

Wednesday, February 24, 2010

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/24/2010

TURNAROUND/REPORT DUE: 3/26/2010

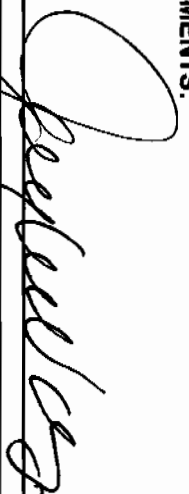
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



These Samples are on:

LANL Request Number: 10-2029

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

REQUEST NUMBER: 10-2029

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
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EPA.901.1	1	1	RE36-10-8470	R	2/20/2010	
	1	1	RE36-10-8474	R	2/20/2010	
	1	1	RE36-10-8476	R	2/20/2010	
	1	1	RE36-10-8478	R	2/20/2010	
	1	1	RE36-10-8480	R	2/20/2010	
	1	1	RE36-10-8482	R	2/20/2010	
	1	1	RE36-10-8483	R	2/20/2010	
	1	1	RE36-10-8490	R	2/20/2010	
EPA.906.0	1	1	RE36-10-8470	R	2/20/2010	

Wednesday, February 24, 2010

REQUEST NUMBER: 10-2029

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:906.0						
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
HASL-300:AM-241						
		1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
HASL-300:ISOPU						
		1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
HASL-300:ISOU						
		1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	

Wednesday, February 24, 2010

REQUEST NUMBER: 10-2029

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	

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Wednesday, February 24, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2029

LOS ALAMOS

REQUEST NUMBER: 10-2029

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/26/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8490	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8490	1	POLY	H3	Ice	R
RE36-10-8470	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8470	1	POLY	H3	Ice	R
RE36-10-8476	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8476	1	POLY	H3	Ice	R
RE36-10-8480	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8480	1	POLY	H3	Ice	R
RE36-10-8474	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8474	1	POLY	H3	Ice	R
RE36-10-8478	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8478	1	POLY	H3	Ice	R
RE36-10-8483	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8483	1	POLY	H3	Ice	R
RE36-10-8482	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8482	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

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8470

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		10:13		SUB-MEDIA:		TUFF 1	
PRS ID:	36-003(a)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	36-610882	OK		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	OK		FIELD PREP:		NA	
TOP DEPTH:	0	5.0 ft		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	5.6 ft		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	OK		EXCAVATED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NA			
BOREHOLE: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS ^{125ml} clear	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:

Light brownish gray pulverized ash flow tuff, dry

SAMPLE COMMENTS: NA

LOCATION DESC: 3a 5 7.6 ft from 3a 6; 5 ft N of staked location 3a 5

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 27 dpm
Beta/Gamma = 2220 dpm

PID $\frac{\text{Ambient Reading}}{0.1} = 0.1$ ppm

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) J. MARIN

R. Saunders

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) JON MARIN	2/20/10	(Printed Name) J. Marin	2/20/10
(Signature) J. Marin	16:05	(Signature) J. Marin	16:05
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8474

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010		MEDIA:		OBT3	
TIME COLLECTED(HH:MM)		13:45		SUB-MEDIA:		TUFF 1	
PRS ID: 36-003(a)		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: 36-610884				FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC				FIELD PREP:		NA	
TOP DEPTH: 0		0.5 ft		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		1.0 ft		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		S		EXCAVATED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NA			
BOREHOLE: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS 12m 2/20/10 Clear	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:

Light brown dry silty soil

SAMPLE COMMENTS:

NA

LOCATION DESC:

3a7 drain field

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 22 dpm
Beta/Gamma = 1955 dpm

PID $\frac{\text{Ambient Reading}}{2/20/10} = \text{ppm}$

COLLECTED BY (PRINT)

L. Lopez

REVIEWED BY (PRINT)

J. Marin

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) JON MARIN	2/20/10	(Printed Name) Sheng Sherwood	2/20/10
(Signature) Jon R. Marin	16:05	(Signature) Sheng Sherwood	1605
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8476

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010		MEDIA:	OBT3		OK
TIME COLLECTED (HH:MM)		13:52		SUB-MEDIA:	TUFF.1		
PRS ID:	36-003(a)	OK		SAMPLE TECH CODE:	HA		
LOCATION ID:	36-610885	OK		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	1.5		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	2.5		SCREEN/PORT DESC:	N/A		
FIELD MATRIX:	R	OK		EXCAVATED: YES (NO) NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES (NO) NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1		8260B	125 ML SEPTUM AMBER GLASS <i>2mm 2/20/10 clear</i>	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: *Welked - Indurated - Pinkish Gray tuff*

SAMPLE COMMENTS:

N/A

LOCATION DESC:

3a-8

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 22 dpm
 Beta/Gamma = 2270 dpm

ARM 2/20/10
 PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

COLLECTED BY (PRINT) *LARRY A. LOPEZ*REVIEWED BY (PRINT) *J. MARIN*

RELINQUISHED BY (Printed Name) <i>LARRY A. LOPEZ</i> (Signature) <i>Larry A. Lopez</i>	Date/Time <i>2/20/10</i> <i>16:05</i>	RECEIVED BY (Printed Name) <i>Sheniferwood</i> (Signature) <i>Sheniferwood</i>	Date/Time <i>2/20/10</i> <i>16:05</i>
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8478

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		14:00		SUB-MEDIA:		TUFF 1	
PRS ID: 36-003(a)		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: 36-610886				FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC				FIELD PREP:		NA	
TOP DEPTH: 0		1.5 ft		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		2.3 ft		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		S		EXCAVATED: YES/NO/NA		NO	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NO	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA		NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS ^{1RM} 1RM ^{1RM} clear	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:

Light brown silty sandy dry soil

SAMPLE COMMENTS:

NA

LOCATION DESC:

3a910

1RM
2/20/10

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 27 dpm
Beta/Gamma = 2310 dpm

^{1RM}
2/20/10
PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

COLLECTED BY (PRINT)

L. Lopez

REVIEWED BY (PRINT)

J. MARIN

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) JON MARIN	2/20/10	(Printed Name) Sheri Sherwood	2/20/10
(Signature) Jon R. Marin	16:07	(Signature) Sheri Sherwood	16:07
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8480

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		15:30		SUB-MEDIA:		TUFF 1	
PRS ID: 36-003(a)		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: 36-610887		1		FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC		1		FIELD PREP:		NA	
TOP DEPTH: 0		1.5 ft		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		2.0 ft		SCREEN/PORT DESC:		X/A	
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		
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:

Light brown sandy silty dry soil

SAMPLE COMMENTS: NA

LOCATION DESC: 3a-9

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = _____ dpm
 Beta/Gamma = _____ dpm

PID ^{JKW} 2/20/10
 Ambient Reading = ppm

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) J. MARIN

L. Lopez

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) JON MARIN	2/20/10	(Printed Name) Sherri Sherwood	2/20/10
(Signature) Jon R. Marin	16:07	(Signature) Sherri Sherwood	16:07
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8482

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010		MEDIA:	QBT3	ALLH	
TIME COLLECTED (HH:MM)		14:30		SUB-MEDIA:	TUFF 1	NA	
PRS ID:	36-003(a)	OK		SAMPLE TECH CODE:	HA	OK	
LOCATION ID:	36-610888			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	3.5		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 2mm 2/20/10 clear	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: FD: RE36-10-8490 Light brown silty sand dry soil

SAMPLE COMMENTS: NA

LOCATION DESC: 3a-11

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 11 dpm
Beta/Gamma = 2260 dpm

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

COLLECTED BY (PRINT)

L. Lopez

REVIEWED BY (PRINT) J. Marin

RELINQUISHED BY (Printed Name) JON MARIN (Signature) Jon R. Marin	Date/Time 2/20/10 16:07	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 2/20/10 16:07
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8483

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010		MEDIA:	QBT3		OK
TIME COLLECTED(HH:MM)		14:45		SUB-MEDIA:	TUFF 1		
PRS ID:	36-003(a)	OK		SAMPLE TECH CODE:	HA		
LOCATION ID:	36-610888	OK		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0			SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	2 ft RM 2 ft RM 2 ft RM 2 ft RM 5.0 7.0		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	6.0 8.0		EXCAVATED: YES/NO/NA	NA		
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA	NA			WATER FLOWING: 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: PINKISH-Gray Weathered - slightly welded Tuff.

SAMPLE COMMENTS:

NA

LOCATION DESC: 3a-11

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 16 dpm
Beta/Gamma = 2236 dpm

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

COLLECTED BY (PRINT)

LARRY A. Lopez

REVIEWED BY (PRINT)

SMARIN

RELINQUISHED BY

(Printed Name) LARRY A. Lopez

(Signature) Larry A. Lopez

RELINQUISHED BY

Date/Time

02/20/10

16:07

RECEIVED BY

(Printed Name) Sherry Sherwood

(Signature) Sherry Sherwood

RECEIVED BY

Date/Time

2/20/10

16:07

Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8490

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/10	2010	MEDIA:	OBT3	ALLH	
TIME COLLECTED(HH:MM)		14:30		SUB-MEDIA:	TUFF 1	NA	
PRS ID:	36-003(a)	OK		SAMPLE TECH CODE:	HA	OK	
LOCATION ID:	UNK	36-610988		FIELD QC TYPE:	ED		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	2.0 ft		SAMPLE USAGE:	QC		
BOTTOM DEPTH:	0	3.5 ft		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA	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		
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: QC Sample of RE36-10-8482 light brown silty sandy dry soil

SAMPLE COMMENTS: NA

LOCATION DESC: 3a-11

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 11 dpm
Beta/Gamma = 2260 dpm

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

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) J. MARIN

RELINQUISHED BY (Printed Name) JOW MARIN (Signature) Jon R. Marin	Date/Time 2/20/10 16:07	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 2/20/10 1607
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8494

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/20/2010	MEDIA:	NA	OK
TIME COLLECTED(HH:MM)		15:15	SUB-MEDIA:	OTHER	
PRS ID:	36-003(a)	OK	SAMPLE TECH CODE:	DC	
LOCATION ID:	UNK	36-610888	FIELD QC TYPE:	ER	
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	UF	
TOP DEPTH:	0	0	SAMPLE USAGE:	QC	
BOTTOM DEPTH:	0	0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	W	OK	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	BOREHOLE DIRECTION:
					NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	METALS+U-GEL	1 LITER POLY	Nitric Acid	Y	
1		NO3NO2	250 ML POLY	Sulfuric Acid (Hydrogen Sulfate)		
1		SW-846:6850	250 ML POLY	Ice		
1		TCN	500 ML POLY	Sodium Hydroxide		

SAMPLE DESC: QC Sample of RE36-10-8483

SAMPLE COMMENTS: NA

LOCATION DESC: 3a-11

FIELD SCREENING/MEASUREMENT RESULTS: NA

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) J. MARIN

N. Gallegos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) JON MARIN	2/20/10	(Printed Name) Sherri Sherwood	2/20/10
(Signature) Jon R. Marin	16:08	(Signature) Sherri Sherwood	16:08
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8496

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/20/2010	MEDIA:	NA		OK	
TIME COLLECTED (HH:MM)		13:35	SUB-MEDIA:	OTHER			
PRS ID:	36-003(a)	OK	SAMPLE TECH CODE:	DC			
LOCATION ID:	UNK	36-610884	FIELD QC TYPE:	ETB			
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA			
TOP DEPTH:	0		SAMPLE USAGE:	QC			
BOTTOM DEPTH:	0		SCREEN/PORT DESC:			NA	
FIELD MATRIX:	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
9/20/2/20/10						
1	Normal	8260B Trip Blank	40 ML SEPTUM AMBER GLASS	Ice	Y	

SAMPLE DESC: QC Sample of RE36-10-8474

SAMPLE COMMENTS:

LOCATION DESC: 3a7

FIELD SCREENING/MEASUREMENT RESULTS: NA

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) J. MARIN

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) JON MARIN	2/20/10	(Printed Name) Sheri Sherwood	2/20/10
(Signature) Jon R. Marin	16:07	(Signature) Sheri Sherwood	16:07
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

Rad Screening Data Release Form

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

RE36-10-8470

8474

8476

8478

8480

8482

8483

8490

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

.....

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

RE36-10-8496 FTB

8494 FR

Reason:

.....

Print Last Name MARIN

Signature

John. J. Marin

Date

2/20/10



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00066

Request or PO Number:

Client Sample ID: RE36-10-8470

ARS Sample ID: ARS2-10-00066-003

Sample Collection Date: 02/20/10 10:13

Date Received: 02/22/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/23/10 11:46

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDA	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	36.58	28.57	52.75	28.92		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	72.04	19.27	18.31	21.19		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
NA-22	-0.04	41.01	0.13	41.01		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	28.35	9.67	1.41	9.90		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CO-60	0.00	0.00	0.14	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	-0.05	39.88	0.09	39.88		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.02	0.04	0.08	0.04		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
EU-152	-0.58	158.76	0.36	158.76		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
PB-212	1.84	0.64	0.21	0.64		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-228	2.47	0.99	0.34	0.99		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	1.37	1.22	0.57	1.22		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	5.07	5.04	1.99	5.17		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	0.08	0.19	0.10	0.19		pCi/g	EPA 901.1M	2/23/2010	ME	N/A

NOTES: % Moisture: 0.65

Matthew J. Eden
Quality Assurance Review

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LELAP Certificate # 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00066

Request or PO Number:

Client Sample ID: RE36-10-8474

ARS Sample ID: ARS2-10-00066-004

Sample Collection Date: 02/20/10 13:45

Date Received: 02/22/10 00:00

Sample Matrix: Sol/Solid

Report Date: 02/23/10 11:46

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	32.71	27.23	33.91	27.52		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	33.76	14.64	17.73	15.21		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
NA-22	0.04	0.30	0.18	0.30		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	32.40	11.11	1.57	11.15		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CO-60	0.00	0.00	0.15	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	0.06	0.12	0.12	0.12		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.03	0.06	0.09	0.06		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
EU-152	0.70	0.84	0.39	0.84		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
PB-212	1.51	0.62	0.21	0.62		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-228	2.01	0.95	0.38	0.95		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	1.14	0.69	0.52	0.69		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	6.34	3.68	1.35	3.96		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	0.75	0.48	0.18	0.48		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
NOTES: % Moisture: 1.51										

Matt Eden
Quality Assurance Review

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NELAP Certificate # E87558



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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00066

Request or PO Number:

Client Sample ID: RE36-10-8476

ARS Sample ID: ARS2-10-00066-005

Sample Collection Date: 02/20/10 13:52

Date Received: 02/22/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/23/10 11:46

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Traceor/Chem Recovery
GROSS ALPHA	34.42	29.41	37.46	29.71		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	50.13	16.86	18.42	17.66		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
NA-22	-0.04	45.95	0.15	45.95		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	33.69	11.39	1.58	11.43		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CO-60	0.13	0.16	0.15	0.16		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	0.42	0.38	0.15	0.38		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.02	0.04	0.09	0.04		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
BU-152	-0.05	-0.11	0.43	-0.11		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
PB-212	0.97	0.55	0.22	0.55		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-228	2.47	1.08	0.38	1.08		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	0.15	0.62	0.61	0.62		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	1.44	3.28	1.58	3.30		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	0.30	0.40	0.18	0.40		pCi/g	EPA 901.1M	2/23/2010	ME	N/A

NOTES: % Moisture: 0.39

Matthew J. Eden
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00066

Client Sample ID: RE36-10-8478

Sample Collection Date: 02/20/10 14:00

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00066-006

Date Received: 02/22/10 00:00

Report Date: 02/23/10 11:46

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	23.63	24.18	34.06	24.35		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	25.34	13.92	17.92	13.87		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
NA-22	0.04	0.16	0.13	0.16		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	23.47	9.03	1.43	9.06		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CO-60	0.00	0.00	0.14	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	0.09	0.10	0.11	0.10		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.10	0.14	0.08	0.14		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
EU-152	-0.56	172.49	0.39	172.49		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
PB-212	1.62	0.58	0.18	0.59		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-226	2.65	1.06	0.35	1.07		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	0.43	0.44	0.47	0.44		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	3.42	3.39	1.50	3.47		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	0.12	0.25	0.13	0.25		pCi/g	EPA 901.1M	2/23/2010	ME	N/A

NOTES: % Moisture: 0.49

Quality Assurance Review

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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00066

Client Sample ID: RE36-10-8480

Sample Collection Date: 02/20/10 15:30

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00066-007

Date Received: 02/22/10 00:00

Report Date: 02/23/10 11:46

Analyte Description	Analyte Results	Analyte Error +/- 2 s	MDC	TPU	Qual	Analyte Units	Analyte Test Method	Analyte Date/Time	Analyte Technician	Tracer/Chem Recovery
GROSS ALPHA	2.77	13.74	32.75	13.75		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	69.73	18.43	18.31	20.31		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
NA-22	-0.04	42.97	0.14	42.97		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	36.91	11.53	1.48	11.58		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CD-60	0.17	0.25	0.14	0.25		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	0.03	0.05	0.12	0.05		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.20	0.20	0.08	0.20		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
EU-152	0.26	0.30	0.37	0.30		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
PB-212	1.54	0.57	0.16	0.57		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-228	2.81	1.39	0.38	1.40		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	0.87	1.02	0.56	1.02		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	6.24	3.51	1.27	3.79		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	0.44	0.29	0.09	0.30		pCi/g	EPA 901.1M	2/23/2010	ME	N/A

NOTES: % Moisture: 1.24

Matthew J. Feller
Quality Assurance Review

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

LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00066

Client Sample ID: RE36-10-8482

Sample Collection Date: 02/20/10 14:30

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00066-008

Date Received: 02/22/10 00:00

Report Date: 02/23/10 11:46

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	5.13	15.66	33.91	15.99		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	55.05	16.40	17.73	17.73		pCi/g	BPA 900.0M	2/23/2010	ME	N/A
NA-22	-0.04	40.19	0.13	40.19		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	22.73	8.75	1.38	8.77		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CO-60	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	0.15	0.23	0.16	0.23		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
EU-152	0.31	0.33	0.38	0.33		pCi/g	BPA 901.1M	2/23/2010	ME	N/A
PB-212	1.58	0.52	0.11	0.52		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-226	0.00	0.00	0.34	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	1.17	0.80	0.42	0.80		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	2.24	2.98	1.48	3.03		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	0.02	0.16	0.10	0.16		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
NOTES: % Moisture: 0.31										

M. J. Edler
Quality Assurance Review

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LELAP Certificate # 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: AR52-10-00066

Client Sample ID: RE36-10-8483

Sample Collection Date: 02/20/10 14:45

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: AR52-10-00066-009

Date Received: 02/22/10 00:00

Report Date: 02/23/10 11:46

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	29.50	27.75	37.46	27.98		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	36.61	16.10	18.42	15.75		pCi/g	EPA 909.0M	2/23/2010	ME	N/A
NA-22	-0.04	40.77	0.13	40.77		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	31.60	10.39	1.41	10.43		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CO-60	0.00	0.00	0.14	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	0.08	0.12	0.11	0.12		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
EU-152	-0.55	157.83	0.38	157.83		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
PB-212	1.50	0.55	0.16	0.55		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-228	2.25	0.96	0.34	0.96		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	-0.22	-0.80	0.56	-0.80		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	5.84	4.32	1.61	4.52		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	0.04	0.14	0.08	0.14		pCi/g	EPA 901.1M	2/23/2010	ME	N/A

NOTES: % Moisture: 0.21

Matthew J. Edger
Quality Assurance Review

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LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00066

Request or PO Number:

Client Sample ID: RE36-10-8490

ARS Sample ID: ARS2-10-00066-013

Sample Collection Date: 02/20/10 15:00

Date Received: 02/22/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/23/10 11:46


Analysis Description	Analysis Results	Analysis Error +/- 3 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Yrecor/Chem Recovery
GROSS ALPHA	19.59	24.11	37.46	24.23		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
GROSS BETA	39.28	15.20	18.42	15.94		pCi/g	EPA 900.0M	2/23/2010	ME	N/A
NA-22	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
K-40	32.50	10.41	1.37	10.45		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CO-60	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-134	0.13	0.15	0.09	0.15		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
CS-137	0.02	0.04	0.08	0.04		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
BU-152	-0.54	154.01	0.38	154.01		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
PB-212	1.47	0.60	0.22	0.60		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
RA-228	2.02	1.28	0.33	1.28		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-235	0.55	0.63	0.59	0.63		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
U-238	4.13	3.40	1.41	3.53		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
AM-241	-0.03	37.68	0.08	37.68		pCi/g	EPA 901.1M	2/23/2010	ME	N/A
NOTES: % Moisture: 0.63										

Matthew A. Edm
Quality Assurance Review

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


LELAP Certificate# 30658


NELAP Certificate # E87558

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


Section I.			
REQUEST NUMBER:	10-2029	VALIDATION DATE:	04/07/10
		LAB CODE:	GEL
CONTRACT LABORATORY NAME:	GEL Laboratories LLC		
VALIDATOR:	David Schwent	ORGANIZATION:	Analytical Quality Associates, Inc.
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): 1. All reported sample results that were rejected by the laboratory due to interference or low abundance were qualified R,R5a. In the QC samples, several results were also rejected by the laboratory. No sample data were qualified as a result. 2. 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. 3. It should be noted that the matrix QC analyses were performed on LANL samples from other RNs. No sample data were qualified as a result.							
Reviewed by: Susan Ball				Level: I		Date: 04/07/10	


DATA VALIDATION COVER SHEET	
5119-1	Records Use only
Data Validation Cover Sheet	
VALIDATOR'S SIGNATURE: <u>David Schwartz</u> DATE: <u>04/07/10</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
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>Rad Analytical Data Validation Checklist</div> <div>  </div> </div>	

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

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
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 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: March 23, 2010

Client Sample ID: RE36-10-8490
Sample ID: 247969001
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 5.15%

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	-0.000985	0.0217	+/-0.00212	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00754	0.0191	+/-0.00561	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00471	0.0161	+/-0.00307	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.944	0.107	+/-0.0908	0.100	pCi/g		JXH2	03/22/10	2119	962404	3
Uranium-235/236	U	0.056	0.0651	+/-0.0179	0.100	pCi/g						
Uranium-238		0.997	0.0749	+/-0.0951	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0805	0.230	+/-0.065	0.200	pCi/g		MXR1	03/10/10	2310	958216	4
Bismuth-211	UI	5.14	R,R5a	0.205	+/-0.228	pCi/g						
Bismuth-214		1.62		0.0699	+/-0.0887	0.200	pCi/g					
Cadmium-109	UI	3.79	R,R5a	0.887	+/-0.405	pCi/g						
Cerium-139	U	-0.00947		0.0342	+/-0.00994	0.050	pCi/g					
Cesium-134	UI	0.105	R,R5a	0.0564	+/-0.0174	0.100	pCi/g					
Cesium-137	U	-0.00544		0.0387	+/-0.0134	0.100	pCi/g					
Cobalt-60	U	-0.000337		0.0387	+/-0.0118	0.100	pCi/g					
Europium-152	U	-0.0685		0.098	+/-0.0437	0.200	pCi/g					
Lanthanum-140	U	-0.0319		0.0905	+/-0.0287	pCi/g						
Lead-212		2.03		0.0622	+/-0.0832	0.100	pCi/g					
Lead-214		1.87		0.0745	+/-0.0975	0.100	pCi/g					
Mercury-203	UI	0.0612	R,R5a	0.0403	+/-0.0197	0.100	pCi/g					
Potassium-40		36.7		0.292	+/-1.51	1.00	pCi/g					
Radium-223	U	0.00398		0.671	+/-0.234	pCi/g						
Radium-224	UI	5.06	R,R5a	0.666	+/-0.444	pCi/g						
Radium-226		1.62		0.0699	+/-0.0887	pCi/g						
Radium-228		2.39		0.137	+/-0.191	0.500	pCi/g					
Ruthenium-106	U	0.0298		0.336	+/-0.103	0.800	pCi/g					
Sodium-22	U	-0.0106		0.0454	+/-0.0141	0.080	pCi/g					
Strontium-85	UI	0.0952	R,R5a	0.045	+/-0.0135	pCi/g						

DJS
04/07/10

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

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE36-10-8490
247969001

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		0.597	0.0367	+/-0.0339	0.080	pCi/g						
Thorium-227	U	0.203	0.284	+/-0.0827		pCi/g						
Thorium-231	U	0.00398	0.671	+/-0.234		pCi/g						
Thorium-234	U	0.536	1.97	+/-0.574	2.00	pCi/g						
Tin-113	U	-0.0199	0.0474	+/-0.0143	0.100	pCi/g						
Uranium-235	U	0.0688	0.232	+/-0.0717	0.500	pCi/g						
Yttrium-88	U	-0.00367	0.0327	+/-0.0102	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	1.62	174	+/-48.8	250	pCi/L		KXK2	03/15/10	1309	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	96.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.5	(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
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value

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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: March 23, 2010

Client Sample ID: RE36-10-8470
Sample ID: 247969002
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 6.2%

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	-0.00372	0.0212	+/-0.00319	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.000938	0.0222	+/-0.00292	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00763	0.0188	+/-0.00446	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.09	0.097	+/-0.0997	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.051	0.0593	+/-0.0152	0.100	pCi/g						
Uranium-238		1.02	0.0682	+/-0.0942	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0368	0.0585	+/-0.0171	0.200	pCi/g		MXR1	03/10/10	2310	958216	4
Bismuth-211	UI	4.93	R,R5a	0.248	+/-0.293	pCi/g						
Bismuth-214		1.66		0.0952	+/-0.119	pCi/g						
Cadmium-109	UI	4.14	R,R5a	0.575	+/-0.324	pCi/g						
Cerium-139	U	0.0169		0.0338	+/-0.00924	pCi/g						
Cesium-134	UI	0.146	R,R5a	0.0858	+/-0.0248	pCi/g						
Cesium-137	U	0.00409		0.0606	+/-0.0182	pCi/g						
Cobalt-60	U	0.00799		0.0615	+/-0.0179	pCi/g						
Europium-152	U	-0.0298		0.121	+/-0.0372	pCi/g						
Lanthanum-140	U	-0.225		0.136	+/-0.0558	pCi/g						
Lead-212		2.14		0.0631	+/-0.116	pCi/g						
Lead-214		1.79		0.0901	+/-0.117	pCi/g						
Mercury-203	U	-0.00664		0.0458	+/-0.0153	pCi/g						
Potassium-40		34.3		0.522	+/-1.69	pCi/g						
Radium-223	U	-0.136		0.783	+/-0.268	pCi/g						
Radium-224	UI	6.21	R,R5a	0.678	+/-0.515	pCi/g						
Radium-226		1.66		0.0952	+/-0.119	pCi/g						
Radium-228		2.32		0.204	+/-0.213	pCi/g						
Ruthenium-106	U	-0.0372		0.458	+/-0.138	pCi/g						
Sodium-22	U	-0.0417		0.0657	+/-0.0222	pCi/g						
Strontium-85	U	0.0536		0.055	+/-0.0165	pCi/g						
Thallium-208		0.648		0.0502	+/-0.0477	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE36-10-8470
Sample ID: 247969002
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	-0.156	0.285	+/-0.087		pCi/g						
Thorium-231	U	-0.136	0.783	+/-0.268		pCi/g						
Thorium-234		1.74	0.616	+/-0.322	2.00	pCi/g						
Tin-113	U	-0.0194	0.0551	+/-0.0175	0.100	pCi/g						
Uranium-235	U	0.0754	0.219	+/-0.0659	0.500	pCi/g						
Yttrium-88	U	0.00154	0.0586	+/-0.018	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	137	180	+/-57.3	250	pCi/L		KXX2	03/15/10	1347	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.8	(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
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE36-10-8476
Sample ID: 247969003
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 4.17%

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	0.00098	0.0206	+/-0.00141	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.002	0.0229	+/-0.00276	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00518	0.0194	+/-0.00301	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.00	0.103	+/-0.0942	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0542	0.0629	+/-0.0161	0.100	pCi/g						
Uranium-238		0.968	0.0724	+/-0.0918	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0802	0.169	+/-0.0473	0.200	pCi/g		MXR1	03/10/10	2311	958216	4
Bismuth-211	UI	5.22	R,R5a	0.224	+/-0.344	pCi/g						
Bismuth-214		1.52		0.0749	+/-0.106	pCi/g						
Cadmium-109	UI	4.24	R,R5a	0.784	+/-0.413	pCi/g						
Cerium-139	U	-0.02		0.0351	+/-0.0104	pCi/g						
Cesium-134	UI	0.0871	R,R5a	0.0603	+/-0.0219	pCi/g						
Cesium-137	U	-0.0191		0.0402	+/-0.0125	pCi/g						
Cobalt-60	U	-0.0107		0.0409	+/-0.0139	pCi/g						
Europium-152	U	0.0044		0.108	+/-0.0414	pCi/g						
Lanthanum-140	U	-0.104		0.112	+/-0.037	pCi/g						
Lead-212		2.16		0.0654	+/-0.149	pCi/g						
Lead-214		1.89		0.0813	+/-0.135	pCi/g						
Mercury-203	U	0.0464		0.0491	+/-0.0165	pCi/g						
Potassium-40		35.7		0.332	+/-1.73	pCi/g						
Radium-223	U	0.0175		0.731	+/-0.245	pCi/g						
Radium-224	UI	5.69	R,R5a	0.700	+/-0.556	pCi/g						
Radium-226		1.52		0.0749	+/-0.106	pCi/g						
Radium-228		2.18		0.144	+/-0.190	pCi/g						
Ruthenium-106	U	-0.112		0.323	+/-0.0988	pCi/g						
Sodium-22	U	0.00195		0.047	+/-0.0166	pCi/g						
Strontium-85	UI	0.159	R,R5a	0.0534	+/-0.0173	pCi/g						
Thallium-208		0.603		0.036	+/-0.0438	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE36-10-8476
Sample ID: 247969003

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	0.0903	0.299	+/-0.0891		pCi/g					
Thorium-231	U	0.0175	0.731	+/-0.245		pCi/g					
Thorium-234	U	0.820	1.55	+/-0.447	2.00	pCi/g					
Tin-113	U	-0.0194	0.0494	+/-0.015	0.100	pCi/g					
Uranium-235	U	0.0243	0.247	+/-0.0741	0.500	pCi/g					
Yttrium-88	U	-0.00365	0.0339	+/-0.0105	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium	U	-73.1	183	+/-47.5	250	pCi/L		KXX2	03/15/10	1425 964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.1	(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
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8480
Sample ID: 247969004
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 10.8%

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	0.00129	0.0228	+/-0.00156	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000858	0.0259	+/-0.00279	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.0114	0.0219	+/-0.00606	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.937	0.099	+/-0.0883	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0564	0.0605	+/-0.0162	0.100	pCi/g						
Uranium-238		0.958	0.0696	+/-0.0899	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0732	0.277	+/-0.0897	0.200	pCi/g		MXR1	03/10/10	2311	958216	4
Bismuth-211	UI	4.92	R,R5a	0.288	+/-0.265	pCi/g						
Bismuth-214		1.48		0.0971	+/-0.0942	pCi/g						
Cadmium-109	UI	5.38	R,R5a	1.12	+/-0.566	pCi/g						
Cerium-139	U	-0.0107		0.0428	+/-0.013	pCi/g						
Cesium-134	U	0.0743		0.0761	+/-0.0235	pCi/g						
Cesium-137	U	0.0341		0.0612	+/-0.0179	pCi/g						
Cobalt-60	U	0.00977		0.0625	+/-0.0189	pCi/g						
Europium-152	U	-0.0681		0.141	+/-0.0498	pCi/g						
Lanthanum-140	U	-0.0972		0.121	+/-0.0421	pCi/g						
Lead-212		2.18		0.0778	+/-0.0931	pCi/g						
Lead-214		1.79		0.105	+/-0.108	pCi/g						
Mercury-203	U	0.0358		0.0611	+/-0.0197	pCi/g						
Potassium-40		31.8		0.388	+/-1.42	pCi/g						
Radium-223	U	-0.25		0.926	+/-0.321	pCi/g						
Radium-224	UI	5.64	R,R5a	0.833	+/-0.560	pCi/g						
Radium-226		1.48		0.0971	+/-0.0942	pCi/g						
Radium-228		2.11		0.191	+/-0.180	pCi/g						
Ruthenium-106	U	-0.0683		0.457	+/-0.142	pCi/g						
Sodium-22	U	-0.0154		0.0659	+/-0.0208	pCi/g						
Strontium-85	U	0.0344		0.0577	+/-0.019	pCi/g						
Thallium-208		0.648		0.0524	+/-0.047	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE36-10-8480
Sample ID: 247969004
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	-0.0184	0.368	+/-0.114		pCi/g						
Thorium-231	U	-0.25	0.926	+/-0.321		pCi/g						
Thorium-234	U	2.21	2.30	+/-0.904	2.00	pCi/g						
Tin-113	U	0.00246	0.0668	+/-0.0198	0.100	pCi/g						
Uranium-235	U	0.126	0.307	+/-0.0927	0.500	pCi/g						
Yttrium-88	U	-0.00438	0.0431	+/-0.0135	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	51.3	184	+/-53.8	250	pCi/L		KXK2	03/15/10	1502	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: March 23, 2010

Client Sample ID: RE36-10-8474
Sample ID: 247969005
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 12.8%

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	-0.00124	0.0214	+/-0.00338	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0036	0.0234	+/-0.00454	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.000423	0.0198	+/-0.00562	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.10	0.104	+/-0.102	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0411	0.0636	+/-0.014	0.100	pCi/g						
Uranium-238		1.04	0.0732	+/-0.0977	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00457	0.177	+/-0.0589	0.200	pCi/g		MXR1	03/10/10	2325	958216	4
Bismuth-211	UI	5.39	R,R5a	0.224	+/-0.341	pCi/g						
Bismuth-214		1.61		0.0802	+/-0.107	pCi/g						
Cadmium-109	UI	4.62	R,R5a	0.833	+/-0.468	pCi/g						
Cerium-139	U	0.00148		0.0352	+/-0.0103	pCi/g						
Cesium-134	UI	0.102	R,R5a	0.0669	+/-0.0289	pCi/g						
Cesium-137		0.0855		0.0495	+/-0.0224	pCi/g						
Cobalt-60	U	-0.0172		0.0451	+/-0.0147	pCi/g						
Europium-152	U	0.040		0.116	+/-0.0339	pCi/g						
Lanthanum-140	U	0.0627		0.117	+/-0.0362	pCi/g						
Lead-212		2.29		0.0667	+/-0.143	pCi/g						
Lead-214		1.96		0.0814	+/-0.135	pCi/g						
Mercury-203	U	0.00619		0.0471	+/-0.016	pCi/g						
Potassium-40		35.1		0.379	+/-1.68	pCi/g						
Radium-223	U	0.333		0.776	+/-0.262	pCi/g						
Radium-224	UI	5.31	R,R5a	0.715	+/-0.546	pCi/g						
Radium-226		1.61		0.0802	+/-0.107	pCi/g						
Radium-228		2.49		0.160	+/-0.196	pCi/g						
Ruthenium-106	U	0.0336		0.374	+/-0.113	pCi/g						
Sodium-22	U	0.0154		0.0535	+/-0.0159	pCi/g						
Strontium-85	U	0.0417		0.0483	+/-0.0152	pCi/g						
Thallium-208		0.684		0.0405	+/-0.0469	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8474
Sample ID: 247969005

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	-0.121	0.287	+/-0.0896		pCi/g						
Thorium-231	U	0.333	0.776	+/-0.262		pCi/g						
Thorium-234		2.37	1.50	+/-0.729	2.00	pCi/g						
Tin-113	U	-0.00782	0.0512	+/-0.0151	0.100	pCi/g						
Uranium-235	U	0.0835	0.245	+/-0.0741	0.500	pCi/g						
Yttrium-88	U	0.00342	0.0359	+/-0.0107	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-72.2	180	+/-46.9	250	pCi/L		KXK2	03/15/10	1540	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8478
Sample ID: 247969006
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 4.74%

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	0.00385	0.0208	+/-0.00235	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.000615	0.0227	+/-0.00667	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.0041	0.0192	+/-0.00501	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.927	0.103	+/-0.0887	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0585	0.0627	+/-0.0168	0.100	pCi/g						
Uranium-238		1.05	0.0721	+/-0.0979	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.132	0.379	+/-0.109	0.200	pCi/g		MXR1	03/11/10	1414	958216	4
Bismuth-211	UI	4.71	R,R5a	0.377	+/-0.308	pCi/g						
Bismuth-214		1.56		0.136	+/-0.0984	0.200	pCi/g					
Cadmium-109	UI	3.71	R,R5a	1.62	+/-0.855	pCi/g						
Cerium-139	U	0.0227	0.0594	+/-0.017	0.050	pCi/g						
Cesium-134	U	0.0778	0.102	+/-0.0313	0.100	pCi/g						
Cesium-137	U	0.0317	0.0786	+/-0.0227	0.100	pCi/g						
Cobalt-60	U	-0.00932	0.0735	+/-0.0231	0.100	pCi/g						
Europium-152	U	0.0773	0.189	+/-0.0878	0.200	pCi/g						
Lanthanum-140	U	-0.0743	0.163	+/-0.0549	pCi/g							
Lead-212		2.00	0.108	+/-0.0959	0.100	pCi/g						
Lead-214		1.71	0.137	+/-0.121	0.100	pCi/g						
Mercury-203	U	0.0669	0.0777	+/-0.0392	0.100	pCi/g						
Potassium-40		29.3	0.568	+/-1.45	1.00	pCi/g						
Radium-223	U	-0.0418	1.19	+/-0.398	pCi/g							
Radium-224	UI	4.74	R,R5a	1.16	+/-0.629	pCi/g						
Radium-226		1.56	0.136	+/-0.0984	pCi/g							
Radium-228		2.12	0.242	+/-0.207	0.500	pCi/g						
Ruthenium-106	U	-0.216	0.582	+/-0.184	0.800	pCi/g						
Sodium-22	U	-0.00454	0.080	+/-0.0247	0.080	pCi/g						
Strontium-85	U	0.0493	0.0791	+/-0.0251	pCi/g							
Thallium-208		0.680	0.058	+/-0.0484	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8478
Sample ID: 247969006
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	-0.0763	0.466	+/-0.143		pCi/g						
Thorium-231	U	-0.0418	1.19	+/-0.398		pCi/g						
Thorium-234	U	0.448	3.34	+/-0.933	2.00	pCi/g						
Tin-113	U	-0.00409	0.0884	+/-0.026	0.100	pCi/g						
Uranium-235	U	0.0458	0.418	+/-0.122	0.500	pCi/g						
Yttrium-88	U	0.041	0.0781	+/-0.0204	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>I13 "As Received"</i>												
Tritium	U	63.1	178	+/-53.0	250	pCi/L		KXK2	03/15/10	1617	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.5	(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
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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: March 23, 2010

Client Sample ID: RE36-10-8483
Sample ID: 247969007
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 2.3%

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	-0.00247	0.0218	+/-0.00212	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00359	0.0238	+/-0.00254	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00537	0.0201	+/-0.00312	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.991	0.105	+/-0.0938	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236		0.0688	0.064	+/-0.0185	0.100	pCi/g						
Uranium-238		1.05	0.0736	+/-0.0985	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0203	0.186	+/-0.062	0.200	pCi/g		MXR1	03/11/10	1415	958216	4
Bismuth-211	UI	5.33	R,R5a	0.295	+/-0.424	pCi/g						
Bismuth-214		1.59		0.118	+/-0.126	0.200	pCi/g					
Cadmium-109	UI	5.58	R,R5a	1.07	+/-0.567	pCi/g						
Cerium-139	U	-0.00448	0.0485	+/-0.0143	0.050	pCi/g						
Cesium-134	UI	0.127	R,R5a	0.0965	+/-0.0355	0.100	pCi/g					
Cesium-137	U	0.00637		0.067	+/-0.0202	0.100	pCi/g					
Cobalt-60	U	-0.0196		0.0617	+/-0.0203	0.100	pCi/g					
Europium-152	U	0.0401		0.165	+/-0.0498	0.200	pCi/g					
Lanthanum-140	U	-0.0578		0.165	+/-0.0539	pCi/g						
Lead-212		2.29		0.0937	+/-0.173	0.100	pCi/g					
Lead-214		1.93		0.107	+/-0.163	0.100	pCi/g					
Mercury-203	U	0.0106		0.067	+/-0.0201	0.100	pCi/g					
Potassium-40		33.8		0.465	+/-1.76	1.00	pCi/g					
Radium-223	U	0.167		1.02	+/-0.345	pCi/g						
Radium-224	UI	5.98	R,R5a	1.01	+/-0.700	pCi/g						
Radium-226		1.59		0.118	+/-0.126	pCi/g						
Radium-228		2.29		0.237	+/-0.225	0.500	pCi/g					
Ruthenium-106	U	-0.00555		0.510	+/-0.155	0.800	pCi/g					
Sodium-22	U	-0.0151		0.0743	+/-0.0237	0.080	pCi/g					
Strontium-85	U	0.00585		0.0661	+/-0.0222	pCi/g						
Thallium-208		0.722		0.0632	+/-0.0612	0.080	pCi/g					

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

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE36-10-8483
247969007

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	0.270	0.427	+/-0.124		pCi/g						
Thorium-231	U	0.167	1.02	+/-0.345		pCi/g						
Thorium-234		3.60	1.66	+/-1.13	2.00	pCi/g						
Tin-113	U	0.0154	0.0748	+/-0.0213	0.100	pCi/g						
Uranium-235	U	0.112	0.344	+/-0.0998	0.500	pCi/g						
Yttrium-88	U	0.0309	0.0706	+/-0.019	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-10.3	221	+/-61.4	250	pCi/L		KXK2	03/15/10	1655	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE36-10-8482
Sample ID: 247969008
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 5.04%

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	0.00171	0.0227	+/-0.00237	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00365	0.0243	+/-0.00259	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00183	0.0205	+/-0.00183	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.07	0.120	+/-0.103	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0629	0.073	+/-0.0201	0.100	pCi/g						
Uranium-238		1.10	0.084	+/-0.105	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00906	0.117	+/-0.0363	0.200	pCi/g		MXR1	03/11/10	1417	958216	4
Bismuth-211	UI	5.07	R,R5a	0.410	+/-0.395	pCi/g						
Bismuth-214		1.85		0.164	+/-0.151	0.200	pCi/g					
Cadmium-109	UI	6.17	R,R5a	0.980	+/-0.571	pCi/g						
Cerium-139	U	0.00995		0.0618	+/-0.0182	0.050	pCi/g					
Cesium-134	UI	0.174	R,R5a	0.124	+/-0.0559	0.100	pCi/g					
Cesium-137	U	0.00369		0.0933	+/-0.029	0.100	pCi/g					
Cobalt-60	U	0.0154		0.0935	+/-0.0269	0.100	pCi/g					
Europium-152	U	-0.0753		0.185	+/-0.0698	0.200	pCi/g					
Lanthanum-140	U	-0.126		0.258	+/-0.0874	pCi/g						
Lead-212		2.34		0.113	+/-0.140	0.100	pCi/g					
Lead-214		1.84		0.149	+/-0.152	0.100	pCi/g					
Mercury-203	U	0.00716		0.0828	+/-0.0267	0.100	pCi/g					
Potassium-40		32.8		0.636	+/-1.84	1.00	pCi/g					
Radium-223	U	0.515		1.27	+/-0.399	pCi/g						
Radium-224	UI	6.13	R,R5a	1.21	+/-0.908	pCi/g						
Radium-226		1.85		0.164	+/-0.151	pCi/g						
Radium-228		2.13		0.232	+/-0.252	0.500	pCi/g					
Ruthenium-106	U	0.399		0.817	+/-0.235	0.800	pCi/g					
Sodium-22	U	-0.0474		0.101	+/-0.0342	0.080	pCi/g					
Strontium-85	U	0.0078		0.0812	+/-0.0276	pCi/g						
Thallium-208		0.722		0.0748	+/-0.0692	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: March 23, 2010

Client Sample ID:
Sample ID:

RE36-10-8482
247969008

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	-0.0255	0.498	+/-0.154		pCi/g						
Thorium-231	U	0.515	1.27	+/-0.399		pCi/g						
Thorium-234		2.28	1.17	+/-0.635	2.00	pCi/g						
Tin-113	U	-0.0265	0.0887	+/-0.0271	0.100	pCi/g						
Uranium-235	U	-0.106	0.395	+/-0.120	0.500	pCi/g						
Yttrium-88	U	-0.0126	0.0794	+/-0.0258	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-28.9	163	+/-45.3	250	pCi/L		KXK2	03/15/10	1732	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	78.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	79.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

Wednesday, February 24, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2029

LOS ALAMOS

REQUEST NUMBER: 10-2029

NATIONAL LABORATORY

ATTN: Valerie Davis:

TURNAROUND/REPORT DUE: 3/26/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

247969%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8490	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8490	1	POLY	H3	Ice	R
RE36-10-8470	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8470	1	POLY	H3	Ice	R
RE36-10-8476	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8476	1	POLY	H3	Ice	R
RE36-10-8480	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8480	1	POLY	H3	Ice	R
RE36-10-8474	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8474	1	POLY	H3	Ice	R
RE36-10-8478	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8478	1	POLY	H3	Ice	R
RE36-10-8483	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8483	1	POLY	H3	Ice	R
RE36-10-8482	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8482	1	POLY	H3	Ice	R

Relinquished By:

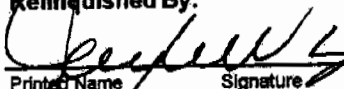
Date

Time

Received By:

Date

Time

 2/24/10 1:40 PM Patricia D. Davis P.D. Davis 2/25/10 10:45

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

Wednesday, February 24, 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: 10-2029
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples according to the schedule indicated:

SHIP DATE: 2/24/2010
TURNAROUND/REPORT DUE: 3/28/2010
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	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	EPA:906.0	1	RE36-10-8470	R	2/20/2010	

Wednesday, February 24, 2010

Page 2 of 3

REQUEST NUMBER: 10-2029

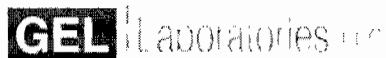
PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	HASL-300:AM-241	1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	HASL-300:ISOPU	1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	HASL-300:ISOU	1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	

REQUEST NUMBER: 10-2029

Wednesday, February 24, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE38-10-8482	R	2/20/2010	
		1	RE38-10-8483	R	2/20/2010	
		1	RE38-10-8490	R	2/20/2010	

Final Page of REQUEST NUMBER 10-2029



a member of **The GEL Group** INC.



PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

March 04, 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: 247969
SDG: 10-2029

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 25, 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: 10-2029
Enclosures

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 247969
SDG: 10-2029

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Case Narrative

Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 247969
SDG # : 10-2029

March 04, 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 February 25, 2010 for analysis. The samples were prepared/analyzed within the required holding time. Shipping container temperatures were checked, documented, and within specifications. The samples were screened according to GEL Standard Operating Procedure. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. The containers for radiochemistry were received at 12-14C temperatures. Shipping container temperature was within specification (0 - 6C).

Sample Identification The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
247969001	RE36-10-8490
247969002	RE36-10-8470
247969003	RE36-10-8476
247969004	RE36-10-8480
247969005	RE36-10-8474
247969006	RE36-10-8478
247969007	RE36-10-8483
247969008	RE36-10-8482

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 04 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

Wednesday, February 24, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2029

LOS ALAMOS

REQUEST NUMBER: 10-2029

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/26/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

247969%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8490	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8490	1	POLY	H3	Ice	R
RE36-10-8470	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8470	1	POLY	H3	Ice	R
RE36-10-8476	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8476	1	POLY	H3	Ice	R
RE36-10-8480	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8480	1	POLY	H3	Ice	R
RE36-10-8474	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8474	1	POLY	H3	Ice	R
RE36-10-8478	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8478	1	POLY	H3	Ice	R
RE36-10-8483	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8483	1	POLY	H3	Ice	R
RE36-10-8482	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8482	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

Wednesday, February 24, 2010

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

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

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/24/2010

TURNAROUND/REPORT DUE: 3/26/2010

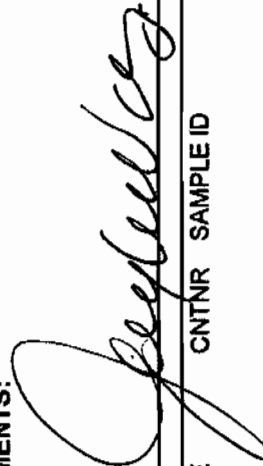
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



These Samples are on:
LANL Request Number: 10-2029
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Page 1 of 3
REQUEST NUMBER: 10-2029

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1						
		1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	EPA:906.0	1	RE36-10-8470	R	2/20/2010	

Wednesday, February 24, 2010

Page 2 of 3

REQUEST NUMBER: 10-2029

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:906.0	1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	HASL-300:AM-241	1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	HASL-300:ISOPU	1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8480	R	2/20/2010	
		1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	
	HASL-300:ISOU	1	RE36-10-8470	R	2/20/2010	
		1	RE36-10-8474	R	2/20/2010	
		1	RE36-10-8476	R	2/20/2010	
		1	RE36-10-8478	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	

Wednesday, February 24, 2010

Page 3 of 3

REQUEST NUMBER: 10-2029

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE36-10-8482	R	2/20/2010	
		1	RE36-10-8483	R	2/20/2010	
		1	RE36-10-8490	R	2/20/2010	

Final Page of REQUEST NUMBER 10-2029

SAMPLE RECEIPT & REVIEW FORM

Client: LANL		SDG/ARCOC/Work Order: 10-2029	
Received By: Patricia Dover-Dent		Date Received: FEB-25-2010	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.	
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/>	Maximum Counts Observed*: 80 CPM	
Classified Radioactive II by RSO?	<input checked="" type="checkbox"/>		
COC/Samples marked containing PCBs?	<input checked="" type="checkbox"/>		
Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:	
Samples identified as Foreign Soil?	<input checked="" type="checkbox"/>		

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within 0 ≤ 6 deg. C?	<input checked="" type="checkbox"/>			Preservation Method: ice bags blue ice dry ice none other (describe) 0-6, 12-14
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	<input checked="" type="checkbox"/>			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?			<input checked="" type="checkbox"/>	Sample ID's affected: No Time On chain of custody
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments: FEDEX#s

7209 7850 1919 0C	7209 7850 2076 2C	7209 7850 2238 3C	7209 7850 1893 12C
7209 7850 2146 1C	7209 7850 2065 2C	7209 7850 2124 3C	7209 7850 1849 12C
7209 7850 1952 1C	7209 7850 1996 3C	7209 7850 1974 4C	7209 7850 1838 13C
7209 7850 2054 1C	7209 7850 2135 3C	7209 7850 1985 4C	7209 7850 1860 13C
7209 7850 1963 1C	7209 7850 2032 3C	7209 7850 2000 4C	7209 7850 1850 13C
7209 7850 2021 2C	7209 7850 2249 3C	7209 7850 2087 4C	7209 7850 2098 13C
7209 7850 2113 2C	7209 7850 2168 3C	7209 7850 2010 5C	7209 7850 1908 14C
7209 7850 2102 2C	7209 7850 1941 3C	7209 7850 2157 6C	
7209 7850 1882 2C	7209 7850 2043 3C	7209 7850 1871 12C	

LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTNGT: 49.0 LB M
CAD: 0014176/CAFE

BILL SENDER

VALERIE DAVIS (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTNGT: 63.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

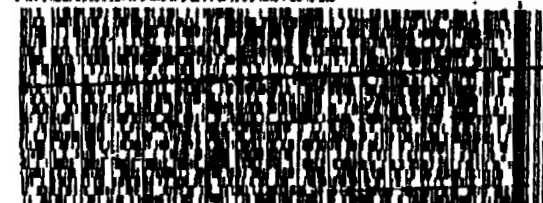
CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A0532VA00

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A015AGWMO



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2 of 2
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TRK 7209 7850 1908 0201

THU - 25FEB
PRIORITY OVERNIGHT

X CHSA

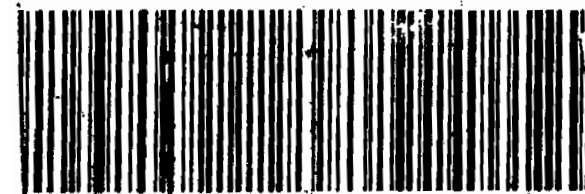
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Mstr 7209 7850 2135 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



LOS ALAMOS, NM 87545
UNITED STATES US

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A05529E00

UNITED STATES US

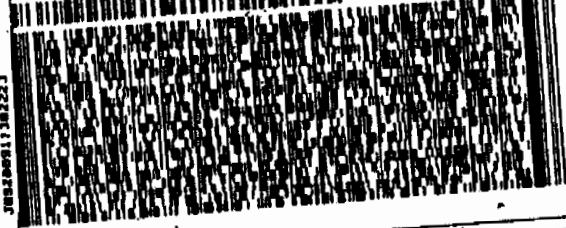
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GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A015AGWMO



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2 of 3
7209 7850 1952
TRK 7209 7850 1941 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

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1 of 2
7209 7850 2054
Mstr MASTER NH

THU - 25FEB A1
PRIORITY OVERNIGHT

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SC-US
CHS



JENNY VALDEZ
LOS ALAMOS NATL LAB
3 BLDG 1237 DPU 03

ALAMOS, NM 87545
ED STATES US

ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
1A00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

LERIE DAVIS
NERAL ENGINEERING LAB
40 SAVAGE RD

CHARLESTON SC 29407

(566-8171)
REF: 6B010AMR3A05529E00

1c

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

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REF: 6B010AMR2A05158YDO

2c

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3 of 3
7209 7850 1963

7209 7850 1941 (0201)

THU - 25FEB A1
PRIORITY OVERNIGHT

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ALAMOS, NM 87545
ED STATES US

BILL SENDER

LERIE DAVIS
NERAL ENGINEERING LAB
40 SAVAGE RD

CHARLESTON SC 29407

(566-8171)
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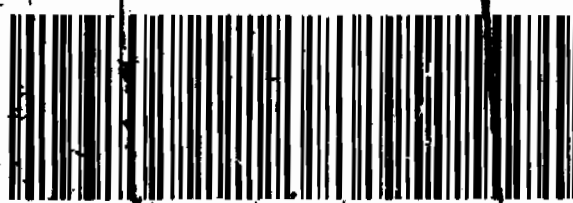
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PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



ALAMOS, NM 87545
ED STATES US

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LERIE DAVIS
NERAL ENGINEERING LAB
40 SAVAGE RD

CHARLESTON SC 29407

(566-8171)
REF: 6B010AMR1A015AGWMO

2c

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A015AGWMO

2c

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1 of 2
7209 7850 2113

MASTER NM

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

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SC-US
CHS



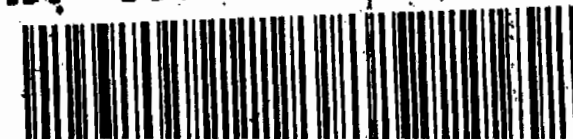
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THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



ORIGIN ID: SAFA (505) 666-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24 FEB 10
ACTWGT: 55.0 LB MAN
CAD: 0014178/CAFE2450

BILL SENDER

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014178/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

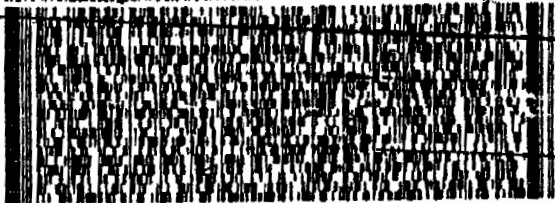
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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

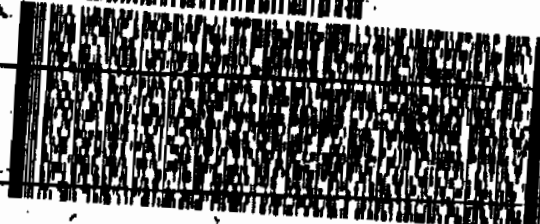
CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWMO



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2 of 3
MPS# 7209 7850 1882
(0263)

Matr# 7209 7850 1871 (0201)

THU - 25FEB
PRIORITY OVERNIGHT

XX CHSA

294



1 of 2
TRK# 7209 7850 2076
(0201)

MM MASTER MM

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014178/CAFE2450

BILL SENDER

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTWGT: 49.0 LB MAN
CAD: 0014178/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWMO

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR2A05158YDO



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2 of 2
MPS# 7209 7850 2065
(0263)

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THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



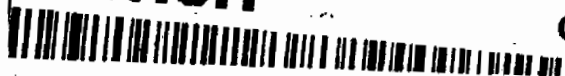
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(0263)

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THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTING: 50.0 LB MAN
CAD: 0014175/CAFE2450

BILL SENDER

JOYLENE VALDEZ

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTING: 50.0 LB MAN
CAD: 0014175/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

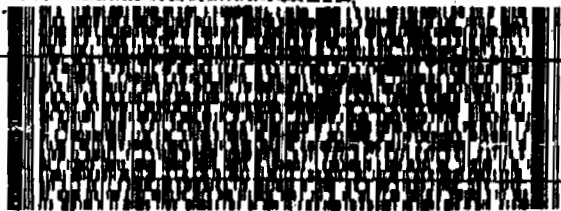
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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A0223KY10



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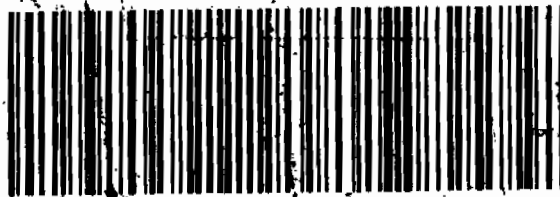
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1 of 2
TRK# 7209 7850 2135
NN MASTER NN

THU - 25FEB
PRIORITY OVERNIGHT

XX CHSA

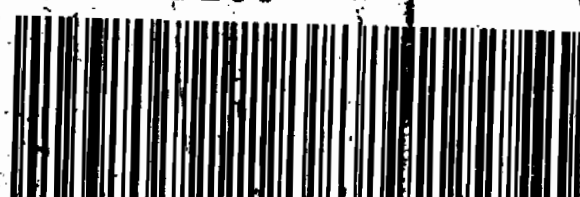


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TRK# 7209 7850 2032
NN MASTER NN

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTING: 50.0 LB MAN
CAD: 0014175/CAFE2450

BILL SENDER

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWMO

TO VALERIE DAVIS
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2040 SAVAGE RD

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REF: 6B010AAREW0140T500



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2 of 2
MPS# 7209 7850 2249
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THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

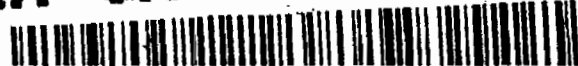


29407
SC-US
CHS

TRK# 7209 7850 2168
0201

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA



29407
SC-US
CHS

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A05529E00

3C

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A0223KY10

3C



1 of 3
TRKH
0201 7209 7850 1941
NN MASTER NN

XX CHSA

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS



2 of 2
MPSH
0263 7209 7850 2043
Matr-N 7209 7850 2032 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA



ORIGIN ID: SFA (505) 666-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 48.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

ORIGIN ID: SFA (505) 666-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTWGT: 57.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A015AGWMO

3

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A015AGWMO

3C



1 of 2
TRKH
0201 7209 7850 2238
NN MASTER NN

XX CHSA

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

2 of 2
MPSH
0263 7209 7850 2124
Matr-N 7209 7850 2113 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT
CAD: 01

48.0 LB MAN
314176/CAFE2450

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A05529E00

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2040 SAVAGE RD

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UNITED STATES US

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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

ACTWGT: 55.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 62.0 LB MMN
CAD: 0014176/CAFE24

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ORIGIN-ID: SAFA (506) 000-9999
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 46.0 LB MMN
CAD: 0014176/CAFE2450

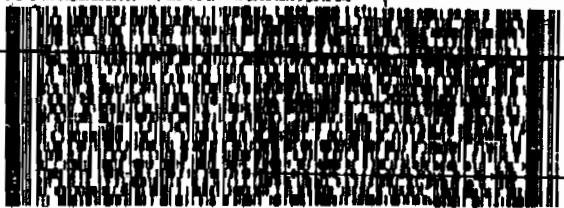
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REF: 6B010AME6L11570000



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Mstr# 7209 7850 2000 0201

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LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014176/CAFE2450

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CHARLESTON SC 29407
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REF: 6B010AMR3A0532VA00



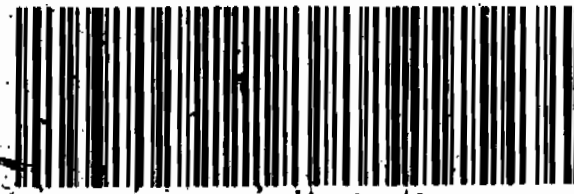
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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014176/CAFE2450

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REF: 6B010AMR3A0532VA00



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ORIGIN ID: SAFA (505) 555-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 54.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

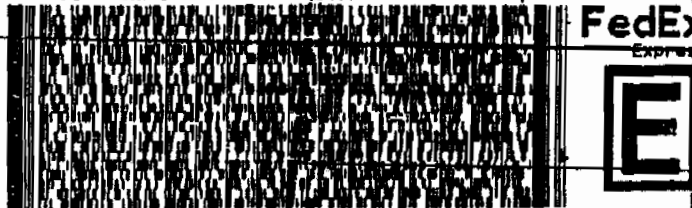
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CAD: 0014176/CAFE2450

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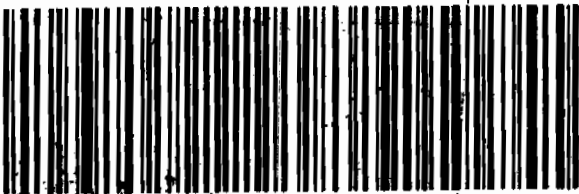


3 of 3
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PRIORITY OVERNIGHT

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ORIGIN ID: SAFA (505) 555-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTWGT: 54.0 LB MAN
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ORIGIN ID: SAFA (505) 555-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 54.0 LB MAN
CAD: 0014176/CAFE2450

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GENERAL ENGINEERING LAB
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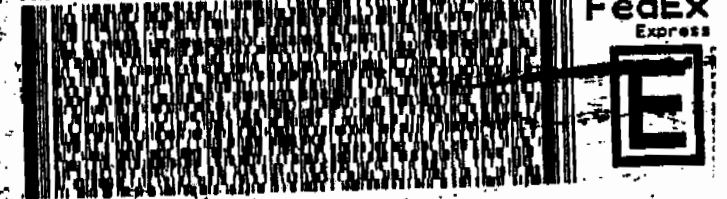
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TA00 BLDG 1237 DPU 03

SHIP DATE: 24FEB10
ACTWGT: 55.0 LB-MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

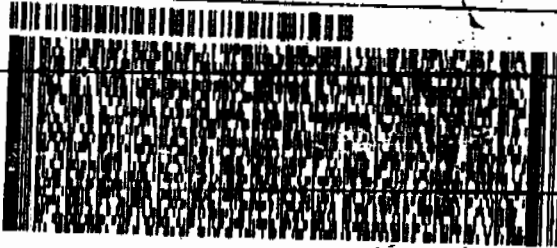
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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

SHIP DATE: 24FEB10
ACTWGT: 62.0 LB-MAN
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Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier Explanation

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

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-2029**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 962401
Prep Batch Number: 958205

Sample ID	Client ID
247969001	RE36-10-8490
247969002	RE36-10-8470
247969003	RE36-10-8476
247969004	RE36-10-8480
247969005	RE36-10-8474
247969006	RE36-10-8478
247969007	RE36-10-8483
247969008	RE36-10-8482
1202064503	Method Blank (MB)
1202064504	247970001(RE46-10-13181) Sample Duplicate (DUP)
1202064505	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 1202064503 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247970001 (RE46-10-13181). The QC was from LANL work order 247970.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: ISOPU

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

Prep Method: Dry Soil Prep

Analytical Batch Number: 962402

Prep Batch Number: 958205

Sample ID	Client ID
247969001	RE36-10-8490
247969002	RE36-10-8470
247969003	RE36-10-8476
247969004	RE36-10-8480
247969005	RE36-10-8474
247969006	RE36-10-8478
247969007	RE36-10-8483
247969008	RE36-10-8482
1202064506	Method Blank (MB)
1202064507	247970001(RE46-10-13181) Sample Duplicate (DUP)
1202064508	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 1202064506 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247970001 (RE46-10-13181). The QC was from LANL work order 247970.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Pu-238 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

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

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

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

Manual Integration

Manual integration of alpha spectroscopy spectra 1202064508 (LCS) was performed to fully separate counts in Regions of Interest which would have been biased.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	962404
Prep Batch Number:	958205

Sample ID	Client ID
247969001	RE36-10-8490
247969002	RE36-10-8470
247969003	RE36-10-8476
247969004	RE36-10-8480
247969005	RE36-10-8474
247969006	RE36-10-8478
247969007	RE36-10-8483
247969008	RE36-10-8482
1202064509	Method Blank (MB)
1202064510	247970001(RE46-10-13181) Sample Duplicate (DUP)
1202064511	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 1202064509 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247970001 (RE46-10-13181). The QC was from LANL work order 247970.

QC Information

All of the QC samples met the required acceptance limits.

CSU

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

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The U-238 blank result is greater than the decision level but less than the MDC.

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:	958216
Prep Batch Number:	958205

Sample ID	Client ID
247969001	RE36-10-8490
247969002	RE36-10-8470
247969003	RE36-10-8476
247969004	RE36-10-8480
247969005	RE36-10-8474
247969006	RE36-10-8478
247969007	RE36-10-8483
247969008	RE36-10-8482
1202054948	Method Blank (MB)
1202054949	247970001(RE46-10-13181) Sample Duplicate (DUP)
1202054950	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 April 2009, June 2009, July 2009, August 2009, November 2009, December 2009 and January 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: 247970001 (RE46-10-13181). The QC was from LANL work order 247970.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

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

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

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

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

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to interference.	Bismuth-211	247969001	RE36-10-8490
			247969002	RE36-10-8470
			247969003	RE36-10-8476
			247969004	RE36-10-8480
			247969005	RE36-10-8474
			247969006	RE36-10-8478
			247969007	RE36-10-8483
			247969008	RE36-10-8482
		Cadmium-109	1202054949	RE46-10-13181(247970001DUP)
			247969001	RE36-10-8490
			247969002	RE36-10-8470
			247969003	RE36-10-8476
			247969004	RE36-10-8480
			247969005	RE36-10-8474

UI	Data rejected due to low abundance.	Mercury-203	247969006	RE36-10-8478
			247969007	RE36-10-8483
			247969008	RE36-10-8482
			1202054949	RE46-10-13181(247970001DUP)
			247969001	RE36-10-8490
		Radium-224	247969001	RE36-10-8490
			247969002	RE36-10-8470
			247969003	RE36-10-8476
			247969004	RE36-10-8480
			247969005	RE36-10-8474
			247969006	RE36-10-8478
			247969007	RE36-10-8483
			247969008	RE36-10-8482
			1202054949	RE46-10-13181(247970001DUP)
		Cesium-134	247969001	RE36-10-8490
			247969002	RE36-10-8470
			247969003	RE36-10-8476
			247969005	RE36-10-8474
			247969007	RE36-10-8483
			247969008	RE36-10-8482
		Strontium-85	247969001	RE36-10-8490
			247969003	RE36-10-8476

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 964049

Sample ID	Client ID
247969001	RE36-10-8490
247969002	RE36-10-8470
247969003	RE36-10-8476
247969004	RE36-10-8480
247969005	RE36-10-8474
247969006	RE36-10-8478
247969007	RE36-10-8483
247969008	RE36-10-8482
1202068192	Method Blank (MB)
1202068193	248028005(RE15-10-8391) Sample Duplicate (DUP)
1202068194	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. The initial Calibrations were performed in July 2009 and August 2009.

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: 248028005 (RE15-10-8391). The QC was from LANL work order 248028.

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

Sample 1202068192 (MB) was recounted due to the quench number being outside the calibration range. Recount is being reported.

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: _____

Paula Hill 3/7/10

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: 10-2029 GEL Work Order: 247969

The Qualifiers in this report are defined as follows:

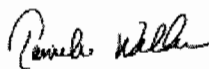
- * Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- ** Indicates the analyte is a surrogate compound.

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

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

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

Reviewed by



GEL LABORATORIES LLC

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE36-10-8490
Sample ID: 247969001
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 5.15%

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	-0.000985	0.0217	+/-0.00212	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00754	0.0191	+/-0.00561	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00471	0.0161	+/-0.00307	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.944	0.107	+/-0.0908	0.100	pCi/g		JXH2	03/22/10	2119	962404	3
Uranium-235/236	U	0.056	0.0651	+/-0.0179	0.100	pCi/g						
Uranium-238		0.997	0.0749	+/-0.0951	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0805	0.230	+/-0.065	0.200	pCi/g		MXR1	03/10/10	2310	958216	4
Bismuth-211	UI	5.14	0.205	+/-0.228		pCi/g						
Bismuth-214		1.62	0.0699	+/-0.0887	0.200	pCi/g						
Cadmium-109	UI	3.79	0.887	+/-0.405		pCi/g						
Cerium-139	U	-0.00947	0.0342	+/-0.00994	0.050	pCi/g						
Cesium-134	UI	0.105	0.0564	+/-0.0174	0.100	pCi/g						
Cesium-137	U	-0.00544	0.0387	+/-0.0134	0.100	pCi/g						
Cobalt-60	U	-0.000337	0.0387	+/-0.0118	0.100	pCi/g						
Europium-152	U	-0.0685	0.098	+/-0.0437	0.200	pCi/g						
Lanthanum-140	U	-0.0319	0.0905	+/-0.0287		pCi/g						
Lead-212		2.03	0.0622	+/-0.0832	0.100	pCi/g						
Lead-214		1.87	0.0745	+/-0.0975	0.100	pCi/g						
Mercury-203	UI	0.0612	0.0403	+/-0.0197	0.100	pCi/g						
Potassium-40		36.7	0.292	+/-1.51	1.00	pCi/g						
Radium-223	U	0.00398	0.671	+/-0.234		pCi/g						
Radium-224	UI	5.06	0.666	+/-0.444		pCi/g						
Radium-226		1.62	0.0699	+/-0.0887		pCi/g						
Radium-228		2.39	0.137	+/-0.191	0.500	pCi/g						
Ruthenium-106	U	0.0298	0.336	+/-0.103	0.800	pCi/g						
Sodium-22	U	-0.0106	0.0454	+/-0.0141	0.080	pCi/g						
Strontium-85	UI	0.0952	0.045	+/-0.0135		pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8490 Project: LANL01004
Sample ID: 247969001 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		0.597	0.0367	+/-0.0339	0.080	pCi/g						
Thorium-227	U	0.203	0.284	+/-0.0827		pCi/g						
Thorium-231	U	0.00398	0.671	+/-0.234		pCi/g						
Thorium-234	U	0.536	1.97	+/-0.574	2.00	pCi/g						
Tin-113	U	-0.0199	0.0474	+/-0.0143	0.100	pCi/g						
Uranium-235	U	0.0688	0.232	+/-0.0717	0.500	pCi/g						
Yttrium-88	U	-0.00367	0.0327	+/-0.0102	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	1.62	174	+/-48.8	250	pCi/L	KXK2	03/15/10	1309	964049	5
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The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	96.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.5	(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
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8490
Sample ID: 247969001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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H Analytical holding time was exceeded
J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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: March 23, 2010

Client Sample ID: RE36-10-8470
Sample ID: 247969002
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 6.2%

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	-0.00372	0.0212	+/-0.00319	0.050	pCi/g		JXH2	03/22/10 0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	0.000938	0.0222	+/-0.00292	0.050	pCi/g		JXH2	03/22/10 2224	962402	2
Plutonium-239/240	U	0.00763	0.0188	+/-0.00446	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		1.09	0.097	+/-0.0997	0.100	pCi/g		JXH2	03/22/10 2120	962404	3
Uranium-235/236	U	0.051	0.0593	+/-0.0152	0.100	pCi/g					
Uranium-238		1.02	0.0682	+/-0.0942	0.100	pCi/g					
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	-0.0368	0.0585	+/-0.0171	0.200	pCi/g		MXR1	03/10/10 2310	958216	4
Bismuth-211	UI	4.93	0.248	+/-0.293		pCi/g					
Bismuth-214		1.66	0.0952	+/-0.119	0.200	pCi/g					
Cadmium-109	UI	4.14	0.575	+/-0.324		pCi/g					
Cerium-139	U	0.0169	0.0338	+/-0.00924	0.050	pCi/g					
Cesium-134	UI	0.146	0.0858	+/-0.0248	0.100	pCi/g					
Cesium-137	U	0.00409	0.0606	+/-0.0182	0.100	pCi/g					
Cobalt-60	U	0.00799	0.0615	+/-0.0179	0.100	pCi/g					
Europium-152	U	-0.0298	0.121	+/-0.0372	0.200	pCi/g					
Lanthanum-140	U	-0.225	0.136	+/-0.0558		pCi/g					
Lcad-212		2.14	0.0631	+/-0.116	0.100	pCi/g					
Lead-214		1.79	0.0901	+/-0.117	0.100	pCi/g					
Mercury-203	U	-0.00664	0.0458	+/-0.0153	0.100	pCi/g					
Potassium-40		34.3	0.522	+/-1.69	1.00	pCi/g					
Radium-223	U	-0.136	0.783	+/-0.268		pCi/g					
Radium-224	UI	6.21	0.678	+/-0.515		pCi/g					
Radium-226		1.66	0.0952	+/-0.119		pCi/g					
Radium-228		2.32	0.204	+/-0.213	0.500	pCi/g					
Ruthenium-106	U	-0.0372	0.458	+/-0.138	0.800	pCi/g					
Sodium-22	U	-0.0417	0.0657	+/-0.0222	0.080	pCi/g					
Strontium-85	U	0.0536	0.055	+/-0.0165		pCi/g					
Thallium-208		0.648	0.0502	+/-0.0477	0.080	pCi/g					

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8470
Sample ID: 247969002

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	-0.156	0.285	+/-0.087		pCi/g						
Thorium-231	U	-0.136	0.783	+/-0.268		pCi/g						
Thorium-234		1.74	0.616	+/-0.322	2.00	pCi/g						
Tin-113	U	-0.0194	0.0551	+/-0.0175	0.100	pCi/g						
Uranium-235	U	0.0754	0.219	+/-0.0659	0.500	pCi/g						
Yttrium-88	U	0.00154	0.0586	+/-0.018	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	137	180	+/-57.3	250	pCi/L		KXK2	03/15/10	1347	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.8	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Client Sample ID: RE36-10-8470
Sample ID: 247969002

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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: March 23, 2010

Client Sample ID: RE36-10-8476
Sample ID: 247969003
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 4.17%

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	0.00098	0.0206	+/-0.00141	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.002	0.0229	+/-0.00276	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00518	0.0194	+/-0.00301	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.00	0.103	+/-0.0942	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0542	0.0629	+/-0.0161	0.100	pCi/g						
Uranium-238		0.968	0.0724	+/-0.0918	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0802	0.169	+/-0.0473	0.200	pCi/g		MXR1	03/10/10	2311	958216	4
Bismuth-211	UI	5.22	0.224	+/-0.344		pCi/g						
Bismuth-214		1.52	0.0749	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	4.24	0.784	+/-0.413		pCi/g						
Cerium-139	U	-0.02	0.0351	+/-0.0104	0.050	pCi/g						
Cesium-134	UI	0.0871	0.0603	+/-0.0219	0.100	pCi/g						
Cesium-137	U	-0.0191	0.0402	+/-0.0125	0.100	pCi/g						
Cobalt-60	U	-0.0107	0.0409	+/-0.0139	0.100	pCi/g						
Europium-152	U	0.0044	0.108	+/-0.0414	0.200	pCi/g						
Lanthanum-140	U	-0.104	0.112	+/-0.037		pCi/g						
Lead-212		2.16	0.0654	+/-0.149	0.100	pCi/g						
Lead-214		1.89	0.0813	+/-0.135	0.100	pCi/g						
Mercury-203	U	0.0464	0.0491	+/-0.0165	0.100	pCi/g						
Potassium-40		35.7	0.332	+/-1.73	1.00	pCi/g						
Radium-223	U	0.0175	0.731	+/-0.245		pCi/g						
Radium-224	UI	5.69	0.700	+/-0.556		pCi/g						
Radium-226		1.52	0.0749	+/-0.106		pCi/g						
Radium-228		2.18	0.144	+/-0.190	0.500	pCi/g						
Ruthenium-106	U	-0.112	0.323	+/-0.0988	0.800	pCi/g						
Sodium-22	U	0.00195	0.047	+/-0.0166	0.080	pCi/g						
Strontium-85	UI	0.159	0.0534	+/-0.0173		pCi/g						
Thallium-208		0.603	0.036	+/-0.0438	0.080	pCi/g						

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Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE36-10-8476
247969003

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	0.0903	0.299	+/-0.0891		pCi/g						
Thorium-231	U	0.0175	0.731	+/-0.245		pCi/g						
Thorium-234	U	0.820	1.55	+/-0.447	2.00	pCi/g						
Tin-113	U	-0.0194	0.0494	+/-0.015	0.100	pCi/g						
Uranium-235	U	0.0243	0.247	+/-0.0741	0.500	pCi/g						
Yttrium-88	U	-0.00365	0.0339	+/-0.0105	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-73.1	183	+/-47.5	250	pCi/L		KXK2	03/15/10	1425	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.1	(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
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8476
Sample ID: 247969003

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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: March 23, 2010

Client Sample ID: RE36-10-8480
Sample ID: 247969004
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 10.8%

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	0.00129	0.0228	+/-0.00156	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000858	0.0259	+/-0.00279	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.0114	0.0219	+/-0.00606	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.937	0.099	+/-0.0883	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0564	0.0605	+/-0.0162	0.100	pCi/g						
Uranium-238		0.958	0.0696	+/-0.0899	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0732	0.277	+/-0.0897	0.200	pCi/g		MXR1	03/10/10	2311	958216	4
Bismuth-211	UI	4.92	0.288	+/-0.265		pCi/g						
Bismuth-214		1.48	0.0971	+/-0.0942	0.200	pCi/g						
Cadmium-109	UI	5.38	1.12	+/-0.566		pCi/g						
Cerium-139	U	-0.0107	0.0428	+/-0.013	0.050	pCi/g						
Cesium-134	U	0.0743	0.0761	+/-0.0235	0.100	pCi/g						
Cesium-137	U	0.0341	0.0612	+/-0.0179	0.100	pCi/g						
Cobalt-60	U	0.00977	0.0625	+/-0.0189	0.100	pCi/g						
Europium-152	U	-0.0681	0.141	+/-0.0498	0.200	pCi/g						
Lanthanum-140	U	-0.0972	0.121	+/-0.0421		pCi/g						
Lead-212		2.18	0.0778	+/-0.0931	0.100	pCi/g						
Lead-214		1.79	0.105	+/-0.108	0.100	pCi/g						
Mercury-203	U	0.0358	0.0611	+/-0.0197	0.100	pCi/g						
Potassium-40		31.8	0.388	+/-1.42	1.00	pCi/g						
Radium-223	U	-0.25	0.926	+/-0.321		pCi/g						
Radium-224	UI	5.64	0.833	+/-0.560		pCi/g						
Radium-226		1.48	0.0971	+/-0.0942		pCi/g						
Radium-228		2.11	0.191	+/-0.180	0.500	pCi/g						
Ruthenium-106	U	-0.0683	0.457	+/-0.142	0.800	pCi/g						
Sodium-22	U	-0.0154	0.0659	+/-0.0208	0.080	pCi/g						
Strontium-85	U	0.0344	0.0577	+/-0.019		pCi/g						
Thallium-208		0.648	0.0524	+/-0.047	0.080	pCi/g						

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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: March 23, 2010

Client Sample ID:
Sample ID:

RE36-10-8480
247969004

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	-0.0184	0.368	+/-0.114		pCi/g						
Thorium-231	U	-0.25	0.926	+/-0.321		pCi/g						
Thorium-234	U	2.21	2.30	+/-0.904	2.00	pCi/g						
Tin-113	U	0.00246	0.0668	+/-0.0198	0.100	pCi/g						
Uranium-235	U	0.126	0.307	+/-0.0927	0.500	pCi/g						
Yttrium-88	U	-0.00438	0.0431	+/-0.0135	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	51.3	184	+/-53.8	250	pCi/L		KXK2	03/15/10	1502	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8480
Sample ID: 247969004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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: March 23, 2010

Client Sample ID: RE36-10-8474
Sample ID: 247969005
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 12.8%

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	-0.00124	0.0214	+/-0.00338	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0036	0.0234	+/-0.00454	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.000423	0.0198	+/-0.00562	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.10	0.104	+/-0.102	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0411	0.0636	+/-0.014	0.100	pCi/g						
Uranium-238		1.04	0.0732	+/-0.0977	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00457	0.177	+/-0.0589	0.200	pCi/g		MXR1	03/10/10	2325	958216	4
Bismuth-211	UI	5.39	0.224	+/-0.341		pCi/g						
Bismuth-214		1.61	0.0802	+/-0.107	0.200	pCi/g						
Cadmium-109	UI	4.62	0.833	+/-0.468		pCi/g						
Cerium-139	U	0.00148	0.0352	+/-0.0103	0.050	pCi/g						
Cesium-134	UI	0.102	0.0669	+/-0.0289	0.100	pCi/g						
Cesium-137		0.0855	0.0495	+/-0.0224	0.100	pCi/g						
Cobalt-60	U	-0.0172	0.0451	+/-0.0147	0.100	pCi/g						
Europium-152	U	0.040	0.116	+/-0.0339	0.200	pCi/g						
Lanthanum-140	U	0.0627	0.117	+/-0.0362		pCi/g						
Lead-212		2.29	0.0667	+/-0.143	0.100	pCi/g						
Lead-214		1.96	0.0814	+/-0.135	0.100	pCi/g						
Mercury-203	U	0.00619	0.0471	+/-0.016	0.100	pCi/g						
Potassium-40		35.1	0.379	+/-1.68	1.00	pCi/g						
Radium-223	U	0.333	0.776	+/-0.262		pCi/g						
Radium-224	UI	5.31	0.715	+/-0.546		pCi/g						
Radium-226		1.61	0.0802	+/-0.107		pCi/g						
Radium-228		2.49	0.160	+/-0.196	0.500	pCi/g						
Ruthenium-106	U	0.0336	0.374	+/-0.113	0.800	pCi/g						
Sodium-22	U	0.0154	0.0535	+/-0.0159	0.080	pCi/g						
Strontium-85	U	0.0417	0.0483	+/-0.0152		pCi/g						
Thallium-208		0.684	0.0405	+/-0.0469	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE36-10-8474
247969005

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	-0.121	0.287	+/-0.0896		pCi/g						
Thorium-231	U	0.333	0.776	+/-0.262		pCi/g						
Thorium-234		2.37	1.50	+/-0.729	2.00	pCi/g						
Tin-113	U	-0.00782	0.0512	+/-0.0151	0.100	pCi/g						
Uranium-235	U	0.0835	0.245	+/-0.0741	0.500	pCi/g						
Yttrium-88	U	0.00342	0.0359	+/-0.0107	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-72.2	180	+/-46.9	250	pCi/L		KXK2	03/15/10	1540	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.5	(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
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8474
Sample ID: 247969005

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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: March 23, 2010

Client Sample ID: RE36-10-8478
Sample ID: 247969006
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 4.74%

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	0.00385	0.0208	+/-0.00235	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.000615	0.0227	+/-0.00667	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.0041	0.0192	+/-0.00501	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.927	0.103	+/-0.0887	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236	U	0.0585	0.0627	+/-0.0168	0.100	pCi/g						
Uranium-238		1.05	0.0721	+/-0.0979	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.132	0.379	+/-0.109	0.200	pCi/g		MXR1	03/11/10	1414	958216	4
Bismuth-211	UI	4.71	0.377	+/-0.308		pCi/g						
Bismuth-214		1.56	0.136	+/-0.0984	0.200	pCi/g						
Cadmium-109	UI	3.71	1.62	+/-0.855		pCi/g						
Cerium-139	U	0.0227	0.0594	+/-0.017	0.050	pCi/g						
Cesium-134	U	0.0778	0.102	+/-0.0313	0.100	pCi/g						
Cesium-137	U	0.0317	0.0786	+/-0.0227	0.100	pCi/g						
Cobalt-60	U	-0.00932	0.0735	+/-0.0231	0.100	pCi/g						
Europium-152	U	0.0773	0.189	+/-0.0878	0.200	pCi/g						
Lanthanum-140	U	-0.0743	0.163	+/-0.0549		pCi/g						
Lead-212		2.00	0.108	+/-0.0959	0.100	pCi/g						
Lead-214		1.71	0.137	+/-0.121	0.100	pCi/g						
Mercury-203	U	0.0669	0.0777	+/-0.0392	0.100	pCi/g						
Potassium-40		29.3	0.568	+/-1.45	1.00	pCi/g						
Radium-223	U	-0.0418	1.19	+/-0.398		pCi/g						
Radium-224	UI	4.74	1.16	+/-0.629		pCi/g						
Radium-226		1.56	0.136	+/-0.0984		pCi/g						
Radium-228		2.12	0.242	+/-0.207	0.500	pCi/g						
Ruthenium-106	U	-0.216	0.582	+/-0.184	0.800	pCi/g						
Sodium-22	U	-0.00454	0.080	+/-0.0247	0.080	pCi/g						
Strontium-85	U	0.0493	0.0791	+/-0.0251		pCi/g						
Thallium-208		0.680	0.058	+/-0.0484	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8478
Sample ID: 247969006

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	-0.0763	0.466	+/-0.143		pCi/g						
Thorium-231	U	-0.0418	1.19	+/-0.398		pCi/g						
Thorium-234	U	0.448	3.34	+/-0.933	2.00	pCi/g						
Tin-113	U	-0.00409	0.0884	+/-0.026	0.100	pCi/g						
Uranium-235	U	0.0458	0.418	+/-0.122	0.500	pCi/g						
Yttrium-88	U	0.041	0.0781	+/-0.0204	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	63.1	178	+/-53.0	250	pCi/L		KXK2	03/15/10	1617	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8478
Sample ID: 247969006
Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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: March 23, 2010

Client Sample ID: RE36-10-8483
Sample ID: 247969007
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 2.3%

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	-0.00247	0.0218	+/-0.00212	0.050	pCi/g		JXH2	03/22/10	0305	962401	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00359	0.0238	+/-0.00254	0.050	pCi/g		JXH2	03/22/10	2224	962402	2
Plutonium-239/240	U	0.00537	0.0201	+/-0.00312	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.991	0.105	+/-0.0938	0.100	pCi/g		JXH2	03/22/10	2120	962404	3
Uranium-235/236		0.0688	0.064	+/-0.0185	0.100	pCi/g						
Uranium-238		1.05	0.0736	+/-0.0985	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0203	0.186	+/-0.062	0.200	pCi/g		MXR1	03/11/10	1415	958216	4
Bismuth-211	UI	5.33	0.295	+/-0.424		pCi/g						
Bismuth-214		1.59	0.118	+/-0.126	0.200	pCi/g						
Cadmium-109	UI	5.58	1.07	+/-0.567		pCi/g						
Cerium-139	U	-0.00448	0.0485	+/-0.0143	0.050	pCi/g						
Cesium-134	UI	0.127	0.0965	+/-0.0355	0.100	pCi/g						
Cesium-137	U	0.00637	0.067	+/-0.0202	0.100	pCi/g						
Cobalt-60	U	-0.0196	0.0617	+/-0.0203	0.100	pCi/g						
Europium-152	U	0.0401	0.165	+/-0.0498	0.200	pCi/g						
Lanthanum-140	U	-0.0578	0.165	+/-0.0539		pCi/g						
Lead-212		2.29	0.0937	+/-0.173	0.100	pCi/g						
Lead-214		1.93	0.107	+/-0.163	0.100	pCi/g						
Mercury-203	U	0.0106	0.067	+/-0.0201	0.100	pCi/g						
Potassium-40		33.8	0.465	+/-1.76	1.00	pCi/g						
Radium-223	U	0.167	1.02	+/-0.345		pCi/g						
Radium-224	UI	5.98	1.01	+/-0.700		pCi/g						
Radium-226		1.59	0.118	+/-0.126		pCi/g						
Radium-228		2.29	0.237	+/-0.225	0.500	pCi/g						
Ruthenium-106	U	-0.00555	0.510	+/-0.155	0.800	pCi/g						
Sodium-22	U	-0.0151	0.0743	+/-0.0237	0.080	pCi/g						
Strontium-85	U	0.00585	0.0661	+/-0.0222		pCi/g						
Thallium-208		0.722	0.0632	+/-0.0612	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: March 23, 2010

Client Sample ID: RE36-10-8483
Sample ID: 247969007

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	0.270	0.427	+/-0.124		pCi/g						
Thorium-231	U	0.167	1.02	+/-0.345		pCi/g						
Thorium-234		3.60	1.66	+/-1.13	2.00	pCi/g						
Tin-113	U	0.0154	0.0748	+/-0.0213	0.100	pCi/g						
Uranium-235	U	0.112	0.344	+/-0.0998	0.500	pCi/g						
Yttrium-88	U	0.0309	0.0706	+/-0.019	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-10.3	221	+/-61.4	250	pCi/L		KXK2	03/15/10	1655	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	84.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Sample ID: 247969007

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated

M M if above MDC and less than LLD

M Matrix Related Failure

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

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

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

UI Gamma Spectroscopy--Uncertain identification

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: March 23, 2010

Client Sample ID: RE36-10-8482
Sample ID: 247969008
Matrix: R
Collect Date: 20-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 5.04%

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	0.00171	0.0227	+/-0.00237	0.050	pCi/g	JXH2	03/22/10	0305	962401	1	
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00365	0.0243	+/-0.00259	0.050	pCi/g	JXH2	03/22/10	2224	962402	2	
Plutonium-239/240	U	0.00183	0.0205	+/-0.00183	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.07	0.120	+/-0.103	0.100	pCi/g	JXH2	03/22/10	2120	962404	3	
Uranium-235/236	U	0.0629	0.073	+/-0.0201	0.100	pCi/g						
Uranium-238		1.10	0.084	+/-0.105	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00906	0.117	+/-0.0363	0.200	pCi/g	MXR1	03/11/10	1417	958216	4	
Bismuth-211	UI	5.07	0.410	+/-0.395		pCi/g						
Bismuth-214		1.85	0.164	+/-0.151	0.200	pCi/g						
Cadmium-109	UI	6.17	0.980	+/-0.571		pCi/g						
Cerium-139	U	0.00995	0.0618	+/-0.0182	0.050	pCi/g						
Cesium-134	UI	0.174	0.124	+/-0.0559	0.100	pCi/g						
Cesium-137	U	0.00369	0.0933	+/-0.029	0.100	pCi/g						
Cobalt-60	U	0.0154	0.0935	+/-0.0269	0.100	pCi/g						
Europium-152	U	-0.0753	0.185	+/-0.0698	0.200	pCi/g						
Lanthanum-140	U	-0.126	0.258	+/-0.0874		pCi/g						
Lead-212		2.34	0.113	+/-0.140	0.100	pCi/g						
Lead-214		1.84	0.149	+/-0.152	0.100	pCi/g						
Mercury-203	U	0.00716	0.0828	+/-0.0267	0.100	pCi/g						
Potassium-40		32.8	0.636	+/-1.84	1.00	pCi/g						
Radium-223	U	0.515	1.27	+/-0.399		pCi/g						
Radium-224	UI	6.13	1.21	+/-0.908		pCi/g						
Radium-226		1.85	0.164	+/-0.151		pCi/g						
Radium-228		2.13	0.232	+/-0.252	0.500	pCi/g						
Ruthenium-106	U	0.399	0.817	+/-0.235	0.800	pCi/g						
Sodium-22	U	-0.0474	0.101	+/-0.0342	0.080	pCi/g						
Strontium-85	U	0.0078	0.0812	+/-0.0276		pCi/g						
Thallium-208		0.722	0.0748	+/-0.0692	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE36-10-8482
247969008

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	-0.0255	0.498	+/-0.154		pCi/g						
Thorium-231	U	0.515	1.27	+/-0.399		pCi/g						
Thorium-234		2.28	1.17	+/-0.635	2.00	pCi/g						
Tin-113	U	-0.0265	0.0887	+/-0.0271	0.100	pCi/g						
Uranium-235	U	-0.106	0.395	+/-0.120	0.500	pCi/g						
Yttrium-88	U	-0.0126	0.0794	+/-0.0258	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-28.9	163	+/-45.3	250	pCi/L		KXK2	03/15/10	1732	964049	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	78.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	79.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE36-10-8482
Sample ID: 247969008

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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: March 23, 2010

Page 1 of 6

Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Ms. Joylene Valdez
Workorder: 247969

Parname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch	962401									
QC1202064504	247970001	DUP								
Americium-241		U	0.00284	U	0.0027	pCi/g	0.0128	(0-1)	JXH2	03/22/1003:06
		TPU:	+/-0.00257		+/-0.00319					
		Yield:	90.5		63.2					
QC1202064505	LCS									
Americium-241		33.1			30.5	pCi/g	91.9	(75%-125%)		03/22/1003:06
		TPU:			+/-2.22					
		Yield:			97.9					
QC1202064503	MB									
Americium-241			U	-0.000603	pCi/g					03/22/1003:06
		TPU:		+/-0.00168						
		Yield:		93.8						
Batch	962402									
QC1202064507	247970001	DUP								
Plutonium-238		U	0.00492	U	0.00327	pCi/g	0.160	(0-1)	JXH2	03/22/1022:24
		TPU:	+/-0.00286		+/-0.00232					
		Yield:	86.7		85.0					
Plutonium-239/240		U	0.00164	U	0.000458	pCi/g	0.162	(0-1)		
		TPU:	+/-0.00164		+/-0.00202					
		Yield:	86.7		85.0					
QC1202064508	LCS									
Plutonium-238					7.32	pCi/g		(75%-125%)		03/22/1009:59
		TPU:			+/-0.607					
		Yield:			93.4					
Plutonium-239/240		41.8			38.0	pCi/g	90.9	(75%-125%)		
		TPU:			+/-2.61					
		Yield:			93.4					
QC1202064506	MB									
Plutonium-238			U	0.00841	pCi/g					03/22/1022:24
		TPU:		+/-0.00464						
		Yield:		90.6						
Plutonium-239/240			U	0.00165	pCi/g					
		TPU:		+/-0.00419						
		Yield:		90.6						
Batch	962404									
QC1202064510	247970001	DUP								
Uranium-233/234			0.853		0.879	pCi/g	0.079	(0-1)	JXH2	03/20/1012:43
		TPU:	+/-0.0808		+/-0.0807					
		Yield:	98.9		96.9					
Uranium-235/236		U	0.0532	U	0.0473	pCi/g	0.0931	(0-1)		
		TPU:	+/-0.0163		+/-0.0154					
		Yield:	98.9		96.9					
Uranium-238			0.814		0.974	pCi/g	0.483	(0-1)		
		TPU:	+/-0.0781		+/-0.0873					

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QC Summary

Workorder: 247969

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Parname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	962404										
QC1202064511	LCS	Yield:	98.9	96.9							
Uranium-233/234				6.71	pCi/g						
		TPU:		+/-0.641							
		Yield:		74.0							
Uranium-235/236				0.358	pCi/g						
		TPU:		+/-0.0966							
		Yield:		74.0							
Uranium-238	5.75			5.52	pCi/g		96	(75%-125%)			
		TPU:		+/-0.546							
		Yield:		74.0							
QC1202064509	MB										
Uranium-233/234			U	0.00681	pCi/g						
		TPU:		+/-0.00298							
		Yield:		104							
Uranium-235/236			U	0.00157	pCi/g						
		TPU:		+/-0.00414							
		Yield:		104							
Uranium-238			U	0.0114	pCi/g						
		TPU:		+/-0.00428							
		Yield:		104							
Rad Gamma Spec											
Batch	958216										
QC1202054949	247970001	DUP									
Americium-241		U	0.0561	U	-0.328	pCi/g	0.969	(0-1)	MXR1	03/11/10	19:27
		TPU:	+/-0.0848		+/-0.114						
Bismuth-211		UI	4.41	UI	3.76	pCi/g	0.640	(0-1)			
		TPU:	+/-0.235		+/-0.273						
Bismuth-214			1.19		1.25	pCi/g	0.136	(0-1)			
		TPU:	+/-0.0956		+/-0.114						
Cadmium-109		UI	3.51	UI	3.95	pCi/g	0.187	(0-1)			
		TPU:	+/-0.530		+/-0.665						
Cerium-139		U	0.0125	U	0.00328	pCi/g	0.151	(0-1)			
		TPU:	+/-0.013		+/-0.0174						
Cesium-134		UI	0.102	U	0.0941	pCi/g	0.0636	(0-1)			
		TPU:	+/-0.0315		+/-0.0298						
Cesium-137		U	-0.0137	U	0.0241	pCi/g	0.490	(0-1)			
		TPU:	+/-0.0155		+/-0.0231						
Cobalt-60		U	0.0227	U	0.00845	pCi/g	0.184	(0-1)			
		TPU:	+/-0.0156		+/-0.0231						
Europium-152		U	-0.0631	U	-0.089	pCi/g	0.113	(0-1)			
		TPU:	+/-0.0443		+/-0.0699						
Lanthanum-140		U	-0.0724	U	-0.0741	pCi/g	0.00948	(0-1)			
		TPU:	+/-0.0371		+/-0.0525						
Lead-212			1.90		1.84	pCi/g	0.161	(0-1)			
		TPU:	+/-0.0858		+/-0.0915						
Lead-214			1.60		1.36	pCi/g	0.585	(0-1)			
		TPU:	+/-0.096		+/-0.106						
Mercury-203		UI	0.059	U	0.0214	pCi/g	0.400	(0-1)			
		TPU:	+/-0.0245		+/-0.0225						

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QC Summary

Workorder: 247969

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	958216										
Potassium-40		38.4		35.4	pCi/g	0.442		(0-1)			
		TPU: +/-1.66		+/-1.69							
Radium-223		U 0.0551	U	-0.744	pCi/g	0.574		(0-1)			
		TPU: +/-0.299		+/-0.397							
Radium-224		UI 4.74	UI	4.90	pCi/g	0.0641		(0-1)			
		TPU: +/-0.568		+/-0.719							
Radium-226		1.19		1.25	pCi/g	0.136		(0-1)			
		TPU: +/-0.0956		+/-0.114							
Radium-228		2.15		2.22	pCi/g	0.0755		(0-1)			
		TPU: +/-0.198		+/-0.225							
Ruthenium-106		U -0.0502	U	0.110	pCi/g	0.244		(0-1)			
		TPU: +/-0.137		+/-0.191							
Sodium-22		U -0.0162	U	-0.0314	pCi/g	0.150		(0-1)			
		TPU: +/-0.0212		+/-0.0295							
Strontium-85		UI 0.0725	U	0.00568	pCi/g	0.773		(0-1)			
		TPU: +/-0.0194		+/-0.0238							
Thallium-208		0.602		0.602	pCi/g	0.00374		(0-1)			
		TPU: +/-0.0406		+/-0.0529							
Thorium-227		U -0.121	U	-0.0806	pCi/g	0.0777		(0-1)			
		TPU: +/-0.109		+/-0.149							
Thorium-231		U 0.0551	U	-0.744	pCi/g	0.574		(0-1)			
		TPU: +/-0.299		+/-0.397							
Thorium-234		U 1.51	U	2.30	pCi/g	0.231		(0-1)			
		TPU: +/-0.754		+/-0.962							
Tin-113		U 0.00257	U	-0.00139	pCi/g	0.0438		(0-1)			
		TPU: +/-0.0181		+/-0.0271							
Uranium-235		U 0.0604	U	0.140	pCi/g	0.183		(0-1)			
		TPU: +/-0.0981		+/-0.119							
Yttrium-88		U -0.00182	U	0.00479	pCi/g	0.0968		(0-1)			
		TPU: +/-0.0135		+/-0.0206							
QC1202054950	LCS										
Americium-241	15.9			13.4	pCi/g		84.1 (75%-125%)			03/11/10	19:35
		TPU: +/-0.594									
Bismuth-211				2.12	pCi/g						
		TPU: +/-0.346									
Bismuth-214				0.940	pCi/g						
		TPU: +/-0.138									
Cadmium-109				31.3	pCi/g						
		TPU: +/-1.76									
Cerium-139			U	0.0126	pCi/g						
		TPU: +/-0.0194									
Cesium-134			U	-0.0112	pCi/g						
		TPU: +/-0.0579									
Cesium-137	5.55			6.05	pCi/g		109 (75%-125%)				
		TPU: +/-0.373									
Cobalt-60	6.35			6.62	pCi/g		104 (75%-125%)				
		TPU: +/-0.340									
Europium-152			U	-0.0255	pCi/g						
		TPU: +/-0.0928									
Lanthanum-140			U	-0.0849	pCi/g						
		TPU: +/-0.0513									

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QC Summary

Workorder: 247969

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	958216								
Lead-212			1.12	pCi/g					
	TPU:		+/-0.0882						
Lead-214			0.770	pCi/g					
	TPU:		+/-0.127						
Mercury-203		U	-0.033	pCi/g					
	TPU:		+/-0.0286						
Potassium-40		U	1.28	pCi/g					
	TPU:		+/-0.337						
Radium-223		U	-0.0389	pCi/g					
	TPU:		+/-0.570						
Radium-224			2.55	pCi/g					
	TPU:		+/-0.720						
Radium-226			0.940	pCi/g					
	TPU:		+/-0.138						
Radium-228			1.97	pCi/g					
	TPU:		+/-0.448						
Ruthenium-106		U	0.028	pCi/g					
	TPU:		+/-0.318						
Sodium-22		U	-0.0527	pCi/g					
	TPU:		+/-0.027						
Strontium-85		U	-0.165	pCi/g					
	TPU:		+/-0.0403						
Thallium-208			0.337	pCi/g					
	TPU:		+/-0.0719						
Thorium-227		U	0.072	pCi/g					
	TPU:		+/-0.209						
Thorium-231		U	-0.0389	pCi/g					
	TPU:		+/-0.570						
Thorium-234		U	0.382	pCi/g					
	TPU:		+/-0.337						
Tin-113		U	-0.0366	pCi/g					
	TPU:		+/-0.0444						
Uranium-235			0.445	pCi/g					
	TPU:		+/-0.159						
Yttrium-88		U	0.0342	pCi/g					
	TPU:		+/-0.0319						
QC1202054948 MB									
Americium-241		U	-0.0085	pCi/g					03/11/1019:26
	TPU:		+/-0.0196						
Bismuth-211		U	0.0282	pCi/g					
	TPU:		+/-0.0505						
Bismuth-214		U	-0.0166	pCi/g					
	TPU:		+/-0.0208						
Cadmium-109		U	0.0734	pCi/g					
	TPU:		+/-0.147						
Cerium-139		U	-0.00955	pCi/g					
	TPU:		+/-0.00616						
Cesium-134		U	0.00514	pCi/g					
	TPU:		+/-0.00948						
Cesium-137		U	-0.00452	pCi/g					
	TPU:		+/-0.0082						

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QC Summary

Workorder: 247969

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Parinname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	958216										
Cobalt-60			U	-0.0121	pCi/g						
		TPU:		+/-0.00908							
Europium-152			U	-0.0349	pCi/g						
		TPU:		+/-0.0203							
Lanthanum-140			U	0.0102	pCi/g						
		TPU:		+/-0.0159							
Lead-212			U	-0.0104	pCi/g						
		TPU:		+/-0.0148							
Lcad-214			U	0.0169	pCi/g						
		TPU:		+/-0.0182							
Mercury-203			U	-0.00477	pCi/g						
		TPU:		+/-0.0072							
Potassium-40			U	0.0544	pCi/g						
		TPU:		+/-0.108							
Radium-223			U	-0.227	pCi/g						
		TPU:		+/-0.141							
Radium-224			U	-0.358	pCi/g						
		TPU:		+/-0.142							
Radium-226			U	-0.0166	pCi/g						
		TPU:		+/-0.0208							
Radium-228			U	0.0226	pCi/g						
		TPU:		+/-0.0326							
Ruthenium-106			U	0.0159	pCi/g						
		TPU:		+/-0.079							
Sodium-22			U	-0.0119	pCi/g						
		TPU:		+/-0.00955							
Strontium-85			U	-0.0722	pCi/g						
		TPU:		+/-0.0161							
Thallium-208			U	-0.0218	pCi/g						
		TPU:		+/-0.0097							
Thorium-227			U	0.00998	pCi/g						
		TPU:		+/-0.0535							
Thorium-231			U	-0.227	pCi/g						
		TPU:		+/-0.141							
Thorium-234			U	0.0538	pCi/g						
		TPU:		+/-0.222							
Tin-113			U	0.000136	pCi/g						
		TPU:		+/-0.00869							
Uranium-235			U	0.0726	pCi/g						
		TPU:		+/-0.0447							
Yttrium-88			U	0.00542	pCi/g						
		TPU:		+/-0.00837							
Rad Liquid Scintillation											
Batch	964049										
QC1202068193	248028005	DUP									
Tritium			U	87.9	U	92.1	pCi/L	0.0195	(0-1)	KXK2	03/15/1022:10
			TPU:	+/-54.2		+/-54.0					
QC1202068194	LCS										
Tritium			5530			5500	pCi/L	99.3	(80%-120%)		03/15/1022:48
			TPU:			+/-456					

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QC Summary

Workorder: 247969

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation									
Batch	964049								
QC1202068192	MB								
Tritium		U	-36.1	pCi/L					03/17/1015:23
	TPU:		+/-47.0						

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.
- 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# 962401 Product: Am Date: 3/23/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
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:

JapLMF - 3/23/10

Secondary Review Performed By:

KjgBtkk 3/23/10

3/25

LANL

Am/Cm Que Sheet

08-MAR-10

Batch #: 962401

Analyst: JXH2

First Client Due Date: 25-MAR-10

Internal Due Date: 14-MAR-10

Comments:

Tracer Code: 445-76-2-53

Expiration Date: 05/10/10

LCS Isotope(s): Am241/Cm244

Expiration Date: 05/10/10

Spike Isotope(s): Am241/Cm244

Expiration Date: 05/10/10

Prep Date: 03/15/10

Pipet ID: 257058

Balance ID: 50110272

Witness: JXH2

Sample ID	Client Description	Type	Hazard	Min	Code	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet	Am/Cm
												Weight	
												Allotment	
												(g/l/f)	
247964001-1	RE36-10-8489	SAMPLE		.05	pCi/g	SOIL	LANL010	19-FEB-10	1		1	1.259	209
247964002-1	RE36-10-8486	SAMPLE		.05	pCi/g	SOIL	LANL010	19-FEB-10	2		2	1.255	210
247964003-1	RE36-10-8487	SAMPLE		.05	pCi/g	SOIL	LANL010	19-FEB-10	3		3	1.254	211
247964004-1	RE36-10-8462	SAMPLE		.05	pCi/g	SOIL	LANL010	19-FEB-10	4		4	1.250	215
247964005-1	RE36-10-8463	SAMPLE		.05	pCi/g	SOIL	LANL010	19-FEB-10	5		5	1.254	216
247969001-1	RE36-10-8490	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	6		6	1.258	217
247969002-1	RE36-10-8470	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	7		7	1.260	216
247969003-1	RE36-10-8476	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	8		8	1.250	219
247969004-1	RE36-10-8480	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	9		9	1.251	220
247969005-1	RE36-10-8474	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	10		10	1.254	221
247969006-1	RE36-10-8478	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	11		11	1.257	222
247969007-1	RE36-10-8483	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	12		12	1.258	223
247969008-1	RE36-10-8482	SAMPLE		.05	pCi/g	SOIL	LANL010	20-FEB-10	13		13	1.259	224
247970001-1	RE46-10-13181	SAMPLE		.05	pCi/g	SOIL	LANL010	23-FEB-10	14		14	1.254	225
247970002-1	RE46-10-13178	SAMPLE		.05	pCi/g	SOIL	LANL010	23-FEB-10	15		15	1.256	226
247970003-1	RE46-10-13179	SAMPLE		.05	pCi/g	SOIL	LANL010	23-FEB-10	16		16	1.250	229
247970004-1	RE46-10-13180	SAMPLE		.05	pCi/g	SOIL	LANL010	23-FEB-10	17		17	1.260	230
247970005-1	RE46-10-13177	SAMPLE		.05	pCi/g	SOIL	LANL010	23-FEB-10	18		18	1.253	231
247970006-1	RE46-10-13176	SAMPLE		.05	pCi/g	SOIL	LANL010	23-FEB-10	19		19	1.259	232
247970007-1	RE46-10-13182	SAMPLE		.05	pCi/g	SOIL	LANL010	23-FEB-10	20		20	1.260	233
1202064503-1	MB for batch 962401	MB		.05	pCi/g	SOIL	QC ACCOUNT		21		21	/	234
1202064504-1	RE46-10-13181(247970001DUP)	DUP		.05	pCi/g	SOIL	QC ACCOUNT		22		22	1.260	235
1202064505-1	LCS for batch 962401	LCS		.05	pCi/g	SOIL	QC ACCOUNT		23		23	0.103	236

*SRM 0244-B exp 04/30/20 0.103g

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

Solid Sample Dissolution by: LEACH or DIGESTION
Circle One

Data Reviewed By: JXH2

3/23/10

Blank Correction Report

Batch ID 962401

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202064504	DUP	Americium-241	1.26 g	0.0027	0.00319	0.029	-0.00047857	pCi/g	NO
1202064505	LCS	Americium-241	0.103 g	30.5	2.22	0.220	-0.00585437	pCi/g	NO
1202064503	MB	Americium-241	1.00 g	-0.000603	0.00168	0.0246	-0.000603	pCi/g	NO
247964001	RE36-10-8489	Americium-241	1.26 g	0.0014	0.00211	0.0207	-0.00047857	pCi/g	NO
247964002	RE36-10-8486	Americium-241	1.26 g	-0.00182	0.00148	0.0216	-0.00047857	pCi/g	NO
247964003	RE36-10-8487	Americium-241	1.25 g	0.00218	0.00171	0.0195	-0.0004824	pCi/g	NO
247964004	RE36-10-8462	Americium-241	1.25 g	0.0025	0.0019	0.0211	-0.0004824	pCi/g	NO
247964005	RE36-10-8463	Americium-241	1.25 g	0.00178	0.00272	0.0206	-0.0004824	pCi/g	NO
247969001	RE36-10-8490	Americium-241	1.26 g	-0.000985	0.00212	0.0217	-0.00047857	pCi/g	NO
247969002	RE36-10-8470	Americium-241	1.26 g	-0.00372	0.00319	0.0212	-0.00047857	pCi/g	YES
247969003	RE36-10-8476	Americium-241	1.25 g	0.00098	0.00141	0.0206	-0.0004824	pCi/g	NO
247969004	RE36-10-8480	Americium-241	1.25 g	0.00129	0.00156	0.0228	-0.0004824	pCi/g	NO
247969005	RE36-10-8474	Americium-241	1.25 g	-0.00124	0.00338	0.0214	-0.0004824	pCi/g	NO
247969006	RE36-10-8478	Americium-241	1.26 g	0.00385	0.00235	0.0208	-0.00047857	pCi/g	NO
247969007	RE36-10-8483	Americium-241	1.26 g	-0.00247	0.00212	0.0218	-0.00047857	pCi/g	YES
247969008	RE36-10-8482	Americium-241	1.26 g	0.00171	0.00237	0.0227	-0.00047857	pCi/g	NO
247970001	RE46-10-13181	Americium-241	1.25 g	0.00284	0.00257	0.0209	-0.0004824	pCi/g	NO
247970002	RE46-10-13178	Americium-241	1.26 g	-0.00182	0.00146	0.0214	-0.00047857	pCi/g	NO
247970003	RE46-10-13179	Americium-241	1.25 g	0.000999	0.00142	0.0207	-0.0004824	pCi/g	NO
247970004	RE46-10-13180	Americium-241	1.26 g	0.00153	0.00222	0.0215	-0.00047857	pCi/g	NO
247970005	RE46-10-13177	Americium-241	1.25 g	0.00517	0.00303	0.0256	-0.0004824	pCi/g	NO
247970006	RE46-10-13176	Americium-241	1.26 g	-0.00163	0.00297	0.0221	-0.00047857	pCi/g	NO
247970007	RE46-10-13182	Americium-241	1.26 g	0.00275	0.00205	0.0223	-0.00047857	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962401	CHAMBER : 217	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247969001_AM	DETECTOR S/N : 79410	BKG FILE : B217.CNF:93
SAMPLE QTY : 1.258 G	AVERAGE %EFFICIENCY : 38.4865	BKG DATE : 21-MAR-2010
SAMPLE DATE : 20-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 03:05:35	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXH2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W217.CNF:32
% YIELD : 87.336		CAL DATE : 28-FEB-2010

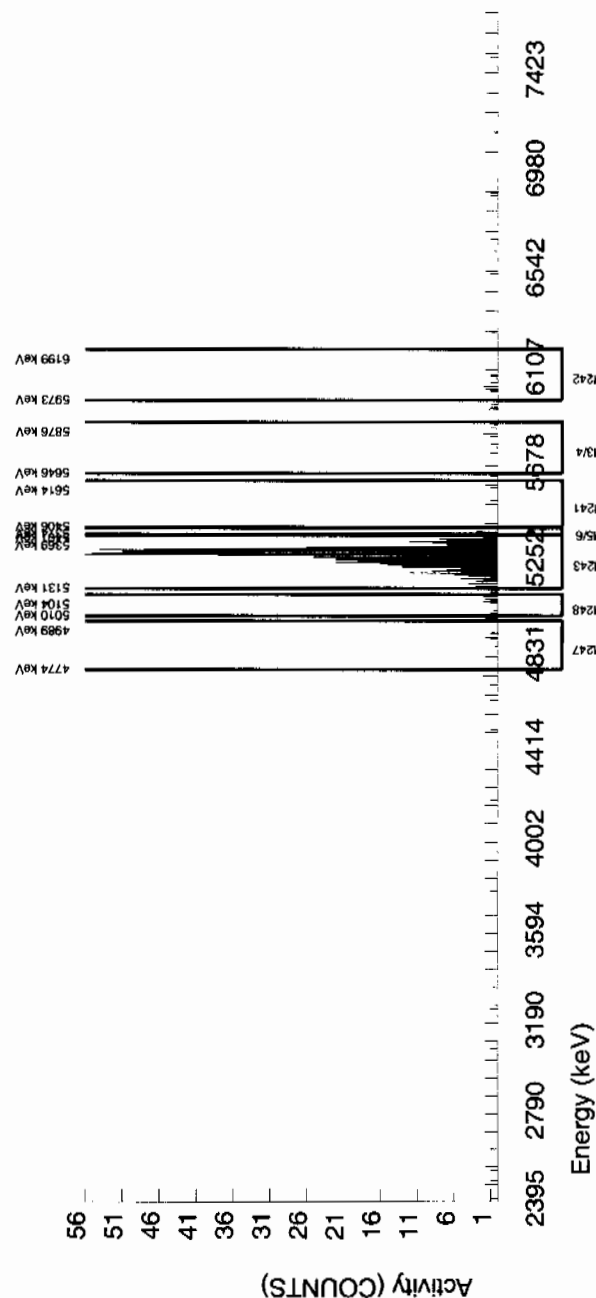
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 2.5472E+00 dpm		

