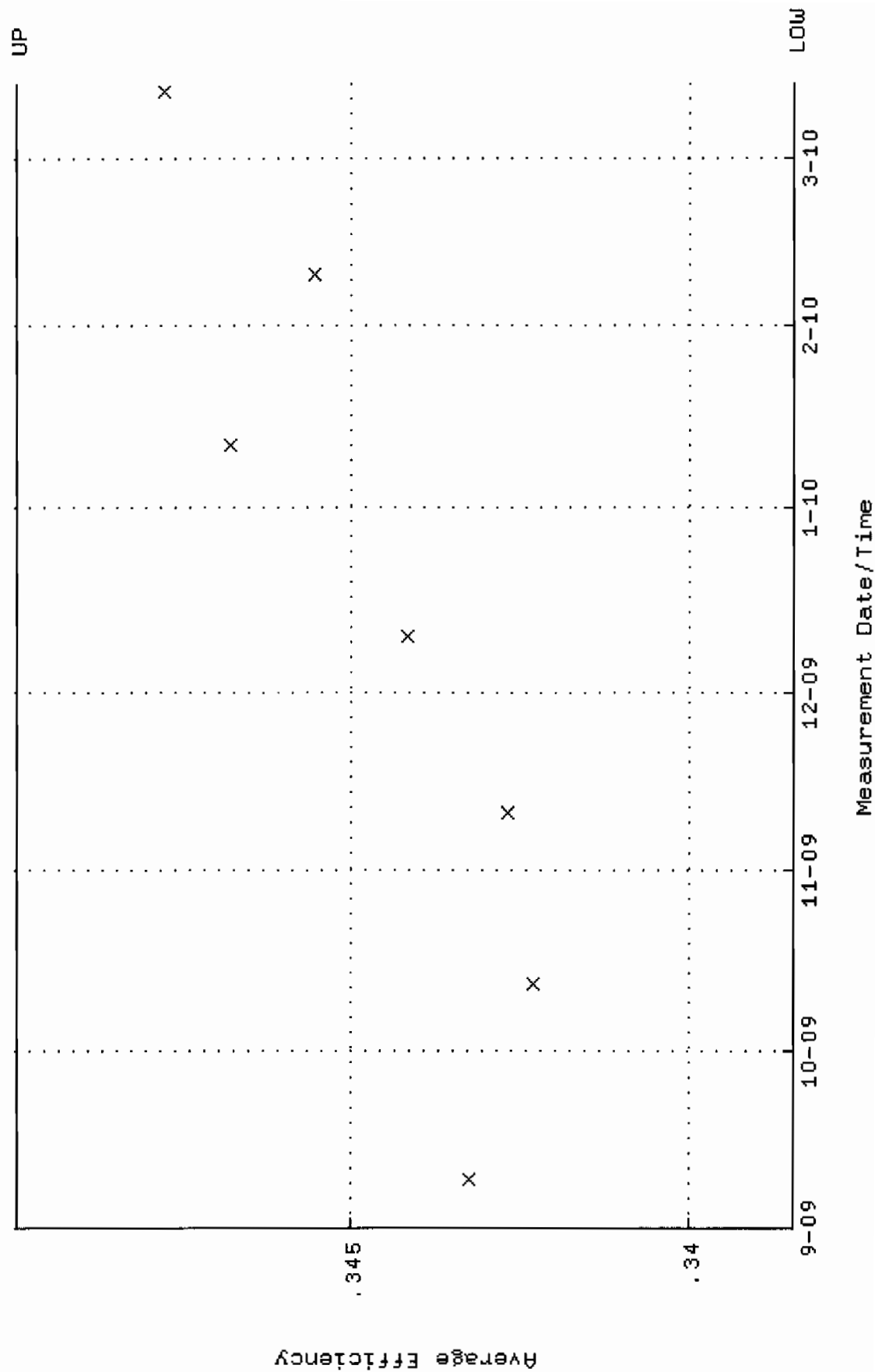
QA filename : DKA100:[ENV_ALPHA.QA.W]W096.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 62.4466 through 69.0200



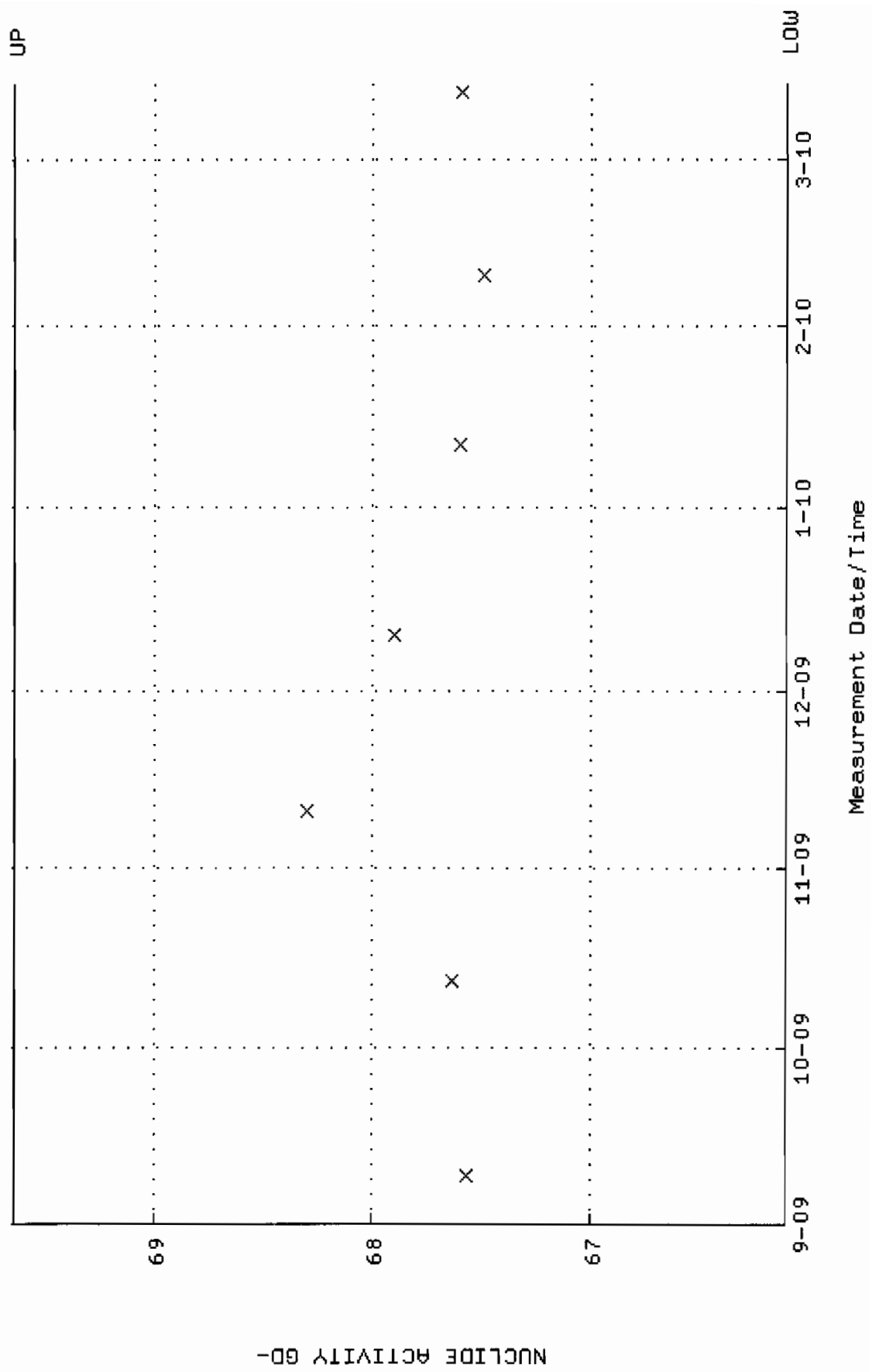
QA filename : DKA100:[ENV_ALPHA.QA.B]B096.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



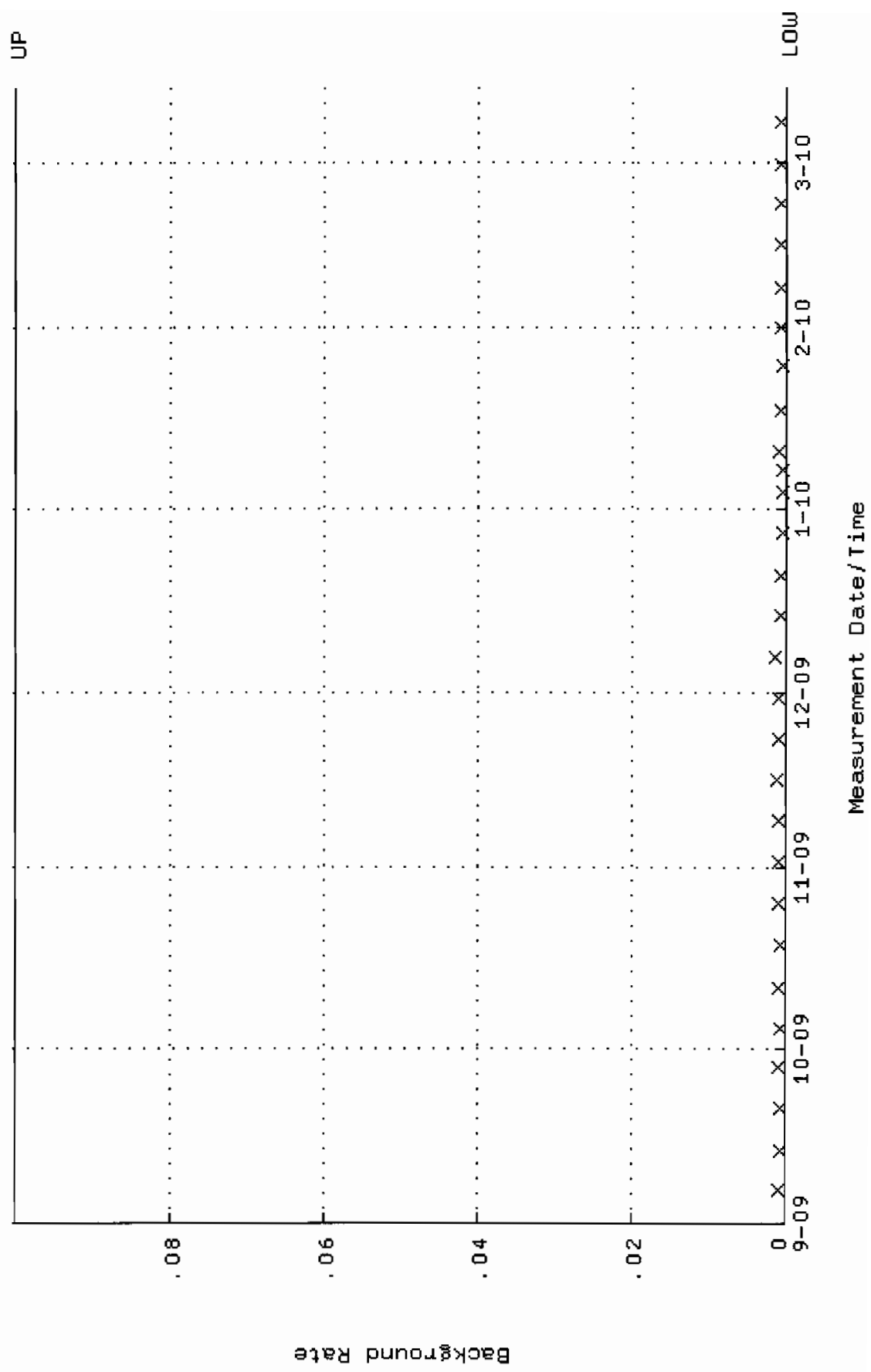
QA filename : DKA100:[ENV_ALPHA.QA.W]W097.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.338442 through 0.349972



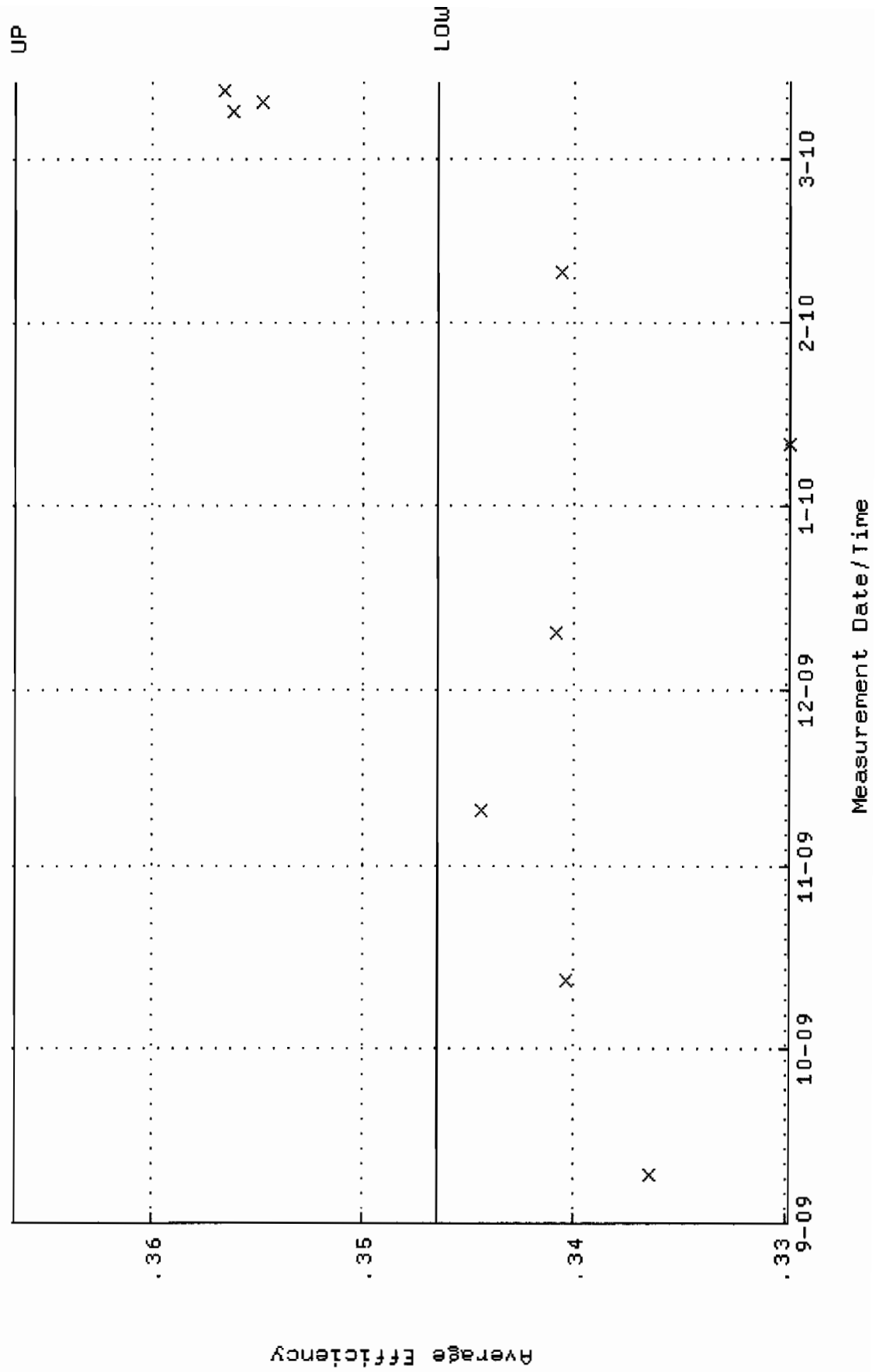
QA filename : DKA100:[ENV_ALPHA.QA.W]W097.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 66.0956 through 69.6464



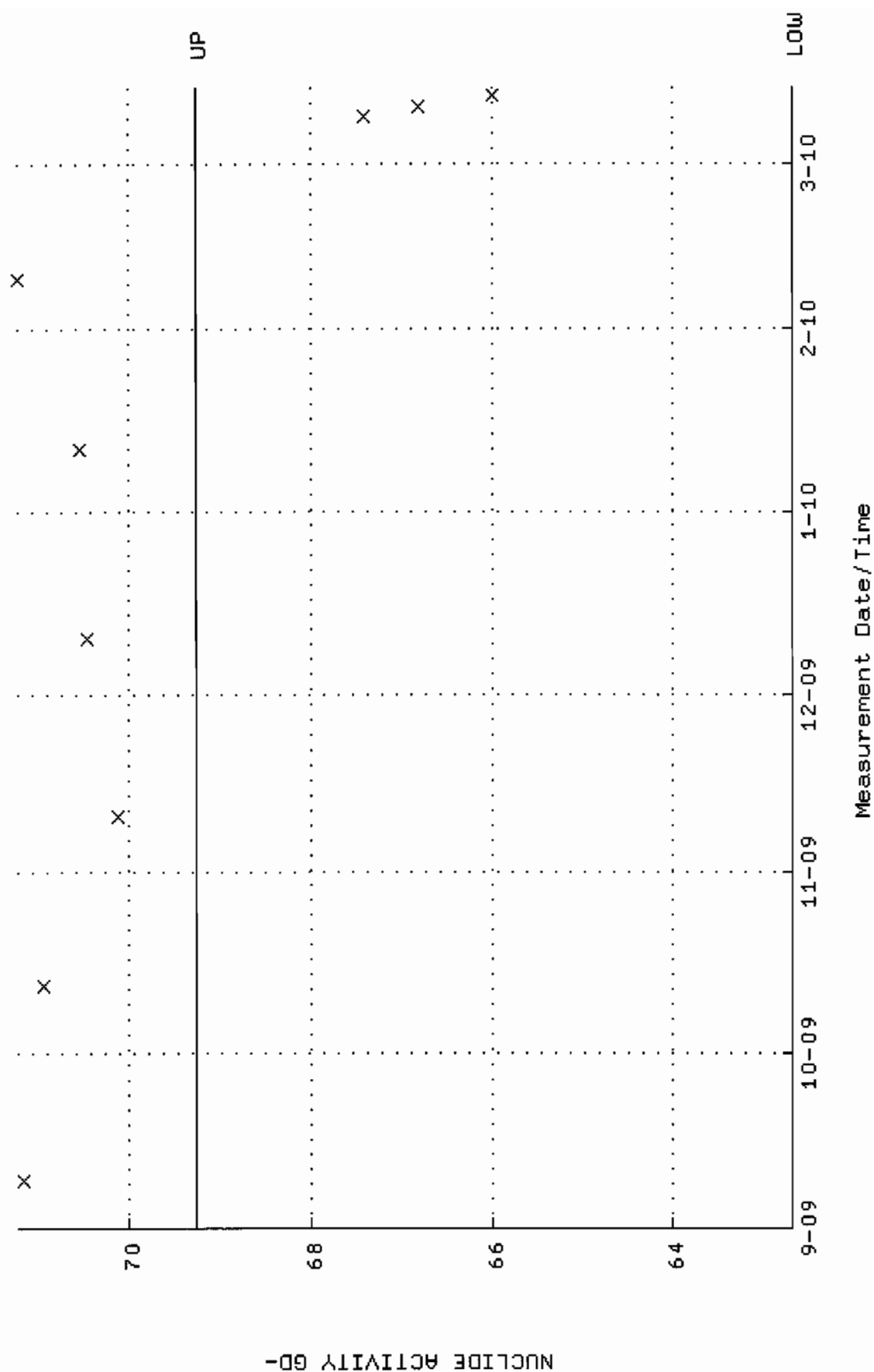
QA filename : DKA100:[ENV_ALPHA.QA.B]B097.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346488 through 0.366488



QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 62.6847 through 69.2831

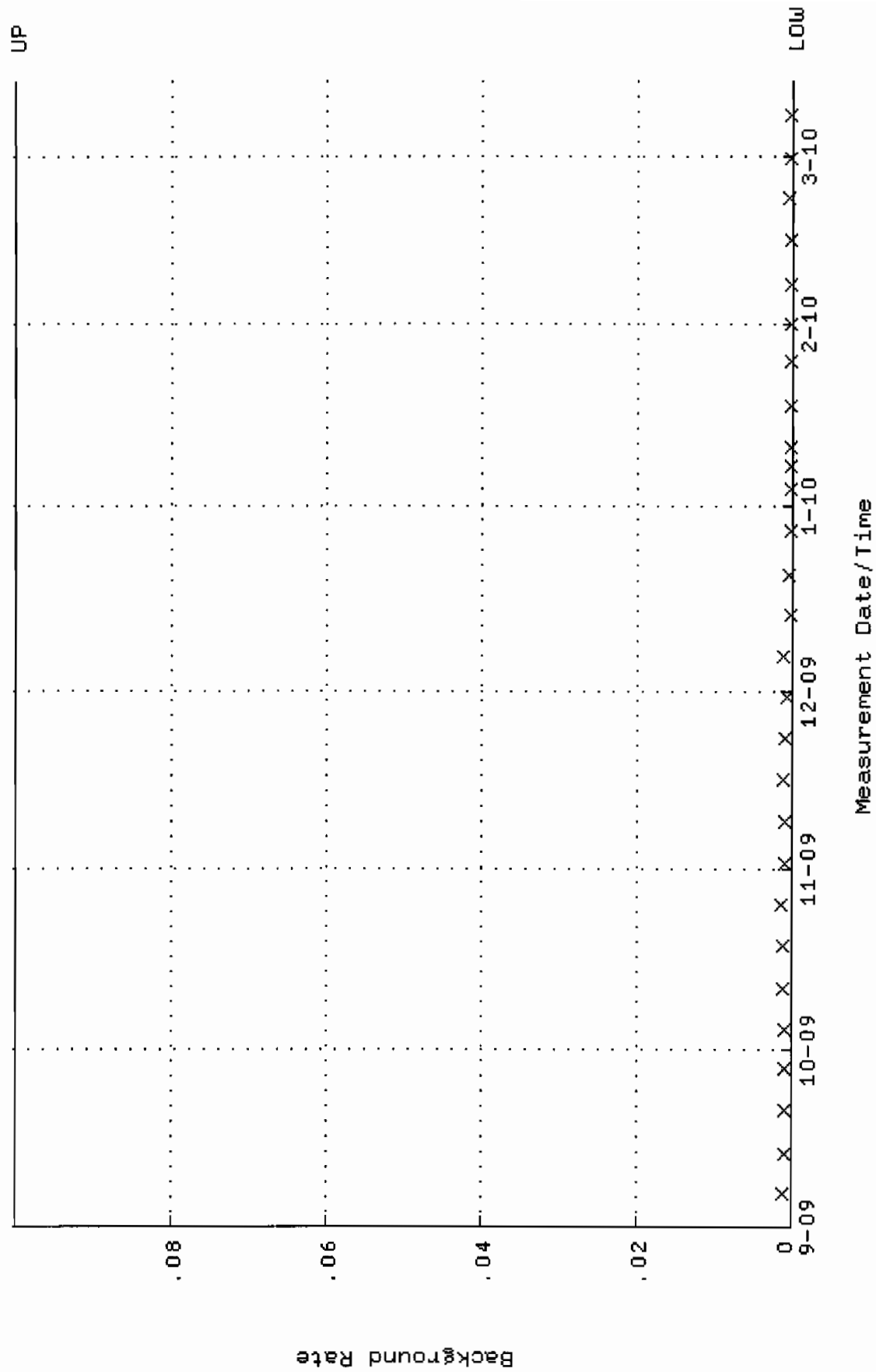


QA filename : DKA100:[ENV_ALPHA.QA.B]B098.QAF;2

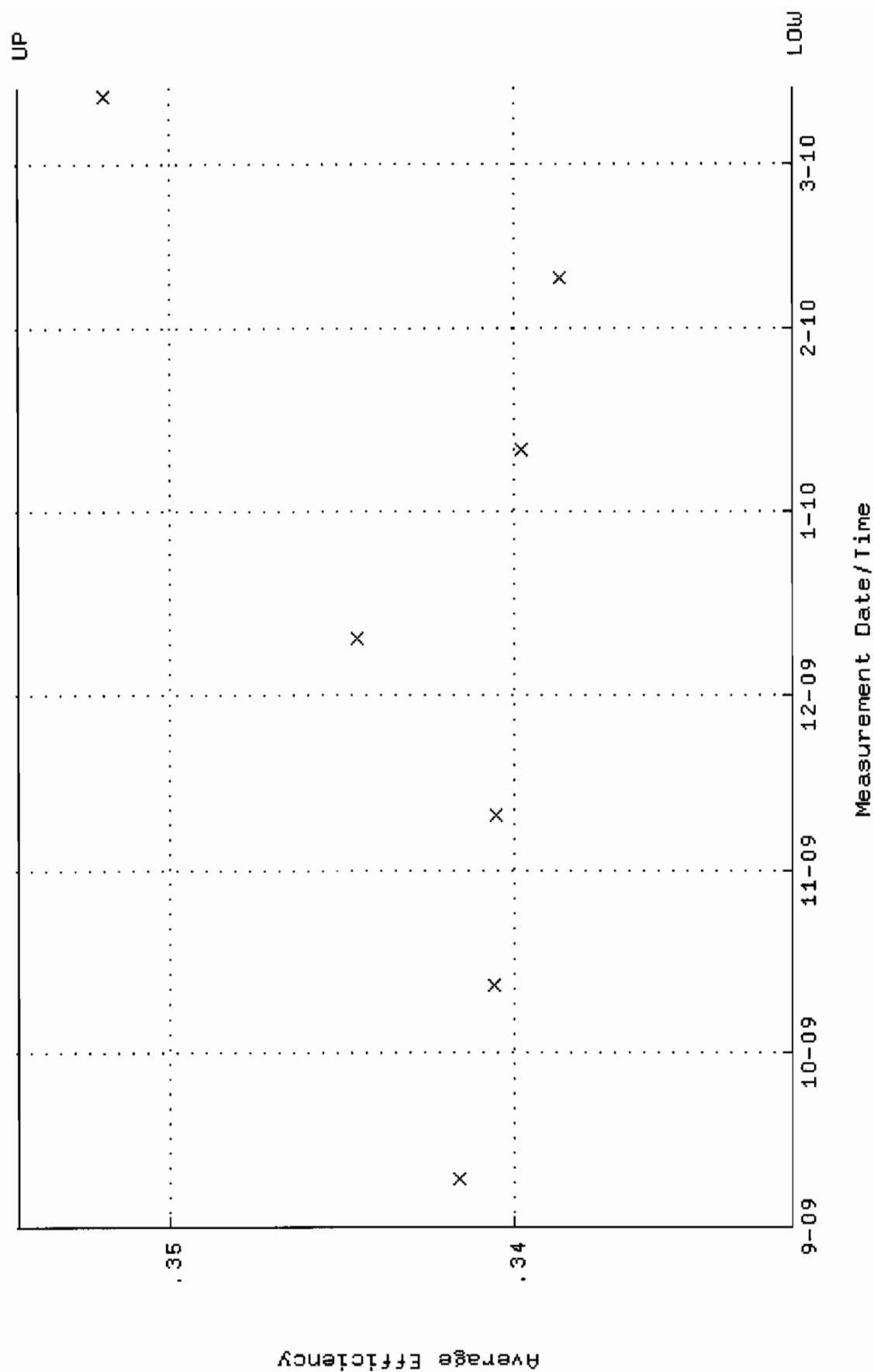
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00

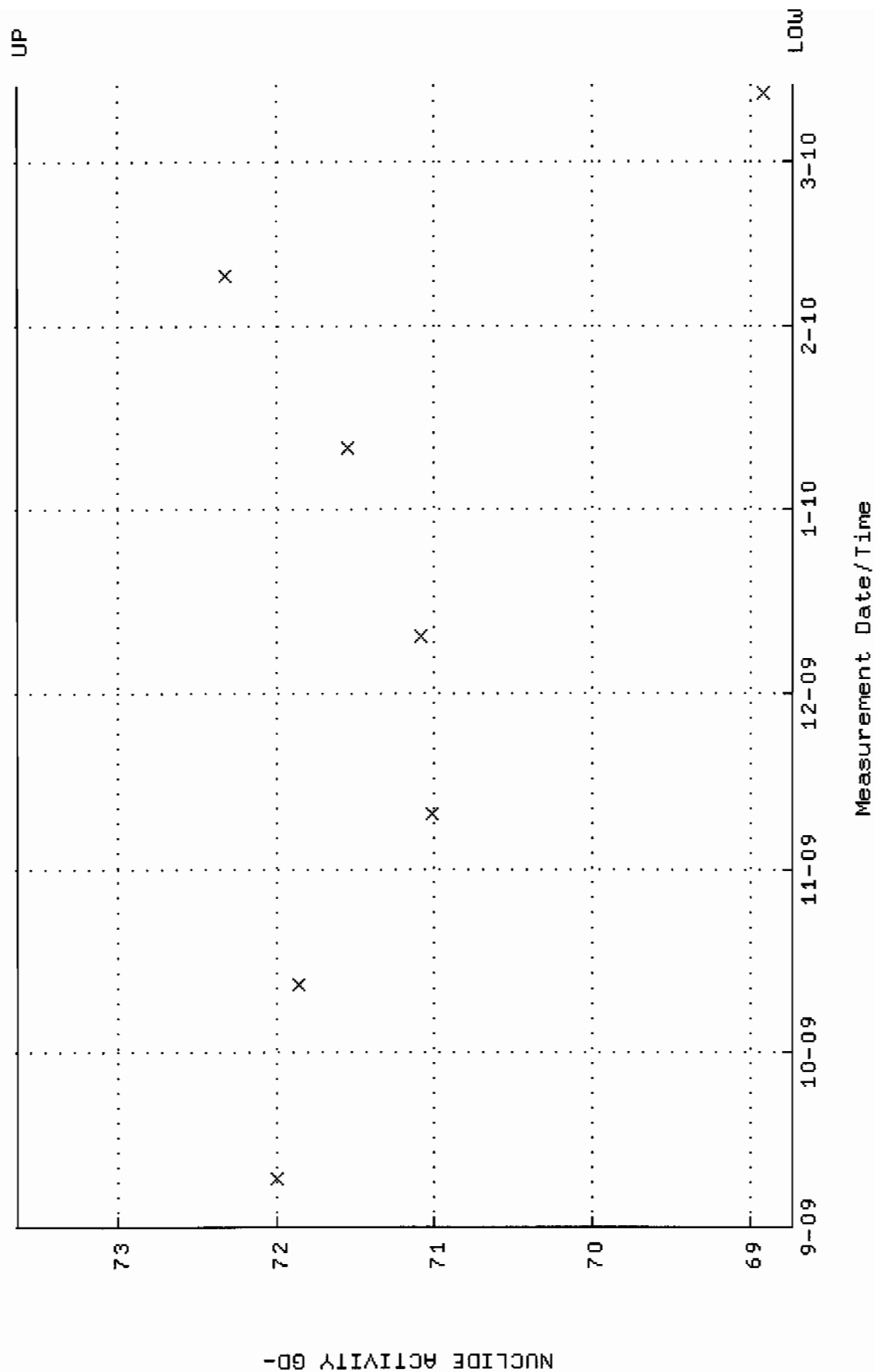
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.331877 through 0.354429



QA filename : DKA100:[ENV_ALPHA.QA.W]w099.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 68.7313 through 73.6359

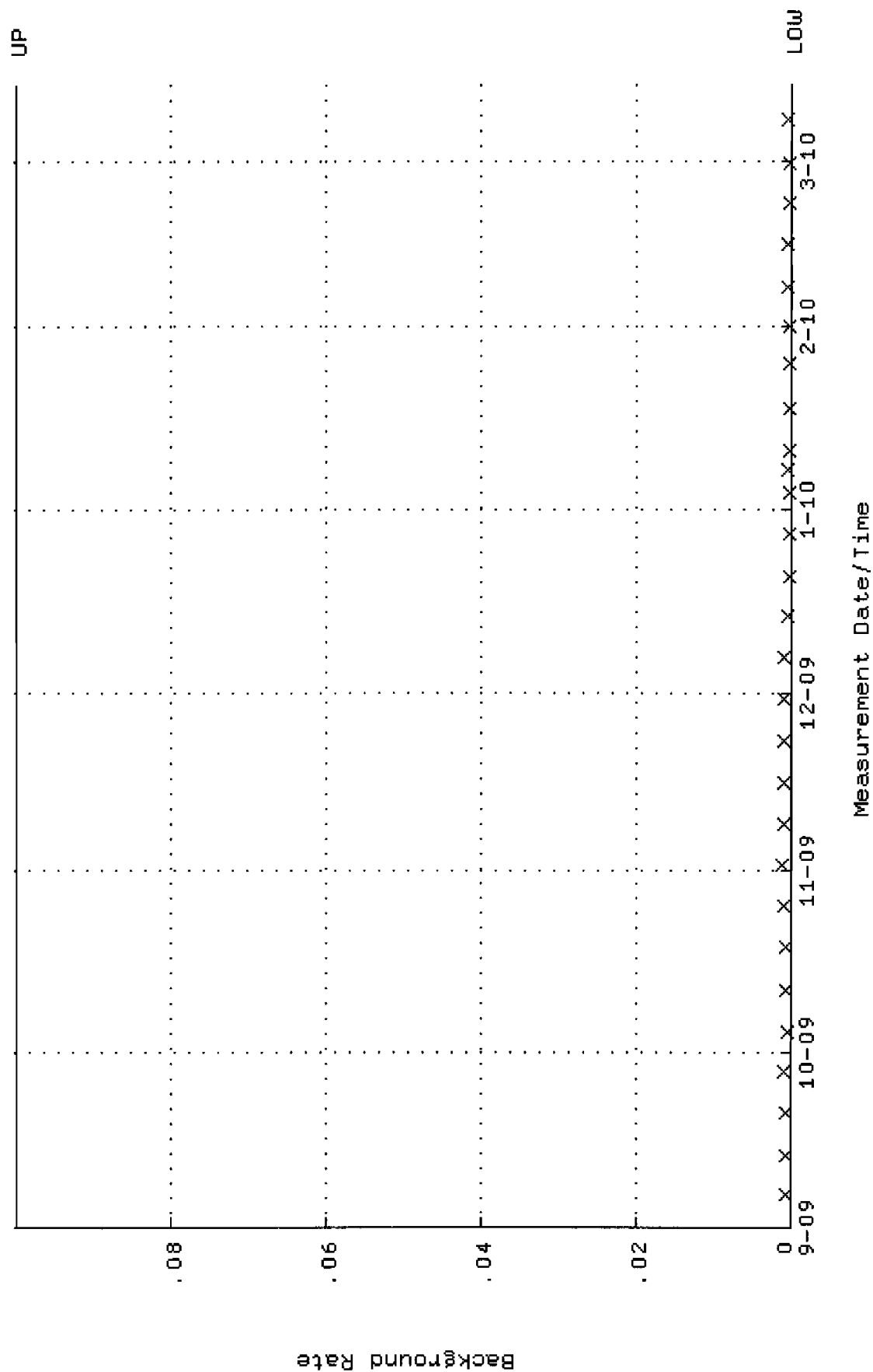


QA filename : DKA100:[ENV_ALPHA.QA.B]B099.QAF;2

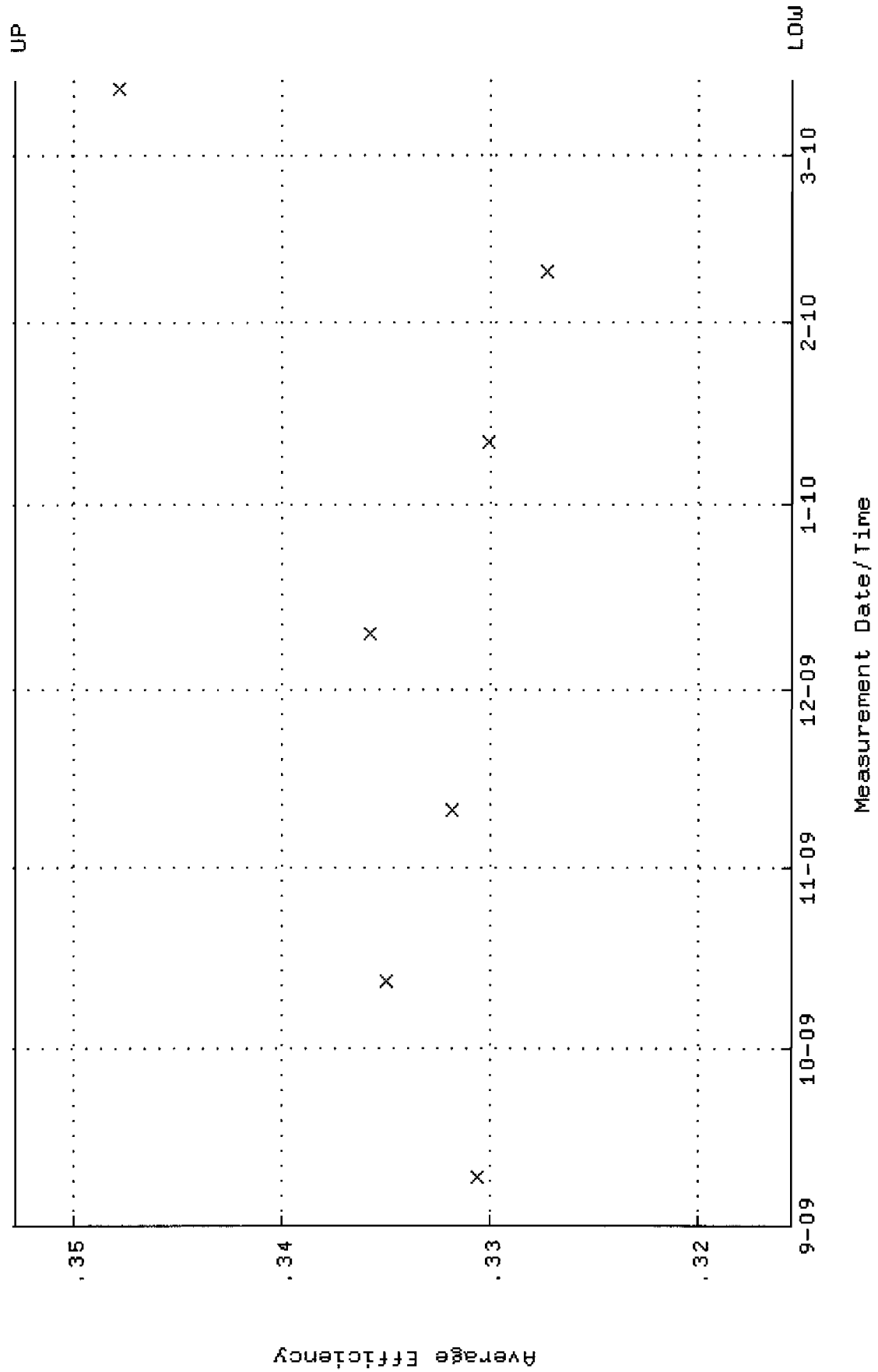
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00

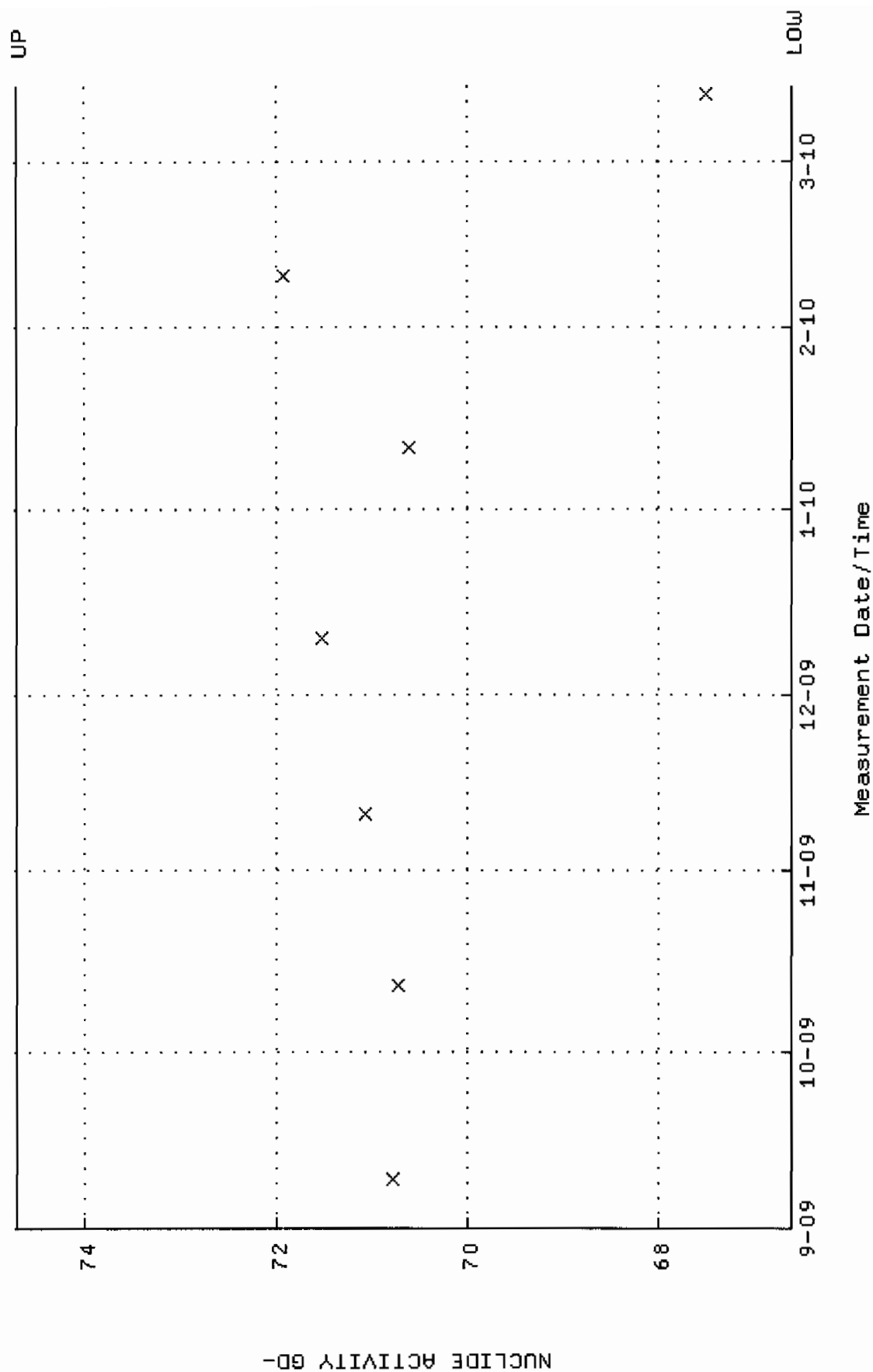
Lower/Upper Lmts: 0.000000E+00 through 0.100000



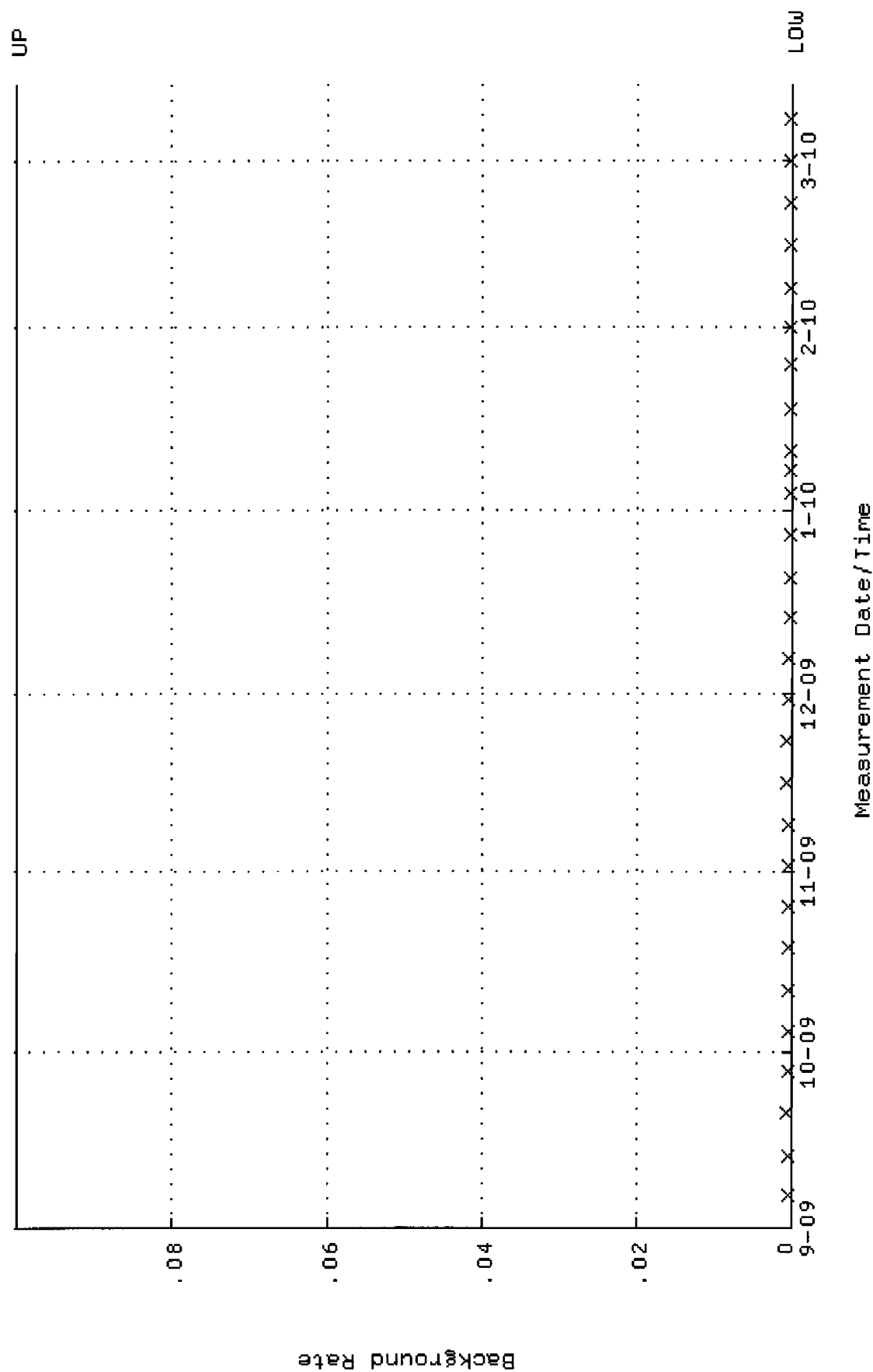
QA filename : DKA100:[ENV_ALPHA.QA.W]W102.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.315554 through 0.352816



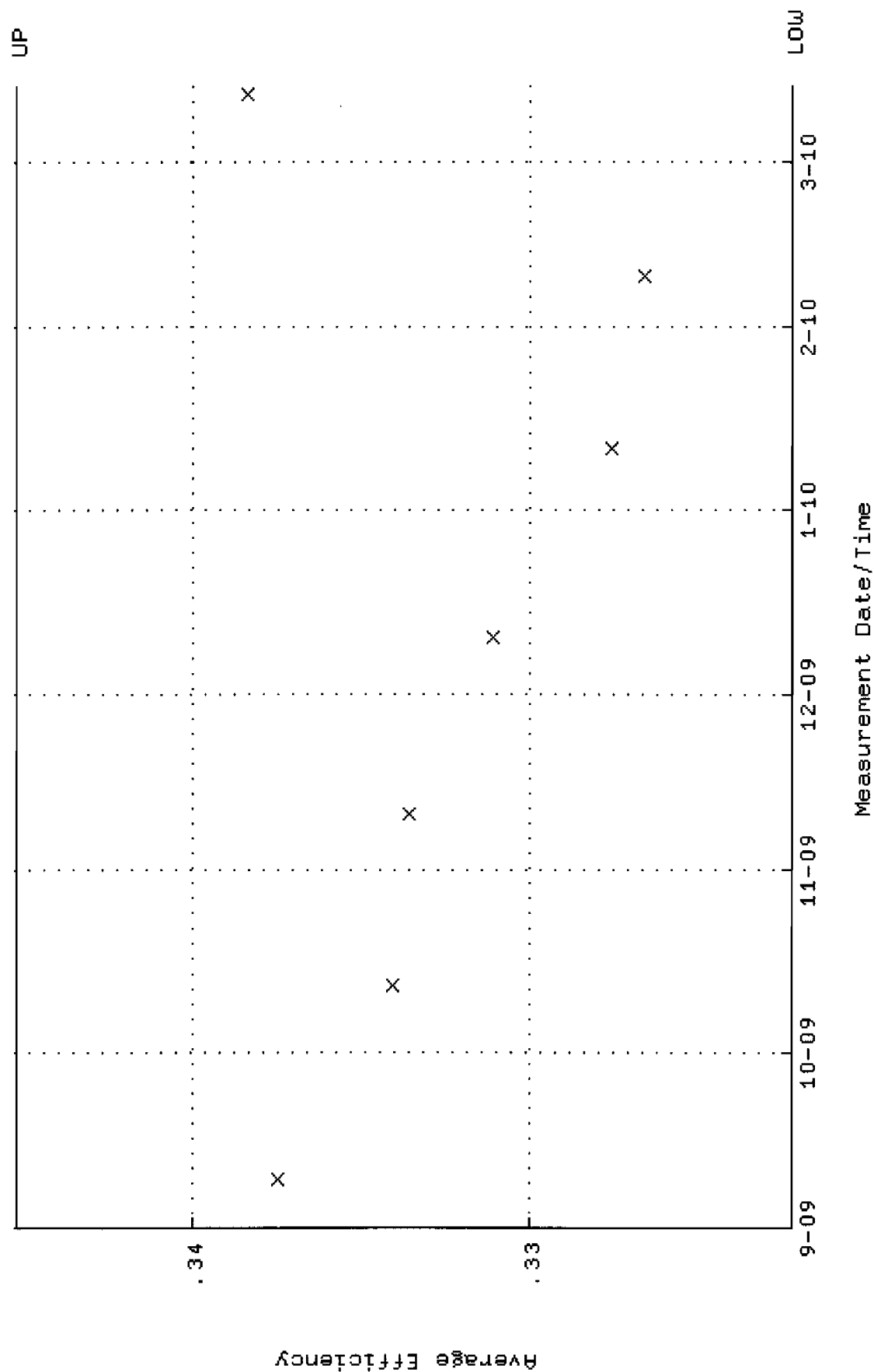
QA filename : DKA100:[ENV_ALPHA.QA.W]w102.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 66.6183 through 74.7119



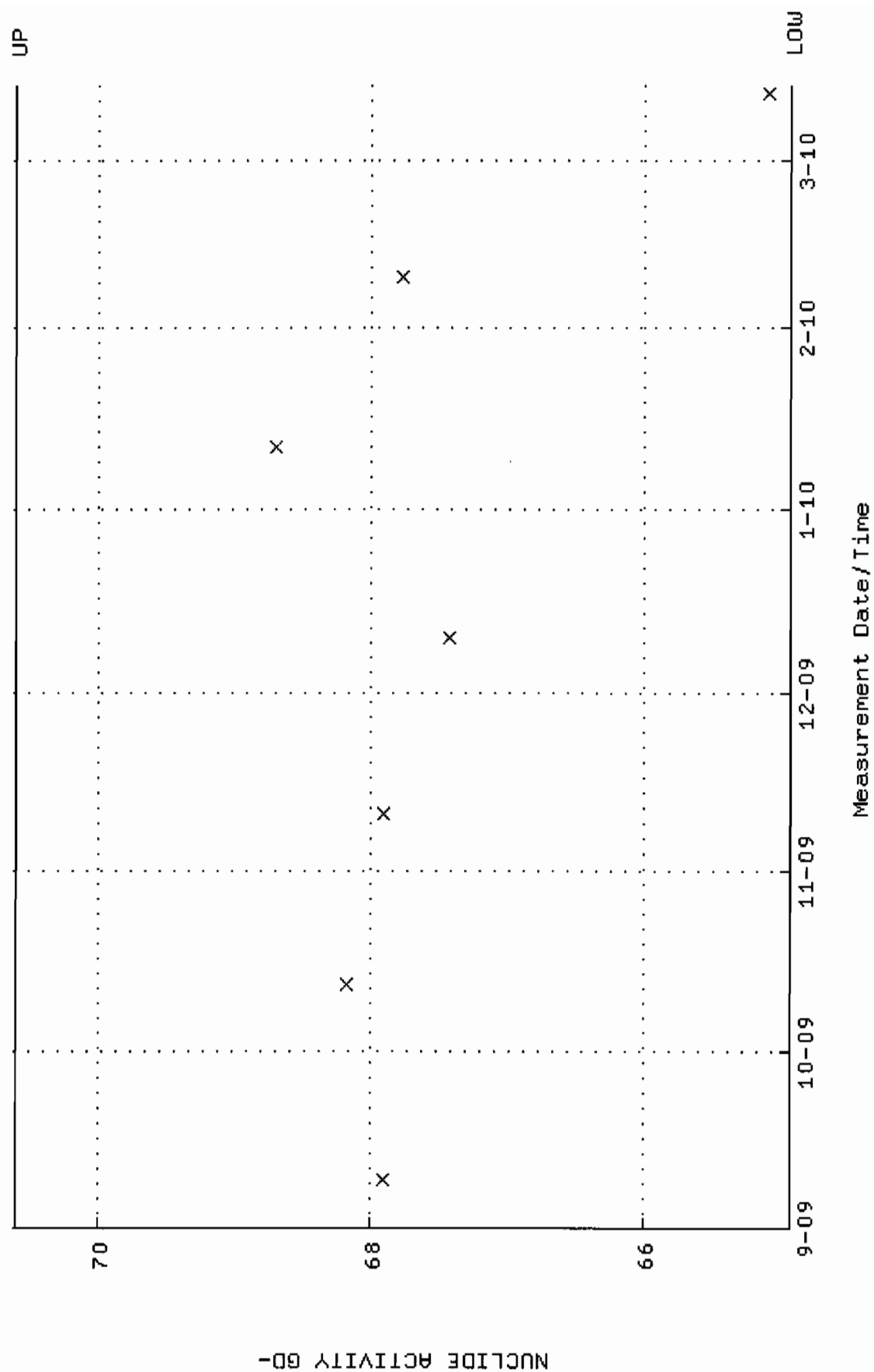
QA filename : DKA100:[ENV_ALPHA.QA.B]B102.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



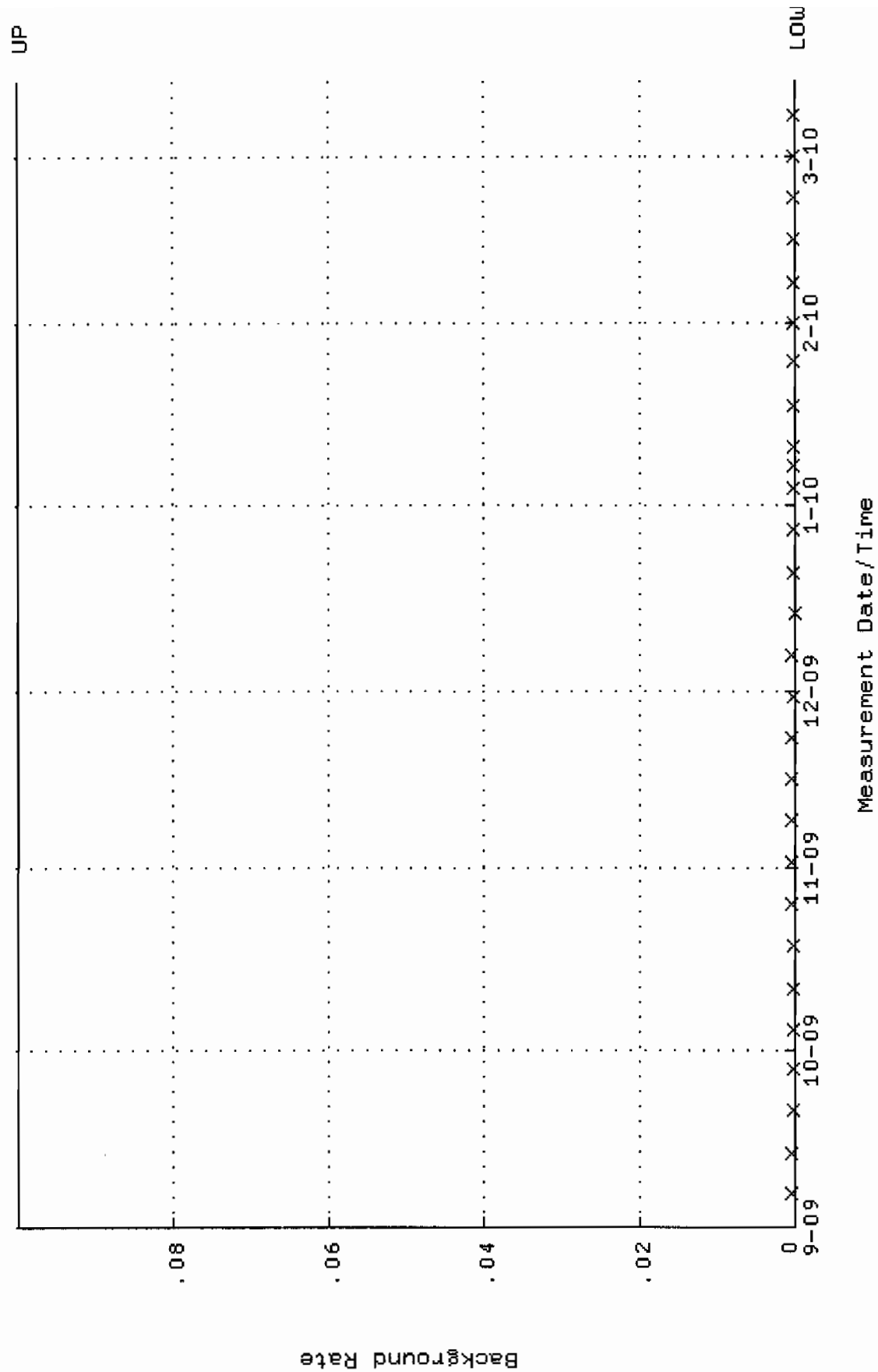
QA filename : DKA100:[ENV_ALPHA.QA.W]W103.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.322227 through 0.345175



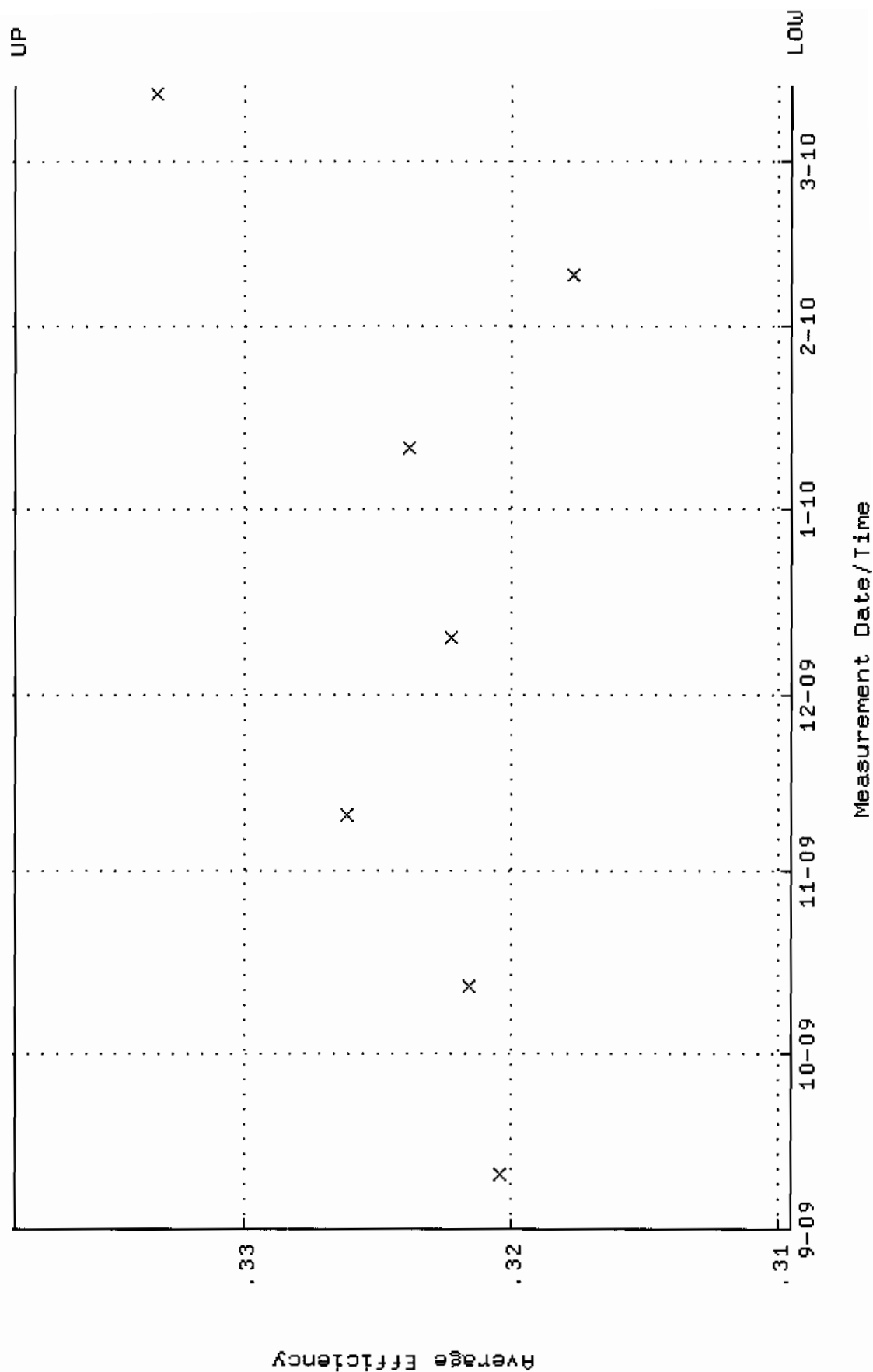
QA filename : DKA100:[ENV_ALPHA.QA.W]w103.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 64.9318 through 70.5959



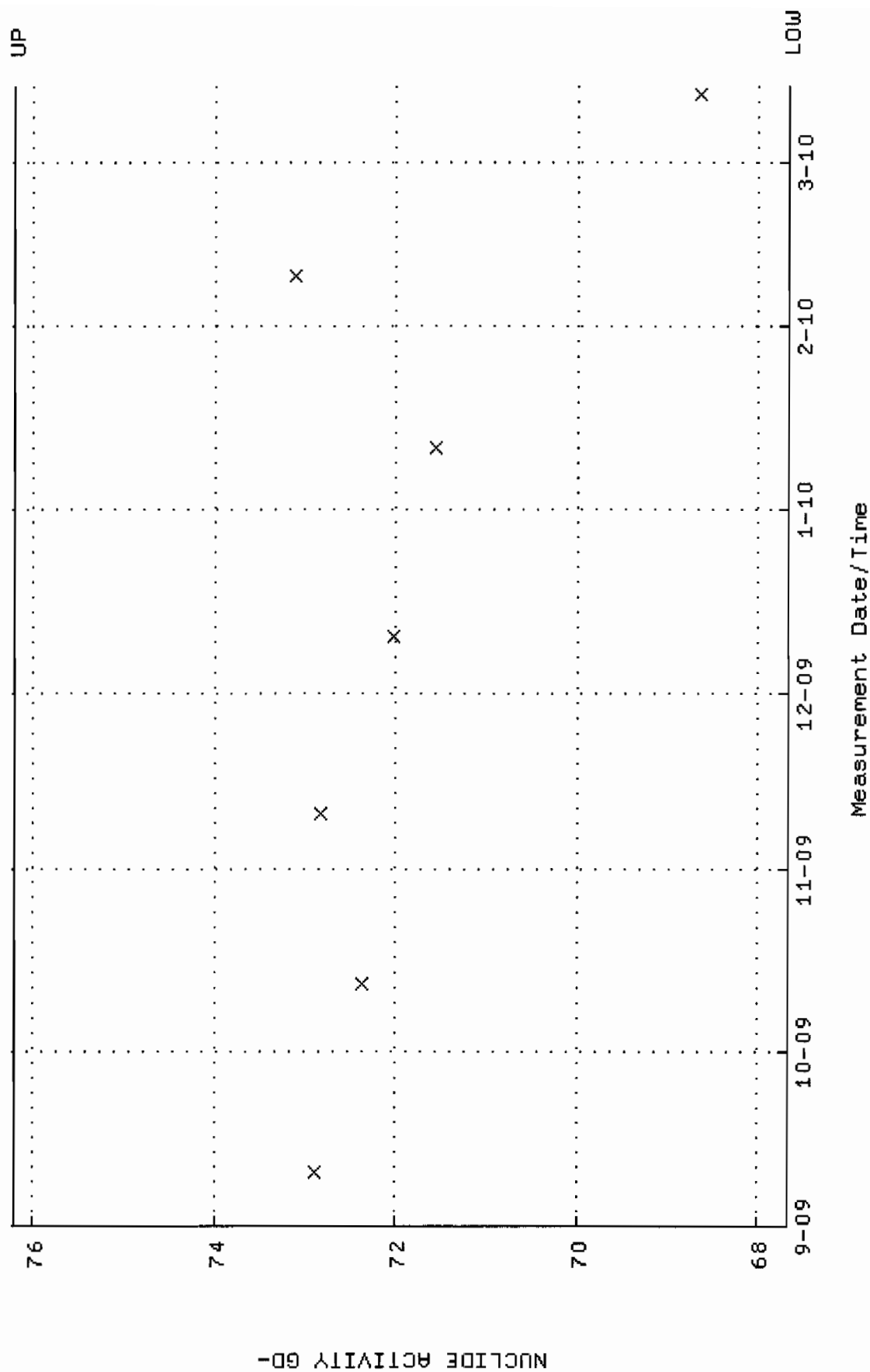
QA filename : DKA100:[ENV_ALPHA.QA.B]B103.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



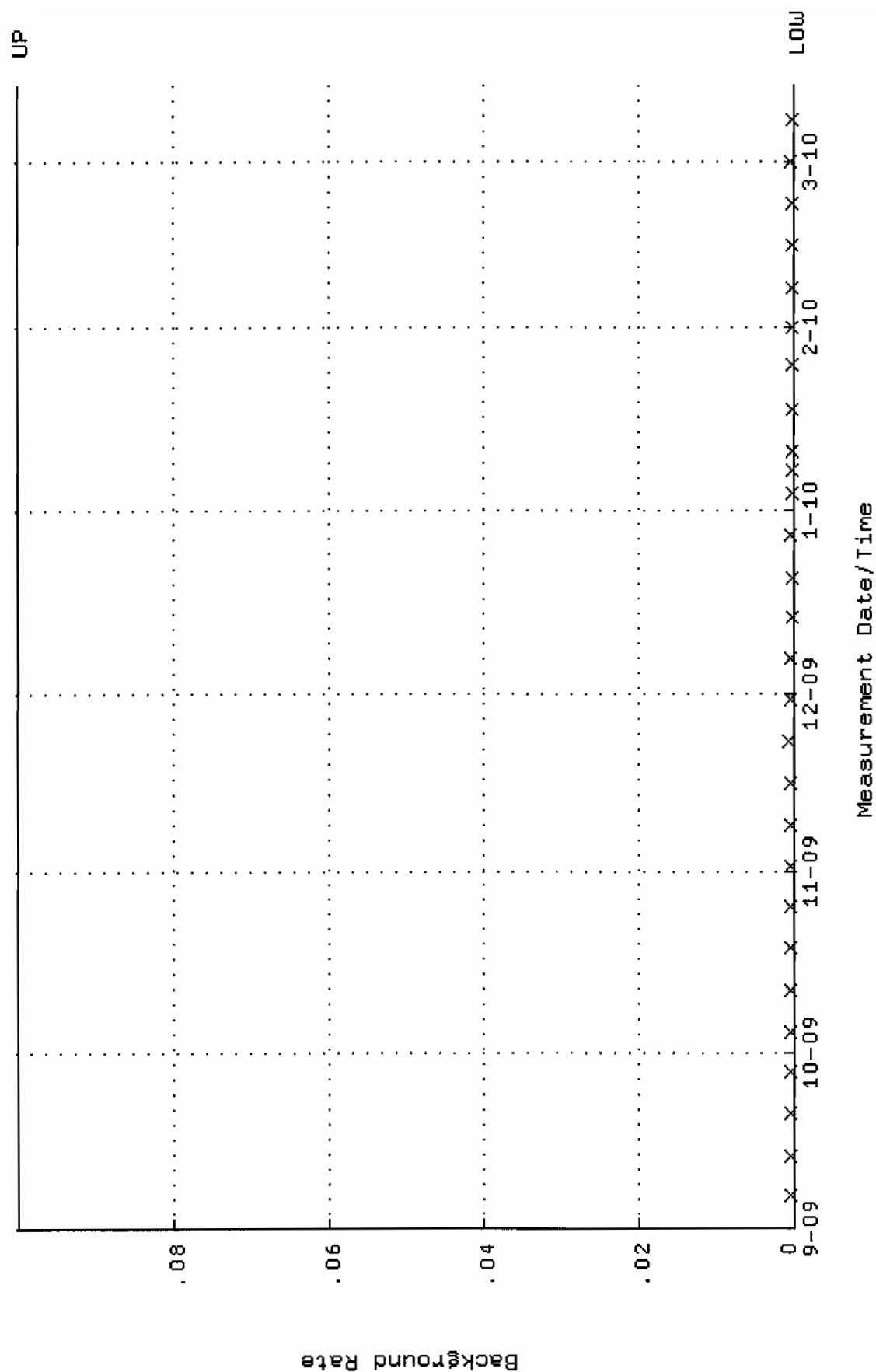
QA filename : DKA100:[ENV_ALPHA.QA.W]W105.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 08:05:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.309544 through 0.338666



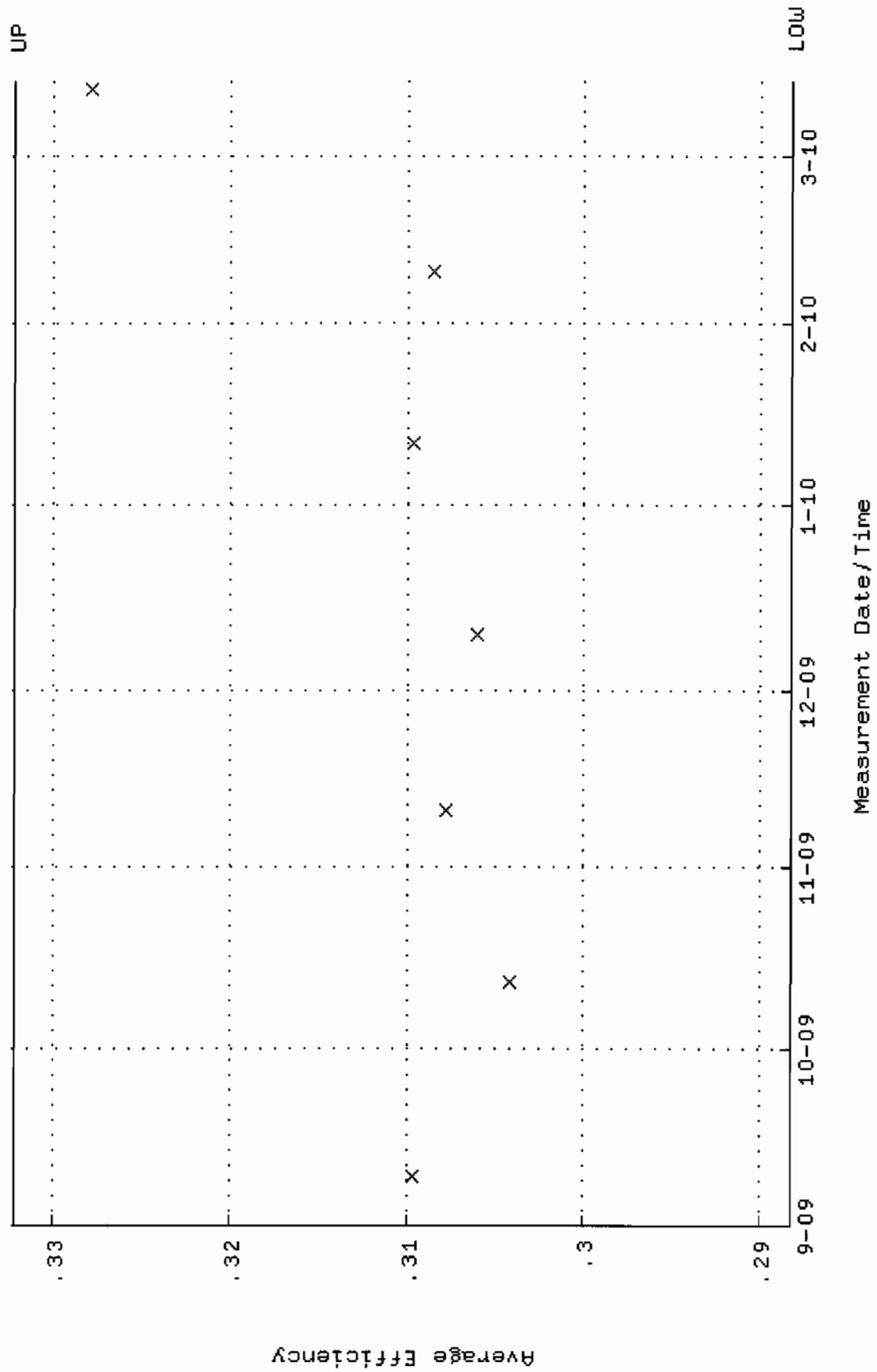
QA filename : DKA100:[ENV_ALPHA.QA.W]W105.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 08:05:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 67.6585 through 76.2091



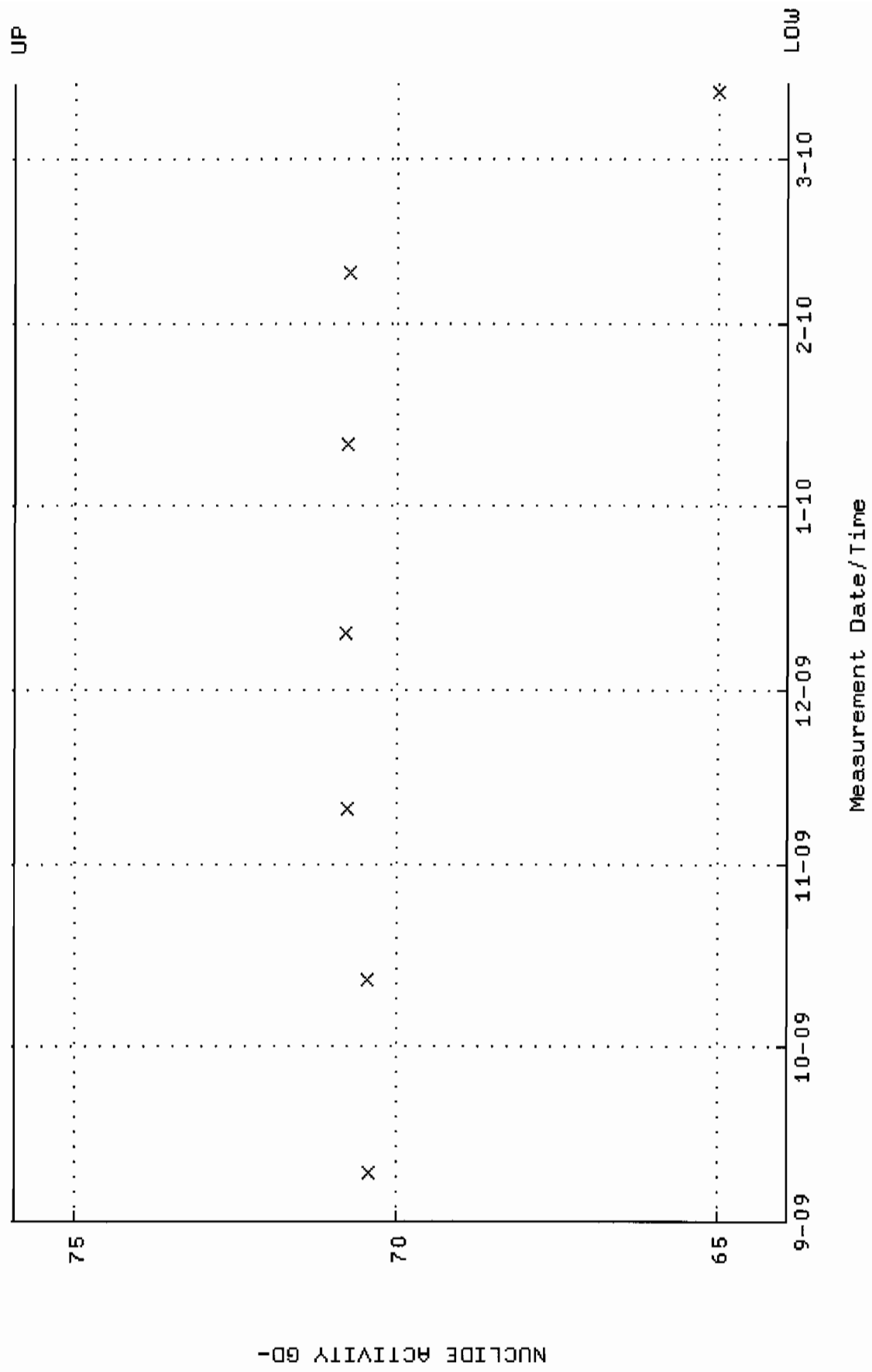
QA filename : DKA100:[ENV_ALPHA.QA.B]B105.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



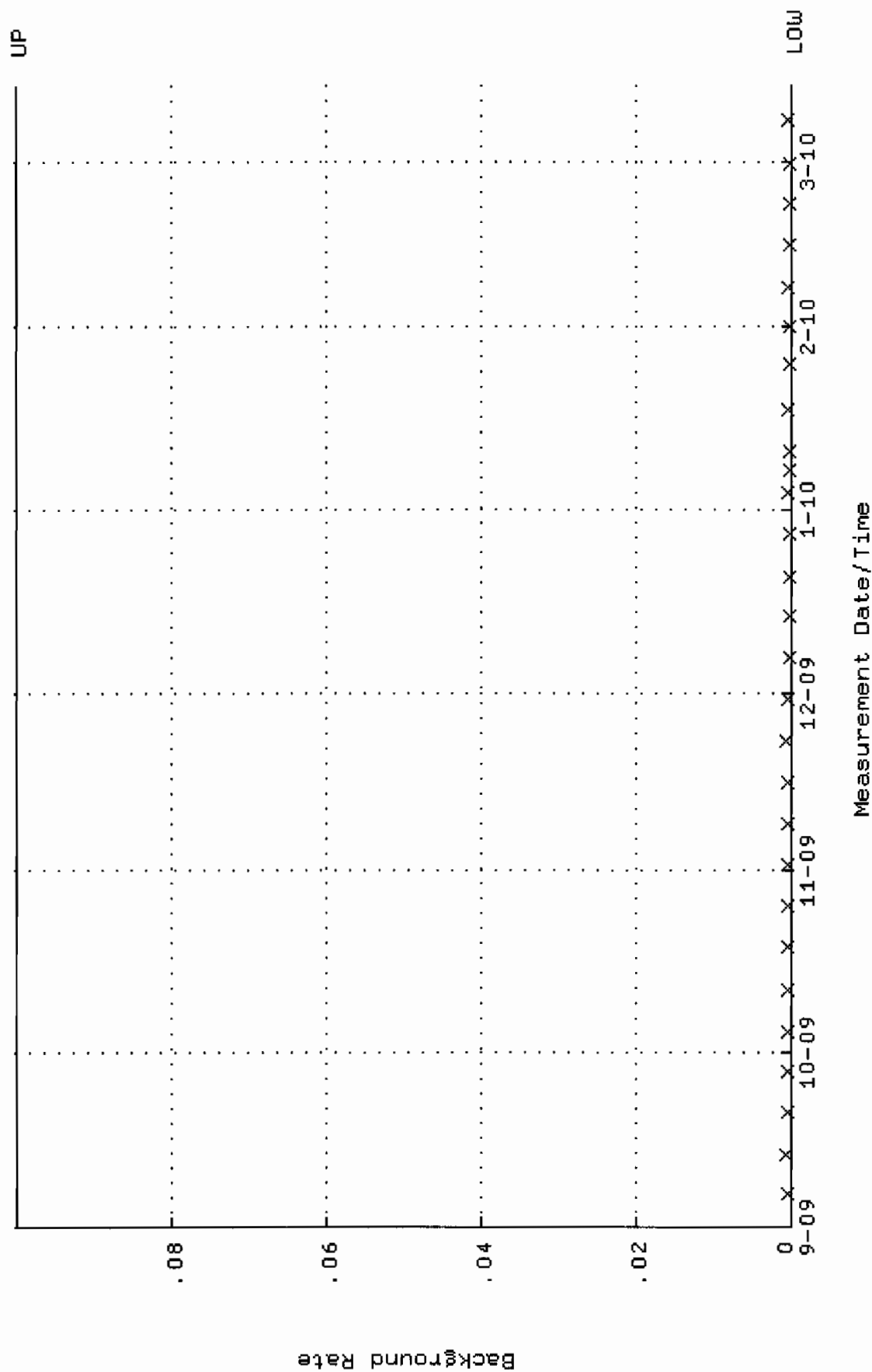
QA filename : DKA100:[ENV_ALPHA.QA.W]W107.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.288232 through 0.332218



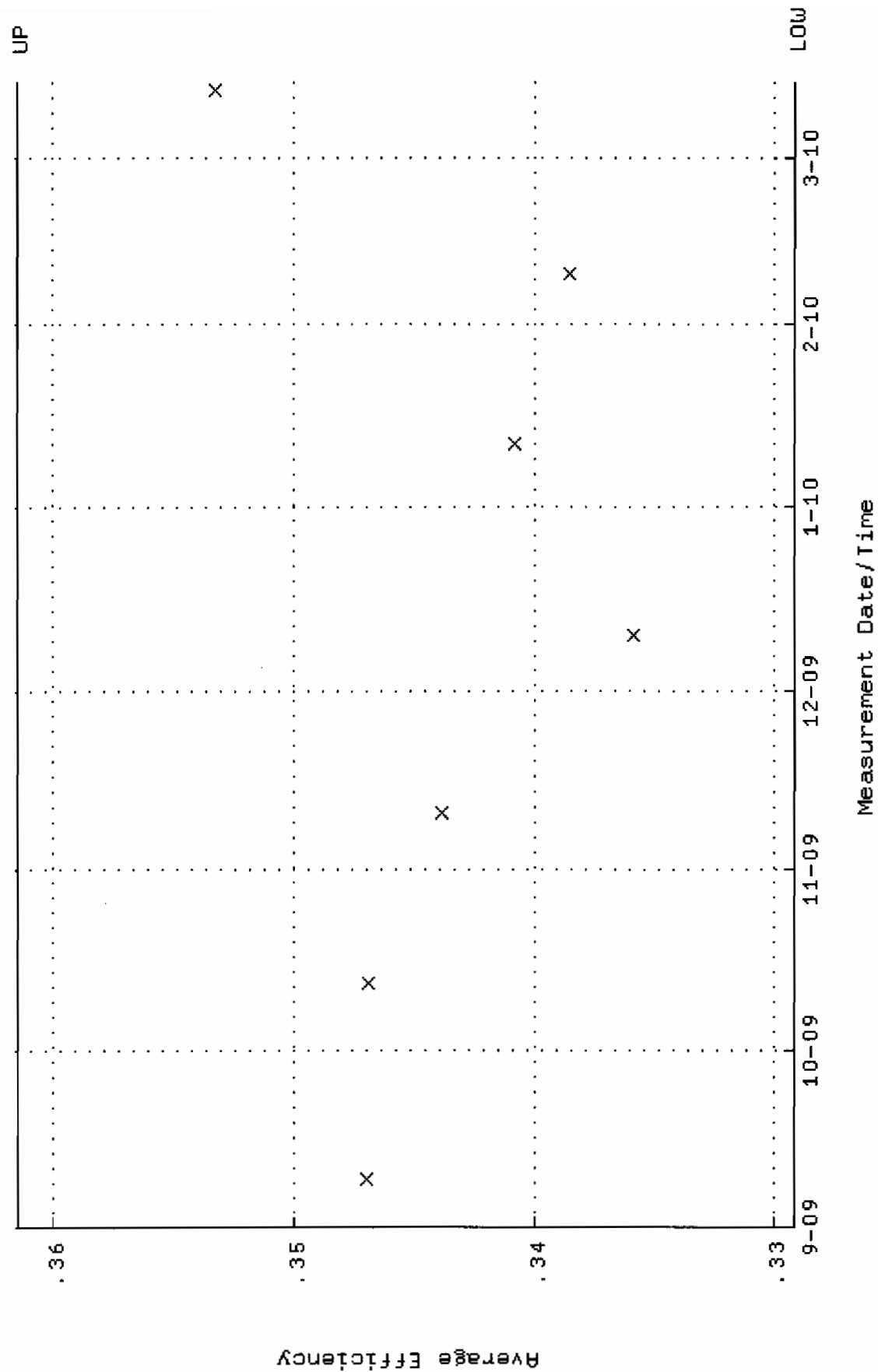
QA filename : DKA100:[ENV_ALPHA.QA.W]W107.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 63.9135 through 75.9257



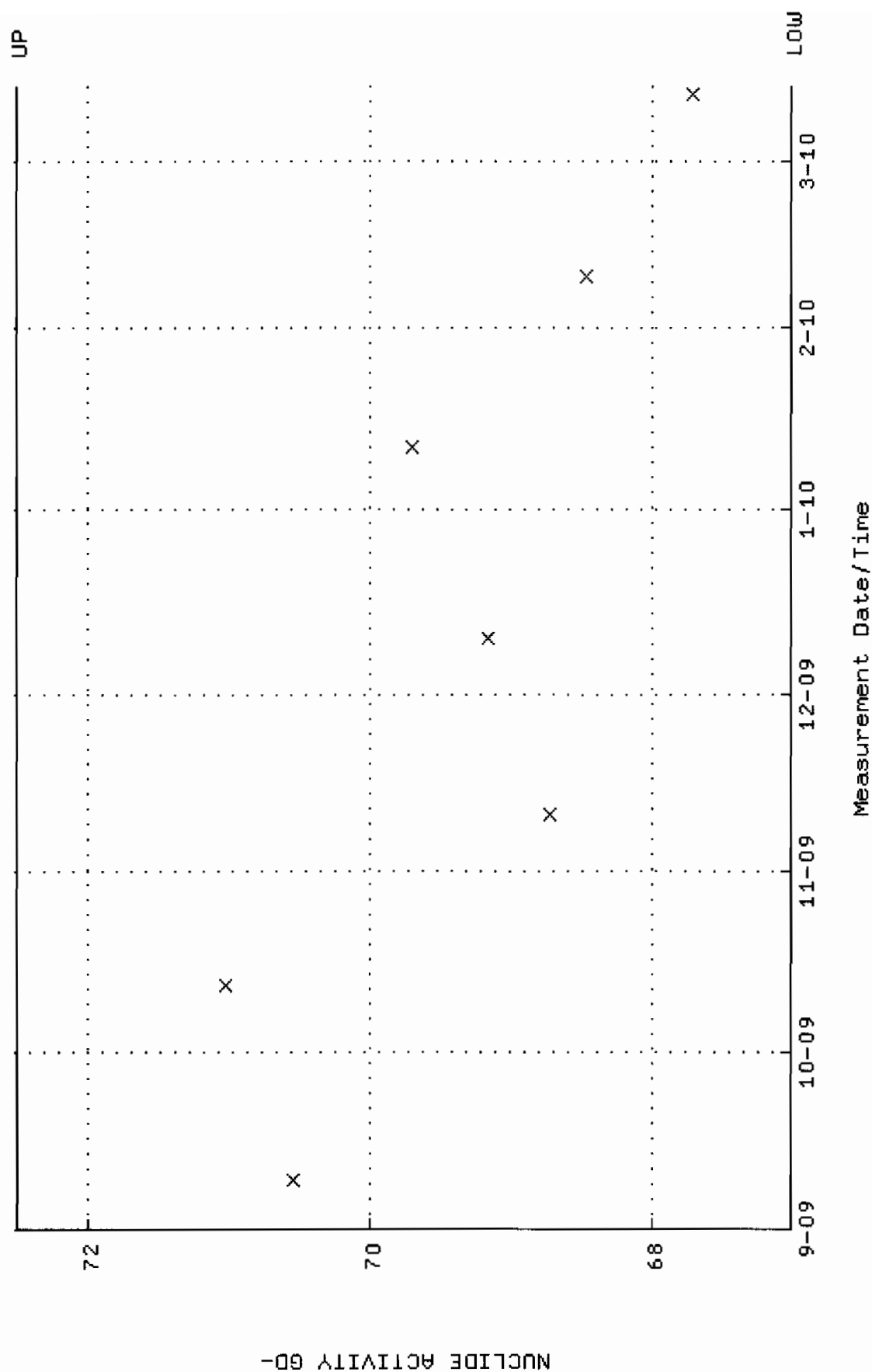
QA filename : DKA100:[ENV_ALPHA.QA.B]B107.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W108.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.329201 through 0.361417