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	5557.603	58.946	2.000	-0.665	1.440	2.7707	99.94000	-9.85E-04	2.12E-03	8.85E-03	2.17E-02	2.11E-03
AM243	5270.000	5282.532	37.146	705.000	704.280	0.720	0.8485	99.78000	1.04E+00	7.71E-02	2.71E-03	9.45E-03	3.94E-02
CM-242	6102.000	6052.184	4.912	8.000	8.000	0.000	4.0092	100.00000	1.35E-02	4.84E-03	1.28E-02	2.96E-02	4.76E-03
CM-3/4	5795.020	5787.807	4.912	7.000	6.280	0.720	4.8510	100.00000	9.32E-03	4.11E-03	1.55E-02	3.50E-02	4.07E-03
CM-5/6	5386.000	5380.239	0.000	13.000	12.280	0.720	6.1294	86.09000	2.11E-02	6.46E-03	2.27E-02	5.01E-02	6.32E-03
CM-247	4946.000	4918.915	58.946	4.000	3.280	0.720	6.3427	79.30000	6.12E-03	3.98E-03	2.55E-02	5.61E-02	3.97E-03
CM-248	5078.600	5077.466	29.473	10.000	10.000	0.000	11.0244	91.00000	1.63E-02	5.24E-03	3.87E-02	8.17E-02	5.14E-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 : 962401
SAMPLE ID : S0247969002_AM
SAMPLE QTY : 1.260 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 87.183

CHAMBER : 218
DETECTOR S/N : 79411
AVERAGE %EFFICIENCY : 39.3974
COUNT DATE : 22-MAR-2010 03:05:37
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B218.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W218.CNF:30
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.5427E+00 dpm

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

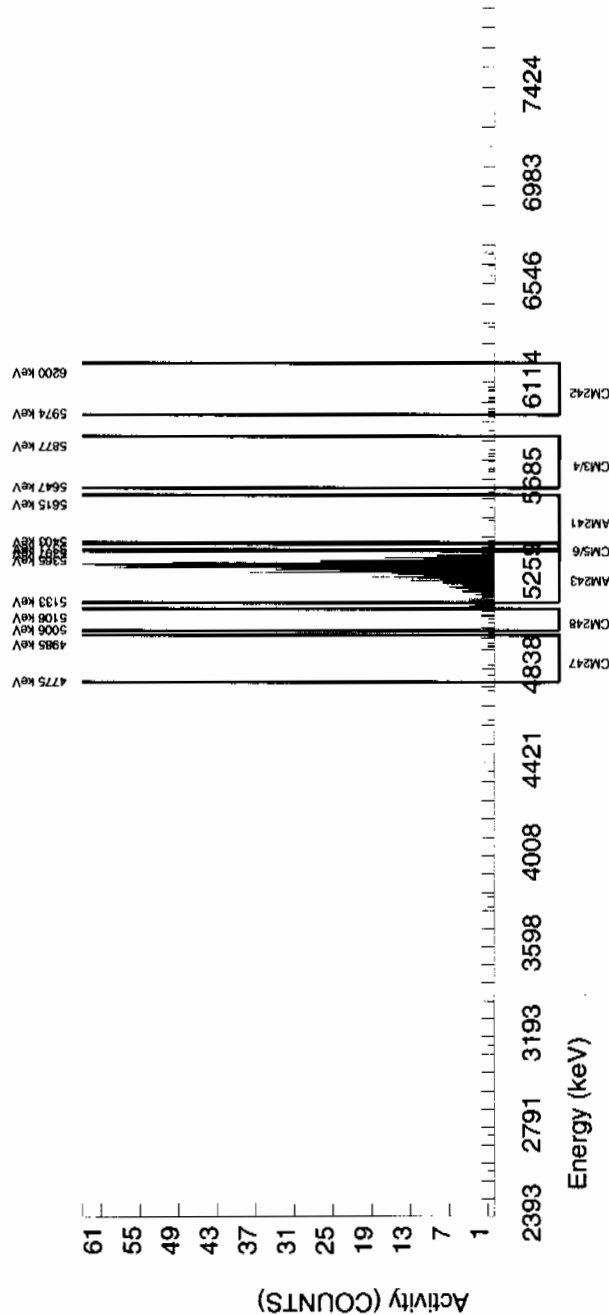
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5496.336	138.488	3.000	-2.572	4.320	2.7707	99.94000	-3.72E-03	3.19E-03	8.65E-03	2.12E-02	3.19E-03
AM243	5270.000	5286.604	44.702	724.000	719.680	4.320	2.0785	99.78000	1.04E+00	7.67E-02	6.50E-03	1.69E-02	3.91E-02
CM-242	6102.000	6044.185	103.247	9.000	9.000	0.000	4.0092	100.0000	1.48E-02	5.02E-03	1.25E-02	2.89E-02	4.94E-03
CM-3/4	5795.020	5773.395	98.920	8.000	6.560	1.440	4.8510	100.0000	9.51E-03	4.40E-03	1.51E-02	3.42E-02	4.36E-03
CM-5/6	5386.000	5377.165	0.000	18.000	18.000	0.000	6.1294	86.09000	3.02E-02	7.38E-03	2.22E-02	4.90E-02	7.12E-03
CM-247	4946.000	4920.612	51.933	13.000	10.840	2.160	6.3427	79.30000	1.98E-02	7.07E-03	2.49E-02	5.48E-02	6.95E-03
CM-248	5078.600	5055.526	0.000	17.000	17.000	0.000	11.0244	91.00000	2.70E-02	6.77E-03	3.78E-02	7.99E-02	6.55E-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



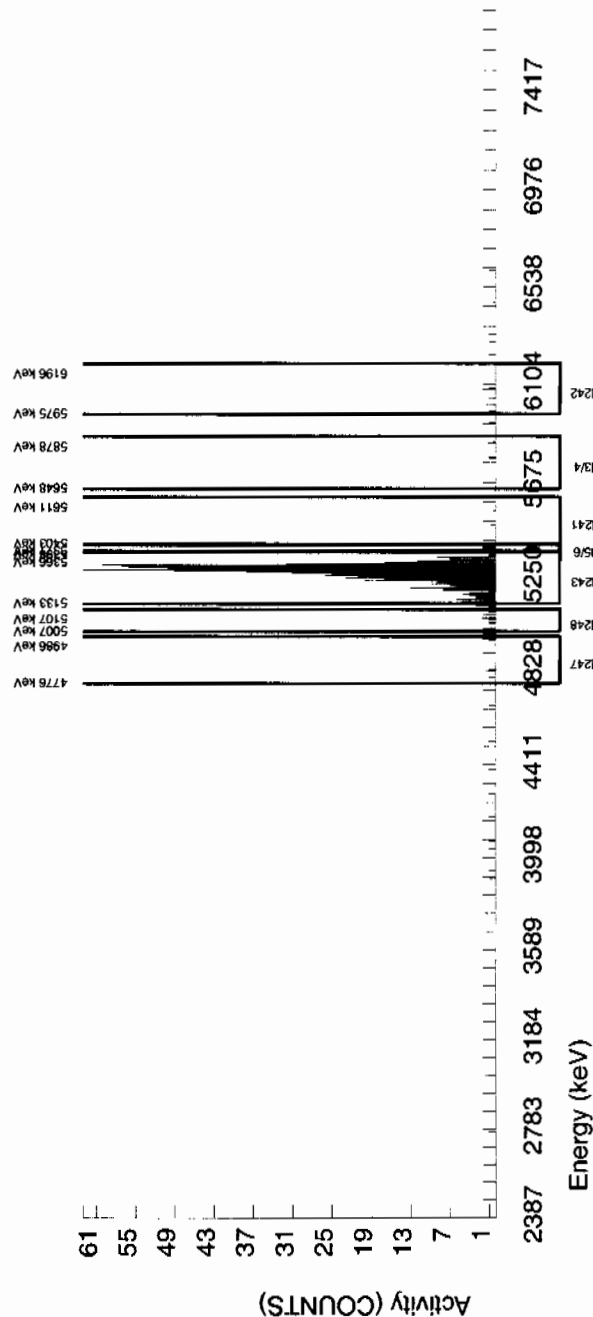
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORTBATCH NUMBER : 962401
SAMPLE ID : S0247969003_AM
SAMPLE QTY : 1.250 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 87.869CHAMBER : 219
DETECTOR S/N : 79412
AVERAGE %EFFICIENCY : 40.6279
COUNT DATE : 22-MAR-2010 03:05:40
ELAPSED LIVE TIME(SEC) : 43200.00LIB FILE : ENV_ALPHA_AM
BKG FILE : B219.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W219.CNF:30
CAL DATE : 28-FEB-2010TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.5627E+00 dpmMS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/GLCS/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	5525.611	64.129	2.000	0.899	0.000	2.7707	99.94000	9.80E-04	1.41E-03	8.39E-03	2.06E-02	1.40E-03
AM-243	5270.000	5279.826	39.273	748.000	748.000	0.000	0.0000	99.78000	1.05E+00	7.64E-02	0.00E+00	3.81E-03	3.84E-02
CM-242	6102.000	6055.878	7.245	6.000	5.280	0.720	4.0092	100.0000	8.42E-03	4.11E-03	1.21E-02	2.81E-02	4.07E-03
CM-3/4	5795.020	5812.286	68.445	3.000	3.000	0.000	4.8510	100.0000	4.22E-03	2.45E-03	1.47E-02	3.31E-02	2.44E-03
CM-5/6	5386.000	5377.657	0.000	18.000	18.000	0.000	6.1294	86.09000	2.93E-02	7.15E-03	2.15E-02	4.75E-02	6.91E-03
CM-247	4946.000	4883.679	7.245	9.000	9.000	0.000	6.3427	79.30000	1.59E-02	5.40E-03	2.42E-02	5.32E-02	5.30E-03
CM-248	5078.600	5059.256	0.000	20.000	20.000	0.000	11.0244	91.00000	3.08E-02	7.16E-03	3.66E-02	7.75E-02	6.89E-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



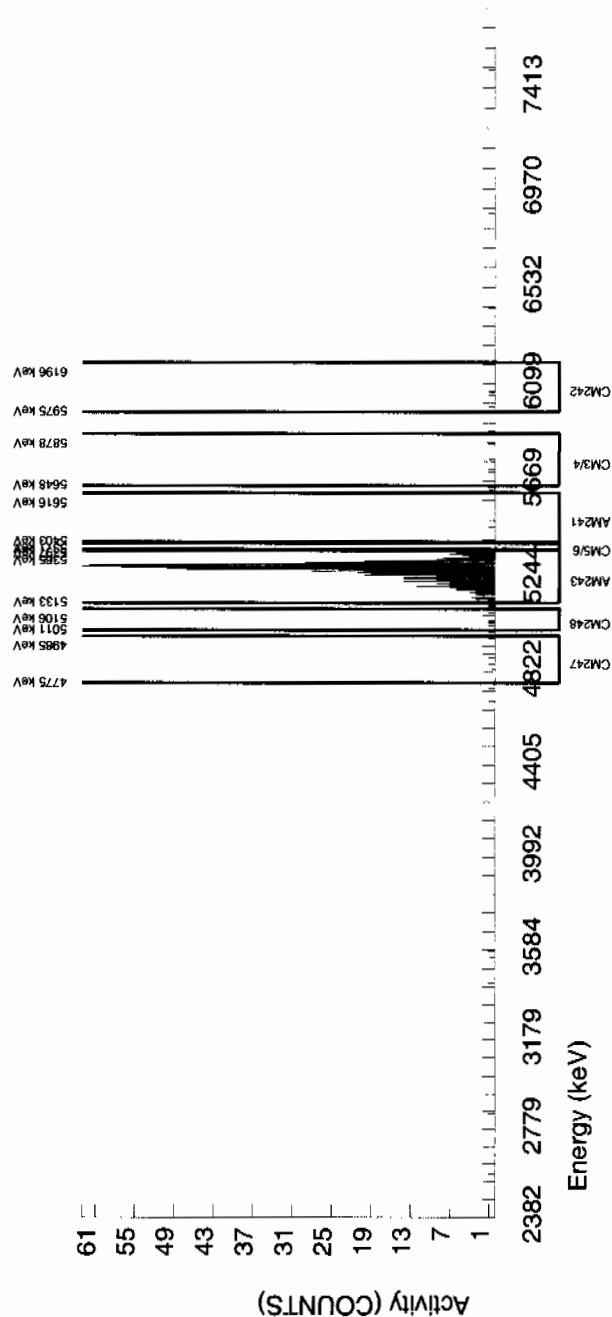
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORTBATCH NUMBER : 962401
SAMPLE ID : S0247969004_AM
SAMPLE QTY : 1.251 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 82.479CHAMBER : 220
DETECTOR S/N : 79413
AVERAGE %EFFICIENCY : 38.9430
COUNT DATE : 22-MAR-2010 03:05:43
ELAPSED LIVE TIME(SEC) : 43200.00LIB FILE : ENV_ALPHA_AM
BKG FILE : B220.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W220.CNF:32
CAL DATE : 28-FEB-2010TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.4055E+00 dpmMS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/GLCS/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	5487.665	34.480	2.000	0.829	0.000	2.7707	99.94000	1.29E-03	1.56E-03	9.31E-03	2.28E-02	1.56E-03
AM243	5270.000	5280.771	31.121	673.000	673.000	0.000	0.0000	99.78000	1.05E+00	7.85E-02	0.00E+00	4.23E-03	4.05E-02
CM-242	6102.000	6048.743	68.959	4.000	4.000	0.000	4.0092	100.0000	7.09E-03	3.57E-03	1.35E-02	3.12E-02	3.54E-03
CM-3/4	5795.020	5759.944	118.216	4.000	3.280	0.720	4.8510	100.0000	5.12E-03	3.34E-03	1.63E-02	3.68E-02	3.32E-03
CM-5/6	5386.000	5372.505	0.000	6.000	6.000	0.000	6.1294	86.09000	1.09E-02	4.48E-03	2.39E-02	5.27E-02	4.43E-03
CM-247	4946.000	4919.965	4.926	8.000	6.560	1.440	6.3427	79.30000	1.29E-02	5.96E-03	2.69E-02	5.91E-02	5.90E-03
CM-248	5078.600	5055.201	78.195	9.000	9.000	0.000	11.0244	91.00000	1.54E-02	5.23E-03	4.07E-02	8.60E-02	5.13E-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 : 962401
SAMPLE ID : S0247969005_AM
SAMPLE QTY : 1.254 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 86.011

CHAMBER : 221
DETECTOR S/N : 79414
AVERAGE %EFFICIENCY : 39.7297
COUNT DATE : 22-MAR-2010 03:05:46
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B221.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W221.CNF:30
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.5086E+00 dpm

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

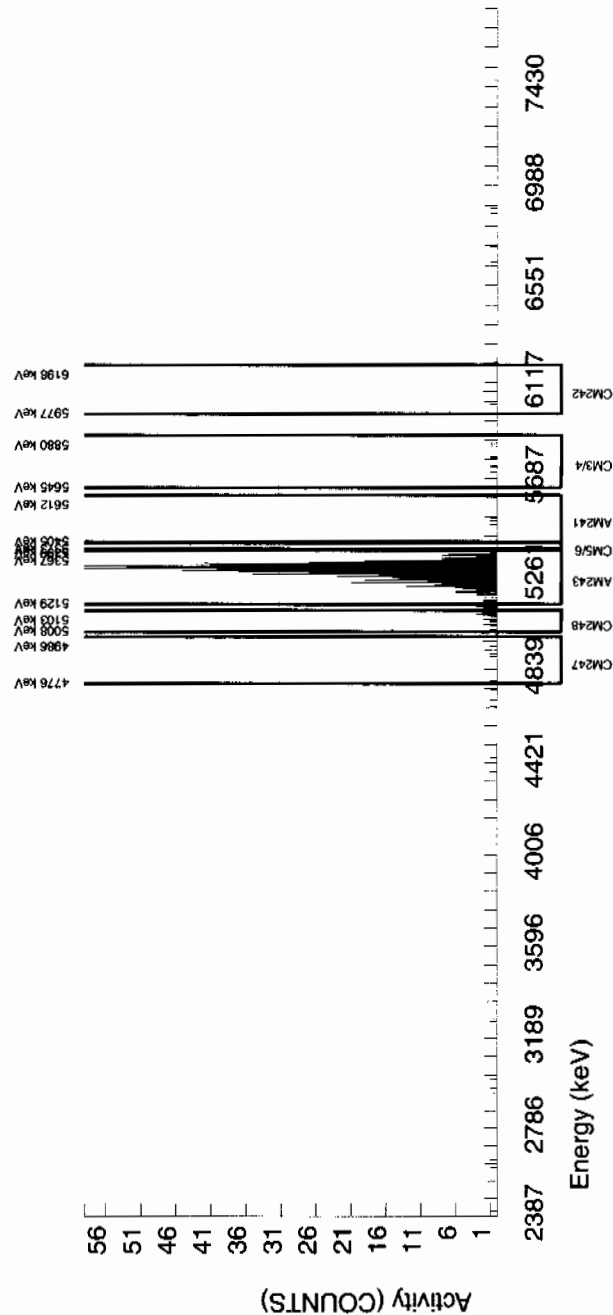
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

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	5504.441	39.722	4.000	-0.846	3.600	2.7707	99.94000	-1.24E-03	3.38E-03	8.73E-03	2.14E-02	3.38E-03
AM243	5270.000	5281.148	50.146	716.000	716.000	0.000	0.0000	99.78000	1.05E+00	7.70E-02	0.00E+00	3.97E-03	3.92E-02
CM-242	6102.000	6064.971	4.965	3.000	3.000	0.000	4.0092	100.0000	4.98E-03	2.89E-03	1.26E-02	2.92E-02	2.88E-03
CM-3/4	5795.020	5780.602	124.130	7.000	4.120	2.880	4.8510	100.0000	6.03E-03	4.43E-03	1.53E-02	3.45E-02	4.41E-03
CM-5/6	5386.000	5376.732	0.000	4.000	3.280	0.720	6.1294	86.09000	5.56E-03	3.62E-03	2.24E-02	4.94E-02	3.60E-03
CM-247	4946.000	4933.785	0.000	8.000	8.000	0.000	6.3427	79.30000	1.47E-02	5.29E-03	2.52E-02	5.54E-02	5.21E-03
CM-248	5078.600	5067.121	53.376	17.000	17.000	0.000	11.0244	91.00000	2.73E-02	6.84E-03	3.82E-02	8.07E-02	6.61E-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 : 962401	CHAMBER : 222	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247969006_AM	DETECTOR S/N : 79415	BKG FILE : B222.CNF;91
SAMPLE QTY : 1.257 G	AVERAGE %EFFICIENCY : 38.9602	BKG DATE : 21-MAR-2010
SAMPLE DATE : 20-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 03:05:49	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXH2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W222.CNF;30
% YIELD : 90.317		CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.6341E+00 dpm

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

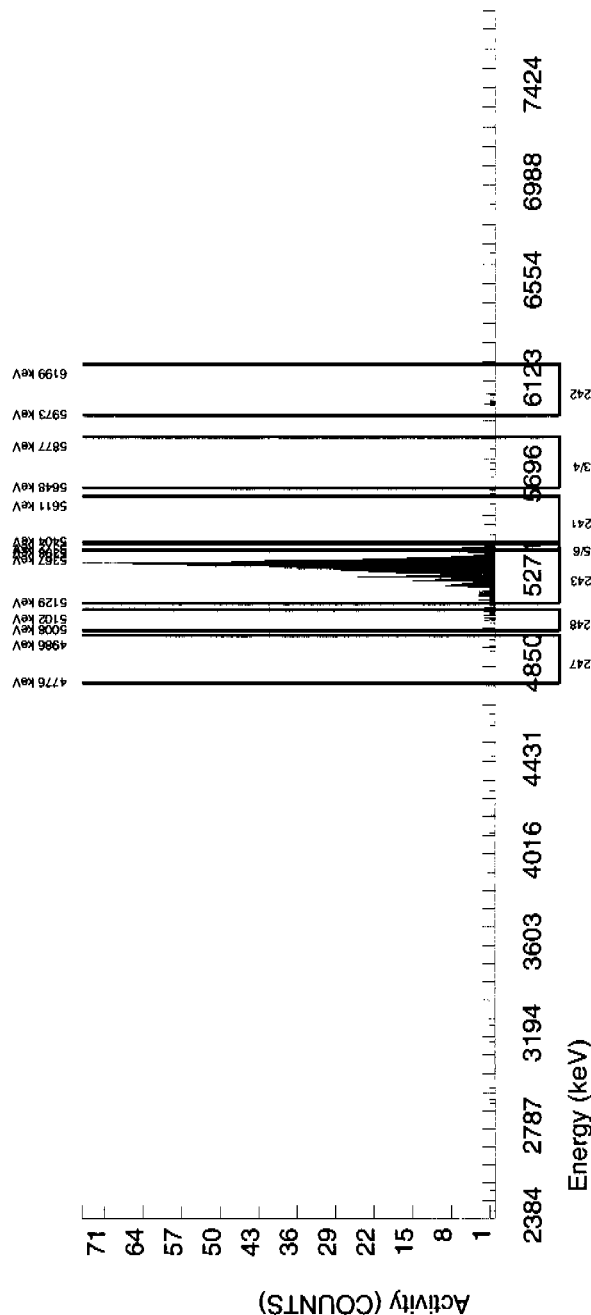
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5491.187	5.025	4.000	2.717	0.000	2.7707	99.94000	3.85E-03	2.35E-03	8.46E-03	2.08E-02	2.33E-03
AM243	5270.000	5293.370	34.200	738.000	737.280	0.720	0.8485	99.78000	1.05E+00	7.63E-02	2.60E-03	9.03E-03	3.85E-02
CM-242	6102.000	6047.210	52.760	9.000	9.000	0.000	4.0092	100.00000	1.45E-02	4.91E-03	1.22E-02	2.83E-02	4.83E-03
CM-3/4	5795.020	5777.596	90.445	3.000	1.560	1.440	4.8510	100.00000	2.21E-03	2.85E-03	1.48E-02	3.34E-02	2.85E-03
CM-5/6	5386.000	5380.652	0.000	29.000	29.000	0.000	6.1294	86.09000	4.76E-02	9.34E-03	2.17E-02	4.79E-02	8.85E-03
CM-247	4946.000	4946.114	50.247	3.000	2.280	0.720	6.3427	79.30000	4.07E-03	3.36E-03	2.44E-02	5.36E-02	3.35E-03
CM-248	5078.600	5077.038	0.000	15.000	15.000	0.000	11.0244	91.00000	2.33E-02	6.20E-03	3.70E-02	7.81E-02	6.02E-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 REPORTBATCH NUMBER : 962401
SAMPLE ID : S0247969007_AM
SAMPLE QTY : 1.258 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 84.743CHAMBER : 223
DETECTOR S/N : 79416
AVERAGE %EFFICIENCY : 39.5920
COUNT DATE : 22-MAR-2010 03:05:52
ELAPSED LIVE TIME(SEC) : 43200.00LIB FILE : ENV_ALPHA_AM
BKG FILE : B223.CNF:93
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W223.CNF:30
CAL DATE : 28-FEB-2010TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.4716E+00 dpmMS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/GLCS/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	5449.085	4.946	1.000	-1.663	1.440	2.7707	99.94000	-2.47E-03	2.12E-03	8.87E-03	2.18E-02	2.12E-03
AM243	5270.000	5280.902	36.183	703.000	703.000	0.000	0.0000	99.78000	1.04E+00	7.71E-02	0.00E+00	4.03E-03	3.94E-02
CM-242	6102.000	6046.898	0.000	5.000	5.000	0.000	4.0092	100.0000	8.43E-03	3.81E-03	1.28E-02	2.97E-02	3.77E-03
CM-3/4	5795.020	5737.699	4.946	8.000	7.280	0.720	4.8510	100.0000	1.08E-02	4.39E-03	1.55E-02	3.50E-02	4.34E-03
CM-5/6	5386.000	5372.946	0.000	11.000	11.000	0.000	6.1294	86.09000	1.89E-02	5.84E-03	2.28E-02	5.02E-02	5.71E-03
CM-247	4946.000	4886.824	173.109	7.000	7.000	0.000	6.3427	79.30000	1.31E-02	5.01E-03	2.56E-02	5.62E-02	4.95E-03
CM-248	5078.600	5075.704	0.000	17.000	17.000	0.000	11.0244	91.00000	2.77E-02	6.94E-03	3.87E-02	8.19E-02	6.72E-03

NOTES:

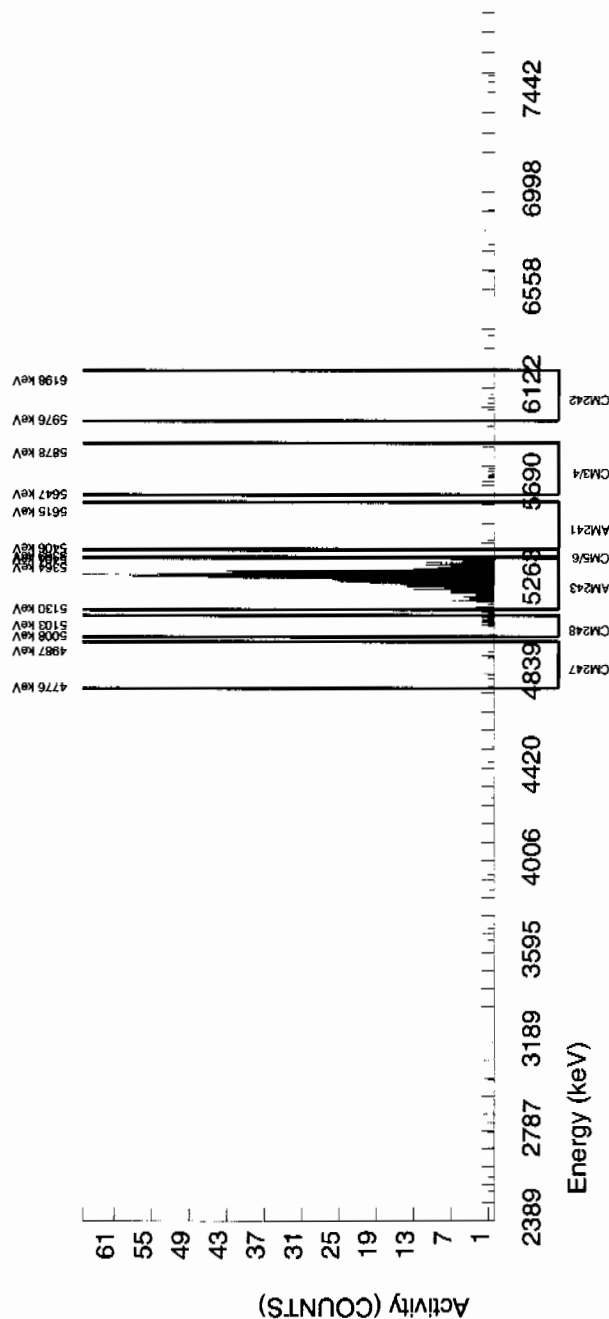
* BKG Sg calculated via blank population.

(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 : 962401
SAMPLE ID : S0247969008_AM
SAMPLE QTY : 1.259 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 83.759

CHAMBER : 224
DETECTOR S/N : 79417
AVERAGE %EFFICIENCY : 38.4049
COUNT DATE : 22-MAR-2010 03:05:57
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B224.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W224.CNF:30
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.4429E+00 dpm

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

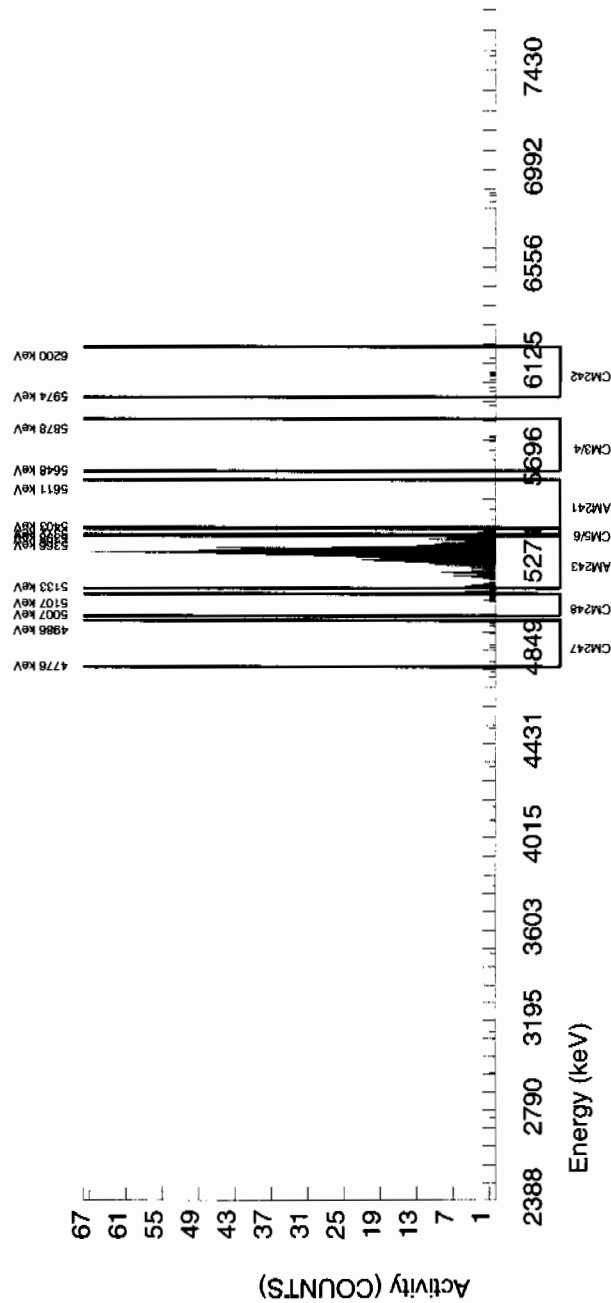
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

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	5509.688	145.060	3.000	1.107	0.720	2.7707	99.94000	1.71E-03	2.37E-03	9.24E-03	2.27E-02	2.37E-03
AM243	5270.000	5288.315	35.517	674.000	8.000	0.000	0.0000	99.78000	1.04E+00	7.79E-02	0.00E+00	4.20E-03	4.02E-02
CM-242	6102.000	6070.885	140.058	8.000	8.000	0.000	4.0092	100.0000	1.41E-02	5.05E-03	1.34E-02	3.09E-02	4.97E-03
CM-3/4	5795.020	5786.897	65.027	5.000	5.000	0.000	4.8510	100.0000	7.75E-03	3.50E-03	1.62E-02	3.65E-02	3.47E-03
CM-5/6	5386.000	5381.208	0.000	21.000	20.280	0.720	6.1294	86.09000	3.64E-02	8.64E-03	2.37E-02	5.23E-02	8.32E-03
CM-247	4946.000	4911.557	5.002	9.000	8.280	0.720	6.3427	79.30000	1.61E-02	6.10E-03	2.67E-02	5.86E-02	6.01E-03
CM-248	5078.600	5086.545	0.000	9.000	9.000	0.000	11.0244	91.00000	1.53E-02	5.19E-03	4.04E-02	8.54E-02	5.09E-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 : 962401
SAMPLE ID : S0247970001_AM
SAMPLE QTY : 1.254 G
SAMPLE DATE : 23-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 90.477

CHAMBER : 225
DETECTOR S/N : 79418
AVERAGE %EFFICIENCY : 38.8004
COUNT DATE : 22-MAR-2010 03:05:59
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B225.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W225.CNF:30
CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.6388E+00 dpm

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

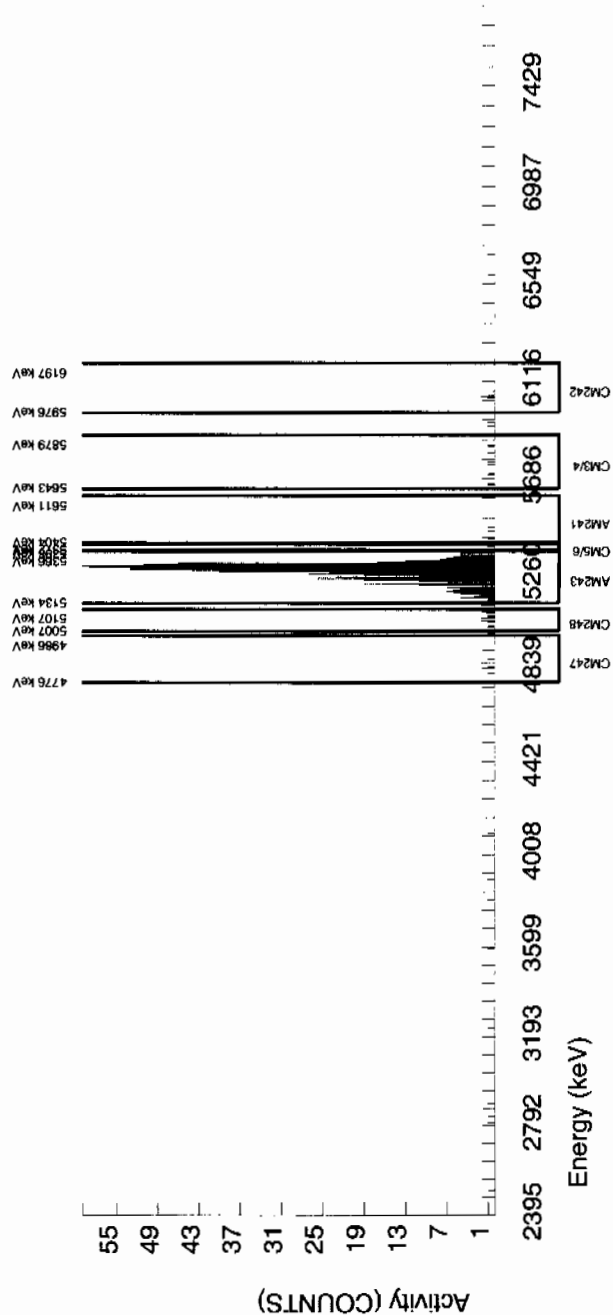
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

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	5474.013	103.723	4.000	2.000	0.720	2.7707	98.94000	2.84E-03	2.57E-03	8.50E-03	2.09E-02	2.56E-03
AM-243	5270.000	5281.089	40.194	737.000	735.560	1.440	1.2000	99.78000	1.05E+00	7.65E-02	3.69E-03	1.12E-02	3.87E-02
CM-242	6102.000	6052.722	9.878	6.000	6.000	0.000	4.0092	100.0000	9.58E-03	3.96E-03	1.23E-02	2.84E-02	3.91E-03
CM-3/4	5795.020	5752.315	162.376	10.000	9.280	0.720	4.8510	100.0000	1.32E-02	4.70E-03	1.49E-02	3.36E-02	4.62E-03
CM-5/6	5386.000	5376.438	0.000	9.000	9.000	0.000	6.1294	86.09000	1.49E-02	5.04E-03	2.18E-02	4.81E-02	4.95E-03
CM-247	4946.000	4859.838	4.939	5.000	5.000	0.000	6.3427	79.30000	8.96E-03	4.05E-03	2.45E-02	5.39E-02	4.01E-03
CM-248	5078.600	5071.849	5.737	16.000	16.000	0.000	11.0244	91.00000	2.50E-02	6.44E-03	3.71E-02	7.85E-02	6.25E-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 : 962401
SAMPLE ID : S1202064503_AM
SAMPLE QTY : 1.000 G
SAMPLE DATE : 15-MAR-2010 00:00:00
ANALYST : JXH2
% YIELD : 93.799

CHAMBER : 234
DETECTOR S/N : 79427
AVERAGE %EFFICIENCY : 39.7384
COUNT DATE : 22-MAR-2010 03:06:21
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B234.CNF:92
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W234.CNF:30
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.7357E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3149E+01 pCi/G

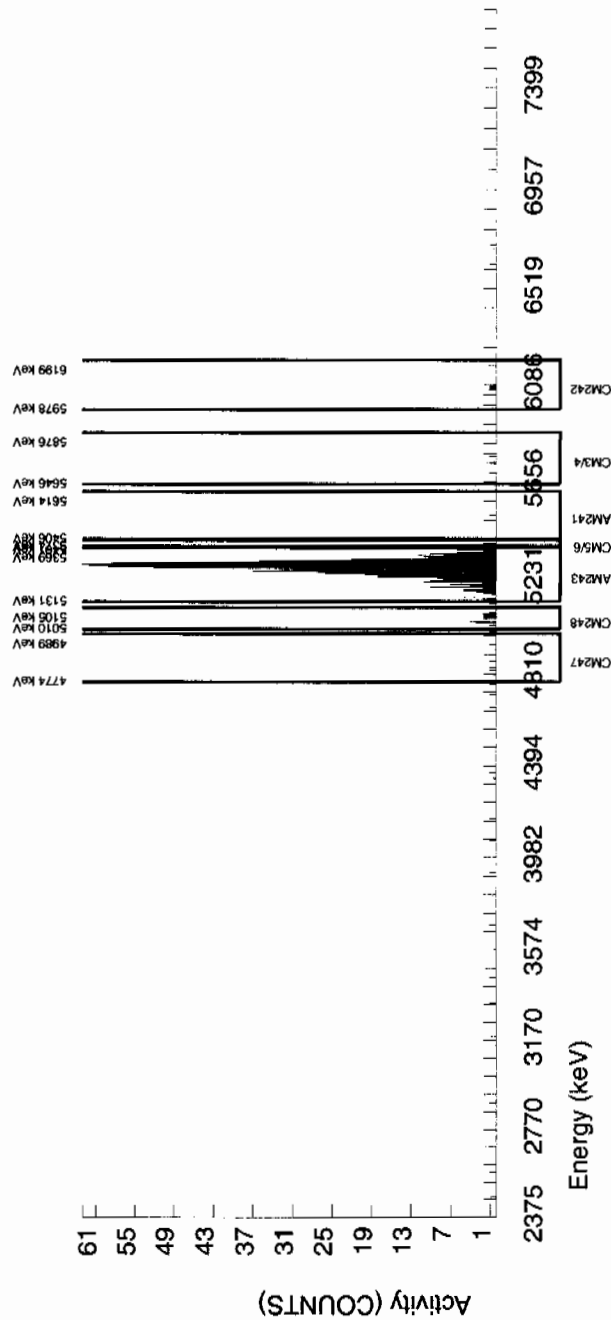
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3149E+01 pCi/G

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	5512.361	4.914	1.000	-0.359	0.000	2.7707	99.94000	-6.03E-04	1.68E-03	1.00E-02	2.46E-02	1.68E-03
AM243	5270.000	5283.005	48.367	781.000	781.000	0.000	0.0000	99.78000	1.31E+00	9.46E-02	0.00E+00	4.56E-03	4.70E-02
CM-242	6102.000	6069.386	29.484	8.000	8.000	0.000	4.0092	100.0000	1.39E-02	4.97E-03	1.45E-02	3.36E-02	4.90E-03
CM-3/4	5795.020	5776.589	4.914	6.000	5.280	0.720	4.8510	100.0000	8.87E-03	4.32E-03	1.76E-02	3.97E-02	4.29E-03
CM-5/6	5386.000	5379.532	0.000	11.000	11.000	0.000	6.1294	86.09000	2.14E-02	6.60E-03	2.58E-02	5.68E-02	6.47E-03
CM-247	4946.000	4862.838	162.161	8.000	6.560	1.440	6.3427	79.30000	1.39E-02	6.42E-03	2.90E-02	6.37E-02	6.36E-03
CM-248	5078.600	5056.114	8.686	20.000	20.000	0.000	11.0244	91.00000	3.69E-02	8.56E-03	4.39E-02	9.27E-02	8.25E-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



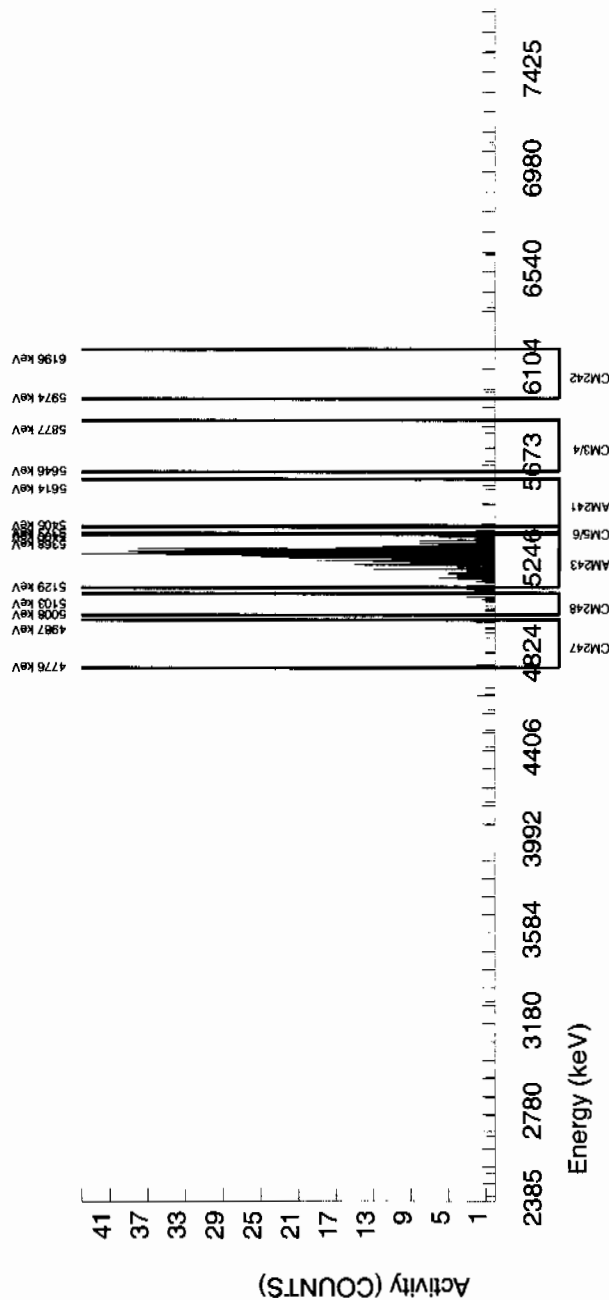
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORTBATCH NUMBER : 962401
SAMPLE ID : S1202064504_AM
SAMPLE QTY : 1.260 G
SAMPLE DATE : 23-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 63.192CHAMBER : 235
DETECTOR S/N : 79428
AVERAGE %EFFICIENCY : 39.7692
COUNT DATE : 22-MAR-2010 03:06:26
ELAPSED LIVE TIME(SEC) : 43200.00LIB FILE : ENV_ALPHA_AM
BKG FILE : B235.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W235.CNF:30
CAL DATE : 28-FEB-2010TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 1.8430E+00 dpmMS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/GLCS/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	5531.604	4.911	3.000	1.364	0.720	2.7707	99.94000	2.70E-03	3.19E-03	1.18E-02	2.90E-02	3.19E-03
AM243	5270.000	5276.923	42.961	528.000	526.560	1.440	1.2000	99.78000	1.04E+00	8.36E-02	5.13E-03	1.56E-02	4.55E-02
CM-242	6102.000	6014.570	19.645	2.000	2.000	0.000	4.0092	100.0000	4.44E-03	3.15E-03	1.71E-02	3.95E-02	3.14E-03
CM-3/4	5795.020	5788.059	0.000	4.000	-0.320	4.320	4.8510	100.0000	-6.34E-04	5.29E-03	2.07E-02	4.67E-02	5.28E-03
CM-5/6	5386.000	5378.017	0.000	8.000	8.000	0.000	6.1294	86.09000	1.84E-02	6.61E-03	3.03E-02	6.69E-02	6.49E-03
CM-247	4946.000	4894.217	181.507	11.000	11.000	0.000	6.3427	79.30000	2.74E-02	8.47E-03	3.41E-02	7.49E-02	8.26E-03
CM-248	5078.600	5057.850	72.388	14.000	14.000	0.000	11.0244	91.00000	3.04E-02	8.38E-03	5.16E-02	1.09E-01	8.12E-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 : 962401
SAMPLE ID : S1202064505_AM
SAMPLE QTY : 0.103 G
SAMPLE DATE : 15-MAR-2010 00:00:00
ANALYST : JXH2
% YIELD : 97.882

CHAMBER : 236
DETECTOR S/N : 79429
AVERAGE %EFFICIENCY : 41.3400
COUNT DATE : 22-MAR-2010 03:06:28
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B236.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W236.CNF:30
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.8547E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3149E+01 pCi/G

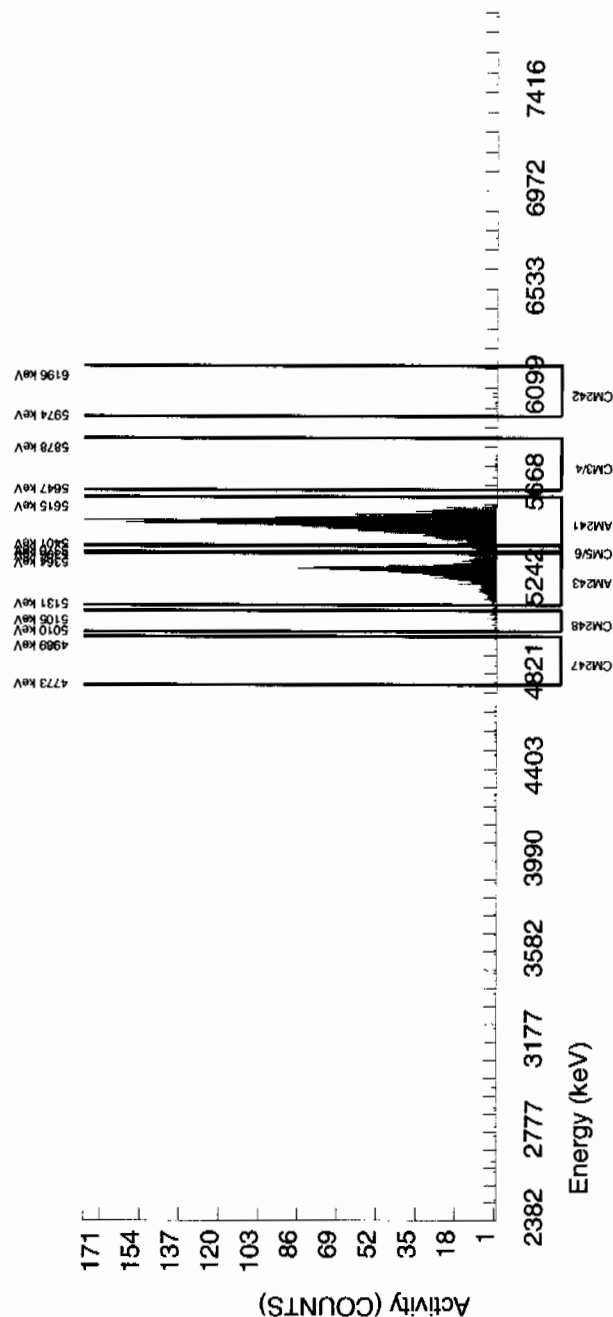
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3149E+01 pCi/G

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	5501.644	38.180	2034.000	2032.525	0.000	2.7707	99.94000	3.05E+01	2.22E+00	8.98E-02	2.20E-01	6.77E-01
AM243	5270.000	5282.669	28.696	850.000	847.840	2.160	1.4697	99.78000	1.28E+01	9.85E-01	4.77E-02	1.36E-01	4.39E-01
CM-242	6102.000	6052.023	19.672	8.000	8.000	0.000	4.0092	100.0000	1.24E-01	4.46E-02	1.30E-01	3.00E-01	4.38E-02
CM-3/4	5795.020	5748.092	4.918	10.000	6.400	3.600	4.8510	100.0000	9.61E-02	5.37E-02	1.57E-01	3.55E-01	5.33E-02
CM-5/6	5386.000	5385.199	0.000	47.000	47.000	0.000	6.1294	86.09000	8.20E-01	1.32E-01	2.31E-01	5.08E-01	1.20E-01
CM-247	4946.000	4877.526	0.000	7.000	4.840	2.160	6.3427	79.30000	9.16E-02	5.57E-02	2.59E-01	5.69E-01	5.54E-02
CM-248	5078.600	5077.441	0.000	18.000	18.000	0.000	11.0244	91.00000	2.97E-01	7.29E-02	3.92E-01	8.29E-01	7.00E-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# 962402 Product: P₁₄ Date: 3/23/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [Signature] 3/23/10

Secondary Review Performed By: [Signature] 3/23/10

LANL

3/14 - 3/25 Page 82 of 694

Analyst: JXH2

Prep Date: 05/15/13 Initials: QAO Pipet ID: 2771058 Balance ID: S040272

Witness: 2/20/10

Choose SOP Used: GL-RAD-A-011, GL-RAD-A-036.
Solid Sample Dissolution by: LEACH or DIGESTION
Circle One
GL-RAD-A-045, GL-RAD-A-045, GL-RAD-A-045

Solid Sample Dissolution by: **LEACH or DIGESTION**
Circle One

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

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: E. J. [Signature] 3/23/10
JL 7/24/10

Page: 1 of 1

Blank Correction Report

Batch ID 962402

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202064507	DUP	Plutonium-238	1.26 g	0.00327	0.00232	0.0217	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.000458	0.00202	0.0183	.001309524	pCi/g	YES
1202064508	LCS	Plutonium-238	0.103 g	7.32	0.607	0.258	.081650485	pCi/g	NO
		Plutonium-239/240	0.103 g	38.0	2.61	0.218	.016019417	pCi/g	NO
1202064506	MB	Plutonium-238	1.00 g	0.00841	0.00464	0.0261	.00841	pCi/g	YES
		Plutonium-239/240	1.00 g	0.00165	0.00419	0.022	.00165	pCi/g	YES
247964001	RE36-10-8489	Plutonium-238	1.26 g	0.00291	0.00484	0.0197	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.000178	0.00334	0.0166	.001309524	pCi/g	YES
247964002	RE36-10-8486	Plutonium-238	1.26 g	0.0149	0.00979	0.021	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.000506	0.00422	0.0178	.001309524	pCi/g	YES
247964003	RE36-10-8487	Plutonium-238	1.25 g	0.00386	0.00339	0.020	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00193	0.00239	0.0169	.00132	pCi/g	YES
247964004	RE36-10-8462	Plutonium-238	1.25 g	0.00943	0.00704	0.0252	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00433	0.00357	0.0213	.00132	pCi/g	YES
247964005	RE36-10-8463	Plutonium-238	1.25 g	-0.00443	0.00586	0.0223	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00717	0.00396	0.0188	.00132	pCi/g	NO
247969001	RE36-10-8490	Plutonium-238	1.26 g	0.00754	0.00561	0.0191	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00471	0.00307	0.0161	.001309524	pCi/g	YES
247969002	RE36-10-8470	Plutonium-238	1.26 g	0.000938	0.00292	0.0222	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00763	0.00446	0.0188	.001309524	pCi/g	NO
247969003	RE36-10-8476	Plutonium-238	1.25 g	-0.002	0.00276	0.0229	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00518	0.00301	0.0194	.00132	pCi/g	YES
247969004	RE36-10-8480	Plutonium-238	1.25 g	-0.000858	0.00279	0.0259	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0114	0.00606	0.0219	.00132	pCi/g	NO
247969005	RE36-10-8474	Plutonium-238	1.25 g	-0.0036	0.00454	0.0234	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.000423	0.00562	0.0198	.00132	pCi/g	YES
247969006	RE36-10-8478	Plutonium-238	1.26 g	0.000615	0.00667	0.0227	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0041	0.00501	0.0192	.001309524	pCi/g	YES
247969007	RE36-10-8483	Plutonium-238	1.26 g	0.00359	0.00254	0.0238	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00537	0.00312	0.0201	.001309524	pCi/g	YES
247969008	RE36-10-8482	Plutonium-238	1.26 g	0.00365	0.00259	0.0243	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00183	0.00183	0.0205	.001309524	pCi/g	YES
247970001	RE46-10-13181	Plutonium-238	1.25 g	0.00492	0.00286	0.0218	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00164	0.00164	0.0184	.00132	pCi/g	YES
247970002	RE46-10-13178	Plutonium-238	1.26 g	0.000909	0.00283	0.0215	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00532	0.00346	0.0182	.001309524	pCi/g	YES
247970003	RE46-10-13179	Plutonium-238	1.25 g	0.00314	0.00223	0.0208	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00785	0.00354	0.0176	.00132	pCi/g	NO
247970004	RE46-10-13180	Plutonium-238	1.26 g	0.0194	0.00865	0.0245	.006674603	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
247970004	RE46-10-13180	Plutonium-239/240	1.26 g	-0.000295	0.00347	0.0207	.001309524	pCi/g	YES
247970005	RE46-10-13177	Plutonium-238	1.25 g	0.00103	0.0032	0.0244	.006728	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00705	0.00506	0.0206	.00132	pCi/g	NO
247970006	RE46-10-13176	Plutonium-238	1.26 g	0.00475	0.00434	0.0202	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00914	0.00377	0.0171	.001309524	pCi/g	NO
247970007	RE46-10-13182	Plutonium-238	1.26 g	0.00505	0.00329	0.0204	.006674603	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00351	0.00289	0.0173	.001309524	pCi/g	YES

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962402
SAMPLE ID : S0247969001_PU
SAMPLE QTY : 1.258 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 96.723

CHAMBER : 083
DETECTOR S/N : 64278
AVERAGE %EFFICIENCY : 35.8135
COUNT DATE : 22-MAR-2010 22:24:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B083.CNF;1034
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W083.CNF;294
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0260E+00 dpm
RESULTS : 2.9268E+00 dpm

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

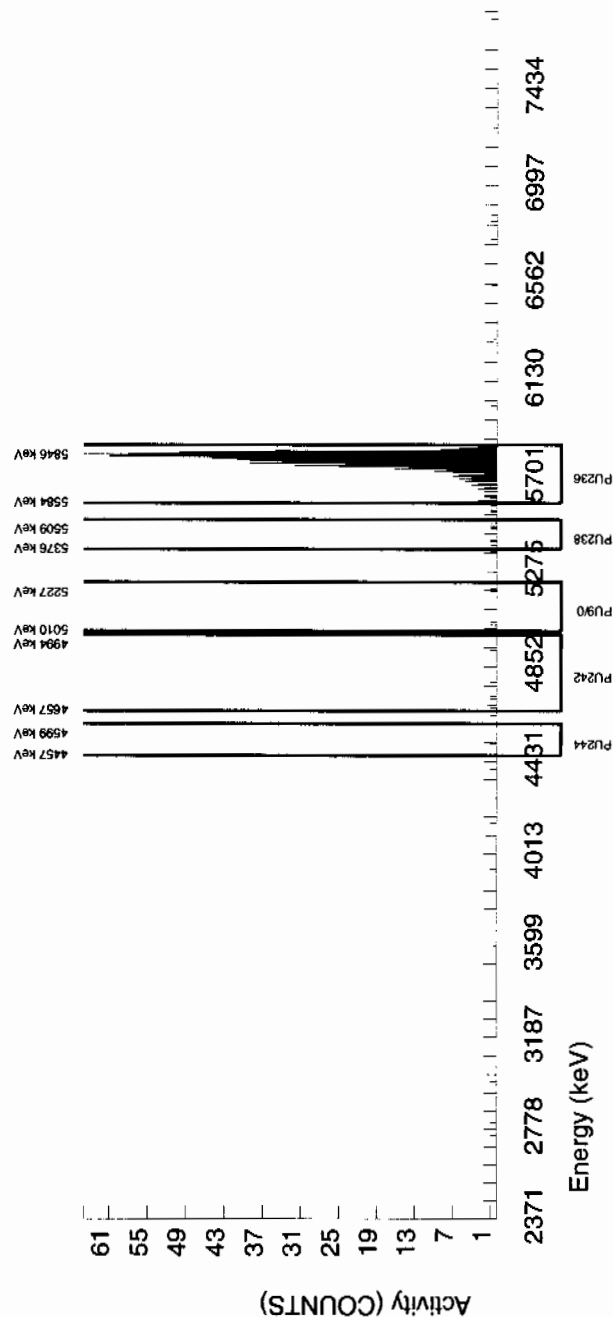
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5781.455	53.249	745.000	739.240	5.760	2.4000	100.0000	1.08E+00	7.25E-02	7.43E-03	1.88E-02	4.01E-02
PU-238	5499.000	5444.052	0.000	11.000	5.240	5.760	2.4495	99.900000	7.54E-03	5.61E-03	7.59E-03	1.91E-02	5.60E-03
PU-9/0	5155.000	5122.408	156.852	4.000	3.280	0.720	1.9732	99.900000	4.71E-03	3.07E-03	6.12E-03	1.61E-02	3.05E-03
PU242	4890.000	4800.312	0.000	7.000	4.120	2.880	*****	100.0000	5.91E-03	4.34E-03	3.86E-01	7.76E-01	4.32E-03
PU-244	4589.000	4514.895	5.060	1.000	-1.160	2.160	6.4609	99.900000	-1.67E-03	2.30E-03	2.00E-02	4.40E-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 REPORTBATCH NUMBER : 962402
SAMPLE ID : S0247969002_PU
SAMPLE QTY : 1.260 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 86.500CHAMBER : 084
DETECTOR S/N : 78265
AVERAGE %EFFICIENCY : 34.3452
COUNT DATE : 22-MAR-2010 22:24:19
ELAPSED LIVE TIME(SEC) : 43199.99LIB FILE : ENV_ALPHA_PU
BKG FILE : B084.CNF:1032
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W084.CNF:297
CAL DATE : 12-MAR-2010TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0260E+00 dpm
RESULTS : 2.6175E+00 dpmMS/MSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/GLCS/LCSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

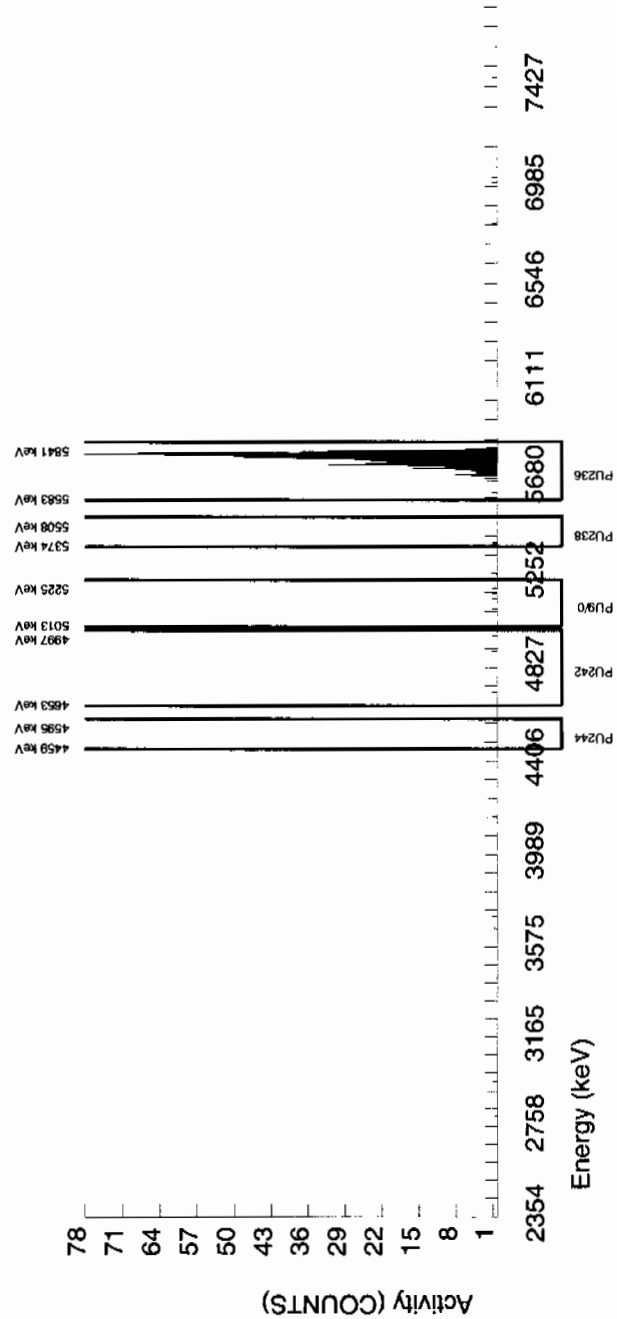
NUCLIDE ACTIVITY SUMMARY

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	5773.605	29.254	634.000	634.000	0.000	0.0000	100.0000	1.08E+00	7.56E-02	0.00E+00	4.53E-03	4.30E-02
PU-238	5499.000	5395.781	15.061	2.000	0.560	1.440	2.4495	99.90000	9.38E-04	2.92E-03	8.84E-03	2.22E-02	2.92E-03
PU-9/0	5155.000	5169.223	0.000	6.000	4.560	1.440	1.9732	99.90000	7.63E-03	4.46E-03	7.12E-03	1.88E-02	4.44E-03
PU242	4890.000	4858.991	245.994	4.000	3.280	0.720	*****	100.0000	5.48E-03	3.57E-03	4.49E-01	9.03E-01	3.55E-03
PU-244	4589.000	4526.991	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.68E-03	2.33E-02	5.12E-02	1.67E-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 : 962402
SAMPLE ID : S0247969003_PU
SAMPLE QTY : 1.250 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 88.450

CHAMBER : 085
DETECTOR S/N : 78776
AVERAGE %EFFICIENCY : 32.8080
COUNT DATE : 22-MAR-2010 22:24:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B085.CNF;1035
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W085.CNF;304
CAL DATE : 12-MAR-2010

TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0260E+00 dpm
RESULTS : 2.6765E+00 dpm

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

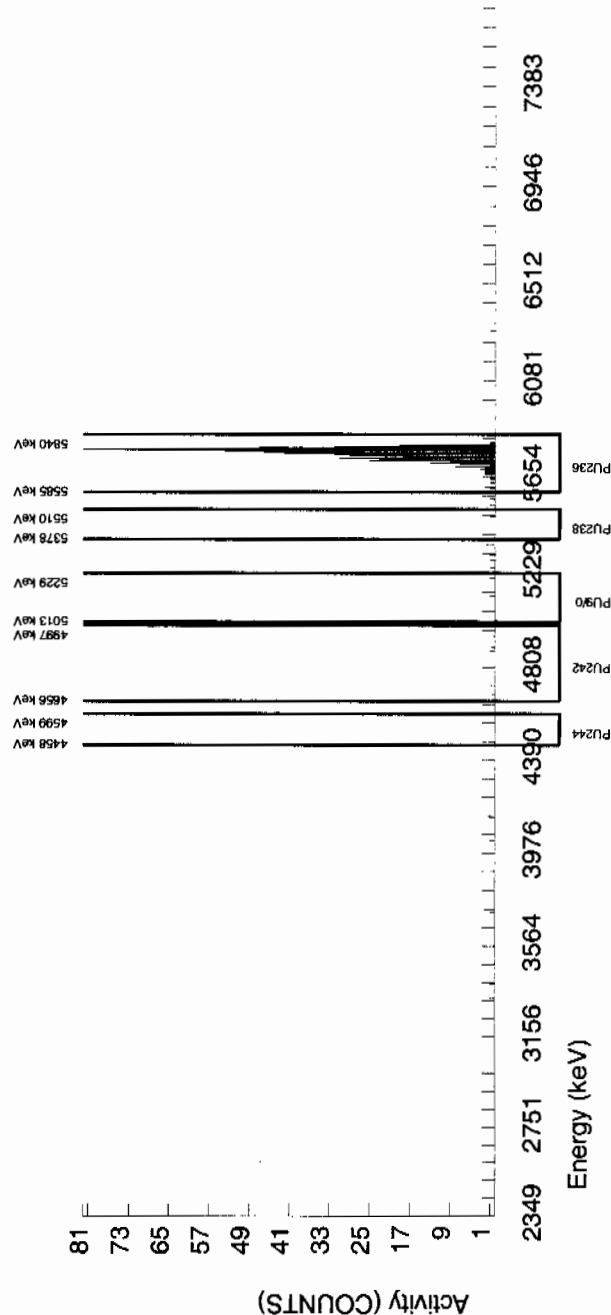
LCS/LCSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5760.769	25.594	620.000	619.280	0.720	0.8485	100.0000	1.09E+00	7.69E-02	3.16E-03	1.10E-02	4.39E-02
PU-238	5499.000	5483.604	5.002	1.000	-1.160	2.160	2.4495	99.90000	-2.00E-03	2.76E-03	9.12E-03	2.29E-02	2.76E-03
PU-9/0	5155.000	5153.717	100.044	3.000	3.000	0.000	1.9732	99.90000	5.18E-03	3.01E-03	7.35E-03	1.94E-02	2.99E-03
PU242	4890.000	4827.179	5.002	5.000	4.280	0.720	*****	100.0000	7.38E-03	4.07E-03	4.64E-01	9.32E-01	4.05E-03
PU-244	4589.000	4528.480	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.73E-03	2.41E-02	5.28E-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 : 962402
SAMPLE ID : S0247969004_PU
SAMPLE QTY : 1.251 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 84.537

CHAMBER : 086
DETECTOR S/N : 78198
AVERAGE %EFFICIENCY : 30.3911
COUNT DATE : 22-MAR-2010 22:24:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B086.CNF:1034
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W086.CNF:285
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0260E+00 dpm
RESULTS : 2.5581E+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

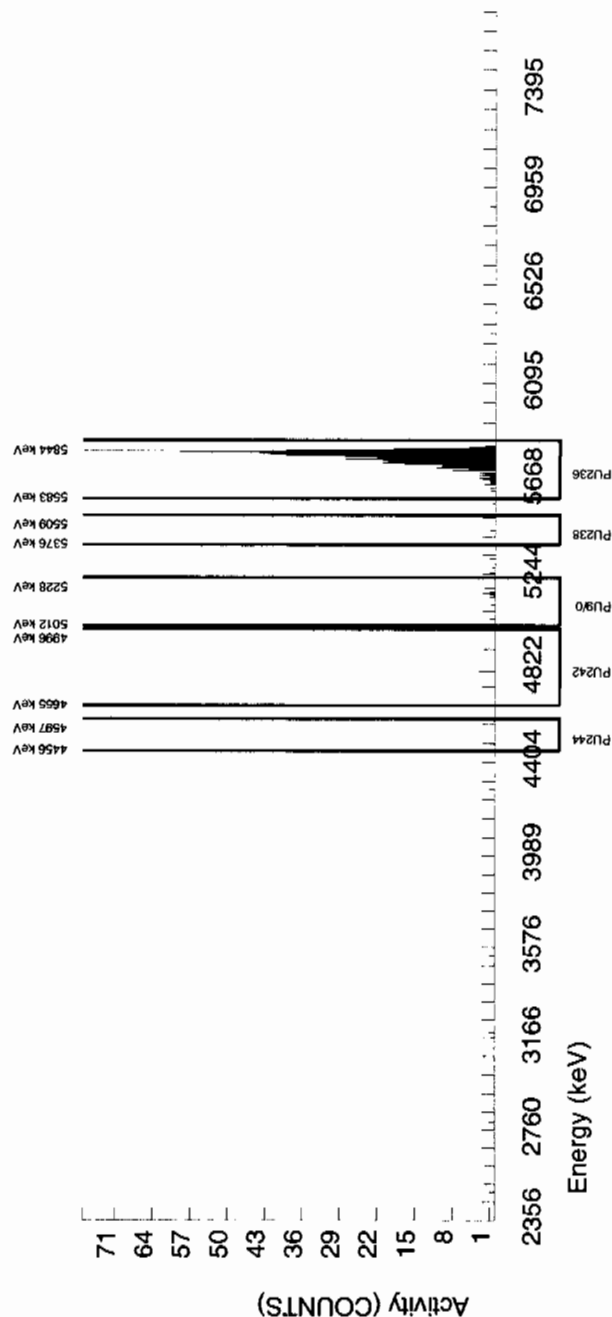
NUCLIDE ACTIVITY SUMMARY

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	5775.609	25.175	549.000	548.280	0.720	0.8485	100.0000	1.09E+00	8.00E-02	3.56E-03	1.24E-02	4.66E-02
PU-238	5499.000	5445.053	5.027	1.000	-0.440	1.440	2.4495	99.900000	-8.58E-04	2.79E-03	1.03E-02	2.59E-02	2.78E-03
PU-9/0	5155.000	5144.830	5.027	8.000	5.840	2.160	1.9732	99.900000	1.14E-02	6.06E-03	8.29E-03	2.19E-02	6.02E-03
PU242	4890.000	4811.968	5.027	3.000	0.840	2.160	*****	100.0000	1.64E-03	4.16E-03	5.23E-01	1.05E+00	4.15E-03
PU-244	4589.000	4529.244	125.686	2.000	1.280	0.720	6.4609	99.900000	2.49E-03	3.10E-03	2.72E-02	5.96E-02	3.09E-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 : 962402
SAMPLE ID : S0247969005_PU
SAMPLE QTY : 1.254 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 87.671

CHAMBER : 087
DETECTOR S/N : 78199
AVERAGE %EFFICIENCY : 32.3127
COUNT DATE : 22-MAR-2010 22:24:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B087.CNF:1041
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W087.CNF:278
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0260E+00 dpm
RESULTS : 2.6529E+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

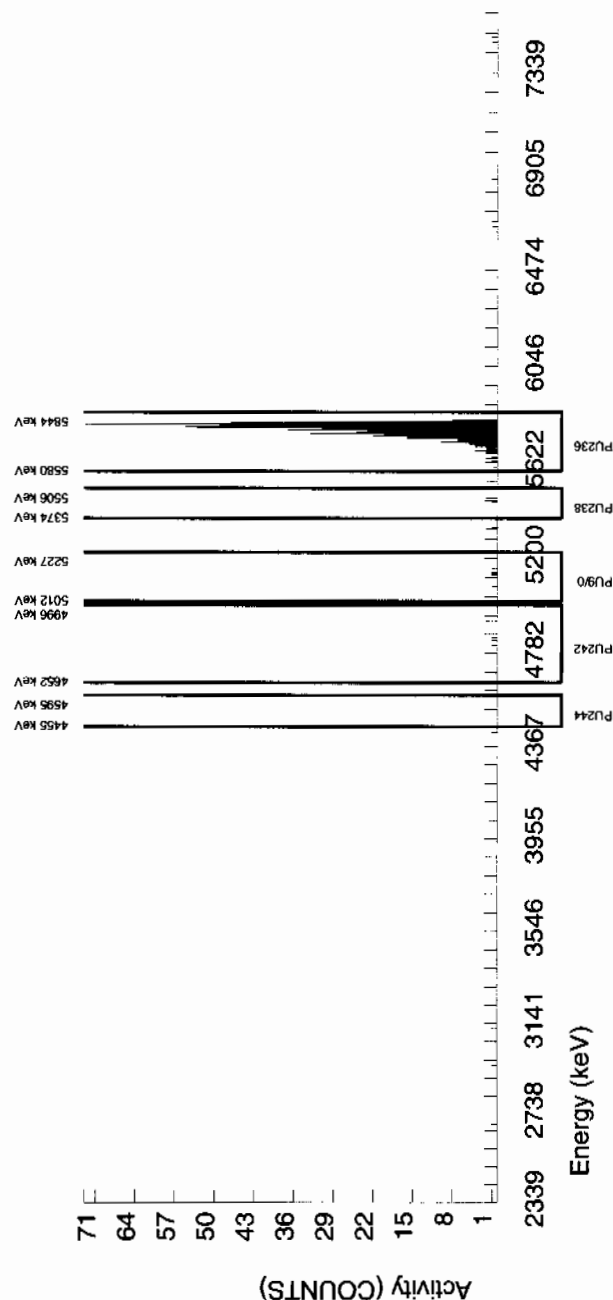
NUCLIDE ACTIVITY SUMMARY

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	5770.487	35.063	606.000	604.560	1.440	1.2000	100.0000	1.09E+00	7.73E-02	4.56E-03	1.39E-02	4.43E-02
PU-238	5499.000	5463.457	4.972	3.000	-2.040	5.040	2.4495	99.900000	-3.60E-03	4.54E-03	9.32E-03	2.34E-02	4.54E-03
PU-9/0	5155.000	5112.183	134.238	6.000	0.240	5.760	1.9732	99.900000	4.23E-04	5.62E-03	7.50E-03	1.98E-02	5.62E-03
PU242	4890.000	4846.476	4.972	6.000	4.560	1.440	*****	100.0000	8.03E-03	4.70E-03	4.74E-01	9.52E-01	4.67E-03
PU-244	4589.000	4524.985	0.000	0.000	-1.440	1.440	6.4609	99.900000	-2.54E-03	2.52E-03	2.46E-02	5.39E-02	2.52E-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 : 962402
SAMPLE ID : S0247969006_PU
SAMPLE QTY : 1.257 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 92.210

CHAMBER : 088
DETECTOR S/N : 33452
AVERAGE %EFFICIENCY : 31.6430
COUNT DATE : 22-MAR-2010 22:24:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B088.CNF:1029
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W088.CNF:288
CAL DATE : 12-MAR-2010

TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0260E+00 dpm
RESULTS : 2.7903E+00 dpm

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

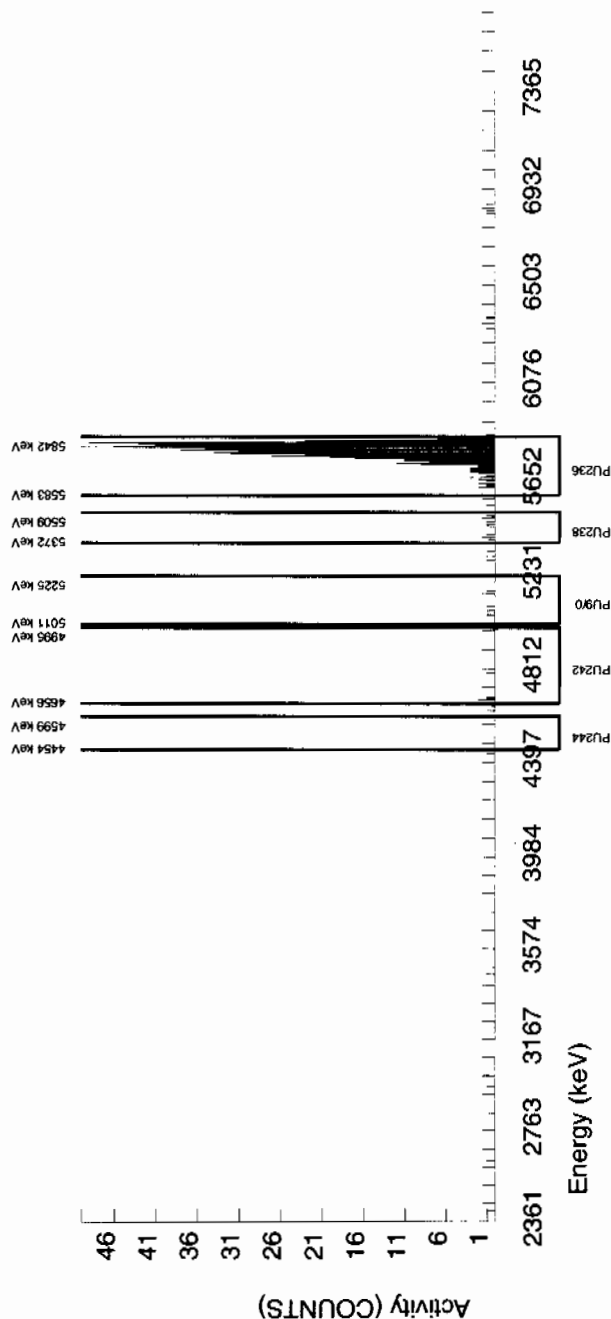
LCS/LCSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5785.700	60.860	627.000	622.680	4.320	2.0785	100.0000	1.08E+00	7.66E-02	7.65E-03	1.99E-02	4.37E-02
PU-238	5499.000	5445.507	5.000	9.000	0.360	8.640	2.4495	99.900000	6.15E-04	6.67E-03	9.02E-03	2.27E-02	6.67E-03
PU-9/0	5155.000	5085.587	109.366	6.000	2.400	3.600	1.9732	99.900000	4.10E-03	5.01E-03	7.27E-03	1.92E-02	5.01E-03
PU242	4890.000	4697.678	7.343	6.000	5.280	0.720	*****	100.0000	9.01E-03	4.39E-03	4.59E-01	9.22E-01	4.36E-03
PU-244	4589.000	4526.248	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.71E-03	2.38E-02	5.22E-02	1.71E-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 : 962402
SAMPLE ID : S0247969007_PU
SAMPLE QTY : 1.258 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 90.822

CHAMBER : 089
DETECTOR S/N : 78262
AVERAGE %EFFICIENCY : 30.5954
COUNT DATE : 22-MAR-2010 22:24:20
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_PU
BKG FILE : B089.CNF;729
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W089.CNF;197
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0260E+00 dpm
RESULTS : 2.7483E+00 dpm

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

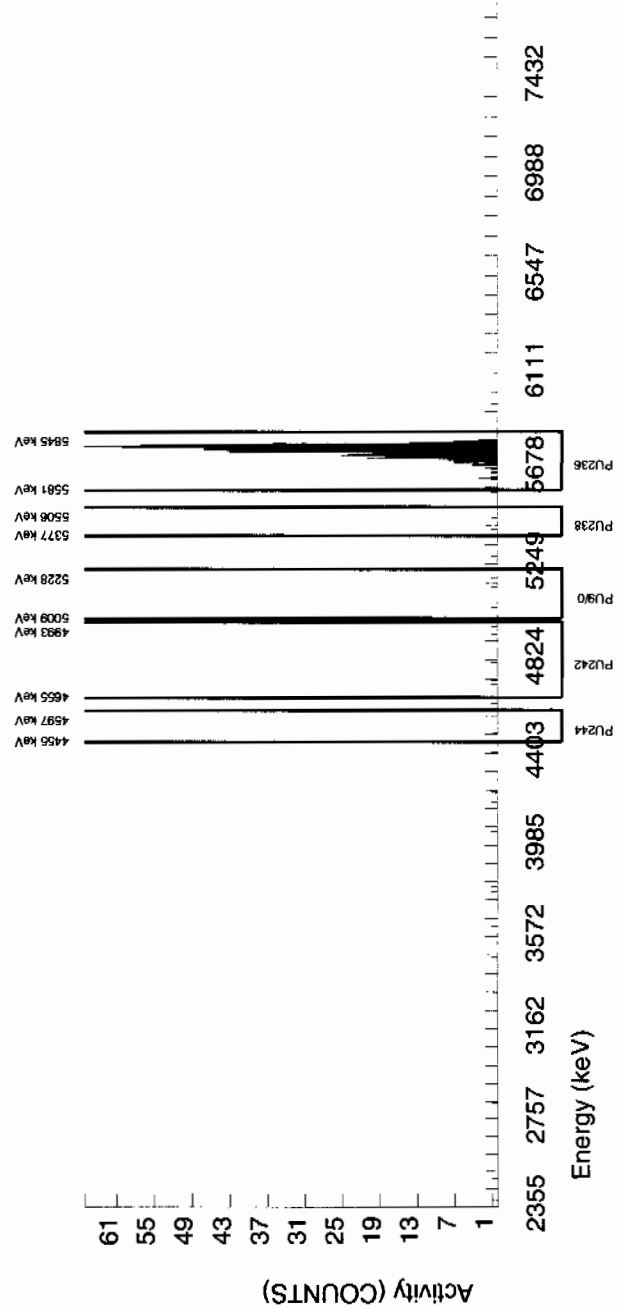
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5764.958	37.828	593.000	593.000	0.000	0.0000	100.0000	1.08E+00	7.75E-02	0.00E+00	4.85E-03	4.45E-02
PU-238	5499.000	5436.160	54.983	2.000	2.000	0.000	2.4495	99.900000	3.59E-03	2.54E-03	9.47E-03	2.38E-02	2.54E-03
PU-9/0	5155.000	5135.259	124.962	3.000	3.000	0.000	1.9732	99.900000	5.37E-03	3.12E-03	7.63E-03	2.01E-02	3.10E-03
PU242	4890.000	4822.168	249.925	6.000	6.000	0.000	*****	100.0000	1.07E-02	4.43E-03	4.81E-01	9.67E-01	4.38E-03
PU-244	4589.000	4502.426	4.998	1.000	0.280	0.720	6.4609	99.900000	5.02E-04	2.21E-03	2.50E-02	5.48E-02	2.21E-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 : 962402
SAMPLE ID : S0247969008_PU
SAMPLE QTY : 1.259 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 78.191

CHAMBER : 090
DETECTOR S/N : 78263
AVERAGE %EFFICIENCY : 34.8354
COUNT DATE : 22-MAR-2010 22:24:20
ELAPSED LIVE TIME(SEC) : 43200.00

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 : 3.0260E+00 dpm
RESULTS : 2.3661E+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

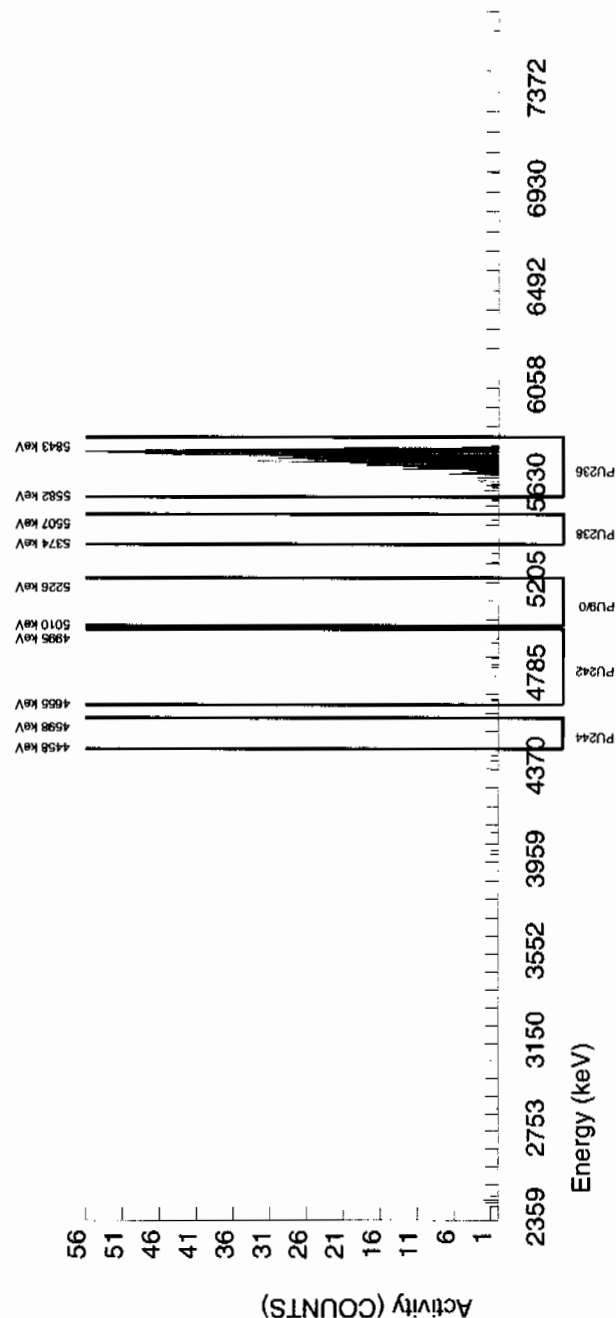
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5760.172	54.713	582.000	581.280	0.720	0.8485	100.0000	1.08E+00	7.80E-02	3.34E-03	1.16E-02	4.50E-02
PU-238	5499.000	5456.619	58.623	2.000	2.000	0.000	2.4495	99.900000	3.65E-03	2.59E-03	9.65E-03	2.43E-02	2.58E-03
PU-9/0	5155.000	5126.083	4.885	1.000	1.000	0.000	1.9732	99.900000	1.83E-03	1.83E-03	7.77E-03	2.05E-02	1.83E-03
PU242	4890.000	4806.982	243.650	6.000	5.280	0.720	*****	100.0000	9.63E-03	4.69E-03	4.91E-01	9.86E-01	4.66E-03
PU-244	4589.000	4462.841	4.885	1.000	0.280	0.720	6.4609	99.900000	5.11E-04	2.25E-03	2.55E-02	5.59E-02	2.25E-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 : 962402
 SAMPLE ID : S0247970001_PU
 SAMPLE QTY : 1.254 G
 SAMPLE DATE : 23-FEB-2010 00:00:00
 ANALYST : JXH2
 % YIELD : 86.748

LIB FILE : ENV_ALPHA_PU
 BKG FILE : B091.CNF;735
 BKG DATE : 21-MAR-2010
 BKG LIVE TIME(SEC) : 59999.99
 EFF FILE : W091.CNF;194
 CAL DATE : 12-MAR-2010

TRACER ID : 1430-C
 NUCLEIDE : PU-236
 NOMINAL : 3.0200E+00 dpm
 RESULTS : 2.6198E+00 dpm

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

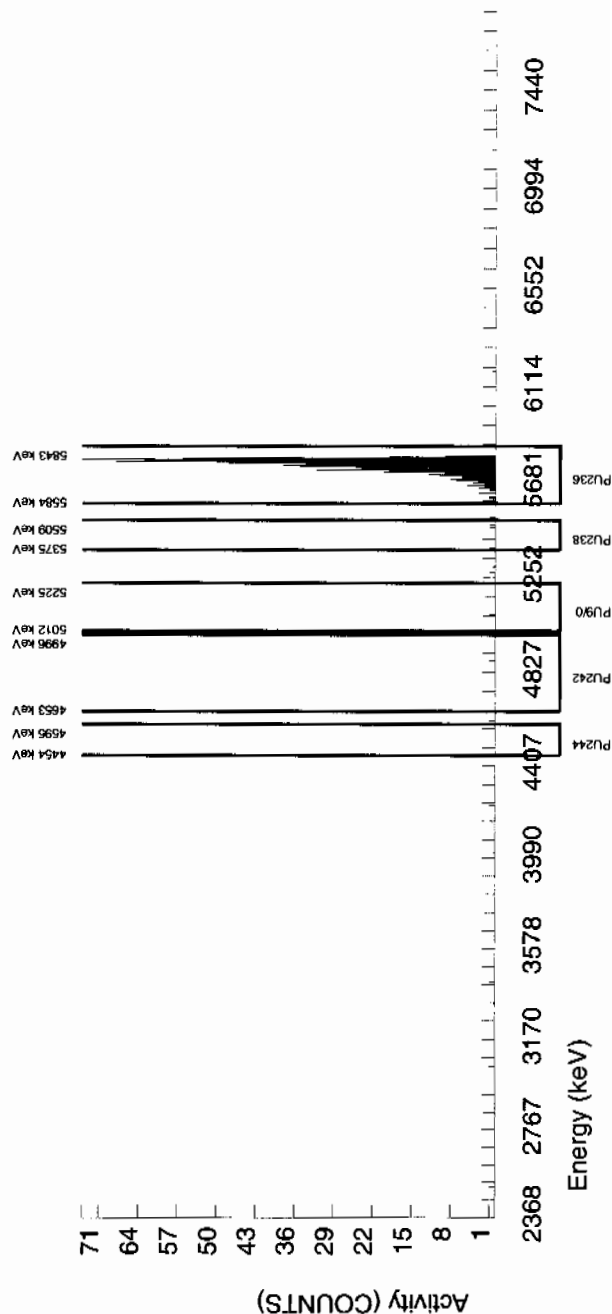
MS/MSD ID : 0244-B
 NUCLEIDE : PU-9/0
 NOMINAL : 4.1778E+01 pCi/G

NUCLEIDE ACTIVITY SUMMARY

NUCLEIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5761.071	33.797	650.000	3.000	0.000	0.0000	100.0000	1.08E+00	7.53E-02	0.00E+00	4.44E-03	4.25E-02
PU-238	5499.000	5455.145	99.274	3.000	1.000	0.000	2.4495	99.900000	4.92E-03	2.86E-03	8.66E-03	2.18E-02	2.84E-03
PU-9/0	5155.000	5092.066	4.964	1.000	1.000	0.000	1.9732	99.900000	1.64E-03	1.64E-03	6.98E-03	1.84E-02	1.64E-03
PU242	4890.000	4885.217	4.964	1.000	1.000	0.000	*****	100.0000	1.64E-03	1.64E-03	4.40E-01	8.85E-01	1.64E-03
PU-244	4589.000	4524.354	0.000	0.000	-2.160	2.160	6.4609	99.900000	-3.54E-03	2.62E-03	2.29E-02	5.02E-02	2.62E-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 REPORTBATCH NUMBER : 962402
SAMPLE ID : S1202064506_PU
SAMPLE QTY : 1.000 G
SAMPLE DATE : 15-MAR-2010 00:00:00
ANALYST : JXH2
% YIELD : 90.622CHAMBER : 099
DETECTOR S/N : 70317
AVERAGE %EFFICIENCY : 35.1904
COUNT DATE : 22-MAR-2010 22:24:21
ELAPSED LIVE TIME(SEC) : 43199.99LIB FILE : ENV_ALPHA_PU
BKG FILE : B099.CNF:689
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W099.CNF:195
CAL DATE : 12-MAR-2010TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 2.9801E+00 dpm
RESULTS : 2.7007E+00 dpmMS/MSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/GLCS/LCSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

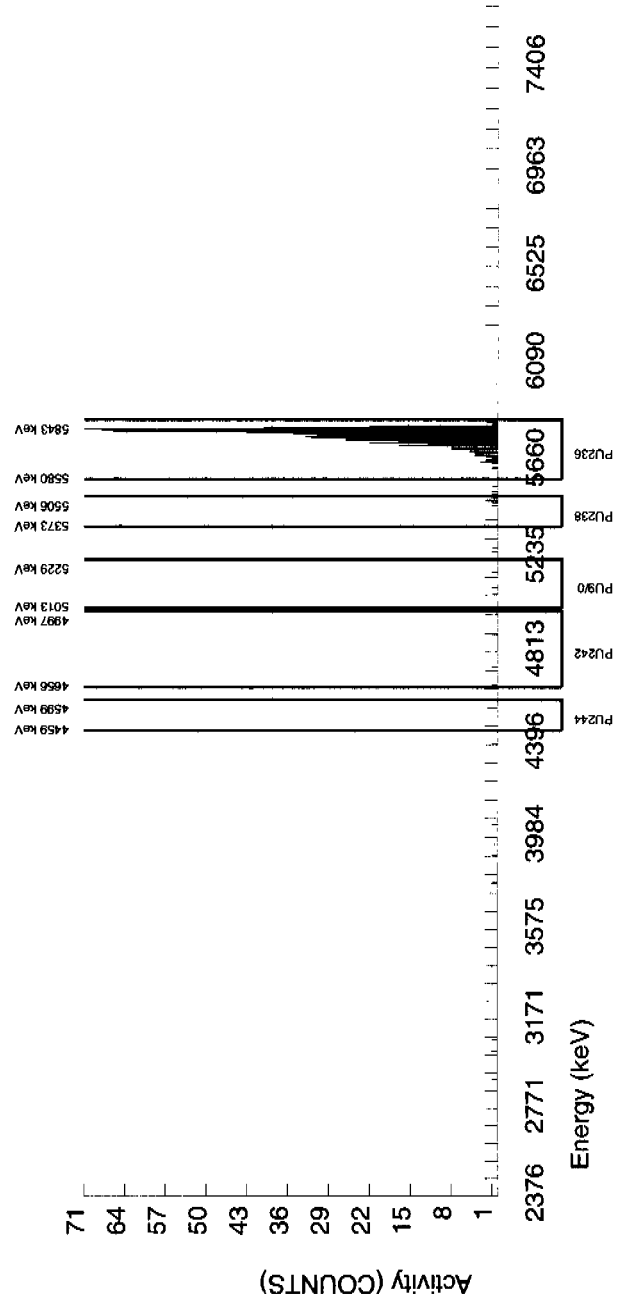
NUCLIDE ACTIVITY SUMMARY

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	5778.249	29.614	682.000	680.560	1.440	1.2000	100.0000	1.34E+00	9.20E-02	5.08E-03	1.55E-02	5.16E-02
PU-238	5499.000	5486.406	4.915	5.000	4.280	0.720	2.4495	99.90000	8.41E-03	4.64E-03	1.04E-02	2.61E-02	4.61E-03
PU-9/0	5155.000	5121.910	93.394	3.000	0.840	2.160	1.9732	99.90000	1.65E-03	4.19E-03	8.36E-03	2.20E-02	4.19E-03
PU242	4890.000	4773.165	216.281	3.000	2.280	0.720	*****	100.0000	4.47E-03	3.69E-03	5.28E-01	1.06E+00	3.68E-03
PU-244	4589.000	4528.731	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.41E-03	2.42E-03	2.74E-02	6.01E-02	2.42E-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 : 962402
SAMPLE ID : S1202064507_PU
SAMPLE QTY : 1.260 G
SAMPLE DATE : 23-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 84.954

CHAMBER : 100
DETECTOR S/N : 79456
AVERAGE %EFFICIENCY : 35.7974
COUNT DATE : 22-MAR-2010 22:24:21
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B100.CNF:690
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W100.CNF:203
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0200E+00 dpm
RESULTS : 2.5656E+00 dpm

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

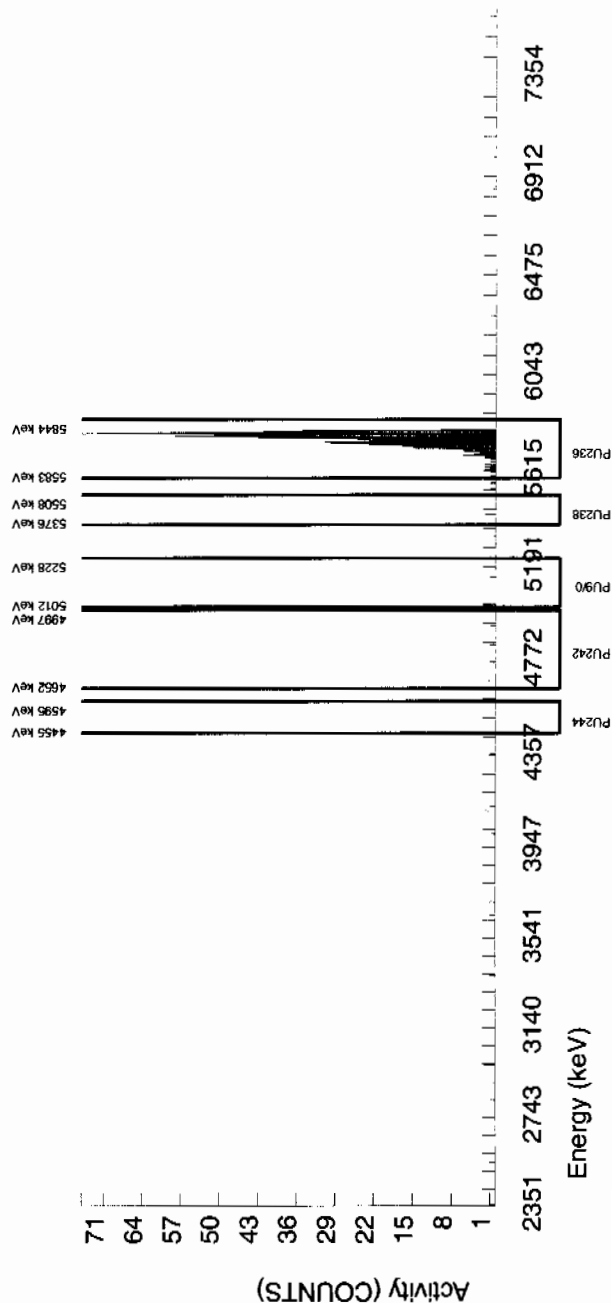
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5764.670	29.236	649.000	649.000	0.000	0.0000	100.0000	1.08E+00	7.50E-02	0.00E+00	4.42E-03	4.24E-02
PU-238	5499.000	5428.885	4.877	2.000	2.000	0.000	2.4495	99.900000	3.27E-03	2.32E-03	8.64E-03	2.17E-02	2.31E-03
PU-9/0	5155.000	5149.056	4.877	1.000	0.280	0.720	1.9732	99.900000	4.58E-04	2.02E-03	6.96E-03	1.83E-02	2.01E-03
PU242	4890.000	4850.286	156.064	4.000	1.840	2.160	*****	100.0000	3.00E-03	3.85E-03	4.39E-01	8.83E-01	3.85E-03
PU-244	4589.000	4525.283	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.64E-03	2.28E-02	5.00E-02	1.63E-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 : 962402
SAMPLE ID : S1202064508_PU
SAMPLE QTY : 0.103 G
SAMPLE DATE : 15-MAR-2010 00:00:00
ANALYST : JXH2
% YIELD : 93.444

CHAMBER : 112
DETECTOR S/N : 78261
AVERAGE %EFFICIENCY : 33.5504
COUNT DATE : 22-MAR-2010 09:59:08
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B112.CNF:698
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W112.CNF:223
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 2.9801E+00 dpm
RESULTS : 2.7848E+00 dpm

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

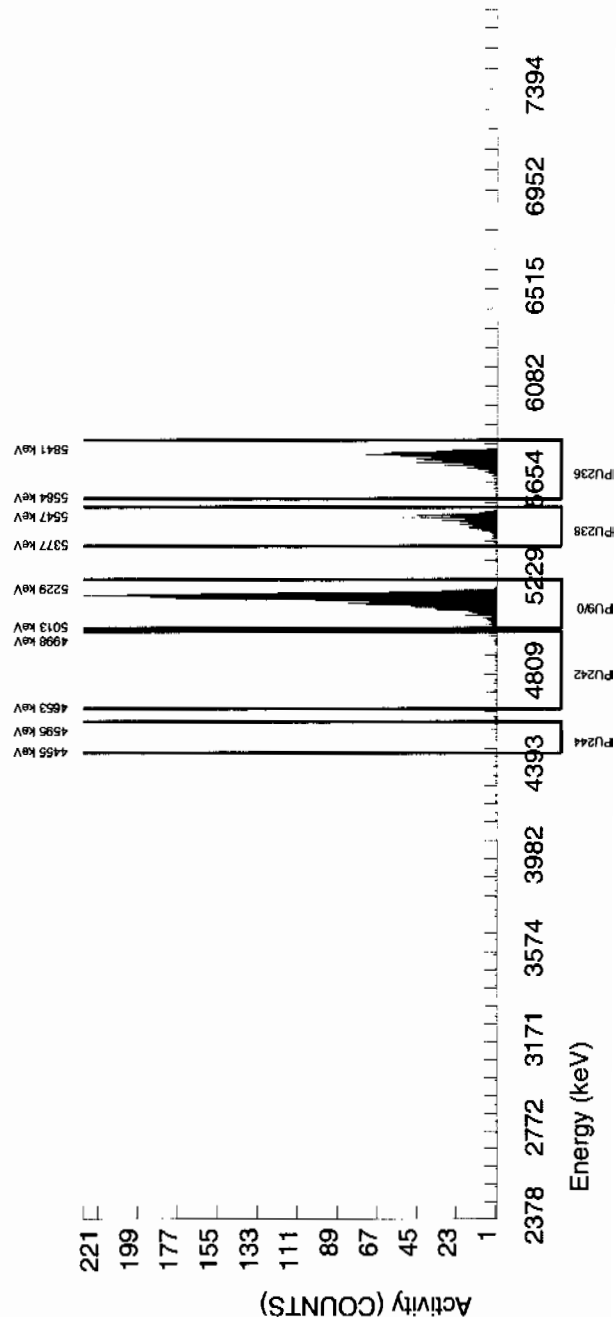
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5763.961	46.340	670.000	669.280	0.720	0.8485	100.0000	1.30E+01	9.85E-01	3.55E-02	1.23E-01	5.04E-01
PU-238	5499.000	5490.862	27.735	378.000	377.280	0.720	2.4495	99.900000	7.32E+00	6.07E-01	1.02E-01	2.58E-01	3.77E-01
PU-9/0	5155.000	5146.969	33.193	1959.000	1958.280	0.720	1.9732	99.900000	3.80E+01	2.61E+00	8.26E-02	2.18E-01	8.58E-01
PU242	4890.000	4857.135	0.000	36.000	33.840	2.160	*****	100.0000	6.56E-01	1.26E-01	5.21E+00	1.05E+01	1.19E-01
PU-244	4589.000	4548.650	0.000	8.000	8.000	0.000	6.4609	99.900000	1.55E-01	5.58E-02	2.70E-01	5.93E-01	5.49E-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# 962404 Product: U Date: 3/23/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.	✓		
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly 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 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: [Signature] 3/23/10Secondary Review Performed By: [Signature] 3/23/10

LANL

3/14 - 3/25

Uranium Que Sheet

08-MAR-10

Batch #: 962404 Analyst: JXH2 First Client Due Date: 25-MAR-10 Internal Due Date: 14-MAR-10
 Tracer Isotope: U-232 Tracer Code: 1283-H Expiration Date: 12/31/10 Vol: 0.1
 LCS Isotope: U-238 LCS Code: Expiration Date: Vol:
 Spike Isotope: U-238 Spike Code: Expiration Date: Vol:
 Prep Date: 03/18/10 Initials: JHO Pipet ID: 2921058 Balance ID: 50410272
 Witness: JHO 3/15/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot (g)	U Det #
247964001-1	RE36-10-8489	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	1	1	0.509	119
247964002-1	RE36-10-8486	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	2	2	0.500	120
247964003-1	RE36-10-8487	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	3	3	0.512	121
247964004-1	RE36-10-8462	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	4	4	0.502	122
247964005-1	RE36-10-8463	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	5	5	0.501	123
247969001-1	RE36-10-8490	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	6	6	0.511	124
247969002-1	RE36-10-8470	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	7	7	0.506	125
247969003-1	RE36-10-8476	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	8	8	0.502	126
247969004-1	RE36-10-8480	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	9	9	0.512	127
247969005-1	RE36-10-8474	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	10	10	0.519	128
247969006-1	RE36-10-8478	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	11	11	0.505	129
247969007-1	RE36-10-8483	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	12	12	0.505	130
247969008-1	RE36-10-8482	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	13	13	0.505	131
247970001-1	RE46-10-13181	SAMPLE		.1 pCi/g	SOIL	LANL010	23-FEB-10	14	14	0.513	132
247970002-1	RE46-10-13178	SAMPLE		.1 pCi/g	SOIL	LANL010	23-FEB-10	15	15	0.516	133
247970003-1	RE46-10-13179	SAMPLE		.1 pCi/g	SOIL	LANL010	23-FEB-10	16	16	0.504	134
247970004-1	RE46-10-13180	SAMPLE		.1 pCi/g	SOIL	LANL010	23-FEB-10	17	17	0.503	141
247970005-1	RE46-10-13177	SAMPLE		.1 pCi/g	SOIL	LANL010	23-FEB-10	18	18	0.509	142
247970006-1	RE46-10-13176	SAMPLE		.1 pCi/g	SOIL	LANL010	23-FEB-10	19	19	0.507	7
247970007-1	RE46-10-13182	SAMPLE		.1 pCi/g	SOIL	LANL010	23-FEB-10	20	20	0.513	8
1202064509-1	MB for batch 962404	MB		.1 pCi/g	QC ACCOUNT	QC ACCOUNT		21	21	1.0	9
1202064510-1	RE46-10-13181(247970001DUP)	DUP		.1 pCi/g	QC ACCOUNT	QC ACCOUNT	23-FEB-10	22	22	0.504	10
1202064511-1	LCS for batch 962404	LCS		.1 pCi/g	QC ACCOUNT	QC ACCOUNT		23	23	0.503	11

*SRM 0244-A exp 10/31/20 0.1033 mg 0.141g

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: JHO 3/23/10

Blank Correction Report

Batch ID 962404

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202064510	DUP	Uranium-233/234	0.504 g	0.879	0.0807	0.083	.013511905	pCi/g	NO
		Uranium-235/236	0.504 g	0.0473	0.0154	0.0507	.003115079	pCi/g	NO
		Uranium-238	0.504 g	0.974	0.0873	0.0583	.022619048	pCi/g	NO
1202064511	LCS	Uranium-233/234	0.101 g	6.71	0.641	0.544	.067425743	pCi/g	NO
		Uranium-235/236	0.101 g	0.358	0.0966	0.332	.015544554	pCi/g	NO
		Uranium-238	0.101 g	5.52	0.546	0.383	.112871287	pCi/g	NO
1202064509	MB	Uranium-233/234	1.00 g	0.00681	0.00298	0.0357	.00681	pCi/g	YES
		Uranium-235/236	1.00 g	0.00157	0.00414	0.0218	.00157	pCi/g	YES
		Uranium-238	1.00 g	0.0114	0.00428	0.0251	.0114	pCi/g	YES
247964001	RE36-10-8489	Uranium-233/234	0.509 g	1.47	0.131	0.112	.013379175	pCi/g	NO
		Uranium-235/236	0.509 g	0.0489	0.0159	0.0682	.003084479	pCi/g	NO
		Uranium-238	0.509 g	1.40	0.126	0.0785	.022396857	pCi/g	NO
247964002	RE36-10-8486	Uranium-233/234	0.500 g	1.56	0.137	0.109	.01362	pCi/g	NO
		Uranium-235/236	0.500 g	0.0762	0.0198	0.0664	.00314	pCi/g	NO
		Uranium-238	0.500 g	1.41	0.126	0.0764	.0228	pCi/g	NO
247964003	RE36-10-8487	Uranium-233/234	0.512 g	1.40	0.123	0.0992	.013300781	pCi/g	NO
		Uranium-235/236	0.512 g	0.0957	0.0224	0.0606	.003066406	pCi/g	NO
		Uranium-238	0.512 g	1.40	0.123	0.0698	.022265625	pCi/g	NO
247964004	RE36-10-8462	Uranium-233/234	0.502 g	1.16	0.105	0.100	.013565737	pCi/g	NO
		Uranium-235/236	0.502 g	0.0439	0.0155	0.0611	.003127490	pCi/g	NO
		Uranium-238	0.502 g	1.26	0.113	0.0703	.022709163	pCi/g	NO
247964005	RE36-10-8463	Uranium-233/234	0.501 g	1.24	0.110	0.0958	.013592814	pCi/g	NO
		Uranium-235/236	0.501 g	0.0714	0.019	0.0585	.003133733	pCi/g	NO
		Uranium-238	0.501 g	1.20	0.107	0.0673	.022754491	pCi/g	NO
247969001	RE36-10-8490	Uranium-233/234	0.511 g	0.944	0.0908	0.107	.013326810	pCi/g	NO
		Uranium-235/236	0.511 g	0.056	0.0179	0.0651	.003072407	pCi/g	NO
		Uranium-238	0.511 g	0.997	0.0951	0.0749	.022309198	pCi/g	NO
247969002	RE36-10-8470	Uranium-233/234	0.506 g	1.09	0.0997	0.097	.013458498	pCi/g	NO
		Uranium-235/236	0.506 g	0.051	0.0152	0.0593	.003102767	pCi/g	NO
		Uranium-238	0.506 g	1.02	0.0942	0.0682	.022529644	pCi/g	NO
247969003	RE36-10-8476	Uranium-233/234	0.502 g	1.00	0.0942	0.103	.013565737	pCi/g	NO
		Uranium-235/236	0.502 g	0.0542	0.0161	0.0629	.003127490	pCi/g	NO
		Uranium-238	0.502 g	0.968	0.0918	0.0724	.022709163	pCi/g	NO
247969004	RE36-10-8480	Uranium-233/234	0.512 g	0.937	0.0883	0.099	.013300781	pCi/g	NO
		Uranium-235/236	0.512 g	0.0564	0.0162	0.0605	.003066406	pCi/g	NO
		Uranium-238	0.512 g	0.958	0.0899	0.0696	.022265625	pCi/g	NO
247969005	RE36-10-8474	Uranium-233/234	0.519 g	1.10	0.102	0.104	.013121387	pCi/g	NO
		Uranium-235/236	0.519 g	0.0411	0.014	0.0636	.003025048	pCi/g	NO
		Uranium-238	0.519 g	1.04	0.0977	0.0732	.021965318	pCi/g	NO
247969006	RE36-10-8478	Uranium-233/234	0.505 g	0.927	0.0887	0.103	.013485149	pCi/g	NO
		Uranium-235/236	0.505 g	0.0585	0.0168	0.0627	.003108911	pCi/g	NO

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
247969006	RE36-10-8478	Uranium-238	0.505 g	1.05	0.0979	0.0721	.022574257	pCi/g	NO
247969007	RE36-10-8483	Uranium-233/234	0.505 g	0.991	0.0938	0.105	.013485149	pCi/g	NO
		Uranium-235/236	0.505 g	0.0688	0.0185	0.064	.003108911	pCi/g	NO
		Uranium-238	0.505 g	1.05	0.0985	0.0736	.022574257	pCi/g	NO
247969008	RE36-10-8482	Uranium-233/234	0.505 g	1.07	0.103	0.120	.013485149	pCi/g	NO
		Uranium-235/236	0.505 g	0.0629	0.0201	0.073	.003108911	pCi/g	NO
		Uranium-238	0.505 g	1.10	0.105	0.084	.022574257	pCi/g	NO
247970001	RE46-10-13181	Uranium-233/234	0.513 g	0.853	0.0808	0.0933	.013274854	pCi/g	NO
		Uranium-235/236	0.513 g	0.0532	0.0163	0.057	.003080429	pCi/g	NO
		Uranium-238	0.513 g	0.814	0.0781	0.0656	.022222222	pCi/g	NO
247970002	RE46-10-13178	Uranium-233/234	0.516 g	0.746	0.0746	0.0979	.013197674	pCi/g	NO
		Uranium-235/236	0.516 g	0.0601	0.0186	0.0598	.003042636	pCi/g	NO
		Uranium-238	0.516 g	0.778	0.0763	0.0688	.022093023	pCi/g	NO
247970003	RE46-10-13179	Uranium-233/234	0.504 g	0.894	0.0861	0.102	.013511905	pCi/g	NO
		Uranium-235/236	0.504 g	0.049	0.0152	0.0621	.003115079	pCi/g	NO
		Uranium-238	0.504 g	0.956	0.0905	0.0715	.022619048	pCi/g	NO
247970004	RE46-10-13180	Uranium-233/234	0.503 g	0.581	0.0611	0.0953	.013538767	pCi/g	NO
		Uranium-235/236	0.503 g	0.046	0.0154	0.0582	.003121272	pCi/g	NO
		Uranium-238	0.503 g	0.750	0.0736	0.067	.022664016	pCi/g	NO
247970005	RE46-10-13177	Uranium-233/234	0.509 g	0.878	0.0841	0.0983	.013379175	pCi/g	NO
		Uranium-235/236	0.509 g	0.0474	0.0147	0.0601	.003084479	pCi/g	NO
		Uranium-238	0.509 g	0.879	0.0841	0.0691	.022396857	pCi/g	NO
247970006	RE46-10-13176	Uranium-233/234	0.507 g	0.802	0.0744	0.0812	.013431953	pCi/g	NO
		Uranium-235/236	0.507 g	0.032	0.013	0.0496	.003096647	pCi/g	NO
		Uranium-238	0.507 g	0.737	0.0697	0.0571	.022485207	pCi/g	NO
247970007	RE46-10-13182	Uranium-233/234	0.513 g	0.803	0.0741	0.0796	.013274854	pCi/g	NO
		Uranium-235/236	0.513 g	0.0593	0.015	0.0486	.003060429	pCi/g	NO
		Uranium-238	0.513 g	0.895	0.0809	0.0559	.022222222	pCi/g	NO

```
LIB FILE : ENV_ALPHA_UU
BKG FILE : B124.CNF:453
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W124.CNF:116
CAL DATE : 19-MAR-2010
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MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

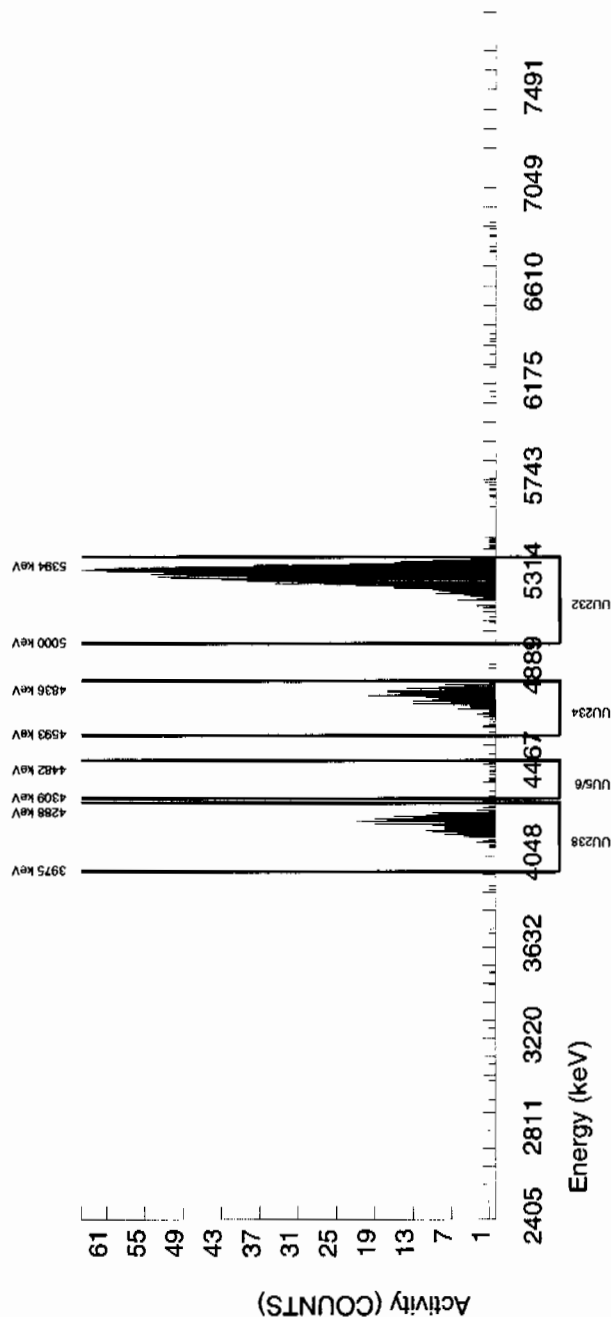
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E

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	5312.858	84.207	1056.000	1050.000	6.000	2.4495	100.0000	3.97E+00	3.12E-01	2.15E-02	5.33E-02	1.23E-01
U-3/4	4763.020	4768.832	71.489	252.000	249.936	1.000	5.4790	100.0000	9.44E-01	9.08E-02	4.81E-02	1.07E-01	6.00E-02
U-235	4391.000	4401.579	4.000	13.000	12.000	1.000	2.4127	80.90000	5.60E-02	1.79E-02	2.62E-02	6.51E-02	1.75E-02
U-238	4184.730	4200.125	44.479	267.000	264.000	3.000	3.6781	100.0000	9.97E-01	9.51E-02	3.23E-02	7.49E-02	6.21E-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 : 962404
SAMPLE ID : S0247969002_UU
SAMPLE QTY : 0.506 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 95.787

CHAMBER : 125
DETECTOR S/N : 75547
AVERAGE %EFFICIENCY : 27.0077
COUNT DATE : 22-MAR-2010 21:20:01
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 : 4.5033E+00 dpm
RESULTS : 4.3136E+00 dpm

MS/MSD

ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

LCS/LCSD

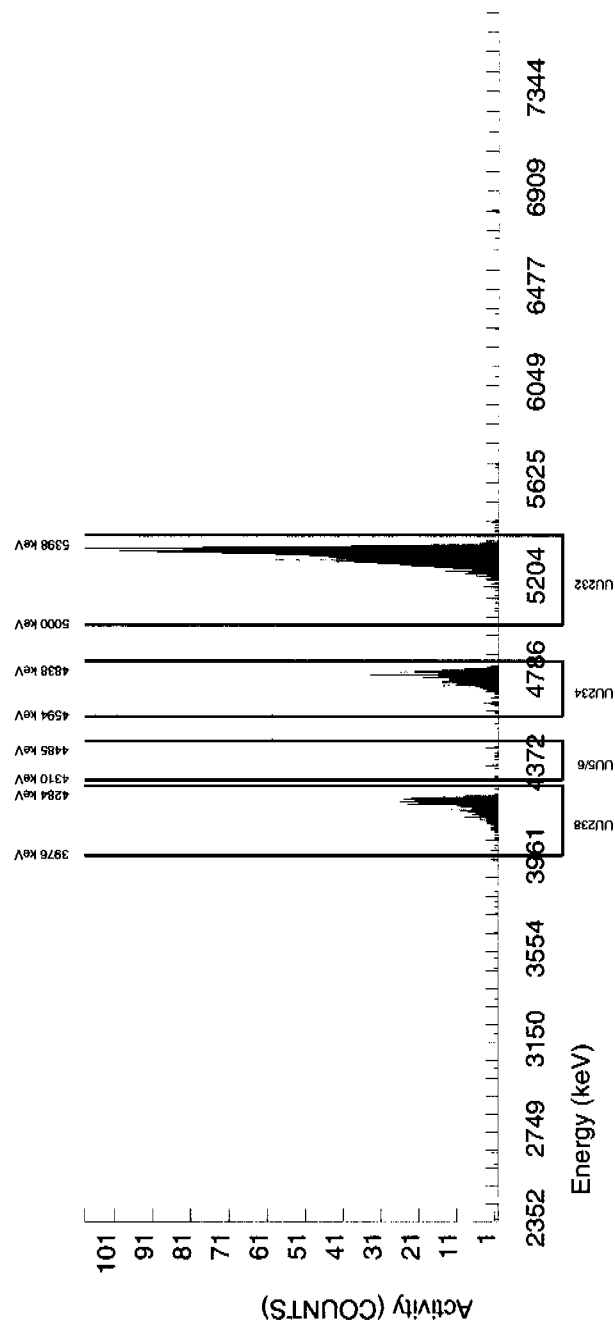
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5312.577	58.700	1168.000	1164.000	4.000	2.0000	100.0000	4.01E+00	3.10E-01	1.60E-02	4.13E-02	1.18E-01
U-3/4	4763.020	4765.989	35.290	321.000	317.821	2.000	5.4790	100.0000	1.09E+00	9.97E-02	4.39E-02	9.70E-02	6.17E-02
U-235	4391.000	4391.505	4.941	12.000	12.000	0.000	2.4127	80.90000	5.10E-02	1.52E-02	2.39E-02	5.93E-02	1.47E-02
U-238	4184.730	4194.123	57.214	298.000	296.000	2.000	3.6781	100.0000	1.02E+00	9.42E-02	2.94E-02	6.82E-02	5.96E-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 : 962404
SAMPLE ID : S0247969003_UU
SAMPLE QTY : 0.502 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 92.114

CHAMBER : 126
DETECTOR S/N : 75548
AVERAGE %EFFICIENCY : 26.6612
COUNT DATE : 22-MAR-2010 21:20:03
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B126.CNF:462
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W126.CNF:136
CAL DATE : 18-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5033E+00 dpm
RESULTS : 4.1482E+00 dpm

MS/MSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

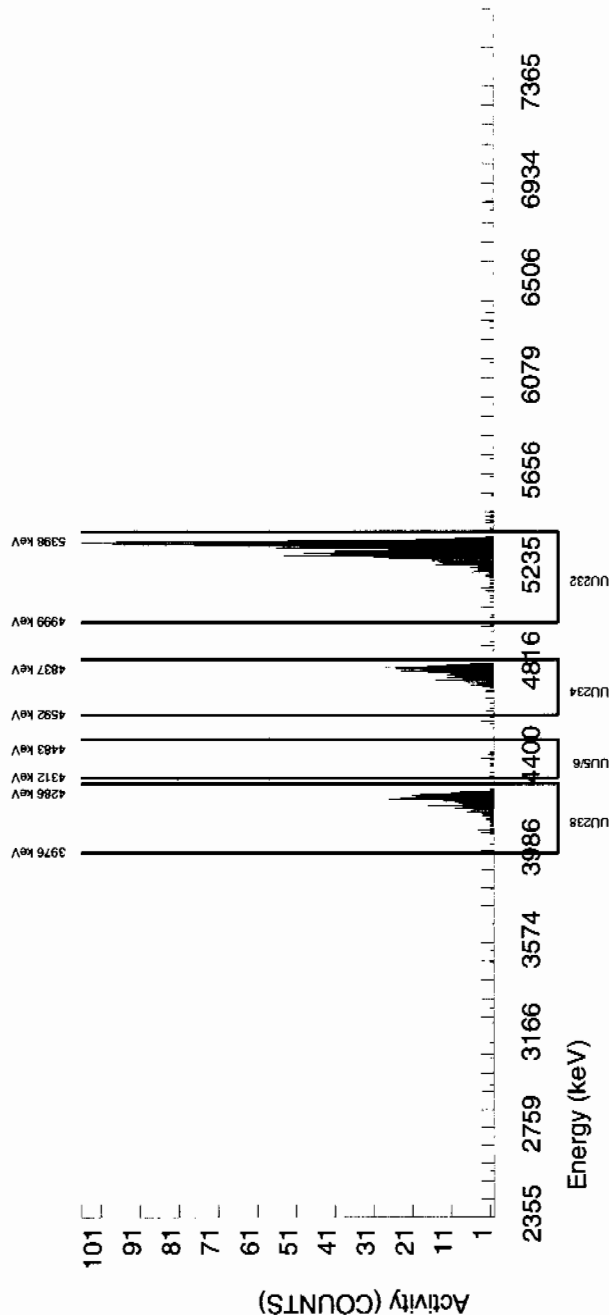
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5323.539	65.409	1106.000	1105.000	1.000	1.00000	100.0000	4.04E+00	3.15E-01	8.50E-03	2.69E-02	1.22E-01
U-3/4	4763.020	4782.417	63.816	277.000	273.881	2.000	5.4790	100.0000	1.00E+00	9.42E-02	4.66E-02	1.03E-01	6.09E-02
U-235	4391.000	4394.900	10.068	12.000	12.000	0.000	2.4127	80.90000	5.42E-02	1.61E-02	2.53E-02	6.29E-02	1.56E-02
U-238	4184.730	4207.632	55.164	267.000	265.000	2.000	3.6781	100.0000	9.68E-01	9.18E-02	3.13E-02	7.24E-02	5.99E-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 : 962404
SAMPLE ID : S0247969004_UU
SAMPLE QTY : 0.512 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 95.276

CHAMBER : 127
DETECTOR S/N : 78770
AVERAGE %EFFICIENCY : 26.3126
COUNT DATE : 22-MAR-2010 21:20:05
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B127.CNF:466
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W127.CNF:127
CAL DATE : 18-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5033E+00 dpm
RESULTS : 4.2906E+00 dpm

MS/MSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

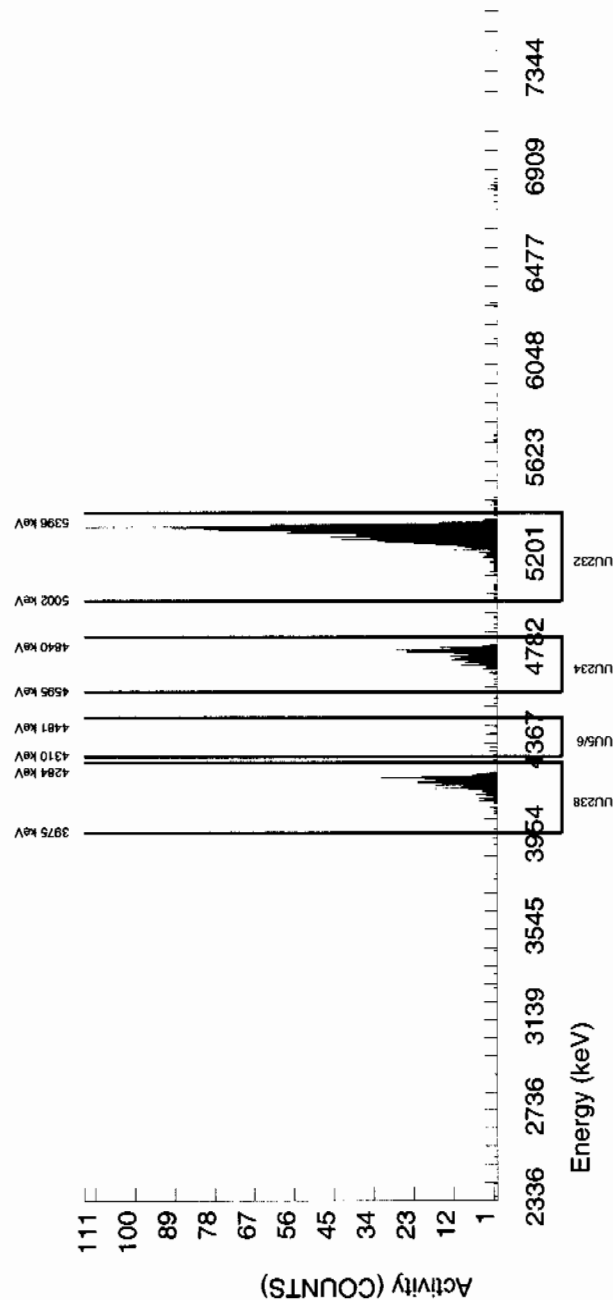
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

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	5308.394	36.620	1132.000	1128.000	4.000	2.0000	100.0000	3.96E+00	3.08E-01	1.63E-02	4.22E-02	1.18E-01
U-3/4	4763.020	4763.643	29.885	268.000	266.857	0.000	5.4790	100.0000	9.36E-01	8.83E-02	4.47E-02	9.90E-02	5.73E-02
U-235	4391.000	4384.456	76.792	13.000	13.000	0.000	2.4127	80.90000	5.64E-02	1.62E-02	2.43E-02	6.05E-02	1.56E-02
U-238	4184.730	4193.466	52.513	273.000	273.000	0.000	3.6781	100.0000	9.58E-01	8.99E-02	3.00E-02	6.96E-02	5.80E-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 : 962404
SAMPLE ID : S0247969005_UU
SAMPLE QTY : 0.519 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 90.528

CHAMBER : 128
DETECTOR S/N : 75549
AVERAGE %EFFICIENCY : 25.9743
COUNT DATE : 22-MAR-2010 21:20:08
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B128.CNF:472
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W128.CNF:137
CAL DATE : 18-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5033E+00 dpm
RESULTS : 4.0768E+00 dpm

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

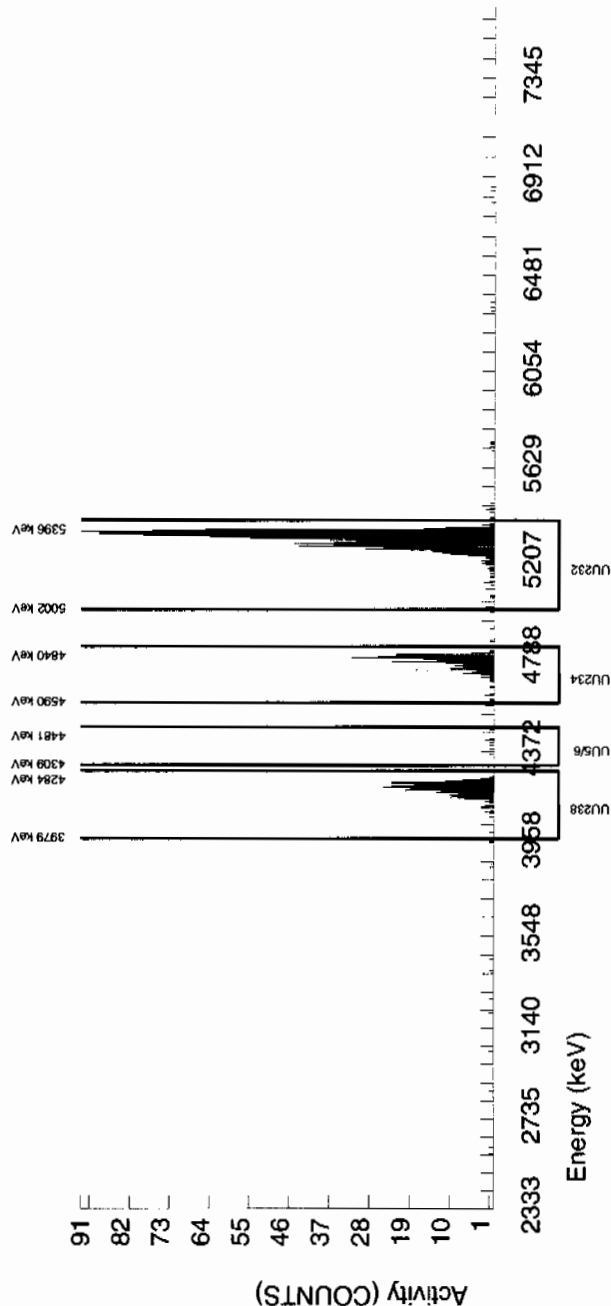
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5318.250	38.715	1061.000	1058.000	3.000	1.7321	100.0000	3.91E+00	3.07E-01	1.49E-02	3.97E-02	1.21E-01
U-3/4	4763.020	4776.145	71.460	301.000	297.928	2.000	5.4790	100.0000	1.10E+00	1.02E-01	4.70E-02	1.04E-01	6.41E-02
U-235	4391.000	4422.310	7.352	9.000	9.000	0.000	2.4127	80.90000	4.11E-02	1.40E-02	2.56E-02	6.36E-02	1.37E-02
U-238	4184.730	4205.147	49.685	284.000	282.000	2.000	3.6781	100.0000	1.04E+00	9.77E-02	3.16E-02	7.32E-02	6.24E-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 : 962404
SAMPLE ID : S0247969006_UU
SAMPLE QTY : 0.505 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 92.501

CHAMBER : 129
DETECTOR S/N : 76227
AVERAGE %EFFICIENCY : 26.5015
COUNT DATE : 22-MAR-2010 21:20:11
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B129.CNF;461
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W129.CNF;132
CAL DATE : 18-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5033E+00 dpm
RESULTS : 4.1656E+00 dpm

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

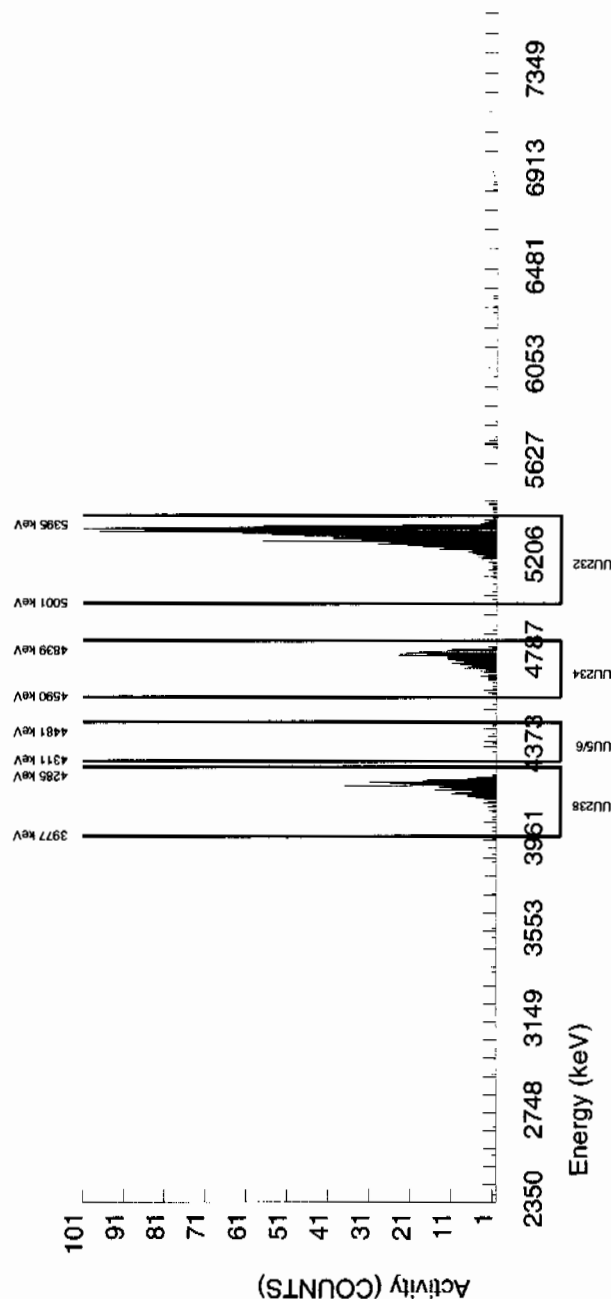
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.171	66.203	1105.000	1103.000	2.000	1.4142	100.0000	4.02E+00	3.13E-01	1.20E-02	3.38E-02	1.21E-01
U-3/4	4763.020	4763.064	29.592	258.000	254.883	2.000	5.4790	100.0000	9.27E-01	8.87E-02	4.64E-02	1.03E-01	5.85E-02
U-235	4391.000	4426.965	0.000	13.000	13.000	0.000	2.4127	80.90000	5.85E-02	1.68E-02	2.52E-02	6.27E-02	1.62E-02
U-238	4184.730	4197.691	23.354	291.000	289.000	2.000	3.6781	100.0000	1.05E+00	9.79E-02	3.11E-02	7.21E-02	6.23E-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 : 962404
SAMPLE ID : S0247969007_UU
SAMPLE QTY : 0.505 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 92.883

CHAMBER : 130
DETECTOR S/N : 76228
AVERAGE %EFFICIENCY : 25.8660
COUNT DATE : 22-MAR-2010 21:20:14
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B130.CNF:461
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W130.CNF:134
CAL DATE : 18-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5033E+00 dpm
RESULTS : 4.1828E+00 dpm

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

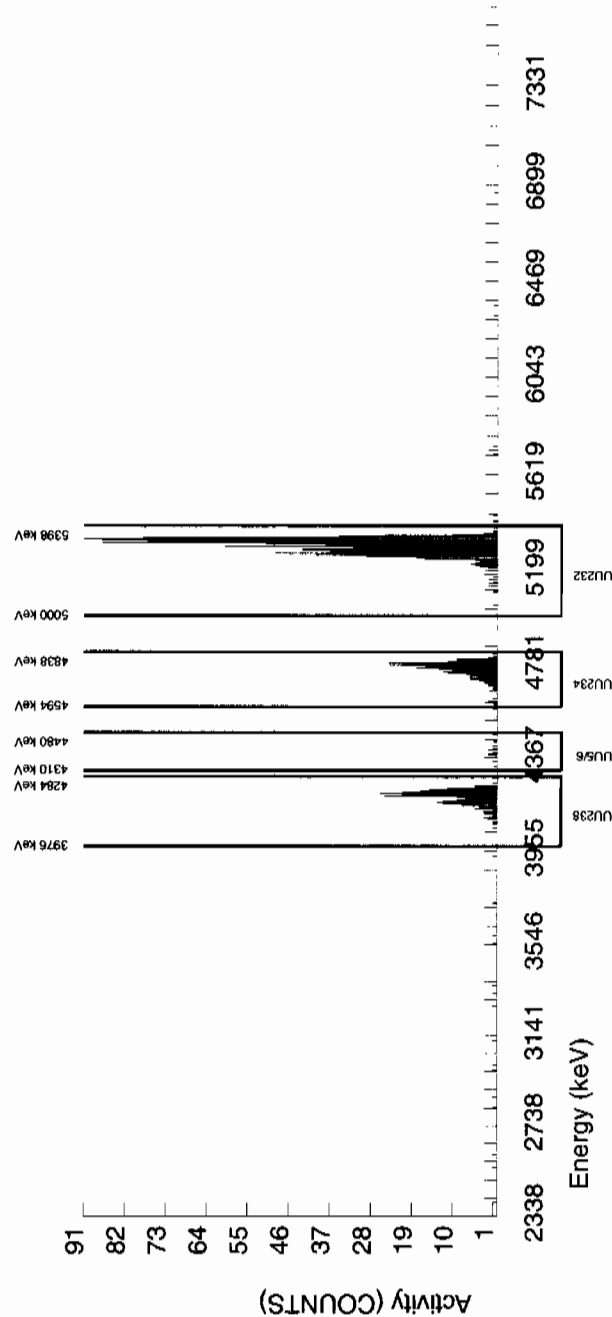
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5313.364	70.199	1081.000	1081.000	0.000	0.0000	100.0000	4.02E+00	3.14E-01	0.00E+00	1.01E-02	1.22E-01
U-3/4	4763.020	4767.009	34.865	269.000	266.905	1.000	5.4790	100.0000	9.91E-01	9.38E-02	4.73E-02	1.05E-01	6.09E-02
U-235	4391.000	4402.487	26.440	15.000	15.000	0.000	2.4127	80.90000	6.88E-02	1.85E-02	2.58E-02	6.40E-02	1.78E-02
U-238	4184.730	4195.363	64.701	285.000	284.000	1.000	3.6781	100.0000	1.05E+00	9.85E-02	3.18E-02	7.36E-02	6.28E-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 : 962404
SAMPLE ID : S0247969008_UU
SAMPLE QTY : 0.505 G
SAMPLE DATE : 20-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 79.571

CHAMBER : 135
DETECTOR S/N : 80005
AVERAGE %EFFICIENCY : 26.4506
COUNT DATE : 22-MAR-2010 21:20:16
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B135.CNF;458
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W135.CNF;144
CAL DATE : 18-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5033E+00 dpm
RESULTS : 3.5833E+00 dpm

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

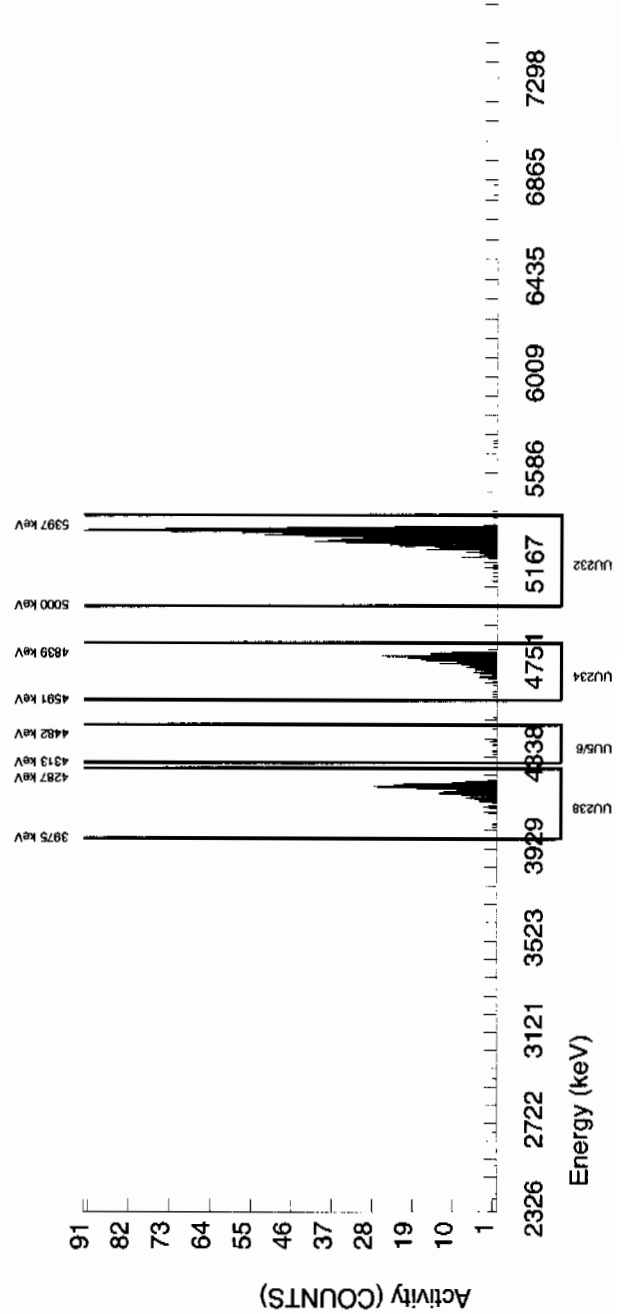
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5310.235	37.192	947.000	947.000	0.000	0.0000	100.0000	4.02E+00	3.21E-01	0.00E+00	1.15E-02	1.31E-01
U-3/4	4763.020	4766.232	38.452	253.000	252.041	0.000	5.4790	100.0000	1.07E+00	1.03E-01	5.40E-02	1.20E-01	6.73E-02
U-235	4391.000	4396.968	45.452	13.000	12.000	1.000	2.4127	80.90000	6.29E-02	2.01E-02	2.94E-02	7.30E-02	1.96E-02
U-238	4184.730	4195.549	29.860	260.000	259.000	1.000	3.6781	100.0000	1.10E+00	1.05E-01	3.63E-02	8.40E-02	6.85E-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 : 962404	CHAMBER : 136	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0247970001_UU	DETECTOR S/N : 80006	BKG FILE : B136.CNF:455
SAMPLE QTY : 0.513 G	AVERAGE %EFFICIENCY : 26.8353	BKG DATE : 21-MAR-2010
SAMPLE DATE : 23-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 21:20:18	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXH2	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W136.CNF:143
% YIELD : 98.887		CAL DATE : 18-MAR-2010

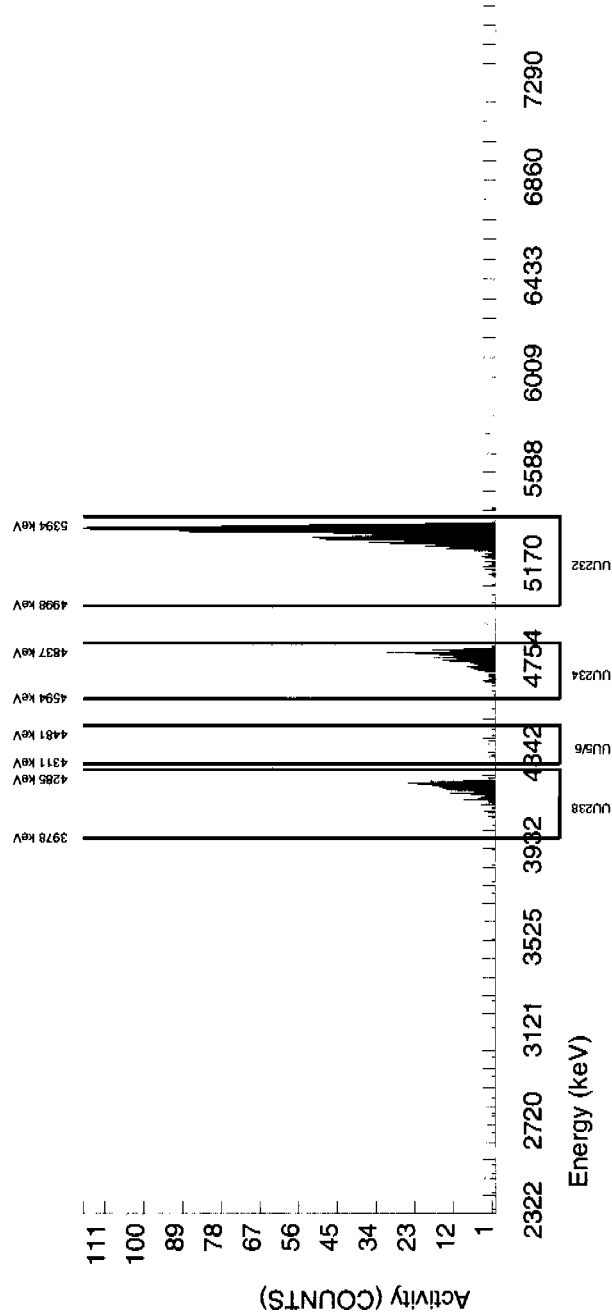
TRACER	MS/MSD
ID : 1283-H	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238
NOMINAL : 4.5029E+00 dpm	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.4528E+00 dpm	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5322.092	32.103	1195.000	1194.000	1.000	1.0000	100.0000	3.95E+00	3.05E-01	7.70E-03	2.44E-02	1.15E-01
U-3/4	4763.020	4771.848	37.558	259.000	257.790	0.000	5.4790	100.0000	8.53E-01	8.08E-02	4.22E-02	9.33E-02	5.31E-02
U-235	4391.000	4408.228	64.465	14.000	13.000	1.000	2.4127	80.90000	5.32E-02	1.63E-02	2.30E-02	5.70E-02	1.58E-02
U-238	4184.730	4201.524	57.911	247.000	246.000	1.000	3.6781	100.0000	8.14E-01	7.81E-02	2.83E-02	6.56E-02	5.21E-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 : 962404
SAMPLE ID : S1202064509_UU
SAMPLE QTY : 1.000 G
SAMPLE DATE : 15-MAR-2010 00:00:00
ANALYST : JXH2
% YIELD : 103.588

CHAMBER : 009
DETECTOR S/N : 72528
AVERAGE %EFFICIENCY : 34.3260
COUNT DATE : 20-MAR-2010 12:43:04
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_UU
BKG FILE : B009.CNF;1114
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W009.CNF;309
CAL DATE : 4-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5005E+00 dpm
RESULTS : 4.6619E+00 dpm

MS/MSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

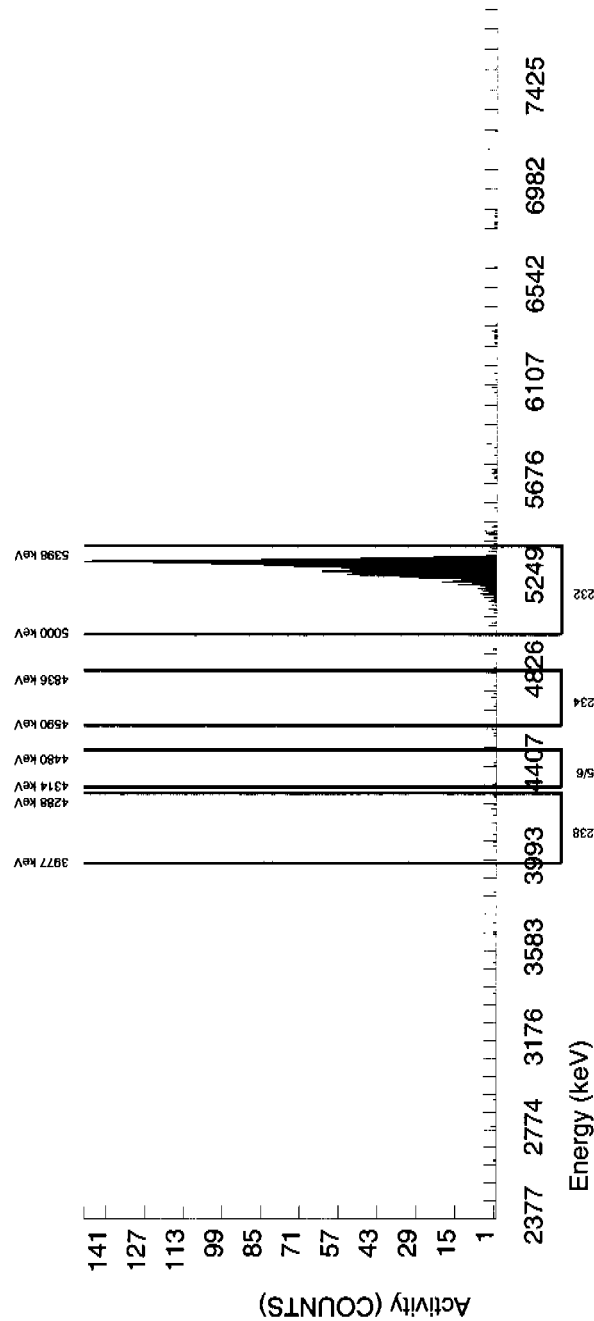
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

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	5303.655	34.860	1606.000	1600.000	6.000	2.4495	100.0000	2.03E+00	1.50E-01	7.22E-03	1.79E-02	5.09E-02
U-3/4	4763.020	4726.146	4.946	7.000	5.379	0.000	5.4790	100.0000	6.81E-03	2.98E-03	1.61E-02	3.57E-02	2.94E-03
U-235	4391.000	4373.485	0.000	4.000	1.000	3.000	2.4127	80.90000	1.57E-03	4.14E-03	8.79E-03	2.18E-02	4.14E-03
U-238	4184.730	4166.417	4.946	10.000	9.000	1.000	3.6781	100.0000	1.14E-02	4.28E-03	1.08E-02	2.51E-02	4.20E-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 : 962404
SAMPLE ID : S1202064510_UU
SAMPLE QTY : 0.504 G
SAMPLE DATE : 23-FEB-2010 00:00:00
ANALYST : JXH2
% YIELD : 96.914

CHAMBER : 010
DETECTOR S/N : 72529
AVERAGE %EFFICIENCY : 31.3468
COUNT DATE : 20-MAR-2010 12:43:04
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_UU
BKG FILE : B010.CNF:1132
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W010.CNF:337
CAL DATE : 4-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5029E+00 dpm
RESULTS : 4.3640E+00 dpm

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

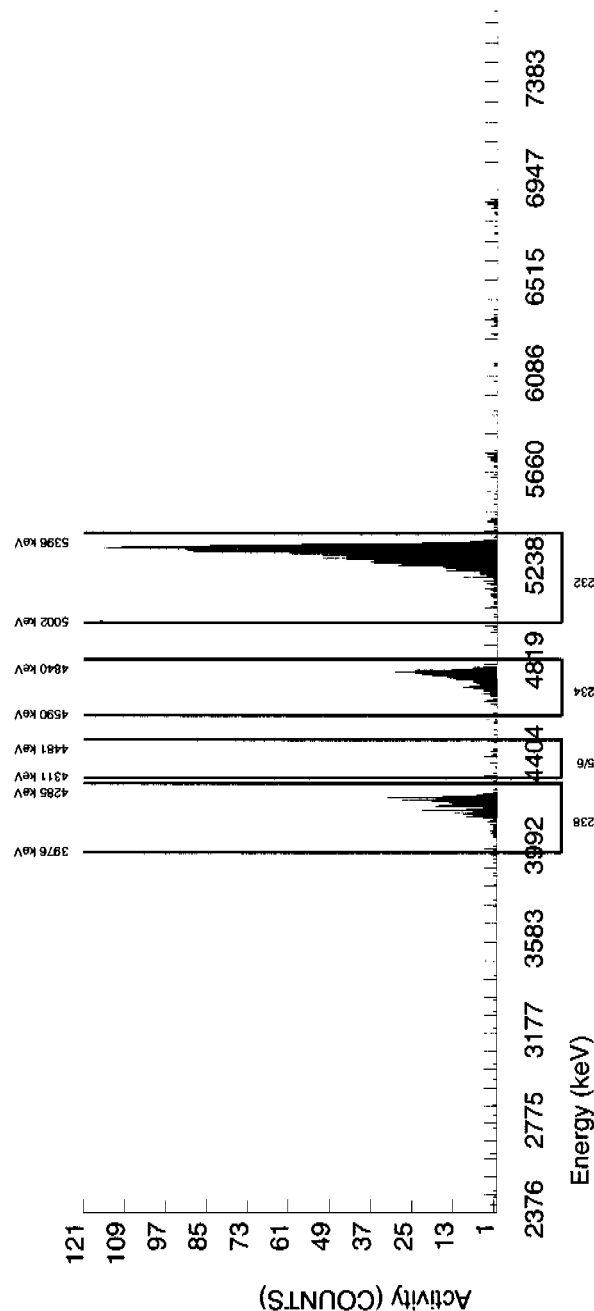
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5308.689	38.622	1374.000	1367.000	7.000	2.6458	100.0000	4.02E+00	3.05E-01	1.81E-02	4.42E-02	1.09E-01
U-3/4	4763.020	4761.481	33.851	304.000	298.615	4.000	5.4790	100.0000	8.79E-01	8.07E-02	3.75E-02	8.30E-02	5.15E-02
U-235	4391.000	4393.729	121.638	15.000	13.000	2.000	2.4127	80.90000	4.73E-02	1.54E-02	2.04E-02	5.07E-02	1.50E-02
U-238	4184.730	4187.443	61.558	332.000	331.000	1.000	3.6781	100.0000	9.74E-01	8.73E-02	2.52E-02	5.83E-02	5.37E-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 : 962404
SAMPLE ID : S1202064511_UU
SAMPLE QTY : 0.101 G
SAMPLE DATE : 15-MAR-2010 00:00:00
ANALYST : JXH2
% YIELD : 73.973

CHAMBER : 011
DETECTOR S/N : 72531
AVERAGE %EFFICIENCY : 31.2445
COUNT DATE : 20-MAR-2010 12:43:04
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_UU
BKG FILE : B011.CNF:1124
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W011.CNF:315
CAL DATE : 4-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5005E+00 dpm
RESULTS : 3.3291E+00 dpm

MS/MSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

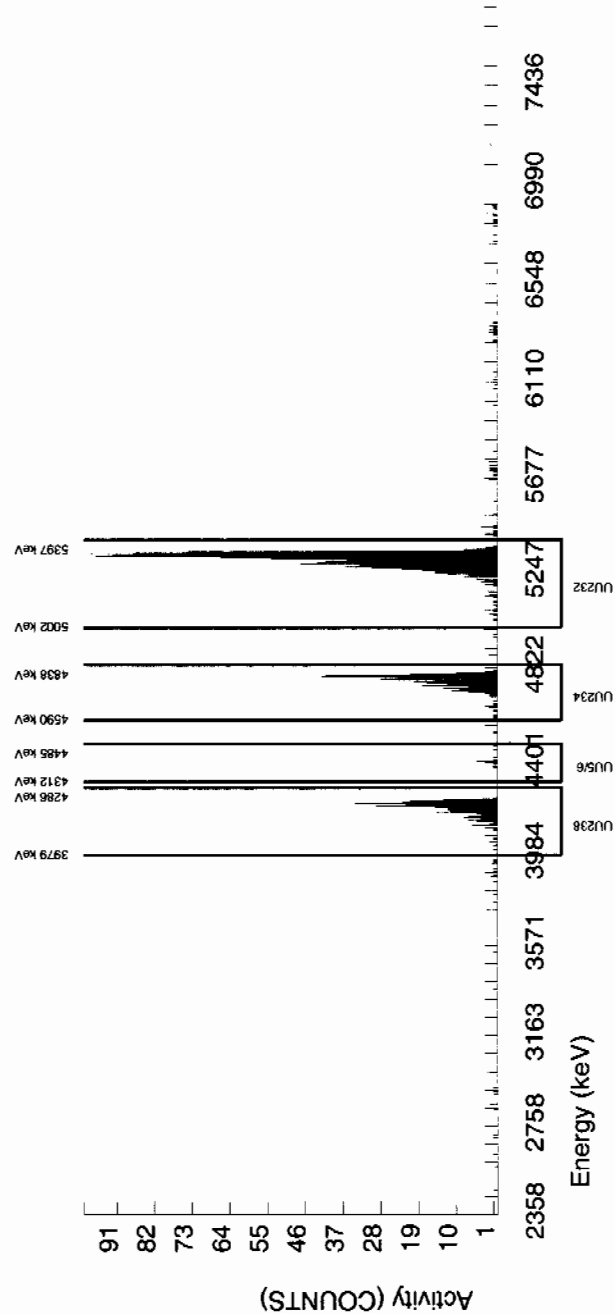
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5309.529	33.915	1050.000	1040.000	10.000	3.1623	100.0000	2.01E+01	1.70E+00	1.42E-01	3.36E-01	6.28E-01
U-3/4	4763.020	4767.510	26.968	350.000	347.947	1.000	5.4790	100.0000	6.71E+00	6.41E-01	2.46E-01	5.44E-01	3.61E-01
U-235	4391.000	4418.509	5.584	15.000	15.000	0.000	2.4127	80.90000	3.58E-01	9.66E-02	1.34E-01	3.32E-01	9.24E-02
U-238	4184.730	4191.930	26.664	289.000	286.000	3.000	3.6781	100.0000	5.52E+00	5.46E-01	1.65E-01	3.83E-01	3.30E-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



Radiochemistry Batch Checklist, Rev10

Batch# 958216 Product: 8-5 Date: 3/16/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: K Ost 3/16/10

Secondary Review Performed By: gi Hantz 3/18/10

LANL

3/25

Gamma Spec Que Sheet

02/26/2010

1.6-3/9/10

Batch #: 958216 Analyst: MXR1 First Client Due Date: 03/25/2010 Internal Due Date: 03/14/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: Ma Expiration Date: Ma Vol: Ma Nominal Concentration: Ma G-60 6.347
 Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 12/2/10 Vol: 1.0mL Nominal Concentration: Cs-137 5.552 Am-241 15.90
 Initials: MS Prep Date: 3/2/10 Library: SOLID Witness: Ma

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Aliquot (1/g/F)	Detector	Sealing Date/Time (if Applicable)
247964001-1	RE36-10-8489	SAMPLE	LANL010	SOIL	19-FEB-10 12:00:00	u	0.918	176.53	16	3/2/10
247964002-1	RE36-10-8486	SAMPLE	LANL010	SOIL	19-FEB-10 12:00:00	u		134.67	25	
247964003-1	RE36-10-8487	SAMPLE	LANL010	SOIL	19-FEB-10 12:00:00	u		132.37	5	
247964004-1	RE36-10-8462	SAMPLE	LANL010	SOIL	19-FEB-10 12:00:00	u		142.62	13	
247964005-1	RE36-10-8463	SAMPLE	LANL010	SOIL	19-FEB-10 12:00:00	u		123.99	15	
247969001-1	RE36-10-8490	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	u		124.41	18	
247969002-1	RE36-10-8470	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	u		136.79	21	
247969003-1	RE36-10-8476	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	u		130.99	22	
247969004-1	RE36-10-8480	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	u		118.10	23	
247969005-1	RE36-10-8474	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	u		128.63	16	
247969006-1	RE36-10-8478	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	CG		136.18	23	
247969007-1	RE36-10-8483	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	CG		120.15	11	
247969008-1	RE36-10-8482	SAMPLE	LANL010	SOIL	20-FEB-10 12:00:00	CG		127.15	17	
247970001-1	RE46-10-13181	SAMPLE	LANL010	SOIL	23-FEB-10 12:00:00	CG		126.98	18	
247970002-1	RE46-10-13178	SAMPLE	LANL010	SOIL	23-FEB-10 12:00:00	CG		105.49	21	
247970003-1	RE46-10-13179	SAMPLE	LANL010	SOIL	23-FEB-10 12:00:00	u		121.97	15	
247970004-1	RE46-10-13180	SAMPLE	LANL010	SOIL	23-FEB-10 12:00:00	u		141.41	5	
247970005-1	RE46-10-13177	SAMPLE	LANL010	SOIL	23-FEB-10 12:00:00	u		127.80	4	
247970006-1	RE46-10-13176	SAMPLE	LANL010	SOIL	23-FEB-10 12:00:00	u		127.94	6	
247970007-1	RE46-10-13182	SAMPLE	LANL010	SOIL	23-FEB-10 12:00:00	u		140.53	14	
1202054948-1	MB	MB	QC ACCOUNT	QC ACCOUNT	3/2/10	u		142.42	20	
1202054949-1	DUP RE46-10-13181(2479700001)	DUP	QC ACCOUNT	QC ACCOUNT	3/2/10	u		126.98	23	
1202054950-1	LCS	LCS	QC ACCOUNT	QC ACCOUNT	3/2/10	u		155.44	21	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: KOst 3/10/10

✓ no history
✓ failures

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
958216	247964001	SAMPLE	10-MAR-10		Americium-241	0.04472	0.2657	0.200
					Cesium-134	0.1016	0.103	0.100
					Thorium-234	1.4	2.445	2.00
958216	247964002	SAMPLE	10-MAR-10		Sodium-22	-0.00188	0.08676	0.080
958216	247964003	SAMPLE	10-MAR-10					
958216	247964004	SAMPLE	10-MAR-10					
958216	247964005	SAMPLE	10-MAR-10		Americium-241	0.2955	0.4242	0.200
					Cerium-139	-0.01395	0.05323	0.050
958216	247969001	SAMPLE	10-MAR-10		Americium-241	0.08054	0.2299	0.200
958216	247969002	SAMPLE	10-MAR-10					
958216	247969003	SAMPLE	10-MAR-10					
958216	247969004	SAMPLE	10-MAR-10		Americium-241	0.0732	0.2771	0.200
					Thorium-234	2.205	2.299	2.00
958216	247969005	SAMPLE	10-MAR-10					
958216	247969006	SAMPLE	11-MAR-10		Americium-241	-0.1318	0.3792	0.200
					Cerium-139	0.02272	0.05935	0.050
					Cesium-134	0.07783	0.1018	0.100
					Thorium-234	0.4476	3.335	2.00
958216	247969007	SAMPLE	11-MAR-10					
958216	247969008	SAMPLE	11-MAR-10		Cerium-139	0.00995	0.06182	0.050
					Ruthenium-106	0.3991	0.8171	0.800
					Sodium-22	-0.04738	0.101	0.080
958216	247970001	SAMPLE	11-MAR-10		Americium-241	0.05609	0.3006	0.200
					Thorium-234	1.508	2.672	2.00
958216	247970002	SAMPLE	11-MAR-10		Cerium-139	0.00202	0.05024	0.050
					Sodium-22	-0.03019	0.1207	0.080
					Yttrium-88	0.06435	0.1263	0.100
958216	247970003	SAMPLE	11-MAR-10		Americium-241	-0.256	0.568	0.200
					Cerium-139	0.0044	0.06955	0.050
					Cesium-134	0.08875	0.1135	0.100
					Europium-152	0.01784	0.2223	0.200
					Sodium-22	0.00056	0.09376	0.080
					Thorium-234	1.526	4.667	2.00
					Tin-113	-0.02793	0.101	0.100
958216	247970004	SAMPLE	11-MAR-10		Cerium-139	0.00606	0.05161	0.050
					Cesium-134	0.07622	0.1014	0.100
					Sodium-22	0.0091	0.08522	0.080
958216	247970005	SAMPLE	11-MAR-10		Americium-241	0.01921	0.4004	0.200
					Cesium-134	0.07937	0.1047	0.100
					Thorium-234	1.604	3.359	2.00
958216	247970006	SAMPLE	11-MAR-10		Americium-241	0.1328	0.3253	0.200
					Cerium-139	0.0179	0.06147	0.050
					Cesium-134	0.06809	0.1039	0.100

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
958216	247970006	SAMPLE	11-MAR-10		Sodium-22	-0.04743	0.08982	0.080
					Thorium-234	2.526	2.77	2.00
958216	247970007	SAMPLE	11-MAR-10		Americium-241	0.0473	0.2234	0.200
					Cerium-139	0.01913	0.05083	0.050
958216	1202054948	MB	11-MAR-10					
958216	1202054949	DUP	11-MAR-10		Americium-241	-0.3284	0.3767	0.200
					Cerium-139	0.00328	0.05868	0.050
					Cesium-134	0.09409	0.1017	0.100
					Sodium-22	-0.03138	0.09119	0.080
					Thorium-234	2.302	3.408	2.00
958216	1202054950	LCS	11-MAR-10		Cerium-139	0.01255	0.0718	0.050
					Cesium-134	-0.0112	0.1878	0.100
					Europium-152	-0.02551	0.3101	0.200
					Potassium-40	1.284	1.452	1.00
					Ruthenium-106	0.02799	1.079	0.800
					Tin-113	-0.03664	0.1427	0.100
					Yttrium-88	0.03418	0.119	0.100

GEL QUALS

Batch ID: 958216

Report run on: March 16, 2010 2:07 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247964001-1 10-MAR-2010 21:17	Bismuth-211	UI	UI	UI	Data rejected due to interference.		6.262			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.435			
	Mercury-203	UI	UI	UI	Data rejected due to interference.		.08283		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		8.17			
	Uranium-235	UI	UI	UI	Data rejected due to no valid peak.		.3886		.5	.5
247964002-1 10-MAR-2010 21:17	Bismuth-211	UI	UI	UI	Data rejected due to interference.		6.736			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.997			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1372		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		7.928			
247964003-1 10-MAR-2010 23:08	Americium-241	UI	UI	UI	Data rejected due to low abundance.		.1155		.2	.2
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		6.257			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.88			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1306		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		7.224			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08304			
247964004-1 10-MAR-2010 23:09	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.597			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.957			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1723		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.46			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1206			

GEL QUALS

Batch ID: 958216

Report run on: March 16, 2010 2:07 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247964005-1 10-MAR-2010 23:10	Bismuth-211	UI	UI	UI	Data rejected due to interference.		6.499			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.723			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.121		.1	.1
	Mercury-203	UI	UI	UI	Data rejected due to low abundance.		.09882		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.504			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1223			
247969001-1 10-MAR-2010 23:10	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.143			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.791			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1048		.1	.1
	Mercury-203	UI	UI	UI	Data rejected due to interference.		.06122		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.064			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09515			
247969002-1 10-MAR-2010 23:10	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.928			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.144			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.146		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.209			
247969003-1 10-MAR-2010 23:11	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.219			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.243			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08705		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.687			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1586			

GEL QUALS

Batch ID: 958216

Report run on: March 16, 2010 2:07 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247969004-1 10-MAR-2010 23:11	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.919			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.377			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.636			
247969005-1 10-MAR-2010 23:25	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.393			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.624			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1015		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.311			
247969006-1 11-MAR-2010 14:14	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.706			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.714			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.737			
247969007-1 11-MAR-2010 14:15	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.33			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.581			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1269		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.976			
247969008-1 11-MAR-2010 14:17	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.069			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		6.169			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1737		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.134			
247970001-1 11-MAR-2010 14:18	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.405			

GEL QUALS

Batch ID: 958216

Report run on: March 16, 2010 2:07 PM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247970001-1 11-MAR-2010 14:18	Mercury-203			UI	Data rejected due to interference					
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.505			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1019		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.737			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.07248			
247970002-1 11-MAR-2010 14:18	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.563			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.719			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.184		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.82			
247970003-1 11-MAR-2010 16:04	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.9			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.518			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.61			
	Radium-228	UI	UI	UI	Data rejected due to low abundance.		2.305		.5	.5
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1159			
247970004-1 11-MAR-2010 18:12	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.982			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.004			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.218			
247970005-1 11-MAR-2010 18:25	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.383			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.424			
	Mercury-203	UI	UI	UI	Data rejected due to interference.		.105		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.798			

GEL QUALS

Batch ID: 958216

Report run on: March 16, 2010 2:07 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
24797006-1 11-MAR-2010 19:25	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.688			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.079			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.677			
24797007-1 11-MAR-2010 19:26	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.676			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.532			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.111			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.07296			
1202054949-1 DUP 11-MAR-2010 19:27	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.755			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.953			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.902			

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

3/16/2010 9:55 AM

Lead-212	✓	2.03	0.08321 pCi/g	0.06219	0.100	238.7	2	1.176	IDENTIFIED	1.952	<input type="checkbox"/>	
Lead-214	✓	1.867	0.0975 pCi/g	0.07446	0.100	351.9	2	1.402	IDENTIFIED	3.061	<input type="checkbox"/>	
Manganese-54	HE	0.04185	0.01201 pCi/g	0.04153	N	835.3	1	1.608	IDENTIFIED	28.23	<input type="checkbox"/>	
Mercury-203	INT	0.06122	0.01974 pCi/g	0.0403	0.100	278	1	1.371	IDENTIFIED	32.1	<input checked="" type="checkbox"/>	UI
Neptunium-237	INT	1.1	0.1646 pCi/g	0.3018	N	87.35	3	1.041	IDENTIFIED	9.641	<input type="checkbox"/>	
Niobium-95	—	0.09106	0.01743 pCi/g	0.05554	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Niobium-95m	HE	0.2104	0.04944 pCi/g	0.1554	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	✓	36.67	1.507 pCi/g	0.2915	1.00	1460	1	2.406	IDENTIFIED	1.573	<input type="checkbox"/>	
Promethium-149	HE	39.69	84.14 pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224	INT	5.064	0.4438 pCi/g	0.6656	Y	241.6	1	1.668	IDENTIFIED	8.31	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.621	0.08866 pCi/g	0.06989	Y	608.9	2	1.703	IDENTIFIED	3.12	<input type="checkbox"/>	
Radium-228	✓	2.39	0.1908 pCi/g	0.1367	0.500	910.5	3	1.865	IDENTIFIED	4.219	<input type="checkbox"/>	
Strontium-85	LA	0.09515	0.01354 pCi/g	0.04501	Y	0	8	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.5969	0.03385 pCi/g	0.03674	0.080	582.9	1	1.472	IDENTIFIED	4.106	<input type="checkbox"/>	
Thorium-228	NR	2.03	0.08321 pCi/g	0.06219	N	238.7	2	1.176	IDENTIFIED	1.952	<input type="checkbox"/>	
Thorium-232	NR	2.39	0.1908 pCi/g	0.1367	N	910.5	3	1.865	IDENTIFIED	4.219	<input type="checkbox"/>	
Tin-126	NR	0.3686	0.03937 pCi/g	0.09955	N	87.35	3	1.041	IDENTIFIED	9.641	<input type="checkbox"/>	
Zinc-65	HE	0.1369	0.03616 pCi/g	0.1138	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	

*** = 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		
247969002	20-FEB-10 12:00	10-MAR-10 23:10	18.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228	✓	2.321	0.2133	pCi/g	0.2035	N	910.6	3 1.469	IDENTIFIED	7.09	<input type="checkbox"/>	
Annihilation Rad.	—	0.1462	0.02995	pCi/g	0.03993	N	510.5	1 1.718	IDENTIFIED	19.92	<input type="checkbox"/>	
Bismuth-211	INT	4.928	0.2934	pCi/g	0.2475	Y	351.7	2 0.972	IDENTIFIED	3.885	<input checked="" type="checkbox"/>	UI
Bismuth-212	—	3.568	0.4526	pCi/g	1.199	N	0	8 0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.659	0.1189	pCi/g	0.09521	0.200	608.9	2 1.207	IDENTIFIED	4.03	<input type="checkbox"/>	
Cadmium-109	INT	4.144	0.3244	pCi/g	0.575	Y	87.18	3 0.9673	IDENTIFIED	6.282	<input checked="" type="checkbox"/>	UI
Cerium-143	—	2756	444.2	pCi/g	0	N	0	8 0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.146	0.02476	pCi/g	0.08579	0.100	0	8 0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Europium-155	HE	0.1491	0.04755	pCi/g	0.09173	N	105.1	1 1.208	IDENTIFIED	31.46	<input type="checkbox"/>	
Gross Gamma	—	12.21	1.397	pCi/g	3.863	N	0				<input type="checkbox"/>	
Iodine-133	HE	9058	37560	pCi/g	0	N	0	8 0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135	—	1.11E+19	0	pCi/g	0	N	0	8 0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-210	✓	1.3	0.2524	pCi/g	0.4653	N	46.55	1 0.6538	IDENTIFIED	18.82	<input type="checkbox"/>	
Lead-212	✓	2.14	0.1155	pCi/g	0.06312	0.100	238.5	2 0.8757	IDENTIFIED	2.037	<input type="checkbox"/>	
Lead-214	✓	1.789	0.1173	pCi/g	0.0901	0.100	351.7	2 0.972	IDENTIFIED	3.885	<input type="checkbox"/>	
Neptunium-237	INT	1.203	0.1574	pCi/g	0.169	N	87.18	3 0.9673	IDENTIFIED	6.282	<input type="checkbox"/>	
Potassium-40	✓	34.33	1.685	pCi/g	0.522	1.00	1460	1 2.011	IDENTIFIED	2.422	<input type="checkbox"/>	
Promethium-149	HE	93.11	91.3	pCi/g	0	N	0	8 0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224	INT	6.209	0.515	pCi/g	0.6784	Y	241.3	1 1.627	IDENTIFIED	7.004	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.659	0.1189	pCi/g	0.09521	Y	608.9	2 1.207	IDENTIFIED	4.03	<input type="checkbox"/>	
Radium-228	✓	2.321	0.2133	pCi/g	0.2035	0.500	910.6	3 1.469	IDENTIFIED	7.09	<input type="checkbox"/>	
Sodium-24	HE	9.03E+06	1.37E+07	pCi/g	0	N	0	8 0	SHORT_HLIF	0	<input type="checkbox"/>	
Tellurium-125m	HE	9.668	2.885	pCi/g	9.38	N	0	8 0	NOT_IDENTI	0	<input type="checkbox"/>	
Thallium-208	✓	0.6478	0.04773	pCi/g	0.05015	0.080	582.9	1 1.324	IDENTIFIED	4.968	<input type="checkbox"/>	

Thorium-228	NR	2.14	0.1155	pCi/g 0.06312	N	238.5	2	0.8757	IDENTIFIED	2.037	<input type="checkbox"/>	
Thorium-232	NR	2.321	0.2133	pCi/g 0.2035	N	910.6	3	1.469	IDENTIFIED	7.09	<input type="checkbox"/>	
Thorium-234	✓	1.741	0.322	pCi/g 0.6159	2.00	63.37	2	0.9083	IDENTIFIED	16.14	<input type="checkbox"/>	
Tin-126	NR	0.403	0.03155	pCi/g 0.05686	N	87.18	3	0.9673	IDENTIFIED	6.282	<input type="checkbox"/>	
Total Uranium	—	5.2142	9.58E-07	ug/g 0.91802	N		0				<input type="checkbox"/>	
Uranium-238	NR	1.741	0.322	pCi/g 0.6159	N	63.37	2	0.9083	IDENTIFIED	16.14	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247969003	20-FEB-10 12:00	10-MAR-10 23:11	18.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	✓	2.178	0.1898	pCi/g 0.1441	N	911.3	3	2.213	IDENTIFIED	5.483	<input type="checkbox"/>	
Annihilation Rad.	—	0.1371	0.02233	pCi/g 0.03077	N	510.9	1	2.118	IDENTIFIED	15.5	<input type="checkbox"/>	
Bismuth-211	INT	5.219	0.3438	pCi/g 0.2235	Y	351.9	2	1.445	IDENTIFIED	3.095	<input checked="" type="checkbox"/>	UI
Bismuth-212	—	2.39	0.3473	pCi/g 0.7751	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.516	0.1057	pCi/g 0.07486	0.200	609.4	2	1.733	IDENTIFIED	3.823	<input type="checkbox"/>	
Cadmium-109	INT	4.243	0.4134	pCi/g 0.7836	Y	87.21	3	1.274	IDENTIFIED	8.532	<input checked="" type="checkbox"/>	UI
Cerium-143	—	5423	764	pCi/g 0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.08705	0.0219	pCi/g 0.06034	0.100	0	8	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-135	HE	0.2958	0.06664	pCi/g 0.1982	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Gross Gamma	—	11.53	1.114	pCi/g 2.074	N	0					<input type="checkbox"/>	
Lead-212	✓	2.163	0.1487	pCi/g 0.06539	0.100	238.7	2	1.229	IDENTIFIED	1.844	<input type="checkbox"/>	
Lead-214	✓	1.894	0.1353	pCi/g 0.08125	0.100	351.9	2	1.445	IDENTIFIED	3.095	<input type="checkbox"/>	
Neptunium-237	NR	1.231	0.1762	pCi/g 0.2307	N	87.21	3	1.274	IDENTIFIED	8.532	<input type="checkbox"/>	
Niobium-95	HE	0.07902	0.01736	pCi/g 0.05326	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Niobium-95m	HE	0.2208	0.0553	pCi/g 0.1665	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	✓	35.74	1.728	pCi/g 0.3324	1.00	1461	1	2.676	IDENTIFIED	1.548	<input type="checkbox"/>	
Promethium-149	HE	28.02	93.79	pCi/g 0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224	INT	5.687	0.5558	pCi/g 0.7	Y	241.7	1	1.904	IDENTIFIED	7.494	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.516	0.1057	pCi/g 0.07486	Y	609.4	2	1.733	IDENTIFIED	3.823	<input type="checkbox"/>	
Radium-228	✓	2.178	0.1898	pCi/g 0.1441	0.500	911.3	3	2.213	IDENTIFIED	5.483	<input type="checkbox"/>	
Strontium-85	LA	0.1586	0.0173	pCi/g 0.05339	Y	0	8	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.6034	0.04376	pCi/g 0.03602	0.080	583.2	1	1.634	IDENTIFIED	4.821	<input type="checkbox"/>	
Thorium-228	NR	2.163	0.1487	pCi/g 0.06539	N	238.7	2	1.229	IDENTIFIED	1.844	<input type="checkbox"/>	
Thorium-232	NR	2.178	0.1898	pCi/g 0.1441	N	911.3	3	2.213	IDENTIFIED	5.483	<input type="checkbox"/>	
Tin-126	NR	0.4127	0.0402	pCi/g 0.07652	N	87.21	3	1.274	IDENTIFIED	8.532	<input type="checkbox"/>	
Total Uranium	—	2.4492	1.33E-06	ug/g 2.3101	N	0					<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247969004	20-FEB-10 12:00	10-MAR-10 23:11	18.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	✓	2.106	0.1795	pCi/g 0.1909	N	910	3	1.921	IDENTIFIED	6.112	<input type="checkbox"/>	
Annihilation Rad.	—	0.188	0.03384	pCi/g 0.04064	N	510.4	1	2.042	IDENTIFIED	17.76	<input type="checkbox"/>	
Bismuth-211	INT	4.919	0.2646	pCi/g 0.288	Y	351.4	2	1.401	IDENTIFIED	4.279	<input checked="" type="checkbox"/>	UI
Bismuth-212	✓	1.994	0.4047	pCi/g 0.682	N	726.2	1	1.171	IDENTIFIED	19.55	<input type="checkbox"/>	
Bismuth-214	✓	1.478	0.09421	pCi/g 0.09705	0.200	608.4	2	1.473	IDENTIFIED	5.121	<input type="checkbox"/>	

Cadmium-109	INT	5.377	0.5662	pCi/g 1.124	Y	87	3	1.452	IDENTIFIED	9.351	<input checked="" type="checkbox"/>	UI
Cerium-143	—	7490	1002	pCi/g 0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-135	HE	0.3988	0.08056	pCi/g 0.2518	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Gross Gamma	—	11.39	1.31	pCi/g 3.502	N		0				<input type="checkbox"/>	
Iodine-133	HE	16540	39370	pCi/g 0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135	—	4.56E+18	0	pCi/g 0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	2.181	0.09305	pCi/g 0.07775	0.100	238.2	2	1.224	IDENTIFIED	2.249	<input type="checkbox"/>	
Lead-214	✓	1.785	0.1079	pCi/g 0.1048	0.100	351.4	2	1.401	IDENTIFIED	4.279	<input type="checkbox"/>	
Neptunium-237	INT	1.56	0.2319	pCi/g 0.3332	N	87	3	1.452	IDENTIFIED	9.351	<input type="checkbox"/>	
Niobium-95m	—	1.19	0.08821	pCi/g 0.2754	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	✓	31.79	1.418	pCi/g 0.3878	1.00	1459	1	2.238	IDENTIFIED	2.43	<input type="checkbox"/>	
Promethium-149	HE	222.5	115.6	pCi/g 0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224	INT	5.636	0.5603	pCi/g 0.8333	Y	241.3	1	1.774	IDENTIFIED	9.533	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.478	0.09421	pCi/g 0.09705	Y	608.4	2	1.473	IDENTIFIED	5.121	<input type="checkbox"/>	
Radium-228	✓	2.106	0.1795	pCi/g 0.1909	0.500	910	3	1.921	IDENTIFIED	6.112	<input type="checkbox"/>	
Sodium-24	HE	1.67E+07	1.54E+07	pCi/g 0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.6479	0.04704	pCi/g 0.05236	0.080	582.4	1	1.662	IDENTIFIED	6.498	<input type="checkbox"/>	
Thorium-228	NR	2.181	0.09305	pCi/g 0.07775	N	238.2	2	1.224	IDENTIFIED	2.249	<input type="checkbox"/>	
Thorium-232	NR	2.106	0.1795	pCi/g 0.1909	N	910	3	1.921	IDENTIFIED	6.112	<input type="checkbox"/>	
Tin-126	NR	0.5229	0.05506	pCi/g 0.11	N	87	3	1.452	IDENTIFIED	9.351	<input type="checkbox"/>	
Total Uranium	—	6.6183	2.69E-06	ug/g 3.423	N		0				<input type="checkbox"/>	
Zinc-65	HE	0.168	0.05116	pCi/g 0.1631	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue		
247969005	20-FEB-10 12:00	10-MAR-10 23:25	18.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	2.485	0.1961	pCi/g 0.1603	N	911.2	3	1.528	IDENTIFIED	5.004	<input type="checkbox"/>	
Annihilation Rad.	—	0.197	0.02723	pCi/g 0.03165	N	510.7	1	1.65	IDENTIFIED	12.98	<input type="checkbox"/>	
Barium-137m	HE	0.08095	0.02124	pCi/g 0.04683	N	661.6	2	1.331	IDENTIFIED	25.86	<input type="checkbox"/>	
Bismuth-211	INT	5.393	0.341	pCi/g 0.2239	Y	351.9	2	1.231	IDENTIFIED	3.196	<input checked="" type="checkbox"/>	UI
Bismuth-212	✓	3.194	0.4	pCi/g 0.5642	N	727.3	1	1.255	IDENTIFIED	10.76	<input type="checkbox"/>	
Bismuth-214	✓	1.612	0.1067	pCi/g 0.0802	0.200	609.4	2	1.418	IDENTIFIED	3.951	<input type="checkbox"/>	
Cadmium-109	INT	4.624	0.468	pCi/g 0.8327	Y	87.19	3	1.295	IDENTIFIED	8.924	<input checked="" type="checkbox"/>	UI
Cerium-143	—	2958	488.1	pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.1015	0.02891	pCi/g 0.06688	0.100	0	4	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137	✓	0.08552	0.02244	pCi/g 0.04947	0.100	661.6	2	1.331	IDENTIFIED	25.86	<input type="checkbox"/>	
Gross Gamma	—	12.87	1.422	pCi/g 3.774	N		0				<input type="checkbox"/>	
Iodine-133	HE	7787	30700	pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	2.291	0.1433	pCi/g 0.06667	0.100	238.6	2	0.9897	IDENTIFIED	1.957	<input type="checkbox"/>	
Lead-214	✓	1.957	0.135	pCi/g 0.08142	0.100	351.9	2	1.231	IDENTIFIED	3.196	<input type="checkbox"/>	
Neptunium-237	INT	1.342	0.1955	pCi/g 0.2455	N	87.19	3	1.295	IDENTIFIED	8.924	<input type="checkbox"/>	
Potassium-40	✓	35.05	1.684	pCi/g 0.3788	1.00	1461	1	1.88	IDENTIFIED	1.943	<input type="checkbox"/>	
Radium-224	INT	5.311	0.5461	pCi/g 0.7146	Y	241.4	1	1.578	IDENTIFIED	8.678	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.612	0.1067	pCi/g 0.0802	Y	609.4	2	1.418	IDENTIFIED	3.951	<input type="checkbox"/>	
Radium-228	✓	2.485	0.1961	pCi/g 0.1603	0.500	911.2	3	1.528	IDENTIFIED	5.004	<input type="checkbox"/>	
Sodium-24	HE	4.91E+06	1.07E+07	pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>	

Thallium-208	✓	0.6842	0.04691	pCi/g	0.04048	0.080	583.2	1	1.196	IDENTIFIED	4.744	<input type="checkbox"/>	
Thorium-228	NR	2.291	0.1433	pCi/g	0.06667	N	238.6	2	0.9897	IDENTIFIED	1.957	<input type="checkbox"/>	
Thorium-232	NR	2.485	0.1961	pCi/g	0.1603	N	911.2	3	1.528	IDENTIFIED	5.004	<input type="checkbox"/>	
Thorium-234	✓	2.371	0.729	pCi/g	1.495	2.00	63.46	2	0.9794	IDENTIFIED	29.42	<input type="checkbox"/>	
Tin-126	NR	0.4497	0.04551	pCi/g	0.08135	N	87.19	3	1.295	IDENTIFIED	8.924	<input type="checkbox"/>	
Total Uranium	—	7.093	2.17E-06	ug/g	2.2262	N	0					<input type="checkbox"/>	
Uranium-238	HE	2.371	0.729	pCi/g	1.495	N	63.46	2	0.9794	IDENTIFIED	29.42	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247969006	20-FEB-10 12:00	11-MAR-10 14:14	19.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	✓	2.117	0.2066	pCi/g	0.2419	N	909.9	3	2.049	IDENTIFIED	7.744		<input type="checkbox"/>	
Annihilation Rad. HE	—	0.1335	0.0418	pCi/g	0.05275	N	510	1	1.698	IDENTIFIED	31.18		<input type="checkbox"/>	
Bismuth-211	INT	4.706	0.3082	pCi/g	0.3767	Y	351.3	2	1.493	IDENTIFIED	5.68		<input checked="" type="checkbox"/>	UI
Bismuth-212	HE	1.849	0.468	pCi/g	1.363	N	0	7	0	FAIL ABUND	0		<input type="checkbox"/>	
Bismuth-214	✓	1.557	0.09839	pCi/g	0.1362	0.200	608.5	2	1.633	IDENTIFIED	5.056		<input type="checkbox"/>	
Cadmium-109	INT	3.714	0.8548	pCi/g	1.623	Y	86.72	3	0.9637	IDENTIFIED	22.5		<input checked="" type="checkbox"/>	UI
Cadmium-115	HE	26.84	22.14	pCi/g	0	N	0	7	0	SHORT_HLIF	0		<input type="checkbox"/>	
Cerium-143	—	11550	1528	pCi/g	0	N	0	7	0	SHORT_HLIF	0		<input type="checkbox"/>	
Cesium-135	INT	0.6788	0.1662	pCi/g	0.2811	N	269.4	1	1.586	IDENTIFIED	24.19		<input type="checkbox"/>	
Gross Gamma	—	10.57	1.522	pCi/g	4.319	N	0						<input type="checkbox"/>	
Iodine-133	HE	47980	81450	pCi/g	0	N	0	7	0	SHORT_HLIF	0		<input type="checkbox"/>	
Lead-212	✓	2.001	0.09589	pCi/g	0.1079	0.100	238.3	2	1.216	IDENTIFIED	3.132		<input type="checkbox"/>	
Lead-214	✓	1.708	0.1214	pCi/g	0.137	0.100	351.3	2	1.493	IDENTIFIED	5.68		<input type="checkbox"/>	
Neptunium-237	INT	1.077	0.2723	pCi/g	0.4854	N	86.72	3	0.9637	IDENTIFIED	22.5		<input type="checkbox"/>	
Niobium-95	HE	0.09669	0.03226	pCi/g	0.08482	N	767.5	1	2.386	IDENTIFIED	33.19		<input type="checkbox"/>	
Niobium-95m	—	1.002	0.107	pCi/g	0.3586	N	0	7	0	NOT_IDENTI	0		<input type="checkbox"/>	
Potassium-40	✓	29.32	1.451	pCi/g	0.5684	1.00	1459	1	2.539	IDENTIFIED	3.237		<input type="checkbox"/>	
Promethium-149	HE	170.5	181.4	pCi/g	0	N	0	7	0	SHORT_HLIF	0		<input type="checkbox"/>	
Radium-224	INT	4.737	0.6289	pCi/g	1.157	Y	241.4	1	1.774	IDENTIFIED	12.97		<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.557	0.09839	pCi/g	0.1362	Y	608.5	2	1.633	IDENTIFIED	5.056		<input type="checkbox"/>	
Radium-228	✓	2.117	0.2066	pCi/g	0.2419	0.500	909.9	3	2.049	IDENTIFIED	7.744		<input type="checkbox"/>	
Technetium-99m	—	3.63E+19	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0		<input type="checkbox"/>	
Thallium-208	✓	0.6796	0.04844	pCi/g	0.05795	0.080	582.3	1	1.606	IDENTIFIED	6.349		<input type="checkbox"/>	
Thorium-228	NR	2.001	0.09589	pCi/g	0.1079	N	238.3	2	1.216	IDENTIFIED	3.132		<input type="checkbox"/>	
Thorium-232	NR	2.117	0.2066	pCi/g	0.2419	N	909.9	3	2.049	IDENTIFIED	7.744		<input type="checkbox"/>	
Tin-126	NR	0.3609	0.08306	pCi/g	0.1587	N	86.72	3	0.9637	IDENTIFIED	22.5		<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
247969007	20-FEB-10 12:00	11-MAR-10 14:15	19.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	✓	2.286	0.2252	pCi/g	0.2374	N	911.5	3	1.714	IDENTIFIED	7.615		<input type="checkbox"/>	
Annihilation Rad.	—	0.1827	0.03541	pCi/g	0.04568	N	510.8	1	1.422	IDENTIFIED	18.63		<input type="checkbox"/>	
Bismuth-211	INT	5.33	0.4243	pCi/g	0.2947	Y	352	2	1.078	IDENTIFIED	4.49		<input checked="" type="checkbox"/>	UI
Bismuth-212	✓	2.596	0.4103	pCi/g	0.8242	N	727.6	1	1.552	IDENTIFIED	14.36		<input type="checkbox"/>	
Bismuth-214	✓	1.585	0.1263	pCi/g	0.1184	0.200	609.6	2	1.351	IDENTIFIED	5.603		<input type="checkbox"/>	

Thorium-228	NR	2.337	0.1399	pCi/g 0.1127	N	238.5	2	0.9944	IDENTIFIED	3.196	<input type="checkbox"/>	
Thorium-232	NR	2.128	0.2524	pCi/g 0.232	N	910.1	3	1.404	IDENTIFIED	10.32	<input type="checkbox"/>	
Thorium-234		2.276	0.6352	pCi/g 1.174	2.00	63.04	2	0.9188	IDENTIFIED	26.23	<input type="checkbox"/>	
Tin-126	NR	0.5994	0.0555	pCi/g 0.09506	N	87.3	3	1.245	IDENTIFIED	7.87	<input type="checkbox"/>	
Total Uranium	—	6.7231	1.89E-06 ug/g	1.7491	N		0				<input type="checkbox"/>	
Uranium-238	HE	2.276	0.6352	pCi/g 1.174	N	63.04	2	0.9188	IDENTIFIED	26.23	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247970001	23-FEB-10 12:00	11-MAR-10 14:18	16.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	2.153	0.1984	pCi/g 0.1723	N	910.4	3	1.8	IDENTIFIED	6.241	<input type="checkbox"/>	
Annihilation Rad.	—	0.1604	0.0265	pCi/g 0.04015	N	510.4	1	2.278	IDENTIFIED	16.19	<input type="checkbox"/>	
Bismuth-211	INT	4.405	0.235	pCi/g 0.2815	Y	351.8	2	1.382	IDENTIFIED	4.262	<input checked="" type="checkbox"/>	
Bismuth-212	—	2.338	0.3754	pCi/g 1.014	N	0	5	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.19	0.09562	pCi/g 0.1075	0.200	608.9	2	1.599	IDENTIFIED	6.663	<input type="checkbox"/>	
Cadmium-109	INT	3.505	0.5302	pCi/g 1.528	Y	87.33	3	1.541	IDENTIFIED	14.41	<input checked="" type="checkbox"/>	
Cerium-143	—	1382	185.6	pCi/g 0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.1019	0.03152	pCi/g 0.0799	0.100	0	5	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Europium-155	HE	0.1648	0.05778	pCi/g 0.1601	N	105.7	1	1.034	IDENTIFIED	34.89	<input type="checkbox"/>	
Gross Gamma	—	10.88	1.287	pCi/g 2.478	N		0				<input type="checkbox"/>	
Lead-212	✓	1.898	0.08578	pCi/g 0.08082	0.100	238.6	2	1.2	IDENTIFIED	2.726	<input type="checkbox"/>	
Lead-214	✓	1.599	0.09603	pCi/g 0.1009	0.100	351.8	2	1.382	IDENTIFIED	4.262	<input type="checkbox"/>	
Mercury-203	INT	0.059	0.02453	pCi/g 0.05506	0.100	278	1	1.499	IDENTIFIED	41.47	<input type="checkbox"/>	UI
Neptunium-237	INT	1.021	0.1879	pCi/g 0.4284	N	87.33	3	1.541	IDENTIFIED	14.41	<input type="checkbox"/>	
Niobium-95	HE	0.07099	0.02104	pCi/g 0.06821	N	0	5	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	✓	38.4	1.655	pCi/g 0.4321	1.00	1460	1	2.283	IDENTIFIED	2.039	<input type="checkbox"/>	
Radium-224	INT	4.737	0.568	pCi/g 0.8651	Y	241.6	1	1.767	IDENTIFIED	11.66	<input checked="" type="checkbox"/>	
Radium-226	✓	1.19	0.09562	pCi/g 0.1075	Y	608.9	2	1.599	IDENTIFIED	6.663	<input type="checkbox"/>	
Radium-228	✓	2.153	0.1984	pCi/g 0.1723	0.500	910.4	3	1.8	IDENTIFIED	6.241	<input type="checkbox"/>	
Strontium-85	LA	0.07248	0.01942	pCi/g 0.06284	Y	0	5	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.6023	0.0406	pCi/g 0.04554	0.080	582.7	1	1.487	IDENTIFIED	5.49	<input type="checkbox"/>	
Thorium-228	NR	1.898	0.08578	pCi/g 0.08082	N	238.6	2	1.2	IDENTIFIED	2.726	<input type="checkbox"/>	
Thorium-232	NR	2.153	0.1984	pCi/g 0.1723	N	910.4	3	1.8	IDENTIFIED	6.241	<input type="checkbox"/>	
Tin-126	NR	0.3421	0.05175	pCi/g 0.1484	N	87.33	3	1.541	IDENTIFIED	14.41	<input type="checkbox"/>	
Total Uranium	—	4.515	2.24E-06 ug/g	3.9778	N		0				<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247970002	23-FEB-10 12:00	11-MAR-10 14:18	16.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 ✓	2.004	0.283	pCi/g	0.3546	N	910.9	3	1.155 IDENTIFIED 12.86	<input type="checkbox"/>	
Annihilation Rad. HE	0.09694	0.04926	pCi/g	0.06111	N	511.1	1	1.531 IDENTIFIED 50.59	<input type="checkbox"/>	
Bismuth-211 INT	4.563	0.3488	pCi/g	0.3067	Y	351.7	2	1.176 IDENTIFIED 6.172	<input checked="" type="checkbox"/>	UI
Bismuth-214 ✓	1.189	0.1316	pCi/g	0.1392	0.200	609	2	1.073 IDENTIFIED 9.344	<input type="checkbox"/>	
Cadmium-109 INT	3.719	0.4304	pCi/g	0.8558	Y	87.23	3	0.941 IDENTIFIED 10.59	<input checked="" type="checkbox"/>	UI
Cerium-143 —	629.2	157.4	pCi/g	0	N	0	4	0 SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 LA	0.184	0.04279	pCi/g	0.1388	0.100	0	4	0 FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.

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

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
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247970004	23-FEB-10 12:00	11-MAR-10 18:12	16.3	SAMPLE	LOAD	1	LANL	LANL01004JGEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.533	0.1787	pCi/g	0.2702	N	910.2 3	1.4	IDENTIFIED	9.773	<input type="checkbox"/>	
Annihilation Rad.	—	0.1542	0.03664	pCi/g	0.04773	N	510.3 1	2.182	IDENTIFIED	23.54	<input type="checkbox"/>	
Bismuth-211	INT	2.982	0.2604	pCi/g	0.3253	Y	351.5 2	1.39	IDENTIFIED	7.785	<input checked="" type="checkbox"/>	✓
Bismuth-212	—	2.416	0.495	pCi/g	1.19	N	0 6 0		FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	0.852	0.08833	pCi/g	0.1111	0.200	608.4 2	1.184	IDENTIFIED	9.47	<input type="checkbox"/>	
Cadmium-109	INT	3.004	0.3923	pCi/g	0.9763	Y	86.76 3	1.326	IDENTIFIED	12.49	<input checked="" type="checkbox"/>	✓
Cerium-143	—	1891	312	pCi/g	0	N	0 6 0		SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-135	HE	0.3079	0.09188	pCi/g	0.3028	N	0 6 0		NOT_IDENTI	0	<input type="checkbox"/>	
Gadolinium-153	HE	0.1378	0.03879	pCi/g	0.1273	N	0 6 0		NOT_IDENTI	0	<input type="checkbox"/>	
Gross Gamma	—	8.408	1.163	pCi/g	3.829	N	0				<input type="checkbox"/>	
Iodine-133	HE	2769	8391	pCi/g	0	N	0 6 0		SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.4	0.0924	pCi/g	0.09936	0.100	238.2 2	1.238	IDENTIFIED	3.777	<input type="checkbox"/>	
Lead-214	✓	1.082	0.0991	pCi/g	0.1183	0.100	351.5 2	1.39	IDENTIFIED	7.785	<input type="checkbox"/>	
Neptunium-237	INT	0.8746	0.1465	pCi/g	0.2831	N	86.76 3	1.326	IDENTIFIED	12.49	<input type="checkbox"/>	
Niobium-95	HE	0.1097	0.02742	pCi/g	0.0726	N	767.3 1	0.8079	IDENTIFIED	24.66	<input type="checkbox"/>	
Niobium-95m	—	1.117	0.1042	pCi/g	0.3294	N	0 6 0		NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	✓	29.57	1.277	pCi/g	0.4642	1.00	1459 1	2.052	IDENTIFIED	2.996	<input type="checkbox"/>	
Radium-224	INT	3.218	0.5805	pCi/g	1.065	Y	241.2 1	1.7	IDENTIFIED	17.36	<input checked="" type="checkbox"/>	✓
Radium-226	✓	0.852	0.08833	pCi/g	0.1111	Y	608.4 2	1.184	IDENTIFIED	9.47	<input type="checkbox"/>	
Radium-228	✓	1.533	0.1787	pCi/g	0.2702	0.500	910.2 3	1.4	IDENTIFIED	9.773	<input type="checkbox"/>	
Thallium-208	✓	0.4188	0.04795	pCi/g	0.06203	0.080	582.6 1	1.452	IDENTIFIED	10.84	<input type="checkbox"/>	
Thorium-228	NR	1.4	0.0924	pCi/g	0.09936	N	238.2 2	1.238	IDENTIFIED	3.777	<input type="checkbox"/>	
Thorium-232	NR	1.533	0.1787	pCi/g	0.2702	N	910.2 3	1.4	IDENTIFIED	9.773	<input type="checkbox"/>	
Tin-126	NR	0.2931	0.03828	pCi/g	0.09515	N	86.76 3	1.326	IDENTIFIED	12.49	<input type="checkbox"/>	
Total Uranium	✓	3.03	1.43E-06	ug/g	1.6009	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
247970005	23-FEB-10 12:00	11-MAR-10 19:25	16.3	SAMPLE	LOAD	1	LANL	LANL01004JGEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	2.033	0.2017	pCi/g 0.2068	N	911.7 3	1.445	IDENTIFIED	8.165	<input type="checkbox"/>	
Annihilation Rad.	HE	0.09926	0.03323	pCi/g 0.04895	N	511.1 1	1.253	IDENTIFIED	33.36	<input type="checkbox"/>	
Bismuth-211	INT	3.383	0.2371	pCi/g 0.32	Y	352 2	1.199	IDENTIFIED	6.142	<input checked="" type="checkbox"/>	✓
Bismuth-212	—	2.316	0.5049	pCi/g 1.251	N	0 5 0		FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.195	0.09606	pCi/g 0.1164	0.200	609.7 2	1.386	IDENTIFIED	7.133	<input type="checkbox"/>	
Cadmium-109	INT	3.424	0.6306	pCi/g 1.577	Y	87.28 3	1.112	IDENTIFIED	17.41	<input checked="" type="checkbox"/>	✓
Cerium-143	—	767.2	164.5	pCi/g 0	N	0 5 0		SHORT_HLIF	0	<input type="checkbox"/>	
Gross Gamma	—	10.35	1.457	pCi/g 2.968	N	0				<input type="checkbox"/>	
Iodine-133	HE	9475	8813	pCi/g 0	N	0 5 0		SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.881	0.09797	pCi/g 0.09099	0.100	238.7 2	1.119	IDENTIFIED	3.282	<input type="checkbox"/>	
Lead-214	✓	1.228	0.09247	pCi/g 0.1328	0.100	352 2	1.199	IDENTIFIED	6.142	<input type="checkbox"/>	
Mercury-203	INT	0.105	0.02993	pCi/g 0.06341	0.100	278 1	2.669	IDENTIFIED	28.29	<input checked="" type="checkbox"/>	✓
Neptunium-237	INT	0.997	0.2113	pCi/g 0.4609	N	87.28 3	1.112	IDENTIFIED	17.41	<input type="checkbox"/>	
Potassium-40	✓	36.43	1.642	pCi/g 0.5766	1.00	1462 1	1.97	IDENTIFIED	2.77	<input type="checkbox"/>	
Radium-224	INT	5.798	0.7621	pCi/g 0.9754	Y	241.9 1	2.053	IDENTIFIED	12.71	<input checked="" type="checkbox"/>	✓

Radium-226	✓	1.195	0.09606	pCi/g	0.1164	Y	609.7	2	1.386	IDENTIFIED	7.133	<input type="checkbox"/>	
Radium-228	✓	2.033	0.2017	pCi/g	0.2068	0.500	911.7	3	1.445	IDENTIFIED	8.165	<input type="checkbox"/>	
Sodium-24	HE	4.91E+05	1.46E+06	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Technetium-99m	✓	2.48E+17	0	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.6247	0.04537	pCi/g	0.06132	0.080	583.4	1	1.368	IDENTIFIED	6.551	<input type="checkbox"/>	
Thorium-228	NR	1.881	0.09797	pCi/g	0.09099	N	238.7	2	1.119	IDENTIFIED	3.282	<input type="checkbox"/>	
Thorium-232	NR	2.033	0.2017	pCi/g	0.2068	N	911.7	3	1.445	IDENTIFIED	8.165	<input type="checkbox"/>	
Tin-126	NR	0.3341	0.06153	pCi/g	0.155	N	87.28	3	1.112	IDENTIFIED	17.41	<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
247970006	23-FEB-10 12:00	11-MAR-10 19:25	16.3	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.827	0.2161	pCi/g 0.2854	N	911.4	3	1.732	IDENTIFIED	10.18	<input type="checkbox"/>	
Annihilation Rad.	—	0.1792	0.03989	pCi/g 0.0521	N	511	1	1.793	IDENTIFIED	21.83	<input type="checkbox"/>	
Bismuth-211	INT	3.688	0.3034	pCi/g 0.3692	Y	351.9	2	1.226	IDENTIFIED	6.759	<input checked="" type="checkbox"/>	VI
Bismuth-212	HE	2.082	0.4709	pCi/g 1.403	N	0	4	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.1	0.1101	pCi/g 0.1295	0.200	609.5	2	1.758	IDENTIFIED	8.696	<input type="checkbox"/>	
Cadmium-109	INT	3.079	0.5945	pCi/g 1.514	Y	87.15	3	1.152	IDENTIFIED	18.5	<input checked="" type="checkbox"/>	UI
Cerium-143	—	870.1	202.1	pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>	
Gross Gamma	—	9.318	1.414	pCi/g 3.349	N	0					<input type="checkbox"/>	
Iodine-135	—	7.25E+16		pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.836	0.1161	pCi/g 0.113	0.100	238.7	2	1.142	IDENTIFIED	3.696	<input type="checkbox"/>	
Lead-214	✓	1.339	0.1161	pCi/g 0.148	0.100	351.9	2	1.226	IDENTIFIED	6.759	<input type="checkbox"/>	
Neptunium-237	INT	0.8965	0.197	pCi/g 0.4426	N	87.15	3	1.152	IDENTIFIED	18.5	<input type="checkbox"/>	
Potassium-40	✓	33.04	1.875	pCi/g 0.5995	1.00	1461	1	2.16	IDENTIFIED	3.159	<input type="checkbox"/>	
Radium-224	INT	3.677	0.5627	pCi/g 1.211	Y	241.8	1	1.38	IDENTIFIED	14.6	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.1	0.1101	pCi/g 0.1295	Y	609.5	2	1.758	IDENTIFIED	8.696	<input type="checkbox"/>	
Radium-228	✓	1.827	0.2161	pCi/g 0.2854	0.500	911.4	3	1.732	IDENTIFIED	10.18	<input type="checkbox"/>	
Sodium-24	HE	1.36E+05	1.64E+06	pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.5407	0.05323	pCi/g 0.06211	0.080	583.3	1	1.42	IDENTIFIED	8.723	<input type="checkbox"/>	
Thorium-228	NR	1.836	0.1161	pCi/g 0.113	N	238.7	2	1.142	IDENTIFIED	3.696	<input type="checkbox"/>	
Thorium-232	NR	1.827	0.2161	pCi/g 0.2854	N	911.4	3	1.732	IDENTIFIED	10.18	<input type="checkbox"/>	
Tin-126	NR	0.3004	0.05801	pCi/g 0.1607	N	87.15	3	1.152	IDENTIFIED	18.5	<input type="checkbox"/>	
Total Uranium	—	7.57	3.22E-06	ug/g 4.1235	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
247970007	23-FEB-10 12:00	11-MAR-10 19:26	16.3	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment	
Actinium-228	✓	2.022	0.2022	pCi/g	0.2111	N	911.9 3	1.532	IDENTIFIED	7.968	<input type="checkbox"/>	
Annihilation Rad.	HE	0.1074	0.03311	pCi/g	0.04703	N	511.1 1	1.728	IDENTIFIED	30.68	<input type="checkbox"/>	
Bismuth-211	INT	3.676	0.2259	pCi/g	0.3184	Y	351.9 2	1.439	IDENTIFIED	5.268	<input checked="" type="checkbox"/>	✓
Bismuth-212	✓	1.849	0.3838	pCi/g	0.7936	N	727.8 1	2.027	IDENTIFIED	19.97	<input type="checkbox"/>	
Bismuth-214	✓	1.075	0.09589	pCi/g	0.1045	0.200	609.7 2	1.99	IDENTIFIED	7.978	<input type="checkbox"/>	
Cadmium-109	INT	2.532	0.4244	pCi/g	1.395	Y	87.34 3	1.146	IDENTIFIED	16.19	<input checked="" type="checkbox"/>	✓
Cerium-143	—	1837	247.1	pCi/g	0	N	0 7 0	SHORT HLIF	0	<input type="checkbox"/>		

Cesium-135	HE	0.2775	0.08383	pCi/g 0.2755	N	0	7	0	NOT_IDENTI	0	<input type="checkbox"/>	
Gross Gamma	—	9.789	1.305	pCi/g 3.78	N		0				<input type="checkbox"/>	
Iodine-133	HE	7138	7987	pCi/g 0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135	—	1.79E+16		pCi/g 0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.734	0.08406	pCi/g 0.08836	0.100	238.6	2	1.441	IDENTIFIED	3.164	<input type="checkbox"/>	
Lead-214	✓	1.334	0.08988	pCi/g 0.1067	0.100	351.9	2	1.439	IDENTIFIED	5.268	<input type="checkbox"/>	
Neptunium-237	INT	0.7371	0.1457	pCi/g 0.4037	N	87.34	3	1.146	IDENTIFIED	16.19	<input type="checkbox"/>	
Niobium-95m	—	0.6874	0.07957	pCi/g 0.2736	N	0	7	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	✓	33.58	1.492	pCi/g 0.5441	1.00	1462	1	1.983	IDENTIFIED	2.562	<input type="checkbox"/>	
Radium-224	INT	4.111	0.6345	pCi/g 0.9464	Y	241.4	1	2.022	IDENTIFIED	15.17	<input checked="" type="checkbox"/>	US
Radium-226	✓	1.075	0.09589	pCi/g 0.1045	Y	609.7	2	1.99	IDENTIFIED	7.978	<input type="checkbox"/>	
Radium-228	✓	2.022	0.2022	pCi/g 0.2111	0.500	911.9	3	1.532	IDENTIFIED	7.968	<input type="checkbox"/>	
Sodium-24	HE	7.00E+05	1.21E+06	pCi/g 0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>	
Strontium-85	LA	0.07296	0.02065	pCi/g 0.06842	Y	0	7	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.5855	0.04499	pCi/g 0.04983	0.080	583.2	1	1.676	IDENTIFIED	6.884	<input type="checkbox"/>	
Thorium-228	NK	1.734	0.08406	pCi/g 0.08836	N	238.6	2	1.441	IDENTIFIED	3.164	<input type="checkbox"/>	
Thorium-232	NK	2.022	0.2022	pCi/g 0.2111	N	911.9	3	1.532	IDENTIFIED	7.968	<input type="checkbox"/>	
Thorium-234	✓	2.524	0.7416	pCi/g 1.897	2.00	63.09	2	2.158	IDENTIFIED	28.03	<input type="checkbox"/>	
Tin-126	NK	0.247	0.04141	pCi/g 0.1419	N	87.34	3	1.146	IDENTIFIED	16.19	<input type="checkbox"/>	
Total Uranium	—	7.553	2.21E-06	ug/g 2.8251	N		0				<input type="checkbox"/>	
Uranium-238	HE	2.524	0.7416	pCi/g 1.897	N	63.09	2	2.158	IDENTIFIED	28.03	<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
1202054948		11-MAR-10 19:26	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Cobalt-56 HE	0.04132	0.0091	pCi/g	0.03776	N	0	3	0	FAIL_ABUND	0	<input type="checkbox"/>
Iodine-133 HE	4.748	18.3	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>
Sodium-24 HE	68.33	496.9	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202054949	23-FEB-10 12:00	11-MAR-10 19:27	16.3	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	2.217	0.2252	pCi/g 0.2789	N	910.2	3	1.812	IDENTIFIED	8.238	<input type="checkbox"/>
Annihilation Rad.	—	0.2026	0.03251	pCi/g 0.05369	N	510.2	1	2.125	IDENTIFIED	15.78	<input type="checkbox"/>
Bismuth-211	INT	3.755	0.2725	pCi/g 0.4078	Y	351.4	2	1.278	IDENTIFIED	6.484	<input checked="" type="checkbox"/>
Bismuth-212	HE	2.344	0.5771	pCi/g 1.311	N	0	4	0	FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214	✓	1.247	0.1139	pCi/g 0.1391	0.200	608.6	2	1.645	IDENTIFIED	8.31	<input type="checkbox"/>
Cadmium-109	INT	3.953	0.6649	pCi/g 1.453	Y	87.05	3	1.526	IDENTIFIED	16.11	<input checked="" type="checkbox"/>
Cerium-143	—	2049	323.1	pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-135	HE	0.3265	0.1512	pCi/g 0.2924	N	269.4	1	1.074	IDENTIFIED	46.14	<input type="checkbox"/>
Gross Gamma	—	10.45	1.5	pCi/g 3.697	N		0				<input type="checkbox"/>
Iodine-133	HE	587.6	9577	pCi/g 0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.841	0.09145	pCi/g 0.1076	0.100	238.3	2	1.161	IDENTIFIED	3.397	<input type="checkbox"/>
Lead-214	✓	1.363	0.1058	pCi/g 0.1455	0.100	351.4	2	1.278	IDENTIFIED	6.484	<input type="checkbox"/>
Neptunium-237	INT	1.151	0.2281	pCi/g 0.4322	N	87.05	3	1.526	IDENTIFIED	16.11	<input type="checkbox"/>
Niobium-95m	—	0.926	0.1012	pCi/g 0.3408	N	0	4	0	NOT_IDENTI	0	<input type="checkbox"/>

Potassium-40	✓	35.44	1.69	pCi/g	0.6285	1.00	1459	1	2.506	IDENTIFIED	2.953	<input type="checkbox"/>	
Radium-224	✓	4.902	0.7189	pCi/g	1.153	Y	241.2	1	1.804	IDENTIFIED	14.39	<input checked="" type="checkbox"/>	
Radium-226	✓	1.247	0.1139	pCi/g	0.1391	Y	608.6	2	1.645	IDENTIFIED	8.31	<input type="checkbox"/>	
Radium-228	✓	2.217	0.2252	pCi/g	0.2789	0.500	910.2	3	1.812	IDENTIFIED	8.238	<input type="checkbox"/>	
Thallium-208	✓	0.6016	0.05294	pCi/g	0.06595	0.080	582.4	1	1.514	IDENTIFIED	8.181	<input type="checkbox"/>	
Thorium-228	✓	1.841	0.09145	pCi/g	0.1076	N	238.3	2	1.161	IDENTIFIED	3.397	<input type="checkbox"/>	
Thorium-232	✓	2.217	0.2252	pCi/g	0.2789	N	910.2	3	1.812	IDENTIFIED	8.238	<input type="checkbox"/>	
Tin-126	✓	0.3857	0.06487	pCi/g	0.1427	N	87.05	3	1.526	IDENTIFIED	16.11	<input type="checkbox"/>	
Total Uranium	✓	6.913	2.86E-06	ug/g	5.0735	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	
1202054950		11-MAR-10 19:35	0	LCS	LOAD	1		GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	1.972	0.448	pCi/g	0.9419	N	0	6	0	FAIL_ABUND 0	<input type="checkbox"/>	
Americium-241 ✓	13.38	0.5938	pCi/g	0.1857	0.200	59.56	1	0.6318	IDENTIFIED 1.303	<input type="checkbox"/>	
Barium-137m	5.726	0.3523	pCi/g	0.1359	N	661.4	2	1.334	IDENTIFIED 2.718	<input type="checkbox"/>	
Bismuth-211	2.122	0.3455	pCi/g	0.6363	Y	351.7	2	1.068	IDENTIFIED 15.64	<input type="checkbox"/>	
Bismuth-214	0.9401	0.1384	pCi/g	0.408	0.200	0	6	0	FAIL_ABUND 0	<input type="checkbox"/>	
Cadmium-109	31.29	1.759	pCi/g	1.242	Y	87.96	3	0.646	IDENTIFIED 3.081	<input type="checkbox"/>	
Cesium-137 ✓	6.049	0.3726	pCi/g	0.1436	0.100	661.4	2	1.334	IDENTIFIED 2.718	<input type="checkbox"/>	
Cobalt-57	0.249	0.02838	pCi/g	0.05187	N	121.9	1	0.7312	IDENTIFIED 9.845	<input type="checkbox"/>	
Cobalt-60 ✓	6.615	0.3404	pCi/g	0.1002	0.100	1332	1	1.916	IDENTIFIED 3.165	<input type="checkbox"/>	
Gross Gamma	27.76	2.589	pCi/g	3.647	N	0				<input type="checkbox"/>	
Lead-212	1.118	0.08816	pCi/g	0.1553	0.100	238.5	2	0.8322	IDENTIFIED 6.101	<input type="checkbox"/>	
Lead-214	0.7703	0.1272	pCi/g	0.2316	0.100	351.7	2	1.068	IDENTIFIED 15.64	<input type="checkbox"/>	
Neptunium-237	9.198	1.094	pCi/g	0.4054	N	87.96	3	0.646	IDENTIFIED 3.081	<input type="checkbox"/>	
Radium-224	2.547	0.7198	pCi/g	1.669	Y	241.5	1	1.414	IDENTIFIED 27.91	<input type="checkbox"/>	
Radium-226	0.9401	0.1384	pCi/g	0.408	Y	0	6	0	FAIL_ABUND 0	<input type="checkbox"/>	
Radium-228	1.972	0.448	pCi/g	0.9419	0.500	0	6	0	FAIL_ABUND 0	<input type="checkbox"/>	
Technetium-99m HE	1.59E+10	1.03E+10	pCi/g	0	N	0	6	0	SHORT_HLIF 0	<input type="checkbox"/>	
Thallium-208	0.3372	0.0719	pCi/g	0.1148	0.080	583	1	1.017	IDENTIFIED 20.62	<input type="checkbox"/>	
Thorium-228	1.118	0.08816	pCi/g	0.1553	N	238.5	2	0.8322	IDENTIFIED 6.101	<input type="checkbox"/>	
Thorium-232	1.972	0.448	pCi/g	0.9419	N	0	6	0	FAIL_ABUND 0	<input type="checkbox"/>	
Tin-126	3.083	0.1733	pCi/g	0.1222	N	87.96	3	0.646	IDENTIFIED 3.081	<input type="checkbox"/>	
Uranium-235	0.4451	0.159	pCi/g	0.3992	0.500	143.8	1	1.602	IDENTIFIED 34.61	<input type="checkbox"/>	

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

*** = 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
958216	247970007	SAMPLE	11-MAR-10	Thallium-208	0.5855	0.04499	pCi/g	0.02493	0.080
				Thorium-234	2.524	0.7416	pCi/g	0.9492	2.00
958216	1202054948	MB	11-MAR-10	Sodium-24	68.33	496.9	pCi/g	0	N
958216	1202054949	DUP	11-MAR-10	Bismuth-211	3.755	0.2725	pCi/g	0.204	Y
				Bismuth-214	1.247	0.1139	pCi/g	0.0696	0.200
				Cadmium-109	3.953	0.6649	pCi/g	0.727	Y
				Cerium-143	2049	323.1	pCi/g	0	N
				Cesium-134	0.09409	0.02984	pCi/g	0.0509	0.100
				Gross Gamma	10.45	1.5	pCi/g	1.798	N
				Iodine-133	587.6	9577	pCi/g	0	N
				Lead-212	1.841	0.09145	pCi/g	0.05383	0.100
				Lead-214	1.363	0.1058	pCi/g	0.07281	0.100
				Potassium-40	35.44	1.69	pCi/g	0.3145	1.00
				Radium-224	4.902	0.7189	pCi/g	0.577	Y
				Radium-226	1.247	0.1139	pCi/g	0.0696	Y
				Radium-228	2.217	0.2252	pCi/g	0.1395	0.500
				Thallium-208	0.6018	0.05294	pCi/g	0.03299	0.080
				Thorium-234	2.302	0.9619	pCi/g	1.705	2.00
958216	1202054950	LCS	11-MAR-10	Americium-241	13.38	0.5938	pCi/g	0.0929	0.200
				Barium-137m	5.726	0.3523	pCi/g	0.06799	N
				Bismuth-211	2.122	0.3455	pCi/g	0.3183	Y
				Bismuth-214	0.9401	0.1384	pCi/g	0.2041	0.200
				Cadmium-109	31.29	1.759	pCi/g	0.6213	Y
				Cerium-143	23.36	7.911	pCi/g	13.05	N
				Cesium-137	6.049	0.3726	pCi/g	0.07182	0.100
				Cobalt-60	6.615	0.3404	pCi/g	0.05015	0.100
				Gross Gamma	27.76	2.589	pCi/g	1.762	N
				Lead-212	1.118	0.08816	pCi/g	0.07769	0.100
				Lead-214	0.7703	0.1272	pCi/g	0.1159	0.100
				Neptunium-237	9.198	1.094	pCi/g	0.2028	N
				Potassium-40	1.284	0.3368	pCi/g	0.7266	1.00
				Radium-224	2.547	0.7198	pCi/g	0.8349	Y
				Radium-226	0.9401	0.1384	pCi/g	0.2041	Y
				Radium-228	1.972	0.448	pCi/g	0.4712	0.500
				Technetium-99m	1.59E+10	1.03E+10	pCi/g	0	N
				Thallium-208	0.3372	0.0719	pCi/g	0.05742	0.080
				Uranium-235	0.4451	0.159	pCi/g	0.1997	0.500

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403/16/10

VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 03:11:51.09

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969001.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:10:31
Sample ID          : G247969001 Sample quantity : 1.24410E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:03.93 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 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	1184	1195	1.13	149.07	143	16	8.22E-02	5.7	8.34E-01
2	3	77.26*	1652	995	1.00	153.64	143	16	1.15E-01	4.1	
3	1	87.35	583	1081	1.04	173.81	165	13	4.05E-02	9.6	6.17E+00
4	3	89.95	324	627	1.00	179.00	177	12	2.25E-02	12.1	4.10E+00
5	3	92.99*	558	1229	1.29	185.09	177	12	3.88E-02	12.3	
6	0	105.47	155	858	1.28	210.03	206	8	1.08E-02	33.6	
7	0	129.13	137	1269	1.09	257.35	253	10	9.53E-03	49.2	
8	0	185.88*	636	1235	1.39	370.80	364	13	4.42E-02	12.6	
9	0	209.57	534	1038	1.26	418.15	412	13	3.71E-02	13.2	
10	4	238.65*	3985	666	1.18	476.31	471	18	2.77E-01	2.0	2.20E+00
11	4	241.63*	929	826	1.67	482.26	471	18	6.45E-02	8.3	
12	0	270.25	374	834	1.47	539.49	532	13	2.60E-02	16.7	
13	0	277.95	157	628	1.37	554.88	550	11	1.09E-02	32.1	
14	2	295.19*	1498	391	1.39	589.34	583	22	1.04E-01	3.5	2.67E+00
15	2	300.11*	319	459	1.71	599.19	583	22	2.22E-02	14.5	
16	0	327.84	236	642	1.42	654.62	649	13	1.64E-02	23.1	
17	0	338.27*	867	614	1.21	675.47	670	12	6.02E-02	6.8	
18	0	351.85*	2401	612	1.40	702.63	695	14	1.67E-01	3.1	
19	0	409.20	148	342	1.19	817.30	813	9	1.03E-02	23.9	
20	0	462.90	314	390	1.61	924.66	919	13	2.18E-02	14.1	
21	0	510.54*	473	476	1.88	1019.92	1011	19	3.28E-02	13.8	
22	0	582.93*	1323	379	1.47	1164.66	1158	12	9.19E-02	4.1	
23	0	608.95*	1864	295	1.70	1216.68	1210	14	1.29E-01	3.1	
24	0	664.54	71	356	1.03	1327.83	1319	15	4.94E-03	59.0	
25	0	726.89	346	260	1.62	1452.50	1446	12	2.40E-02	10.8	
26	0	768.13	283	339	1.93	1534.96	1528	18	1.96E-02	16.3	
27	0	785.88*	133	229	1.77	1570.45	1564	14	9.25E-03	26.9	
28	0	794.27	180	198	1.81	1587.23	1579	14	1.25E-02	18.2	
29	0	835.25	80	131	1.61	1669.18	1665	9	5.52E-03	28.2	
30	0	859.90	199	224	1.86	1718.45	1712	13	1.38E-02	17.1	
31	0	910.48*	1137	209	1.87	1819.60	1811	16	7.89E-02	4.2	
32	0	934.59	115	247	3.95	1867.81	1859	17	7.99E-03	33.0	
33	2	964.21	238	215	2.55	1927.03	1920	29	1.65E-02	14.3	1.84E+00
34	2	968.40*	619	182	1.80	1935.41	1920	29	4.30E-02	6.0	
35	0	1119.70*	395	270	1.88	2237.97	2229	18	2.74E-02	11.3	
36	0	1238.02*	180	314	2.49	2474.57	2464	21	1.25E-02	26.5	
37	0	1377.05	67	135	1.71	2752.61	2744	13	4.62E-03	35.9	
38	0	1459.68*	4907	143	2.41	2917.85	2905	23	3.41E-01	1.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1509.39	83	72	4.85	3017.25	3007	18	5.79E-03	26.3	
40	0	1618.94	75	42	1.57	3236.34	3228	15	5.18E-03	22.7	
41	0	1728.75	84	72	2.81	3455.95	3448	24	5.82E-03	28.0	
42	0	1763.19	369	79	2.60	3524.82	3515	24	2.56E-02	8.2	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 03:11:53

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:10:31
Sample ID        : G247969001 Sample quantity : 124.41 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.93 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	*	3.667E+01	3.013E+00	2.918E-01	2.214E-02	125.663
MN-54	+	834.85	*	4.185E-02	2.401E-02	4.124E-02	4.225E-03	1.015
CD-109	+	88.03	*	3.791E+00	8.097E-01	8.544E-01	7.899E-02	4.436
SN-126		64.28		2.060E-01	4.257E-01	7.021E-01	1.038E-01	0.293
	+	86.94		1.533E+00	7.010E-01	4.023E-01	1.669E-01	3.809
	+	87.57	*	3.686E-01	7.875E-02	9.591E-02	8.837E-03	3.844
EU-155	+	86.55		4.476E-01	9.577E-02	1.182E-01	1.089E-02	3.787
	+	105.31	*	1.449E-01	9.804E-02	1.179E-01	8.422E-03	1.229
HG-203		70.83		-3.701E-01	1.227E+00	1.804E+00	2.854E-01	-0.205
		72.87		1.292E+00	7.364E-01	1.105E+00	1.695E-01	1.169
	+	279.20	*	6.122E-02	3.947E-02	3.943E-02	2.377E-03	1.553
TL-208	+	277.37		5.741E-01	3.737E-01	3.801E-01	4.078E-02	1.510
	+	583.19	*	5.969E-01	6.771E-02	3.631E-02	2.841E-03	16.441
	+	860.56		8.232E-01	2.956E-01	2.635E-01	2.948E-02	3.124
BI-211		72.87		4.932E+00	2.739E+00	4.220E+00	3.484E-01	1.169
	+	351.06	*	5.143E+00	4.563E-01	2.010E-01	1.291E-02	25.588
BI-212	+	727.33	*	2.343E+00	5.828E-01	5.029E-01	6.247E-02	4.659
	+	785.37		5.819E+00	3.176E+00	3.123E+00	2.952E-01	1.863
		1620.50		2.014E+00	1.999E+00	3.084E+00	2.085E-01	0.653
PB-212	+	74.82		3.521E+00	6.049E-01	4.393E-01	5.632E-02	8.016
	+	77.11		2.773E+00	3.253E-01	2.486E-01	2.107E-02	11.156
	+	238.63	*	2.030E+00	1.664E-01	6.072E-02	4.377E-03	33.431
	+	300.09		2.438E+00	7.339E-01	7.539E-01	6.296E-02	3.234
BI-214	+	609.32	*	1.621E+00	1.773E-01	6.911E-02	6.211E-03	23.455
	+	1120.29		1.711E+00	4.190E-01	2.929E-01	2.821E-02	5.840
	+	1764.49		2.146E+00	3.756E-01	1.689E-01	1.027E-02	12.708
PB-214	+	74.82		6.241E+00	1.013E+00	7.786E-01	8.967E-02	8.016
	+	77.11		4.889E+00	7.011E-01	4.382E-01	5.183E-02	11.156
	+	242.00		2.864E+00	5.287E-01	3.686E-01	2.964E-02	7.768
	+	295.22		2.031E+00	2.269E-01	1.335E-01	1.159E-02	15.215
	+	351.93	*	1.867E+00	1.950E-01	7.309E-02	6.186E-03	25.540
RA-224	+	240.99	*	5.064E+00	8.876E-01	6.500E-01	3.621E-02	7.790
RA-226	+	609.32	*	1.621E+00	1.773E-01	6.911E-02	6.211E-03	23.455
	+	1120.29		1.711E+00	4.190E-01	2.929E-01	2.821E-02	5.840

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	+	1764.49		2.146E+00	3.756E-01	1.689E-01	1.027E-02	12.708
	+	338.32		2.081E+00	9.030E-01	2.404E-01	9.909E-02	8.656
	+	911.20	*	2.390E+00	3.816E-01	1.359E-01	1.841E-02	17.581
RA-228	+	968.97		2.239E+00	6.207E-01	2.359E-01	5.884E-02	9.490
	+	338.32		2.081E+00	9.030E-01	2.404E-01	9.909E-02	8.656
	+	911.20	*	2.390E+00	3.816E-01	1.359E-01	1.841E-02	17.581
TH-228	+	968.97		2.239E+00	6.207E-01	2.359E-01	5.884E-02	9.490
	+	74.82		3.521E+00	5.003E-01	4.393E-01	3.704E-02	8.016
	+	77.11		2.773E+00	3.253E-01	2.486E-01	2.107E-02	11.156
TH-232	+	238.63	*	2.030E+00	1.664E-01	6.072E-02	4.377E-03	33.431
	+	300.09		2.438E+00	1.643E+00	7.539E-01	4.590E-01	3.234
	+	338.32		2.081E+00	3.071E-01	2.404E-01	1.390E-02	8.656
U-235	+	911.20	*	2.390E+00	3.816E-01	1.359E-01	1.841E-02	17.581
	+	968.97		2.239E+00	6.207E-01	2.359E-01	5.884E-02	9.490
	+	89.96		2.100E+00	7.274E-01	1.159E+00	2.864E-01	1.812
	+	93.35		2.160E+00	7.264E-01	5.009E-01	1.152E-01	4.313
		143.76	*	6.878E-02	1.434E-01	2.247E-01	3.504E-02	0.306
		163.33		2.374E-02	2.989E-01	4.881E-01	8.105E-02	0.049
NP-237	+	185.72		2.193E-01	5.644E-02	4.285E-02	2.279E-03	5.117
		205.31		-2.500E-01	3.706E-01	5.201E-01	8.769E-02	-0.481
	+	86.48	*	1.100E+00	3.292E-01	2.907E-01	6.648E-02	3.783
ANH-511		95.86		-9.075E-01	7.675E-01	1.027E+00	2.442E-01	-0.884
	+	511.00	*	1.654E-01	4.685E-02	2.796E-02	1.846E-03	5.916

---- 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	*	1.322E-01	2.134E-01	3.598E-01	2.606E-02	0.367
NA-22		1274.54	*	-1.062E-02	2.822E-02	4.541E-02	3.090E-03	-0.234
NA-24		1368.63	*	-1.577E+00	2.822E-02	Half-Life too short		
SC-46		889.28	*	-8.896E-03	2.602E-02	4.178E-02	4.660E-03	-0.213
V-48	+	1120.55		2.976E-01	7.011E-02	8.609E-02	5.947E-03	3.457
		944.13		-6.447E-01	6.657E-01	9.944E-01	1.052E-01	-0.648
		983.53	*	2.493E-02	5.120E-02	8.493E-02	8.400E-03	0.294
CR-51		1312.11		2.454E-02	5.742E-02	9.633E-02	7.017E-03	0.255
		320.08	*	-3.750E-02	2.560E-01	4.101E-01	2.636E-02	-0.091
		846.77	*	-1.730E-02	2.490E-02	3.936E-02	4.109E-03	-0.440
CO-56		1037.84		-1.820E-02	2.033E-01	3.390E-01	3.137E-02	-0.054
	+	1238.28		2.231E-01	1.190E-01	1.118E-01	7.450E-03	1.996
		1771.35		-8.258E-02	1.531E-01	1.943E-01	1.174E-02	-0.425
CO-57		122.06	*	5.331E-03	1.810E-02	2.928E-02	1.734E-03	0.182
		136.47		1.321E-02	1.480E-01	2.362E-01	1.543E-02	0.056
CO-58		810.76	*	-3.776E-02	2.588E-02	3.925E-02	3.875E-03	-0.962
FE-59		1099.45	*	-2.893E-02	6.177E-02	1.005E-01	8.270E-03	-0.288
		1291.59		6.946E-02	8.044E-02	1.379E-01	1.159E-02	0.504
CO-60		1173.23		6.324E-04	2.844E-02	4.713E-02	2.604E-03	0.013
		1332.49	*	-3.373E-04	2.369E-02	3.870E-02	2.924E-03	-0.009
ZN-65		1115.54	*	1.369E-01	7.233E-02	1.135E-01	7.995E-03	1.206

---- 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			1.088E-02	9.573E-02	1.542E-01	1.414E-02	0.071
	136.00			2.336E-03	2.855E-02	4.558E-02	2.597E-03	0.051
	264.66	*		4.217E-02	3.229E-02	4.876E-02	2.789E-03	0.865
	279.54			8.674E-02	7.897E-02	1.177E-01	7.284E-03	0.737
	400.66			1.201E-01	1.622E-01	2.774E-01	2.518E-02	0.433
SR-85	514.00	*		9.515E-02	2.708E-02	4.441E-02	2.942E-03	2.142
Y-88	898.04			-2.389E-02	2.798E-02	4.358E-02	4.939E-03	-0.548
	1836.06	*		-3.668E-03	2.044E-02	3.286E-02	1.871E-03	-0.112
Y-91	1204.77	*		1.935E+00	1.465E+01	2.432E+01	1.438E+00	0.080
NB-94	702.65	*		6.816E-03	2.173E-02	3.669E-02	3.010E-03	0.186
	871.09			-1.695E-03	2.127E-02	3.468E-02	3.761E-03	-0.049
NB-95	765.81	*		9.106E-02	3.486E-02	5.510E-02	5.040E-03	1.653
NB-95M	235.69	*		2.104E-01	9.888E-02	1.517E-01	1.117E-02	1.387
ZR-95	724.19			2.706E-01	7.818E-02	1.257E-01	1.163E-02	2.154
	756.73	*		3.740E-03	4.910E-02	8.167E-02	8.065E-03	0.046
MO-99	140.51			-1.651E+01	3.812E+01	5.765E+01	1.315E+01	-0.286
	181.07			-1.335E+01	3.047E+01	4.432E+01	7.762E+00	-0.301
	366.42			2.567E+01	1.389E+02	2.355E+02	1.360E+01	0.109
	739.50	*		2.829E-01	1.906E+01	2.936E+01	4.647E+00	0.010
	777.92			-1.041E+02	6.888E+01	8.201E+01	7.656E+00	-1.270
TC-99M	140.51	*		-1.406E+14	6.888E+01	Half-Life	too short	
RU-103	497.08	*		-1.862E-02	2.576E-02	4.090E-02	5.223E-03	-0.455
	610.33	+		1.776E+01	2.997E+00	2.002E+00	3.140E-01	8.873
RH-106	621.93	*		2.979E-02	2.049E-01	3.324E-01	4.146E-02	0.090
	1050.41			-3.621E-01	1.529E+00	2.525E+00	2.158E-01	-0.143
RU-106	621.93	*		2.979E-02	2.049E-01	3.324E-01	2.446E-02	0.090
	1050.41			-3.621E-01	1.529E+00	2.525E+00	2.158E-01	-0.143
AG-108M	433.94	*		5.872E-03	1.821E-02	3.061E-02	1.973E-03	0.192
	614.28			4.204E-03	2.454E-02	3.451E-02	2.637E-03	0.122
	722.91			3.747E-02	2.628E-02	4.058E-02	3.563E-03	0.923
AG-110M	657.76	*		6.968E-03	2.481E-02	3.654E-02	2.882E-03	0.191
	677.62			-1.521E-01	1.839E-01	2.960E-01	2.403E-02	-0.514
	706.68			-1.422E-01	1.373E-01	2.187E-01	1.864E-02	-0.650
	763.94			9.957E-02	1.161E-01	1.736E-01	1.622E-02	0.574
	884.68			1.354E-02	3.118E-02	5.203E-02	5.876E-03	0.260
	937.49			7.972E-02	7.748E-02	1.157E-01	1.266E-02	0.689
	1384.29			1.680E-03	1.046E-01	1.555E-01	1.204E-02	0.011
	1505.03			7.889E-02	2.188E-01	3.220E-01	2.311E-02	0.245
SN-113	391.69	*		-1.994E-02	2.851E-02	4.663E-02	2.860E-03	-0.428
CD-115	260.90			-5.045E-04	2.851E-02	Half-Life	too short	
	492.35			-2.436E-05	2.851E-02	Half-Life	too short	
	527.90	*		-8.951E-06	2.851E-02	Half-Life	too short	
SN-117M	156.02			-1.673E+00	1.776E+00	2.944E+00	1.572E-01	-0.569
	158.56	*		1.842E-02	4.218E-02	7.217E-02	3.836E-03	0.255
TE-123M	159.00	*		1.010E-02	1.892E-02	3.243E-02	1.750E-03	0.311
SB-124	602.73			-8.453E-03	3.024E-02	4.145E-02	2.998E-03	-0.204
	645.85			-8.426E-02	3.095E-01	4.904E-01	3.963E-02	-0.172
	722.78			3.711E-01	2.735E-01	4.212E-01	3.664E-02	0.881
	1690.97	*		-1.088E-02	4.678E-02	7.552E-02	5.230E-03	-0.144

---- 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	*	-1.099E-03	5.480E-02	9.112E-02	5.687E-03	-0.012
		463.37		9.880E-01	2.882E-01	3.616E-01	2.580E-02	2.732
		600.60		1.129E-01	1.188E-01	1.941E-01	1.546E-02	0.582
		635.95		1.346E-01	1.748E-01	2.903E-01	2.396E-02	0.464
TE-125M		109.28	*	-6.879E-01	8.108E+00	1.165E+01	1.046E+00	-0.059
I-126	*	388.63		9.573E-02	1.262E-01	2.166E-01	1.245E-02	0.442
		666.33	*	2.326E-01	1.889E-01	2.911E-01	2.238E-02	0.799
		753.82		1.830E+00	1.419E+00	2.461E+00	2.206E-01	0.744
SB-126		414.70		1.111E-02	6.211E-02	9.504E-02	5.621E-03	0.117
		666.50		8.539E-02	6.560E-02	1.014E-01	7.797E-03	0.842
		695.00		2.549E-02	5.883E-02	9.991E-02	8.086E-03	0.255
		697.00		-6.600E-02	2.085E-01	3.438E-01	2.793E-02	-0.192
		720.70	*	8.212E-02	1.211E-01	1.808E-01	1.531E-02	0.454
		856.80		5.946E-01	4.424E-01	6.687E-01	7.092E-02	0.889
SB-127		252.40		-2.428E+00	5.143E+00	8.155E+00	3.369E+00	-0.298
		473.00		-1.029E+00	1.855E+00	2.988E+00	3.706E-01	-0.344
		685.70	*	2.756E-01	1.484E+00	2.500E+00	2.994E-01	0.110
		783.70		9.488E+00	5.100E+00	7.782E+00	1.079E+00	1.219
I-131		80.19		5.697E+00	5.332E+00	7.426E+00	6.494E-01	0.767
		284.31		1.453E-01	1.348E+00	2.034E+00	1.301E-01	0.071
		364.49	*	2.348E-02	9.288E-02	1.578E-01	1.024E-02	0.149
TE-132		636.99		2.781E-01	1.368E+00	2.220E+00	1.789E-01	0.125
		49.72		-1.478E+01	3.912E+01	6.534E+01	7.468E+00	-0.226
		111.76		-1.132E+01	5.001E+01	8.020E+01	8.512E+00	-0.141
		116.30		-1.003E-01	4.209E+01	6.775E+01	7.070E+00	-0.001
BA-133	*	228.16	*	2.007E-01	9.958E-01	1.654E+00	2.507E-01	0.121
		81.00		4.859E-02	9.373E-02	1.115E-01	1.737E-02	0.436
		276.40		4.159E-01	2.840E-01	3.970E-01	4.978E-02	1.048
		302.85		5.666E-02	9.789E-02	1.419E-01	1.615E-02	0.399
		356.01	*	1.136E-02	2.981E-02	4.228E-02	4.764E-03	0.269
I-133	*	383.85		-3.535E-02	1.800E-01	3.001E-01	3.193E-02	-0.118
		529.87	*	-2.437E-02	1.800E-01	Half-Life	too short	
		875.33		5.925E-01	1.800E-01	Half-Life	too short	
		1298.22		-9.685E-01	1.800E-01	Half-Life	too short	
CS-134		563.25		2.024E-01	2.348E-01	3.943E-01	2.786E-02	0.513
		569.33		5.288E-02	1.375E-01	2.108E-01	1.507E-02	0.251
		604.72		-4.237E-03	2.604E-02	3.595E-02	2.614E-03	-0.118
		795.86	*	1.048E-01	3.476E-02	5.602E-02	5.419E-03	1.870
		801.95		-5.312E-01	2.845E-01	3.839E-01	3.745E-02	-1.384
CS-135		1365.19		1.693E-01	7.659E-01	1.268E+00	1.009E-01	0.134
I-135	*	268.22	*	2.208E-01	1.229E-01	1.863E-01	1.408E-02	1.185
		546.56		-1.823E+13	1.229E-01	Half-Life	too short	
		836.80		1.334E+14	1.229E-01	Half-Life	too short	
		1038.76		7.726E+12	1.229E-01	Half-Life	too short	
		1131.51		1.877E+13	1.229E-01	Half-Life	too short	
		1260.41	*	-3.009E+12	1.229E-01	Half-Life	too short	
		1457.56		9.715E+15	1.229E-01	Half-Life	too short	
		1678.03		-7.250E+12	1.229E-01	Half-Life	too short	
		1791.20		2.065E+13	1.229E-01	Half-Life	too short	
						Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	153.25			1.001E+00	6.736E-01	1.174E+00	9.092E-02	0.853
	176.60			1.225E-01	3.865E-01	6.552E-01	4.350E-02	0.187
	273.65			-1.694E-02	6.008E-01	6.153E-01	4.150E-02	-0.028
	340.55			7.372E-01	1.443E-01	2.322E-01	1.455E-02	3.175
	818.51			-2.102E-02	5.453E-02	8.804E-02	8.794E-03	-0.239
	1048.07	*		1.255E-03	7.845E-02	1.313E-01	1.177E-02	0.010
	1235.36			1.151E+00	5.588E-01	8.583E-01	8.744E-02	1.342
BA-137M	661.66	*		-5.153E-03	2.537E-02	3.629E-02	2.767E-03	-0.142
CS-137	661.66	*		-5.443E-03	2.680E-02	3.834E-02	2.930E-03	-0.142
CE-139	165.86	*		-9.465E-03	1.988E-02	3.319E-02	1.743E-03	-0.285
BA-140	162.66			-1.163E-01	6.695E-01	1.087E+00	6.718E-02	-0.107
	304.85			6.652E-01	1.132E+00	1.623E+00	4.635E-01	0.410
	423.72			6.377E-01	1.456E+00	2.438E+00	7.875E-01	0.262
	537.26	*		1.116E-01	1.946E-01	3.197E-01	1.071E-01	0.349
LA-140	328.76	+		8.449E-01	3.944E-01	4.268E-01	2.771E-02	1.980
	487.02			-1.340E-02	9.956E-02	1.630E-01	1.163E-02	-0.082
	815.77			4.615E-03	2.402E-01	3.960E-01	4.286E-02	0.012
	1596.21	*		-3.191E-02	5.731E-02	9.070E-02	6.223E-03	-0.352
CE-141	145.44	*		-1.565E-02	4.824E-02	7.407E-02	4.229E-03	-0.211
CE-143	57.36			2.300E-03	4.824E-02	Half-Life	too short	
	293.27	*		6.011E-03	4.824E-02	Half-Life	too short	
	664.57	+		6.000E-03	4.824E-02	Half-Life	too short	
	721.93			5.168E-03	4.824E-02	Half-Life	too short	
CE-144	80.12			2.402E+00	2.172E+00	3.029E+00	2.622E-01	0.793
	133.52	*		-8.801E-02	1.601E-01	2.218E-01	3.067E-02	-0.397
PM-144	476.78			1.563E-02	4.086E-02	6.835E-02	5.019E-03	0.229
	618.01			4.158E-04	2.070E-02	3.341E-02	2.545E-03	0.012
PR-144	696.49	*		2.507E-03	2.199E-02	3.689E-02	2.995E-03	0.068
	696.51	*		1.825E-01	1.648E+00	2.765E+00	2.244E-01	0.066
PM-146	1489.16			-9.231E+00	8.861E+00	1.316E+01	9.504E-01	-0.702
	453.88	*		1.027E-02	2.617E-02	4.396E-02	3.840E-03	0.234
	633.25			-1.917E-01	9.385E-01	1.492E+00	5.661E-01	-0.128
	735.93			-2.404E-02	8.862E-02	1.451E-01	4.071E-02	-0.166
ND-147	747.24			-5.406E-02	6.023E-02	9.508E-02	1.401E-02	-0.569
	91.11	+		8.424E-01	2.198E-01	4.439E-01	4.178E-02	1.898
	319.41			-1.467E+00	2.682E+00	4.234E+00	2.446E-01	-0.346
	531.02	*		1.790E-01	4.071E-01	6.771E-01	9.448E-02	0.264
PM-149	285.90	*		3.969E-05	4.071E-01	Half-Life	too short	
EU-152	121.78			1.682E-02	5.159E-02	8.351E-02	6.411E-03	0.201
	244.70			-9.391E-03	2.368E-01	3.411E-01	1.905E-02	-0.028
	344.28	*		-6.851E-02	8.734E-02	9.619E-02	6.272E-03	-0.712
	778.90			-8.916E-02	2.005E-01	2.623E-01	2.453E-02	-0.340
	964.08	+		9.268E-01	2.812E-01	4.010E-01	4.107E-02	2.311
	1085.87			-2.871E-01	2.660E-01	3.927E-01	3.042E-02	-0.731
GD-153	1112.07			8.534E-02	2.266E-01	3.307E-01	2.354E-02	0.258
	1408.01			1.111E-01	1.242E-01	2.092E-01	1.554E-02	0.531
	69.67			-1.110E+00	1.553E+00	2.255E+00	1.830E-01	-0.492
	97.43	*		-1.162E-01	6.985E-02	9.842E-02	7.695E-03	-1.180
	103.18			-9.321E-02	8.942E-02	1.242E-01	8.956E-03	-0.751

---- 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			1.113E-02	3.666E-02	5.925E-02	5.595E-03	0.188
	723.31			2.245E-01	1.225E-01	1.916E-01	1.799E-02	1.172
	873.19			2.037E-02	1.753E-01	2.886E-01	3.931E-02	0.071
	996.26			4.525E-02	2.357E-01	3.845E-01	6.922E-02	0.118
	1004.73			-1.358E-01	1.458E-01	2.230E-01	2.742E-02	-0.609
TB-160	1274.44	*		-2.625E-02	7.959E-02	1.284E-01	1.292E-02	-0.205
	86.79		+	1.225E+00	2.617E-01	3.954E-01	3.618E-02	3.098
	197.04			-1.139E-01	3.954E-01	6.352E-01	3.411E-02	-0.179
	215.65			5.491E-02	5.711E-01	8.361E-01	4.158E-02	0.066
	298.57			2.981E-01	7.852E-02	1.381E-01	7.934E-03	2.158
HO-166M	879.36	*		5.842E-02	9.118E-02	1.535E-01	1.686E-02	0.381
	962.29			1.412E+00	4.458E-01	7.004E-01	7.195E-02	2.016
	966.15			2.175E+00	2.942E-01	4.075E-01	4.158E-02	5.337
	1177.93			1.437E-01	2.382E-01	4.046E-01	2.259E-02	0.355
	1271.85			-2.226E-01	4.651E-01	7.438E-01	5.027E-02	-0.299
TA-182	80.57		+	1.984E-01	2.681E-01	3.229E-01	2.805E-02	0.614
	184.41			1.742E-01	4.484E-02	4.469E-02	2.375E-03	3.898
	280.46			-2.309E-02	6.067E-02	8.488E-02	4.841E-03	-0.272
	410.95			3.455E-01	1.835E-01	2.872E-01	1.690E-02	1.203
	711.68	*		-5.639E-03	3.702E-02	6.133E-02	5.112E-03	-0.092
IR-192	752.31			2.032E-01	1.753E-01	3.033E-01	2.712E-02	0.670
	810.29			-5.026E-02	3.817E-02	5.851E-02	5.761E-03	-0.859
	67.75		+	4.907E-03	9.454E-02	1.539E-01	1.237E-02	0.032
	100.11			1.525E-01	1.309E-01	2.182E-01	1.640E-02	0.699
	152.43			1.583E-01	2.533E-01	4.069E-01	2.189E-02	0.389
BI-207	222.11			-1.036E-01	2.319E-01	3.793E-01	2.082E-02	-0.273
	1121.30			7.629E-01	1.383E-01	2.324E-01	1.601E-02	3.282
	1189.05			-8.829E-02	2.050E-01	3.321E-01	1.899E-02	-0.266
	1221.41	*		1.042E-01	1.331E-01	2.265E-01	1.385E-02	0.460
	1231.02			1.106E-01	3.592E-01	5.151E-01	3.213E-02	0.215
PB-210	295.96		+	1.550E+00	1.417E-01	2.107E-01	1.229E-02	7.355
	308.46			-1.408E-03	6.282E-02	1.014E-01	5.908E-03	-0.014
	316.51	*		1.286E-02	2.253E-02	3.704E-02	2.149E-03	0.347
	468.07			1.776E-02	4.731E-02	6.919E-02	4.937E-03	0.257
	72.81		+	2.414E-01	1.566E-01	2.403E-01	1.984E-02	1.004
RN-219	74.97			1.015E+00	1.437E-01	1.892E-01	1.582E-02	5.363
	569.70			1.311E-02	2.097E-02	3.239E-02	2.270E-03	0.405
	1063.66	*		1.051E-02	3.418E-02	5.786E-02	4.776E-03	0.182
	1770.23			-1.845E-01	2.953E-01	3.692E-01	2.233E-02	-0.500
	46.54	*		2.495E+00	3.991E+00	6.568E+00	5.035E-01	0.380
RA-223	404.85	*		-3.609E-01	5.290E-01	7.001E-01	3.359E-01	-0.516
	427.09			-4.528E-01	9.487E-01	1.513E+00	6.937E-01	-0.299
	832.01			5.027E-01	7.532E-01	1.039E+00	5.416E-01	0.484
	271.23		+	8.228E-01	2.832E-01	2.981E-01	2.368E-02	2.760
	401.81	*		2.112E-01	2.516E-01	4.299E-01	5.780E-02	0.491
RA-223	81.07			1.036E-01	2.115E-01	2.519E-01	2.197E-02	0.411
	83.79			8.506E-02	1.045E-01	1.547E-01	1.379E-02	0.550
	94.87			1.032E+00	3.715E-01	5.728E-01	4.665E-02	1.801
RA-223	144.24			1.074E-01	4.794E-01	7.480E-01	5.201E-02	0.144

---- 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		2.423E-01	2.551E-01	4.413E-01	2.915E-02	0.549
	+	269.46		6.393E-01	2.174E-01	2.370E-01	1.406E-02	2.697
		323.87	*	3.977E-03	4.679E-01	6.574E-01	1.059E-01	0.006
	+	338.28		8.256E+00	1.404E+00	1.630E+00	1.669E-01	5.066
		79.69		1.286E+00	1.020E+00	1.524E+00	2.628E-01	0.844
		235.96		6.003E-01	1.308E-01	2.027E-01	1.614E-02	2.962
		256.23	*	2.027E-01	1.649E-01	2.780E-01	2.816E-02	0.729
TH-227	+	299.98		2.682E+00	8.294E-01	1.062E+00	1.164E-01	2.525
		304.50		4.534E-01	1.121E+00	1.613E+00	2.456E-01	0.281
		334.37		-4.635E-01	1.789E+00	1.749E+00	2.487E-01	-0.265
		79.80		1.838E+00	1.475E+00	2.002E+00	4.361E-01	0.918
		235.96		6.003E-01	1.292E-01	2.027E-01	1.457E-02	2.962
		256.23	*	2.027E-01	1.654E-01	2.780E-01	3.318E-02	0.729
	+	299.98		2.682E+00	8.294E-01	1.062E+00	1.164E-01	2.525
TH-229		304.50		4.534E-01	1.121E+00	1.613E+00	2.456E-01	0.281
		334.37		-4.635E-01	1.789E+00	1.749E+00	2.487E-01	-0.265
		85.43		1.891E-01	1.788E-01	2.656E-01	2.401E-02	0.712
	+	88.47		5.683E-01	1.214E-01	1.817E-01	1.664E-02	3.128
		193.51	*	-1.554E-01	3.472E-01	5.740E-01	3.073E-02	-0.271
	+	210.85		3.965E+00	1.070E+00	1.083E+00	5.885E-02	3.663
		283.69	*	-2.780E-01	1.037E+00	1.456E+00	1.904E-01	-0.191
PA-231	+	301.36		1.723E+00	5.290E-01	6.652E-01	6.862E-02	2.590
TH-231		81.07		1.036E-01	2.115E-01	2.519E-01	2.197E-02	0.411
		83.79		8.506E-02	1.045E-01	1.547E-01	1.379E-02	0.550
		94.87		1.032E+00	3.715E-01	5.728E-01	4.665E-02	1.801
		144.24		1.074E-01	4.794E-01	7.480E-01	5.201E-02	0.144
		154.21		2.423E-01	2.551E-01	4.413E-01	2.915E-02	0.549
	+	269.46		6.393E-01	2.174E-01	2.370E-01	1.406E-02	2.697
		323.87	*	3.977E-03	4.679E-01	6.574E-01	1.059E-01	0.006
PA-233	+	338.28		8.256E+00	1.404E+00	1.630E+00	1.669E-01	5.066
	+	300.13		1.214E+00	3.866E-01	4.802E-01	6.418E-02	2.527
		311.90	*	-3.730E-02	4.012E-02	6.245E-02	3.826E-03	-0.597
		340.48		2.900E+00	8.352E-01	8.498E-01	1.972E-01	3.413
		94.67		5.135E-01	1.479E-01	2.176E-01	2.631E-02	2.360
		98.44		9.130E-02	8.554E-02	1.110E-01	6.176E-02	0.823
		111.00		1.389E-02	1.311E-01	2.122E-01	2.276E-02	0.065
PA-234		131.20		6.740E-02	8.432E-02	1.230E-01	7.001E-03	0.548
		569.50		1.355E-01	1.868E-01	2.899E-01	2.031E-02	0.467
		733.00		1.060E-01	2.594E-01	3.797E-01	8.433E-02	0.279
		880.51		1.707E-02	1.784E-01	2.933E-01	3.227E-02	0.058
		883.24		-1.349E-02	1.818E-01	2.958E-01	1.999E-01	-0.046
		926.50		4.170E-02	1.231E-01	1.755E-01	4.585E-02	0.238
		946.00	*	-1.098E-01	1.941E-01	3.043E-01	6.002E-02	-0.361
PA-234M		949.00		3.841E-01	2.818E-01	4.842E-01	5.085E-02	0.793
		766.42		2.652E+01	1.610E+01	1.449E+01	7.365E+00	1.830
		1001.03	*	-1.957E-01	3.178E+00	5.045E+00	5.443E-01	-0.039
	TH-234	63.29	*	5.356E-01	1.147E+00	1.890E+00	3.404E-01	0.283
	+	92.59		2.860E+00	9.420E-01	9.779E-01	2.154E-01	2.925
	U-238	63.29	*	5.356E-01	1.147E+00	1.890E+00	3.404E-01	0.283

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

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59	2.860E+00	7.411E-01	9.779E-01	8.281E-02	2.925
		99.53	2.630E-01	1.199E-01	2.029E-01	1.538E-02	1.297
		103.37	-3.139E-03	7.840E-02	1.133E-01	8.148E-03	-0.028
	+	106.12	1.154E-01	7.806E-02	9.859E-02	6.854E-03	1.170
		117.23	* -2.012E-01	2.834E-01	4.467E-01	2.759E-02	-0.450
AM-241		228.18	2.822E-02	1.415E-01	2.351E-01	1.297E-02	0.120
	+	277.60	2.624E-01	1.691E-01	1.957E-01	1.115E-02	1.341
		59.54	* 8.054E-02	1.299E-01	2.204E-01	1.828E-02	0.366
CM-247	+	278.00	1.114E+00	7.182E-01	8.332E-01	4.747E-02	1.337
		287.50	2.150E-01	7.851E-01	1.287E+00	7.360E-02	0.167
		402.40	* 1.276E-02	2.349E-02	3.901E-02	2.271E-03	0.327
CF-249		252.80	-2.814E-01	6.145E-01	9.937E-01	5.581E-02	-0.283
		333.37	-1.380E-02	1.888E-01	1.879E-01	1.086E-02	-0.073
		388.16	* 2.292E-02	2.508E-02	4.325E-02	2.486E-03	0.530
CF-251		177.52	* -8.268E-03	8.455E-02	1.419E-01	7.498E-03	-0.058
		227.38	-7.798E-02	2.337E-01	3.829E-01	2.111E-02	-0.204
		285.41	4.411E-01	1.373E+00	2.255E+00	1.289E-01	0.196

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]G247969001      *
* Acquisition date   : 10-MAR-2010 23:10:31 Detector SN#      :              *
* Detector ID        : GAM18 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 04:00:03.93 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID           : G247969001 Analyst initials: MXR1          *
* Batch Number        : 958216 Sample Quantity : 1.2441E+02 GRAM    *
* Recovery             : 1.00000 Carrier Weight : 0.00000          *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope      :          *
* MSD DPM             : 0.000 MSD Isotope      :                  *
* LCS DPM             : 0.000 LCS Isotope      :                  *
* LCSD DPM            : 0.000 LCSD Isotope     :                  *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.667E+01	2.953E+00	2.915E-01	0.000E+00
MN-54	4.185E-02	2.353E-02	4.153E-02	0.000E+00
CD-109	3.791E+00	7.935E-01	8.868E-01	0.000E+00
SN-126	3.686E-01	7.717E-02	9.955E-02	0.000E+00
EU-155	1.449E-01	9.608E-02	1.220E-01	0.000E+00
HG-203	6.122E-02	3.869E-02	4.030E-02	0.000E+00
TL-208	5.969E-01	6.635E-02	3.674E-02	0.000E+00
BI-211	5.143E+00	4.472E-01	2.048E-01	0.000E+00
BI-212	2.343E+00	5.712E-01	5.073E-01	0.000E+00
PB-212	2.030E+00	1.631E-01	6.219E-02	0.000E+00
BI-214	1.621E+00	1.738E-01	6.989E-02	0.000E+00
PB-214	1.867E+00	1.911E-01	7.446E-02	0.000E+00
RA-224	5.064E+00	8.698E-01	6.656E-01	0.000E+00
RA-226	1.621E+00	1.738E-01	6.989E-02	0.000E+00
AC-228	2.390E+00	3.739E-01	1.367E-01	0.000E+00
RA-228	2.390E+00	3.739E-01	1.367E-01	0.000E+00
TH-228	2.030E+00	1.631E-01	6.219E-02	0.000E+00
TH-232	2.390E+00	3.739E-01	1.367E-01	0.000E+00
U-235	6.878E-02	1.405E-01	2.317E-01	0.000E+00
NP-237	1.100E+00	3.227E-01	3.018E-01	0.000E+00
ANH-511	1.654E-01	4.591E-02	2.834E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.322E-01	2.091E-01	3.650E-01	0.000E+00 NOT IDENT.
NA-22	-1.062E-02	2.765E-02	4.544E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.294E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-8.896E-03	2.550E-02	4.203E-02	0.000E+00 FAIL ABUN
V-48	2.493E-02	5.017E-02	8.532E-02	0.000E+00 NOT IDENT.
CR-51	-3.750E-02	2.508E-01	4.184E-01	0.000E+00 NOT IDENT.

CO-56	-1.730E-02	2.440E-02	3.962E-02	0.000E+00	FAIL ABUN
CO-57	5.331E-03	1.774E-02	3.026E-02	0.000E+00	NOT IDENT.
CO-58	-3.776E-02	2.536E-02	3.953E-02	0.000E+00	NOT IDENT.
FE-59	-2.893E-02	6.054E-02	1.008E-01	0.000E+00	NOT IDENT.
CO-60	-3.373E-04	2.322E-02	3.871E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	7.088E-02	1.138E-01	0.000E+00	NOT IDENT.
SE-75	4.217E-02	3.164E-02	4.987E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	2.654E-02	4.501E-02	0.000E+00	NOT IDENT.
Y-88	-3.668E-03	2.003E-02	3.272E-02	0.000E+00	NOT IDENT.
Y-91	1.935E+00	1.436E+01	2.436E+01	0.000E+00	NOT IDENT.
NB-94	6.816E-03	2.129E-02	3.703E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	3.416E-02	5.554E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	9.690E-02	1.554E-01	0.000E+00	NOT IDENT.
ZR-95	3.740E-03	4.811E-02	8.234E-02	0.000E+00	NOT IDENT.
MO-99	2.829E-01	1.868E+01	2.961E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.203E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.862E-02	2.525E-02	4.147E-02	0.000E+00	FAIL ABUN
RH-106	2.979E-02	2.008E-01	3.360E-01	0.000E+00	NOT IDENT.
RU-106	2.979E-02	2.008E-01	3.360E-01	0.000E+00	NOT IDENT.
AG-108M	5.872E-03	1.784E-02	3.110E-02	0.000E+00	NOT IDENT.
AG-110M	6.968E-03	2.431E-02	3.691E-02	0.000E+00	NOT IDENT.
SN-113	-1.994E-02	2.794E-02	4.744E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.883E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.842E-02	4.134E-02	7.433E-02	0.000E+00	NOT IDENT.
TE-123M	1.010E-02	1.854E-02	3.339E-02	0.000E+00	NOT IDENT.
SB-124	-1.088E-02	4.585E-02	7.528E-02	0.000E+00	NOT IDENT.
SB-125	-1.099E-03	5.370E-02	9.259E-02	0.000E+00	FAIL ABUN
TE-125M	-6.879E-01	7.946E+00	1.205E+01	0.000E+00	NOT IDENT.
I-126	2.326E-01	1.851E-01	2.940E-01	0.000E+00	NOT IDENT.
SB-126	8.212E-02	1.187E-01	1.824E-01	0.000E+00	NOT IDENT.
SB-127	2.756E-01	1.454E+00	2.524E+00	0.000E+00	NOT IDENT.
I-131	2.348E-02	9.102E-02	1.607E-01	0.000E+00	NOT IDENT.
TE-132	2.007E-01	9.759E-01	1.695E+00	0.000E+00	NOT IDENT.
BA-133	1.136E-02	2.922E-02	4.307E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.193E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	3.406E-02	5.644E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.204E-01	1.905E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.158E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.255E-03	7.688E-02	1.318E-01	0.000E+00	NOT IDENT.
BA-137M	-5.153E-03	2.486E-02	3.666E-02	0.000E+00	NOT IDENT.
CS-137	-5.443E-03	2.626E-02	3.873E-02	0.000E+00	NOT IDENT.
CE-139	-9.465E-03	1.948E-02	3.416E-02	0.000E+00	NOT IDENT.
BA-140	1.116E-01	1.907E-01	3.239E-01	0.000E+00	NOT IDENT.
LA-140	-3.191E-02	5.616E-02	9.048E-02	0.000E+00	FAIL ABUN
CE-141	-1.565E-02	4.728E-02	7.636E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.463E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.801E-02	1.569E-01	2.289E-01	0.000E+00	NOT IDENT.
PM-144	2.507E-03	2.155E-02	3.723E-02	0.000E+00	NOT IDENT.
PR-144	1.825E-01	1.615E+00	2.791E+00	0.000E+00	NOT IDENT.
PM-146	1.027E-02	2.565E-02	4.463E-02	0.000E+00	NOT IDENT.
ND-147	1.790E-01	3.990E-01	6.860E-01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.649E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.851E-02	8.559E-02	9.803E-02	0.000E+00	FAIL ABUN
GD-153	-1.162E-01	6.846E-02	1.020E-01	0.000E+00	NOT IDENT.
EU-154	-2.625E-02	7.800E-02	1.285E-01	0.000E+00	NOT IDENT.
TB-160	5.842E-02	8.936E-02	1.544E-01	0.000E+00	FAIL ABUN
HO-166M	-5.639E-03	3.628E-02	6.188E-02	0.000E+00	FAIL ABUN
TA-182	1.042E-01	1.305E-01	2.268E-01	0.000E+00	NOT IDENT.
IR-192	1.286E-02	2.208E-02	3.780E-02	0.000E+00	FAIL ABUN
BI-207	1.051E-02	3.350E-02	5.806E-02	0.000E+00	FAIL ABUN
PB-210	2.495E+00	3.912E+00	6.874E+00	0.000E+00	NOT IDENT.
PB-211	-3.609E-01	5.184E-01	7.119E-01	0.000E+00	NOT IDENT.
RN-219	2.112E-01	2.466E-01	4.372E-01	0.000E+00	FAIL ABUN
RA-223	3.977E-03	4.586E-01	6.706E-01	0.000E+00	FAIL ABUN
AC-227	2.027E-01	1.616E-01	2.844E-01	0.000E+00	FAIL ABUN
TH-227	2.027E-01	1.621E-01	2.844E-01	0.000E+00	FAIL ABUN
TH-229	-1.554E-01	3.402E-01	5.895E-01	0.000E+00	FAIL ABUN
PA-231	-2.780E-01	1.016E+00	1.487E+00	0.000E+00	FAIL ABUN
TH-231	3.977E-03	4.586E-01	6.706E-01	0.000E+00	FAIL ABUN
PA-233	-3.730E-02	3.932E-02	6.373E-02	0.000E+00	FAIL ABUN
PA-234	-1.098E-01	1.902E-01	3.058E-01	0.000E+00	NOT IDENT.
PA-234M	-1.957E-01	3.115E+00	5.067E+00	0.000E+00	NOT IDENT.
TH-234	5.356E-01	1.124E+00	1.970E+00	0.000E+00	FAIL ABUN
U-238	5.356E-01	1.124E+00	1.970E+00	0.000E+00	FAIL ABUN
NP-239	-2.012E-01	2.778E-01	4.618E-01	0.000E+00	FAIL ABUN
AM-241	8.054E-02	1.273E-01	2.299E-01	0.000E+00	NOT IDENT.
CM-247	1.276E-02	2.302E-02	3.967E-02	0.000E+00	FAIL ABUN
CF-249	2.292E-02	2.458E-02	4.400E-02	0.000E+00	NOT IDENT.

CF-251	-8.268E-03	8.286E-02	1.459E-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]G247969001.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:10:31
Sample ID          : G247969001 Sample quantity : 1.24410E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:03.93 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 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	4907	10.66*	1.894E+00	3.667E+01	3.667E+01	8.22
MN-54	834.85	80	99.98*	2.987E+00	4.016E-02	4.185E-02	57.38
CD-109	88.03	583	3.70*	6.453E+00	3.686E+00	3.791E+00	21.36
SN-126	64.28	-----	9.60	3.245E+00	-----	Line Not Found	-----
	86.94	583	8.90	6.453E+00	1.533E+00	1.533E+00	45.74
	87.57	583	37.00*	6.453E+00	3.686E-01	3.686E-01	21.36
EU-155	86.55	583	30.70	6.453E+00	4.443E-01	4.476E-01	21.40
	105.31	155	21.10*	7.730E+00	1.438E-01	1.449E-01	67.68
HG-203	70.83	-----	3.69	4.309E+00	-----	Line Not Found	-----
	72.87	-----	6.19	4.622E+00	-----	Line Not Found	-----
	279.20	157	81.56*	6.251E+00	4.646E-02	6.122E-02	64.48
TL-208	277.37	157	6.60	6.251E+00	5.741E-01	5.741E-01	65.09
	583.19	1323	85.00*	3.934E+00	5.969E-01	5.969E-01	11.34
	860.56	199	12.50	2.916E+00	8.232E-01	8.232E-01	35.91
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	2401	12.92*	5.452E+00	5.143E+00	5.143E+00	8.87
BI-212	727.33	346	6.67*	3.338E+00	2.343E+00	2.343E+00	24.88
	785.37	133	1.10	3.138E+00	5.819E+00	5.819E+00	54.57
	1620.50	-----	1.47	1.770E+00	-----	Line Not Found	-----
PB-212	74.82	1184	10.28	4.933E+00	3.521E+00	3.521E+00	17.18
	77.11	1652	17.10	5.255E+00	2.773E+00	2.773E+00	11.73
	238.63	3985	43.60*	6.793E+00	2.030E+00	2.030E+00	8.20
	300.09	319	3.30	5.984E+00	2.438E+00	2.438E+00	30.10
BI-214	609.32	1864	45.49*	3.813E+00	1.621E+00	1.621E+00	10.94
	1120.29	395	14.92	2.335E+00	1.711E+00	1.711E+00	24.49
	1764.49	369	15.30	1.695E+00	2.146E+00	2.146E+00	17.50
PB-214	74.82	1184	5.80	4.933E+00	6.241E+00	6.241E+00	16.23
	77.11	1652	9.70	5.255E+00	4.889E+00	4.889E+00	14.34
	242.00	929	7.25	6.749E+00	2.864E+00	2.864E+00	18.46
	295.22	1498	18.42	6.041E+00	2.031E+00	2.031E+00	11.18
	351.93	2401	35.60*	5.452E+00	1.867E+00	1.867E+00	10.45
RA-224	240.99	929	4.10*	6.749E+00	5.064E+00	5.064E+00	17.53

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-226	609.32	1864	45.49*	3.813E+00	1.621E+00	1.621E+00	10.94
	1120.29	395	14.92	2.335E+00	1.711E+00	1.711E+00	24.49
	1764.49	369	15.30	1.695E+00	2.146E+00	2.146E+00	17.50
AC-228	338.32	867	11.27	5.581E+00	2.081E+00	2.081E+00	43.40
	911.20	1137	25.80*	2.781E+00	2.390E+00	2.390E+00	15.97
	968.97	619	15.80	2.640E+00	2.239E+00	2.239E+00	27.73
RA-228	338.32	867	11.27	5.581E+00	2.081E+00	2.081E+00	43.40
	911.20	1137	25.80*	2.781E+00	2.390E+00	2.390E+00	15.97
	968.97	619	15.80	2.640E+00	2.239E+00	2.239E+00	27.73
TH-228	74.82	1184	10.28	4.933E+00	3.521E+00	3.521E+00	14.21
	77.11	1652	17.10	5.255E+00	2.773E+00	2.773E+00	11.73
	238.63	3985	43.60*	6.793E+00	2.030E+00	2.030E+00	8.20
	300.09	319	3.30	5.984E+00	2.438E+00	2.438E+00	67.40
TH-232	338.32	867	11.27	5.581E+00	2.081E+00	2.081E+00	14.76
	911.20	1137	25.80*	2.781E+00	2.390E+00	2.390E+00	15.97
	968.97	619	15.80	2.640E+00	2.239E+00	2.239E+00	27.73
U-235	89.96	324	3.47	6.701E+00	2.100E+00	2.100E+00	34.64
	93.35	558	5.60	6.962E+00	2.160E+00	2.160E+00	33.62
	143.76	-----	10.96*	8.222E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.005E+00	-----	Line Not Found	-----
	185.72	636	57.20	7.649E+00	2.193E-01	2.193E-01	25.74
	205.31	-----	5.01	7.323E+00	-----	Line Not Found	-----
NP-237	86.48	583	12.40*	6.453E+00	1.100E+00	1.100E+00	29.93
	95.86	-----	2.68	7.180E+00	-----	Line Not Found	-----
ANH-511	511.00	473	100.00*	4.311E+00	1.654E-01	1.654E-01	28.32

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247969001

Page : 3
Acquisition date : 10-MAR-2010 23:10:31

Total number of lines in spectrum 42
Number of unidentified lines 9
Number of lines tentatively identified by NID 33 78.57%

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	3.667E+01	3.667E+01	0.301E+01	8.22	
MN-54	312.05D	1.04	4.016E-02	4.185E-02	2.401E-02	57.38	
CD-109	461.40D	1.03	3.686E+00	3.791E+00	0.810E+00	21.36	
SN-126	2.30E+05Y	1.00	3.686E-01	3.686E-01	0.787E-01	21.36	
EU-155	4.75Y	1.01	1.438E-01	1.449E-01	0.980E-01	67.68	
HG-203	46.59D	1.32	4.646E-02	6.122E-02	3.947E-02	64.48	
TL-208	1.41E+10Y	1.00	5.969E-01	5.969E-01	0.677E-01	11.34	
BI-211	7.04E+08Y	1.00	5.143E+00	5.143E+00	0.456E+00	8.87	
BI-212	1.41E+10Y	1.00	2.343E+00	2.343E+00	0.583E+00	24.88	
PB-212	1.41E+10Y	1.00	2.030E+00	2.030E+00	0.166E+00	8.20	
BI-214	1600.00Y	1.00	1.621E+00	1.621E+00	0.177E+00	10.94	
PB-214	1600.00Y	1.00	1.867E+00	1.867E+00	0.195E+00	10.45	
RA-224	1.41E+10Y	1.00	5.064E+00	5.064E+00	0.888E+00	17.53	
RA-226	1600.00Y	1.00	1.621E+00	1.621E+00	0.177E+00	10.94	
AC-228	1.41E+10Y	1.00	2.390E+00	2.390E+00	0.382E+00	15.97	
RA-228	1.41E+10Y	1.00	2.390E+00	2.390E+00	0.382E+00	15.97	
TH-228	1.41E+10Y	1.00	2.030E+00	2.030E+00	0.166E+00	8.20	
TH-232	1.41E+10Y	1.00	2.390E+00	2.390E+00	0.382E+00	15.97	
U-235	7.04E+08Y	1.00	2.193E-01	2.193E-01	0.564E-01	25.74	K
NP-237	2.14E+06Y	1.00	1.100E+00	1.100E+00	0.329E+00	29.93	
ANH-511	1.00E+09Y	1.00	1.654E-01	1.654E-01	0.468E-01	28.32	

Total Activity : 7.192E+01 7.205E+01

Grand Total Activity : 7.192E+01 7.205E+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	129.13	137	1269	1.09	257.35	253	10	9.53E-03	98.5	8.25E+00	
0	209.57	534	1038	1.26	418.15	412	13	3.71E-02	26.4	7.25E+00	T
0	270.25	374	834	1.47	539.49	532	13	2.60E-02	33.5	6.35E+00	T
0	327.84	236	642	1.42	654.62	649	13	1.64E-02	46.2	5.68E+00	T
0	409.20	148	342	1.19	817.30	813	9	1.03E-02	47.8	4.97E+00	
0	462.90	314	390	1.61	924.66	919	13	2.18E-02	28.3	4.60E+00	T
0	664.54	71	356	1.03	1327.83	1319	15	4.94E-03	***	3.58E+00	T
0	768.13	283	339	1.93	1534.96	1528	18	1.96E-02	32.6	3.20E+00	
0	794.27	180	198	1.81	1587.23	1579	14	1.25E-02	36.4	3.11E+00	
0	934.59	115	247	3.95	1867.81	1859	17	7.99E-03	66.1	2.72E+00	
2	964.21	238	215	2.55	1927.03	1920	29	1.65E-02	28.6	2.65E+00	T
0	1238.02	180	314	2.49	2474.57	2464	21	1.25E-02	52.9	2.15E+00	T
0	1377.05	67	135	1.71	2752.61	2744	13	4.62E-03	71.9	1.98E+00	
0	1509.39	83	72	4.85	3017.25	3007	18	5.79E-03	52.5	1.85E+00	
0	1618.94	75	42	1.57	3236.34	3228	15	5.18E-03	45.3	1.77E+00	
0	1728.75	84	72	2.81	3455.95	3448	24	5.82E-03	56.0	1.71E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969001.CNF;1
* Acquisition date   : 10-MAR-2010 23:10:31  Detector SN#      :
* Detector ID        : GAM18                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 04:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 04:00:03.93          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247969001            Analyst initials: MXR1
* Batch Number       : 958216                Sample Quantity : 1.24410E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23.2MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.667E+01	3.013E+00	2.918E-01	2.214E-02	125.663
MN-54	4.185E-02	2.401E-02	4.124E-02	4.225E-03	1.015
CD-109	3.791E+00	8.097E-01	8.544E-01	7.899E-02	4.436
SN-126	3.686E-01	7.875E-02	9.591E-02	8.837E-03	3.844
EU-155	1.449E-01	9.804E-02	1.179E-01	8.422E-03	1.229
HG-203	6.122E-02	3.947E-02	3.943E-02	2.377E-03	1.553
TL-208	5.969E-01	6.771E-02	3.631E-02	2.841E-03	16.441
BI-211	5.143E+00	4.563E-01	2.010E-01	1.291E-02	25.588
BI-212	2.343E+00	5.828E-01	5.029E-01	6.247E-02	4.659
PB-212	2.030E+00	1.664E-01	6.072E-02	4.377E-03	33.431
BI-214	1.621E+00	1.773E-01	6.911E-02	6.211E-03	23.455
PB-214	1.867E+00	1.950E-01	7.309E-02	6.186E-03	25.540
RA-224	5.064E+00	8.876E-01	6.500E-01	3.621E-02	7.790
AC-226	1.621E+00	1.773E-01	6.911E-02	6.211E-03	23.455
AC-228	2.390E+00	3.816E-01	1.359E-01	1.841E-02	17.581
RA-228	2.390E+00	3.816E-01	1.359E-01	1.841E-02	17.581
TH-228	2.030E+00	1.664E-01	6.072E-02	4.377E-03	33.431
TH-232	2.390E+00	3.816E-01	1.359E-01	1.841E-02	17.581

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.193E-01	5.644E-02	2.247E-01	3.504E-02	0.976
NP-237	1.100E+00	3.292E-01	2.907E-01	6.648E-02	3.783
ANH-511	1.654E-01	4.685E-02	2.796E-02	1.846E-03	5.916

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.322E-01		2.134E-01	3.598E-01	2.606E-02	0.367
NA-22	-1.062E-02		2.822E-02	4.541E-02	3.090E-03	-0.234
NA-24	-1.577E+00		1.171E+01	Half-Life	too short	
SC-46	-8.896E-03		2.602E-02	4.178E-02	4.660E-03	-0.213
V-48	2.493E-02		5.120E-02	8.493E-02	8.400E-03	0.294
CR-51	-3.750E-02		2.560E-01	4.101E-01	2.636E-02	-0.091
CO-56	-1.730E-02		2.490E-02	3.936E-02	4.109E-03	-0.440
CO-57	5.331E-03		1.810E-02	2.928E-02	1.734E-03	0.182
CO-58	-3.776E-02		2.588E-02	3.925E-02	3.875E-03	-0.962
FE-59	-2.893E-02		6.177E-02	1.005E-01	8.270E-03	-0.288
CO-60	-3.373E-04		2.369E-02	3.870E-02	2.924E-03	-0.009
ZN-65	1.369E-01		7.233E-02	1.135E-01	7.995E-03	1.206
SE-75	4.217E-02		3.229E-02	4.876E-02	2.789E-03	0.865
SR-85	9.515E-02		2.708E-02	4.441E-02	2.942E-03	2.142
Y-88	-3.668E-03		2.044E-02	3.286E-02	1.871E-03	-0.112
Y-91	1.935E+00		1.465E+01	2.432E+01	1.438E+00	0.080
NB-94	6.816E-03		2.173E-02	3.669E-02	3.010E-03	0.186
NB-95	9.106E-02		3.486E-02	5.510E-02	5.040E-03	1.653
NB-95M	2.104E-01		9.888E-02	1.517E-01	1.117E-02	1.387
ZR-95	3.740E-03		4.910E-02	8.167E-02	8.065E-03	0.046
MO-99	2.829E-01		1.906E+01	2.936E+01	4.647E+00	0.010
TC-99M	-1.406E+14		1.634E+14	Half-Life	too short	
RU-103	-1.862E-02		2.576E-02	4.090E-02	5.223E-03	-0.455
RH-106	2.979E-02		2.049E-01	3.324E-01	4.146E-02	0.090
RU-106	2.979E-02		2.049E-01	3.324E-01	2.446E-02	0.090
AG-108M	5.872E-03		1.821E-02	3.061E-02	1.973E-03	0.192
AG-110M	6.968E-03		2.481E-02	3.654E-02	2.882E-03	0.191
SN-113	-1.994E-02		2.851E-02	4.663E-02	2.860E-03	-0.428
CD-115	-8.951E-06		9.605E-06	Half-Life	too short	
SN-117M	1.842E-02		4.218E-02	7.217E-02	3.836E-03	0.255
TE-123M	1.010E-02		1.892E-02	3.243E-02	1.750E-03	0.311
SB-124	-1.088E-02		4.678E-02	7.552E-02	5.230E-03	-0.144
SB-125	-1.099E-03		5.480E-02	9.112E-02	5.687E-03	-0.012
TE-125M	-6.879E-01		8.108E+00	1.165E+01	1.046E+00	-0.059
I-126	2.326E-01		1.889E-01	2.911E-01	2.238E-02	0.799
SB-126	8.212E-02		1.211E-01	1.808E-01	1.531E-02	0.454
SB-127	2.756E-01		1.484E+00	2.500E+00	2.994E-01	0.110
I-131	2.348E-02		9.288E-02	1.578E-01	1.024E-02	0.149
TE-132	2.007E-01		9.958E-01	1.654E+00	2.507E-01	0.121
BA-133	1.136E-02		2.981E-02	4.228E-02	4.764E-03	0.269

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-2.437E-02		2.650E-02	Half-Life too short		
CS-134	1.048E-01		3.476E-02	5.602E-02	5.419E-03	1.870
CS-135	2.208E-01		1.229E-01	1.863E-01	1.408E-02	1.185
I-135	-3.009E+12		1.101E+13	Half-Life too short		
CS-136	1.255E-03		7.845E-02	1.313E-01	1.177E-02	0.010
BA-137M	-5.153E-03		2.537E-02	3.629E-02	2.767E-03	-0.142
CS-137	-5.443E-03		2.680E-02	3.834E-02	2.930E-03	-0.142
CE-139	-9.465E-03		1.988E-02	3.319E-02	1.743E-03	-0.285
BA-140	1.116E-01		1.946E-01	3.197E-01	1.071E-01	0.349
LA-140	-3.191E-02		5.731E-02	9.070E-02	6.223E-03	-0.352
CE-141	-1.565E-02		4.824E-02	7.407E-02	4.229E-03	-0.211
CE-143	6.011E-03		7.463E-04	Half-Life too short		
CE-144	-8.801E-02		1.601E-01	2.218E-01	3.067E-02	-0.397
PM-144	2.507E-03		2.199E-02	3.689E-02	2.995E-03	0.068
PR-144	1.825E-01		1.648E+00	2.765E+00	2.244E-01	0.066
PM-146	1.027E-02		2.617E-02	4.396E-02	3.840E-03	0.234
ND-147	1.790E-01		4.071E-01	6.771E-01	9.448E-02	0.264
PM-149	3.969E-05		8.414E-05	Half-Life too short		
EU-152	-6.851E-02		8.734E-02	9.619E-02	6.272E-03	-0.712
GD-153	-1.162E-01		6.985E-02	9.842E-02	7.695E-03	-1.180
EU-154	-2.625E-02		7.959E-02	1.284E-01	1.292E-02	-0.205
TB-160	5.842E-02		9.118E-02	1.535E-01	1.686E-02	0.381
HO-166M	-5.639E-03		3.702E-02	6.133E-02	5.112E-03	-0.092
TA-182	1.042E-01		1.331E-01	2.265E-01	1.385E-02	0.460
IR-192	1.286E-02		2.253E-02	3.704E-02	2.149E-03	0.347
BI-207	1.051E-02		3.418E-02	5.786E-02	4.776E-03	0.182
PB-210	2.495E+00		3.991E+00	6.568E+00	5.035E-01	0.380
PB-211	-3.609E-01		5.290E-01	7.001E-01	3.359E-01	-0.516
RN-219	2.112E-01		2.516E-01	4.299E-01	5.780E-02	0.491
RA-223	3.977E-03		4.679E-01	6.574E-01	1.059E-01	0.006
AC-227	2.027E-01		1.649E-01	2.780E-01	2.816E-02	0.729
TH-227	2.027E-01		1.654E-01	2.780E-01	3.318E-02	0.729
TH-229	-1.554E-01		3.472E-01	5.740E-01	3.073E-02	-0.271
PA-231	-2.780E-01		1.037E+00	1.456E+00	1.904E-01	-0.191
TH-231	3.977E-03		4.679E-01	6.574E-01	1.059E-01	0.006
PA-233	-3.730E-02		4.012E-02	6.245E-02	3.826E-03	-0.597
PA-234	-1.098E-01		1.941E-01	3.043E-01	6.002E-02	-0.361
PA-234M	-1.957E-01		3.178E+00	5.045E+00	5.443E-01	-0.039
TH-234	5.356E-01		1.147E+00	1.890E+00	3.404E-01	0.283
U-238	5.356E-01		1.147E+00	1.890E+00	3.404E-01	0.283
NP-239	-2.012E-01		2.834E-01	4.467E-01	2.759E-02	-0.450
AM-241	8.054E-02		1.299E-01	2.204E-01	1.828E-02	0.366
CM-247	1.276E-02		2.349E-02	3.901E-02	2.271E-03	0.327
CF-249	2.292E-02		2.508E-02	4.325E-02	2.486E-03	0.530
CF-251	-8.268E-03		8.455E-02	1.419E-01	7.498E-03	-0.058

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]G247969001          *
* Acquisition date   : 10-MAR-2010 23:10:31 Detector SN#      :              *
* Detector ID        : GAM18 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 04:00:03.93 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247969001 Analyst initials: MXR1         *
* Batch Number       : 958216 Sample Quantity : 1.2441E+02 GRAM *
* Recovery           : 1.00000 Carrier Weight : 0.00000         *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope        :              *
* MSD DPM             : 0.000 MSD Isotope                     :              *
* LCS DPM             : 0.000 LCS Isotope                      :              *
* LCSD DPM            : 0.000 LCSD Isotope                    :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.667E+01	2.953E+00	1.458E-01	1.507E+00
MN-54	4.185E-02	2.353E-02	2.077E-02	1.201E-02
CD-109	3.791E+00	7.935E-01	4.436E-01	4.049E-01
SN-126	3.686E-01	7.717E-02	4.980E-02	3.937E-02
EU-155	1.449E-01	9.608E-02	6.106E-02	4.902E-02
HG-203	6.122E-02	3.869E-02	2.016E-02	1.974E-02
TL-208	5.969E-01	6.635E-02	1.838E-02	3.385E-02
BI-211	5.143E+00	4.472E-01	1.025E-01	2.282E-01
BI-212	2.343E+00	5.712E-01	2.538E-01	2.914E-01
PB-212	2.030E+00	1.631E-01	3.111E-02	8.321E-02
BI-214	1.621E+00	1.738E-01	3.497E-02	8.866E-02
PB-214	1.867E+00	1.911E-01	3.725E-02	9.750E-02
RA-224	5.064E+00	8.698E-01	3.330E-01	4.438E-01
RA-226	1.621E+00	1.738E-01	3.497E-02	8.866E-02
AC-228	2.390E+00	3.739E-01	6.839E-02	1.908E-01
RA-228	2.390E+00	3.739E-01	6.839E-02	1.908E-01
TH-228	2.030E+00	1.631E-01	3.111E-02	8.321E-02
TH-232	2.390E+00	3.739E-01	6.839E-02	1.908E-01
U-235	6.878E-02	1.405E-01	1.159E-01	7.168E-02
NP-237	1.100E+00	3.227E-01	1.510E-01	1.646E-01
ANH-511	1.654E-01	4.591E-02	1.418E-02	2.342E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	1.322E-01	2.091E-01	1.826E-01	1.067E-01	NOT IDENT.
NA-22	-1.062E-02	2.765E-02	2.274E-02	1.411E-02	NOT IDENT.
NA-24	-1.577E+06	2.294E+07	0.000E+00	1.171E+07	SHORT HLIF
SC-46	-8.896E-03	2.550E-02	2.103E-02	1.301E-02	FAIL ABUN
V-48	2.493E-02	5.017E-02	4.268E-02	2.560E-02	NOT IDENT.
CR-51	-3.750E-02	2.508E-01	2.093E-01	1.280E-01	NOT IDENT.

CO-56	-1.730E-02	2.440E-02	1.982E-02	1.245E-02	FAIL ABUN
CO-57	5.331E-03	1.774E-02	1.514E-02	9.052E-03	NOT IDENT.
CO-58	-3.776E-02	2.536E-02	1.978E-02	1.294E-02	NOT IDENT.
FE-59	-2.893E-02	6.054E-02	5.044E-02	3.089E-02	NOT IDENT.
CO-60	-3.373E-04	2.322E-02	1.936E-02	1.184E-02	NOT IDENT.
ZN-65	1.369E-01	7.088E-02	5.694E-02	3.616E-02	NOT IDENT.
SE-75	4.217E-02	3.164E-02	2.495E-02	1.614E-02	NOT IDENT.
SR-85	9.515E-02	2.654E-02	2.252E-02	1.354E-02	NOT IDENT.
Y-88	-3.668E-03	2.003E-02	1.637E-02	1.022E-02	NOT IDENT.
Y-91	1.935E+00	1.436E+01	1.219E+01	7.324E+00	NOT IDENT.
NB-94	6.816E-03	2.129E-02	1.853E-02	1.086E-02	NOT IDENT.
NB-95	9.106E-02	3.416E-02	2.779E-02	1.743E-02	NOT IDENT.
NB-95M	2.104E-01	9.690E-02	7.774E-02	4.944E-02	NOT IDENT.
ZR-95	3.740E-03	4.811E-02	4.120E-02	2.455E-02	NOT IDENT.
MO-99	2.829E-01	1.868E+01	1.481E+01	9.529E+00	NOT IDENT.
TC-99M	-1.406E+20	3.203E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.862E-02	2.525E-02	2.075E-02	1.288E-02	FAIL ABUN
RH-106	2.979E-02	2.008E-01	1.681E-01	1.025E-01	NOT IDENT.
RU-106	2.979E-02	2.008E-01	1.681E-01	1.025E-01	NOT IDENT.
AG-108M	5.872E-03	1.784E-02	1.556E-02	9.103E-03	NOT IDENT.
AG-110M	6.968E-03	2.431E-02	1.847E-02	1.241E-02	NOT IDENT.
SN-113	-1.994E-02	2.794E-02	2.373E-02	1.426E-02	NOT IDENT.
CD-115	-8.951E+00	1.883E+01	0.000E+00	9.605E+00	SHORT HLIF
SN-117M	1.842E-02	4.134E-02	3.718E-02	2.109E-02	NOT IDENT.
TE-123M	1.010E-02	1.854E-02	1.671E-02	9.459E-03	NOT IDENT.
SB-124	-1.088E-02	4.585E-02	3.766E-02	2.339E-02	NOT IDENT.
SB-125	-1.099E-03	5.370E-02	4.632E-02	2.740E-02	FAIL ABUN
TE-125M	-6.879E-01	7.946E+00	6.030E+00	4.054E+00	NOT IDENT.
I-126	2.326E-01	1.851E-01	1.471E-01	9.443E-02	NOT IDENT.
SB-126	8.212E-02	1.187E-01	9.123E-02	6.054E-02	NOT IDENT.
SB-127	2.756E-01	1.454E+00	1.263E+00	7.419E-01	NOT IDENT.
I-131	2.348E-02	9.102E-02	8.040E-02	4.644E-02	NOT IDENT.
TE-132	2.007E-01	9.759E-01	8.481E-01	4.979E-01	NOT IDENT.
BA-133	1.136E-02	2.922E-02	2.155E-02	1.491E-02	NOT IDENT.
I-133	-2.437E+04	5.193E+04	0.000E+00	2.650E+04	SHORT HLIF
CS-134	1.048E-01	3.406E-02	2.824E-02	1.738E-02	NOT IDENT.
CS-135	2.208E-01	1.204E-01	9.530E-02	6.144E-02	NOT IDENT.
I-135	-3.009E+18	2.158E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.255E-03	7.688E-02	6.593E-02	3.923E-02	NOT IDENT.
BA-137M	-5.153E-03	2.486E-02	1.834E-02	1.268E-02	NOT IDENT.
CS-137	-5.443E-03	2.626E-02	1.937E-02	1.340E-02	NOT IDENT.
CE-139	-9.465E-03	1.948E-02	1.709E-02	9.939E-03	NOT IDENT.
BA-140	1.116E-01	1.907E-01	1.620E-01	9.730E-02	NOT IDENT.
LA-140	-3.191E-02	5.616E-02	4.527E-02	2.865E-02	FAIL ABUN
CE-141	-1.565E-02	4.728E-02	3.820E-02	2.412E-02	NOT IDENT.
CE-143	6.011E+03	1.463E+03	0.000E+00	7.463E+02	SHORT HLIF
CE-144	-8.801E-02	1.569E-01	1.145E-01	8.004E-02	NOT IDENT.
PM-144	2.507E-03	2.155E-02	1.863E-02	1.099E-02	NOT IDENT.
PR-144	1.825E-01	1.615E+00	1.396E+00	8.240E-01	NOT IDENT.
PM-146	1.027E-02	2.565E-02	2.233E-02	1.309E-02	NOT IDENT.
ND-147	1.790E-01	3.990E-01	3.432E-01	2.035E-01	FAIL ABUN
PM-149	3.969E+01	1.649E+02	0.000E+00	8.414E+01	SHORT HLIF
EU-152	-6.851E-02	8.559E-02	4.904E-02	4.367E-02	FAIL ABUN
GD-153	-1.162E-01	6.846E-02	5.104E-02	3.493E-02	NOT IDENT.
EU-154	-2.625E-02	7.800E-02	6.427E-02	3.980E-02	NOT IDENT.
TO-160	5.842E-02	8.936E-02	7.725E-02	4.559E-02	FAIL ABUN
HB-166M	-5.639E-03	3.628E-02	3.096E-02	1.851E-02	FAIL ABUN
TA-182	1.042E-01	1.305E-01	1.135E-01	6.656E-02	NOT IDENT.
IR-192	1.286E-02	2.208E-02	1.891E-02	1.127E-02	FAIL ABUN
BI-207	1.051E-02	3.350E-02	2.905E-02	1.709E-02	FAIL ABUN
PB-210	2.495E+00	3.912E+00	3.439E+00	1.996E+00	NOT IDENT.
PB-211	-3.609E-01	5.184E-01	3.562E-01	2.645E-01	NOT IDENT.
RN-219	2.112E-01	2.466E-01	2.187E-01	1.258E-01	FAIL ABUN
RA-223	3.977E-03	4.586E-01	3.355E-01	2.340E-01	FAIL ABUN
AC-227	2.027E-01	1.616E-01	1.423E-01	8.245E-02	FAIL ABUN
TH-227	2.027E-01	1.621E-01	1.423E-01	8.270E-02	FAIL ABUN
TH-229	-1.554E-01	3.402E-01	2.949E-01	1.736E-01	FAIL ABUN
PA-231	-2.780E-01	1.016E+00	7.442E-01	5.184E-01	FAIL ABUN
TH-231	3.977E-03	4.586E-01	3.355E-01	2.340E-01	FAIL ABUN
PA-233	-3.730E-02	3.932E-02	3.188E-02	2.006E-02	FAIL ABUN
PA-234	-1.098E-01	1.902E-01	1.530E-01	9.706E-02	NOT IDENT.
PA-234M	-1.957E-01	3.115E+00	2.535E+00	1.589E+00	NOT IDENT.
TH-234	5.356E-01	1.124E+00	9.855E-01	5.735E-01	FAIL ABUN
U-238	5.356E-01	1.124E+00	9.855E-01	5.735E-01	FAIL ABUN
NP-239	-2.012E-01	2.778E-01	2.311E-01	1.417E-01	FAIL ABUN
AM-241	8.054E-02	1.273E-01	1.150E-01	6.497E-02	NOT IDENT.
CM-247	1.276E-02	2.302E-02	1.985E-02	1.175E-02	FAIL ABUN
CF-249	2.292E-02	2.458E-02	2.202E-02	1.254E-02	NOT IDENT.

CF-251

-8.268E-03

8.286E-02

7.299E-02

4.228E-02 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT          *
*****