QA filename : DKA100:[ENV_ALPHA.QA.W]W108.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 67.0155 through 72.5031

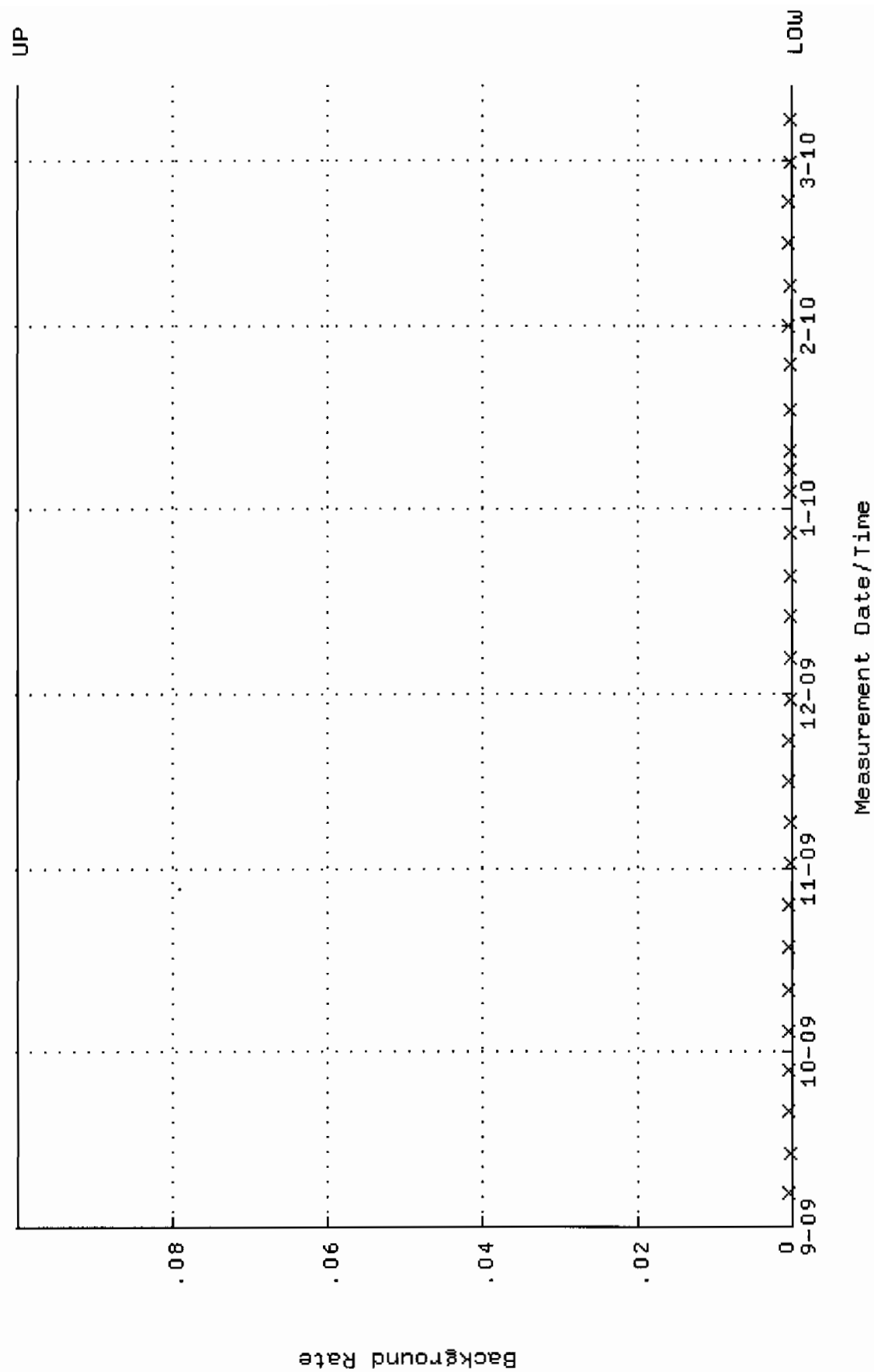


QA filename : DKA100:[ENV_ALPHA.QA.B]B108.QAF;2

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

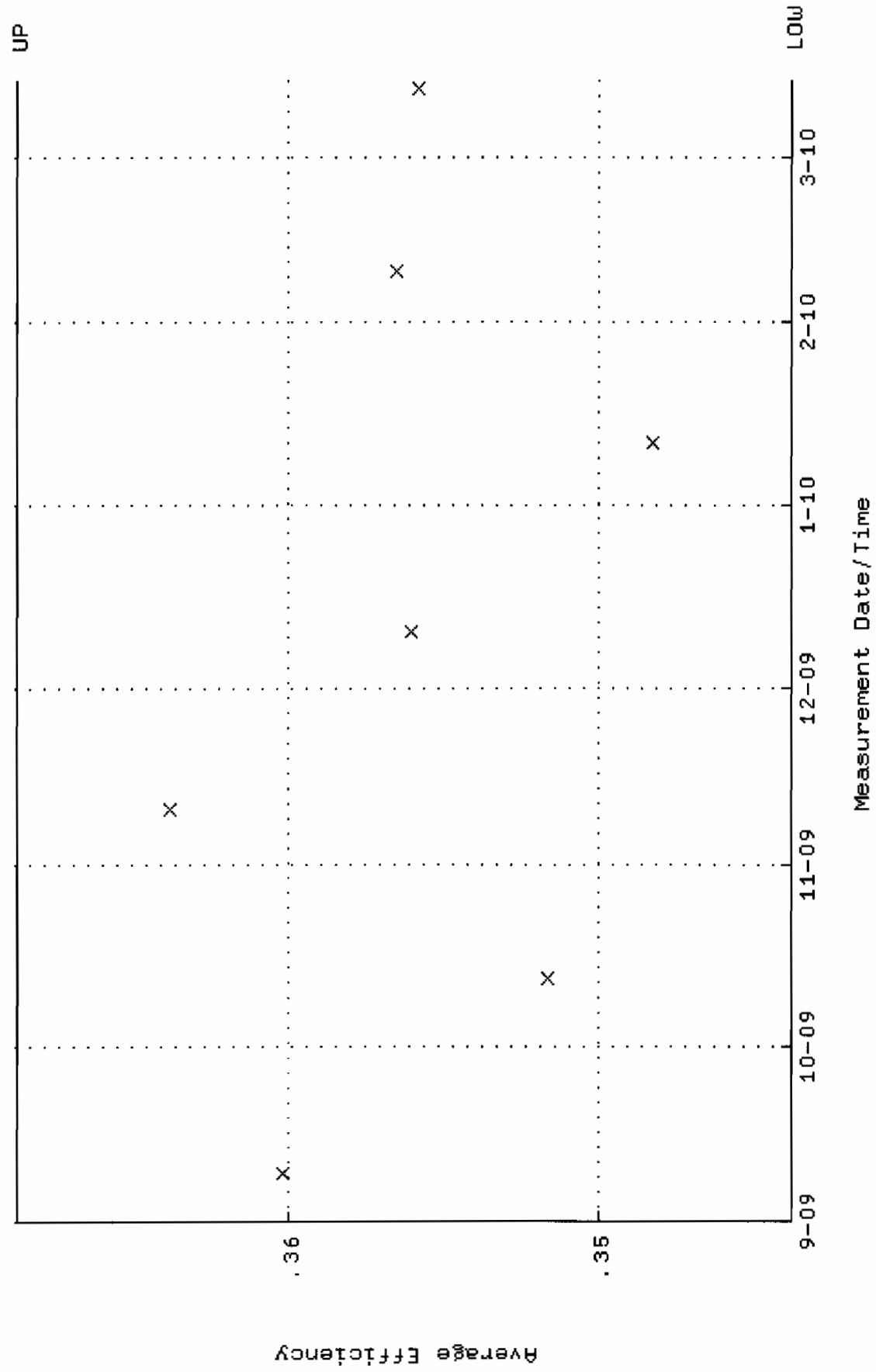


QA filename : DKA100:[ENV_ALPHA.QA.W]W109.QAF;2

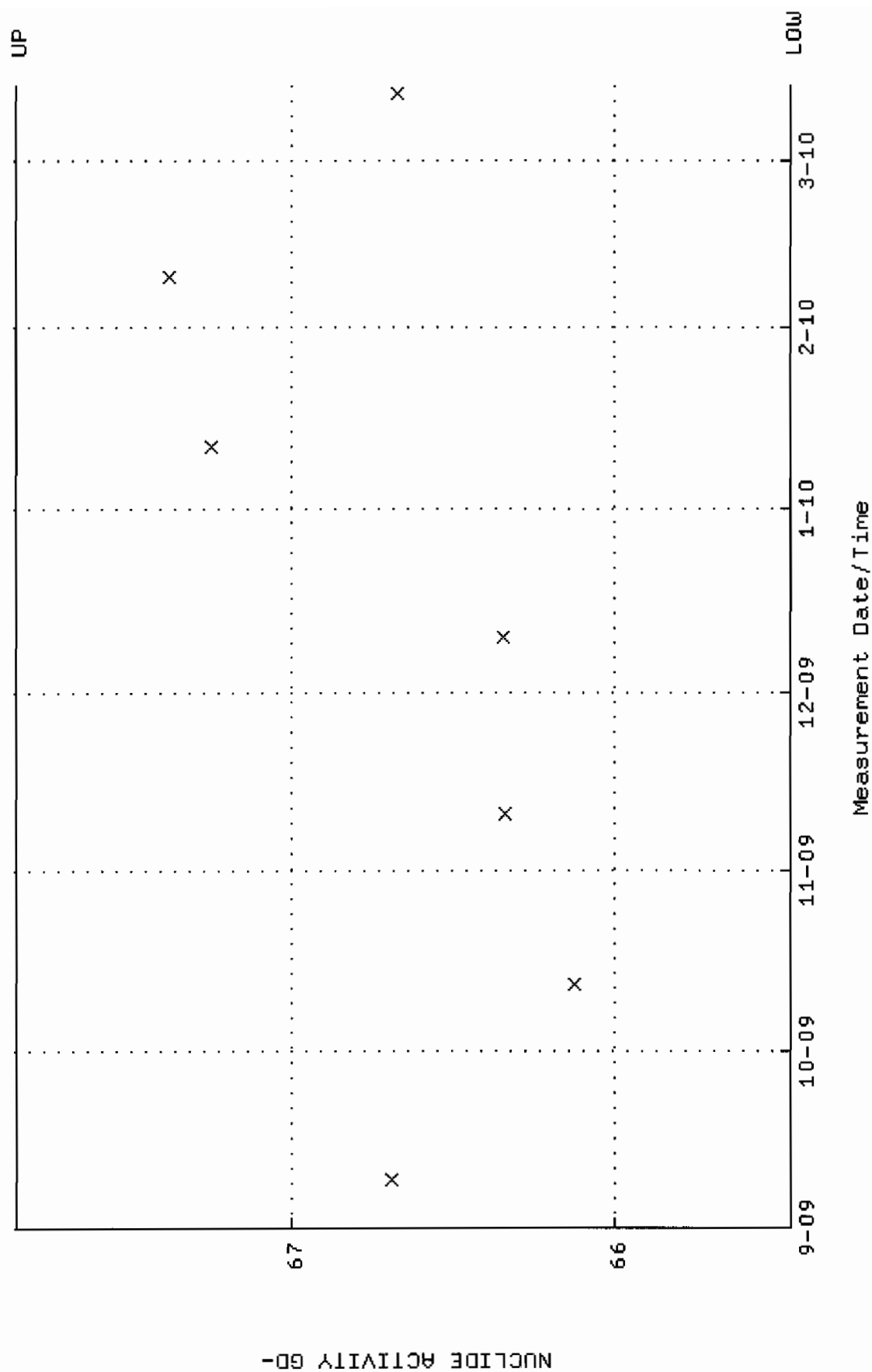
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00

Lower/Upper Lmts: 0.343718 through 0.368808



QA filename : DKA100:[ENV_ALPHA.QA.W]W109.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 65.4511 through 67.8527

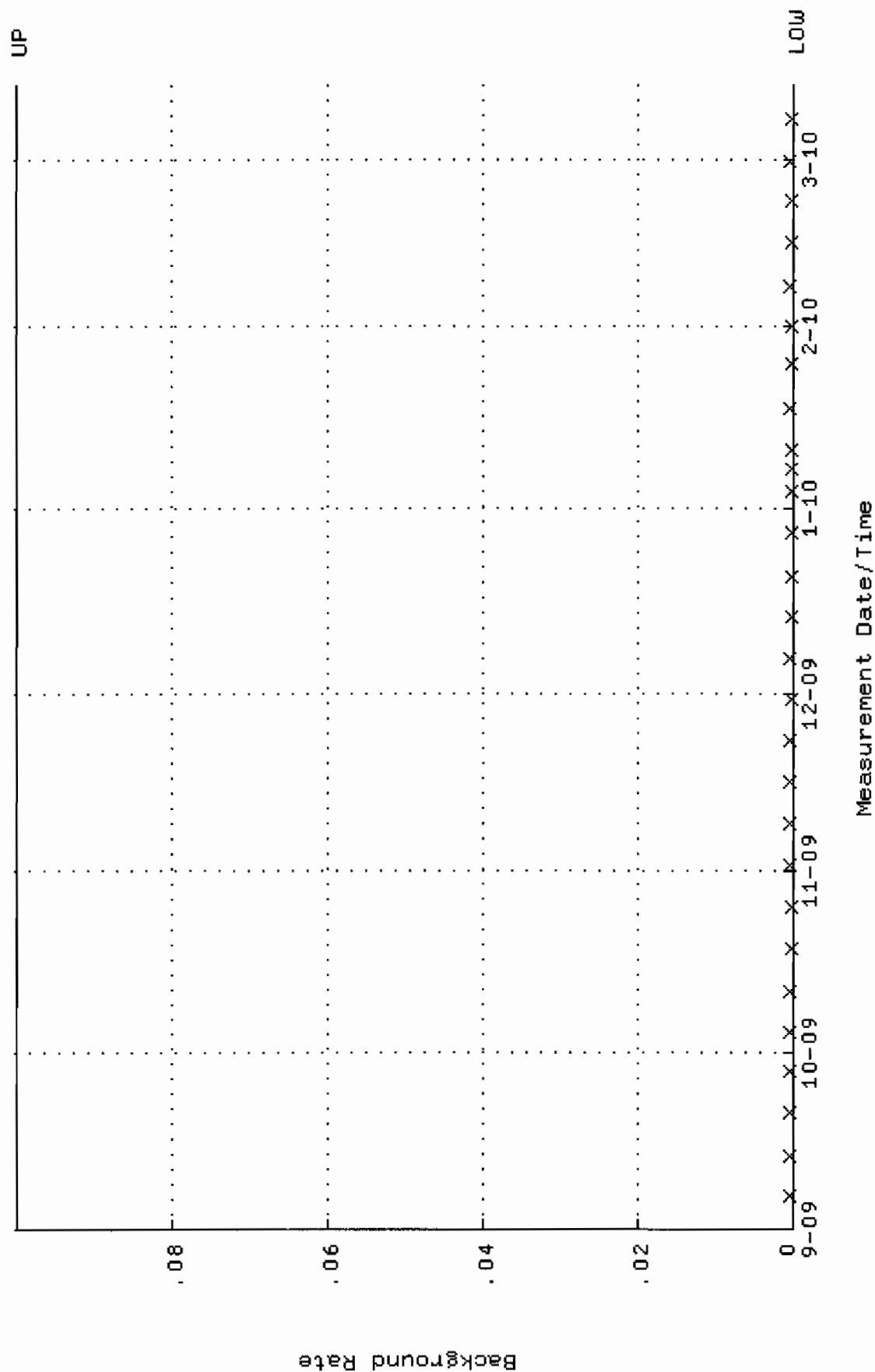


QA filename : DKA100:[ENV_ALPHA.QA.B]B109.QAF;2

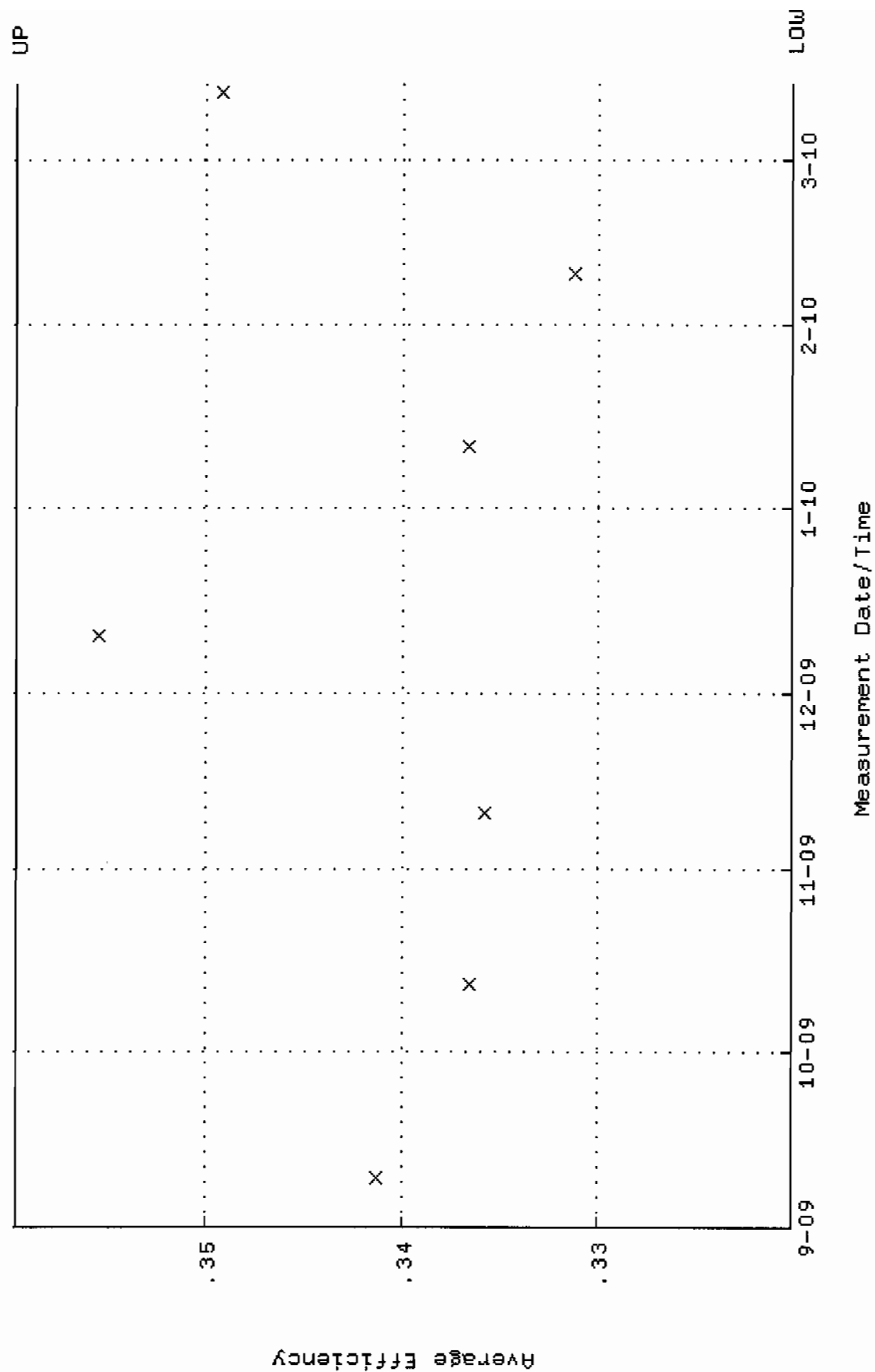
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00

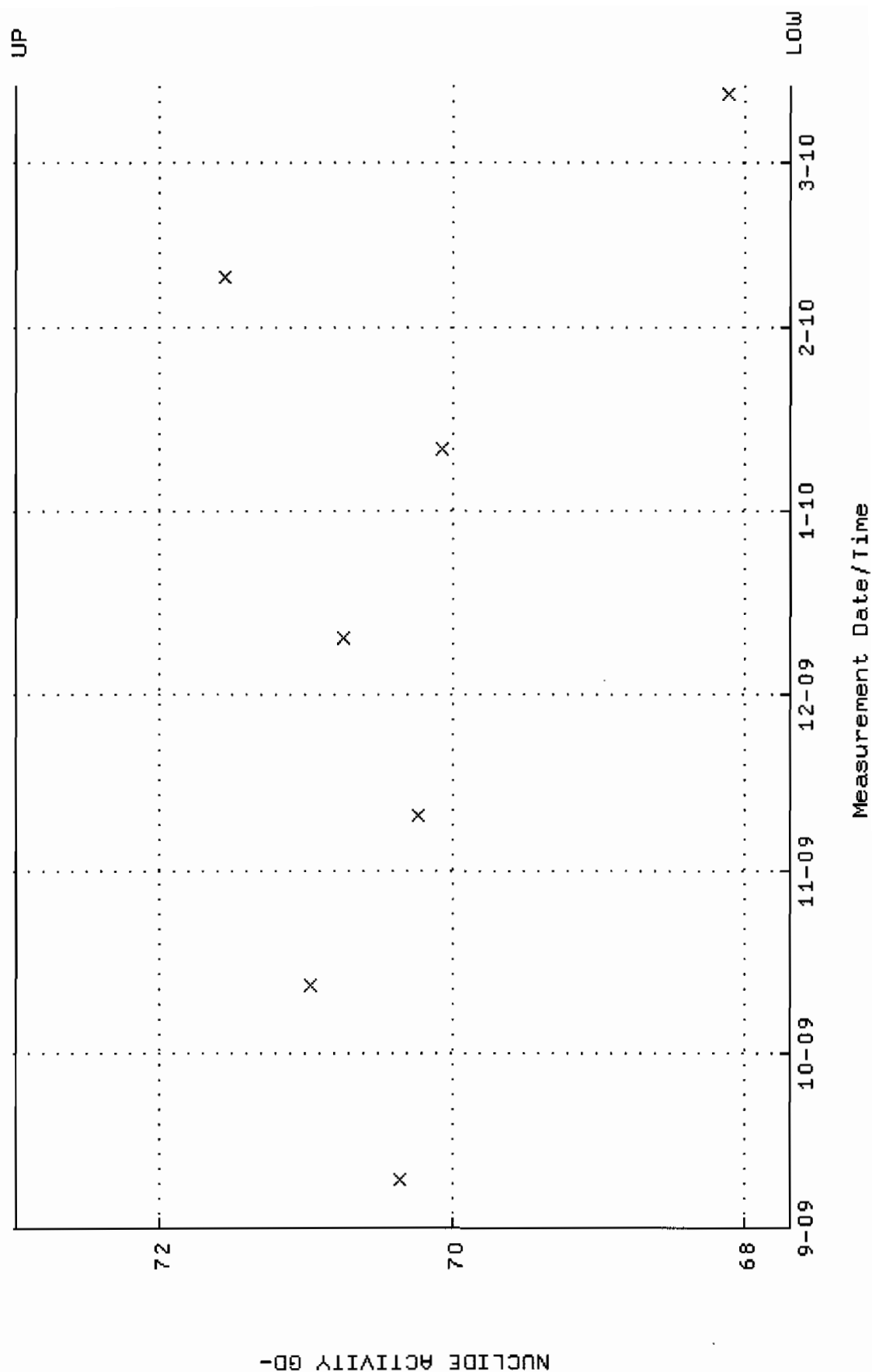
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]U111.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.320109 through 0.359725



QA filename : DKA100:[ENV_ALPHA.QA.W]W111.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 67.6917 through 72.9869

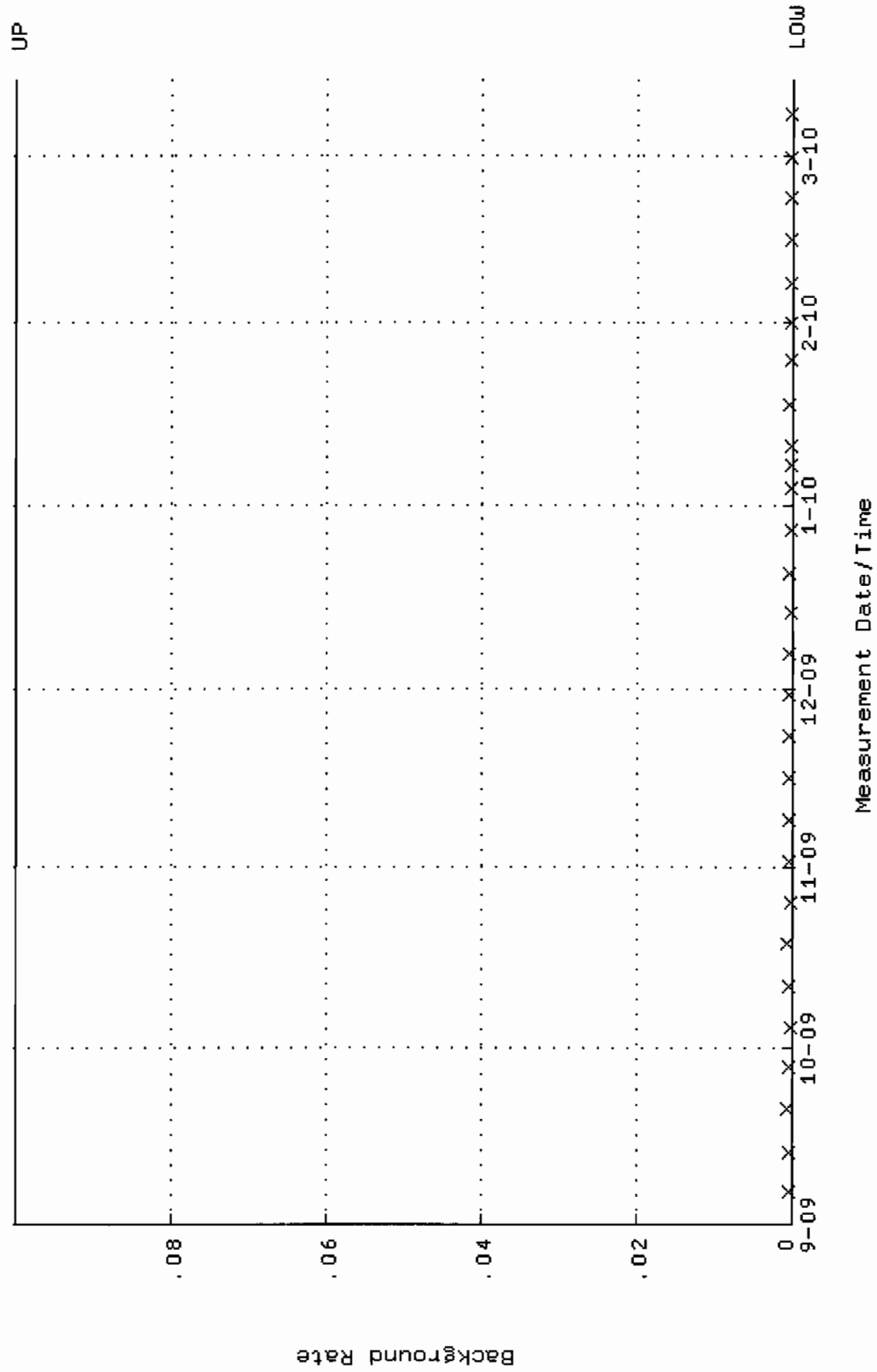


QA filename : DKA100:[ENV_ALPHA.QA.B]B111.QAF;2

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

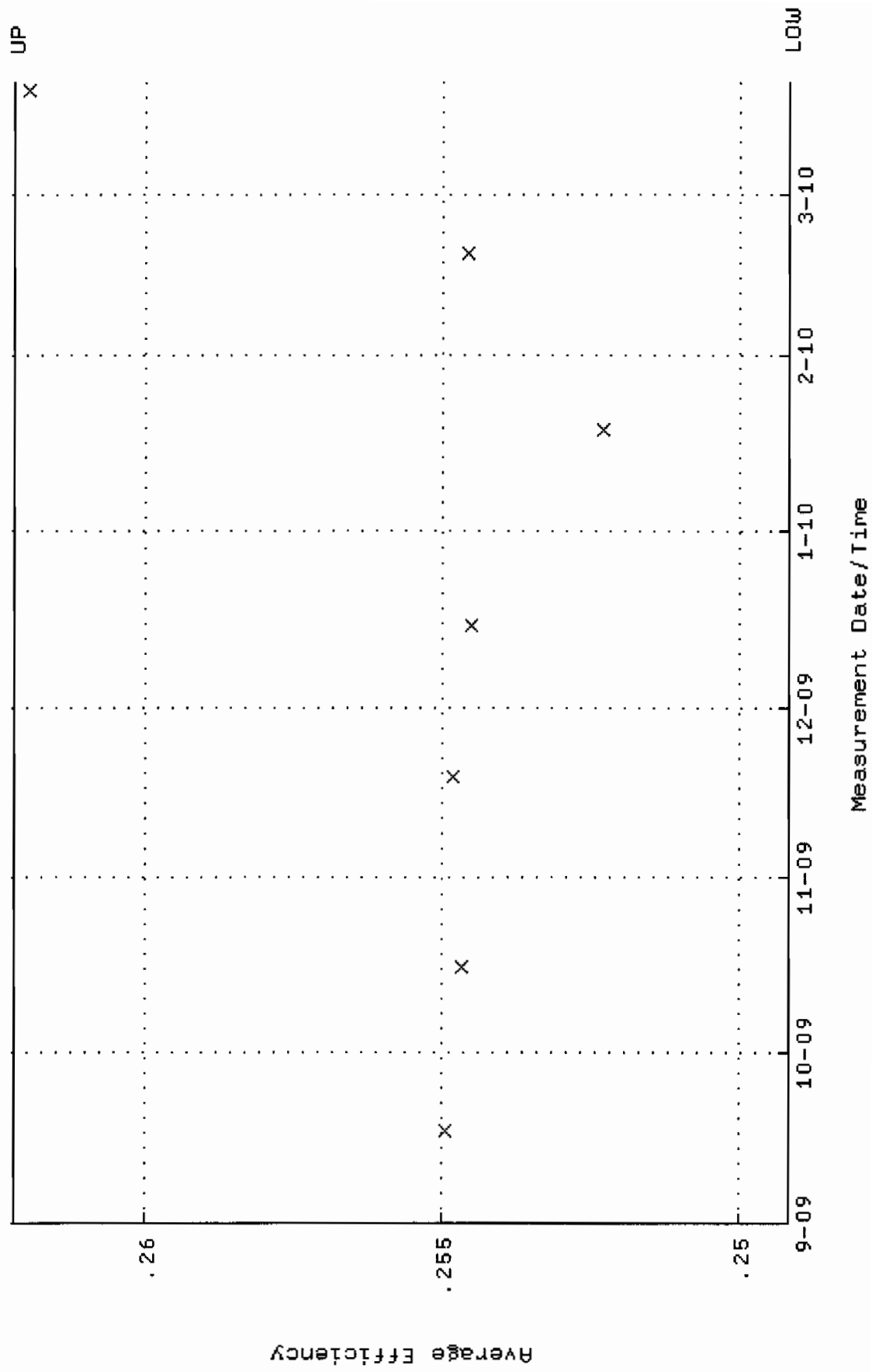


QA filename : DKA100:[ENV_ALPHA.QA.W]W114.QAF;1

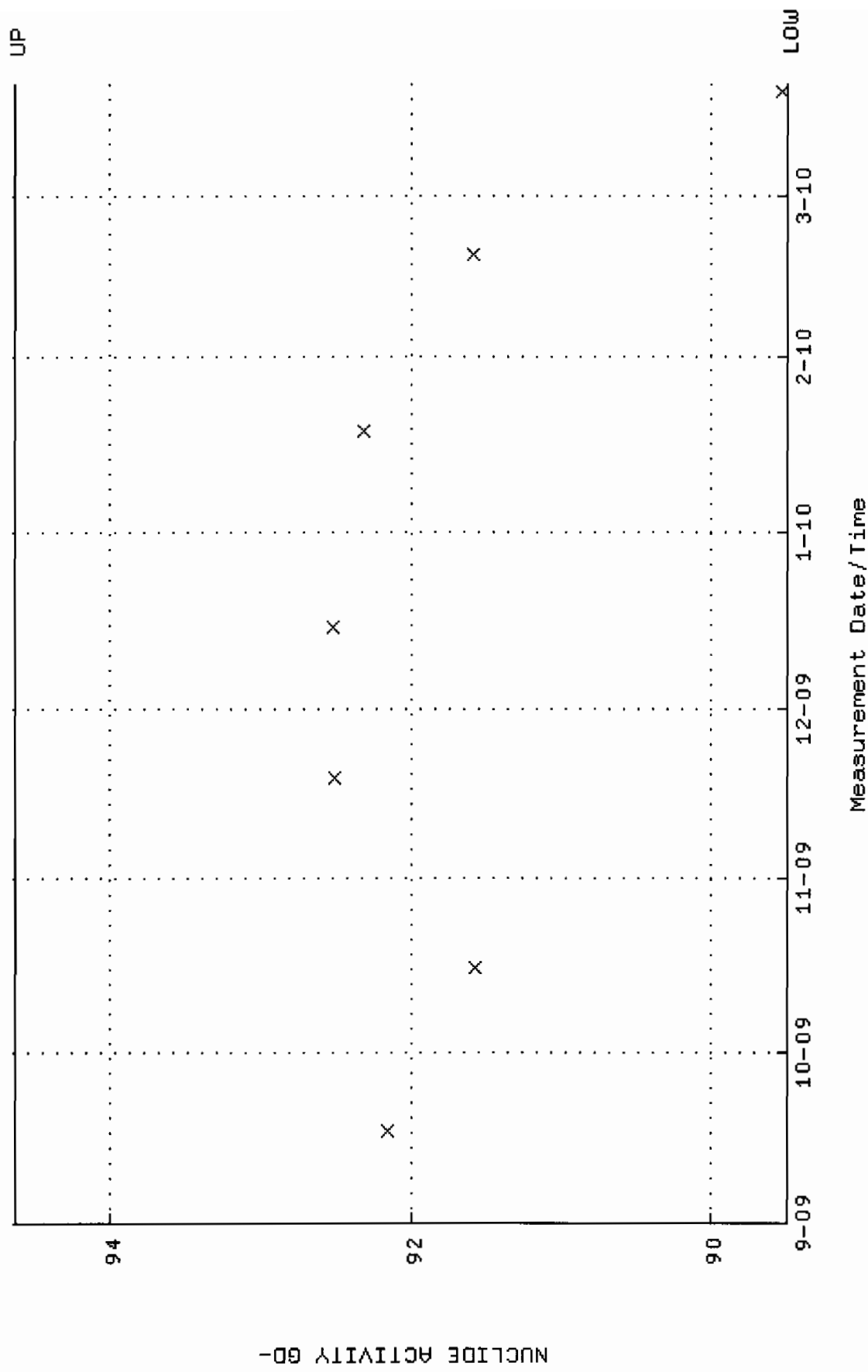
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:22:42 through 20-MAR-2010 12:00:00

Lower/Upper Lmts: 0.249186 through 0.262190



QA filename : DKA100:[ENV_ALPHA.QA.W]w114.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:22:42 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.4927 through 94.6315

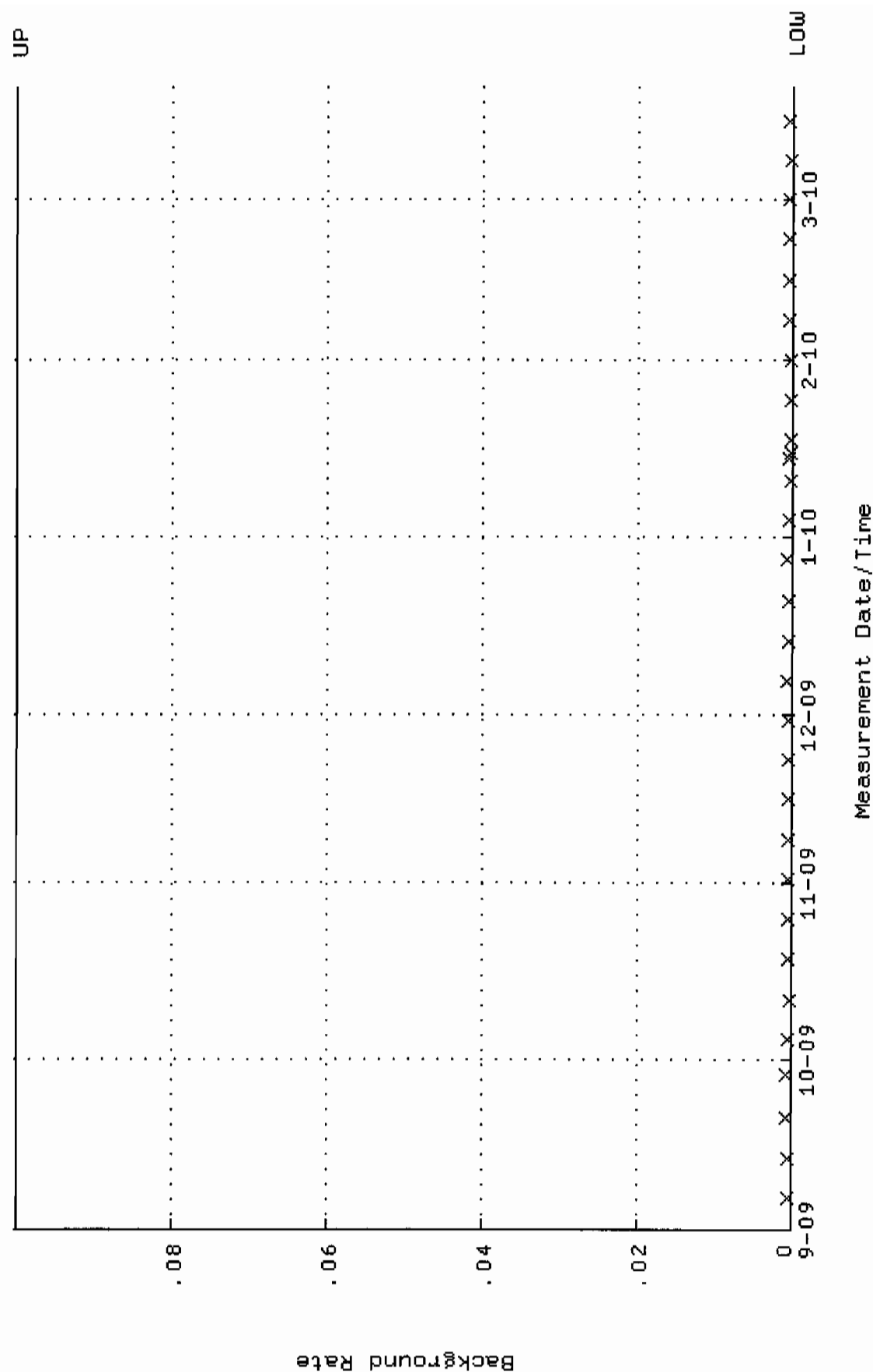


QA filename : DKA100:[ENV_ALPHA.QA.B]B114.QAF;1

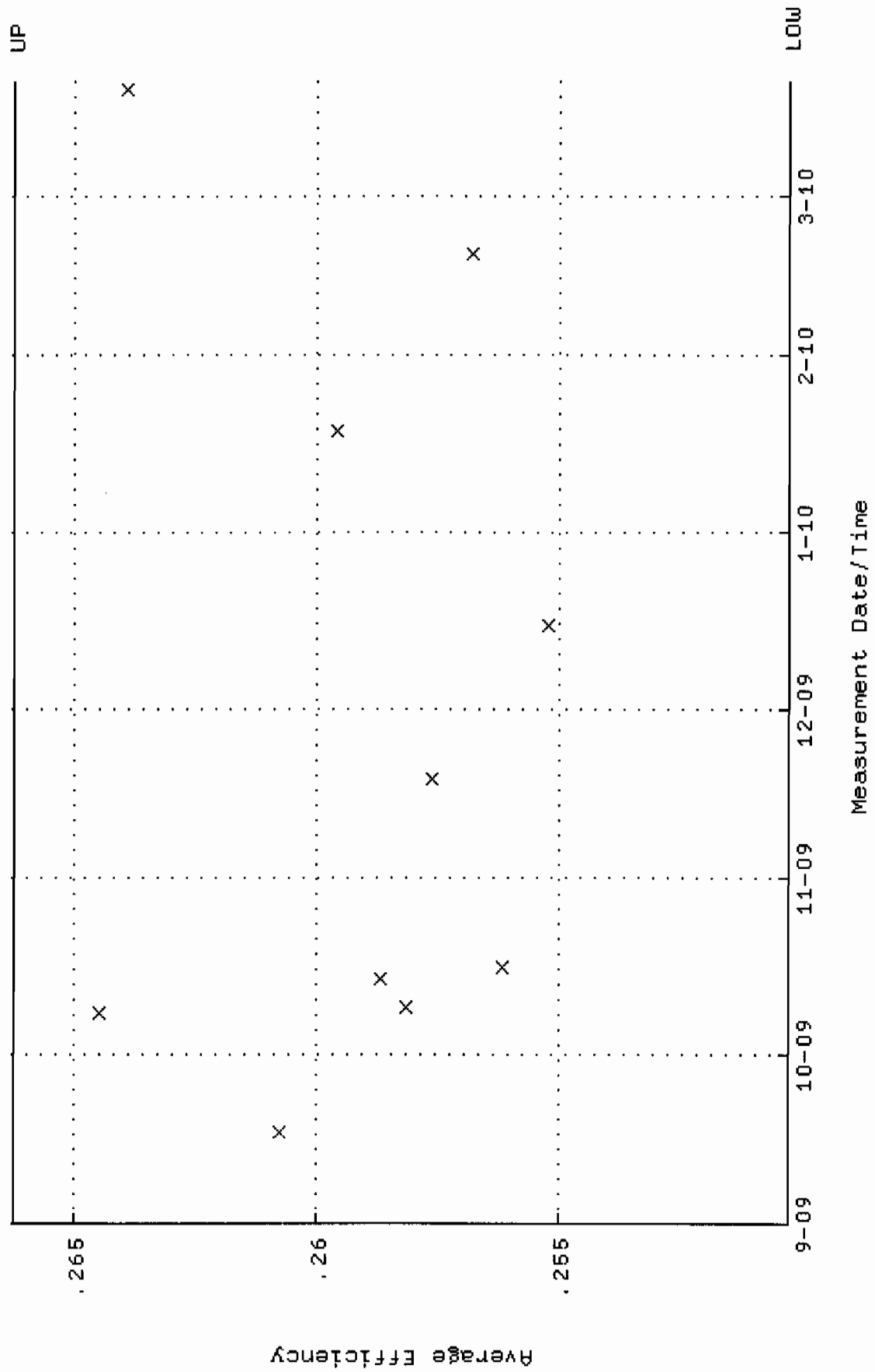
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:13 through 20-MAR-2010 12:00:00

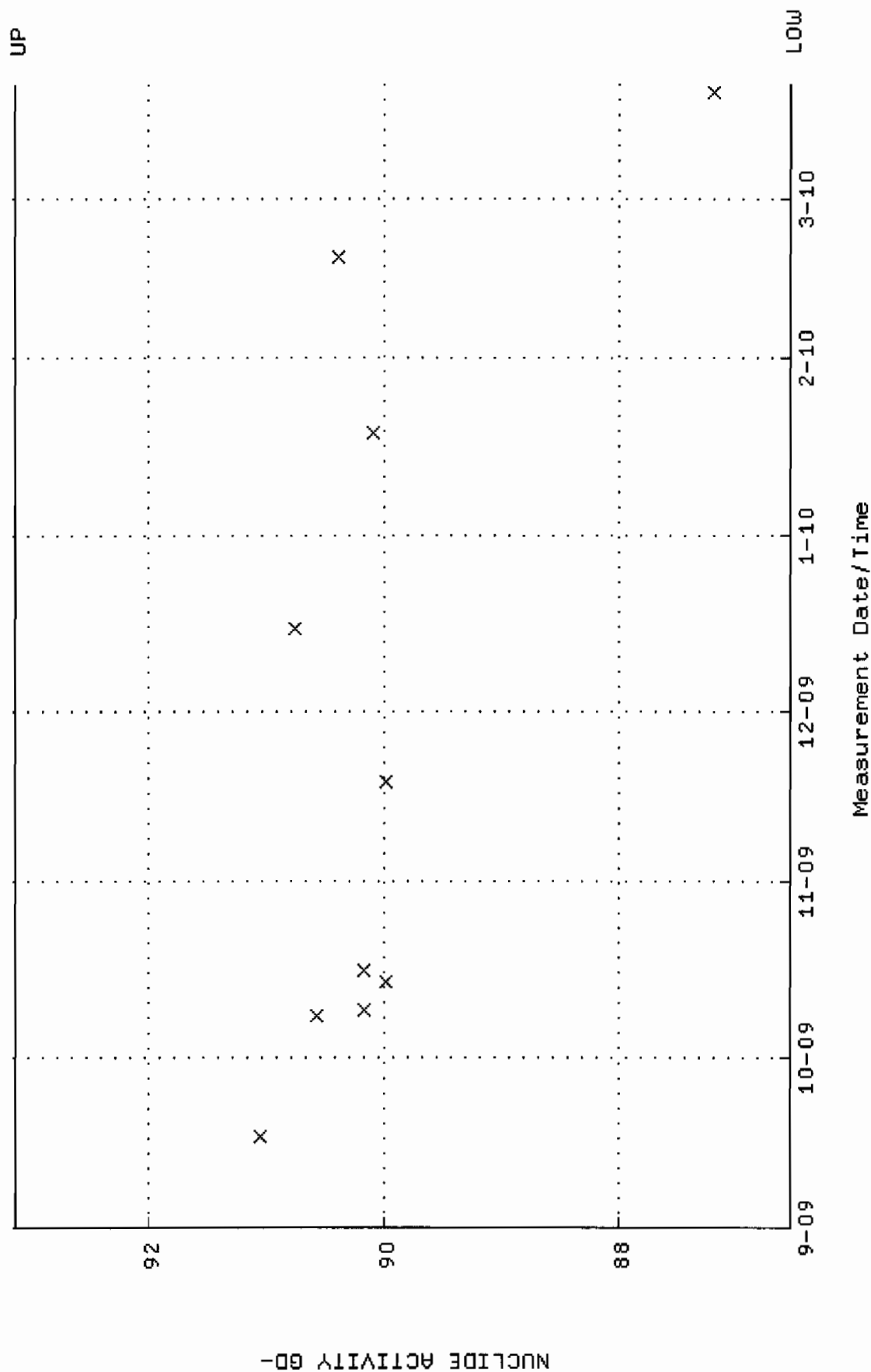
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W115.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:22:48 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250292 through 0.266228



QA filename : DKA100:[ENV_ALPHA.QA.W]W115.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:22:48 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.5408 through 93.1306

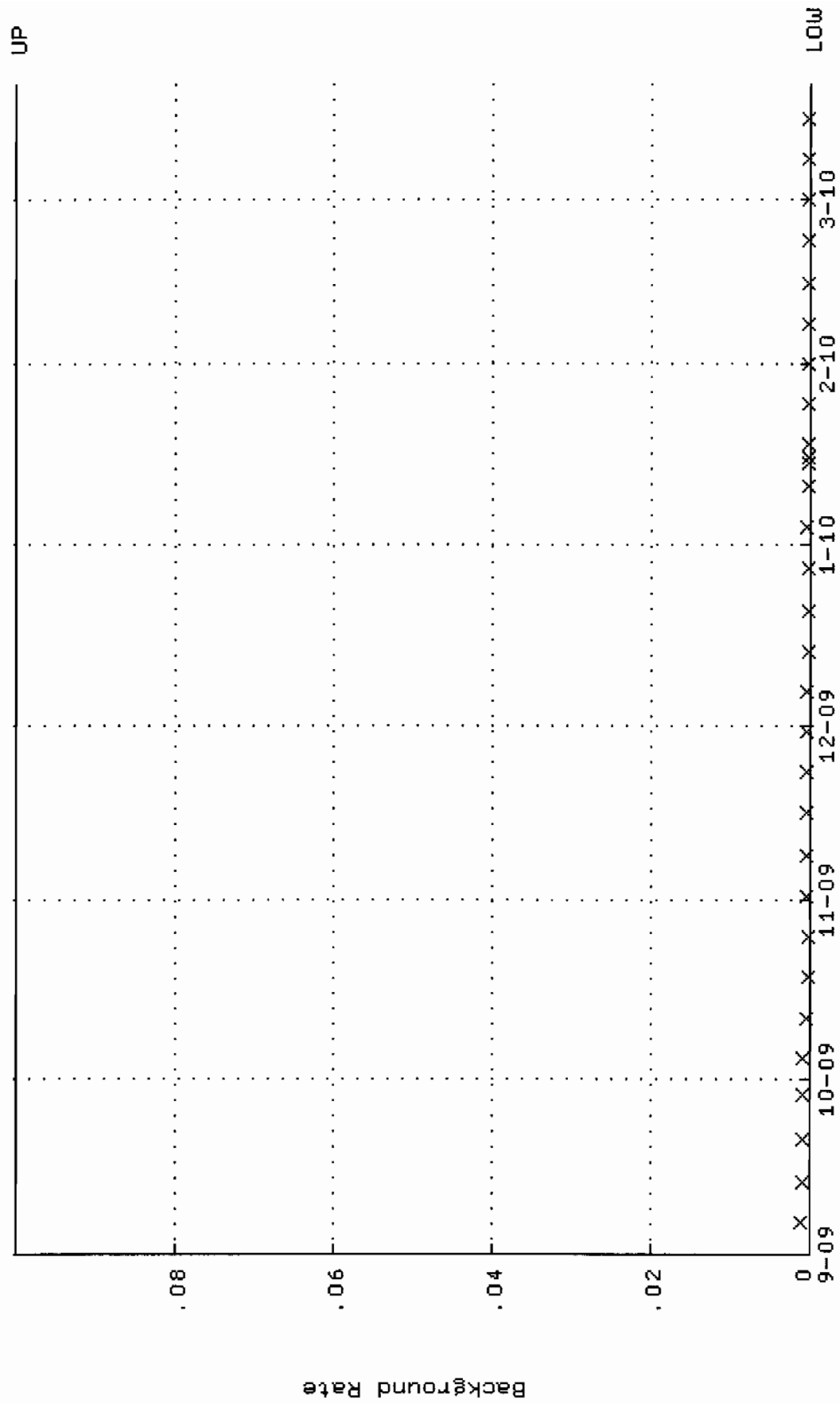


QA filename : DKA100:[ENV_ALPHA.QA.B]B115.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:17 through 20-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

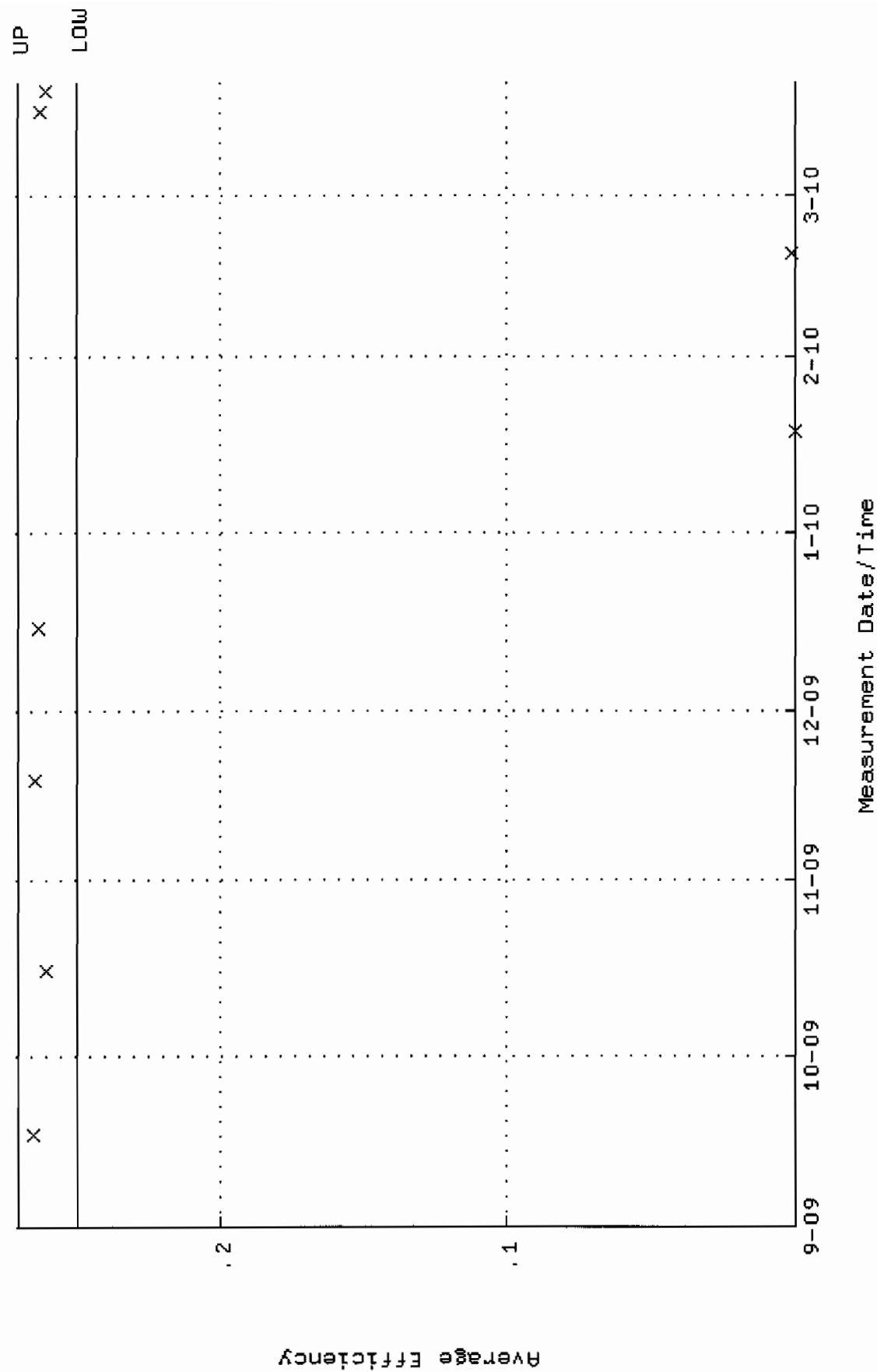


QA filename : DKA100:[ENV_ALPHA.QA.W]W116.QAF;1

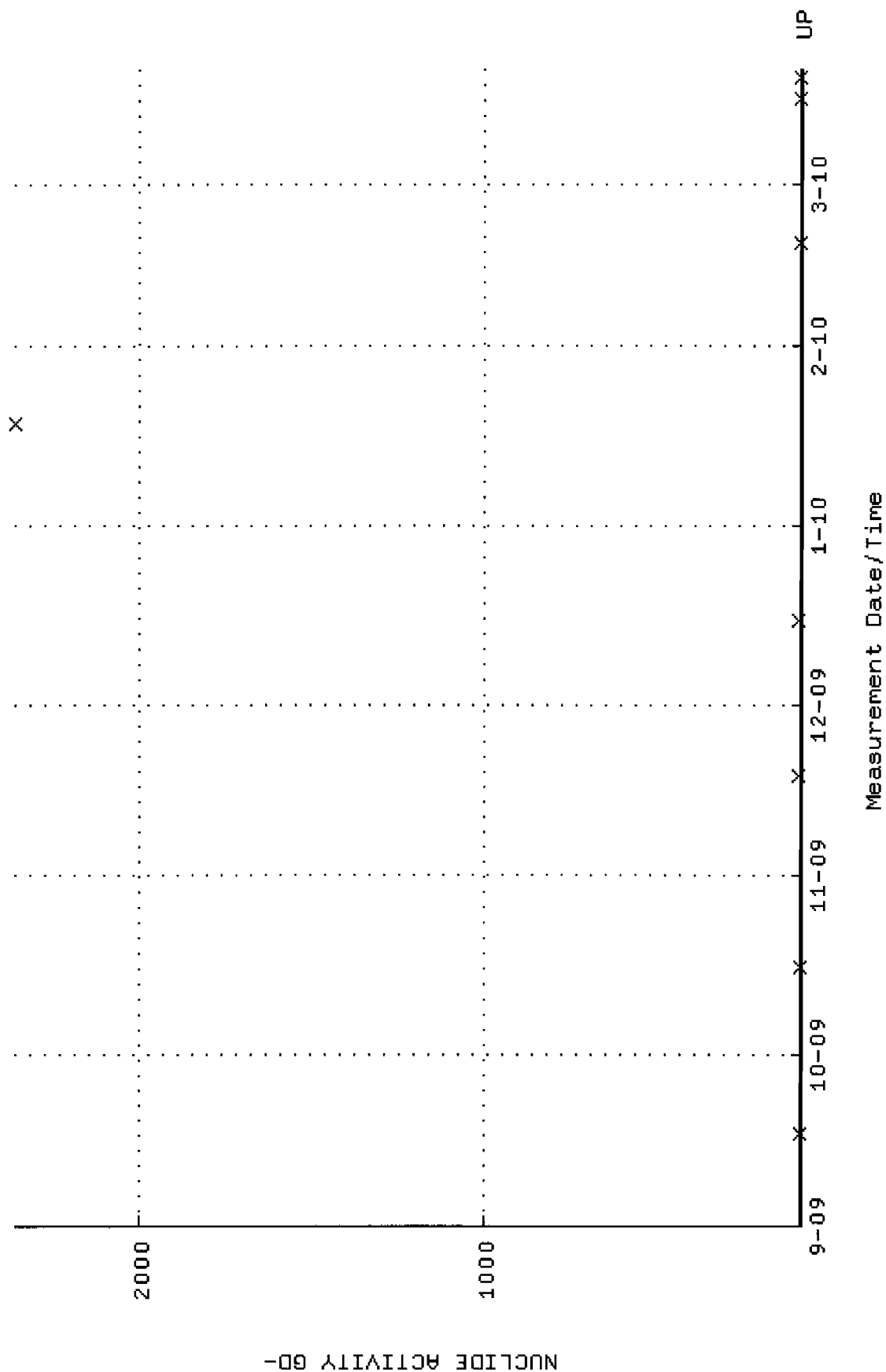
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:22:54 through 20-MAR-2010 12:00:00

Lower/Upper Lmts: 0.249691 through 0.269691



QA filename : DKA100:[ENV_ALPHA.QA.W]W116.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:22:54 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.7644 through 93.6870

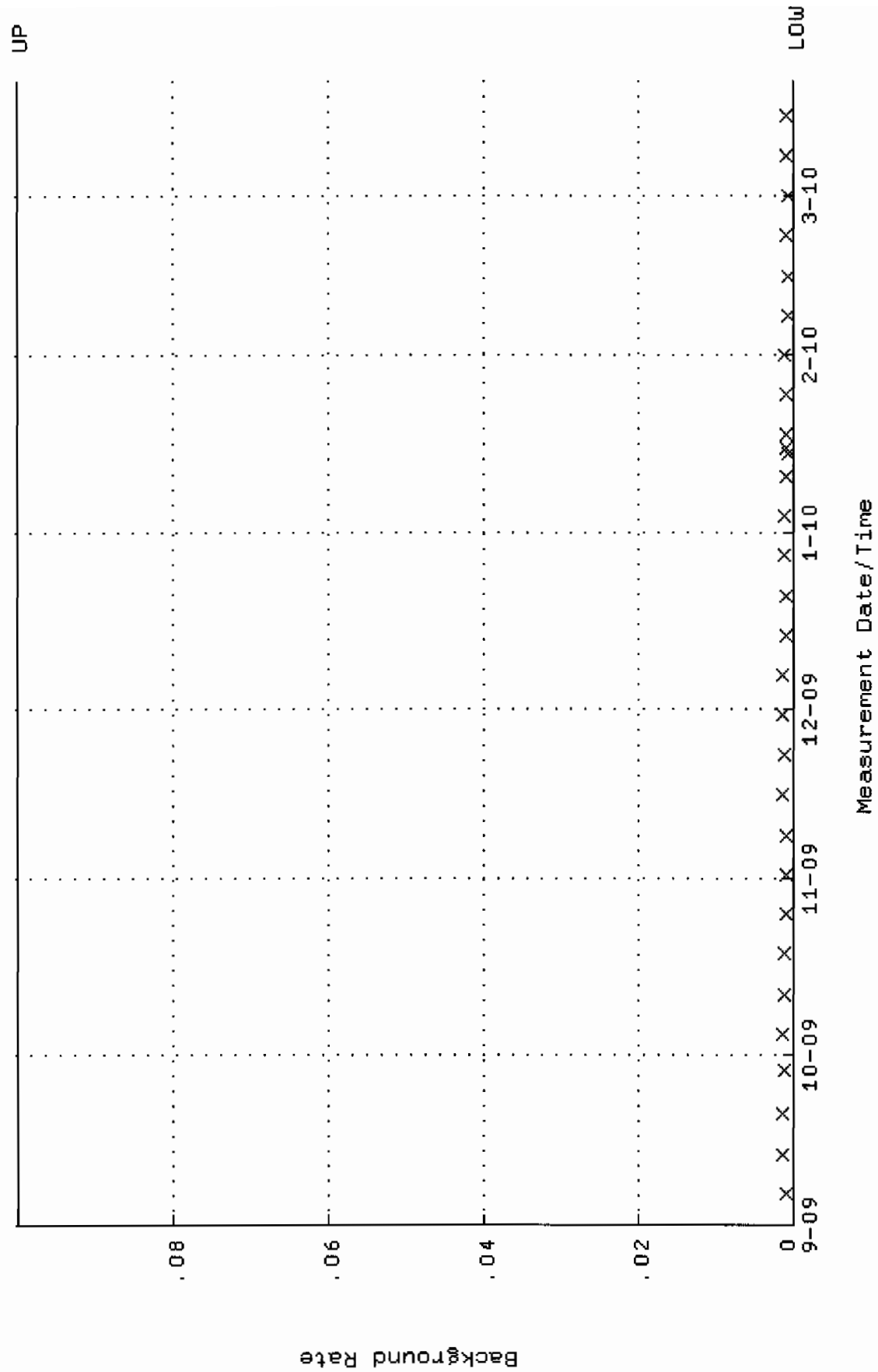


QA filename : DKA100:[ENV_ALPHA.QA.B]B116.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:21 through 20-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

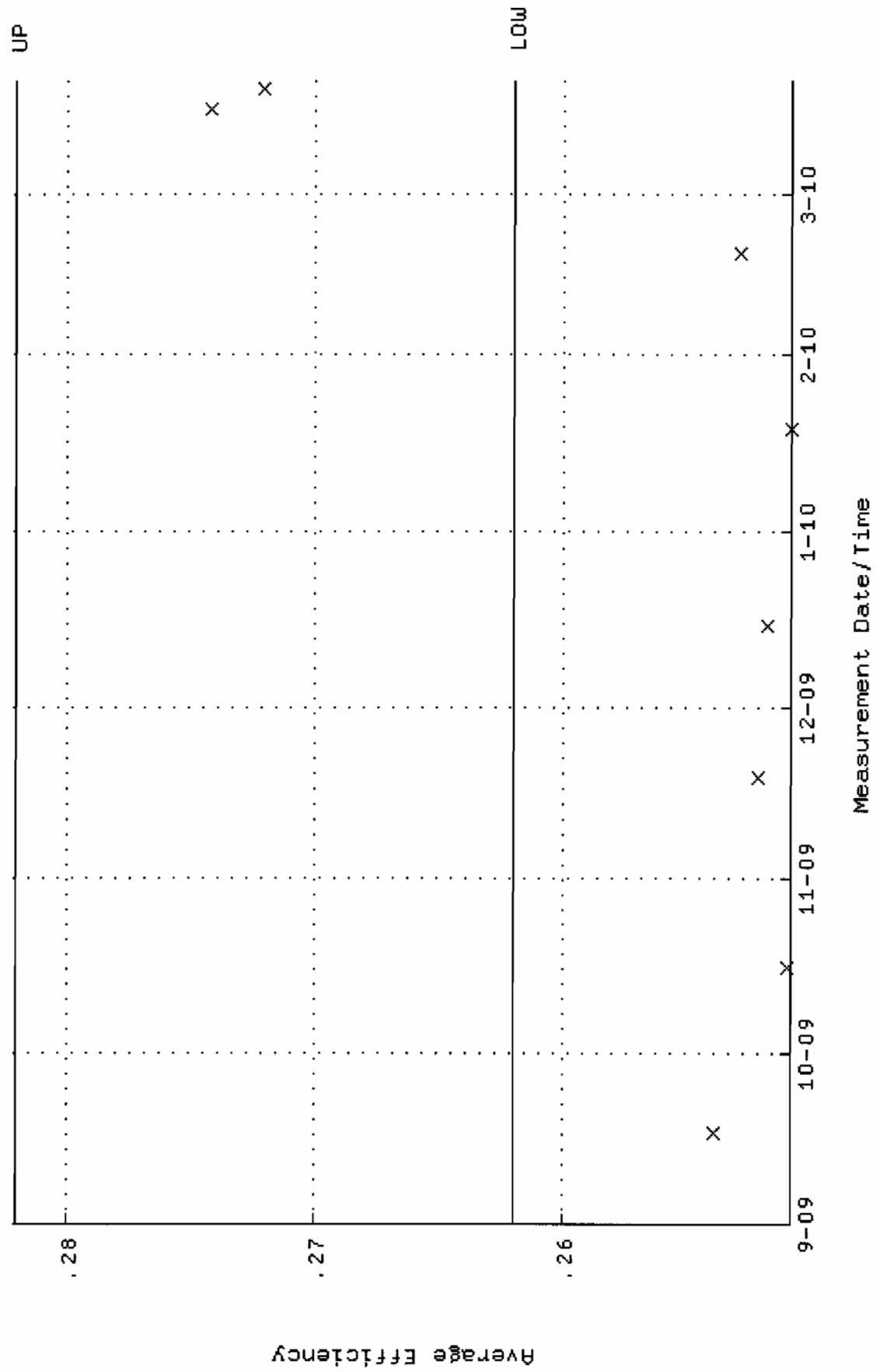


QA filename : DKA100:[ENV_ALPHA.QA.W]w117.QAF;1

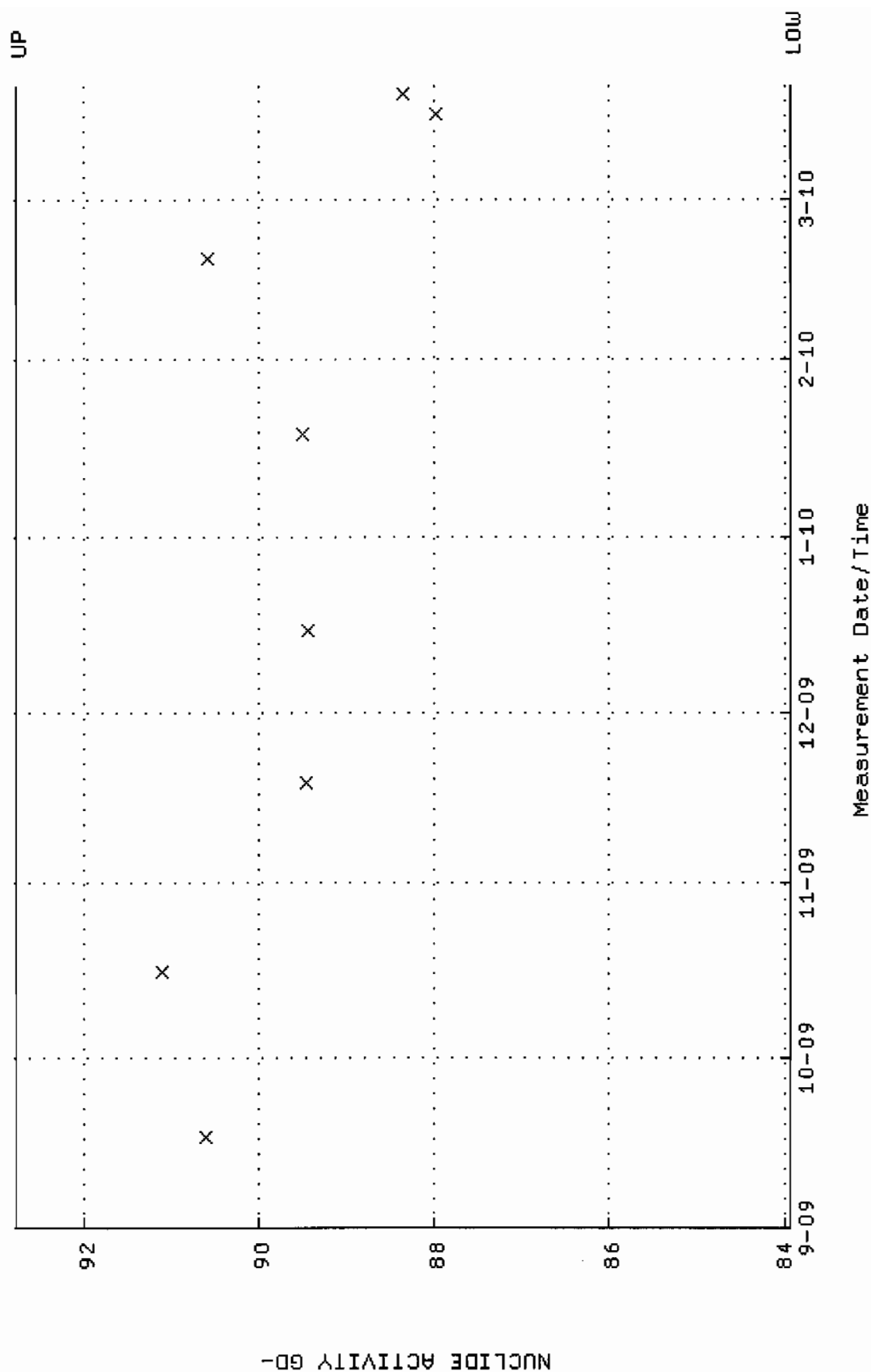
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:22:59 through 20-MAR-2010 12:00:00

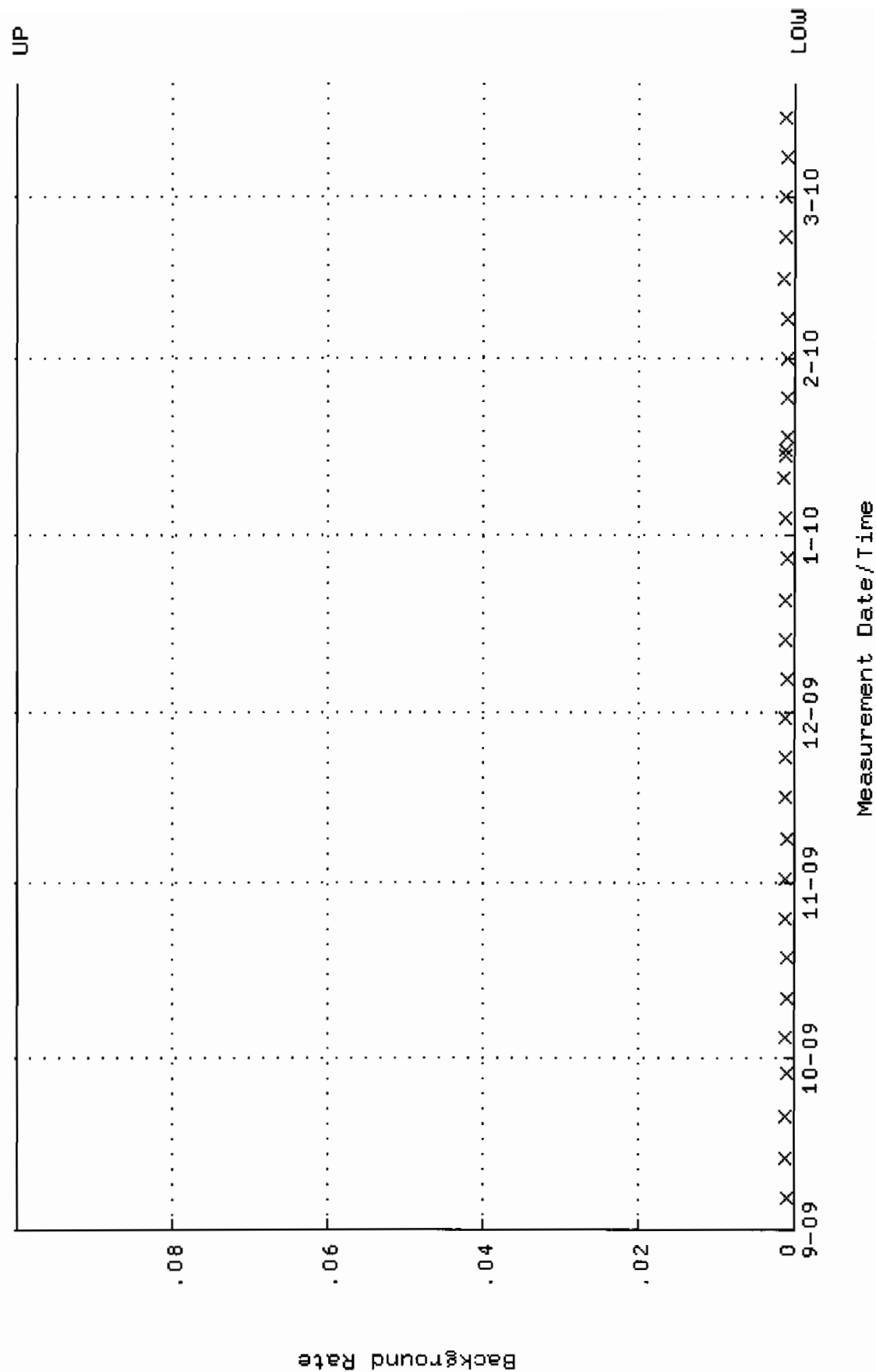
Lower/Upper Lmts: 0.262036 through 0.282036



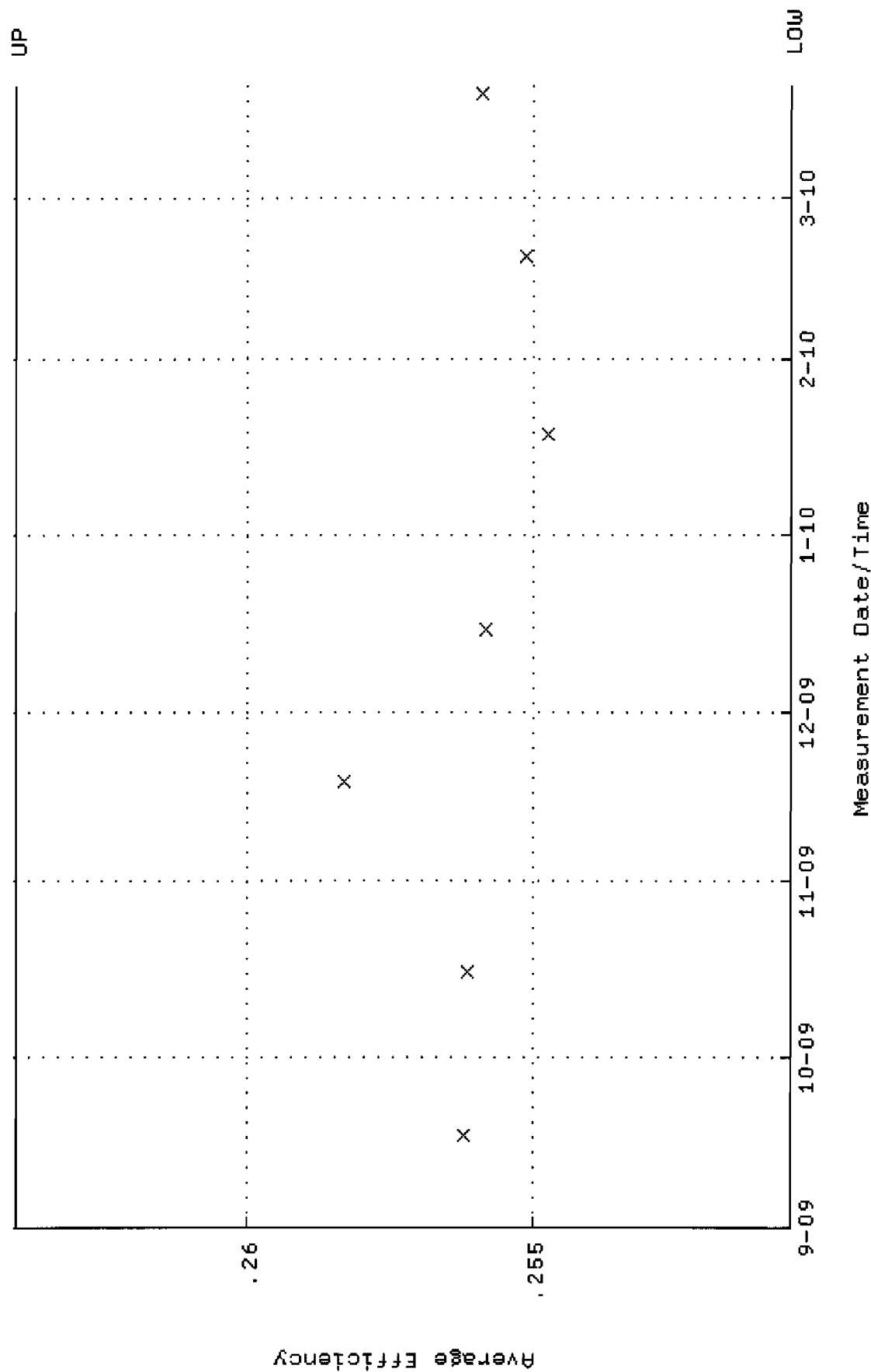
QA filename : DKA100:[ENV_ALPHA.QA.W]W117.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:22:59 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.9311 through 92.7659



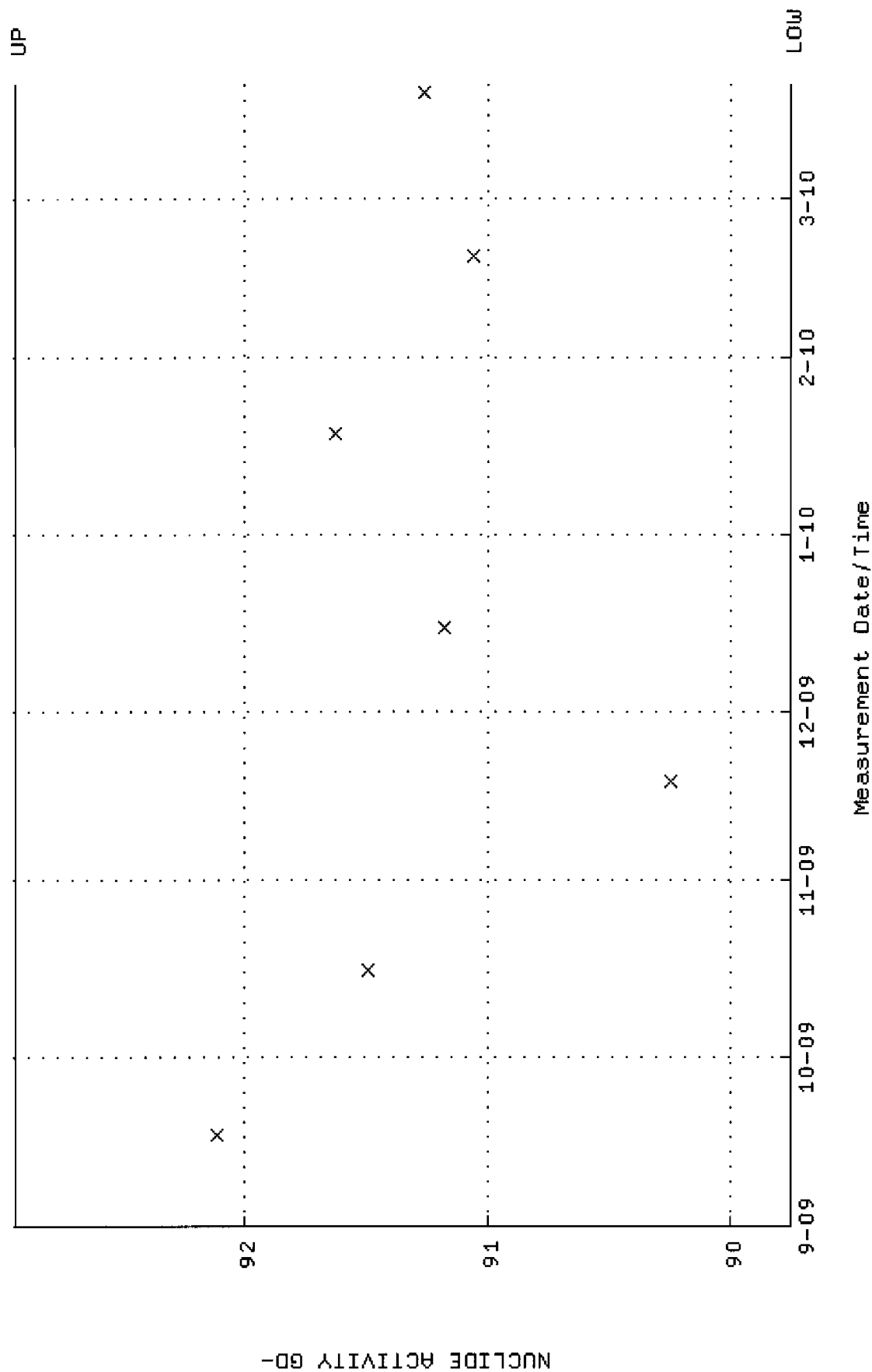
QA filename : DKA100:[ENV_ALPHA.QA.B]B117.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:26 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W118.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:06 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250494 through 0.264074



QA filename : DKA100:[ENV_ALPHA.QA.W]W118.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:06 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.7572 through 92.9316

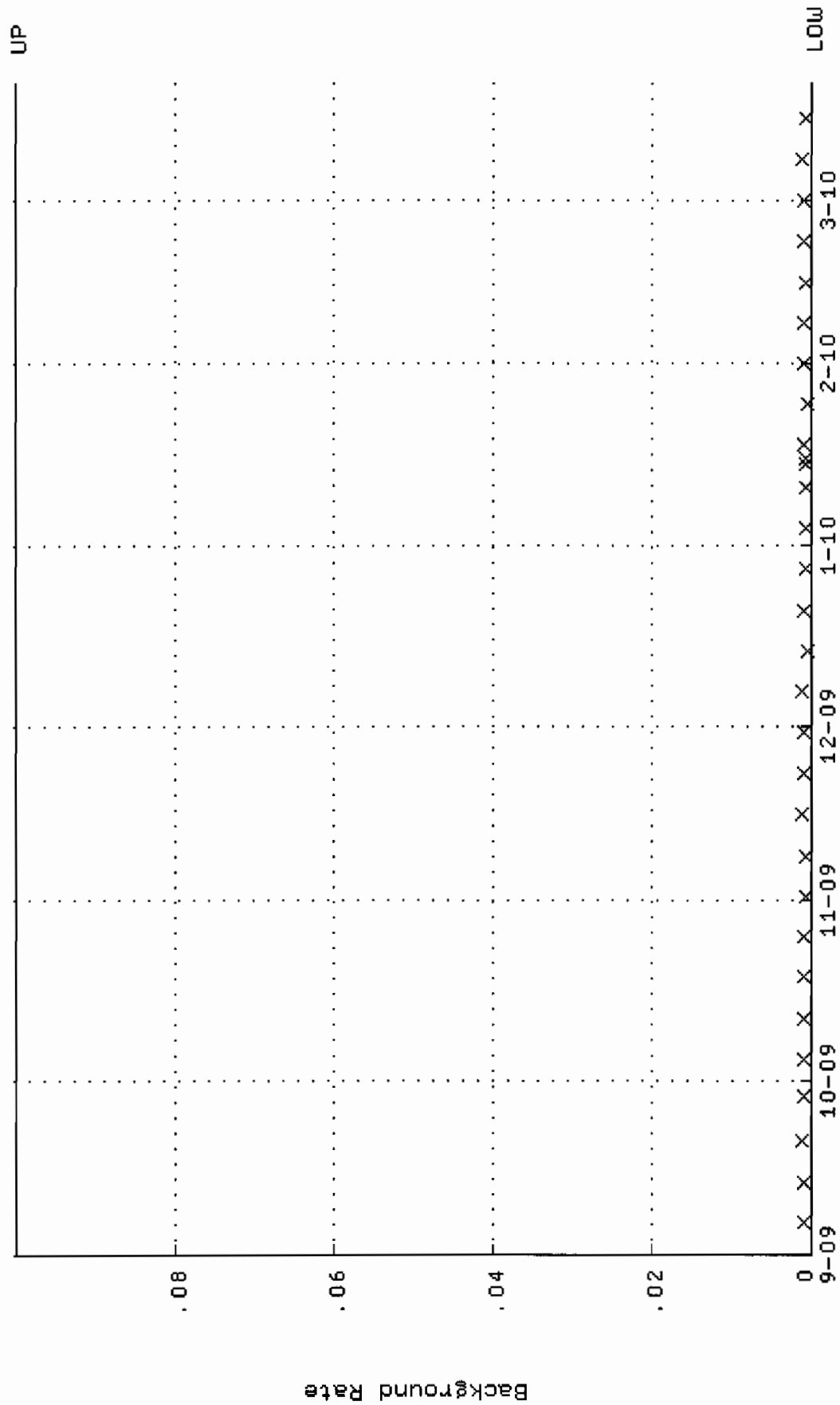


QA filename : DKA100:[ENV_ALPHA.QA.B]B118.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:30 through 20-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