```

ENERGY	MDA COUNTS
46.54	664.6442
49.72	695.7687
57.36	0.0000
59.54	722.7222
63.29	837.7618
63.29	837.7618
64.28	865.1522
67.75	897.0242
69.67	995.4629
70.83	991.8136
72.81	983.2783
72.87	983.4583
72.87	983.4583
74.82	999.0333
74.82	999.0333
74.82	999.0333
74.97	999.4799
77.11	1005.8051
77.11	1005.8051
77.11	1005.8051
79.69	897.6958
79.80	881.5955
80.12	882.3994
80.19	882.5710
80.57	892.4787
81.00	899.5370
81.07	899.7161
81.07	899.7161
83.79	978.8284
83.79	978.8284
85.43	1066.4126
86.48	1069.4354
86.55	1069.6398
86.79	1070.3175
86.94	1070.7532
87.57	1072.5551
88.03	816.4439
88.47	817.3926
89.96	1475.8456
91.11	887.5408
92.59	890.9231
92.59	890.9231
93.35	781.4525
94.67	813.5033
94.87	813.9118
94.87	813.9118
95.86	909.1753
97.43	929.8768
98.44	745.5335
99.53	721.3751
100.11	759.0286
103.18	822.6086
103.37	751.7584
105.31	738.7474
106.12	783.6708
109.28	805.3862
111.00	794.5455
111.76	831.3815
116.30	758.2098
117.23	793.4690
121.12	760.5207
121.78	749.4792
122.06	754.3146
123.07	759.2009
131.20	796.3889
133.52	816.8829
136.00	782.3576

136.47	794.3774
140.51	811.8643
140.51	0.0000
143.76	757.1161
144.24	766.9660
144.24	766.9660
145.44	787.0620
152.43	802.7750
153.25	750.8417
154.21	774.0128
154.21	774.0128
156.02	850.3081
158.56	743.6237
159.00	749.4790
162.66	776.3434
163.33	762.0811
165.86	791.2010
176.60	728.5524
177.52	749.6425
181.07	775.2059
184.41	713.4362
185.72	714.8493
193.51	770.7388
197.04	766.2491
205.31	780.3928
210.85	663.9850
215.65	692.9407
222.11	683.3643
227.38	692.9399
228.16	659.3910
228.18	659.4064
235.69	706.3931
235.96	717.6991
235.96	717.6991
238.63	657.2336
238.63	657.2336
240.99	659.1456
242.00	659.9600
244.70	615.1964
252.40	565.4556
252.80	574.8010
256.23	522.4445
256.23	522.4445
260.90	0.0000
264.66	462.9358
268.22	584.7056
269.46	557.1429
269.46	557.1429
271.23	552.0712
273.65	537.0355
276.40	517.9520
277.37	500.8723
277.60	500.9975
278.00	501.2186
279.20	470.4944
279.54	470.6671
280.46	516.0940
283.69	494.5064
284.31	480.6290
285.41	480.1514
285.90	0.0000
287.50	488.5619
293.27	0.0000
295.22	448.1580
295.96	448.5073
298.57	449.7236
299.98	450.3771
299.98	450.3771
300.09	450.4288
300.09	450.4288
300.13	450.4418
301.36	471.4343
302.85	443.1807
304.50	425.1420
304.50	425.1420
304.85	420.1699
308.46	452.1355
311.90	457.9942

316.51	419.0526
319.41	477.6536
320.08	449.7839
323.87	457.7587
323.87	457.7587
328.76	464.5065
333.37	491.7910
334.37	492.2559
334.37	492.2559
338.28	464.2846
338.28	464.2846
338.32	464.3039
338.32	464.3039
338.32	464.3039
340.48	422.5854
340.55	422.6087
344.28	470.2003
351.06	408.4048
351.93	408.7231
356.01	381.9803
364.49	375.8320
366.42	379.1817
383.85	399.5925
388.16	385.3642
388.63	392.8955
391.69	428.1054
400.66	380.0347
401.81	367.3382
402.40	374.1468
404.85	401.8862
410.95	389.7667
414.70	375.4512
423.72	353.8537
427.09	363.3383
427.87	342.6152
433.94	341.3420
453.88	334.8168
463.37	340.0646
468.07	305.5870
473.00	340.4417
476.78	325.5648
477.60	326.7413
487.02	301.0692
492.35	0.0000
497.08	317.1587
511.00	294.8890
514.00	244.5415
527.90	0.0000
529.87	0.0000
531.02	250.6764
537.26	257.8449
546.56	0.0000
563.25	300.6844
569.33	282.9397
569.50	265.1497
569.70	265.1867
583.19	299.3884
600.60	298.9014
602.73	338.4607
604.72	365.5984
609.32	291.8223
609.32	291.8223
610.33	298.7938
614.28	270.7751
618.01	287.8789
621.93	284.1954
621.93	284.1954
633.25	293.6052
635.95	253.7459
636.99	274.5976
645.85	246.3684
657.76	267.6409
661.66	288.7075
661.66	288.7075
664.57	0.0000
666.33	257.7915
666.50	257.8142
677.62	258.0006

685.70	255.3587
695.00	279.0598
696.49	298.0150
696.51	298.0215
697.00	314.9658
702.65	304.5938
706.68	322.1697
711.68	264.4255
720.70	235.8020
721.93	0.0000
722.78	234.4219
722.91	234.4369
723.31	236.1105
724.19	254.1311
727.33	254.5229
733.00	229.0576
735.93	245.6328
739.50	233.6100
747.24	263.3136
752.31	236.0179
753.82	244.8636
756.73	277.0620
763.94	245.7651
765.81	264.2643
766.42	267.6670
777.92	300.3113
778.90	257.5278
783.70	243.0136
785.37	236.4917
795.86	188.7578
801.95	280.3671
810.29	269.1501
810.76	265.2520
815.77	212.2802
818.51	220.4824
832.01	202.1046
834.85	284.0982
836.80	0.0000
846.77	225.2396
856.80	228.5186
860.56	187.2711
871.09	206.2503
873.19	202.3645
875.33	0.0000
879.36	196.7695
880.51	210.1240
883.24	211.3841
884.68	195.1618
889.28	224.1996
898.04	247.6144
911.20	193.0196
911.20	193.0196
911.20	193.0196
926.50	176.3921
937.49	164.6355
944.13	221.5009
946.00	219.9506
949.00	173.0231
962.29	211.4096
964.08	196.1870
966.15	196.3459
968.97	196.5579
968.97	196.5579
968.97	196.5579
983.53	179.5866
996.26	211.4143
1001.03	225.6986
1004.73	251.7147
1037.84	211.8813
1038.76	0.0000
1048.07	193.0806
1050.41	187.6383
1050.41	187.6383
1063.66	211.9775
1085.87	222.1403
1099.45	226.0303
1112.07	210.3179
1115.54	228.9465

1120.29	211.3806
1120.29	211.3806
1120.55	211.4037
1121.30	189.2115
1131.51	0.0000
1173.23	222.9060
1177.93	216.4252
1189.05	250.4643
1204.77	246.8067
1221.41	250.0793
1231.02	246.3679
1235.36	269.2917
1238.28	250.4092
1260.41	0.0000
1271.85	188.7409
1274.44	191.8993
1274.54	193.9155
1291.59	143.4065
1298.22	0.0000
1312.11	138.1819
1332.49	123.6756
1365.19	107.3008
1368.63	0.0000
1384.29	106.0140
1408.01	114.8608
1457.56	0.0000
1460.82	70.4406
1489.16	118.4640
1505.03	108.3615
1596.21	77.7321
1620.50	96.1102
1678.03	0.0000
1690.97	55.9615
1764.49	38.9429
1764.49	38.9429
1770.23	51.5461
1771.35	49.7823
1791.20	0.0000
1836.06	50.7248