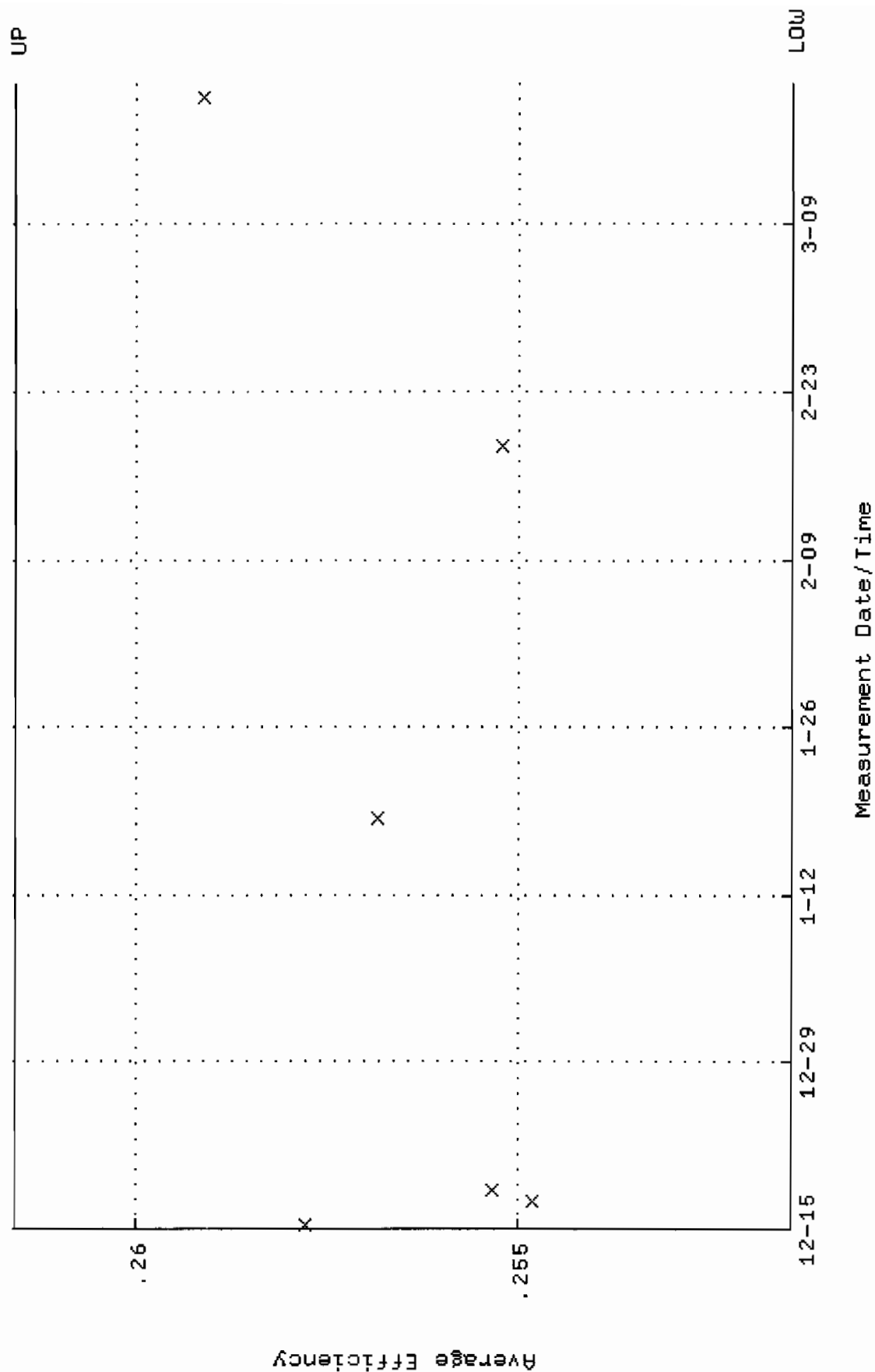


QA filename : DKA100:[ENV-ALPHA.QA.W]U119.QAF;1

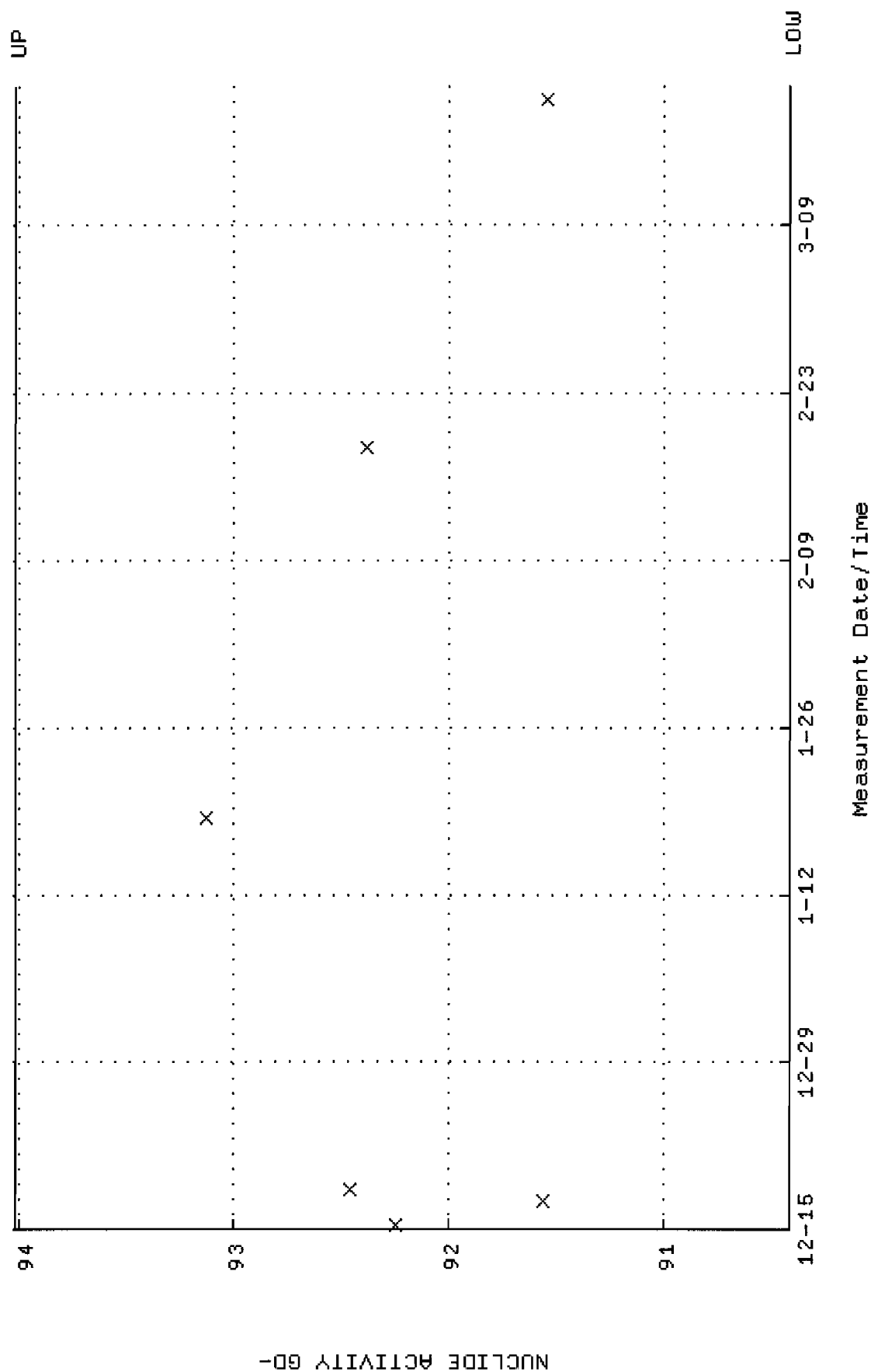
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00

Lower/Upper Lmts: 0.251416 through 0.261570



QA filename : DKA100:[ENV_ALPHA.QA.W]W119.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.4178 through 94.0134

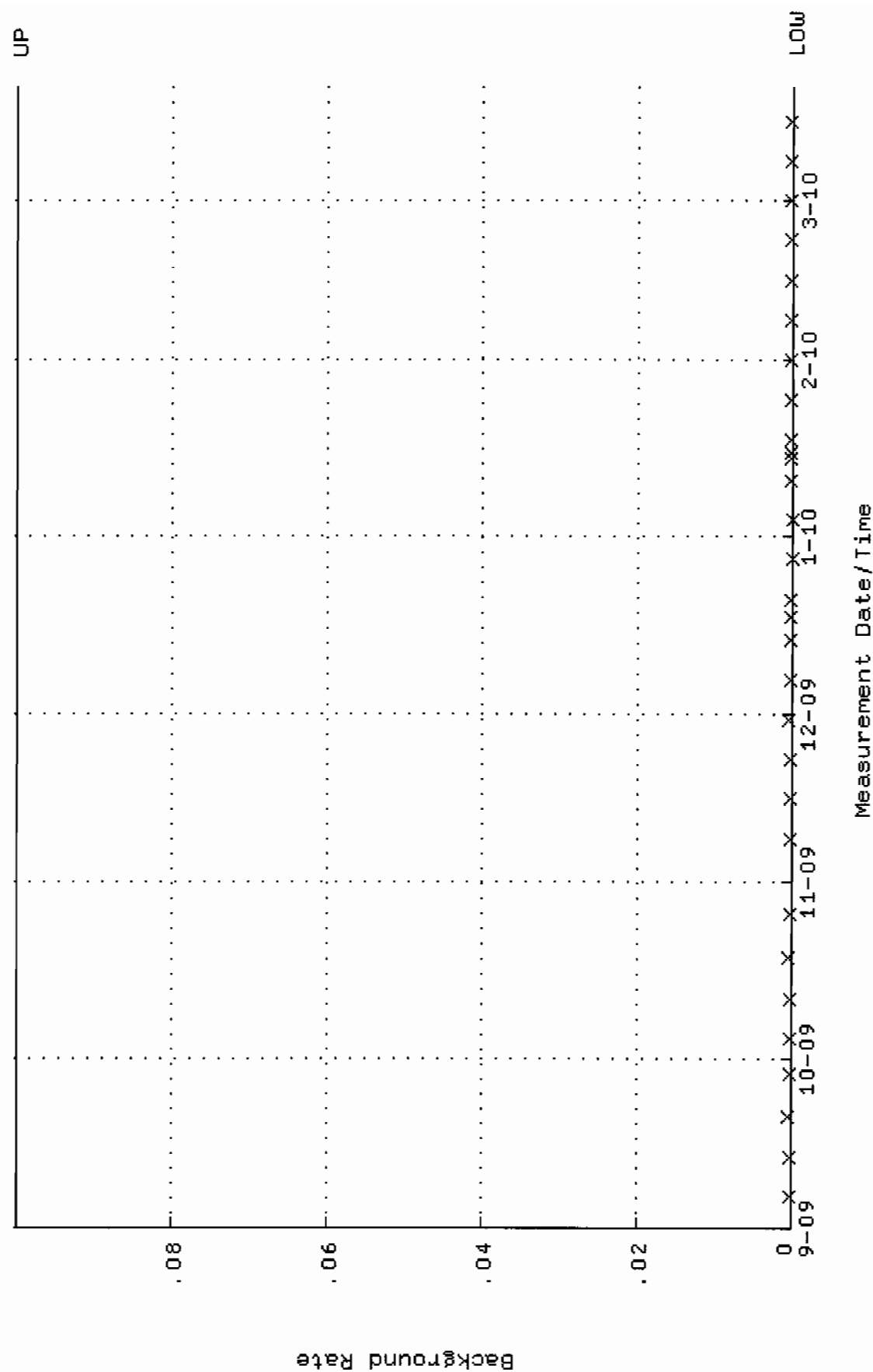


QA filename : DKA100:[ENV_ALPHA.QA.B]B119.QAF;1

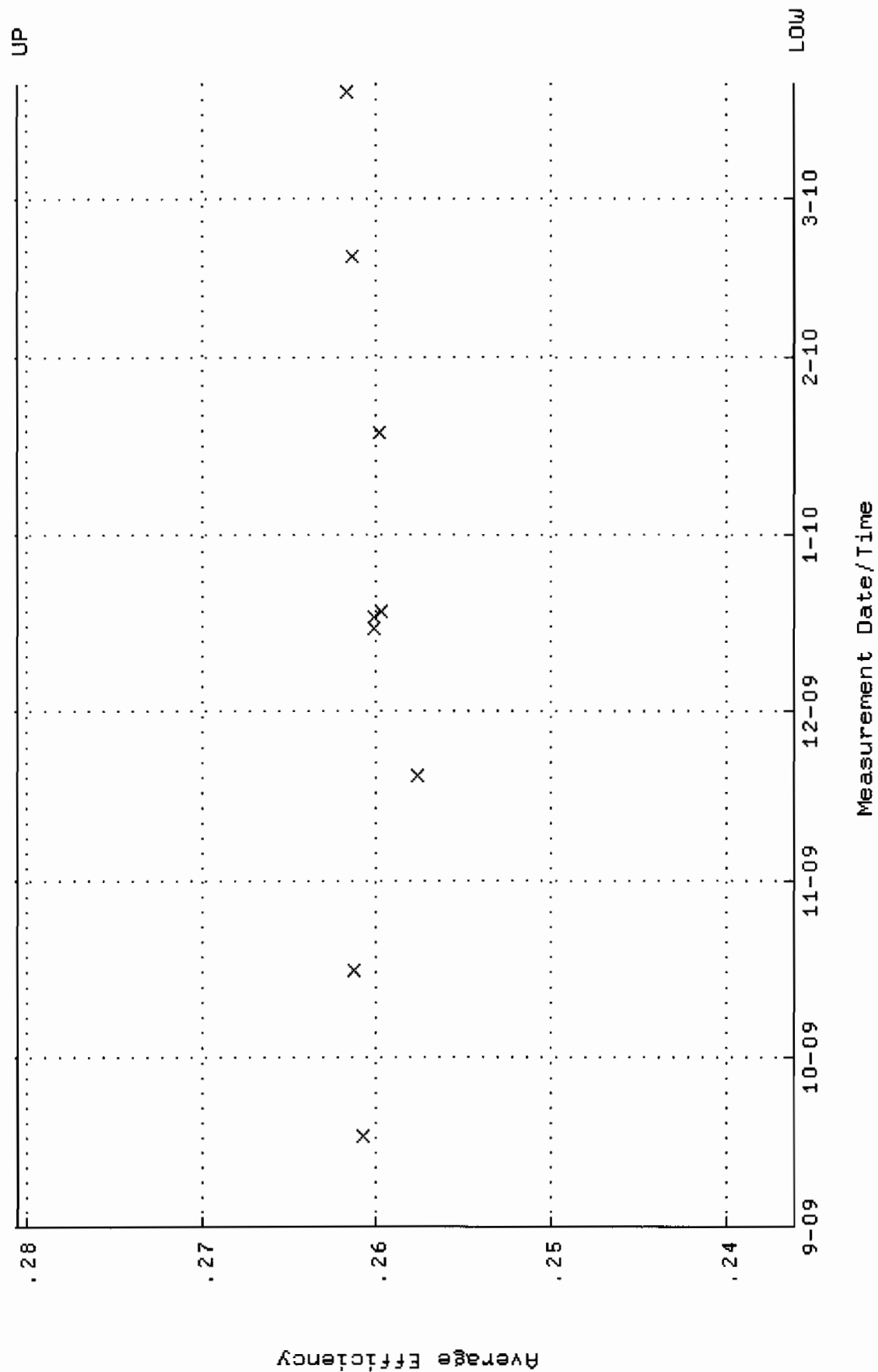
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:34 through 20-MAR-2010 12:00:00

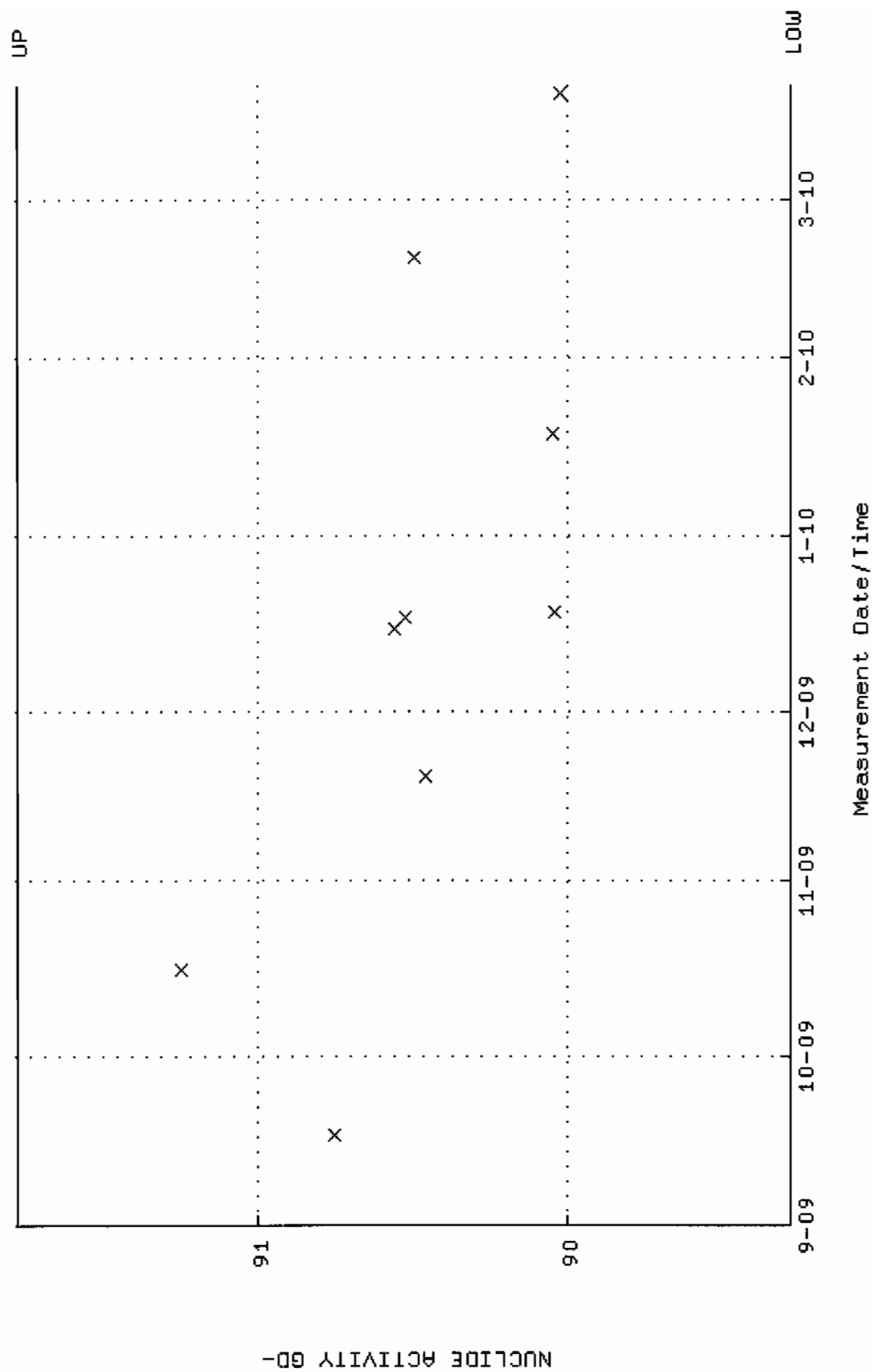
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W120.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:19 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.236163 through 0.280493



QA filename : DKA100:[ENV_ALPHA.QA.W]W120.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:19 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.2737 through 91.7767

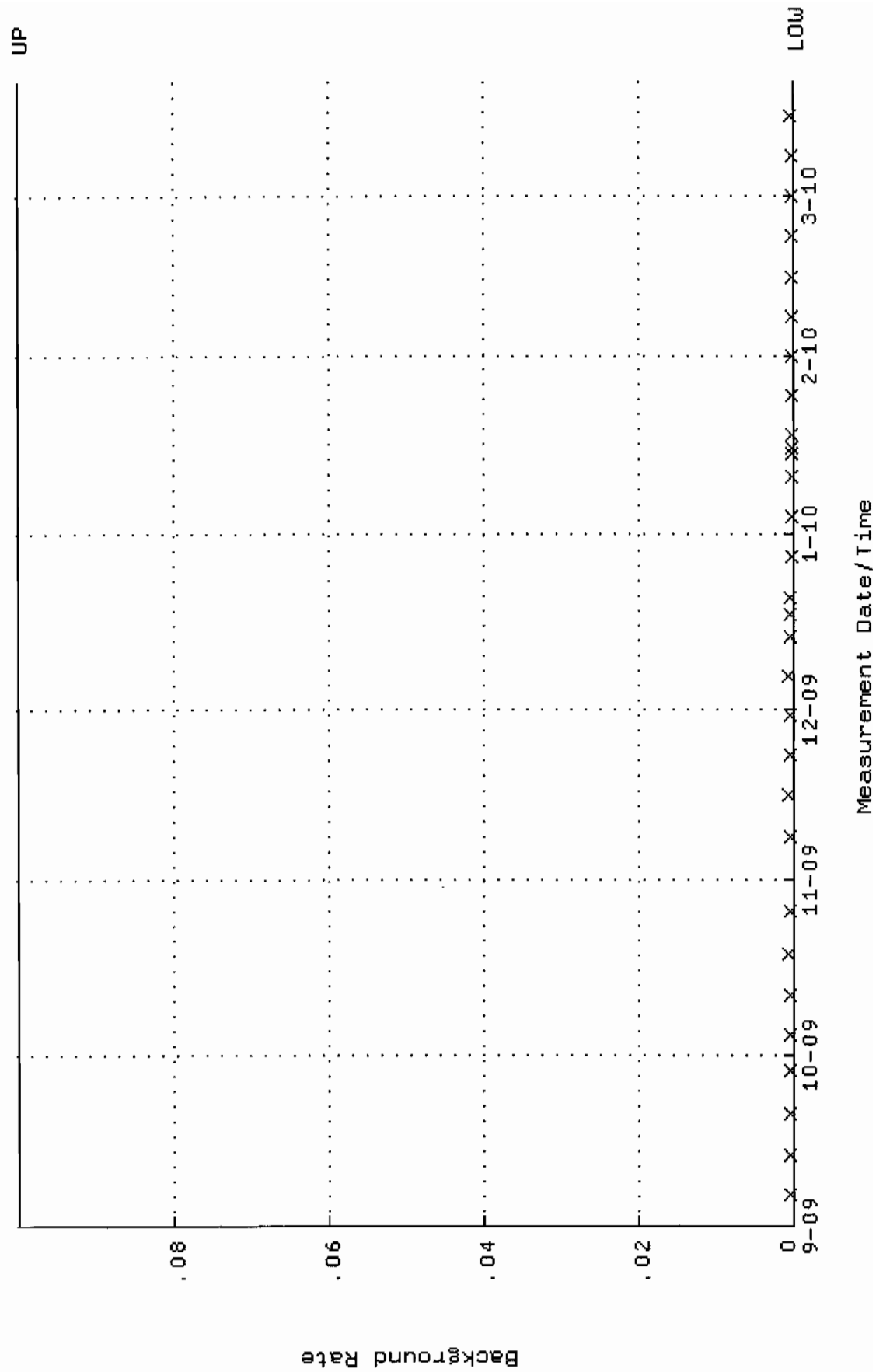


QA filename : DKA100:[ENV_ALPHA.QA.B]B120.QAF;1

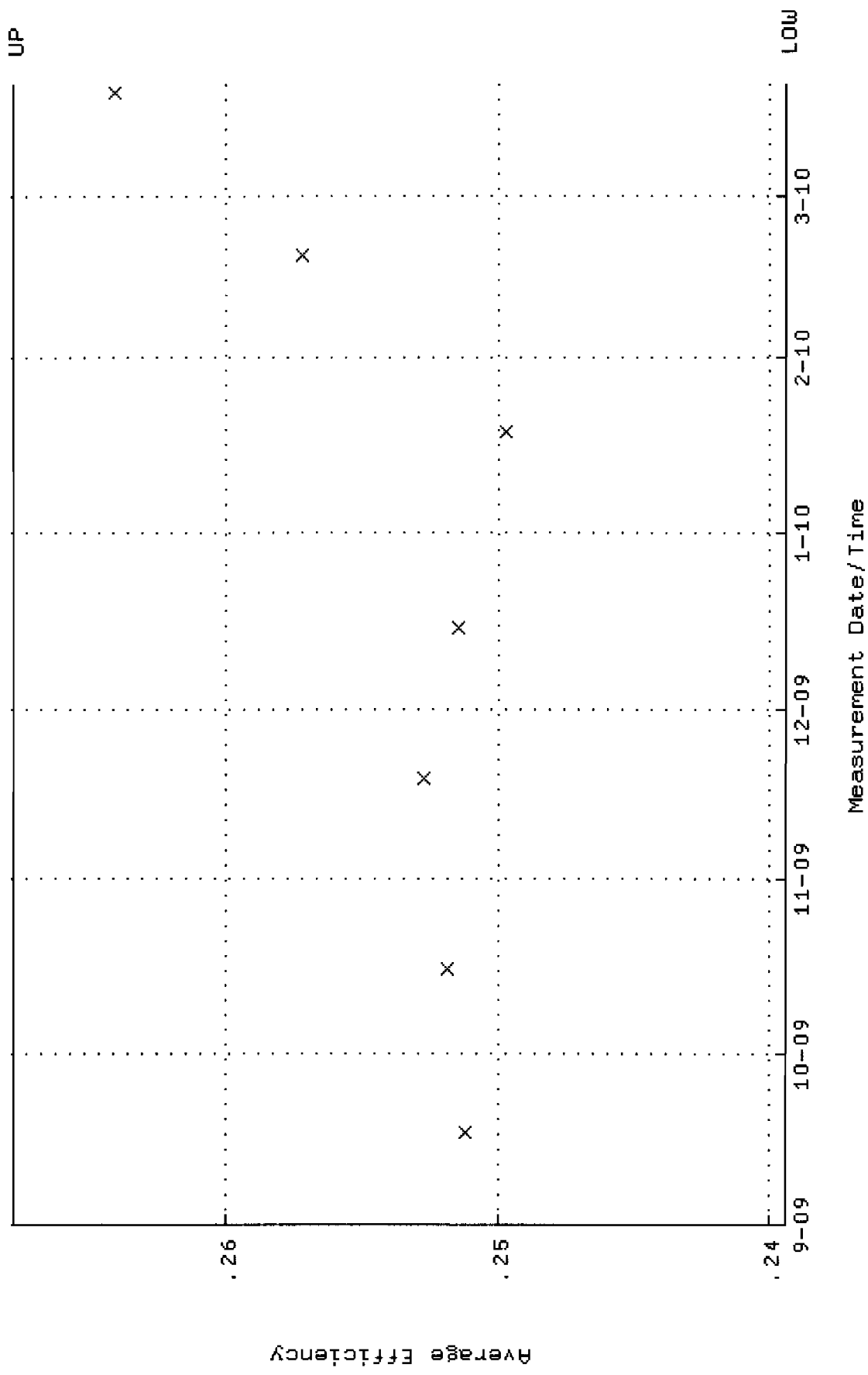
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:39 through 20-MAR-2010 12:00:00

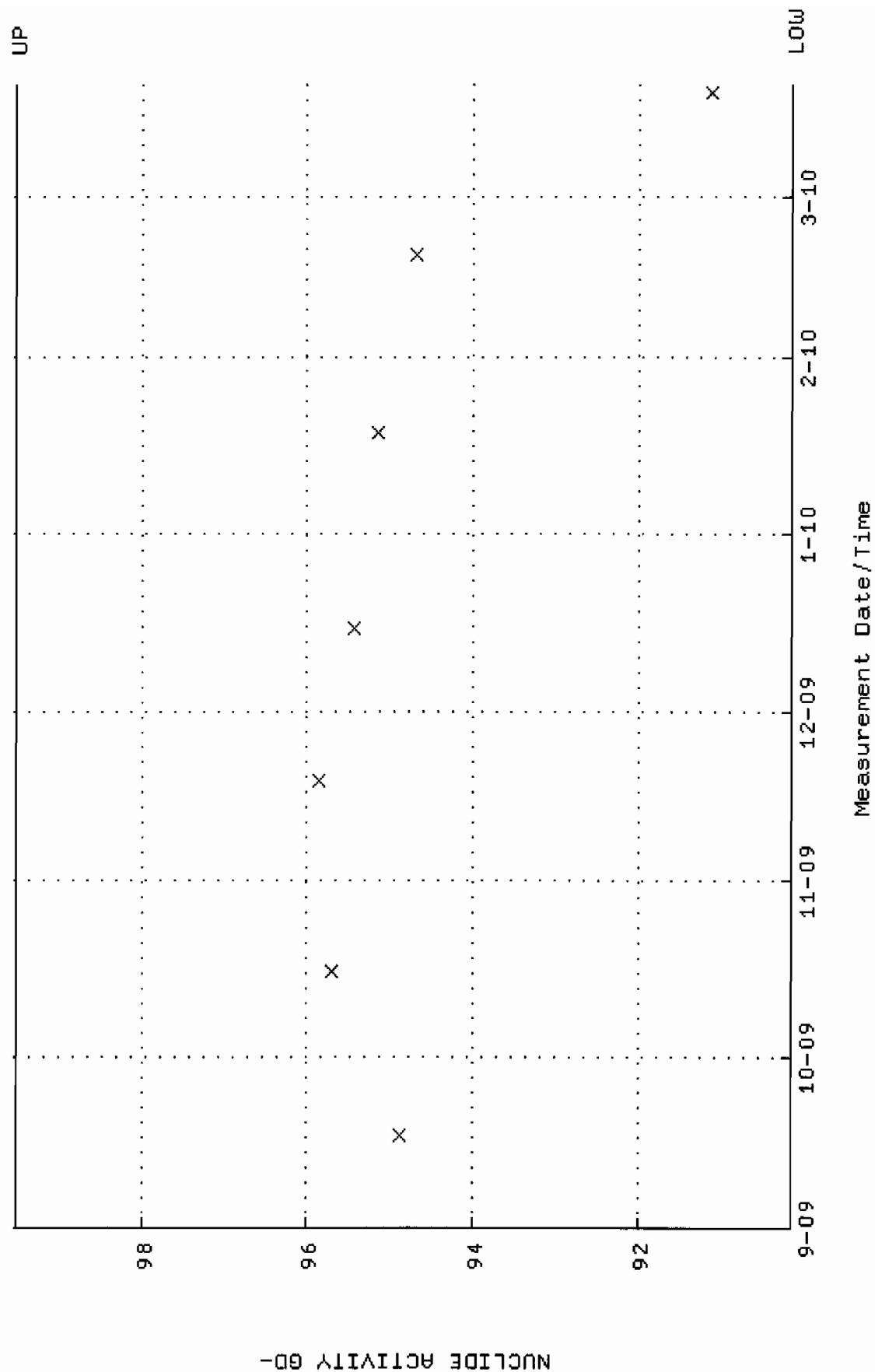
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W122.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.239412 through 0.267828



QA filename : DKA100:[ENV_ALPHA.QA.W]w122.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.1506 through 99.5122

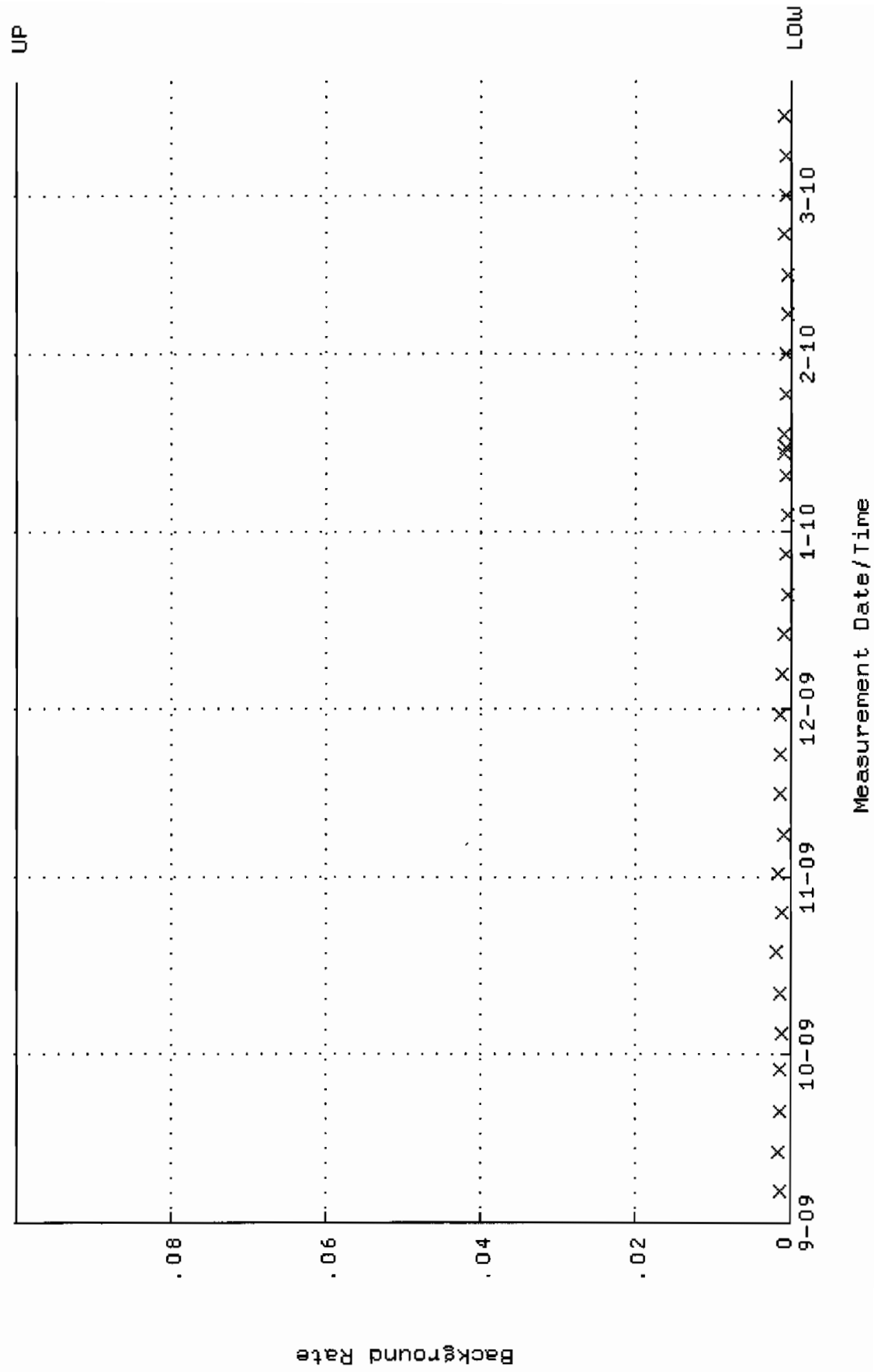


QA filename : DKA100:[ENV_ALPHA.QA.B]B122.QAF;1

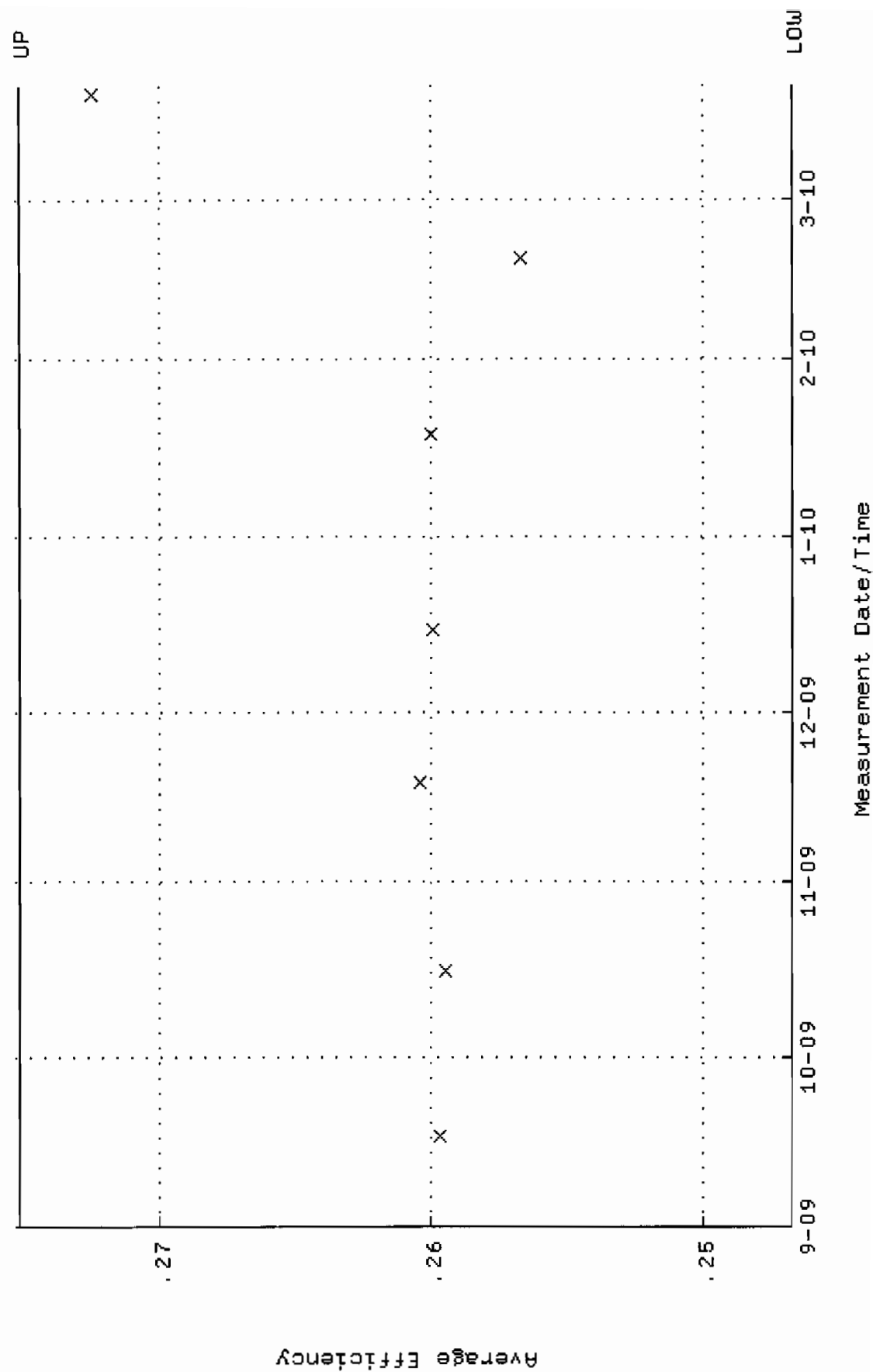
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:48 through 20-MAR-2010 12:00:00

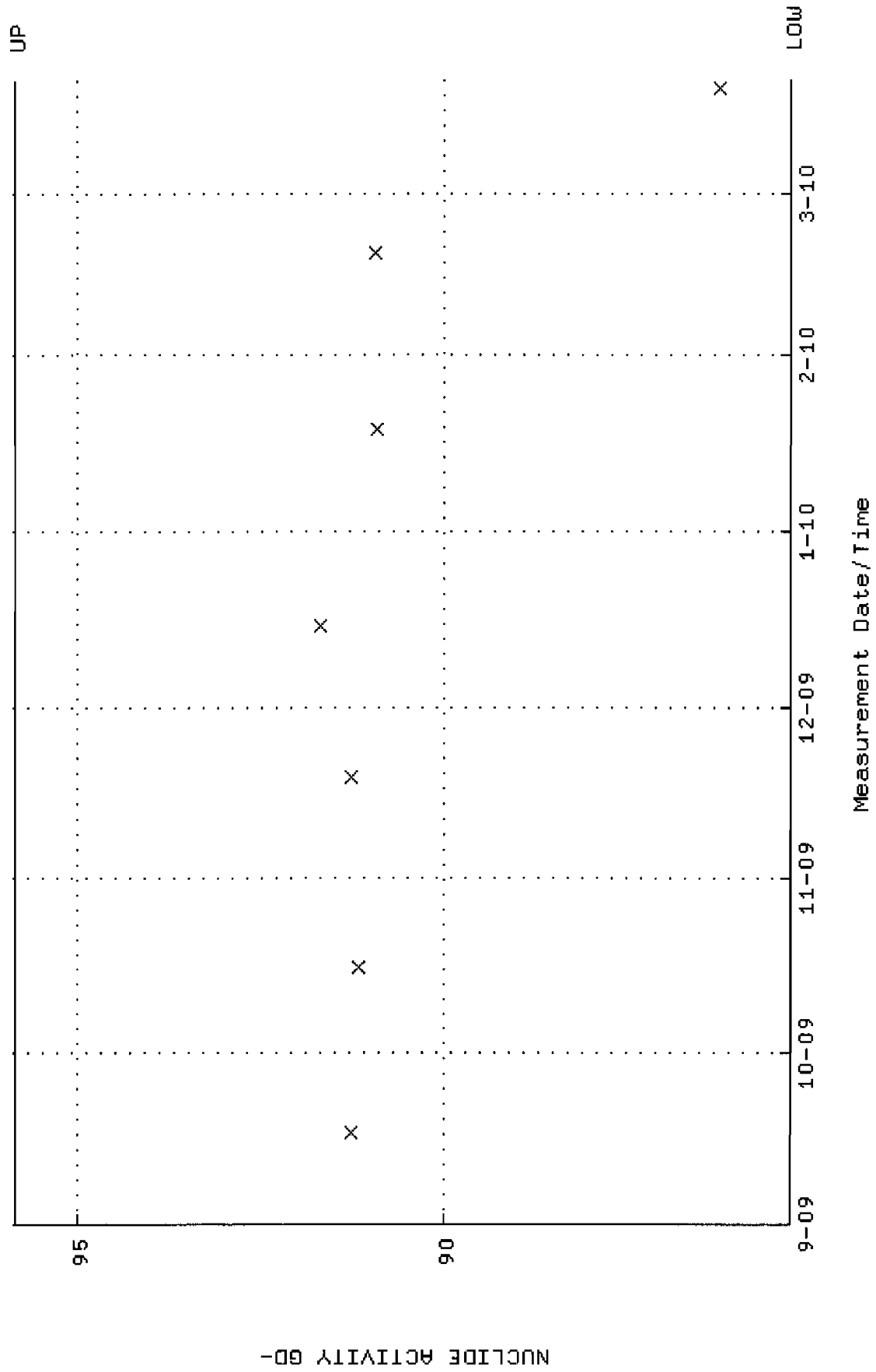
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]w123.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.246718 through 0.275204



QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
 Parameter Name : NLAIVITY-GD148 {NUCLIDE ACTIVITY GD-148}
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.2791 through 95.8339

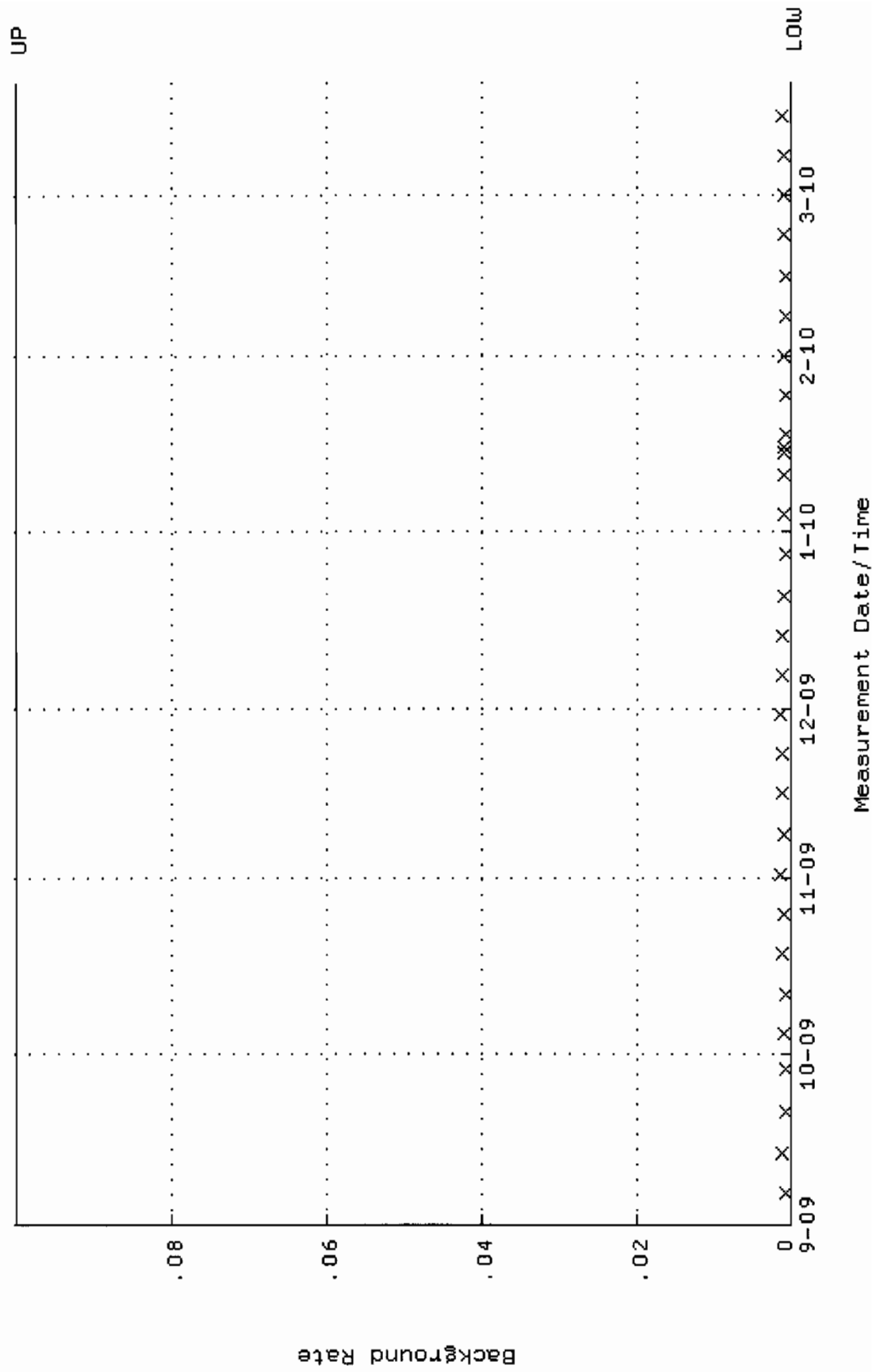


QA filename : DKA100:[ENV_ALPHA.QA.B]B123.QAF;1

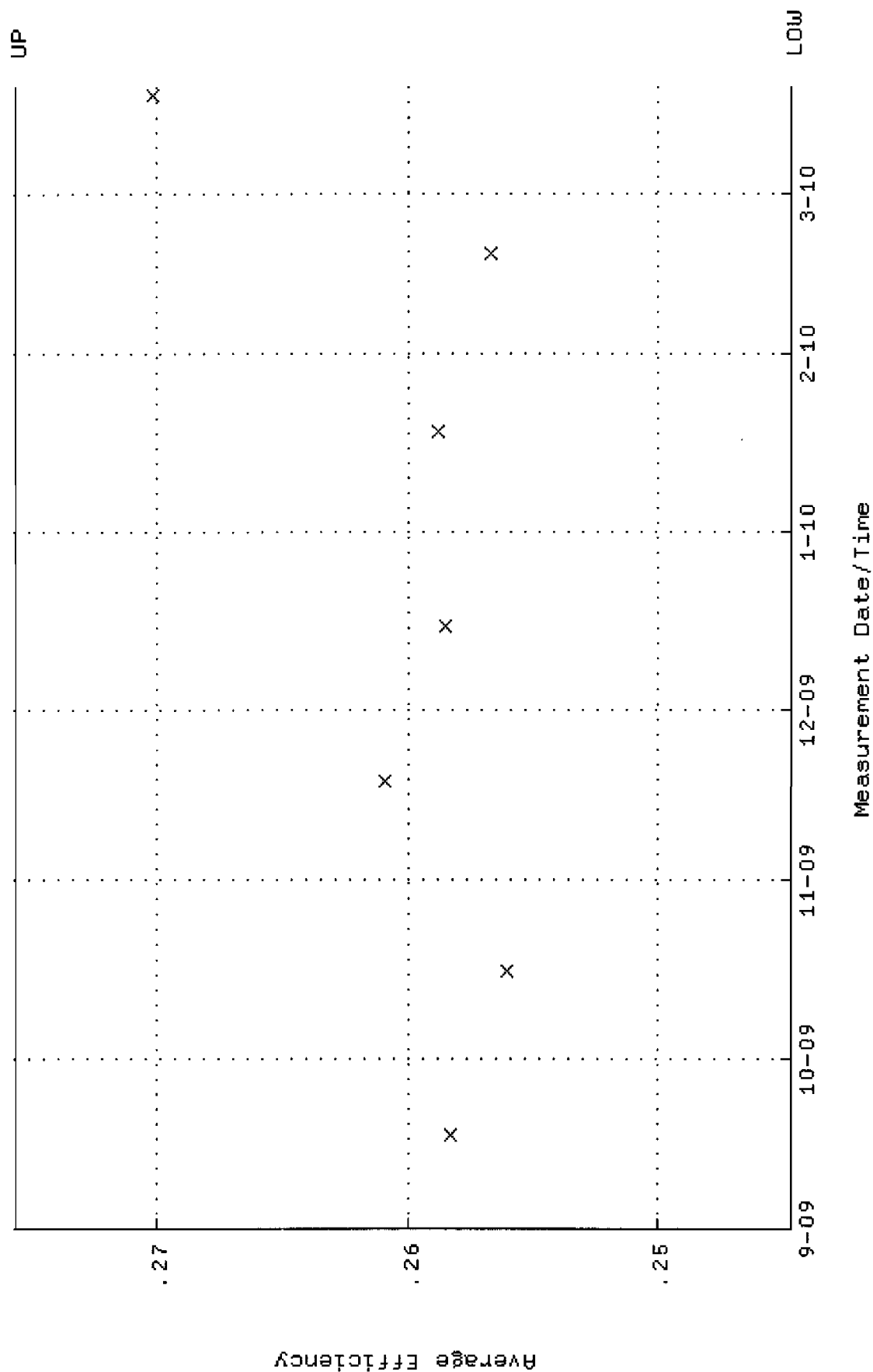
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:52 through 20-MAR-2010 12:00:00

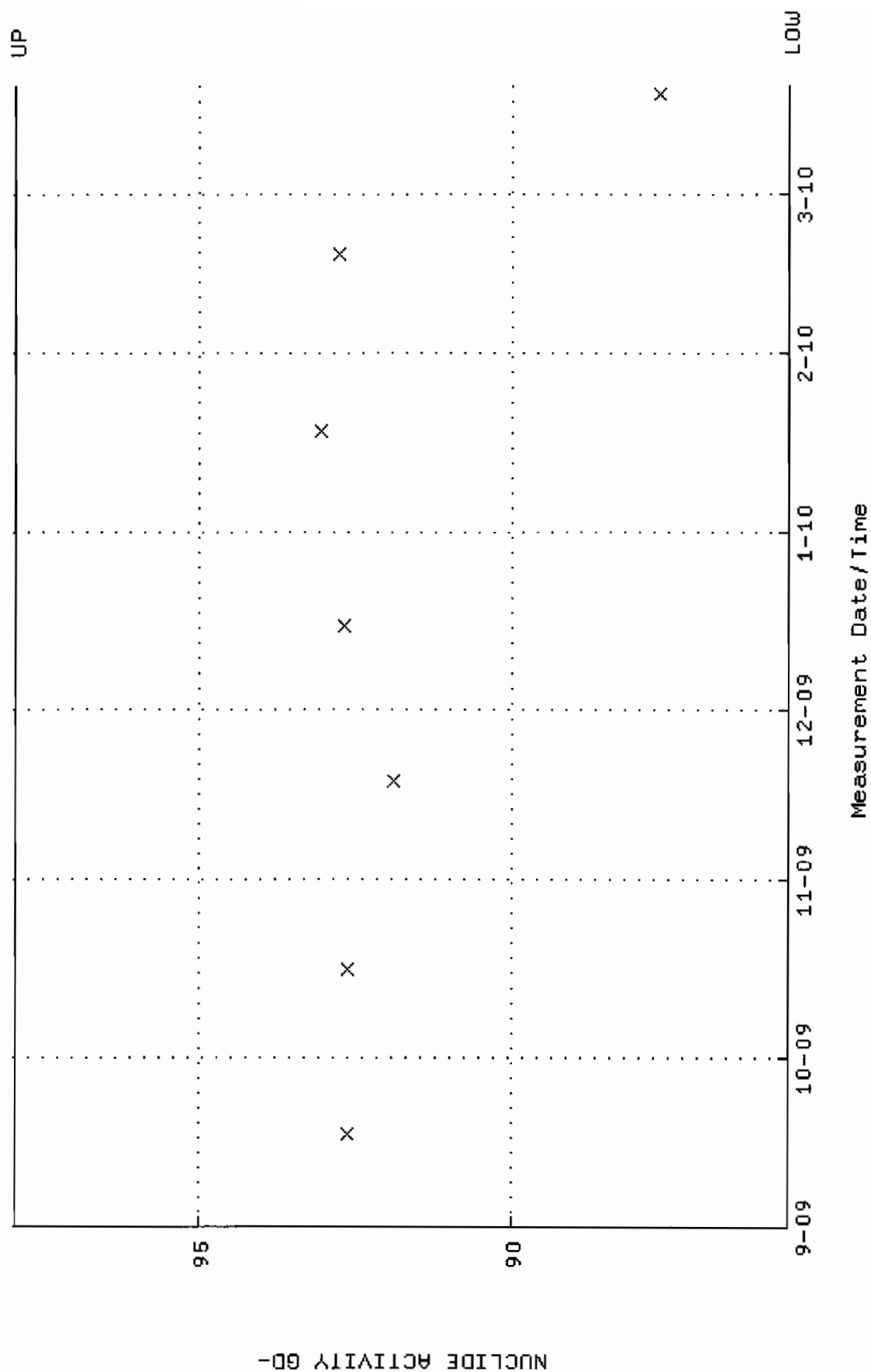
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W125.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.244676 through 0.275622



QA filename : DKA100:[ENV_ALPHA.QA.W]W125.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5532 through 97.9632

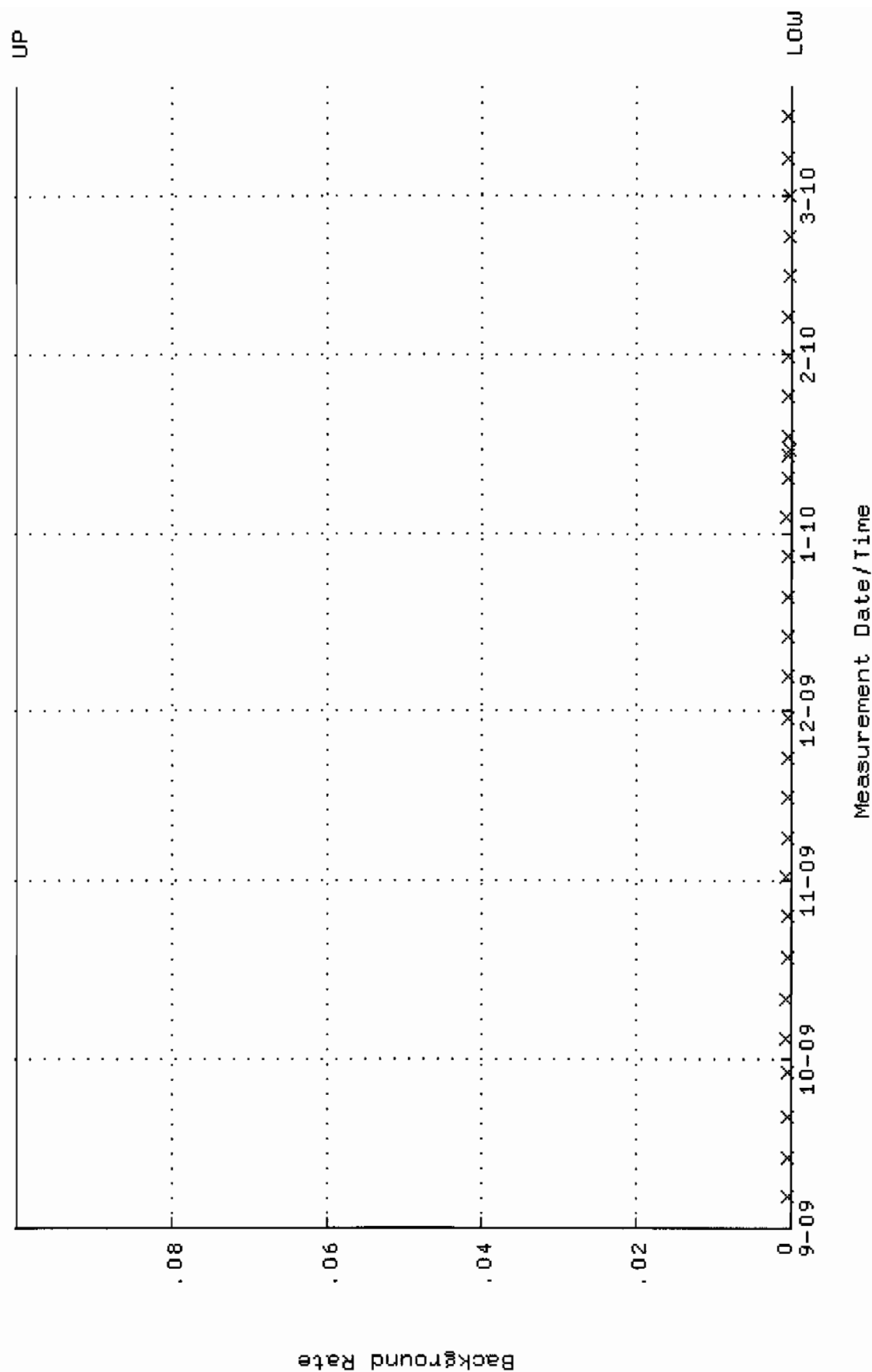


QA filename : DKA100:[ENV_ALPHA.QA.B]B125.QAF;1

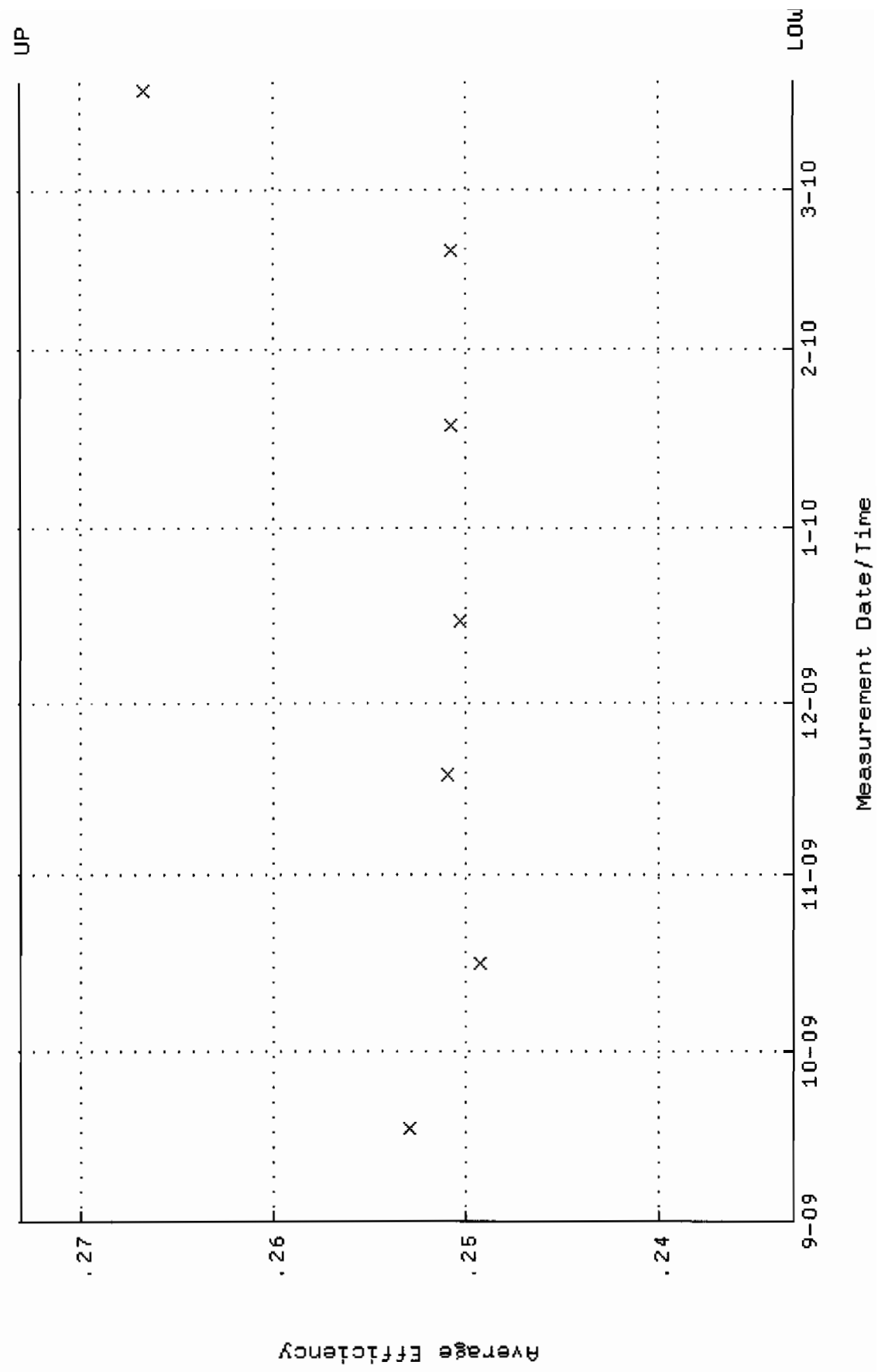
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:41:01 through 19-MAR-2010 12:00:00

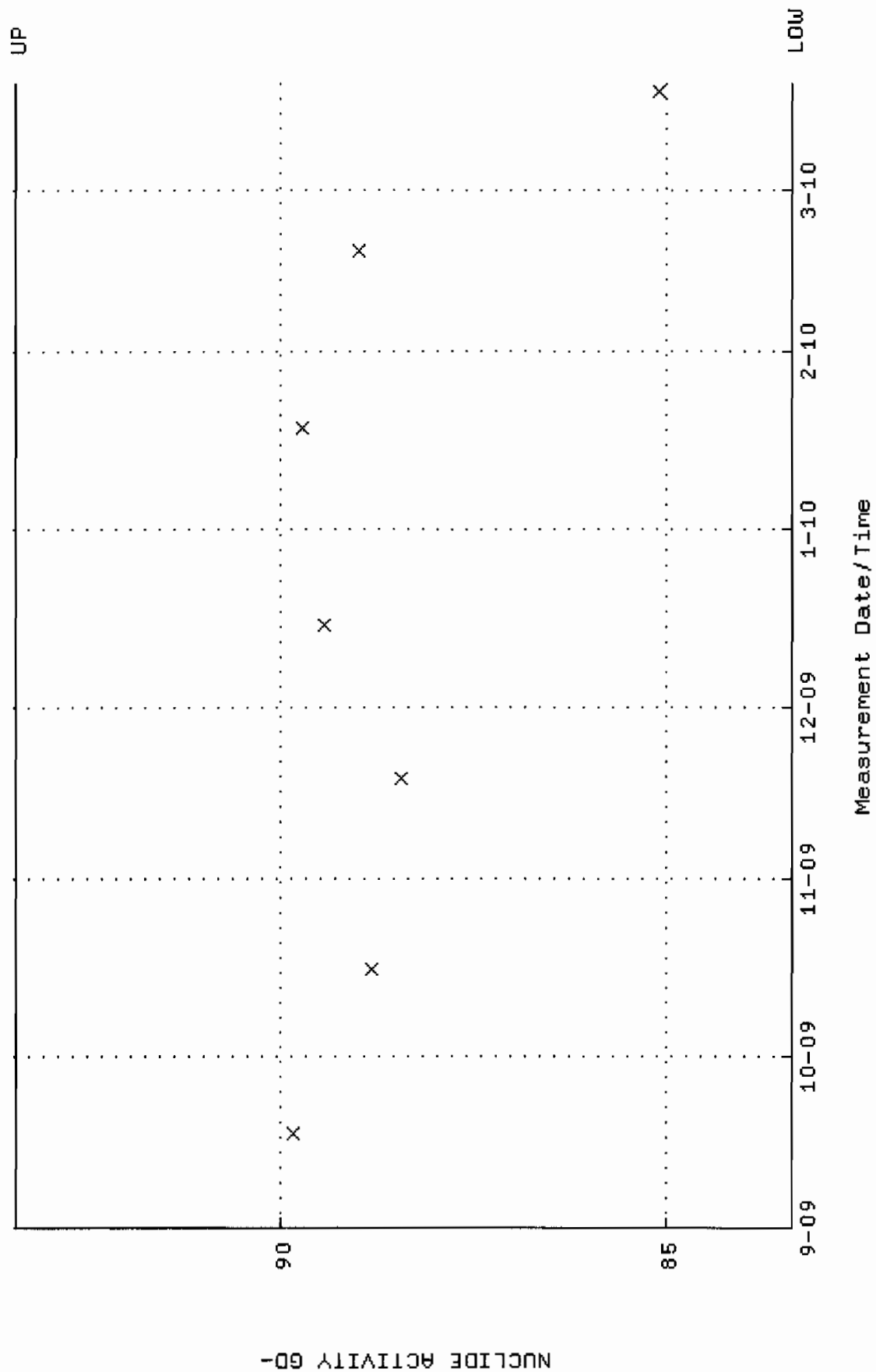
Lower/Upper Lmts: 0.000000E+00 through 0.100000



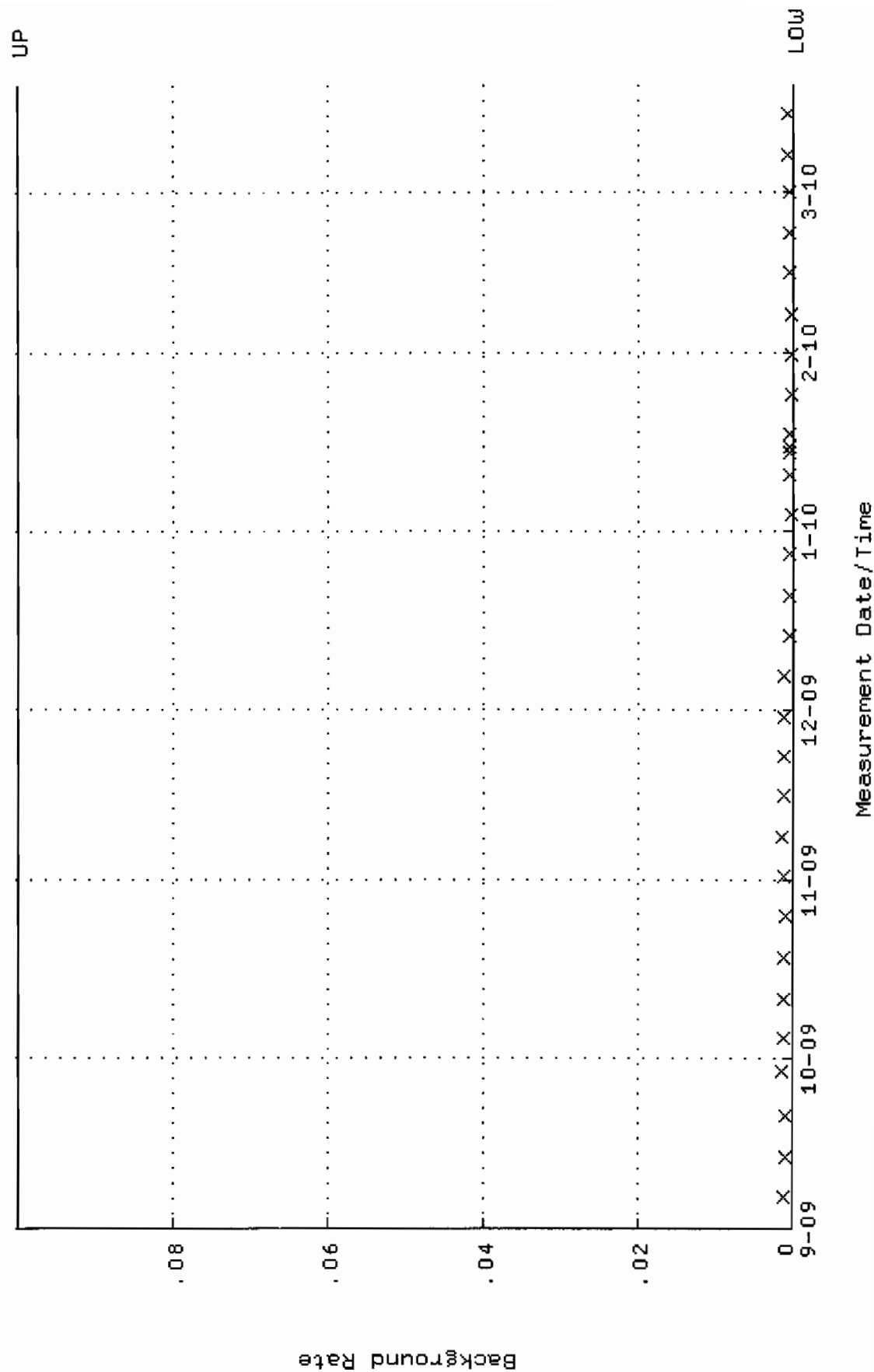
QA Filename : DKA100:[ENV_ALPHA.QA.W]w126.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.233045 through 0.273065



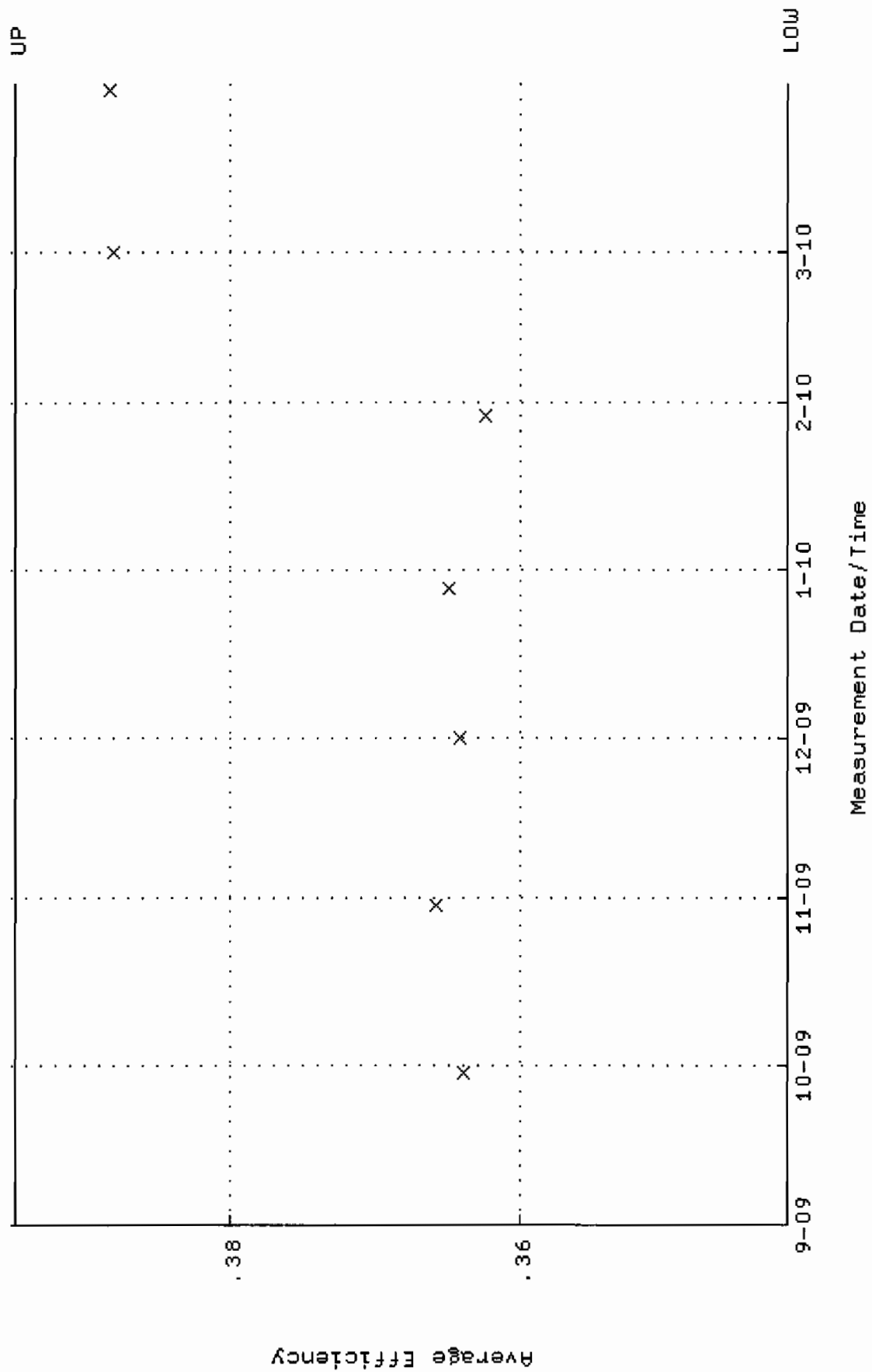
QA filename : DKA100:[ENV_ALPHA.QA.W]w126.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.3533 through 93.4269



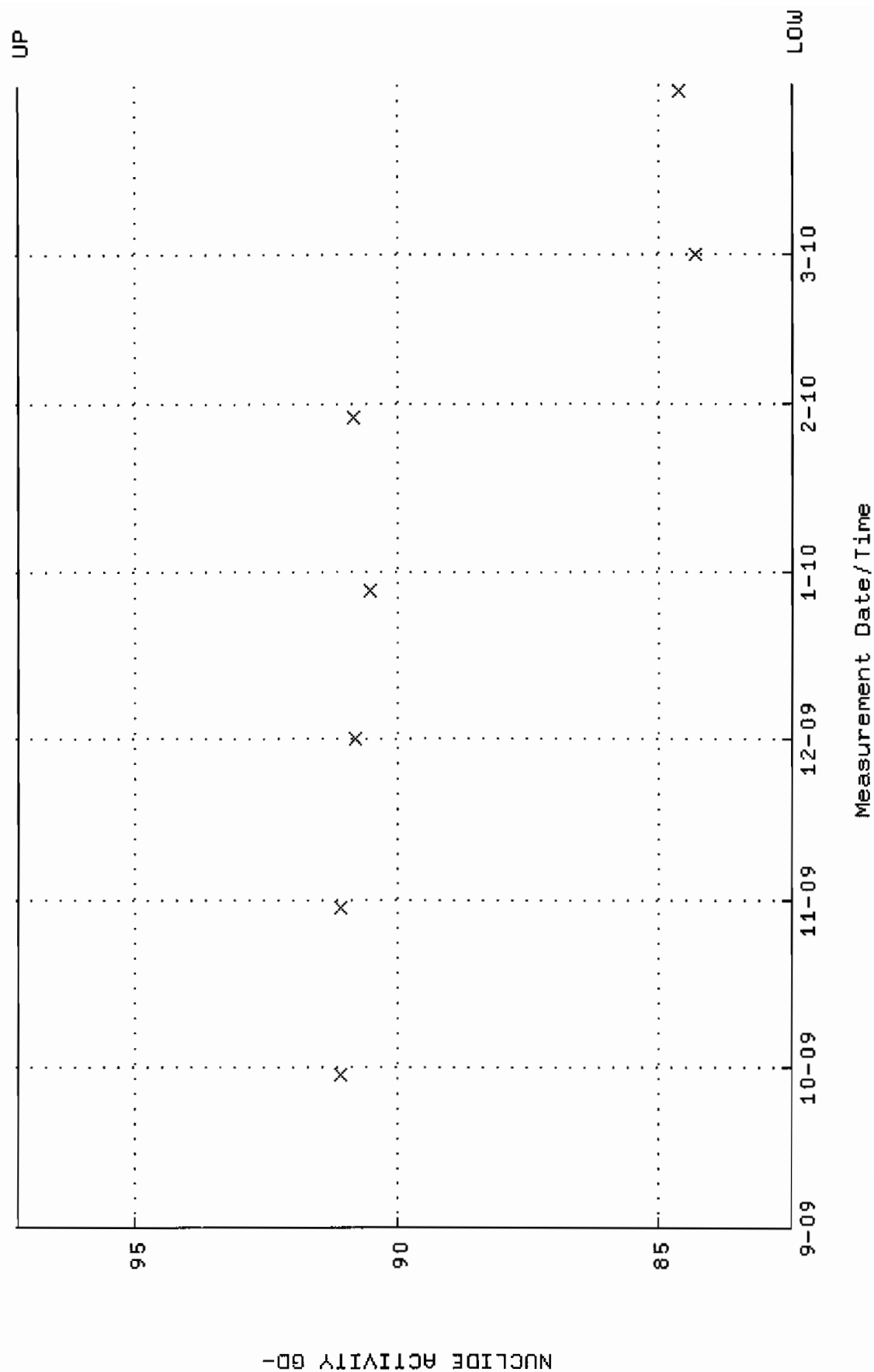
QA filename : DKA100:[ENV_ALPHA.QA.B]B126.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:05 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



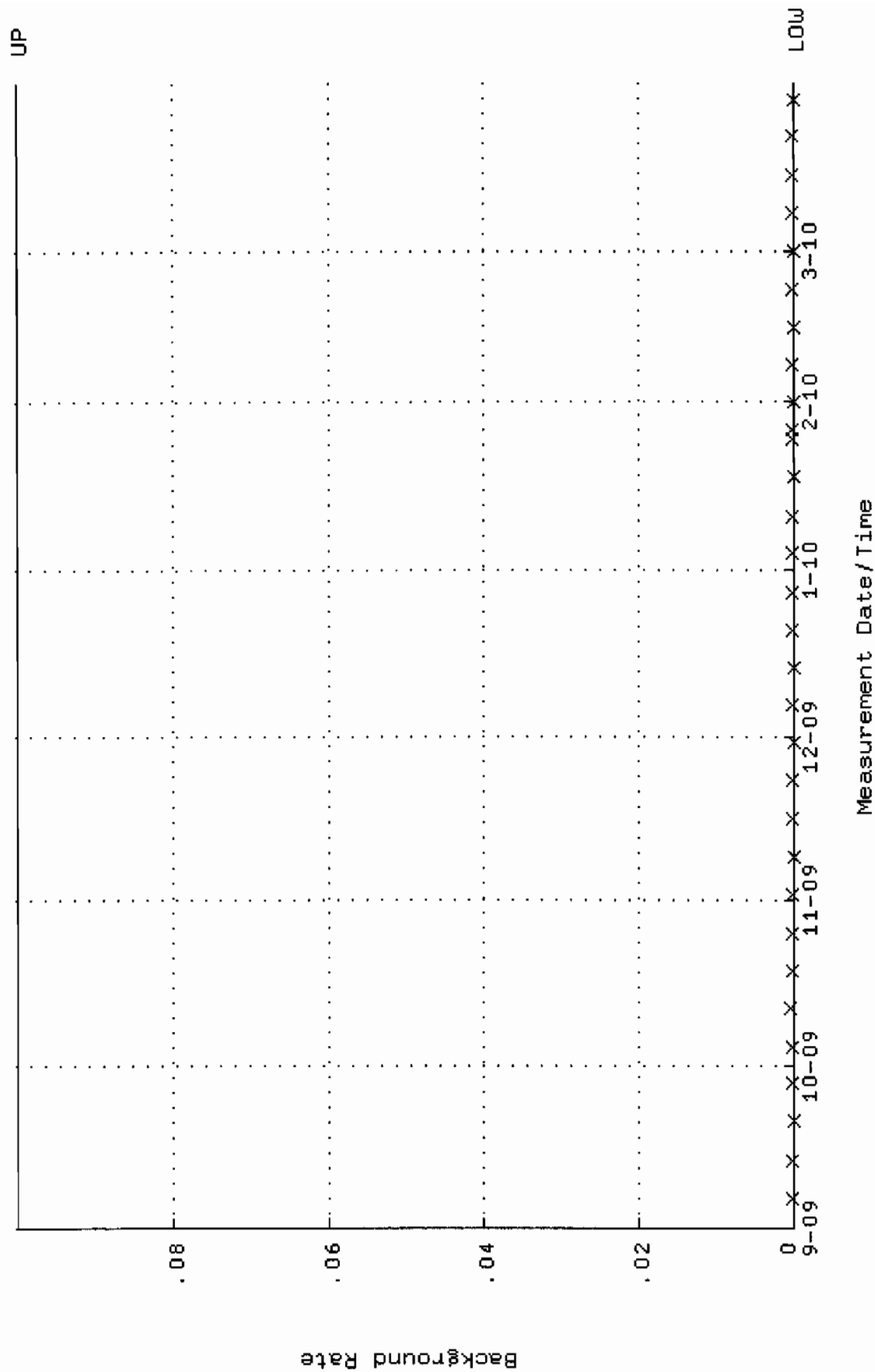
QA filename : DKA100:[ENV_ALPHA.QA.W]W209.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:36:24 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.341431 through 0.395023



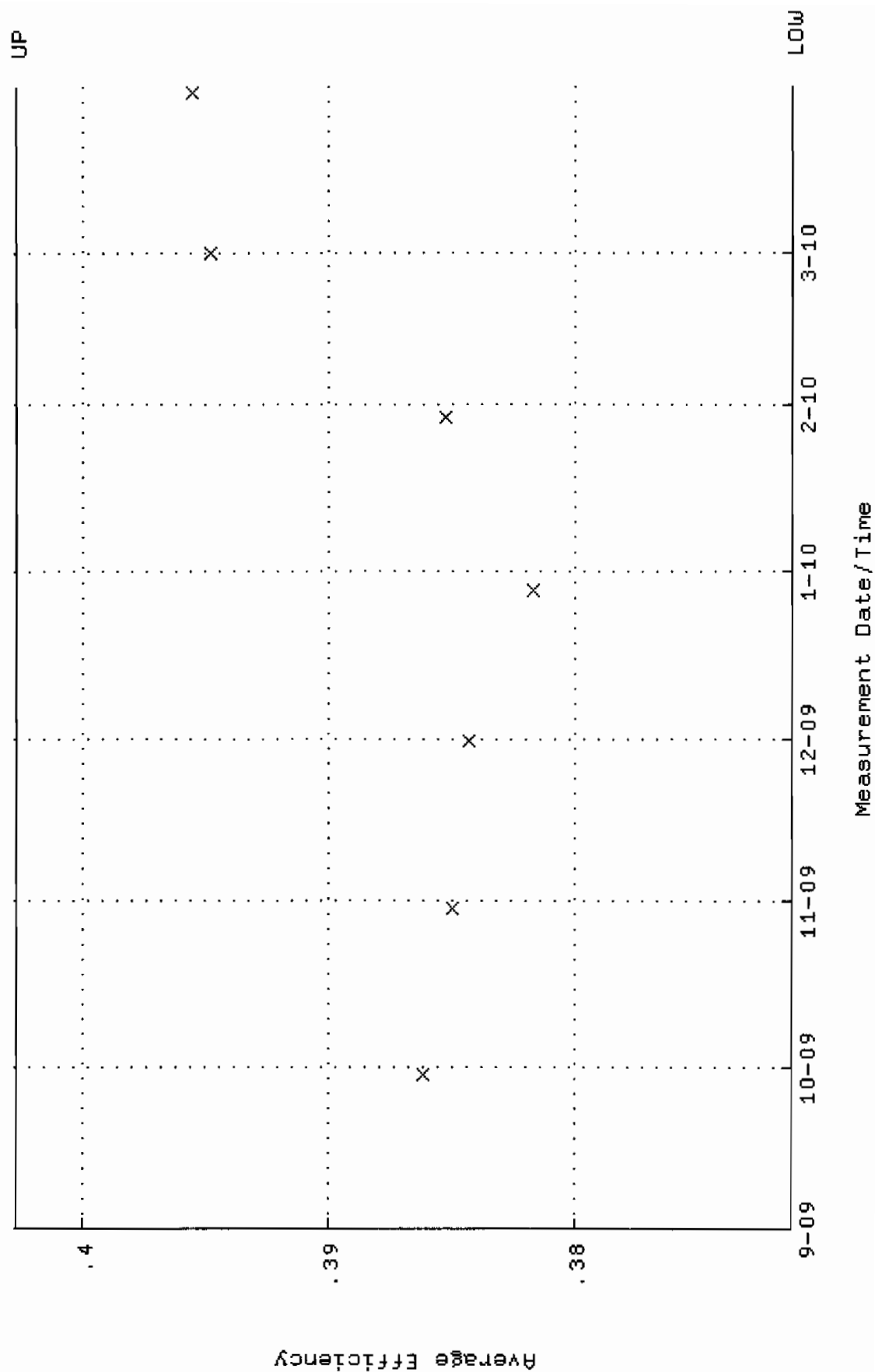
QA filename : DKA100:[ENV_ALPHA.QA.W]W209.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:36:24 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4748 through 97.2344



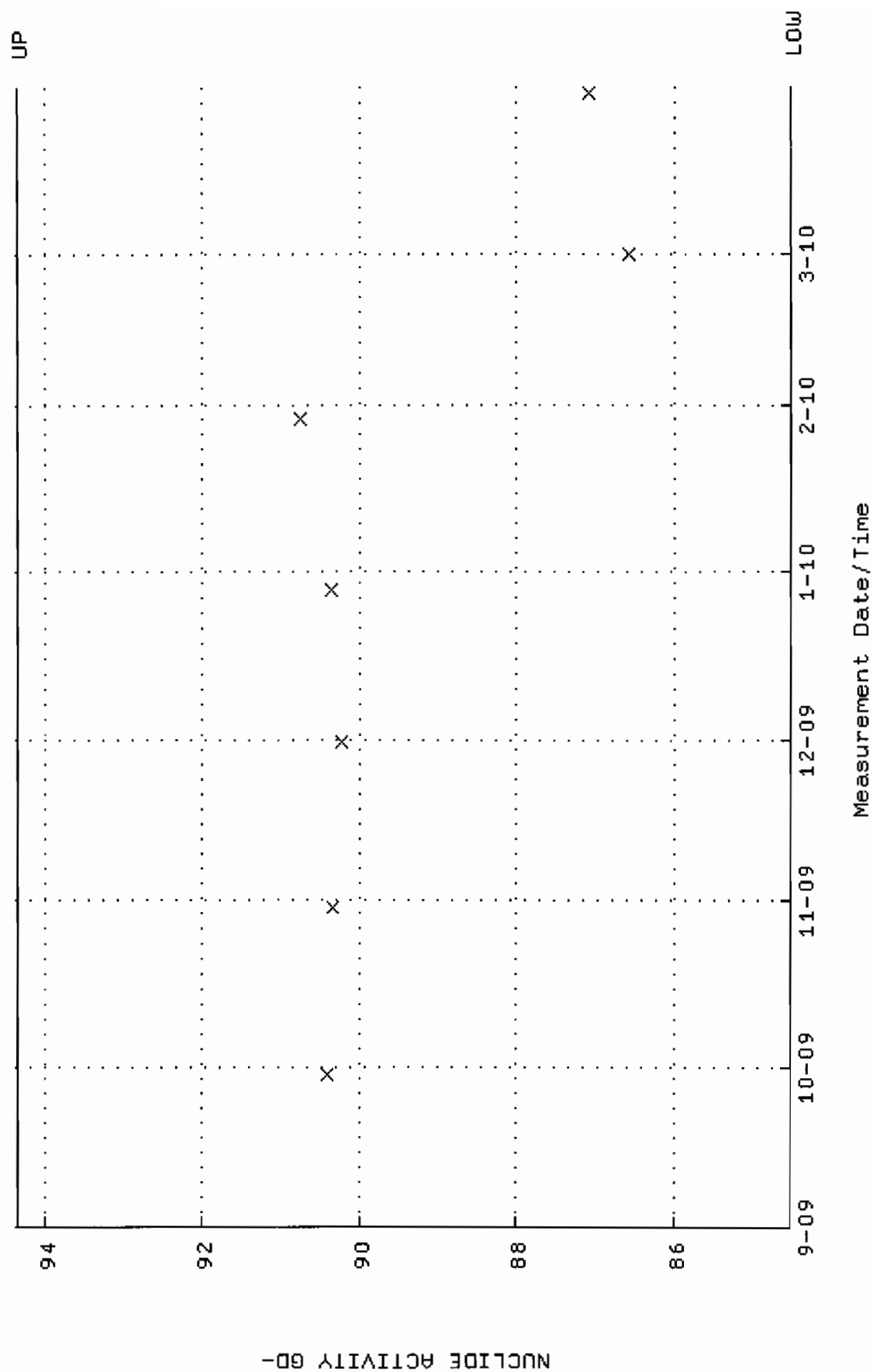
QA filename : DKA100:[ENV_ALPHA.QA.B]B209.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:48:22 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



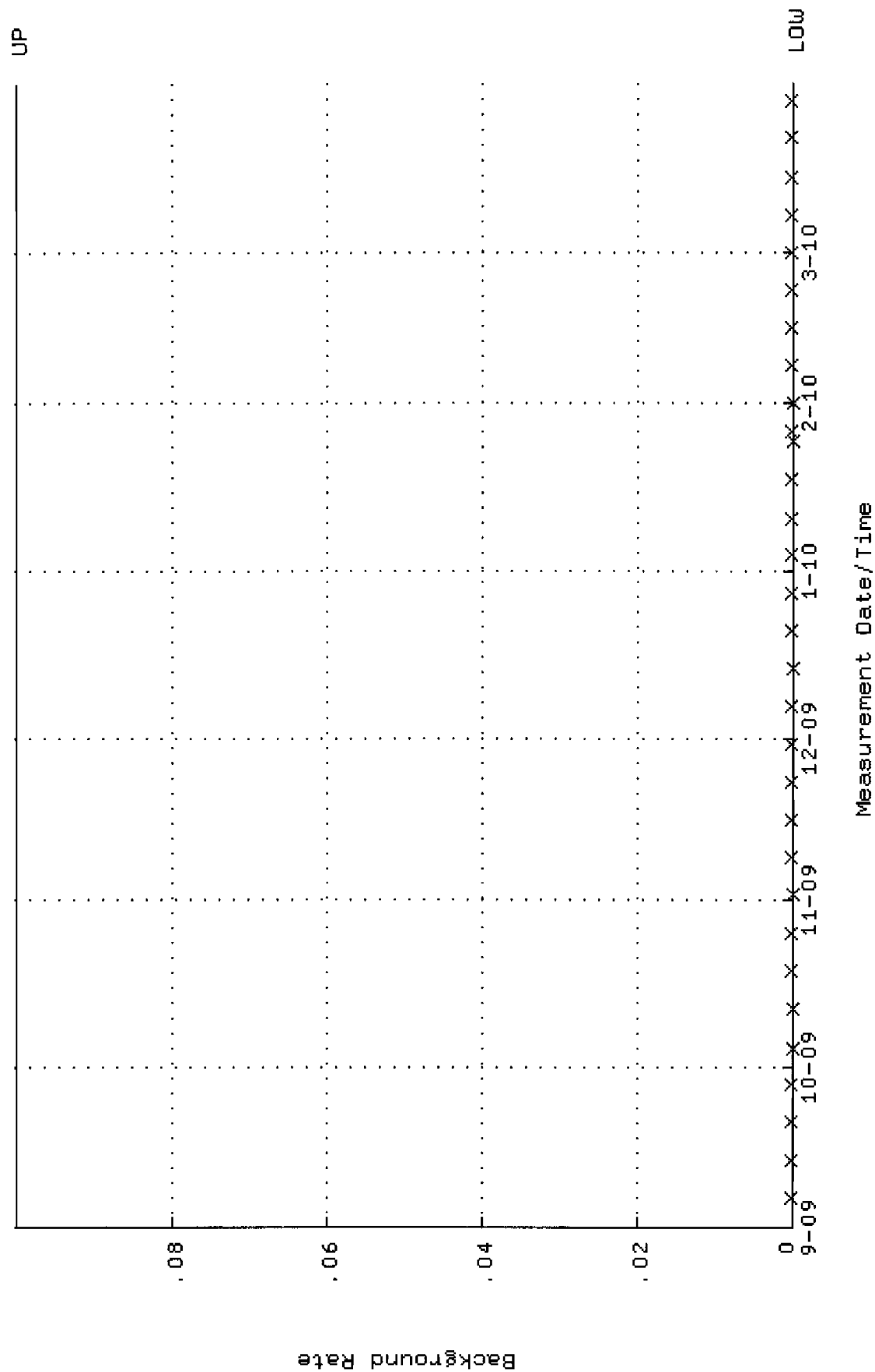
QA filename : DKA100:[ENV_ALPHA.QA.W]w210.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:36:29 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.371205 through 0.402649



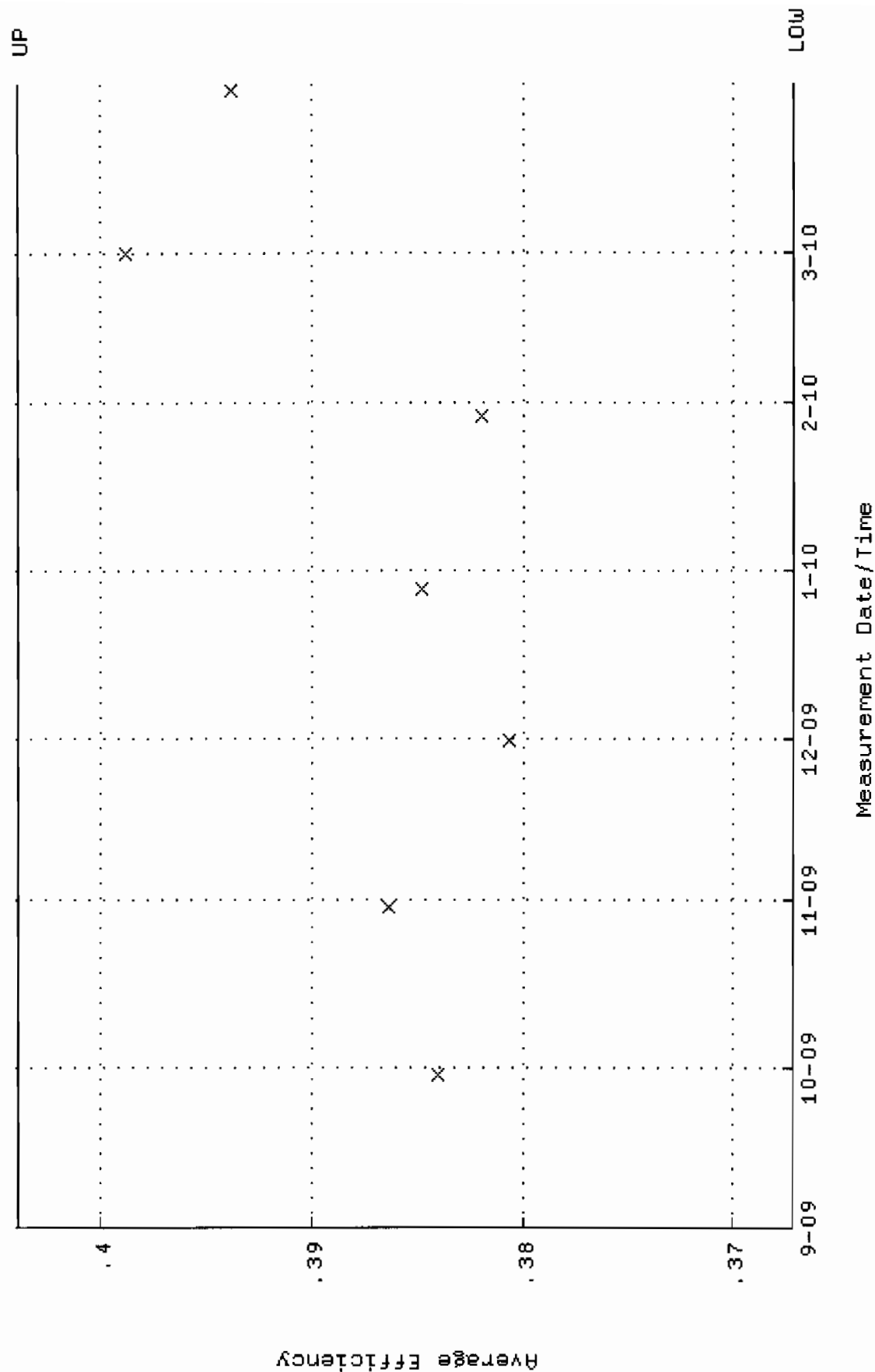
QA filename : DKA100:[ENV_ALPHA.QA.W]w210.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:36:29 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.5109 through 94.3421



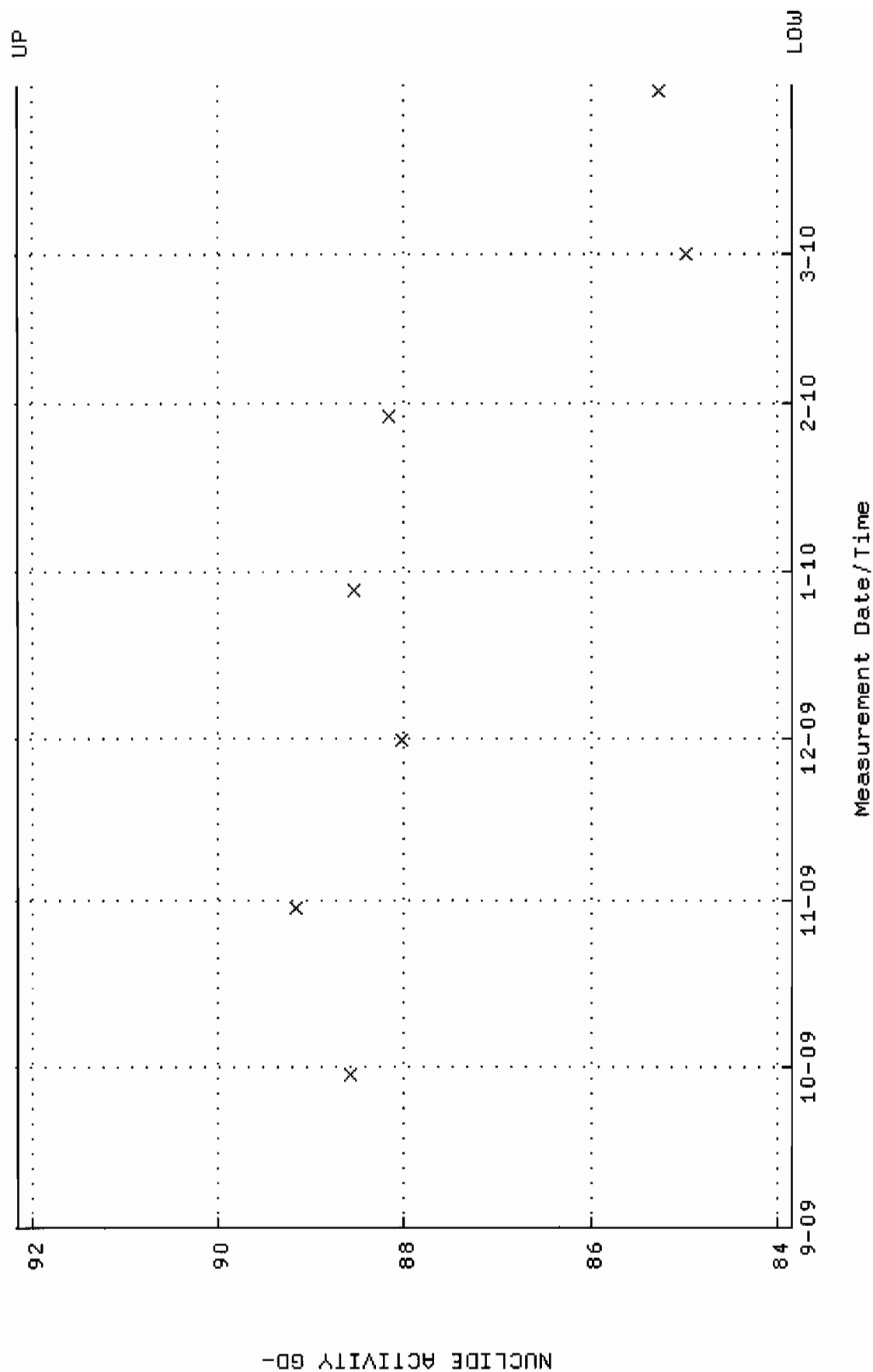
QA filename : DKA100:[ENV_ALPHA.QA.B]B210.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:48:26 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]w211.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:36:34 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.367181 through 0.403915



QA filename : DKA100:[ENV_ALPHA.QA.W]W211.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:36:34 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.8443 through 92.1557

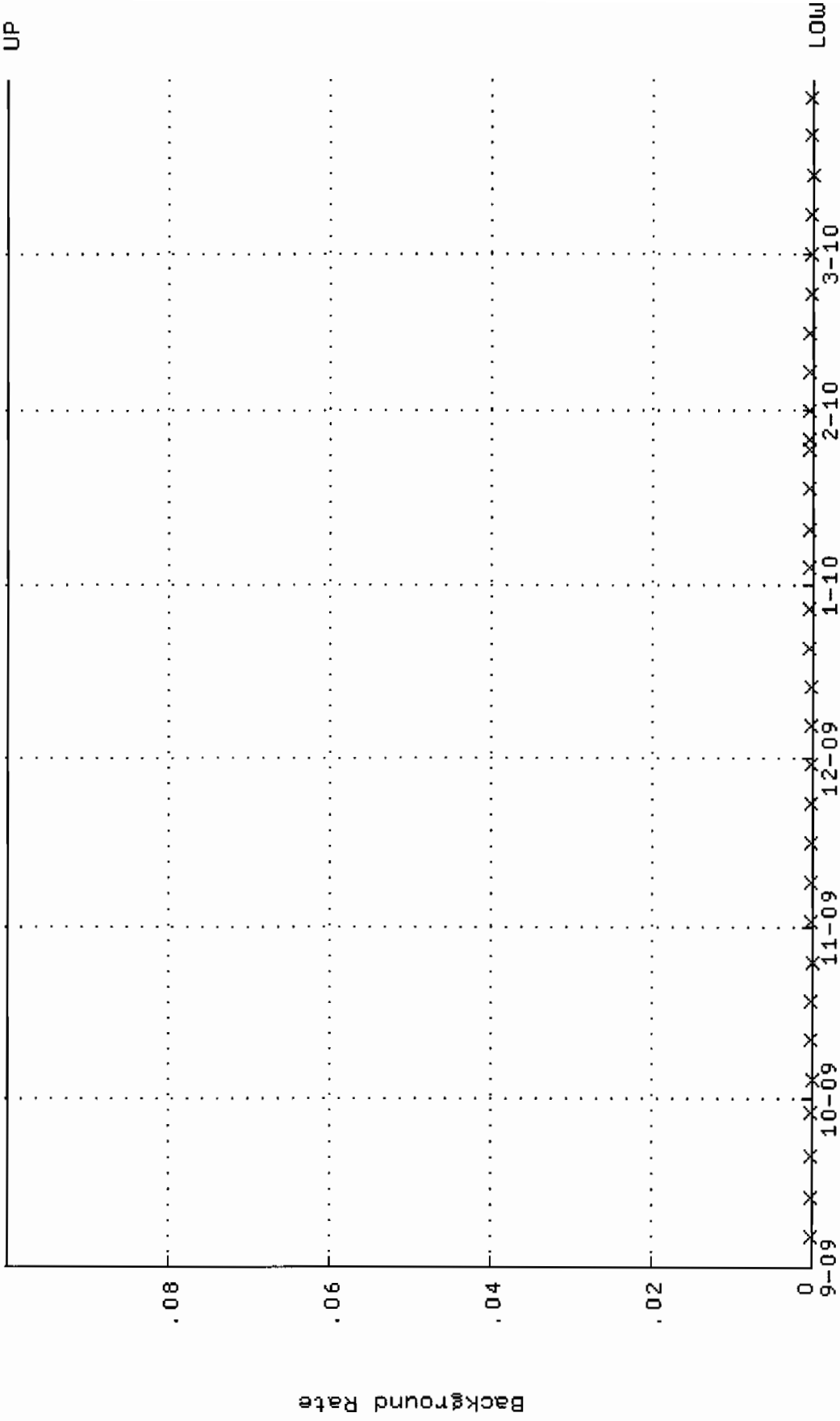


QA filename : DKA100:[ENV_ALPHA.QA.B]B211.QAF;1

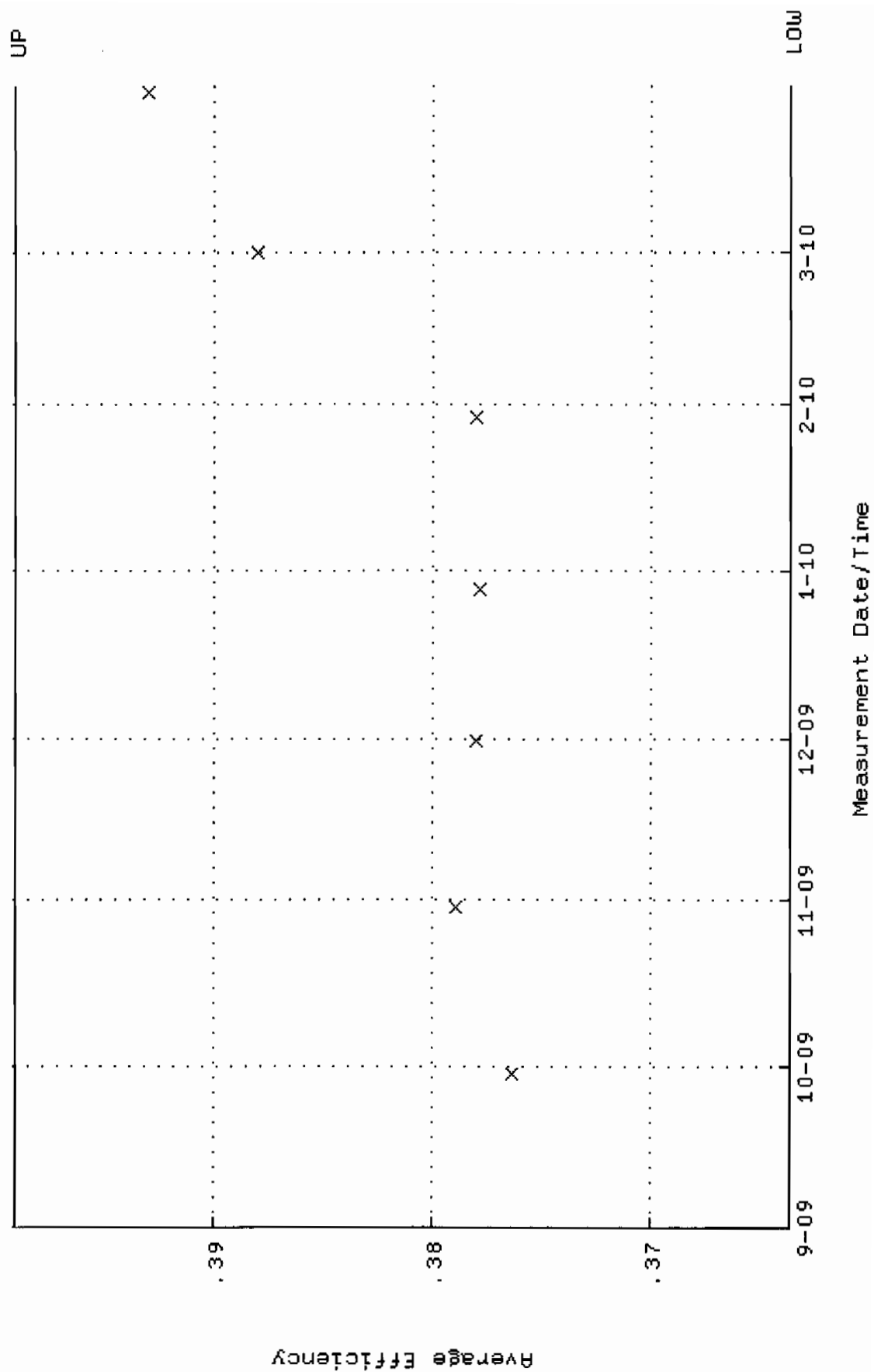
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:48:31 through 31-MAR-2010 12:00:00

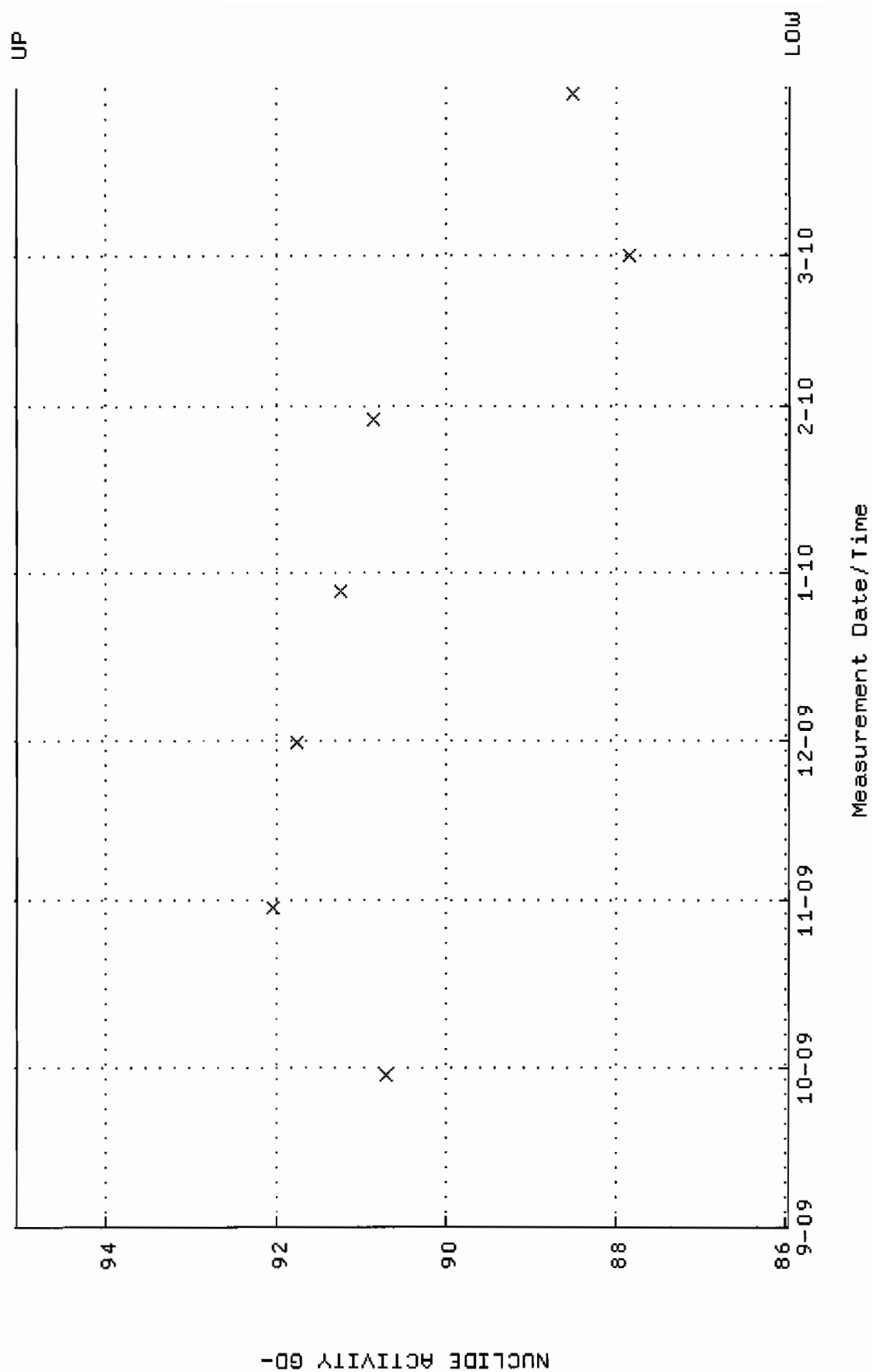
Lower/Upper Lmts: 0.000000E+00 through 0.100000



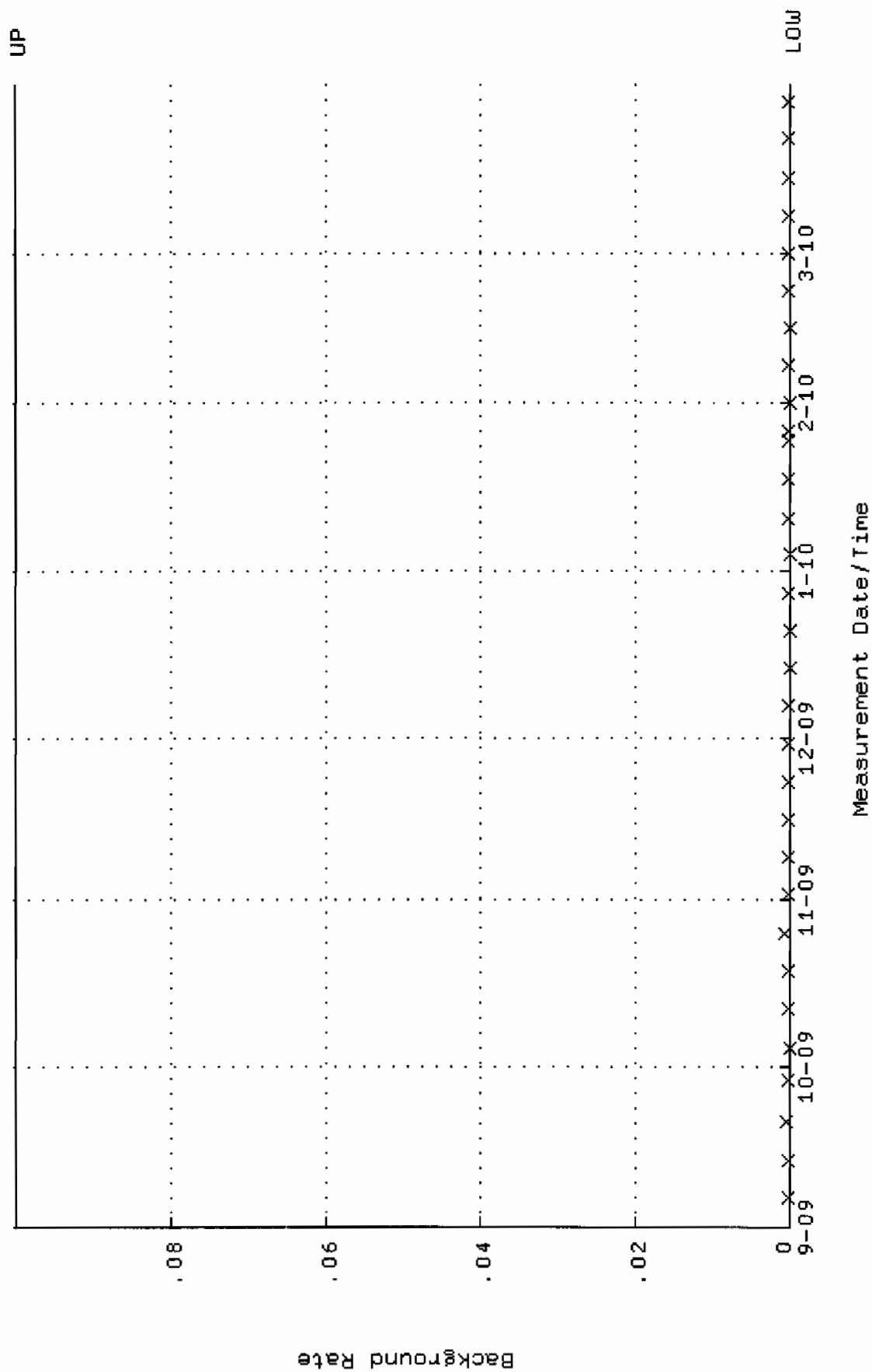
QA filename : DKA100:[ENV_ALPHA.QA.W]W212.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:36:39 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363681 through 0.399037



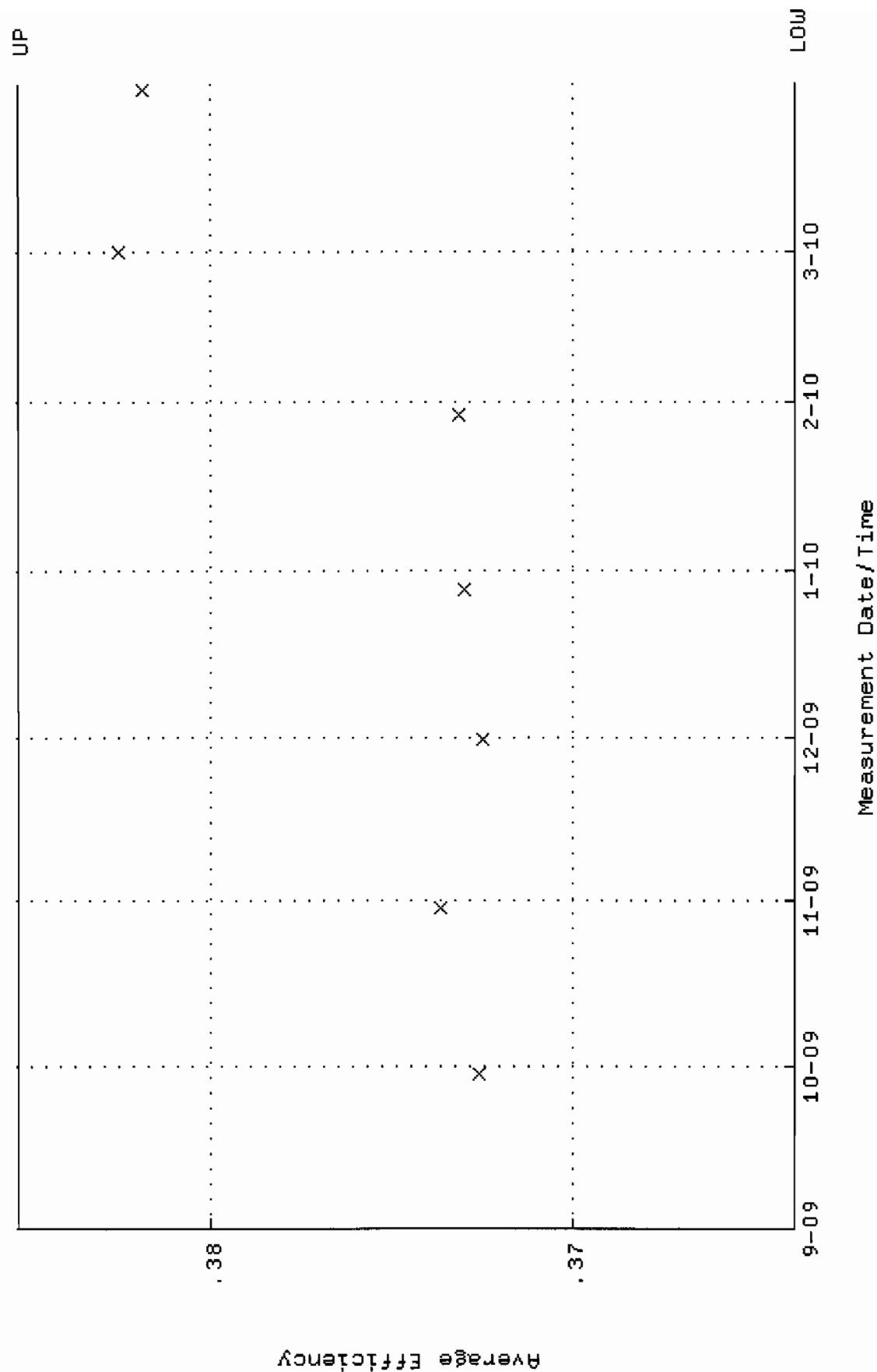
QA filename : DKA100:[ENV_ALPHA.QA.W]W212.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:36:39 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.9643 through 95.0571



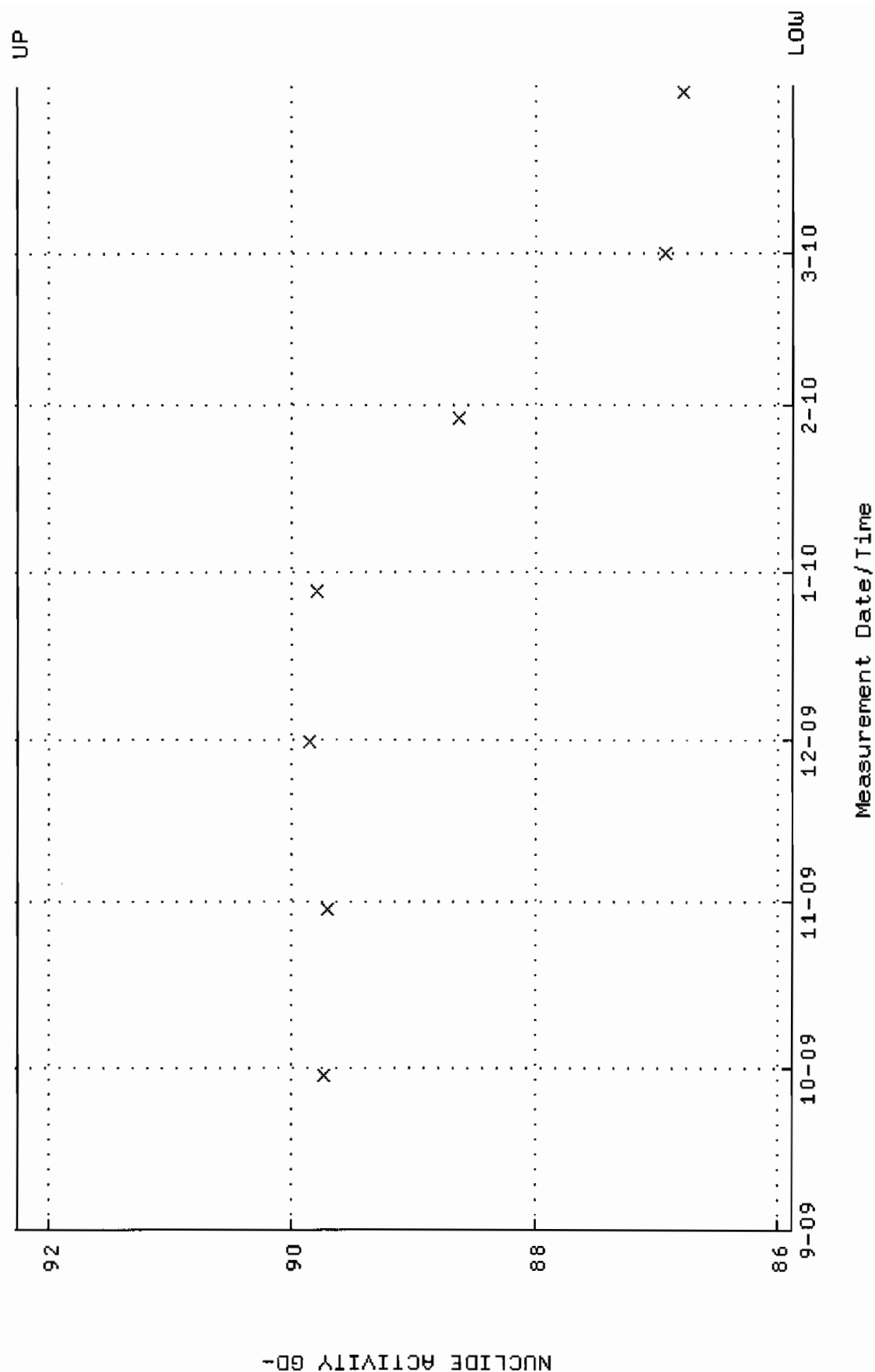
QA filename : DKA100:[ENV_ALPHA.QA.B]B212.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:48:35 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W213.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:36:44 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363867 through 0.385287



QA filename : DKA100:[ENV_ALPHA.QA.W]U213.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:36:44 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.8876 through 92.2476

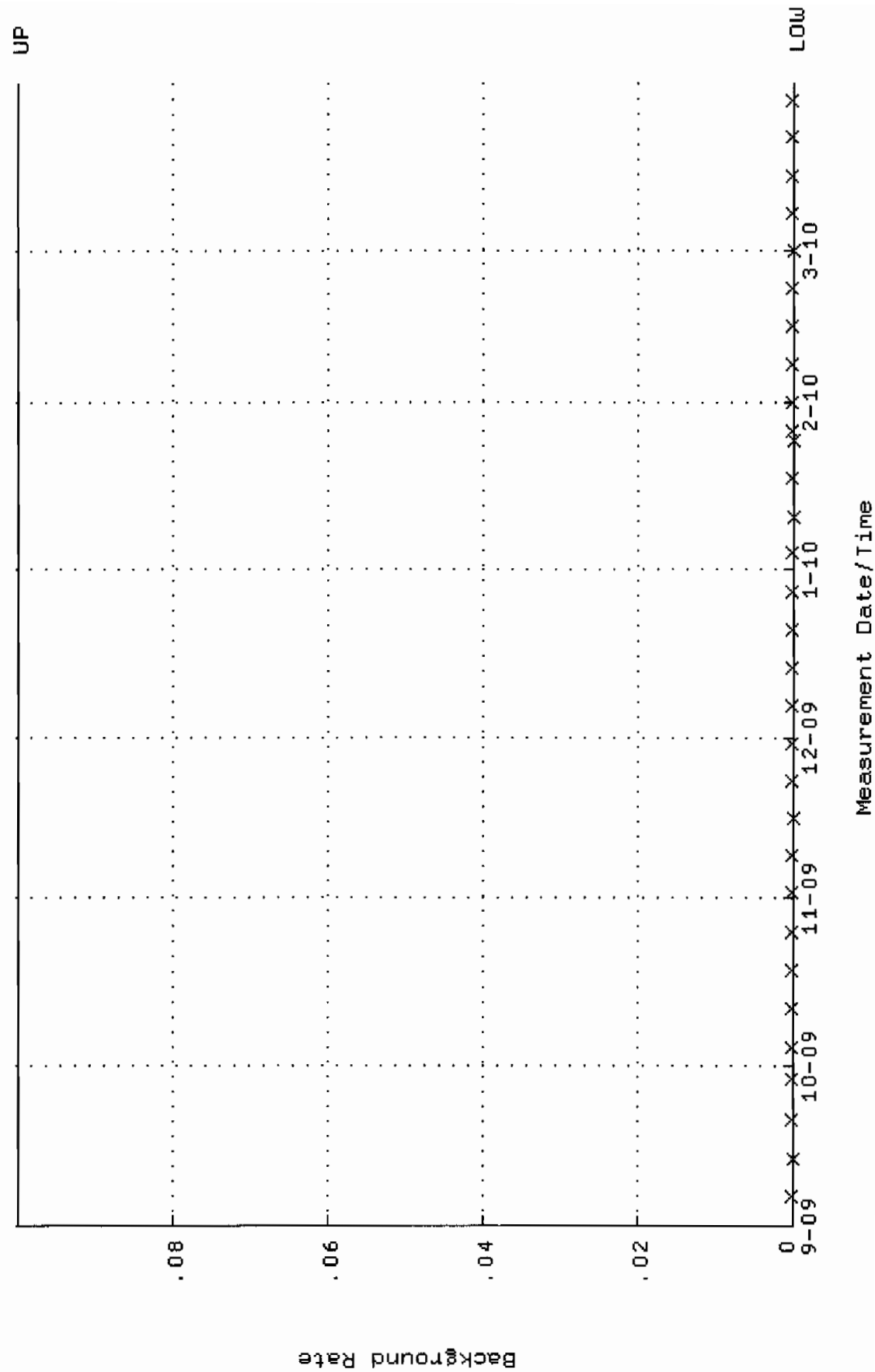


QA filename : DKA100:[ENV_ALPHA.QA.B]B213.QAF;1

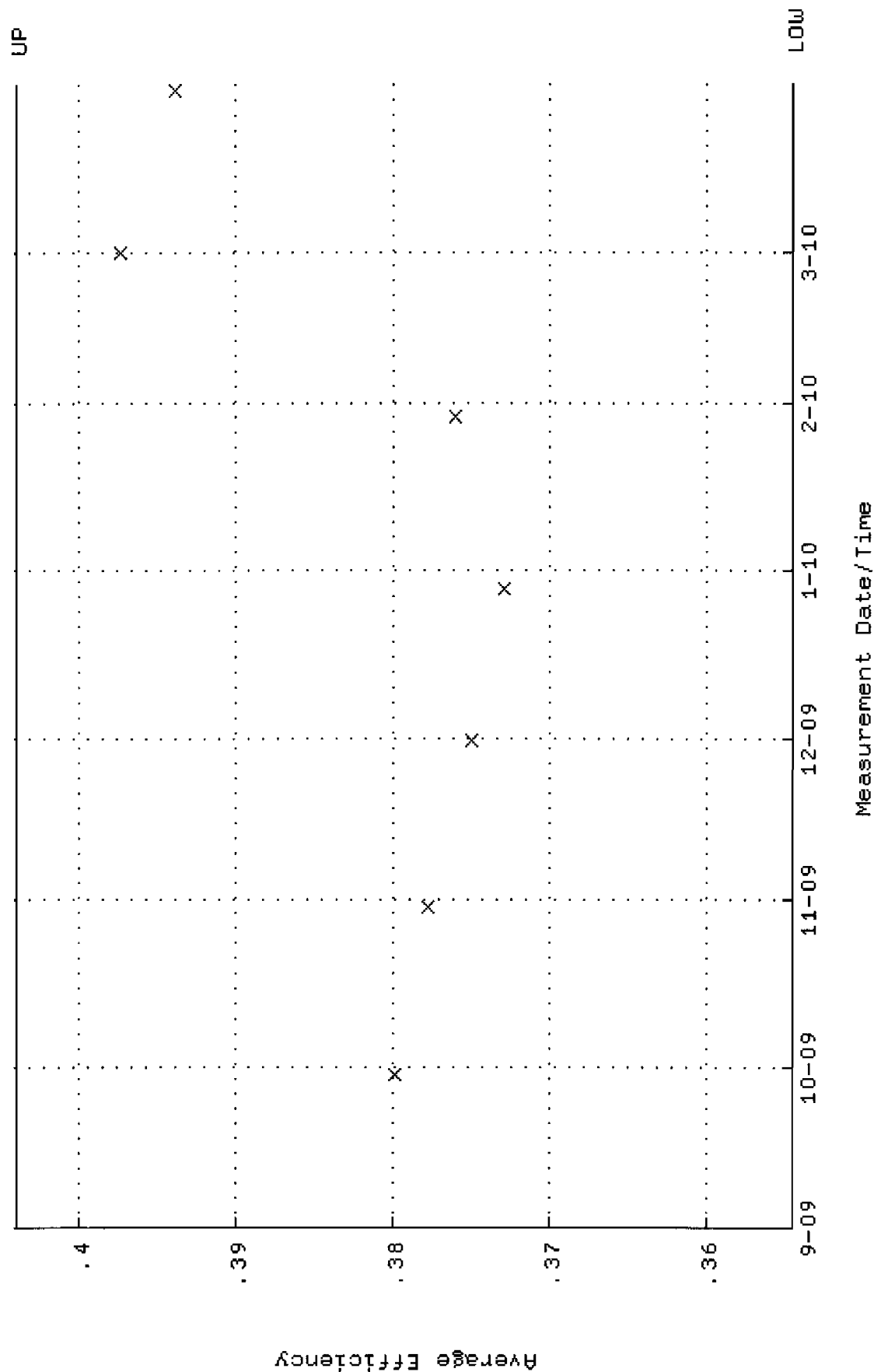
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:48:40 through 31-MAR-2010 12:00:00

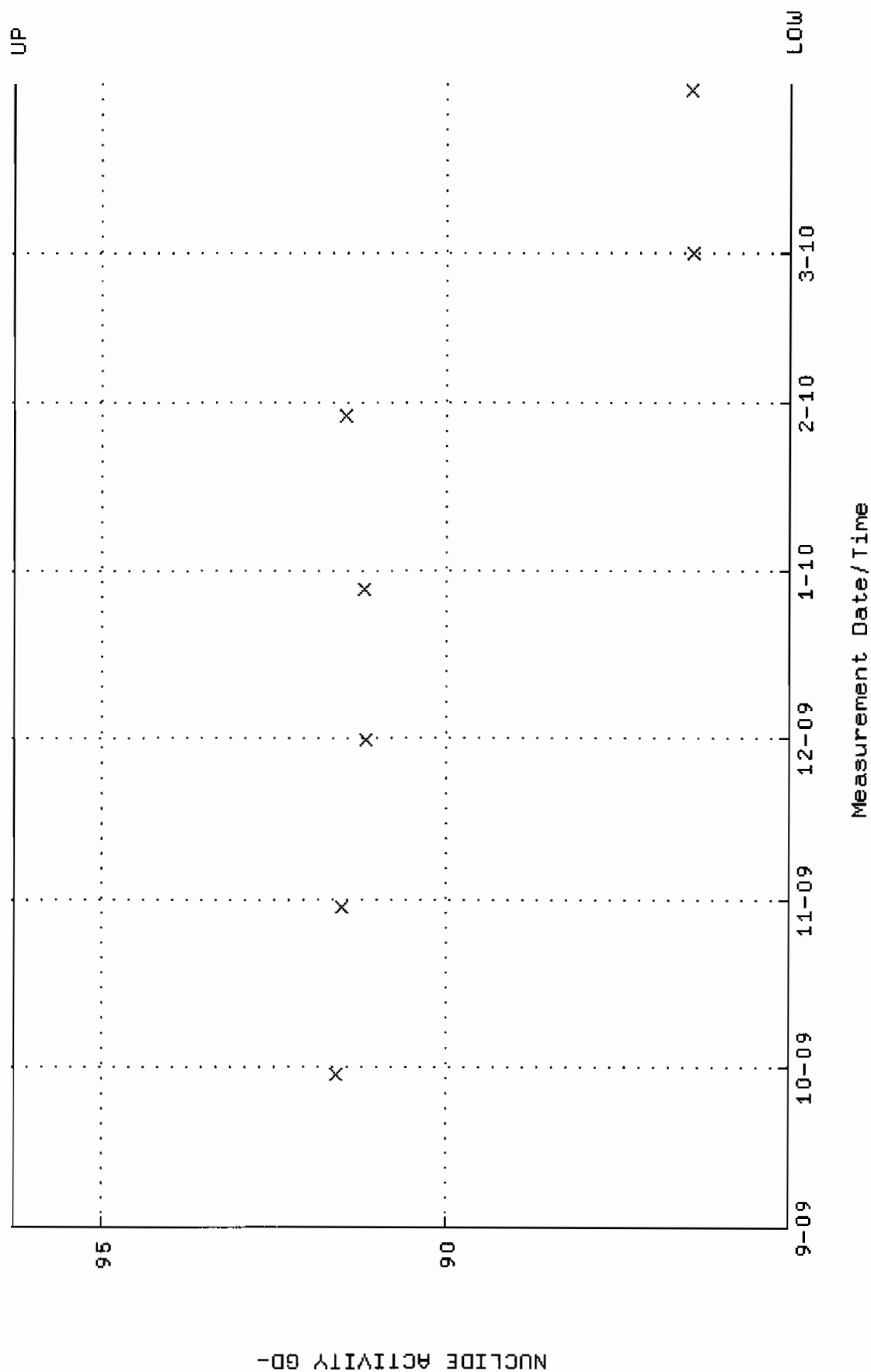
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W221.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:37:31 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.354487 through 0.403989



QA filename : DKA100:[ENV_ALPHA.QA.W]W221.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:37:31 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.0275 through 96.2669

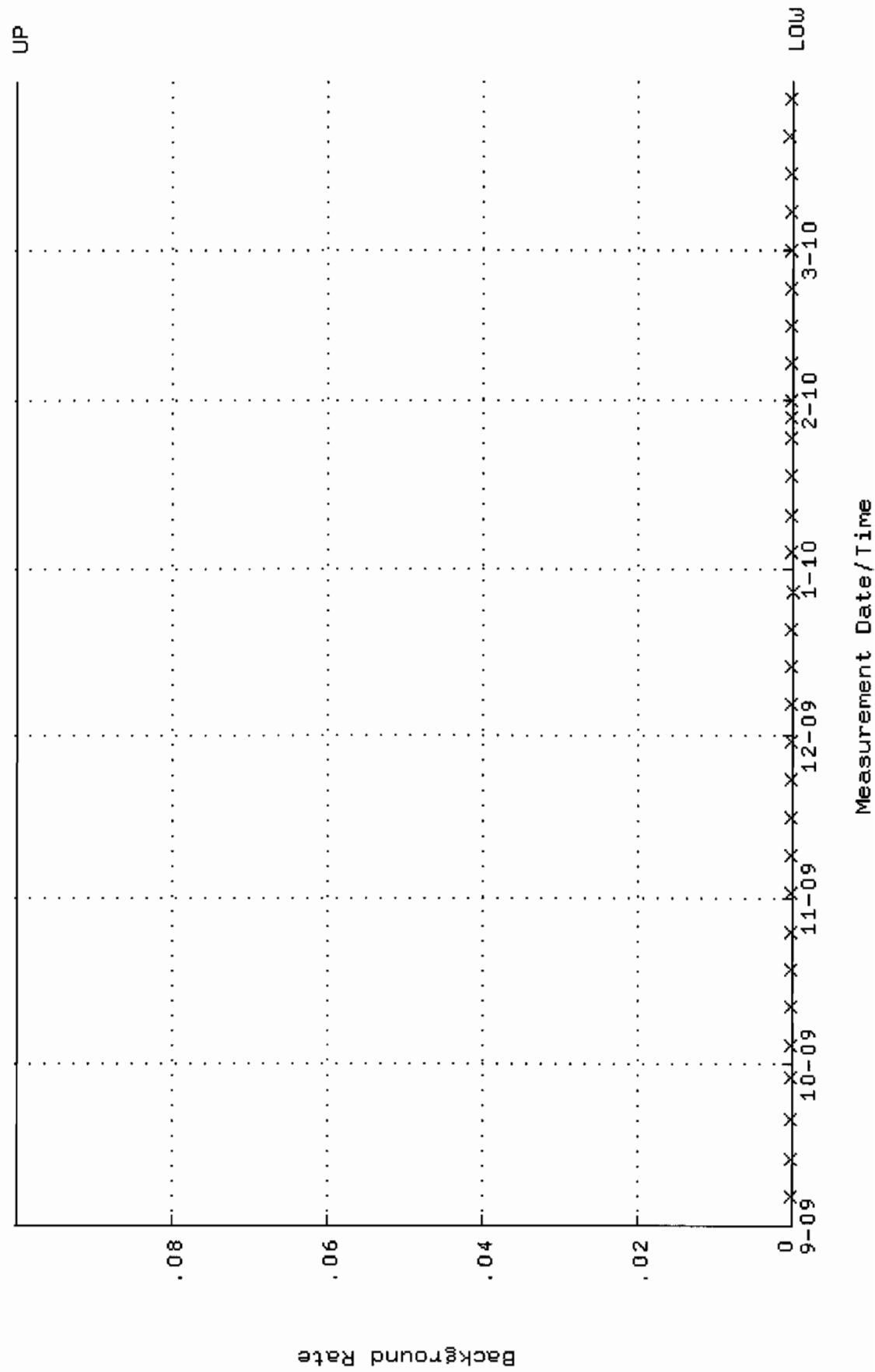


QA filename : DKA100:[ENV_ALPHA.QA.B]B221.QAF;1

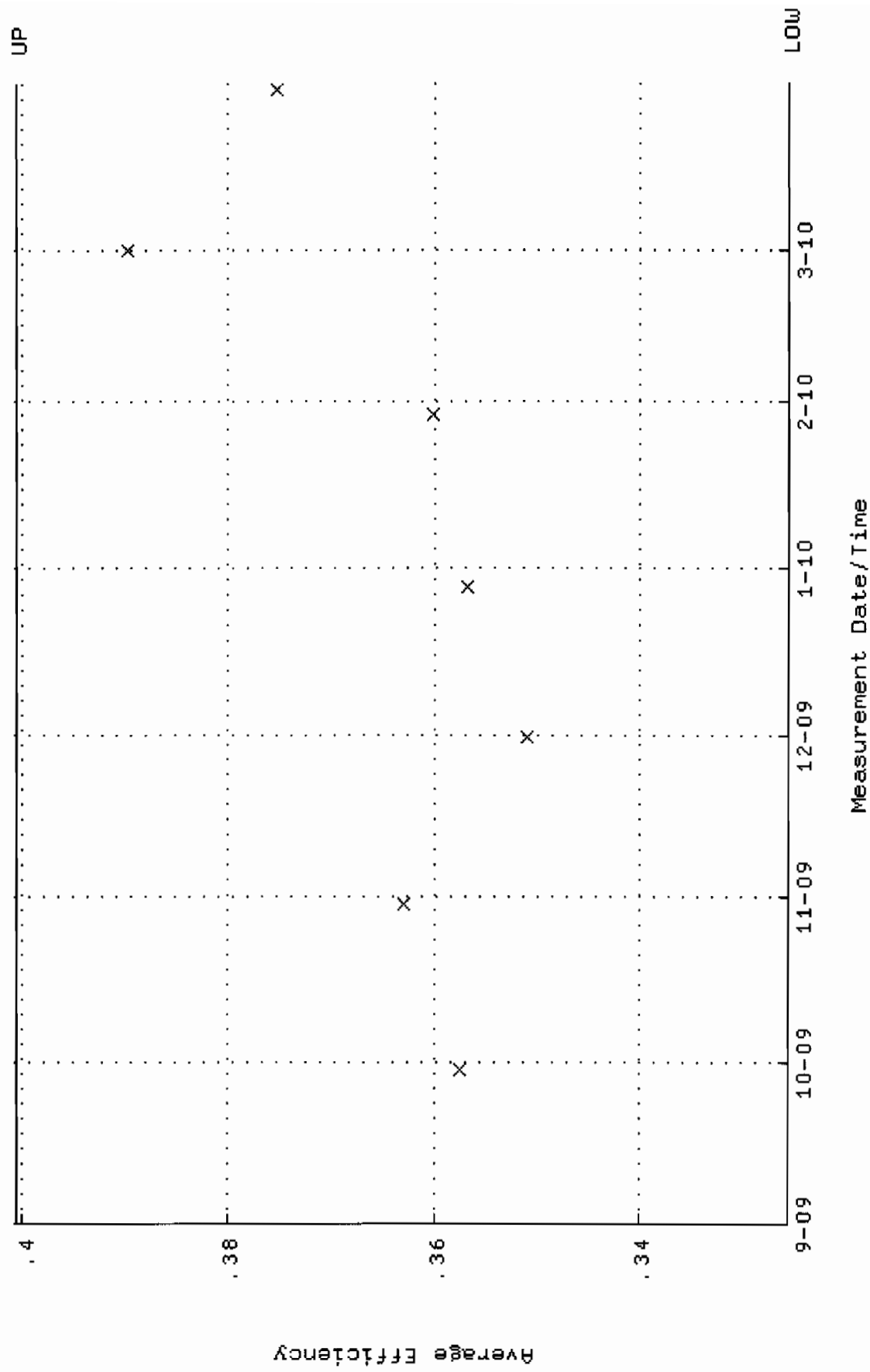
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:49:16 through 31-MAR-2010 12:00:00

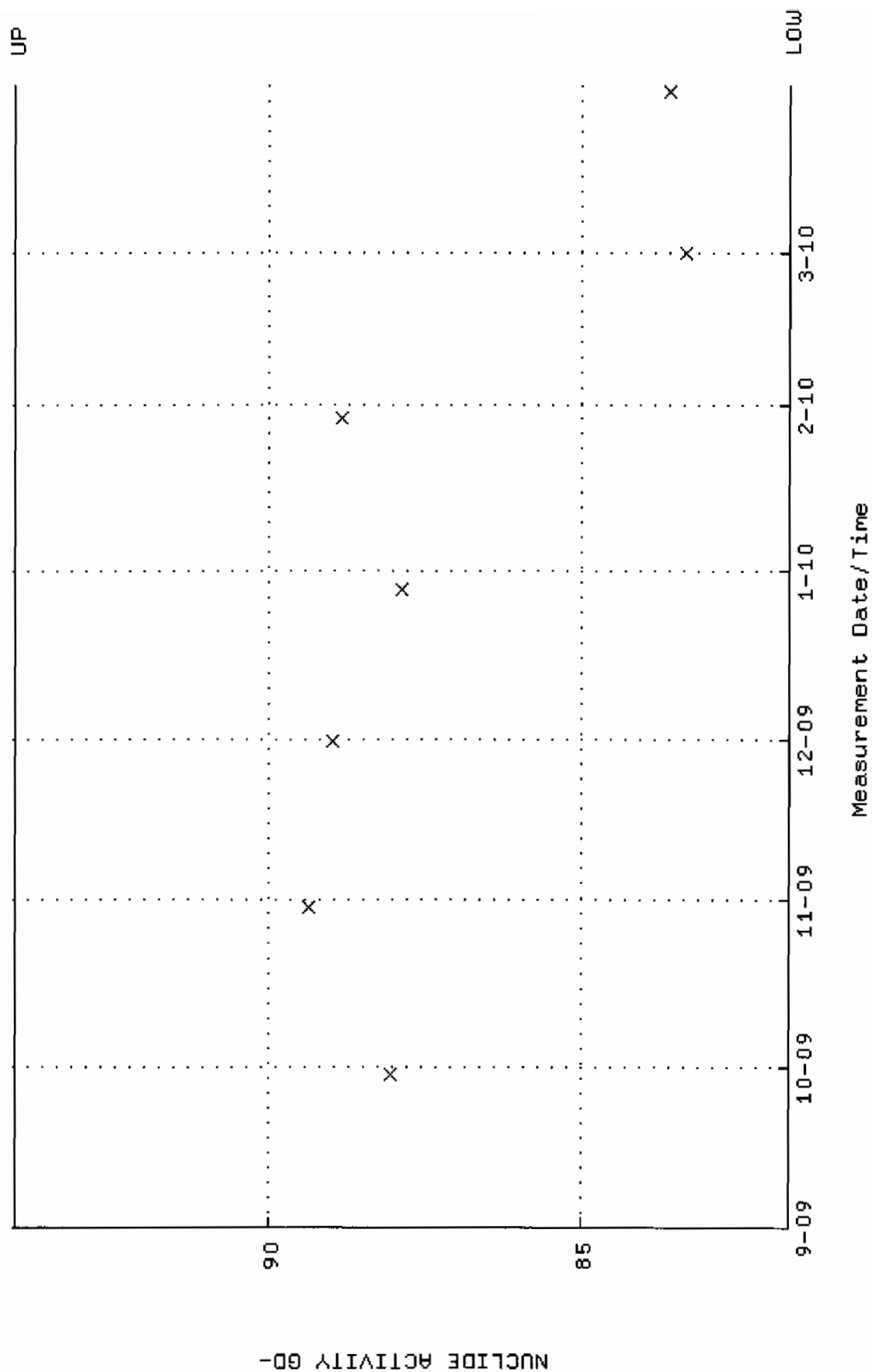
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W222.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:37:37 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.325585 through 0.400497



QA filename : DKA100:[ENV-ALPHA.QA.W]W222.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:37:37 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.6821 through 94.0551

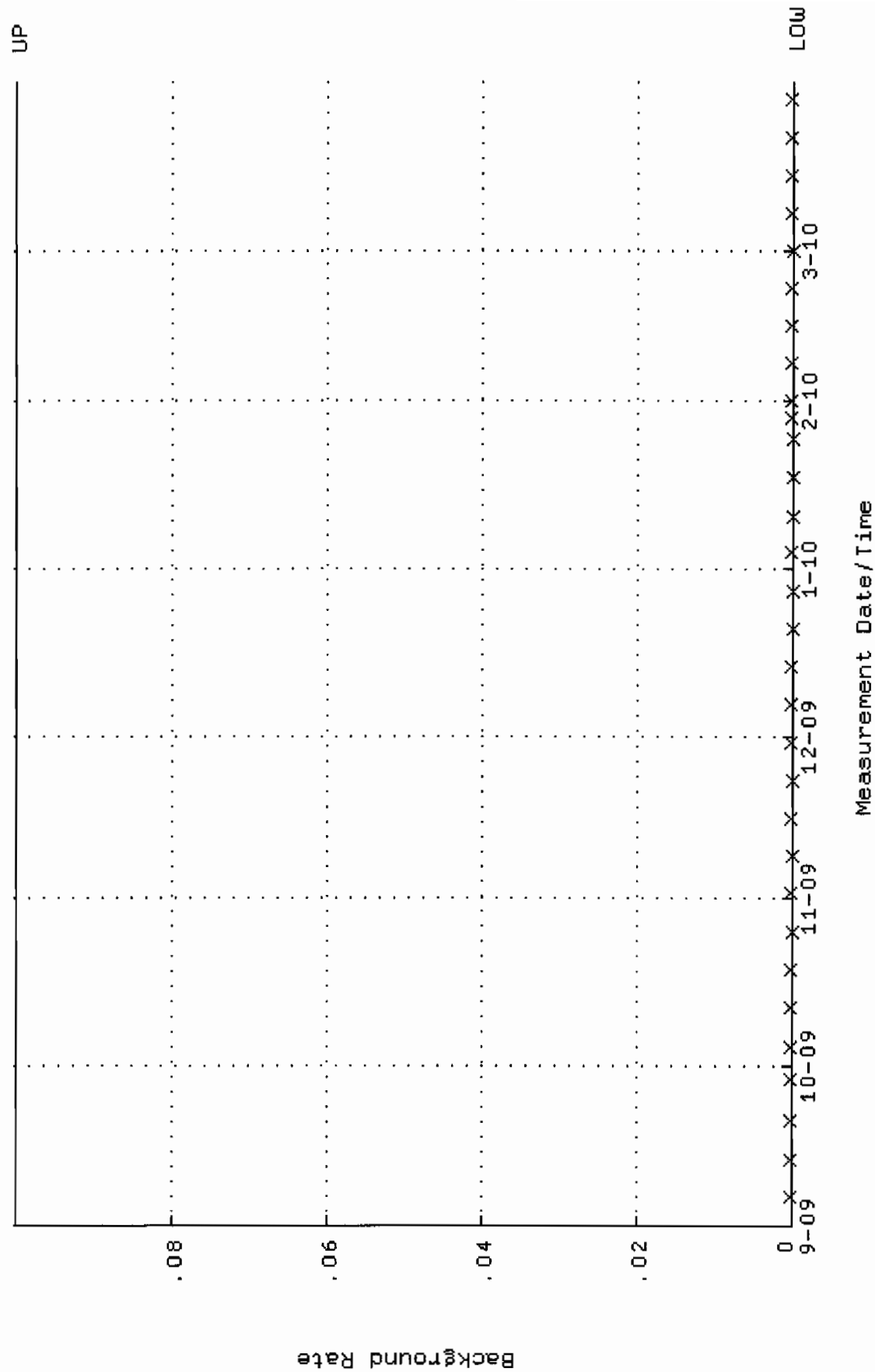


QA filename : DKA100:[ENV_ALPHA.QA.B]B222.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:49:20 through 31-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

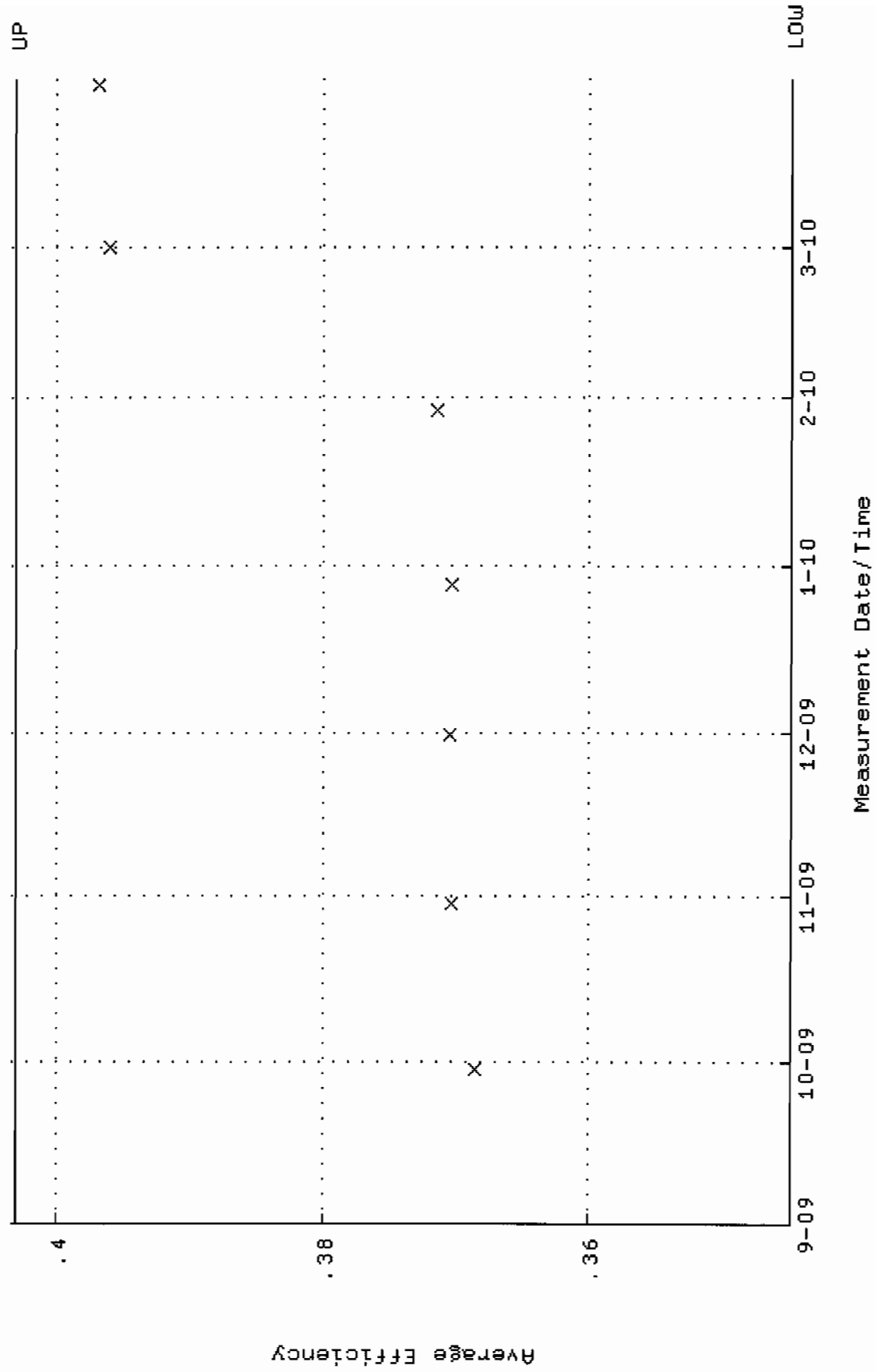


QA filename : DKA100:[ENV_ALPHA.QA.W]w223.QAF;1

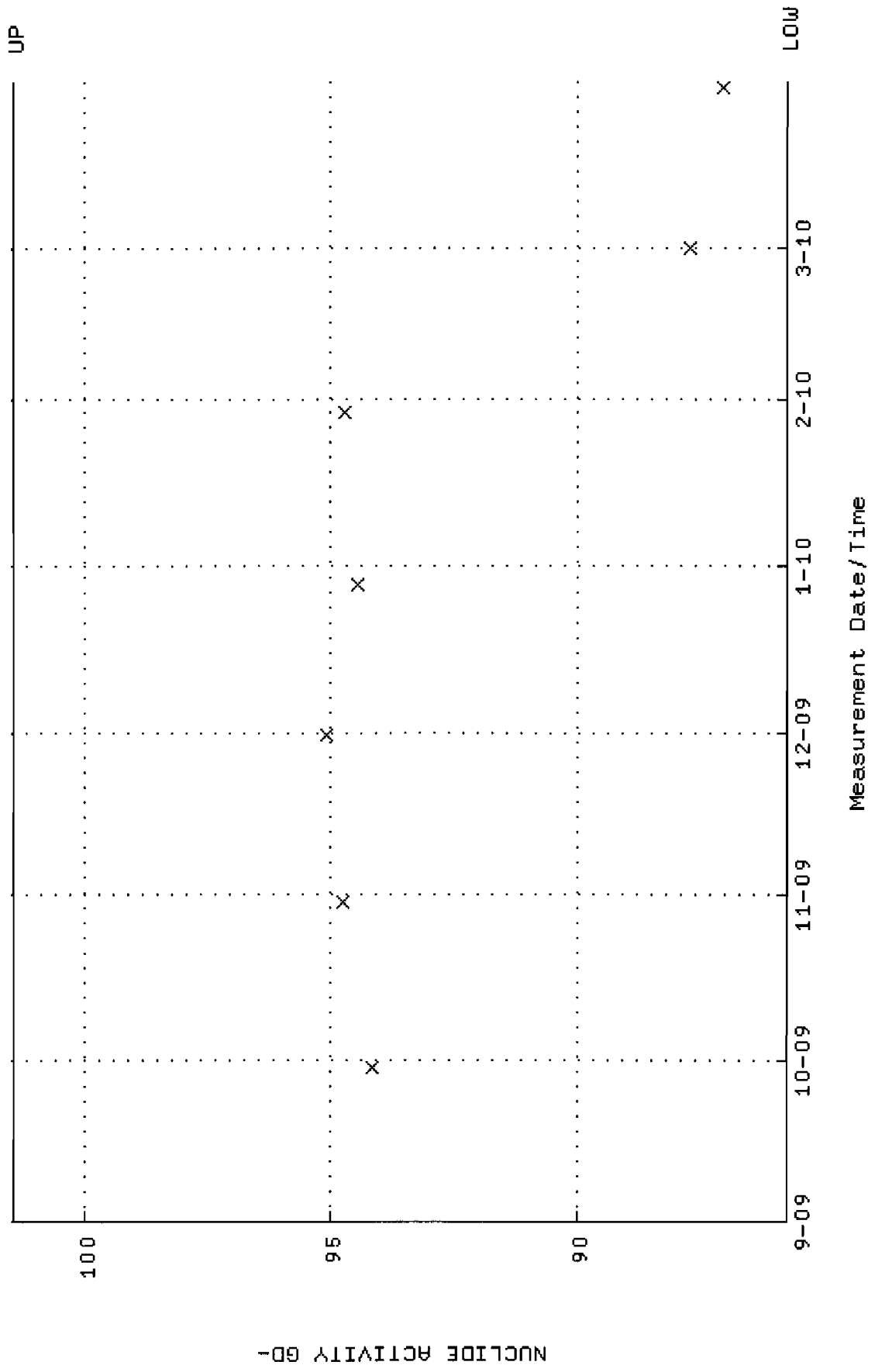
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 29-SEP-2009 08:37:43 through 31-MAR-2010 12:00:00

Lower/Upper Lmts: 0.344809 through 0.403131



QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:37:43 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.7275 through 101.456

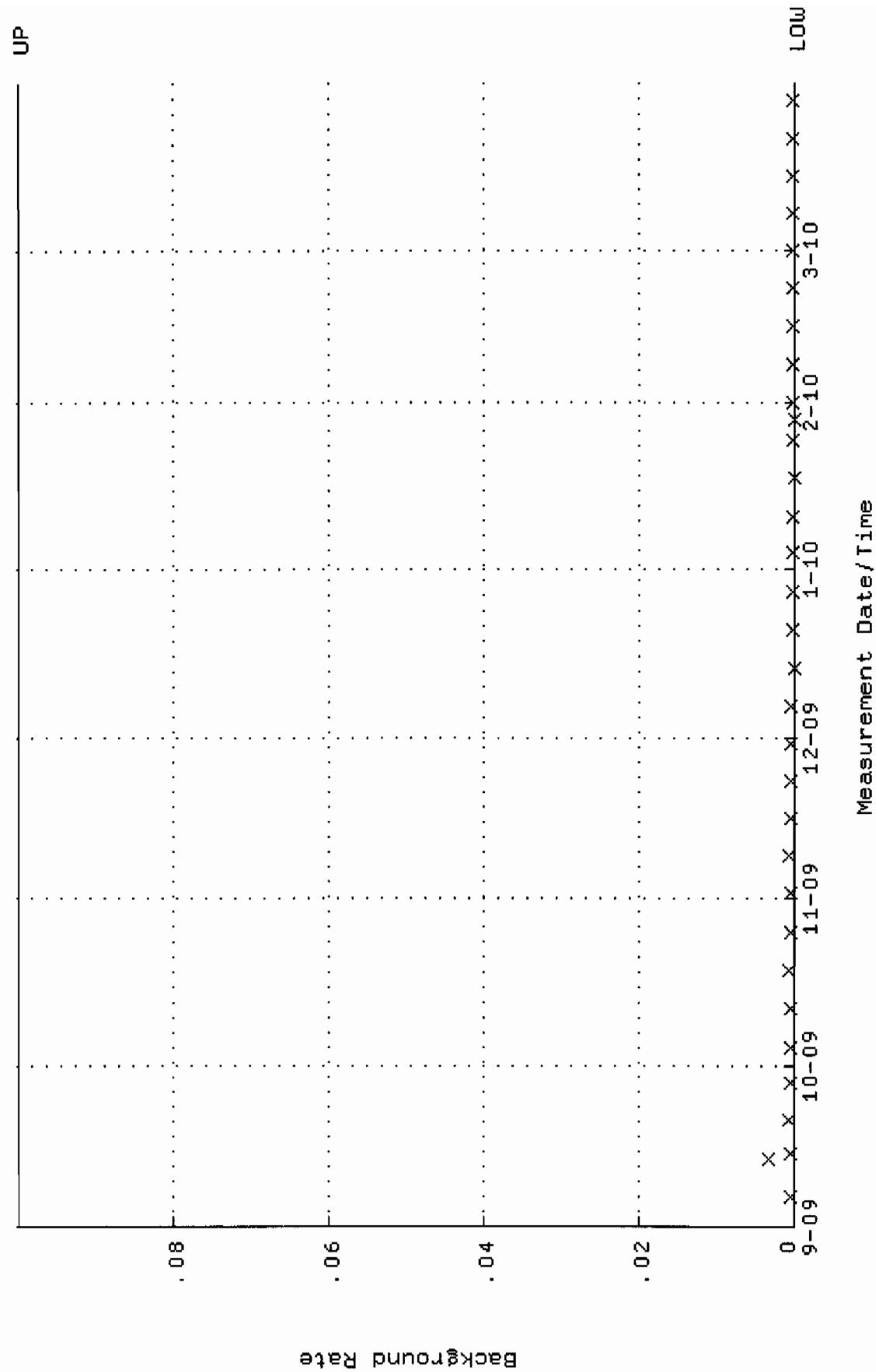


QA filename : DKA100:[ENV_ALPHA.QA.B]B223.QAF;1

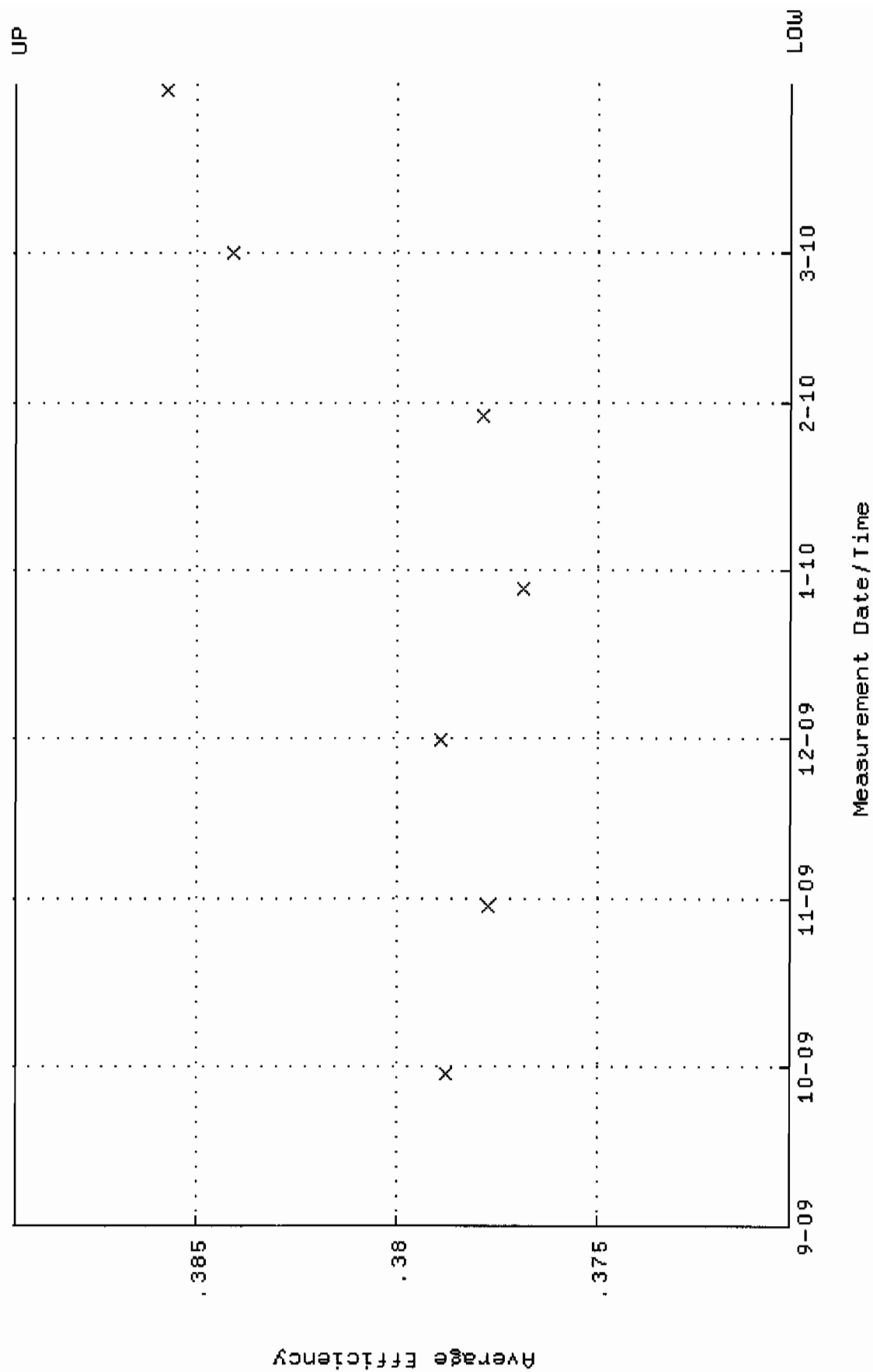
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:49:25 through 31-MAR-2010 12:00:00

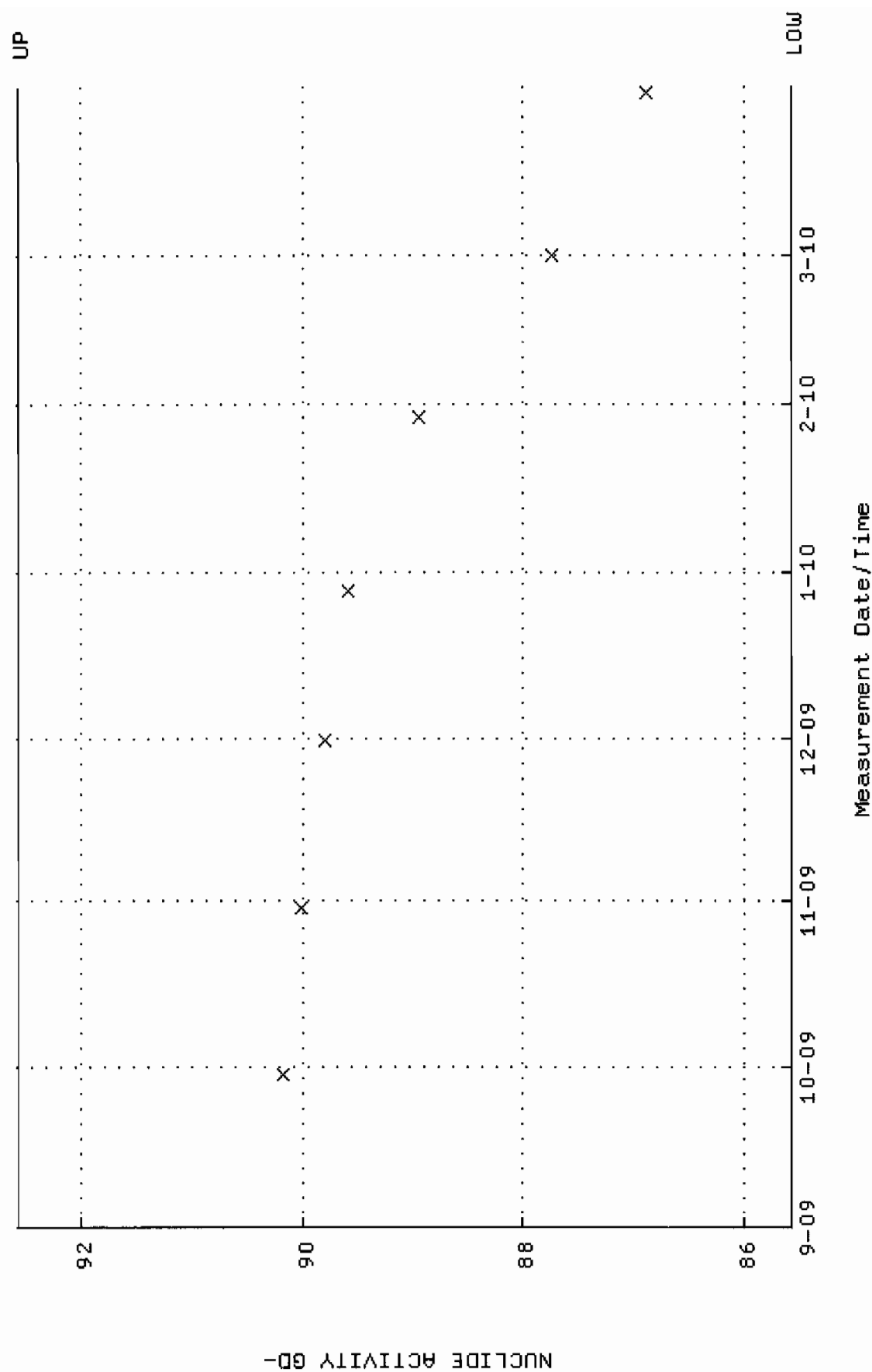
Lower/Upper Lmts: 0.000000E+00 through 0.100000



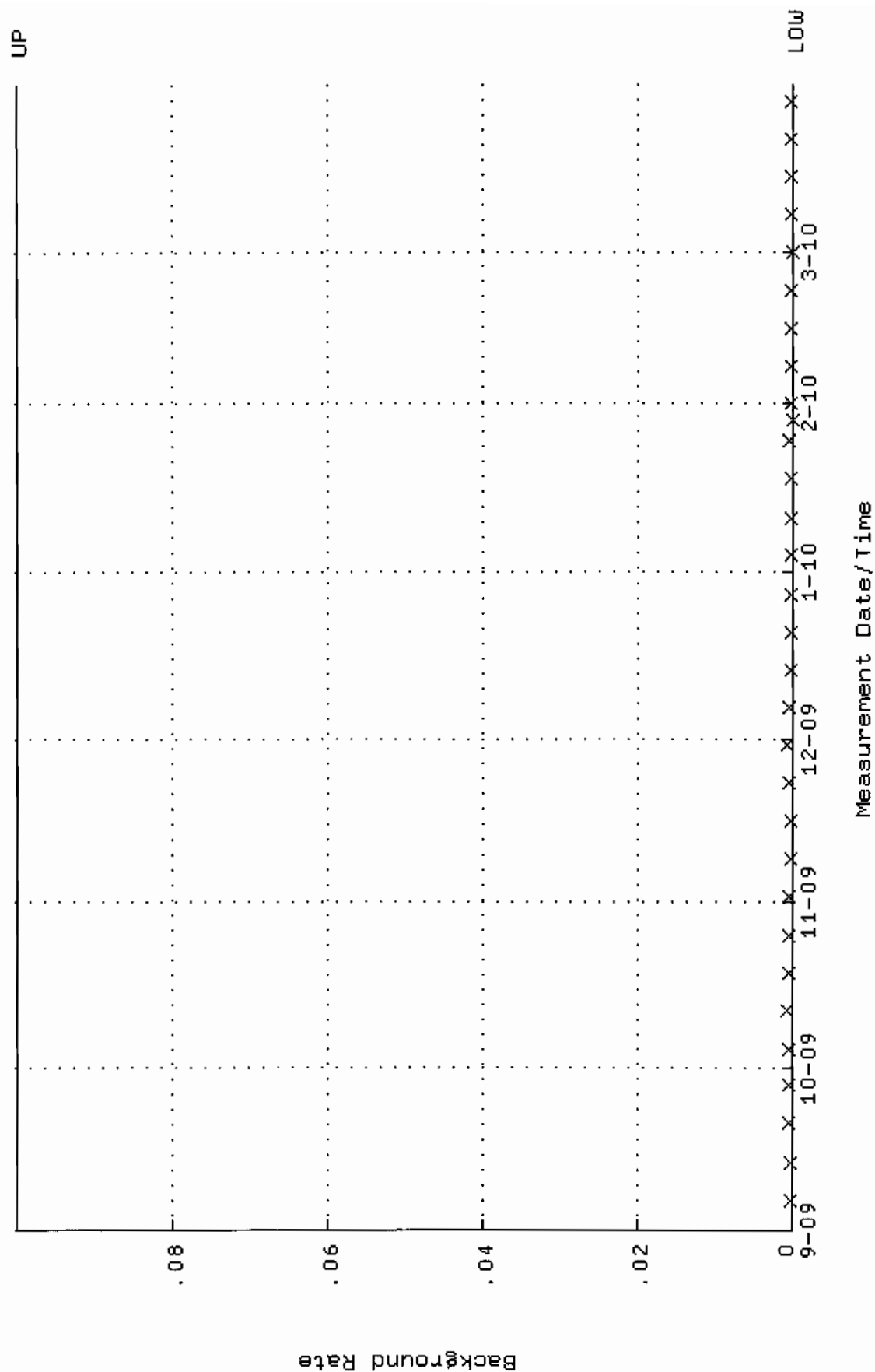
QA filename : DKA100:[ENV_ALPHA.QA.W]W224.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:37:48 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.370149 through 0.389511



QA filename : DKA100:[ENV_ALPHA.QA.W]W224.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:37:48 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5747 through 92.5537



QA filename : DKA100:[ENV_ALPHA.QA.B]B224.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:49:30 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

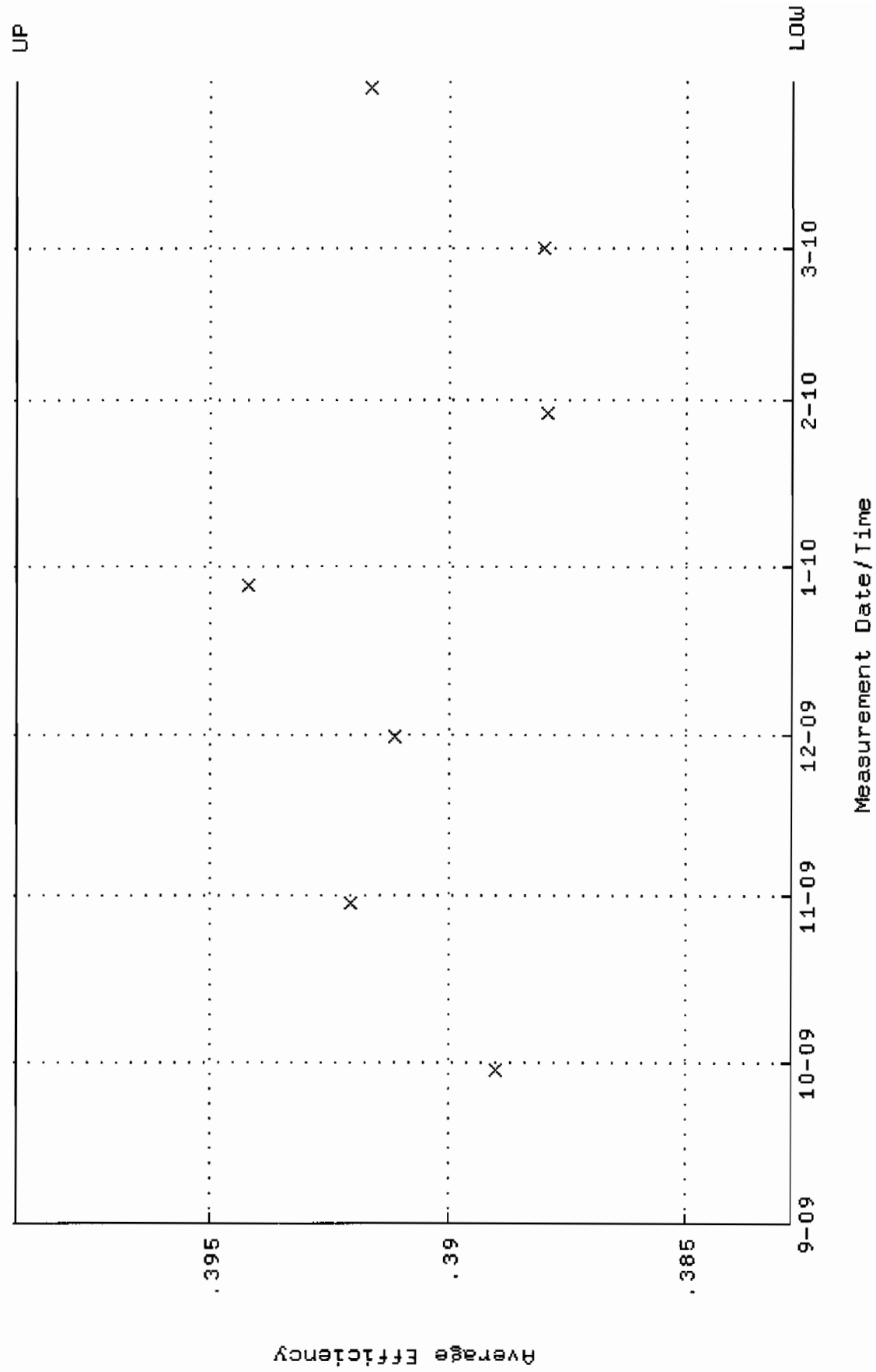


QA filename : DKA100:[ENV_ALPHA.QA.W]W225.QAF;1

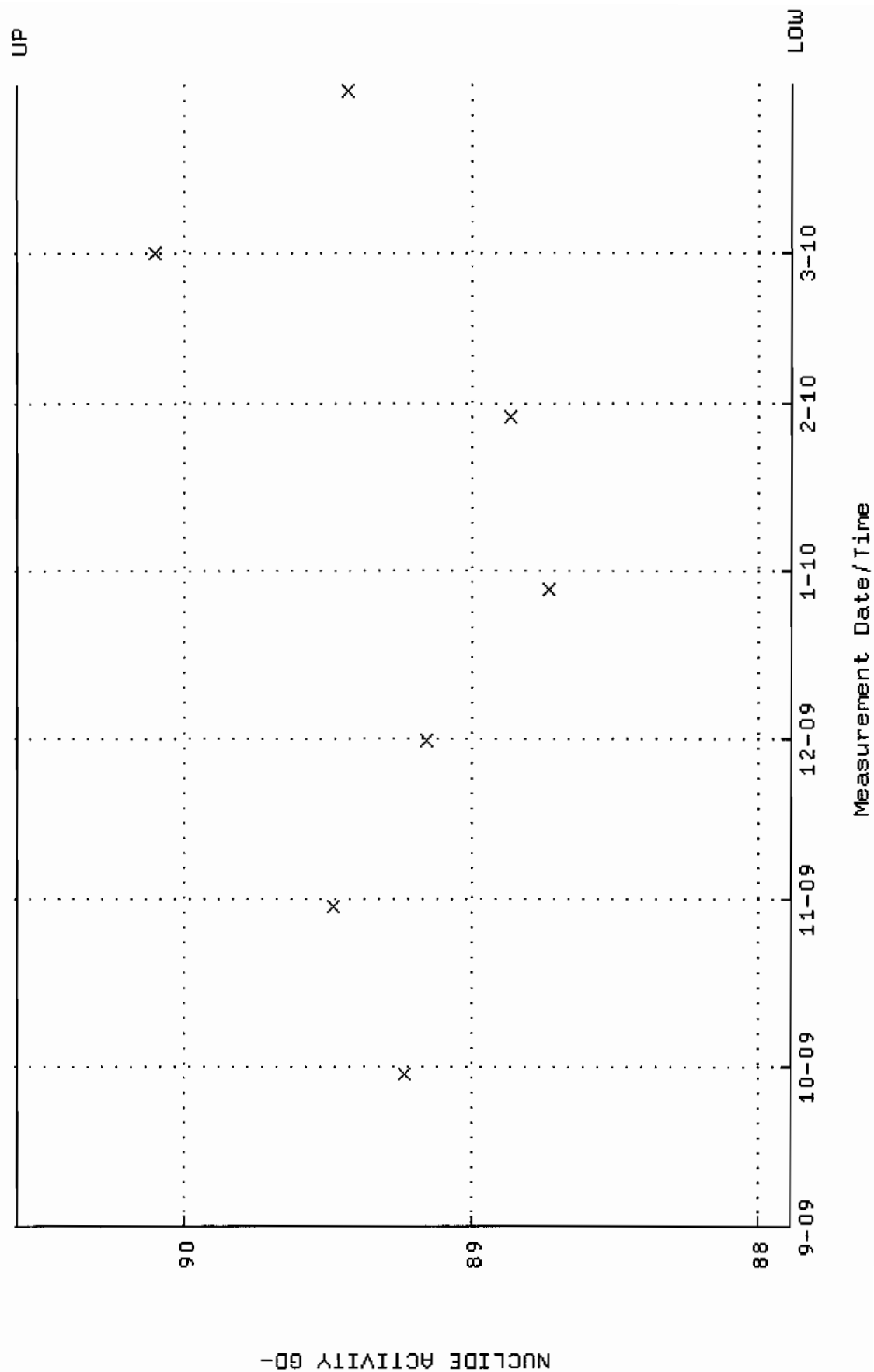
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 29-SEP-2009 08:37:53 through 31-MAR-2010 12:00:00