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969001

Total Uranium Activity	1.6252E+00	ug/g
Total Uranium Counting Unc.	3.3449E+00	ug/g
Total Uranium Tpu	1.7066E-06	ug/g
Total Uranium Mda	2.9324E+00	ug/g


```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958216                          SAMPLE ID   : G247969001
*  ANALYST       : MXR1                             DETECTOR    : GAM18
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00          COUNT TIME   : 0 04:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 23:10:31.97          SAMPLE ALQT  : 124.410 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.231E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.261E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.598E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.275E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 03:13:20.49

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969002.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:10:57
Sample ID          : G247969002      Sample quantity      : 1.36790E+02 GRAM
Detector name      : GAM21           Detector geometry    : CAN
Elapsed live time  : 0 04:00:00.00   Elapsed real time  : 0 04:00:51.88 0.4%
Energy tolerance   : 1.50000 keV     Analyst Initials   : MXR1
Abundance limit    : 75.00000        Sensitivity        : 5.00000
Batch ID          : 958216           Detector SN#       :
Matrix Spike ID    :                 LCS ID              : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.55*	296	908	0.65	93.08	89	8	2.05E-02	18.8	
2	0	52.91*	107	906	0.95	105.79	103	7	7.44E-03	48.4	
3	0	63.37	384	1255	0.91	126.69	124	7	2.67E-02	16.1	
4	2	73.16	138	991	0.82	146.28	144	22	9.57E-03	34.2	9.14E+00
5	2	74.88*	1752	936	0.82	149.72	144	22	1.22E-01	3.6	
6	2	77.10*	2821	660	0.72	154.16	144	22	1.96E-01	2.3	
7	2	80.88	106	725	0.84	161.71	144	22	7.34E-03	41.5	
8	6	84.06*	399	985	1.11	168.07	165	13	2.77E-02	14.1	2.19E+00
9	6	87.18*	884	905	0.97	174.29	165	13	6.14E-02	6.3	
10	0	89.89	532	662	0.90	179.73	178	5	3.69E-02	8.5	
11	0	93.07*	967	1276	1.53	186.07	183	11	6.72E-02	7.9	
12	0	105.15	176	889	1.21	210.22	207	9	1.22E-02	31.5	
13	0	128.96	288	804	0.69	257.82	254	8	2.00E-02	18.1	
14	0	153.49	183	874	1.09	306.86	302	10	1.27E-02	31.1	
15	0	185.83*	529	808	1.10	371.52	366	11	3.67E-02	11.4	
16	0	209.01	276	572	0.85	417.85	414	9	1.91E-02	16.8	
17	6	238.46*	2984	312	0.88	476.74	472	17	2.07E-01	2.0	5.04E+00
18	6	241.34*	805	438	1.63	482.49	472	17	5.59E-02	7.0	
19	0	270.21	222	370	0.85	540.21	536	9	1.54E-02	17.0	
20	0	277.40*	165	317	0.85	554.59	551	9	1.15E-02	21.4	
21	0	295.03*	868	404	0.98	589.84	585	11	6.03E-02	5.7	
22	0	299.96*	164	411	1.16	599.70	596	11	1.14E-02	25.3	
23	0	327.61	126	273	1.06	654.98	651	8	8.72E-03	24.4	
24	0	338.05	437	352	1.14	675.87	672	9	3.03E-02	9.1	
25	0	351.67*	1391	363	0.97	703.09	697	12	9.66E-02	3.9	
26	0	409.47	61	308	1.20	818.67	814	11	4.22E-03	57.7	
27	0	462.46	144	195	0.92	924.62	920	10	1.00E-02	20.0	
28	0	510.46*	217	294	1.72	1020.61	1014	14	1.51E-02	19.9	
29	0	582.88*	713	139	1.32	1165.45	1161	10	4.95E-02	5.0	
30	0	608.94*	935	128	1.21	1217.57	1213	9	6.49E-02	4.0	
31	0	726.70	246	109	1.41	1453.11	1446	12	1.71E-02	10.6	
32	0	768.29	86	104	1.91	1536.30	1531	10	5.94E-03	25.0	
33	0	794.32	126	69	1.22	1588.36	1583	11	8.74E-03	15.6	
34	0	860.60	66	115	1.49	1720.95	1714	11	4.62E-03	33.8	
35	0	910.60	496	148	1.47	1820.97	1813	16	3.44E-02	7.1	
36	0	964.14	68	93	1.10	1928.09	1924	9	4.70E-03	28.4	
37	0	968.65	231	99	1.83	1937.11	1933	10	1.60E-02	10.5	
38	0	1119.76	232	92	1.41	2239.45	2233	14	1.61E-02	10.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1238.20	91	111	1.99	2476.47	2471	12	6.32E-03	25.8	
40	0	1377.12*	46	19	2.18	2754.48	2748	11	3.20E-03	24.3	
41	0	1408.89	65	42	6.14	2818.07	2808	23	4.51E-03	29.7	
42	0	1460.07	1922	42	2.01	2920.52	2910	19	1.33E-01	2.4	
43	0	1556.36	16	2	0.62	3113.24	3107	10	1.11E-03	30.8	
44	0	1728.77	38	3	0.74	3458.40	3452	12	2.63E-03	18.6	
45	0	1763.46*	132	16	2.21	3527.85	3519	20	9.20E-03	11.6	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:10:57
Sample ID         : G247969002 Sample quantity      : 136.79 GRAM
Sample type       : SOLID Sample geometry       :
Detector name     : GAMMA21 Detector geometry: CAN
Elapsed live time : 0 04:00:00.00 Elapsed real time: 0 04:00:51.88 0.4%
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	*	3.433E+01	3.370E+00	5.206E-01	4.445E-02	65.939
CD-109	+	88.03	*	4.144E+00	6.488E-01	5.438E-01	5.117E-02	7.620
SN-126	+	64.28		6.710E-01	2.383E-01	2.231E-01	3.306E-02	3.007
	+	86.94		1.676E+00	7.267E-01	2.231E-01	9.259E-02	7.512
	+	87.57	*	4.030E-01	6.310E-02	5.378E-02	5.041E-03	7.494
EU-155	+	86.55		4.894E-01	7.686E-02	6.505E-02	6.099E-03	7.523
	+	105.31	*	1.491E-01	9.510E-02	8.705E-02	9.073E-03	1.713
TL-208	+	277.37		9.036E-01	4.040E-01	4.142E-01	5.276E-02	2.182
	+	583.19	*	6.478E-01	9.545E-02	4.912E-02	5.347E-03	13.187
	+	860.56		6.079E-01	4.157E-01	3.770E-01	3.741E-02	1.612
PB-210	+	46.54	*	1.300E+00	5.048E-01	4.352E-01	4.115E-02	2.988
BI-211	+	72.87		1.858E+00	1.281E+00	1.740E+00	1.457E-01	1.068
	+	351.06	*	4.928E+00	5.867E-01	2.402E-01	2.168E-02	20.520
PB-212	+	74.82		2.826E+00	4.169E-01	2.090E-01	2.698E-02	13.522
	+	77.11		2.739E+00	2.679E-01	1.263E-01	1.090E-02	21.682
	+	238.63	*	2.140E+00	2.309E-01	6.080E-02	6.074E-03	35.207
	+	300.09		1.943E+00	1.007E+00	8.899E-01	9.597E-02	2.183
BI-214	+	609.32	*	1.659E+00	2.378E-01	9.334E-02	1.107E-02	17.776
	+	1120.29		2.298E+00	5.593E-01	4.096E-01	4.418E-02	5.610
	+	1764.49		1.985E+00	4.901E-01	2.559E-01	2.127E-02	7.757
PB-214	+	74.82		5.009E+00	6.829E-01	3.705E-01	4.302E-02	13.522
	+	77.11		4.829E+00	6.177E-01	2.227E-01	2.658E-02	21.682
	+	242.00		3.511E+00	6.170E-01	3.713E-01	3.940E-02	9.457
	+	295.22		1.807E+00	2.865E-01	1.478E-01	1.633E-02	12.227
	+	351.93	*	1.789E+00	2.347E-01	8.742E-02	9.241E-03	20.459
RA-223	+	81.07		1.174E-01	9.807E-02	1.456E-01	1.295E-02	0.806
	+	83.79		2.707E-01	8.011E-02	8.090E-02	7.349E-03	3.346
		94.87		2.930E-01	2.219E-01	3.440E-01	3.351E-02	0.852
		144.24		3.727E-01	4.396E-01	7.024E-01	7.628E-02	0.531
	+	154.21		7.004E-01	4.409E-01	3.793E-01	3.777E-02	1.847
	+	269.46		5.623E-01	1.984E-01	1.870E-01	1.702E-02	3.007
	+	323.87	*	-1.361E-01	5.352E-01	7.580E-01	1.322E-01	-0.180
	+	338.28		6.758E+00	1.477E+00	1.160E+00	1.408E-01	5.826
RA-224	+	240.99	*	6.209E+00	1.030E+00	6.535E-01	5.807E-02	9.501

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	+	609.32	*	1.659E+00	2.378E-01	9.334E-02	1.107E-02	17.776
	+	1120.29		2.298E+00	5.593E-01	4.096E-01	4.418E-02	5.610
	+	1764.49		1.985E+00	4.901E-01	2.559E-01	2.127E-02	7.757
AC-228	+	338.32		1.703E+00	7.752E-01	2.924E-01	1.220E-01	5.825
	+	911.20	*	2.321E+00	4.267E-01	2.011E-01	2.352E-02	11.544
	+	968.97		1.875E+00	6.033E-01	3.497E-01	8.535E-02	5.362
RA-228	+	338.32		1.703E+00	7.752E-01	2.924E-01	1.220E-01	5.825
	+	911.20	*	2.321E+00	4.267E-01	2.011E-01	2.352E-02	11.544
	+	968.97		1.875E+00	6.033E-01	3.497E-01	8.535E-02	5.362
TH-228	+	74.82		2.826E+00	3.151E-01	2.090E-01	1.790E-02	13.522
	+	77.11		2.739E+00	2.679E-01	1.263E-01	1.090E-02	21.682
	+	238.63	*	2.140E+00	2.309E-01	6.080E-02	6.074E-03	35.207
TH-229	+	300.09		1.943E+00	1.545E+00	8.899E-01	5.451E-01	2.183
	+	85.43		4.548E-01	1.346E-01	1.343E-01	1.237E-02	3.387
	+	88.47		6.214E-01	9.728E-02	8.168E-02	7.701E-03	7.607
TH-231		193.51	*	-1.241E-02	3.347E-01	5.642E-01	4.789E-02	-0.022
		210.85		1.768E-01	6.044E-01	9.218E-01	7.995E-02	0.192
	+	81.07		1.174E-01	9.807E-02	1.456E-01	1.295E-02	0.806
TH-232	+	83.79		2.707E-01	8.011E-02	8.090E-02	7.349E-03	3.346
		94.87		2.930E-01	2.219E-01	3.440E-01	3.351E-02	0.852
		144.24		3.727E-01	4.396E-01	7.024E-01	7.628E-02	0.531
TH-234	+	154.21		7.004E-01	4.409E-01	3.793E-01	3.777E-02	1.847
	+	269.46		5.623E-01	1.984E-01	1.870E-01	1.702E-02	3.007
	+	323.87	*	-1.361E-01	5.352E-01	7.580E-01	1.322E-01	-0.180
U-235	+	338.28		6.758E+00	1.477E+00	1.160E+00	1.408E-01	5.826
	+	338.32		1.703E+00	3.433E-01	2.924E-01	2.549E-02	5.825
	+	911.20	*	2.321E+00	4.267E-01	2.011E-01	2.352E-02	11.544
NP-237	+	968.97		1.875E+00	6.033E-01	3.497E-01	8.535E-02	5.362
	+	63.29	*	1.741E+00	6.440E-01	5.791E-01	1.045E-01	3.006
	+	92.59		3.912E+00	1.078E+00	4.195E-01	9.436E-02	9.327
U-238	+	89.96		2.602E+00	7.848E-01	5.248E-01	1.308E-01	4.958
	+	93.35		2.955E+00	8.384E-01	3.179E-01	7.472E-02	9.297
		143.76	*	7.536E-02	1.318E-01	2.085E-01	3.692E-02	0.361
ANH-511		163.33		-1.317E-01	2.633E-01	4.417E-01	7.877E-02	-0.298
	+	185.72		2.327E-01	5.665E-02	4.162E-02	3.493E-03	5.592
		205.31		8.026E-02	3.352E-01	5.108E-01	9.269E-02	0.157
U-238	+	86.48	*	1.203E+00	3.147E-01	1.598E-01	3.665E-02	7.525
	+	95.86		1.615E-01	4.572E-01	6.862E-01	1.677E-01	0.235
	+	63.29	*	1.741E+00	6.440E-01	5.791E-01	1.045E-01	3.006
ANH-511	+	92.59		3.912E+00	7.274E-01	4.195E-01	4.038E-02	9.327
	+	511.00	*	1.462E-01	5.990E-02	3.902E-02	3.740E-03	3.746

---- 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	*	-8.296E-02	2.515E-01	4.137E-01	4.052E-02	-0.201
NA-22		1274.54	*	-4.168E-02	4.432E-02	6.533E-02	5.359E-03	-0.638
NA-24		1368.63	*	9.034E+00	4.432E-02	Half-Life too short		

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SC-46		889.28	*	-1.442E-02	3.467E-02	5.605E-02	4.984E-03	-0.257
	+	1120.55		3.998E-01	9.354E-02	1.359E-01	1.149E-02	2.942
V-48		944.13		8.128E-02	9.270E-01	1.549E+00	1.358E-01	0.052
		983.53	*	-1.156E-02	7.282E-02	1.189E-01	1.040E-02	-0.097
		1312.11		2.073E-02	8.918E-02	1.463E-01	1.192E-02	0.142
CR-51		320.08	*	1.145E-01	2.889E-01	4.763E-01	4.424E-02	0.240
MN-54		834.85	*	9.809E-03	3.553E-02	6.065E-02	5.878E-03	0.162
CO-56		846.77	*	3.016E-02	3.470E-02	6.150E-02	5.862E-03	0.490
		1037.84		2.554E-02	2.908E-01	4.815E-01	4.393E-02	0.053
	+	1238.28		2.613E-01	1.367E-01	1.845E-01	1.566E-02	1.416
		1771.35		-1.238E-02	2.192E-01	3.007E-01	2.499E-02	-0.041
CO-57		122.06	*	-1.120E-03	1.444E-02	2.274E-02	2.612E-03	-0.049
		136.47		-1.370E-02	1.266E-01	1.973E-01	2.185E-02	-0.069
CO-58		810.76	*	-5.610E-02	3.600E-02	5.331E-02	5.335E-03	-1.052
FE-59		1099.45	*	7.695E-03	9.188E-02	1.512E-01	1.395E-02	0.051
		1291.59		1.236E-01	1.253E-01	2.180E-01	2.048E-02	0.567
CO-60		1173.23		-7.595E-03	4.602E-02	7.385E-02	6.086E-03	-0.103
		1332.49	*	7.990E-03	3.576E-02	6.117E-02	4.964E-03	0.131
ZN-65		1115.54	*	3.027E-02	9.536E-02	1.392E-01	1.180E-02	0.217
SE-75		121.12		1.827E-02	7.539E-02	1.202E-01	1.607E-02	0.152
		136.00		3.663E-03	2.450E-02	3.856E-02	4.099E-03	0.095
		264.66	*	-1.512E-03	2.982E-02	4.896E-02	4.396E-03	-0.031
		279.54		-3.618E-02	8.413E-02	1.199E-01	1.107E-02	-0.302
		400.66		1.016E-01	2.060E-01	3.349E-01	3.576E-02	0.303
SR-85		514.00	*	5.355E-02	3.307E-02	5.378E-02	5.175E-03	0.996
Y-88		898.04		1.054E-02	3.938E-02	6.689E-02	5.879E-03	0.158
		1836.06	*	1.543E-03	3.597E-02	5.874E-02	4.850E-03	0.026
Y-91		1204.77	*	1.018E+01	2.344E+01	3.906E+01	3.218E+00	0.261
NB-94		702.65	*	-9.523E-03	2.963E-02	4.682E-02	5.099E-03	-0.203
		871.09		-2.822E-03	2.904E-02	4.825E-02	4.429E-03	-0.058
NB-95		765.81	*	1.393E-03	4.970E-02	6.963E-02	7.277E-03	0.020
NB-95M		235.69	*	6.456E-02	9.174E-02	1.408E-01	1.422E-02	0.458
ZR-95		724.19		9.479E-02	9.759E-02	1.486E-01	1.688E-02	0.638
		756.73	*	-1.450E-02	7.313E-02	1.157E-01	1.305E-02	-0.125
MO-99		140.51		-2.818E+01	3.315E+01	4.787E+01	1.167E+01	-0.589
		181.07		-1.079E+01	2.799E+01	4.194E+01	7.825E+00	-0.257
		366.42		2.819E+01	1.767E+02	2.848E+02	2.388E+01	0.099
		739.50	*	-2.868E+00	2.808E+01	4.484E+01	7.606E+00	-0.064
		777.92		3.865E+01	8.153E+01	1.346E+02	1.392E+01	0.287
TC-99M		140.51	*	-2.404E+14	8.153E+01	Half-Life	too short	
RU-103		497.08	*	-4.132E-03	3.109E-02	5.151E-02	7.455E-03	-0.080
	+	610.33		1.818E+01	3.500E+00	2.810E+00	4.914E-01	6.470
RH-106		621.93	*	-3.721E-02	2.768E-01	4.490E-01	6.607E-02	-0.083
		1050.41		3.629E-01	2.304E+00	3.833E+00	3.315E-01	0.095
RU-106		621.93	*	-3.721E-02	2.768E-01	4.490E-01	4.817E-02	-0.083
		1050.41		3.629E-01	2.304E+00	3.833E+00	3.315E-01	0.095
AG-108M		433.94	*	-2.255E-03	2.125E-02	3.573E-02	3.163E-03	-0.063
		614.28		-1.074E-05	3.120E-02	4.729E-02	5.152E-03	0.000
		722.91		-1.445E-02	3.823E-02	5.179E-02	5.696E-03	-0.279

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AG-110M	657.76	*		-1.555E-02	3.125E-02	4.910E-02	5.508E-03	-0.317
	677.62			-7.477E-02	2.784E-01	4.431E-01	4.960E-02	-0.169
	706.68			1.693E-01	2.005E-01	3.398E-01	3.761E-02	0.498
	763.94			-4.262E-02	1.763E-01	2.406E-01	2.566E-02	-0.177
	884.68			4.912E-03	4.210E-02	7.096E-02	6.552E-03	0.069
	937.49			-1.348E-01	1.081E-01	1.626E-01	1.475E-02	-0.829
	1384.29			-6.539E-02	1.484E-01	2.242E-01	1.892E-02	-0.292
	1505.03			-1.435E-01	2.450E-01	3.758E-01	3.127E-02	-0.382
SN-113	391.69	*		-1.938E-02	3.491E-02	5.357E-02	4.412E-03	-0.362
CD-115	260.90			-1.628E-04	3.491E-02	Half-Life	too short	
	492.35			-1.261E-06	3.491E-02	Half-Life	too short	
	527.90	*		-1.043E-05	3.491E-02	Half-Life	too short	
SN-117M	156.02			-1.526E-01	1.733E+00	2.673E+00	2.412E-01	-0.057
	158.56	*		3.569E-03	4.080E-02	6.707E-02	5.904E-03	0.053
TE-123M	159.00	*		2.093E-03	1.724E-02	2.963E-02	2.612E-03	0.071
SB-124	602.73			-2.425E-02	3.556E-02	5.365E-02	5.666E-03	-0.452
	645.85			1.531E-01	4.568E-01	7.602E-01	8.605E-02	0.201
	722.78			-1.653E-01	3.986E-01	5.377E-01	5.880E-02	-0.307
	1690.97	*		5.251E-02	7.062E-02	1.288E-01	1.124E-02	0.408
SB-125	427.87	*		-8.912E-03	7.017E-02	1.181E-01	1.021E-02	-0.075
+	463.37			8.389E-01	3.445E-01	4.464E-01	4.288E-02	1.879
	600.60			1.252E-02	1.510E-01	2.491E-01	2.757E-02	0.050
	635.95			-2.383E-02	2.277E-01	3.690E-01	4.211E-02	-0.065
TE-125M	109.28	*		9.668E+00	5.770E+00	8.907E+00	1.083E+00	1.085
I-126	388.63			2.190E-01	1.548E-01	2.635E-01	2.110E-02	0.831
	666.33	*		2.484E-01	2.469E-01	4.230E-01	4.667E-02	0.587
	753.82			1.151E+00	2.030E+00	3.381E+00	3.568E-01	0.341
SB-126	414.70			-4.601E-02	7.711E-02	1.108E-01	9.192E-03	-0.415
	666.50			8.425E-02	8.471E-02	1.451E-01	1.601E-02	0.580
	695.00			3.835E-02	8.627E-02	1.434E-01	1.567E-02	0.267
	697.00			8.319E-02	2.842E-01	4.687E-01	5.117E-02	0.177
	720.70	*		4.957E-02	1.779E-01	2.572E-01	2.775E-02	0.193
	856.80			5.608E-02	6.050E-01	8.901E-01	8.358E-02	0.063
SB-127	252.40			1.017E+00	5.358E+00	8.892E+00	3.725E+00	0.114
	473.00			-1.569E-01	2.303E+00	3.851E+00	5.401E-01	-0.041
	685.70	*		1.708E+00	2.300E+00	3.882E+00	5.493E-01	0.440
	783.70			9.478E+00	6.571E+00	1.125E+01	1.626E+00	0.842
I-131	80.19	+		3.334E+00	2.785E+00	3.857E+00	3.436E-01	0.865
	284.31			-1.363E+00	1.402E+00	2.183E+00	2.047E-01	-0.625
	364.49	*		-9.451E-02	1.156E-01	1.758E-01	1.567E-02	-0.538
	636.99			1.887E-01	1.721E+00	2.830E+00	3.190E-01	0.067
TE-132	49.72			4.567E+00	4.912E+00	7.054E+00	8.350E-01	0.647
	111.76			-1.518E+01	3.667E+01	5.735E+01	7.815E+00	-0.265
	116.30			-6.756E+00	3.238E+01	5.092E+01	7.064E+00	-0.133
	228.16	*		-4.887E-01	9.760E-01	1.590E+00	2.646E-01	-0.307
BA-133	81.00	+		5.184E-02	4.380E-02	6.047E-02	9.473E-03	0.857
+	276.40			8.357E-01	3.776E-01	4.471E-01	6.394E-02	1.869
	302.85			3.162E-02	1.071E-01	1.582E-01	2.099E-02	0.200
	356.01	*		-2.263E-02	3.531E-02	4.786E-02	6.170E-03	-0.473

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133		383.85		2.105E-01	2.211E-01	3.683E-01	4.445E-02	0.571
		529.87	*	9.058E-03	2.211E-01	Half-Life	too short	
		875.33		9.176E-01	2.211E-01	Half-Life	too short	
CS-134		1298.22		2.500E+00	2.211E-01	Half-Life	too short	
		563.25		2.300E-01	3.273E-01	5.596E-01	5.733E-02	0.411
		569.33		-6.378E-02	1.683E-01	2.713E-01	2.804E-02	-0.235
		604.72		-8.619E-05	3.216E-02	4.625E-02	4.900E-03	-0.002
		795.86	*	1.460E-01	4.951E-02	8.454E-02	8.630E-03	1.726
CS-135		801.95		-8.881E-02	3.512E-01	5.826E-01	5.902E-02	-0.152
		1365.19		-5.086E-01	1.121E+00	1.787E+00	1.534E-01	-0.285
		268.22	*	1.055E-01	1.134E-01	1.747E-01	1.789E-02	0.604
I-135		546.56		-1.632E+12	1.134E-01	Half-Life	too short	
		836.80		1.154E+14	1.134E-01	Half-Life	too short	
		1038.76		3.309E+13	1.134E-01	Half-Life	too short	
		1131.51		1.092E+13	1.134E-01	Half-Life	too short	
		1260.41	*	1.110E+13	1.134E-01	Half-Life	too short	
		1457.56		6.332E+15	1.134E-01	Half-Life	too short	
		1678.03		-1.515E+13	1.134E-01	Half-Life	too short	
		1791.20		-1.651E+13	1.134E-01	Half-Life	too short	
		153.25		1.845E+00	1.164E+00	1.134E+00	1.226E-01	1.627
		176.60		-6.155E-02	3.660E-01	6.187E-01	5.692E-02	-0.099
		273.65		1.655E-01	5.407E-01	6.445E-01	6.213E-02	0.257
		340.55		5.812E-02	1.444E-01	2.119E-01	1.913E-02	0.274
		818.51		-7.954E-02	7.555E-02	1.167E-01	1.157E-02	-0.681
		1048.07	*	-7.358E-02	1.202E-01	1.878E-01	1.694E-02	-0.392
		1235.36		5.002E-01	9.266E-01	1.345E+00	1.544E-01	0.372
BA-137M		661.66	*	3.869E-03	3.440E-02	5.631E-02	6.219E-03	0.069
CS-137		661.66	*	4.087E-03	3.634E-02	5.948E-02	6.577E-03	0.069
CE-139		165.86	*	1.693E-02	1.848E-02	3.230E-02	2.625E-03	0.524
BA-140		162.66		-8.247E-02	5.830E-01	9.926E-01	8.955E-02	-0.083
		304.85		6.500E-01	1.224E+00	1.814E+00	5.326E-01	0.358
		423.72		-6.667E-01	1.798E+00	2.970E+00	9.754E-01	-0.225
LA-140		537.26	*	-3.038E-01	2.873E-01	4.143E-01	1.419E-01	-0.733
		328.76		7.225E-01	3.595E-01	4.993E-01	4.633E-02	1.447
		487.02		1.552E-03	1.250E-01	2.094E-01	2.050E-02	0.007
		815.77		2.798E-01	3.261E-01	5.794E-01	6.269E-02	0.483
CE-141		1596.21	*	-2.253E-01	1.116E-01	1.355E-01	1.133E-02	-1.663
		145.44	*	3.100E-03	4.442E-02	6.932E-02	6.951E-03	0.045
CE-143		57.36		5.750E-04	4.442E-02	Half-Life	too short	
		293.27	*	2.756E-03	4.442E-02	Half-Life	too short	
		664.57		-1.506E-03	4.442E-02	Half-Life	too short	
CE-144		721.93		-1.458E-03	4.442E-02	Half-Life	too short	
		80.12		1.355E+00	1.132E+00	1.559E+00	1.375E-01	0.869
		133.52	*	-1.480E-01	1.295E-01	1.876E-01	3.111E-02	-0.789
PM-144		476.78		-4.106E-02	4.874E-02	7.748E-02	7.642E-03	-0.530
		618.01		3.225E-04	2.765E-02	4.530E-02	4.934E-03	0.007
PR-144		696.49	*	1.006E-02	3.049E-02	5.039E-02	5.505E-03	0.200
		696.51	*	7.250E-01	2.284E+00	3.772E+00	4.119E-01	0.192
		1489.16		-1.163E+01	1.052E+01	1.458E+01	1.212E+00	-0.797

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146		453.88	*	-2.345E-02	3.271E-02	5.287E-02	5.700E-03	-0.443
		633.25		1.167E+00	1.248E+00	2.028E+00	7.861E-01	0.575
		735.93		2.959E-02	1.360E-01	2.217E-01	6.370E-02	0.133
		747.24		-1.041E-02	8.466E-02	1.347E-01	2.134E-02	-0.077
ND-147	+	91.11		1.044E+00	2.064E-01	2.622E-01	2.676E-02	3.980
		319.41		-9.707E-01	2.925E+00	4.652E+00	4.120E-01	-0.209
		531.02	*	-1.551E-01	5.768E-01	9.422E-01	1.477E-01	-0.165
PM-149		285.90	*	9.311E-05	5.768E-01	Half-Life too short		
EU-152		121.78		3.070E-03	4.098E-02	6.492E-02	8.087E-03	0.047
		244.70		-1.647E-01	2.233E-01	3.168E-01	2.820E-02	-0.520
		344.28	*	-2.981E-02	7.439E-02	1.171E-01	1.074E-02	-0.255
		778.90		-1.107E-01	2.555E-01	3.958E-01	4.088E-02	-0.280
	+	964.08		5.914E-01	3.395E-01	5.277E-01	4.623E-02	1.121
		1085.87		2.490E-01	3.830E-01	6.558E-01	5.614E-02	0.380
		1112.07		5.488E-02	3.091E-01	4.830E-01	4.096E-02	0.114
	+	1408.01		5.681E-01	3.407E-01	3.264E-01	2.686E-02	1.740
GD-153		69.67		-4.923E-01	5.776E-01	9.274E-01	7.603E-02	-0.531
		97.43	*	-3.751E-02	4.609E-02	6.587E-02	6.507E-03	-0.569
		103.18		-2.806E-02	6.013E-02	8.682E-02	8.863E-03	-0.323
EU-154		123.07		-3.270E-03	2.958E-02	4.648E-02	6.324E-03	-0.070
		723.31		-6.319E-02	1.748E-01	2.373E-01	2.725E-02	-0.266
		873.19		-1.135E-02	2.563E-01	4.274E-01	5.250E-02	-0.027
		996.26		-1.479E-01	3.444E-01	5.494E-01	9.629E-02	-0.269
		1004.73		-1.920E-01	2.031E-01	3.092E-01	3.622E-02	-0.621
		1274.44	*	-7.996E-02	1.232E-01	1.866E-01	2.064E-02	-0.428
TB-160	+	86.79		1.339E+00	2.097E-01	2.722E-01	2.535E-02	4.921
		197.04		-2.325E-01	3.596E-01	5.924E-01	5.053E-02	-0.392
		215.65		1.144E-01	4.842E-01	8.168E-01	7.121E-02	0.140
	+	298.57		2.826E-01	1.454E-01	1.508E-01	1.346E-02	1.874
		879.36	*	7.008E-02	1.234E-01	2.146E-01	1.943E-02	0.327
		962.29		5.415E-01	6.131E-01	9.462E-01	8.291E-02	0.572
		966.15		1.044E+00	3.785E-01	4.929E-01	4.318E-02	2.118
		1177.93		-2.871E-02	3.677E-01	5.935E-01	4.891E-02	-0.048
		1271.85		-6.611E-02	7.359E-01	1.176E+00	9.640E-02	-0.056
HO-166M	+	80.57		1.472E-01	1.229E-01	1.718E-01	1.522E-02	0.856
	+	184.41		1.849E-01	4.501E-02	4.124E-02	3.454E-03	4.484
		280.46		2.232E-02	6.241E-02	9.325E-02	8.316E-03	0.239
	+	410.95		2.906E-01	3.363E-01	3.301E-01	2.719E-02	0.880
		711.68	*	1.468E-02	5.591E-02	9.181E-02	9.954E-03	0.160
		752.31		-1.204E-01	2.568E-01	3.979E-01	4.204E-02	-0.303
		810.29		-9.938E-02	5.426E-02	7.841E-02	7.837E-03	-1.267
TA-182		67.75		-4.757E-03	3.547E-02	5.826E-02	4.722E-03	-0.082
		100.11		7.623E-02	9.105E-02	1.496E-01	1.500E-02	0.510
	+	152.43		6.446E-01	4.050E-01	3.698E-01	3.450E-02	1.743
		222.11		2.906E-03	2.250E-01	3.759E-01	3.297E-02	0.008
		1121.30		9.071E-01	2.057E-01	3.622E-01	3.060E-02	2.504
		1189.05		8.445E-04	3.319E-01	5.385E-01	4.437E-02	0.002
		1221.41	*	5.631E-02	2.152E-01	3.539E-01	2.913E-02	0.159
		1231.02		-1.489E-02	5.664E-01	8.596E-01	7.073E-02	-0.017

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

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IR-192	+	295.96	1.379E+00	1.999E-01	2.389E-01	2.147E-02	5.775
		308.46	-1.095E-02	6.917E-02	1.114E-01	9.965E-03	-0.098
		316.51	* -6.305E-03	2.590E-02	4.145E-02	3.684E-03	-0.152
		468.07	-1.150E-02	5.530E-02	8.503E-02	8.199E-03	-0.135
HG-203	+	70.83	-8.654E-02	5.141E-01	7.778E-01	1.234E-01	-0.111
		72.87	4.865E-01	3.413E-01	4.967E-01	7.647E-02	0.980
		279.20	* -6.635E-03	3.061E-02	4.424E-02	4.038E-03	-0.150
		72.81	1.069E-01	7.372E-02	1.087E-01	9.091E-03	0.984
BI-207	+	74.97	8.147E-01	9.033E-02	1.099E-01	9.333E-03	7.413
		569.70	-9.145E-03	2.619E-02	4.231E-02	4.332E-03	-0.216
		1063.66	* -2.798E-02	4.968E-02	7.783E-02	6.708E-03	-0.360
		1770.23	-4.621E-02	4.403E-01	5.964E-01	4.956E-02	-0.077
PB-211	+	404.85	* -5.691E-02	6.380E-01	8.898E-01	4.299E-01	-0.064
		427.09	6.516E-01	1.197E+00	2.015E+00	9.318E-01	0.323
		832.01	-7.552E-01	9.984E-01	1.461E+00	7.605E-01	-0.517
		727.33	* 3.568E+00	9.053E-01	1.180E+00	1.654E-01	3.024
BI-212	+	785.37	5.245E+00	3.152E+00	5.505E+00	5.651E-01	0.953
		1620.50	1.864E+00	2.132E+00	3.887E+00	3.251E-01	0.479
		271.23	7.237E-01	2.581E-01	3.117E-01	3.279E-02	2.322
		401.81	* 9.409E-02	3.174E-01	5.108E-01	7.447E-02	0.184
AC-227	+	79.69	6.673E-01	5.660E-01	7.433E-01	1.288E-01	0.898
		235.96	7.122E-02	1.076E-01	1.648E-01	1.738E-02	0.432
		256.23	* -1.562E-01	1.737E-01	2.743E-01	3.368E-02	-0.569
		299.98	2.137E+00	1.118E+00	1.216E+00	1.570E-01	1.758
TH-227	+	304.50	8.690E-01	1.203E+00	1.814E+00	3.027E-01	0.479
		334.37	6.889E-02	1.434E+00	2.044E+00	3.201E-01	0.034
		79.80	8.808E-01	7.563E-01	9.866E-01	2.156E-01	0.893
		235.96	7.122E-02	1.076E-01	1.648E-01	1.643E-02	0.432
PA-231	+	256.23	* -1.562E-01	1.740E-01	2.743E-01	3.788E-02	-0.569
		299.98	2.137E+00	1.118E+00	1.216E+00	1.570E-01	1.758
		304.50	8.690E-01	1.203E+00	1.814E+00	3.027E-01	0.479
		334.37	6.889E-02	1.434E+00	2.044E+00	3.201E-01	0.034
PA-233	+	283.69	* -6.391E-01	1.007E+00	1.593E+00	2.352E-01	-0.401
		301.36	1.373E+00	7.163E-01	7.193E-01	8.894E-02	1.909
		300.13	9.671E-01	5.112E-01	5.503E-01	8.258E-02	1.757
		311.90	* -4.706E-02	4.764E-02	7.330E-02	6.690E-03	-0.642
PA-234	+	340.48	2.752E-01	5.217E-01	7.660E-01	1.846E-01	0.359
		94.67	1.968E-01	8.614E-02	1.329E-01	1.754E-02	1.481
		98.44	5.135E-02	5.586E-02	7.407E-02	4.148E-02	0.693
		111.00	-1.915E-01	1.043E-01	1.497E-01	2.043E-02	-1.279
PA-234M	+	131.20	4.027E-02	6.839E-02	1.012E-01	1.103E-02	0.398
		569.50	-9.485E-02	2.317E-01	3.727E-01	3.816E-02	-0.254
		733.00	8.170E-02	3.540E-01	5.588E-01	1.290E-01	0.146
		880.51	-2.094E-02	2.405E-01	3.994E-01	3.608E-02	-0.052
PA-234M	+	883.24	2.865E-02	2.468E-01	4.147E-01	2.790E-01	0.069
		926.50	-2.703E-02	1.564E-01	2.565E-01	6.497E-02	-0.105
		946.00	* -1.062E-01	2.768E-01	4.453E-01	8.386E-02	-0.238
		949.00	2.583E-01	4.108E-01	6.996E-01	6.133E-02	0.369
PA-234M	+	766.42	8.774E+00	1.357E+01	1.894E+01	9.674E+00	0.463

---- 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	*		3.655E+00	4.395E+00	7.645E+00	7.692E-01	0.478
	99.53			3.831E-02	8.329E-02	1.355E-01	1.354E-02	0.283
	103.37			-1.468E-02	5.450E-02	7.945E-02	8.120E-03	-0.185
	+	106.12		1.187E-01	7.571E-02	7.607E-02	7.903E-03	1.561
		117.23	*	-2.638E-01	2.241E-01	3.364E-01	3.744E-02	-0.784
		228.18		-6.924E-02	1.384E-01	2.260E-01	1.992E-02	-0.306
AM-241	+	277.60		4.130E-01	1.808E-01	2.272E-01	2.027E-02	1.818
		59.54	*	-3.680E-02	3.421E-02	5.495E-02	4.661E-03	-0.670
CM-247	+	278.00		1.754E+00	7.678E-01	9.634E-01	8.593E-02	1.821
		287.50		3.921E-01	8.559E-01	1.426E+00	1.273E-01	0.275
CF-249		402.40	*	3.139E-03	2.930E-02	4.669E-02	3.787E-03	0.067
		252.80		1.647E-01	6.470E-01	1.079E+00	9.634E-02	0.153
		333.37		-3.942E-02	1.538E-01	2.151E-01	1.884E-02	-0.183
		388.16	*	3.298E-02	3.087E-02	5.179E-02	4.152E-03	0.637
CF-251		177.52	*	3.604E-02	7.894E-02	1.359E-01	1.126E-02	0.265
		227.38		-1.927E-01	2.297E-01	3.699E-01	3.258E-02	-0.521
		285.41		2.819E-01	1.494E+00	2.463E+00	2.199E-01	0.114

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]G247969002      *
* Acquisition date   : 10-MAR-2010 23:10:57 Detector SN#      :              *
* Detector ID        : GAM21          Sensitivity             : 5.000          *
* Geometry           : CAN            Energy tolerance        : 1.500          *
* Elapsed live time  : 0 04:00:00.00  Abundance limit         : 75.000          *
* Elapsed real time  : 0 04:00:51.88  Half life ratio         : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library   : SOLID          *
* Sample ID          : G247969002      Analyst initials      : MXR1           *
* Batch Number       : 958216          Sample Quantity       : 1.3679E+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	3.433E+01	3.302E+00	5.220E-01	0.000E+00
CD-109	4.144E+00	6.359E-01	5.750E-01	0.000E+00
SN-126	4.030E-01	6.184E-02	5.686E-02	0.000E+00
EU-155	1.491E-01	9.319E-02	9.173E-02	0.000E+00
TL-208	6.478E-01	9.354E-02	5.015E-02	0.000E+00
PB-210	1.300E+00	4.947E-01	4.653E-01	0.000E+00
BI-211	4.928E+00	5.750E-01	2.475E-01	0.000E+00
PB-212	2.140E+00	2.263E-01	6.312E-02	0.000E+00
BI-214	1.659E+00	2.331E-01	9.521E-02	0.000E+00
PB-214	1.789E+00	2.300E-01	9.010E-02	0.000E+00
RA-223	-1.361E-01	5.245E-01	7.825E-01	0.000E+00
RA-224	6.209E+00	1.009E+00	6.784E-01	0.000E+00
RA-226	1.659E+00	2.331E-01	9.521E-02	0.000E+00
AC-228	2.321E+00	4.181E-01	2.035E-01	0.000E+00
RA-228	2.321E+00	4.181E-01	2.035E-01	0.000E+00
TH-228	2.140E+00	2.263E-01	6.312E-02	0.000E+00
TH-229	-1.241E-02	3.280E-01	5.880E-01	0.000E+00
TH-231	-1.361E-01	5.245E-01	7.825E-01	0.000E+00
TH-232	2.321E+00	4.181E-01	2.035E-01	0.000E+00
TH-234	1.741E+00	6.311E-01	6.159E-01	0.000E+00
U-235	7.536E-02	1.292E-01	2.185E-01	0.000E+00
NP-237	1.203E+00	3.084E-01	1.690E-01	0.000E+00
U-238	1.741E+00	6.311E-01	6.159E-01	0.000E+00
ANH-511	1.462E-01	5.871E-02	3.993E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-8.296E-02	2.465E-01	4.240E-01	0.000E+00 NOT IDENT.
NA-22	-4.168E-02	4.344E-02	6.569E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.683E+07	0.000E+00	0.000E+00 SHORT HLIF

SC-46	-1.442E-02	3.398E-02	5.676E-02	0.000E+00	FAIL ABUN
V-48	-1.156E-02	7.136E-02	1.202E-01	0.000E+00	NOT IDENT.
CR-51	1.145E-01	2.831E-01	4.918E-01	0.000E+00	NOT IDENT.
MN-54	9.809E-03	3.482E-02	6.149E-02	0.000E+00	NOT IDENT.
CO-56	3.016E-02	3.400E-02	6.233E-02	0.000E+00	FAIL ABUN
CO-57	-1.120E-03	1.415E-02	2.390E-02	0.000E+00	NOT IDENT.
CO-58	-5.610E-02	3.528E-02	5.408E-02	0.000E+00	NOT IDENT.
FE-59	7.695E-03	9.004E-02	1.525E-01	0.000E+00	NOT IDENT.
CO-60	7.990E-03	3.504E-02	6.145E-02	0.000E+00	NOT IDENT.
ZN-65	3.027E-02	9.345E-02	1.403E-01	0.000E+00	NOT IDENT.
SE-75	-1.512E-03	2.922E-02	5.073E-02	0.000E+00	NOT IDENT.
SR-85	5.355E-02	3.241E-02	5.504E-02	0.000E+00	NOT IDENT.
Y-88	1.543E-03	3.525E-02	5.864E-02	0.000E+00	NOT IDENT.
Y-91	1.018E+01	2.297E+01	3.932E+01	0.000E+00	NOT IDENT.
NB-94	-9.523E-03	2.904E-02	4.763E-02	0.000E+00	NOT IDENT.
NB-95	1.393E-03	4.871E-02	7.071E-02	0.000E+00	NOT IDENT.
NB-95M	6.456E-02	8.990E-02	1.462E-01	0.000E+00	NOT IDENT.
ZR-95	-1.450E-02	7.167E-02	1.175E-01	0.000E+00	NOT IDENT.
MO-99	-2.868E+00	2.752E+01	4.557E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.838E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.132E-03	3.046E-02	5.275E-02	0.000E+00	FAIL ABUN
RH-106	-3.721E-02	2.713E-01	4.578E-01	0.000E+00	NOT IDENT.
RU-106	-3.721E-02	2.713E-01	4.578E-01	0.000E+00	NOT IDENT.
AG-108M	-2.255E-03	2.082E-02	3.668E-02	0.000E+00	NOT IDENT.
AG-110M	-1.555E-02	3.063E-02	5.001E-02	0.000E+00	NOT IDENT.
SN-113	-1.938E-02	3.421E-02	5.511E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.705E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	3.569E-03	3.998E-02	7.016E-02	0.000E+00	NOT IDENT.
TE-123M	2.093E-03	1.690E-02	3.100E-02	0.000E+00	NOT IDENT.
SB-124	5.251E-02	6.921E-02	1.288E-01	0.000E+00	NOT IDENT.
SB-125	-8.912E-03	6.876E-02	1.212E-01	0.000E+00	FAIL ABUN
TE-125M	0.000E+00	5.654E+00	9.380E+00	0.000E+00	NOT IDENT.
I-126	2.484E-01	2.419E-01	4.307E-01	0.000E+00	NOT IDENT.
SB-126	4.957E-02	1.744E-01	2.615E-01	0.000E+00	NOT IDENT.
SB-127	1.708E+00	2.254E+00	3.951E+00	0.000E+00	NOT IDENT.
I-131	-9.451E-02	1.133E-01	1.810E-01	0.000E+00	FAIL ABUN
TE-132	-4.887E-01	9.565E-01	1.652E+00	0.000E+00	NOT IDENT.
BA-133	-2.263E-02	3.461E-02	4.932E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	7.361E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.852E-02	8.579E-02	0.000E+00	NOT IDENT.
CS-135	1.055E-01	1.111E-01	1.810E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.541E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.358E-02	1.178E-01	1.896E-01	0.000E+00	FAIL ABUN
BA-137M	3.869E-03	3.371E-02	5.734E-02	0.000E+00	NOT IDENT.
CS-137	4.087E-03	3.561E-02	6.058E-02	0.000E+00	NOT IDENT.
CE-139	1.693E-02	1.811E-02	3.376E-02	0.000E+00	NOT IDENT.
BA-140	-3.038E-01	2.815E-01	4.236E-01	0.000E+00	NOT IDENT.
LA-140	-2.253E-01	1.094E-01	1.356E-01	0.000E+00	FAIL ABUN
CE-141	3.100E-03	4.353E-02	7.263E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.706E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.480E-01	1.269E-01	1.969E-01	0.000E+00	FAIL ABUN
PM-144	1.006E-02	2.988E-02	5.127E-02	0.000E+00	NOT IDENT.
PR-144	7.250E-01	2.239E+00	3.838E+00	0.000E+00	NOT IDENT.
PM-146	-2.345E-02	3.206E-02	5.424E-02	0.000E+00	NOT IDENT.
ND-147	-1.551E-01	5.653E-01	9.636E-01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.789E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-2.981E-02	7.291E-02	1.208E-01	0.000E+00	FAIL ABUN
GD-153	-3.751E-02	4.516E-02	6.951E-02	0.000E+00	NOT IDENT.
EU-154	-7.996E-02	1.207E-01	1.877E-01	0.000E+00	NOT IDENT.
TB-160	7.008E-02	1.210E-01	2.174E-01	0.000E+00	FAIL ABUN
HO-166M	1.468E-02	5.479E-02	9.337E-02	0.000E+00	FAIL ABUN
TA-182	5.631E-02	2.109E-01	3.561E-01	0.000E+00	FAIL ABUN
IR-192	-6.305E-03	2.538E-02	4.281E-02	0.000E+00	FAIL ABUN
HG-203	-6.635E-03	3.000E-02	4.579E-02	0.000E+00	FAIL ABUN
BI-207	-2.798E-02	4.869E-02	7.853E-02	0.000E+00	FAIL ABUN
PB-211	-5.691E-02	6.252E-01	9.147E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.872E-01	1.199E+00	0.000E+00	FAIL ABUN
RN-219	9.409E-02	3.110E-01	5.252E-01	0.000E+00	FAIL ABUN
AC-227	-1.562E-01	1.702E-01	2.845E-01	0.000E+00	FAIL ABUN
TH-227	-1.562E-01	1.705E-01	2.845E-01	0.000E+00	FAIL ABUN
PA-231	-6.391E-01	9.868E-01	1.649E+00	0.000E+00	FAIL ABUN
PA-233	-4.706E-02	4.669E-02	7.572E-02	0.000E+00	FAIL ABUN
PA-234	-1.062E-01	2.713E-01	4.504E-01	0.000E+00	NOT IDENT.
PA-234M	3.655E+00	4.307E+00	7.723E+00	0.000E+00	NOT IDENT.
NP-239	-2.638E-01	2.197E-01	3.538E-01	0.000E+00	FAIL ABUN
AM-241	-3.680E-02	3.352E-02	5.850E-02	0.000E+00	NOT IDENT.
CM-247	3.139E-03	2.871E-02	4.800E-02	0.000E+00	FAIL ABUN
CF-249	3.298E-02	3.026E-02	5.328E-02	0.000E+00	NOT IDENT.

CF-251	3.604E-02	7.736E-02	1.419E-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]G247969002.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:10:57
Sample ID          : G247969002          Sample quantity   : 1.36790E+02 GRAM
Detector name      : GAM21              Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00      Elapsed real time: 0 04:00:51.88 0.4%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 958216             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	1922	10.66*	7.206E-01	3.433E+01	3.433E+01	9.82
CD-109	88.03	884	3.70*	8.137E+00	4.030E+00	4.144E+00	15.66
SN-126	64.28	384	9.60	8.183E+00	6.710E-01	6.710E-01	35.52
	86.94	884	8.90	8.137E+00	1.676E+00	1.676E+00	43.37
	87.57	884	37.00*	8.137E+00	4.030E-01	4.030E-01	15.66
EU-155	86.55	884	30.70	8.137E+00	4.857E-01	4.894E-01	15.71
	105.31	176	21.10*	7.712E+00	1.480E-01	1.491E-01	63.78
TL-208	277.37	165	6.60	3.801E+00	9.036E-01	9.036E-01	44.71
	583.19	713	85.00*	1.778E+00	6.478E-01	6.478E-01	14.74
	860.56	66	12.50	1.201E+00	6.079E-01	6.079E-01	68.39
PB-210	46.54	296	4.25*	7.352E+00	1.298E+00	1.300E+00	38.82
BI-211	72.87	138	1.23	8.278E+00	1.858E+00	1.858E+00	68.97
	351.06	1391	12.92*	2.998E+00	4.928E+00	4.928E+00	11.91
PB-212	74.82	1752	10.28	8.275E+00	2.826E+00	2.826E+00	14.75
	77.11	2821	17.10	8.264E+00	2.739E+00	2.739E+00	9.78
	238.63	2984	43.60*	4.388E+00	2.140E+00	2.140E+00	10.79
	300.09	164	3.30	3.519E+00	1.943E+00	1.943E+00	51.82
BI-214	609.32	935	45.49*	1.700E+00	1.659E+00	1.659E+00	14.34
	1120.29	232	14.92	9.299E-01	2.298E+00	2.298E+00	24.34
	1764.49	132	15.30	5.986E-01	1.985E+00	1.985E+00	24.69
PB-214	74.82	1752	5.80	8.275E+00	5.009E+00	5.009E+00	13.63
	77.11	2821	9.70	8.264E+00	4.829E+00	4.829E+00	12.79
	242.00	805	7.25	4.339E+00	3.511E+00	3.511E+00	17.57
	295.22	868	18.42	3.578E+00	1.807E+00	1.807E+00	15.85
	351.93	1391	35.60*	2.998E+00	1.788E+00	1.789E+00	13.12
RA-223	81.07	106	15.00	8.230E+00	1.174E-01	1.174E-01	83.50
	83.79	399	24.70	8.188E+00	2.707E-01	2.707E-01	29.60
	94.87	-----	5.69	7.977E+00	-----	Line Not Found	-----
	144.24	-----	3.27	6.553E+00	-----	Line Not Found	-----
	154.21	183	5.70	6.287E+00	7.004E-01	7.004E-01	62.95
	269.46	222	13.90	3.899E+00	5.623E-01	5.623E-01	35.28
	323.87	-----	3.99*	3.259E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	338.28	437	2.84	3.121E+00	6.758E+00	6.758E+00	21.86
RA-224	240.99	805	4.10*	4.339E+00	6.209E+00	6.209E+00	16.59
RA-226	609.32	935	45.49*	1.700E+00	1.659E+00	1.659E+00	14.34
	1120.29	232	14.92	9.299E-01	2.298E+00	2.298E+00	24.34
	1764.49	132	15.30	5.986E-01	1.985E+00	1.985E+00	24.69
AC-228	338.32	437	11.27	3.121E+00	1.703E+00	1.703E+00	45.52
	911.20	496	25.80*	1.136E+00	2.321E+00	2.321E+00	18.38
	968.97	231	15.80	1.070E+00	1.875E+00	1.875E+00	32.18
RA-228	338.32	437	11.27	3.121E+00	1.703E+00	1.703E+00	45.52
	911.20	496	25.80*	1.136E+00	2.321E+00	2.321E+00	18.38
	968.97	231	15.80	1.070E+00	1.875E+00	1.875E+00	32.18
TH-228	74.82	1752	10.28	8.275E+00	2.826E+00	2.826E+00	11.15
	77.11	2821	17.10	8.264E+00	2.739E+00	2.739E+00	9.78
	238.63	2984	43.60*	4.388E+00	2.140E+00	2.140E+00	10.79
	300.09	164	3.30	3.519E+00	1.943E+00	1.943E+00	79.51
TH-229	85.43	399	14.70	8.188E+00	4.548E-01	4.548E-01	29.60
	88.47	884	24.00	8.137E+00	6.214E-01	6.214E-01	15.66
	193.51	-----	4.41*	5.271E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.900E+00	-----	Line Not Found	-----
TH-231	81.07	106	15.00	8.230E+00	1.174E-01	1.174E-01	83.50
	83.79	399	24.70	8.188E+00	2.707E-01	2.707E-01	29.60
	94.87	-----	5.69	7.977E+00	-----	Line Not Found	-----
	144.24	-----	3.27	6.553E+00	-----	Line Not Found	-----
	154.21	183	5.70	6.287E+00	7.004E-01	7.004E-01	62.95
	269.46	222	13.90	3.899E+00	5.623E-01	5.623E-01	35.28
	323.87	-----	3.99*	3.259E+00	-----	Line Not Found	-----
TH-232	338.28	437	2.84	3.121E+00	6.758E+00	6.758E+00	21.86
	338.32	437	11.27	3.121E+00	1.703E+00	1.703E+00	20.16
	911.20	496	25.80*	1.136E+00	2.321E+00	2.321E+00	18.38
	968.97	231	15.80	1.070E+00	1.875E+00	1.875E+00	32.18
TH-234	63.29	384	3.70*	8.183E+00	1.741E+00	1.741E+00	36.99
	92.59	967	4.23	8.018E+00	3.912E+00	3.912E+00	27.55
U-235	89.96	532	3.47	8.085E+00	2.602E+00	2.602E+00	30.16
	93.35	967	5.60	8.018E+00	2.955E+00	2.955E+00	28.37
	143.76	-----	10.96*	6.567E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.017E+00	-----	Line Not Found	-----
	185.72	529	57.20	5.449E+00	2.327E-01	2.327E-01	24.34
	205.31	-----	5.01	5.015E+00	-----	Line Not Found	-----
NP-237	86.48	884	12.40*	8.137E+00	1.203E+00	1.203E+00	26.17
	95.86	-----	2.68	7.953E+00	-----	Line Not Found	-----
U-238	63.29	384	3.70*	8.183E+00	1.741E+00	1.741E+00	36.99
	92.59	967	4.23	8.018E+00	3.912E+00	3.912E+00	18.59
ANH-511	511.00	217	100.00*	2.039E+00	1.462E-01	1.462E-01	40.98

Flag: "*" = Keyline

Total number of lines in spectrum 45
Number of unidentified lines 8
Number of lines tentatively identified by NID 37 82.22%

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	3.433E+01	3.433E+01	0.337E+01	9.82	
CD-109	461.40D	1.03	4.030E+00	4.144E+00	0.649E+00	15.66	
SN-126	2.30E+05Y	1.00	4.030E-01	4.030E-01	0.631E-01	15.66	
EU-155	4.75Y	1.01	1.480E-01	1.491E-01	0.951E-01	63.78	
TL-208	1.41E+10Y	1.00	6.478E-01	6.478E-01	0.955E-01	14.74	
PB-210	22.20Y	1.00	1.298E+00	1.300E+00	0.505E+00	38.82	
BI-211	7.04E+08Y	1.00	4.928E+00	4.928E+00	0.587E+00	11.91	
PB-212	1.41E+10Y	1.00	2.140E+00	2.140E+00	0.231E+00	10.79	
BI-214	1600.00Y	1.00	1.659E+00	1.659E+00	0.238E+00	14.34	
PB-214	1600.00Y	1.00	1.788E+00	1.789E+00	0.235E+00	13.12	
RA-223	7.04E+08Y	1.00	2.707E-01	2.707E-01	0.801E-01	29.60	K
RA-224	1.41E+10Y	1.00	6.209E+00	6.209E+00	1.030E+00	16.59	
RA-226	1600.00Y	1.00	1.659E+00	1.659E+00	0.238E+00	14.34	
AC-228	1.41E+10Y	1.00	2.321E+00	2.321E+00	0.427E+00	18.38	
RA-228	1.41E+10Y	1.00	2.321E+00	2.321E+00	0.427E+00	18.38	
TH-228	1.41E+10Y	1.00	2.140E+00	2.140E+00	0.231E+00	10.79	
TH-229	7340.00Y	1.00	6.214E-01	6.214E-01	0.973E-01	15.66	K
TH-231	7.04E+08Y	1.00	2.707E-01	2.707E-01	0.801E-01	29.60	K
TH-232	1.41E+10Y	1.00	2.321E+00	2.321E+00	0.427E+00	18.38	
TH-234	4.47E+09Y	1.00	1.741E+00	1.741E+00	0.644E+00	36.99	
U-235	7.04E+08Y	1.00	2.327E-01	2.327E-01	0.566E-01	24.34	K
NP-237	2.14E+06Y	1.00	1.203E+00	1.203E+00	0.315E+00	26.17	
U-238	4.47E+09Y	1.00	1.741E+00	1.741E+00	0.644E+00	36.99	
ANH-511	1.00E+09Y	1.00	1.462E-01	1.462E-01	0.599E-01	40.98	

Total Activity : 7.457E+01 7.469E+01

Grand Total Activity : 7.457E+01 7.469E+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	52.91	107	906	0.95	105.79	103	7	7.44E-03	96.7	7.79E+00	
0	128.96	288	804	0.69	257.82	254	8	2.00E-02	36.2	7.01E+00	
0	209.01	276	572	0.85	417.85	414	9	1.91E-02	33.5	4.94E+00	
0	327.61	126	273	1.06	654.98	651	8	8.72E-03	48.9	3.22E+00	T
0	409.47	61	308	1.20	818.67	814	11	4.22E-03	****	2.56E+00	T
0	462.46	144	195	0.92	924.62	920	10	1.00E-02	39.9	2.26E+00	T
0	726.70	246	109	1.41	1453.11	1446	12	1.71E-02	21.1	1.42E+00	T
0	768.29	86	104	1.91	1536.30	1531	10	5.94E-03	50.1	1.34E+00	
0	794.32	126	69	1.22	1588.36	1583	11	8.74E-03	31.1	1.30E+00	
0	964.14	68	93	1.10	1928.09	1924	9	4.70E-03	56.7	1.07E+00	T
0	1238.20	91	111	1.99	2476.47	2471	12	6.32E-03	51.6	8.44E-01	T
0	1377.12	46	19	2.18	2754.48	2748	11	3.20E-03	48.5	7.62E-01	
0	1408.89	65	42	6.14	2818.07	2808	23	4.51E-03	59.4	7.46E-01	T
0	1556.36	16	2	0.62	3113.24	3107	10	1.11E-03	61.6	6.77E-01	
0	1728.77	38	3	0.74	3458.40	3452	12	2.63E-03	37.3	6.11E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969002.CNF;1
* Acquisition date   : 10-MAR-2010 23:10:57   Detector SN#      :
* Detector ID        : GAM21                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 04:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 04:00:51.88          Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 20-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247969002             Analyst initials: MXR1
* Batch Number       : 958216                 Sample Quantity  : 1.36790E+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	3.433E+01	3.370E+00	5.206E-01	4.445E-02	65.939
CD-109	4.144E+00	6.488E-01	5.438E-01	5.117E-02	7.620
SN-126	4.030E-01	6.310E-02	5.378E-02	5.041E-03	7.494
EU-155	1.491E-01	9.510E-02	8.705E-02	9.073E-03	1.713
TL-208	6.478E-01	9.545E-02	4.912E-02	5.347E-03	13.187
PB-210	1.300E+00	5.048E-01	4.352E-01	4.115E-02	2.988
BI-211	4.928E+00	5.867E-01	2.402E-01	2.168E-02	20.520
PB-212	2.140E+00	2.309E-01	6.080E-02	6.074E-03	35.207
BI-214	1.659E+00	2.378E-01	9.334E-02	1.107E-02	17.776
PB-214	1.789E+00	2.347E-01	8.742E-02	9.241E-03	20.459
RA-223	2.707E-01	8.011E-02	7.580E-01	1.322E-01	0.357
RA-224	6.209E+00	1.030E+00	6.535E-01	5.807E-02	9.501
RA-226	1.659E+00	2.378E-01	9.334E-02	1.107E-02	17.776
AC-228	2.321E+00	4.267E-01	2.011E-01	2.352E-02	11.544
RA-228	2.321E+00	4.267E-01	2.011E-01	2.352E-02	11.544
TH-228	2.140E+00	2.309E-01	6.080E-02	6.074E-03	35.207
TH-229	6.214E-01	9.728E-02	5.642E-01	4.789E-02	1.101
TH-231	2.707E-01	8.011E-02	7.580E-01	1.322E-01	0.357

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	2.321E+00	4.267E-01	2.011E-01	2.352E-02	11.544
TH-234	1.741E+00	6.440E-01	5.791E-01	1.045E-01	3.006
U-235	2.327E-01	5.665E-02	2.085E-01	3.692E-02	1.116
NP-237	1.203E+00	3.147E-01	1.598E-01	3.665E-02	7.525
U-238	1.741E+00	6.440E-01	5.791E-01	1.045E-01	3.006
ANH-511	1.462E-01	5.990E-02	3.902E-02	3.740E-03	3.746

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-8.296E-02		2.515E-01	4.137E-01	4.052E-02	-0.201
NA-22	-4.168E-02		4.432E-02	6.533E-02	5.359E-03	-0.638
NA-24	9.034E+00		1.369E+01	Half-Life too short		
SC-46	-1.442E-02		3.467E-02	5.605E-02	4.984E-03	-0.257
V-48	-1.156E-02		7.282E-02	1.189E-01	1.040E-02	-0.097
CR-51	1.145E-01		2.889E-01	4.763E-01	4.424E-02	0.240
MN-54	9.809E-03		3.553E-02	6.065E-02	5.878E-03	0.162
CO-56	3.016E-02		3.470E-02	6.150E-02	5.862E-03	0.490
CO-57	-1.120E-03		1.444E-02	2.274E-02	2.612E-03	-0.049
CO-58	-5.610E-02		3.600E-02	5.331E-02	5.335E-03	-1.052
FE-59	7.695E-03		9.188E-02	1.512E-01	1.395E-02	0.051
CO-60	7.990E-03		3.576E-02	6.117E-02	4.964E-03	0.131
ZN-65	3.027E-02		9.536E-02	1.392E-01	1.180E-02	0.217
SE-75	-1.512E-03		2.982E-02	4.896E-02	4.396E-03	-0.031
SR-85	5.355E-02		3.307E-02	5.378E-02	5.175E-03	0.996
Y-88	1.543E-03		3.597E-02	5.874E-02	4.850E-03	0.026
Y-91	1.018E+01		2.344E+01	3.906E+01	3.218E+00	0.261
NB-94	-9.523E-03		2.963E-02	4.682E-02	5.099E-03	-0.203
NB-95	1.393E-03		4.970E-02	6.963E-02	7.277E-03	0.020
NB-95M	6.456E-02		9.174E-02	1.408E-01	1.422E-02	0.458
ZR-95	-1.450E-02		7.313E-02	1.157E-01	1.305E-02	-0.125
MO-99	-2.868E+00		2.808E+01	4.484E+01	7.606E+00	-0.064
TC-99M	-2.404E+14		1.448E+14	Half-Life too short		
RU-103	-4.132E-03		3.109E-02	5.151E-02	7.455E-03	-0.080
RH-106	-3.721E-02		2.768E-01	4.490E-01	6.607E-02	-0.083
RU-106	-3.721E-02		2.768E-01	4.490E-01	4.817E-02	-0.083
AG-108M	-2.255E-03		2.125E-02	3.573E-02	3.163E-03	-0.063
AG-110M	-1.555E-02		3.125E-02	4.910E-02	5.508E-03	-0.317
SN-113	-1.938E-02		3.491E-02	5.357E-02	4.412E-03	-0.362
CD-115	-1.043E-05		1.380E-05	Half-Life too short		
SN-117M	3.569E-03		4.080E-02	6.707E-02	5.904E-03	0.053
TE-123M	2.093E-03		1.724E-02	2.963E-02	2.612E-03	0.071
SB-124	5.251E-02		7.062E-02	1.288E-01	1.124E-02	0.408
SB-125	-8.912E-03		7.017E-02	1.181E-01	1.021E-02	-0.075
TE-125M	9.668E+00		5.770E+00	8.907E+00	1.083E+00	1.085
I-126	2.484E-01		2.469E-01	4.230E-01	4.667E-02	0.587
SB-126	4.957E-02		1.779E-01	2.572E-01	2.775E-02	0.193

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1.708E+00		2.300E+00	3.882E+00	5.493E-01	0.440
I-131	-9.451E-02		1.156E-01	1.758E-01	1.567E-02	-0.538
TE-132	-4.887E-01		9.760E-01	1.590E+00	2.646E-01	-0.307
BA-133	-2.263E-02		3.531E-02	4.786E-02	6.170E-03	-0.473
I-133	9.058E-03		3.756E-02	Half-Life too short		
CS-134	1.460E-01		4.951E-02	8.454E-02	8.630E-03	1.726
CS-135	1.055E-01		1.134E-01	1.747E-01	1.789E-02	0.604
I-135	1.110E+13		1.806E+13	Half-Life too short		
CS-136	-7.358E-02		1.202E-01	1.878E-01	1.694E-02	-0.392
BA-137M	3.869E-03		3.440E-02	5.631E-02	6.219E-03	0.069
CS-137	4.087E-03		3.634E-02	5.948E-02	6.577E-03	0.069
CE-139	1.693E-02		1.848E-02	3.230E-02	2.625E-03	0.524
BA-140	-3.038E-01		2.873E-01	4.143E-01	1.419E-01	-0.733
LA-140	-2.253E-01		1.116E-01	1.355E-01	1.133E-02	-1.663
CE-141	3.100E-03		4.442E-02	6.932E-02	6.951E-03	0.045
CE-143	2.756E-03		4.442E-04	Half-Life too short		
CE-144	-1.480E-01		1.295E-01	1.876E-01	3.111E-02	-0.789
PM-144	1.006E-02		3.049E-02	5.039E-02	5.505E-03	0.200
PR-144	7.250E-01		2.284E+00	3.772E+00	4.119E-01	0.192
PM-146	-2.345E-02		3.271E-02	5.287E-02	5.700E-03	-0.443
ND-147	-1.551E-01		5.768E-01	9.422E-01	1.477E-01	-0.165
PM-149	9.311E-05		9.130E-05	Half-Life too short		
EU-152	-2.981E-02		7.439E-02	1.171E-01	1.074E-02	-0.255
GD-153	-3.751E-02		4.609E-02	6.587E-02	6.507E-03	-0.569
EU-154	-7.996E-02		1.232E-01	1.866E-01	2.064E-02	-0.428
TB-160	7.008E-02		1.234E-01	2.146E-01	1.943E-02	0.327
HO-166M	1.468E-02		5.591E-02	9.181E-02	9.954E-03	0.160
TA-182	5.631E-02		2.152E-01	3.539E-01	2.913E-02	0.159
IR-192	-6.305E-03		2.590E-02	4.145E-02	3.684E-03	-0.152
HG-203	-6.635E-03		3.061E-02	4.424E-02	4.038E-03	-0.150
BI-207	-2.798E-02		4.968E-02	7.783E-02	6.708E-03	-0.360
PB-211	-5.691E-02		6.380E-01	8.898E-01	4.299E-01	-0.064
BI-212	3.568E+00	+	9.053E-01	1.180E+00	1.654E-01	3.024
RN-219	9.409E-02		3.174E-01	5.108E-01	7.447E-02	0.184
AC-227	-1.562E-01		1.737E-01	2.743E-01	3.368E-02	-0.569
TH-227	-1.562E-01		1.740E-01	2.743E-01	3.788E-02	-0.569
PA-231	-6.391E-01		1.007E+00	1.593E+00	2.352E-01	-0.401
PA-233	-4.706E-02		4.764E-02	7.330E-02	6.690E-03	-0.642
PA-234	-1.062E-01		2.768E-01	4.453E-01	8.386E-02	-0.238
PA-234M	3.655E+00		4.395E+00	7.645E+00	7.692E-01	0.478
NP-239	-2.638E-01		2.241E-01	3.364E-01	3.744E-02	-0.784
AM-241	-3.680E-02		3.421E-02	5.495E-02	4.661E-03	-0.670
CM-247	3.139E-03		2.930E-02	4.669E-02	3.787E-03	0.067
CF-249	3.298E-02		3.087E-02	5.179E-02	4.152E-03	0.637
CF-251	3.604E-02		7.894E-02	1.359E-01	1.126E-02	0.265

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]G247969002          *
* Acquisition date   : 10-MAR-2010 23:10:57 Detector SN# :                *
* Detector ID        : GAM21 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 04:00:51.88 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G247969002 Analyst initials: MXR1                 *
* Batch Number       : 958216 Sample Quantity : 1.3679E+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	3.433E+01	3.302E+00	2.612E-01	1.685E+00
CD-109	4.144E+00	6.359E-01	2.876E-01	3.244E-01
SN-126	4.030E-01	6.184E-02	2.845E-02	3.155E-02
EU-155	1.491E-01	9.319E-02	4.589E-02	4.755E-02
TL-208	6.478E-01	9.354E-02	2.509E-02	4.773E-02
PB-210	1.300E+00	4.947E-01	2.328E-01	2.524E-01
BI-211	4.928E+00	5.750E-01	1.238E-01	2.934E-01
PB-212	2.140E+00	2.263E-01	3.158E-02	1.155E-01
BI-214	1.659E+00	2.331E-01	4.763E-02	1.189E-01
PB-214	1.789E+00	2.300E-01	4.508E-02	1.173E-01
RA-223	-1.361E-01	5.245E-01	3.915E-01	2.676E-01
RA-224	6.209E+00	1.009E+00	3.394E-01	5.150E-01
RA-226	1.659E+00	2.331E-01	4.763E-02	1.189E-01
AC-228	2.321E+00	4.181E-01	1.018E-01	2.133E-01
RA-228	2.321E+00	4.181E-01	1.018E-01	2.133E-01
TH-228	2.140E+00	2.263E-01	3.158E-02	1.155E-01
TH-229	-1.241E-02	3.280E-01	2.942E-01	1.673E-01
TH-231	-1.361E-01	5.245E-01	3.915E-01	2.676E-01
TH-232	2.321E+00	4.181E-01	1.018E-01	2.133E-01
TH-234	1.741E+00	6.311E-01	3.081E-01	3.220E-01
U-235	7.536E-02	1.292E-01	1.093E-01	6.591E-02
NP-237	1.203E+00	3.084E-01	8.456E-02	1.574E-01
U-238	1.741E+00	6.311E-01	3.081E-01	3.220E-01
ANH-511	1.462E-01	5.871E-02	1.998E-02	2.995E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-8.296E-02	2.465E-01	2.121E-01	1.258E-01 NOT IDENT.
NA-22	-4.168E-02	4.344E-02	3.286E-02	2.216E-02 NOT IDENT.
NA-24	9.034E+06	2.683E+07	0.000E+00	1.369E+07 SHORT HLIF

SC-46	-1.442E-02	3.398E-02	2.839E-02	1.734E-02	FAIL ABUN
V-48	-1.156E-02	7.136E-02	6.012E-02	3.641E-02	NOT IDENT.
CR-51	1.145E-01	2.831E-01	2.460E-01	1.445E-01	NOT IDENT.
MN-54	9.809E-03	3.482E-02	3.077E-02	1.777E-02	NOT IDENT.
CO-56	3.016E-02	3.400E-02	3.118E-02	1.735E-02	FAIL ABUN
CO-57	-1.120E-03	1.415E-02	1.196E-02	7.220E-03	NOT IDENT.
CO-58	-5.610E-02	3.528E-02	2.706E-02	1.800E-02	NOT IDENT.
FE-59	7.695E-03	9.004E-02	7.628E-02	4.594E-02	NOT IDENT.
CO-60	7.990E-03	3.504E-02	3.074E-02	1.788E-02	NOT IDENT.
ZN-65	3.027E-02	9.345E-02	7.020E-02	4.768E-02	NOT IDENT.
SE-75	-1.512E-03	2.922E-02	2.538E-02	1.491E-02	NOT IDENT.
SR-85	5.355E-02	3.241E-02	2.754E-02	1.654E-02	NOT IDENT.
Y-88	1.543E-03	3.525E-02	2.934E-02	1.798E-02	NOT IDENT.
Y-91	1.018E+01	2.297E+01	1.967E+01	1.172E+01	NOT IDENT.
NB-94	-9.523E-03	2.904E-02	2.383E-02	1.481E-02	NOT IDENT.
NB-95	1.393E-03	4.871E-02	3.538E-02	2.485E-02	NOT IDENT.
NB-95M	6.456E-02	8.990E-02	7.316E-02	4.587E-02	NOT IDENT.
ZR-95	-1.450E-02	7.167E-02	5.880E-02	3.656E-02	NOT IDENT.
MO-99	-2.868E+00	2.752E+01	2.280E+01	1.404E+01	NOT IDENT.
TC-99M	-2.404E+20	2.838E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.132E-03	3.046E-02	2.639E-02	1.554E-02	FAIL ABUN
RH-106	-3.721E-02	2.713E-01	2.290E-01	1.384E-01	NOT IDENT.
RU-106	-3.721E-02	2.713E-01	2.290E-01	1.384E-01	NOT IDENT.
AG-108M	-2.255E-03	2.082E-02	1.835E-02	1.062E-02	NOT IDENT.
AG-110M	-1.555E-02	3.063E-02	2.502E-02	1.563E-02	NOT IDENT.
SN-113	-1.938E-02	3.421E-02	2.757E-02	1.746E-02	NOT IDENT.
CD-115	-1.043E+01	2.705E+01	0.000E+00	1.380E+01	SHORT HLIF
SN-117M	3.569E-03	3.998E-02	3.510E-02	2.040E-02	NOT IDENT.
TE-123M	2.093E-03	1.690E-02	1.551E-02	8.622E-03	NOT IDENT.
SB-124	5.251E-02	6.921E-02	6.441E-02	3.531E-02	NOT IDENT.
SB-125	-8.912E-03	6.876E-02	6.066E-02	3.508E-02	FAIL ABUN
TE-125M	9.668E+00	5.654E+00	4.693E+00	2.885E+00	NOT IDENT.
I-126	2.484E-01	2.419E-01	2.155E-01	1.234E-01	NOT IDENT.
SB-126	4.957E-02	1.744E-01	1.308E-01	8.896E-02	NOT IDENT.
SB-127	1.708E+00	2.254E+00	1.977E+00	1.150E+00	NOT IDENT.
I-131	-9.451E-02	1.133E-01	9.058E-02	5.782E-02	FAIL ABUN
TE-132	-4.887E-01	9.565E-01	8.265E-01	4.880E-01	NOT IDENT.
BA-133	-2.263E-02	3.461E-02	2.467E-02	1.766E-02	FAIL ABUN
I-133	9.058E+03	7.361E+04	0.000E+00	3.756E+04	SHORT HLIF
CS-134	1.460E-01	4.852E-02	4.292E-02	2.476E-02	NOT IDENT.
CS-135	1.055E-01	1.111E-01	9.055E-02	5.670E-02	NOT IDENT.
I-135	1.110E+19	3.541E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.358E-02	1.178E-01	9.483E-02	6.012E-02	FAIL ABUN
BA-137M	3.869E-03	3.371E-02	2.869E-02	1.720E-02	NOT IDENT.
CS-137	4.087E-03	3.561E-02	3.031E-02	1.817E-02	NOT IDENT.
CE-139	1.693E-02	1.811E-02	1.689E-02	9.240E-03	NOT IDENT.
BA-140	-3.038E-01	2.815E-01	2.119E-01	1.436E-01	NOT IDENT.
LA-140	-2.253E-01	1.094E-01	6.785E-02	5.582E-02	FAIL ABUN
CE-141	3.100E-03	4.353E-02	3.633E-02	2.221E-02	NOT IDENT.
CE-143	2.756E+03	8.706E+02	0.000E+00	4.442E+02	SHORT HLIF
CE-144	-1.480E-01	1.269E-01	9.851E-02	6.476E-02	FAIL ABUN
PM-144	1.006E-02	2.988E-02	2.565E-02	1.525E-02	NOT IDENT.
PR-144	7.250E-01	2.239E+00	1.920E+00	1.142E+00	NOT IDENT.
PM-146	-2.345E-02	3.206E-02	2.713E-02	1.635E-02	NOT IDENT.
ND-147	-1.551E-01	5.653E-01	4.821E-01	2.884E-01	FAIL ABUN
PM-149	9.311E+01	1.789E+02	0.000E+00	9.130E+01	SHORT HLIF
EU-152	-2.981E-02	7.291E-02	6.041E-02	3.720E-02	FAIL ABUN
GD-153	-3.751E-02	4.516E-02	3.477E-02	2.304E-02	NOT IDENT.
EU-154	-7.996E-02	1.207E-01	9.389E-02	6.160E-02	NOT IDENT.
TB-160	7.008E-02	1.210E-01	1.088E-01	6.172E-02	FAIL ABUN
HO-166M	1.468E-02	5.479E-02	4.671E-02	2.795E-02	FAIL ABUN
TA-182	5.631E-02	2.109E-01	1.782E-01	1.076E-01	FAIL ABUN
IR-192	-6.305E-03	2.538E-02	2.142E-02	1.295E-02	FAIL ABUN
HG-203	-6.635E-03	3.000E-02	2.291E-02	1.531E-02	FAIL ABUN
BI-207	-2.798E-02	4.869E-02	3.929E-02	2.484E-02	FAIL ABUN
PB-211	-5.691E-02	6.252E-01	4.576E-01	3.190E-01	NOT IDENT.
BI-212	3.568E+00	8.872E-01	6.001E-01	4.526E-01	FAIL ABUN
RN-219	9.409E-02	3.110E-01	2.627E-01	1.587E-01	FAIL ABUN
AC-227	-1.562E-01	1.702E-01	1.423E-01	8.686E-02	FAIL ABUN
TH-227	-1.562E-01	1.705E-01	1.423E-01	8.700E-02	FAIL ABUN
PA-231	-6.391E-01	9.868E-01	8.248E-01	5.035E-01	FAIL ABUN
PA-233	-4.706E-02	4.669E-02	3.788E-02	2.382E-02	FAIL ABUN
PA-234	-1.062E-01	2.713E-01	2.253E-01	1.384E-01	NOT IDENT.
PA-234M	3.655E+00	4.307E+00	3.864E+00	2.197E+00	NOT IDENT.
NP-239	-2.638E-01	2.197E-01	1.770E-01	1.121E-01	FAIL ABUN
AM-241	-3.680E-02	3.352E-02	2.927E-02	1.710E-02	NOT IDENT.
CM-247	3.139E-03	2.871E-02	2.402E-02	1.465E-02	FAIL ABUN
CF-249	3.298E-02	3.026E-02	2.666E-02	1.544E-02	NOT IDENT.

CF-251

3.604E-02

7.736E-02

7.097E-02

3.947E-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	452.7257
49.72	445.2856
57.36	0.0000
59.54	702.1694
63.29	755.0077
63.29	755.0077
64.28	758.0256
67.75	780.2987
69.67	827.9293
70.83	812.1572
72.81	771.0034
72.87	771.1695
72.87	771.1695
74.82	776.6078
74.82	776.6078
74.82	776.6078
74.97	777.0275
77.11	782.9030
77.11	782.9030
77.11	782.9030
79.69	789.8860
79.80	790.1832
80.12	791.0401
80.19	791.2266
80.57	792.2466
81.00	793.3891
81.07	793.5756
81.07	793.5756
83.79	658.2137
83.79	658.2137
85.43	638.5442
86.48	640.6941
86.55	640.8374
86.79	641.3229
86.94	641.6373
87.57	642.9180
88.03	620.4777
88.47	621.3332
89.96	532.3013
91.11	534.1896
92.59	498.5266
92.59	498.5266
93.35	499.6703
94.67	501.6470
94.87	501.9470
94.87	501.9470
95.86	500.5139
97.43	564.0325
98.44	466.2873
99.53	515.7704
100.11	482.4777
103.18	478.5101
103.37	478.7631
105.31	485.0547
106.12	486.1276
109.28	408.1844
111.00	560.5931
111.76	474.1549
116.30	445.2041
117.23	491.2169
121.12	429.6151
121.78	437.3059
122.06	445.7735
123.07	455.0551
131.20	462.6623
133.52	531.0444
136.00	453.2471

136.47	463.3770
140.51	489.4284
140.51	0.0000
143.76	513.7059
144.24	498.2755
144.24	498.2755
145.44	525.3841
152.43	458.1564
153.25	450.1648
154.21	451.0382
154.21	451.0382
156.02	461.4828
158.56	465.0818
159.00	454.5181
162.66	462.0159
163.33	477.0703
165.86	428.1159
176.60	438.4569
177.52	407.7509
181.07	437.5788
184.41	412.7533
185.72	413.6939
193.51	424.6049
197.04	427.1021
205.31	389.8543
210.85	375.2756
215.65	352.4942
222.11	339.9863
227.38	370.0984
228.16	350.6200
228.18	350.6313
235.69	352.0492
235.96	360.8106
235.96	360.8106
238.63	331.8744
238.63	331.8744
240.99	332.9729
242.00	333.4431
244.70	299.7650
252.40	296.0585
252.80	296.2183
256.23	325.1660
256.23	325.1660
260.90	0.0000
264.66	263.0171
268.22	247.7065
269.46	253.6125
269.46	253.6125
271.23	262.2160
273.65	244.8787
276.40	273.0267
277.37	265.2516
277.60	265.3315
278.00	265.4594
279.20	273.9716
279.54	275.6096
280.46	242.3867
283.69	278.5431
284.31	291.0071
285.41	251.5204
285.90	0.0000
287.50	248.0559
293.27	0.0000
295.22	232.7591
295.96	232.9605
298.57	227.4433
299.98	262.1411
299.98	262.1411
300.09	262.1770
300.09	262.1770
300.13	262.1873
301.36	262.5615
302.85	234.8328
304.50	202.3420
304.50	202.3420
304.85	211.8356
308.46	228.9905
311.90	268.8986

316.51	237.4258
319.41	226.4902
320.08	218.1462
323.87	251.6418
323.87	251.6418
328.76	246.5285
333.37	249.3665
334.37	233.4199
334.37	233.4199
338.28	259.3397
338.28	259.3397
338.32	259.3494
338.32	259.3494
338.32	259.3494
340.48	246.3427
340.55	246.3611
344.28	240.2177
351.06	213.3005
351.93	213.4900
356.01	218.7902
364.49	203.9241
366.42	194.2632
383.85	161.2089
388.16	167.5582
388.63	159.6505
391.69	193.2676
400.66	181.0234
401.81	178.9034
402.40	184.7754
404.85	190.9692
410.95	157.0990
414.70	191.9472
423.72	188.8729
427.09	165.5225
427.87	182.4597
433.94	153.1350
453.88	177.4127
463.37	131.3438
468.07	150.1465
473.00	150.7321
476.78	153.9429
477.60	145.7382
487.02	135.6519
492.35	0.0000
497.08	127.3278
511.00	155.1389
514.00	118.3149
527.90	0.0000
529.87	0.0000
531.02	146.8367
537.26	162.9090
546.56	0.0000
563.25	150.1425
569.33	149.7734
569.50	150.7728
569.70	150.7915
583.19	135.2363
600.60	136.7637
602.73	154.2131
604.72	141.9602
609.32	127.8118
609.32	127.8118
610.33	118.1794
614.28	125.7748
618.01	126.0662
621.93	130.4492
621.93	130.4492
633.25	93.3883
635.95	113.0716
636.99	104.9136
645.85	119.9507
657.76	133.2930
661.66	149.2536
661.66	149.2536
664.57	0.0000
666.33	122.4487
666.50	120.3696
677.62	121.1417

685.70	118.5249
695.00	123.4022
696.49	116.0520
696.51	116.0553
697.00	115.0203
702.65	126.0664
706.68	117.7814
711.68	119.1773
720.70	110.4875
721.93	0.0000
722.78	124.4355
722.91	124.4461
723.31	126.2030
724.19	108.9642
727.33	112.6138
733.00	110.4740
735.93	112.0464
739.50	125.3355
747.24	100.6783
752.31	121.7924
753.82	106.5141
756.73	127.5724
763.94	128.9298
765.81	143.1976
766.42	136.1674
777.92	107.8403
778.90	126.8027
783.70	105.9241
785.37	100.4343
795.86	64.6154
801.95	108.0146
810.29	131.9561
810.76	121.1398
815.77	73.4043
818.51	102.5387
832.01	124.2129
834.85	118.8916
836.80	0.0000
846.77	76.3373
856.80	106.2627
860.56	78.6790
871.09	82.7813
873.19	94.0341
875.33	0.0000
879.36	74.6914
880.51	83.1376
883.24	80.4339
884.68	77.6788
889.28	87.2170
898.04	93.2089
911.20	85.2297
911.20	85.2297
911.20	85.2297
926.50	86.7522
937.49	118.7718
944.13	85.4887
946.00	94.2078
949.00	75.0788
962.29	101.6342
964.08	74.2633
966.15	116.3379
968.97	85.7390
968.97	85.7390
968.97	85.7390
983.53	81.0466
996.26	100.1174
1001.03	85.5599
1004.73	105.3856
1037.84	79.8320
1038.76	0.0000
1048.07	93.1771
1050.41	76.2115
1050.41	76.2115
1063.66	93.7356
1085.87	83.3453
1099.45	87.8519
1112.07	88.5200
1115.54	85.6364

1120.29	79.2634
1120.29	79.2634
1120.55	79.2709
1121.30	78.9502
1131.51	0.0000
1173.23	109.0984
1177.93	100.8703
1189.05	114.9716
1204.77	109.2313
1221.41	122.6479
1231.02	137.7524
1235.36	157.1510
1238.28	124.4111
1260.41	0.0000
1271.85	81.3318
1274.44	86.8242
1274.54	93.3402
1291.59	56.7480
1298.22	0.0000
1312.11	59.3183
1332.49	51.5908
1365.19	49.3187
1368.63	0.0000
1384.29	48.2952
1408.01	49.0145
1457.56	0.0000
1460.82	39.2433
1489.16	34.7358
1505.03	37.7971
1596.21	61.5888
1620.50	20.9940
1678.03	0.0000
1690.97	14.2495
1764.49	13.4718
1764.49	13.4718
1770.23	16.0105
1771.35	14.2355
1791.20	0.0000
1836.06	21.0791

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969002

Total Uranium Activity	5.2142E+00	ug/g
Total Uranium Counting Unc.	1.8785E+00	ug/g
Total Uranium Tpu	9.5843E-07	ug/g
Total Uranium Mda	9.1802E-01	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*             2040 SAVAGE ROAD                     *
*             CHARLESTON ,SC 29417                 *
*             GROSS GAMMA REPORT                   *
*
*****
*
*  BATCH ID      : 958216                      SAMPLE ID   : G247969002
*  ANALYST       : MXR1                        DETECTOR    : GAM21
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00    COUNT TIME   : 0 04:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 23:10:57.98    SAMPLE ALQT  : 136.790 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.221E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.397E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.863E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.888E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 03:12:38.28

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969003.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:11:27
Sample ID          : G247969003 Sample quantity : 1.30990E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:04.97 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 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	72.85	160	973	1.25	145.94	143	18	1.11E-02	29.6	5.58E+00
2	3	74.85	1387	1471	1.33	149.93	143	18	9.63E-02	5.6	
3	3	77.13*	2065	1016	1.06	154.48	143	18	1.43E-01	3.5	
4	2	87.21*	797	1246	1.27	174.62	162	32	5.53E-02	8.5	2.66E+00
5	2	89.92	533	1035	1.12	180.04	162	32	3.70E-02	11.1	
6	2	92.80*	681	1117	1.29	185.79	162	32	4.73E-02	10.5	
7	0	129.16	204	1308	1.17	258.43	254	9	1.42E-02	32.8	
8	0	185.86*	579	1414	1.38	371.73	366	12	4.02E-02	14.2	
9	0	209.16	327	956	1.21	418.29	415	9	2.27E-02	17.9	
10	4	238.71*	4415	635	1.23	477.35	469	20	3.07E-01	1.8	1.75E+00
11	4	241.70	1085	835	1.90	483.31	469	20	7.53E-02	7.5	
12	0	270.31	378	704	1.56	540.49	536	10	2.62E-02	14.1	
13	0	277.28	100	686	1.09	554.40	550	9	6.97E-03	48.0	
14	3	295.30*	1351	436	1.24	590.43	585	20	9.39E-02	3.9	1.40E+00
15	3	300.28	295	523	1.25	600.38	585	20	2.05E-02	14.3	
16	0	328.16	193	682	1.19	656.09	651	11	1.34E-02	27.1	
17	0	338.36*	928	669	1.41	676.47	670	12	6.45E-02	6.6	
18	0	351.89*	2542	716	1.44	703.52	696	15	1.77E-01	3.1	
19	0	408.84*	131	527	1.19	817.32	812	12	9.08E-03	37.1	
20	0	462.92*	234	405	1.38	925.41	920	11	1.62E-02	18.5	
21	0	510.91*	411	523	2.12	1021.32	1014	15	2.86E-02	15.5	
22	0	583.19*	1407	535	1.63	1165.79	1157	18	9.77E-02	4.8	
23	0	609.42*	1834	516	1.73	1218.22	1210	18	1.27E-01	3.8	
24	0	727.57*	372	350	1.83	1454.41	1447	16	2.58E-02	12.7	
25	0	768.24	144	304	0.85	1535.71	1530	12	9.98E-03	25.6	
26	0	794.87	143	273	1.28	1588.95	1583	12	9.94E-03	24.5	
27	0	860.64*	211	315	2.04	1720.42	1710	20	1.47E-02	22.5	
28	0	911.27*	1093	361	2.21	1821.67	1813	21	7.59E-02	5.5	
29	3	964.93	281	169	2.78	1928.94	1923	22	1.95E-02	11.7	1.62E+00
30	3	969.20	645	169	2.14	1937.49	1923	22	4.48E-02	5.8	
31	0	1120.25*	304	293	2.46	2239.53	2232	16	2.11E-02	14.3	
32	0	1238.99*	122	364	1.99	2476.98	2470	18	8.48E-03	39.3	
33	0	1280.82	104	135	4.47	2560.64	2553	15	7.22E-03	26.2	
34	0	1403.09	36	97	1.56	2805.19	2797	12	2.53E-03	57.0	
35	0	1460.89*	5075	139	2.68	2920.80	2907	24	3.52E-01	1.5	
36	0	1729.50	111	44	2.61	3458.18	3447	20	7.70E-03	17.6	
37	0	1764.89*	370	89	2.99	3528.98	3515	30	2.57E-02	9.7	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 03:12:41

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:11:27
Sample ID         : G247969003 Sample quantity : 130.99 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time : 0 04:00:00.00 Elapsed real time: 0 04:00:04.97 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	*	3.574E+01	3.456E+00	3.321E-01	3.042E-02	107.616
CD-109	+	88.03	*	4.243E+00	8.267E-01	7.476E-01	7.094E-02	5.676
SN-126		64.28		2.606E-01	3.265E-01	5.392E-01	7.831E-02	0.483
	+	86.94		1.716E+00	7.703E-01	3.052E-01	1.267E-01	5.621
	+	87.57	*	4.127E-01	8.040E-02	7.300E-02	6.893E-03	5.653
TL-208	+	277.37		3.524E-01	3.436E-01	4.235E-01	7.044E-02	0.832
	+	583.19	*	6.034E-01	8.751E-02	3.543E-02	3.839E-03	17.030
	+	860.56		8.294E-01	3.853E-01	2.825E-01	3.291E-02	2.936
BI-211	+	72.87		3.158E+00	1.887E+00	3.113E+00	2.492E-01	1.014
	+	351.06	*	5.219E+00	6.876E-01	2.180E-01	2.544E-02	23.942
PB-212	+	74.82		3.132E+00	5.294E-01	3.574E-01	4.539E-02	8.763
	+	77.11		2.678E+00	2.921E-01	2.058E-01	1.721E-02	13.007
	+	238.63	*	2.163E+00	2.975E-01	6.338E-02	8.396E-03	34.123
	+	300.09		2.169E+00	6.981E-01	8.306E-01	1.218E-01	2.612
BI-214	+	609.32	*	1.516E+00	2.115E-01	7.369E-02	8.598E-03	20.571
	+	1120.29		1.243E+00	3.803E-01	3.100E-01	3.440E-02	4.009
	+	1764.49		2.018E+00	4.250E-01	1.819E-01	1.515E-02	11.092
PB-214	+	74.82		5.551E+00	8.848E-01	6.335E-01	7.210E-02	8.763
	+	77.11		4.720E+00	6.455E-01	3.629E-01	4.262E-02	13.007
	+	242.00		3.216E+00	6.557E-01	3.849E-01	5.323E-02	8.356
	+	295.22		1.761E+00	2.974E-01	1.466E-01	2.199E-02	12.014
	+	351.93	*	1.894E+00	2.706E-01	7.926E-02	1.020E-02	23.898
RA-224	+	240.99	*	5.687E+00	1.112E+00	6.786E-01	8.495E-02	8.380
RA-226	+	609.32	*	1.516E+00	2.115E-01	7.369E-02	8.598E-03	20.571
	+	1120.29		1.243E+00	3.803E-01	3.100E-01	3.440E-02	4.009
	+	1764.49		2.018E+00	4.250E-01	1.819E-01	1.515E-02	11.092
AC-228	+	338.32		2.136E+00	9.512E-01	2.546E-01	1.083E-01	8.390
	+	911.20	*	2.178E+00	3.795E-01	1.428E-01	1.934E-02	15.253
	+	968.97		2.210E+00	6.128E-01	2.406E-01	6.049E-02	9.184
RA-228	+	338.32		2.136E+00	9.512E-01	2.546E-01	1.083E-01	8.390
	+	911.20	*	2.178E+00	3.795E-01	1.428E-01	1.934E-02	15.253
	+	968.97		2.210E+00	6.128E-01	2.406E-01	6.049E-02	9.184
TH-228	+	74.82		3.132E+00	4.345E-01	3.574E-01	2.947E-02	8.763
	+	77.11		2.678E+00	2.921E-01	2.058E-01	1.721E-02	13.007

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	2.163E+00	2.975E-01	6.338E-02	8.396E-03	34.123
	+	300.09		2.169E+00	1.483E+00	8.306E-01	5.155E-01	2.612
	+	338.32		2.136E+00	3.801E-01	2.546E-01	3.028E-02	8.390
	+	911.20	*	2.178E+00	3.795E-01	1.428E-01	1.934E-02	15.253
U-235	+	968.97		2.210E+00	6.128E-01	2.406E-01	6.049E-02	9.184
	+	89.96		2.865E+00	9.535E-01	7.632E-01	1.898E-01	3.754
	+	93.35		2.214E+00	6.948E-01	4.623E-01	1.075E-01	4.790
		143.76	*	2.434E-02	1.481E-01	2.370E-01	4.050E-02	0.103
NP-237		163.33		-9.761E-02	3.165E-01	4.944E-01	9.142E-02	-0.197
	+	185.72		1.906E-01	5.786E-02	4.611E-02	4.828E-03	4.135
		205.31		1.845E-01	3.924E-01	5.707E-01	1.112E-01	0.323
	+	86.48	*	1.231E+00	3.524E-01	2.200E-01	5.048E-02	5.597
ANH-511		95.86		6.949E-02	6.642E-01	9.577E-01	2.307E-01	0.073
	+	511.00	*	1.371E-01	4.466E-02	3.020E-02	3.026E-03	4.538

---- 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	*	5.137E-03	2.195E-01	3.549E-01	3.704E-02	0.014
NA-22		1274.54	*	1.949E-03	3.312E-02	4.680E-02	4.033E-03	0.042
NA-24		1368.63	*	-2.067E+01	3.312E-02	Half-Life too short		
SC-46		889.28	*	-2.388E-02	2.624E-02	4.154E-02	4.650E-03	-0.575
V-48	+	1120.55		2.162E-01	6.455E-02	8.219E-02	7.266E-03	2.631
		944.13		-9.719E-03	6.806E-01	1.122E+00	1.217E-01	-0.009
		983.53	*	7.765E-03	5.453E-02	9.013E-02	9.452E-03	0.086
CR-51		1312.11		-1.642E-02	6.264E-02	1.020E-01	8.985E-03	-0.161
		320.08	*	-8.886E-02	2.688E-01	4.452E-01	5.762E-02	-0.200
		834.85	*	4.550E-04	2.584E-02	4.314E-02	4.792E-03	0.011
CO-56		846.77	*	-7.647E-03	2.755E-02	4.539E-02	5.052E-03	-0.168
		1037.84		1.135E-01	2.037E-01	3.411E-01	3.515E-02	0.333
	+	1238.28		1.430E-01	1.131E-01	1.190E-01	1.031E-02	1.202
		1771.35		1.414E-01	1.599E-01	2.488E-01	2.067E-02	0.568
CO-57		122.06	*	-5.639E-03	1.860E-02	2.924E-02	2.411E-03	-0.193
		136.47		-1.046E-01	1.433E-01	2.381E-01	2.207E-02	-0.439
CO-58		810.76	*	-4.475E-02	2.515E-02	3.794E-02	4.202E-03	-1.179
FE-59		1099.45	*	-8.303E-02	6.447E-02	9.741E-02	9.544E-03	-0.852
CO-60		1291.59		2.660E-02	8.881E-02	1.441E-01	1.420E-02	0.185
		1173.23		1.475E-03	2.907E-02	4.861E-02	3.909E-03	0.030
		1332.49	*	-1.066E-02	2.777E-02	4.077E-02	3.635E-03	-0.262
ZN-65		1115.54	*	-1.213E-02	7.605E-02	1.038E-01	9.257E-03	-0.117
SE-75		121.12		-7.603E-03	9.738E-02	1.542E-01	1.664E-02	-0.049
		136.00		-1.664E-02	2.762E-02	4.606E-02	3.998E-03	-0.361
		264.66	*	-2.069E-02	3.639E-02	4.968E-02	6.688E-03	-0.416
		279.54		1.012E-01	8.988E-02	1.295E-01	1.838E-02	0.782
		400.66		1.260E-01	1.748E-01	2.925E-01	3.415E-02	0.431
SR-85		514.00	*	1.586E-01	3.461E-02	5.240E-02	5.258E-03	3.026
Y-88		898.04		7.542E-03	2.762E-02	4.628E-02	5.200E-03	0.163
		1836.06	*	-3.654E-03	2.103E-02	3.398E-02	2.747E-03	-0.108

---- 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	*		-5.695E-01	1.491E+01	2.478E+01	2.037E+00	-0.023
NB-94	702.65	*		4.710E-03	2.194E-02	3.610E-02	3.869E-03	0.130
	871.09			-6.982E-05	2.306E-02	3.684E-02	4.116E-03	-0.002
NB-95	765.81	*		7.902E-02	3.472E-02	5.263E-02	5.755E-03	1.501
NB-95M	235.69	*		2.208E-01	1.106E-01	1.614E-01	2.136E-02	1.368
ZR-95	724.19			2.008E-01	7.924E-02	1.203E-01	1.369E-02	1.670
	756.73	*		1.532E-02	5.015E-02	8.227E-02	9.571E-03	0.186
MO-99	140.51			-3.035E+01	3.752E+01	5.894E+01	1.403E+01	-0.515
	181.07			-9.054E+00	3.259E+01	4.695E+01	9.213E+00	-0.193
	366.42			-4.285E+01	1.522E+02	2.495E+02	2.646E+01	-0.172
	739.50	*		1.477E+01	1.871E+01	3.114E+01	5.319E+00	0.474
	777.92			-9.277E+01	5.929E+01	8.792E+01	9.646E+00	-1.055
TC-99M	140.51	*		-2.589E+14	5.929E+01	Half-Life	too short	
RU-103	497.08	*		-1.093E-02	2.814E-02	4.454E-02	6.602E-03	-0.245
	610.33		+	1.661E+01	3.150E+00	1.982E+00	3.441E-01	8.379
RH-106	621.93	*		-1.120E-01	1.979E-01	3.182E-01	4.617E-02	-0.352
	1050.41			-2.103E-01	1.634E+00	2.649E+00	2.586E-01	-0.079
RU-106	621.93	*		-1.120E-01	1.976E-01	3.182E-01	3.324E-02	-0.352
	1050.41			-2.103E-01	1.634E+00	2.649E+00	2.586E-01	-0.079
AG-108M	433.94	*		3.408E-03	1.994E-02	3.268E-02	3.217E-03	0.104
	614.28			7.790E-03	2.582E-02	3.727E-02	3.972E-03	0.209
	722.91			1.328E-02	2.833E-02	4.052E-02	4.463E-03	0.328
AG-110M	657.76	*		1.689E-02	2.275E-02	3.832E-02	4.119E-03	0.441
	677.62			3.702E-02	2.099E-01	3.462E-01	3.745E-02	0.107
	706.68			1.097E-01	1.392E-01	2.334E-01	2.551E-02	0.470
	763.94			1.083E-01	1.188E-01	1.729E-01	1.922E-02	0.626
	884.68			1.091E-02	3.146E-02	5.297E-02	6.041E-03	0.206
	937.49			5.460E-02	7.429E-02	1.260E-01	1.405E-02	0.433
	1384.29			-1.610E-01	1.233E-01	1.872E-01	1.716E-02	-0.860
	1505.03			-9.091E-02	1.862E-01	2.927E-01	2.603E-02	-0.311
SN-113	391.69	*		-1.942E-02	3.006E-02	4.830E-02	4.613E-03	-0.402
CD-115	260.90			-3.934E-06	3.006E-02	Half-Life	too short	
	492.35			-2.656E-05	3.006E-02	Half-Life	too short	
	527.90	*		-2.838E-05	3.006E-02	Half-Life	too short	
SN-117M	156.02			-3.224E-01	1.870E+00	3.120E+00	2.925E-01	-0.103
	158.56	*		2.613E-03	4.527E-02	7.584E-02	7.192E-03	0.034
TE-123M	159.00	*		-5.017E-03	2.035E-02	3.385E-02	3.233E-03	-0.148
SB-124	602.73			2.666E-03	3.032E-02	4.338E-02	4.507E-03	0.061
	645.85			-5.888E-02	3.173E-01	5.180E-01	5.656E-02	-0.114
	722.78			1.375E-01	2.958E-01	4.230E-01	4.633E-02	0.325
	1690.97	*		-2.216E-02	4.958E-02	7.892E-02	7.036E-03	-0.281
SB-125	427.87	*		-4.824E-02	6.069E-02	9.600E-02	9.311E-03	-0.503
	463.37		+	7.013E-01	2.688E-01	3.521E-01	3.643E-02	1.992
	600.60			5.540E-02	1.247E-01	1.950E-01	2.128E-02	0.284
	635.95			5.532E-02	1.754E-01	2.925E-01	3.236E-02	0.189
TE-125M	109.28	*		-1.043E+00	7.083E+00	1.128E+01	1.161E+00	-0.092
I-126	388.63			7.147E-02	1.328E-01	2.220E-01	2.102E-02	0.322
	666.33	*		1.497E-01	1.723E-01	2.908E-01	3.073E-02	0.515
	753.82			1.226E+00	1.449E+00	2.421E+00	2.639E-01	0.506

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SB-126	414.70	3.880E-02		6.835E-02	6.835E-02	9.930E-02	9.399E-03	0.391
	666.50	5.182E-02		5.964E-02	5.964E-02	1.007E-01	1.064E-02	0.515
	695.00	5.862E-02		6.708E-02	6.708E-02	1.061E-01	1.133E-02	0.553
	697.00	-1.782E-03		2.125E-01	2.125E-01	3.470E-01	3.711E-02	-0.005
	720.70	-4.592E-02	*	1.364E-01	1.364E-01	1.863E-01	2.009E-02	-0.246
	856.80	4.429E-01		4.391E-01	4.391E-01	6.582E-01	7.338E-02	0.673
SB-127	252.40	-1.710E+00		5.637E+00	5.637E+00	8.942E+00	3.839E+00	-0.191
	473.00	1.476E+00		1.975E+00	1.975E+00	3.263E+00	4.731E-01	0.452
	685.70	-2.074E-01	*	1.592E+00	1.592E+00	2.591E+00	3.602E-01	-0.080
	783.70	8.319E+00		4.676E+00	4.676E+00	7.804E+00	1.168E+00	1.066
I-131	80.19	4.612E+00		5.185E+00	5.185E+00	6.193E+00	5.409E-01	0.745
	284.31	-9.496E-01		1.406E+00	1.406E+00	2.189E+00	3.097E-01	-0.434
	364.49	-6.170E-03	*	1.015E-01	1.015E-01	1.677E-01	1.861E-02	-0.037
	636.99	1.070E+00		1.359E+00	1.359E+00	2.299E+00	2.510E-01	0.465
TE-132	49.72	8.789E+00		2.181E+01	2.181E+01	3.694E+01	4.280E+00	0.238
	111.76	7.033E+00		4.822E+01	4.822E+01	7.722E+01	9.119E+00	0.091
	116.30	5.659E+00		4.266E+01	4.266E+01	6.809E+01	8.013E+00	0.083
	228.16	-8.331E-01	*	1.102E+00	1.102E+00	1.740E+00	3.228E-01	-0.479
BA-133	81.00	4.213E-02		7.936E-02	7.936E-02	9.317E-02	1.452E-02	0.452
	276.40	3.259E-01	+	3.185E-01	3.185E-01	4.187E-01	7.464E-02	0.778
	302.85	6.314E-02		1.065E-01	1.065E-01	1.586E-01	2.617E-02	0.398
	356.01	2.440E-02	*	3.078E-02	3.078E-02	4.558E-02	6.710E-03	0.535
I-133	383.85	-4.579E-02		1.922E-01	1.922E-01	3.141E-01	4.151E-02	-0.146
	529.87	-8.497E-02	*	1.922E-01	1.922E-01	Half-Life	too short	
	875.33	1.540E+00		1.922E-01	1.922E-01	Half-Life	too short	
	1298.22	-5.000E-01		1.922E-01	1.922E-01	Half-Life	too short	
CS-134	563.25	1.686E-01		2.296E-01	2.296E-01	3.914E-01	4.038E-02	0.431
	569.33	6.834E-02		1.239E-01	1.239E-01	2.101E-01	2.178E-02	0.325
	604.72	3.167E-03		2.571E-02	2.571E-02	3.683E-02	3.834E-03	0.086
	795.86	8.705E-02	+	4.380E-02	4.380E-02	5.966E-02	6.603E-03	1.459
CS-135	801.95	3.371E-02		3.036E-01	3.036E-01	4.387E-01	4.858E-02	0.077
	1365.19	-1.601E-02		7.611E-01	7.611E-01	1.249E+00	1.164E-01	-0.013
	268.22	2.958E-01	*	1.333E-01	1.333E-01	1.925E-01	2.784E-02	1.537
	546.56	1.968E+13		1.333E-01	1.333E-01	Half-Life	too short	
I-135	836.80	9.702E+13		1.333E-01	1.333E-01	Half-Life	too short	
	1038.76	1.404E+13		1.333E-01	1.333E-01	Half-Life	too short	
	1131.51	-1.145E+13		1.333E-01	1.333E-01	Half-Life	too short	
	1260.41	-1.108E+13	*	1.333E-01	1.333E-01	Half-Life	too short	
CS-136	1457.56	7.277E+15		1.333E-01	1.333E-01	Half-Life	too short	
	1678.03	1.571E+12		1.333E-01	1.333E-01	Half-Life	too short	
	1791.20	4.042E+13		1.333E-01	1.333E-01	Half-Life	too short	
	153.25	4.333E-01		7.137E-01	7.137E-01	1.209E+00	1.308E-01	0.358
BA-137M	176.60	2.042E-01		4.111E-01	4.111E-01	6.891E-01	7.530E-02	0.296
	273.65	6.935E-02		6.612E-01	6.612E-01	6.654E-01	9.485E-02	0.104
	340.55	1.003E+00		1.898E-01	1.898E-01	2.581E-01	3.108E-02	3.885
	818.51	2.205E-02		5.594E-02	5.594E-02	9.496E-02	1.052E-02	0.232
BA-137M	1048.07	-1.193E-02	*	8.168E-02	8.168E-02	1.324E-01	1.339E-02	-0.090
	1235.36	1.059E+00		5.768E-01	5.768E-01	8.723E-01	1.012E-01	1.214
	661.66	-1.810E-02	*	2.362E-02	2.362E-02	3.751E-02	3.955E-03	-0.483

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CS-137	661.66	*		-1.912E-02	2.495E-02	3.962E-02	4.184E-03	-0.483
CE-139	165.86	*		-1.996E-02	2.080E-02	3.378E-02	3.314E-03	-0.591
BA-140	162.66			1.121E-01	7.066E-01	1.118E+00	1.138E-01	0.100
	304.85			-2.078E-01	1.214E+00	1.761E+00	5.446E-01	-0.118
	423.72			-5.103E-01	1.537E+00	2.466E+00	8.174E-01	-0.207
	537.26	*		8.168E-02	2.072E-01	3.483E-01	1.196E-01	0.235
LA-140	328.76	+		6.658E-01	3.706E-01	4.460E-01	5.638E-02	1.493
	487.02			-1.290E-02	1.049E-01	1.684E-01	1.745E-02	-0.077
	815.77			-5.723E-02	2.410E-01	3.987E-01	4.733E-02	-0.144
	1596.21	*		-1.039E-01	7.404E-02	1.117E-01	9.796E-03	-0.930
CE-141	145.44	*		5.069E-02	4.624E-02	7.921E-02	7.211E-03	0.640
CE-143	57.36			1.168E-03	4.624E-02	Half-Life	too short	
	293.27	*		5.423E-03	4.624E-02	Half-Life	too short	
	664.57			4.843E-03	4.624E-02	Half-Life	too short	
	721.93			-9.271E-04	4.624E-02	Half-Life	too short	
CE-144	80.12			1.900E+00	2.110E+00	2.521E+00	2.180E-01	0.754
	133.52	*		3.881E-02	1.528E-01	2.301E-01	3.507E-02	0.169
PM-144	476.78			-1.860E-02	4.280E-02	6.794E-02	7.136E-03	-0.274
	618.01			8.262E-03	2.270E-02	3.418E-02	3.636E-03	0.242
	696.49	*		9.964E-03	2.277E-02	3.780E-02	4.043E-03	0.264
PR-144	696.51	*		7.497E-01	1.708E+00	2.834E+00	3.030E-01	0.265
	1489.16			-4.328E+00	8.216E+00	1.285E+01	1.145E+00	-0.337
PM-146	453.88	*		1.097E-02	2.701E-02	4.446E-02	5.112E-03	0.247
	633.25			-6.385E-01	9.451E-01	1.462E+00	5.652E-01	-0.437
	735.93			-7.817E-02	1.084E-01	1.471E-01	4.235E-02	-0.531
	747.24			-4.696E-02	6.411E-02	9.999E-02	1.602E-02	-0.470
ND-147	91.11	+		1.149E+00	2.789E-01	4.176E-01	4.129E-02	2.752
	319.41			-1.585E+00	2.752E+00	4.518E+00	5.719E-01	-0.351
	531.02	*		-1.682E-01	4.400E-01	7.255E-01	1.151E-01	-0.232
PM-149	285.90	*		2.802E-05	4.400E-01	Half-Life	too short	
EU-152	121.78			-7.649E-03	5.295E-02	8.364E-02	8.009E-03	-0.091
	244.70			2.362E-01	2.550E-01	3.707E-01	4.693E-02	0.637
	344.28	*		4.404E-03	8.279E-02	1.049E-01	1.261E-02	0.042
	778.90			-1.151E-01	1.778E-01	2.787E-01	3.058E-02	-0.413
	964.08	+		1.036E+00	2.658E-01	3.734E-01	3.984E-02	2.775
	1085.87			7.951E-02	2.550E-01	4.207E-01	3.920E-02	0.189
	1112.07			1.785E-01	2.462E-01	3.548E-01	3.179E-02	0.503
	1408.01			9.886E-02	1.398E-01	2.058E-01	1.840E-02	0.480
GD-153	69.67			8.457E-01	1.204E+00	1.807E+00	1.403E-01	0.468
	97.43	*		-5.713E-02	6.784E-02	9.201E-02	8.091E-03	-0.621
	103.18			-1.408E-01	7.955E-02	1.206E-01	1.031E-02	-1.167
EU-154	123.07			-1.060E-02	3.810E-02	5.990E-02	6.638E-03	-0.177
	723.31			9.588E-02	1.314E-01	1.900E-01	2.186E-02	0.505
	873.19			3.562E-02	1.837E-01	3.077E-01	4.263E-02	0.116
	996.26			-2.465E-01	2.419E-01	3.712E-01	6.827E-02	-0.664
	1004.73			8.827E-02	1.389E-01	2.335E-01	3.014E-02	0.378
	1274.44	*		5.904E-03	9.370E-02	1.324E-01	1.506E-02	0.045
EU-155	86.55	+		5.011E-01	9.782E-02	1.238E-01	1.165E-02	4.046
	105.31	*		9.270E-02	7.426E-02	1.219E-01	1.046E-02	0.760

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		1.371E+00	2.672E-01	3.386E-01	3.166E-02	4.051
		197.04		-1.332E-01	4.532E-01	6.820E-01	7.416E-02	-0.195
		215.65		1.773E-01	5.751E-01	9.147E-01	1.057E-01	0.194
		298.57		3.067E-01	8.991E-02	1.465E-01	1.964E-02	2.093
		879.36	*	-3.576E-02	9.317E-02	1.520E-01	1.699E-02	-0.235
	+	962.29		1.321E+00	4.257E-01	6.690E-01	7.150E-02	1.975
		966.15		7.474E-01	1.917E-01	3.671E-01	3.910E-02	2.036
		1177.93		1.149E-02	2.415E-01	4.036E-01	3.257E-02	0.028
		1271.85		-4.544E-02	5.436E-01	7.861E-01	6.756E-02	-0.058
		80.57		1.921E-01	2.275E-01	2.712E-01	2.356E-02	0.708
HO-166M	+	184.41		1.514E-01	4.597E-02	4.715E-02	4.916E-03	3.212
		280.46		1.232E-02	6.696E-02	9.403E-02	1.313E-02	0.131
		410.95		3.548E-01	1.897E-01	2.873E-01	2.711E-02	1.235
		711.68	*	-5.255E-02	4.018E-02	6.129E-02	6.589E-03	-0.857
		752.31		5.020E-02	1.827E-01	2.995E-01	3.262E-02	0.168
	+	810.29		-7.528E-02	3.735E-02	5.538E-02	6.123E-03	-1.359
		67.75		-1.008E-01	7.376E-02	1.142E-01	8.711E-03	-0.883
		100.11		1.331E-01	1.259E-01	2.067E-01	1.791E-02	0.644
		152.43		1.818E-01	2.482E-01	4.218E-01	3.892E-02	0.431
		222.11		-2.032E-01	2.588E-01	4.120E-01	4.863E-02	-0.493
TA-182	+	1121.30		5.945E-01	1.775E-01	2.274E-01	2.008E-02	2.614
		1189.05		-7.562E-02	2.087E-01	3.426E-01	2.786E-02	-0.221
		1221.41	*	6.740E-02	1.367E-01	2.312E-01	1.923E-02	0.291
		1231.02		-2.634E-02	3.934E-01	5.539E-01	4.636E-02	-0.048
		295.96		1.344E+00	2.099E-01	2.042E-01	2.762E-02	6.585
	+	308.46		2.000E-02	6.562E-02	1.109E-01	1.452E-02	0.180
		316.51	*	-2.222E-03	2.345E-02	3.915E-02	5.004E-03	-0.057
		468.07		2.418E-02	5.315E-02	7.589E-02	7.856E-03	0.319
		70.83		1.564E+00	9.971E-01	1.486E+00	2.327E-01	1.052
		72.87		8.270E-01	5.054E-01	9.565E-01	1.454E-01	0.865
HG-203	+	279.20	*	4.635E-02	3.303E-02	4.774E-02	6.750E-03	0.971
		72.81		1.817E-01	1.085E-01	2.079E-01	1.663E-02	0.874
		74.97		9.028E-01	1.248E-01	1.548E-01	1.265E-02	5.833
		569.70		2.161E-02	1.913E-02	3.293E-02	3.382E-03	0.656
		1063.66	*	3.799E-02	3.663E-02	6.211E-02	5.962E-03	0.612
	+	1770.23		1.299E+00	3.929E-01	7.046E-01	5.857E-02	1.844
		46.54	*	2.475E+00	2.176E+00	3.484E+00	3.209E-01	0.710
		404.85	*	-1.896E-01	5.662E-01	7.806E-01	3.789E-01	-0.243
		427.09		-4.227E-01	1.019E+00	1.608E+00	7.471E-01	-0.263
		832.01		-5.244E-01	7.264E-01	1.089E+00	5.699E-01	-0.481
BI-212	+	727.33	*	2.390E+00	6.947E-01	7.652E-01	1.076E-01	3.124
		785.37		4.978E+00	2.272E+00	3.871E+00	4.255E-01	1.286
		1620.50		1.918E+00	1.533E+00	2.743E+00	2.392E-01	0.699
		271.23		7.987E-01	2.546E-01	3.140E-01	4.639E-02	2.544
		401.81	*	2.525E-01	2.903E-01	4.597E-01	7.045E-02	0.549
	+	81.07		8.403E-02	1.790E-01	2.101E-01	1.836E-02	0.400
		83.79		3.314E-01	9.233E-02	1.373E-01	1.239E-02	2.413
		94.87		9.405E-01	3.425E-01	5.175E-01	4.627E-02	1.817
		144.24		2.417E-01	4.961E-01	7.982E-01	7.888E-02	0.303
RA-223	+	81.07		8.403E-02	1.790E-01	2.101E-01	1.836E-02	0.400
		83.79		3.314E-01	9.233E-02	1.373E-01	1.239E-02	2.413
		94.87		9.405E-01	3.425E-01	5.175E-01	4.627E-02	1.817
		144.24		2.417E-01	4.961E-01	7.982E-01	7.888E-02	0.303
		81.07		8.403E-02	1.790E-01	2.101E-01	1.836E-02	0.400
		83.79		3.314E-01	9.233E-02	1.373E-01	1.239E-02	2.413
		94.87		9.405E-01	3.425E-01	5.175E-01	4.627E-02	1.817
		144.24		2.417E-01	4.961E-01	7.982E-01	7.888E-02	0.303
		81.07		8.403E-02	1.790E-01	2.101E-01	1.836E-02	0.400
		83.79		3.314E-01	9.233E-02	1.373E-01	1.239E-02	2.413

----- 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		2.740E-01	2.716E-01	4.625E-01	4.657E-02	0.592
	+	269.46		6.206E-01	1.950E-01	2.414E-01	3.314E-02	2.571
		323.87	*	1.749E-02	4.893E-01	7.122E-01	1.392E-01	0.025
	+	338.28		8.478E+00	1.670E+00	1.637E+00	2.388E-01	5.179
		79.69		1.088E+00	1.061E+00	1.260E+00	2.170E-01	0.864
		235.96		7.402E-01	1.664E-01	2.182E-01	2.964E-02	3.393
TH-227		256.23	*	9.034E-02	1.780E-01	2.901E-01	4.519E-02	0.311
	+	299.98		2.386E+00	7.863E-01	1.092E+00	1.780E-01	2.184
		304.50		-2.963E-01	1.219E+00	1.764E+00	3.407E-01	-0.168
		334.37		3.657E-01	1.613E+00	1.867E+00	3.309E-01	0.196
		79.80		1.383E+00	1.408E+00	1.656E+00	3.607E-01	0.835
		235.96		7.402E-01	1.645E-01	2.182E-01	2.868E-02	3.393
TH-229		256.23	*	9.034E-02	1.781E-01	2.901E-01	4.876E-02	0.311
	+	299.98		2.386E+00	7.863E-01	1.092E+00	1.780E-01	2.184
		304.50		-2.963E-01	1.219E+00	1.764E+00	3.407E-01	-0.168
		334.37		3.657E-01	1.613E+00	1.867E+00	3.309E-01	0.196
		85.43		7.322E-01	1.616E-01	2.389E-01	2.198E-02	3.065
	+	88.47		6.362E-01	1.240E-01	1.590E-01	1.502E-02	4.000
PA-231		193.51	*	1.134E-02	3.682E-01	6.074E-01	6.527E-02	0.019
		210.85		2.027E+00	7.556E-01	1.123E+00	1.277E-01	1.805
		283.69	*	-8.411E-01	1.026E+00	1.580E+00	2.873E-01	-0.533
	+	301.36		1.533E+00	5.019E-01	7.079E-01	1.120E-01	2.166
		81.07		8.403E-02	1.790E-01	2.101E-01	1.836E-02	0.400
		83.79		3.314E-01	9.233E-02	1.373E-01	1.239E-02	2.413
TH-231		94.87		9.405E-01	3.425E-01	5.175E-01	4.627E-02	1.817
		144.24		2.417E-01	4.961E-01	7.982E-01	7.888E-02	0.303
		154.21		2.740E-01	2.716E-01	4.625E-01	4.657E-02	0.592
	+	269.46		6.206E-01	1.950E-01	2.414E-01	3.314E-02	2.571
		323.87	*	1.749E-02	4.893E-01	7.122E-01	1.392E-01	0.025
	+	338.28		8.478E+00	1.670E+00	1.637E+00	2.388E-01	5.179
PA-233	+	300.13		1.080E+00	3.653E-01	4.950E-01	8.909E-02	2.181
		311.90	*	-2.937E-02	4.271E-02	6.992E-02	9.162E-03	-0.420
		340.48		3.988E+00	1.139E+00	9.377E-01	2.380E-01	4.252
		94.67		4.627E-01	1.359E-01	1.956E-01	2.472E-02	2.366
		98.44		3.781E-02	7.556E-02	1.031E-01	5.755E-02	0.367
		111.00		5.064E-04	1.281E-01	2.045E-01	2.432E-02	0.002
PA-234		131.20		6.822E-02	8.154E-02	1.247E-01	1.056E-02	0.547
		569.50		1.424E-01	1.697E-01	2.900E-01	2.979E-02	0.491
		733.00		7.337E-02	2.663E-01	3.765E-01	8.714E-02	0.195
		880.51		-1.030E-01	1.823E-01	2.946E-01	3.294E-02	-0.350
		883.24		-5.056E-02	1.879E-01	3.030E-01	2.048E-01	-0.167
		926.50		7.959E-02	1.160E-01	1.942E-01	5.085E-02	0.410
PA-234M		946.00	*	1.352E-01	2.025E-01	3.405E-01	6.768E-02	0.397
		949.00		4.340E-01	3.006E-01	5.196E-01	5.614E-02	0.835
		766.42		2.058E+01	1.373E+01	1.374E+01	7.031E+00	1.498
		1001.03	*	1.190E+00	3.167E+00	5.106E+00	5.852E-01	0.233
	TH-234	63.29	*	8.195E-01	8.949E-01	1.473E+00	2.621E-01	0.556
	+	92.59		2.932E+00	8.982E-01	8.912E-01	1.985E-01	3.290
U-238		63.29	*	8.195E-01	8.949E-01	1.473E+00	2.621E-01	0.556

----- 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		2.932E+00	6.720E-01	8.912E-01	8.107E-02	3.290
		99.53		1.627E-01	1.229E-01	1.877E-01	1.632E-02	0.867
		103.37		-8.717E-02	7.064E-02	1.093E-01	9.330E-03	-0.798
		106.12		8.935E-02	5.931E-02	9.765E-02	8.255E-03	0.915
		117.23	*	2.070E-02	2.825E-01	4.501E-01	3.719E-02	0.046
		228.18		-1.176E-01	1.557E-01	2.474E-01	2.976E-02	-0.476
AM-241	+	277.60		1.611E-01	1.564E-01	2.089E-01	2.911E-02	0.771
CM-247		59.54	*	8.020E-02	9.461E-02	1.599E-01	1.250E-02	0.502
	+	278.00		6.840E-01	6.642E-01	8.894E-01	1.241E-01	0.769
CF-249		287.50		9.819E-01	8.720E-01	1.422E+00	1.956E-01	0.690
		402.40	*	2.547E-02	2.758E-02	4.246E-02	3.982E-03	0.600
		252.80		-1.299E-01	6.748E-01	1.082E+00	1.404E-01	-0.120
		333.37		-8.185E-03	2.037E-01	1.974E-01	2.388E-02	-0.041
CF-251		388.16	*	2.334E-02	2.650E-02	4.469E-02	4.242E-03	0.522
		177.52	*	1.209E-02	9.030E-02	1.503E-01	1.531E-02	0.080
		227.38		-1.404E-01	2.534E-01	4.057E-01	4.869E-02	-0.346
		285.41		9.662E-02	1.531E+00	2.449E+00	3.385E-01	0.039

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]G247969003      *
* Acquisition date   : 10-MAR-2010 23:11:27 Detector SN#      :              *
* Detector ID        : GAM22                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 04:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 04:00:04.97           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247969003           Analyst initials: MXR1          *
* Batch Number       : 958216               Sample Quantity : 1.3099E+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	3.574E+01	3.387E+00	3.324E-01	0.000E+00
CD-109	4.243E+00	8.102E-01	7.836E-01	0.000E+00
SN-126	4.127E-01	7.879E-02	7.652E-02	0.000E+00
TL-208	6.034E-01	8.576E-02	3.602E-02	0.000E+00
BI-211	5.219E+00	6.739E-01	2.235E-01	0.000E+00
PB-212	2.163E+00	2.915E-01	6.539E-02	0.000E+00
BI-214	1.516E+00	2.072E-01	7.486E-02	0.000E+00
PB-214	1.894E+00	2.651E-01	8.125E-02	0.000E+00
RA-224	5.687E+00	1.089E+00	7.000E-01	0.000E+00
RA-226	1.516E+00	2.072E-01	7.486E-02	0.000E+00
AC-228	2.178E+00	3.719E-01	1.441E-01	0.000E+00
RA-228	2.178E+00	3.719E-01	1.441E-01	0.000E+00
TH-228	2.163E+00	2.915E-01	6.539E-02	0.000E+00
TH-232	2.178E+00	3.719E-01	1.441E-01	0.000E+00
U-235	2.434E-02	1.451E-01	2.465E-01	0.000E+00
NP-237	1.231E+00	3.454E-01	2.307E-01	0.000E+00
ANH-511	1.371E-01	4.377E-02	3.077E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	5.137E-03	2.151E-01	3.620E-01	0.000E+00 NOT IDENT.
NA-22	1.949E-03	3.246E-02	4.695E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.092E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.388E-02	2.571E-02	4.193E-02	0.000E+00 FAIL ABUN
V-48	7.765E-03	5.344E-02	9.083E-02	0.000E+00 NOT IDENT.
CR-51	-8.886E-02	2.634E-01	4.571E-01	0.000E+00 NOT IDENT.
MN-54	4.550E-04	2.532E-02	4.359E-02	0.000E+00 NOT IDENT.
CO-56	-7.647E-03	2.700E-02	4.585E-02	0.000E+00 FAIL ABUN
CO-57	-5.639E-03	1.822E-02	3.049E-02	0.000E+00 NOT IDENT.
CO-58	-4.475E-02	2.465E-02	3.836E-02	0.000E+00 NOT IDENT.

FE-59	-8.303E-02	6.318E-02	9.798E-02	0.000E+00	NOT IDENT.
CO-60	-1.066E-02	2.721E-02	4.087E-02	0.000E+00	NOT IDENT.