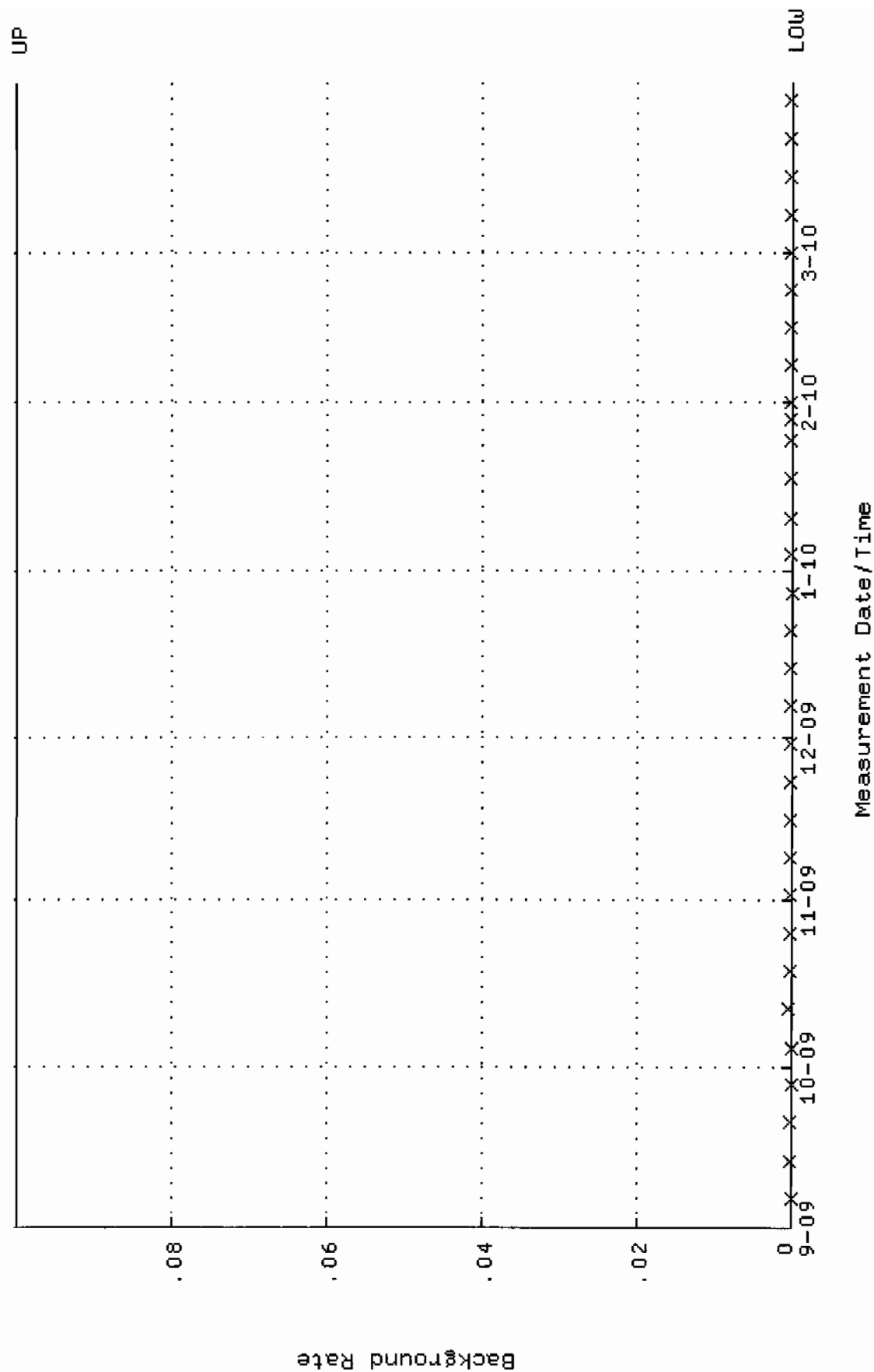
Lower/Upper Lmts: 0.382792 through 0.399070



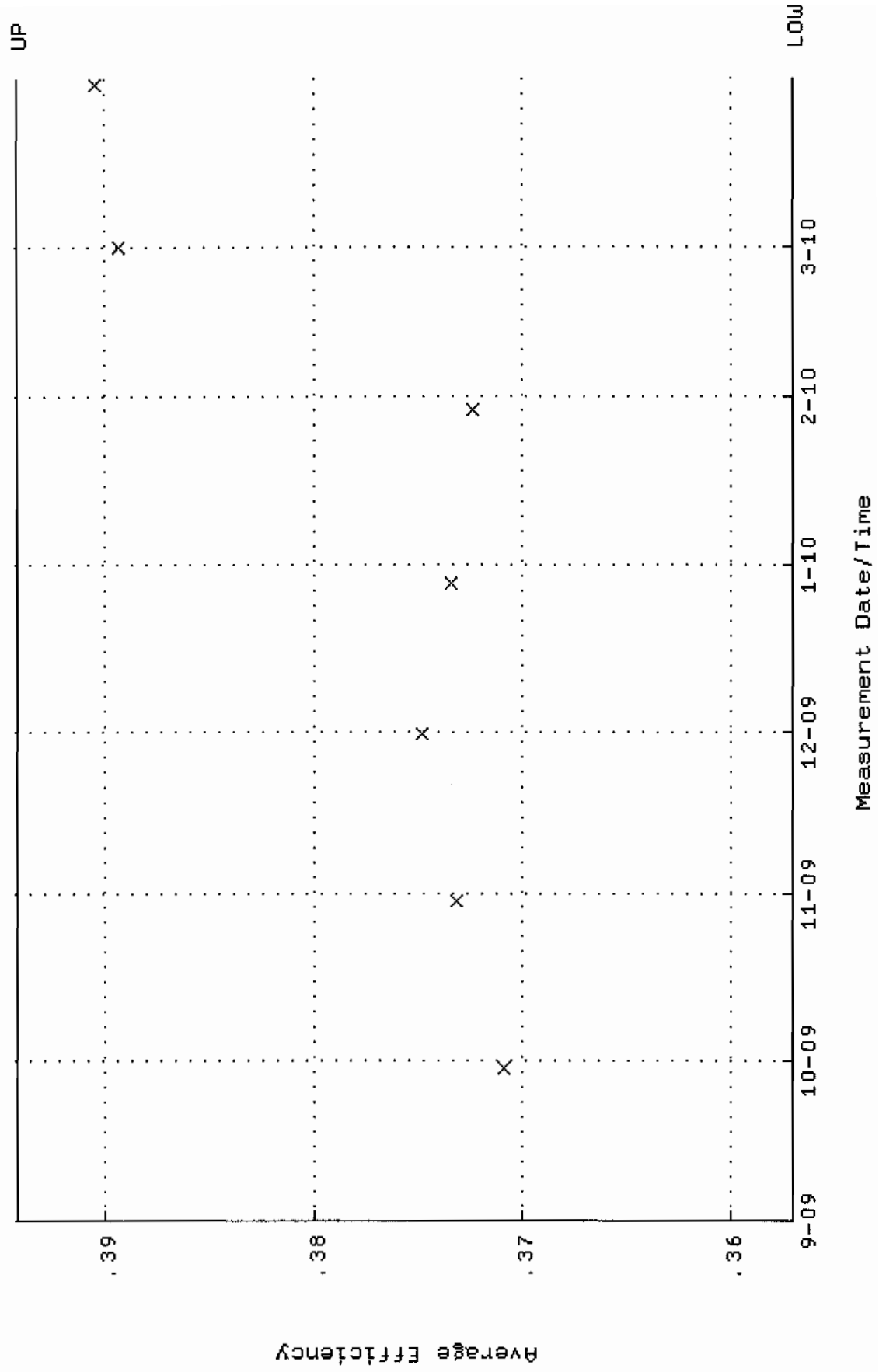
QA filename : DKA100:[ENV_ALPHA.QA.W]w225.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:37:53 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.8853 through 90.5875



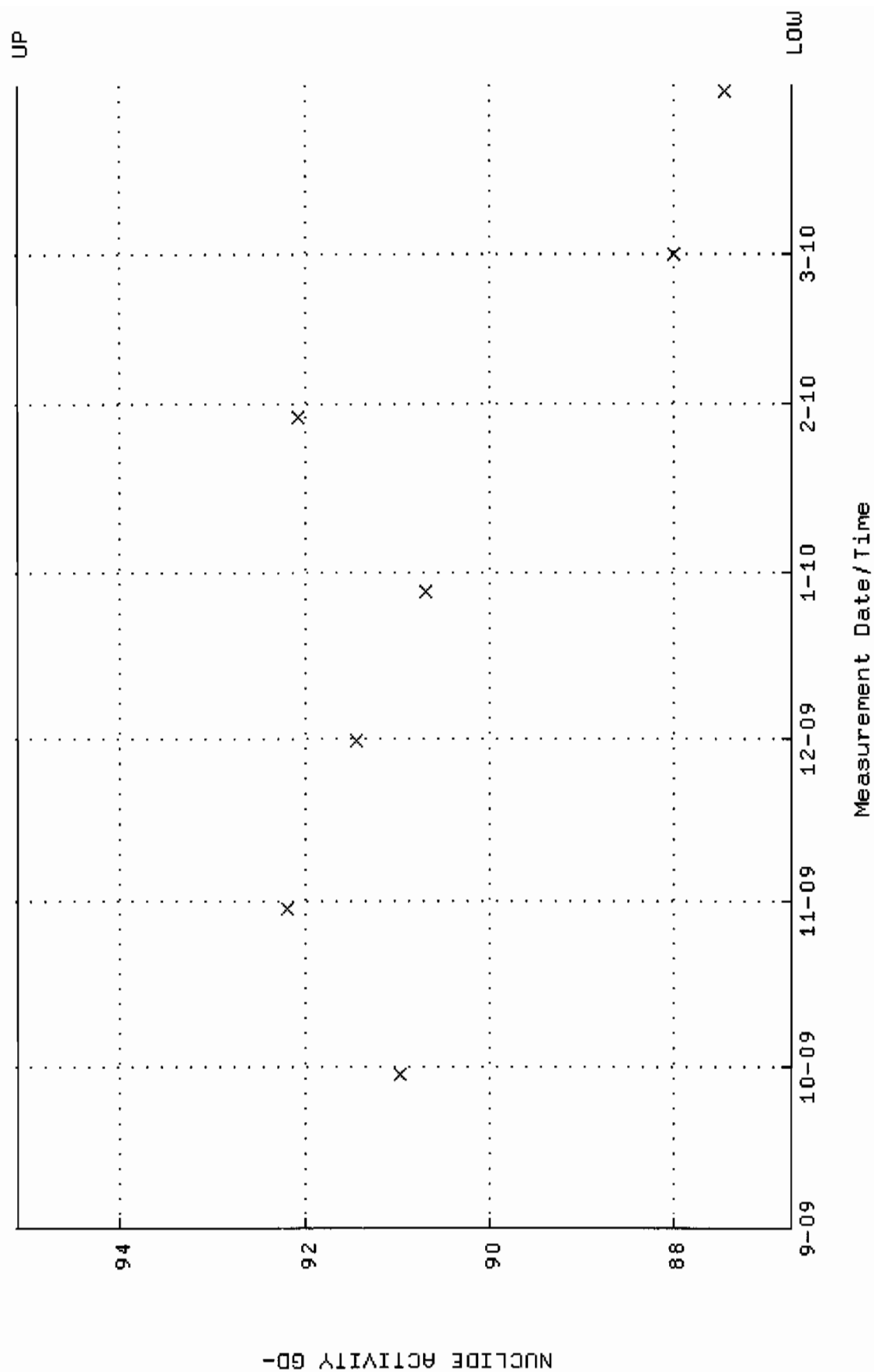
QA filename : DKA100:[ENV_ALPHA.QA.B]B225.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:49:35 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W226.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:37:58 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.357039 through 0.394215



QA filename : DKA100:[ENV_ALPHA.QA.W]W226.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:37:58 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7273 through 95.1093

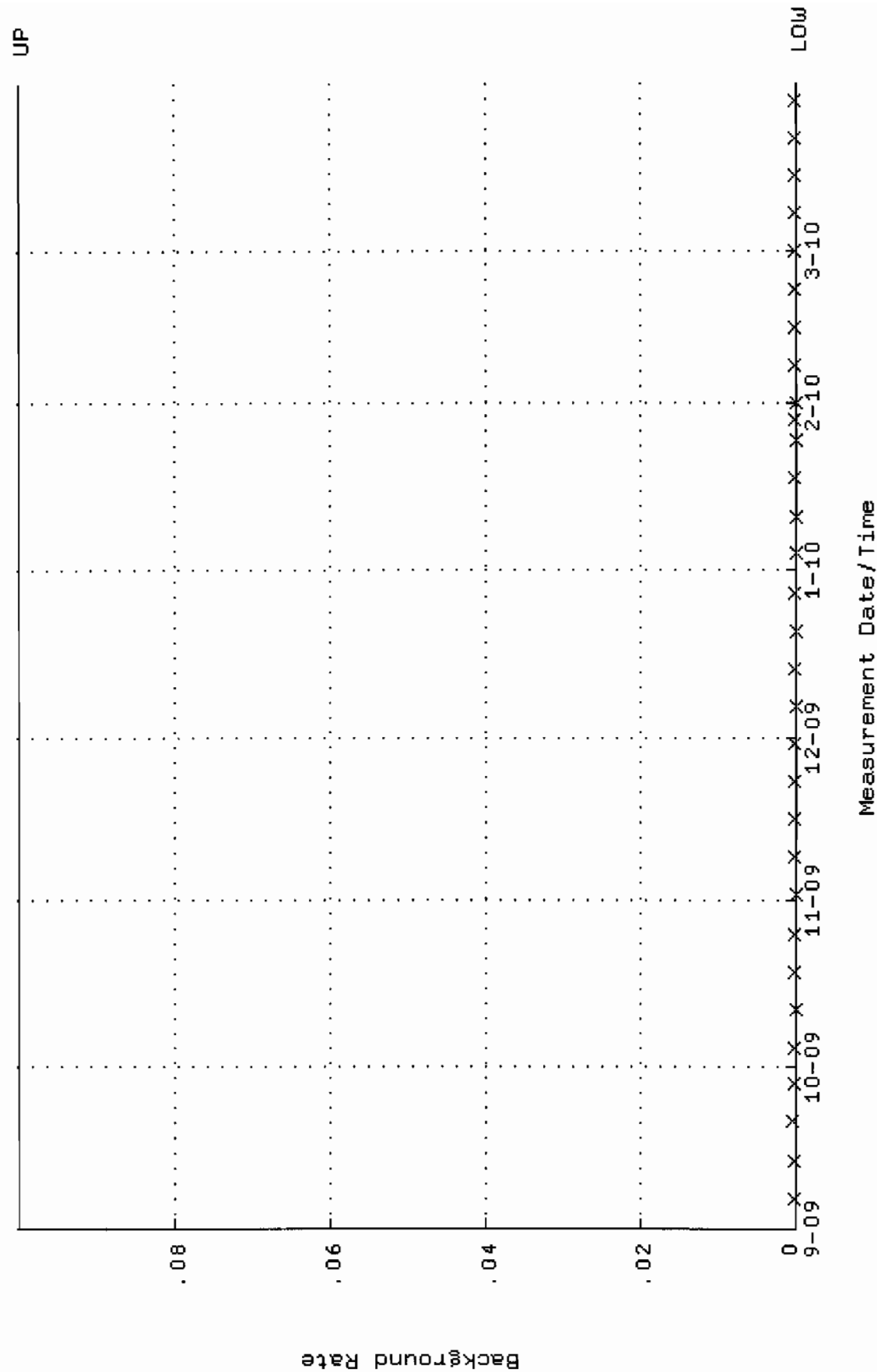


QA filename : DKA100:[ENV_ALPHA.QA.B]B2226.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:49:39 through 31-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

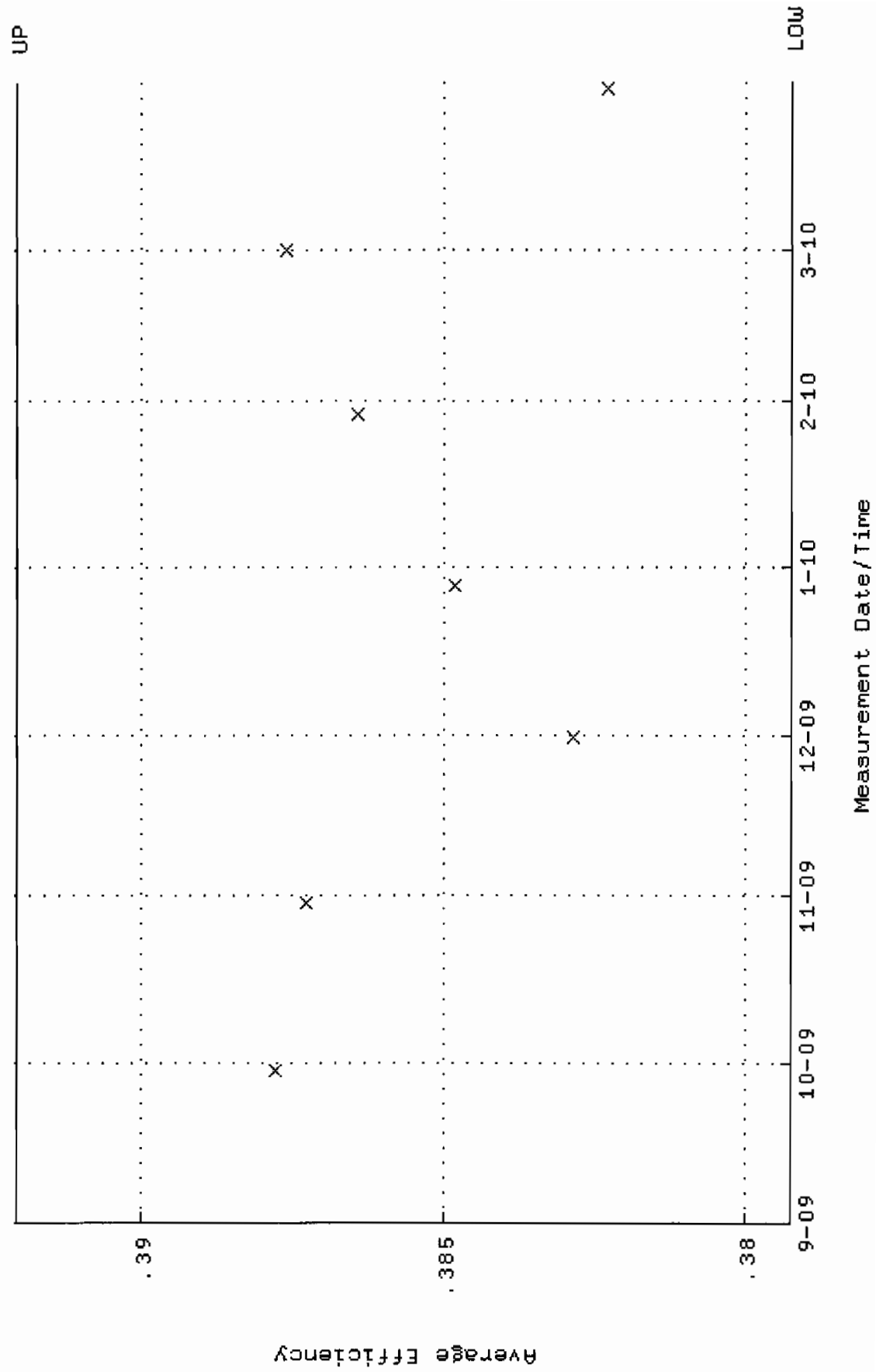


QA filename : DKA100:[ENV_ALPHA.QA.W]W227.QAF;1

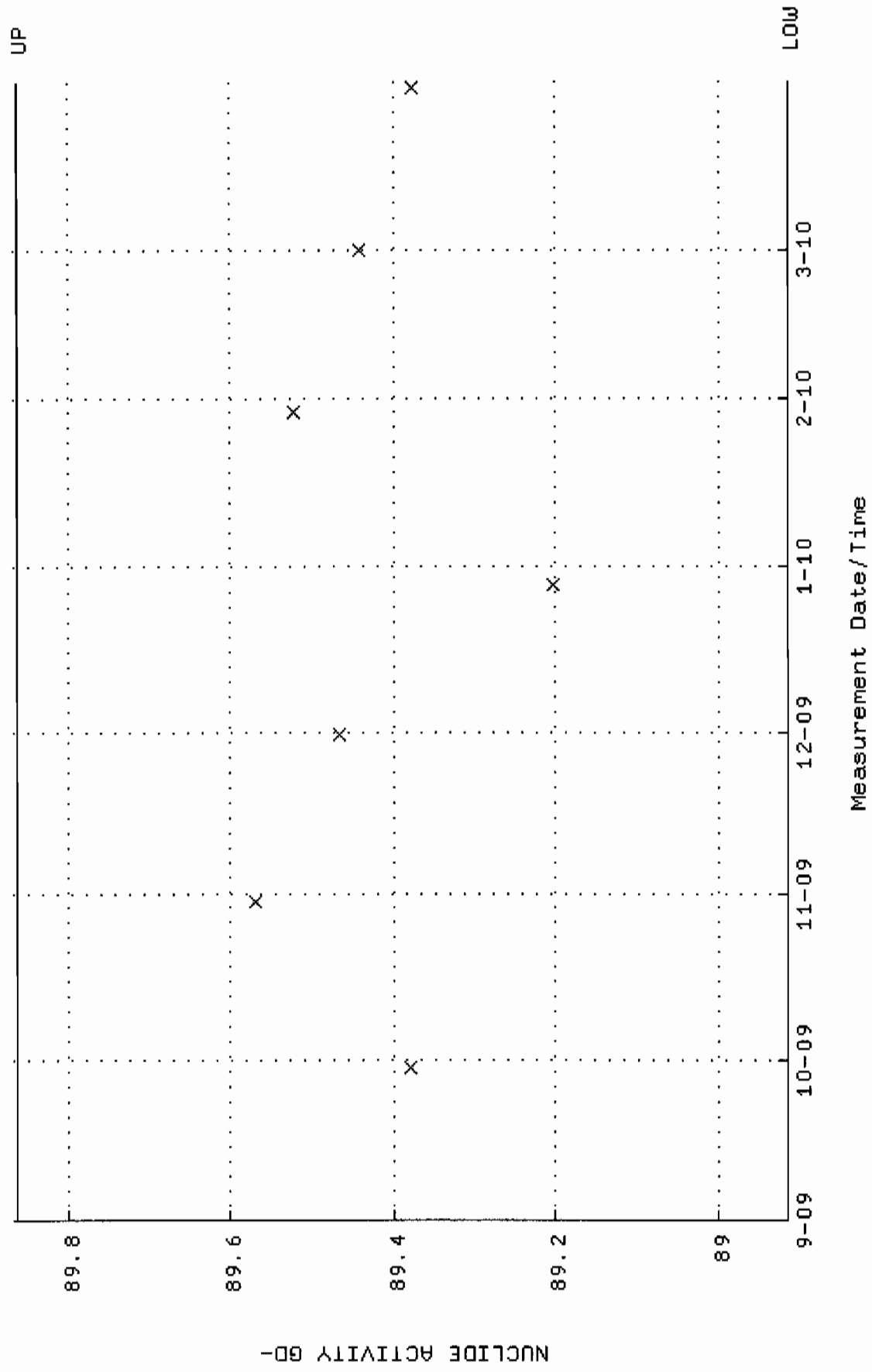
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 29-SEP-2009 08:38:04 through 31-MAR-2010 12:00:00

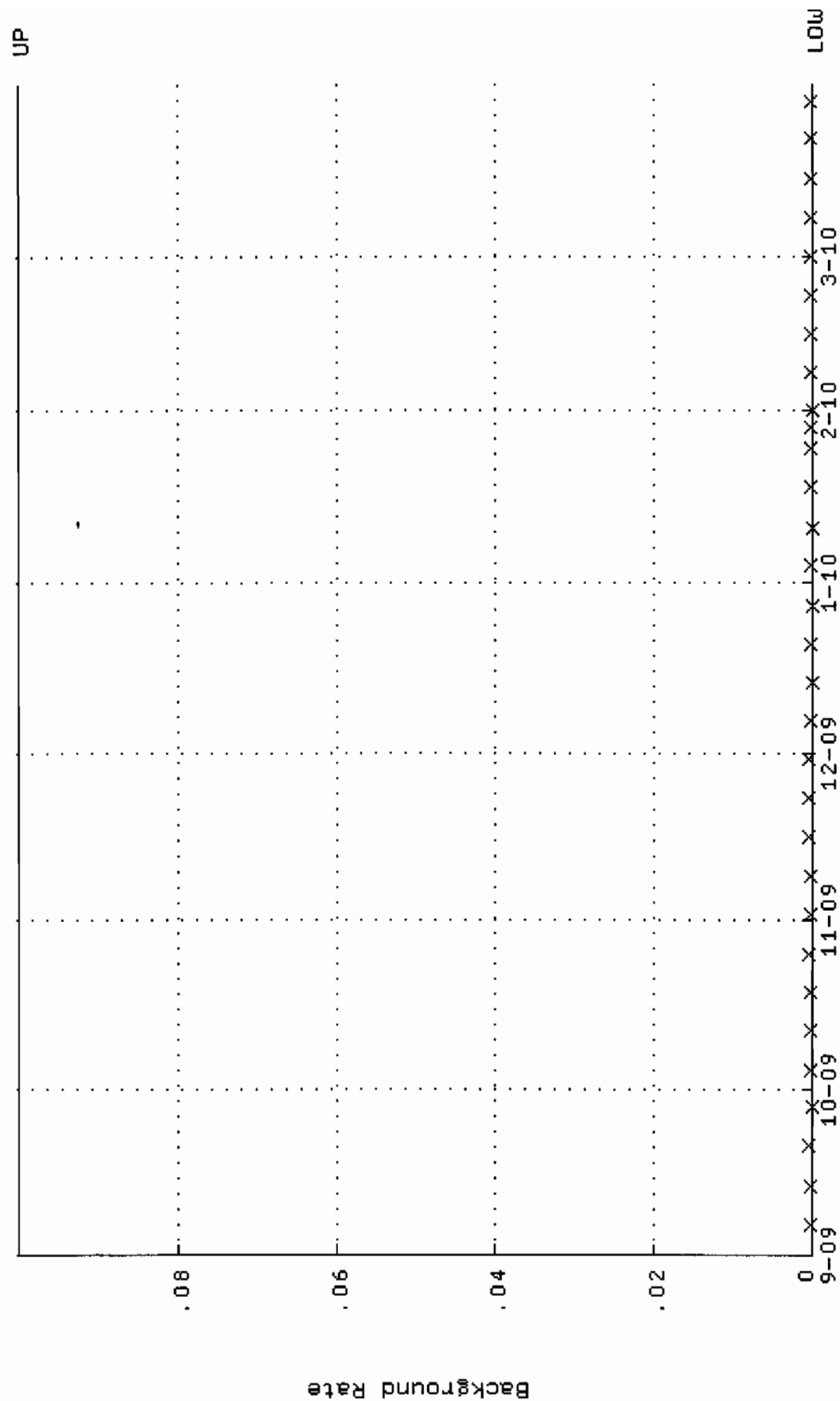
Lower/Upper Lmts: 0.379260 through 0.392050



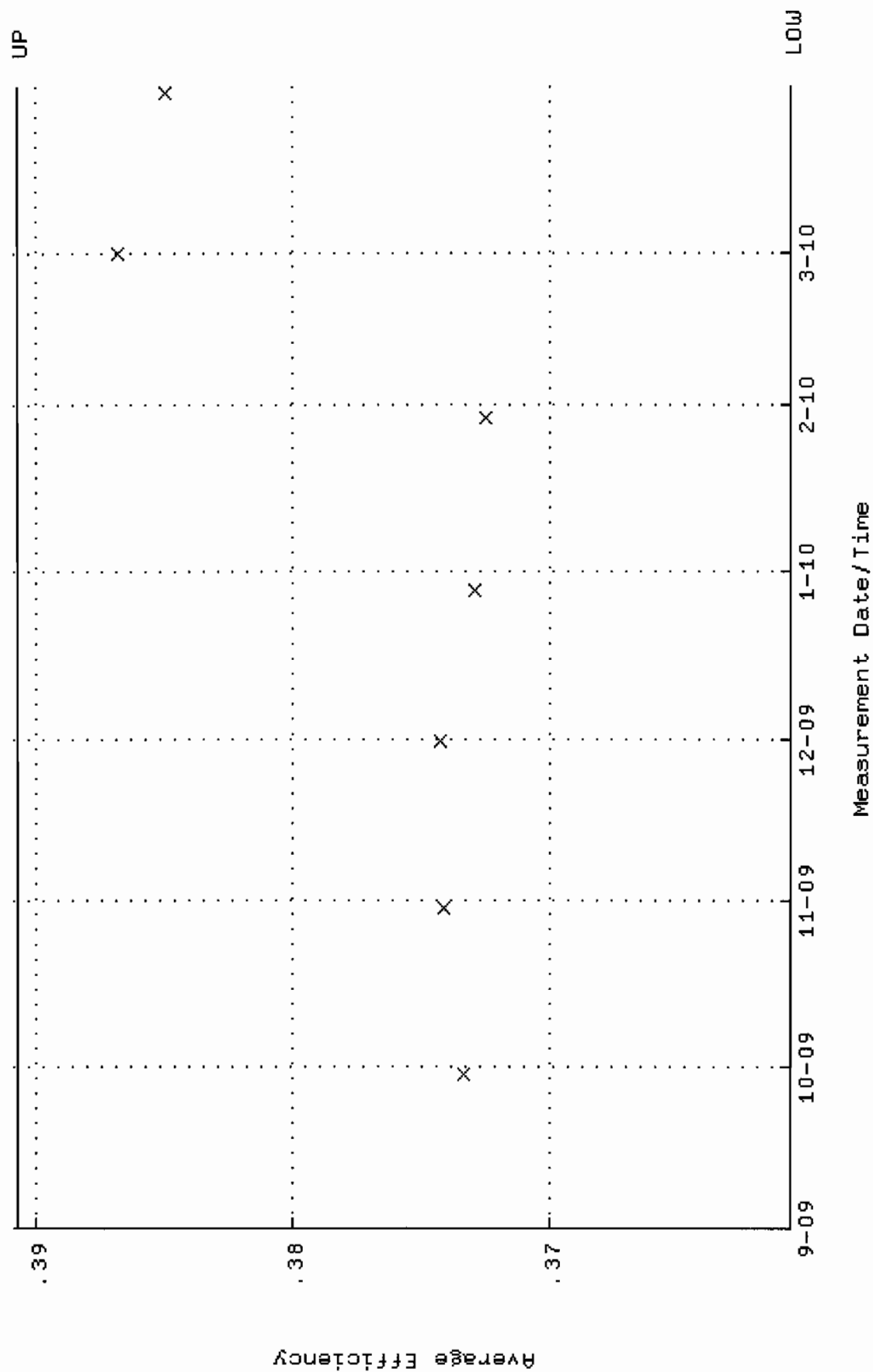
QA filename : DKA100:[ENV_ALPHA.QA.W]W227.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:04 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.9145 through 89.8637



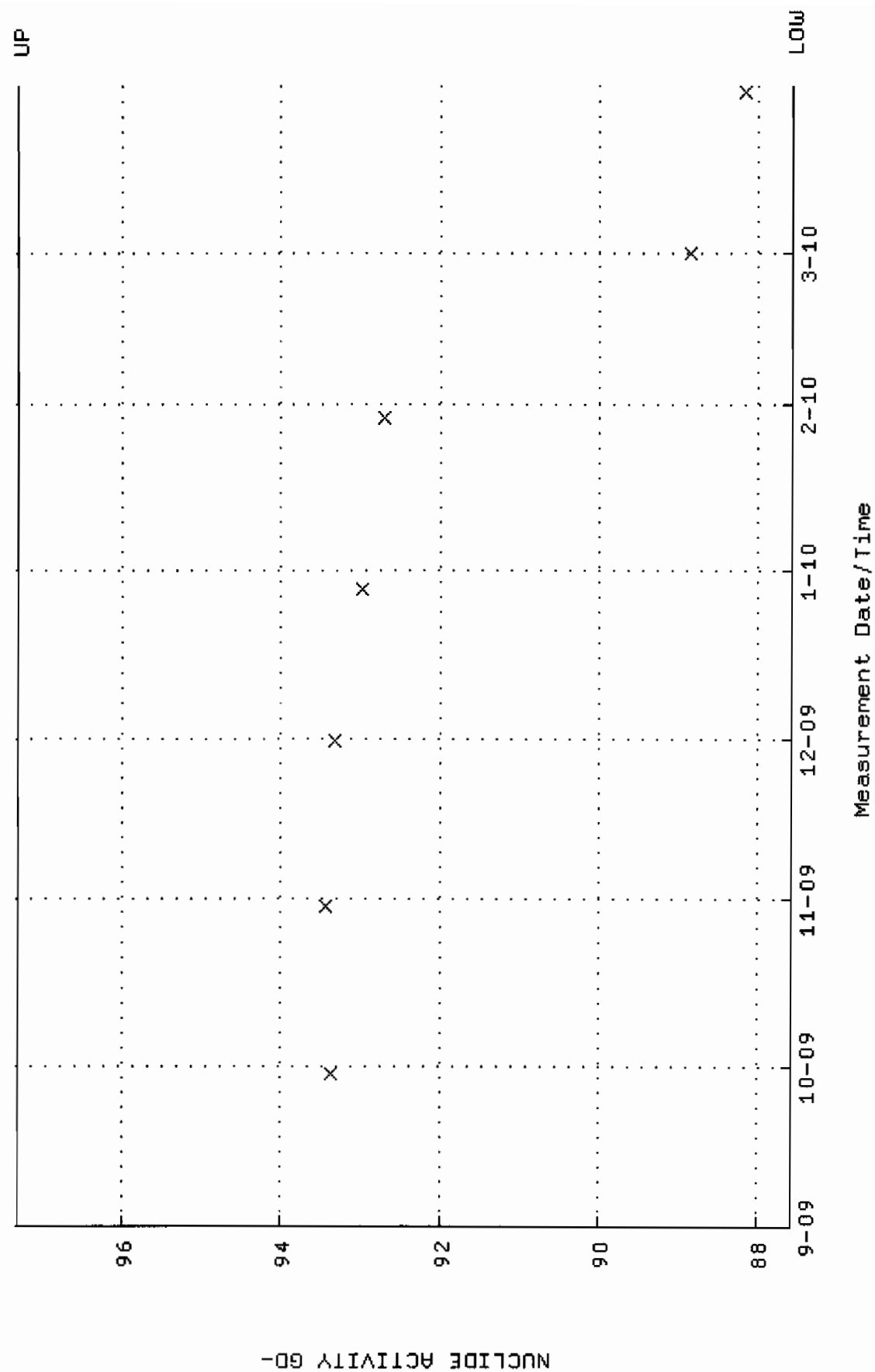
QA filename : DKA100:[ENV_ALPHA.QA.B]B227.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:49:45 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



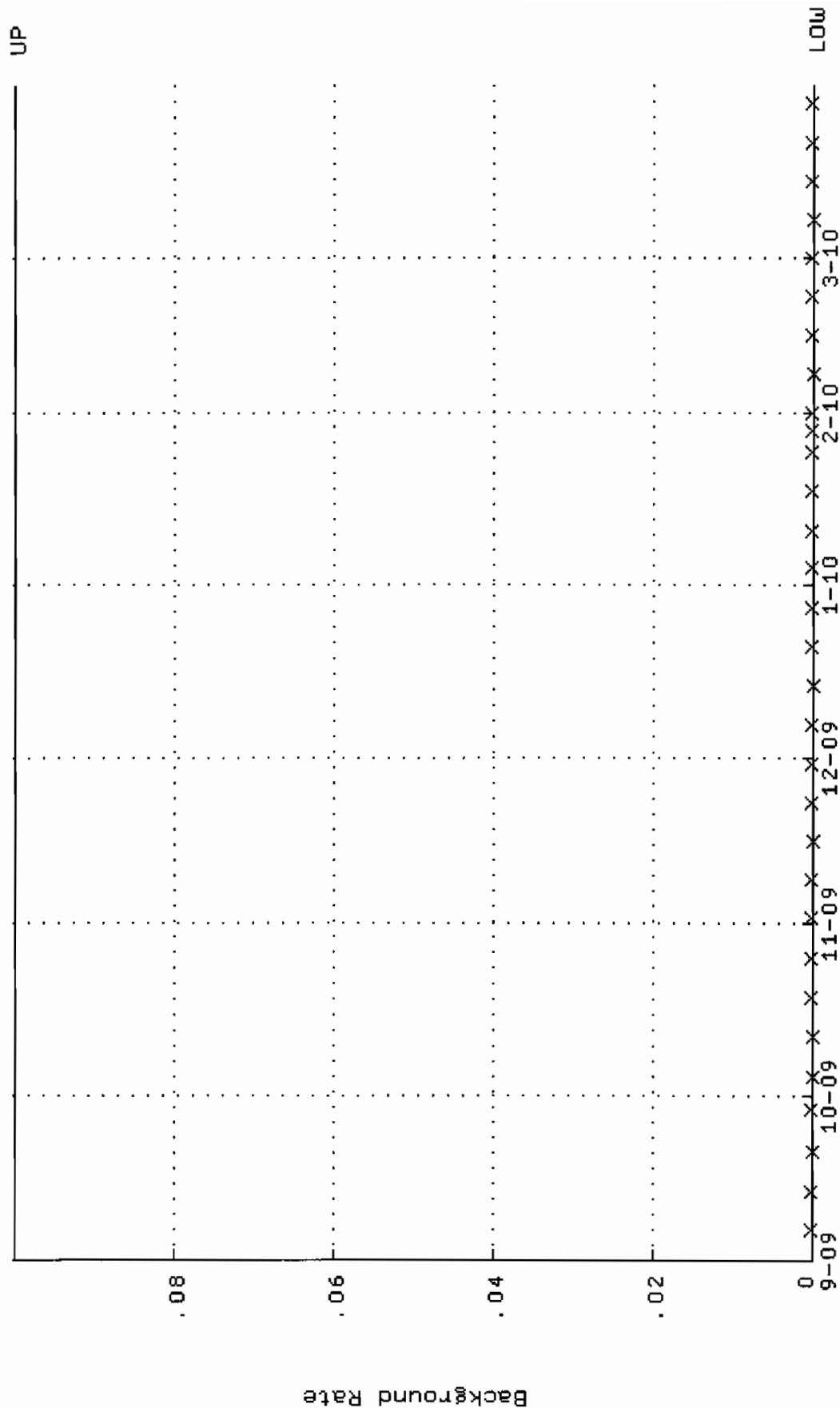
QA filename : DKA100:[ENV_ALPHA.QA.W]W229.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:38:15 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.360663 through 0.390815



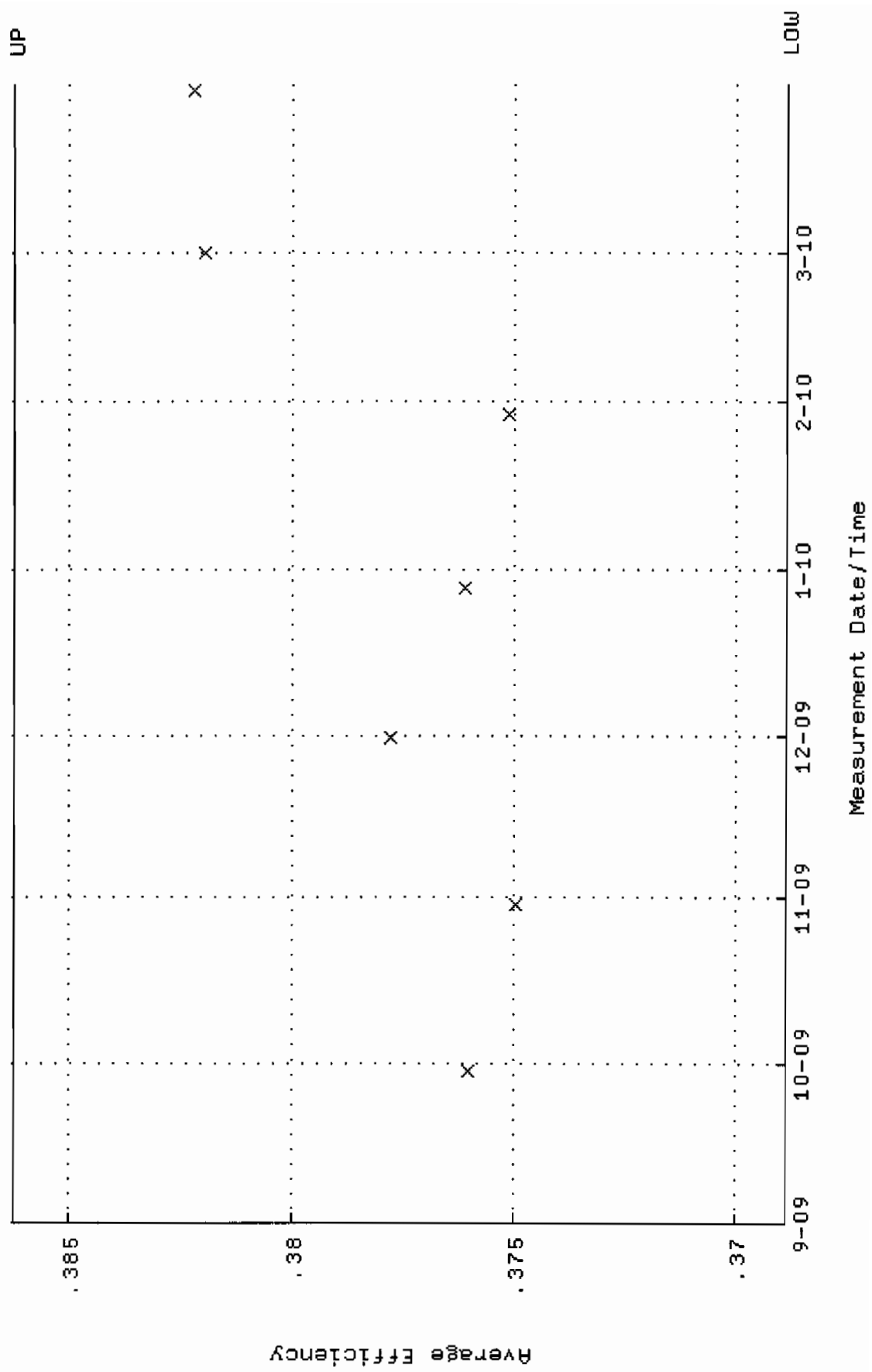
QA filename : DKA100:[ENV_ALPHA.QA.W]W229.QAF;1
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:38:15 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 87.5648 through 97.3078



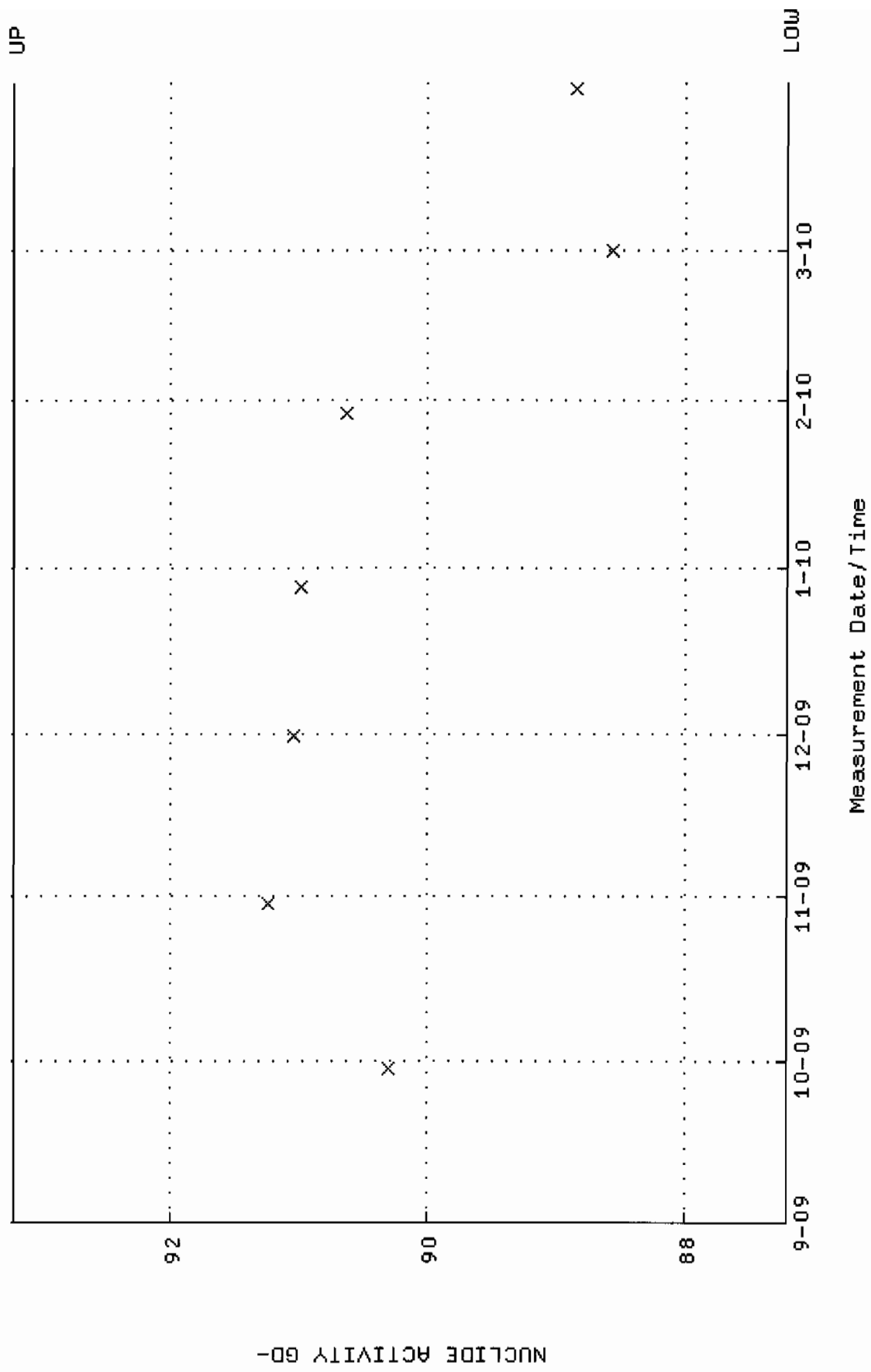
QA filename : DKA100:[ENV_ALPHA.QA.B]B229.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:49:53 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



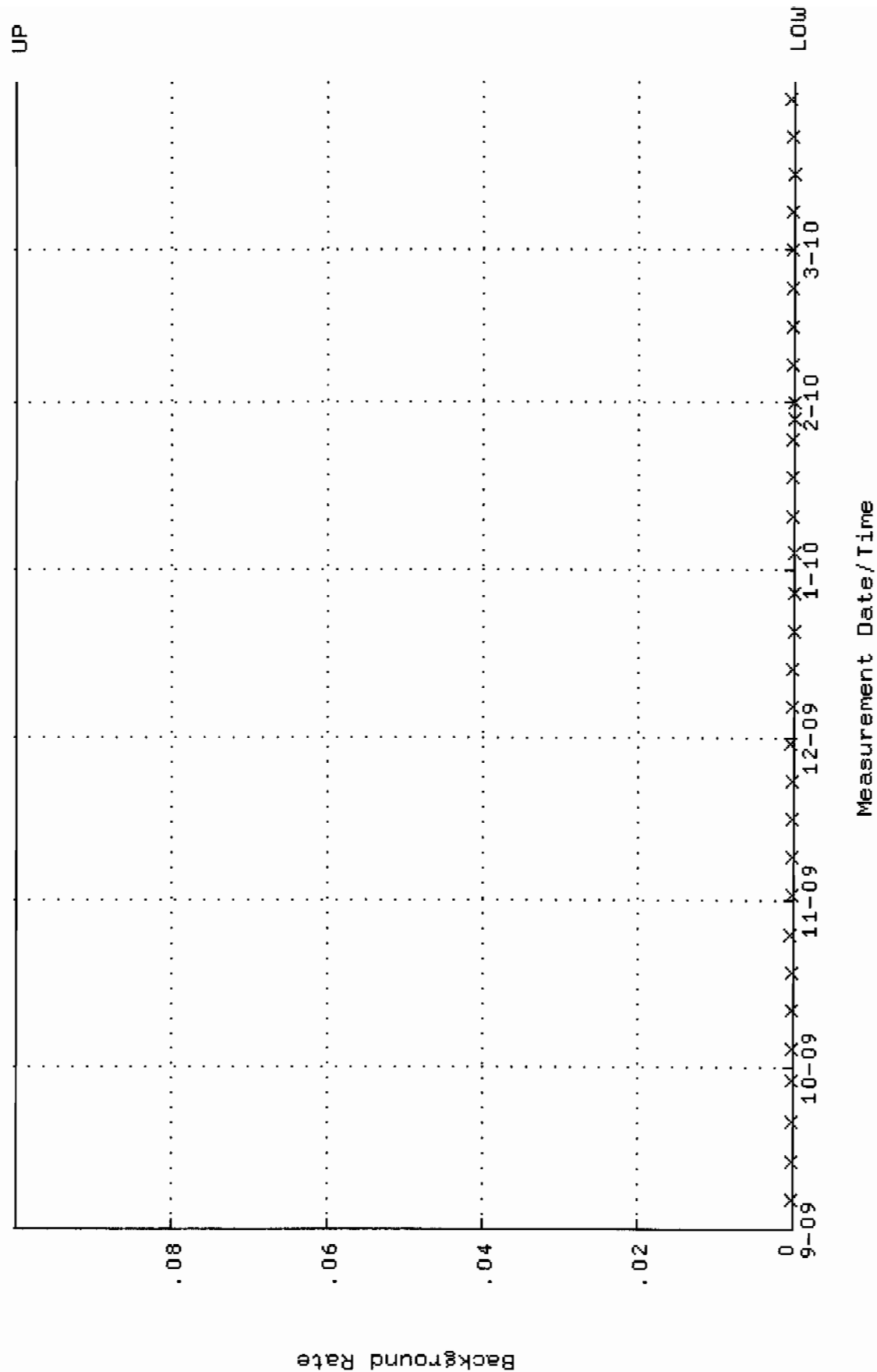
QA filename : DKA100:[ENV_ALPHA.QA.W]W230.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:38:20 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.368869 through 0.386247



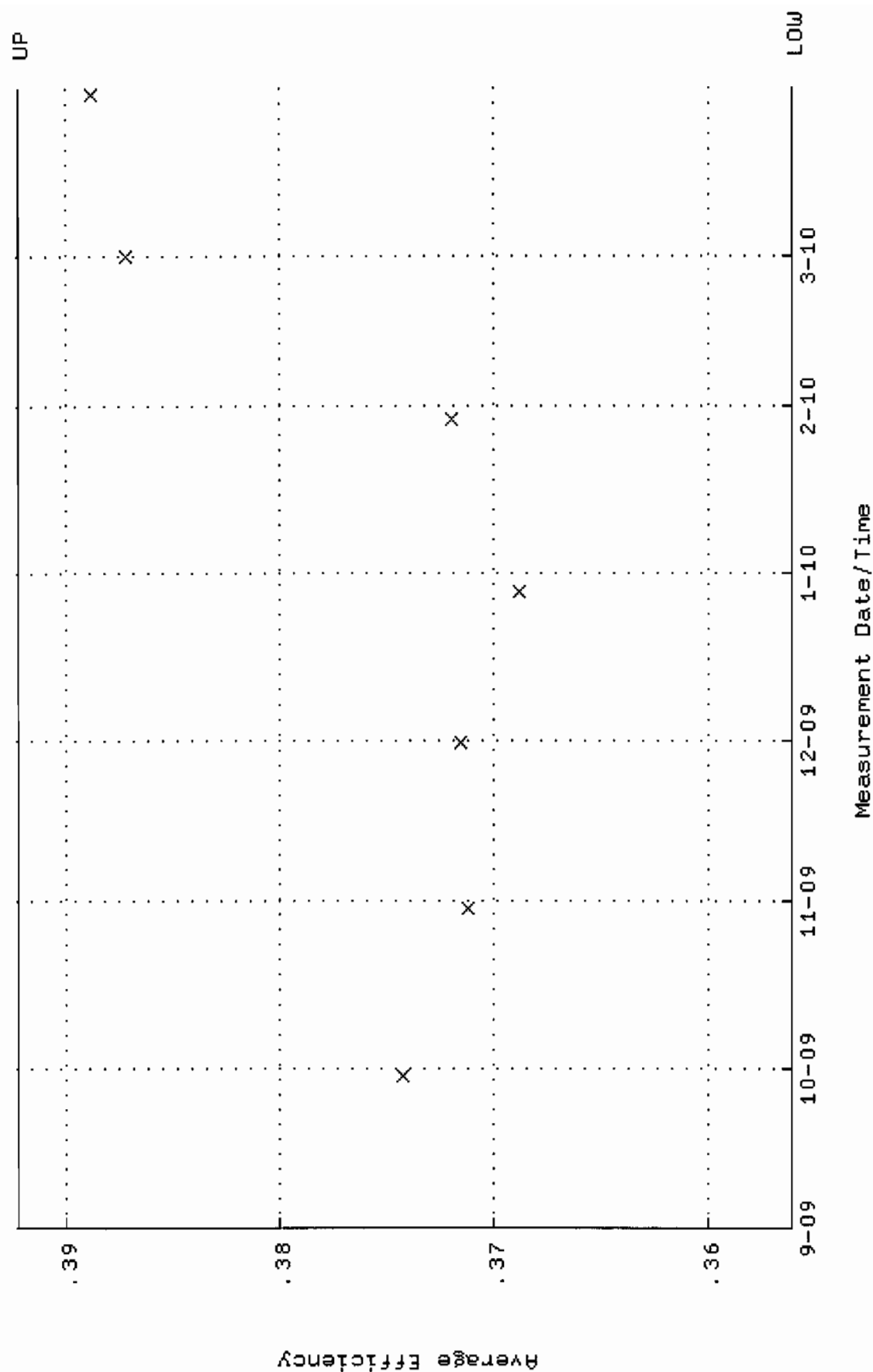
QA filename : DKA100:[ENV_ALPHA.QA.W]W230.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:20 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.2030 through 93.2176



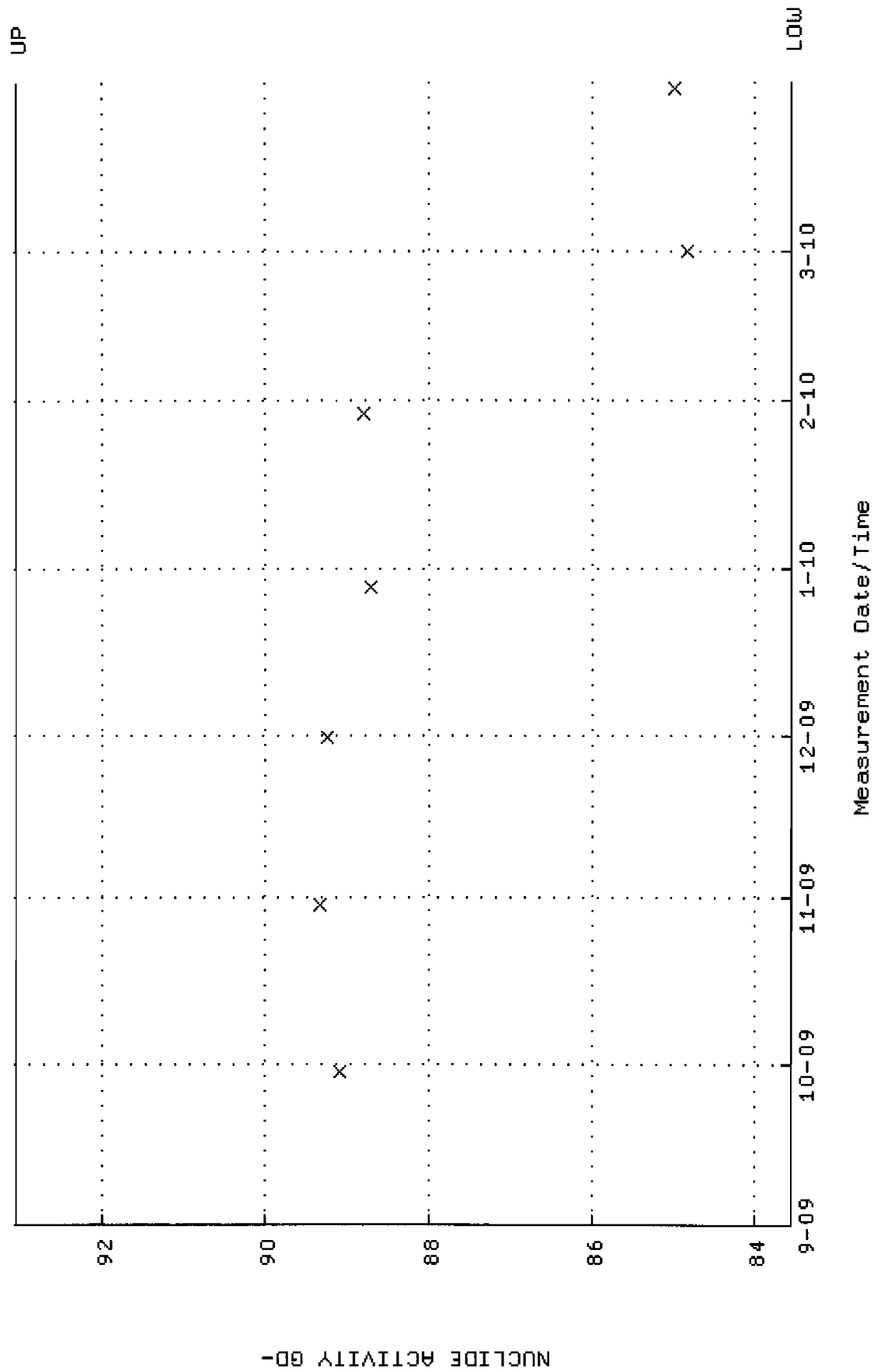
QA filename : DKA100:[ENV_ALPHA.QA.B]B230.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:49:58 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



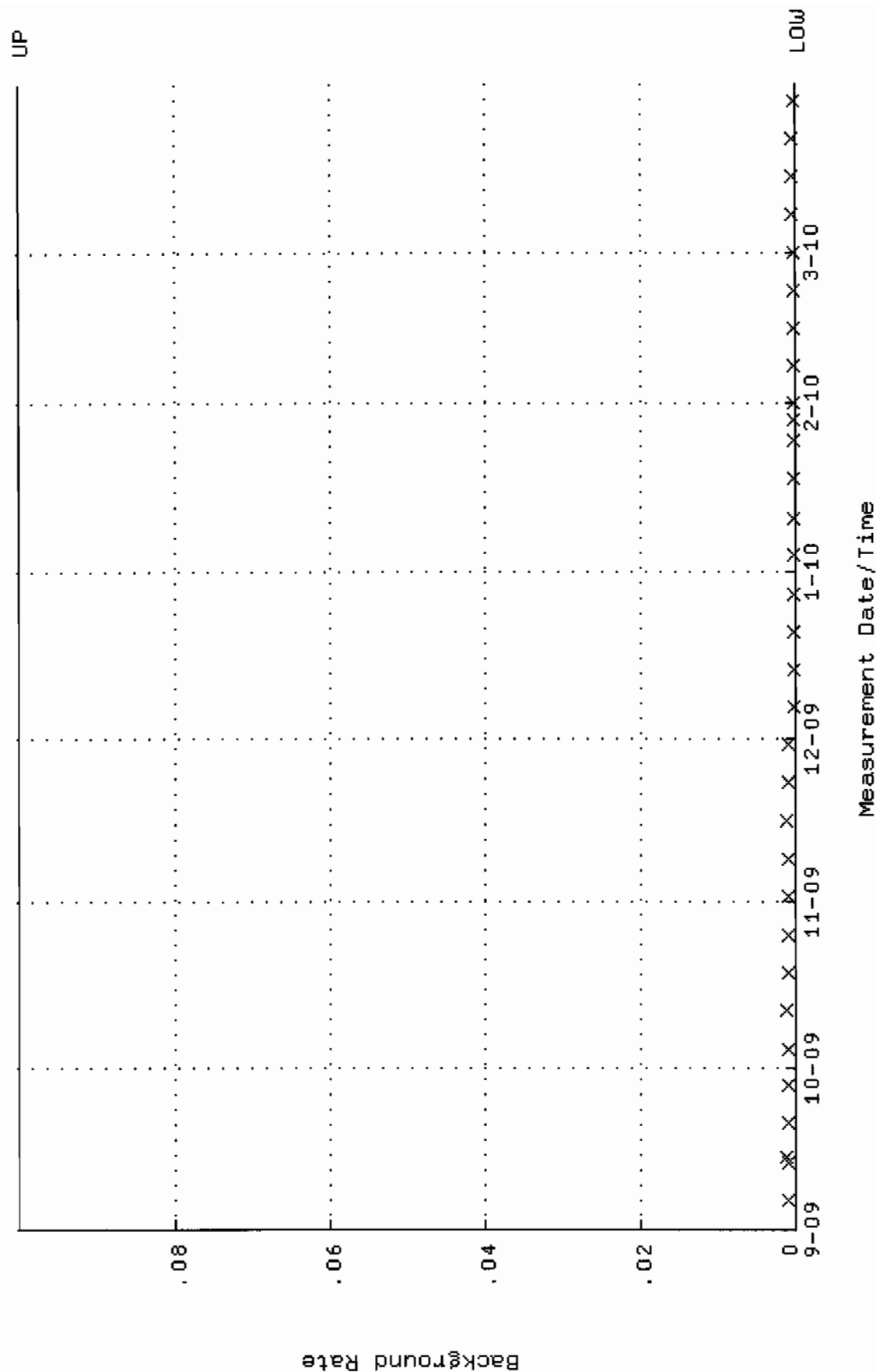
QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:38:31 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.356063 through 0.392181



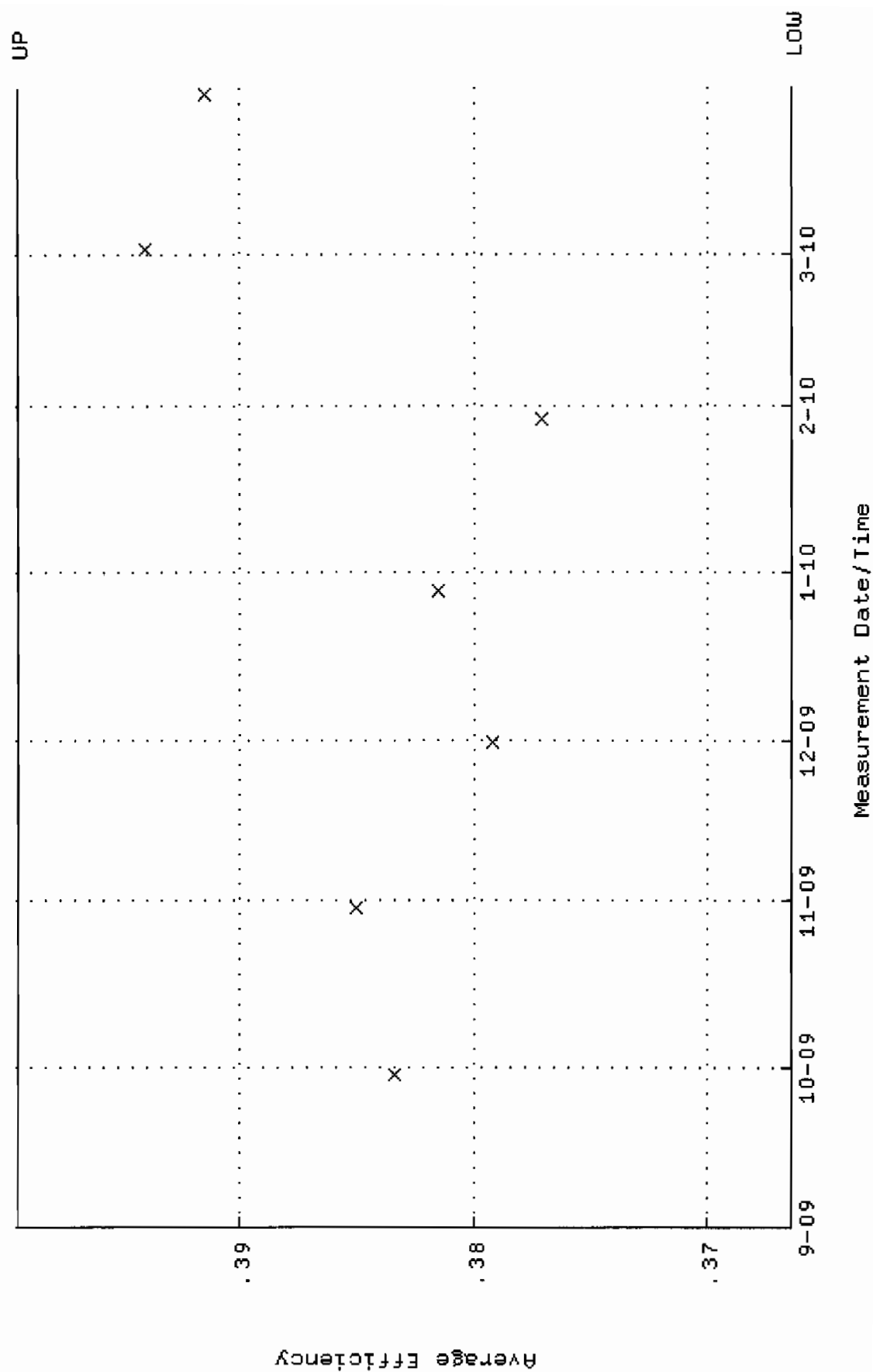
QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:31 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.5615 through 93.0435



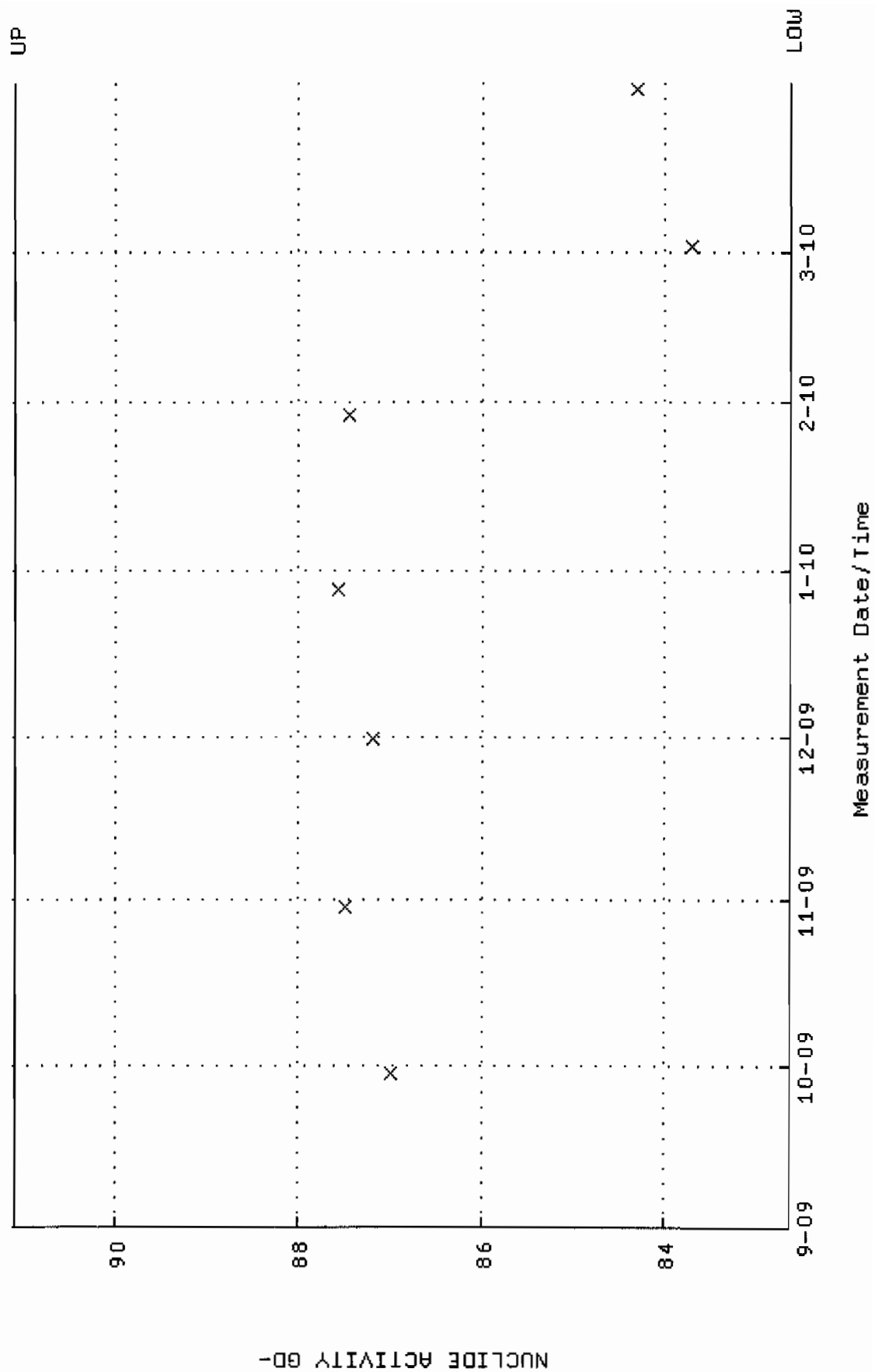
QA filename : DKA100:[ENV_ALPHA.QA.B]B232.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:07 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]w233.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:38:37 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.366381 through 0.399563



QA filename : DKA100:[ENV_ALPHA.QA.W]W233.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:37 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.6177 through 91.1049

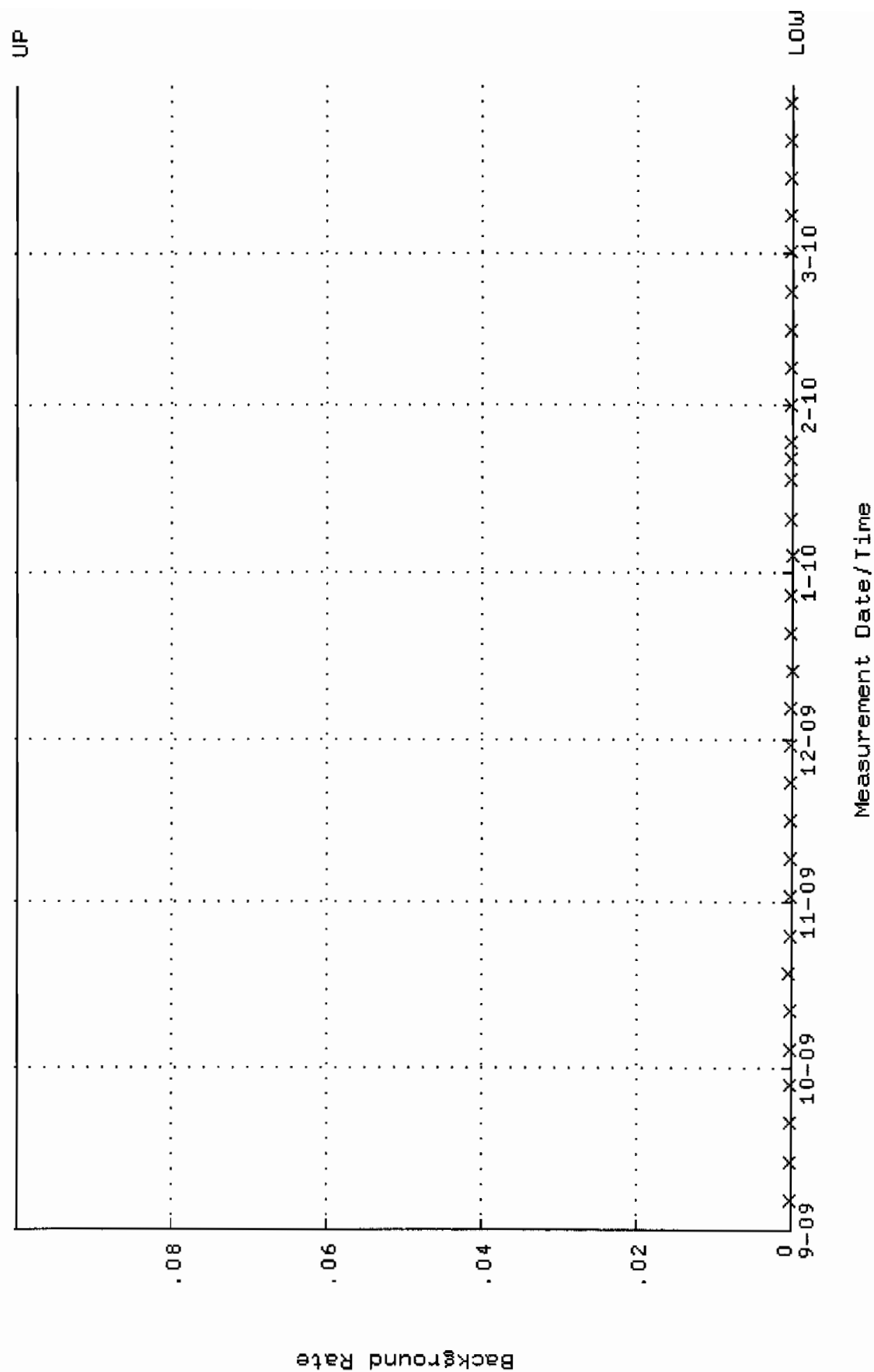


QA filename : DKA100:[ENV_ALPHA.QA.B]B233.QAF;1

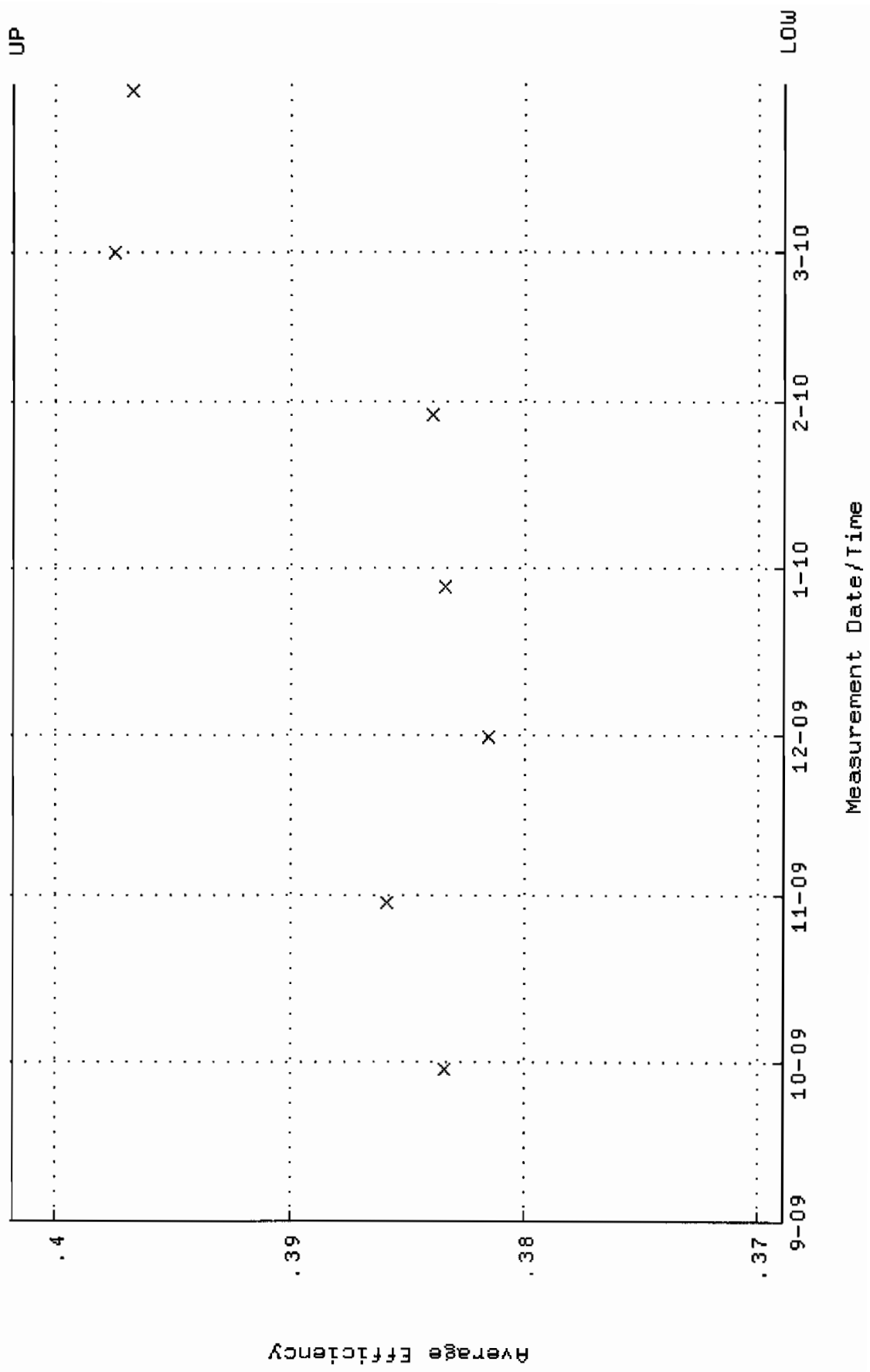
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:50:12 through 31-MAR-2010 12:00:00

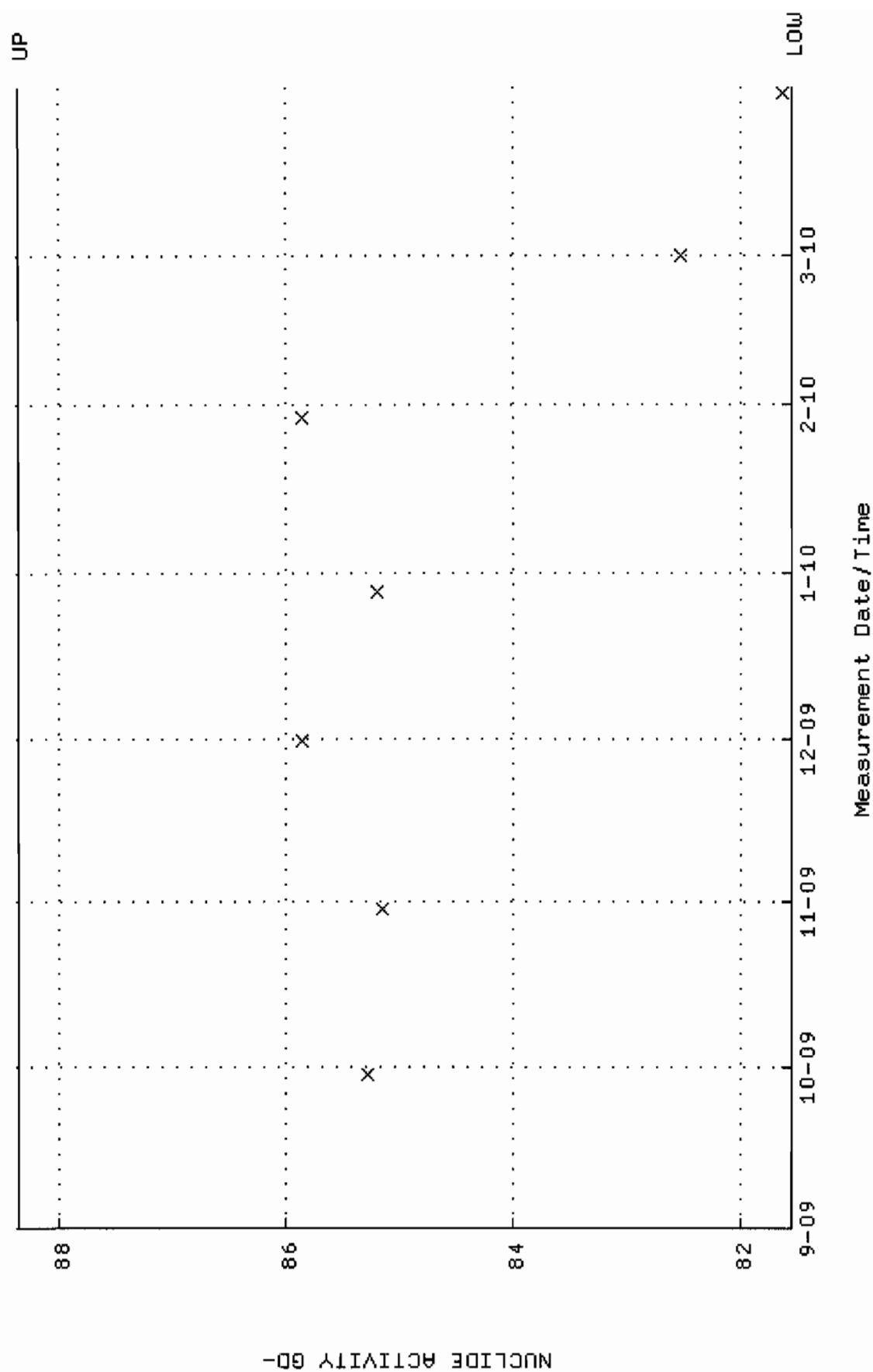
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W234.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:38:42 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.368938 through 0.401788



QA filename : DKA100:[ENV_ALPHA.QA.W]W234.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:42 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5490 through 88.3592

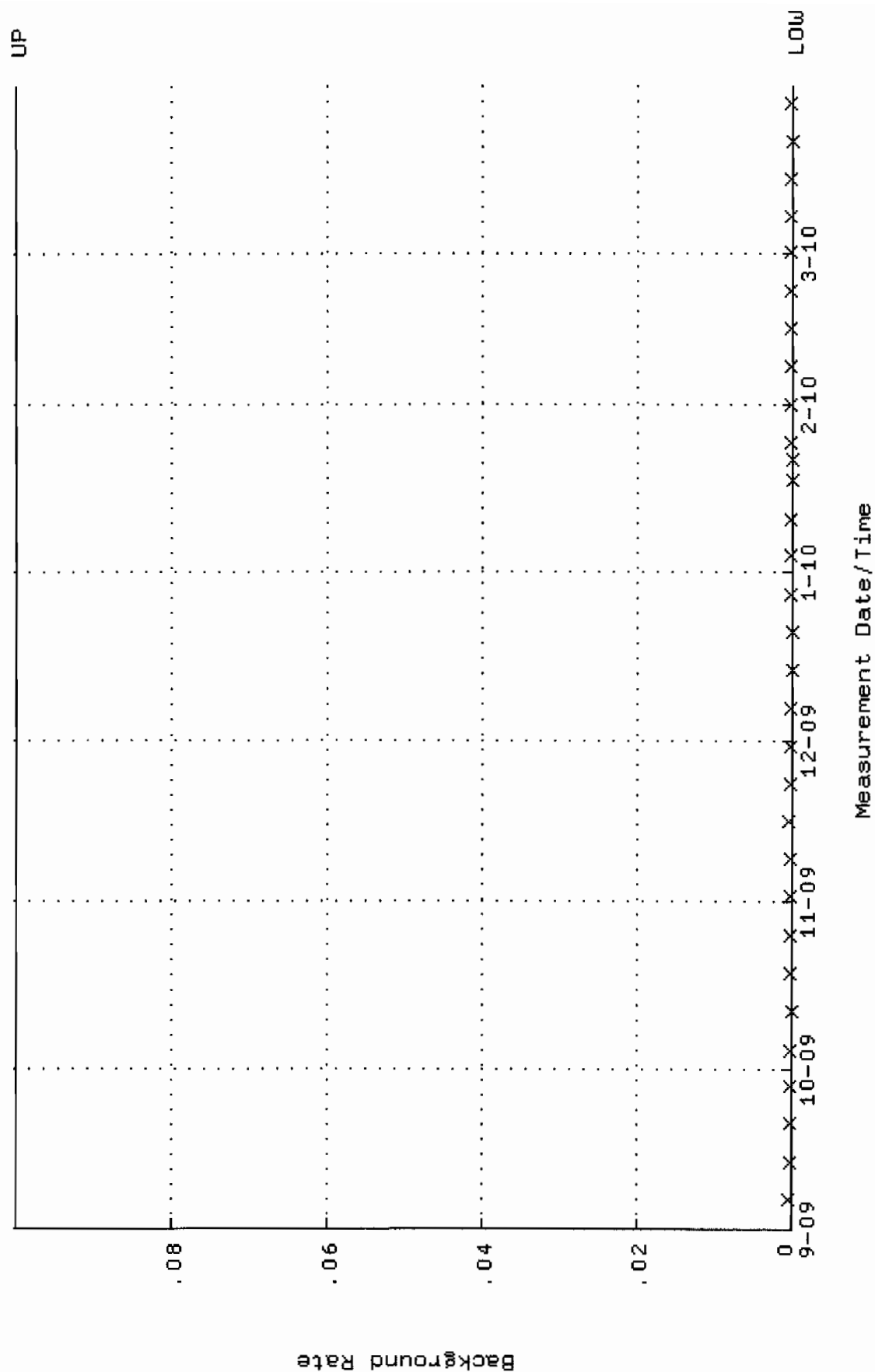


QA filename : DKA100:[ENV-ALPHA.QA.B]B234.QAF;1

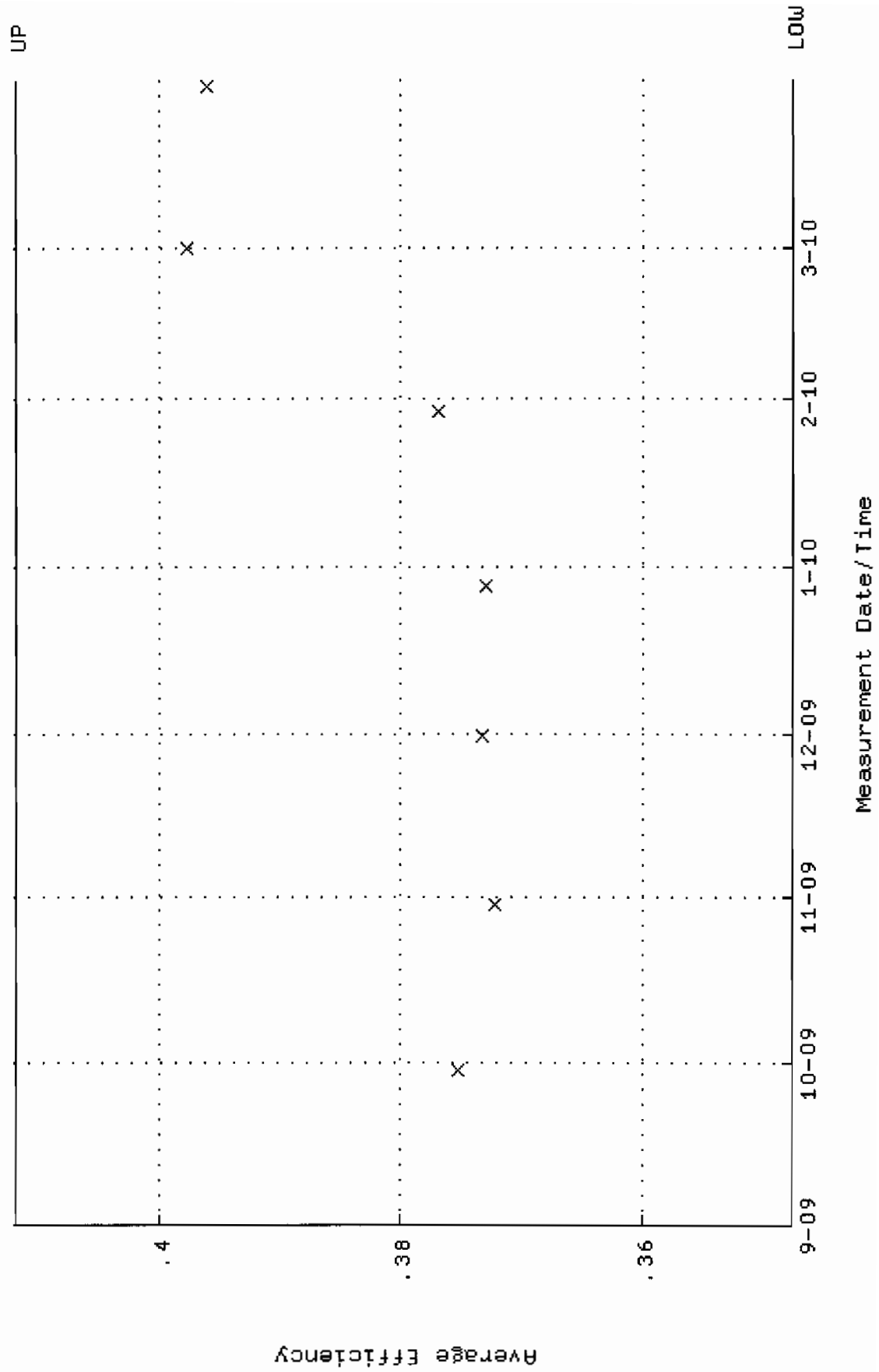
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:50:16 through 31-MAR-2010 12:00:00

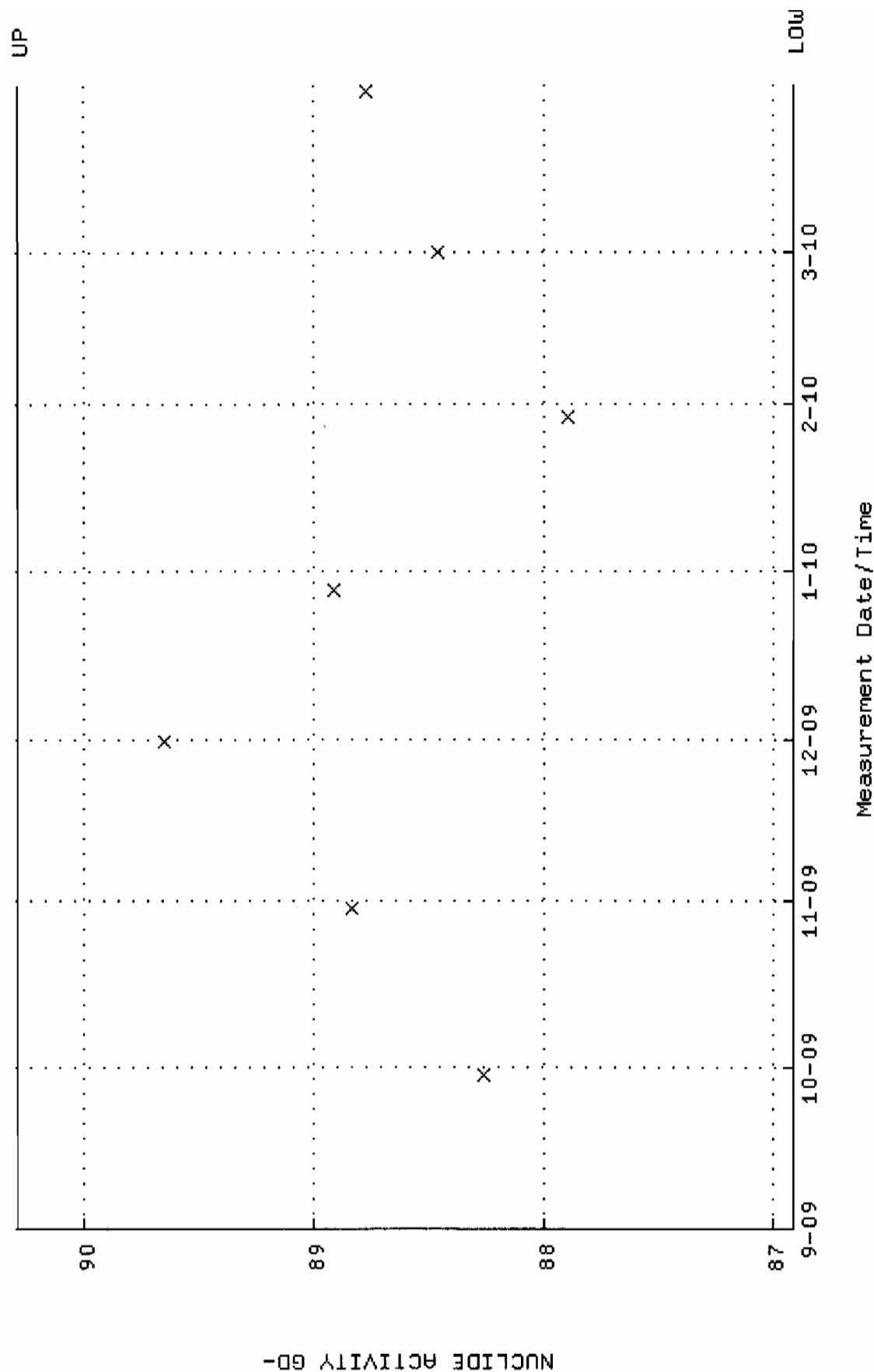
Lower/Upper Lmts: 0.000000E+00 through 0.100000



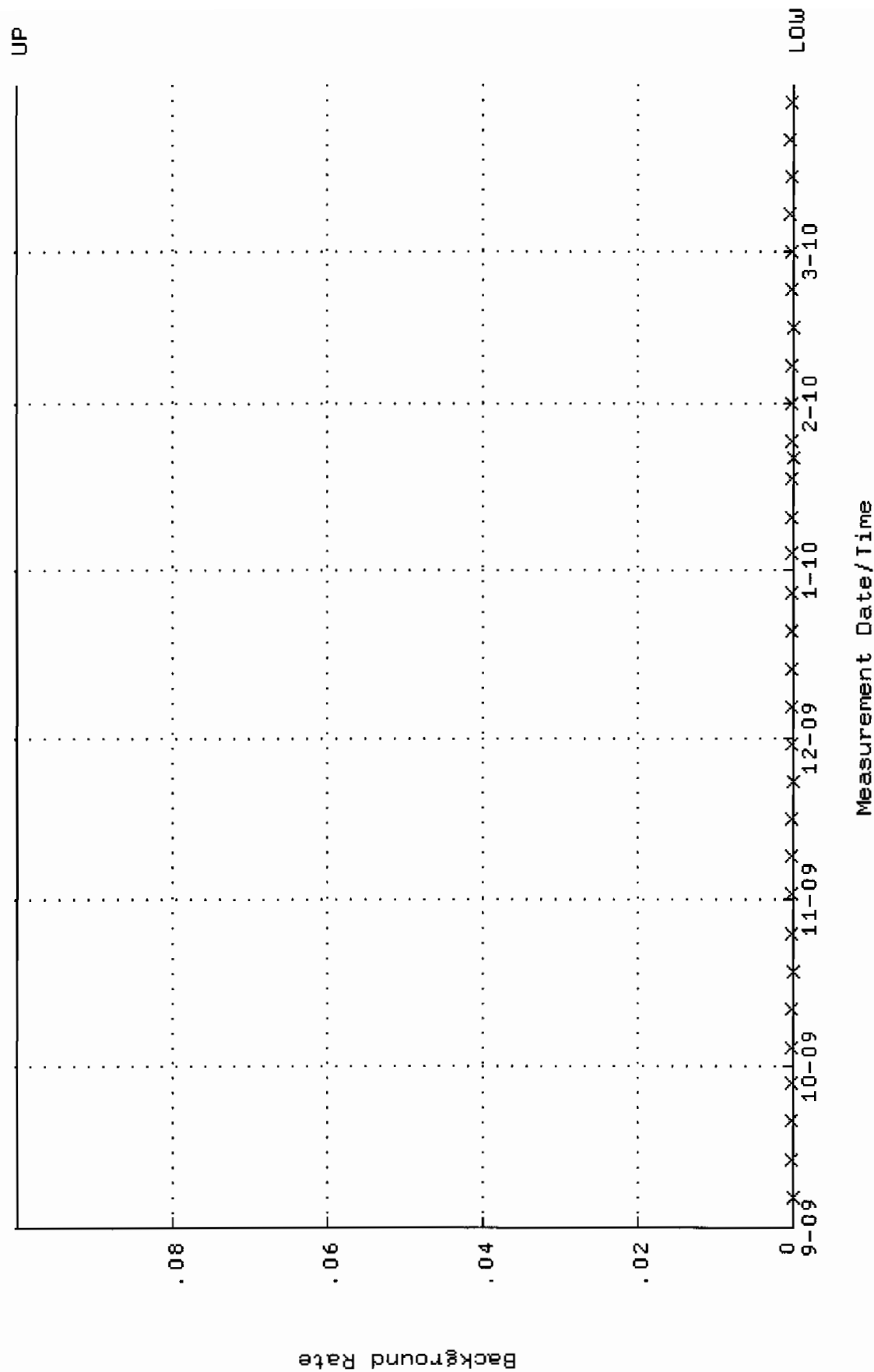
QA filename : DKA100:[ENV_ALPHA.QA.W]W235.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:38:47 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.347554 through 0.411802



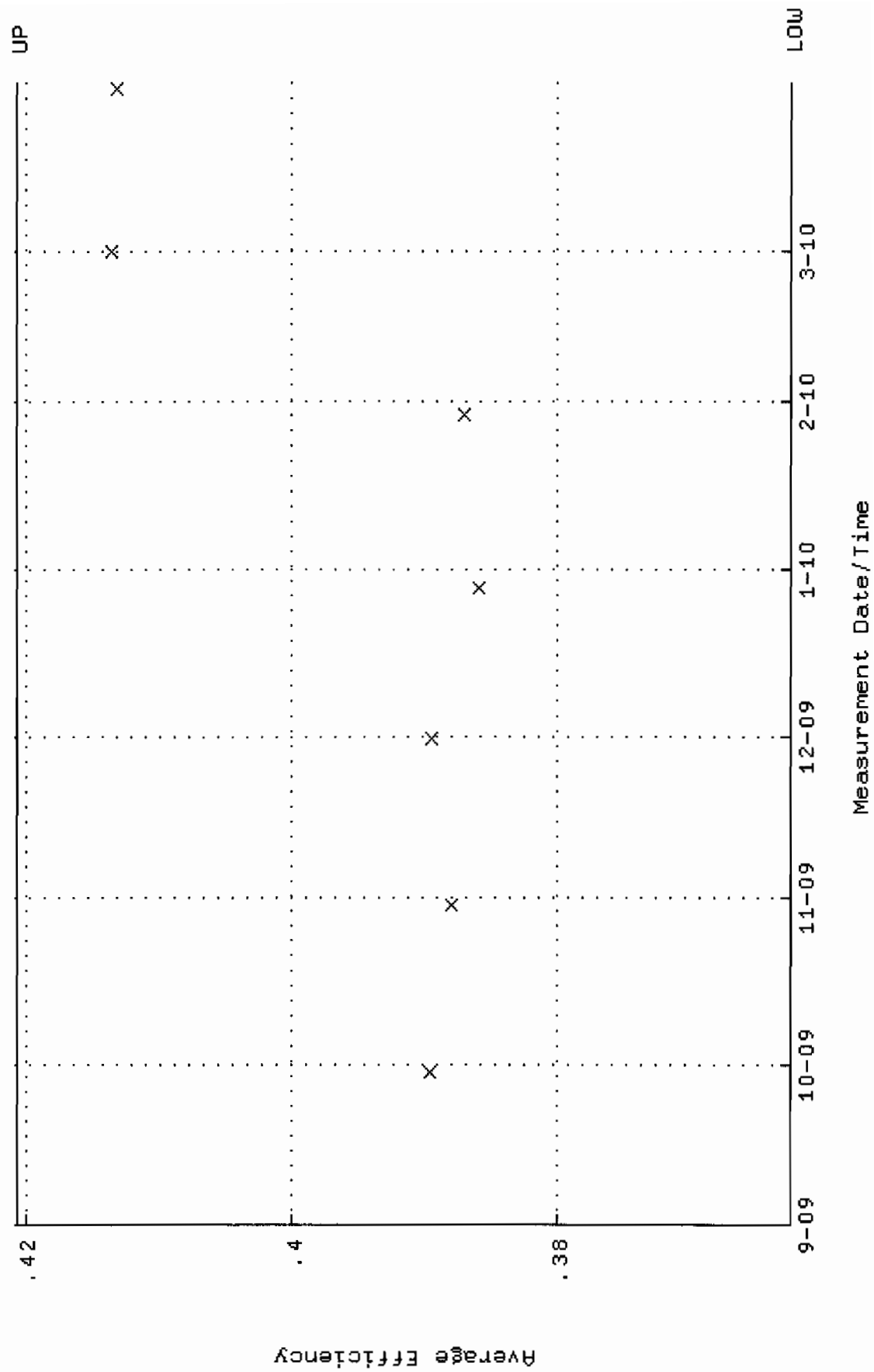
QA filename : DKA100:[ENV_ALPHA.QA.W]w235.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:47 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.9159 through 90.2825



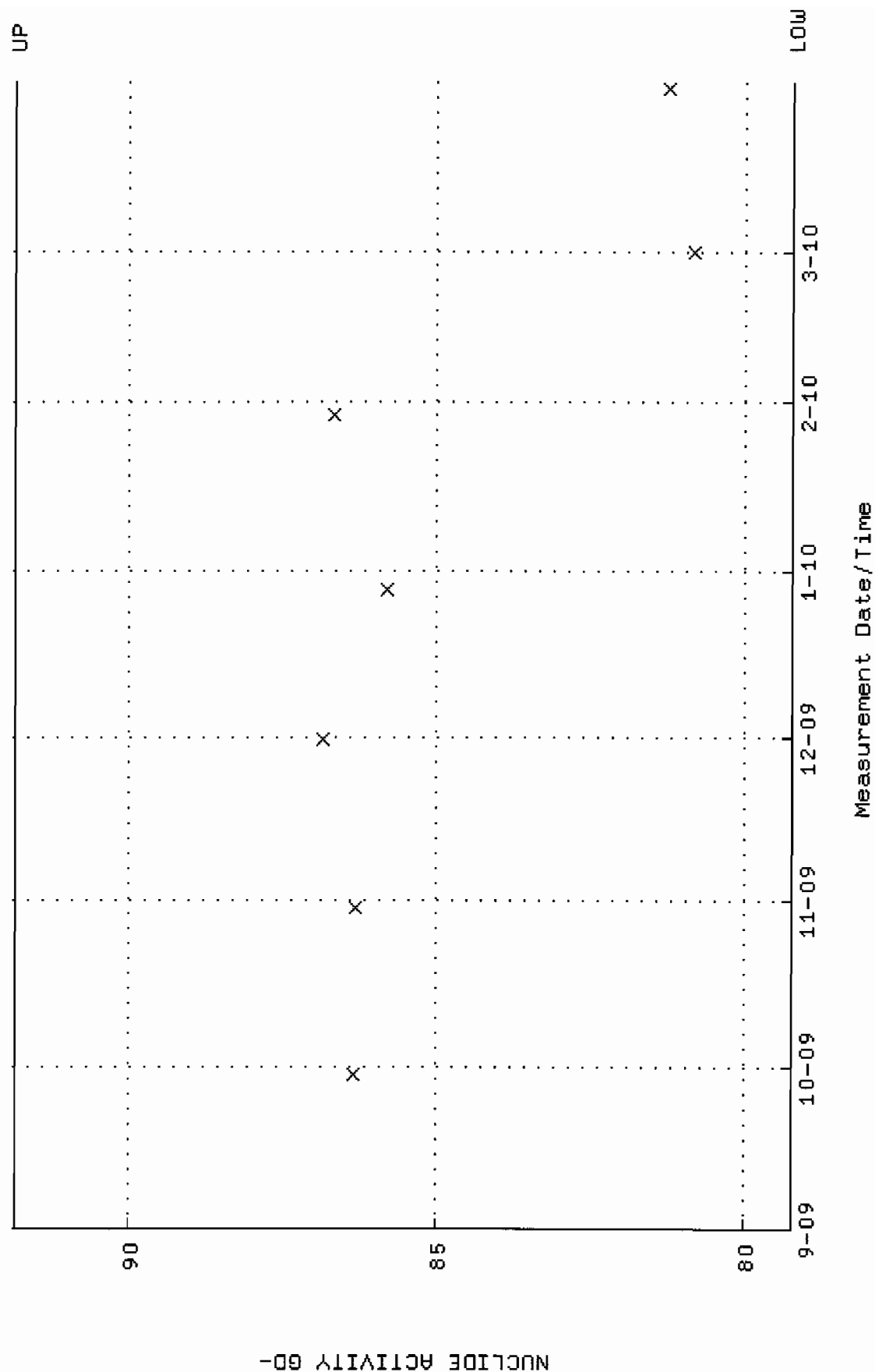
QA filename : DKA100:[ENV_ALPHA.QA.B]B235.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:20 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W236.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:38:52 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.362418 through 0.420706



QA filename : DKA100:[ENV_ALPHA.QA.W]W236.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:52 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 79.2135 through 91.8401

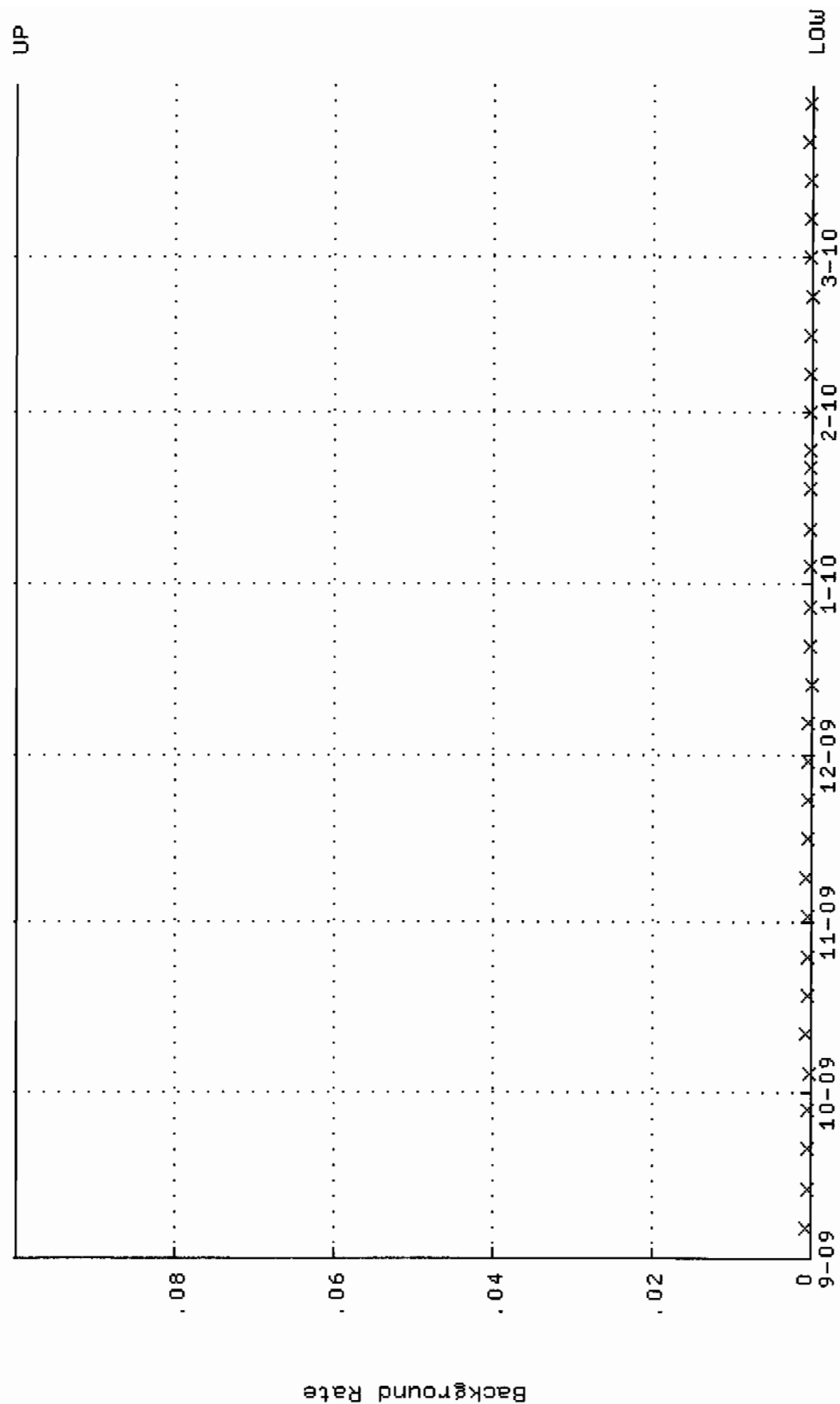


QA filename : DKA100:[ENV_ALPHA.QA.B]B236.QAF;1

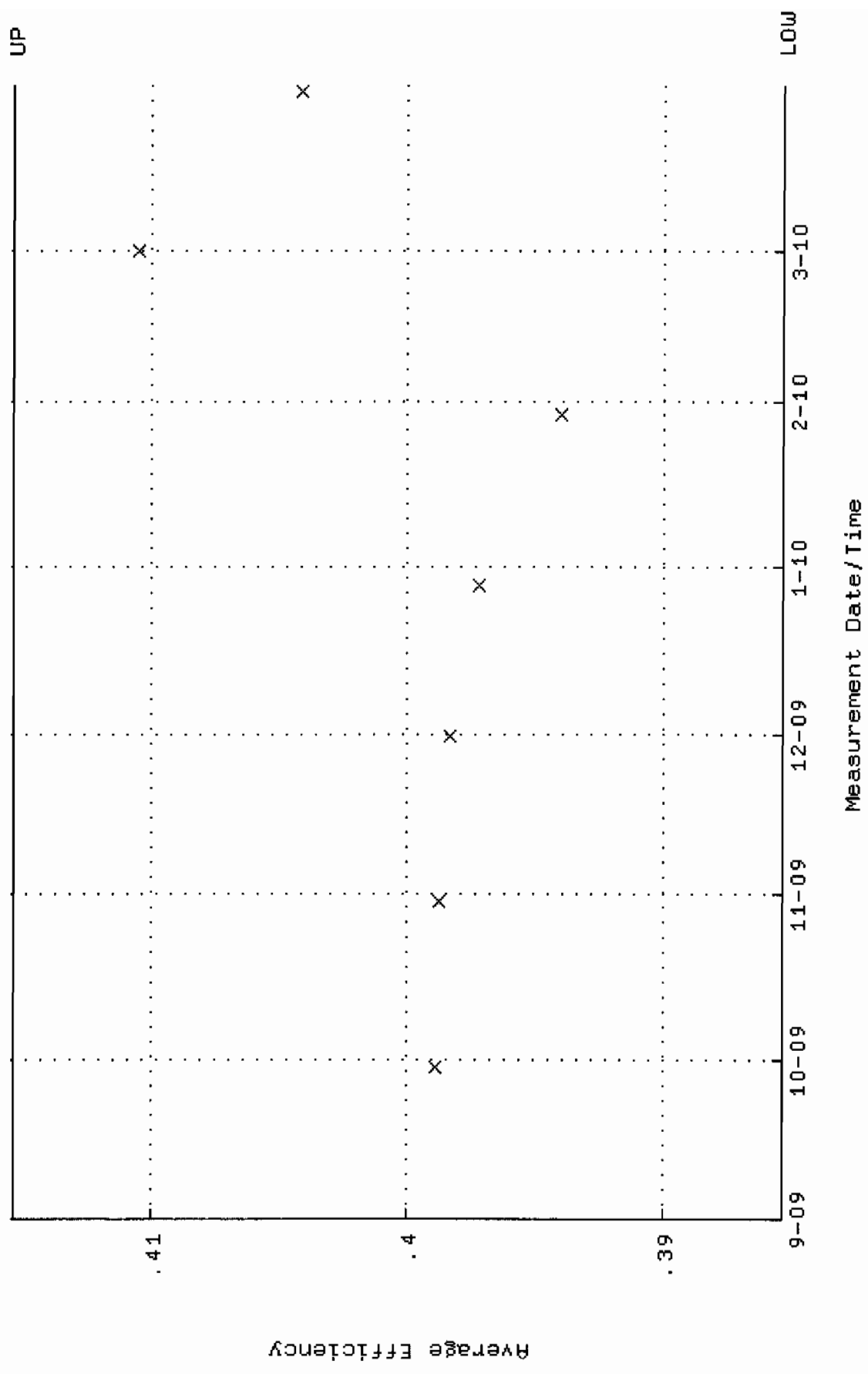
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:50:26 through 31-MAR-2010 12:00:00

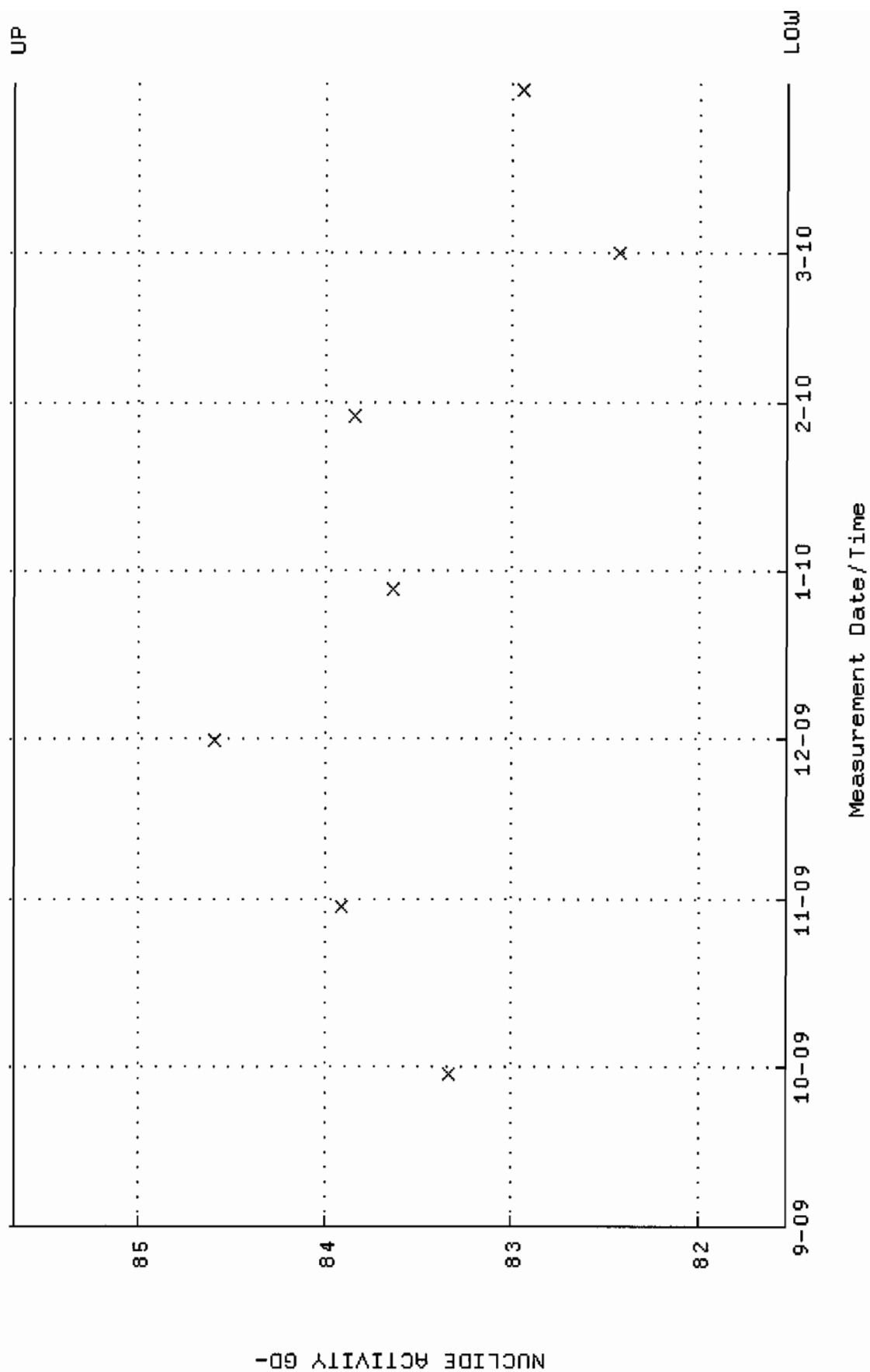
Lower/Upper Lmts: 0.000000E+00 through 0.100000



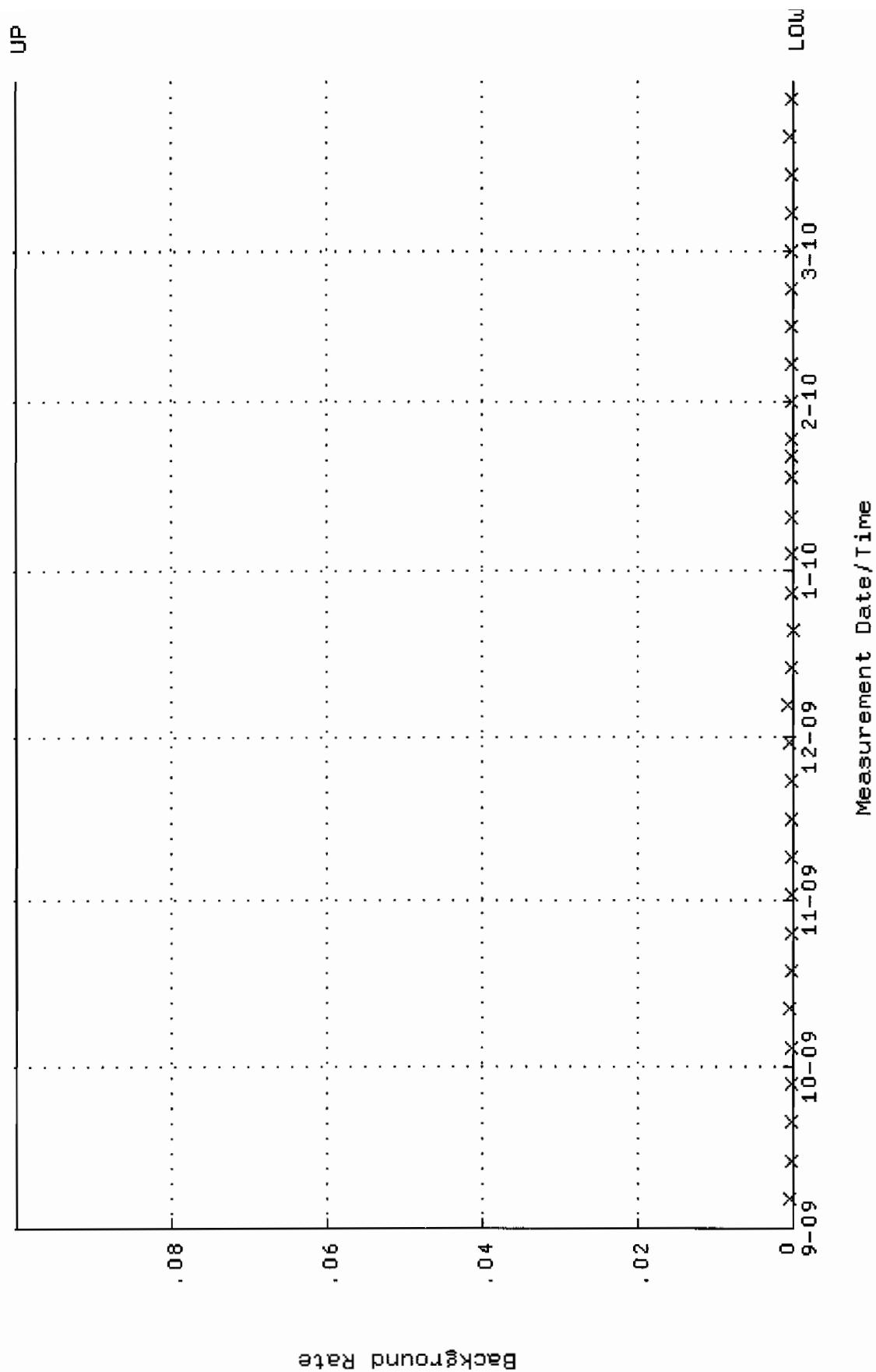
QA filename : DKA100:[ENV_ALPHA.QA.W]W237.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:38:58 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.385327 through 0.415351



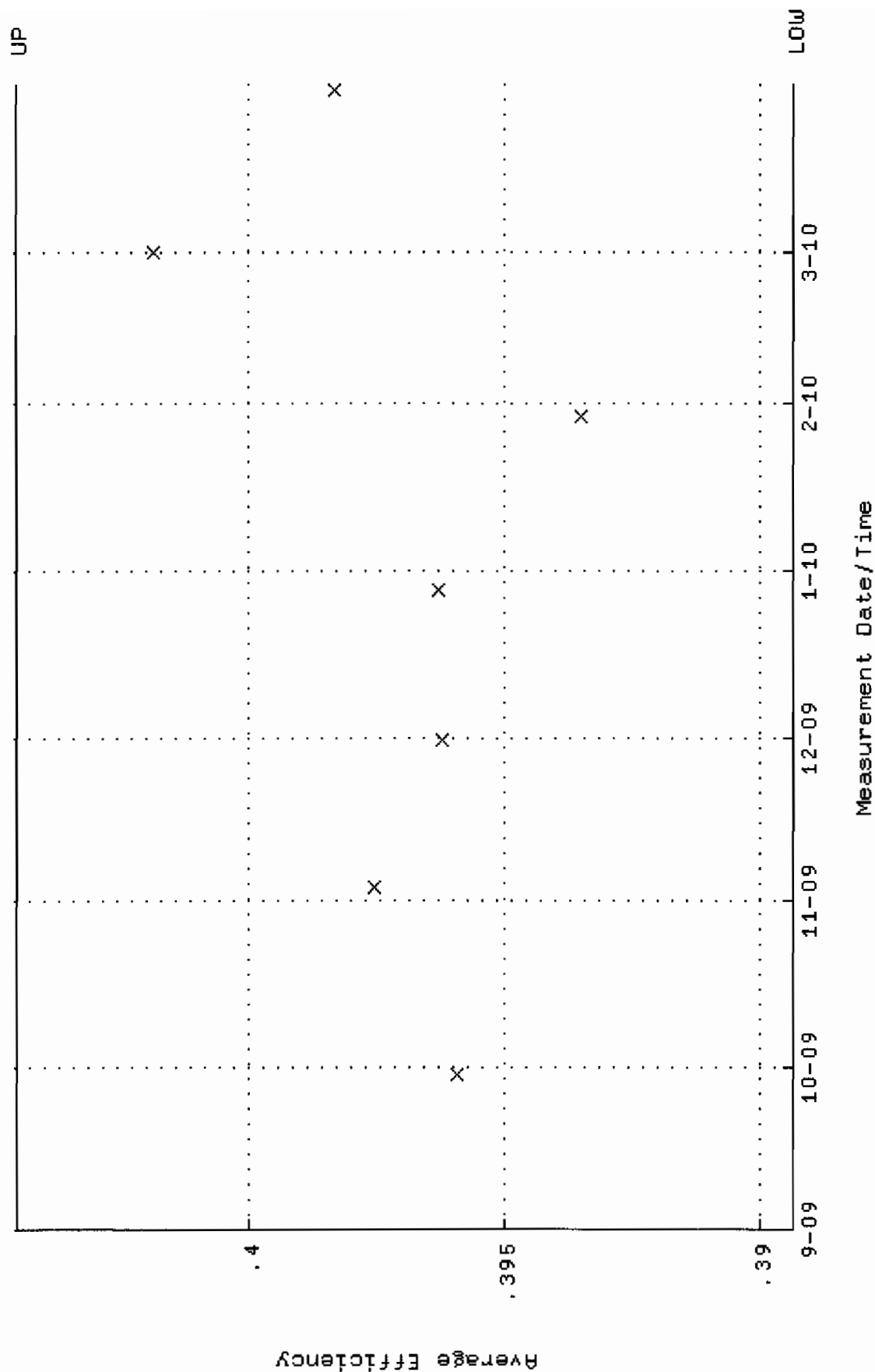
QA filename : DKA100:[ENV_ALPHA.QA.W]W237.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:38:58 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5268 through 85.6787



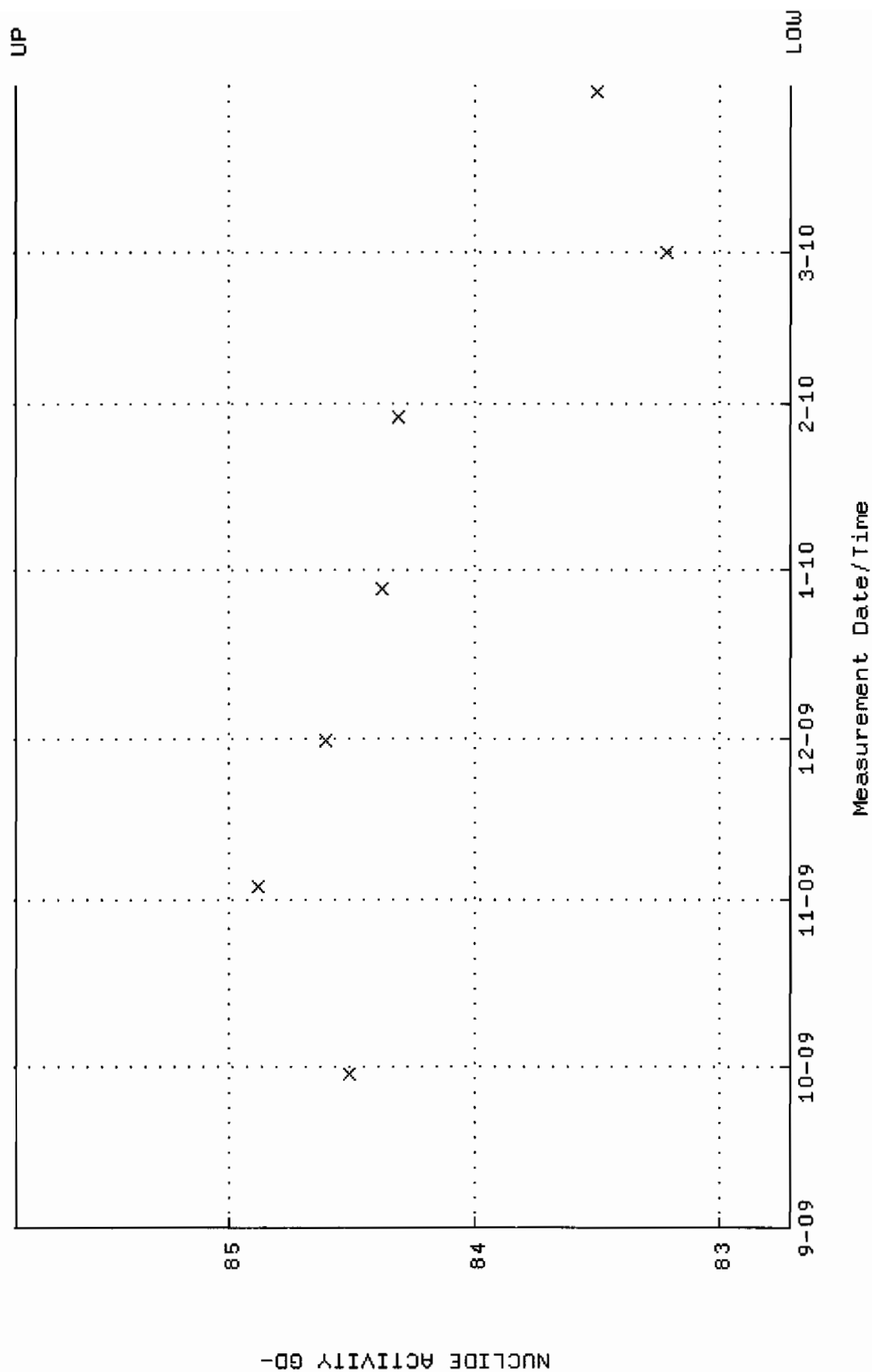
QA filename : DKA100:[ENV_ALPHA.QA.B]B237.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:30 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



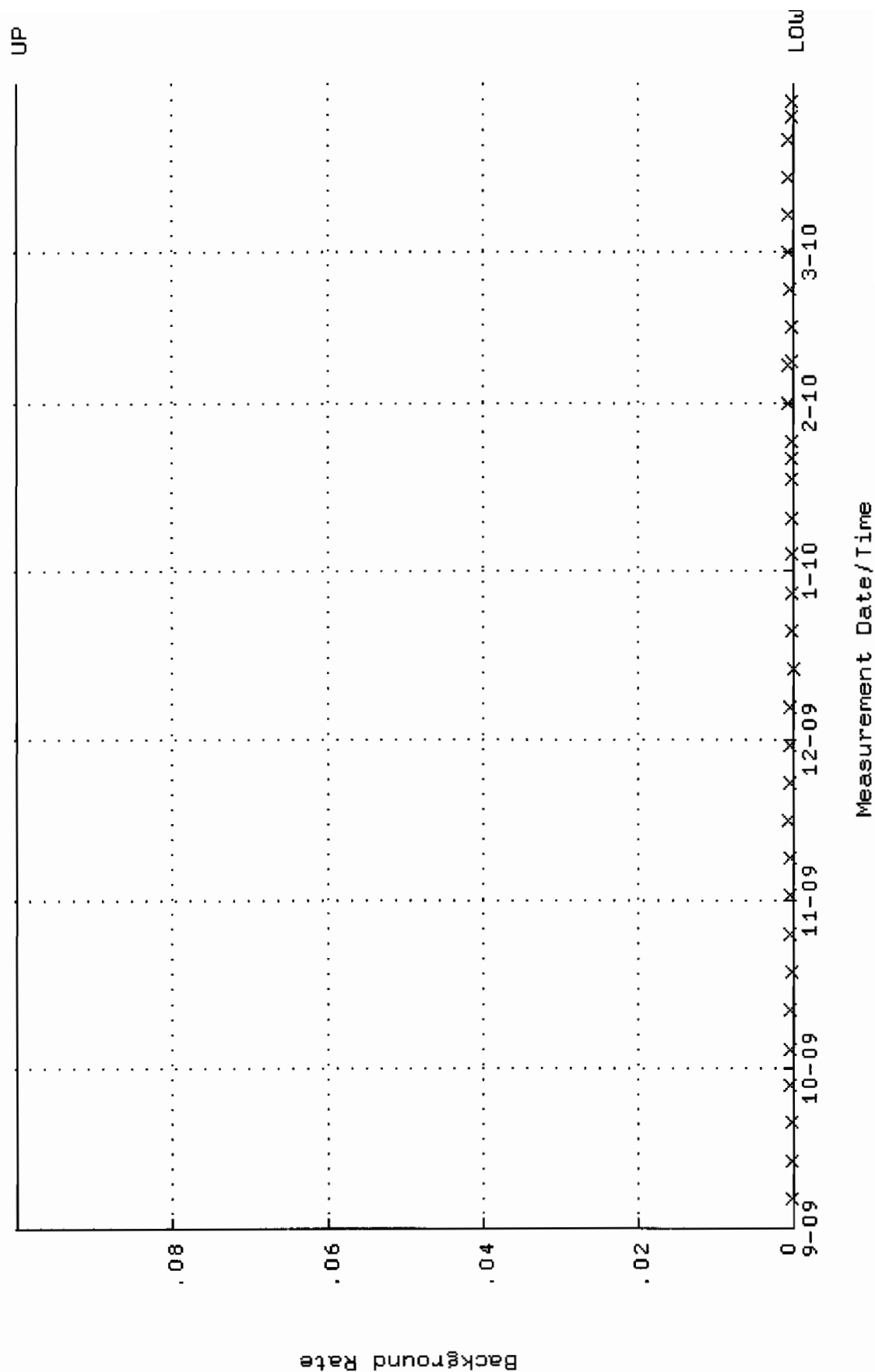
QA filename : DKA100:[ENV_ALPHA.QA.W]W238.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:39:04 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.389351 through 0.404525



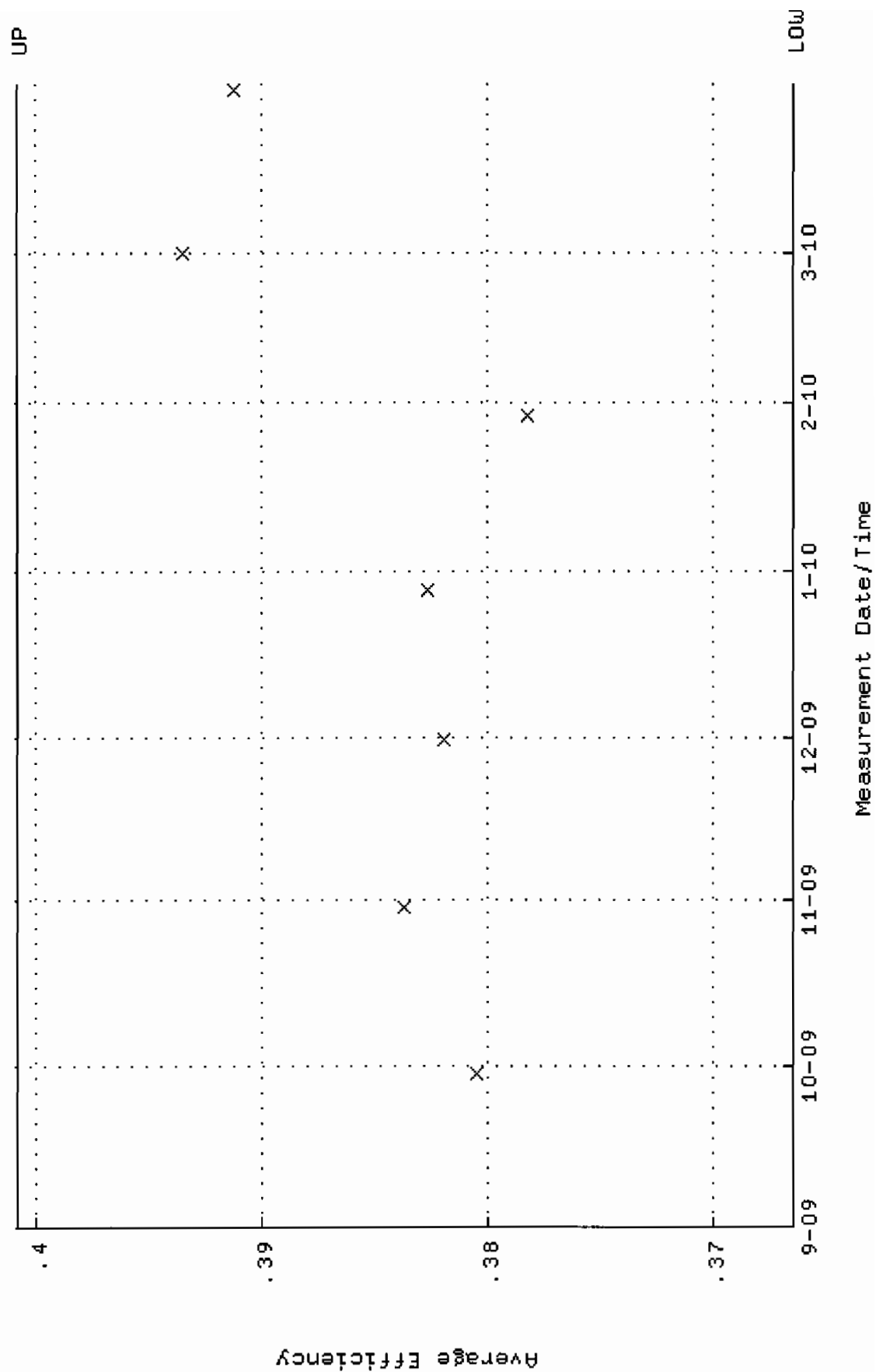
QA filename : DKA100:[ENV_ALPHA.QA.W]w238.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:39:04 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.7118 through 85.8726



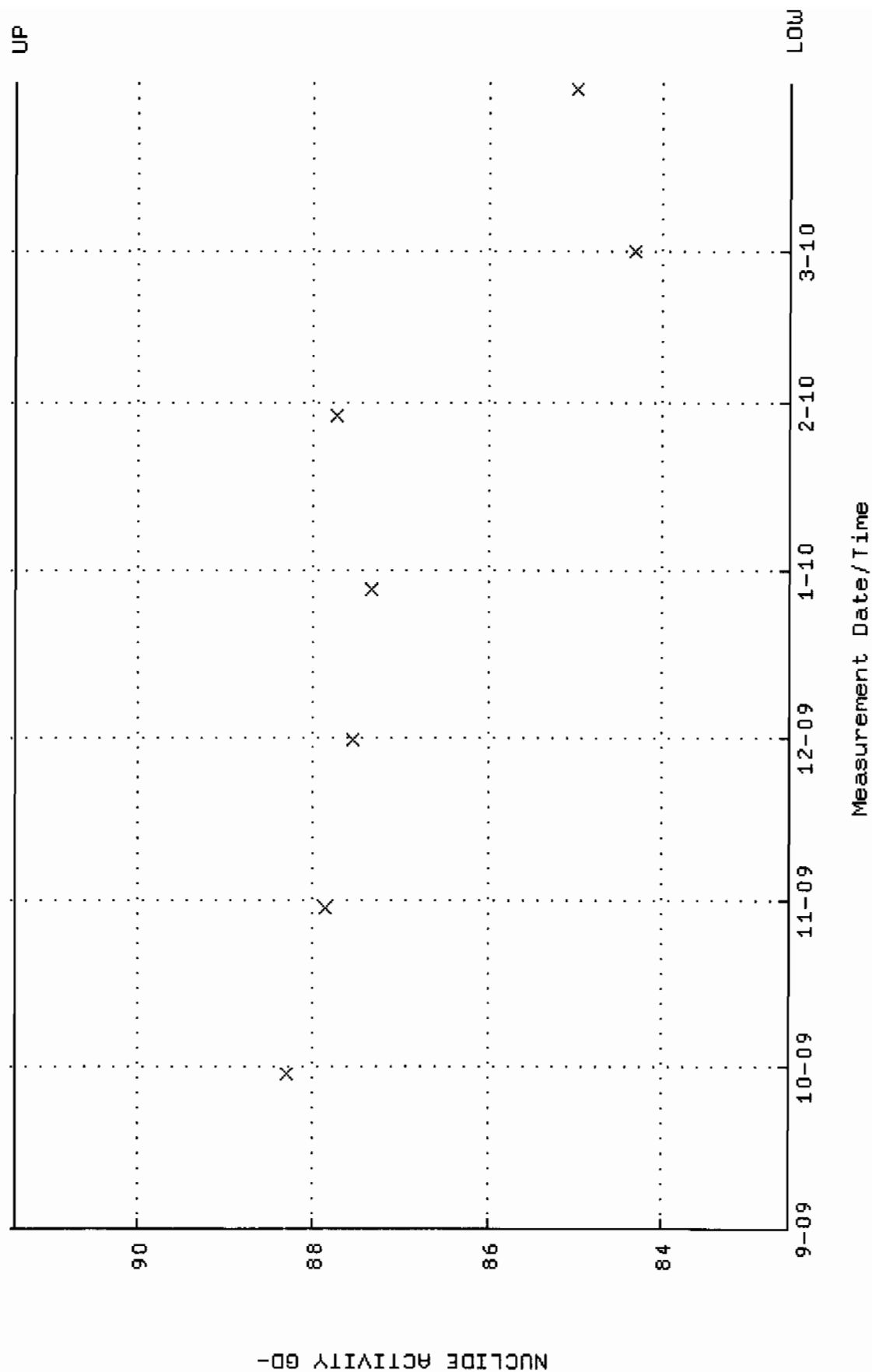
QA filename : DKA100:[ENV_ALPHA.QA.B]B238.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:34 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



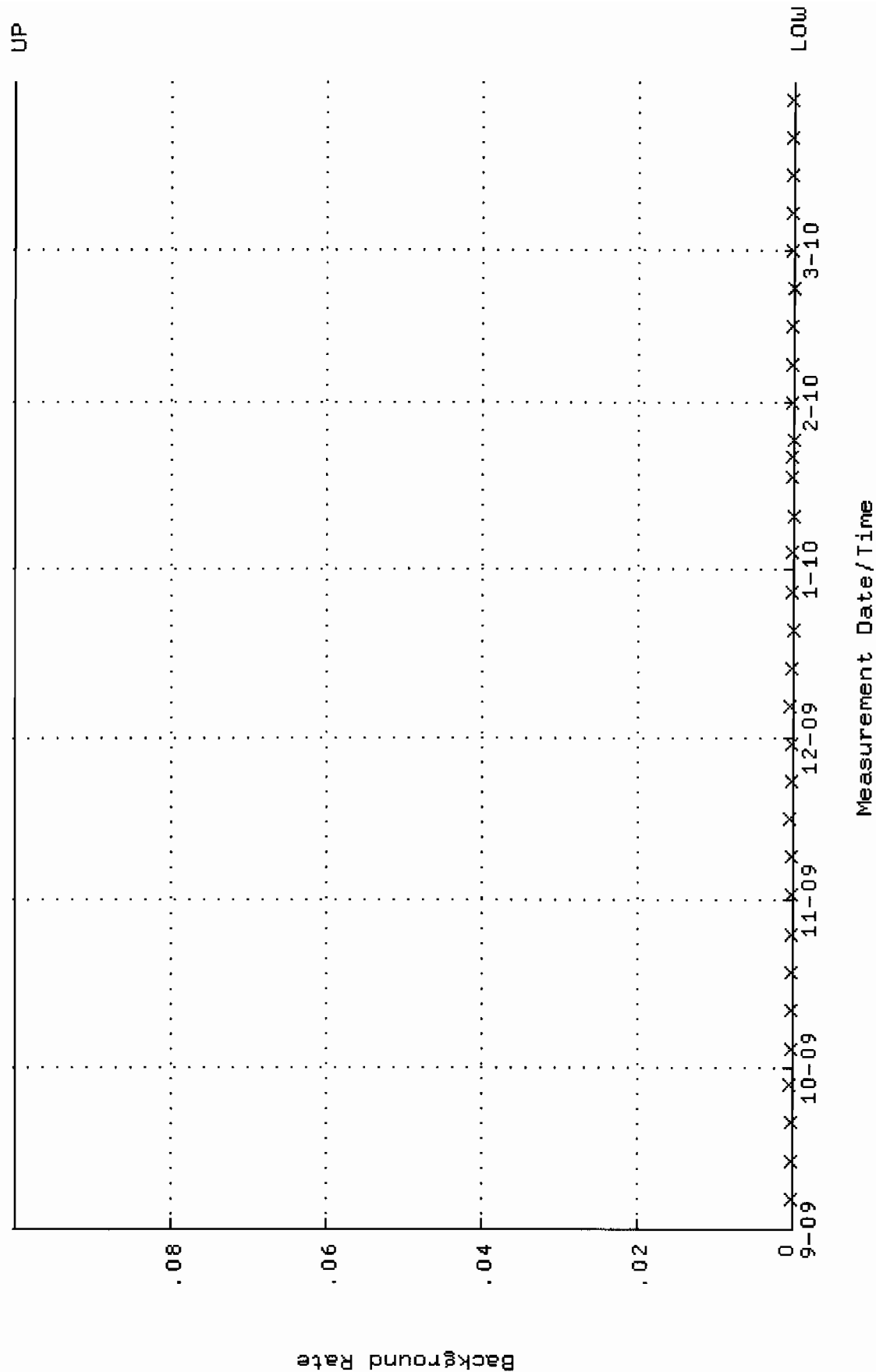
QA filename : DKA100:[ENV_ALPHA.QA.W]U239.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:39:10 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.366465 through 0.400837



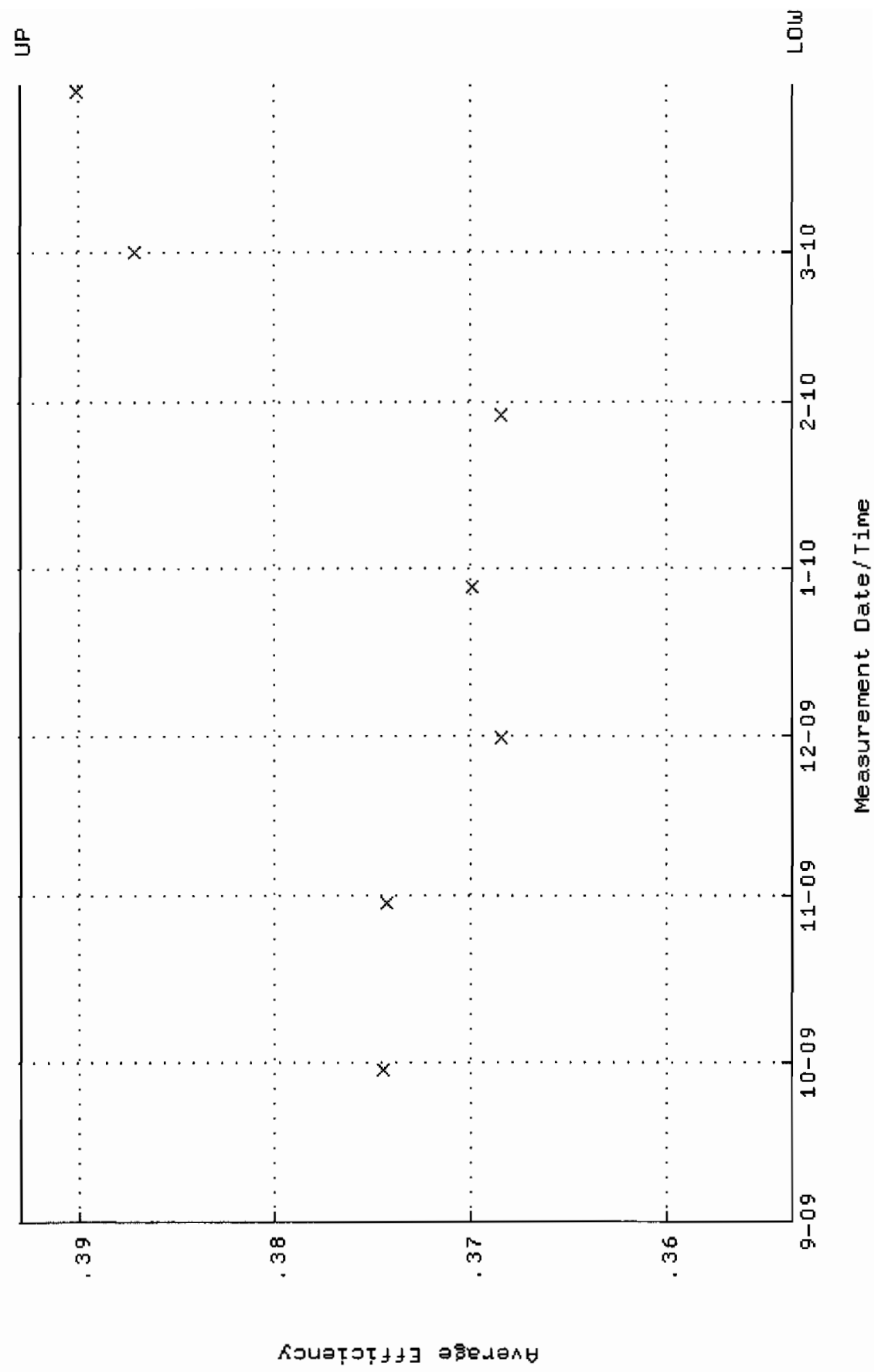
QA filename : DKA100:[ENV_ALPHA.QA.W]w239.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:39:10 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.5482 through 91.4126



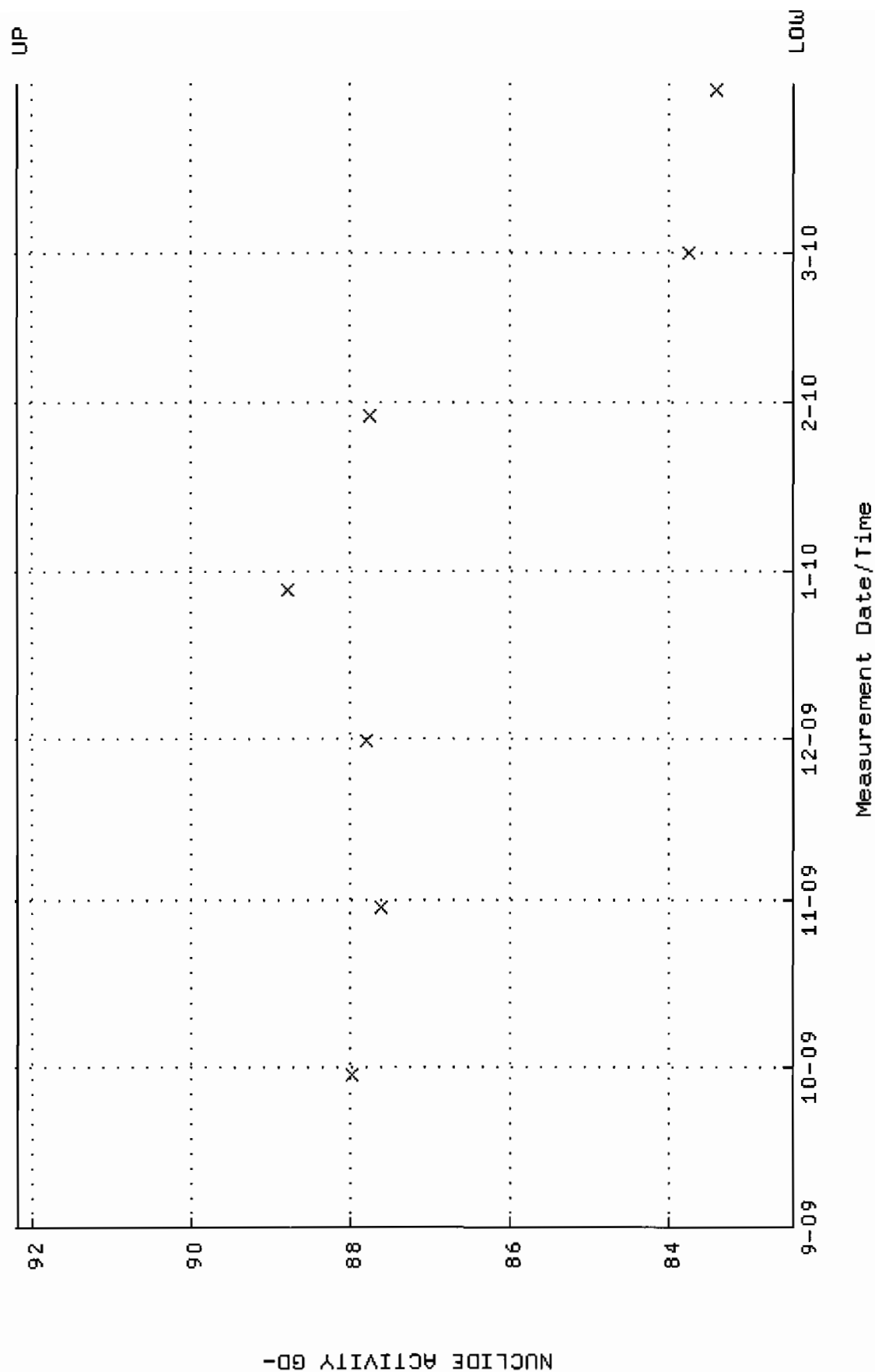
QA filename : DKA100:[ENV_ALPHA.QA.B]B239.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:39 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



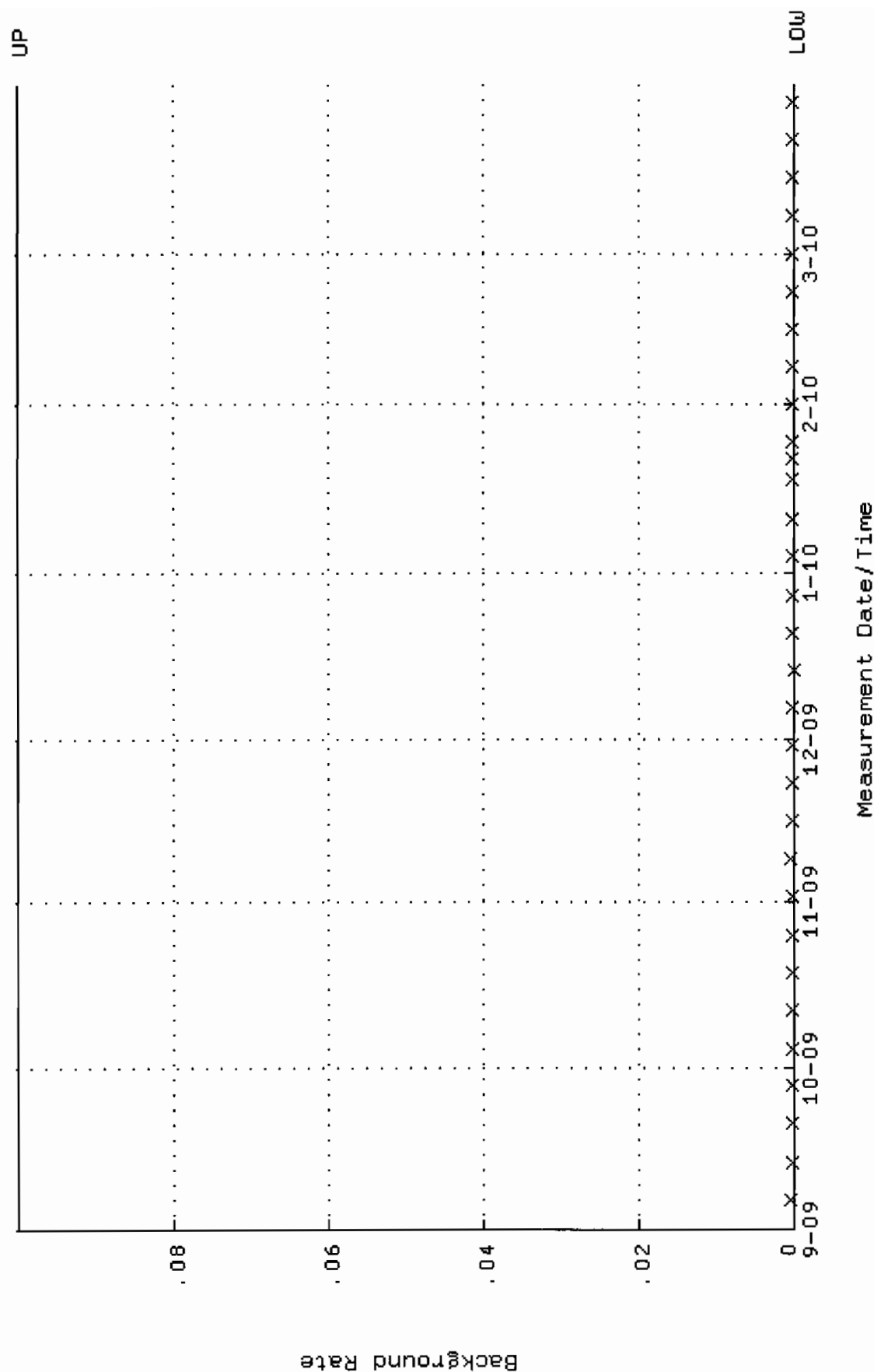
QA filename : DKA100:[ENV_ALPHA.QA.W]W240.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:39:16 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.353617 through 0.392947



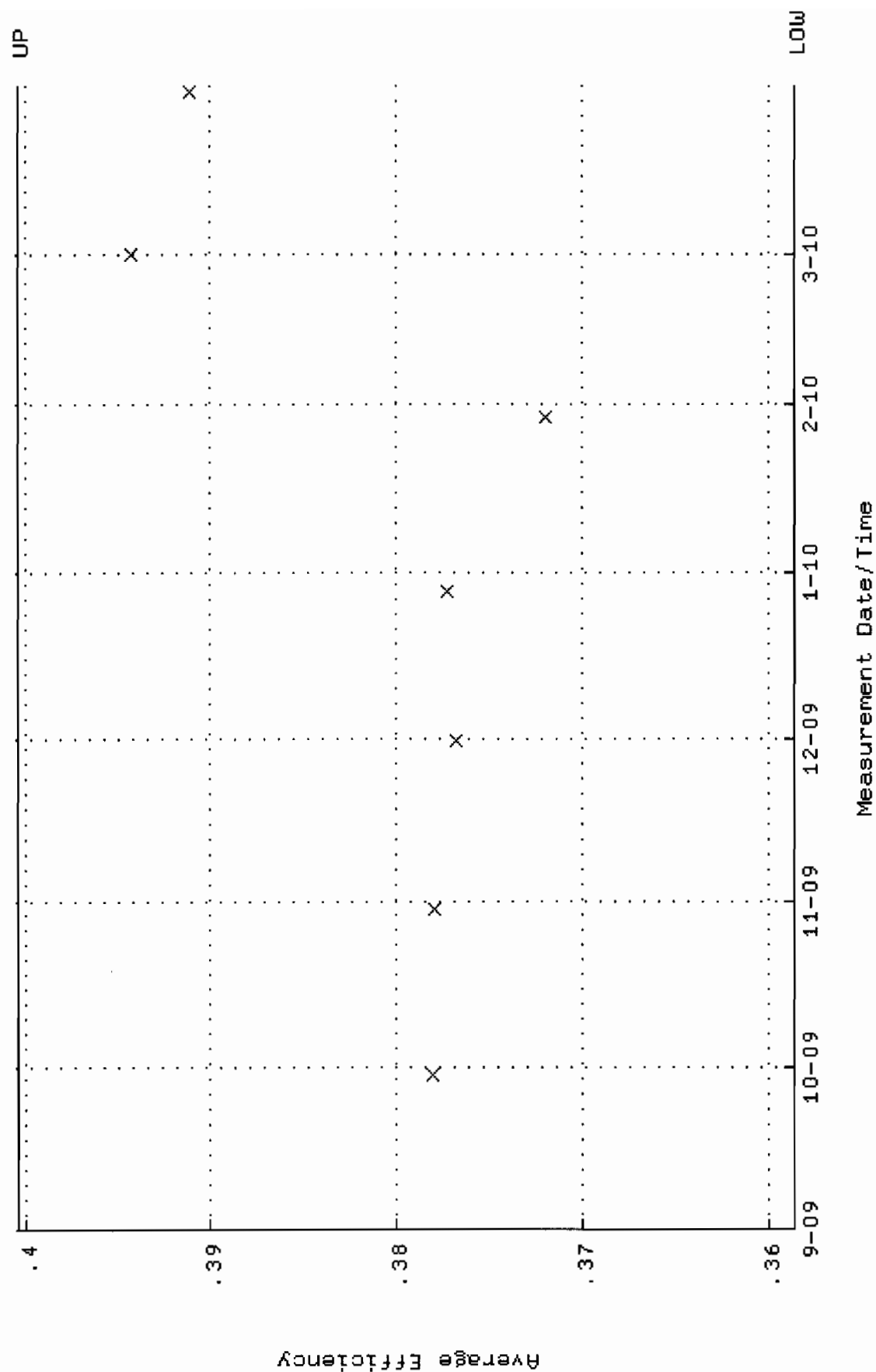
QA filename : DKA100:[ENV_ALPHA.QA.W]w240.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:39:16 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4439 through 92.1786



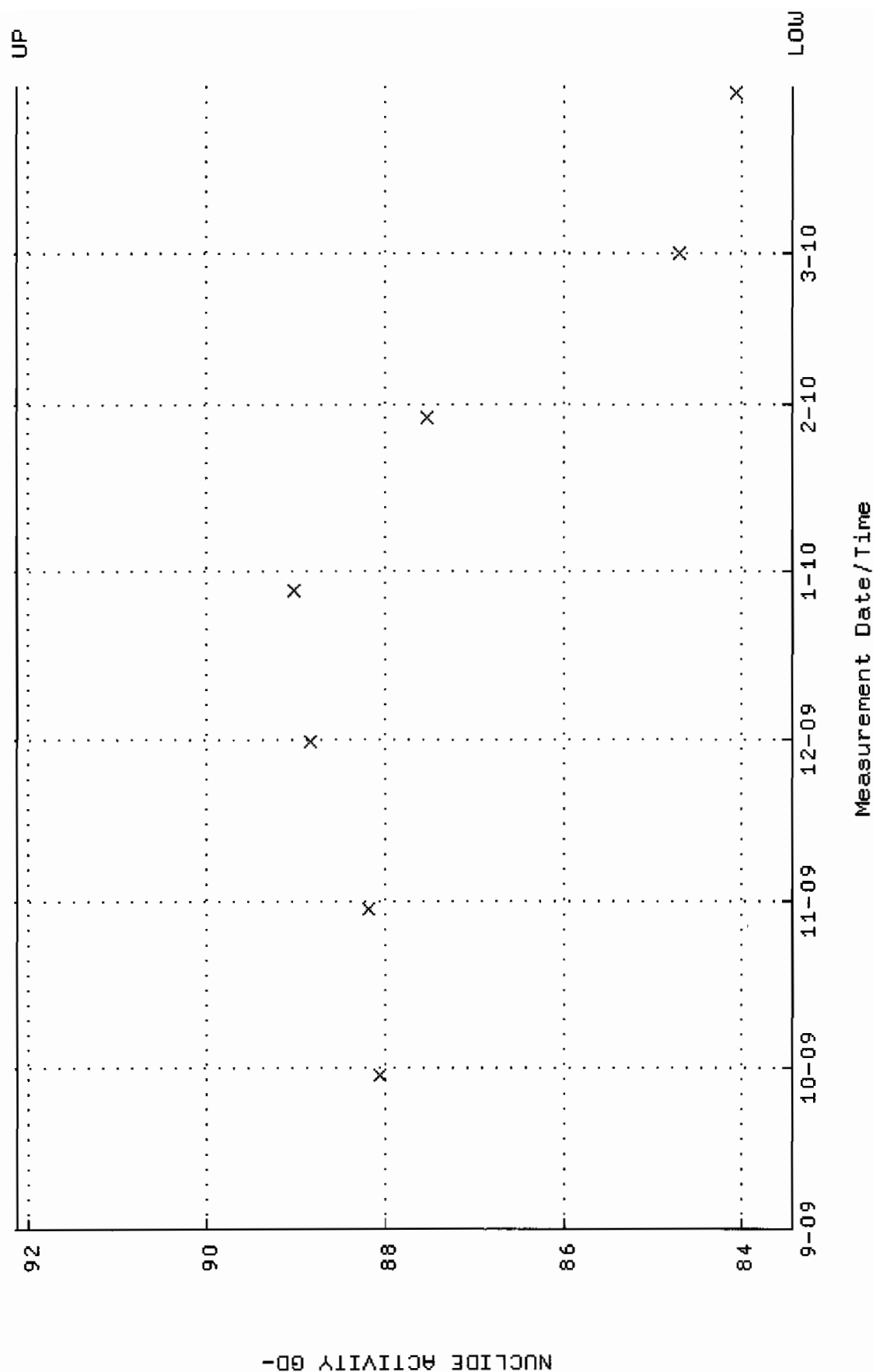
QA filename : DKA100:[ENV_ALPHA.QA.B]B240.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:44 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W241.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:39:20 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.358643 through 0.400349



QA filename : DKA100:[ENV_ALPHA.QA.W]W241.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:39:20 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4341 through 92.1277

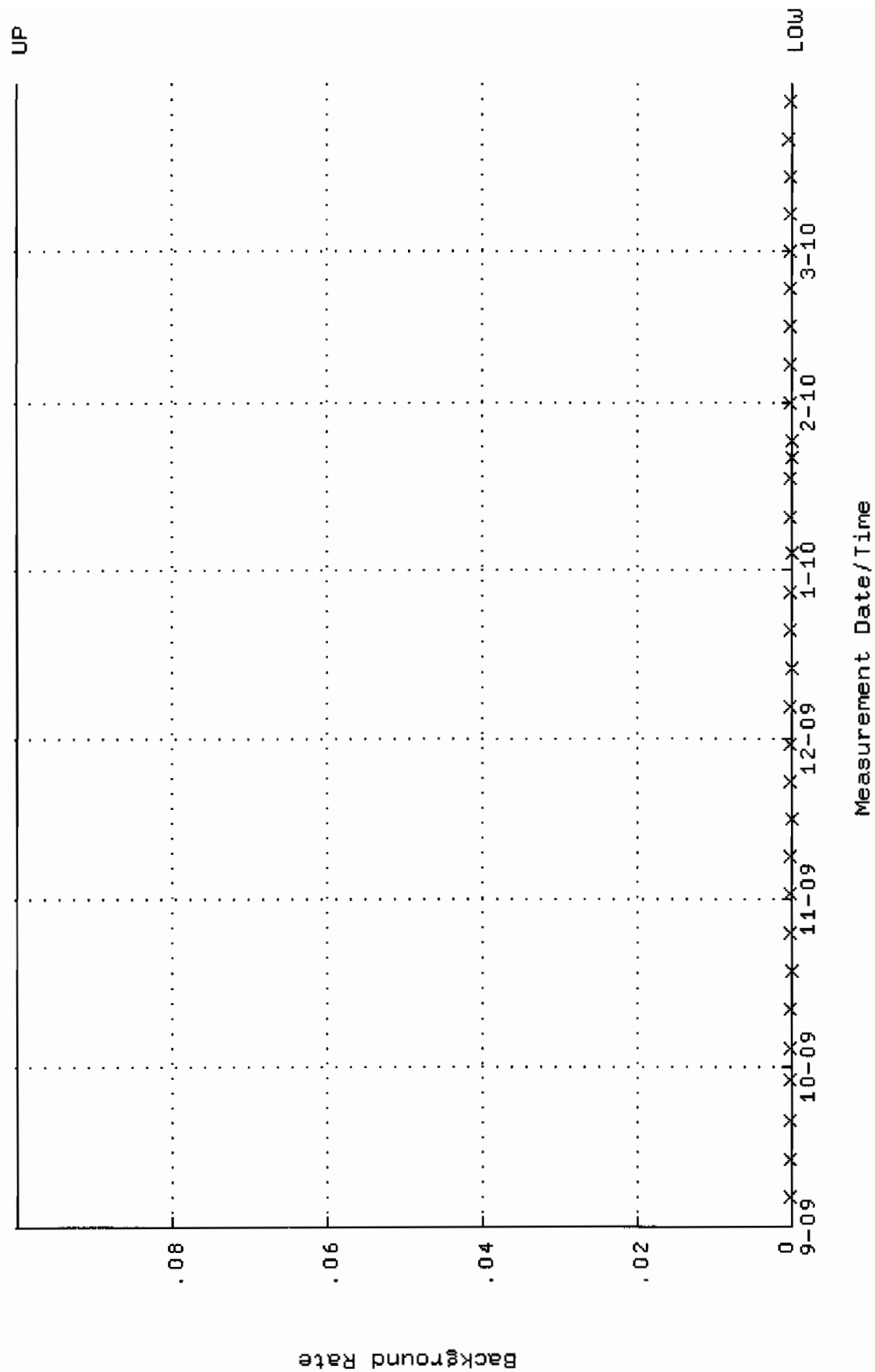


QA filename : DKA100:[ENV_ALPHA.QA.B]B241.QAF;1

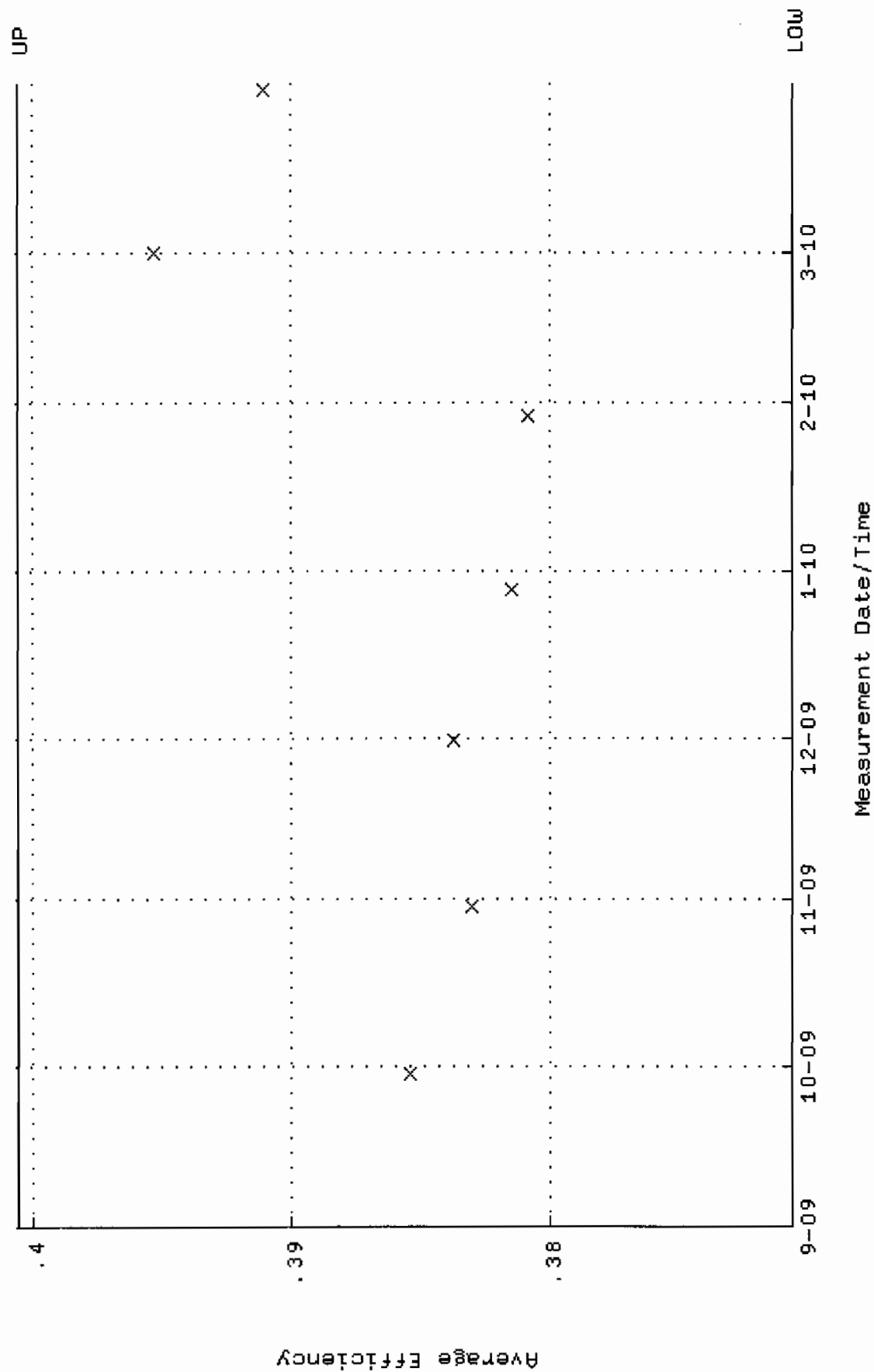
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:50:48 through 31-MAR-2010 12:00:00

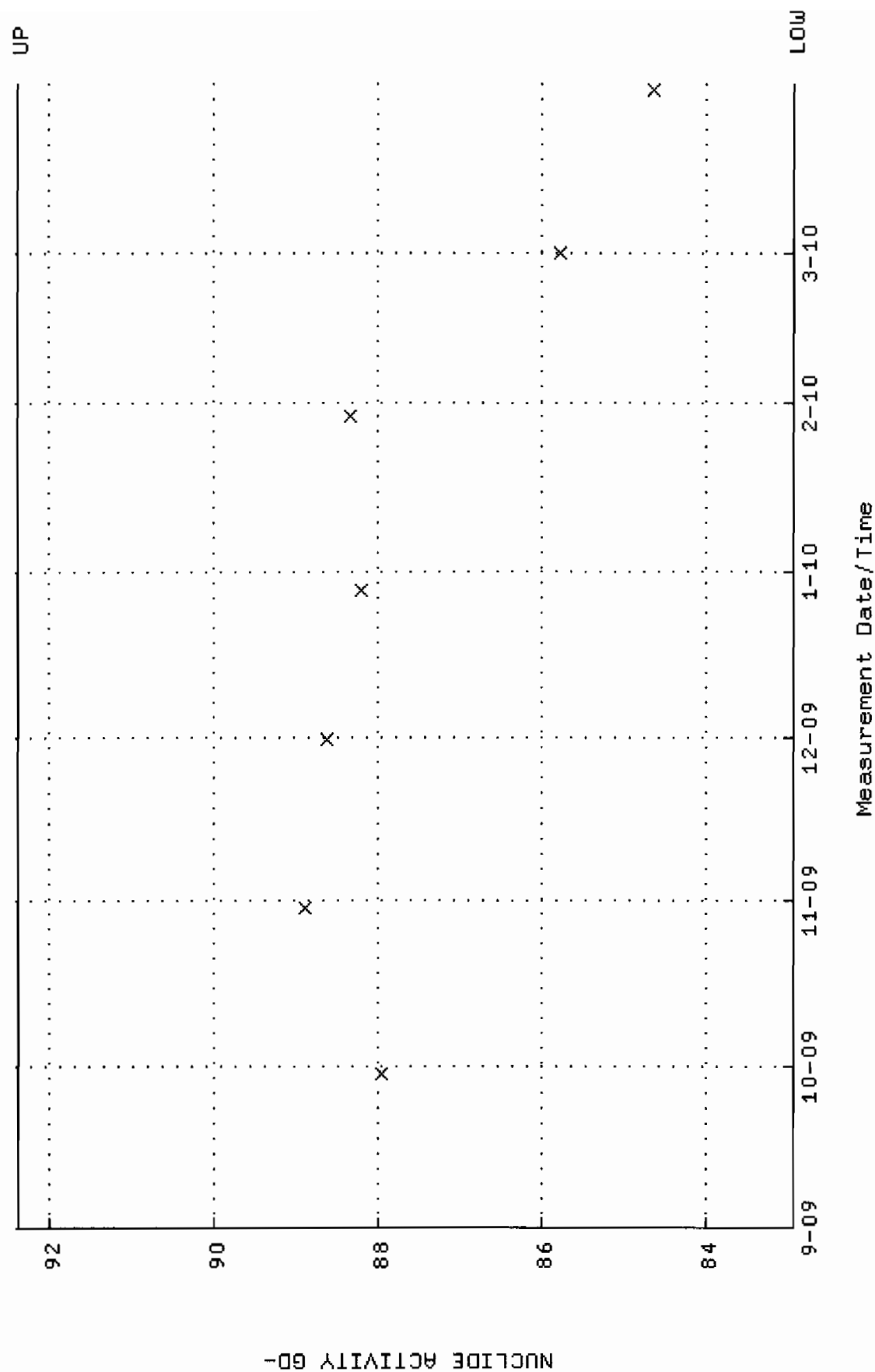
Lower/Upper Lmts: 0.000000E+00 through 0.100000