ZN-65	-1.213E-02	7.453E-02	1.044E-01	0.000E+00	NOT IDENT.
SE-75	-2.069E-02	3.567E-02	5.117E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.392E-02	5.339E-02	0.000E+00	NOT IDENT.
Y-88	-3.654E-03	2.061E-02	3.388E-02	0.000E+00	NOT IDENT.
Y-91	-5.695E-01	1.461E+01	2.489E+01	0.000E+00	NOT IDENT.
NB-94	4.710E-03	2.150E-02	3.659E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	3.403E-02	5.326E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.084E-01	1.665E-01	0.000E+00	NOT IDENT.
ZR-95	1.532E-02	4.915E-02	8.328E-02	0.000E+00	NOT IDENT.
MO-99	1.477E+01	1.833E+01	3.153E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.205E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.093E-02	2.758E-02	4.540E-02	0.000E+00	FAIL ABUN
RU-106	-1.120E-01	1.939E-01	3.232E-01	0.000E+00	NOT IDENT.
RU-106	-1.120E-01	1.936E-01	3.232E-01	0.000E+00	NOT IDENT.
AG-108M	3.408E-03	1.954E-02	3.339E-02	0.000E+00	NOT IDENT.
AG-110M	1.689E-02	2.229E-02	3.888E-02	0.000E+00	NOT IDENT.
SN-113	-1.942E-02	2.946E-02	4.943E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.029E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	2.613E-03	4.437E-02	7.876E-02	0.000E+00	NOT IDENT.
TE-123M	-5.017E-03	1.994E-02	3.515E-02	0.000E+00	NOT IDENT.
SB-124	-2.216E-02	4.859E-02	7.879E-02	0.000E+00	NOT IDENT.
SE-125	-4.824E-02	5.948E-02	9.810E-02	0.000E+00	FAIL ABUN
TE-125M	-1.043E+00	6.941E+00	1.178E+01	0.000E+00	NOT IDENT.
I-126	1.497E-01	1.688E-01	2.950E-01	0.000E+00	NOT IDENT.
SB-126	-4.592E-02	1.337E-01	1.887E-01	0.000E+00	NOT IDENT.
SB-127	-2.074E-01	1.560E+00	2.627E+00	0.000E+00	NOT IDENT.
I-131	-6.170E-03	9.947E-02	1.718E-01	0.000E+00	NOT IDENT.
TE-132	-8.331E-01	1.080E+00	1.797E+00	0.000E+00	NOT IDENT.
BA-133	2.440E-02	3.017E-02	4.671E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.742E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.293E-02	6.034E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.306E-01	1.982E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.266E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.193E-02	8.004E-02	1.332E-01	0.000E+00	NOT IDENT.
BA-137M	-1.810E-02	2.315E-02	3.805E-02	0.000E+00	NOT IDENT.
CS-137	-1.912E-02	2.445E-02	4.020E-02	0.000E+00	NOT IDENT.
CE-139	-1.996E-02	2.039E-02	3.506E-02	0.000E+00	NOT IDENT.
BA-140	8.168E-02	2.031E-01	3.546E-01	0.000E+00	NOT IDENT.
LA-140	-1.039E-01	7.256E-02	1.117E-01	0.000E+00	FAIL ABUN
CE-141	5.069E-02	4.532E-02	8.237E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.497E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	3.881E-02	1.498E-01	2.396E-01	0.000E+00	NOT IDENT.
PM-144	9.964E-03	2.232E-02	3.831E-02	0.000E+00	NOT IDENT.
PR-144	7.497E-01	1.673E+00	2.873E+00	0.000E+00	NOT IDENT.
PM-146	1.097E-02	2.647E-02	4.539E-02	0.000E+00	NOT IDENT.
ND-147	-1.682E-01	4.312E-01	7.387E-01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.838E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.404E-03	8.113E-02	1.076E-01	0.000E+00	FAIL ABUN
GD-153	-5.713E-02	6.648E-02	9.629E-02	0.000E+00	NOT IDENT.
EU-154	5.904E-03	9.182E-02	1.329E-01	0.000E+00	NOT IDENT.
EU-155	9.270E-02	7.277E-02	1.274E-01	0.000E+00	FAIL ABUN
TB-160	-3.576E-02	9.130E-02	1.534E-01	0.000E+00	FAIL ABUN
HO-166M	-5.255E-02	3.937E-02	6.210E-02	0.000E+00	FAIL ABUN
TA-182	6.740E-02	1.340E-01	2.322E-01	0.000E+00	FAIL ABUN
IR-192	-2.222E-03	2.298E-02	4.021E-02	0.000E+00	FAIL ABUN
HG-203	4.635E-02	3.237E-02	4.913E-02	0.000E+00	FAIL ABUN
BI-207	3.799E-02	3.590E-02	6.251E-02	0.000E+00	FAIL ABUN
PB-210	2.475E+00	2.133E+00	3.689E+00	0.000E+00	NOT IDENT.
PB-211	-1.896E-01	5.549E-01	7.984E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.808E-01	7.751E-01	0.000E+00	FAIL ABUN
RN-219	2.525E-01	2.845E-01	4.703E-01	0.000E+00	FAIL ABUN
RA-223	1.749E-02	4.795E-01	7.311E-01	0.000E+00	FAIL ABUN
AC-227	9.034E-02	1.744E-01	2.989E-01	0.000E+00	FAIL ABUN
TH-227	9.034E-02	1.745E-01	2.989E-01	0.000E+00	FAIL ABUN
TH-229	1.134E-02	3.608E-01	6.287E-01	0.000E+00	FAIL ABUN
PA-231	-8.411E-01	1.006E+00	1.625E+00	0.000E+00	FAIL ABUN
TH-231	1.749E-02	4.795E-01	7.311E-01	0.000E+00	FAIL ABUN
PA-233	-2.937E-02	4.185E-02	7.182E-02	0.000E+00	FAIL ABUN
PA-234	1.352E-01	1.984E-01	3.434E-01	0.000E+00	NOT IDENT.
PA-234M	1.190E+00	3.104E+00	5.144E+00	0.000E+00	NOT IDENT.
TH-234	8.195E-01	8.770E-01	1.552E+00	0.000E+00	FAIL ABUN
U-238	8.195E-01	8.770E-01	1.552E+00	0.000E+00	FAIL ABUN
NP-239	2.070E-02	2.769E-01	4.697E-01	0.000E+00	FAIL ABUN
AM-241	8.020E-02	9.272E-02	1.686E-01	0.000E+00	NOT IDENT.
CM-247	2.547E-02	2.703E-02	4.343E-02	0.000E+00	FAIL ABUN
CF-249	2.334E-02	2.597E-02	4.574E-02	0.000E+00	NOT IDENT.

CF-251	1.209E-02	8.849E-02	1.558E-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]G247969003.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:11:27
Sample ID          : G247969003          Sample quantity  : 1.30990E+02 GRAM
Detector name      : GAM22              Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00      Elapsed real time: 0 04:00:04.97  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 958216             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	5075	10.66*	1.909E+00	3.574E+01	3.574E+01	9.67
CD-109	88.03	797	3.70*	7.479E+00	4.127E+00	4.243E+00	19.48
SN-126	64.28	-----	9.60	4.512E+00	-----	Line Not Found	-----
	86.94	797	8.90	7.479E+00	1.716E+00	1.716E+00	44.90
	87.57	797	37.00*	7.479E+00	4.127E-01	4.127E-01	19.48
TL-208	277.37	100	6.60	6.183E+00	3.524E-01	3.524E-01	97.53
	583.19	1407	85.00*	3.930E+00	6.034E-01	6.034E-01	14.50
	860.56	211	12.50	2.923E+00	8.294E-01	8.294E-01	46.45
BI-211	72.87	160	1.23	5.895E+00	3.158E+00	3.158E+00	59.74
	351.06	2542	12.92*	5.402E+00	5.219E+00	5.219E+00	13.18
PB-212	74.82	1387	10.28	6.171E+00	3.132E+00	3.132E+00	16.90
	77.11	2065	17.10	6.464E+00	2.678E+00	2.678E+00	10.91
	238.63	4415	43.60*	6.709E+00	2.163E+00	2.163E+00	13.75
	300.09	295	3.30	5.914E+00	2.169E+00	2.169E+00	32.18
BI-214	609.32	1834	45.49*	3.811E+00	1.516E+00	1.516E+00	13.95
	1120.29	304	14.92	2.346E+00	1.243E+00	1.243E+00	30.60
	1764.49	370	15.30	1.716E+00	2.017E+00	2.018E+00	21.06
PB-214	74.82	1387	5.80	6.171E+00	5.551E+00	5.551E+00	15.94
	77.11	2065	9.70	6.464E+00	4.720E+00	4.720E+00	13.68
	242.00	1085	7.25	6.664E+00	3.216E+00	3.216E+00	20.39
	295.22	1351	18.42	5.969E+00	1.761E+00	1.761E+00	16.89
	351.93	2542	35.60*	5.402E+00	1.894E+00	1.894E+00	14.28
RA-224	240.99	1085	4.10*	6.664E+00	5.687E+00	5.687E+00	19.55
RA-226	609.32	1834	45.49*	3.811E+00	1.516E+00	1.516E+00	13.95
	1120.29	304	14.92	2.346E+00	1.243E+00	1.243E+00	30.60
	1764.49	370	15.30	1.716E+00	2.017E+00	2.018E+00	21.06
AC-228	338.32	928	11.27	5.525E+00	2.136E+00	2.136E+00	44.53
	911.20	1093	25.80*	2.788E+00	2.178E+00	2.178E+00	17.43
	968.97	645	15.80	2.648E+00	2.210E+00	2.210E+00	27.73
RA-228	338.32	928	11.27	5.525E+00	2.136E+00	2.136E+00	44.53
	911.20	1093	25.80*	2.788E+00	2.178E+00	2.178E+00	17.43
	968.97	645	15.80	2.648E+00	2.210E+00	2.210E+00	27.73

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	1387	10.28	6.171E+00	3.132E+00	3.132E+00	13.87
	77.11	2065	17.10	6.464E+00	2.678E+00	2.678E+00	10.91
	238.63	4415	43.60*	6.709E+00	2.163E+00	2.163E+00	13.75
	300.09	295	3.30	5.914E+00	2.169E+00	2.169E+00	68.35
TH-232	338.32	928	11.27	5.525E+00	2.136E+00	2.136E+00	17.79
	911.20	1093	25.80*	2.788E+00	2.178E+00	2.178E+00	17.43
	968.97	645	15.80	2.648E+00	2.210E+00	2.210E+00	27.73
	89.96	533	3.47	7.681E+00	2.865E+00	2.865E+00	33.28
U-235	93.35	681	5.60	7.866E+00	2.214E+00	2.214E+00	31.38
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
	185.72	579	57.20	7.607E+00	1.906E-01	1.906E-01	30.35
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
NP-237	86.48	797	12.40*	7.479E+00	1.231E+00	1.231E+00	28.62
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
ANH-511	511.00	411	100.00*	4.298E+00	1.371E-01	1.371E-01	32.58

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	3.574E+01	3.574E+01	0.346E+01	9.67	
CD-109	461.40D	1.03	4.127E+00	4.243E+00	0.827E+00	19.48	
SN-126	2.30E+05Y	1.00	4.127E-01	4.127E-01	0.804E-01	19.48	
TL-208	1.41E+10Y	1.00	6.034E-01	6.034E-01	0.875E-01	14.50	
BI-211	7.04E+08Y	1.00	5.219E+00	5.219E+00	0.688E+00	13.18	
PB-212	1.41E+10Y	1.00	2.163E+00	2.163E+00	0.297E+00	13.75	
BI-214	1600.00Y	1.00	1.516E+00	1.516E+00	0.211E+00	13.95	
PB-214	1600.00Y	1.00	1.894E+00	1.894E+00	0.271E+00	14.28	
RA-224	1.41E+10Y	1.00	5.687E+00	5.687E+00	1.112E+00	19.55	
RA-226	1600.00Y	1.00	1.516E+00	1.516E+00	0.211E+00	13.95	
AC-228	1.41E+10Y	1.00	2.178E+00	2.178E+00	0.380E+00	17.43	
RA-228	1.41E+10Y	1.00	2.178E+00	2.178E+00	0.380E+00	17.43	
TH-228	1.41E+10Y	1.00	2.163E+00	2.163E+00	0.297E+00	13.75	
TH-232	1.41E+10Y	1.00	2.178E+00	2.178E+00	0.380E+00	17.43	
U-235	7.04E+08Y	1.00	1.906E-01	1.906E-01	0.579E-01	30.35	K
NP-237	2.14E+06Y	1.00	1.231E+00	1.231E+00	0.352E+00	28.62	
ANH-511	1.00E+09Y	1.00	1.371E-01	1.371E-01	0.447E-01	32.58	

Total Activity : 6.913E+01 6.925E+01

Grand Total Activity : 6.913E+01 6.925E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247969003

Page : 4
Acquisition date : 10-MAR-2010 23:11:27

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.16	204	1308	1.17	258.43	254	9	1.42E-02	65.5	8.53E+00	
0	209.16	327	956	1.21	418.29	415	9	2.27E-02	35.8	7.19E+00	
0	270.31	378	704	1.56	540.49	536	10	2.62E-02	28.3	6.27E+00	T
0	328.16	193	682	1.19	656.09	651	11	1.34E-02	54.2	5.62E+00	T
0	408.84	131	527	1.19	817.32	812	12	9.08E-03	74.1	4.94E+00	
0	462.92	234	405	1.38	925.41	920	11	1.62E-02	36.9	4.58E+00	T
0	727.57	372	350	1.83	1454.41	1447	16	2.58E-02	25.4	3.34E+00	T
0	768.24	144	304	0.85	1535.71	1530	12	9.98E-03	51.3	3.20E+00	
0	794.87	143	273	1.28	1588.95	1583	12	9.94E-03	49.1	3.12E+00	T
3	964.93	281	169	2.78	1928.94	1923	22	1.95E-02	23.3	2.66E+00	T
0	1238.99	122	364	1.99	2476.98	2470	18	8.48E-03	78.6	2.16E+00	T
0	1280.82	104	135	4.47	2560.64	2553	15	7.22E-03	52.5	2.10E+00	
0	1403.09	36	97	1.56	2805.19	2797	12	2.53E-03	***	1.96E+00	
0	1729.50	111	44	2.61	3458.18	3447	20	7.70E-03	35.2	1.73E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969003.CNF;1
* Acquisition date   : 10-MAR-2010 23:11:27   Detector SN#      :
* Detector ID        : GAM22                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 04:00:00.00          Abundance limit      : 75.00000
* Elapsed real time  : 0 04:00:04.97          Half life ratio     : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 20-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G247969003             Analyst initials    : MXR1
* Batch Number       : 958216                 Sample Quantity     : 1.30990E+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	3.574E+01	3.456E+00	3.321E-01	3.042E-02	107.616
CD-109	4.243E+00	8.267E-01	7.476E-01	7.094E-02	5.676
SN-126	4.127E-01	8.040E-02	7.300E-02	6.893E-03	5.653
TL-208	6.034E-01	8.751E-02	3.543E-02	3.839E-03	17.030
BI-211	5.219E+00	6.876E-01	2.180E-01	2.544E-02	23.942
PB-212	2.163E+00	2.975E-01	6.338E-02	8.396E-03	34.123
BI-214	1.516E+00	2.115E-01	7.369E-02	8.598E-03	20.571
PB-214	1.894E+00	2.706E-01	7.926E-02	1.020E-02	23.898
RA-224	5.687E+00	1.112E+00	6.786E-01	8.495E-02	8.380
RA-226	1.516E+00	2.115E-01	7.369E-02	8.598E-03	20.571
AC-228	2.178E+00	3.795E-01	1.428E-01	1.934E-02	15.253
RA-228	2.178E+00	3.795E-01	1.428E-01	1.934E-02	15.253
TH-228	2.163E+00	2.975E-01	6.338E-02	8.396E-03	34.123
TH-232	2.178E+00	3.795E-01	1.428E-01	1.934E-02	15.253
U-235	1.906E-01	5.786E-02	2.370E-01	4.050E-02	0.804
NP-237	1.231E+00	3.524E-01	2.200E-01	5.048E-02	5.597
ANH-511	1.371E-01	4.466E-02	3.020E-02	3.026E-03	4.538

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.137E-03		2.195E-01	3.549E-01	3.704E-02	0.014

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1.949E-03		3.312E-02	4.680E-02	4.033E-03	0.042
NA-24	-2.067E+01		1.067E+01	Half-Life too short		
SC-46	-2.388E-02		2.624E-02	4.154E-02	4.650E-03	-0.575
V-48	7.765E-03		5.453E-02	9.013E-02	9.452E-03	0.086
CR-51	-8.886E-02		2.688E-01	4.452E-01	5.762E-02	-0.200
MN-54	4.550E-04		2.584E-02	4.314E-02	4.792E-03	0.011
CO-56	-7.647E-03		2.755E-02	4.539E-02	5.052E-03	-0.168
CO-57	-5.639E-03		1.860E-02	2.924E-02	2.411E-03	-0.193
CO-58	-4.475E-02		2.515E-02	3.794E-02	4.202E-03	-1.179
FE-59	-8.303E-02		6.447E-02	9.741E-02	9.544E-03	-0.852
CO-60	-1.066E-02		2.777E-02	4.077E-02	3.635E-03	-0.262
ZN-65	-1.213E-02		7.605E-02	1.038E-01	9.257E-03	-0.117
SE-75	-2.069E-02		3.639E-02	4.968E-02	6.688E-03	-0.416
SR-85	1.586E-01		3.461E-02	5.240E-02	5.258E-03	3.026
Y-88	-3.654E-03		2.103E-02	3.398E-02	2.747E-03	-0.108
Y-91	-5.695E-01		1.491E+01	2.478E+01	2.037E+00	-0.023
NB-94	4.710E-03		2.194E-02	3.610E-02	3.869E-03	0.130
NB-95	7.902E-02		3.472E-02	5.263E-02	5.755E-03	1.501
NB-95M	2.208E-01		1.106E-01	1.614E-01	2.136E-02	1.368
ZR-95	1.532E-02		5.015E-02	8.227E-02	9.571E-03	0.186
MO-99	1.477E+01		1.871E+01	3.114E+01	5.319E+00	0.474
TC-99M	-2.589E+14		1.635E+14	Half-Life too short		
RU-103	-1.093E-02		2.814E-02	4.454E-02	6.602E-03	-0.245
RH-106	-1.120E-01		1.979E-01	3.182E-01	4.617E-02	-0.352
RU-106	-1.120E-01		1.976E-01	3.182E-01	3.324E-02	-0.352
AG-108M	3.408E-03		1.994E-02	3.268E-02	3.217E-03	0.104
AG-110M	1.689E-02		2.275E-02	3.832E-02	4.119E-03	0.441
SN-113	-1.942E-02		3.006E-02	4.830E-02	4.613E-03	-0.402
CD-115	-2.838E-05		1.035E-05	Half-Life too short		
SN-117M	2.613E-03		4.527E-02	7.584E-02	7.192E-03	0.034
TE-123M	-5.017E-03		2.035E-02	3.385E-02	3.233E-03	-0.148
SB-124	-2.216E-02		4.958E-02	7.892E-02	7.036E-03	-0.281
SB-125	-4.824E-02		6.069E-02	9.600E-02	9.311E-03	-0.503
TE-125M	-1.043E+00		7.083E+00	1.128E+01	1.161E+00	-0.092
I-126	1.497E-01		1.723E-01	2.908E-01	3.073E-02	0.515
SB-126	-4.592E-02		1.364E-01	1.863E-01	2.009E-02	-0.246
SB-127	-2.074E-01		1.592E+00	2.591E+00	3.602E-01	-0.080
I-131	-6.170E-03		1.015E-01	1.677E-01	1.861E-02	-0.037
TE-132	-8.331E-01		1.102E+00	1.740E+00	3.228E-01	-0.479
BA-133	2.440E-02		3.078E-02	4.558E-02	6.710E-03	0.535
I-133	-8.497E-02		2.930E-02	Half-Life too short		
CS-134	8.705E-02	+	4.380E-02	5.966E-02	6.603E-03	1.459
CS-135	2.958E-01		1.333E-01	1.925E-01	2.784E-02	1.537
I-135	-1.108E+13		1.156E+13	Half-Life too short		
CS-136	-1.193E-02		8.168E-02	1.324E-01	1.339E-02	-0.090
BA-137M	-1.810E-02		2.362E-02	3.751E-02	3.955E-03	-0.483
CS-137	-1.912E-02		2.495E-02	3.962E-02	4.184E-03	-0.483
CE-139	-1.996E-02		2.080E-02	3.378E-02	3.314E-03	-0.591

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	8.168E-02		2.072E-01	3.483E-01	1.196E-01	0.235
LA-140	-1.039E-01		7.404E-02	1.117E-01	9.796E-03	-0.930
CE-141	5.069E-02		4.624E-02	7.921E-02	7.211E-03	0.640
CE-143	5.423E-03		7.640E-04	Half-Life	too short	
CE-144	3.881E-02		1.528E-01	2.301E-01	3.507E-02	0.169
PM-144	9.964E-03		2.277E-02	3.780E-02	4.043E-03	0.264
PR-144	7.497E-01		1.708E+00	2.834E+00	3.030E-01	0.265
PM-146	1.097E-02		2.701E-02	4.446E-02	5.112E-03	0.247
ND-147	-1.682E-01		4.400E-01	7.255E-01	1.151E-01	-0.232
PM-149	2.802E-05		9.379E-05	Half-Life	too short	
EU-152	4.404E-03		8.279E-02	1.049E-01	1.261E-02	0.042
GD-153	-5.713E-02		6.784E-02	9.201E-02	8.091E-03	-0.621
EU-154	5.904E-03		9.370E-02	1.324E-01	1.506E-02	0.045
EU-155	9.270E-02		7.426E-02	1.219E-01	1.046E-02	0.760
TB-160	-3.576E-02		9.317E-02	1.520E-01	1.699E-02	-0.235
HO-166M	-5.255E-02		4.018E-02	6.129E-02	6.589E-03	-0.857
TA-182	6.740E-02		1.367E-01	2.312E-01	1.923E-02	0.291
IR-192	-2.222E-03		2.345E-02	3.915E-02	5.004E-03	-0.057
HG-203	4.635E-02		3.303E-02	4.774E-02	6.750E-03	0.971
BI-207	3.799E-02		3.663E-02	6.211E-02	5.962E-03	0.612
PB-210	2.475E+00		2.176E+00	3.484E+00	3.209E-01	0.710
PB-211	-1.896E-01		5.662E-01	7.806E-01	3.789E-01	-0.243
BI-212	2.390E+00	+	6.947E-01	7.652E-01	1.076E-01	3.124
RN-219	2.525E-01		2.903E-01	4.597E-01	7.045E-02	0.549
RA-223	1.749E-02		4.893E-01	7.122E-01	1.392E-01	0.025
AC-227	9.034E-02		1.780E-01	2.901E-01	4.519E-02	0.311
TH-227	9.034E-02		1.781E-01	2.901E-01	4.876E-02	0.311
TH-229	1.134E-02		3.682E-01	6.074E-01	6.527E-02	0.019
PA-231	-8.411E-01		1.026E+00	1.580E+00	2.873E-01	-0.533
TH-231	1.749E-02		4.893E-01	7.122E-01	1.392E-01	0.025
PA-233	-2.937E-02		4.271E-02	6.992E-02	9.162E-03	-0.420
PA-234	1.352E-01		2.025E-01	3.405E-01	6.768E-02	0.397
PA-234M	1.190E+00		3.167E+00	5.106E+00	5.852E-01	0.233
TH-234	8.195E-01		8.949E-01	1.473E+00	2.621E-01	0.556
U-238	8.195E-01		8.949E-01	1.473E+00	2.621E-01	0.556
NP-239	2.070E-02		2.825E-01	4.501E-01	3.719E-02	0.046
AM-241	8.020E-02		9.461E-02	1.599E-01	1.250E-02	0.502
CM-247	2.547E-02		2.758E-02	4.246E-02	3.982E-03	0.600
CF-249	2.334E-02		2.650E-02	4.469E-02	4.242E-03	0.522
CF-251	1.209E-02		9.030E-02	1.503E-01	1.531E-02	0.080

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]G247969003          *
* Acquisition date   : 10-MAR-2010 23:11:27 Detector SN# :                *
* Detector ID        : GAM22                      Sensitivity      : 5.000    *
* Geometry           : CAN                        Energy tolerance : 1.500    *
* Elapsed live time  : 0 04:00:00.00             Abundance limit  : 75.000   *
* Elapsed real time  : 0 04:00:04.97             Half life ratio : 8.000    *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247969003              Analyst initials: MXR1        *
* Batch Number       : 958216                  Sample Quantity : 1.3099E+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	3.574E+01	3.387E+00	1.663E-01	1.728E+00
CD-109	4.243E+00	8.102E-01	3.920E-01	4.134E-01
SN-126	4.127E-01	7.879E-02	3.828E-02	4.020E-02
TL-208	6.034E-01	8.576E-02	1.802E-02	4.376E-02
BI-211	5.219E+00	6.739E-01	1.118E-01	3.438E-01
PB-212	2.163E+00	2.915E-01	3.271E-02	1.487E-01
BI-214	1.516E+00	2.072E-01	3.745E-02	1.057E-01
PB-214	1.894E+00	2.651E-01	4.065E-02	1.353E-01
RA-224	5.687E+00	1.089E+00	3.502E-01	5.558E-01
RA-226	1.516E+00	2.072E-01	3.745E-02	1.057E-01
AC-228	2.178E+00	3.719E-01	7.208E-02	1.898E-01
RA-228	2.178E+00	3.719E-01	7.208E-02	1.898E-01
TH-228	2.163E+00	2.915E-01	3.271E-02	1.487E-01
TH-232	2.178E+00	3.719E-01	7.208E-02	1.898E-01
U-235	2.434E-02	1.451E-01	1.233E-01	7.405E-02
NP-237	1.231E+00	3.454E-01	1.154E-01	1.762E-01
ANH-511	1.371E-01	4.377E-02	1.540E-02	2.233E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	5.137E-03	2.151E-01	1.811E-01	1.097E-01 NOT IDENT.
NA-22	1.949E-03	3.246E-02	2.349E-02	1.656E-02 NOT IDENT.
NA-24	-2.067E+07	2.092E+07	0.000E+00	1.067E+07 SHORT HLIF
SC-46	-2.388E-02	2.571E-02	2.098E-02	1.312E-02 FAIL ABUN
V-48	7.765E-03	5.344E-02	4.544E-02	2.726E-02 NOT IDENT.
CR-51	-8.886E-02	2.634E-01	2.287E-01	1.344E-01 NOT IDENT.
MN-54	4.550E-04	2.532E-02	2.181E-02	1.292E-02 NOT IDENT.
CO-56	-7.647E-03	2.700E-02	2.294E-02	1.378E-02 FAIL ABUN
CO-57	-5.639E-03	1.822E-02	1.526E-02	9.298E-03 NOT IDENT.
CO-58	-4.475E-02	2.465E-02	1.919E-02	1.258E-02 NOT IDENT.

FE-59	-8.303E-02	6.318E-02	4.902E-02	3.224E-02	NOT IDENT.
CO-60	-1.066E-02	2.721E-02	2.045E-02	1.388E-02	NOT IDENT.
ZN-65	-1.213E-02	7.453E-02	5.221E-02	3.802E-02	NOT IDENT.
SE-75	-2.069E-02	3.567E-02	2.560E-02	1.820E-02	NOT IDENT.
SR-85	1.586E-01	3.392E-02	2.671E-02	1.730E-02	NOT IDENT.
Y-88	-3.654E-03	2.061E-02	1.695E-02	1.052E-02	NOT IDENT.
Y-91	-5.695E-01	1.461E+01	1.245E+01	7.456E+00	NOT IDENT.
NB-94	4.710E-03	2.150E-02	1.831E-02	1.097E-02	NOT IDENT.
NB-95	7.902E-02	3.403E-02	2.665E-02	1.736E-02	NOT IDENT.
NB-95M	2.208E-01	1.084E-01	8.332E-02	5.530E-02	NOT IDENT.
ZR-95	1.532E-02	4.915E-02	4.166E-02	2.508E-02	NOT IDENT.
MO-99	1.477E+01	1.833E+01	1.578E+01	9.354E+00	NOT IDENT.
TC-99M	-2.589E+20	3.205E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.093E-02	2.758E-02	2.271E-02	1.407E-02	FAIL ABUN
RH-106	-1.120E-01	1.939E-01	1.617E-01	9.894E-02	NOT IDENT.
RU-106	-1.120E-01	1.936E-01	1.617E-01	9.878E-02	NOT IDENT.
AG-108M	3.408E-03	1.954E-02	1.671E-02	9.969E-03	NOT IDENT.
AG-110M	1.689E-02	2.229E-02	1.945E-02	1.137E-02	NOT IDENT.
SN-113	-1.942E-02	2.946E-02	2.473E-02	1.503E-02	NOT IDENT.
CD-115	-2.838E+01	2.029E+01	0.000E+00	1.035E+01	SHORT HLIF
SN-117M	2.613E-03	4.437E-02	3.940E-02	2.264E-02	NOT IDENT.
TE-123M	-5.017E-03	1.994E-02	1.759E-02	1.017E-02	NOT IDENT.
SB-124	-2.216E-02	4.859E-02	3.942E-02	2.479E-02	NOT IDENT.
SB-125	-4.824E-02	5.948E-02	4.908E-02	3.034E-02	FAIL ABUN
TE-125M	-1.043E+00	6.941E+00	5.894E+00	3.541E+00	NOT IDENT.
I-126	1.497E-01	1.688E-01	1.476E-01	8.614E-02	NOT IDENT.
SB-126	-4.592E-02	1.337E-01	9.441E-02	6.820E-02	NOT IDENT.
SB-127	-2.074E-01	1.560E+00	1.314E+00	7.959E-01	NOT IDENT.
I-131	-6.170E-03	9.947E-02	8.595E-02	5.075E-02	NOT IDENT.
TE-132	-8.331E-01	1.080E+00	8.990E-01	5.508E-01	NOT IDENT.
BA-133	2.440E-02	3.017E-02	2.337E-02	1.539E-02	FAIL ABUN
I-133	-8.497E+04	5.742E+04	0.000E+00	2.930E+04	SHORT HLIF
CS-134	8.705E-02	4.293E-02	3.019E-02	2.190E-02	FAIL ABUN
CS-135	2.958E-01	1.306E-01	9.915E-02	6.664E-02	NOT IDENT.
I-135	-1.108E+19	2.266E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.193E-02	8.004E-02	6.666E-02	4.084E-02	NOT IDENT.
BA-137M	-1.810E-02	2.315E-02	1.904E-02	1.181E-02	NOT IDENT.
CS-137	-1.912E-02	2.445E-02	2.011E-02	1.248E-02	NOT IDENT.
CE-139	-1.996E-02	2.039E-02	1.754E-02	1.040E-02	NOT IDENT.
BA-140	8.168E-02	2.031E-01	1.774E-01	1.036E-01	NOT IDENT.
LA-140	-1.039E-01	7.256E-02	5.587E-02	3.702E-02	FAIL ABUN
CE-141	5.069E-02	4.532E-02	4.121E-02	2.312E-02	NOT IDENT.
CE-143	5.423E+03	1.497E+03	0.000E+00	7.640E+02	SHORT HLIF
CE-144	3.881E-02	1.498E-01	1.199E-01	7.641E-02	NOT IDENT.
PM-144	9.964E-03	2.232E-02	1.917E-02	1.139E-02	NOT IDENT.
PR-144	7.497E-01	1.673E+00	1.437E+00	8.538E-01	NOT IDENT.
PM-146	1.097E-02	2.647E-02	2.271E-02	1.350E-02	NOT IDENT.
ND-147	-1.682E-01	4.312E-01	3.696E-01	2.200E-01	FAIL ABUN
PM-149	2.802E+01	1.838E+02	0.000E+00	9.379E+01	SHORT HLIF
EU-152	4.404E-03	8.113E-02	5.383E-02	4.139E-02	FAIL ABUN
GD-153	-5.713E-02	6.648E-02	4.817E-02	3.392E-02	NOT IDENT.
EU-154	5.904E-03	9.182E-02	6.647E-02	4.685E-02	NOT IDENT.
EU-155	9.270E-02	7.277E-02	6.374E-02	3.713E-02	FAIL ABUN
TB-160	-3.576E-02	9.130E-02	7.677E-02	4.658E-02	FAIL ABUN
HO-166M	-5.255E-02	3.937E-02	3.107E-02	2.009E-02	FAIL ABUN
TA-182	6.740E-02	1.340E-01	1.162E-01	6.835E-02	FAIL ABUN
IR-192	-2.222E-03	2.298E-02	2.012E-02	1.172E-02	FAIL ABUN
HG-203	4.635E-02	3.237E-02	2.458E-02	1.651E-02	FAIL ABUN
BI-207	3.799E-02	3.590E-02	3.127E-02	1.832E-02	FAIL ABUN
PB-210	2.475E+00	2.133E+00	1.845E+00	1.088E+00	NOT IDENT.
PB-211	-1.896E-01	5.549E-01	3.994E-01	2.831E-01	NOT IDENT.
BI-212	2.390E+00	6.808E-01	3.878E-01	3.473E-01	FAIL ABUN
RN-219	2.525E-01	2.845E-01	2.353E-01	1.452E-01	FAIL ABUN
RA-223	1.749E-02	4.795E-01	3.658E-01	2.446E-01	FAIL ABUN
AC-227	9.034E-02	1.744E-01	1.496E-01	8.900E-02	FAIL ABUN
TH-227	9.034E-02	1.745E-01	1.496E-01	8.905E-02	FAIL ABUN
TH-229	1.134E-02	3.608E-01	3.145E-01	1.841E-01	FAIL ABUN
PA-231	-8.411E-01	1.006E+00	8.130E-01	5.131E-01	FAIL ABUN
TH-231	1.749E-02	4.795E-01	3.658E-01	2.446E-01	FAIL ABUN
PA-233	-2.937E-02	4.185E-02	3.593E-02	2.135E-02	FAIL ABUN
PA-234	1.352E-01	1.984E-01	1.718E-01	1.012E-01	NOT IDENT.
PA-234M	1.190E+00	3.104E+00	2.574E+00	1.584E+00	NOT IDENT.
TH-234	8.195E-01	8.770E-01	7.763E-01	4.474E-01	FAIL ABUN
U-238	8.195E-01	8.770E-01	7.763E-01	4.474E-01	FAIL ABUN
NP-239	2.070E-02	2.769E-01	2.350E-01	1.413E-01	FAIL ABUN
AM-241	8.020E-02	9.272E-02	8.435E-02	4.731E-02	NOT IDENT.
CM-247	2.547E-02	2.703E-02	2.173E-02	1.379E-02	FAIL ABUN
CF-249	2.334E-02	2.597E-02	2.288E-02	1.325E-02	NOT IDENT.

CF-251	1.209E-02	8.849E-02	7.793E-02	4.515E-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	722.6766
49.72	711.4202
57.36	0.0000
59.54	909.8687
63.29	1020.1965
63.29	1020.1965
64.28	1005.5211
67.75	1123.9386
69.67	1063.1885
70.83	1051.0781
72.81	1148.6215
72.87	1148.8601
72.87	1148.8601
74.82	1156.4685
74.82	1156.4685
74.82	1156.4685
74.97	1157.0505
77.11	1165.2760
77.11	1165.2760
77.11	1165.2760
79.69	1004.1055
79.80	1004.4587
80.12	1005.4834
80.19	1005.7072
80.57	1006.9210
81.00	1008.2939
81.07	1008.5178
81.07	1008.5178
83.79	915.7051
83.79	915.7051
85.43	920.3045
86.48	923.2245
86.55	923.4171
86.79	924.0798
86.94	924.5008
87.57	926.2385
88.03	927.5059
88.47	928.7150
89.96	932.7837
91.11	935.9030
92.59	939.8843
92.59	939.8843
93.35	941.9175
94.67	945.4331
94.87	945.9615
94.87	945.9615
95.86	946.9610
97.43	1007.8790
98.44	943.9382
99.53	886.6620
100.11	935.1296
103.18	1071.3456
103.37	1031.2046
105.31	917.0916
106.12	910.1503
109.28	968.8270
111.00	944.9706
111.76	937.7654
116.30	935.6797
117.23	916.1313
121.12	942.9131
121.78	957.0065
122.06	967.9833
123.07	993.3066
131.20	974.1396
133.52	942.2024
136.00	990.8156

136.47	1011.4049
140.51	1024.4623
140.51	0.0000
143.76	976.1068
144.24	954.4155
144.24	954.4155
145.44	943.1157
152.43	975.5135
153.25	987.1974
154.21	962.2394
154.21	962.2394
156.02	997.0765
158.56	957.1776
159.00	986.8498
162.66	904.4340
163.33	925.2712
165.86	951.2446
176.60	876.1439
177.52	906.4247
181.07	936.5171
184.41	960.4772
185.72	907.2903
193.51	898.0660
197.04	895.1523
205.31	921.9939
210.85	856.5745
215.65	882.7775
222.11	898.4354
227.38	858.3344
228.16	870.7292
228.18	870.7547
235.69	890.7567
235.96	886.0326
235.96	886.0326
238.63	774.4896
238.63	774.4896
240.99	776.9446
242.00	777.9904
244.70	698.7617
252.40	716.5628
252.80	712.6227
256.23	674.6662
256.23	674.6662
260.90	0.0000
264.66	674.8403
268.22	639.1684
269.46	589.1371
269.46	589.1371
271.23	660.9009
273.65	662.8326
276.40	715.2667
277.37	672.4477
277.60	658.8601
278.00	636.0793
279.20	622.7539
279.54	623.0017
280.46	632.5864
283.69	666.2894
284.31	661.1777
285.41	634.0209
285.90	0.0000
287.50	586.1508
293.27	0.0000
295.22	585.4454
295.96	585.9343
298.57	587.6534
299.98	588.5760
299.98	588.5760
300.09	592.2998
300.09	592.2998
300.13	592.3236
301.36	602.2581
302.85	607.8191
304.50	605.8789
304.50	605.8789
304.85	601.5330
308.46	564.6746
311.90	592.6274

316.51	555.6690
319.41	586.2338
320.08	585.7102
323.87	581.1961
323.87	581.1961
328.76	621.7421
333.37	585.3521
334.37	554.4401
334.37	554.4401
338.28	566.4431
338.28	566.4431
338.32	566.4723
338.32	566.4723
338.32	566.4723
340.48	507.1549
340.55	535.7236
344.28	517.8319
351.06	522.7433
351.93	523.1883
356.01	458.6371
364.49	482.8068
366.42	493.4426
383.85	479.6457
388.16	454.6514
388.63	466.7844
391.69	496.0050
400.66	466.7471
401.81	459.4135
402.40	460.5469
404.85	509.8453
410.95	429.6430
414.70	422.5330
423.72	443.1850
427.09	443.4007
427.87	463.2440
433.94	437.6232
453.88	376.3326
463.37	478.3135
468.07	402.1039
473.00	366.9865
476.78	400.1325
477.60	383.2505
487.02	352.5309
492.35	0.0000
497.08	389.8910
511.00	379.5441
514.00	329.7821
527.90	0.0000
529.87	0.0000
531.02	363.3768
537.26	352.8219
546.56	0.0000
563.25	337.1903
569.33	333.7685
569.50	322.3921
569.70	312.9221
583.19	315.6330
600.60	364.6631
602.73	384.5596
604.72	405.0367
609.32	367.5888
609.32	367.5888
610.33	367.8189
614.28	343.6925
618.01	314.6390
621.93	324.2194
621.93	324.2194
633.25	337.2814
635.95	311.0741
636.99	298.3729
645.85	298.9197
657.76	306.9899
661.66	370.0140
661.66	370.0140
664.57	0.0000
666.33	314.5327
666.50	314.5645
677.62	328.7000

685.70	320.9921
695.00	303.1663
696.49	331.0894
696.51	331.0960
697.00	339.3841
702.65	333.2219
706.68	304.0507
711.68	353.4320
720.70	339.9923
721.93	0.0000
722.78	315.4171
722.91	315.4356
723.31	322.6335
724.19	310.2956
727.33	302.1718
733.00	257.9766
735.93	307.7095
739.50	263.1895
747.24	311.6033
752.31	299.7450
753.82	286.2393
756.73	301.4731
763.94	269.3495
765.81	284.1755
766.42	300.6566
777.92	354.9047
778.90	326.2033
783.70	292.6619
785.37	284.3175
795.86	286.5381
801.95	296.8780
810.29	302.4828
810.76	289.5179
815.77	251.0101
818.51	247.5964
832.01	337.5391
834.85	345.5153
836.80	0.0000
846.77	304.8118
856.80	267.9288
860.56	240.0425
871.09	255.6915
873.19	253.8536
875.33	0.0000
879.36	261.2707
880.51	266.2087
883.24	255.9434
884.68	231.0728
889.28	272.0564
898.04	252.7573
911.20	237.6345
911.20	237.6345
911.20	237.6345
926.50	231.3412
937.49	246.1940
944.13	257.7366
946.00	244.1012
949.00	227.5814
962.29	221.1144
964.08	240.4387
966.15	228.1853
968.97	228.4449
968.97	228.4449
968.97	228.4449
983.53	243.8348
996.26	275.3232
1001.03	224.3112
1004.73	229.6958
1037.84	212.1548
1038.76	0.0000
1048.07	226.3532
1050.41	225.5229
1050.41	225.5229
1063.66	241.1264
1085.87	227.4584
1099.45	275.7684
1112.07	254.3785
1115.54	319.2855

1120.29	265.1555
1120.29	265.1555
1120.55	281.0293
1121.30	277.4048
1131.51	0.0000
1173.23	264.5695
1177.93	267.8274
1189.05	293.4442
1204.77	295.9473
1221.41	310.0188
1231.02	344.6888
1235.36	334.9290
1238.28	335.2480
1260.41	0.0000
1271.85	217.8477
1274.44	211.1039
1274.54	211.1106
1291.59	201.3135
1298.22	0.0000
1312.11	202.8755
1332.49	153.6046
1365.19	125.0992
1368.63	0.0000
1384.29	226.4488
1408.01	133.3221
1457.56	0.0000
1460.82	102.8748
1489.16	109.9045
1505.03	128.0862
1596.21	156.4644
1620.50	82.0597
1678.03	0.0000
1690.97	73.8023
1764.49	51.3949
1764.49	51.3949
1770.23	48.0990
1771.35	48.1122
1791.20	0.0000
1836.06	61.2962

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969003

Total Uranium Activity	2.4492E+00	ug/g
Total Uranium Counting Unc.	2.6099E+00	ug/g
Total Uranium Tpu	1.3316E-06	ug/g
Total Uranium Mda	2.3101E+00	ug/g

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*****
*
*                               GEL Laboratories LLC
*                               2040 SAVAGE ROAD
*                               CHARLESTON , SC 29417
*                               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 958216          SAMPLE ID   : G247969003
*  ANALYST       : MXR1            DETECTOR    : GAM22
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00  COUNT TIME : 0 04:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 23:11:27.61  SAMPLE ALQT: 130.990 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.153E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.114E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.074E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.018E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 21:43:18.33

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969004.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:11:54
Sample ID          : G247969004      Sample quantity   : 1.18100E+02 GRAM
Detector name      : GAM23           Detector geometry: CAN
Elapsed live time   : 0 04:00:00.00 Elapsed real time: 0 04:00:03.61 0.0%
Energy tolerance    : 1.70000 keV    Analyst Initials : MXR1
Abundance limit     : 75.00000        Sensitivity      : 5.00000
Batch ID           : 958216           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	63.24*	133	828	1.20	126.48	123	8	9.21E-03	39.9	
2	2	74.66	848	908	1.16	149.33	144	15	5.89E-02	6.8	3.43E+00
3	2	76.95	1298	764	1.07	153.90	144	15	9.02E-02	4.4	
4	2	87.00	634	893	1.45	174.00	164	28	4.40E-02	9.4	3.38E+00
5	2	89.72	435	651	1.16	179.45	164	28	3.02E-02	11.0	
6	2	92.54*	560	770	1.42	185.09	164	28	3.89E-02	11.1	
7	0	128.57	106	716	1.01	257.14	254	8	7.37E-03	44.8	
8	0	185.67*	326	718	1.42	371.34	367	10	2.27E-02	17.2	
9	0	208.84	218	480	1.20	417.69	414	8	1.52E-02	18.6	
10	2	238.25*	2776	348	1.22	476.49	468	26	1.93E-01	2.2	2.40E+00
11	2	241.28	668	522	1.77	482.55	468	26	4.64E-02	9.5	
12	0	269.99	233	410	1.43	539.98	535	11	1.61E-02	18.1	
13	0	276.53	172	451	1.31	553.05	547	12	1.20E-02	25.8	
14	0	294.88	700	479	1.21	589.77	584	11	4.86E-02	7.1	
15	0	299.68	144	340	0.85	599.36	595	9	1.00E-02	24.5	
16	0	327.59	141	296	1.04	655.17	651	9	9.83E-03	23.5	
17	0	337.79	470	289	1.31	675.58	671	9	3.26E-02	8.0	
18	0	351.38*	1377	441	1.40	702.76	696	14	9.56E-02	4.3	
19	0	462.70	147	260	1.68	925.41	920	12	1.02E-02	23.5	
20	0	510.38*	301	338	2.04	1020.76	1011	20	2.09E-02	17.8	
21	0	582.44*	789	320	1.66	1164.88	1156	18	5.48E-02	6.5	
22	0	608.45*	929	252	1.47	1216.89	1209	16	6.45E-02	5.1	
23	0	726.16	157	186	1.17	1452.31	1446	13	1.09E-02	19.6	
24	0	768.69	189	193	5.44	1537.38	1529	20	1.31E-02	19.7	
25	0	793.88	86	168	1.51	1587.75	1579	16	6.00E-03	35.2	
26	0	859.57	100	126	1.57	1719.13	1712	14	6.94E-03	25.9	
27	0	910.02*	522	108	1.92	1820.03	1813	13	3.63E-02	6.1	
28	1	963.48	119	72	2.12	1926.97	1920	24	8.28E-03	19.7	1.63E+00
29	1	967.69	273	91	2.08	1935.39	1920	24	1.90E-02	9.4	
30	0	1119.12	216	149	2.05	2238.24	2227	18	1.50E-02	14.9	
31	0	1237.85	132	163	1.01	2475.69	2467	20	9.20E-03	25.5	
32	0	1376.53	55	86	1.92	2753.06	2744	20	3.80E-03	43.5	
33	0	1459.17	2127	95	2.24	2918.34	2907	20	1.48E-01	2.4	
34	0	1620.95	27	27	5.39	3241.91	3234	18	1.87E-03	49.1	
35	0	1762.88*	174	26	2.02	3525.77	3517	19	1.21E-02	10.9	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 21:43:20

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969004.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:11:54
 Sample ID : G247969004 Sample quantity : 118.10 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA23 Detector geometry: CAN
 Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.61 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.70 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	*	3.179E+01	2.837E+00	3.890E-01	2.910E-02	81.726
CD-109	+	88.03	*	5.377E+00	1.132E+00	1.094E+00	1.068E-01	4.917
SN-126	+	64.28		8.499E-01	6.909E-01	8.234E-01	1.253E-01	1.032
	+	86.94		2.174E+00	9.914E-01	4.486E-01	1.866E-01	4.846
	+	87.57	*	5.229E-01	1.101E-01	1.070E-01	1.041E-02	4.888
TL-208	+	277.37		9.990E-01	5.267E-01	5.246E-01	5.661E-02	1.904
	+	583.19	*	6.479E-01	9.408E-02	5.199E-02	3.367E-03	12.462
	+	860.56		7.885E-01	4.139E-01	3.790E-01	3.425E-02	2.080
BI-211		72.87		1.650E+01	3.926E+00	5.992E+00	5.285E-01	2.755
	+	351.06	*	4.919E+00	5.291E-01	2.844E-01	1.853E-02	17.298
BI-212	+	727.33	*	1.994E+00	8.093E-01	6.788E-01	7.376E-02	2.938
		785.37		1.915E+00	3.129E+00	4.917E+00	3.466E-01	0.390
	+	1620.50		3.165E+00	3.114E+00	3.395E+00	2.302E-01	0.932
PB-212	+	74.82		3.245E+00	6.160E-01	5.543E-01	7.306E-02	5.855
	+	77.11		2.811E+00	3.539E-01	3.142E-01	2.827E-02	8.947
	+	238.63	*	2.181E+00	1.861E-01	7.645E-02	5.546E-03	28.526
	+	300.09		1.779E+00	8.855E-01	1.089E+00	9.192E-02	1.634
BI-214	+	609.32	*	1.478E+00	1.884E-01	9.640E-02	7.309E-03	15.336
	+	1120.29		1.828E+00	5.702E-01	4.380E-01	4.095E-02	4.174
	+	1764.49		2.070E+00	4.698E-01	2.594E-01	1.613E-02	7.980
PB-214	+	74.82		5.752E+00	1.043E+00	9.826E-01	1.171E-01	5.855
	+	77.11		4.956E+00	7.458E-01	5.539E-01	6.761E-02	8.947
	+	242.00		3.187E+00	6.601E-01	4.650E-01	3.760E-02	6.854
	+	295.22		1.529E+00	2.565E-01	1.878E-01	1.646E-02	8.145
	+	351.93	*	1.785E+00	2.158E-01	1.034E-01	8.831E-03	17.261
RA-224	+	240.99	*	5.636E+00	1.121E+00	8.195E-01	4.617E-02	6.878
RA-226	+	609.32	*	1.478E+00	1.884E-01	9.640E-02	7.309E-03	15.336
	+	1120.29		1.828E+00	5.702E-01	4.380E-01	4.095E-02	4.174
	+	1764.49		2.070E+00	4.698E-01	2.594E-01	1.613E-02	7.980
AC-228	+	338.32		1.867E+00	8.257E-01	3.305E-01	1.363E-01	5.648
	+	911.20	*	2.106E+00	3.591E-01	1.905E-01	2.262E-02	11.057
	+	968.97		1.905E+00	5.864E-01	3.292E-01	8.003E-02	5.786
RA-228	+	338.32		1.867E+00	8.257E-01	3.305E-01	1.363E-01	5.648
	+	911.20	*	2.106E+00	3.591E-01	1.905E-01	2.262E-02	11.057

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.905E+00	5.864E-01	3.292E-01	8.003E-02	5.786
	+	74.82		3.245E+00	5.303E-01	5.543E-01	4.972E-02	5.855
	+	77.11		2.811E+00	3.539E-01	3.142E-01	2.827E-02	8.947
	+	238.63	*	2.181E+00	1.861E-01	7.645E-02	5.546E-03	28.526
	+	300.09		1.779E+00	1.391E+00	1.089E+00	6.629E-01	1.634
TH-229	+	85.43		1.316E+00	2.772E-01	2.776E-01	2.651E-02	4.741
	+	88.47		5.336E-01	1.279E-01	1.630E-01	1.577E-02	3.273
		193.51	*	4.719E-02	4.757E-01	7.724E-01	4.091E-02	0.061
		210.85		1.319E+00	9.147E-01	1.361E+00	7.390E-02	0.969
TH-232	+	338.32		1.867E+00	3.182E-01	3.305E-01	1.952E-02	5.648
	+	911.20	*	2.106E+00	3.591E-01	1.905E-01	2.262E-02	11.057
	+	968.97		1.905E+00	5.864E-01	3.292E-01	8.003E-02	5.786
TH-234	+	63.29	*	2.205E+00	1.807E+00	2.229E+00	4.101E-01	0.989
	+	92.59		3.772E+00	1.182E+00	8.833E-01	1.960E-01	4.270
U-235	+	89.96		3.691E+00	1.227E+00	1.107E+00	2.756E-01	3.332
	+	93.35		2.849E+00	9.132E-01	6.624E-01	1.534E-01	4.301
		143.76	*	1.259E-01	1.855E-01	2.999E-01	4.670E-02	0.420
		163.33		-3.028E-01	3.841E-01	6.057E-01	1.003E-01	-0.500
	+	185.72		1.651E-01	5.736E-02	5.906E-02	3.092E-03	2.796
		205.31		3.447E-01	4.880E-01	7.044E-01	1.187E-01	0.489
NP-237	+	86.48	*	1.560E+00	4.637E-01	3.241E-01	7.478E-02	4.815
		95.86		-7.569E-01	9.414E-01	1.306E+00	3.122E-01	-0.580
U-238	+	63.29	*	2.205E+00	1.807E+00	2.229E+00	4.101E-01	0.989
	+	92.59		3.772E+00	8.992E-01	8.833E-01	7.862E-02	4.270
ANH-511	+	511.00	*	1.880E-01	6.769E-02	4.029E-02	2.340E-03	4.667

---- 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	*	1.249E-01	2.994E-01	5.026E-01	3.414E-02	0.248
NA-22		1274.54	*	-1.537E-02	4.163E-02	6.600E-02	4.432E-03	-0.233
NA-24		1368.63	*	1.670E+01	4.163E-02	Half-Life too short		
SC-46		889.28	*	9.938E-03	3.528E-02	5.981E-02	5.344E-03	0.166
	+	1120.55		3.180E-01	9.688E-02	1.191E-01	7.758E-03	2.671
V-48		944.13		-1.422E+00	8.993E-01	1.314E+00	1.145E-01	-1.082
		983.53	*	2.960E-02	7.843E-02	1.328E-01	1.105E-02	0.223
		1312.11		-9.363E-03	8.490E-02	1.368E-01	9.735E-03	-0.068
CR-51		320.08	*	-7.555E-02	3.497E-01	5.818E-01	3.809E-02	-0.130
MN-54		834.85	*	-2.256E-02	3.558E-02	5.740E-02	4.545E-03	-0.393
CO-56		846.77	*	1.210E-02	3.406E-02	5.815E-02	4.731E-03	0.208
		1037.84		-1.510E-01	3.090E-01	4.883E-01	3.998E-02	-0.309
	+	1238.28		3.237E-01	1.668E-01	1.632E-01	1.086E-02	1.983
		1771.35		-3.751E-01	2.251E-01	2.864E-01	1.771E-02	-1.310
CO-57		122.06	*	1.528E-02	2.248E-02	3.761E-02	2.218E-03	0.406
		136.47		-5.390E-02	1.819E-01	2.956E-01	1.918E-02	-0.182
CO-58		810.76	*	-1.378E-02	3.505E-02	5.728E-02	4.303E-03	-0.241
FE-59		1099.45	*	-8.061E-04	8.681E-02	1.427E-01	1.099E-02	-0.006
		1291.59		8.475E-02	1.236E-01	2.109E-01	1.751E-02	0.402

----- 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			-1.326E-02	4.639E-02	7.472E-02	4.215E-03	-0.177
	1332.49	*		9.772E-03	3.775E-02	6.262E-02	4.597E-03	0.156
ZN-65	1115.54	*		1.680E-01	1.023E-01	1.631E-01	1.077E-02	1.030
SE-75	121.12			6.344E-02	1.179E-01	1.965E-01	1.801E-02	0.323
	136.00			-1.634E-02	3.533E-02	5.714E-02	3.228E-03	-0.286
	264.66	*		-1.115E-02	4.610E-02	6.337E-02	3.690E-03	-0.176
	279.54			4.716E-02	1.064E-01	1.597E-01	1.005E-02	0.295
	400.66			-1.076E-01	2.333E-01	3.796E-01	3.442E-02	-0.284
SR-85	514.00	*		3.435E-02	3.798E-02	5.720E-02	3.320E-03	0.600
Y-88	898.04			-2.672E-03	3.792E-02	6.287E-02	5.748E-03	-0.042
	1836.06	*		-4.378E-03	2.692E-02	4.335E-02	2.553E-03	-0.101
Y-91	1204.77	*		3.528E+00	2.297E+01	3.789E+01	2.260E+00	0.093
NB-94	702.65	*		-1.407E-02	3.090E-02	4.850E-02	2.772E-03	-0.290
	871.09			-2.782E-03	3.057E-02	5.070E-02	4.354E-03	-0.055
NB-95	765.81	*		7.305E-02	5.282E-02	7.996E-02	5.373E-03	0.914
NB-95M	235.69	*		1.190E+00	1.764E-01	2.708E-01	2.004E-02	4.396
ZR-95	724.19			3.060E-01	1.071E-01	1.764E-01	1.243E-02	1.735
	756.73	*		-1.859E-03	7.264E-02	1.165E-01	8.989E-03	-0.016
MO-99	140.51			-1.902E+01	4.654E+01	7.503E+01	1.710E+01	-0.254
	181.07			2.651E+01	4.258E+01	6.158E+01	1.077E+01	0.431
	366.42			7.347E+01	2.077E+02	3.510E+02	2.057E+01	0.209
	739.50	*		-7.683E+00	2.716E+01	4.288E+01	6.267E+00	-0.179
	777.92			-9.526E+01	8.756E+01	1.146E+02	7.937E+00	-0.831
TC-99M	140.51	*		-1.624E+14	8.756E+01	Half-Life	too short	
RU-103	497.08	*		-2.389E-03	3.564E-02	5.836E-02	7.260E-03	-0.041
	610.33			1.410E+01	2.438E+00	2.526E+00	3.768E-01	5.583
RH-106	621.93	*		-6.826E-02	2.835E-01	4.540E-01	5.182E-02	-0.150
	1050.41			3.581E-01	2.445E+00	4.070E+00	3.062E-01	0.088
RU-106	621.93	*		-6.826E-02	2.834E-01	4.540E-01	2.439E-02	-0.150
	1050.41			3.581E-01	2.445E+00	4.070E+00	3.062E-01	0.088
AG-108M	433.94	*		4.813E-03	2.619E-02	4.368E-02	2.730E-03	0.110
	614.28			1.039E-02	3.380E-02	4.798E-02	2.810E-03	0.217
	722.91			1.198E-02	3.890E-02	5.478E-02	3.516E-03	0.219
AG-110M	657.76	*		1.583E-03	3.297E-02	5.352E-02	2.975E-03	0.030
	677.62			2.910E-02	2.904E-01	4.722E-01	2.707E-02	0.062
	706.68			1.425E-01	1.980E-01	3.320E-01	2.039E-02	0.429
	763.94			9.337E-02	1.908E-01	2.736E-01	1.913E-02	0.341
	884.68			-1.016E-02	4.564E-02	7.502E-02	6.839E-03	-0.135
	937.49			-8.103E-02	1.036E-01	1.632E-01	1.482E-02	-0.497
	1384.29			-5.615E-03	1.619E-01	2.232E-01	1.690E-02	-0.025
	1505.03			1.025E-01	2.447E-01	4.122E-01	2.928E-02	0.249
SN-113	391.69	*		2.461E-03	3.963E-02	6.605E-02	4.069E-03	0.037
CD-115	260.90			4.165E-05	3.963E-02	Half-Life	too short	
	492.35			3.973E-05	3.963E-02	Half-Life	too short	
	527.90	*		-4.380E-05	3.963E-02	Half-Life	too short	
SN-117M	156.02			-1.213E-01	2.381E+00	3.879E+00	2.030E-01	-0.031
	158.56	*		-1.963E-02	5.793E-02	9.354E-02	4.861E-03	-0.210
TE-123M	159.00	*		1.296E-02	2.549E-02	4.214E-02	2.224E-03	0.308
SB-124	602.73			-3.508E-02	4.452E-02	5.891E-02	3.230E-03	-0.595

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		645.85		-8.402E-02	4.658E-01	7.471E-01	4.485E-02	-0.112
		722.78		9.993E-02	4.050E-01	5.676E-01	3.579E-02	0.176
SB-125		1690.97	*	6.584E-03	6.284E-02	1.060E-01	7.415E-03	0.062
	+	427.87	*	4.604E-02	7.951E-02	1.349E-01	8.198E-03	0.341
		463.37		8.140E-01	3.864E-01	4.853E-01	3.289E-02	1.678
		600.60		1.736E-01	1.797E-01	2.812E-01	1.813E-02	0.617
		635.95		8.557E-02	2.408E-01	3.986E-01	2.537E-02	0.215
TE-125M		109.28	*	-9.444E+00	9.265E+00	1.482E+01	1.350E+00	-0.637
I-126		388.63		1.464E-01	1.771E-01	3.040E-01	1.758E-02	0.481
		666.33	*	8.242E-02	2.474E-01	4.076E-01	2.109E-02	0.202
		753.82		-1.011E+00	2.081E+00	3.242E+00	2.115E-01	-0.312
SB-126		414.70		-2.018E-02	8.119E-02	1.332E-01	7.750E-03	-0.152
		666.50		3.387E-02	8.465E-02	1.400E-01	7.248E-03	0.242
		695.00		7.308E-02	8.504E-02	1.438E-01	8.053E-03	0.508
		697.00		-5.199E-02	2.954E-01	4.719E-01	2.656E-02	-0.110
		720.70	*	1.166E-01	1.694E-01	2.467E-01	1.478E-02	0.472
		856.80		7.667E-01	5.895E-01	9.345E-01	7.776E-02	0.820
SB-127		252.40		1.926E+00	7.074E+00	1.137E+01	4.699E+00	0.169
		473.00		-8.561E-01	2.645E+00	4.286E+00	5.214E-01	-0.200
		685.70	*	-4.615E-01	2.162E+00	3.446E+00	3.611E-01	-0.134
		783.70		8.185E+00	5.871E+00	1.026E+01	1.267E+00	0.798
I-131		80.19		-2.528E+00	8.711E+00	9.081E+00	8.399E-01	-0.278
		284.31		5.062E-02	1.718E+00	2.898E+00	1.886E-01	0.017
		364.49	*	5.282E-02	1.364E-01	2.309E-01	1.516E-02	0.229
		636.99		-5.902E-01	1.893E+00	3.014E+00	1.836E-01	-0.196
TE-132		49.72		-4.510E+01	4.721E+01	7.696E+01	9.123E+00	-0.586
		111.76		2.222E+01	6.162E+01	1.025E+02	1.096E+01	0.217
		116.30		-5.108E+01	5.260E+01	8.388E+01	8.785E+00	-0.609
		228.16	*	4.412E-01	1.389E+00	2.254E+00	3.419E-01	0.196
BA-133		81.00		-4.783E-02	1.333E-01	1.382E-01	2.192E-02	-0.346
	+	276.40		9.240E-01	4.908E-01	5.553E-01	6.993E-02	1.664
		302.85		1.004E-01	1.349E-01	2.041E-01	2.337E-02	0.492
		356.01	*	1.261E-02	3.913E-02	5.784E-02	6.547E-03	0.218
		383.85		-1.120E-02	2.586E-01	4.295E-01	4.581E-02	-0.026
I-133		529.87	*	1.654E-02	2.586E-01	Half-Life	too short	
		875.33		-3.625E-01	2.586E-01	Half-Life	too short	
		1298.22		1.831E+00	2.586E-01	Half-Life	too short	
CS-134		563.25		-1.392E-01	3.352E-01	5.145E-01	2.976E-02	-0.270
		569.33		1.368E-01	1.731E-01	2.939E-01	1.709E-02	0.465
		604.72		3.647E-02	3.640E-02	5.462E-02	3.006E-03	0.668
		795.86	*	7.431E-02	4.694E-02	7.581E-02	5.536E-03	0.980
		801.95		9.116E-03	3.742E-01	5.833E-01	4.311E-02	0.016
		1365.19		-3.793E-01	1.084E+00	1.696E+00	1.320E-01	-0.224
CS-135		268.22	*	3.988E-01	1.611E-01	2.479E-01	1.894E-02	1.609
I-135		546.56		-4.220E+12	1.611E-01	Half-Life	too short	
		836.80		1.245E+14	1.611E-01	Half-Life	too short	
		1038.76		-1.973E+12	1.611E-01	Half-Life	too short	
		1131.51		8.235E+12	1.611E-01	Half-Life	too short	
		1260.41	*	4.561E+12	1.611E-01	Half-Life	too short	

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	+	1457.56		9.013E+15	1.611E-01	Half-Life	too short	
		1678.03		-6.381E+12	1.611E-01	Half-Life	too short	
		1791.20		-1.739E+13	1.611E-01	Half-Life	too short	
		153.25		7.496E-01	9.059E-01	1.509E+00	1.159E-01	0.497
		176.60		-3.389E-01	5.251E-01	8.355E-01	5.473E-02	-0.406
		273.65		6.158E-01	7.712E-01	8.264E-01	5.654E-02	0.745
		340.55		3.403E-01	1.690E-01	2.687E-01	1.713E-02	1.267
BA-137M		818.51		2.597E-02	7.757E-02	1.324E-01	1.011E-02	0.196
		1048.07	*	3.575E-02	1.197E-01	2.012E-01	1.604E-02	0.178
		1235.36		9.752E-01	8.070E-01	1.226E+00	1.248E-01	0.796
		661.66	*	3.224E-02	3.393E-02	5.762E-02	2.944E-03	0.560
		661.66	*	3.406E-02	3.584E-02	6.087E-02	3.127E-03	0.560
		165.86	*	-1.072E-02	2.609E-02	4.194E-02	2.138E-03	-0.256
		162.66		2.902E-01	8.489E-01	1.396E+00	8.465E-02	0.208
LA-140		304.85		5.228E-01	1.564E+00	2.317E+00	6.624E-01	0.226
		423.72		-2.244E+00	2.172E+00	3.223E+00	1.040E+00	-0.696
		537.26	*	-1.169E-01	2.866E-01	4.547E-01	1.514E-01	-0.257
	+	328.76		8.347E-01	3.961E-01	5.795E-01	3.829E-02	1.440
		487.02		5.205E-02	1.420E-01	2.378E-01	1.571E-02	0.219
		815.77		-1.390E-01	3.394E-01	5.535E-01	4.821E-02	-0.251
		1596.21	*	-9.718E-02	8.427E-02	1.210E-01	8.304E-03	-0.803
CE-141		145.44	*	-1.829E-02	6.212E-02	9.832E-02	5.546E-03	-0.186
CE-143		57.36		-7.775E-03	6.212E-02	Half-Life	too short	
CE-144	+	293.27	*	7.490E-03	6.212E-02	Half-Life	too short	
		664.57		4.808E-03	6.212E-02	Half-Life	too short	
		721.93		-7.790E-04	6.212E-02	Half-Life	too short	
		80.12		-9.299E-01	3.546E+00	3.704E+00	3.395E-01	-0.251
PM-144		133.52	*	4.838E-02	1.971E-01	2.859E-01	3.949E-02	0.169
		476.78		4.298E-02	5.733E-02	9.766E-02	6.743E-03	0.440
		618.01		-1.659E-02	2.813E-02	4.410E-02	2.547E-03	-0.376
PR-144		696.49	*	3.956E-03	3.127E-02	5.084E-02	2.861E-03	0.078
		696.51	*	2.762E-01	2.343E+00	3.808E+00	2.140E-01	0.073
		1489.16		-2.706E+00	1.146E+01	1.797E+01	1.283E+00	-0.151
PM-146		453.88	*	-1.369E-02	3.663E-02	5.936E-02	5.043E-03	-0.231
		633.25		-4.009E-01	1.284E+00	2.031E+00	7.634E-01	-0.197
		735.93		-7.263E-02	1.350E-01	2.074E-01	5.679E-02	-0.350
		747.24		3.803E-02	9.089E-02	1.496E-01	2.005E-02	0.254
ND-147	+	91.11		1.480E+00	3.588E-01	6.220E-01	6.119E-02	2.380
		319.41		3.571E-01	3.577E+00	6.021E+00	3.558E-01	0.059
		531.02	*	2.189E-01	6.097E-01	1.016E+00	1.373E-01	0.215
PM-149		285.90	*	2.225E-04	6.097E-01	Half-Life	too short	
EU-152		121.78		4.461E-02	6.423E-02	1.075E-01	8.231E-03	0.415
		244.70		6.144E-02	3.107E-01	4.389E-01	2.483E-02	0.140
		344.28	*	-6.805E-02	9.958E-02	1.392E-01	9.222E-03	-0.489
		778.90		-2.304E-01	2.536E-01	3.695E-01	2.564E-02	-0.624
	+	964.08		8.959E-01	3.607E-01	5.741E-01	4.892E-02	1.561
		1085.87		-3.001E-02	3.641E-01	5.962E-01	4.195E-02	-0.050
		1112.07		-9.668E-03	3.241E-01	4.560E-01	3.030E-02	-0.021
		1408.01		1.642E-01	1.737E-01	3.036E-01	2.208E-02	0.541

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GD-153		69.67		1.116E+00	1.929E+00	2.884E+00	2.519E-01	0.387
		97.43	*	5.425E-02	8.768E-02	1.273E-01	1.040E-02	0.426
		103.18		-1.752E-01	1.020E-01	1.597E-01	1.193E-02	-1.097
EU-154		123.07		3.487E-03	4.728E-02	7.527E-02	7.094E-03	0.046
		723.31		1.627E-01	1.819E-01	2.701E-01	1.952E-02	0.602
		873.19		9.729E-02	2.551E-01	4.349E-01	5.175E-02	0.224
		996.26		-2.560E-02	3.151E-01	5.186E-01	8.949E-02	-0.049
		1004.73		-4.110E-01	2.233E-01	2.940E-01	3.306E-02	-1.398
EU-155		1274.44	*	-4.101E-02	1.179E-01	1.873E-01	1.874E-02	-0.219
	+	86.55		6.349E-01	1.339E-01	1.762E-01	1.713E-02	3.603
		105.31	*	8.827E-02	9.491E-02	1.601E-01	1.180E-02	0.551
TB-160	+	86.79		1.738E+00	3.660E-01	4.789E-01	4.627E-02	3.629
		197.04		3.836E-01	5.264E-01	8.690E-01	4.626E-02	0.441
		215.65		1.387E-01	6.916E-01	1.122E+00	6.130E-02	0.124
	+	298.57		2.588E-01	1.279E-01	1.817E-01	1.068E-02	1.424
		879.36	*	9.113E-02	1.337E-01	2.314E-01	2.023E-02	0.394
	+	962.29		1.738E+00	6.997E-01	9.724E-01	8.303E-02	1.787
	+	966.15		1.486E+00	3.076E-01	5.288E-01	4.495E-02	2.810
		1177.93		1.045E-01	3.750E-01	6.243E-01	3.552E-02	0.167
		1271.85		2.895E-02	6.867E-01	1.123E+00	7.493E-02	0.026
	+	80.57		-1.360E-01	3.813E-01	3.958E-01	3.640E-02	-0.344
HO-166M		184.41		1.312E-01	4.557E-02	6.057E-02	3.165E-03	2.166
		280.46		3.903E-02	8.055E-02	1.211E-01	7.055E-03	0.322
		410.95		1.604E-01	2.193E-01	3.741E-01	2.175E-02	0.429
		711.68	*	-6.408E-02	5.391E-02	8.007E-02	4.687E-03	-0.800
		752.31		1.970E-02	2.605E-01	4.205E-01	2.732E-02	0.047
		810.29		-3.185E-02	5.240E-02	8.451E-02	6.321E-03	-0.377
		67.75		-2.105E-01	1.347E-01	1.854E-01	1.614E-02	-1.136
TA-182		100.11		3.002E-01	1.627E-01	2.789E-01	2.182E-02	1.076
		152.43		2.317E-01	3.169E-01	5.274E-01	2.787E-02	0.439
		222.11		1.210E-01	3.215E-01	5.239E-01	2.887E-02	0.231
		1121.30		6.069E-01	1.805E-01	3.088E-01	2.008E-02	1.965
		1189.05		1.296E-01	3.266E-01	5.466E-01	3.171E-02	0.237
		1221.41	*	1.448E-01	2.075E-01	3.518E-01	2.159E-02	0.412
		1231.02		4.401E-01	5.308E-01	7.951E-01	4.960E-02	0.554
	+	295.96		1.168E+00	1.808E-01	2.568E-01	1.531E-02	4.547
IR-192		308.46		-8.556E-03	8.240E-02	1.379E-01	8.215E-03	-0.062
		316.51	*	1.509E-02	3.010E-02	5.142E-02	3.050E-03	0.293
		468.07		1.865E-03	6.878E-02	9.843E-02	6.640E-03	0.019
HG-203		70.83		1.661E+00	1.560E+00	2.333E+00	3.765E-01	0.712
		72.87		4.322E+00	1.170E+00	1.569E+00	2.455E-01	2.755
BI-207		279.20	*	3.581E-02	3.934E-02	6.021E-02	3.698E-03	0.595
		72.81		8.791E-01	2.228E-01	3.410E-01	3.007E-02	2.578
	+	74.97		9.356E-01	1.525E-01	2.438E-01	2.170E-02	3.837
		569.70		2.225E-02	2.685E-02	4.569E-02	2.574E-03	0.487
		1063.66	*	1.862E-02	5.067E-02	8.541E-02	6.274E-03	0.218
PB-210		1770.23		-4.110E-01	4.773E-01	5.540E-01	3.430E-02	-0.742
		46.54	*	7.228E-01	4.654E+00	7.620E+00	5.887E-01	0.095
PB-211		404.85	*	-3.155E-01	6.835E-01	1.086E+00	5.207E-01	-0.291

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	427.09		7.523E-01	1.367E+00	2.245E+00	1.029E+00	0.335
		832.01		2.854E-01	8.853E-01	1.487E+00	7.695E-01	0.192
		271.23		8.098E-01	3.001E-01	3.811E-01	3.058E-02	2.125
		401.81	*	-1.668E-01	3.674E-01	5.975E-01	8.028E-02	-0.279
RA-223		81.07		-1.025E-01	3.015E-01	3.132E-01	2.890E-02	-0.327
		83.79		3.629E-01	1.196E-01	1.987E-01	1.871E-02	1.827
		94.87		8.562E-01	4.641E-01	7.073E-01	6.037E-02	1.211
		144.24		3.747E-01	6.175E-01	1.001E+00	6.907E-02	0.374
AC-227		154.21		2.898E-01	3.460E-01	5.768E-01	3.763E-02	0.502
		269.46	+	6.292E-01	2.308E-01	2.976E-01	1.796E-02	2.114
		323.87	*	-2.500E-01	6.409E-01	9.139E-01	1.477E-01	-0.274
		338.28	+	7.408E+00	1.409E+00	2.031E+00	2.094E-01	3.648
		79.69		5.065E-01	1.738E+00	1.872E+00	3.276E-01	0.271
		235.96		2.523E+00	2.724E-01	3.764E-01	3.012E-02	6.703
		256.23	*	-1.836E-02	2.271E-01	3.623E-01	3.689E-02	-0.051
		299.98	+	1.957E+00	9.839E-01	1.399E+00	1.543E-01	1.399
TH-227		304.50		7.912E-01	1.580E+00	2.365E+00	3.614E-01	0.335
		334.37		1.297E+00	1.809E+00	2.579E+00	3.680E-01	0.503
		79.80		5.528E-01	2.288E+00	2.457E+00	5.403E-01	0.225
		235.96		2.523E+00	2.583E-01	3.764E-01	2.722E-02	6.703
		256.23	*	-1.836E-02	2.271E-01	3.623E-01	4.341E-02	-0.051
		299.98	+	1.957E+00	9.839E-01	1.399E+00	1.543E-01	1.399
PA-231	+	304.50		7.912E-01	1.580E+00	2.365E+00	3.614E-01	0.335
		334.37		1.297E+00	1.809E+00	2.579E+00	3.680E-01	0.503
		283.69	*	-5.383E-01	1.291E+00	2.086E+00	2.739E-01	-0.258
TH-231	+	301.36		1.257E+00	6.303E-01	9.063E-01	9.417E-02	1.387
		81.07		-1.025E-01	3.015E-01	3.132E-01	2.890E-02	-0.327
		83.79		3.629E-01	1.196E-01	1.987E-01	1.871E-02	1.827
		94.87		8.562E-01	4.641E-01	7.073E-01	6.037E-02	1.211
		144.24		3.747E-01	6.175E-01	1.001E+00	6.907E-02	0.374
		154.21		2.898E-01	3.460E-01	5.768E-01	3.763E-02	0.502
		269.46	+	6.292E-01	2.308E-01	2.976E-01	1.796E-02	2.114
		323.87	*	-2.500E-01	6.409E-01	9.139E-01	1.477E-01	-0.274
		338.28	+	7.408E+00	1.409E+00	2.031E+00	2.094E-01	3.648
PA-233	+	300.13		8.855E-01	4.503E-01	6.346E-01	8.518E-02	1.395
		311.90	*	-3.148E-02	5.336E-02	8.751E-02	5.473E-03	-0.360
		340.48		1.445E+00	6.928E-01	9.848E-01	2.288E-01	1.468
PA-234		94.67		5.004E-01	1.785E-01	2.666E-01	3.297E-02	1.877
		98.44		9.913E-02	1.100E-01	1.404E-01	7.818E-02	0.706
		111.00		-1.891E-04	1.637E-01	2.699E-01	2.919E-02	-0.001
		131.20		6.201E-02	1.044E-01	1.534E-01	8.671E-03	0.404
		569.50		1.922E-01	2.380E-01	4.046E-01	2.280E-02	0.475
		733.00		1.765E-01	3.695E-01	5.554E-01	1.187E-01	0.318
		880.51		4.905E-02	2.619E-01	4.414E-01	3.870E-02	0.111
		883.24		3.907E-02	2.657E-01	4.446E-01	2.990E-01	0.088
		926.50		-1.679E-01	1.651E-01	2.470E-01	6.265E-02	-0.680
		946.00	*	-1.103E-02	2.652E-01	4.391E-01	8.254E-02	-0.025
		949.00		2.587E-01	3.954E-01	6.824E-01	5.914E-02	0.379
		766.42		1.960E+01	1.657E+01	2.033E+01	1.026E+01	0.964
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	*		4.230E+00	4.105E+00	7.198E+00	6.868E-01	0.588
	99.53			2.737E-01	1.562E-01	2.522E-01	1.991E-02	1.085
	103.37			-8.160E-02	8.979E-02	1.445E-01	1.077E-02	-0.565
	106.12			1.201E-01	7.534E-02	1.286E-01	9.221E-03	0.934
	117.23	*		-6.663E-01	3.666E-01	5.412E-01	3.368E-02	-1.231
	228.18			6.257E-02	1.972E-01	3.204E-01	1.779E-02	0.195
AM-241	+	277.60		4.566E-01	2.371E-01	2.741E-01	1.594E-02	1.666
CM-247	+	59.54	*	7.320E-02	1.794E-01	2.685E-01	2.498E-02	0.273
CF-249		278.00		1.939E+00	1.007E+00	1.156E+00	6.723E-02	1.678
		287.50		-1.230E-01	1.134E+00	1.798E+00	1.052E-01	-0.068
		402.40	*	1.532E-02	3.355E-02	5.671E-02	3.287E-03	0.270
CF-251		252.80		4.870E-01	8.450E-01	1.382E+00	7.877E-02	0.353
		333.37		2.442E-01	2.190E-01	2.742E-01	1.620E-02	0.891
		388.16	*	3.871E-02	3.550E-02	6.149E-02	3.558E-03	0.630
CF-251		177.52	*	-6.118E-02	1.141E-01	1.822E-01	9.426E-03	-0.336
		227.38		-2.159E-01	3.263E-01	5.132E-01	2.846E-02	-0.421
		285.41		6.960E-01	1.894E+00	3.229E+00	1.886E-01	0.216

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]G247969004      *
* Acquisition date   : 10-MAR-2010 23:11:54 Detector SN#                   *
* Detector ID        : GAM23 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.700                        *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 04:00:03.61 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247969004 Analyst initials: MXR1                  *
* Batch Number      : 958216 Sample Quantity : 1.1810E+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	3.179E+01	2.780E+00	3.878E-01	0.000E+00
CD-109	5.377E+00	1.110E+00	1.124E+00	0.000E+00
SN-126	5.229E-01	1.079E-01	1.100E-01	0.000E+00
TL-208	6.479E-01	9.220E-02	5.236E-02	0.000E+00
BI-211	4.919E+00	5.186E-01	2.880E-01	0.000E+00
BI-212	1.994E+00	7.932E-01	6.820E-01	0.000E+00
PB-212	2.181E+00	1.824E-01	7.775E-02	0.000E+00
BI-214	1.478E+00	1.847E-01	9.705E-02	0.000E+00
PB-214	1.785E+00	2.115E-01	1.048E-01	0.000E+00
RA-224	5.636E+00	1.098E+00	8.333E-01	0.000E+00
RA-226	1.478E+00	1.847E-01	9.705E-02	0.000E+00
AC-228	2.106E+00	3.519E-01	1.909E-01	0.000E+00
RA-228	2.106E+00	3.519E-01	1.909E-01	0.000E+00
TH-228	2.181E+00	1.824E-01	7.775E-02	0.000E+00
TH-229	4.719E-02	4.662E-01	7.873E-01	0.000E+00
TH-232	2.106E+00	3.519E-01	1.909E-01	0.000E+00
TH-234	2.205E+00	1.771E+00	2.299E+00	0.000E+00
U-235	1.259E-01	1.818E-01	3.067E-01	0.000E+00
NP-237	1.560E+00	4.544E-01	3.332E-01	0.000E+00
U-238	2.205E+00	1.771E+00	2.299E+00	0.000E+00
ANH-511	1.880E-01	6.633E-02	4.064E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.249E-01	2.934E-01	5.073E-01	0.000E+00 NOT IDENT.
NA-22	-1.537E-02	4.080E-02	6.590E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.016E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	9.938E-03	3.457E-02	5.996E-02	0.000E+00 FAIL ABUN
V-48	2.960E-02	7.686E-02	1.330E-01	0.000E+00 NOT IDENT.
CR-51	-7.555E-02	3.427E-01	5.898E-01	0.000E+00 NOT IDENT.

MN-54	-2.256E-02	3.487E-02	5.758E-02	0.000E+00	NOT IDENT.
CO-56	1.210E-02	3.338E-02	5.833E-02	0.000E+00	FAIL ABUN
CO-57	1.528E-02	2.203E-02	3.853E-02	0.000E+00	NOT IDENT.
CO-58	-1.378E-02	3.435E-02	5.748E-02	0.000E+00	NOT IDENT.
FE-59	-8.061E-04	8.507E-02	1.427E-01	0.000E+00	NOT IDENT.
CO-60	9.772E-03	3.699E-02	6.250E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	1.003E-01	1.631E-01	0.000E+00	NOT IDENT.
SE-75	-1.115E-02	4.518E-02	6.437E-02	0.000E+00	NOT IDENT.
SR-85	3.435E-02	3.722E-02	5.769E-02	0.000E+00	NOT IDENT.
Y-88	-4.378E-03	2.638E-02	4.311E-02	0.000E+00	NOT IDENT.
Y-91	3.528E+00	2.251E+01	3.786E+01	0.000E+00	NOT IDENT.
NB-94	-1.407E-02	3.028E-02	4.875E-02	0.000E+00	NOT IDENT.
NB-95	7.305E-02	5.176E-02	8.029E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.729E-01	2.754E-01	0.000E+00	NOT IDENT.
ZR-95	-1.859E-03	7.119E-02	1.170E-01	0.000E+00	NOT IDENT.
MO-99	-7.683E+00	2.662E+01	4.307E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.916E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.389E-03	3.492E-02	5.888E-02	0.000E+00	NOT IDENT.
RH-106	-6.826E-02	2.779E-01	4.569E-01	0.000E+00	NOT IDENT.
RU-106	-6.826E-02	2.778E-01	4.569E-01	0.000E+00	NOT IDENT.
AG-108M	4.813E-03	2.567E-02	4.414E-02	0.000E+00	NOT IDENT.
AG-110M	1.583E-03	3.231E-02	5.384E-02	0.000E+00	NOT IDENT.
SN-113	2.461E-03	3.884E-02	6.682E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.946E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.963E-02	5.678E-02	9.554E-02	0.000E+00	NOT IDENT.
TE-123M	1.296E-02	2.498E-02	4.304E-02	0.000E+00	NOT IDENT.
SB-124	6.584E-03	6.159E-02	1.055E-01	0.000E+00	NOT IDENT.
SB-125	4.604E-02	7.792E-02	1.364E-01	0.000E+00	FAIL ABUN
TE-125M	-9.444E+00	9.079E+00	1.520E+01	0.000E+00	NOT IDENT.
I-126	8.242E-02	2.425E-01	4.099E-01	0.000E+00	NOT IDENT.
SB-126	1.166E-01	1.660E-01	2.479E-01	0.000E+00	NOT IDENT.
SB-127	-4.615E-01	2.119E+00	3.465E+00	0.000E+00	NOT IDENT.
I-131	5.282E-02	1.337E-01	2.337E-01	0.000E+00	NOT IDENT.
TE-132	4.412E-01	1.361E+00	2.294E+00	0.000E+00	NOT IDENT.
BA-133	1.261E-02	3.834E-02	5.857E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	7.717E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.431E-02	4.600E-02	7.609E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.579E-01	2.518E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.330E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.575E-02	1.173E-01	2.014E-01	0.000E+00	NOT IDENT.
BA-137M	3.224E-02	3.325E-02	5.795E-02	0.000E+00	NOT IDENT.
CS-137	3.406E-02	3.512E-02	6.122E-02	0.000E+00	NOT IDENT.
CE-139	-1.072E-02	2.557E-02	4.282E-02	0.000E+00	NOT IDENT.
BA-140	-1.169E-01	2.809E-01	4.584E-01	0.000E+00	NOT IDENT.
LA-140	-9.718E-02	8.258E-02	1.205E-01	0.000E+00	FAIL ABUN
CE-141	-1.829E-02	6.088E-02	1.005E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.964E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.838E-02	1.932E-01	2.926E-01	0.000E+00	NOT IDENT.
PM-144	3.956E-03	3.064E-02	5.110E-02	0.000E+00	NOT IDENT.
PR-144	2.762E-01	2.296E+00	3.828E+00	0.000E+00	NOT IDENT.
PM-146	-1.369E-02	3.589E-02	5.995E-02	0.000E+00	NOT IDENT.
ND-147	2.189E-01	5.975E-01	1.025E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	2.265E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.805E-02	9.759E-02	1.410E-01	0.000E+00	FAIL ABUN
GD-153	5.425E-02	8.593E-02	1.307E-01	0.000E+00	NOT IDENT.
EU-154	-4.101E-02	1.156E-01	1.870E-01	0.000E+00	NOT IDENT.
EU-155	8.827E-02	9.301E-02	1.643E-01	0.000E+00	FAIL ABUN
TB-160	9.113E-02	1.310E-01	2.320E-01	0.000E+00	FAIL ABUN
HO-166M	-6.408E-02	5.284E-02	8.047E-02	0.000E+00	FAIL ABUN
TA-182	1.448E-01	2.033E-01	3.514E-01	0.000E+00	NOT IDENT.
IR-192	1.509E-02	2.950E-02	5.213E-02	0.000E+00	FAIL ABUN
HG-203	3.581E-02	3.856E-02	6.113E-02	0.000E+00	NOT IDENT.
BI-207	1.862E-02	4.965E-02	8.545E-02	0.000E+00	FAIL ABUN
PB-210	7.228E-01	4.561E+00	7.885E+00	0.000E+00	NOT IDENT.
PB-211	-3.155E-01	6.699E-01	1.098E+00	0.000E+00	NOT IDENT.
RN-219	-1.668E-01	3.601E-01	6.042E-01	0.000E+00	FAIL ABUN
RA-223	-2.500E-01	6.281E-01	9.264E-01	0.000E+00	FAIL ABUN
AC-227	-1.836E-02	2.225E-01	3.682E-01	0.000E+00	FAIL ABUN
TH-227	-1.836E-02	2.225E-01	3.682E-01	0.000E+00	FAIL ABUN
PA-231	-5.383E-01	1.265E+00	2.117E+00	0.000E+00	FAIL ABUN
TH-231	-2.500E-01	6.281E-01	9.264E-01	0.000E+00	FAIL ABUN
PA-233	-3.148E-02	5.229E-02	8.874E-02	0.000E+00	FAIL ABUN
PA-234	-1.103E-02	2.599E-01	4.399E-01	0.000E+00	NOT IDENT.
PA-234M	4.230E+00	4.023E+00	7.206E+00	0.000E+00	NOT IDENT.
NP-239	-6.663E-01	3.593E-01	5.545E-01	0.000E+00	FAIL ABUN
AM-241	7.320E-02	1.758E-01	2.771E-01	0.000E+00	NOT IDENT.
CM-247	1.532E-02	3.288E-02	5.735E-02	0.000E+00	FAIL ABUN
CF-249	3.871E-02	3.479E-02	6.221E-02	0.000E+00	NOT IDENT.

CF-251	-6.118E-02	1.118E-01	1.858E-01	0.000E+00 NOT IDENT.
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*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969004.CNF;1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:11:54
Sample ID        : G247969004 Sample quantity : 1.18100E+02 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.61 0.0%
Energy tolerance : 1.70000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 958216 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	2127	10.66*	9.976E-01	3.179E+01	3.179E+01	8.92
CD-109	88.03	634	3.70*	5.210E+00	5.229E+00	5.377E+00	21.06
SN-126	64.28	133	9.60	2.583E+00	8.499E-01	8.499E-01	81.29
	86.94	634	8.90	5.210E+00	2.174E+00	2.174E+00	45.60
	87.57	634	37.00*	5.210E+00	5.229E-01	5.229E-01	21.06
TL-208	277.37	172	6.60	4.149E+00	9.991E-01	9.990E-01	52.72
	583.19	789	85.00*	2.278E+00	6.479E-01	6.479E-01	14.52
	860.56	100	12.50	1.610E+00	7.885E-01	7.885E-01	52.50
BI-211	72.87	-----	1.23	3.829E+00	-----	Line Not Found	-----
	351.06	1377	12.92*	3.442E+00	4.919E+00	4.919E+00	10.76
BI-212	727.33	157	6.67*	1.879E+00	1.994E+00	1.994E+00	40.58
	785.37	-----	1.10	1.750E+00	-----	Line Not Found	-----
	1620.50	27	1.47	9.221E-01	3.165E+00	3.165E+00	98.36
PB-212	74.82	848	10.28	4.039E+00	3.245E+00	3.245E+00	18.98
	77.11	1298	17.10	4.293E+00	2.811E+00	2.811E+00	12.59
	238.63	2776	43.60*	4.639E+00	2.181E+00	2.181E+00	8.53
	300.09	144	3.30	3.900E+00	1.779E+00	1.779E+00	49.78
BI-214	609.32	929	45.49*	2.195E+00	1.478E+00	1.478E+00	12.74
	1120.29	216	14.92	1.259E+00	1.828E+00	1.828E+00	31.19
	1764.49	174	15.30	8.744E-01	2.070E+00	2.070E+00	22.69
PB-214	74.82	848	5.80	4.039E+00	5.752E+00	5.752E+00	18.13
	77.11	1298	9.70	4.293E+00	4.956E+00	4.956E+00	15.05
	242.00	668	7.25	4.597E+00	3.187E+00	3.187E+00	20.71
	295.22	700	18.42	3.949E+00	1.529E+00	1.529E+00	16.77
	351.93	1377	35.60*	3.442E+00	1.785E+00	1.785E+00	12.09
RA-224	240.99	668	4.10*	4.597E+00	5.636E+00	5.636E+00	19.88
RA-226	609.32	929	45.49*	2.195E+00	1.478E+00	1.478E+00	12.74
	1120.29	216	14.92	1.259E+00	1.828E+00	1.828E+00	31.19
	1764.49	174	15.30	8.744E-01	2.070E+00	2.070E+00	22.69
AC-228	338.32	470	11.27	3.551E+00	1.867E+00	1.867E+00	44.23
	911.20	522	25.80*	1.527E+00	2.106E+00	2.106E+00	17.05
	968.97	273	15.80	1.442E+00	1.905E+00	1.905E+00	30.79

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	470	11.27	3.551E+00	1.867E+00	1.867E+00	44.23
	911.20	522	25.80*	1.527E+00	2.106E+00	2.106E+00	17.05
	968.97	273	15.80	1.442E+00	1.905E+00	1.905E+00	30.79
TH-228	74.82	848	10.28	4.039E+00	3.245E+00	3.245E+00	16.34
	77.11	1298	17.10	4.293E+00	2.811E+00	2.811E+00	12.59
	238.63	2776	43.60*	4.639E+00	2.181E+00	2.181E+00	8.53
TH-229	300.09	144	3.30	3.900E+00	1.779E+00	1.779E+00	78.19
	85.43	634	14.70	5.210E+00	1.316E+00	1.316E+00	21.06
	88.47	435	24.00	5.403E+00	5.336E-01	5.336E-01	23.97
	193.51	-----	4.41*	5.353E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.059E+00	-----	Line Not Found	-----
TH-232	338.32	470	11.27	3.551E+00	1.867E+00	1.867E+00	17.04
	911.20	522	25.80*	1.527E+00	2.106E+00	2.106E+00	17.05
	968.97	273	15.80	1.442E+00	1.905E+00	1.905E+00	30.79
TH-234	63.29	133	3.70*	2.583E+00	2.205E+00	2.205E+00	81.94
	92.59	560	4.23	5.579E+00	3.772E+00	3.772E+00	31.33
U-235	89.96	435	3.47	5.403E+00	3.691E+00	3.691E+00	33.26
	93.35	560	5.60	5.579E+00	2.849E+00	2.849E+00	32.06
	143.76	-----	10.96*	6.189E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.887E+00	-----	Line Not Found	-----
	185.72	326	57.20	5.491E+00	1.651E-01	1.651E-01	34.74
	205.31	-----	5.01	5.150E+00	-----	Line Not Found	-----
NP-237	86.48	634	12.40*	5.210E+00	1.560E+00	1.560E+00	29.72
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
U-238	63.29	133	3.70*	2.583E+00	2.205E+00	2.205E+00	81.94
	92.59	560	4.23	5.579E+00	3.772E+00	3.772E+00	23.84
ANH-511	511.00	301	100.00*	2.546E+00	1.880E-01	1.880E-01	36.00

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	3.179E+01	3.179E+01	0.284E+01	8.92	
CD-109	461.40D	1.03	5.229E+00	5.377E+00	1.132E+00	21.06	
SN-126	2.30E+05Y	1.00	5.229E-01	5.229E-01	1.101E-01	21.06	
TL-208	1.41E+10Y	1.00	6.479E-01	6.479E-01	0.941E-01	14.52	
BI-211	7.04E+08Y	1.00	4.919E+00	4.919E+00	0.529E+00	10.76	
BI-212	1.41E+10Y	1.00	1.994E+00	1.994E+00	0.809E+00	40.58	
PB-212	1.41E+10Y	1.00	2.181E+00	2.181E+00	0.186E+00	8.53	
BI-214	1600.00Y	1.00	1.478E+00	1.478E+00	0.188E+00	12.74	
PB-214	1600.00Y	1.00	1.785E+00	1.785E+00	0.216E+00	12.09	
RA-224	1.41E+10Y	1.00	5.636E+00	5.636E+00	1.121E+00	19.88	
RA-226	1600.00Y	1.00	1.478E+00	1.478E+00	0.188E+00	12.74	
AC-228	1.41E+10Y	1.00	2.106E+00	2.106E+00	0.359E+00	17.05	
RA-228	1.41E+10Y	1.00	2.106E+00	2.106E+00	0.359E+00	17.05	
TH-228	1.41E+10Y	1.00	2.181E+00	2.181E+00	0.186E+00	8.53	
TH-229	7340.00Y	1.00	5.336E-01	5.336E-01	1.279E-01	23.97	K
TH-232	1.41E+10Y	1.00	2.106E+00	2.106E+00	0.359E+00	17.05	
TH-234	4.47E+09Y	1.00	2.205E+00	2.205E+00	1.807E+00	81.94	
U-235	7.04E+08Y	1.00	1.651E-01	1.651E-01	0.574E-01	34.74	K
NP-237	2.14E+06Y	1.00	1.560E+00	1.560E+00	0.464E+00	29.72	
U-238	4.47E+09Y	1.00	2.205E+00	2.205E+00	1.807E+00	81.94	
ANH-511	1.00E+09Y	1.00	1.880E-01	1.880E-01	0.677E-01	36.00	
Total Activity :			7.302E+01	7.317E+01			

Grand Total Activity : 7.302E+01 7.317E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247969004

Page : 4
Acquisition date : 10-MAR-2010 23:11:54

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.57	106	716	1.01	257.14	254	8	7.37E-03	89.6	6.33E+00	
0	208.84	218	480	1.20	417.69	414	8	1.52E-02	37.3	5.09E+00	
0	269.99	233	410	1.43	539.98	535	11	1.61E-02	36.2	4.23E+00	T
0	327.59	141	296	1.04	655.17	651	9	9.83E-03	47.0	3.64E+00	T
0	462.70	147	260	1.68	925.41	920	12	1.02E-02	47.0	2.76E+00	T
0	768.69	189	193	5.44	1537.38	1529	20	1.31E-02	39.4	1.78E+00	
0	793.88	86	168	1.51	1587.75	1579	16	6.00E-03	70.4	1.73E+00	
1	963.48	119	72	2.12	1926.97	1920	24	8.28E-03	39.4	1.45E+00	T
0	1237.85	132	163	1.01	2475.69	2467	20	9.20E-03	51.1	1.15E+00	T
0	1376.53	55	86	1.92	2753.06	2744	20	3.80E-03	87.1	1.05E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 21:43:23.14

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969004.CNF;1
* Acquisition date   : 10-MAR-2010 23:11:54   Detector SN#      :
* Detector ID        : GAM23                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.70000
* Elapsed live time: 0 04:00:00.00           Abundance limit  : 75.00000
* Elapsed real time: 0 04:00:03.61           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 20-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247969004             Analyst initials: MXR1
* Batch Number       : 958216                 Sample Quantity : 1.18100E+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	3.179E+01	2.837E+00	3.890E-01	2.910E-02	81.726
CD-109	5.377E+00	1.132E+00	1.094E+00	1.068E-01	4.917
SN-126	5.229E-01	1.101E-01	1.070E-01	1.041E-02	4.888
TL-208	6.479E-01	9.408E-02	5.199E-02	3.367E-03	12.462
BI-211	4.919E+00	5.291E-01	2.844E-01	1.853E-02	17.298
BI-212	1.994E+00	8.093E-01	6.788E-01	7.376E-02	2.938
PB-212	2.181E+00	1.861E-01	7.645E-02	5.546E-03	28.526
BI-214	1.478E+00	1.884E-01	9.640E-02	7.309E-03	15.336
PB-214	1.785E+00	2.158E-01	1.034E-01	8.831E-03	17.261
RA-224	5.636E+00	1.121E+00	8.195E-01	4.617E-02	6.878
RA-226	1.478E+00	1.884E-01	9.640E-02	7.309E-03	15.336
AC-228	2.106E+00	3.591E-01	1.905E-01	2.262E-02	11.057
RA-228	2.106E+00	3.591E-01	1.905E-01	2.262E-02	11.057
TH-228	2.181E+00	1.861E-01	7.645E-02	5.546E-03	28.526
TH-229	5.336E-01	1.279E-01	7.724E-01	4.091E-02	0.691
TH-232	2.106E+00	3.591E-01	1.905E-01	2.262E-02	11.057
TH-234	2.205E+00	1.807E+00	2.229E+00	4.101E-01	0.989
U-235	1.651E-01	5.736E-02	2.999E-01	4.670E-02	0.550

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.560E+00	4.637E-01	3.241E-01	7.478E-02	4.815
U-238	2.205E+00	1.807E+00	2.229E+00	4.101E-01	0.989
ANH-511	1.880E-01	6.769E-02	4.029E-02	2.340E-03	4.667

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.249E-01		2.994E-01	5.026E-01	3.414E-02	0.248
NA-22	-1.537E-02		4.163E-02	6.600E-02	4.432E-03	-0.233
NA-24	1.670E+01		1.539E+01	Half-Life	too short	
SC-46	9.938E-03		3.528E-02	5.981E-02	5.344E-03	0.166
V-48	2.960E-02		7.843E-02	1.328E-01	1.105E-02	0.223
CR-51	-7.555E-02		3.497E-01	5.818E-01	3.809E-02	-0.130
MN-54	-2.256E-02		3.558E-02	5.740E-02	4.545E-03	-0.393
CO-56	1.210E-02		3.406E-02	5.815E-02	4.731E-03	0.208
CO-57	1.528E-02		2.248E-02	3.761E-02	2.218E-03	0.406
CO-58	-1.378E-02		3.505E-02	5.728E-02	4.303E-03	-0.241
FE-59	-8.061E-04		8.681E-02	1.427E-01	1.099E-02	-0.006
CO-60	9.772E-03		3.775E-02	6.262E-02	4.597E-03	0.156
ZN-65	1.680E-01		1.023E-01	1.631E-01	1.077E-02	1.030
SE-75	-1.115E-02		4.610E-02	6.337E-02	3.690E-03	-0.176
SR-85	3.435E-02		3.798E-02	5.720E-02	3.320E-03	0.600
Y-88	-4.378E-03		2.692E-02	4.335E-02	2.553E-03	-0.101
Y-91	3.528E+00		2.297E+01	3.789E+01	2.260E+00	0.093
NB-94	-1.407E-02		3.090E-02	4.850E-02	2.772E-03	-0.290
NB-95	7.305E-02		5.282E-02	7.996E-02	5.373E-03	0.914
NB-95M	1.190E+00		1.764E-01	2.708E-01	2.004E-02	4.396
ZR-95	-1.859E-03		7.264E-02	1.165E-01	8.989E-03	-0.016
MO-99	-7.683E+00		2.716E+01	4.288E+01	6.267E+00	-0.179
TC-99M	-1.624E+14		1.998E+14	Half-Life	too short	
RU-103	-2.389E-03		3.564E-02	5.836E-02	7.260E-03	-0.041
RH-106	-6.826E-02		2.835E-01	4.540E-01	5.182E-02	-0.150
RU-106	-6.826E-02		2.834E-01	4.540E-01	2.439E-02	-0.150
AG-108M	4.813E-03		2.619E-02	4.368E-02	2.730E-03	0.110
AG-110M	1.583E-03		3.297E-02	5.352E-02	2.975E-03	0.030
SN-113	2.461E-03		3.963E-02	6.605E-02	4.069E-03	0.037
CD-115	-4.380E-05		1.503E-05	Half-Life	too short	
SN-117M	-1.963E-02		5.793E-02	9.354E-02	4.861E-03	-0.210
TE-123M	1.296E-02		2.549E-02	4.214E-02	2.224E-03	0.308
SB-124	6.584E-03		6.284E-02	1.060E-01	7.415E-03	0.062
SB-125	4.604E-02		7.951E-02	1.349E-01	8.198E-03	0.341
TE-125M	-9.444E+00		9.265E+00	1.482E+01	1.350E+00	-0.637
I-126	8.242E-02		2.474E-01	4.076E-01	2.109E-02	0.202
SB-126	1.166E-01		1.694E-01	2.467E-01	1.478E-02	0.472
SB-127	-4.615E-01		2.162E+00	3.446E+00	3.611E-01	-0.134
I-131	5.282E-02		1.364E-01	2.309E-01	1.516E-02	0.229
TE-132	4.412E-01		1.389E+00	2.254E+00	3.419E-01	0.196

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	1.261E-02		3.913E-02	5.784E-02	6.547E-03	0.218
I-133	1.654E-02		3.937E-02	Half-Life too short		
CS-134	7.431E-02		4.694E-02	7.581E-02	5.536E-03	0.980
CS-135	3.988E-01		1.611E-01	2.479E-01	1.894E-02	1.609
I-135	4.561E+12		1.699E+13	Half-Life too short		
CS-136	3.575E-02		1.197E-01	2.012E-01	1.604E-02	0.178
BA-137M	3.224E-02		3.393E-02	5.762E-02	2.944E-03	0.560
CS-137	3.406E-02		3.584E-02	6.087E-02	3.127E-03	0.560
CE-139	-1.072E-02		2.609E-02	4.194E-02	2.138E-03	-0.256
BA-140	-1.169E-01		2.866E-01	4.547E-01	1.514E-01	-0.257
LA-140	-9.718E-02		8.427E-02	1.210E-01	8.304E-03	-0.803
CE-141	-1.829E-02		6.212E-02	9.832E-02	5.546E-03	-0.186
CE-143	7.490E-03	+	1.002E-03	Half-Life too short		
CE-144	4.838E-02		1.971E-01	2.859E-01	3.949E-02	0.169
PM-144	3.956E-03		3.127E-02	5.084E-02	2.861E-03	0.078
PR-144	2.762E-01		2.343E+00	3.808E+00	2.140E-01	0.073
PM-146	-1.369E-02		3.663E-02	5.936E-02	5.043E-03	-0.231
ND-147	2.189E-01		6.097E-01	1.016E+00	1.373E-01	0.215
PM-149	2.225E-04		1.156E-04	Half-Life too short		
EU-152	-6.805E-02		9.958E-02	1.392E-01	9.222E-03	-0.489
GD-153	5.425E-02		8.768E-02	1.273E-01	1.040E-02	0.426
EU-154	-4.101E-02		1.179E-01	1.873E-01	1.874E-02	-0.219
EU-155	8.827E-02		9.491E-02	1.601E-01	1.180E-02	0.551
TB-160	9.113E-02		1.337E-01	2.314E-01	2.023E-02	0.394
HO-166M	-6.408E-02		5.391E-02	8.007E-02	4.687E-03	-0.800
TA-182	1.448E-01		2.075E-01	3.518E-01	2.159E-02	0.412
IR-192	1.509E-02		3.010E-02	5.142E-02	3.050E-03	0.293
HG-203	3.581E-02		3.934E-02	6.021E-02	3.698E-03	0.595
BI-207	1.862E-02		5.067E-02	8.541E-02	6.274E-03	0.218
PB-210	7.228E-01		4.654E+00	7.620E+00	5.887E-01	0.095
PB-211	-3.155E-01		6.835E-01	1.086E+00	5.207E-01	-0.291
RN-219	-1.668E-01		3.674E-01	5.975E-01	8.028E-02	-0.279
RA-223	-2.500E-01		6.409E-01	9.139E-01	1.477E-01	-0.274
AC-227	-1.836E-02		2.271E-01	3.623E-01	3.689E-02	-0.051
TH-227	-1.836E-02		2.271E-01	3.623E-01	4.341E-02	-0.051
PA-231	-5.383E-01		1.291E+00	2.086E+00	2.739E-01	-0.258
TH-231	-2.500E-01		6.409E-01	9.139E-01	1.477E-01	-0.274
PA-233	-3.148E-02		5.336E-02	8.751E-02	5.473E-03	-0.360
PA-234	-1.103E-02		2.652E-01	4.391E-01	8.254E-02	-0.025
PA-234M	4.230E+00		4.105E+00	7.198E+00	6.868E-01	0.588
NP-239	-6.663E-01		3.666E-01	5.412E-01	3.368E-02	-1.231
AM-241	7.320E-02		1.794E-01	2.685E-01	2.498E-02	0.273
CM-247	1.532E-02		3.355E-02	5.671E-02	3.287E-03	0.270
CF-249	3.871E-02		3.550E-02	6.149E-02	3.558E-03	0.630
CF-251	-6.118E-02		1.141E-01	1.822E-01	9.426E-03	-0.336

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]G247969004          *
* Acquisition date   : 10-MAR-2010 23:11:54 Detector SN#      :             *
* Detector ID        : GAM23                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.700        *
* Elapsed live time  : 0 04:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 04:00:03.61             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247969004             Analyst initials: MXR1          *
* Batch Number       : 958216                 Sample Quantity : 1.1810E+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	3.179E+01	2.780E+00	1.940E-01	1.418E+00
CD-109	5.377E+00	1.110E+00	5.623E-01	5.662E-01
SN-126	5.229E-01	1.079E-01	5.502E-02	5.506E-02
TL-208	6.479E-01	9.220E-02	2.620E-02	4.704E-02
BI-211	4.919E+00	5.186E-01	1.441E-01	2.646E-01
BI-212	1.994E+00	7.932E-01	3.412E-01	4.047E-01
PB-212	2.181E+00	1.824E-01	3.890E-02	9.305E-02
BI-214	1.478E+00	1.847E-01	4.855E-02	9.421E-02
PB-214	1.785E+00	2.115E-01	5.241E-02	1.079E-01
RA-224	5.636E+00	1.098E+00	4.169E-01	5.603E-01
RA-226	1.478E+00	1.847E-01	4.855E-02	9.421E-02
AC-228	2.106E+00	3.519E-01	9.550E-02	1.795E-01
RA-228	2.106E+00	3.519E-01	9.550E-02	1.795E-01
TH-228	2.181E+00	1.824E-01	3.890E-02	9.305E-02
TH-229	4.719E-02	4.662E-01	3.939E-01	2.379E-01
TH-232	2.106E+00	3.519E-01	9.550E-02	1.795E-01
TH-234	2.205E+00	1.771E+00	1.150E+00	9.035E-01
U-235	1.259E-01	1.818E-01	1.534E-01	9.274E-02
NP-237	1.560E+00	4.544E-01	1.667E-01	2.319E-01
U-238	2.205E+00	1.771E+00	1.150E+00	9.035E-01
ANH-511	1.880E-01	6.633E-02	2.033E-02	3.384E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.249E-01	2.934E-01	2.538E-01	1.497E-01 NOT IDENT.
NA-22	-1.537E-02	4.080E-02	3.297E-02	2.081E-02 NOT IDENT.
NA-24	1.670E+07	3.016E+07	0.000E+00	1.539E+07 SHORT HLIF
SC-46	9.938E-03	3.457E-02	3.000E-02	1.764E-02 FAIL ABUN
V-48	2.960E-02	7.686E-02	6.655E-02	3.921E-02 NOT IDENT.
CR-51	-7.555E-02	3.427E-01	2.951E-01	1.749E-01 NOT IDENT.

MN-54	-2.256E-02	3.487E-02	2.881E-02	1.779E-02	NOT IDENT.
CO-56	1.210E-02	3.338E-02	2.918E-02	1.703E-02	FAIL ABUN
CO-57	1.528E-02	2.203E-02	1.928E-02	1.124E-02	NOT IDENT.
CO-58	-1.378E-02	3.435E-02	2.876E-02	1.752E-02	NOT IDENT.
FE-59	-8.061E-04	8.507E-02	7.141E-02	4.340E-02	NOT IDENT.
CO-60	9.772E-03	3.699E-02	3.127E-02	1.887E-02	NOT IDENT.
ZN-65	1.680E-01	1.003E-01	8.161E-02	5.116E-02	NOT IDENT.
SE-75	-1.115E-02	4.518E-02	3.220E-02	2.305E-02	NOT IDENT.
SR-85	3.435E-02	3.722E-02	2.886E-02	1.899E-02	NOT IDENT.
Y-88	-4.378E-03	2.638E-02	2.157E-02	1.346E-02	NOT IDENT.
Y-91	3.528E+00	2.251E+01	1.894E+01	1.148E+01	NOT IDENT.
NB-94	-1.407E-02	3.028E-02	2.439E-02	1.545E-02	NOT IDENT.
NB-95	7.305E-02	5.176E-02	4.017E-02	2.641E-02	NOT IDENT.
NB-95M	1.190E+00	1.729E-01	1.378E-01	8.821E-02	NOT IDENT.
ZR-95	-1.859E-03	7.119E-02	5.854E-02	3.632E-02	NOT IDENT.
MO-99	-7.683E+00	2.662E+01	2.155E+01	1.358E+01	NOT IDENT.
TC-99M	-1.624E+20	3.916E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.389E-03	3.492E-02	2.946E-02	1.782E-02	NOT IDENT.
RH-106	-6.826E-02	2.779E-01	2.286E-01	1.418E-01	NOT IDENT.
RU-106	-6.826E-02	2.778E-01	2.286E-01	1.417E-01	NOT IDENT.
AG-108M	4.813E-03	2.567E-02	2.208E-02	1.309E-02	NOT IDENT.
AG-110M	1.583E-03	3.231E-02	2.693E-02	1.648E-02	NOT IDENT.
SN-113	2.461E-03	3.884E-02	3.343E-02	1.982E-02	NOT IDENT.
CD-115	-4.380E+01	2.946E+01	0.000E+00	1.503E+01	SHORT HLIF
SN-117M	-1.963E-02	5.678E-02	4.780E-02	2.897E-02	NOT IDENT.
TE-123M	1.296E-02	2.498E-02	2.153E-02	1.274E-02	NOT IDENT.
SB-124	6.584E-03	6.159E-02	5.276E-02	3.142E-02	NOT IDENT.
SB-125	4.604E-02	7.792E-02	6.822E-02	3.976E-02	FAIL ABUN
TE-125M	-9.444E+00	9.079E+00	7.604E+00	4.632E+00	NOT IDENT.
I-126	8.242E-02	2.425E-01	2.051E-01	1.237E-01	NOT IDENT.
SB-126	1.166E-01	1.660E-01	1.240E-01	8.469E-02	NOT IDENT.
SB-127	-4.615E-01	2.119E+00	1.733E+00	1.081E+00	NOT IDENT.
I-131	5.282E-02	1.337E-01	1.169E-01	6.819E-02	NOT IDENT.
TE-132	4.412E-01	1.361E+00	1.148E+00	6.944E-01	NOT IDENT.
BA-133	1.261E-02	3.834E-02	2.930E-02	1.956E-02	FAIL ABUN
I-133	1.654E+04	7.717E+04	0.000E+00	3.937E+04	SHORT HLIF
CS-134	7.431E-02	4.600E-02	3.807E-02	2.347E-02	NOT IDENT.
CS-135	3.988E-01	1.579E-01	1.260E-01	8.056E-02	NOT IDENT.
I-135	4.561E+18	3.330E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.575E-02	1.173E-01	1.007E-01	5.985E-02	NOT IDENT.
BA-137M	3.224E-02	3.325E-02	2.899E-02	1.696E-02	NOT IDENT.
CS-137	3.406E-02	3.512E-02	3.063E-02	1.792E-02	NOT IDENT.
CE-139	-1.072E-02	2.557E-02	2.142E-02	1.304E-02	NOT IDENT.
BA-140	-1.169E-01	2.809E-01	2.293E-01	1.433E-01	NOT IDENT.
LA-140	-9.718E-02	8.258E-02	6.030E-02	4.213E-02	FAIL ABUN
CE-141	-1.829E-02	6.088E-02	5.029E-02	3.106E-02	NOT IDENT.
CE-143	7.490E+03	1.964E+03	0.000E+00	1.002E+03	SHORT HLIF
CE-144	4.838E-02	1.932E-01	1.464E-01	9.856E-02	NOT IDENT.
PM-144	3.956E-03	3.064E-02	2.557E-02	1.563E-02	NOT IDENT.
PR-144	2.762E-01	2.296E+00	1.915E+00	1.172E+00	NOT IDENT.
PM-146	-1.369E-02	3.589E-02	2.999E-02	1.831E-02	NOT IDENT.
ND-147	2.189E-01	5.975E-01	5.126E-01	3.049E-01	FAIL ABUN
PM-149	2.225E+02	2.265E+02	0.000E+00	1.156E+02	SHORT HLIF
EU-152	-6.805E-02	9.759E-02	7.057E-02	4.979E-02	FAIL ABUN
GD-153	5.425E-02	8.593E-02	6.540E-02	4.384E-02	NOT IDENT.
EU-154	-4.101E-02	1.156E-01	9.354E-02	5.897E-02	NOT IDENT.
EU-155	8.827E-02	9.301E-02	8.219E-02	4.746E-02	FAIL ABUN
TB-160	9.113E-02	1.310E-01	1.161E-01	6.684E-02	FAIL ABUN
HO-166M	-6.408E-02	5.284E-02	4.026E-02	2.696E-02	FAIL ABUN
TA-182	1.448E-01	2.033E-01	1.758E-01	1.037E-01	NOT IDENT.
IR-192	1.509E-02	2.950E-02	2.608E-02	1.505E-02	FAIL ABUN
HG-203	3.581E-02	3.856E-02	3.058E-02	1.967E-02	NOT IDENT.
BI-207	1.862E-02	4.965E-02	4.275E-02	2.533E-02	FAIL ABUN
PB-210	7.228E-01	4.561E+00	3.945E+00	2.327E+00	NOT IDENT.
PB-211	-3.155E-01	6.699E-01	5.492E-01	3.418E-01	NOT IDENT.
RN-219	-1.668E-01	3.601E-01	3.023E-01	1.837E-01	FAIL ABUN
RA-223	-2.500E-01	6.281E-01	4.635E-01	3.205E-01	FAIL ABUN
AC-227	-1.836E-02	2.225E-01	1.842E-01	1.135E-01	FAIL ABUN
TH-227	-1.836E-02	2.225E-01	1.842E-01	1.135E-01	FAIL ABUN
PA-231	-5.383E-01	1.265E+00	1.059E+00	6.455E-01	FAIL ABUN
TH-231	-2.500E-01	6.281E-01	4.635E-01	3.205E-01	FAIL ABUN
PA-233	-3.148E-02	5.229E-02	4.440E-02	2.668E-02	FAIL ABUN
PA-234	-1.103E-02	2.599E-01	2.201E-01	1.326E-01	NOT IDENT.
PA-234M	4.230E+00	4.023E+00	3.605E+00	2.053E+00	NOT IDENT.
NP-239	-6.663E-01	3.593E-01	2.774E-01	1.833E-01	FAIL ABUN
AM-241	7.320E-02	1.758E-01	1.386E-01	8.968E-02	NOT IDENT.
CM-247	1.532E-02	3.288E-02	2.869E-02	1.677E-02	FAIL ABUN
CF-249	3.871E-02	3.479E-02	3.112E-02	1.775E-02	NOT IDENT.

CF-251	-6.118E-02	1.118E-01	9.298E-02	5.703E-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	637.8680
49.72	686.0332
57.36	0.0000
59.54	701.9470
63.29	835.1692
63.29	835.1692
64.28	848.5186
67.75	990.5594
69.67	889.7932
70.83	897.2782
72.81	969.1193
72.87	969.2017
72.87	969.2017
74.82	978.6284
74.82	978.6284
74.82	978.6284
74.97	978.8300
77.11	981.6913
77.11	981.6913
77.11	981.6913
79.69	897.6074
79.80	897.7370
80.12	939.9802
80.19	940.0669
80.57	940.5380
81.00	941.0694
81.07	941.1561
81.07	941.1561
83.79	787.7105
83.79	787.7105
85.43	789.3607
86.48	790.4106
86.55	790.4829
86.79	790.7186
86.94	790.8695
87.57	791.4951
88.03	791.9508
88.47	792.3846
89.96	793.8463
91.11	794.9684
92.59	796.3986
92.59	796.3986
93.35	797.1310
94.67	759.6346
94.87	790.8300
94.87	790.8300
95.86	816.6002
97.43	689.0186
98.44	691.3896
99.53	638.1400
100.11	657.2338
103.18	817.0892
103.37	760.4963
105.31	698.3979
106.12	666.6293
109.28	800.9730
111.00	722.5228
111.76	708.2968
116.30	707.7561
117.23	716.3958
121.12	637.4814
121.78	642.9019
122.06	643.0861
123.07	675.1632
131.20	664.2897
133.52	646.3916
136.00	679.3138

136.47	674.5567
140.51	735.0801
140.51	0.0000
143.76	680.1902
144.24	678.4500
144.24	678.4500
145.44	710.8575
152.43	663.9548
153.25	654.1476
154.21	658.8184
154.21	658.8184
156.02	672.2407
158.56	667.5281
159.00	620.2286
162.66	614.9199
163.33	657.8079
165.86	612.4257
176.60	624.1572
177.52	615.1721
181.07	614.8147
184.41	631.6364
185.72	629.7487
193.51	601.6557
197.04	598.9987
205.31	549.0664
210.85	563.3365
215.65	538.0461
222.11	511.1891
227.38	557.7109
228.16	513.3236
228.18	513.3308
235.69	497.7592
235.96	436.0565
235.96	436.0565
238.63	436.8338
238.63	436.8338
240.99	437.5170
242.00	437.8085
244.70	407.2870
252.40	408.6527
252.80	396.5717
256.23	424.0829
256.23	424.0829
260.90	0.0000
264.66	394.6328
268.22	348.9695
269.46	383.2617
269.46	383.2617
271.23	313.7567
273.65	314.2181
276.40	381.2843
277.37	376.1082
277.60	377.9590
278.00	351.0476
279.20	373.8192
279.54	370.8920
280.46	360.5762
283.69	404.4212
284.31	384.8925
285.41	379.7175
285.90	0.0000
287.50	390.3676
293.27	0.0000
295.22	340.9790
295.96	341.1255
298.57	341.6336
299.98	361.6630
299.98	361.6630
300.09	358.6478
300.09	358.6478
300.13	358.6574
301.36	358.9070
302.85	336.3784
304.50	339.7402
304.50	339.7402
304.85	336.7606
308.46	319.7321
311.90	325.8529

316.51	301.8345
319.41	329.0440
320.08	341.1525
323.87	351.0964
323.87	351.0964
328.76	385.9863
333.37	297.1680
334.37	325.1984
334.37	325.1984
338.28	319.6663
338.28	319.6663
338.32	319.6705
338.32	319.6705
338.32	319.6705
340.48	295.1780
340.55	295.1896
344.28	345.5742
351.06	293.3611
351.93	293.4910
356.01	255.2645
364.49	276.4901
366.42	288.0895
383.85	278.1771
388.16	253.9306
388.63	257.8085
391.69	265.8341
400.66	290.9717
401.81	294.0095
402.40	270.0646
404.85	314.6297
410.95	262.4508
414.70	266.7686
423.72	268.8340
427.09	223.5565
427.87	224.6075
433.94	233.9912
453.88	227.1848
463.37	218.8877
468.07	212.7272
473.00	220.1085
476.78	195.6269
477.60	207.6147
487.02	185.4846
492.35	0.0000
497.08	184.2426
511.00	192.3162
514.00	194.8969
527.90	0.0000
529.87	0.0000
531.02	175.5595
537.26	194.2875
546.56	0.0000
563.25	179.7595
569.33	164.7188
569.50	164.7305
569.70	164.7422
583.19	185.2099
600.60	176.9934
602.73	232.6952
604.72	196.3614
609.32	169.1785
609.32	169.1785
610.33	158.4428
614.28	139.4824
618.01	170.7401
621.93	169.9220
621.93	169.9220
633.25	166.3667
635.95	148.6042
636.99	165.5246
645.85	166.0191
657.76	175.1715
661.66	166.8930
661.66	166.8930
664.57	0.0000
666.33	172.4731
666.50	167.1575
677.62	160.2832

685.70	152.1300
695.00	147.2114
696.49	161.2573
696.51	161.2573
697.00	168.8095
702.65	177.7255
706.68	153.1458
711.68	167.4310
720.70	111.9335
721.93	0.0000
722.78	142.7150
722.91	142.7214
723.31	151.7749
724.19	133.7426
727.33	132.0630
733.00	133.5862
735.93	154.5394
739.50	155.7953
747.24	141.9653
752.31	154.2119
753.82	167.4147
756.73	162.0846
763.94	181.0891
765.81	183.0200
766.42	177.5610
777.92	159.0102
778.90	162.9055
783.70	121.4297
785.37	140.8165
795.86	118.6916
801.95	133.1689
810.29	141.8282
810.76	131.6487
815.77	128.1228
818.51	118.0005
832.01	127.7769
834.85	174.5478
836.80	0.0000
846.77	107.6955
856.80	112.6880
860.56	106.3569
871.09	121.6094
873.19	116.9614
875.33	0.0000
879.36	117.1557
880.51	126.6446
883.24	123.8972
884.68	127.7298
889.28	108.9402
898.04	121.5365
911.20	102.9023
911.20	102.9023
911.20	102.9023
926.50	134.8783
937.49	138.1348
944.13	131.6429
946.00	111.5183
949.00	102.9444
962.29	119.1470
964.08	112.0257
966.15	112.0847
968.97	102.7697
968.97	102.7697
968.97	102.7697
983.53	118.3910
996.26	109.0264
1001.03	99.4081
1004.73	130.7122
1037.84	118.9715
1038.76	0.0000
1048.07	111.3723
1050.41	118.3398
1050.41	118.3398
1063.66	117.7168
1085.87	116.3335
1099.45	109.7091
1112.07	114.8805
1115.54	114.9693

1120.29	123.6847
1120.29	123.6847
1120.55	123.6897
1121.30	118.5552
1131.51	0.0000
1173.23	156.1243
1177.93	140.0439
1189.05	148.5189
1204.77	153.0945
1221.41	152.6074
1231.02	128.4323
1235.36	153.2028
1238.28	137.7295
1260.41	0.0000
1271.85	98.3205
1274.44	107.6901
1274.54	107.6943
1291.59	85.2031
1298.22	0.0000
1312.11	81.3801
1332.49	75.4248
1365.19	59.0374
1368.63	0.0000
1384.29	56.2307
1408.01	56.3319
1457.56	0.0000
1460.82	31.2797
1489.16	45.3120
1505.03	41.1125
1596.21	48.0544
1620.50	38.7921
1678.03	0.0000
1690.97	22.9746
1764.49	22.0367
1764.49	22.0367
1770.23	35.6298
1771.35	39.0301
1791.20	0.0000
1836.06	21.5488

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969004

Total Uranium Activity	6.6183E+00	ug/g
Total Uranium Counting Unc.	5.2687E+00	ug/g
Total Uranium Tpu	2.6881E-06	ug/g
Total Uranium Mda	3.4230E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958216          SAMPLE ID   : G247969004   *