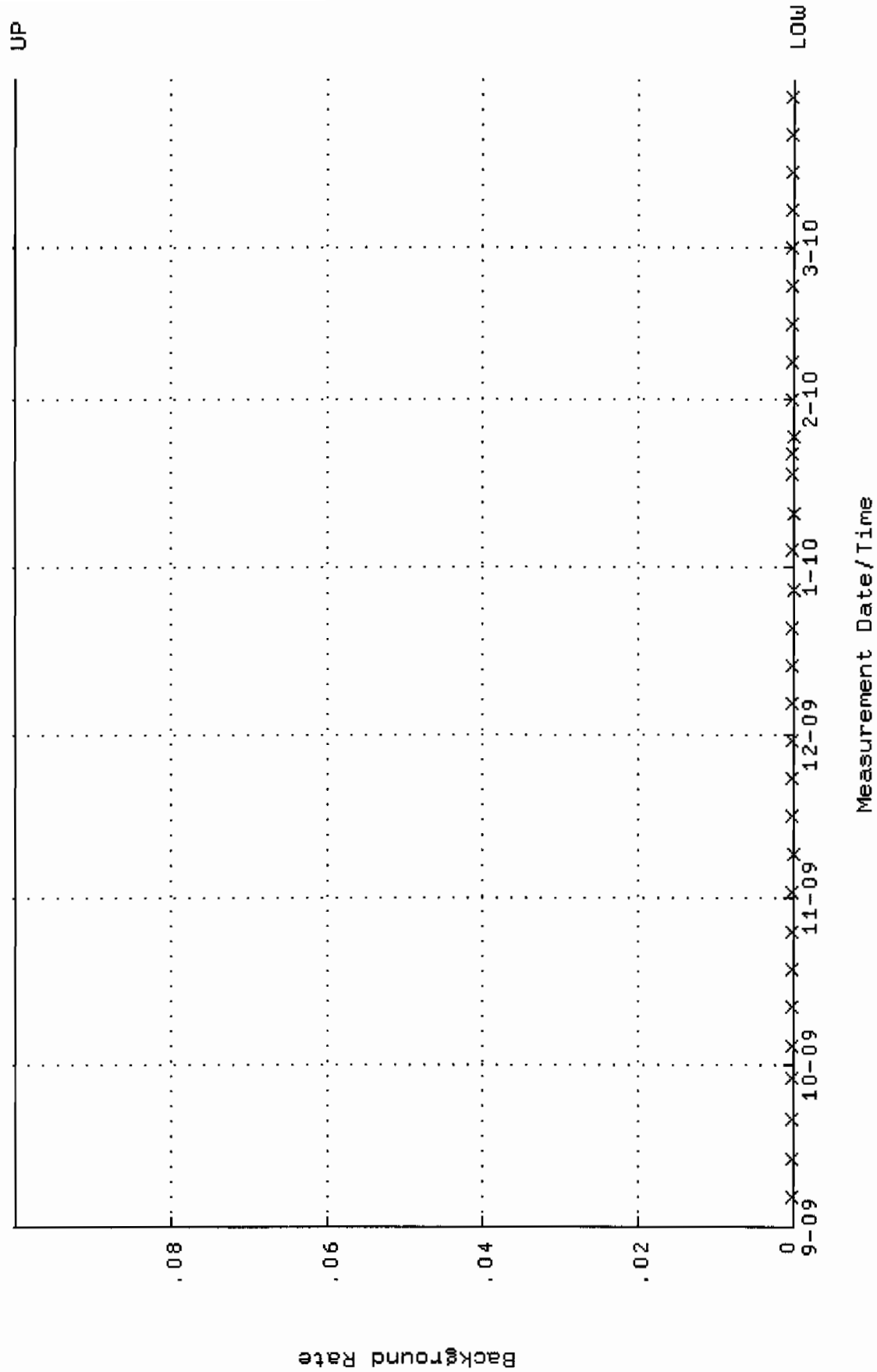
QA filename : DKA100:[ENV_ALPHA.QA.W]W242.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 29-SEP-2009 08:39:26 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.370669 through 0.400529



QA filename : DKA100:[ENV_ALPHA.QA.W]w242.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:39:26 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.9250 through 92.3782



QA filename : DKA100:[ENV_ALPHA.QA.B]B242.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:53 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

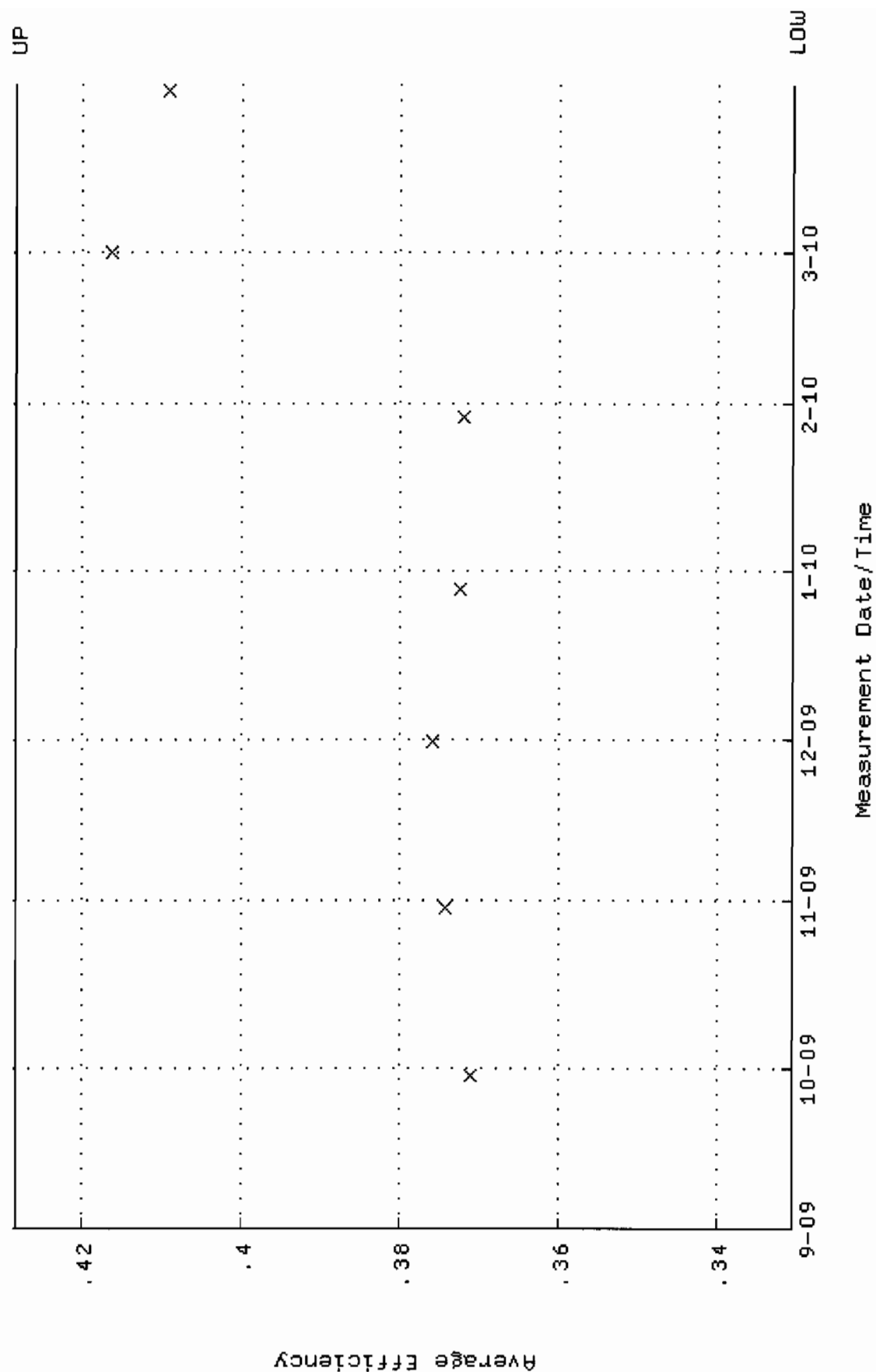


QA filename : DKA100:[ENV_ALPHA.QA.W]W243.QAF;1

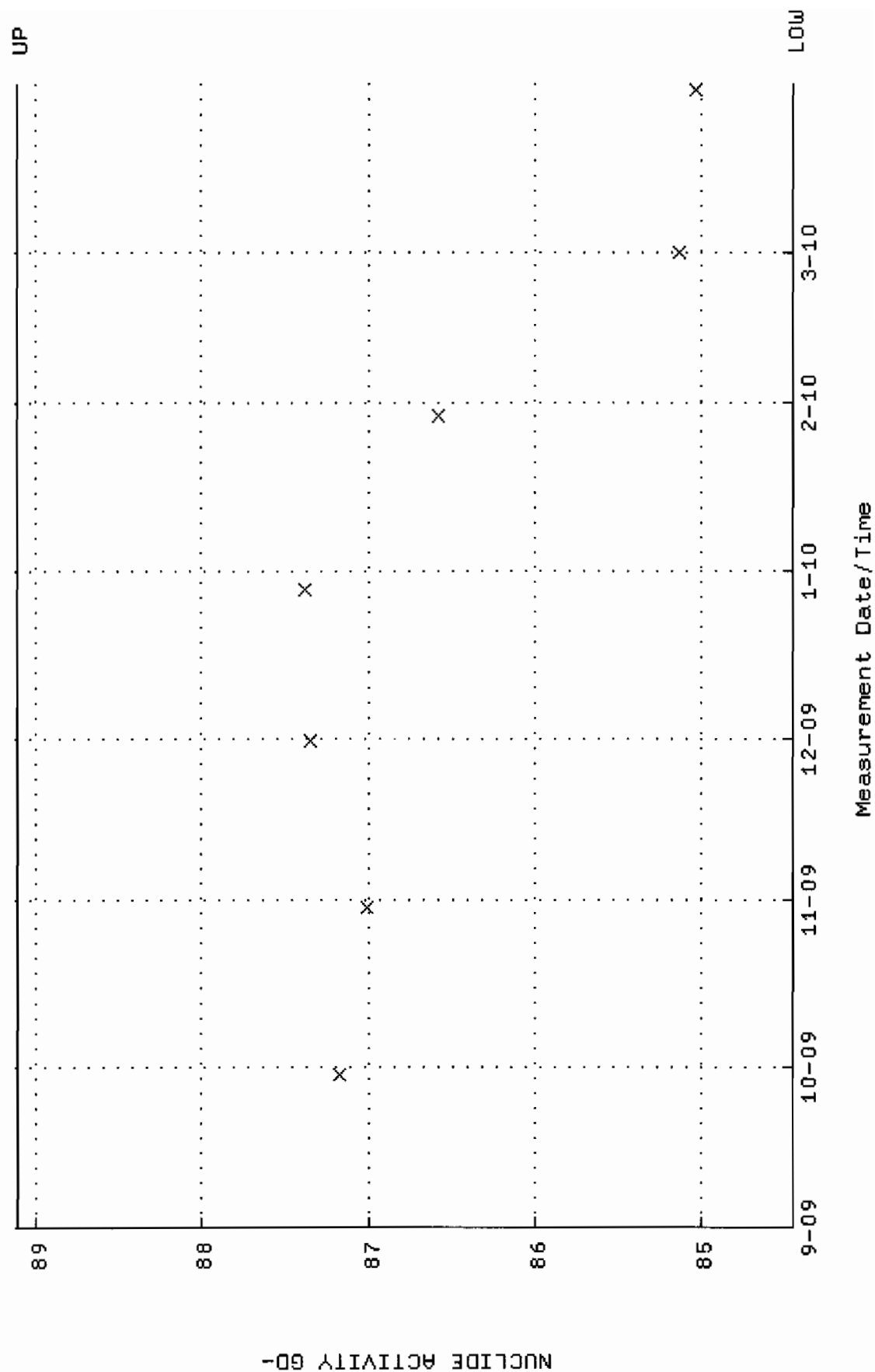
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 29-SEP-2009 08:39:32 through 31-MAR-2010 12:00:00

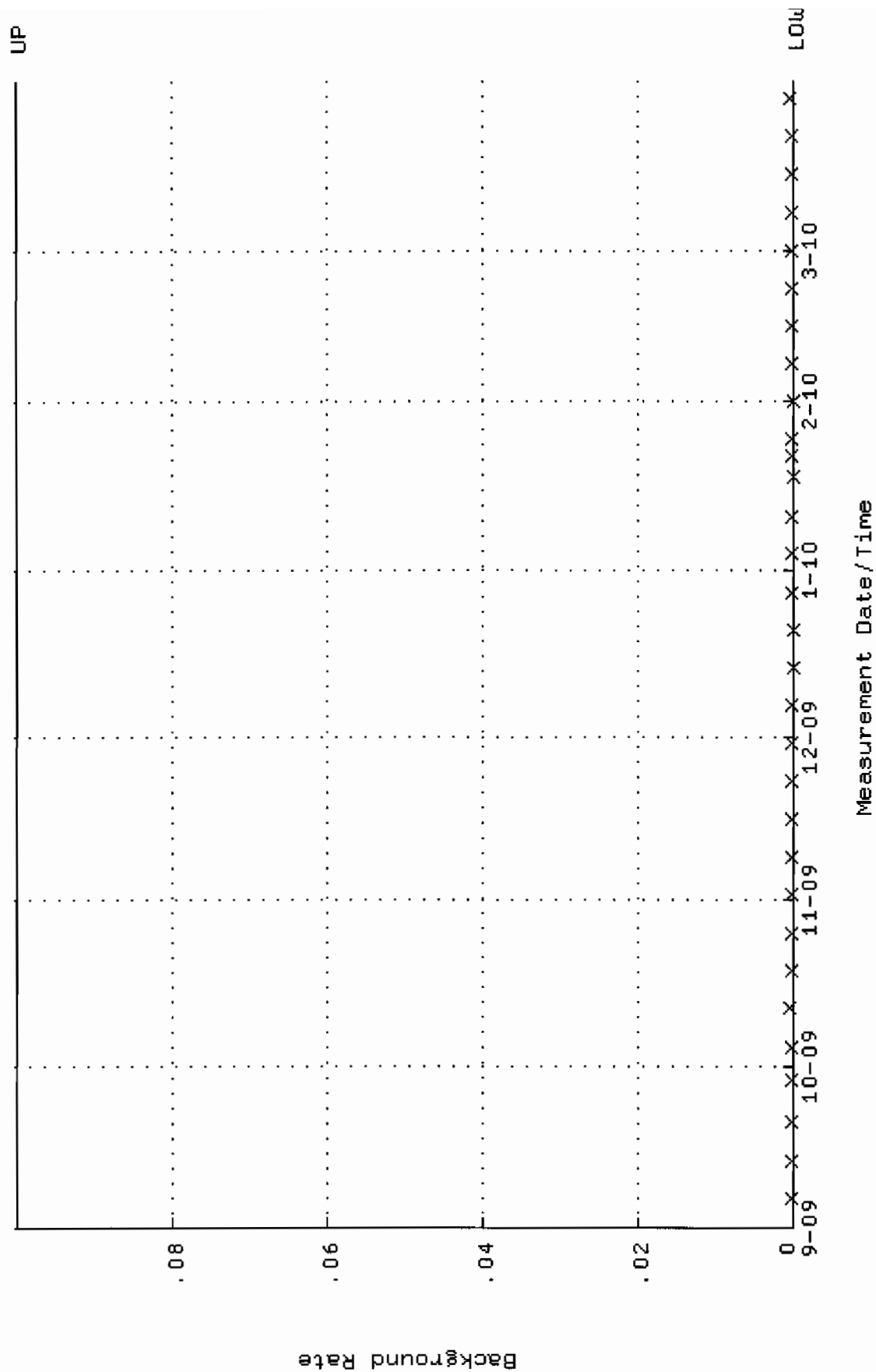
Lower/Upper Lmts: 0.330696 through 0.428326



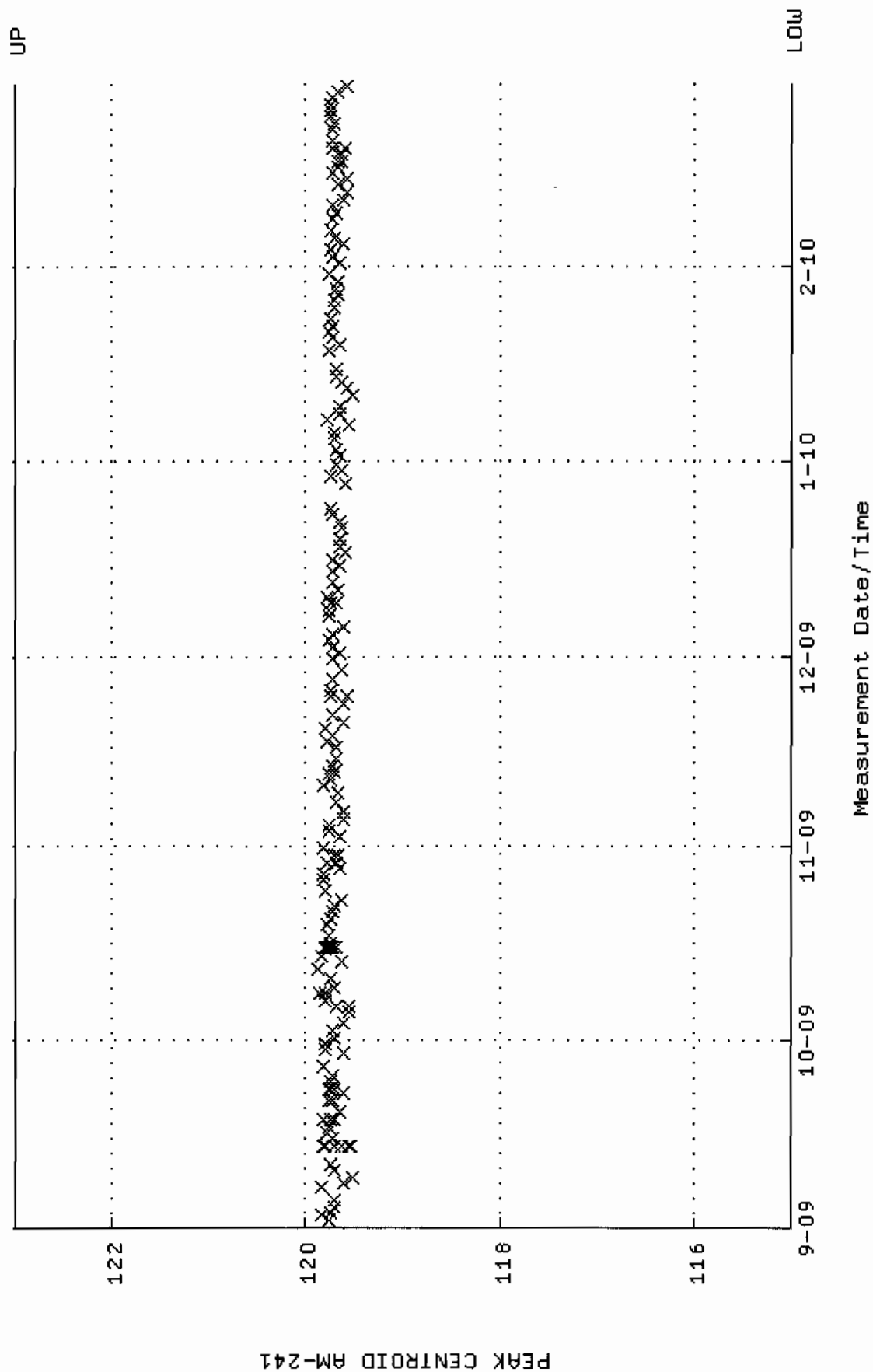
QA filename : DKA100:[ENV_ALPHA.QA.W]W243.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 29-SEP-2009 08:39:32 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.4488 through 89.1128



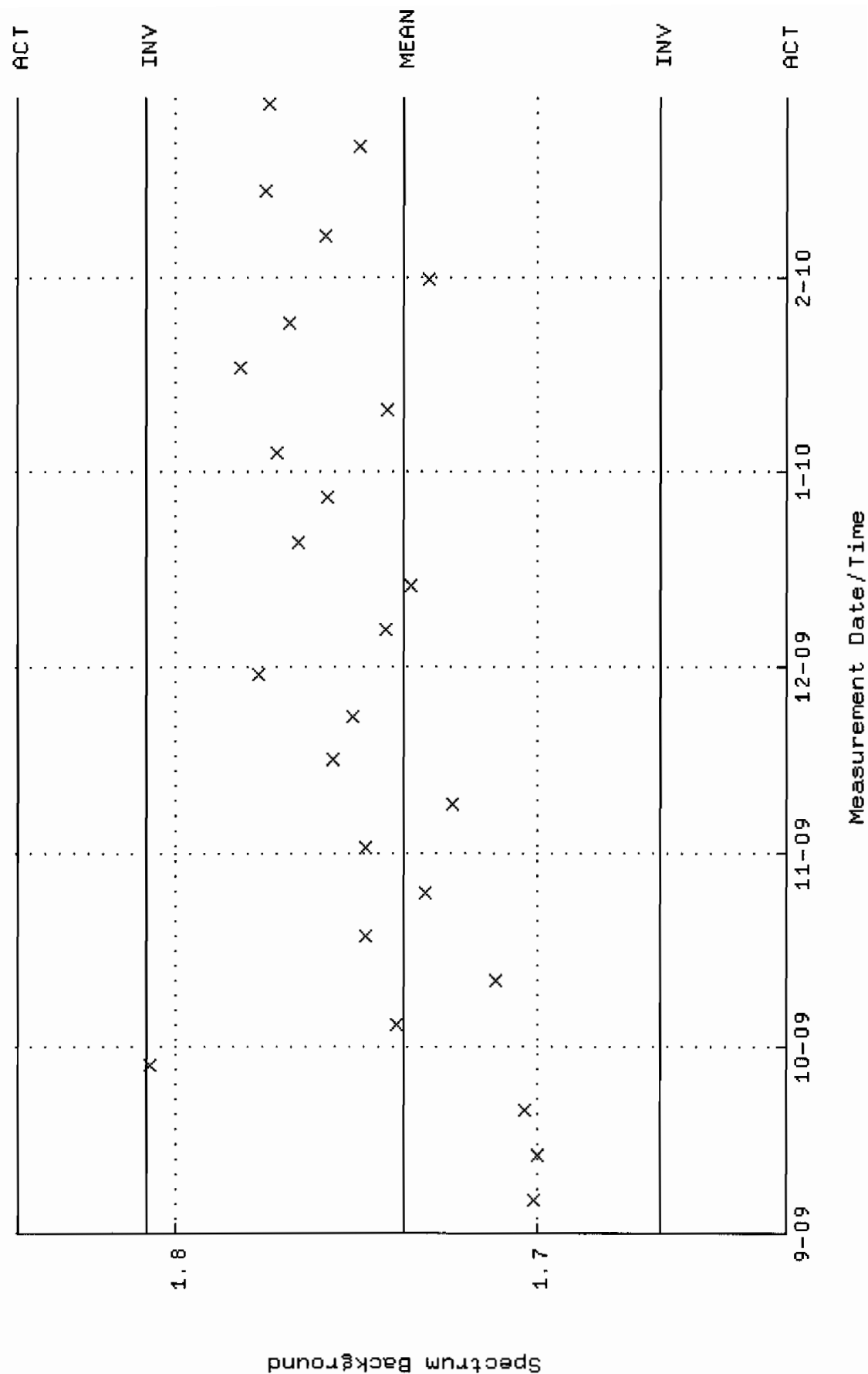
QA filename : DKA100:[ENV_ALPHA.QA.B]B243.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:50:58 through 31-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



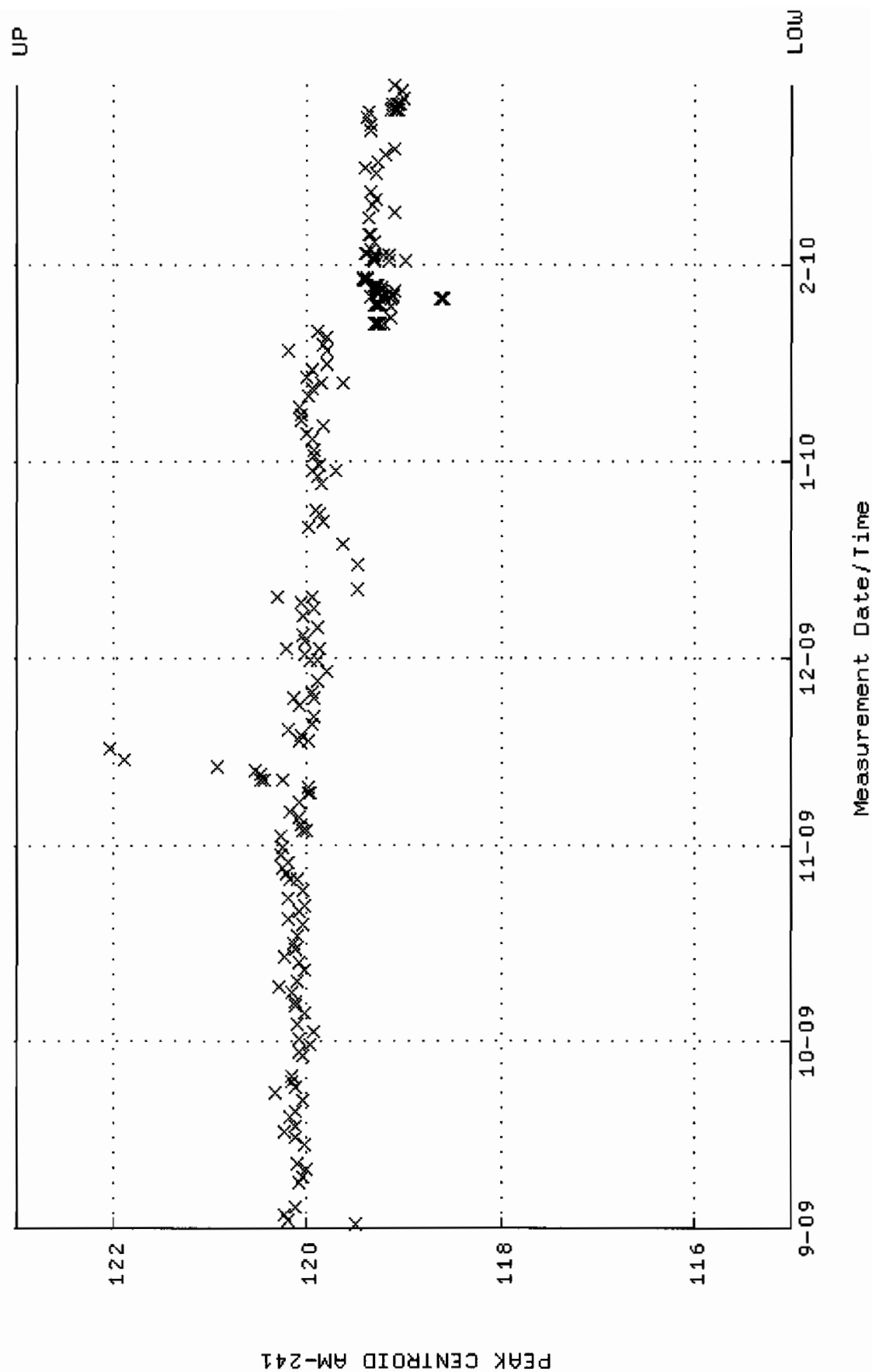
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM01-500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:39:53 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



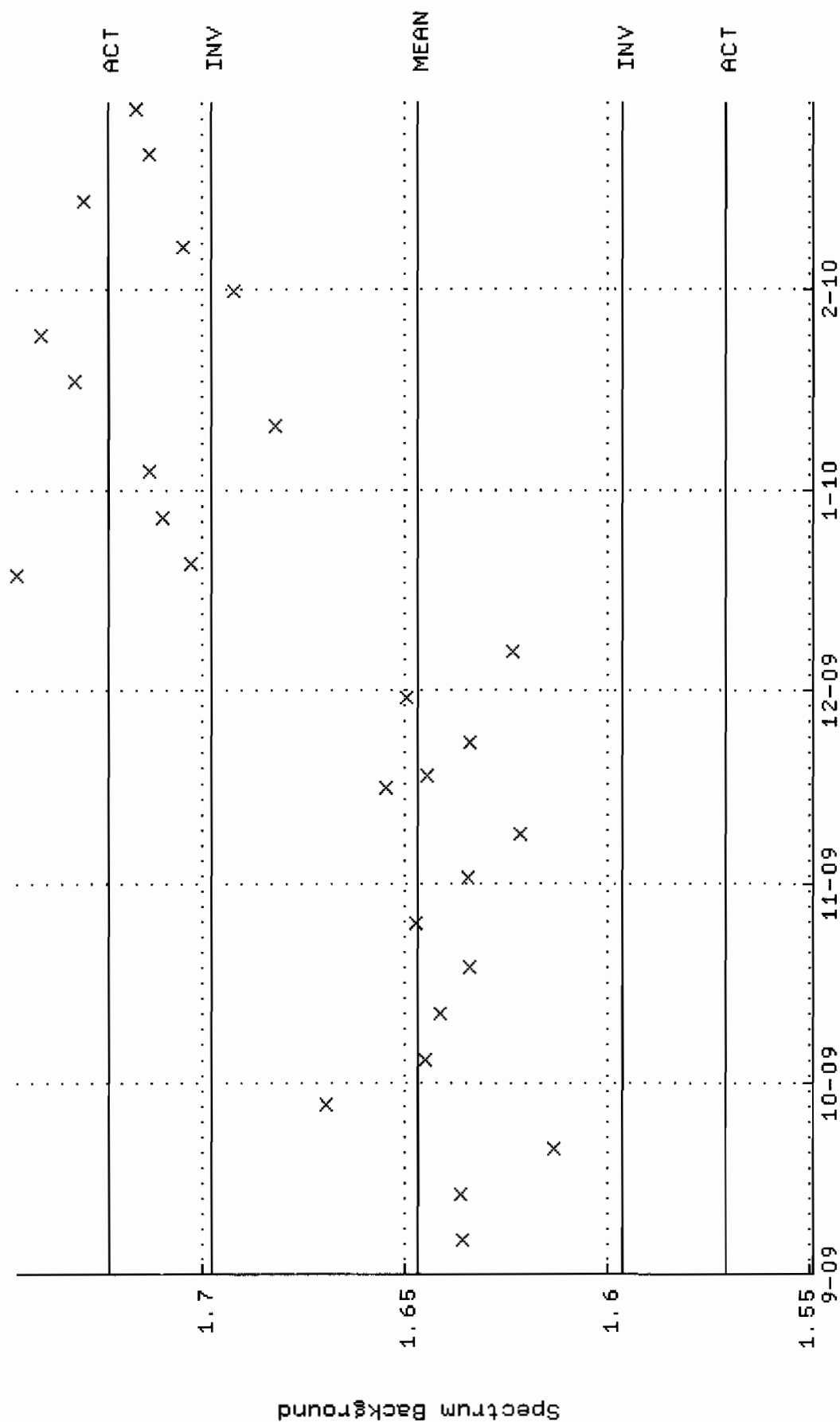
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM01.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:36:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73723 +- 3.552524E-02 (2.04 %)



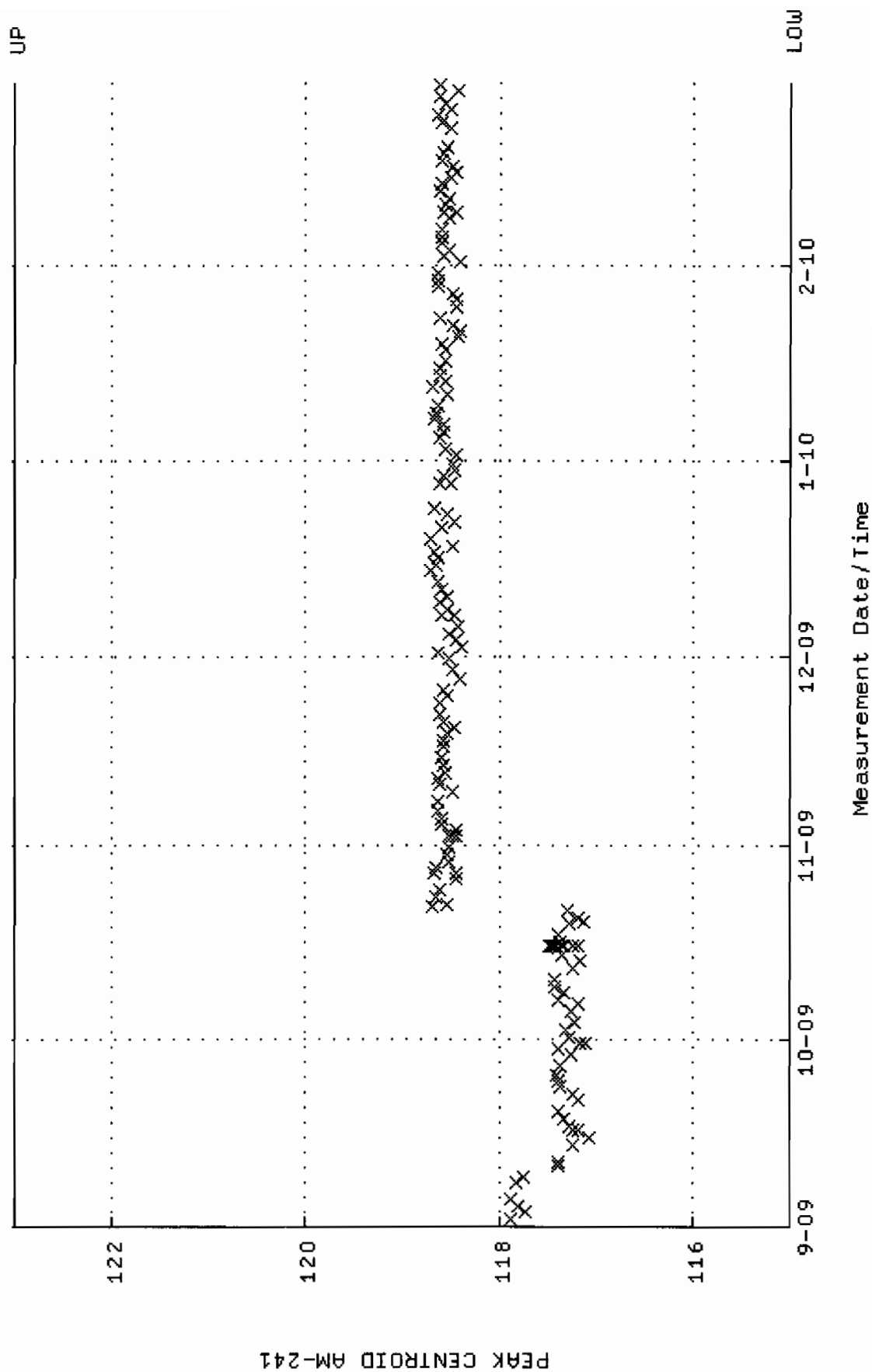
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM05-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-SEP-2009 14:54:46 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



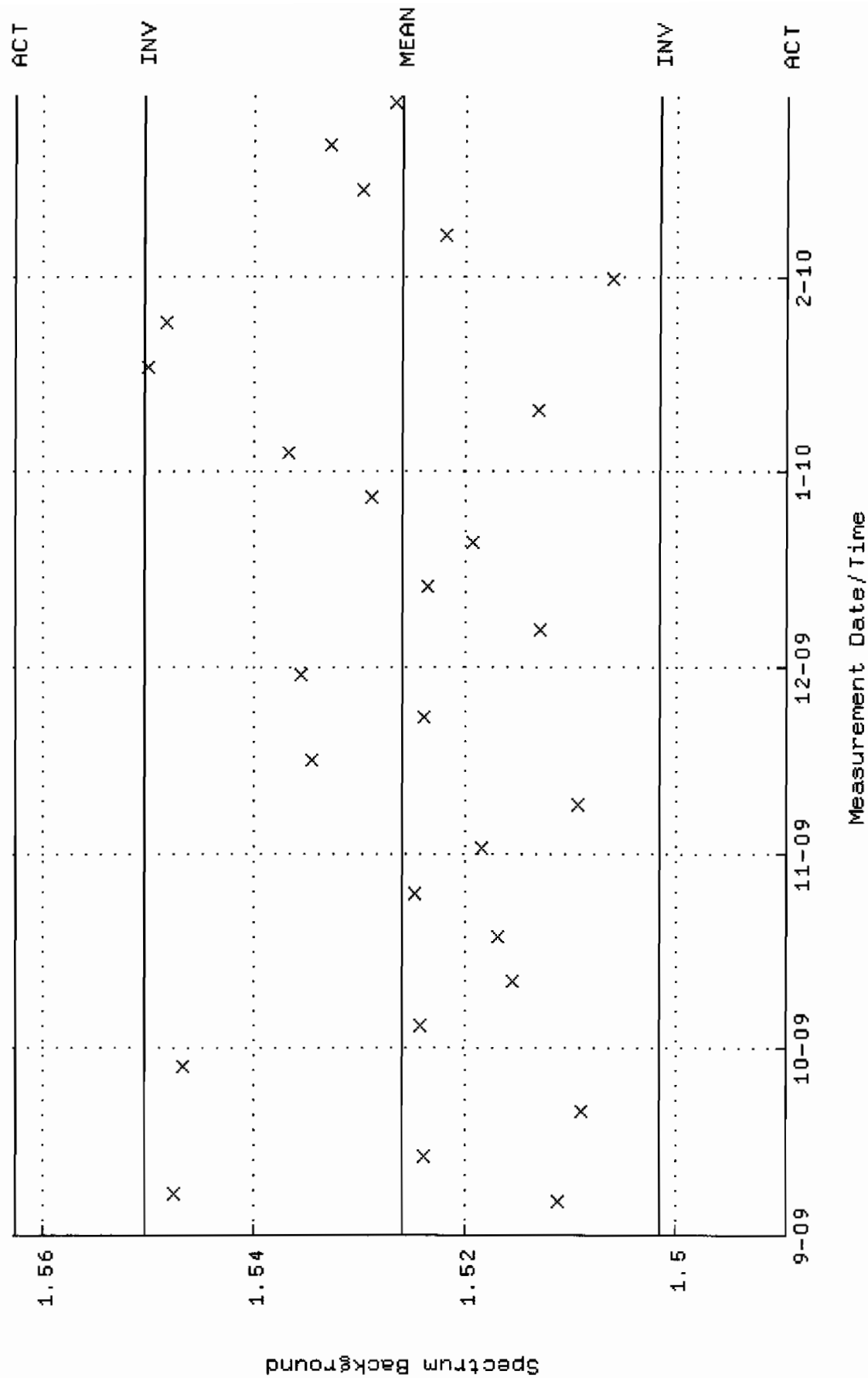
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM05.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



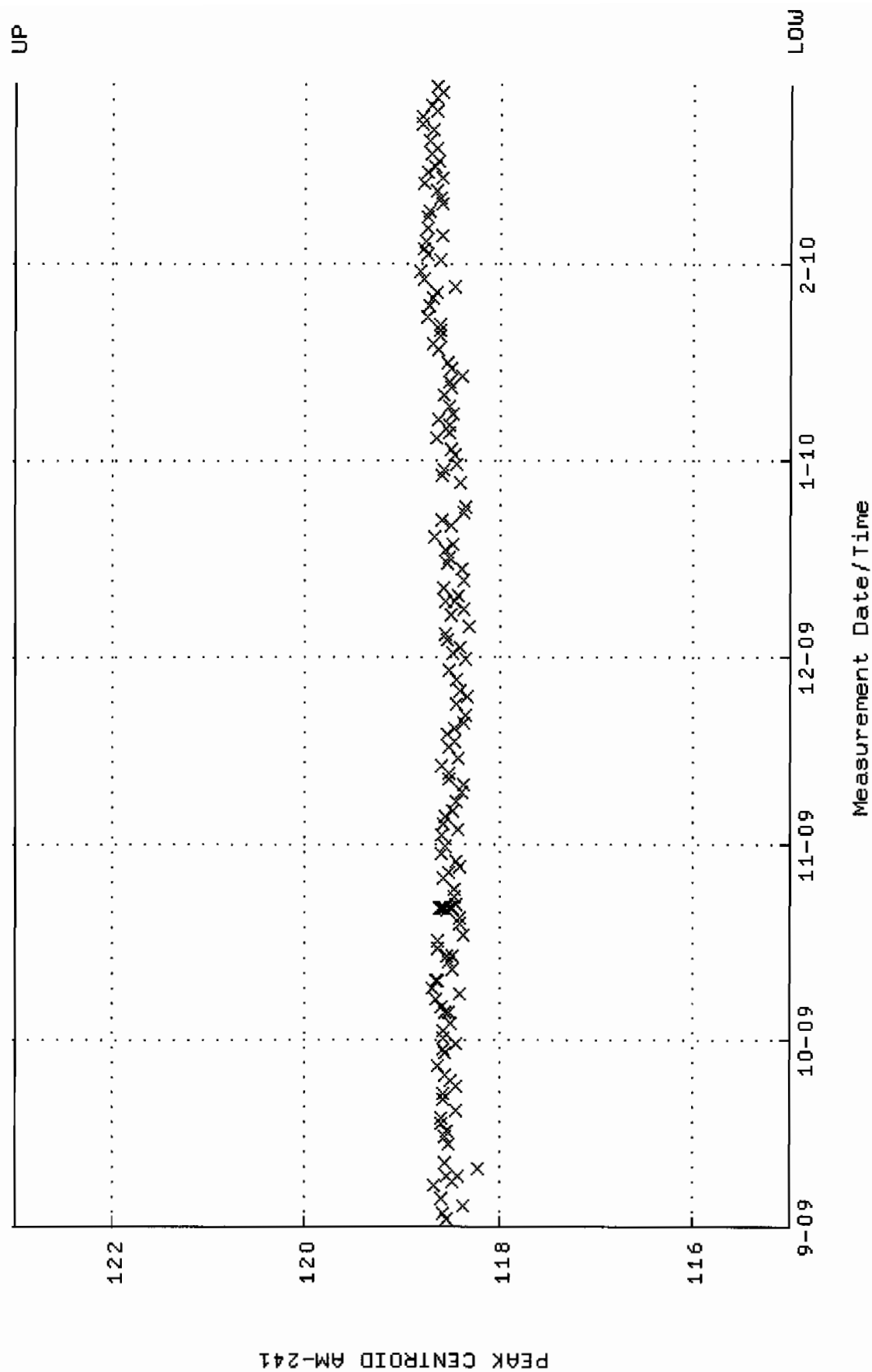
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:19 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



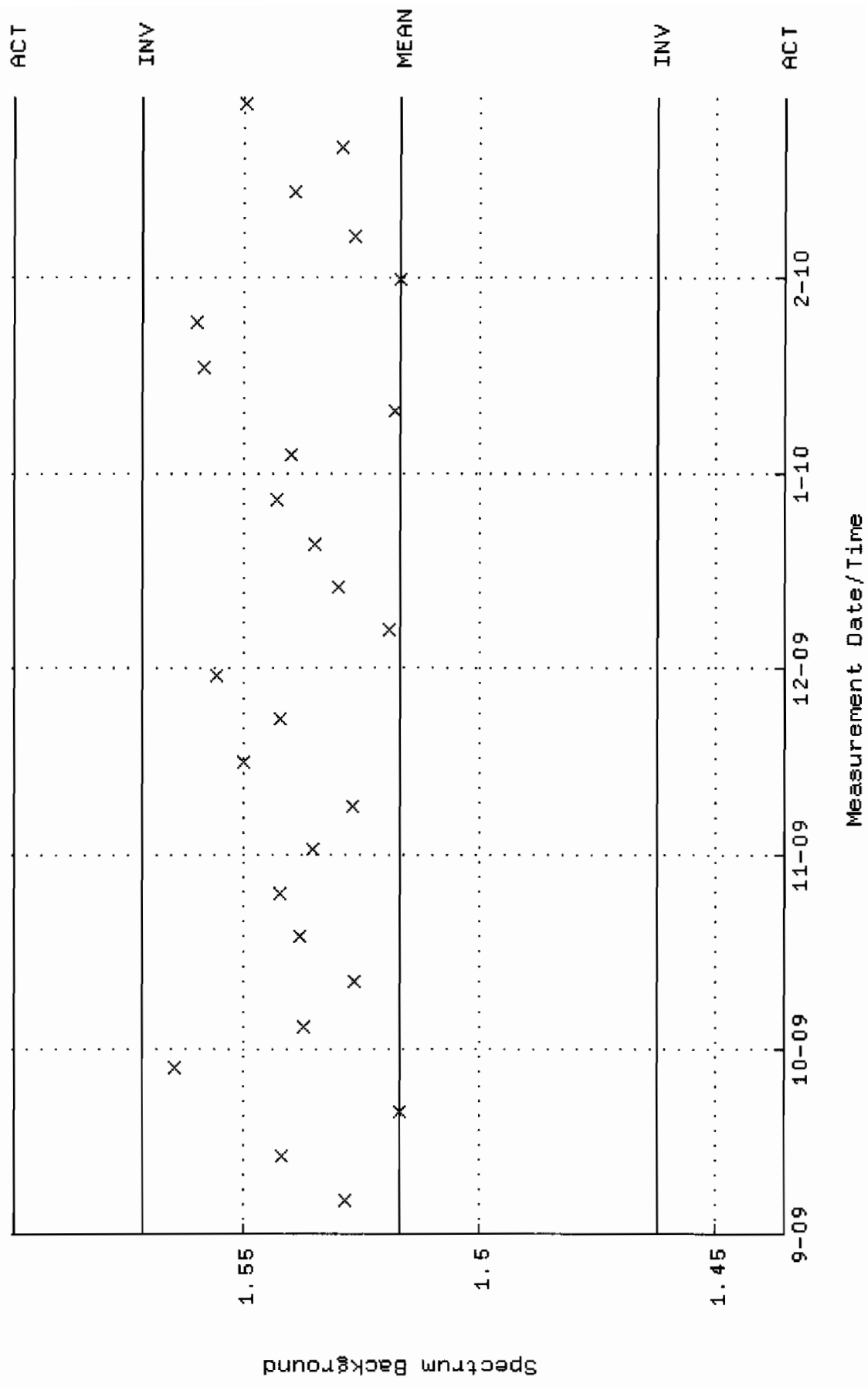
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



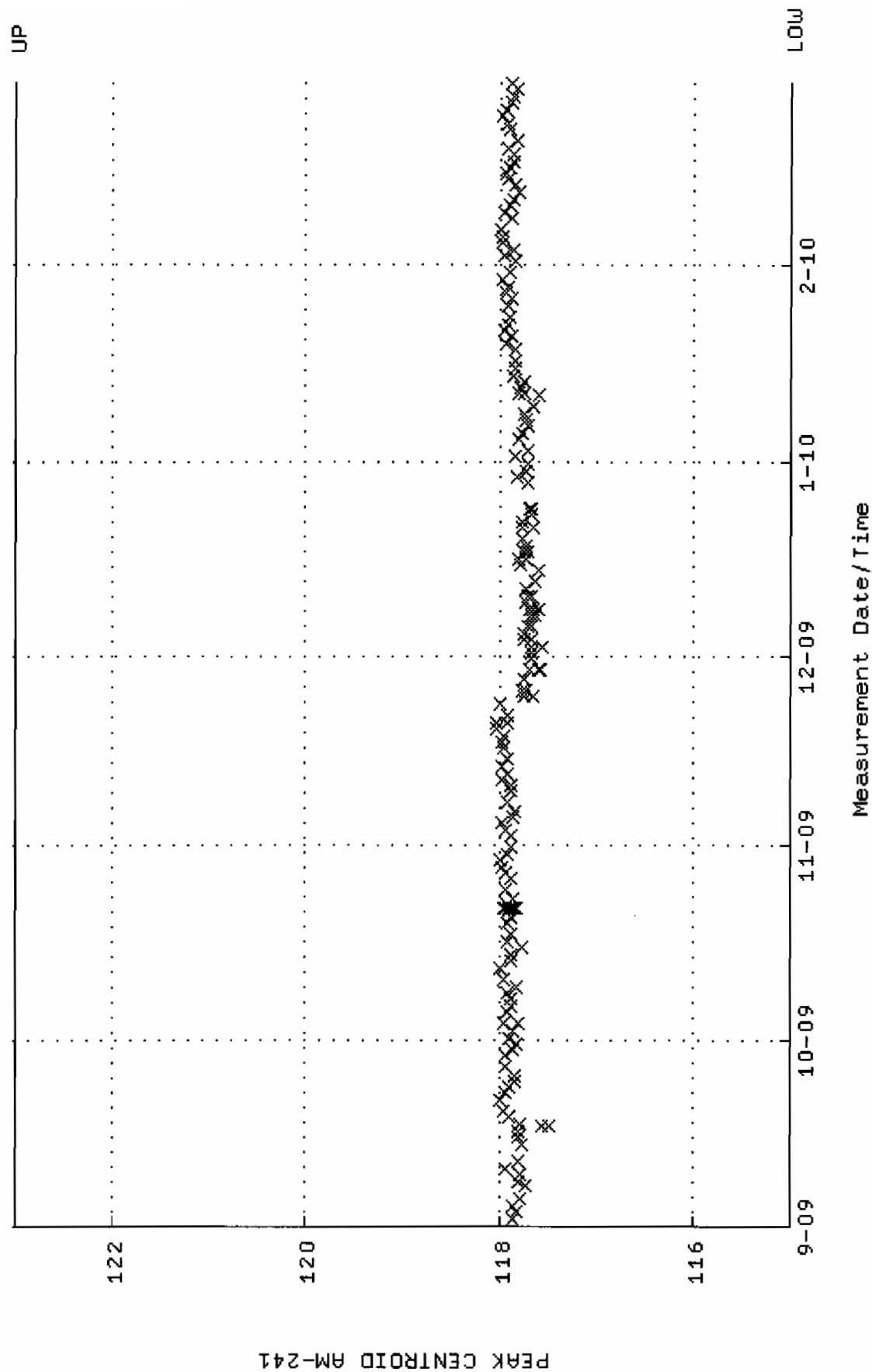
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM07_JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:09:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



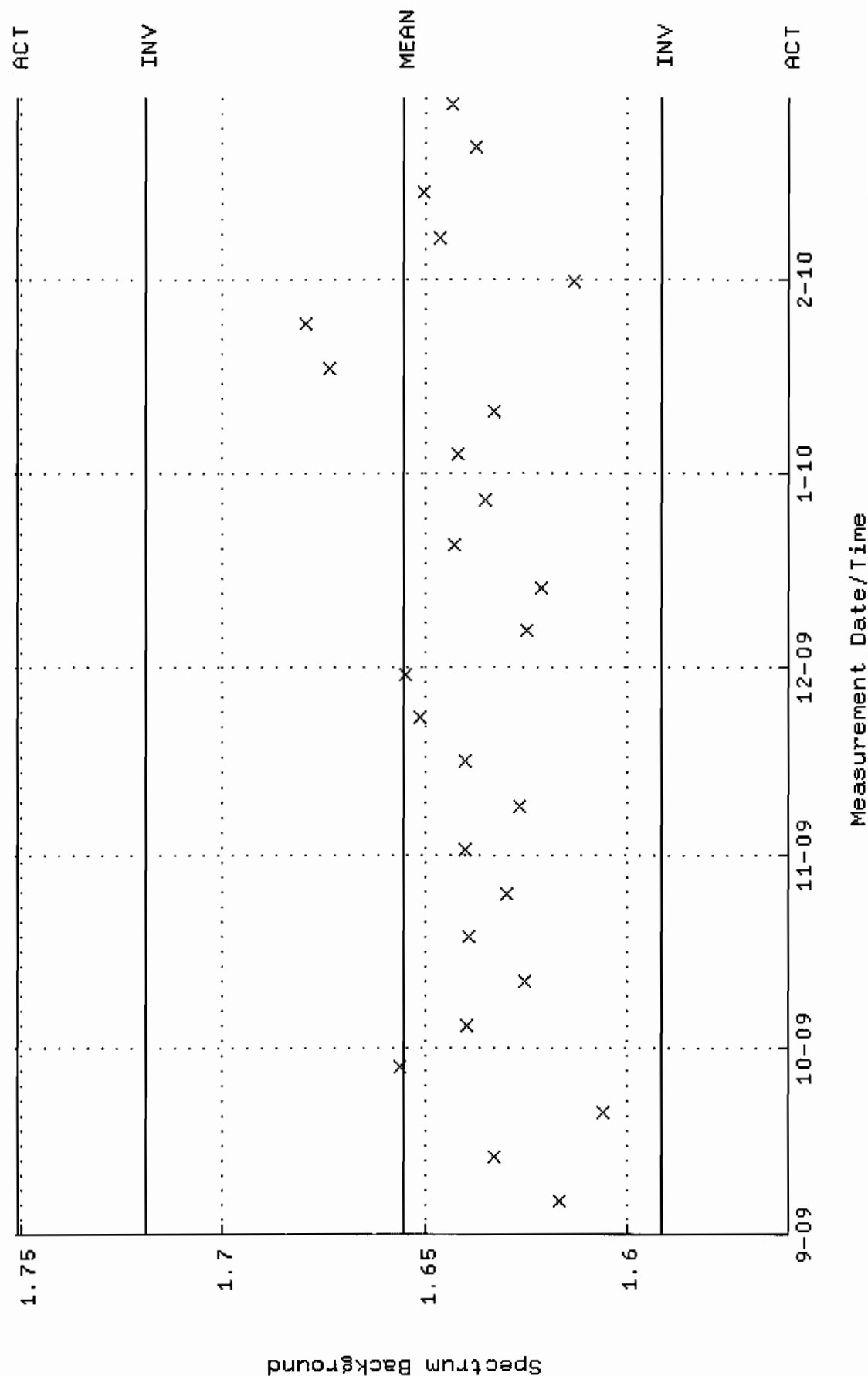
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM07.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:54 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



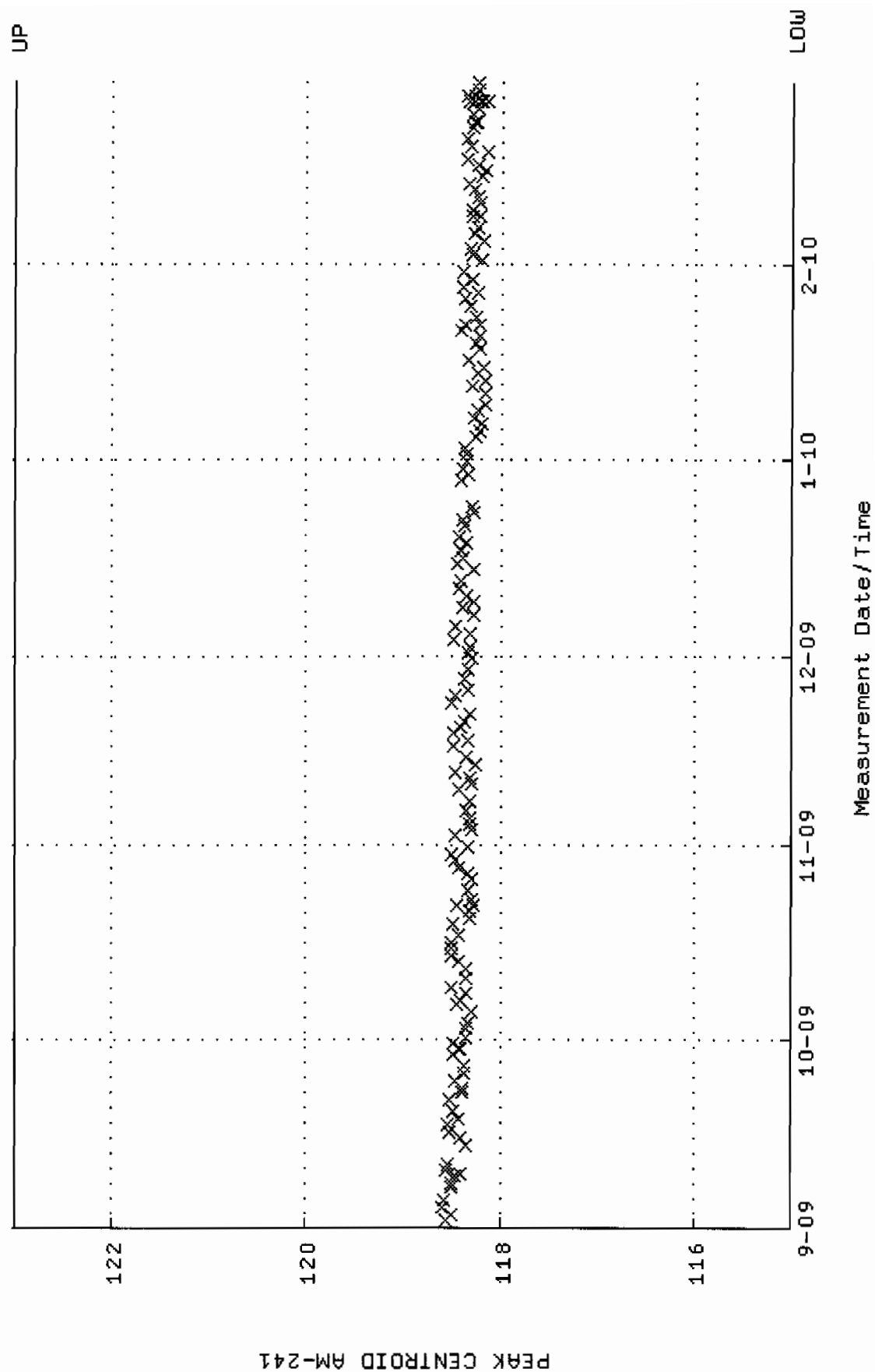
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM11_JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:47:51 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



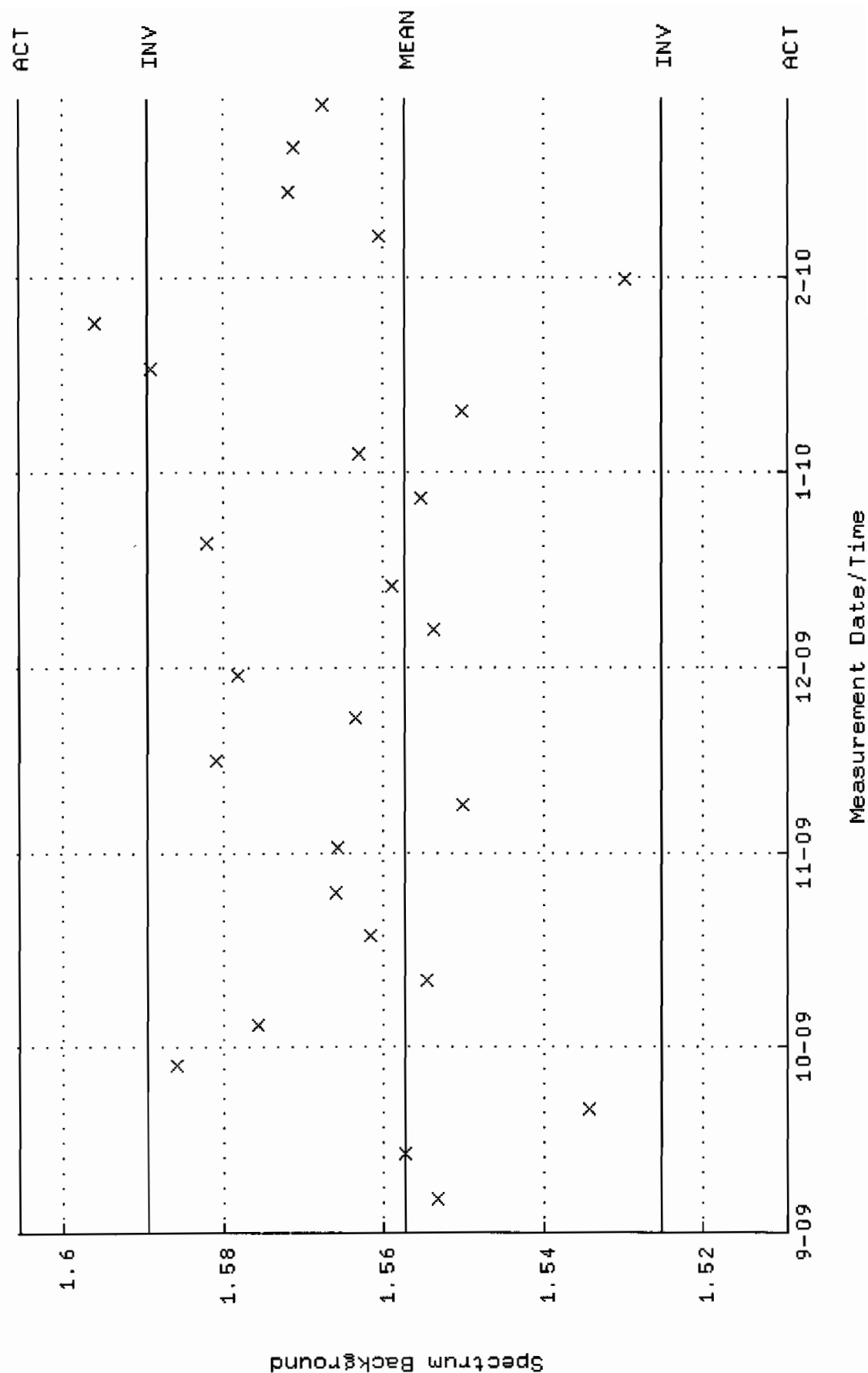
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM11.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:41:47 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



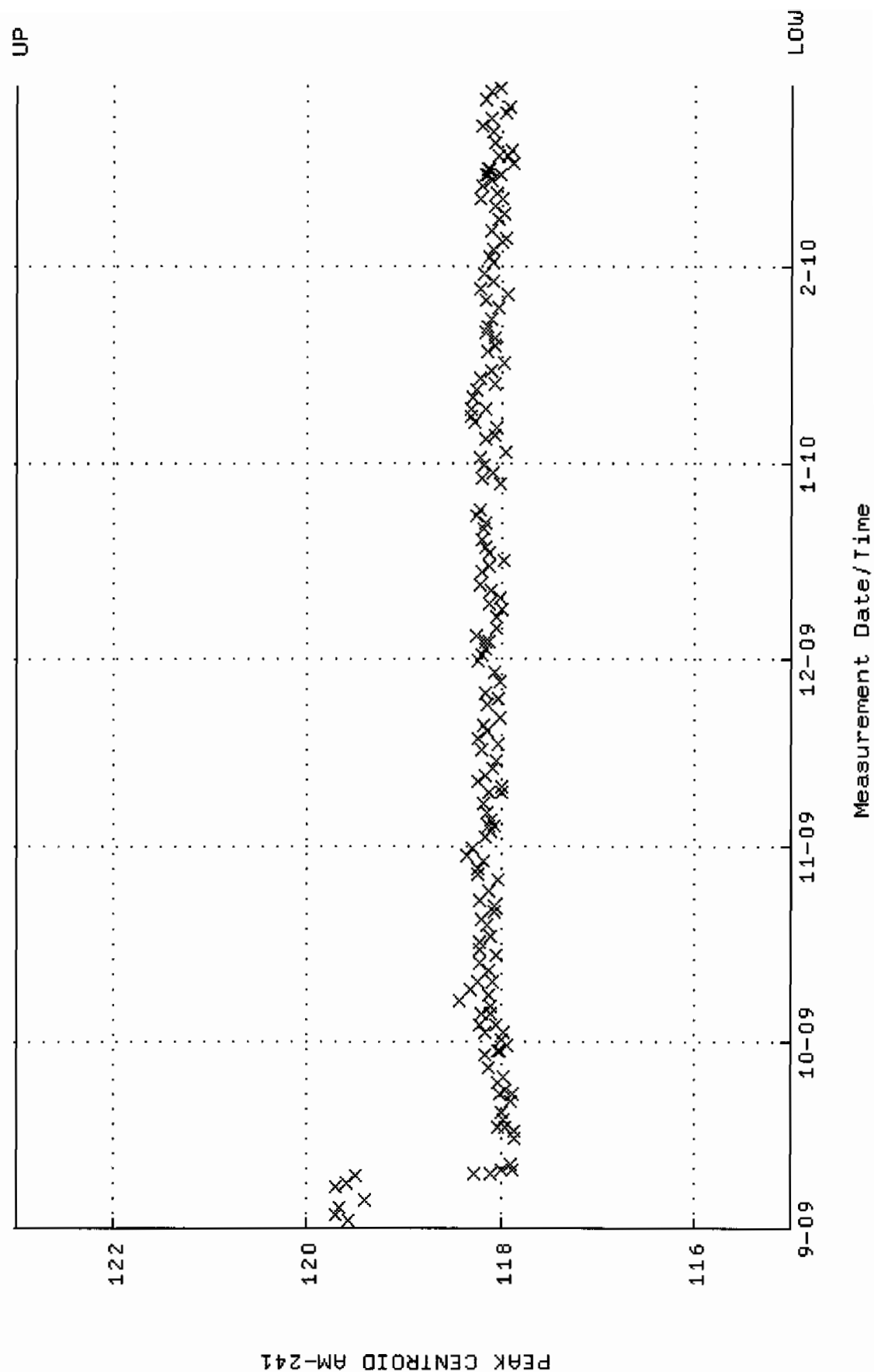
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM12_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 07:07:38 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM12.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:42:20 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)



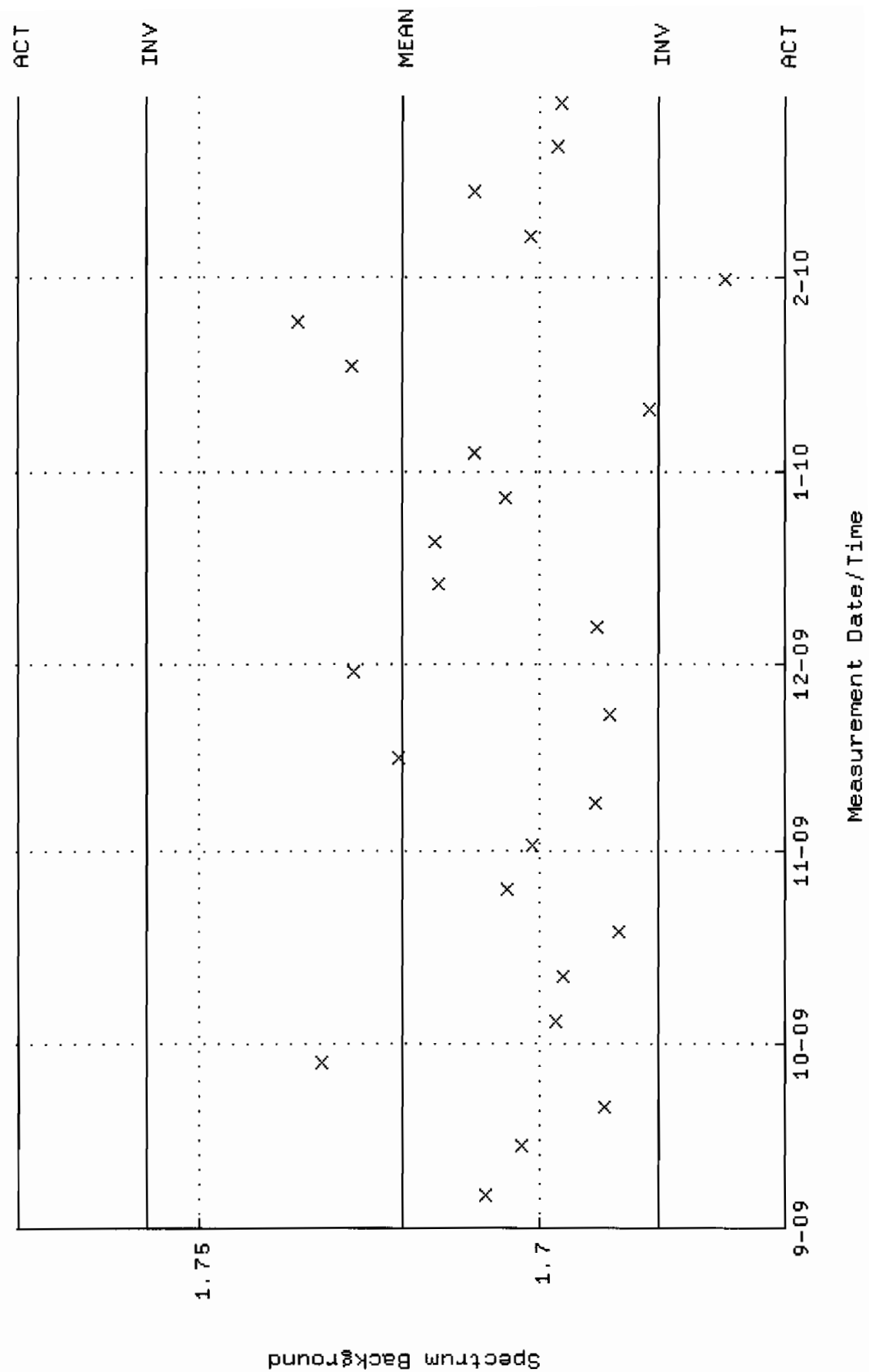
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM15_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:32:23 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



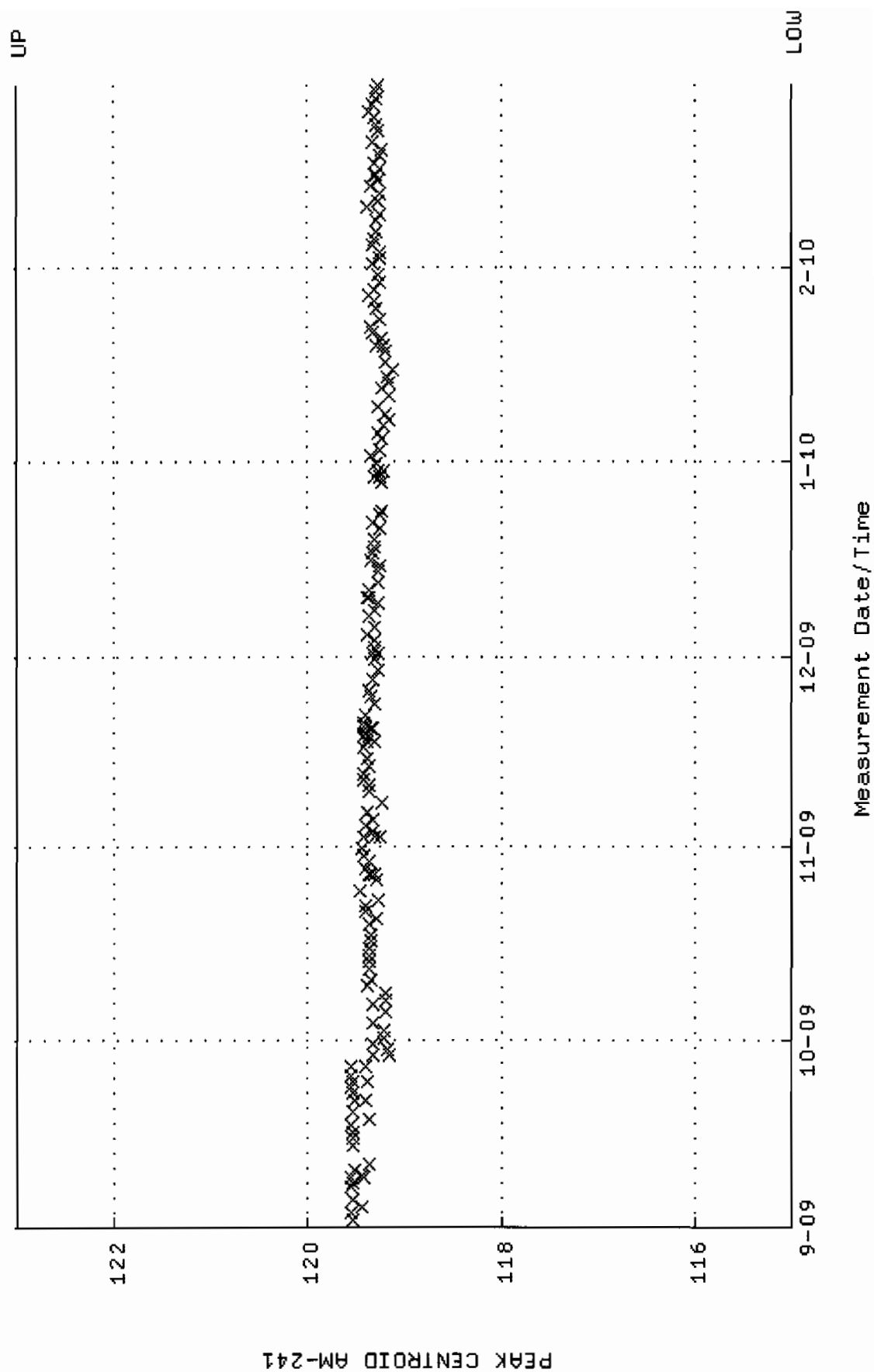

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QA filename      : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM15.QAF;1
Parameter Name   : BACKRATE (Spectrum Background Rate)
Start/End Dates  : 6-SEP-2009 11:43:44 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)

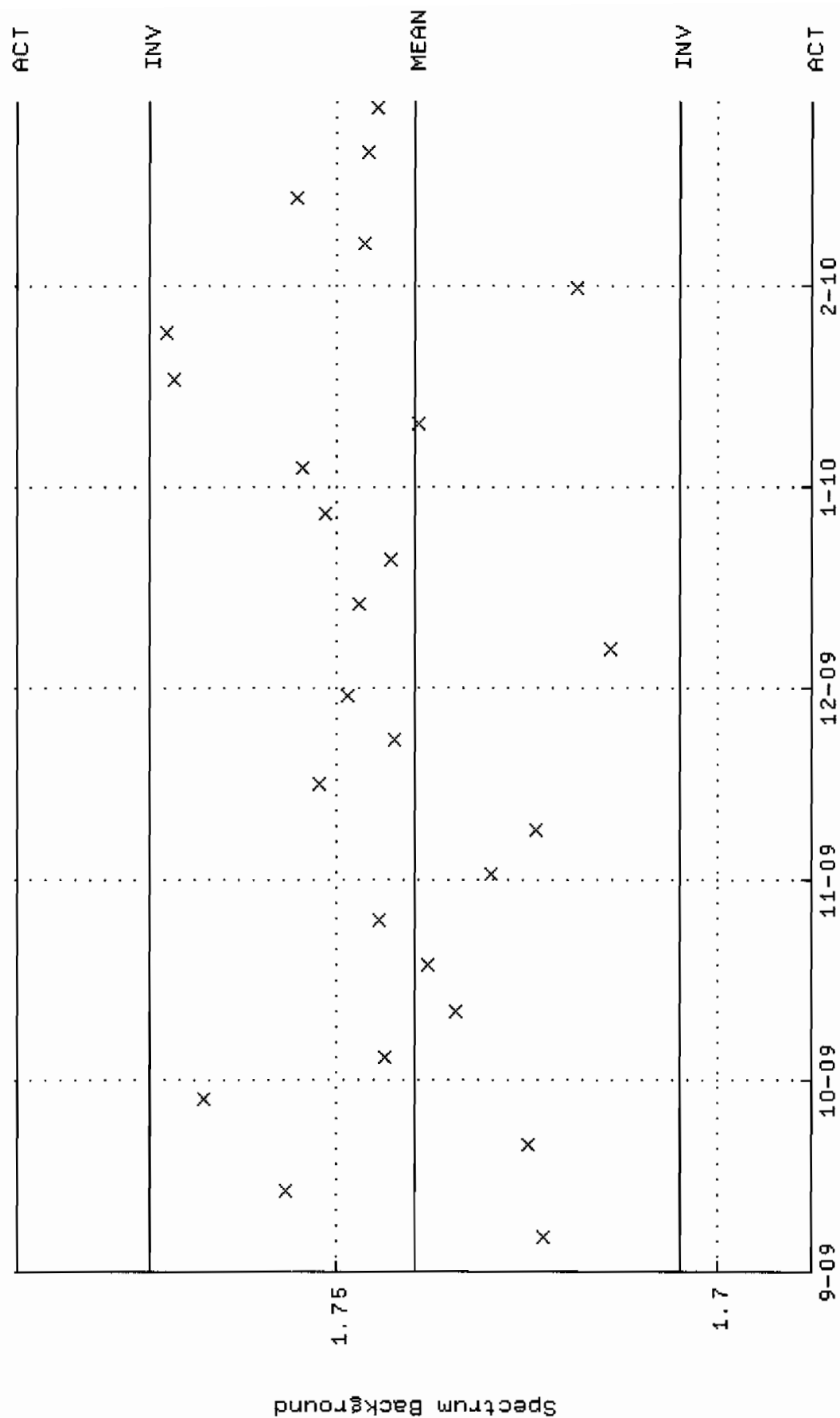
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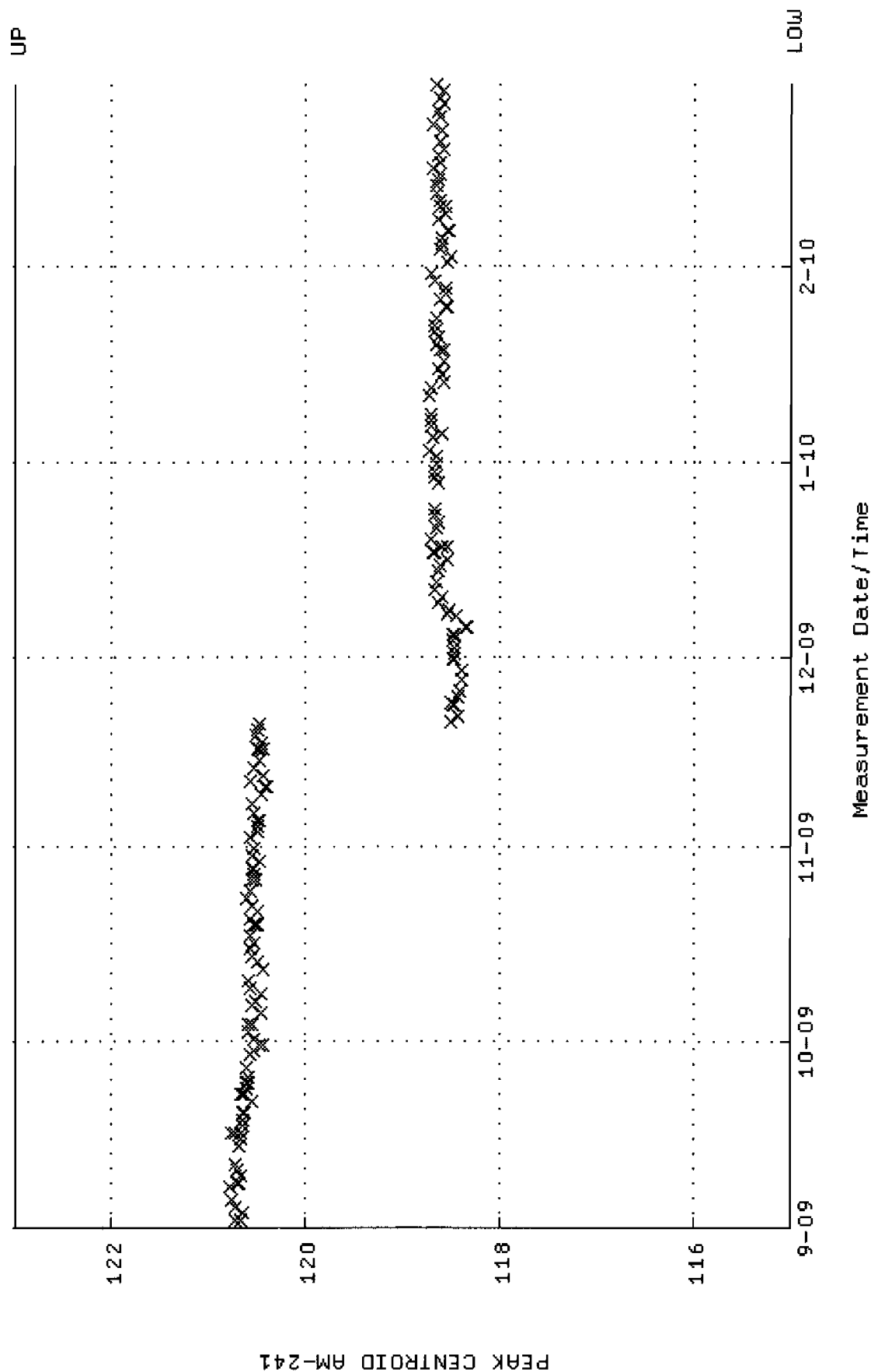
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM16_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



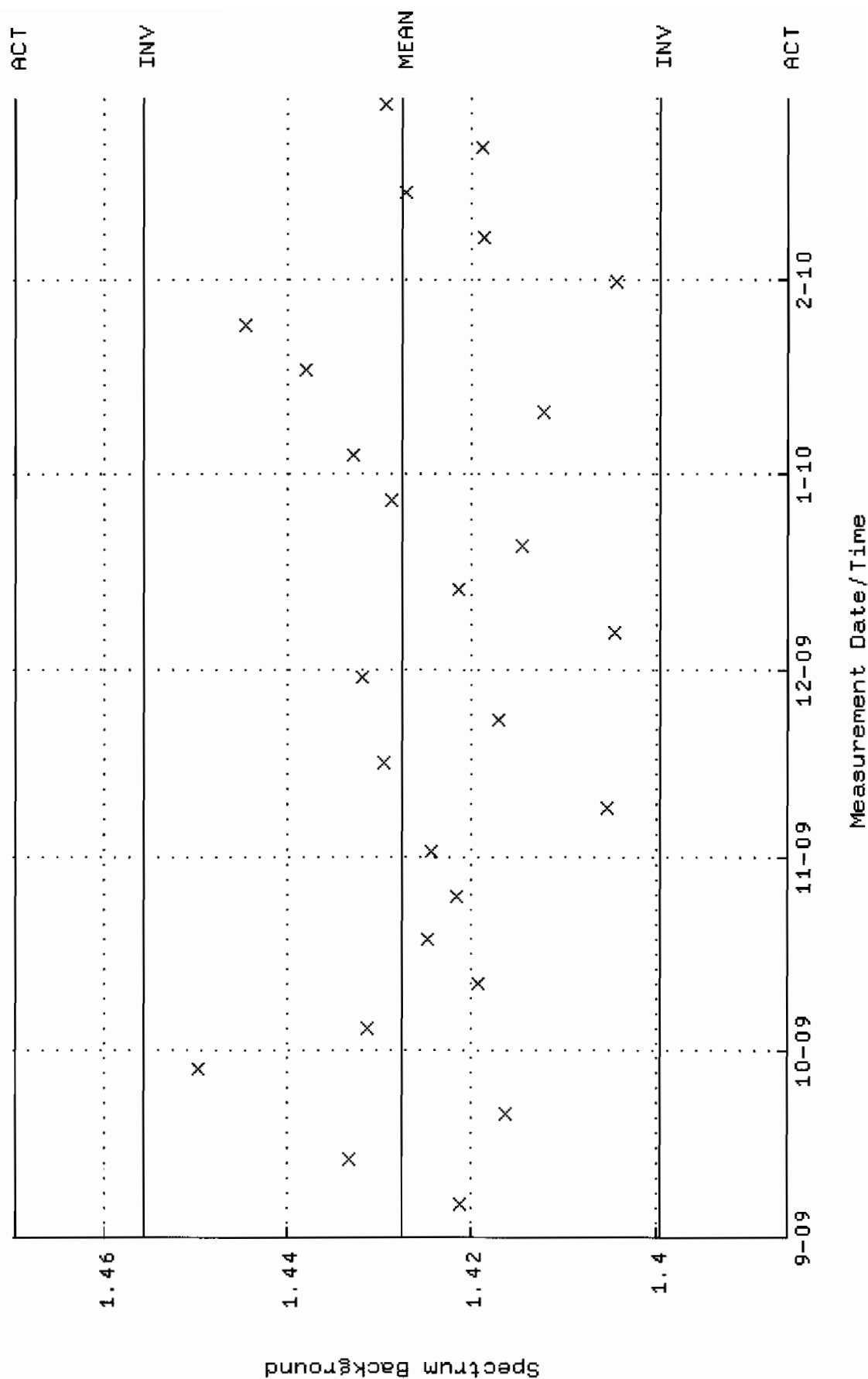
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:09 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



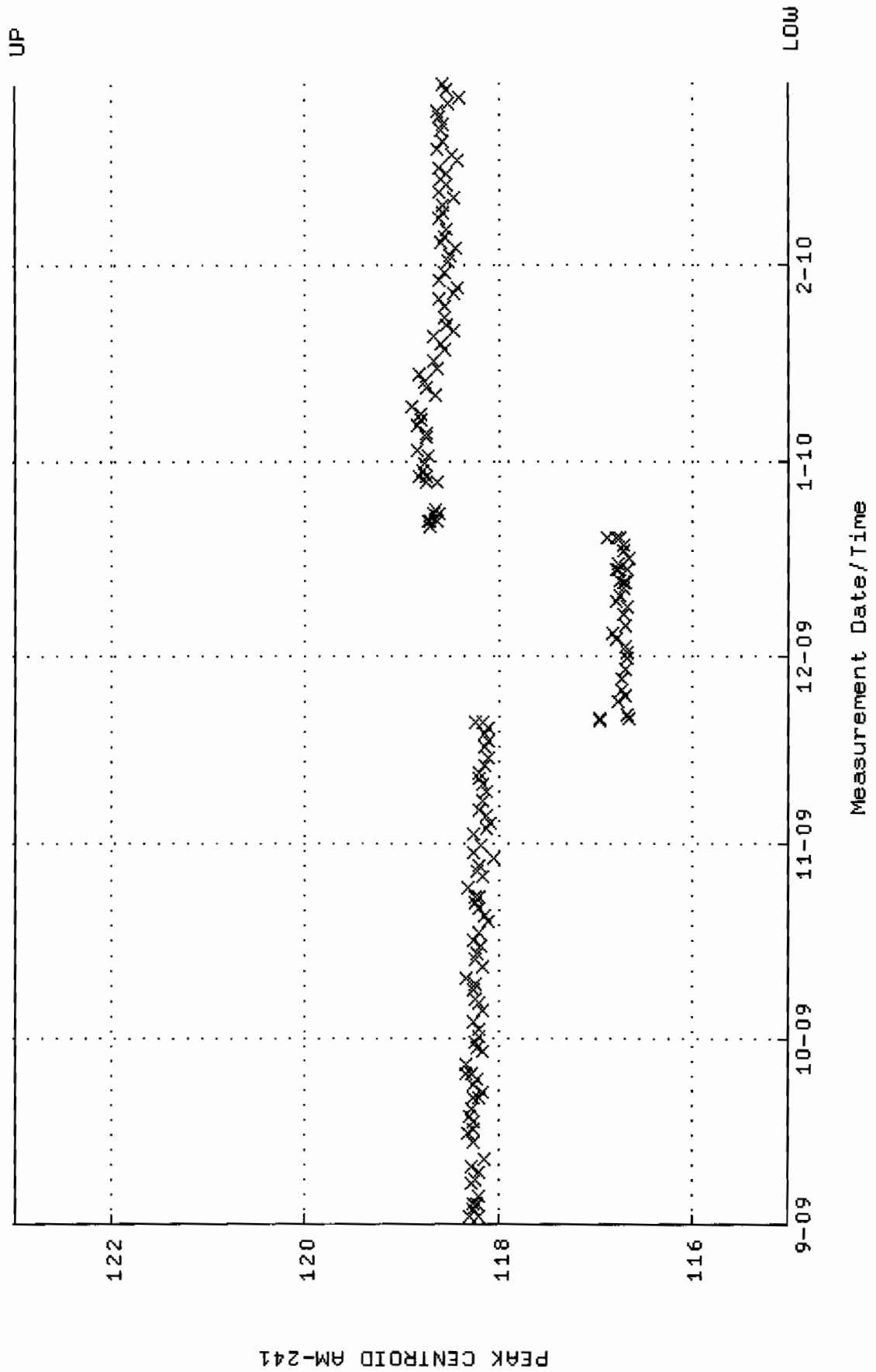
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM17-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:49 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



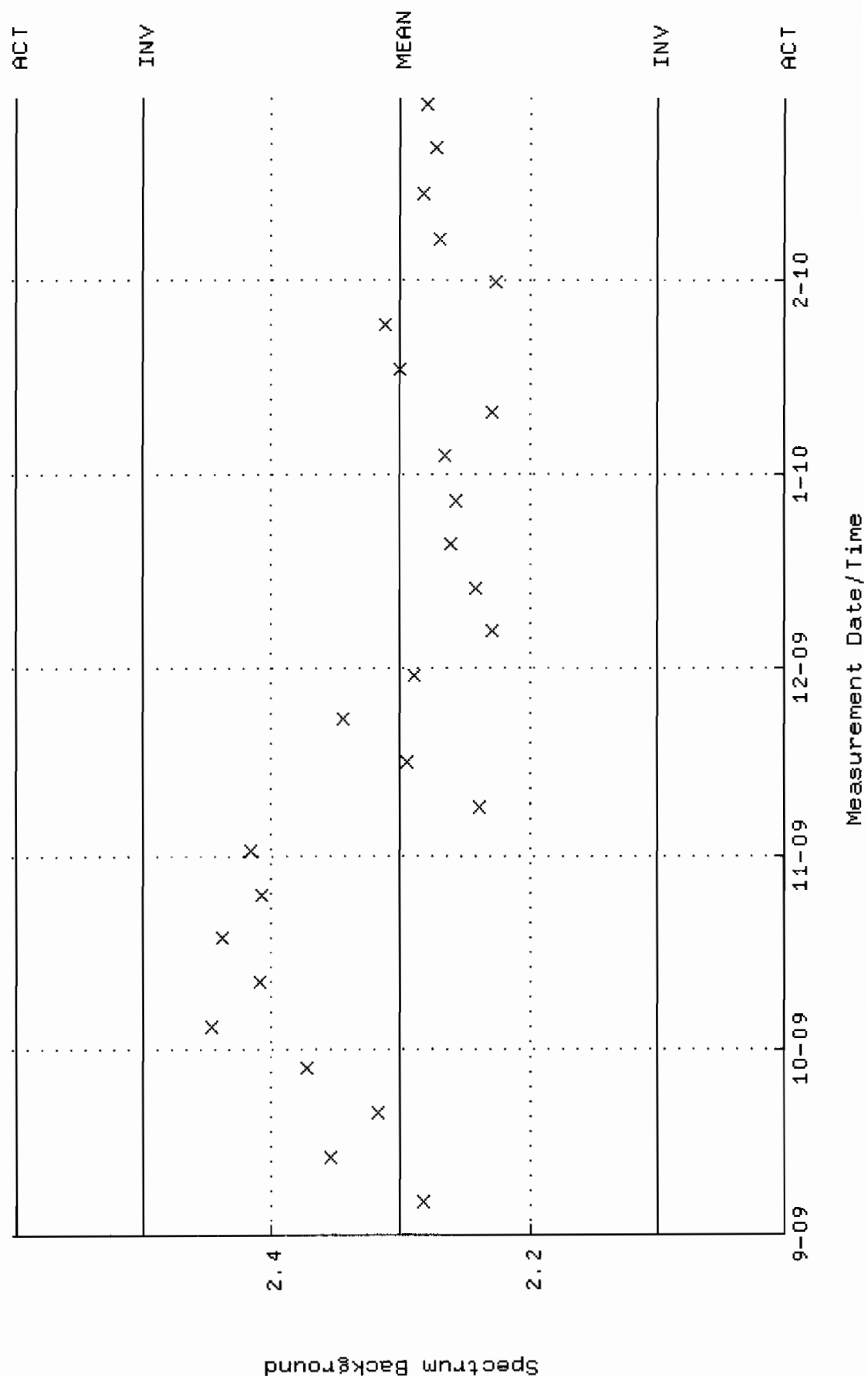
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM17.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



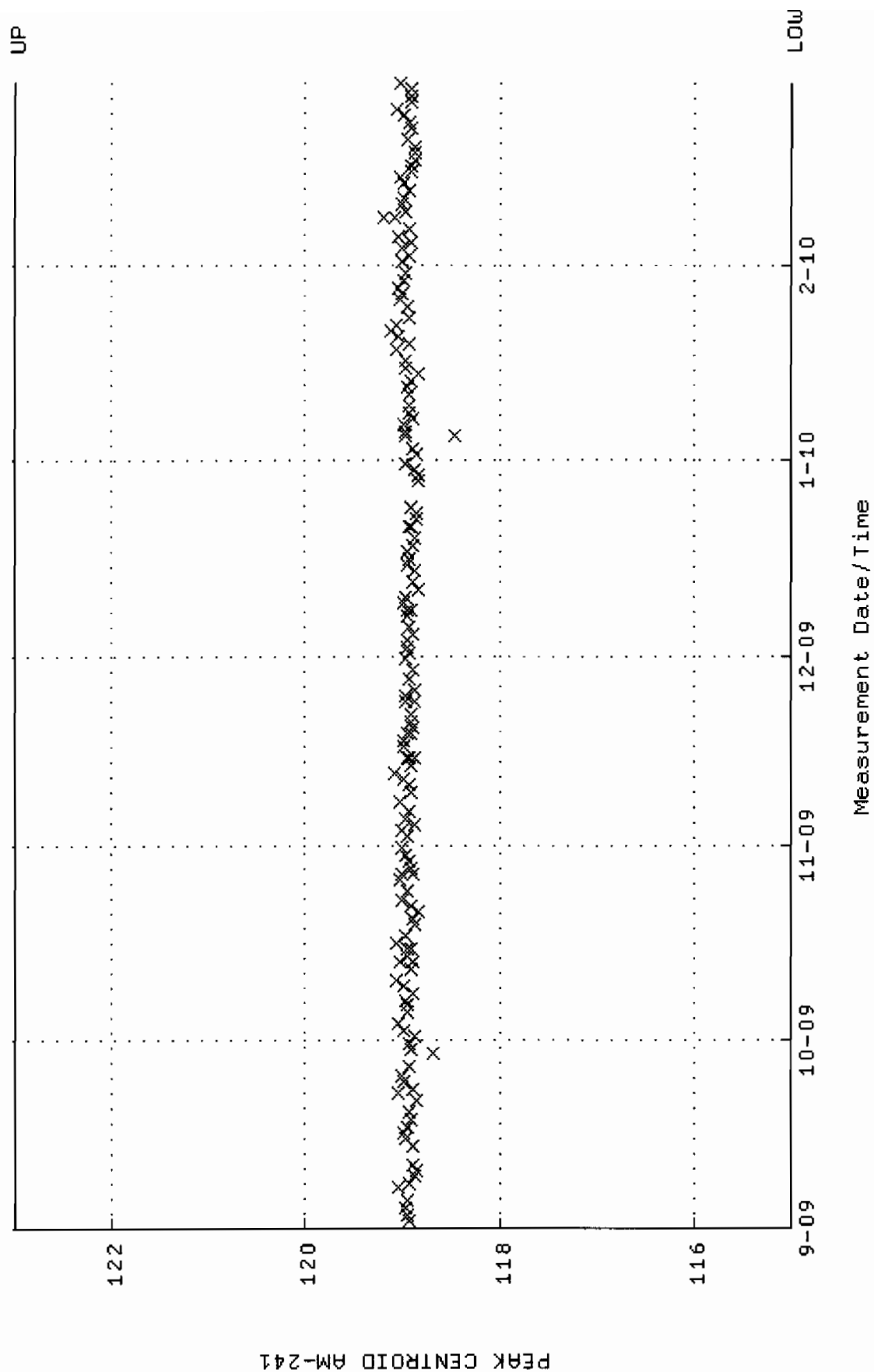
QA filename : DKA100:[CANNBERRA.GAMMA.SCUSR.QA]QCC_GAM18_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:13:07 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



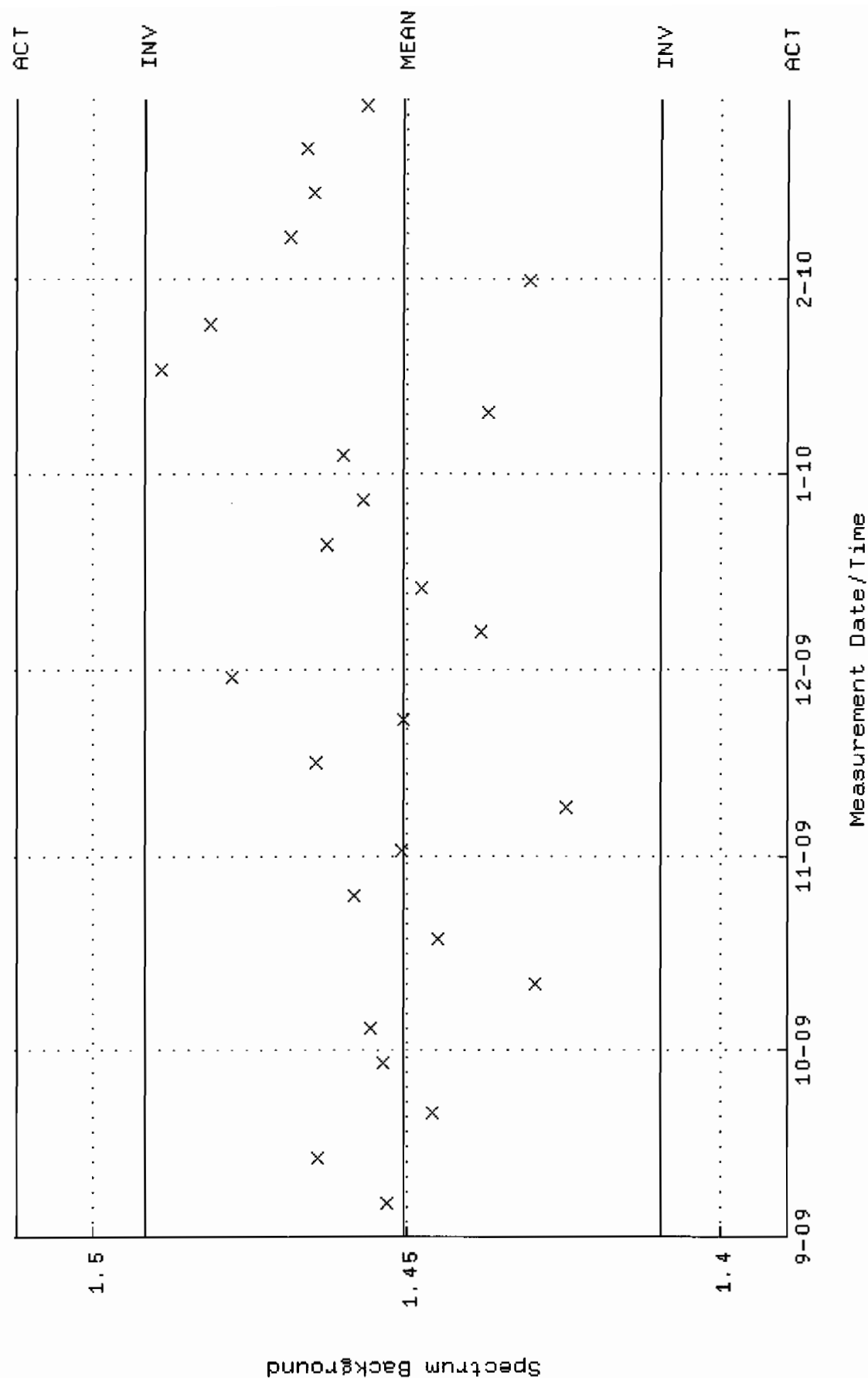
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM18.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:03 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



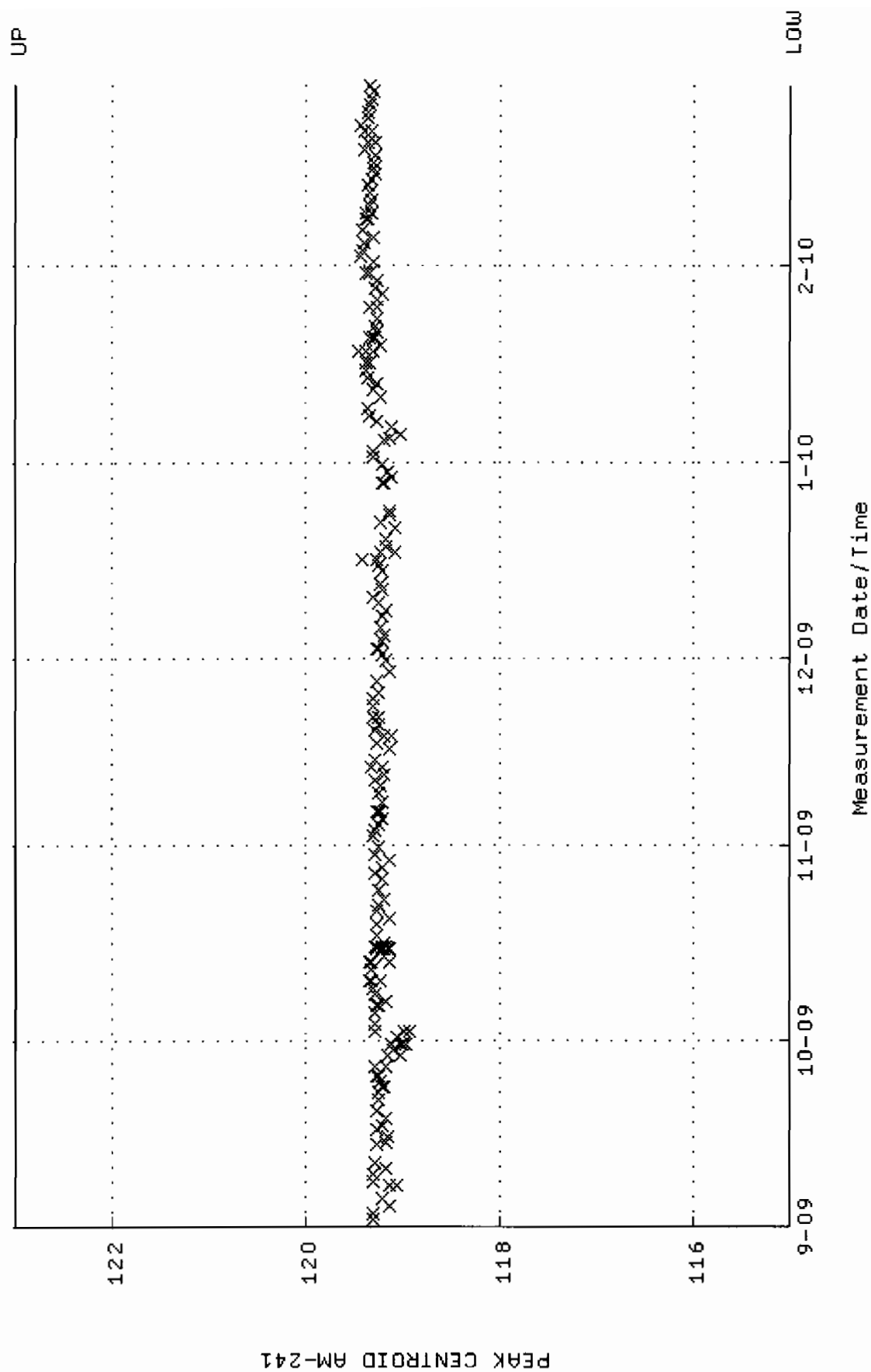
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



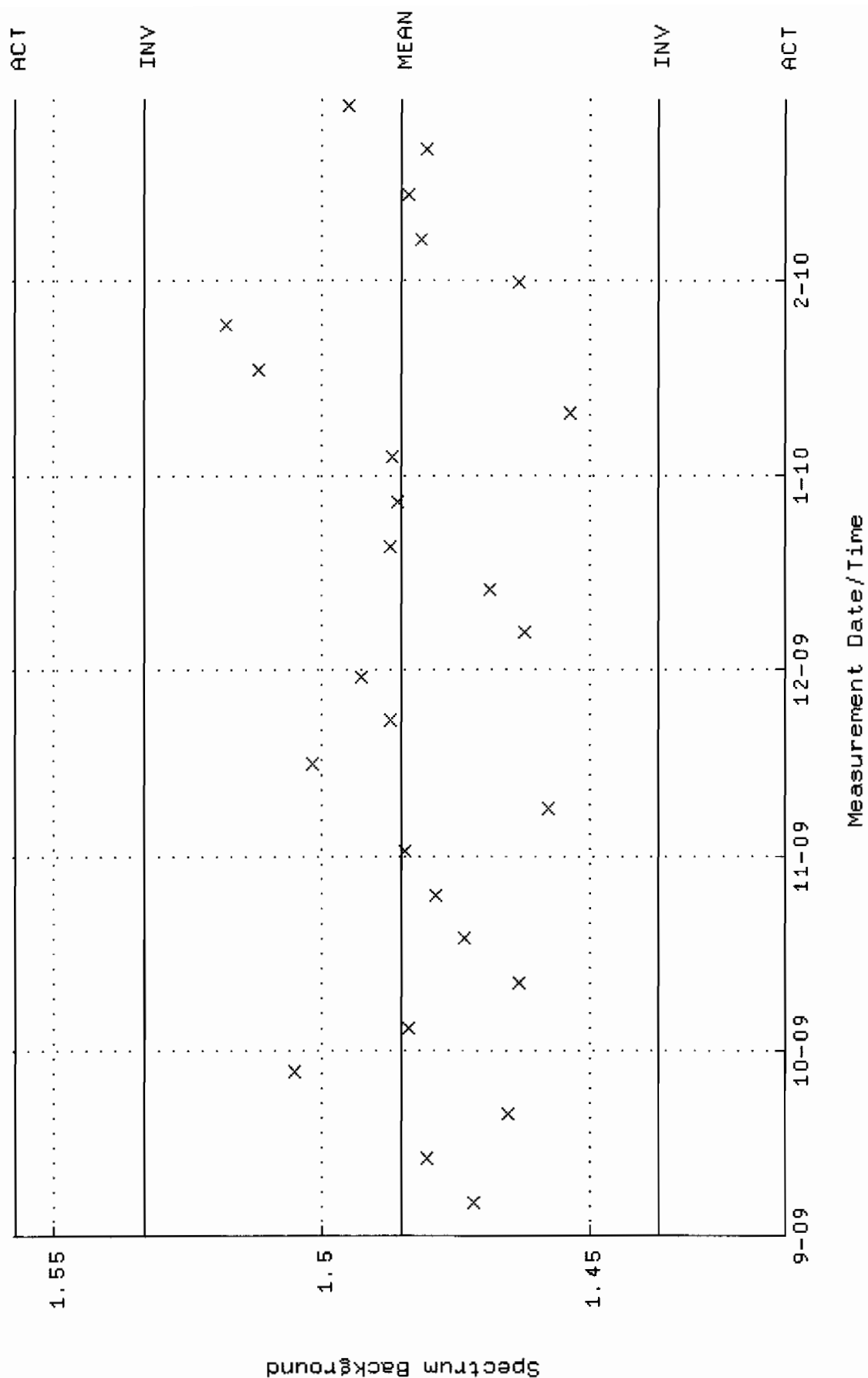
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM19.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:39 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.45067 +- 2.046038E-02 (1.41 %)



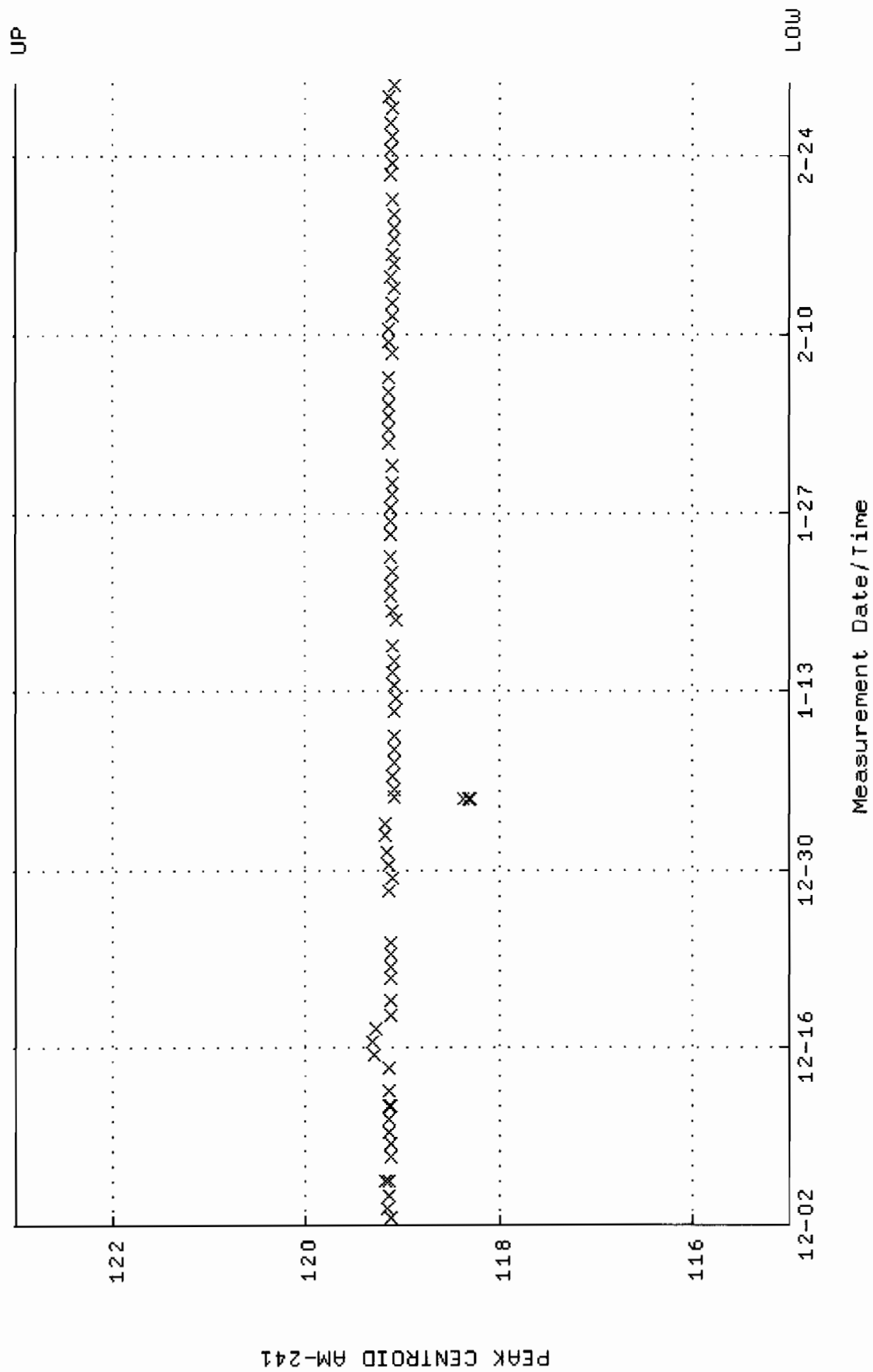
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM20_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:11 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



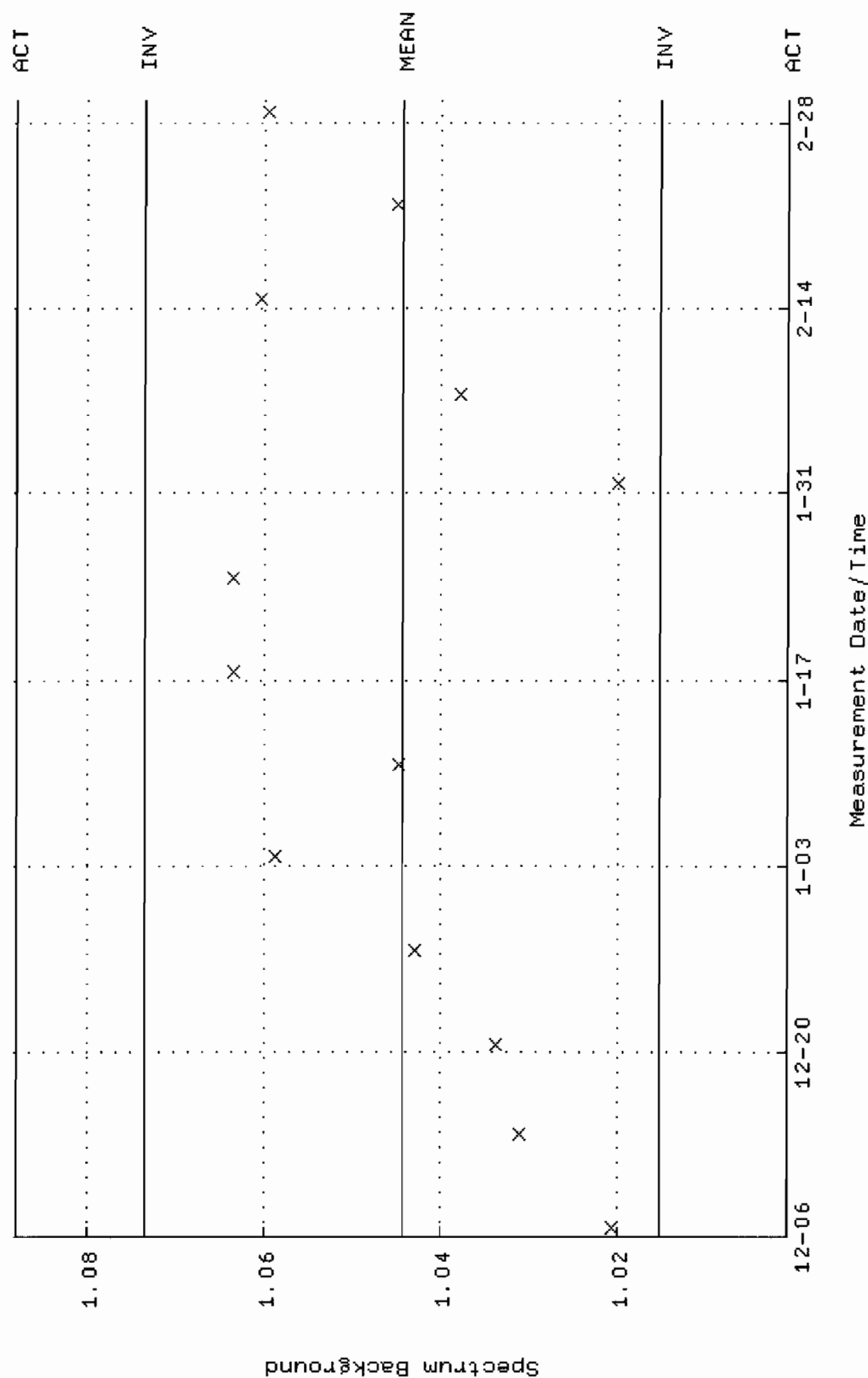
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM20.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:46:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



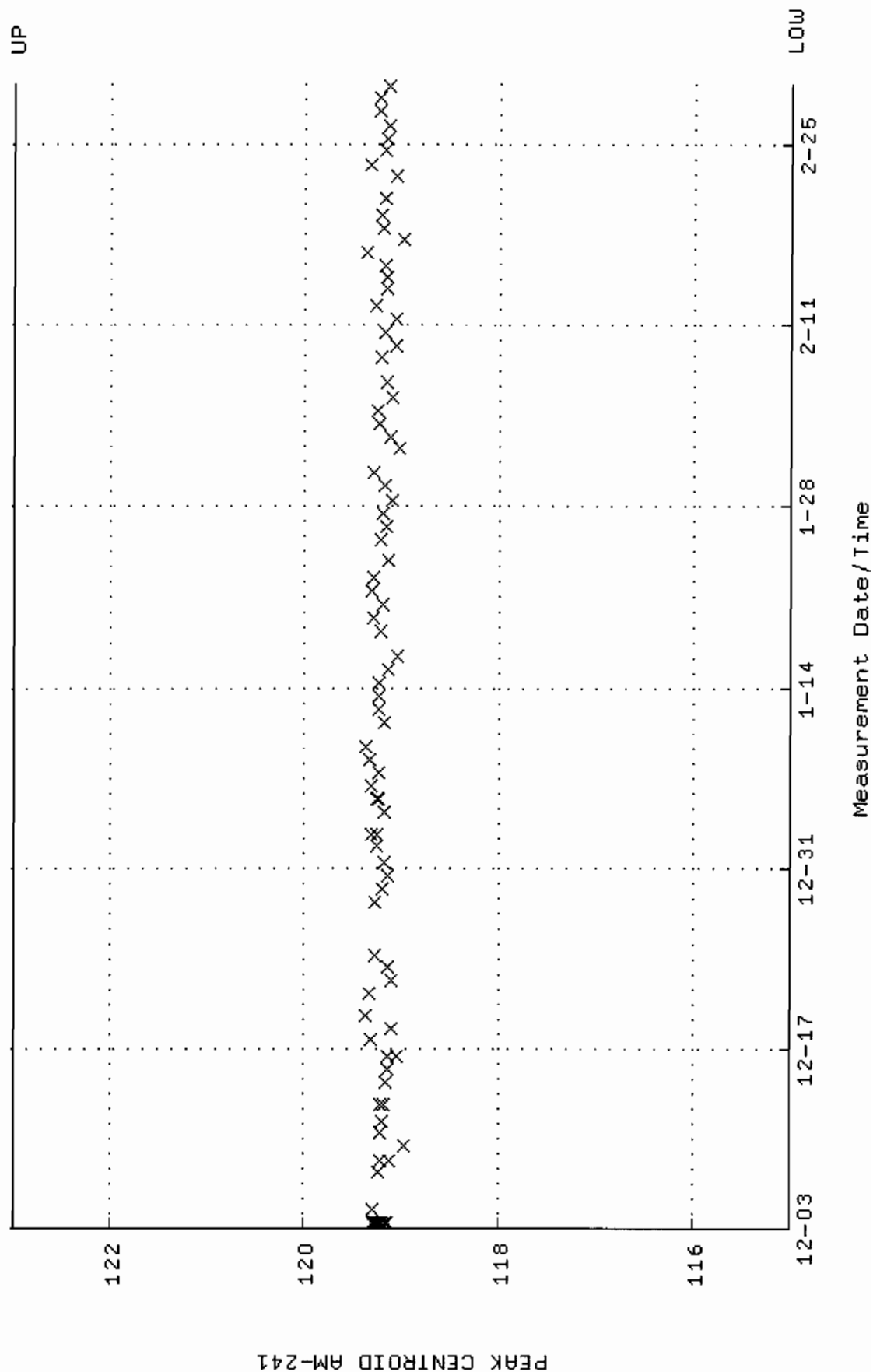
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM21_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-DEC-2009 13:07:42 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



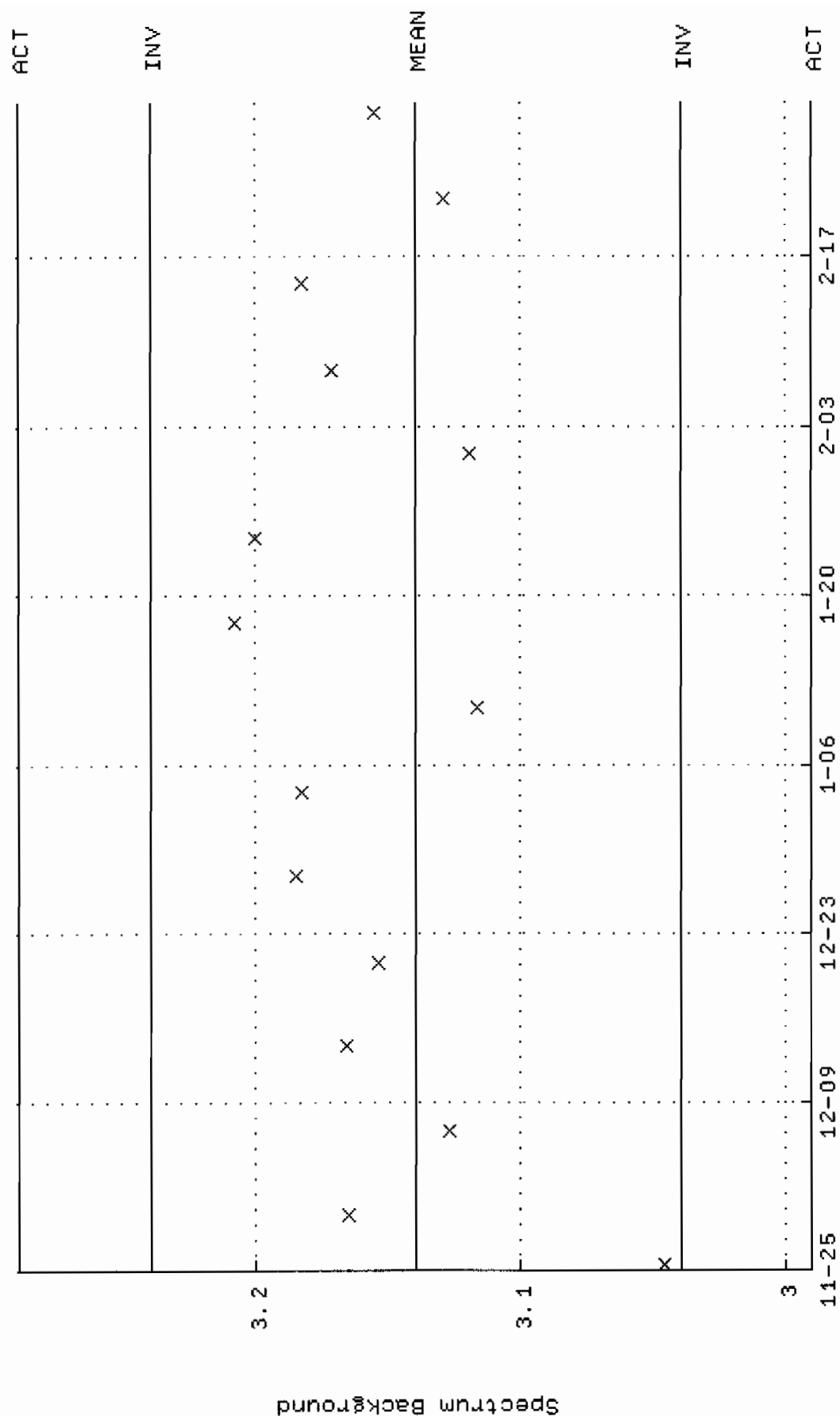
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM21.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-DEC-2009 15:25:38 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.04443 +- 1.452671E-02 (1.39 %)



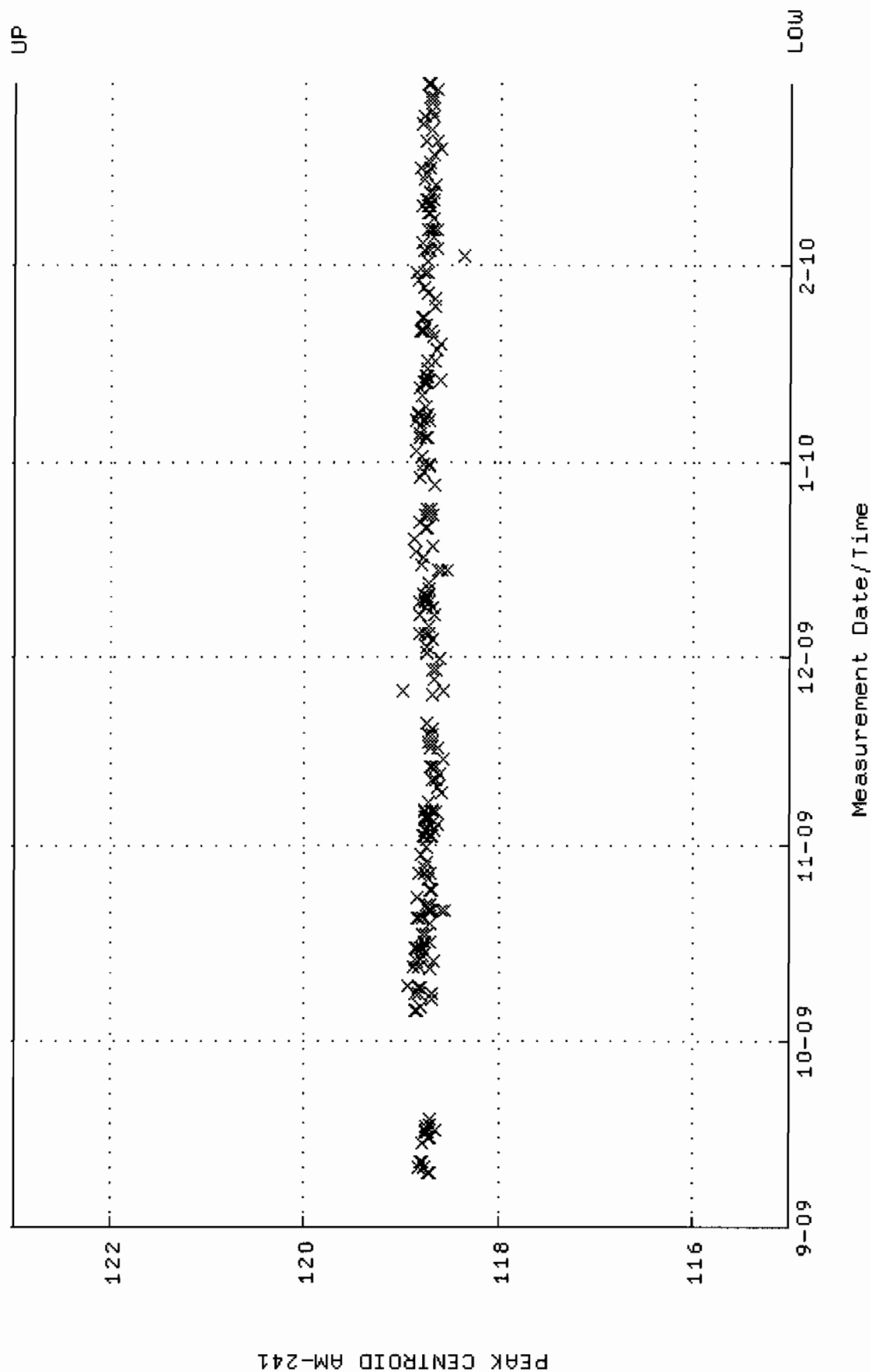
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM22-CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



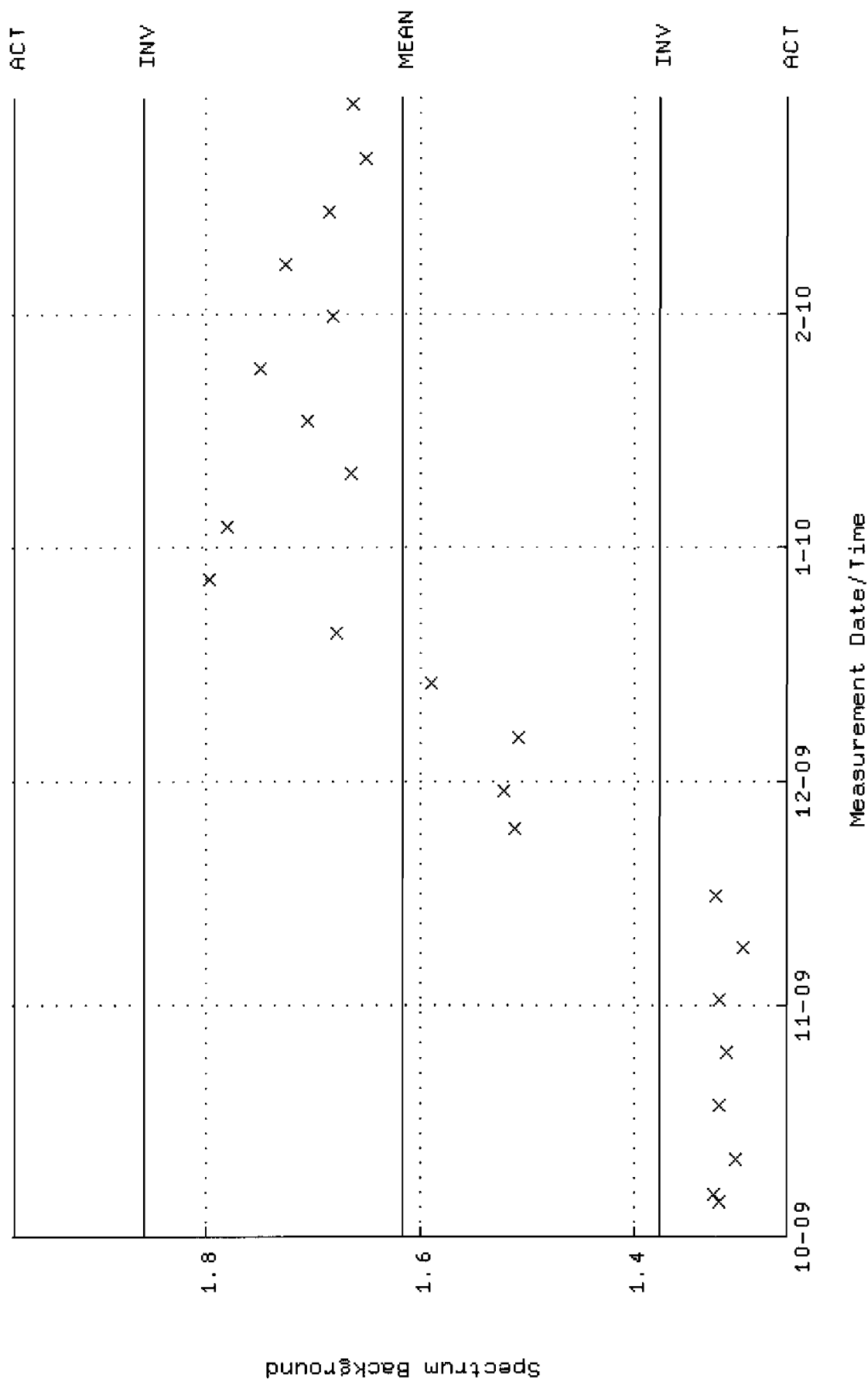
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



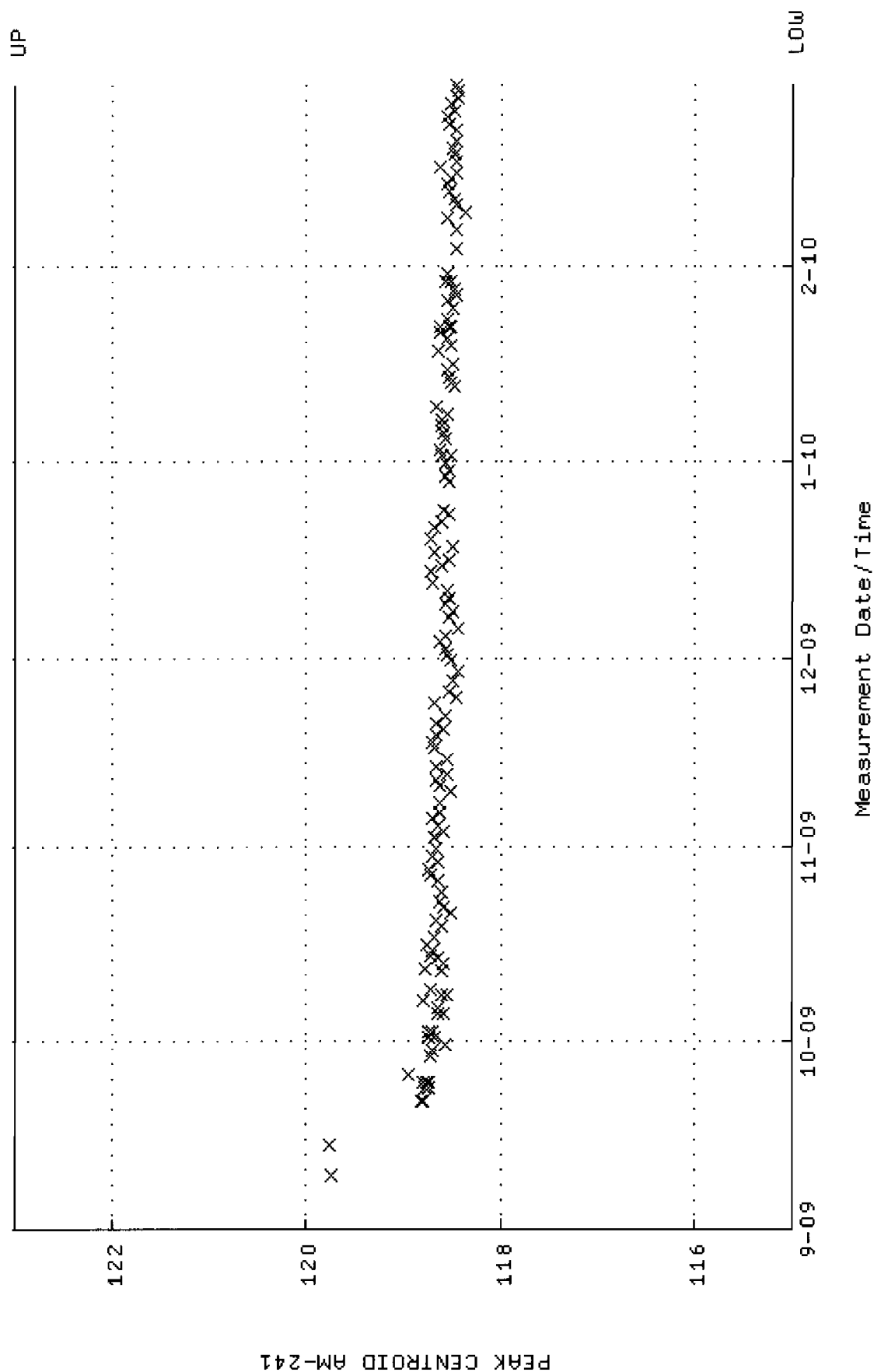
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM23_CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:19:12 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



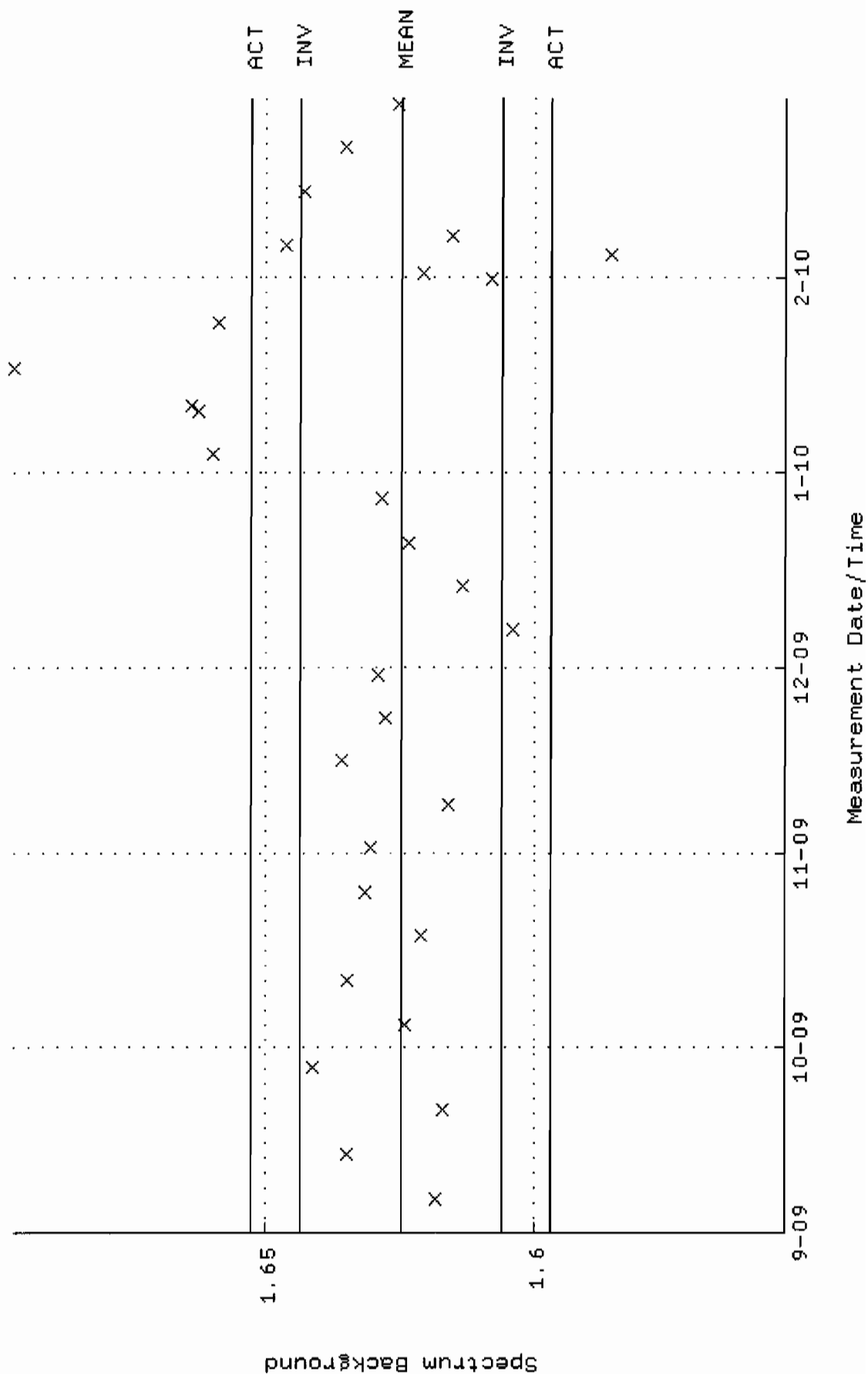
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM23.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-OCT-2009 15:13:53 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)



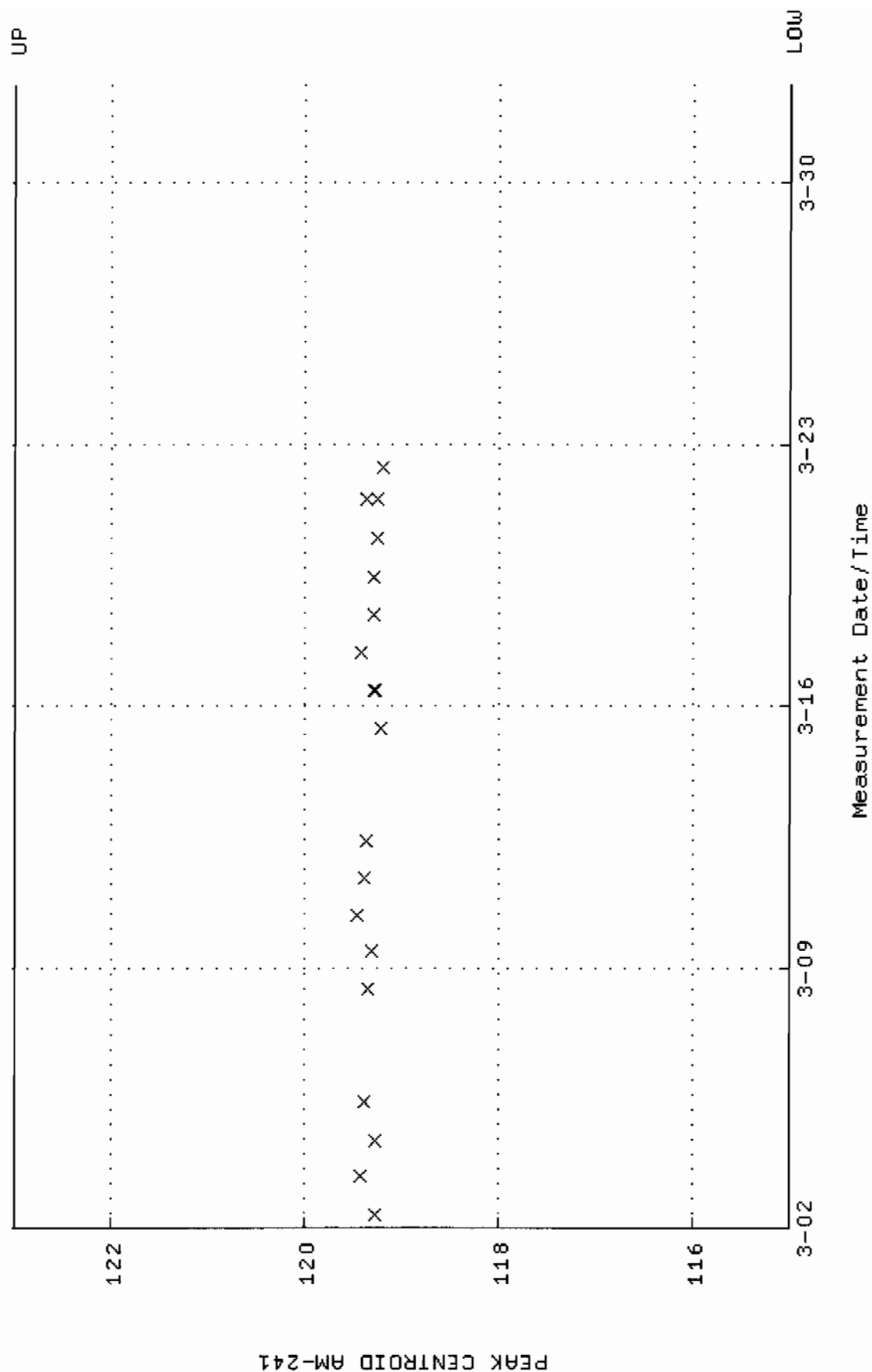
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM25_2LMB.QAF;1
 Parameter Name : PSCENTRO-59 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:18:34 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



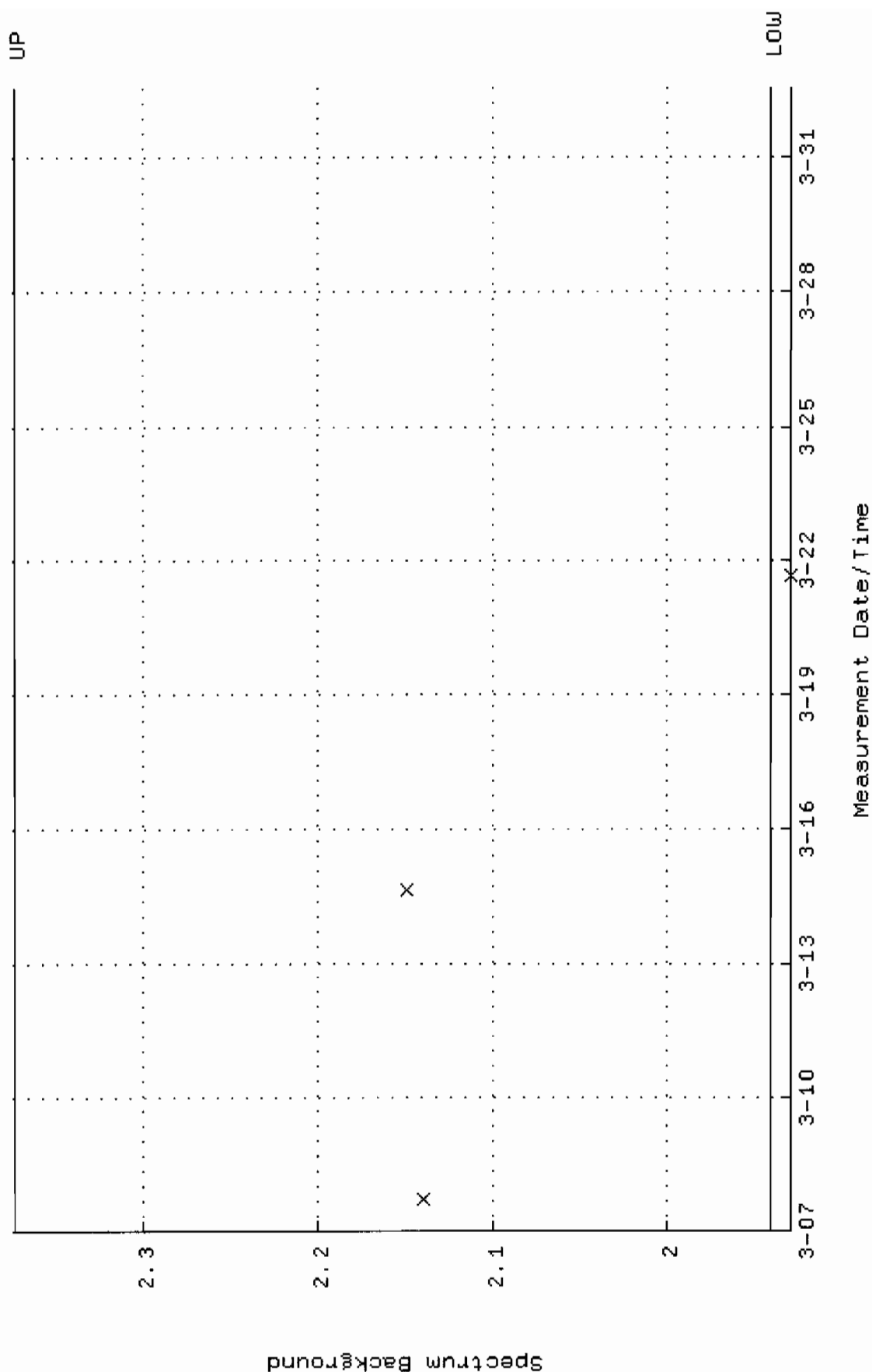
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM25.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:47:27 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.62502 +- 9.370414E-03 (0.58 %)

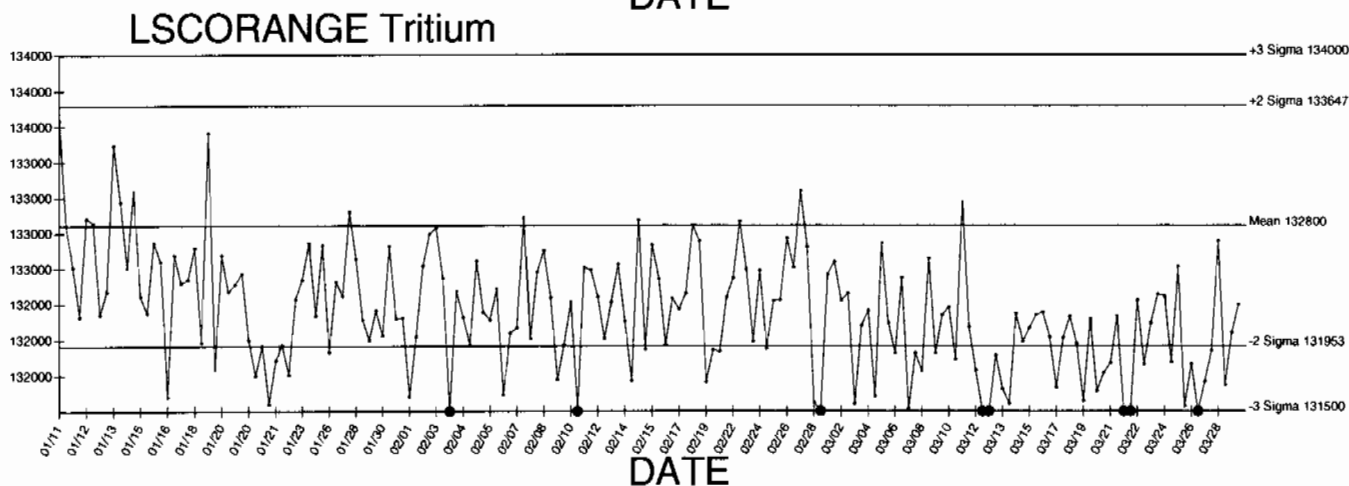
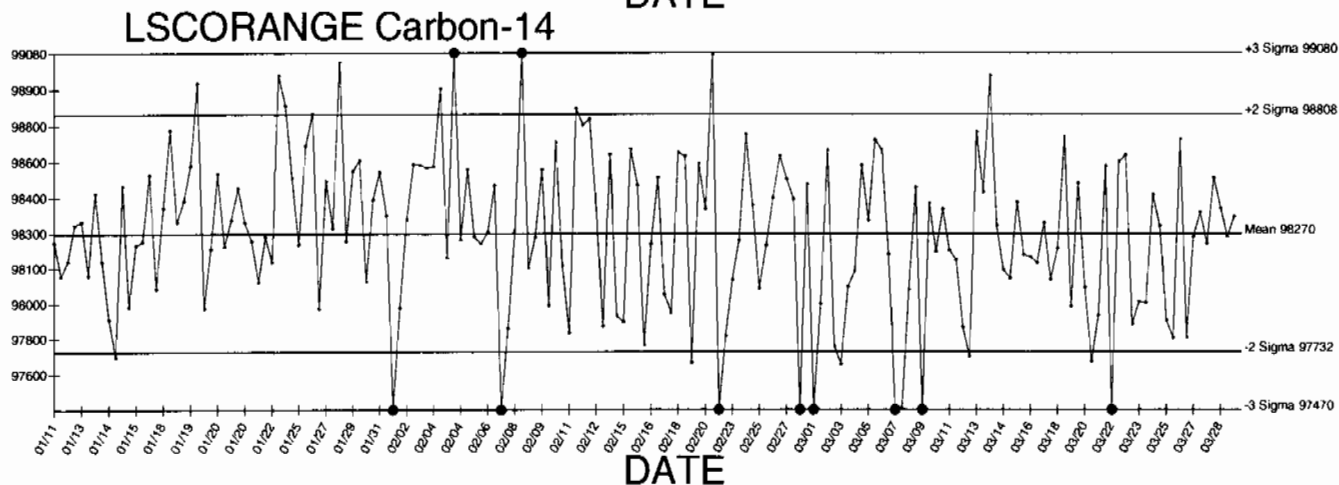
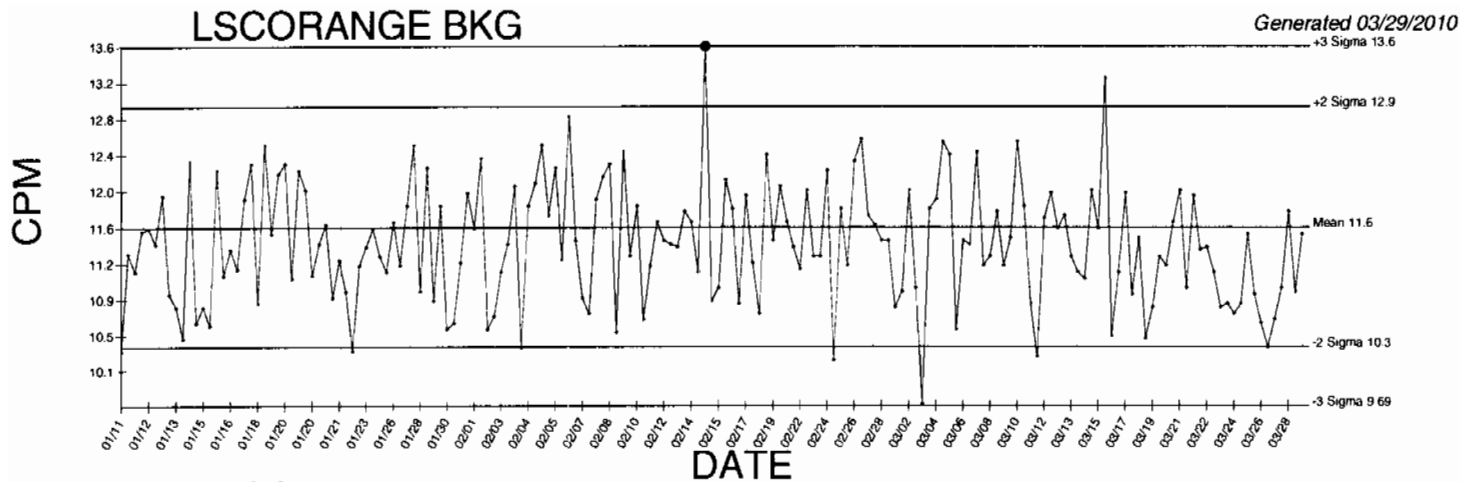


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM29_CAN.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 2-MAR-2010 08:30:43 through 1-APR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM29.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 7-MAR-2010 16:47:12 through 1-APR-2010 12:00:00
 Lower/Upper Lmts: 1.94193 through 2.37347





● 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: 2.93×10^7 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 ± 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) = 3.7×10^{10} becquerels exactly.

Useful conversion factors are:

1 microcurie (μCi) = 3.7×10^4 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

Page 1176 of 1212
W.F. Case

QC-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:	03/27/2009
Expiration Date:	03/11/2011
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

$(\text{Mass of parent(g)}) * (\text{Parent Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$

$(\text{Mass of parent(g)}) * (\text{Parent Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$

$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$

$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$

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	03/11/2010	03/11/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

G. Ramsey 3/1/2010	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff Mass. Used (mL)	Standard
	0134-K N1	1081.2000	38.6000	1042.6000	0.44203446	1.0000
	0134-K N2	1132.6000	38.6000	1094.0000	0.44203446	1.0000
	0134-K N3	1142.0000	38.6000	1103.4000	0.44203446	1.0000
Mean Value (Counting) =	2443.248415		99.4273605	Pass		Average =
Stddev =	74.04078992		0.03030424	Rule 3 (Pass/Fail)		

Certificate Value = 2457.32 dpm/mL
 Lower Limit = 2295.166835 dpm/mL
 Upper Limit = 2591.329895 dpm/mL
 Rule 1 Pass/Fail Pass
 Two sigma = 148.0815798 dpm/mL
 10 % of Mean = 244.3248415 dpm/mL
 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 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 1.0 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 Brown for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 3/1/10 using 1222 A (H-3).

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

Ramsey 3/18/10
 C. J. Ramsey 3/18/10

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. Analytisc 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 11/28/06
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 ¹	Statistics ²	Calibration ²	Peak Fitting ²	Geometry ²	Impurities ²	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)

²As 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

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
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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-1AR-1
Mixed Gamma N1	2534	pCi/L - Ver-1AR-3
Mixed Gamma N2	2510	pCi/L - Ver-1AR-5
Mixed Gamma N3	2413	

Mean Value (Counting) = 2485.67
 Stdev = 64.065
 100.00 Pass
 Rule 3 (Pass/Fail)

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
 M. Stamps
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Cs-137

Isotope	Result	pCi/L - Ver. Jar. 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
Rule 3 (Pass/Fail) Pass

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

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.

Handwritten notes:
12/2/09
12/2/09
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver. Int. 5'
Mixed Gamma N1	1572	pCi/L - Ver. Int. 2
Mixed Gamma N2	1495	pCi/L - Ver. Int. 3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67 Pass
Stdev = 42.829 Rule 3 (Pass/Fail)

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.

U.S. Stamp 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 DATA 4/11/2000 *lett c held 12/1/04*

angela d. johnson 12/3/04

TRM

Invoice:

5 boxes of TRM-1
 10 " " TRM-2 and 3
 5 " each of NRM-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	53.5 ± 2.1	44.0 ± 1.6
Ra-226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb-210	425 ± 12	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

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 & Shale 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.

Attention Nancy Slater At GEL
 Not for Log In
 ANALYSIS REQUEST AND CHAIN OF CUSTODY
 Press F1 for instructions for each field.

SF 2001-COC (10-97)
 Supersedes (5-97) 1000
 Internal Lab
 Batch No.
 SARWR No. N/A
 Contract No.: AJ-2480A
 Case No.: 10204 1-3
 SMO Authorization: *[Signature]*
 Bill to: Sandia National Laboratories
 Supplier Services, Dept.
 P.O. Box 5800 MS 0154

9911627-01-70
 Page 1 of 1
 ARVOC- 602945

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: 11-16-98 Date/Time Collected: 11-16-98 Lab Contact: EDIE KENT Lab Destination: G.E.L. SMO Contact/Phone: Doug Salimi / 844-3110 Send Report to SMO: Suzi Jensen/844-3184		Contract No.: AJ-2480A Case No.: 10204 1-3 SMO Authorization: <i>[Signature]</i> Bill to: Sandia National Laboratories Supplier Services, Dept. P.O. Box 5800 MS 0154	
Location Building N/A Sample No. - Fraction Tech Area VI Room N/A ER Sample ID or Sample Location Detail		Reference LOV (available at SMO) Container Type Volume Sample Matrix Date/Time Collected Date/Time Collected Date/Time Collected		Parameter & Method Requested Lab Sample ID Lab USE	
050484 - 001 PEM-1 050485 - 001 TRM-2 050486 - 001 NRM-2 N3HD		S P 1L 4C G 1L 4C G 1L 4C		See Special Instructions Below	
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No. Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		Special Instructions/QC Requirements EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No These samples are well characterized and materials being sent to GEL, not being at Hank Hinton		Abnormal Conditions on Receipt Lab Use	
Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date Name Douglas E. Perry Signature <i>[Signature]</i>		Sample Tracking (if no use) Date Entered (mm/dd/yy) Entered by Company/Organization/Phone Weston / 7577 / 845-0867		Please list as separate report.	
1. Relinquished by <i>[Signature]</i> Date 11-16-98 Time 0900 1. Received by Org. Date		4. Relinquished by 4. Received by Org. Date		Date	
2. Relinquished by 2. Received by Org. Date		5. Relinquished by 5. Received by Org. Date		Date	
3. Relinquished by 3. Received by Org. Date		6. Relinquished by 6. Received by Org. Date		Date	

Original To Accompany Samples, Laboratory Copy (White)
 1st Copy To Accompany Samples, Return to SMO (Blue)
 2nd Copy SMO Suspense Copy (Yellow)
 3rd Copy Field Copy (Pink)

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 μ 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 ₃) ₃ in 2N HNO ₃
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 μ 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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi 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:	03/09/2010
Ampoule Mass (g):	5.3739 g	Expiration Date:	03/09/2011
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	Tara Sides	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/14/2009	09/14/2010
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
03/09/2010	Ashley Drochter	.011	1000	445-96-2-VV	22.7878 dpm/mL	03/09/2010	03/09/2011
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
03/23/2010	Ashley Drochter	.0163	1000	445-96-2-WW	33.7674 dpm/mL	03/23/2010	03/23/2011
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-VV

A.Drochter 3/15/2010	Isotope	Value	Uncertainty
	445-96-2-VV #1	1.040	0.1630
	445-96-2-VV #2	0.964	0.1480
	445-96-2-VV #3	0.970	0.1550
Mean Value (Counting) =	0.991	96.72	Pass
Stdev =	0.042253205	Rule 3 (Pass/Fail)	
Target =	1.025		
Lower Limit =	0.906826923		
Upper Limit =	1.075839743		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.08450641		
10 % of Mean =	0.099133333		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard **445-96-2-VV** 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.

fil 3/15/10
f 3/16/10



NATIONAL PHYSICAL LABORATORY

Teddington Middlesex UK TW11 0LW Telephone +44 20 8977 3222

Certificate of Calibration



0478

PLUTONIUM-236 SOLUTION

R37-02

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

FOR: GEL Laboratories LLC
2040 Savage Road
Charleston, SC 29407
USA

FOR THE ATTENTION OF: Mr Tim Winters

NPL PRODUCT CODE: R37-02

IDENTIFICATION: A09881

DESCRIPTION: An aqueous solution of ^{236}Pu also containing 2 mol dm^{-3} of nitric acid. The solution is contained in a flame sealed ampoule of type Q and nominal volume 5 ml (squat) as defined in BS 795:1983.

DATE(S) OF CALIBRATION: 26 June 2009 to 1 July 2009

INTENDED USE: Calibration of instruments for response to ^{236}Pu

STORAGE: The material may be stored at room temperature in a suitably sealed container. Flame-sealed glass ampoules are recommended for long-term storage. Regulatory conditions may apply to the manner in which this material is stored.

MEASUREMENTS

The samples were prepared by gravimetric dilution of a ^{236}Pu solution, which had been previously standardised using liquid scintillation counting. The accuracy of the dilution factor was checked using liquid scintillation counting.

Reference: 2009100356

Date of Issue: 4 November 2009

Checked by: *Ch Ali*
Page 1 of 1212

Signed: *Arvic Harms*

Name: Dr Arvic Harms

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(Authorised Signatory)

for Managing Director

RESULTS

Principal radionuclide:	^{236}Pu
Reference time:	2009-07-01 12:00 UTC
Activity concentration of principal radionuclide:	170.8 Bq g^{-1}
Expanded uncertainty:	$\pm 0.6 \text{ Bq g}^{-1} (\pm 0.36 \%)$
Contaminants present:	$^{226}\text{Ra}, ^{232}\text{U}, ^{228}\text{Th}, ^{237}\text{Np}$
Activity concentration of ^{226}Ra :	11.0 mBq g^{-1}
Expanded uncertainty:	$\pm 4.0 \text{ mBq g}^{-1} (\pm 36 \%)$
Activity concentration of ^{232}U :	0.67 Bq g^{-1}
Expanded uncertainty:	$\pm 0.12 \text{ Bq g}^{-1} (\pm 18 \%)$
Activity concentration of ^{228}Th :	11.38 mBq g^{-1}
Expanded uncertainty:	$\pm 0.46 \text{ mBq g}^{-1} (\pm 4 \%)$
Activity concentration of ^{237}Np :	5.00 mBq g^{-1}
Expanded uncertainty:	$\pm 0.34 \text{ mBq g}^{-1} (\pm 8 \%)$
Sample Mass:	$4.97 \text{ g} \pm 0.02 \text{ g}$

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

NOTES

- [1]. The reported reference time is stated consistent with the format given in ISO 8601:2004. UTC is the abbreviation for Universal Time, Coordinated. The date is stated in the format YYYY-MM-DD such that 2008-09-01 represents 1 September 2008.
- [2]. The recommended half life of ^{236}Pu is 1044 (6) days and is taken from the evaluations published in *Nuclear Data Sheets*.
- [3]. The recommended half life of ^{226}Ra is $5.844 (50) \times 10^5$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [4]. The recommended half life of ^{232}U is 25800 (800) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [5]. The recommended half life of ^{237}Np is $7.83 (6) \times 10^8$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [6]. The recommended half life of ^{228}Th is 698.60 (46) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1430	Isotope:	Plutonium-236
Prepared By:	Ashley Drochter	Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO3	Prep Date:	01/27/2010
Reference Date:	07/01/2009	Verification Date:	01/27/2010
Ampoule Mass (g):	4.97 g	Expiration Date:	01/27/2011
Uncertainty:	+/- .36 %	Primary Code:	1430-A
LogBook No:	RC-S-051-149	Dilution(mL):	100 mL
		Mass of Parent(g):	4.8051 g
		Density(g/mL):	1.0610
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (100 \text{ mL}) = 492.4266 \text{ dpm/mL}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0610 \text{ g/mL}) / (100 \text{ mL}) = 464.1156 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/27/2010	Bethany Fiem	33.0429	200	1430-B	76.6786262 dpm/mL	01/27/2010	01/27/2011
03/04/2010	Ashley Drochter	15.2331	200	1430-C	35.3496 dpm/mL	03/04/2010	03/04/2011
03/17/2010	Ashley Drochter	15.0683	200	1430-D	34.9672 dpm/mL	03/17/2010	03/17/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Plutonium-236 Standard 1430-C

	Isotope	Value	Uncertainty
A. Drochter 3/4/2010	1430-C	2.760	0.4480
	1430-C	2.770	0.4520
	1430-C	2.950	0.4850
Mean Value (Counting) =	2.827	104.54659 % of Known Value	
Stdev =	0.106926766		
Target =	2.70		
Lower Limit =	2.612813134		
Upper Limit =	3.040520199		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	0.213853532		
10 % of Mean =	0.282666667		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard 1430-B 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. After approximately ten minutes, 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-236 were calculated by comparison to Pu-239 certified values.

file 3/5/10
file 3/5/10



Eckert & Ziegler
Analytics

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Atlanta, Georgia 30318
Tel 404-352-8677
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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.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%
5.20483 grams 1M HNO₃ 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	
Parent Code:	1283
Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3
Reference Date:	12/09/2008
Ampoule Mass (g):	5.20453 g
Uncertainty:	+/- 5 %
LogBook No:	RC-S-051-002

A Solution Material Info	
Isotope:	Uranium-232
Prepared By:	Daniel Roy
Prep Date:	12/16/2008
Verification Date:	12/30/2008
Expiration Date:	12/30/2009
Primary Code:	1283-A
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

Analyst: A. Drochter	Serial #	Value	Uncertainty					
Date: 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			
Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass				
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)					
Target =	2.033	pCi/L						
Lower Limit =	1.965565657	pCi/L						
Upper Limit =	2.087767676	pCi/L						
Rule 1 Pass/Fail	Pass							
Two sigma =	0.061101009							
10 % of Mean =	0.202666667							
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 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

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 961097

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248513001	SAMPLE	MXR1	GAM15	20-MAR-10 11:20	DONE	CAN	03-FEB-10 00:00
248513002	SAMPLE	MXR1	GAM16	20-MAR-10 11:21	DONE	CAN	16-NOV-09 00:00
248513003	SAMPLE	MXR1	GAM17	20-MAR-10 11:21	DONE	CAN	06-JAN-10 00:00
248513004	SAMPLE	MXR1	GAM18	20-MAR-10 11:22	DONE	CAN	23-APR-09 00:00
248513005	SAMPLE	MXR1	GAM19	20-MAR-10 11:22	DONE	CAN	12-MAR-09 00:00
248513006	SAMPLE	MXR1	GAM22	20-MAR-10 11:23	DONE	CAN	02-DEC-09 00:00
248513007	SAMPLE	MXR1	GAM23	20-MAR-10 11:23	DONE	CAN	02-JUN-09 00:00
248513008	SAMPLE	MXR1	GAM25	20-MAR-10 11:24	DONE	CAN	07-OCT-09 00:00
248513009	SAMPLE	MXR1	GAM21	20-MAR-10 11:27	DONE	CAN	28-JUL-09 00:00
248513010	SAMPLE	MXR1	GAM29	20-MAR-10 11:27	DONE	CAN	23-FEB-10 00:00
248513011	SAMPLE	MXR1	GAM01	20-MAR-10 12:08	DONE	CAN	12-JAN-10 00:00
1202061454	LCS	MXR1	GAM20	20-MAR-10 12:14	DONE	CAN	26-AUG-09 00:00
248513012	SAMPLE	MXR1	GAM05	20-MAR-10 13:29	DONE	CAN	11-JUN-09 00:00
248513013	SAMPLE	MXR1	GAM06	20-MAR-10 13:30	DONE	CAN	16-FEB-10 00:00
248513014	SAMPLE	MXR1	GAM07	20-MAR-10 13:30	DONE	CAN	20-JUL-09 00:00
248513015	SAMPLE	MXR1	GAM11	20-MAR-10 13:30	DONE	CAN	18-NOV-09 00:00
248513016	SAMPLE	MXR1	GAM12	20-MAR-10 13:31	DONE	CAN	25-FEB-10 00:00
248513017	SAMPLE	MXR1	GAM15	20-MAR-10 13:31	DONE	CAN	03-FEB-10 00:00
248513018	SAMPLE	MXR1	GAM16	20-MAR-10 13:32	DONE	CAN	16-NOV-09 00:00
248513019	SAMPLE	MXR1	GAM17	20-MAR-10 13:32	DONE	CAN	06-JAN-10 00:00
1202061452	MB	MXR1	GAM19	20-MAR-10 13:33	DONE	CAN	12-MAR-09 00:00
1202061453	DUP	MXR1	GAM22	20-MAR-10 13:34	DONE	CAN	02-DEC-09 00:00
248513020	SAMPLE	MXR1	GAM18	20-MAR-10 13:38	DONE	CAN	23-APR-09 00:00

Instrument Run Log

Instrument Type: LSC

Batch ID: 964062

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248513001	SAMPLE	KXK2	LSCORANGE	27-MAR-10 13:58	DONE		
248513002	SAMPLE	KXK2	LSCORANGE	27-MAR-10 14:41	DONE		
248513003	SAMPLE	KXK2	LSCORANGE	27-MAR-10 15:23	DONE		
248513004	SAMPLE	KXK2	LSCORANGE	27-MAR-10 16:06	DONE		
248513005	SAMPLE	KXK2	LSCORANGE	27-MAR-10 16:48	DONE		
248513006	SAMPLE	KXK2	LSCORANGE	27-MAR-10 17:31	DONE		
248513007	SAMPLE	KXK2	LSCORANGE	27-MAR-10 18:13	DONE		
248513008	SAMPLE	KXK2	LSCORANGE	27-MAR-10 18:56	DONE		
248513009	SAMPLE	KXK2	LSCORANGE	27-MAR-10 19:38	DONE		
248513010	SAMPLE	KXK2	LSCORANGE	27-MAR-10 20:21	DONE		
248513011	SAMPLE	KXK2	LSCORANGE	27-MAR-10 21:03	DONE		
248513012	SAMPLE	KXK2	LSCORANGE	27-MAR-10 21:46	DONE		
248513014	SAMPLE	KXK2	LSCORANGE	27-MAR-10 23:11	DONE		
248513015	SAMPLE	KXK2	LSCORANGE	27-MAR-10 23:54	DONE		
248513016	SAMPLE	KXK2	LSCORANGE	28-MAR-10 00:36	DONE		
248513017	SAMPLE	KXK2	LSCORANGE	28-MAR-10 01:19	DONE		
248513018	SAMPLE	KXK2	LSCORANGE	28-MAR-10 02:01	DONE		
248513019	SAMPLE	KXK2	LSCORANGE	28-MAR-10 02:44	DONE		
1202068225	MB	KXK2	LSCORANGE	28-MAR-10 04:10	DONE		
1202068226	DUP	KXK2	LSCORANGE	28-MAR-10 04:52	DONE		
1202068227	LCS	KXK2	LSCORANGE	28-MAR-10 05:35	DONE		
248513013	SAMPLE	KXK2	LSCORANGE	29-MAR-10 19:55	DONE		
248513020	SAMPLE	KXK2	LSCORANGE	29-MAR-10 20:38	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 965492

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248513001	SAMPLE	AYB1	1028	25-MAR-10 20:23	DONE		
248513002	SAMPLE	AYB1	1029	25-MAR-10 20:23	DONE		
248513003	SAMPLE	AYB1	1030	25-MAR-10 20:23	DONE		
248513004	SAMPLE	AYB1	1095	25-MAR-10 20:23	DUSE		
248513005	SAMPLE	AYB1	1096	25-MAR-10 20:23	DONE		
248513006	SAMPLE	AYB1	1097	25-MAR-10 20:23	DONE		
248513007	SAMPLE	AYB1	1098	25-MAR-10 20:23	DONE		
248513008	SAMPLE	AYB1	1099	25-MAR-10 20:23	DONE		
248513009	SAMPLE	AYB1	1100	25-MAR-10 20:23	DUSE		
248513010	SAMPLE	AYB1	1101	25-MAR-10 20:23	DUSE		
248513011	SAMPLE	AYB1	1102	25-MAR-10 20:23	DONE		
248513012	SAMPLE	AYB1	1103	25-MAR-10 20:23	DONE		
248513013	SAMPLE	AYB1	1105	25-MAR-10 20:23	DONE		
248513014	SAMPLE	AYB1	1107	25-MAR-10 20:23	DONE		
248513015	SAMPLE	AYB1	1108	25-MAR-10 20:23	DONE		
248513016	SAMPLE	AYB1	1109	25-MAR-10 20:23	DONE		
248513017	SAMPLE	AYB1	1111	25-MAR-10 20:23	DONE		
248513018	SAMPLE	AYB1	1112	25-MAR-10 20:23	DUSE		
248513019	SAMPLE	AYB1	1090	25-MAR-10 23:38	DONE		
248513020	SAMPLE	AYB1	1091	25-MAR-10 23:38	DUSE		
1202071655	MB	AYB1	1093	25-MAR-10 23:38	DONE		
1202071656	DUP	AYB1	1094	25-MAR-10 23:38	DONE		
1202071657	LCS	AYB1	1036	26-MAR-10 08:27	DONE		
248513004	SAMPLE	AYB1	1065	30-MAR-10 07:40	DONE		
248513009	SAMPLE	AYB1	1066	30-MAR-10 07:40	DONE		
248513010	SAMPLE	AYB1	1067	30-MAR-10 07:40	DONE		
248513018	SAMPLE	AYB1	1068	30-MAR-10 07:40	DONE		
248513020	SAMPLE	AYB1	1069	30-MAR-10 07:40	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 965493

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248513012	SAMPLE	AYB1	1114	26-MAR-10 17:46	DONE		
248513013	SAMPLE	AYB1	1115	26-MAR-10 17:46	DONE		
248513014	SAMPLE	AYB1	1116	26-MAR-10 17:46	DONE		
248513015	SAMPLE	AYB1	1117	26-MAR-10 17:46	DONE		
248513016	SAMPLE	AYB1	1118	26-MAR-10 17:46	DONE		
248513017	SAMPLE	AYB1	1119	26-MAR-10 17:46	DONE		
248513018	SAMPLE	AYB1	1120	26-MAR-10 17:46	DONE		
248513019	SAMPLE	AYB1	1121	26-MAR-10 17:47	DUSE		
248513020	SAMPLE	AYB1	1122	26-MAR-10 17:47	DONE		
1202071658	MB	AYB1	1123	26-MAR-10 17:47	DONE		
1202071659	DUP	AYB1	1125	26-MAR-10 17:47	DONE		
1202071660	LCS	AYB1	1126	26-MAR-10 17:47	DONE		
248513001	SAMPLE	AYB1	1001	26-MAR-10 17:48	DONE		
248513002	SAMPLE	AYB1	1002	26-MAR-10 17:48	DONE		
248513003	SAMPLE	AYB1	1003	26-MAR-10 17:48	DONE		
248513004	SAMPLE	AYB1	1004	26-MAR-10 17:48	DONE		
248513005	SAMPLE	AYB1	1005	26-MAR-10 17:48	DONE		
248513006	SAMPLE	AYB1	1006	26-MAR-10 17:48	DONE		
248513007	SAMPLE	AYB1	1007	26-MAR-10 17:48	DONE		
248513008	SAMPLE	AYB1	1008	26-MAR-10 17:48	DONE		
248513009	SAMPLE	AYB1	1009	26-MAR-10 17:48	DONE		
248513010	SAMPLE	AYB1	1010	26-MAR-10 17:48	DONE		
248513011	SAMPLE	AYB1	1011	26-MAR-10 17:48	DONE		
248513019	SAMPLE	AYB1	1116	29-MAR-10 12:37	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 970857

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248513001	SAMPLE	AYB1	1221	01-APR-10 16:30	DONE		
248513002	SAMPLE	AYB1	1222	01-APR-10 16:30	DONE		
248513003	SAMPLE	AYB1	1223	01-APR-10 16:30	DONE		
248513004	SAMPLE	AYB1	1224	01-APR-10 16:30	DONE		
248513005	SAMPLE	AYB1	1225	01-APR-10 16:30	DONE		
248513006	SAMPLE	AYB1	1226	01-APR-10 16:30	DONE		
248513007	SAMPLE	AYB1	1227	01-APR-10 16:30	DONE		
248513008	SAMPLE	AYB1	1228	01-APR-10 16:30	DUSE		
248513009	SAMPLE	AYB1	1229	01-APR-10 16:30	DONE		
248513010	SAMPLE	AYB1	1230	01-APR-10 16:30	DONE		
248513011	SAMPLE	AYB1	1231	01-APR-10 16:31	DUSE		
248513012	SAMPLE	AYB1	1232	01-APR-10 16:31	DONE		
248513013	SAMPLE	AYB1	1233	01-APR-10 16:31	DONE		
248513014	SAMPLE	AYB1	1234	01-APR-10 16:31	DONE		
248513015	SAMPLE	AYB1	1235	01-APR-10 16:31	DONE		
248513016	SAMPLE	AYB1	1236	01-APR-10 16:31	DONE		
248513017	SAMPLE	AYB1	1237	01-APR-10 16:31	DONE		
248513018	SAMPLE	AYB1	1238	01-APR-10 16:31	DONE		
248513019	SAMPLE	AYB1	1239	01-APR-10 16:31	DONE		
248513020	SAMPLE	AYB1	1240	01-APR-10 16:31	DONE		
1202085016	MB	AYB1	1241	01-APR-10 16:31	DONE		
1202085017	DUP	AYB1	1242	01-APR-10 16:31	DONE		
1202085018	LCS	AYB1	1243	01-APR-10 16:31	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 971644

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248513008	SAMPLE	AXD2	1209	03-APR-10 16:20	DONE		
248513011	SAMPLE	AXD2	1210	03-APR-10 16:20	DONE		
1202086943	MB	AXD2	1211	03-APR-10 16:20	DONE		
1202086944	DUP	AXD2	1212	03-APR-10 16:20	DONE		
1202086945	LCS	AXD2	1213	03-APR-10 16:20	DONE		