*  ANALYST       : MXR1            DETECTOR    : GAM23        *
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00  COUNT TIME : 0 04:00:00.00 *
*  ANALYSIS DATE : 10-MAR-2010 23:11:54.25  SAMPLE ALQT: 118.100 GRAM *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.139E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.310E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.502E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.717E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 03:25:49.75

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969005.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:25:21
Sample ID          : G247969005      Sample quantity      : 1.28630E+02 GRAM
Detector name      : GAM16            Detector geometry   : CAN
Elapsed live time  : 0 04:00:00.00    Elapsed real time  : 0 04:00:04.69 0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials   : MXR1
Abundance limit    : 75.00000         Sensitivity         : 5.00000
Batch ID           : 958216           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	63.46*	214	1183	0.98	127.11	123	8	1.49E-02	29.4	
2	3	74.89*	1056	928	0.88	149.98	146	16	7.33E-02	5.5	6.80E-01
3	3	77.12*	1737	832	0.85	154.43	146	16	1.21E-01	3.6	
4	8	84.12*	344	1168	1.25	168.43	164	28	2.39E-02	17.7	1.51E+00
5	8	87.19*	713	1092	1.29	174.57	164	28	4.95E-02	8.9	
6	8	89.90	442	770	0.97	180.00	164	28	3.07E-02	11.1	
7	8	92.87*	859	1071	1.51	185.92	164	28	5.97E-02	8.3	
8	0	129.30	184	917	0.98	258.79	255	8	1.28E-02	29.5	
9	0	154.37	184	745	0.90	308.94	306	8	1.28E-02	26.7	
10	0	185.83*	571	899	1.18	371.85	367	11	3.97E-02	11.5	
11	0	209.31*	300	735	0.97	418.82	415	9	2.09E-02	17.7	
12	4	238.60*	3577	443	0.99	477.39	471	17	2.48E-01	2.0	5.90E+00
13	4	241.40	773	576	1.58	483.00	471	17	5.37E-02	8.7	
14	0	270.29	346	472	1.72	540.77	536	10	2.40E-02	12.9	
15	0	277.38	89	432	1.15	554.95	551	8	6.19E-03	41.8	
16	0	295.21*	1141	508	1.13	590.62	585	12	7.92E-02	5.0	
17	0	299.99	218	345	1.04	600.17	597	8	1.51E-02	16.2	
18	0	328.03	158	405	0.93	656.24	652	9	1.10E-02	24.4	
19	0	338.23	670	515	0.99	676.64	671	11	4.66E-02	7.6	
20	0	351.87*	1881	439	1.23	703.92	698	11	1.31E-01	3.2	
21	0	409.40	100	293	1.34	818.99	815	8	6.98E-03	31.2	
22	0	462.86	202	232	1.20	925.90	921	9	1.41E-02	15.3	
23	0	510.70*	400	350	1.65	1021.56	1014	16	2.78E-02	13.0	
24	0	583.20*	1063	320	1.20	1166.55	1161	13	7.38E-02	4.7	
25	0	609.37*	1293	277	1.42	1218.88	1213	13	8.98E-02	4.0	
26	0	661.59	120	210	1.33	1323.30	1317	12	8.32E-03	25.9	
27	0	727.33	324	195	1.26	1454.75	1448	14	2.25E-02	10.8	
28	0	768.02	114	196	1.13	1536.11	1531	11	7.93E-03	25.6	
29	0	771.59	43	101	1.82	1543.25	1541	8	3.00E-03	43.0	
30	0	785.76	80	151	1.11	1571.60	1566	10	5.52E-03	31.3	
31	0	795.32*	108	169	1.43	1590.71	1586	13	7.51E-03	28.1	
32	0	860.33	180	129	1.42	1720.69	1714	13	1.25E-02	15.0	
33	0	911.19*	802	149	1.53	1822.38	1815	16	5.57E-02	5.0	
34	0	934.17	56	166	1.51	1868.33	1862	13	3.86E-03	49.6	
35	0	964.65	159	137	2.15	1929.27	1923	11	1.10E-02	16.4	
36	0	969.04*	427	112	1.49	1938.05	1934	10	2.97E-02	6.9	
37	0	1120.42*	330	171	1.88	2240.73	2233	17	2.29E-02	10.7	
38	0	1238.48*	81	187	0.94	2476.76	2469	13	5.62E-03	37.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1377.88	47	56	1.46	2755.43	2751	10	3.24E-03	33.2	
40	0	1401.09	41	49	3.56	2801.84	2794	14	2.87E-03	39.2	
41	0	1408.34	64	37	1.87	2816.32	2811	10	4.42E-03	22.3	
42	0	1460.92*	3093	80	1.88	2921.45	2912	19	2.15E-01	1.9	
43	0	1509.37	33	59	0.73	3018.29	3011	14	2.31E-03	52.0	
44	0	1589.58	44	86	0.69	3178.64	3170	19	3.03E-03	53.1	
45	0	1630.74	51	24	2.03	3260.91	3254	14	3.53E-03	25.0	
46	0	1729.66	67	25	2.10	3458.65	3452	16	4.63E-03	20.6	
47	0	1764.74*	241	32	1.88	3528.75	3521	16	1.67E-02	8.6	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 03:25:52

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:25:21
Sample ID         : G247969005 Sample quantity : 128.63 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA16 Detector geometry: CAN
Elapsed live time : 0 04:00:00.00 Elapsed real time: 0 04:00:04.69 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	*	3.505E+01	3.369E+00	3.787E-01	3.329E-02	92.549
CD-109	+	88.03	*	4.624E+00	9.360E-01	7.972E-01	7.682E-02	5.801
SN-126	+	64.28		9.139E-01	5.539E-01	5.372E-01	7.872E-02	1.701
	+	86.94		1.870E+00	8.457E-01	3.258E-01	1.354E-01	5.738
	+	87.57	*	4.497E-01	9.102E-02	7.788E-02	7.467E-03	5.775
BA-137M	+	661.66	*	8.095E-02	4.247E-02	4.623E-02	4.103E-03	1.751
CS-137	+	661.66	*	8.552E-02	4.487E-02	4.884E-02	4.342E-03	1.751
TL-208	+	277.37		4.197E-01	3.567E-01	4.209E-01	6.325E-02	0.997
	+	583.19	*	6.842E-01	9.382E-02	3.989E-02	3.949E-03	17.153
	+	860.56		1.094E+00	3.467E-01	3.152E-01	3.155E-02	3.470
BI-211		72.87		2.450E+00	2.232E+00	3.539E+00	2.877E-01	0.692
	+	351.06	*	5.393E+00	6.820E-01	2.188E-01	2.393E-02	24.641
BI-212	+	727.33	*	3.194E+00	8.000E-01	5.578E-01	7.148E-02	5.726
	+	785.37		5.077E+00	3.210E+00	3.616E+00	3.360E-01	1.404
		1620.50		2.048E+00	1.751E+00	3.210E+00	2.727E-01	0.638
PB-212	+	74.82		2.930E+00	4.929E-01	3.871E-01	4.948E-02	7.568
	+	77.11		2.763E+00	3.059E-01	2.222E-01	1.887E-02	12.436
	+	238.63	*	2.291E+00	2.866E-01	6.479E-02	7.697E-03	35.366
	+	300.09		2.173E+00	7.604E-01	8.680E-01	1.145E-01	2.503
BI-214	+	609.32	*	1.612E+00	2.133E-01	7.908E-02	8.397E-03	20.381
	+	1120.29		2.132E+00	5.126E-01	3.581E-01	3.862E-02	5.953
	+	1764.49		2.178E+00	4.141E-01	2.396E-01	1.983E-02	9.090
PB-214	+	74.82		5.193E+00	8.232E-01	6.862E-01	7.873E-02	7.568
	+	77.11		4.871E+00	6.725E-01	3.917E-01	4.637E-02	12.436
	+	242.00		3.004E+00	6.417E-01	3.942E-01	4.917E-02	7.620
	+	295.22		2.015E+00	3.381E-01	1.449E-01	1.952E-02	13.908
	+	351.93	*	1.957E+00	2.700E-01	7.960E-02	9.732E-03	24.588
RA-224	+	240.99	*	5.311E+00	1.092E+00	6.946E-01	7.655E-02	7.647
RA-226	+	609.32	*	1.612E+00	2.133E-01	7.908E-02	8.397E-03	20.381
	+	1120.29		2.132E+00	5.126E-01	3.581E-01	3.862E-02	5.953
	+	1764.49		2.178E+00	4.141E-01	2.396E-01	1.983E-02	9.090
AC-228	+	338.32		2.139E+00	9.605E-01	2.639E-01	1.115E-01	8.104
	+	911.20	*	2.485E+00	3.923E-01	1.591E-01	1.942E-02	15.621
	+	968.97		2.285E+00	6.446E-01	2.692E-01	6.621E-02	8.489

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		2.139E+00	9.605E-01	2.639E-01	1.115E-01	8.104
	+	911.20	*	2.485E+00	3.923E-01	1.591E-01	1.942E-02	15.621
	+	968.97		2.285E+00	6.446E-01	2.692E-01	6.621E-02	8.489
TH-228	+	74.82		2.930E+00	4.036E-01	3.871E-01	3.242E-02	7.568
	+	77.11		2.763E+00	3.059E-01	2.222E-01	1.887E-02	12.436
	+	238.63	*	2.291E+00	2.866E-01	6.479E-02	7.697E-03	35.366
	+	300.09		2.173E+00	1.515E+00	8.680E-01	5.358E-01	2.503
TH-229	+	85.43		5.665E-01	2.076E-01	2.005E-01	1.873E-02	2.825
	+	88.47		6.933E-01	1.403E-01	1.190E-01	1.141E-02	5.825
		193.51	*	2.938E-01	3.682E-01	6.146E-01	5.995E-02	0.478
		210.85		1.696E+00	7.171E-01	1.107E+00	1.131E-01	1.532
TH-232	+	338.32		2.139E+00	4.005E-01	2.639E-01	2.881E-02	8.104
	+	911.20	*	2.485E+00	3.923E-01	1.591E-01	1.942E-02	15.621
	+	968.97		2.285E+00	6.446E-01	2.692E-01	6.621E-02	8.489
TH-234	+	63.29	*	2.371E+00	1.458E+00	1.425E+00	2.540E-01	1.664
	+	92.59		4.492E+00	1.251E+00	6.531E-01	1.458E-01	6.877
U-235	+	89.96		2.890E+00	9.649E-01	8.124E-01	2.024E-01	3.557
	+	93.35		3.393E+00	9.727E-01	4.908E-01	1.144E-01	6.913
		143.76	*	8.352E-02	1.482E-01	2.361E-01	3.996E-02	0.354
		163.33		-1.009E-01	3.109E-01	4.921E-01	8.926E-02	-0.205
	+	185.72		2.372E-01	5.893E-02	4.493E-02	4.292E-03	5.278
		205.31		4.343E-01	3.746E-01	5.580E-01	1.053E-01	0.778
NP-237	+	86.48	*	1.342E+00	3.911E-01	2.350E-01	5.406E-02	5.710
		95.86		-1.563E-01	6.359E-01	9.596E-01	2.315E-01	-0.163
U-238	+	63.29	*	2.371E+00	1.458E+00	1.425E+00	2.540E-01	1.664
	+	92.59		4.492E+00	8.555E-01	6.531E-01	6.015E-02	6.877
ANH-511	+	511.00	*	1.970E-01	5.446E-02	3.112E-02	2.960E-03	6.329

---- 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	*	3.307E-02	2.459E-01	4.098E-01	4.145E-02	0.081
NA-22		1274.54	*	1.538E-02	3.184E-02	5.337E-02	4.441E-03	0.288
NA-24		1368.63	*	4.909E+00	3.184E-02	Half-Life too short		
SC-46		889.28	*	-6.928E-03	2.647E-02	4.345E-02	4.108E-03	-0.159
	+	1120.55		3.709E-01	8.564E-02	1.080E-01	9.123E-03	3.434
V-48		944.13		-9.050E-01	7.346E-01	1.117E+00	1.044E-01	-0.810
		983.53	*	1.514E-02	5.655E-02	9.532E-02	8.774E-03	0.159
		1312.11		-5.041E-02	6.616E-02	9.993E-02	8.389E-03	-0.504
CR-51		320.08	*	5.691E-02	2.896E-01	4.623E-01	5.402E-02	0.123
MN-54		834.85	*	-1.559E-02	2.709E-02	4.402E-02	4.134E-03	-0.354
CO-56		846.77	*	-1.858E-02	2.717E-02	4.356E-02	4.099E-03	-0.427
		1037.84		-8.461E-02	2.141E-01	3.432E-01	3.223E-02	-0.247
	+	1238.28		1.502E-01	1.125E-01	1.329E-01	1.127E-02	1.131
		1771.35		9.727E-02	1.865E-01	2.893E-01	2.390E-02	0.336
CO-57		122.06	*	-5.095E-03	1.692E-02	2.810E-02	2.336E-03	-0.181
		136.47		-4.295E-02	1.426E-01	2.356E-01	2.140E-02	-0.182
CO-58		810.76	*	-6.939E-03	2.698E-02	4.469E-02	4.187E-03	-0.155

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59	1099.45	*		-2.051E-03	7.054E-02	1.156E-01	1.075E-02	-0.018
	1291.59			7.594E-02	9.395E-02	1.608E-01	1.536E-02	0.472
CO-60	1173.23			-1.415E-02	3.553E-02	5.663E-02	4.553E-03	-0.250
	1332.49	*		-1.715E-02	2.937E-02	4.504E-02	3.800E-03	-0.381
ZN-65	1115.54	*		-4.107E-02	7.618E-02	1.028E-01	8.727E-03	-0.400
SE-75	121.12			-3.587E-02	9.034E-02	1.496E-01	1.622E-02	-0.240
	136.00			-1.524E-03	2.752E-02	4.578E-02	3.886E-03	-0.033
	264.66	*		8.617E-03	3.382E-02	5.215E-02	6.086E-03	0.165
	279.54			1.809E-02	8.676E-02	1.246E-01	1.526E-02	0.145
	400.66			1.621E-02	1.829E-01	3.078E-01	3.575E-02	0.053
SR-85	514.00	*		4.170E-02	3.046E-02	4.750E-02	4.516E-03	0.878
Y-88	898.04			2.340E-02	2.974E-02	5.181E-02	4.921E-03	0.452
	1836.06	*		3.420E-03	2.138E-02	3.598E-02	2.921E-03	0.095
Y-91	1204.77	*		6.137E-01	1.776E+01	2.900E+01	2.358E+00	0.021
NB-94	702.65	*		1.280E-02	2.467E-02	4.081E-02	3.689E-03	0.314
	871.09			-1.942E-03	2.357E-02	3.924E-02	3.704E-03	-0.050
NB-95	765.81	*		3.596E-02	3.960E-02	5.866E-02	5.422E-03	0.613
NB-95M	235.69	*		7.585E-02	1.006E-01	1.490E-01	1.774E-02	0.509
ZR-95	724.19			-1.385E-02	8.280E-02	1.145E-01	1.122E-02	-0.121
	756.73	*		4.142E-02	5.549E-02	9.250E-02	9.312E-03	0.448
MO-99	140.51			-4.304E+01	3.988E+01	5.864E+01	1.390E+01	-0.734
	181.07			2.347E+01	3.158E+01	4.724E+01	9.058E+00	0.497
	366.42			-1.468E+02	1.500E+02	2.411E+02	2.439E+01	-0.609
	739.50	*		1.249E+01	2.112E+01	3.492E+01	5.609E+00	0.358
	777.92			-4.204E+01	6.852E+01	9.578E+01	8.885E+00	-0.439
TC-99M	140.51	*		-3.762E+14	6.852E+01	Half-Life	too short	
RU-103	497.08	*		-6.644E-03	2.743E-02	4.472E-02	6.500E-03	-0.149
	610.33	+		1.766E+01	3.258E+00	2.425E+00	4.040E-01	7.285
RH-106	621.93	*		3.361E-02	2.251E-01	3.688E-01	5.016E-02	0.091
	1050.41			-6.852E-02	1.886E+00	3.103E+00	2.758E-01	-0.022
RU-106	621.93	*		3.361E-02	2.251E-01	3.688E-01	3.372E-02	0.091
	1050.41			-6.852E-02	1.886E+00	3.103E+00	2.758E-01	-0.022
AG-108M	433.94	*		-1.755E-02	2.047E-02	3.270E-02	3.164E-03	-0.537
	614.28			1.143E-02	2.685E-02	3.945E-02	3.729E-03	0.290
	722.91			-8.701E-03	3.222E-02	4.384E-02	4.110E-03	-0.198
AG-110M	657.76	*		-9.643E-04	2.961E-02	4.176E-02	3.822E-03	-0.023
	677.62			1.907E-01	2.292E-01	3.864E-01	3.548E-02	0.493
	706.68			-8.201E-03	1.568E-01	2.514E-01	2.336E-02	-0.033
	763.94			2.041E-01	1.340E-01	2.077E-01	1.965E-02	0.983
	884.68			-1.222E-03	3.303E-02	5.508E-02	5.344E-03	-0.022
	937.49			6.132E-02	8.764E-02	1.343E-01	1.295E-02	0.457
	1384.29			6.883E-02	1.256E-01	1.943E-01	1.696E-02	0.354
	1505.03			1.530E-02	1.762E-01	2.579E-01	2.205E-02	0.059
SN-113	391.69	*		-7.821E-03	3.020E-02	5.015E-02	4.760E-03	-0.156
CD-115	260.90			-4.492E-04	3.020E-02	Half-Life	too short	
	492.35			4.886E-05	3.020E-02	Half-Life	too short	
	527.90	*		-9.135E-06	3.020E-02	Half-Life	too short	
SN-117M	156.02			1.619E+00	2.005E+00	3.054E+00	2.694E-01	0.530
	158.56	*		1.872E-02	4.966E-02	7.451E-02	6.618E-03	0.251

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-123M	159.00	*		1.430E-02	2.176E-02	3.296E-02	2.948E-03	0.434
SB-124	602.73			-4.980E-03	2.955E-02	4.400E-02	4.070E-03	-0.113
	645.85			-7.791E-02	3.547E-01	5.670E-01	5.368E-02	-0.137
	722.78			1.334E-01	3.203E-01	4.603E-01	4.281E-02	0.290
	1690.97	*		-5.024E-02	5.009E-02	7.036E-02	6.177E-03	-0.714
SB-125	427.87	*		-2.008E-02	6.526E-02	1.075E-01	1.026E-02	-0.187
	+			463.37	8.848E-01	4.135E-01	4.169E-02	2.140
	600.60			6.364E-03	1.234E-01	2.016E-01	1.987E-02	0.032
	635.95			-1.354E-02	1.941E-01	3.136E-01	3.050E-02	-0.043
TE-125M	109.28	*		5.332E+00	6.692E+00	1.146E+01	1.185E+00	0.465
I-126	388.63			6.256E-02	1.399E-01	2.391E-01	2.237E-02	0.262
	666.33	*		1.103E-01	2.265E-01	3.312E-01	2.946E-02	0.333
	753.82			7.984E-01	1.634E+00	2.688E+00	2.475E-01	0.297
SB-126	414.70			-2.382E-02	6.718E-02	1.069E-01	9.996E-03	-0.223
	666.50			3.995E-02	7.852E-02	1.150E-01	1.023E-02	0.348
	695.00			7.291E-03	7.063E-02	1.144E-01	1.031E-02	0.064
	697.00			-1.330E-01	2.455E-01	3.830E-01	3.454E-02	-0.347
	720.70	*		1.103E-01	1.440E-01	2.125E-01	1.934E-02	0.519
	856.80			-4.383E-02	4.323E-01	6.247E-01	5.886E-02	-0.070
SB-127	252.40			2.182E+00	5.439E+00	8.756E+00	3.719E+00	0.249
	473.00			-4.331E-02	2.088E+00	3.459E+00	4.941E-01	-0.013
	685.70	*		-1.370E-03	1.716E+00	2.665E+00	3.378E-01	-0.001
	783.70			9.852E+00	5.712E+00	8.798E+00	1.212E+00	1.120
I-131	80.19			-1.365E+00	5.274E+00	6.410E+00	5.684E-01	-0.213
	284.31			-3.695E-01	1.414E+00	2.231E+00	2.741E-01	-0.166
	364.49	*		-8.669E-02	1.004E-01	1.625E-01	1.721E-02	-0.534
	636.99			1.386E+00	1.508E+00	2.561E+00	2.445E-01	0.541
TE-132	49.72			2.179E+00	2.620E+01	4.130E+01	4.809E+00	0.053
	111.76			1.362E+01	4.630E+01	7.842E+01	9.298E+00	0.174
	116.30			-7.949E+00	3.964E+01	6.618E+01	7.819E+00	-0.120
	228.16	*		4.587E-01	1.088E+00	1.781E+00	3.152E-01	0.258
BA-133	81.00			-3.455E-02	8.112E-02	9.753E-02	1.527E-02	-0.354
	+			276.40	3.882E-01	4.279E-01	6.997E-02	0.907
	302.85			1.444E-03	1.092E-01	1.543E-01	2.353E-02	0.009
	356.01	*		1.658E-02	2.961E-02	4.545E-02	6.465E-03	0.365
	383.85			-2.352E-02	2.112E-01	3.535E-01	4.621E-02	-0.067
I-133	529.87	*		7.787E-03	2.112E-01	Half-Life	too short	
	875.33			1.916E-01	2.112E-01	Half-Life	too short	
	1298.22			2.585E-01	2.112E-01	Half-Life	too short	
CS-134	563.25			2.516E-01	2.510E-01	4.303E-01	4.081E-02	0.585
	569.33			-2.797E-02	1.491E-01	2.375E-01	2.256E-02	-0.118
	604.72			-2.570E-02	2.715E-02	3.581E-02	3.316E-03	-0.718
	+			795.86	1.015E-01	5.782E-02	6.622E-02	1.533
	801.95	*		-3.829E-01	3.481E-01	4.594E-01	4.308E-02	-0.833
	1365.19			-3.839E-01	9.070E-01	1.403E+00	1.246E-01	-0.274
CS-135	268.22	*		9.817E-02	1.230E-01	1.815E-01	2.314E-02	0.541
I-135	546.56			-9.152E+12	1.230E-01	Half-Life	too short	
	836.80			-2.191E+12	1.230E-01	Half-Life	too short	
	1038.76			-2.928E+13	1.230E-01	Half-Life	too short	

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Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1131.51		-5.108E+12	1.230E-01	Half-Life	too short	
		1260.41	*	-1.129E+13	1.230E-01	Half-Life	too short	
		1457.56		2.405E+15	1.230E-01	Half-Life	too short	
		1678.03		-7.055E+12	1.230E-01	Half-Life	too short	
		1791.20		-1.124E+13	1.230E-01	Half-Life	too short	
CS-136	+	153.25		1.840E+00	9.998E-01	1.213E+00	1.259E-01	1.517
		176.60		-6.884E-02	4.046E-01	6.612E-01	6.714E-02	-0.104
		273.65		7.198E-02	5.738E-01	6.474E-01	8.036E-02	0.111
		340.55		2.707E-01	1.347E-01	2.154E-01	2.396E-02	1.257
		818.51		3.014E-02	6.045E-02	1.044E-01	9.792E-03	0.289
		1048.07	*	-2.722E-02	9.924E-02	1.580E-01	1.463E-02	-0.172
		1235.36		3.751E-01	6.158E-01	9.033E-01	1.037E-01	0.415
CE-139		165.86	*	1.478E-03	2.060E-02	3.404E-02	3.087E-03	0.043
BA-140		162.66		1.950E-01	6.862E-01	1.107E+00	1.056E-01	0.176
		304.85		-6.682E-01	1.319E+00	1.786E+00	5.410E-01	-0.374
		423.72		-3.639E-01	1.611E+00	2.658E+00	8.799E-01	-0.137
		537.26	*	2.437E-01	2.438E-01	3.962E-01	1.353E-01	0.615
LA-140	+	328.76		7.494E-01	3.761E-01	4.745E-01	5.473E-02	1.579
		487.02		-8.272E-02	1.113E-01	1.767E-01	1.766E-02	-0.468
		815.77		-1.065E-01	2.679E-01	4.397E-01	4.528E-02	-0.242
		1596.21	*	6.267E-02	7.230E-02	1.175E-01	1.001E-02	0.533
CE-141		145.44	*	-4.458E-02	5.028E-02	7.701E-02	6.737E-03	-0.579
CE-143		57.36		4.563E-03	5.028E-02	Half-Life	too short	
		293.27	*	2.958E-03	5.028E-02	Half-Life	too short	
		664.57		5.600E-03	5.028E-02	Half-Life	too short	
		721.93		6.500E-03	5.028E-02	Half-Life	too short	
CE-144		80.12		-5.354E-01	2.144E+00	2.608E+00	2.289E-01	-0.205
		133.52	*	7.979E-02	1.512E-01	2.298E-01	3.483E-02	0.347
PM-144		476.78		-3.053E-02	4.705E-02	7.547E-02	7.689E-03	-0.405
		618.01		-9.531E-03	2.297E-02	3.645E-02	3.424E-03	-0.262
		696.49	*	-2.317E-02	2.627E-02	4.008E-02	3.616E-03	-0.578
PR-144		696.51	*	-1.723E+00	1.970E+00	3.007E+00	2.712E-01	-0.573
		1489.16		1.636E+00	7.855E+00	1.344E+01	1.149E+00	0.122
PM-146		453.88	*	-7.379E-03	3.117E-02	4.972E-02	5.617E-03	-0.148
		633.25		-4.970E-01	1.022E+00	1.583E+00	6.062E-01	-0.314
		735.93		-1.689E-02	1.069E-01	1.695E-01	4.780E-02	-0.100
		747.24		4.496E-02	7.064E-02	1.170E-01	1.747E-02	0.384
ND-147	+	91.11		1.160E+00	2.832E-01	4.123E-01	4.124E-02	2.813
		319.41		8.061E-01	2.961E+00	4.742E+00	5.385E-01	0.170
		531.02	*	3.580E-02	4.747E-01	7.836E-01	1.212E-01	0.046
PM-149		285.90	*	-1.416E-04	4.747E-01	Half-Life	too short	
EU-152		121.78		4.525E-03	4.825E-02	8.103E-02	7.803E-03	0.056
		244.70		-8.048E-02	2.395E-01	3.377E-01	3.755E-02	-0.238
		344.28	*	4.002E-02	6.772E-02	1.134E-01	1.267E-02	0.353
		778.90		-6.576E-02	1.978E-01	2.971E-01	2.756E-02	-0.221
	+	964.08		9.142E-01	3.109E-01	4.472E-01	4.149E-02	2.044
		1085.87		-1.361E-01	2.964E-01	4.729E-01	4.105E-02	-0.288
		1112.07		2.848E-02	2.380E-01	3.714E-01	3.159E-02	0.077
	+	1408.01		3.554E-01	1.611E-01	2.654E-01	2.260E-02	1.339

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		69.67		-6.030E-01	1.131E+00	1.918E+00	1.511E-01	-0.314
		97.43	*	-1.091E-02	6.224E-02	9.315E-02	8.275E-03	-0.117
		103.18		-4.527E-02	7.254E-02	1.203E-01	1.037E-02	-0.376
EU-154		123.07		-3.062E-03	3.441E-02	5.747E-02	6.387E-03	-0.053
		723.31		3.589E-03	1.437E-01	2.017E-01	2.006E-02	0.018
		873.19		4.784E-02	1.956E-01	3.318E-01	4.149E-02	0.144
		996.26		-6.780E-02	2.578E-01	4.193E-01	7.437E-02	-0.162
		1004.73		-2.589E-01	1.611E-01	2.343E-01	2.813E-02	-1.105
		1274.44	*	2.732E-02	9.123E-02	1.510E-01	1.683E-02	0.181
EU-155	+	86.55		5.461E-01	1.107E-01	1.326E-01	1.266E-02	4.118
		105.31	*	6.402E-02	7.051E-02	1.213E-01	1.049E-02	0.528
TB-160	+	86.79		1.495E+00	3.025E-01	3.674E-01	3.489E-02	4.068
		197.04		-3.737E-01	4.259E-01	6.450E-01	6.351E-02	-0.579
		215.65		9.458E-01	5.518E-01	9.305E-01	9.625E-02	1.016
	+	298.57		3.161E-01	1.090E-01	1.462E-01	1.716E-02	2.163
		879.36	*	-1.207E-02	9.988E-02	1.658E-01	1.566E-02	-0.073
		962.29		4.308E-01	4.783E-01	7.323E-01	6.798E-02	0.588
		966.15		9.910E-01	2.744E-01	3.688E-01	3.418E-02	2.687
		1177.93		1.800E-01	2.788E-01	4.723E-01	3.804E-02	0.381
		1271.85		-4.877E-01	5.630E-01	8.544E-01	7.096E-02	-0.571
		80.57		-8.166E-02	2.317E-01	2.801E-01	2.472E-02	-0.291
HO-166M	+	184.41		1.884E-01	4.682E-02	4.560E-02	4.340E-03	4.133
		280.46		2.128E-03	6.613E-02	9.411E-02	1.129E-02	0.023
		410.95		3.394E-01	2.049E-01	3.246E-01	3.031E-02	1.046
		711.68	*	1.777E-02	4.437E-02	7.294E-02	6.618E-03	0.244
		752.31		-2.164E-01	2.115E-01	3.160E-01	2.908E-02	-0.685
		810.29		-3.527E-02	3.993E-02	6.343E-02	5.930E-03	-0.556
		67.75		3.999E-02	8.302E-02	1.284E-01	9.932E-03	0.312
TA-182		100.11		5.748E-02	1.167E-01	1.996E-01	1.746E-02	0.288
		152.43		9.252E-02	2.760E-01	4.143E-01	3.619E-02	0.223
		222.11		-9.410E-02	2.520E-01	4.031E-01	4.239E-02	-0.233
	+	1121.30		1.020E+00	2.355E-01	3.000E-01	2.533E-02	3.399
		1189.05		1.057E-02	2.381E-01	3.894E-01	3.149E-02	0.027
		1221.41	*	-8.751E-02	1.571E-01	2.472E-01	2.022E-02	-0.354
		1231.02		8.060E-03	4.426E-01	6.226E-01	5.107E-02	0.013
IR-192	+	295.96		1.538E+00	2.384E-01	2.333E-01	2.760E-02	6.592
		308.46		3.359E-02	7.236E-02	1.169E-01	1.357E-02	0.287
		316.51	*	-1.364E-02	2.558E-02	3.946E-02	4.510E-03	-0.346
		468.07		-2.542E-02	5.304E-02	7.929E-02	7.984E-03	-0.321
HG-203		70.83		-4.096E-01	1.007E+00	1.538E+00	2.417E-01	-0.266
		72.87		6.418E-01	5.903E-01	9.269E-01	1.415E-01	0.692
BI-207		279.20	*	6.191E-03	3.200E-02	4.592E-02	5.588E-03	0.135
		72.81		1.363E-01	1.285E-01	2.036E-01	1.654E-02	0.670
	+	74.97		8.446E-01	1.159E-01	1.679E-01	1.394E-02	5.031
		569.70		-2.486E-03	2.333E-02	3.734E-02	3.505E-03	-0.067
		1063.66	*	6.432E-03	3.481E-02	5.806E-02	5.118E-03	0.111
PB-210		1770.23		-1.537E-02	3.739E-01	5.257E-01	4.345E-02	-0.029
		46.54	*	9.854E-01	2.476E+00	3.840E+00	3.551E-01	0.257
PB-211		404.85	*	6.477E-02	5.737E-01	8.512E-01	4.130E-01	0.076

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		427.09		4.757E-01	1.105E+00	1.842E+00	8.549E-01	0.258
		832.01		-2.196E-01	7.082E-01	1.153E+00	5.996E-01	-0.190
RN-219	+	271.23		9.777E-01	2.826E-01	3.250E-01	4.241E-02	3.009
		401.81	*	-2.046E-01	2.894E-01	4.686E-01	7.158E-02	-0.437
RA-223		81.07		-8.365E-02	1.833E-01	2.203E-01	1.955E-02	-0.380
	+	83.79		3.371E-01	1.236E-01	1.515E-01	1.387E-02	2.226
		94.87		6.899E-01	3.136E-01	5.022E-01	4.541E-02	1.374
		144.24		1.947E-01	4.991E-01	7.948E-01	7.611E-02	0.245
	+	154.21		6.984E-01	3.784E-01	4.677E-01	4.485E-02	1.493
	+	269.46		7.597E-01	2.158E-01	2.524E-01	3.000E-02	3.010
		323.87	*	3.326E-01	5.240E-01	7.573E-01	1.422E-01	0.439
	+	338.28		8.488E+00	1.744E+00	1.848E+00	2.551E-01	4.593
AC-227		79.69		-4.103E-01	1.066E+00	1.285E+00	2.222E-01	-0.319
		235.96		8.354E-02	1.182E-01	1.747E-01	2.148E-02	0.478
		256.23	*	-1.211E-01	1.791E-01	2.789E-01	3.958E-02	-0.434
	+	299.98		2.390E+00	8.535E-01	1.162E+00	1.741E-01	2.057
		304.50		-4.306E-01	1.316E+00	1.819E+00	3.327E-01	-0.237
		334.37		4.541E-01	1.307E+00	1.989E+00	3.388E-01	0.228
TH-227		79.80		-4.581E-01	1.406E+00	1.700E+00	3.711E-01	-0.269
		235.96		8.354E-02	1.182E-01	1.747E-01	2.062E-02	0.478
		256.23	*	-1.211E-01	1.793E-01	2.789E-01	4.332E-02	-0.434
	+	299.98		2.390E+00	8.535E-01	1.162E+00	1.741E-01	2.057
		304.50		-4.306E-01	1.316E+00	1.819E+00	3.327E-01	-0.237
		334.37		4.541E-01	1.307E+00	1.989E+00	3.388E-01	0.228
PA-231		283.69	*	1.991E-01	1.031E+00	1.657E+00	2.779E-01	0.120
	+	301.36		1.535E+00	5.453E-01	7.377E-01	1.069E-01	2.081
TH-231		81.07		-8.365E-02	1.833E-01	2.203E-01	1.955E-02	-0.380
	+	83.79		3.371E-01	1.236E-01	1.515E-01	1.387E-02	2.226
		94.87		6.899E-01	3.136E-01	5.022E-01	4.541E-02	1.374
		144.24		1.947E-01	4.991E-01	7.948E-01	7.611E-02	0.245
	+	154.21		6.984E-01	3.784E-01	4.677E-01	4.485E-02	1.493
	+	269.46		7.597E-01	2.158E-01	2.524E-01	3.000E-02	3.010
		323.87	*	3.326E-01	5.240E-01	7.573E-01	1.422E-01	0.439
	+	338.28		8.488E+00	1.744E+00	1.848E+00	2.551E-01	4.593
PA-233	+	300.13		1.082E+00	3.950E-01	5.269E-01	8.861E-02	2.053
		311.90	*	-5.367E-03	4.525E-02	7.137E-02	8.343E-03	-0.075
		340.48		1.087E+00	5.448E-01	7.822E-01	1.952E-01	1.390
PA-234		94.67		4.025E-01	1.251E-01	1.929E-01	2.452E-02	2.086
		98.44		8.441E-02	7.803E-02	1.030E-01	5.752E-02	0.819
		111.00		-1.004E-01	1.227E-01	2.011E-01	2.400E-02	-0.499
		131.20		4.961E-02	7.893E-02	1.207E-01	1.009E-02	0.411
		569.50		-2.351E-02	2.056E-01	3.287E-01	3.086E-02	-0.072
		733.00		3.919E-03	2.986E-01	4.183E-01	9.372E-02	0.009
		880.51		-1.075E-02	1.985E-01	3.234E-01	3.055E-02	-0.033
		883.24		-7.208E-03	1.969E-01	3.282E-01	2.210E-01	-0.022
		926.50		-5.193E-02	1.276E-01	1.932E-01	4.937E-02	-0.269
		946.00	*	1.334E-01	2.167E-01	3.710E-01	7.088E-02	0.360
		949.00		3.918E-01	3.318E-01	5.853E-01	5.459E-02	0.669
PA-234M		766.42		1.756E+01	1.380E+01	1.633E+01	8.306E+00	1.075

---- 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	*		3.494E+00	3.610E+00	6.054E+00	6.304E-01	0.577
	99.53			6.227E-02	1.097E-01	1.848E-01	1.621E-02	0.337
	103.37			-2.133E-02	6.499E-02	1.087E-01	9.362E-03	-0.196
	106.12			1.248E-02	5.650E-02	9.577E-02	8.161E-03	0.130
	117.23	*		-1.593E-01	2.634E-01	4.341E-01	3.614E-02	-0.367
	228.18			6.564E-02	1.540E-01	2.526E-01	2.697E-02	0.260
AM-241	+	277.60		1.919E-01	1.621E-01	2.114E-01	2.530E-02	0.908
CM-247	+	59.54	*	-4.571E-03	1.178E-01	1.687E-01	1.323E-02	-0.027
	+	278.00		8.148E-01	6.884E-01	8.957E-01	1.073E-01	0.910
CF-249		287.50		3.560E-01	8.735E-01	1.414E+00	1.684E-01	0.252
		402.40	*	-1.645E-02	2.660E-02	4.342E-02	4.037E-03	-0.379
		252.80		2.028E-01	6.470E-01	1.052E+00	1.193E-01	0.193
		333.37		1.011E-01	1.566E-01	2.078E-01	2.294E-02	0.486
CF-251		388.16	*	2.124E-02	2.803E-02	4.838E-02	4.535E-03	0.439
		177.52	*	-2.226E-02	8.827E-02	1.438E-01	1.344E-02	-0.155
		227.38		-1.118E-01	2.524E-01	4.020E-01	4.285E-02	-0.278
		285.41		-1.320E+00	1.585E+00	2.431E+00	2.901E-01	-0.543

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]G247969005      *
* Acquisition date   : 10-MAR-2010 23:25:21 Detector SN#                   *
* Detector ID        : GAM16 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 04:00:04.69 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247969005 Analyst initials: MXR1                  *
* Batch Number       : 958216 Sample Quantity : 1.2863E+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	3.505E+01	3.302E+00	3.788E-01	0.000E+00
CD-109	4.624E+00	9.172E-01	8.327E-01	0.000E+00
SN-126	4.497E-01	8.920E-02	8.135E-02	0.000E+00
BA-137M	8.095E-02	4.162E-02	4.683E-02	0.000E+00
CS-137	8.552E-02	4.397E-02	4.947E-02	0.000E+00
TL-208	6.842E-01	9.194E-02	4.048E-02	0.000E+00
BI-211	5.393E+00	6.684E-01	2.239E-01	0.000E+00
BI-212	3.194E+00	7.840E-01	5.642E-01	0.000E+00
PB-212	2.291E+00	2.809E-01	6.667E-02	0.000E+00
BI-214	1.612E+00	2.090E-01	8.020E-02	0.000E+00
PB-214	1.957E+00	2.646E-01	8.142E-02	0.000E+00
RA-224	5.311E+00	1.070E+00	7.146E-01	0.000E+00
RA-226	1.612E+00	2.090E-01	8.020E-02	0.000E+00
AC-228	2.485E+00	3.844E-01	1.603E-01	0.000E+00
RA-228	2.485E+00	3.844E-01	1.603E-01	0.000E+00
TH-228	2.291E+00	2.809E-01	6.667E-02	0.000E+00
TH-229	2.938E-01	3.608E-01	6.344E-01	0.000E+00
TH-232	2.485E+00	3.844E-01	1.603E-01	0.000E+00
TH-234	2.371E+00	1.429E+00	1.495E+00	0.000E+00
U-235	8.352E-02	1.453E-01	2.448E-01	0.000E+00
NP-237	1.342E+00	3.832E-01	2.455E-01	0.000E+00
U-238	2.371E+00	1.429E+00	1.495E+00	0.000E+00
ANH-511	1.970E-01	5.338E-02	3.165E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	3.307E-02	2.409E-01	4.172E-01	0.000E+00 NOT IDENT.
NA-22	1.538E-02	3.121E-02	5.350E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.094E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-6.928E-03	2.594E-02	4.381E-02	0.000E+00 FAIL ABUN

V-48	1.514E-02	5.541E-02	9.595E-02	0.000E+00	NOT IDENT.
CR-51	5.691E-02	2.838E-01	4.735E-01	0.000E+00	NOT IDENT.
MN-54	-1.559E-02	2.655E-02	4.442E-02	0.000E+00	NOT IDENT.
CO-56	-1.858E-02	2.663E-02	4.395E-02	0.000E+00	FAIL ABUN
CO-57	-5.095E-03	1.659E-02	2.921E-02	0.000E+00	NOT IDENT.
CO-58	-6.939E-03	2.644E-02	4.513E-02	0.000E+00	NOT IDENT.
FE-59	-2.051E-03	6.913E-02	1.162E-01	0.000E+00	NOT IDENT.
CO-60	-1.715E-02	2.879E-02	4.512E-02	0.000E+00	NOT IDENT.
ZN-65	-4.107E-02	7.465E-02	1.032E-01	0.000E+00	NOT IDENT.
SE-75	8.617E-03	3.315E-02	5.357E-02	0.000E+00	NOT IDENT.
SR-85	4.170E-02	2.985E-02	4.830E-02	0.000E+00	NOT IDENT.
Y-88	3.420E-03	2.095E-02	3.585E-02	0.000E+00	NOT IDENT.
Y-91	6.137E-01	1.741E+01	2.910E+01	0.000E+00	NOT IDENT.
NB-94	1.280E-02	2.418E-02	4.130E-02	0.000E+00	NOT IDENT.
NB-95	3.596E-02	3.881E-02	5.928E-02	0.000E+00	NOT IDENT.
NB-95M	7.585E-02	9.860E-02	1.533E-01	0.000E+00	NOT IDENT.
ZR-95	4.142E-02	5.438E-02	9.349E-02	0.000E+00	NOT IDENT.
MO-99	1.249E+01	2.069E+01	3.531E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.547E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.644E-03	2.688E-02	4.550E-02	0.000E+00	FAIL ABUN
RH-106	3.361E-02	2.206E-01	3.739E-01	0.000E+00	NOT IDENT.
RU-106	3.361E-02	2.206E-01	3.739E-01	0.000E+00	NOT IDENT.
AG-108M	-1.755E-02	2.006E-02	3.334E-02	0.000E+00	NOT IDENT.
AG-110M	-9.643E-04	2.902E-02	4.230E-02	0.000E+00	NOT IDENT.
SN-113	-7.821E-03	2.960E-02	5.121E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.242E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.872E-02	4.867E-02	7.715E-02	0.000E+00	NOT IDENT.
TE-123M	1.430E-02	2.133E-02	3.413E-02	0.000E+00	NOT IDENT.
SB-124	-5.024E-02	4.909E-02	7.022E-02	0.000E+00	NOT IDENT.
SB-125	-2.008E-02	6.395E-02	1.096E-01	0.000E+00	FAIL ABUN
TE-125M	5.332E+00	6.558E+00	1.193E+01	0.000E+00	NOT IDENT.
I-126	1.103E-01	2.220E-01	3.355E-01	0.000E+00	NOT IDENT.
SB-126	1.103E-01	1.412E-01	2.149E-01	0.000E+00	NOT IDENT.
SB-127	-1.370E-03	1.681E+00	2.698E+00	0.000E+00	NOT IDENT.
I-131	-8.669E-02	9.839E-02	1.661E-01	0.000E+00	NOT IDENT.
TE-132	4.587E-01	1.066E+00	1.833E+00	0.000E+00	NOT IDENT.
BA-133	1.658E-02	2.902E-02	4.649E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	6.016E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.666E-02	6.688E-02	0.000E+00	FAIL ABUN
CS-135	9.817E-02	1.205E-01	1.864E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.693E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.722E-02	9.725E-02	1.589E-01	0.000E+00	FAIL ABUN
CE-139	1.478E-03	2.019E-02	3.522E-02	0.000E+00	NOT IDENT.
BA-140	2.437E-01	2.389E-01	4.026E-01	0.000E+00	NOT IDENT.
LA-140	6.267E-02	7.085E-02	1.173E-01	0.000E+00	FAIL ABUN
CE-141	-4.458E-02	4.927E-02	7.984E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	9.566E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	7.979E-02	1.482E-01	2.385E-01	0.000E+00	NOT IDENT.
PM-144	-2.317E-02	2.574E-02	4.057E-02	0.000E+00	NOT IDENT.
PR-144	-1.723E+00	1.931E+00	3.044E+00	0.000E+00	NOT IDENT.
PM-146	-7.379E-03	3.054E-02	5.066E-02	0.000E+00	NOT IDENT.
ND-147	3.580E-02	4.652E-01	7.965E-01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.881E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.002E-02	6.636E-02	1.161E-01	0.000E+00	FAIL ABUN
GD-153	-1.091E-02	6.100E-02	9.715E-02	0.000E+00	NOT IDENT.
EU-154	2.732E-02	8.940E-02	1.514E-01	0.000E+00	NOT IDENT.
EU-155	6.402E-02	6.910E-02	1.263E-01	0.000E+00	FAIL ABUN
TB-160	-1.207E-02	9.788E-02	1.672E-01	0.000E+00	FAIL ABUN
HO-166M	1.777E-02	4.348E-02	7.380E-02	0.000E+00	FAIL ABUN
TA-182	-8.751E-02	1.540E-01	2.480E-01	0.000E+00	FAIL ABUN
IR-192	-1.364E-02	2.507E-02	4.043E-02	0.000E+00	FAIL ABUN
HG-203	6.191E-03	3.136E-02	4.714E-02	0.000E+00	NOT IDENT.
BI-207	6.432E-03	3.411E-02	5.837E-02	0.000E+00	FAIL ABUN
PB-210	9.854E-01	2.426E+00	4.049E+00	0.000E+00	NOT IDENT.
PB-211	6.477E-02	5.623E-01	8.688E-01	0.000E+00	NOT IDENT.
RN-219	-2.046E-01	2.837E-01	4.783E-01	0.000E+00	FAIL ABUN
RA-223	3.326E-01	5.135E-01	7.756E-01	0.000E+00	FAIL ABUN
AC-227	-1.211E-01	1.755E-01	2.867E-01	0.000E+00	FAIL ABUN
TH-227	-1.211E-01	1.757E-01	2.867E-01	0.000E+00	FAIL ABUN
PA-231	1.991E-01	1.010E+00	1.701E+00	0.000E+00	FAIL ABUN
TH-231	3.326E-01	5.135E-01	7.756E-01	0.000E+00	FAIL ABUN
PA-233	-5.367E-03	4.435E-02	7.314E-02	0.000E+00	FAIL ABUN
PA-234	1.334E-01	2.123E-01	3.737E-01	0.000E+00	NOT IDENT.
PA-234M	3.494E+00	3.538E+00	6.093E+00	0.000E+00	NOT IDENT.
NP-239	-1.593E-01	2.581E-01	4.515E-01	0.000E+00	FAIL ABUN
AM-241	-4.571E-03	1.154E-01	1.772E-01	0.000E+00	NOT IDENT.
CM-247	-1.645E-02	2.607E-02	4.432E-02	0.000E+00	FAIL ABUN
CF-249	2.124E-02	2.747E-02	4.941E-02	0.000E+00	NOT IDENT.

CF-251	-2.226E-02	8.651E-02	1.487E-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]G247969005.CNF;1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 23:25:21
Sample ID        : G247969005 Sample quantity : 1.28630E+02 GRAM
Detector name    : GAM16 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:04.69 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 958216 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	3093	10.66*	1.208E+00	3.505E+01	3.505E+01	9.61
CD-109	88.03	713	3.70*	6.255E+00	4.497E+00	4.624E+00	20.24
SN-126	64.28	214	9.60	3.556E+00	9.139E-01	9.139E-01	60.61
	86.94	713	8.90	6.255E+00	1.870E+00	1.870E+00	45.23
	87.57	713	37.00*	6.255E+00	4.497E-01	4.497E-01	20.24
BA-137M	661.66	120	89.90*	2.405E+00	8.086E-02	8.095E-02	52.47
CS-137	661.66	120	85.10*	2.405E+00	8.542E-02	8.552E-02	52.47
TL-208	277.37	89	6.60	4.694E+00	4.197E-01	4.197E-01	84.97
	583.19	1063	85.00*	2.668E+00	6.842E-01	6.842E-01	13.71
	860.56	180	12.50	1.920E+00	1.094E+00	1.094E+00	31.69
BI-211	72.87	-----	1.23	4.872E+00	-----	Line Not Found	-----
	351.06	1881	12.92*	3.940E+00	5.393E+00	5.393E+00	12.65
BI-212	727.33	324	6.67*	2.221E+00	3.194E+00	3.194E+00	25.05
	785.37	80	1.10	2.078E+00	5.077E+00	5.077E+00	63.23
	1620.50	-----	1.47	1.117E+00	-----	Line Not Found	-----
PB-212	74.82	1056	10.28	5.115E+00	2.930E+00	2.930E+00	16.82
	77.11	1737	17.10	5.364E+00	2.763E+00	2.763E+00	11.07
	238.63	3577	43.60*	5.225E+00	2.291E+00	2.291E+00	12.51
	300.09	218	3.30	4.434E+00	2.173E+00	2.173E+00	35.00
BI-214	609.32	1293	45.49*	2.574E+00	1.612E+00	1.612E+00	13.24
	1120.29	330	14.92	1.516E+00	2.132E+00	2.132E+00	24.05
	1764.49	241	15.30	1.056E+00	2.178E+00	2.178E+00	19.01
PB-214	74.82	1056	5.80	5.115E+00	5.193E+00	5.193E+00	15.85
	77.11	1737	9.70	5.364E+00	4.871E+00	4.871E+00	13.81
	242.00	773	7.25	5.183E+00	3.004E+00	3.004E+00	21.37
	295.22	1141	18.42	4.486E+00	2.015E+00	2.015E+00	16.78
	351.93	1881	35.60*	3.940E+00	1.957E+00	1.957E+00	13.80
RA-224	240.99	773	4.10*	5.183E+00	5.311E+00	5.311E+00	20.57
RA-226	609.32	1293	45.49*	2.574E+00	1.612E+00	1.612E+00	13.24
	1120.29	330	14.92	1.516E+00	2.132E+00	2.132E+00	24.05
	1764.49	241	15.30	1.056E+00	2.178E+00	2.178E+00	19.01
AC-228	338.32	670	11.27	4.058E+00	2.139E+00	2.139E+00	44.91

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	802	25.80*	1.824E+00	2.485E+00	2.485E+00	15.79
	968.97	427	15.80	1.727E+00	2.285E+00	2.285E+00	28.21
	338.32	670	11.27	4.058E+00	2.139E+00	2.139E+00	44.91
	911.20	802	25.80*	1.824E+00	2.485E+00	2.485E+00	15.79
TH-228	968.97	427	15.80	1.727E+00	2.285E+00	2.285E+00	28.21
	74.82	1056	10.28	5.115E+00	2.930E+00	2.930E+00	13.77
	77.11	1737	17.10	5.364E+00	2.763E+00	2.763E+00	11.07
	238.63	3577	43.60*	5.225E+00	2.291E+00	2.291E+00	12.51
TH-229	300.09	218	3.30	4.434E+00	2.173E+00	2.173E+00	69.72
	85.43	344	14.70	6.023E+00	5.665E-01	5.665E-01	36.65
	88.47	713	24.00	6.255E+00	6.933E-01	6.933E-01	20.24
	193.51	-----	4.41*	5.998E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	5.681E+00	-----	Line Not Found	-----
	338.32	670	11.27	4.058E+00	2.139E+00	2.139E+00	18.72
	911.20	802	25.80*	1.824E+00	2.485E+00	2.485E+00	15.79
	968.97	427	15.80	1.727E+00	2.285E+00	2.285E+00	28.21
TH-234	63.29	214	3.70*	3.556E+00	2.371E+00	2.371E+00	61.48
	92.59	859	4.23	6.599E+00	4.492E+00	4.492E+00	27.86
U-235	89.96	442	3.47	6.432E+00	2.890E+00	2.890E+00	33.39
	93.35	859	5.60	6.599E+00	3.393E+00	3.393E+00	28.67
	143.76	-----	10.96*	6.943E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.588E+00	-----	Line Not Found	-----
NP-237	185.72	571	57.20	6.146E+00	2.372E-01	2.372E-01	24.85
	205.31	-----	5.01	5.780E+00	-----	Line Not Found	-----
	86.48	713	12.40*	6.255E+00	1.342E+00	1.342E+00	29.14
	95.86	-----	2.68	6.742E+00	-----	Line Not Found	-----
U-238	63.29	214	3.70*	3.556E+00	2.371E+00	2.371E+00	61.48
	92.59	859	4.23	6.599E+00	4.492E+00	4.492E+00	19.05
ANH-511	511.00	400	100.00*	2.965E+00	1.970E-01	1.970E-01	27.65

Flag: "*" = Keyline

Total number of lines in spectrum 47
Number of unidentified lines 12
Number of lines tentatively identified by NID 35 74.47%

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	3.505E+01	3.505E+01	0.337E+01	9.61	
CD-109	461.40D	1.03	4.497E+00	4.624E+00	0.936E+00	20.24	
SN-126	2.30E+05Y	1.00	4.497E-01	4.497E-01	0.910E-01	20.24	
BA-137M	30.08Y	1.00	8.086E-02	8.095E-02	4.247E-02	52.47	
CS-137	30.08Y	1.00	8.542E-02	8.552E-02	4.487E-02	52.47	
TL-208	1.41E+10Y	1.00	6.842E-01	6.842E-01	0.938E-01	13.71	
BI-211	7.04E+08Y	1.00	5.393E+00	5.393E+00	0.682E+00	12.65	
BI-212	1.41E+10Y	1.00	3.194E+00	3.194E+00	0.800E+00	25.05	
PB-212	1.41E+10Y	1.00	2.291E+00	2.291E+00	0.287E+00	12.51	
BI-214	1600.00Y	1.00	1.612E+00	1.612E+00	0.213E+00	13.24	
PB-214	1600.00Y	1.00	1.957E+00	1.957E+00	0.270E+00	13.80	
RA-224	1.41E+10Y	1.00	5.311E+00	5.311E+00	1.092E+00	20.57	
RA-226	1600.00Y	1.00	1.612E+00	1.612E+00	0.213E+00	13.24	
AC-228	1.41E+10Y	1.00	2.485E+00	2.485E+00	0.392E+00	15.79	
RA-228	1.41E+10Y	1.00	2.485E+00	2.485E+00	0.392E+00	15.79	
TH-228	1.41E+10Y	1.00	2.291E+00	2.291E+00	0.287E+00	12.51	
TH-229	7340.00Y	1.00	6.933E-01	6.933E-01	1.403E-01	20.24	K
TH-232	1.41E+10Y	1.00	2.485E+00	2.485E+00	0.392E+00	15.79	
TH-234	4.47E+09Y	1.00	2.371E+00	2.371E+00	1.458E+00	61.48	
U-235	7.04E+08Y	1.00	2.372E-01	2.372E-01	0.589E-01	24.85	K
NP-237	2.14E+06Y	1.00	1.342E+00	1.342E+00	0.391E+00	29.14	
U-238	4.47E+09Y	1.00	2.371E+00	2.371E+00	1.458E+00	61.48	
ANH-511	1.00E+09Y	1.00	1.970E-01	1.970E-01	0.545E-01	27.65	

Total Activity : 7.918E+01 7.931E+01

Grand Total Activity : 7.918E+01 7.931E+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	129.30	184	917	0.98	258.79	255	8	1.28E-02	59.0	7.13E+00	
0	154.37	184	745	0.90	308.94	306	8	1.28E-02	53.3	6.76E+00	T
0	209.31	300	735	0.97	418.82	415	9	2.09E-02	35.4	5.71E+00	
0	270.29	346	472	1.72	540.77	536	10	2.40E-02	25.8	4.78E+00	T
0	328.03	158	405	0.93	656.24	652	9	1.10E-02	48.8	4.15E+00	T
0	409.40	100	293	1.34	818.99	815	8	6.98E-03	62.3	3.52E+00	
0	462.86	202	232	1.20	925.90	921	9	1.41E-02	30.5	3.20E+00	T
0	768.02	114	196	1.13	1536.11	1531	11	7.93E-03	51.2	2.12E+00	
0	771.59	43	101	1.82	1543.25	1541	8	3.00E-03	85.9	2.11E+00	
0	795.32	108	169	1.43	1590.71	1586	13	7.51E-03	56.2	2.06E+00	T
0	934.17	56	166	1.51	1868.33	1862	13	3.86E-03	99.1	1.78E+00	
0	964.65	159	137	2.15	1929.27	1923	11	1.10E-02	32.7	1.73E+00	T
0	1238.48	81	187	0.94	2476.76	2469	13	5.62E-03	74.4	1.39E+00	T
0	1377.88	47	56	1.46	2755.43	2751	10	3.24E-03	66.4	1.27E+00	
0	1401.09	41	49	3.56	2801.84	2794	14	2.87E-03	78.3	1.25E+00	
0	1408.34	64	37	1.87	2816.32	2811	10	4.42E-03	44.5	1.24E+00	T
0	1509.37	33	59	0.73	3018.29	3011	14	2.31E-03	****	1.18E+00	
0	1589.58	44	86	0.69	3178.64	3170	19	3.03E-03	****	1.13E+00	
0	1630.74	51	24	2.03	3260.91	3254	14	3.53E-03	49.9	1.11E+00	
0	1729.66	67	25	2.10	3458.65	3452	16	4.63E-03	41.1	1.07E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969005.CNF;1 *
* Acquisition date   : 10-MAR-2010 23:25:21  Detector SN#      :             *
* Detector ID        : GAM16                  Sensitivity       : 5.00000      *
* Geometry           : CAN                    Energy tolerance  : 1.50000      *
* Elapsed live time  : 0 04:00:00.00          Abundance limit    : 75.00000      *
* Elapsed real time  : 0 04:00:04.69          Half life ratio  : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00  Nuclide Library   : SOLID        *
* Sample ID          : G247969005           Analyst initials: MXR1          *
* Batch Number       : 958216               Sample Quantity  : 1.28630E+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	3.505E+01	3.369E+00	3.787E-01	3.329E-02	92.549
CD-109	4.624E+00	9.360E-01	7.972E-01	7.682E-02	5.801
SN-126	4.497E-01	9.102E-02	7.788E-02	7.467E-03	5.775
BA-137M	8.095E-02	4.247E-02	4.623E-02	4.103E-03	1.751
CS-137	8.552E-02	4.487E-02	4.884E-02	4.342E-03	1.751
TL-208	6.842E-01	9.382E-02	3.989E-02	3.949E-03	17.153
BI-211	5.393E+00	6.820E-01	2.188E-01	2.393E-02	24.641
BI-212	3.194E+00	8.000E-01	5.578E-01	7.148E-02	5.726
PB-212	2.291E+00	2.866E-01	6.479E-02	7.697E-03	35.366
BI-214	1.612E+00	2.133E-01	7.908E-02	8.397E-03	20.381
PB-214	1.957E+00	2.700E-01	7.960E-02	9.732E-03	24.588
RA-224	5.311E+00	1.092E+00	6.946E-01	7.655E-02	7.647
RA-226	1.612E+00	2.133E-01	7.908E-02	8.397E-03	20.381
AC-228	2.485E+00	3.923E-01	1.591E-01	1.942E-02	15.621
RA-228	2.485E+00	3.923E-01	1.591E-01	1.942E-02	15.621
TH-228	2.291E+00	2.866E-01	6.479E-02	7.697E-03	35.366
TH-229	6.933E-01	1.403E-01	6.146E-01	5.995E-02	1.128
TH-232	2.485E+00	3.923E-01	1.591E-01	1.942E-02	15.621

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	2.371E+00	1.458E+00	1.425E+00	2.540E-01	1.664
U-235	2.372E-01	5.893E-02	2.361E-01	3.996E-02	1.004
NP-237	1.342E+00	3.911E-01	2.350E-01	5.406E-02	5.710
U-238	2.371E+00	1.458E+00	1.425E+00	2.540E-01	1.664
ANH-511	1.970E-01	5.446E-02	3.112E-02	2.960E-03	6.329

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.307E-02		2.459E-01	4.098E-01	4.145E-02	0.081
NA-22	1.538E-02		3.184E-02	5.337E-02	4.441E-03	0.288
NA-24	4.909E+00		1.068E+01	Half-Life too short		
SC-46	-6.928E-03		2.647E-02	4.345E-02	4.108E-03	-0.159
V-48	1.514E-02		5.655E-02	9.532E-02	8.774E-03	0.159
CR-51	5.691E-02		2.896E-01	4.623E-01	5.402E-02	0.123
MN-54	-1.559E-02		2.709E-02	4.402E-02	4.134E-03	-0.354
CO-56	-1.858E-02		2.717E-02	4.356E-02	4.099E-03	-0.427
CO-57	-5.095E-03		1.692E-02	2.810E-02	2.336E-03	-0.181
CO-58	-6.939E-03		2.698E-02	4.469E-02	4.187E-03	-0.155
FE-59	-2.051E-03		7.054E-02	1.156E-01	1.075E-02	-0.018
CO-60	-1.715E-02		2.937E-02	4.504E-02	3.800E-03	-0.381
ZN-65	-4.107E-02		7.618E-02	1.028E-01	8.727E-03	-0.400
SE-75	8.617E-03		3.382E-02	5.215E-02	6.086E-03	0.165
SR-85	4.170E-02		3.046E-02	4.750E-02	4.516E-03	0.878
Y-88	3.420E-03		2.138E-02	3.598E-02	2.921E-03	0.095
Y-91	6.137E-01		1.776E+01	2.900E+01	2.358E+00	0.021
NB-94	1.280E-02		2.467E-02	4.081E-02	3.689E-03	0.314
NB-95	3.596E-02		3.960E-02	5.866E-02	5.422E-03	0.613
NB-95M	7.585E-02		1.006E-01	1.490E-01	1.774E-02	0.509
ZR-95	4.142E-02		5.549E-02	9.250E-02	9.312E-03	0.448
MO-99	1.249E+01		2.112E+01	3.492E+01	5.609E+00	0.358
TC-99M	-3.762E+14		1.810E+14	Half-Life too short		
RU-103	-6.644E-03		2.743E-02	4.472E-02	6.500E-03	-0.149
RH-106	3.361E-02		2.251E-01	3.688E-01	5.016E-02	0.091
RU-106	3.361E-02		2.251E-01	3.688E-01	3.372E-02	0.091
AG-108M	-1.755E-02		2.047E-02	3.270E-02	3.164E-03	-0.537
AG-110M	-9.643E-04		2.961E-02	4.176E-02	3.822E-03	-0.023
SN-113	-7.821E-03		3.020E-02	5.015E-02	4.760E-03	-0.156
CD-115	-9.135E-06		1.144E-05	Half-Life too short		
SN-117M	1.872E-02		4.966E-02	7.451E-02	6.618E-03	0.251
TE-123M	1.430E-02		2.176E-02	3.296E-02	2.948E-03	0.434
SB-124	-5.024E-02		5.009E-02	7.036E-02	6.177E-03	-0.714
SB-125	-2.008E-02		6.526E-02	1.075E-01	1.026E-02	-0.187
TE-125M	5.332E+00		6.692E+00	1.146E+01	1.185E+00	0.465
I-126	1.103E-01		2.265E-01	3.312E-01	2.946E-02	0.333
SB-126	1.103E-01		1.440E-01	2.125E-01	1.934E-02	0.519
SB-127	-1.370E-03		1.716E+00	2.665E+00	3.378E-01	-0.001

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-8.669E-02		1.004E-01	1.625E-01	1.721E-02	-0.534
TE-132	4.587E-01		1.088E+00	1.781E+00	3.152E-01	0.258
BA-133	1.658E-02		2.961E-02	4.545E-02	6.465E-03	0.365
I-133	7.787E-03		3.070E-02	Half-Life too short		
CS-134	1.015E-01	+	5.782E-02	6.622E-02	6.208E-03	1.533
CS-135	9.817E-02		1.230E-01	1.815E-01	2.314E-02	0.541
I-135	-1.129E+13		1.374E+13	Half-Life too short		
CS-136	-2.722E-02		9.924E-02	1.580E-01	1.463E-02	-0.172
CE-139	1.478E-03		2.060E-02	3.404E-02	3.087E-03	0.043
BA-140	2.437E-01		2.438E-01	3.962E-01	1.353E-01	0.615
LA-140	6.267E-02		7.230E-02	1.175E-01	1.001E-02	0.533
CE-141	-4.458E-02		5.028E-02	7.701E-02	6.737E-03	-0.579
CE-143	2.958E-03		4.881E-04	Half-Life too short		
CE-144	7.979E-02		1.512E-01	2.298E-01	3.483E-02	0.347
PM-144	-2.317E-02		2.627E-02	4.008E-02	3.616E-03	-0.578
PR-144	-1.723E+00		1.970E+00	3.007E+00	2.712E-01	-0.573
PM-146	-7.379E-03		3.117E-02	4.972E-02	5.617E-03	-0.148
ND-147	3.580E-02		4.747E-01	7.836E-01	1.212E-01	0.046
PM-149	-1.416E-04		9.595E-05	Half-Life too short		
EU-152	4.002E-02		6.772E-02	1.134E-01	1.267E-02	0.353
GD-153	-1.091E-02		6.224E-02	9.315E-02	8.275E-03	-0.117
EU-154	2.732E-02		9.123E-02	1.510E-01	1.683E-02	0.181
EU-155	6.402E-02		7.051E-02	1.213E-01	1.049E-02	0.528
TB-160	-1.207E-02		9.988E-02	1.658E-01	1.566E-02	-0.073
HO-166M	1.777E-02		4.437E-02	7.294E-02	6.618E-03	0.244
TA-182	-8.751E-02		1.571E-01	2.472E-01	2.022E-02	-0.354
IR-192	-1.364E-02		2.558E-02	3.946E-02	4.510E-03	-0.346
HG-203	6.191E-03		3.200E-02	4.592E-02	5.588E-03	0.135
BI-207	6.432E-03		3.481E-02	5.806E-02	5.118E-03	0.111
PB-210	9.854E-01		2.476E+00	3.840E+00	3.551E-01	0.257
PB-211	6.477E-02		5.737E-01	8.512E-01	4.130E-01	0.076
RN-219	-2.046E-01		2.894E-01	4.686E-01	7.158E-02	-0.437
RA-223	3.326E-01		5.240E-01	7.573E-01	1.422E-01	0.439
AC-227	-1.211E-01		1.791E-01	2.789E-01	3.958E-02	-0.434
TH-227	-1.211E-01		1.793E-01	2.789E-01	4.332E-02	-0.434
PA-231	1.991E-01		1.031E+00	1.657E+00	2.779E-01	0.120
TH-231	3.326E-01		5.240E-01	7.573E-01	1.422E-01	0.439
PA-233	-5.367E-03		4.525E-02	7.137E-02	8.343E-03	-0.075
PA-234	1.334E-01		2.167E-01	3.710E-01	7.088E-02	0.360
PA-234M	3.494E+00		3.610E+00	6.054E+00	6.304E-01	0.577
NP-239	-1.593E-01		2.634E-01	4.341E-01	3.614E-02	-0.367
AM-241	-4.571E-03		1.178E-01	1.687E-01	1.323E-02	-0.027
CM-247	-1.645E-02		2.660E-02	4.342E-02	4.037E-03	-0.379
CF-249	2.124E-02		2.803E-02	4.838E-02	4.535E-03	0.439
CF-251	-2.226E-02		8.827E-02	1.438E-01	1.344E-02	-0.155

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247969005             *
* Acquisition date   : 10-MAR-2010 23:25:21 Detector SN# :                     *
* Detector ID        : GAM16          Sensitivity       : 5.000                *
* Geometry           : CAN            Energy tolerance   : 1.500                *
* Elapsed live time  : 0 04:00:00.00  Abundance limit    : 75.000                *
* Elapsed real time  : 0 04:00:04.69  Half life ratio    : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G247969005     Analyst initials:  MXR1                 *
* Batch Number       : 958216         Sample Quantity  : 1.2863E+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	3.505E+01	3.302E+00	1.895E-01	1.684E+00
CD-109	4.624E+00	9.172E-01	4.166E-01	4.680E-01
SN-126	4.497E-01	8.920E-02	4.070E-02	4.551E-02
BA-137M	8.095E-02	4.162E-02	2.343E-02	2.124E-02
CS-137	8.552E-02	4.397E-02	2.475E-02	2.244E-02
TL-208	6.842E-01	9.194E-02	2.025E-02	4.691E-02
BI-211	5.393E+00	6.684E-01	1.120E-01	3.410E-01
BI-212	3.194E+00	7.840E-01	2.822E-01	4.000E-01
PB-212	2.291E+00	2.809E-01	3.336E-02	1.433E-01
BI-214	1.612E+00	2.090E-01	4.013E-02	1.067E-01
PB-214	1.957E+00	2.646E-01	4.074E-02	1.350E-01
RA-224	5.311E+00	1.070E+00	3.575E-01	5.461E-01
RA-226	1.612E+00	2.090E-01	4.013E-02	1.067E-01
AC-228	2.485E+00	3.844E-01	8.021E-02	1.961E-01
RA-228	2.485E+00	3.844E-01	8.021E-02	1.961E-01
TH-228	2.291E+00	2.809E-01	3.336E-02	1.433E-01
TH-229	2.938E-01	3.608E-01	3.174E-01	1.841E-01
TH-232	2.485E+00	3.844E-01	8.021E-02	1.961E-01
TH-234	2.371E+00	1.429E+00	7.481E-01	7.290E-01
U-235	8.352E-02	1.453E-01	1.225E-01	7.412E-02
NP-237	1.342E+00	3.832E-01	1.228E-01	1.955E-01
U-238	2.371E+00	1.429E+00	7.481E-01	7.290E-01
ANH-511	1.970E-01	5.338E-02	1.583E-02	2.723E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	3.307E-02	2.409E-01	2.087E-01	1.229E-01 NOT IDENT.
NA-22	1.538E-02	3.121E-02	2.677E-02	1.592E-02 NOT IDENT.
NA-24	4.909E+06	2.094E+07	0.000E+00	1.068E+07 SHORT HLIF
SC-46	-6.928E-03	2.594E-02	2.192E-02	1.323E-02 FAIL ABUN

V-48	1.514E-02	5.541E-02	4.800E-02	2.827E-02	NOT IDENT.
CR-51	5.691E-02	2.838E-01	2.369E-01	1.448E-01	NOT IDENT.
MN-54	-1.559E-02	2.655E-02	2.222E-02	1.354E-02	NOT IDENT.
CO-56	-1.858E-02	2.663E-02	2.199E-02	1.359E-02	FAIL ABUN
CO-57	-5.095E-03	1.659E-02	1.462E-02	8.462E-03	NOT IDENT.
CO-58	-6.939E-03	2.644E-02	2.258E-02	1.349E-02	NOT IDENT.
FE-59	-2.051E-03	6.913E-02	5.813E-02	3.527E-02	NOT IDENT.
CO-60	-1.715E-02	2.879E-02	2.257E-02	1.469E-02	NOT IDENT.
ZN-65	-4.107E-02	7.465E-02	5.164E-02	3.809E-02	NOT IDENT.
SE-75	8.617E-03	3.315E-02	2.680E-02	1.691E-02	NOT IDENT.
SR-85	4.170E-02	2.985E-02	2.416E-02	1.523E-02	NOT IDENT.
Y-88	3.420E-03	2.095E-02	1.794E-02	1.069E-02	NOT IDENT.
Y-91	6.137E-01	1.741E+01	1.456E+01	8.882E+00	NOT IDENT.
NB-94	1.280E-02	2.418E-02	2.066E-02	1.234E-02	NOT IDENT.
NB-95	3.596E-02	3.881E-02	2.966E-02	1.980E-02	NOT IDENT.
NB-95M	7.585E-02	9.860E-02	7.671E-02	5.031E-02	NOT IDENT.
ZR-95	4.142E-02	5.438E-02	4.677E-02	2.774E-02	NOT IDENT.
MO-99	1.249E+01	2.069E+01	1.766E+01	1.056E+01	NOT IDENT.
TC-99M	-3.762E+20	3.547E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.644E-03	2.688E-02	2.276E-02	1.372E-02	FAIL ABUN
RH-106	3.361E-02	2.206E-01	1.871E-01	1.126E-01	NOT IDENT.
RU-106	3.361E-02	2.206E-01	1.871E-01	1.125E-01	NOT IDENT.
AG-108M	-1.755E-02	2.006E-02	1.668E-02	1.023E-02	NOT IDENT.
AG-110M	-9.643E-04	2.902E-02	2.116E-02	1.480E-02	NOT IDENT.
SN-113	-7.821E-03	2.960E-02	2.562E-02	1.510E-02	NOT IDENT.
CD-115	-9.135E+00	2.242E+01	0.000E+00	1.144E+01	SHORT HLIF
SN-117M	1.872E-02	4.867E-02	3.860E-02	2.483E-02	NOT IDENT.
TE-123M	1.430E-02	2.133E-02	1.707E-02	1.088E-02	NOT IDENT.
SB-124	-5.024E-02	4.909E-02	3.513E-02	2.504E-02	NOT IDENT.
SB-125	-2.008E-02	6.395E-02	5.484E-02	3.263E-02	FAIL ABUN
TE-125M	5.332E+00	6.558E+00	5.969E+00	3.346E+00	NOT IDENT.
I-126	1.103E-01	2.220E-01	1.678E-01	1.133E-01	NOT IDENT.
SB-126	1.103E-01	1.412E-01	1.075E-01	7.202E-02	NOT IDENT.
SB-127	-1.370E-03	1.681E+00	1.350E+00	8.578E-01	NOT IDENT.
I-131	-8.669E-02	9.839E-02	8.310E-02	5.020E-02	NOT IDENT.
TE-132	4.587E-01	1.066E+00	9.173E-01	5.439E-01	NOT IDENT.
BA-133	1.658E-02	2.902E-02	2.326E-02	1.480E-02	FAIL ABUN
I-133	7.787E+03	6.016E+04	0.000E+00	3.070E+04	SHORT HLIF
CS-134	1.015E-01	5.666E-02	3.346E-02	2.891E-02	FAIL ABUN
CS-135	9.817E-02	1.205E-01	9.326E-02	6.150E-02	NOT IDENT.
I-135	-1.129E+19	2.693E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.722E-02	9.725E-02	7.949E-02	4.962E-02	FAIL ABUN
CE-139	1.478E-03	2.019E-02	1.762E-02	1.030E-02	NOT IDENT.
BA-140	2.437E-01	2.389E-01	2.014E-01	1.219E-01	NOT IDENT.
LA-140	6.267E-02	7.085E-02	5.870E-02	3.615E-02	FAIL ABUN
CE-141	-4.458E-02	4.927E-02	3.994E-02	2.514E-02	NOT IDENT.
CE-143	2.958E+03	9.566E+02	0.000E+00	4.881E+02	SHORT HLIF
CE-144	7.979E-02	1.482E-01	1.193E-01	7.560E-02	NOT IDENT.
PM-144	-2.317E-02	2.574E-02	2.029E-02	1.313E-02	NOT IDENT.
PR-144	-1.723E+00	1.931E+00	1.523E+00	9.850E-01	NOT IDENT.
PM-146	-7.379E-03	3.054E-02	2.535E-02	1.558E-02	NOT IDENT.
ND-147	3.580E-02	4.652E-01	3.985E-01	2.374E-01	FAIL ABUN
PM-149	-1.416E+02	1.881E+02	0.000E+00	9.595E+01	SHORT HLIF
EU-152	4.002E-02	6.636E-02	5.807E-02	3.386E-02	FAIL ABUN
GD-153	-1.091E-02	6.100E-02	4.860E-02	3.112E-02	NOT IDENT.
EU-154	2.732E-02	8.940E-02	7.572E-02	4.561E-02	NOT IDENT.
EU-155	6.402E-02	6.910E-02	6.320E-02	3.526E-02	FAIL ABUN
TB-160	-1.207E-02	9.788E-02	8.363E-02	4.994E-02	FAIL ABUN
HO-166M	1.777E-02	4.348E-02	3.692E-02	2.218E-02	FAIL ABUN
TA-182	-8.751E-02	1.540E-01	1.241E-01	7.856E-02	FAIL ABUN
IR-192	-1.364E-02	2.507E-02	2.023E-02	1.279E-02	FAIL ABUN
HG-203	6.191E-03	3.136E-02	2.358E-02	1.600E-02	NOT IDENT.
BI-207	6.432E-03	3.411E-02	2.920E-02	1.741E-02	FAIL ABUN
PB-210	9.854E-01	2.426E+00	2.026E+00	1.238E+00	NOT IDENT.
PB-211	6.477E-02	5.623E-01	4.346E-01	2.869E-01	NOT IDENT.
RN-219	-2.046E-01	2.837E-01	2.393E-01	1.447E-01	FAIL ABUN
RA-223	3.326E-01	5.135E-01	3.880E-01	2.620E-01	FAIL ABUN
AC-227	-1.211E-01	1.755E-01	1.434E-01	8.955E-02	FAIL ABUN
TH-227	-1.211E-01	1.757E-01	1.434E-01	8.963E-02	FAIL ABUN
PA-231	1.991E-01	1.010E+00	8.508E-01	5.154E-01	FAIL ABUN
TH-231	3.326E-01	5.135E-01	3.880E-01	2.620E-01	FAIL ABUN
PA-233	-5.367E-03	4.435E-02	3.659E-02	2.263E-02	FAIL ABUN
PA-234	1.334E-01	2.123E-01	1.870E-01	1.083E-01	NOT IDENT.
PA-234M	3.494E+00	3.538E+00	3.048E+00	1.805E+00	NOT IDENT.
NP-239	-1.593E-01	2.581E-01	2.259E-01	1.317E-01	FAIL ABUN
AM-241	-4.571E-03	1.154E-01	8.864E-02	5.888E-02	NOT IDENT.
CM-247	-1.645E-02	2.607E-02	2.217E-02	1.330E-02	FAIL ABUN
CF-249	2.124E-02	2.747E-02	2.472E-02	1.402E-02	NOT IDENT.

CF-251	-2.226E-02	8.651E-02	7.438E-02	4.414E-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	549.0168
49.72	552.0704
57.36	0.0000
59.54	693.5089
63.29	752.1904
63.29	752.1904
64.28	782.9510
67.75	785.6495
69.67	877.0615
70.83	892.0773
72.81	876.0882
72.87	876.2100
72.87	876.2100
74.82	896.9438
74.82	896.9438
74.82	896.9438
74.97	897.2568
77.11	901.6541
77.11	901.6541
77.11	901.6541
79.69	833.5316
79.80	833.7349
80.12	829.1858
80.19	829.3140
80.57	835.1483
81.00	835.9368
81.07	836.0657
81.07	836.0657
83.79	705.9266
83.79	705.9266
85.43	708.3908
86.48	709.9560
86.55	710.0601
86.79	710.4139
86.94	710.6428
87.57	711.5752
88.03	712.2537
88.47	712.9031
89.96	715.0843
91.11	716.7535
92.59	718.8889
92.59	718.8889
93.35	719.9795
94.67	601.9954
94.87	615.4673
94.87	615.4673
95.86	672.3614
97.43	658.4529
98.44	581.0983
99.53	632.1704
100.11	620.3883
103.18	658.0345
103.37	642.1268
105.31	630.0242
106.12	670.6172
109.28	615.5233
111.00	680.1425
111.76	643.7214
116.30	619.4366
117.23	624.0951
121.12	624.4835
121.78	593.6768
122.06	608.7797
123.07	608.8640
131.20	616.3917
133.52	605.8849
136.00	625.2557

136.47	642.7634
140.51	673.4089
140.51	0.0000
143.76	615.3218
144.24	633.0170
144.24	633.0170
145.44	677.3677
152.43	633.2444
153.25	650.0061
154.21	594.4484
154.21	594.4484
156.02	554.4991
158.56	577.0029
159.00	547.9633
162.66	552.1716
163.33	588.1334
165.86	566.4017
176.60	549.2933
177.52	551.9414
181.07	524.6670
184.41	573.9099
185.72	542.3906
193.51	520.8986
197.04	574.4501
205.31	480.8794
210.85	488.5854
215.65	455.5005
222.11	499.9258
227.38	501.6728
228.16	472.3010
228.18	472.3101
235.69	495.3068
235.96	509.9252
235.96	509.9252
238.63	473.1441
238.63	473.1441
240.99	474.2766
242.00	474.7599
244.70	397.6054
252.40	357.5789
252.80	360.9908
256.23	415.8105
256.23	415.8105
260.90	0.0000
264.66	374.6019
268.22	371.8682
269.46	344.5980
269.46	344.5980
271.23	349.6005
273.65	347.0454
276.40	361.3030
277.37	369.4322
277.60	358.3494
278.00	368.5309
279.20	370.6039
279.54	357.2989
280.46	357.5979
283.69	356.9542
284.31	363.8870
285.41	393.4723
285.90	0.0000
287.50	341.2695
293.27	0.0000
295.22	311.2698
295.96	311.4708
298.57	272.9346
299.98	350.1228
299.98	350.1228
300.09	350.1541
300.09	350.1541
300.13	350.1666
301.36	333.4364
302.85	333.8589
304.50	356.6177
304.50	356.6177
304.85	356.7256
308.46	323.4061
311.90	310.5341

316.51	324.4203
319.41	305.5186
320.08	311.4745
323.87	310.1148
323.87	310.1148
328.76	321.8315
333.37	294.9229
334.37	321.8635
334.37	321.8635
338.28	316.3326
338.28	316.3326
338.32	316.3436
338.32	316.3436
338.32	316.3436
340.48	295.1615
340.55	295.1768
344.28	286.3213
351.06	270.5227
351.93	270.6990
356.01	234.3787
364.49	265.1696
366.42	266.4479
383.85	298.9917
388.16	261.5004
388.63	267.0756
391.69	254.8178
400.66	274.8506
401.81	297.2221
402.40	298.2634
404.85	276.7518
410.95	261.5508
414.70	276.6807
423.72	247.2946
427.09	245.0260
427.87	264.8741
433.94	251.7751
453.88	234.9229
463.37	221.3191
468.07	244.0482
473.00	215.4698
476.78	244.0443
477.60	233.5055
487.02	205.5878
492.35	0.0000
497.08	180.3389
511.00	184.7487
514.00	197.9248
527.90	0.0000
529.87	0.0000
531.02	178.8361
537.26	176.4404
546.56	0.0000
563.25	164.6796
569.33	203.9551
569.50	203.9734
569.70	207.0578
583.19	177.6882
600.60	182.3647
602.73	183.9411
604.72	215.9663
609.32	186.2817
609.32	186.2817
610.33	186.3691
614.28	160.2375
618.01	182.8934
621.93	168.5862
621.93	168.5862
633.25	172.6635
635.95	166.5635
636.99	148.7152
645.85	158.8715
657.76	178.9307
661.66	216.5982
661.66	216.5982
664.57	0.0000
666.33	179.6382
666.50	179.6536
677.62	150.4718

685.70	136.9994
695.00	183.0644
696.49	205.9454
696.51	205.9512
697.00	198.4026
702.65	168.4669
706.68	173.1202
711.68	158.2220
720.70	136.7133
721.93	0.0000
722.78	147.3609
722.91	175.4395
723.31	175.4688
724.19	193.0908
727.33	148.3072
733.00	142.7230
735.93	156.5735
739.50	139.1391
747.24	137.3771
752.31	186.5186
753.82	153.3085
756.73	142.3711
763.94	132.0835
765.81	182.2005
766.42	185.8238
777.92	160.0690
778.90	152.6472
783.70	133.1494
785.37	148.5443
795.86	135.6079
801.95	167.6563
810.29	143.6581
810.76	130.0441
815.77	134.8549
818.51	118.5774
832.01	150.3747
834.85	170.7286
836.80	0.0000
846.77	132.7781
856.80	124.9508
860.56	124.1986
871.09	122.8251
873.19	119.1937
875.33	0.0000
879.36	124.1323
880.51	109.2448
883.24	119.6344
884.68	111.2807
889.28	112.4063
898.04	112.7607
911.20	121.7910
911.20	121.7910
911.20	121.7910
926.50	119.8419
937.49	106.4050
944.13	143.2617
946.00	114.6826
949.00	114.8027
962.29	142.5535
964.08	112.1891
966.15	125.0996
968.97	117.1933
968.97	117.1933
968.97	117.1933
983.53	106.4739
996.26	127.3380
1001.03	106.1207
1004.73	158.8892
1037.84	108.3779
1038.76	0.0000
1048.07	131.4674
1050.41	123.6511
1050.41	123.6511
1063.66	97.3492
1085.87	138.0337
1099.45	124.5449
1112.07	126.0315
1115.54	142.9810

1120.29	142.5146
1120.29	142.5146
1120.55	142.5215
1121.30	142.5560
1131.51	0.0000
1173.23	159.1248
1177.93	126.4414
1189.05	141.2813
1204.77	159.5269
1221.41	172.7600
1231.02	170.4393
1235.36	167.1563
1238.28	137.6714
1260.41	0.0000
1271.85	126.6211
1274.44	101.3719
1274.54	96.0921
1291.59	82.7417
1298.22	0.0000
1312.11	92.7901
1332.49	88.9940
1365.19	71.3625
1368.63	0.0000
1384.29	58.9800
1408.01	54.6460
1457.56	0.0000
1460.82	51.6637
1489.16	36.2229
1505.03	31.9629
1596.21	29.3705
1620.50	37.3210
1678.03	0.0000
1690.97	33.0343
1764.49	32.5555
1764.49	32.5555
1770.23	32.1698
1771.35	25.4035
1791.20	0.0000
1836.06	21.0162

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969005

Total Uranium Activity	7.0930E+00	ug/g
Total Uranium Counting Unc.	4.2511E+00	ug/g
Total Uranium Tpu	2.1689E-06	ug/g
Total Uranium Mda	2.2262E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958216          SAMPLE ID   : G247969005
*  ANALYST       : MXR1            DETECTOR    : GAM16
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00  COUNT TIME : 0 04:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 23:25:21.12  SAMPLE ALQT: 128.630 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.287E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.422E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.774E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.848E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 21:46:32.65

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969006.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:14:59
Sample ID          : G247969006      Sample quantity      : 1.36180E+02 GRAM
Detector name      : GAM23           Detector geometry    : CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time  : 0 02:00:01.91  0.0%
Energy tolerance   : 1.80000 keV     Analyst Initials   : MXR1
Abundance limit    : 75.00000        Sensitivity        : 5.00000
Batch ID           : 958216          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	74.68	462	493	1.22	149.35	143	16	6.41E-02	9.2	2.06E+00
2	2	76.96	705	413	1.05	153.92	143	16	9.79E-02	6.0	
3	0	86.72	251	785	0.96	173.44	167	11	3.49E-02	22.5	
4	2	89.90	156	194	1.23	179.79	178	16	2.17E-02	13.2	1.53E+00
5	2	92.76*	291	493	1.56	185.52	178	16	4.04E-02	15.7	
6	0	128.45	162	532	0.99	256.90	251	12	2.24E-02	29.6	
7	0	185.66*	190	343	1.21	371.33	367	9	2.64E-02	19.7	
8	0	208.51	161	352	1.18	417.02	413	11	2.23E-02	23.9	
9	2	238.27*	1468	218	1.22	476.55	469	21	2.04E-01	3.1	8.37E-01
10	2	241.42	324	289	1.77	482.84	469	21	4.50E-02	13.0	
11	0	269.44	167	307	1.59	538.88	531	15	2.32E-02	24.2	
12	0	277.97	61	307	1.95	555.94	549	12	8.54E-03	58.5	
13	0	294.71	464	155	1.26	589.42	585	9	6.44E-02	6.7	
14	0	299.68	71	248	1.29	599.35	595	11	9.80E-03	45.0	
15	0	327.49	42	175	1.12	654.97	651	9	5.89E-03	58.1	
16	0	337.95	358	187	1.38	675.89	670	13	4.97E-02	9.5	
17	0	351.30*	759	225	1.49	702.60	695	15	1.05E-01	5.7	
18	0	462.07	75	189	1.22	924.14	917	14	1.04E-02	40.6	
19	0	510.01*	123	212	1.70	1020.01	1011	18	1.71E-02	31.2	
20	0	582.30*	478	84	1.61	1164.61	1157	16	6.63E-02	6.3	
21	0	608.45*	564	61	1.63	1216.91	1211	11	7.83E-02	5.1	
22	0	726.66	84	90	1.24	1453.31	1450	11	1.17E-02	24.7	
23	0	767.47	51	60	2.39	1534.93	1530	11	7.06E-03	33.2	
24	0	794.57	37	56	2.21	1589.14	1584	9	5.13E-03	40.1	
25	0	909.92*	303	55	2.05	1819.84	1813	13	4.20E-02	7.7	
26	1	963.50	69	64	2.12	1927.00	1920	24	9.63E-03	26.9	1.07E+00
27	1	967.69	160	56	1.92	1935.39	1920	24	2.22E-02	12.5	
28	0	1119.16	139	58	2.19	2238.32	2232	14	1.93E-02	14.5	
29	0	1459.04	1131	35	2.54	2918.08	2908	20	1.57E-01	3.2	
30	1	1726.00	40	7	2.25	3452.00	3445	17	5.49E-03	19.8	8.28E+00
31	1	1728.50	30	6	2.25	3457.00	3445	17	4.12E-03	25.0	
32	0	1762.64*	96	7	3.33	3525.27	3518	13	1.33E-02	12.1	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 21:46:35

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:14:59
Sample ID        : G247969006 Sample quantity : 136.18 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.91 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.80 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	*	2.932E+01	2.902E+00	5.669E-01	4.241E-02	51.725
NB-95	+	765.81	*	9.669E-02	6.451E-02	8.355E-02	5.615E-03	1.157
CD-109	+	88.03	*	3.714E+00	1.710E+00	1.537E+00	1.500E-01	2.417
SN-126		64.28		6.717E-01	6.863E-01	1.167E+00	1.777E-01	0.575
	+	86.94		1.500E+00	9.194E-01	6.299E-01	2.620E-01	2.382
	+	87.57	*	3.609E-01	1.661E-01	1.502E-01	1.462E-02	2.402
CS-135	+	268.22	*	6.788E-01	3.325E-01	2.715E-01	2.074E-02	2.500
HG-203		70.83		1.744E+00	2.071E+00	3.118E+00	5.031E-01	0.559
		72.87		3.831E+00	1.397E+00	2.050E+00	3.207E-01	1.869
	+	279.20	*	6.686E-02	7.835E-02	7.510E-02	4.612E-03	0.890
TL-208	+	277.37		6.215E-01	7.305E-01	6.707E-01	7.238E-02	0.927
	+	583.19	*	6.796E-01	9.688E-02	5.679E-02	3.678E-03	11.966
		860.56		5.549E-01	3.532E-01	6.483E-01	5.860E-02	0.856
BI-211		72.87		1.450E+01	4.945E+00	7.760E+00	6.845E-01	1.869
	+	351.06	*	4.706E+00	6.164E-01	3.657E-01	2.383E-02	12.871
PB-212	+	74.82		3.063E+00	6.955E-01	7.237E-01	9.539E-02	4.232
	+	77.11		2.645E+00	3.954E-01	4.102E-01	3.691E-02	6.449
	+	238.63	*	2.001E+00	1.918E-01	1.040E-01	7.547E-03	19.237
	+	300.09		1.512E+00	1.366E+00	1.352E+00	1.142E-01	1.118
BI-214	+	609.32	*	1.557E+00	1.968E-01	1.335E-01	1.012E-02	11.658
	+	1120.29		2.036E+00	6.208E-01	6.202E-01	5.799E-02	3.282
		1764.49		1.748E+00	4.500E-01	9.341E-01	5.808E-02	1.871
PB-214	+	74.82		5.429E+00	1.194E+00	1.283E+00	1.529E-01	4.232
	+	77.11		4.664E+00	7.962E-01	7.232E-01	8.827E-02	6.449
	+	242.00		2.679E+00	7.281E-01	6.328E-01	5.117E-02	4.233
	+	295.22		1.756E+00	2.816E-01	2.495E-01	2.187E-02	7.041
	+	351.93	*	1.708E+00	2.427E-01	1.330E-01	1.135E-02	12.843
RA-224	+	240.99	*	4.737E+00	1.258E+00	1.115E+00	6.283E-02	4.248
RA-226	+	609.32	*	1.557E+00	1.968E-01	1.335E-01	1.012E-02	11.658
	+	1120.29		2.036E+00	6.208E-01	6.202E-01	5.799E-02	3.282
		1764.49		1.748E+00	4.500E-01	9.341E-01	5.808E-02	1.871
AC-228	+	338.32		2.465E+00	1.120E+00	4.419E-01	1.823E-01	5.578
	+	911.20	*	2.117E+00	4.132E-01	2.391E-01	2.840E-02	8.852
	+	968.97		1.936E+00	6.738E-01	3.837E-01	9.328E-02	5.045

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		2.465E+00	1.120E+00	4.419E-01	1.823E-01	5.578
	+	911.20	*	2.117E+00	4.132E-01	2.391E-01	2.840E-02	8.852
	+	968.97		1.936E+00	6.738E-01	3.837E-01	9.328E-02	5.045
TH-228	+	74.82		3.063E+00	6.295E-01	7.237E-01	6.491E-02	4.232
	+	77.11		2.645E+00	3.954E-01	4.102E-01	3.691E-02	6.449
	+	238.63	*	2.001E+00	1.918E-01	1.040E-01	7.547E-03	19.237
	+	300.09		1.512E+00	1.642E+00	1.352E+00	8.233E-01	1.118
TH-229	+	85.43		9.084E-01	4.181E-01	3.935E-01	3.758E-02	2.308
	+	88.47		3.307E-01	9.248E-02	2.289E-01	2.214E-02	1.445
		193.51	*	-1.493E-01	6.111E-01	9.793E-01	5.187E-02	-0.152
		210.85		2.123E+00	1.150E+00	1.779E+00	9.657E-02	1.193
TH-232	+	338.32		2.465E+00	4.909E-01	4.419E-01	2.610E-02	5.578
	+	911.20	*	2.117E+00	4.132E-01	2.391E-01	2.840E-02	8.852
	+	968.97		1.936E+00	6.738E-01	3.837E-01	9.328E-02	5.045
U-235	+	89.96		2.288E+00	8.290E-01	1.864E+00	4.639E-01	1.227
	+	93.35		2.563E+00	1.001E+00	8.502E-01	1.969E-01	3.015
		143.76	*	4.579E-02	2.443E-01	3.993E-01	6.217E-02	0.115
		163.33		-5.204E-01	5.139E-01	7.926E-01	1.313E-01	-0.657
	+	185.72		1.671E-01	6.656E-02	7.737E-02	4.051E-03	2.160
		205.31		6.463E-01	6.400E-01	9.413E-01	1.586E-01	0.687
NP-237	+	86.48	*	1.077E+00	5.447E-01	4.594E-01	1.060E-01	2.344
		95.86		-6.158E-01	1.189E+00	1.675E+00	4.004E-01	-0.368
ANH-511	+	511.00	*	1.335E-01	8.360E-02	5.157E-02	2.995E-03	2.588

---- 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	*	-3.863E-01	3.802E-01	5.812E-01	3.948E-02	-0.665
NA-22		1274.54	*	-4.543E-03	4.931E-02	7.958E-02	5.344E-03	-0.057
NA-24		1368.63	*	-3.656E+01	4.931E-02	Half-Life too short		
SC-46		889.28	*	-2.605E-02	4.404E-02	6.929E-02	6.191E-03	-0.376
	+	1120.55		3.559E-01	1.059E-01	1.601E-01	1.043E-02	2.223
V-48		944.13		-3.016E-02	1.257E+00	2.083E+00	1.815E-01	-0.014
		983.53	*	-9.010E-02	1.044E-01	1.596E-01	1.327E-02	-0.565
		1312.11		-9.846E-02	1.136E-01	1.660E-01	1.181E-02	-0.593
CR-51		320.08	*	-1.067E-01	4.472E-01	7.409E-01	4.851E-02	-0.144
MN-54		834.85	*	-5.800E-03	4.104E-02	6.784E-02	5.372E-03	-0.085
CO-56		846.77	*	-1.939E-03	4.095E-02	6.811E-02	5.541E-03	-0.028
		1037.84		-1.187E-01	3.650E-01	5.878E-01	4.813E-02	-0.202
		1238.28		1.107E-01	1.120E-01	1.961E-01	1.305E-02	0.564
		1771.35		0.000E+00	2.509E-01	4.157E-01	2.571E-02	0.000
CO-57		122.06	*	-1.588E-03	3.125E-02	4.748E-02	2.799E-03	-0.033
		136.47		-1.969E-01	2.427E-01	3.853E-01	2.501E-02	-0.511
CO-58		810.76	*	-4.664E-02	4.588E-02	7.011E-02	5.267E-03	-0.665
FE-59		1099.45	*	-1.160E-01	1.142E-01	1.692E-01	1.303E-02	-0.685
		1291.59		1.210E-01	1.511E-01	2.657E-01	2.206E-02	0.455
CO-60		1173.23		-3.190E-02	5.325E-02	8.248E-02	4.653E-03	-0.387
		1332.49	*	-9.319E-03	4.617E-02	7.322E-02	5.375E-03	-0.127

----- 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	*		2.195E-01	1.389E-01	2.273E-01	1.501E-02	0.966
SE-75	121.12			-5.644E-02	1.528E-01	2.478E-01	2.271E-02	-0.228
	136.00			-1.241E-02	4.713E-02	7.650E-02	4.322E-03	-0.162
	264.66	*		-1.055E-02	5.962E-02	8.196E-02	4.773E-03	-0.129
	279.54	+		1.834E-01	2.149E-01	2.187E-01	1.377E-02	0.838
	400.66			6.745E-02	2.960E-01	4.976E-01	4.512E-02	0.136
SR-85	514.00	*		4.925E-02	5.016E-02	7.737E-02	4.490E-03	0.637
Y-88	898.04			-1.123E-02	4.734E-02	7.718E-02	7.057E-03	-0.145
	1836.06	*		4.104E-02	4.073E-02	7.829E-02	4.610E-03	0.524
Y-91	1204.77	*		-5.561E+00	2.709E+01	4.352E+01	2.596E+00	-0.128
NB-94	702.65	*		4.061E-02	4.163E-02	7.173E-02	4.099E-03	0.566
	871.09			-3.301E-02	4.303E-02	6.729E-02	5.779E-03	-0.491
NB-95M	235.69	*		1.002E+00	2.139E-01	3.455E-01	2.558E-02	2.899
ZR-95	724.19			2.791E-01	1.485E-01	2.398E-01	1.690E-02	1.164
	756.73	*		1.655E-03	8.746E-02	1.407E-01	1.086E-02	0.012
MO-99	140.51			9.702E-01	7.121E+01	1.166E+02	2.658E+01	0.008
	181.07			-1.008E+01	6.311E+01	8.873E+01	1.552E+01	-0.114
	366.42			2.721E+02	2.870E+02	5.031E+02	2.949E+01	0.541
	739.50	*		2.253E+01	4.039E+01	6.769E+01	9.893E+00	0.333
	777.92			-3.018E+01	1.129E+02	1.857E+02	1.286E+01	-0.163
TC-99M	140.51	*		3.628E+13	1.129E+02	Half-Life	too short	
RU-103	497.08	*		-2.126E-02	4.775E-02	7.592E-02	9.446E-03	-0.280
	610.33			1.318E+01	2.589E+00	3.338E+00	4.979E-01	3.950
RH-106	621.93	*		-2.158E-01	3.693E-01	5.712E-01	6.519E-02	-0.378
	1050.41			-1.610E+00	3.073E+00	4.826E+00	3.631E-01	-0.334
RU-106	621.93	*		-2.158E-01	3.686E-01	5.712E-01	3.069E-02	-0.378
	1050.41			-1.610E+00	3.073E+00	4.826E+00	3.631E-01	-0.334
AG-108M	433.94	*		-7.134E-03	3.371E-02	5.505E-02	3.441E-03	-0.130
	614.28			-1.845E-02	4.999E-02	6.764E-02	3.962E-03	-0.273
	722.91			-2.426E-02	5.454E-02	7.198E-02	4.619E-03	-0.337
AG-110M	657.76	*		6.254E-03	4.170E-02	6.829E-02	3.795E-03	0.092
	677.62			4.661E-02	3.607E-01	5.893E-01	3.377E-02	0.079
	706.68			-1.142E-01	2.650E-01	4.131E-01	2.536E-02	-0.276
	763.94			2.345E-01	2.076E-01	3.245E-01	2.268E-02	0.723
	884.68			9.051E-03	5.662E-02	9.563E-02	8.718E-03	0.095
	937.49			-1.770E-01	1.318E-01	1.910E-01	1.735E-02	-0.927
	1384.29			-1.251E-01	1.717E-01	2.483E-01	1.880E-02	-0.504
	1505.03			2.141E-01	3.186E-01	5.620E-01	3.991E-02	0.381
SN-113	391.69	*		-4.089E-03	5.196E-02	8.599E-02	5.297E-03	-0.048
CD-115	260.90			1.747E-04	5.196E-02	Half-Life	too short	
	492.35			7.569E-05	5.196E-02	Half-Life	too short	
	527.90	*		2.684E-05	5.196E-02	Half-Life	too short	
SN-117M	156.02			4.410E-01	3.247E+00	5.323E+00	2.786E-01	0.083
	158.56	*		-1.287E-02	7.935E-02	1.286E-01	6.683E-03	-0.100
TE-123M	159.00	*		1.778E-02	3.400E-02	5.649E-02	2.981E-03	0.315
SB-124	602.73			1.270E-02	4.880E-02	7.057E-02	3.869E-03	0.180
	645.85			-1.106E-01	5.666E-01	9.034E-01	5.424E-02	-0.122
	722.78			-2.992E-01	5.710E-01	7.462E-01	4.705E-02	-0.401
	1690.97	*		-1.129E-02	8.028E-02	1.298E-01	9.081E-03	-0.087

----- 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	*	1.173E-02	1.073E-01	1.788E-01	1.086E-02	0.066
		463.37		7.179E-01	5.844E-01	6.350E-01	4.304E-02	1.131
		600.60		-7.613E-02	2.060E-01	3.162E-01	2.039E-02	-0.241
		635.95		1.314E-01	3.163E-01	5.294E-01	3.369E-02	0.248
TE-125M		109.28	*	-6.842E-01	1.190E+01	1.960E+01	1.785E+00	-0.035
I-126		388.63		-1.106E-02	2.230E-01	3.697E-01	2.138E-02	-0.030
		666.33	*	2.412E-02	3.187E-01	5.187E-01	2.684E-02	0.047
		753.82		1.174E+00	2.567E+00	4.283E+00	2.794E-01	0.274
		414.70		9.615E-04	1.081E-01	1.794E-01	1.044E-02	0.005
SB-126		666.50		-3.347E-02	1.125E-01	1.779E-01	9.213E-03	-0.188
		695.00		-7.096E-03	1.109E-01	1.781E-01	9.971E-03	-0.040
		697.00		-3.431E-02	3.954E-01	6.338E-01	3.568E-02	-0.054
		720.70	*	1.123E-01	2.348E-01	3.580E-01	2.146E-02	0.314
		856.80		8.299E-01	6.973E-01	1.260E+00	1.049E-01	0.658
		252.40		8.386E+00	1.060E+01	1.671E+01	6.917E+00	0.502
SB-127		473.00		4.109E+00	3.574E+00	6.280E+00	7.763E-01	0.654
		685.70	*	-7.260E-01	3.151E+00	4.993E+00	5.345E-01	-0.145
		783.70		2.030E+00	8.257E+00	1.409E+01	1.768E+00	0.144
		80.19		1.673E+00	1.017E+01	1.270E+01	1.175E+00	0.132
I-131		284.31		-1.118E+00	2.551E+00	3.970E+00	2.586E-01	-0.282
		364.49	*	4.269E-02	1.747E-01	2.953E-01	1.941E-02	0.145
		636.99		1.212E+00	2.583E+00	4.338E+00	2.646E-01	0.279
		49.72		-2.332E+01	6.688E+01	1.111E+02	1.337E+01	-0.210
TE-132		111.76		-1.980E+01	9.222E+01	1.509E+02	1.645E+01	-0.131
		116.30		1.280E+01	7.728E+01	1.280E+02	1.368E+01	0.100
		228.16	*	-1.738E+00	2.056E+00	3.153E+00	4.829E-01	-0.551
		81.00		-1.566E-01	1.868E-01	1.841E-01	2.920E-02	-0.851
BA-133	+	276.40		5.749E-01	6.767E-01	7.448E-01	9.380E-02	0.772
		302.85		4.879E-02	1.684E-01	2.514E-01	2.879E-02	0.194
		356.01	*	1.382E-02	5.024E-02	7.450E-02	8.433E-03	0.186
		383.85		6.075E-02	3.215E-01	5.406E-01	5.765E-02	0.112
I-133	*	529.87		4.798E-02	3.215E-01	Half-Life	too short	
		875.33		1.792E+00	3.215E-01	Half-Life	too short	
		1298.22		-1.234E+01	3.215E-01	Half-Life	too short	
		563.25		2.988E-01	4.277E-01	7.256E-01	4.197E-02	0.412
CS-134		569.33		-5.965E-02	2.310E-01	3.700E-01	2.151E-02	-0.161
		604.72		2.464E-02	4.475E-02	6.627E-02	3.647E-03	0.372
		795.86	*	7.783E-02	6.269E-02	1.004E-01	7.330E-03	0.776
		801.95		-1.631E-01	4.691E-01	7.473E-01	5.524E-02	-0.218
		1365.19		1.094E-01	1.337E+00	2.194E+00	1.707E-01	0.050
		546.56		-1.166E+14	1.337E+00	Half-Life	too short	
I-135		836.80		8.363E+14	1.337E+00	Half-Life	too short	
		1038.76		-7.309E+13	1.337E+00	Half-Life	too short	
		1131.51		-7.573E+13	1.337E+00	Half-Life	too short	
		1260.41	*	-4.364E+13	1.337E+00	Half-Life	too short	
		1457.56	+	3.673E+16	1.337E+00	Half-Life	too short	
		1678.03		-1.262E+14	1.337E+00	Half-Life	too short	
		1791.20		1.256E+14	1.337E+00	Half-Life	too short	
		153.25		8.432E-01	1.228E+00	2.051E+00	1.575E-01	0.411
CS-136								

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		4.084E-01	7.070E-01	1.174E+00	7.688E-02	0.348
		273.65		-6.255E-02	1.105E+00	1.089E+00	7.450E-02	-0.057
		340.55		5.240E-01	2.293E-01	3.793E-01	2.420E-02	1.381
		818.51		-4.192E-02	1.042E-01	1.686E-01	1.288E-02	-0.249
		1048.07	*	-2.806E-02	1.528E-01	2.479E-01	1.976E-02	-0.113
		1235.36		8.472E-01	8.950E-01	1.556E+00	1.584E-01	0.545
BA-137M		661.66	*	2.998E-02	4.302E-02	7.312E-02	3.735E-03	0.410
CS-137		661.66	*	3.168E-02	4.545E-02	7.725E-02	3.968E-03	0.410
CE-139		165.86	*	2.272E-02	3.404E-02	5.683E-02	2.897E-03	0.400
BA-140		162.66		-1.315E-02	1.162E+00	1.893E+00	1.148E-01	-0.007
		304.85		3.578E-01	1.998E+00	2.958E+00	8.457E-01	0.121
		423.72		1.352E+00	2.905E+00	4.881E+00	1.575E+00	0.277
		537.26	*	2.449E-01	4.007E-01	6.690E-01	2.228E-01	0.366
LA-140	+	328.76		4.478E-01	5.211E-01	7.576E-01	5.006E-02	0.591
		487.02		-6.040E-02	1.832E-01	2.942E-01	1.943E-02	-0.205
		815.77		1.334E-01	4.433E-01	7.603E-01	6.622E-02	0.176
		1596.21	*	-7.431E-02	1.098E-01	1.633E-01	1.121E-02	-0.455
CE-141		145.44	*	6.158E-02	8.157E-02	1.358E-01	7.661E-03	0.453
CE-143		57.36		-1.588E-02	8.157E-02	Half-Life	too short	
	+	293.27	*	1.155E-02	8.157E-02	Half-Life	too short	
		664.57		1.503E-03	8.157E-02	Half-Life	too short	
		721.93		-8.938E-03	8.157E-02	Half-Life	too short	
CE-144		80.12		6.716E-01	3.942E+00	4.922E+00	4.512E-01	0.136
		133.52	*	1.139E-01	2.637E-01	3.866E-01	5.339E-02	0.295
PM-144		476.78		-6.034E-02	7.178E-02	1.111E-01	7.674E-03	-0.543
		618.01		9.546E-03	3.972E-02	6.563E-02	3.791E-03	0.145
		696.49	*	2.763E-03	4.007E-02	6.503E-02	3.660E-03	0.042
PR-144		696.51	*	2.293E-01	3.007E+00	4.882E+00	2.744E-01	0.047
		1489.16		4.129E+00	1.501E+01	2.519E+01	1.798E+00	0.164
PM-146		453.88	*	-2.247E-02	5.159E-02	7.770E-02	6.602E-03	-0.289
		633.25		-3.011E-01	1.671E+00	2.667E+00	1.002E+00	-0.113
		735.93		3.531E-03	1.783E-01	2.873E-01	7.869E-02	0.012
		747.24		1.657E-02	1.117E-01	1.817E-01	2.435E-02	0.091
ND-147	+	91.11		9.522E-01	2.684E-01	8.012E-01	7.881E-02	1.188
		319.41		2.979E+00	4.720E+00	8.156E+00	4.820E-01	0.365
		531.02	*	3.741E-01	8.369E-01	1.410E+00	1.905E-01	0.265
PM-149		285.90	*	1.705E-04	8.369E-01	Half-Life	too short	
EU-152		121.78		-1.049E-02	8.890E-02	1.346E-01	1.031E-02	-0.078
		244.70		3.404E-01	4.004E-01	5.919E-01	3.348E-02	0.575
		344.28	*	7.734E-02	1.756E-01	1.830E-01	1.212E-02	0.423
		778.90		-1.330E-01	2.923E-01	4.731E-01	3.283E-02	-0.281
	+	964.08		9.035E-01	4.913E-01	7.425E-01	6.326E-02	1.217
		1085.87		-1.679E-02	4.456E-01	7.310E-01	5.143E-02	-0.023
		1112.07		2.347E-01	4.196E-01	6.335E-01	4.210E-02	0.371
		1408.01		1.496E-01	2.052E-01	3.624E-01	2.635E-02	0.413
GD-153		69.67		1.065E+00	2.553E+00	3.815E+00	3.333E-01	0.279
		97.43	*	3.473E-02	1.116E-01	1.635E-01	1.336E-02	0.212
		103.18		-1.696E-02	1.328E-01	2.185E-01	1.633E-02	-0.078
EU-154		123.07		3.307E-02	6.552E-02	9.686E-02	9.129E-03	0.341

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		723.31		4.523E-03	2.592E-01	3.604E-01	2.604E-02	0.013
		873.19		1.784E-01	3.421E-01	5.925E-01	7.052E-02	0.301
		996.26		-2.418E-01	4.184E-01	6.531E-01	1.127E-01	-0.370
		1004.73		-2.004E-01	2.684E-01	4.124E-01	4.638E-02	-0.486
		1274.44	*	-1.284E-02	1.394E-01	2.250E-01	2.251E-02	-0.057
EU-155	+	86.55		4.383E-01	2.018E-01	2.260E-01	2.197E-02	1.940
		105.31	*	-6.105E-03	1.253E-01	2.067E-01	1.523E-02	-0.030
TB-160	+	86.79		1.206E+00	5.552E-01	6.189E-01	5.980E-02	1.949
		197.04		4.258E-01	6.679E-01	1.108E+00	5.896E-02	0.384
		215.65		-2.129E-01	9.082E-01	1.396E+00	7.629E-02	-0.152
	+	298.57		2.211E-01	1.993E-01	2.389E-01	1.404E-02	0.926
		879.36	*	-1.920E-02	1.737E-01	2.870E-01	2.510E-02	-0.067
	+	962.29		1.762E+00	9.582E-01	1.280E+00	1.093E-01	1.377
	+	966.15		1.518E+00	3.995E-01	7.001E-01	5.951E-02	2.169
		1177.93		3.182E-01	4.320E-01	7.524E-01	4.281E-02	0.423
		1271.85		-1.258E+00	8.581E-01	1.156E+00	7.714E-02	-1.089
HO-166M		80.57		5.344E-02	4.924E-01	5.264E-01	4.840E-02	0.102
	+	184.41		1.328E-01	5.288E-02	7.762E-02	4.057E-03	1.710
		280.46		-1.782E-02	1.083E-01	1.574E-01	9.170E-03	-0.113
		410.95		8.397E-02	2.782E-01	4.691E-01	2.727E-02	0.179
		711.68	*	7.272E-02	7.251E-02	1.257E-01	7.355E-03	0.579
		752.31		3.191E-02	3.195E-01	5.178E-01	3.365E-02	0.062
		810.29		-6.310E-02	6.638E-02	1.021E-01	7.638E-03	-0.618
TA-182		67.75		-5.294E-02	1.560E-01	2.489E-01	2.168E-02	-0.213
		100.11		8.544E-02	2.264E-01	3.524E-01	2.758E-02	0.242
		152.43		3.995E-01	4.095E-01	6.915E-01	3.654E-02	0.578
		222.11		1.604E-01	4.230E-01	6.920E-01	3.813E-02	0.232
		1121.30		5.850E-01	2.388E-01	4.086E-01	2.657E-02	1.432
		1189.05		3.552E-01	3.677E-01	6.507E-01	3.775E-02	0.546
		1221.41	*	8.767E-02	2.593E-01	4.347E-01	2.668E-02	0.202
		1231.02		-5.094E-01	6.584E-01	1.011E+00	6.309E-02	-0.504
IR-192	+	295.96		1.348E+00	1.980E-01	3.366E-01	2.007E-02	4.005
		308.46		-4.174E-02	1.103E-01	1.818E-01	1.083E-02	-0.230
		316.51	*	-2.036E-02	3.996E-02	6.532E-02	3.875E-03	-0.312
		468.07		-1.711E-02	8.728E-02	1.223E-01	8.252E-03	-0.140
BI-207		72.81		7.727E-01	2.821E-01	4.421E-01	3.899E-02	1.748
	+	74.97		8.830E-01	1.812E-01	3.142E-01	2.796E-02	2.810
		569.70		-1.387E-02	3.629E-02	5.763E-02	3.247E-03	-0.241
		1063.66	*	-9.639E-03	6.103E-02	9.915E-02	7.284E-03	-0.097
		1770.23		-1.154E+00	6.512E-01	7.644E-01	4.733E-02	-1.510
PB-210		46.54	*	-3.362E+00	5.836E+00	9.507E+00	7.344E-01	-0.354
PB-211		404.85	*	-1.139E+00	1.014E+00	1.312E+00	6.292E-01	-0.869
		427.09		-3.796E-01	1.849E+00	3.012E+00	1.380E+00	-0.126
		832.01		-4.944E-01	1.047E+00	1.624E+00	8.404E-01	-0.304
BI-212	+	727.33	*	1.849E+00	9.359E-01	1.341E+00	1.457E-01	1.379
		785.37		8.764E-01	3.582E+00	6.116E+00	4.311E-01	0.143
		1620.50		9.360E-03	2.589E+00	4.318E+00	2.929E-01	0.002
RN-219	+	271.23		1.006E+00	4.932E-01	4.898E-01	3.930E-02	2.053
		401.81	*	2.521E-01	4.625E-01	7.890E-01	1.060E-01	0.320

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

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07	-3.544E-01	4.201E-01	4.165E-01	3.843E-02	-0.851
		83.79	9.572E-02	1.687E-01	2.504E-01	2.359E-02	0.382
		94.87	8.307E-01	5.956E-01	9.131E-01	7.795E-02	0.910
		144.24	2.269E-02	8.113E-01	1.319E+00	9.102E-02	0.017
		154.21	3.899E-01	4.522E-01	7.598E-01	4.956E-02	0.513
	+	269.46	7.813E-01	3.810E-01	4.008E-01	2.419E-02	1.949
AC-227		323.87	* -4.177E-02	7.964E-01	1.157E+00	1.870E-01	-0.036
	+	338.28	9.782E+00	2.116E+00	2.794E+00	2.880E-01	3.501
		79.69	2.950E-01	1.774E+00	2.439E+00	4.269E-01	0.121
		235.96	2.146E+00	3.084E-01	4.779E-01	3.825E-02	4.491
		256.23	* -7.632E-02	2.852E-01	4.500E-01	4.581E-02	-0.170
	+	299.98	1.663E+00	1.507E+00	1.815E+00	2.002E-01	0.916
TH-227		304.50	5.014E-01	1.946E+00	2.898E+00	4.429E-01	0.173
		334.37	1.966E-01	2.313E+00	3.203E+00	4.570E-01	0.061
		79.80	4.217E-01	2.338E+00	3.216E+00	7.072E-01	0.131
		235.96	2.146E+00	2.995E-01	4.779E-01	3.456E-02	4.491
		256.23	* -7.632E-02	2.852E-01	4.500E-01	5.391E-02	-0.170
	+	299.98	1.663E+00	1.507E+00	1.815E+00	2.002E-01	0.916
PA-231		304.50	5.014E-01	1.946E+00	2.898E+00	4.429E-01	0.173
		334.37	1.966E-01	2.313E+00	3.203E+00	4.570E-01	0.061
TH-231		283.69	* -4.516E-01	1.809E+00	2.738E+00	3.596E-01	-0.165
	+	301.36	1.068E+00	9.671E-01	1.153E+00	1.198E-01	0.927
PA-233		81.07	-3.544E-01	4.201E-01	4.165E-01	3.843E-02	-0.851
		83.79	9.572E-02	1.687E-01	2.504E-01	2.359E-02	0.382
		94.87	8.307E-01	5.956E-01	9.131E-01	7.795E-02	0.910
		144.24	2.269E-02	8.113E-01	1.319E+00	9.102E-02	0.017
		154.21	3.899E-01	4.522E-01	7.598E-01	4.956E-02	0.513
	+	269.46	7.813E-01	3.810E-01	4.008E-01	2.419E-02	1.949
PA-234		323.87	* -4.177E-02	7.964E-01	1.157E+00	1.870E-01	-0.036
	+	338.28	9.782E+00	2.116E+00	2.794E+00	2.880E-01	3.501
	+	300.13	7.524E-01	6.842E-01	8.210E-01	1.102E-01	0.916
		311.90	* 6.852E-02	7.023E-02	1.233E-01	7.709E-03	0.556
		340.48	2.039E+00	9.255E-01	1.345E+00	3.125E-01	1.516
		94.67	4.313E-01	2.248E-01	3.443E-01	4.257E-02	1.253
PA-234M		98.44	6.216E-02	1.256E-01	1.786E-01	9.948E-02	0.348
		111.00	-7.430E-02	2.141E-01	3.486E-01	3.771E-02	-0.213
		131.20	4.761E-02	1.396E-01	2.041E-01	1.154E-02	0.233
		569.50	-7.458E-02	3.177E-01	5.099E-01	2.873E-02	-0.146
		733.00	3.683E-02	5.284E-01	7.384E-01	1.578E-01	0.050
		880.51	-1.633E-01	3.423E-01	5.482E-01	4.806E-02	-0.298
		883.24	7.226E-02	3.325E-01	5.582E-01	3.754E-01	0.129
		926.50	-1.035E-01	2.080E-01	3.282E-01	8.325E-02	-0.315
		946.00	* 1.901E-01	3.587E-01	6.185E-01	1.163E-01	0.307
		949.00	3.764E-01	5.248E-01	9.206E-01	7.979E-02	0.409
TH-234	+	766.42	2.451E+01	2.044E+01	2.430E+01	1.226E+01	1.009
		1001.03	* 4.130E+00	5.394E+00	9.465E+00	9.031E-01	0.436
U-238		63.29	* 4.476E-01	1.865E+00	3.140E+00	5.775E-01	0.143
	+	92.59	3.393E+00	1.306E+00	1.526E+00	3.386E-01	2.224

---- 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		3.393E+00	1.108E+00	1.526E+00	1.358E-01	2.224
		99.53		1.457E-02	2.222E-01	3.219E-01	2.542E-02	0.045
		103.37		6.737E-02	1.179E-01	1.984E-01	1.479E-02	0.340
		106.12		1.382E-02	9.956E-02	1.652E-01	1.184E-02	0.084
		117.23	*	-1.212E-01	4.654E-01	7.445E-01	4.634E-02	-0.163
		228.18		-2.172E-01	2.555E-01	3.948E-01	2.192E-02	-0.550
AM-241	+	277.60		2.841E-01	3.329E-01	3.673E-01	2.135E-02	0.773
		59.54	*	-1.318E-01	2.172E-01	3.566E-01	3.318E-02	-0.370
CM-247	+	278.00		1.206E+00	1.414E+00	1.583E+00	9.205E-02	0.762
		287.50		6.756E-01	1.461E+00	2.450E+00	1.433E-01	0.276
		402.40	*	2.032E-02	4.136E-02	7.056E-02	4.089E-03	0.288
CF-249		252.80		9.080E-01	1.079E+00	1.799E+00	1.026E-01	0.505
		333.37		-1.389E-01	2.974E-01	3.235E-01	1.912E-02	-0.429
		388.16	*	3.864E-03	4.373E-02	7.309E-02	4.229E-03	0.053
CF-251		177.52	*	-9.271E-02	1.525E-01	2.416E-01	1.250E-02	-0.384
		227.38		-1.220E-01	4.100E-01	6.505E-01	3.608E-02	-0.188
		285.41		5.264E-01	2.480E+00	4.217E+00	2.463E-01	0.125

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]G247969006      *
* Acquisition date   : 11-MAR-2010 14:14:59 Detector SN# :                  *
* Detector ID        : GAM23 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.800                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000           *
* Elapsed real time  : 0 02:00:01.91 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G247969006 Analyst initials: MXR1                 *
* Batch Number       : 958216 Sample Quantity : 1.3618E+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	2.932E+01	2.844E+00	5.684E-01	0.000E+00
NB-95	9.669E-02	6.322E-02	8.482E-02	0.000E+00
CD-109	3.714E+00	1.675E+00	1.623E+00	0.000E+00
SN-126	3.609E-01	1.628E-01	1.587E-01	0.000E+00
CS-135	6.788E-01	3.258E-01	2.811E-01	0.000E+00
HG-203	6.686E-02	7.679E-02	7.769E-02	0.000E+00
TL-208	6.796E-01	9.494E-02	5.795E-02	0.000E+00
BI-211	4.706E+00	6.040E-01	3.767E-01	0.000E+00
PB-212	2.001E+00	1.879E-01	1.079E-01	0.000E+00
BI-214	1.557E+00	1.928E-01	1.362E-01	0.000E+00
PB-214	1.708E+00	2.379E-01	1.370E-01	0.000E+00
RA-224	4.737E+00	1.233E+00	1.157E+00	0.000E+00
RA-226	1.557E+00	1.928E-01	1.362E-01	0.000E+00
AC-228	2.117E+00	4.049E-01	2.419E-01	0.000E+00
RA-228	2.117E+00	4.049E-01	2.419E-01	0.000E+00
TH-228	2.001E+00	1.879E-01	1.079E-01	0.000E+00
TH-229	-1.493E-01	5.989E-01	1.020E+00	0.000E+00
TH-232	2.117E+00	4.049E-01	2.419E-01	0.000E+00
U-235	4.579E-02	2.394E-01	4.181E-01	0.000E+00
NP-237	1.077E+00	5.338E-01	4.854E-01	0.000E+00
ANH-511	1.335E-01	8.193E-02	5.275E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.863E-01	3.726E-01	5.953E-01	0.000E+00 NOT IDENT.
NA-22	-4.543E-03	4.833E-02	8.000E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	6.498E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.605E-02	4.316E-02	7.014E-02	0.000E+00 FAIL ABUN
V-48	-9.010E-02	1.023E-01	1.612E-01	0.000E+00 NOT IDENT.
CR-51	-1.067E-01	4.383E-01	7.646E-01	0.000E+00 NOT IDENT.

MN-54	-5.800E-03	4.021E-02	6.876E-02	0.000E+00	NOT IDENT.
CO-56	-1.939E-03	4.013E-02	6.901E-02	0.000E+00	NOT IDENT.
CO-57	-1.588E-03	3.063E-02	4.986E-02	0.000E+00	NOT IDENT.
CO-58	-4.664E-02	4.496E-02	7.110E-02	0.000E+00	NOT IDENT.
FE-59	-1.160E-01	1.119E-01	1.706E-01	0.000E+00	NOT IDENT.
CO-60	-9.319E-03	4.525E-02	7.354E-02	0.000E+00	NOT IDENT.
ZN-65	2.195E-01	1.361E-01	2.290E-01	0.000E+00	NOT IDENT.
SE-75	-1.055E-02	5.842E-02	8.488E-02	0.000E+00	FAIL ABUN
SR-85	4.925E-02	4.915E-02	7.914E-02	0.000E+00	NOT IDENT.
Y-88	4.104E-02	3.991E-02	7.814E-02	0.000E+00	NOT IDENT.
Y-91	-5.561E+00	2.655E+01	4.380E+01	0.000E+00	NOT IDENT.
NB-94	4.061E-02	4.079E-02	7.294E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.096E-01	3.586E-01	0.000E+00	NOT IDENT.
ZR-95	1.655E-03	8.571E-02	1.429E-01	0.000E+00	NOT IDENT.
MO-99	2.253E+01	3.958E+01	6.877E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.609E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.126E-02	4.680E-02	7.771E-02	0.000E+00	NOT IDENT.
RH-106	-2.158E-01	3.619E-01	5.821E-01	0.000E+00	NOT IDENT.
RU-106	-2.158E-01	3.612E-01	5.821E-01	0.000E+00	NOT IDENT.
AG-108M	-7.134E-03	3.304E-02	5.649E-02	0.000E+00	NOT IDENT.
AG-110M	6.254E-03	4.086E-02	6.953E-02	0.000E+00	NOT IDENT.
SN-113	-4.089E-03	5.092E-02	8.840E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	4.339E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.287E-02	7.776E-02	1.344E-01	0.000E+00	NOT IDENT.
TE-123M	1.778E-02	3.332E-02	5.904E-02	0.000E+00	NOT IDENT.
SB-124	-1.129E-02	7.867E-02	1.297E-01	0.000E+00	NOT IDENT.
SB-125	1.173E-02	1.052E-01	1.835E-01	0.000E+00	FAIL ABUN
TE-125M	-6.842E-01	1.166E+01	2.062E+01	0.000E+00	NOT IDENT.
I-126	2.412E-02	3.123E-01	5.279E-01	0.000E+00	NOT IDENT.
SB-126	1.123E-01	2.301E-01	3.639E-01	0.000E+00	NOT IDENT.
SB-127	-7.260E-01	3.088E+00	5.079E+00	0.000E+00	NOT IDENT.
I-131	4.269E-02	1.712E-01	3.040E-01	0.000E+00	NOT IDENT.
TE-132	-1.738E+00	2.015E+00	3.274E+00	0.000E+00	NOT IDENT.
BA-133	1.382E-02	4.923E-02	7.673E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.596E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.783E-02	6.144E-02	1.018E-01	0.000E+00	FAIL ABUN
I-135	0.000E+00	1.757E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.806E-02	1.498E-01	2.502E-01	0.000E+00	NOT IDENT.
BA-137M	2.998E-02	4.216E-02	7.444E-02	0.000E+00	NOT IDENT.
CS-137	3.168E-02	4.454E-02	7.864E-02	0.000E+00	NOT IDENT.
CE-139	2.272E-02	3.336E-02	5.935E-02	0.000E+00	NOT IDENT.
BA-140	2.449E-01	3.927E-01	6.837E-01	0.000E+00	NOT IDENT.
LA-140	-7.431E-02	1.076E-01	1.634E-01	0.000E+00	FAIL ABUN
CE-141	6.158E-02	7.993E-02	1.422E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.995E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.139E-01	2.584E-01	4.053E-01	0.000E+00	NOT IDENT.
PM-144	2.763E-03	3.927E-02	6.613E-02	0.000E+00	NOT IDENT.
PR-144	2.293E-01	2.947E+00	4.965E+00	0.000E+00	NOT IDENT.
PM-146	-2.247E-02	5.056E-02	7.967E-02	0.000E+00	NOT IDENT.
ND-147	3.741E-01	8.201E-01	1.442E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	3.556E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	7.734E-02	1.721E-01	1.885E-01	0.000E+00	FAIL ABUN
GD-153	3.473E-02	1.093E-01	1.724E-01	0.000E+00	NOT IDENT.
EU-154	-1.284E-02	1.367E-01	2.262E-01	0.000E+00	NOT IDENT.
EU-155	-6.105E-03	1.228E-01	2.176E-01	0.000E+00	FAIL ABUN
TB-160	-1.920E-02	1.702E-01	2.906E-01	0.000E+00	FAIL ABUN
HO-166M	7.272E-02	7.106E-02	1.278E-01	0.000E+00	FAIL ABUN
TA-182	8.767E-02	2.541E-01	4.373E-01	0.000E+00	NOT IDENT.
IR-192	-2.036E-02	3.917E-02	6.742E-02	0.000E+00	FAIL ABUN
BI-207	-9.639E-03	5.981E-02	1.000E-01	0.000E+00	FAIL ABUN
PB-210	-3.362E+00	5.719E+00	1.015E+01	0.000E+00	NOT IDENT.
PB-211	-1.139E+00	9.932E-01	1.348E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.172E-01	1.363E+00	0.000E+00	FAIL ABUN
RN-219	2.521E-01	4.532E-01	8.108E-01	0.000E+00	FAIL ABUN
RA-223	-4.177E-02	7.805E-01	1.194E+00	0.000E+00	FAIL ABUN
AC-227	-7.632E-02	2.795E-01	4.662E-01	0.000E+00	FAIL ABUN
TH-227	-7.632E-02	2.795E-01	4.662E-01	0.000E+00	FAIL ABUN
PA-231	-4.516E-01	1.773E+00	2.832E+00	0.000E+00	FAIL ABUN
TH-231	-4.177E-02	7.805E-01	1.194E+00	0.000E+00	FAIL ABUN
PA-233	6.852E-02	6.883E-02	1.273E-01	0.000E+00	FAIL ABUN
PA-234	1.901E-01	3.516E-01	6.254E-01	0.000E+00	NOT IDENT.
PA-234M	4.130E+00	5.286E+00	9.559E+00	0.000E+00	FAIL ABUN
TH-234	4.476E-01	1.828E+00	3.335E+00	0.000E+00	FAIL ABUN
U-238	4.476E-01	1.828E+00	3.335E+00	0.000E+00	FAIL ABUN
NP-239	-1.212E-01	4.561E-01	7.825E-01	0.000E+00	FAIL ABUN
AM-241	-1.318E-01	2.129E-01	3.792E-01	0.000E+00	NOT IDENT.
CM-247	2.032E-02	4.053E-02	7.250E-02	0.000E+00	FAIL ABUN
CF-249	3.864E-03	4.286E-02	7.516E-02	0.000E+00	NOT IDENT.

CF-251	-9.271E-02	1.495E-01	2.520E-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]G247969006.CNF;1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:14:59
Sample ID        : G247969006 Sample quantity : 1.36180E+02 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.91 0.0%
Energy tolerance : 1.80000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 958216 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	1131	10.66*	9.976E-01	2.932E+01	2.932E+01	9.90
NB-95	765.81	51	99.81*	1.787E+00	7.860E-02	9.669E-02	66.73
CD-109	88.03	251	3.70*	5.189E+00	3.609E+00	3.714E+00	46.03
SN-126	64.28	-----	9.60	2.723E+00	-----	Line Not Found	-----
	86.94	251	8.90	5.189E+00	1.500E+00	1.500E+00	61.28
	87.57	251	37.00*	5.189E+00	3.609E-01	3.609E-01	46.03
CS-135	268.22	167	16.00*	4.232E+00	6.788E-01	6.788E-01	48.99
HG-203	70.83	-----	3.69	3.580E+00	-----	Line Not Found	-----
	72.87	-----	6.19	3.829E+00	-----	Line Not Found	-----
	279.20	61	81.56*	4.132E+00	5.029E-02	6.686E-02	117.20
TL-208	277.37	61	6.60	4.132E+00	6.215E-01	6.215E-01	117.53
	583.19	478	85.00*	2.279E+00	6.796E-01	6.796E-01	14.26
	860.56	-----	12.50	1.609E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.829E+00	-----	Line Not Found	-----
	351.06	759	12.92*	3.443E+00	4.706E+00	4.706E+00	13.10
PB-212	74.82	462	10.28	4.040E+00	3.063E+00	3.063E+00	22.71
	77.11	705	17.10	4.293E+00	2.645E+00	2.645E+00	14.95
	238.63	1468	43.60*	4.639E+00	2.001E+00	2.001E+00	9.58
	300.09	71	3.30	3.900E+00	1.512E+00	1.512E+00	90.34
BI-214	609.32	564	45.49*	2.195E+00	1.557E+00	1.557E+00	12.64
	1120.29	139	14.92	1.259E+00	2.036E+00	2.036E+00	30.50
	1764.49	-----	15.30	8.740E-01	-----	Line Not Found	-----
PB-214	74.82	462	5.80	4.040E+00	5.429E+00	5.429E+00	22.00
	77.11	705	9.70	4.293E+00	4.663E+00	4.664E+00	17.07
	242.00	324	7.25	4.595E+00	2.679E+00	2.679E+00	27.18
	295.22	464	18.42	3.951E+00	1.756E+00	1.756E+00	16.03
	351.93	759	35.60*	3.443E+00	1.708E+00	1.708E+00	14.21
RA-224	240.99	324	4.10*	4.595E+00	4.737E+00	4.737E+00	26.55
RA-226	609.32	564	45.49*	2.195E+00	1.557E+00	1.557E+00	12.64
	1120.29	139	14.92	1.259E+00	2.036E+00	2.036E+00	30.50
	1764.49	-----	15.30	8.740E-01	-----	Line Not Found	-----
AC-228	338.32	358	11.27	3.550E+00	2.465E+00	2.465E+00	45.42

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	303	25.80*	1.527E+00	2.117E+00	2.117E+00	19.52
	968.97	160	15.80	1.442E+00	1.936E+00	1.936E+00	34.80
	338.32	358	11.27	3.550E+00	2.465E+00	2.465E+00	45.42
	911.20	303	25.80*	1.527E+00	2.117E+00	2.117E+00	19.52
TH-228	968.97	160	15.80	1.442E+00	1.936E+00	1.936E+00	34.80
	74.82	462	10.28	4.040E+00	3.063E+00	3.063E+00	20.55
	77.11	705	17.10	4.293E+00	2.645E+00	2.645E+00	14.95
	238.63	1468	43.60*	4.639E+00	2.001E+00	2.001E+00	9.58
TH-229	300.09	71	3.30	3.900E+00	1.512E+00	1.512E+00	108.61
	85.43	251	14.70	5.189E+00	9.084E-01	9.084E-01	46.03
	88.47	156	24.00	5.414E+00	3.307E-01	3.307E-01	27.96
	193.51	-----	4.41*	5.353E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	5.059E+00	-----	Line Not Found	-----
	338.32	358	11.27	3.550E+00	2.465E+00	2.465E+00	19.92
	911.20	303	25.80*	1.527E+00	2.117E+00	2.117E+00	19.52
	968.97	160	15.80	1.442E+00	1.936E+00	1.936E+00	34.80
U-235	89.96	156	3.47	5.414E+00	2.288E+00	2.288E+00	36.24
	93.35	291	5.60	5.591E+00	2.563E+00	2.563E+00	39.07
	143.76	-----	10.96*	6.189E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.887E+00	-----	Line Not Found	-----
NP-237	185.72	190	57.20	5.491E+00	1.671E-01	1.671E-01	39.83
	205.31	-----	5.01	5.150E+00	-----	Line Not Found	-----
	86.48	251	12.40*	5.189E+00	1.077E+00	1.077E+00	50.58
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
ANH-511	511.00	123	100.00*	2.548E+00	1.335E-01	1.335E-01	62.63

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 5
Number of lines tentatively identified by NID 27 84.38%

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	2.932E+01	2.932E+01	0.290E+01	9.90	
NB-95	64.03D	1.23	7.860E-02	9.669E-02	6.451E-02	66.73	
CD-109	461.40D	1.03	3.609E+00	3.714E+00	1.710E+00	46.03	
SN-126	2.30E+05Y	1.00	3.609E-01	3.609E-01	1.661E-01	46.03	
CS-135	2.30E+06Y	1.00	6.788E-01	6.788E-01	3.325E-01	48.99	
HG-203	46.59D	1.33	5.029E-02	6.686E-02	7.835E-02	117.20	
TL-208	1.41E+10Y	1.00	6.796E-01	6.796E-01	0.969E-01	14.26	
BI-211	7.04E+08Y	1.00	4.706E+00	4.706E+00	0.616E+00	13.10	
PB-212	1.41E+10Y	1.00	2.001E+00	2.001E+00	0.192E+00	9.58	
BI-214	1600.00Y	1.00	1.557E+00	1.557E+00	0.197E+00	12.64	
PB-214	1600.00Y	1.00	1.708E+00	1.708E+00	0.243E+00	14.21	
RA-224	1.41E+10Y	1.00	4.737E+00	4.737E+00	1.258E+00	26.55	
RA-226	1600.00Y	1.00	1.557E+00	1.557E+00	0.197E+00	12.64	
AC-228	1.41E+10Y	1.00	2.117E+00	2.117E+00	0.413E+00	19.52	
RA-228	1.41E+10Y	1.00	2.117E+00	2.117E+00	0.413E+00	19.52	
TH-228	1.41E+10Y	1.00	2.001E+00	2.001E+00	0.192E+00	9.58	
TH-229	7340.00Y	1.00	3.307E-01	3.307E-01	0.925E-01	27.96	K
TH-232	1.41E+10Y	1.00	2.117E+00	2.117E+00	0.413E+00	19.52	
U-235	7.04E+08Y	1.00	1.671E-01	1.671E-01	0.666E-01	39.83	K
NP-237	2.14E+06Y	1.00	1.077E+00	1.077E+00	0.545E+00	50.58	
ANH-511	1.00E+09Y	1.00	1.335E-01	1.335E-01	0.836E-01	62.63	
Total Activity :			6.110E+01	6.124E+01			

Grand Total Activity : 6.110E+01 6.124E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247969006

Page : 4
Acquisition date : 11-MAR-2010 14:14:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.45	162	532	0.99	256.90	251	12	2.24E-02	59.2	6.33E+00	
0	208.51	161	352	1.18	417.02	413	11	2.23E-02	47.8	5.10E+00	
0	327.49	42	175	1.12	654.97	651	9	5.89E-03	****	3.64E+00	T
0	462.07	75	189	1.22	924.14	917	14	1.04E-02	81.1	2.76E+00	T
0	726.66	84	90	1.24	1453.31	1450	11	1.17E-02	49.4	1.88E+00	T
0	794.57	37	56	2.21	1589.14	1584	9	5.13E-03	80.2	1.73E+00	T
1	963.50	69	64	2.12	1927.00	1920	24	9.63E-03	53.7	1.45E+00	T
1	1726.00	40	7	2.25	3452.00	3445	17	5.49E-03	39.6	8.85E-01	
1	1728.50	30	6	2.25	3457.00	3445	17	4.12E-03	50.0	8.85E-01	
0	1762.64	96	7	3.33	3525.27	3518	13	1.33E-02	24.1	8.75E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969006.CNF;1  *
* Acquisition date   : 11-MAR-2010 14:14:59   Detector SN#      :          *
* Detector ID        : GAM23                  Sensitivity       : 5.00000      *
* Geometry           : CAN                    Energy tolerance  : 1.80000      *
* Elapsed live time  : 0 02:00:00.00          Abundance limit      : 75.00000     *
* Elapsed real time  : 0 02:00:01.91          Half life ratio     : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00   Nuclide Library   : SOLID      *
* Sample ID          : G247969006             Analyst initials  : MXR1        *
* Batch Number       : 958216                 Sample Quantity   : 1.36180E+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	2.932E+01	2.902E+00	5.669E-01	4.241E-02	51.725
NB-95	9.669E-02	6.451E-02	8.355E-02	5.615E-03	1.157
CD-109	3.714E+00	1.710E+00	1.537E+00	1.500E-01	2.417
SN-126	3.609E-01	1.661E-01	1.502E-01	1.462E-02	2.402
CS-135	6.788E-01	3.325E-01	2.715E-01	2.074E-02	2.500
HG-203	6.686E-02	7.835E-02	7.510E-02	4.612E-03	0.890
TL-208	6.796E-01	9.688E-02	5.679E-02	3.678E-03	11.966
BI-211	4.706E+00	6.164E-01	3.657E-01	2.383E-02	12.871
PB-212	2.001E+00	1.918E-01	1.040E-01	7.547E-03	19.237
BI-214	1.557E+00	1.968E-01	1.335E-01	1.012E-02	11.658
PB-214	1.708E+00	2.427E-01	1.330E-01	1.135E-02	12.843
RA-224	4.737E+00	1.258E+00	1.115E+00	6.283E-02	4.248
RA-226	1.557E+00	1.968E-01	1.335E-01	1.012E-02	11.658
AC-228	2.117E+00	4.132E-01	2.391E-01	2.840E-02	8.852
RA-228	2.117E+00	4.132E-01	2.391E-01	2.840E-02	8.852
TH-228	2.001E+00	1.918E-01	1.040E-01	7.547E-03	19.237
TH-229	3.307E-01	9.248E-02	9.793E-01	5.187E-02	0.338
TH-232	2.117E+00	4.132E-01	2.391E-01	2.840E-02	8.852

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	1.671E-01	6.656E-02	3.993E-01	6.217E-02	0.419
NP-237	1.077E+00	5.447E-01	4.594E-01	1.060E-01	2.344
ANH-511	1.335E-01	8.360E-02	5.157E-02	2.995E-03	2.588

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.863E-01		3.802E-01	5.812E-01	3.948E-02	-0.665
NA-22	-4.543E-03		4.931E-02	7.958E-02	5.344E-03	-0.057
NA-24	-3.656E+01		3.315E+01	Half-Life	too short	
SC-46	-2.605E-02		4.404E-02	6.929E-02	6.191E-03	-0.376
V-48	-9.010E-02		1.044E-01	1.596E-01	1.327E-02	-0.565
CR-51	-1.067E-01		4.472E-01	7.409E-01	4.851E-02	-0.144
MN-54	-5.800E-03		4.104E-02	6.784E-02	5.372E-03	-0.085
CO-56	-1.939E-03		4.095E-02	6.811E-02	5.541E-03	-0.028
CO-57	-1.588E-03		3.125E-02	4.748E-02	2.799E-03	-0.033
CO-58	-4.664E-02		4.588E-02	7.011E-02	5.267E-03	-0.665
FE-59	-1.160E-01		1.142E-01	1.692E-01	1.303E-02	-0.685
CO-60	-9.319E-03		4.617E-02	7.322E-02	5.375E-03	-0.127
ZN-65	2.195E-01		1.389E-01	2.273E-01	1.501E-02	0.966
SE-75	-1.055E-02		5.962E-02	8.196E-02	4.773E-03	-0.129
SR-85	4.925E-02		5.016E-02	7.737E-02	4.490E-03	0.637
Y-88	4.104E-02		4.073E-02	7.829E-02	4.610E-03	0.524
Y-91	-5.561E+00		2.709E+01	4.352E+01	2.596E+00	-0.128
NB-94	4.061E-02		4.163E-02	7.173E-02	4.099E-03	0.566
NB-95M	1.002E+00		2.139E-01	3.455E-01	2.558E-02	2.899
ZR-95	1.655E-03		8.746E-02	1.407E-01	1.086E-02	0.012
MO-99	2.253E+01		4.039E+01	6.769E+01	9.893E+00	0.333
TC-99M	3.628E+13		1.331E+15	Half-Life	too short	
RU-103	-2.126E-02		4.775E-02	7.592E-02	9.446E-03	-0.280
RH-106	-2.158E-01		3.693E-01	5.712E-01	6.519E-02	-0.378
RU-106	-2.158E-01		3.686E-01	5.712E-01	3.069E-02	-0.378
AG-108M	-7.134E-03		3.371E-02	5.505E-02	3.441E-03	-0.130
AG-110M	6.254E-03		4.170E-02	6.829E-02	3.795E-03	0.092
SN-113	-4.089E-03		5.196E-02	8.599E-02	5.297E-03	-0.048
CD-115	2.684E-05		2.214E-05	Half-Life	too short	
SN-117M	-1.287E-02		7.935E-02	1.286E-01	6.683E-03	-0.100
TE-123M	1.778E-02		3.400E-02	5.649E-02	2.981E-03	0.315
SB-124	-1.129E-02		8.028E-02	1.298E-01	9.081E-03	-0.087
SB-125	1.173E-02		1.073E-01	1.788E-01	1.086E-02	0.066
TE-125M	-6.842E-01		1.190E+01	1.960E+01	1.785E+00	-0.035
I-126	2.412E-02		3.187E-01	5.187E-01	2.684E-02	0.047
SB-126	1.123E-01		2.348E-01	3.580E-01	2.146E-02	0.314
SB-127	-7.260E-01		3.151E+00	4.993E+00	5.345E-01	-0.145
I-131	4.269E-02		1.747E-01	2.953E-01	1.941E-02	0.145
TE-132	-1.738E+00		2.056E+00	3.153E+00	4.829E-01	-0.551
BA-133	1.382E-02		5.024E-02	7.450E-02	8.433E-03	0.186

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	4.798E-02		8.145E-02	Half-Life too short		
CS-134	7.783E-02	+	6.269E-02	1.004E-01	7.330E-03	0.776
I-135	-4.364E+13		8.963E+13	Half-Life too short		
CS-136	-2.806E-02		1.528E-01	2.479E-01	1.976E-02	-0.113
BA-137M	2.998E-02		4.302E-02	7.312E-02	3.735E-03	0.410
CS-137	3.168E-02		4.545E-02	7.725E-02	3.968E-03	0.410
CE-139	2.272E-02		3.404E-02	5.683E-02	2.897E-03	0.400
BA-140	2.449E-01		4.007E-01	6.690E-01	2.228E-01	0.366
LA-140	-7.431E-02		1.098E-01	1.633E-01	1.121E-02	-0.455
CE-141	6.158E-02		8.157E-02	1.358E-01	7.661E-03	0.453
CE-143	1.155E-02	+	1.528E-03	Half-Life too short		
CE-144	1.139E-01		2.637E-01	3.866E-01	5.339E-02	0.295
PM-144	2.763E-03		4.007E-02	6.503E-02	3.660E-03	0.042
PR-144	2.293E-01		3.007E+00	4.882E+00	2.744E-01	0.047
PM-146	-2.247E-02		5.159E-02	7.770E-02	6.602E-03	-0.289
ND-147	3.741E-01		8.369E-01	1.410E+00	1.905E-01	0.265
PM-149	1.705E-04		1.814E-04	Half-Life too short		
EU-152	7.734E-02		1.756E-01	1.830E-01	1.212E-02	0.423
GD-153	3.473E-02		1.116E-01	1.635E-01	1.336E-02	0.212
EU-154	-1.284E-02		1.394E-01	2.250E-01	2.251E-02	-0.057
EU-155	-6.105E-03		1.253E-01	2.067E-01	1.523E-02	-0.030
TB-160	-1.920E-02		1.737E-01	2.870E-01	2.510E-02	-0.067
HO-166M	7.272E-02		7.251E-02	1.257E-01	7.355E-03	0.579
TA-182	8.767E-02		2.593E-01	4.347E-01	2.668E-02	0.202
IR-192	-2.036E-02		3.996E-02	6.532E-02	3.875E-03	-0.312
BI-207	-9.639E-03		6.103E-02	9.915E-02	7.284E-03	-0.097
PB-210	-3.362E+00		5.836E+00	9.507E+00	7.344E-01	-0.354
PB-211	-1.139E+00		1.014E+00	1.312E+00	6.292E-01	-0.869
BI-212	1.849E+00	+	9.359E-01	1.341E+00	1.457E-01	1.379
RN-219	2.521E-01		4.625E-01	7.890E-01	1.060E-01	0.320
RA-223	-4.177E-02		7.964E-01	1.157E+00	1.870E-01	-0.036
AC-227	-7.632E-02		2.852E-01	4.500E-01	4.581E-02	-0.170
TH-227	-7.632E-02		2.852E-01	4.500E-01	5.391E-02	-0.170
PA-231	-4.516E-01		1.809E+00	2.738E+00	3.596E-01	-0.165
TH-231	-4.177E-02		7.964E-01	1.157E+00	1.870E-01	-0.036
PA-233	6.852E-02		7.023E-02	1.233E-01	7.709E-03	0.556
PA-234	1.901E-01		3.587E-01	6.185E-01	1.163E-01	0.307
PA-234M	4.130E+00		5.394E+00	9.465E+00	9.031E-01	0.436
TH-234	4.476E-01		1.865E+00	3.140E+00	5.775E-01	0.143
U-238	4.476E-01		1.865E+00	3.140E+00	5.775E-01	0.143
NP-239	-1.212E-01		4.654E-01	7.445E-01	4.634E-02	-0.163
AM-241	-1.318E-01		2.172E-01	3.566E-01	3.318E-02	-0.370
CM-247	2.032E-02		4.136E-02	7.056E-02	4.089E-03	0.288
CF-249	3.864E-03		4.373E-02	7.309E-02	4.229E-03	0.053
CF-251	-9.271E-02		1.525E-01	2.416E-01	1.250E-02	-0.384

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247969006             *
* Acquisition date   : 11-MAR-2010 14:14:59 Detector SN#      :               *
* Detector ID        : GAM23                               Sensitivity      : 5.000   *
* Geometry           : CAN                                Energy tolerance: 1.800   *
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.91                      Half life ratio : 8.000   *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G247969006                      Analyst initials: MXR1      *
* Batch Number       : 958216                          Sample Quantity : 1.3618E+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	2.932E+01	2.844E+00	2.843E-01	1.451E+00
NB-95	9.669E-02	6.322E-02	4.244E-02	3.226E-02
CD-109	3.714E+00	1.675E+00	8.121E-01	8.548E-01
SN-126	3.609E-01	1.628E-01	7.939E-02	8.306E-02
CS-135	6.788E-01	3.258E-01	1.406E-01	1.662E-01
HG-203	6.686E-02	7.679E-02	3.887E-02	3.918E-02
TL-208	6.796E-01	9.494E-02	2.899E-02	4.844E-02
BI-211	4.706E+00	6.040E-01	1.885E-01	3.082E-01
PB-212	2.001E+00	1.879E-01	5.400E-02	9.589E-02
BI-214	1.557E+00	1.928E-01	6.812E-02	9.839E-02
PB-214	1.708E+00	2.379E-01	6.854E-02	1.214E-01
RA-224	4.737E+00	1.233E+00	5.788E-01	6.289E-01
RA-226	1.557E+00	1.928E-01	6.812E-02	9.839E-02
AC-228	2.117E+00	4.049E-01	1.210E-01	2.066E-01
RA-228	2.117E+00	4.049E-01	1.210E-01	2.066E-01
TH-228	2.001E+00	1.879E-01	5.400E-02	9.589E-02
TH-229	-1.493E-01	5.989E-01	5.103E-01	3.056E-01
TH-232	2.117E+00	4.049E-01	1.210E-01	2.066E-01
U-235	4.579E-02	2.394E-01	2.092E-01	1.221E-01
NP-237	1.077E+00	5.338E-01	2.428E-01	2.723E-01
ANH-511	1.335E-01	8.193E-02	2.639E-02	4.180E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.863E-01	3.726E-01	2.978E-01	1.901E-01 NOT IDENT.
NA-22	-4.543E-03	4.833E-02	4.002E-02	2.466E-02 NOT IDENT.
NA-24	-3.656E+07	6.498E+07	0.000E+00	3.315E+07 SHORT HLIF
SC-46	-2.605E-02	4.316E-02	3.509E-02	2.202E-02 FAIL ABUN
V-48	-9.010E-02	1.023E-01	8.065E-02	5.219E-02 NOT IDENT.
CR-51	-1.067E-01	4.383E-01	3.825E-01	2.236E-01 NOT IDENT.

MN-54	-5.800E-03	4.021E-02	3.440E-02	2.052E-02	NOT IDENT.
CO-56	-1.939E-03	4.013E-02	3.453E-02	2.047E-02	NOT IDENT.
CO-57	-1.588E-03	3.063E-02	2.495E-02	1.563E-02	NOT IDENT.
CO-58	-4.664E-02	4.496E-02	3.557E-02	2.294E-02	NOT IDENT.
FE-59	-1.160E-01	1.119E-01	8.536E-02	5.709E-02	NOT IDENT.
CO-60	-9.319E-03	4.525E-02	3.679E-02	2.309E-02	NOT IDENT.
ZN-65	2.195E-01	1.361E-01	1.146E-01	6.945E-02	NOT IDENT.
SE-75	-1.055E-02	5.842E-02	4.246E-02	2.981E-02	FAIL ABUN
SR-85	4.925E-02	4.915E-02	3.960E-02	2.508E-02	NOT IDENT.
Y-88	4.104E-02	3.991E-02	3.909E-02	2.036E-02	NOT IDENT.
Y-91	-5.561E+00	2.655E+01	2.191E+01	1.354E+01	NOT IDENT.
NB-94	4.061E-02	4.079E-02	3.649E-02	2.081E-02	NOT IDENT.
NB-95M	1.002E+00	2.096E-01	1.794E-01	1.070E-01	NOT IDENT.
ZR-95	1.655E-03	8.571E-02	7.148E-02	4.373E-02	NOT IDENT.
MO-99	2.253E+01	3.958E+01	3.440E+01	2.019E+01	NOT IDENT.
TC-99M	3.628E+19	2.609E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.126E-02	4.680E-02	3.888E-02	2.388E-02	NOT IDENT.
RH-106	-2.158E-01	3.619E-01	2.912E-01	1.846E-01	NOT IDENT.
RU-106	-2.158E-01	3.612E-01	2.912E-01	1.843E-01	NOT IDENT.
AG-108M	-7.134E-03	3.304E-02	2.826E-02	1.686E-02	NOT IDENT.
AG-110M	6.254E-03	4.086E-02	3.478E-02	2.085E-02	NOT IDENT.
SN-113	-4.089E-03	5.092E-02	4.423E-02	2.598E-02	NOT IDENT.
CD-115	2.684E+01	4.339E+01	0.000E+00	2.214E+01	SHORT HLIF
SN-117M	-1.287E-02	7.776E-02	6.725E-02	3.968E-02	NOT IDENT.
TE-123M	1.778E-02	3.332E-02	2.954E-02	1.700E-02	NOT IDENT.
SB-124	-1.129E-02	7.867E-02	6.490E-02	4.014E-02	NOT IDENT.
SB-125	1.173E-02	1.052E-01	9.182E-02	5.367E-02	FAIL ABUN
TE-125M	-6.842E-01	1.166E+01	1.032E+01	5.951E+00	NOT IDENT.
I-126	2.412E-02	3.123E-01	2.641E-01	1.593E-01	NOT IDENT.
SB-126	1.123E-01	2.301E-01	1.821E-01	1.174E-01	NOT IDENT.
SB-127	-7.260E-01	3.088E+00	2.541E+00	1.575E+00	NOT IDENT.
I-131	4.269E-02	1.712E-01	1.521E-01	8.735E-02	NOT IDENT.
TE-132	-1.738E+00	2.015E+00	1.638E+00	1.028E+00	NOT IDENT.
BA-133	1.382E-02	4.923E-02	3.839E-02	2.512E-02	FAIL ABUN
I-133	4.798E+04	1.596E+05	0.000E+00	8.145E+04	SHORT HLIF
CS-134	7.783E-02	6.144E-02	5.094E-02	3.134E-02	FAIL ABUN
I-135	-4.364E+19	1.757E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.806E-02	1.498E-01	1.252E-01	7.642E-02	NOT IDENT.
BA-137M	2.998E-02	4.216E-02	3.724E-02	2.151E-02	NOT IDENT.
CS-137	3.168E-02	4.454E-02	3.934E-02	2.273E-02	NOT IDENT.
CE-139	2.272E-02	3.336E-02	2.969E-02	1.702E-02	NOT IDENT.
BA-140	2.449E-01	3.927E-01	3.421E-01	2.004E-01	NOT IDENT.
LA-140	-7.431E-02	1.076E-01	8.177E-02	5.492E-02	FAIL ABUN
CE-141	6.158E-02	7.993E-02	7.113E-02	4.078E-02	NOT IDENT.
CE-143	1.155E+04	2.995E+03	0.000E+00	1.528E+03	SHORT HLIF
CE-144	1.139E-01	2.584E-01	2.028E-01	1.318E-01	NOT IDENT.
PM-144	2.763E-03	3.927E-02	3.309E-02	2.004E-02	NOT IDENT.
PR-144	2.293E-01	2.947E+00	2.484E+00	1.503E+00	NOT IDENT.
PM-146	-2.247E-02	5.056E-02	3.986E-02	2.580E-02	NOT IDENT.
ND-147	3.741E-01	8.201E-01	7.212E-01	4.184E-01	FAIL ABUN
PM-149	1.705E+02	3.556E+02	0.000E+00	1.814E+02	SHORT HLIF
EU-152	7.734E-02	1.721E-01	9.433E-02	8.781E-02	FAIL ABUN
GD-153	3.473E-02	1.093E-01	8.627E-02	5.579E-02	NOT IDENT.
EU-154	-1.284E-02	1.367E-01	1.132E-01	6.972E-02	NOT IDENT.
EU-155	-6.105E-03	1.228E-01	1.089E-01	6.265E-02	FAIL ABUN
TB-160	-1.920E-02	1.702E-01	1.454E-01	8.684E-02	FAIL ABUN
HO-166M	7.272E-02	7.106E-02	6.391E-02	3.626E-02	FAIL ABUN
TA-182	8.767E-02	2.541E-01	2.188E-01	1.297E-01	NOT IDENT.
IR-192	-2.036E-02	3.917E-02	3.373E-02	1.998E-02	FAIL ABUN
BI-207	-9.639E-03	5.981E-02	5.004E-02	3.052E-02	FAIL ABUN
PB-210	-3.362E+00	5.719E+00	5.080E+00	2.918E+00	NOT IDENT.
PB-211	-1.139E+00	9.932E-01	6.742E-01	5.068E-01	NOT IDENT.
BI-212	1.849E+00	9.172E-01	6.817E-01	4.680E-01	FAIL ABUN
RN-219	2.521E-01	4.532E-01	4.056E-01	2.312E-01	FAIL ABUN
RA-223	-4.177E-02	7.805E-01	5.974E-01	3.982E-01	FAIL ABUN
AC-227	-7.632E-02	2.795E-01	2.333E-01	1.426E-01	FAIL ABUN
TH-227	-7.632E-02	2.795E-01	2.333E-01	1.426E-01	FAIL ABUN
PA-231	-4.516E-01	1.773E+00	1.417E+00	9.046E-01	FAIL ABUN
TH-231	-4.177E-02	7.805E-01	5.974E-01	3.982E-01	FAIL ABUN
PA-233	6.852E-02	6.883E-02	6.367E-02	3.512E-02	FAIL ABUN
PA-234	1.901E-01	3.516E-01	3.129E-01	1.794E-01	NOT IDENT.
PA-234M	4.130E+00	5.286E+00	4.782E+00	2.697E+00	FAIL ABUN
TH-234	4.476E-01	1.828E+00	1.669E+00	9.326E-01	FAIL ABUN
U-238	4.476E-01	1.828E+00	1.669E+00	9.326E-01	FAIL ABUN
NP-239	-1.212E-01	4.561E-01	3.915E-01	2.327E-01	FAIL ABUN
AM-241	-1.318E-01	2.129E-01	1.897E-01	1.086E-01	NOT IDENT.
CM-247	2.032E-02	4.053E-02	3.627E-02	2.068E-02	FAIL ABUN
CF-249	3.864E-03	4.286E-02	3.760E-02	2.187E-02	NOT IDENT.

CF-251	-9.271E-02	1.495E-01	1.261E-01	7.625E-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	366.8193
49.72	349.8315
57.36	0.0000
59.54	467.3489
63.29	501.6589
63.29	501.6589
64.28	469.8486
67.75	522.6409
69.67	517.6706
70.83	521.5336
72.81	565.1940
72.87	565.2420
72.87	565.2420
74.82	554.4932
74.82	554.4932
74.82	554.4932
74.97	554.6074
77.11	556.2285
77.11	556.2285
77.11	556.2285
79.69	515.3635
79.80	515.4380
80.12	515.0229
80.19	515.0704
80.57	514.0592
81.00	617.2196
81.07	617.2765
81.07	617.2765
83.79	521.5714
83.79	521.5714
85.43	527.2623
86.48	527.9636
86.55	528.0119
86.79	528.1694
86.94	518.2883
87.57	518.6982
88.03	518.9969
88.47	519.2812
89.96	747.6028
91.11	435.3031
92.59	436.0862
92.59	436.0862
93.35	436.4873
94.67	437.1775
94.87	437.2825
94.87	437.2825
95.86	440.9020
97.43	387.2813
98.44	389.2960
99.53	419.4128
100.11	397.8507
103.18	431.5405
103.37	400.3127
105.31	428.6516
106.12	424.1294
109.28	416.7424
111.00	420.4846
111.76	423.7926
116.30	373.2346
117.23	379.5606
121.12	375.1064
121.78	368.7036
122.06	368.8092
123.07	343.8648
131.20	398.2513
133.52	376.5231
136.00	396.8569

136.47	413.2419
140.51	419.9006
140.51	0.0000
143.76	423.2068
144.24	419.3127
144.24	419.3127
145.44	384.0265
152.43	353.5611
153.25	374.3864
154.21	367.4971
154.21	367.4971
156.02	386.6415
158.56	389.5636
159.00	360.7663
162.66	367.0854
163.33	398.4199
165.86	319.2100
176.60	326.2401
177.52	370.5730
181.07	352.0446
184.41	369.8619
185.72	359.2526
193.51	338.0327
197.04	314.4211
205.31	298.5548
210.85	277.3614
215.65	292.6378
222.11	289.7823
227.38	288.6590
228.16	311.6997
228.18	311.7040
235.69	303.2125
235.96	292.7495
235.96	292.7495
238.63	268.9052
238.63	268.9052
240.99	269.3258
242.00	269.5052
244.70	211.5776
252.40	210.4174
252.80	206.0401
256.23	226.4736
256.23	226.4736
260.90	0.0000
264.66	217.8516
268.22	207.0808
269.46	207.2376
269.46	207.2376
271.23	210.6652
273.65	210.9750
276.40	212.8238
277.37	204.3787
277.60	204.4064
278.00	195.0264
279.20	219.1871
279.54	223.7365
280.46	226.8625
283.69	229.6642
284.31	237.1696
285.41	217.8855
285.90	0.0000
287.50	217.2480
293.27	0.0000
295.22	200.0410
295.96	200.1270
298.57	200.4250
299.98	183.8707
299.98	183.8707
300.09	183.8830
300.09	183.8830
300.13	183.8879
301.36	177.9327
302.85	179.6048
304.50	173.6788
304.50	173.6788
304.85	173.7136
308.46	194.2212
311.90	159.7138

316.51	192.3275
319.41	165.9045
320.08	181.6406
323.87	177.0881
323.87	177.0881
328.76	194.5371
333.37	201.2075
334.37	185.8276
334.37	185.8276
338.28	189.9376
338.28	189.9376
338.32	189.9401
338.32	189.9401
338.32	189.9401
340.48	155.3568
340.55	155.3629
344.28	149.4375
351.06	161.2080
351.93	161.2794
356.01	139.3776
364.49	136.8296
366.42	123.7368
383.85	139.0885
388.16	140.3301
388.63	138.4527
391.69	152.9980
400.66	145.0057
401.81	139.3182
402.40	133.5907
404.85	189.5476
410.95	144.7339
414.70	144.0164
423.72	141.6959
427.09	155.5176
427.87	141.9597
433.94	134.5450
453.88	135.2290
463.37	120.1414
468.07	115.4333
473.00	86.2587
476.78	122.1427
477.60	129.1383
487.02	104.7090
492.35	0.0000
497.08	113.1490
511.00	104.7166
514.00	107.5293
527.90	0.0000
529.87	0.0000
531.02	99.4499
537.26	101.7212
546.56	0.0000
563.25	89.3662
569.33	110.1557
569.50	110.1635
569.70	115.3195
583.19	73.4632
600.60	102.9570
602.73	83.3535
604.72	100.7873
609.32	107.9122
609.32	107.9122
610.33	118.3968
614.28	115.0730
618.01	102.6536
621.93	100.6945
621.93	100.6945
633.25	93.7129
635.95	83.2605
636.99	83.2895
645.85	81.4234
657.76	91.3015
661.66	89.2931
661.66	89.2931
664.57	0.0000
666.33	91.5598
666.50	100.0815
677.62	81.2102

685.70	87.8497
695.00	87.0374
696.49	88.1540
696.51	88.1540
697.00	93.5441
702.65	88.3242
706.68	104.6136
711.68	75.6140
720.70	77.3734
721.93	0.0000
722.78	104.7781
722.91	104.7828
723.31	112.0243
724.19	92.1740
727.33	68.3833
733.00	86.9863
735.93	85.9762
739.50	75.1740
747.24	73.1667
752.31	76.5591
753.82	70.0297
756.73	76.6616
763.94	62.1922
765.81	89.6798
766.42	87.8652
777.92	82.6538
778.90	81.7590
783.70	80.0332
785.37	78.2314
795.86	60.1371
801.95	81.7173
810.29	81.5744
810.76	82.5122
815.77	61.2761
818.51	74.3311
832.01	65.2875
834.85	73.7394
836.80	0.0000
846.77	54.3160
856.80	61.9784
860.56	62.9815
871.09	88.6146
873.19	66.9698
875.33	0.0000
879.36	72.7499
880.51	79.3892
883.24	62.4215
884.68	61.4995
889.28	64.4168
898.04	64.5662
911.20	53.9012
911.20	53.9012
911.20	53.9012
926.50	71.7438
937.49	82.4971
944.13	68.2237
946.00	60.5660
949.00	57.7258
962.29	56.2639
964.08	54.0814
966.15	54.1099
968.97	46.4121
968.97	46.4121
968.97	46.4121
983.53	79.5743
996.26	69.1149
1001.03	57.5008
1004.73	66.3315
1037.84	56.0444
1038.76	0.0000
1048.07	61.1069
1050.41	69.0316
1050.41	69.0316
1063.66	61.3315
1085.87	57.6696
1099.45	72.8069
1112.07	58.2976
1115.54	66.9224

1120.29	82.4565
1120.29	82.4565
1120.55	82.4598
1121.30	72.1641
1131.51	0.0000
1173.23	72.9932
1177.93	54.7998
1189.05	53.9144
1204.77	73.4854
1221.41	80.9126
1231.02	107.7600
1235.36	78.0688
1238.28	71.9482
1260.41	0.0000
1271.85	62.0972
1274.44	48.6676
1274.54	48.6696
1291.59	38.4453
1298.22	0.0000
1312.11	53.2101
1332.49	40.8551
1365.19	27.4102
1368.63	0.0000
1384.29	33.8594
1408.01	25.5088
1457.56	0.0000
1460.82	22.0798
1489.16	22.6560
1505.03	20.5563
1596.21	24.4983
1620.50	20.8153
1678.03	0.0000
1690.97	13.4019
1764.49	10.1708
1764.49	10.1708
1770.23	37.8112
1771.35	13.5757
1791.20	0.0000
1836.06	9.7949

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969006

Total Uranium Activity	1.3527E+00	ug/g
Total Uranium Counting Unc.	5.4390E+00	ug/g
Total Uranium Tpu	2.7750E-06	ug/g
Total Uranium Mda	4.9653E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 958216                SAMPLE ID   : G247969006                *
*  ANALYST       : MXR1                  DETECTOR    : GAM23                    *
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 11-MAR-2010 14:14:59.87  SAMPLE ALQT: 136.180 GRAM          *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.057E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.522E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.319E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.107E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 16:16:15.44

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969007.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:15:52
Sample ID          : G247969007 Sample quantity   : 1.20150E+02 GRAM
Detector name      : GAM11 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.96 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials  : MXR1
Abundance limit    : 75.00000 Sensitivity         : 5.00000
Batch ID           : 958216 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	62.92*	180	720	1.24	124.72	119	11	2.50E-02	30.2	
2	3	74.88*	631	477	1.05	148.67	143	15	8.76E-02	6.9	1.73E+00
3	3	77.10*	930	378	0.87	153.09	143	15	1.29E-01	4.7	
4	7	87.22*	436	405	1.20	173.36	163	28	6.06E-02	9.0	2.23E+00
5	7	89.89	278	318	1.08	178.69	163	28	3.86E-02	12.0	
6	7	92.82*	467	460	1.59	184.56	163	28	6.49E-02	10.7	
7	0	128.97	79	450	0.93	256.92	253	9	1.10E-02	49.5	
8	0	186.16*	299	431	1.36	371.38	367	12	4.15E-02	15.4	
9	0	209.26	167	349	1.13	417.62	413	10	2.32E-02	22.3	
10	6	238.67*	1662	205	0.99	476.49	472	17	2.31E-01	2.8	2.07E+00
11	6	241.62	405	273	1.52	482.39	472	17	5.63E-02	9.6	
12	0	270.24	133	253	1.15	539.67	535	11	1.85E-02	24.6	
13	0	295.22*	548	201	1.02	589.66	585	10	7.62E-02	6.5	
14	0	300.04	92	187	1.08	599.30	596	9	1.28E-02	28.7	
15	0	327.87	87	166	1.05	655.01	651	9	1.20E-02	28.8	
16	0	338.38	298	143	0.95	676.05	672	8	4.14E-02	9.1	
17	0	351.99*	864	153	1.08	703.27	697	12	1.20E-01	4.5	
18	0	409.70	75	89	1.00	818.78	816	8	1.04E-02	24.5	
19	0	462.98	96	85	1.98	925.39	921	8	1.33E-02	19.7	
20	0	510.83*	173	143	1.42	1021.15	1014	14	2.40E-02	18.6	
21	0	583.46*	523	138	1.34	1166.51	1162	13	7.26E-02	6.5	
22	0	609.60*	593	120	1.35	1218.81	1212	12	8.23E-02	5.6	
23	0	727.60	123	58	1.55	1454.93	1450	9	1.71E-02	14.4	
24	0	786.35	43	52	1.87	1572.51	1568	9	5.96E-03	34.3	
25	0	795.09	63	61	2.57	1589.99	1584	12	8.79E-03	27.5	
26	0	861.30	47	59	1.38	1722.48	1717	9	6.50E-03	33.3	
27	0	911.55*	346	74	1.71	1823.01	1817	14	4.81E-02	7.6	
28	0	934.21	35	51	1.48	1868.36	1864	9	4.91E-03	40.3	
29	0	965.26	87	49	1.21	1930.49	1924	11	1.21E-02	19.0	
30	0	969.31*	170	62	1.46	1938.58	1935	10	2.36E-02	11.8	
31	0	1120.84*	105	81	1.40	2241.76	2235	13	1.46E-02	20.4	
32	0	1238.72	84	89	1.68	2477.60	2472	15	1.17E-02	26.8	
33	0	1408.15	24	22	1.05	2816.56	2811	10	3.30E-03	42.6	
34	0	1461.48*	1413	47	1.73	2923.25	2915	17	1.96E-01	2.9	
35	0	1496.75*	21	8	1.01	2993.81	2985	14	2.85E-03	36.8	
36	0	1510.51	28	11	0.69	3021.32	3016	13	3.82E-03	32.7	
37	0	1631.59	33	8	1.07	3263.53	3258	14	4.57E-03	24.6	
38	0	1731.00	37	11	2.53	3462.38	3455	15	5.09E-03	25.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1765.40*	132	4	1.42	3531.18	3524	15	1.83E-02	9.6	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 16:16:18

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969007.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:15:52
Sample ID : G247969007 Sample quantity : 120.15 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.96 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	*	3.381E+01	3.519E+00	4.660E-01	4.030E-02	72.554
CD-109	+	88.03	*	5.581E+00	1.133E+00	1.042E+00	9.879E-02	5.357
SN-126	+	64.28		1.387E+00	8.621E-01	6.804E-01	9.870E-02	2.039
	+	86.94		2.254E+00	1.020E+00	4.241E-01	1.761E-01	5.316
	+	87.57	*	5.423E-01	1.101E-01	1.015E-01	9.579E-03	5.340
TL-208		277.37		1.588E-01	3.919E-01	6.456E-01	1.153E-01	0.246
	+	583.19	*	7.221E-01	1.225E-01	6.262E-02	6.756E-03	11.533
	+	860.56		6.073E-01	4.094E-01	4.109E-01	4.279E-02	1.478
BI-211		72.87		5.620E-01	3.070E+00	4.489E+00	3.565E-01	0.125
	+	351.06	*	5.330E+00	8.487E-01	2.904E-01	3.832E-02	18.351
BI-212	+	727.33	*	2.596E+00	8.206E-01	8.192E-01	1.082E-01	3.168
	+	785.37		5.861E+00	4.057E+00	5.458E+00	5.346E-01	1.074
		1620.50		4.791E+00	2.470E+00	5.091E+00	4.275E-01	0.941
PB-212	+	74.82		3.308E+00	6.174E-01	4.831E-01	6.117E-02	6.847
	+	77.11		2.821E+00	3.536E-01	2.801E-01	2.328E-02	10.072
	+	238.63	*	2.286E+00	3.462E-01	9.195E-02	1.291E-02	24.865
	+	300.09		1.983E+00	1.182E+00	1.150E+00	1.852E-01	1.724
BI-214	+	609.32	*	1.585E+00	2.527E-01	1.175E-01	1.333E-02	13.491
	+	1120.29		1.436E+00	6.070E-01	5.159E-01	5.597E-02	2.784
	+	1764.49		2.510E+00	5.257E-01	2.817E-01	2.321E-02	8.912
PB-214	+	74.82		5.863E+00	1.043E+00	8.563E-01	9.711E-02	6.847
	+	77.11		4.974E+00	7.462E-01	4.938E-01	5.781E-02	10.072
	+	242.00		3.380E+00	8.159E-01	5.595E-01	8.192E-02	6.041
	+	295.22		2.082E+00	4.361E-01	2.246E-01	3.685E-02	9.273
	+	351.93	*	1.934E+00	3.260E-01	1.056E-01	1.507E-02	18.311
RA-224	+	240.99	*	5.976E+00	1.401E+00	9.859E-01	1.320E-01	6.062
RA-226	+	609.32	*	1.585E+00	2.527E-01	1.175E-01	1.333E-02	13.491
	+	1120.29		1.436E+00	6.070E-01	5.159E-01	5.597E-02	2.784
	+	1764.49		2.510E+00	5.257E-01	2.817E-01	2.321E-02	8.912
AC-228	+	338.32		2.046E+00	9.545E-01	3.872E-01	1.664E-01	5.285
	+	911.20	*	2.286E+00	4.503E-01	2.366E-01	2.957E-02	9.659
	+	968.97		1.934E+00	6.605E-01	3.642E-01	8.998E-02	5.310
RA-228	+	338.32		2.046E+00	9.545E-01	3.872E-01	1.664E-01	5.285
	+	911.20	*	2.286E+00	4.503E-01	2.366E-01	2.957E-02	9.659

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.934E+00	6.605E-01	3.642E-01	8.998E-02	5.310
	+	74.82		3.308E+00	5.283E-01	4.831E-01	3.956E-02	6.847
	+	77.11		2.821E+00	3.536E-01	2.801E-01	2.328E-02	10.072
	+	238.63	*	2.286E+00	3.462E-01	9.195E-02	1.291E-02	24.865
	+	300.09		1.983E+00	1.681E+00	1.150E+00	7.179E-01	1.724
TH-232	+	338.32		2.046E+00	4.621E-01	3.872E-01	5.221E-02	5.285
	+	911.20	*	2.286E+00	4.503E-01	2.366E-01	2.957E-02	9.659
	+	968.97		1.934E+00	6.605E-01	3.642E-01	8.998E-02	5.310
TH-234	+	63.29	*	3.599E+00	2.267E+00	1.599E+00	2.843E-01	2.252
	+	92.59		4.890E+00	1.514E+00	8.627E-01	1.923E-01	5.668
U-235	+	89.96		3.607E+00	1.247E+00	1.066E+00	2.652E-01	3.383
	+	93.35		3.693E+00	1.171E+00	6.495E-01	1.512E-01	5.687
		143.76	*	1.116E-01	1.997E-01	3.350E-01	5.739E-02	0.333
		163.33		-3.832E-02	4.204E-01	6.907E-01	1.275E-01	-0.055
	+	185.72		2.656E-01	8.672E-02	6.338E-02	6.722E-03	4.190
		205.31		3.636E-01	5.216E-01	7.888E-01	1.555E-01	0.461
NP-237	+	86.48	*	1.618E+00	4.722E-01	3.055E-01	7.007E-02	5.297
		95.86		1.814E-01	8.223E-01	1.188E+00	2.864E-01	0.153
U-238	+	63.29	*	3.599E+00	2.267E+00	1.599E+00	2.843E-01	2.252
	+	92.59		4.890E+00	1.142E+00	8.627E-01	7.888E-02	5.668
ANH-511	+	511.00	*	1.827E-01	7.082E-02	4.521E-02	4.835E-03	4.042

---- 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	*	-1.038E-01	3.046E-01	4.946E-01	5.597E-02	-0.210
NA-22		1274.54	*	-1.514E-02	4.731E-02	7.434E-02	6.105E-03	-0.204
NA-24		1368.63	*	2.847E+01	4.731E-02	Half-Life too short		
SC-46		889.28	*	-2.953E-02	4.051E-02	6.323E-02	6.228E-03	-0.467
	+	1120.55		2.511E-01	1.048E-01	1.469E-01	1.253E-02	1.709
V-48		944.13		7.083E-01	9.665E-01	1.724E+00	1.667E-01	0.411
		983.53	*	3.480E-02	8.498E-02	1.466E-01	1.391E-02	0.237
		1312.11		-9.739E-03	9.805E-02	1.571E-01	1.296E-02	-0.062
CR-51		320.08	*	-8.162E-02	4.037E-01	6.364E-01	9.233E-02	-0.128
MN-54		834.85	*	1.945E-02	3.956E-02	6.907E-02	6.801E-03	0.282
CO-56		846.77	*	9.383E-03	3.988E-02	6.852E-02	6.751E-03	0.137
		1037.84		-1.315E-01	3.334E-01	5.311E-01	5.092E-02	-0.248
	+	1238.28		3.331E-01	1.807E-01	2.170E-01	1.827E-02	1.535
		1771.35		2.363E-02	1.964E-01	2.913E-01	2.397E-02	0.081
CO-57		122.06	*	1.507E-02	2.198E-02	3.832E-02	3.242E-03	0.393
		136.47		-1.130E-01	1.990E-01	3.281E-01	3.078E-02	-0.345
CO-58		810.76	*	-1.079E-02	4.575E-02	7.153E-02	7.043E-03	-0.151
FE-59		1099.45	*	-8.859E-02	1.015E-01	1.524E-01	1.432E-02	-0.581
		1291.59		2.961E-02	1.316E-01	2.191E-01	2.068E-02	0.135
CO-60		1173.23		2.024E-04	4.936E-02	8.090E-02	6.500E-03	0.003
		1332.49	*	-1.959E-02	4.068E-02	6.175E-02	5.103E-03	-0.317
ZN-65		1115.54	*	-1.021E-01	1.138E-01	1.438E-01	1.234E-02	-0.710
SE-75		121.12		4.334E-02	1.162E-01	2.003E-01	2.195E-02	0.216

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		1.132E-03	3.837E-02	6.488E-02	5.713E-03	0.017
		264.66	*	2.807E-02	4.455E-02	7.145E-02	1.050E-02	0.393
		279.54		-7.329E-02	1.132E-01	1.750E-01	2.740E-02	-0.419
		400.66		7.264E-02	2.564E-01	4.404E-01	5.624E-02	0.165
SR-85		514.00	*	5.852E-03	4.432E-02	6.546E-02	6.992E-03	0.089
Y-88		898.04		3.542E-02	4.275E-02	7.648E-02	7.558E-03	0.463
		1836.06	*	3.085E-02	3.801E-02	7.093E-02	5.758E-03	0.435
Y-91		1204.77	*	-4.435E+00	2.560E+01	4.122E+01	3.337E+00	-0.108
NB-94		702.65	*	-2.497E-02	3.440E-02	5.201E-02	4.995E-03	-0.480
		871.09		4.683E-03	3.434E-02	5.839E-02	5.755E-03	0.080
NB-95		765.81	*	-4.703E-02	5.485E-02	8.217E-02	8.021E-03	-0.572
NB-95M		235.69	*	-2.516E-03	1.377E-01	2.008E-01	2.806E-02	-0.013
ZR-95		724.19		-6.894E-02	1.217E-01	1.603E-01	1.655E-02	-0.430
		756.73	*	5.343E-02	8.444E-02	1.426E-01	1.505E-02	0.375
MO-99		140.51		6.142E+00	5.624E+01	9.347E+01	2.228E+01	0.066
		181.07		1.434E+01	4.659E+01	7.491E+01	1.473E+01	0.191
		366.42		-1.370E+02	2.885E+02	4.405E+02	5.337E+01	-0.311
		739.50	*	-1.078E+00	3.315E+01	5.326E+01	8.722E+00	-0.020
		777.92		-5.405E+01	9.988E+01	1.515E+02	1.482E+01	-0.357
TC-99M		140.51	*	2.300E+14	9.988E+01	Half-Life	too short	
RU-103		497.08	*	-1.029E-02	4.145E-02	6.644E-02	1.021E-02	-0.155
	+	610.33		1.754E+01	3.592E+00	3.607E+00	6.180E-01	4.864
RH-106		621.93	*	-5.553E-03	3.097E-01	5.057E-01	7.149E-02	-0.011
		1050.41		-2.054E-01	2.826E+00	4.646E+00	4.217E-01	-0.044
RU-106		621.93	*	-5.553E-03	3.097E-01	5.057E-01	5.017E-02	-0.011
		1050.41		-2.054E-01	2.826E+00	4.646E+00	4.217E-01	-0.044
AG-108M		433.94	*	9.449E-04	2.678E-02	4.512E-02	4.965E-03	0.021
		614.28		1.272E-02	3.707E-02	5.528E-02	5.662E-03	0.230
		722.91		2.465E-02	4.540E-02	6.789E-02	6.728E-03	0.363
AG-110M		657.76	*	1.197E-03	3.408E-02	5.565E-02	5.423E-03	0.022
		677.62		8.276E-02	3.249E-01	5.388E-01	5.252E-02	0.154
		706.68		-2.178E-01	2.363E-01	3.493E-01	3.436E-02	-0.624
		763.94		-2.999E-02	1.905E-01	3.024E-01	3.014E-02	-0.099
		884.68		-9.041E-03	4.908E-02	8.100E-02	8.176E-03	-0.112
		937.49		1.473E-02	1.232E-01	1.818E-01	1.814E-02	0.081
		1384.29		2.855E-02	1.425E-01	2.370E-01	2.031E-02	0.120
		1505.03		1.401E-01	2.681E-01	4.331E-01	3.644E-02	0.324
SN-113		391.69	*	1.539E-02	4.266E-02	7.376E-02	8.023E-03	0.209
CD-115		260.90		-2.724E-04	4.266E-02	Half-Life	too short	
		492.35		-6.572E-05	4.266E-02	Half-Life	too short	
		527.90	*	-2.862E-06	4.266E-02	Half-Life	too short	
SN-117M		156.02		-4.035E+00	2.555E+00	3.938E+00	3.686E-01	-1.025
		158.56	*	2.070E-02	6.197E-02	1.052E-01	9.941E-03	0.197
TE-123M		159.00	*	-1.011E-05	2.730E-02	4.570E-02	4.348E-03	0.000
SB-124		602.73		5.524E-03	4.566E-02	6.910E-02	6.984E-03	0.080
		645.85		1.482E-01	4.864E-01	8.143E-01	8.225E-02	0.182
		722.78		2.634E-01	4.777E-01	7.149E-01	7.035E-02	0.368
		1690.97	*	-6.052E-02	7.877E-02	1.105E-01	9.625E-03	-0.548
SB-125		427.87	*	1.168E-02	8.641E-02	1.467E-01	1.599E-02	0.080

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		8.984E-01	3.678E-01	5.722E-01	6.475E-02	1.570
		600.60		2.402E-02	1.840E-01	3.046E-01	3.252E-02	0.079
		635.95		2.232E-01	2.807E-01	4.860E-01	5.050E-02	0.459
TE-125M		109.28	*	5.989E+00	8.816E+00	1.541E+01	1.606E+00	0.389
I-126		388.63		-3.140E-02	1.950E-01	3.270E-01	3.547E-02	-0.096
		666.33	*	-4.483E-01	3.154E-01	4.510E-01	4.275E-02	-0.994
		753.82		3.614E-01	2.603E+00	4.235E+00	4.123E-01	0.085
SB-126		414.70		2.566E-03	9.671E-02	1.443E-01	1.549E-02	0.018
		666.50		-1.502E-01	1.097E-01	1.577E-01	1.495E-02	-0.952
		695.00		3.641E-02	1.019E-01	1.699E-01	1.628E-02	0.214
		697.00		2.241E-01	3.660E-01	6.201E-01	5.944E-02	0.361
		720.70	*	6.650E-02	2.061E-01	3.412E-01	3.294E-02	0.195
		856.80		-6.744E-01	7.174E-01	9.279E-01	9.144E-02	-0.727
SB-127		252.40		6.483E+00	8.601E+00	1.383E+01	5.991E+00	0.469
		473.00		1.310E-01	2.984E+00	5.001E+00	7.663E-01	0.026
		685.70	*	1.443E+00	2.891E+00	4.870E+00	6.461E-01	0.296
		783.70		5.808E+00	8.807E+00	1.324E+01	1.891E+00	0.439
I-131		80.19		1.815E+00	6.657E+00	8.564E+00	7.448E-01	0.212
		284.31		-2.067E-01	2.101E+00	3.368E+00	5.263E-01	-0.061
		364.49	*	1.180E-02	1.741E-01	2.770E-01	3.483E-02	0.043
		636.99		2.692E-01	2.305E+00	3.798E+00	3.883E-01	0.071
TE-132		49.72		-2.086E+00	2.924E+01	4.675E+01	5.485E+00	-0.045
		111.76		-3.051E+01	6.924E+01	1.140E+02	1.382E+01	-0.268
		116.30		5.476E+00	5.769E+01	9.860E+01	1.192E+01	0.056
		228.16	*	-2.342E-01	1.710E+00	2.780E+00	5.314E-01	-0.084
BA-133		81.00		-8.282E-02	1.044E-01	1.233E-01	1.919E-02	-0.672
		276.40		2.387E-01	3.594E-01	5.975E-01	1.133E-01	0.400
		302.85		-1.229E-02	1.431E-01	2.030E-01	3.610E-02	-0.061
		356.01	*	-6.352E-03	4.468E-02	6.203E-02	9.879E-03	-0.102
		383.85		1.458E-01	2.916E-01	5.072E-01	7.245E-02	0.287
I-133		529.87	*	1.199E-02	2.916E-01	Half-Life	too short	
		875.33		1.616E+00	2.916E-01	Half-Life	too short	
		1298.22		3.921E-01	2.916E-01	Half-Life	too short	
CS-134		563.25		1.797E-01	3.747E-01	6.382E-01	6.695E-02	0.282
		569.33		1.266E-01	2.089E-01	3.581E-01	3.752E-02	0.354
		604.72		-4.684E-03	3.964E-02	5.570E-02	5.629E-03	-0.084
	+	795.86	*	1.269E-01	7.104E-02	9.598E-02	9.468E-03	1.322
		801.95		-2.324E-02	4.272E-01	6.554E-01	6.463E-02	-0.035
		1365.19		2.546E-01	1.222E+00	2.031E+00	1.771E-01	0.125
CS-135		268.22	*	9.901E-02	1.637E-01	2.464E-01	3.867E-02	0.402
I-135		546.56		2.273E+14	1.637E-01	Half-Life	too short	
		836.80		-3.968E+14	1.637E-01	Half-Life	too short	
		1038.76		-3.064E+14	1.637E-01	Half-Life	too short	
		1131.51		3.248E+13	1.637E-01	Half-Life	too short	
		1260.41	*	-1.488E+14	1.637E-01	Half-Life	too short	
		1457.56		3.014E+15	1.637E-01	Half-Life	too short	
		1678.03		-4.021E+13	1.637E-01	Half-Life	too short	
		1791.20		4.532E+13	1.637E-01	Half-Life	too short	
CS-136		153.25		1.454E+00	9.684E-01	1.702E+00	1.842E-01	0.854

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		3.107E-01	5.921E-01	1.006E+00	1.102E-01	0.309
		273.65		7.934E-02	6.994E-01	1.017E+00	1.586E-01	0.078
		340.55		2.023E-01	2.068E-01	3.130E-01	4.258E-02	0.646
		818.51		-3.461E-02	9.663E-02	1.495E-01	1.472E-02	-0.231
		1048.07	*	-3.307E-02	1.468E-01	2.380E-01	2.247E-02	-0.139
		1235.36		7.029E-01	9.337E-01	1.418E+00	1.621E-01	0.496
BA-137M		661.66	*	6.031E-03	3.825E-02	6.299E-02	5.960E-03	0.096
CS-137		661.66	*	6.371E-03	4.040E-02	6.654E-02	6.306E-03	0.096
CE-139		165.86	*	-4.484E-03	2.856E-02	4.737E-02	4.604E-03	-0.095
BA-140		162.66		5.111E-01	9.676E-01	1.630E+00	1.650E-01	0.314
		304.85		-9.194E-01	1.807E+00	2.430E+00	7.685E-01	-0.378
		423.72		6.272E-01	2.335E+00	3.983E+00	1.335E+00	0.157
		537.26	*	-8.812E-02	3.112E-01	5.006E-01	1.725E-01	-0.176
LA-140	+	328.76		9.141E-01	5.417E-01	7.220E-01	1.025E-01	1.266
		487.02		-7.230E-02	1.729E-01	2.793E-01	3.126E-02	-0.259
		815.77		-3.232E-01	4.338E-01	6.387E-01	6.853E-02	-0.506
		1596.21	*	-5.778E-02	1.078E-01	1.653E-01	1.390E-02	-0.350
CE-141		145.44	*	5.478E-02	6.505E-02	1.127E-01	1.033E-02	0.486
CE-143		57.36		2.091E-03	6.505E-02	Half-Life	too short	
		293.27	*	2.735E-03	6.505E-02	Half-Life	too short	
		664.57		1.065E-02	6.505E-02	Half-Life	too short	
		721.93		1.280E-02	6.505E-02	Half-Life	too short	
CE-144		80.12		5.903E-01	2.574E+00	3.302E+00	2.840E-01	0.179
		133.52	*	2.811E-02	2.126E-01	3.255E-01	4.987E-02	0.086
PM-144		476.78		-3.693E-02	5.837E-02	9.234E-02	1.051E-02	-0.400
		618.01		-1.952E-02	3.080E-02	4.745E-02	4.826E-03	-0.411
		696.49	*	1.494E-02	3.712E-02	6.201E-02	5.946E-03	0.241
PR-144		696.51	*	1.167E+00	2.788E+00	4.662E+00	4.469E-01	0.250
		1489.16		5.632E+00	1.066E+01	1.761E+01	1.481E+00	0.320
PM-146		453.88	*	2.657E-02	4.403E-02	7.632E-02	9.483E-03	0.348
		633.25		-8.074E-01	1.514E+00	2.309E+00	8.886E-01	-0.350
		735.93		1.498E-03	1.512E-01	2.439E-01	6.922E-02	0.006
		747.24		1.797E-02	1.063E-01	1.736E-01	2.649E-02	0.104
ND-147	+	91.11		1.501E+00	3.903E-01	5.640E-01	5.592E-02	2.662
		319.41		-1.188E+00	4.280E+00	6.713E+00	9.571E-01	-0.177
		531.02	*	-4.963E-01	6.843E-01	1.058E+00	1.711E-01	-0.469
PM-149		285.90	*	-8.199E-05	6.843E-01	Half-Life	too short	
EU-152		121.78		5.894E-02	6.251E-02	1.098E-01	1.072E-02	0.537
		244.70		1.175E-01	3.419E-01	5.093E-01	6.922E-02	0.231
		344.28	*	4.010E-02	9.964E-02	1.625E-01	2.202E-02	0.247
		778.90		-1.247E-01	2.677E-01	4.096E-01	4.008E-02	-0.304
	+	964.08		1.065E+00	4.172E-01	6.426E-01	6.158E-02	1.657
		1085.87		-1.135E-01	3.812E-01	6.095E-01	5.373E-02	-0.186
		1112.07		-4.597E-02	3.358E-01	5.461E-01	4.697E-02	-0.084
	+	1408.01		2.800E-01	2.394E-01	3.868E-01	3.232E-02	0.724
GD-153		69.67		2.216E-01	1.647E+00	2.410E+00	1.856E-01	0.092
		97.43	*	-1.759E-02	8.711E-02	1.221E-01	1.085E-02	-0.144
		103.18		1.098E-02	9.829E-02	1.690E-01	1.467E-02	0.065
EU-154		123.07		1.674E-02	4.490E-02	7.732E-02	8.687E-03	0.217

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	723.31		3.496E-02	2.136E-01	3.068E-01	3.206E-02	0.114
		873.19		1.295E-01	2.899E-01	5.046E-01	6.468E-02	0.257
		996.26		-7.272E-02	3.462E-01	5.631E-01	1.007E-01	-0.129
		1004.73		-3.687E-02	2.231E-01	3.650E-01	4.453E-02	-0.101
		1274.44	*	-4.411E-02	1.337E-01	2.098E-01	2.321E-02	-0.210
		86.55		6.586E-01	1.340E-01	1.854E-01	1.741E-02	3.553
		105.31	*	1.261E-01	9.612E-02	1.710E-01	1.491E-02	0.737
		86.79		1.812E+00	3.679E-01	5.129E-01	4.790E-02	3.533
		197.04		-4.594E-01	5.881E-01	9.210E-01	1.027E-01	-0.499
		215.65		8.613E-02	7.592E-01	1.254E+00	1.514E-01	0.069
TB-160	+	298.57		2.900E-01	1.721E-01	2.072E-01	3.101E-02	1.399
		879.36	*	-9.566E-03	1.421E-01	2.372E-01	2.337E-02	-0.040
		962.29		5.271E-02	5.810E-01	8.514E-01	8.166E-02	0.062
		966.15		7.724E-01	3.026E-01	5.061E-01	4.845E-02	1.526
		1177.93		5.443E-02	4.148E-01	6.870E-01	5.526E-02	0.079
		1271.85		2.377E-01	7.894E-01	1.323E+00	1.085E-01	0.180
		80.57		3.692E-01	2.644E-01	3.643E-01	3.150E-02	1.013
		184.41		3.138E-02	3.869E-02	6.157E-02	6.492E-03	0.510
		280.46		-5.175E-02	8.560E-02	1.327E-01	2.050E-02	-0.390
		410.95		5.997E-01	3.010E-01	4.553E-01	4.885E-02	1.317
HO-166M	+	711.68	*	-7.588E-03	6.407E-02	1.026E-01	9.879E-03	-0.074
		752.31		-1.243E-01	3.191E-01	4.966E-01	4.834E-02	-0.250
		810.29		-4.604E-02	6.907E-02	1.036E-01	1.018E-02	-0.445
		67.75		2.261E-02	9.822E-02	1.565E-01	1.185E-02	0.144
		100.11		-1.402E-01	1.517E-01	2.501E-01	2.194E-02	-0.561
		152.43		3.125E-01	3.205E-01	5.575E-01	5.151E-02	0.561
		222.11		-1.521E-01	3.477E-01	5.569E-01	6.907E-02	-0.273
		1121.30		6.895E-01	2.877E-01	4.030E-01	3.434E-02	1.711
		1189.05		1.202E-01	3.280E-01	5.544E-01	4.472E-02	0.217
		1221.41	*	9.170E-02	2.419E-01	4.062E-01	3.300E-02	0.226
TA-182	+	1231.02		-2.051E-01	5.791E-01	8.903E-01	7.247E-02	-0.230
		295.96		1.598E+00	3.186E-01	3.501E-01	5.278E-02	4.565
		308.46		7.506E-02	9.865E-02	1.649E-01	2.419E-02	0.455
		316.51	*	-1.587E-02	3.546E-02	5.491E-02	7.893E-03	-0.289
		468.07		-5.444E-02	6.689E-02	1.005E-01	1.135E-02	-0.542
		70.83		-4.294E-01	1.368E+00	1.955E+00	3.055E-01	-0.220
		72.87		1.484E-01	8.111E-01	1.186E+00	1.799E-01	0.125
		279.20	*	1.061E-02	4.018E-02	6.583E-02	1.027E-02	0.161
		72.81		2.131E-02	1.765E-01	2.574E-01	2.043E-02	0.083
		74.97		9.536E-01	1.519E-01	2.247E-01	1.824E-02	4.243
IR-192	+	569.70		2.923E-02	3.174E-02	5.548E-02	5.757E-03	0.527
		1063.66	*	-4.197E-02	5.403E-02	8.222E-02	7.386E-03	-0.511
		1770.23		3.007E-03	4.442E-01	6.318E-01	5.200E-02	0.005
		46.54	*	3.994E-01	2.332E+00	3.844E+00	3.546E-01	0.104
		404.85	*	-1.226E-01	7.559E-01	1.169E+00	5.704E-01	-0.105
		427.09		-4.469E-01	1.462E+00	2.386E+00	1.114E+00	-0.187
		832.01		4.776E-01	1.130E+00	1.826E+00	9.510E-01	0.262
		271.23		8.074E-01	4.183E-01	4.618E-01	7.403E-02	1.749
		401.81	*	-7.145E-02	4.026E-01	6.730E-01	1.088E-01	-0.106
HG-203	+							
BI-207	+							
PB-210	+							
PB-211	+							
RN-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		-1.939E-01	2.349E-01	2.783E-01	2.421E-02	-0.697
		83.79		2.577E-01	1.146E-01	1.900E-01	1.708E-02	1.357
		94.87		4.972E-01	4.101E-01	6.244E-01	5.626E-02	0.796
		144.24		6.705E-01	6.703E-01	1.142E+00	1.136E-01	0.587
		154.21		8.671E-02	3.554E-01	6.020E-01	6.061E-02	0.144
	+	269.46		6.273E-01	3.233E-01	3.461E-01	5.206E-02	1.812
		323.87	*	1.670E-01	6.896E-01	1.000E+00	2.061E-01	0.167
AC-227	+	338.28		8.120E+00	1.958E+00	2.598E+00	4.135E-01	3.125
		79.69		-1.272E+00	1.377E+00	1.607E+00	2.764E-01	-0.792
		235.96		3.870E-02	1.578E-01	2.339E-01	3.349E-02	0.165
		256.23	*	2.695E-01	2.470E-01	4.191E-01	6.923E-02	0.643
	+	299.98		2.181E+00	1.310E+00	1.668E+00	2.936E-01	1.307
TH-227		304.50		-9.260E-01	1.770E+00	2.399E+00	4.900E-01	-0.386
		334.37		9.313E-02	1.942E+00	2.763E+00	5.206E-01	0.034
		79.80		-1.627E+00	1.829E+00	2.124E+00	4.622E-01	-0.766
		235.96		3.870E-02	1.578E-01	2.339E-01	3.252E-02	0.165
		256.23	*	2.695E-01	2.476E-01	4.191E-01	7.412E-02	0.643
TH-229	+	299.98		2.181E+00	1.310E+00	1.668E+00	2.936E-01	1.307
		304.50		-9.260E-01	1.770E+00	2.399E+00	4.900E-01	-0.386
		334.37		9.313E-02	1.942E+00	2.763E+00	5.206E-01	0.034
		85.43		3.633E-01	1.868E-01	3.074E-01	2.822E-02	1.182
	+	88.47		8.360E-01	1.697E-01	2.112E-01	1.995E-02	3.958
PA-231		193.51	*	-3.215E-03	5.164E-01	8.543E-01	9.375E-02	-0.004
		210.85		1.503E+00	9.778E-01	1.545E+00	1.827E-01	0.973
		283.69	*	-3.215E-01	1.438E+00	2.286E+00	4.426E-01	-0.141
TH-231	+	301.36		1.401E+00	8.397E-01	1.003E+00	1.722E-01	1.397
		81.07		-1.939E-01	2.349E-01	2.783E-01	2.421E-02	-0.697
		83.79		2.577E-01	1.146E-01	1.900E-01	1.708E-02	1.357
PA-233		94.87		4.972E-01	4.101E-01	6.244E-01	5.626E-02	0.796
		144.24		6.705E-01	6.703E-01	1.142E+00	1.136E-01	0.587
		154.21		8.671E-02	3.554E-01	6.020E-01	6.061E-02	0.144
	+	269.46		6.273E-01	3.233E-01	3.461E-01	5.206E-02	1.812
		323.87	*	1.670E-01	6.896E-01	1.000E+00	2.061E-01	0.167
	+	338.28		8.120E+00	1.958E+00	2.598E+00	4.135E-01	3.125
	+	300.13		9.868E-01	5.974E-01	7.543E-01	1.447E-01	1.308
PA-234		311.90	*	-1.345E-02	6.535E-02	1.033E-01	1.515E-02	-0.130
		340.48		8.443E-01	7.496E-01	1.108E+00	2.899E-01	0.762
		94.67		3.008E-01	1.570E-01	2.420E-01	3.070E-02	1.243
		98.44		1.166E-01	1.024E-01	1.365E-01	7.621E-02	0.854
		111.00		-1.289E-01	1.571E-01	2.581E-01	3.101E-02	-0.499
		131.20		-5.717E-02	1.085E-01	1.605E-01	1.385E-02	-0.356
		569.50		2.594E-01	2.816E-01	4.924E-01	5.110E-02	0.527
PA-234M		733.00		2.347E-01	3.944E-01	6.220E-01	1.408E-01	0.377
		880.51		-3.788E-02	2.739E-01	4.541E-01	4.474E-02	-0.083
		883.24		-1.411E-02	2.829E-01	4.725E-01	3.184E-01	-0.030
		926.50		-5.907E-02	1.730E-01	2.788E-01	7.161E-02	-0.212
		946.00	*	-1.570E-01	2.876E-01	4.515E-01	8.699E-02	-0.348
		949.00		-2.110E-01	4.288E-01	6.805E-01	6.568E-02	-0.310
		766.42		2.777E+00	1.359E+01	2.205E+01	1.123E+01	0.126

----- 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	*		-1.209E+00	4.947E+00	7.875E+00	8.377E-01	-0.154
	99.53			7.877E-02	1.414E-01	2.439E-01	2.145E-02	0.323
	103.37			1.056E-02	8.842E-02	1.521E-01	1.319E-02	0.069
	106.12			5.506E-02	7.670E-02	1.343E-01	1.155E-02	0.410
	117.23	*		1.277E-01	3.341E-01	5.774E-01	4.885E-02	0.221
	228.18			-4.622E-02	2.148E-01	3.478E-01	4.423E-02	-0.133
AM-241	277.60			1.010E-01	1.788E-01	2.967E-01	4.567E-02	0.340
	59.54	*		-2.029E-02	1.239E-01	1.800E-01	1.414E-02	-0.113
CM-247	278.00			6.293E-01	7.491E-01	1.256E+00	1.937E-01	0.501
	287.50			4.615E-01	1.275E+00	2.094E+00	3.199E-01	0.220
CF-249	402.40	*		-1.307E-02	3.668E-02	6.060E-02	6.486E-03	-0.216
	252.80			-2.361E-01	9.174E-01	1.469E+00	2.060E-01	-0.161
	333.37			-2.920E-02	1.964E-01	2.944E-01	4.033E-02	-0.099
CF-251	388.16	*		-1.739E-02	3.826E-02	6.294E-02	6.846E-03	-0.276
	177.52	*		-1.292E-02	1.238E-01	2.050E-01	2.097E-02	-0.063
	227.38			2.217E-01	3.518E-01	5.920E-01	7.504E-02	0.374
	285.41			-5.448E-01	2.239E+00	3.556E+00	5.451E-01	-0.153

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]G247969007      *
* Acquisition date   : 11-MAR-2010 14:15:52 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 02:00:01.96 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247969007 Analyst initials: MXR1                  *
* Batch Number      : 958216 Sample Quantity : 1.2015E+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	3.381E+01	3.449E+00	4.649E-01	0.000E+00
CD-109	5.581E+00	1.110E+00	1.074E+00	0.000E+00
SN-126	5.423E-01	1.079E-01	1.047E-01	0.000E+00
TL-208	7.221E-01	1.200E-01	6.316E-02	0.000E+00
BI-211	5.330E+00	8.317E-01	2.947E-01	0.000E+00
BI-212	2.596E+00	8.042E-01	8.242E-01	0.000E+00
PB-212	2.286E+00	3.393E-01	9.372E-02	0.000E+00
BI-214	1.585E+00	2.476E-01	1.184E-01	0.000E+00
PB-214	1.934E+00	3.194E-01	1.072E-01	0.000E+00
RA-224	5.976E+00	1.373E+00	1.005E+00	0.000E+00
RA-226	1.585E+00	2.476E-01	1.184E-01	0.000E+00
AC-228	2.286E+00	4.413E-01	2.374E-01	0.000E+00
RA-228	2.286E+00	4.413E-01	2.374E-01	0.000E+00
TH-228	2.286E+00	3.393E-01	9.372E-02	0.000E+00
TH-232	2.286E+00	4.413E-01	2.374E-01	0.000E+00
TH-234	3.599E+00	2.222E+00	1.655E+00	0.000E+00
U-235	1.116E-01	1.957E-01	3.435E-01	0.000E+00
NP-237	1.618E+00	4.628E-01	3.150E-01	0.000E+00
U-238	3.599E+00	2.222E+00	1.655E+00	0.000E+00
ANH-511	1.827E-01	6.941E-02	4.568E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.038E-01	2.985E-01	5.001E-01	0.000E+00 NOT IDENT.
NA-22	-1.514E-02	4.636E-02	7.429E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	6.083E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.953E-02	3.970E-02	6.346E-02	0.000E+00 FAIL ABUN
V-48	3.480E-02	8.328E-02	1.470E-01	0.000E+00 NOT IDENT.
CR-51	-8.162E-02	3.956E-01	6.465E-01	0.000E+00 NOT IDENT.
MN-54	1.945E-02	3.877E-02	6.937E-02	0.000E+00 NOT IDENT.

CO-56	9.383E-03	3.909E-02	6.880E-02	0.000E+00	FAIL ABUN
CO-57	1.507E-02	2.154E-02	3.936E-02	0.000E+00	NOT IDENT.
CO-58	-1.079E-02	4.483E-02	7.187E-02	0.000E+00	NOT IDENT.
FE-59	-8.859E-02	9.946E-02	1.525E-01	0.000E+00	NOT IDENT.
CO-60	-1.959E-02	3.987E-02	6.167E-02	0.000E+00	NOT IDENT.
ZN-65	-1.021E-01	1.116E-01	1.439E-01	0.000E+00	NOT IDENT.
SE-75	2.807E-02	4.366E-02	7.274E-02	0.000E+00	NOT IDENT.
SR-85	5.852E-03	4.343E-02	6.613E-02	0.000E+00	NOT IDENT.
Y-88	3.085E-02	3.725E-02	7.056E-02	0.000E+00	NOT IDENT.
Y-91	-4.435E+00	2.509E+01	4.122E+01	0.000E+00	NOT IDENT.
NB-94	-2.497E-02	3.371E-02	5.234E-02	0.000E+00	NOT IDENT.
NB-95	-4.703E-02	5.375E-02	8.262E-02	0.000E+00	NOT IDENT.
NB-95M	-2.516E-03	1.350E-01	2.047E-01	0.000E+00	NOT IDENT.
ZR-95	5.343E-02	8.275E-02	1.434E-01	0.000E+00	NOT IDENT.
MO-99	-1.078E+00	3.249E+01	5.357E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.065E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.029E-02	4.062E-02	6.714E-02	0.000E+00	FAIL ABUN
RH-106	-5.553E-03	3.035E-01	5.097E-01	0.000E+00	NOT IDENT.
RU-106	-5.553E-03	3.035E-01	5.097E-01	0.000E+00	NOT IDENT.
AG-108M	9.449E-04	2.624E-02	4.567E-02	0.000E+00	NOT IDENT.
AG-110M	1.197E-03	3.340E-02	5.606E-02	0.000E+00	NOT IDENT.
SN-113	1.539E-02	4.180E-02	7.475E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.546E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	2.070E-02	6.073E-02	1.077E-01	0.000E+00	NOT IDENT.
TE-123M	-1.011E-05	2.675E-02	4.681E-02	0.000E+00	NOT IDENT.
SB-124	-6.052E-02	7.719E-02	1.100E-01	0.000E+00	NOT IDENT.
SB-125	1.168E-02	8.468E-02	1.485E-01	0.000E+00	FAIL ABUN
TE-125M	5.989E+00	8.640E+00	1.585E+01	0.000E+00	NOT IDENT.
I-126	-4.483E-01	3.091E-01	4.542E-01	0.000E+00	NOT IDENT.
SB-126	6.650E-02	2.020E-01	3.433E-01	0.000E+00	NOT IDENT.
SB-127	1.443E+00	2.833E+00	4.903E+00	0.000E+00	NOT IDENT.
I-131	1.180E-02	1.706E-01	2.809E-01	0.000E+00	NOT IDENT.
TE-132	-2.342E-01	1.676E+00	2.835E+00	0.000E+00	NOT IDENT.
BA-133	-6.352E-03	4.379E-02	6.294E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.286E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.962E-02	9.645E-02	0.000E+00	FAIL ABUN
CS-135	9.901E-02	1.604E-01	2.509E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.650E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.307E-02	1.438E-01	2.384E-01	0.000E+00	NOT IDENT.
BA-137M	6.031E-03	3.748E-02	6.344E-02	0.000E+00	NOT IDENT.
CS-137	6.371E-03	3.960E-02	6.702E-02	0.000E+00	NOT IDENT.
CE-139	-4.484E-03	2.799E-02	4.849E-02	0.000E+00	NOT IDENT.
BA-140	-8.812E-02	3.050E-01	5.054E-01	0.000E+00	NOT IDENT.
LA-140	-5.778E-02	1.056E-01	1.647E-01	0.000E+00	FAIL ABUN
CE-141	5.478E-02	6.375E-02	1.155E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.343E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	2.811E-02	2.084E-01	3.340E-01	0.000E+00	NOT IDENT.
PM-144	1.494E-02	3.638E-02	6.242E-02	0.000E+00	NOT IDENT.
PR-144	1.167E+00	2.732E+00	4.693E+00	0.000E+00	NOT IDENT.
PM-146	2.657E-02	4.315E-02	7.722E-02	0.000E+00	NOT IDENT.
ND-147	-4.963E-01	6.706E-01	1.068E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	3.224E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.010E-02	9.764E-02	1.649E-01	0.000E+00	FAIL ABUN
GD-153	-1.759E-02	8.536E-02	1.258E-01	0.000E+00	NOT IDENT.
EU-154	-4.411E-02	1.310E-01	2.096E-01	0.000E+00	NOT IDENT.
EU-155	1.261E-01	9.420E-02	1.759E-01	0.000E+00	FAIL ABUN
TB-160	-9.566E-03	1.392E-01	2.380E-01	0.000E+00	FAIL ABUN
HO-166M	-7.588E-03	6.279E-02	1.032E-01	0.000E+00	FAIL ABUN
TA-182	9.170E-02	2.371E-01	4.061E-01	0.000E+00	FAIL ABUN
IR-192	-1.587E-02	3.475E-02	5.578E-02	0.000E+00	FAIL ABUN
HG-203	1.061E-02	3.938E-02	6.698E-02	0.000E+00	NOT IDENT.
BI-207	-4.197E-02	5.295E-02	8.234E-02	0.000E+00	FAIL ABUN
PB-210	3.994E-01	2.285E+00	3.992E+00	0.000E+00	NOT IDENT.
PB-211	-1.226E-01	7.408E-01	1.184E+00	0.000E+00	NOT IDENT.
RN-219	-7.145E-02	3.946E-01	6.818E-01	0.000E+00	FAIL ABUN
RA-223	1.670E-01	6.758E-01	1.016E+00	0.000E+00	FAIL ABUN
AC-227	2.695E-01	2.421E-01	4.268E-01	0.000E+00	FAIL ABUN
TH-227	2.695E-01	2.426E-01	4.268E-01	0.000E+00	FAIL ABUN
TH-229	-3.215E-03	5.061E-01	8.729E-01	0.000E+00	FAIL ABUN
PA-231	-3.215E-01	1.409E+00	2.326E+00	0.000E+00	FAIL ABUN
TH-231	1.670E-01	6.758E-01	1.016E+00	0.000E+00	FAIL ABUN
PA-233	-1.345E-02	6.405E-02	1.049E-01	0.000E+00	FAIL ABUN
PA-234	-1.570E-01	2.819E-01	4.528E-01	0.000E+00	NOT IDENT.
PA-234M	-1.209E+00	4.848E+00	7.892E+00	0.000E+00	NOT IDENT.
NP-239	1.277E-01	3.275E-01	5.934E-01	0.000E+00	NOT IDENT.
AM-241	-2.029E-02	1.214E-01	1.864E-01	0.000E+00	NOT IDENT.
CM-247	-1.307E-02	3.594E-02	6.140E-02	0.000E+00	NOT IDENT.
CF-249	-1.739E-02	3.749E-02	6.379E-02	0.000E+00	NOT IDENT.

CF-251	-1.292E-02	1.213E-01	2.097E-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]G247969007.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:15:52
Sample ID          : G247969007 Sample quantity : 1.20150E+02 GRAM
Detector name      : GAM11 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.96 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 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	1413	10.66*	1.225E+00	3.381E+01	3.381E+01	10.41
CD-109	88.03	436	3.70*	6.790E+00	5.423E+00	5.581E+00	20.30
SN-126	64.28	180	9.60	4.226E+00	1.387E+00	1.387E+00	62.14
	86.94	436	8.90	6.790E+00	2.254E+00	2.254E+00	45.26
	87.57	436	37.00*	6.790E+00	5.423E-01	5.423E-01	20.30
TL-208	277.37	-----	6.60	4.676E+00	-----	Line Not Found	-----
	583.19	523	85.00*	2.660E+00	7.221E-01	7.221E-01	16.96
	860.56	47	12.50	1.925E+00	6.073E-01	6.073E-01	67.41
BI-211	72.87	-----	1.23	5.576E+00	-----	Line Not Found	-----
	351.06	864	12.92*	3.921E+00	5.330E+00	5.330E+00	15.92
BI-212	727.33	123	6.67*	2.222E+00	2.596E+00	2.596E+00	31.61
	785.37	43	1.10	2.081E+00	5.861E+00	5.861E+00	69.23
	1620.50	-----	1.47	1.134E+00	-----	Line Not Found	-----
PB-212	74.82	631	10.28	5.797E+00	3.308E+00	3.308E+00	18.66
	77.11	930	17.10	6.021E+00	2.821E+00	2.821E+00	12.53
	238.63	1662	43.60*	5.209E+00	2.286E+00	2.286E+00	15.14
	300.09	92	3.30	4.414E+00	1.983E+00	1.983E+00	59.63
BI-214	609.32	593	45.49*	2.569E+00	1.584E+00	1.585E+00	15.95
	1120.29	105	14.92	1.530E+00	1.436E+00	1.436E+00	42.26
	1764.49	132	15.30	1.071E+00	2.510E+00	2.510E+00	20.94
PB-214	74.82	631	5.80	5.797E+00	5.863E+00	5.863E+00	17.79
	77.11	930	9.70	6.021E+00	4.973E+00	4.974E+00	15.00
	242.00	405	7.25	5.164E+00	3.380E+00	3.380E+00	24.14
	295.22	548	18.42	4.467E+00	2.082E+00	2.082E+00	20.94
	351.93	864	35.60*	3.921E+00	1.934E+00	1.934E+00	16.85
RA-224	240.99	405	4.10*	5.164E+00	5.976E+00	5.976E+00	23.44
RA-226	609.32	593	45.49*	2.569E+00	1.584E+00	1.585E+00	15.95
	1120.29	105	14.92	1.530E+00	1.436E+00	1.436E+00	42.26
	1764.49	132	15.30	1.071E+00	2.510E+00	2.510E+00	20.94
AC-228	338.32	298	11.27	4.038E+00	2.046E+00	2.046E+00	46.65
	911.20	346	25.80*	1.833E+00	2.286E+00	2.286E+00	19.70
	968.97	170	15.80	1.738E+00	1.934E+00	1.934E+00	34.15

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	298	11.27	4.038E+00	2.046E+00	2.046E+00	46.65
	911.20	346	25.80*	1.833E+00	2.286E+00	2.286E+00	19.70
	968.97	170	15.80	1.738E+00	1.934E+00	1.934E+00	34.15
TH-228	74.82	631	10.28	5.797E+00	3.308E+00	3.308E+00	15.97
	77.11	930	17.10	6.021E+00	2.821E+00	2.821E+00	12.53
	238.63	1662	43.60*	5.209E+00	2.286E+00	2.286E+00	15.14
TH-232	300.09	92	3.30	4.414E+00	1.983E+00	1.983E+00	84.81
	338.32	298	11.27	4.038E+00	2.046E+00	2.046E+00	22.58
	911.20	346	25.80*	1.833E+00	2.286E+00	2.286E+00	19.70
TH-234	968.97	170	15.80	1.738E+00	1.934E+00	1.934E+00	34.15
	63.29	180	3.70*	4.226E+00	3.599E+00	3.599E+00	62.99
	92.59	467	4.23	7.061E+00	4.890E+00	4.890E+00	30.97
U-235	89.96	278	3.47	6.931E+00	3.607E+00	3.607E+00	34.56
	93.35	467	5.60	7.061E+00	3.693E+00	3.693E+00	31.70
	143.76	-----	10.96*	7.034E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.630E+00	-----	Line Not Found	-----
	185.72	299	57.20	6.150E+00	2.656E-01	2.656E-01	32.65
	205.31	-----	5.01	5.777E+00	-----	Line Not Found	-----
NP-237	86.48	436	12.40*	6.790E+00	1.618E+00	1.618E+00	29.19
	95.86	-----	2.68	7.169E+00	-----	Line Not Found	-----
U-238	63.29	180	3.70*	4.226E+00	3.599E+00	3.599E+00	62.99
	92.59	467	4.23	7.061E+00	4.890E+00	4.890E+00	23.36
ANH-511	511.00	173	100.00*	2.954E+00	1.827E-01	1.827E-01	38.76

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 7
Number of lines tentatively identified by NID 32 82.05%

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	3.381E+01	3.381E+01	0.352E+01	10.41	
CD-109	461.40D	1.03	5.423E+00	5.581E+00	1.133E+00	20.30	
SN-126	2.30E+05Y	1.00	5.423E-01	5.423E-01	1.101E-01	20.30	
TL-208	1.41E+10Y	1.00	7.221E-01	7.221E-01	1.225E-01	16.96	
BI-211	7.04E+08Y	1.00	5.330E+00	5.330E+00	0.849E+00	15.92	
BI-212	1.41E+10Y	1.00	2.596E+00	2.596E+00	0.821E+00	31.61	
PB-212	1.41E+10Y	1.00	2.286E+00	2.286E+00	0.346E+00	15.14	
BI-214	1600.00Y	1.00	1.584E+00	1.585E+00	0.253E+00	15.95	
PB-214	1600.00Y	1.00	1.934E+00	1.934E+00	0.326E+00	16.85	
RA-224	1.41E+10Y	1.00	5.976E+00	5.976E+00	1.401E+00	23.44	
RA-226	1600.00Y	1.00	1.584E+00	1.585E+00	0.253E+00	15.95	
AC-228	1.41E+10Y	1.00	2.286E+00	2.286E+00	0.450E+00	19.70	
RA-228	1.41E+10Y	1.00	2.286E+00	2.286E+00	0.450E+00	19.70	
TH-228	1.41E+10Y	1.00	2.286E+00	2.286E+00	0.346E+00	15.14	
TH-232	1.41E+10Y	1.00	2.286E+00	2.286E+00	0.450E+00	19.70	
TH-234	4.47E+09Y	1.00	3.599E+00	3.599E+00	2.267E+00	62.99	
U-235	7.04E+08Y	1.00	2.656E-01	2.656E-01	0.867E-01	32.65	K
NP-237	2.14E+06Y	1.00	1.618E+00	1.618E+00	0.472E+00	29.19	
U-238	4.47E+09Y	1.00	3.599E+00	3.599E+00	2.267E+00	62.99	
ANH-511	1.00E+09Y	1.00	1.827E-01	1.827E-01	0.708E-01	38.76	

Total Activity : 8.020E+01 8.036E+01

Grand Total Activity : 8.020E+01 8.036E+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	128.97	79	450	0.93	256.92	253	9	1.10E-02	99.0	7.29E+00	
0	209.26	167	349	1.13	417.62	413	10	2.32E-02	44.7	5.70E+00	
0	270.24	133	253	1.15	539.67	535	11	1.85E-02	49.3	4.77E+00	T
0	327.87	87	166	1.05	655.01	651	9	1.20E-02	57.5	4.13E+00	T
0	409.70	75	89	1.00	818.78	816	8	1.04E-02	49.0	3.50E+00	T
0	462.98	96	85	1.98	925.39	921	8	1.33E-02	39.3	3.19E+00	T
0	795.09	63	61	2.57	1589.99	1584	12	8.79E-03	55.1	2.06E+00	T
0	934.21	35	51	1.48	1868.36	1864	9	4.91E-03	80.5	1.79E+00	
0	965.26	87	49	1.21	1930.49	1924	11	1.21E-02	38.0	1.74E+00	T
0	1238.72	84	89	1.68	2477.60	2472	15	1.17E-02	53.6	1.40E+00	T
0	1408.15	24	22	1.05	2816.56	2811	10	3.30E-03	85.1	1.26E+00	T
0	1496.75	21	8	1.01	2993.81	2985	14	2.85E-03	73.6	1.20E+00	
0	1510.51	28	11	0.69	3021.32	3016	13	3.82E-03	65.5	1.19E+00	
0	1631.59	33	8	1.07	3263.53	3258	14	4.57E-03	49.2	1.13E+00	
0	1731.00	37	11	2.53	3462.38	3455	15	5.09E-03	51.9	1.08E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969007.CNF;1  *
* Acquisition date   : 11-MAR-2010 14:15:52  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 02:00:01.96          Half life ratio  : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00  Nuclide Library   : SOLID        *
* Sample ID          : G247969007            Analyst initials: MXR1          *
* Batch Number       : 958216                Sample Quantity  : 1.20150E+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	3.381E+01	3.519E+00	4.660E-01	4.030E-02	72.554
CD-109	5.581E+00	1.133E+00	1.042E+00	9.879E-02	5.357
SN-126	5.423E-01	1.101E-01	1.015E-01	9.579E-03	5.340
TL-208	7.221E-01	1.225E-01	6.262E-02	6.756E-03	11.533
BI-211	5.330E+00	8.487E-01	2.904E-01	3.832E-02	18.351
BI-212	2.596E+00	8.206E-01	8.192E-01	1.082E-01	3.168
PB-212	2.286E+00	3.462E-01	9.195E-02	1.291E-02	24.865
BI-214	1.585E+00	2.527E-01	1.175E-01	1.333E-02	13.491
PB-214	1.934E+00	3.260E-01	1.056E-01	1.507E-02	18.311
RA-224	5.976E+00	1.401E+00	9.859E-01	1.320E-01	6.062
RA-226	1.585E+00	2.527E-01	1.175E-01	1.333E-02	13.491
AC-228	2.286E+00	4.503E-01	2.366E-01	2.957E-02	9.659
RA-228	2.286E+00	4.503E-01	2.366E-01	2.957E-02	9.659
TH-228	2.286E+00	3.462E-01	9.195E-02	1.291E-02	24.865
TH-232	2.286E+00	4.503E-01	2.366E-01	2.957E-02	9.659
TH-234	3.599E+00	2.267E+00	1.599E+00	2.843E-01	2.252
U-235	2.656E-01	8.672E-02	3.350E-01	5.739E-02	0.793
NP-237	1.618E+00	4.722E-01	3.055E-01	7.007E-02	5.297

----- Identified Nuclides -----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	3.599E+00	2.267E+00	1.599E+00	2.843E-01	2.252
ANH-511	1.827E-01	7.082E-02	4.521E-02	4.835E-03	4.042

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.038E-01		3.046E-01	4.946E-01	5.597E-02	-0.210
NA-22	-1.514E-02		4.731E-02	7.434E-02	6.105E-03	-0.204
NA-24	2.847E+01		3.104E+01	Half-Life too short		
SC-46	-2.953E-02		4.051E-02	6.323E-02	6.228E-03	-0.467
V-48	3.480E-02		8.498E-02	1.466E-01	1.391E-02	0.237
CR-51	-8.162E-02		4.037E-01	6.364E-01	9.233E-02	-0.128
MN-54	1.945E-02		3.956E-02	6.907E-02	6.801E-03	0.282
CO-56	9.383E-03		3.988E-02	6.852E-02	6.751E-03	0.137
CO-57	1.507E-02		2.198E-02	3.832E-02	3.242E-03	0.393
CO-58	-1.079E-02		4.575E-02	7.153E-02	7.043E-03	-0.151
FE-59	-8.859E-02		1.015E-01	1.524E-01	1.432E-02	-0.581
CO-60	-1.959E-02		4.068E-02	6.175E-02	5.103E-03	-0.317
ZN-65	-1.021E-01		1.138E-01	1.438E-01	1.234E-02	-0.710
SE-75	2.807E-02		4.455E-02	7.145E-02	1.050E-02	0.393
SR-85	5.852E-03		4.432E-02	6.546E-02	6.992E-03	0.089
Y-88	3.085E-02		3.801E-02	7.093E-02	5.758E-03	0.435
Y-91	-4.435E+00		2.560E+01	4.122E+01	3.337E+00	-0.108
NB-94	-2.497E-02		3.440E-02	5.201E-02	4.995E-03	-0.480
NB-95	-4.703E-02		5.485E-02	8.217E-02	8.021E-03	-0.572
NB-95M	-2.516E-03		1.377E-01	2.008E-01	2.806E-02	-0.013
ZR-95	5.343E-02		8.444E-02	1.426E-01	1.505E-02	0.375
MO-99	-1.078E+00		3.315E+01	5.326E+01	8.722E+00	-0.020
TC-99M	2.300E+14		1.053E+15	Half-Life too short		
RU-103	-1.029E-02		4.145E-02	6.644E-02	1.021E-02	-0.155
RH-106	-5.553E-03		3.097E-01	5.057E-01	7.149E-02	-0.011
RU-106	-5.553E-03		3.097E-01	5.057E-01	5.017E-02	-0.011
AG-108M	9.449E-04		2.678E-02	4.512E-02	4.965E-03	0.021
AG-110M	1.197E-03		3.408E-02	5.565E-02	5.423E-03	0.022
SN-113	1.539E-02		4.266E-02	7.376E-02	8.023E-03	0.209
CD-115	-2.862E-06		1.809E-05	Half-Life too short		
SN-117M	2.070E-02		6.197E-02	1.052E-01	9.941E-03	0.197
TE-123M	-1.011E-05		2.730E-02	4.570E-02	4.348E-03	0.000
SB-124	-6.052E-02		7.877E-02	1.105E-01	9.625E-03	-0.548
SB-125	1.168E-02		8.641E-02	1.467E-01	1.599E-02	0.080
TE-125M	5.989E+00		8.816E+00	1.541E+01	1.606E+00	0.389
I-126	-4.483E-01		3.154E-01	4.510E-01	4.275E-02	-0.994
SB-126	6.650E-02		2.061E-01	3.412E-01	3.294E-02	0.195
SB-127	1.443E+00		2.891E+00	4.870E+00	6.461E-01	0.296
I-131	1.180E-02		1.741E-01	2.770E-01	3.483E-02	0.043
TE-132	-2.342E-01		1.710E+00	2.780E+00	5.314E-01	-0.084
BA-133	-6.352E-03		4.468E-02	6.203E-02	9.879E-03	-0.102

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	1.199E-02		6.560E-02	Half-Life too short		
CS-134	1.269E-01	+	7.104E-02	9.598E-02	9.468E-03	1.322
CS-135	9.901E-02		1.637E-01	2.464E-01	3.867E-02	0.402
I-135	-1.488E+14		8.419E+13	Half-Life too short		
CS-136	-3.307E-02		1.468E-01	2.380E-01	2.247E-02	-0.139
BA-137M	6.031E-03		3.825E-02	6.299E-02	5.960E-03	0.096
CS-137	6.371E-03		4.040E-02	6.654E-02	6.306E-03	0.096
CE-139	-4.484E-03		2.856E-02	4.737E-02	4.604E-03	-0.095
BA-140	-8.812E-02		3.112E-01	5.006E-01	1.725E-01	-0.176
LA-140	-5.778E-02		1.078E-01	1.653E-01	1.390E-02	-0.350
CE-141	5.478E-02		6.505E-02	1.127E-01	1.033E-02	0.486
CE-143	2.735E-03		6.851E-04	Half-Life too short		
CE-144	2.811E-02		2.126E-01	3.255E-01	4.987E-02	0.086
PM-144	1.494E-02		3.712E-02	6.201E-02	5.946E-03	0.241
PR-144	1.167E+00		2.788E+00	4.662E+00	4.469E-01	0.250
PM-146	2.657E-02		4.403E-02	7.632E-02	9.483E-03	0.348
ND-147	-4.963E-01		6.843E-01	1.058E+00	1.711E-01	-0.469
PM-149	-8.199E-05		1.645E-04	Half-Life too short		
EU-152	4.010E-02		9.964E-02	1.625E-01	2.202E-02	0.247
GD-153	-1.759E-02		8.711E-02	1.221E-01	1.085E-02	-0.144
EU-154	-4.411E-02		1.337E-01	2.098E-01	2.321E-02	-0.210
EU-155	1.261E-01		9.612E-02	1.710E-01	1.491E-02	0.737
TB-160	-9.566E-03		1.421E-01	2.372E-01	2.337E-02	-0.040
HO-166M	-7.588E-03		6.407E-02	1.026E-01	9.879E-03	-0.074
TA-182	9.170E-02		2.419E-01	4.062E-01	3.300E-02	0.226
IR-192	-1.587E-02		3.546E-02	5.491E-02	7.893E-03	-0.289
HG-203	1.061E-02		4.018E-02	6.583E-02	1.027E-02	0.161
BI-207	-4.197E-02		5.403E-02	8.222E-02	7.386E-03	-0.511
PB-210	3.994E-01		2.332E+00	3.844E+00	3.546E-01	0.104
PB-211	-1.226E-01		7.559E-01	1.169E+00	5.704E-01	-0.105
RN-219	-7.145E-02		4.026E-01	6.730E-01	1.088E-01	-0.106
RA-223	1.670E-01		6.896E-01	1.000E+00	2.061E-01	0.167
AC-227	2.695E-01		2.470E-01	4.191E-01	6.923E-02	0.643
TH-227	2.695E-01		2.476E-01	4.191E-01	7.412E-02	0.643
TH-229	-3.215E-03		5.164E-01	8.543E-01	9.375E-02	-0.004
PA-231	-3.215E-01		1.438E+00	2.286E+00	4.426E-01	-0.141
TH-231	1.670E-01		6.896E-01	1.000E+00	2.061E-01	0.167
PA-233	-1.345E-02		6.535E-02	1.033E-01	1.515E-02	-0.130
PA-234	-1.570E-01		2.876E-01	4.515E-01	8.699E-02	-0.348
PA-234M	-1.209E+00		4.947E+00	7.875E+00	8.377E-01	-0.154
NP-239	1.277E-01		3.341E-01	5.774E-01	4.885E-02	0.221
AM-241	-2.029E-02		1.239E-01	1.800E-01	1.414E-02	-0.113
CM-247	-1.307E-02		3.668E-02	6.060E-02	6.486E-03	-0.216
CF-249	-1.739E-02		3.826E-02	6.294E-02	6.846E-03	-0.276
CF-251	-1.292E-02		1.238E-01	2.050E-01	2.097E-02	-0.063

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]G247969007           *
* Acquisition date   : 11-MAR-2010 14:15:52 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 02:00:01.96 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247969007 Analyst initials: MXR1         *
* Batch Number       : 958216 Sample Quantity : 1.2015E+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	3.381E+01	3.449E+00	2.326E-01	1.760E+00
CD-109	5.581E+00	1.110E+00	5.374E-01	5.665E-01
SN-126	5.423E-01	1.079E-01	5.239E-02	5.505E-02
TL-208	7.221E-01	1.200E-01	3.160E-02	6.124E-02
BI-211	5.330E+00	8.317E-01	1.474E-01	4.243E-01
BI-212	2.596E+00	8.042E-01	4.123E-01	4.103E-01
PB-212	2.286E+00	3.393E-01	4.689E-02	1.731E-01
BI-214	1.585E+00	2.476E-01	5.924E-02	1.263E-01
PB-214	1.934E+00	3.194E-01	5.363E-02	1.630E-01
RA-224	5.976E+00	1.373E+00	5.027E-01	7.003E-01
RA-226	1.585E+00	2.476E-01	5.924E-02	1.263E-01
AC-228	2.286E+00	4.413E-01	1.188E-01	2.252E-01
RA-228	2.286E+00	4.413E-01	1.188E-01	2.252E-01
TH-228	2.286E+00	3.393E-01	4.689E-02	1.731E-01
TH-232	2.286E+00	4.413E-01	1.188E-01	2.252E-01
TH-234	3.599E+00	2.222E+00	8.278E-01	1.134E+00
U-235	1.116E-01	1.957E-01	1.718E-01	9.984E-02
NP-237	1.618E+00	4.628E-01	1.576E-01	2.361E-01
U-238	3.599E+00	2.222E+00	8.278E-01	1.134E+00
ANH-511	1.827E-01	6.941E-02	2.285E-02	3.541E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.038E-01	2.985E-01	2.502E-01	1.523E-01 NOT IDENT.
NA-22	-1.514E-02	4.636E-02	3.717E-02	2.365E-02 NOT IDENT.
NA-24	2.847E+07	6.083E+07	0.000E+00	3.104E+07 SHORT HLIF
SC-46	-2.953E-02	3.970E-02	3.175E-02	2.025E-02 FAIL ABUN
V-48	3.480E-02	8.328E-02	7.353E-02	4.249E-02 NOT IDENT.
CR-51	-8.162E-02	3.956E-01	3.234E-01	2.018E-01 NOT IDENT.
MN-54	1.945E-02	3.877E-02	3.470E-02	1.978E-02 NOT IDENT.

CO-56	9.383E-03	3.909E-02	3.442E-02	1.994E-02	FAIL ABUN
CO-57	1.507E-02	2.154E-02	1.969E-02	1.099E-02	NOT IDENT.
CO-58	-1.079E-02	4.483E-02	3.595E-02	2.287E-02	NOT IDENT.
FE-59	-8.859E-02	9.946E-02	7.632E-02	5.075E-02	NOT IDENT.
CO-60	-1.959E-02	3.987E-02	3.086E-02	2.034E-02	NOT IDENT.
ZN-65	-1.021E-01	1.116E-01	7.201E-02	5.692E-02	NOT IDENT.
SE-75	2.807E-02	4.366E-02	3.639E-02	2.228E-02	NOT IDENT.
SR-85	5.852E-03	4.343E-02	3.308E-02	2.216E-02	NOT IDENT.
Y-88	3.085E-02	3.725E-02	3.530E-02	1.901E-02	NOT IDENT.
Y-91	-4.435E+00	2.509E+01	2.062E+01	1.280E+01	NOT IDENT.
NB-94	-2.497E-02	3.371E-02	2.619E-02	1.720E-02	NOT IDENT.
NB-95	-4.703E-02	5.375E-02	4.133E-02	2.743E-02	NOT IDENT.
NB-95M	-2.516E-03	1.350E-01	1.024E-01	6.886E-02	NOT IDENT.
ZR-95	5.343E-02	8.275E-02	7.176E-02	4.222E-02	NOT IDENT.
MO-99	-1.078E+00	3.249E+01	2.680E+01	1.658E+01	NOT IDENT.
TC-99M	2.300E+20	2.065E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.029E-02	4.062E-02	3.359E-02	2.072E-02	FAIL ABUN
RH-106	-5.553E-03	3.035E-01	2.550E-01	1.549E-01	NOT IDENT.
RU-106	-5.553E-03	3.035E-01	2.550E-01	1.549E-01	NOT IDENT.
AG-108M	9.449E-04	2.624E-02	2.285E-02	1.339E-02	NOT IDENT.
AG-110M	1.197E-03	3.340E-02	2.804E-02	1.704E-02	NOT IDENT.
SN-113	1.539E-02	4.180E-02	3.740E-02	2.133E-02	NOT IDENT.
CD-115	-2.862E+00	3.546E+01	0.000E+00	1.809E+01	SHORT HLIF
SN-117M	2.070E-02	6.073E-02	5.389E-02	3.098E-02	NOT IDENT.
TE-123M	-1.011E-05	2.675E-02	2.342E-02	1.365E-02	NOT IDENT.
SB-124	-6.052E-02	7.719E-02	5.505E-02	3.938E-02	NOT IDENT.
SB-125	1.168E-02	8.468E-02	7.429E-02	4.321E-02	FAIL ABUN
TE-125M	5.989E+00	8.640E+00	7.928E+00	4.408E+00	NOT IDENT.
I-126	-4.483E-01	3.091E-01	2.272E-01	1.577E-01	NOT IDENT.
SB-126	6.650E-02	2.020E-01	1.717E-01	1.031E-01	NOT IDENT.
SB-127	1.443E+00	2.833E+00	2.453E+00	1.445E+00	NOT IDENT.
I-131	1.180E-02	1.706E-01	1.406E-01	8.706E-02	NOT IDENT.
TE-132	-2.342E-01	1.676E+00	1.418E+00	8.551E-01	NOT IDENT.
BA-133	-6.352E-03	4.379E-02	3.149E-02	2.234E-02	NOT IDENT.
I-133	1.199E+04	1.286E+05	0.000E+00	6.560E+04	SHORT HLIF
CS-134	1.269E-01	6.962E-02	4.825E-02	3.552E-02	FAIL ABUN
CS-135	9.901E-02	1.604E-01	1.255E-01	8.184E-02	NOT IDENT.
I-135	-1.488E+20	1.650E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.307E-02	1.438E-01	1.192E-01	7.338E-02	NOT IDENT.
BA-137M	6.031E-03	3.748E-02	3.174E-02	1.912E-02	NOT IDENT.
CS-137	6.371E-03	3.960E-02	3.353E-02	2.020E-02	NOT IDENT.
CE-139	-4.484E-03	2.799E-02	2.426E-02	1.428E-02	NOT IDENT.
BA-140	-8.812E-02	3.050E-01	2.528E-01	1.556E-01	NOT IDENT.
LA-140	-5.778E-02	1.056E-01	8.240E-02	5.390E-02	FAIL ABUN
CE-141	5.478E-02	6.375E-02	5.779E-02	3.252E-02	NOT IDENT.
CE-143	2.735E+03	1.343E+03	0.000E+00	6.851E+02	SHORT HLIF
CE-144	2.811E-02	2.084E-01	1.671E-01	1.063E-01	NOT IDENT.
PM-144	1.494E-02	3.638E-02	3.123E-02	1.856E-02	NOT IDENT.
PR-144	1.167E+00	2.732E+00	2.348E+00	1.394E+00	NOT IDENT.
PM-146	2.657E-02	4.315E-02	3.863E-02	2.202E-02	NOT IDENT.
ND-147	-4.963E-01	6.706E-01	5.344E-01	3.421E-01	FAIL ABUN
PM-149	-8.199E+01	3.224E+02	0.000E+00	1.645E+02	SHORT HLIF
EU-152	4.010E-02	9.764E-02	8.250E-02	4.982E-02	FAIL ABUN
GD-153	-1.759E-02	8.536E-02	6.293E-02	4.355E-02	NOT IDENT.
EU-154	-4.411E-02	1.310E-01	1.049E-01	6.684E-02	NOT IDENT.
EU-155	1.261E-01	9.420E-02	8.801E-02	4.806E-02	FAIL ABUN
TB-160	-9.566E-03	1.392E-01	1.191E-01	7.104E-02	FAIL ABUN
HO-166M	-7.588E-03	6.279E-02	5.164E-02	3.204E-02	FAIL ABUN
TA-182	9.170E-02	2.371E-01	2.032E-01	1.210E-01	FAIL ABUN
IR-192	-1.587E-02	3.475E-02	2.791E-02	1.779E-02	FAIL ABUN
HG-203	1.061E-02	3.938E-02	3.351E-02	2.003E-02	NOT IDENT.
BI-207	-4.197E-02	5.295E-02	4.119E-02	2.702E-02	FAIL ABUN
PB-210	3.994E-01	2.285E+00	1.997E+00	1.166E+00	NOT IDENT.
PB-211	-1.226E-01	7.408E-01	5.923E-01	3.779E-01	NOT IDENT.
RN-219	-7.145E-02	3.946E-01	3.411E-01	2.013E-01	FAIL ABUN
RA-223	1.670E-01	6.758E-01	5.083E-01	3.448E-01	FAIL ABUN
AC-227	2.695E-01	2.421E-01	2.135E-01	1.235E-01	FAIL ABUN
TH-227	2.695E-01	2.426E-01	2.135E-01	1.238E-01	FAIL ABUN
TH-229	-3.215E-03	5.061E-01	4.367E-01	2.582E-01	FAIL ABUN
PA-231	-3.215E-01	1.409E+00	1.164E+00	7.190E-01	FAIL ABUN
TH-231	1.670E-01	6.758E-01	5.083E-01	3.448E-01	FAIL ABUN
PA-233	-1.345E-02	6.405E-02	5.250E-02	3.268E-02	FAIL ABUN
PA-234	-1.570E-01	2.819E-01	2.265E-01	1.438E-01	NOT IDENT.
PA-234M	-1.209E+00	4.848E+00	3.948E+00	2.474E+00	NOT IDENT.
NP-239	1.277E-01	3.275E-01	2.969E-01	1.671E-01	NOT IDENT.
AM-241	-2.029E-02	1.214E-01	9.325E-02	6.195E-02	NOT IDENT.
CM-247	-1.307E-02	3.594E-02	3.072E-02	1.834E-02	NOT IDENT.
CF-249	-1.739E-02	3.749E-02	3.192E-02	1.913E-02	NOT IDENT.

CF-251	-1.292E-02	1.213E-01	1.049E-01	6.191E-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	250.1561
49.72	241.9392
57.36	0.0000
59.54	276.8893
63.29	304.0640
63.29	304.0640
64.28	397.3690
67.75	355.5541
69.67	380.0090
70.83	417.1250
72.81	436.5949
72.87	436.6628
72.87	436.6628
74.82	391.9135
74.82	391.9135
74.82	391.9135
74.97	392.0650
77.11	394.2065
77.11	394.2065
77.11	394.2065
79.69	393.1561
79.80	393.2612
80.12	321.5767
80.19	321.6319
80.57	271.4786
81.00	394.4198
81.07	394.4874
81.07	394.4874
83.79	307.4929
83.79	307.4929
85.43	308.6866
86.48	309.4462
86.55	309.4966
86.79	309.6671
86.94	309.7757
87.57	310.2272
88.03	310.5566
88.47	310.8706
89.96	311.9267
91.11	312.7367
92.59	313.7715
92.59	313.7715
93.35	314.2986
94.67	239.9247
94.87	240.0294
94.87	240.0294
95.86	235.5688
97.43	276.3154
98.44	218.1929
99.53	254.1420
100.11	288.7704
103.18	285.5623
103.37	285.6743
105.31	267.3483
106.12	287.2762
109.28	252.4208
111.00	277.2328
111.76	272.5016
116.30	239.4375
117.23	223.4043
121.12	229.3812
121.78	213.9401
122.06	221.9128
123.07	234.5736
131.20	294.3553
133.52	286.1714
136.00	278.4238

136.47	297.4572
140.51	253.4614
140.51	0.0000
143.76	277.4775
144.24	265.8949
144.24	265.8949
145.44	264.5891
152.43	221.5541
153.25	216.3131
154.21	248.8953
154.21	248.8953
156.02	283.7901
158.56	237.5573
159.00	252.5706
162.66	233.4112
163.33	249.5276
165.86	249.5157
176.60	234.3061
177.52	243.1870
181.07	225.4000
184.41	244.0386
185.72	236.2721
193.51	242.6043
197.04	247.6262
205.31	203.2423
210.85	209.1092
215.65	217.3333
222.11	213.9538
227.38	196.9859
228.16	211.3918
228.18	214.4450
235.69	215.2487
235.96	207.6251
235.96	207.6251
238.63	206.6985
238.63	206.6985
240.99	207.2383
242.00	207.4673
244.70	170.8109
252.40	138.8258
252.80	169.1669
256.23	143.5794
256.23	143.5794
260.90	0.0000
264.66	134.4772
268.22	144.8313
269.46	163.6062
269.46	163.6062
271.23	163.8976
273.65	174.4273
276.40	163.6738
277.37	172.3957
277.60	168.1508
278.00	156.4320
279.20	157.6888
279.54	181.3470
280.46	177.2159
283.69	159.4571
284.31	159.5535
285.41	169.4349
285.90	0.0000
287.50	158.9629
293.27	0.0000
295.22	161.7663
295.96	161.8781
298.57	163.9130
299.98	132.9425
299.98	132.9425
300.09	132.9574
300.09	132.9574
300.13	132.9623
301.36	121.6095
302.85	128.3591
304.50	146.6838
304.50	146.6838
304.85	141.7840
308.46	122.4022
311.90	144.9070

316.51	137.7315
319.41	138.0847
320.08	134.8227
323.87	122.4167
323.87	122.4167
328.76	166.7241
333.37	151.4926
334.37	140.4526
334.37	140.4526
338.28	147.1440
338.28	147.1440
338.32	147.1492
338.32	147.1492
338.32	147.1492
340.48	137.7801
340.55	137.7875
344.28	126.2729
351.06	102.9584
351.93	103.0316
356.01	110.2676
364.49	127.2121
366.42	136.6728
383.85	115.3526
388.16	121.9145
388.63	114.0049
391.69	102.7532
400.66	114.1426
401.81	123.1653
402.40	124.1108
404.85	120.4574
410.95	93.4407
414.70	95.1360
423.72	100.6446
427.09	104.5206
427.87	97.3018
433.94	87.6694
453.88	102.7533
463.37	81.9763
468.07	98.2474
473.00	77.8049
476.78	85.5125
477.60	82.7363
487.02	101.2056
492.35	0.0000
497.08	80.9054
511.00	84.4799
514.00	103.1000
527.90	0.0000
529.87	0.0000
531.02	84.5255
537.26	78.0103
546.56	0.0000
563.25	84.1284
569.33	85.4069
569.50	77.4692
569.70	77.4787
583.19	95.0667
600.60	87.8841
602.73	84.9485
604.72	89.0876
609.32	89.3052
609.32	89.3052
610.33	81.2280
614.28	66.7451
618.01	76.4580
621.93	71.5060
621.93	71.5060
633.25	85.2822
635.95	65.8496
636.99	76.1793
645.85	59.9753
657.76	67.6125
661.66	83.3765
661.66	83.3765
664.57	0.0000
666.33	116.9937
666.50	117.0039
677.62	70.3717

685.70	71.7001
695.00	75.1948
696.49	78.4263
696.51	78.4285
697.00	78.4466
702.65	85.0317
706.68	93.7122
711.68	73.6494
720.70	84.6728
721.93	0.0000
722.78	73.8118
722.91	73.8160
723.31	84.1302
724.19	96.1871
727.33	69.8798
733.00	54.6095
735.93	67.9930
739.50	61.6166
747.24	72.6781
752.31	90.2367
753.82	83.7676
756.73	70.8041
763.94	95.0686
765.81	121.3927
766.42	100.6418
777.92	68.1625
778.90	69.2908
783.70	65.2450
785.37	74.1152
795.86	49.6303
801.95	63.4661
810.29	84.7045
810.76	73.5732
815.77	70.3751
818.51	60.3891
832.01	66.3462
834.85	69.3508
836.80	0.0000
846.77	55.2038
856.80	80.2613
860.56	46.4080
871.09	55.7385
873.19	54.8701
875.33	0.0000
879.36	55.0020
880.51	55.0261
883.24	55.0840
884.68	56.0333
889.28	63.4948
898.04	48.0111
911.20	59.3867
911.20	59.3867
911.20	59.3867
926.50	55.9951
937.49	49.9753
944.13	38.5126
946.00	54.5180
949.00	55.5185
962.29	56.7319
964.08	50.4609
966.15	47.3413
968.97	47.3901
968.97	47.3901
968.97	47.3901
983.53	48.5882
996.26	51.6771
1001.03	61.3484
1004.73	60.4668
1037.84	59.2159
1038.76	0.0000
1048.07	65.2628
1050.41	62.3906
1050.41	62.3906
1063.66	61.6865
1085.87	51.2865
1099.45	65.3812
1112.07	65.6455
1115.54	74.6777

1120.29	65.8163
1120.29	65.8163
1120.55	65.8195
1121.30	63.1756
1131.51	0.0000
1173.23	65.8918
1177.93	65.9839
1189.05	56.0205
1204.77	75.7271
1221.41	81.2412
1231.02	87.0875
1235.36	77.4426
1238.28	72.3413
1260.41	0.0000
1271.85	46.9556
1274.44	54.3004
1274.54	54.3004
1291.59	38.8229
1298.22	0.0000
1312.11	40.1004
1332.49	39.2637
1365.19	25.6934
1368.63	0.0000
1384.29	21.5205
1408.01	33.5642
1457.56	0.0000
1460.82	17.5586
1489.16	9.4729
1505.03	14.2653
1596.21	26.4585
1620.50	8.5525
1678.03	0.0000
1690.97	18.3444
1764.49	10.0907
1764.49	10.0907
1770.23	10.1032
1771.35	6.7369
1791.20	0.0000
1836.06	10.9548

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969007

Total Uranium Activity	1.0760E+01	ug/g
Total Uranium Counting Unc.	6.6111E+00	ug/g
Total Uranium Tpu	3.3730E-06	ug/g
Total Uranium Mda	2.4639E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 958216                      SAMPLE ID : G247969007
*  ANALYST       : MXR1                        DETECTOR  : GAM11
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00    COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 11-MAR-2010 14:15:52.41    SAMPLE ALQT: 120.150 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.250E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.544E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.502E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.182E+00

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VAX/VMS Nuclide Identification Report Generated 16-MAR-2010 12:38:48.98

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969008.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:17:11
Sample ID          : G247969008 Sample quantity : 1.27150E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:10.30 0.1%
Energy tolerance   : 2.20000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 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	46.32*	137	537	0.76	92.26	87	10	1.90E-02	33.8	
2	0	63.04*	193	698	0.92	125.72	121	9	2.68E-02	26.2	
3	3	74.89*	726	469	0.91	149.43	145	21	1.01E-01	5.8	1.04E+00
4	3	77.15*	1216	418	0.90	153.95	145	21	1.69E-01	3.9	
5	0	84.14*	154	364	1.27	167.93	165	6	2.14E-02	21.7	
6	5	87.30*	501	389	1.25	174.25	171	22	6.96E-02	7.9	2.06E+00
7	5	89.85	260	320	1.06	179.36	171	22	3.62E-02	12.8	
8	5	92.95*	415	454	1.48	185.57	171	22	5.76E-02	11.1	
9	0	129.12	146	399	0.90	257.92	254	9	2.03E-02	25.9	
10	0	185.87*	201	310	1.22	371.47	367	9	2.79E-02	17.8	
11	0	209.29*	161	230	1.62	418.32	415	9	2.24E-02	19.0	
12	7	238.47*	1389	207	0.99	476.71	472	18	1.93E-01	3.2	4.11E+00
13	7	241.46	340	289	1.74	482.69	472	18	4.72E-02	14.1	
14	0	269.87	133	195	1.47	539.53	535	10	1.84E-02	21.5	
15	0	276.24	88	175	1.34	552.28	547	10	1.22E-02	30.1	
16	0	295.01	427	237	1.13	589.84	583	12	5.92E-02	8.7	
17	0	299.73	75	182	1.19	599.28	596	9	1.04E-02	34.5	
18	0	327.94	104	134	1.09	655.73	652	10	1.44E-02	23.1	
19	0	338.06*	302	194	1.32	675.98	670	14	4.20E-02	11.4	
20	0	351.56*	646	221	1.27	702.99	696	13	8.97E-02	6.2	
21	0	462.77	50	119	1.34	925.52	921	11	6.94E-03	44.5	
22	0	510.36*	197	153	1.71	1020.75	1012	19	2.73E-02	18.0	
23	0	582.55*	377	129	1.47	1165.20	1158	14	5.23E-02	8.3	
24	0	608.57*	494	102	1.47	1217.26	1209	15	6.86E-02	6.4	
25	0	726.59*	90	78	1.61	1453.44	1447	12	1.25E-02	22.6	
26	0	766.90	74	72	1.01	1534.13	1528	12	1.02E-02	25.8	
27	0	785.09	54	67	0.81	1570.53	1563	14	7.56E-03	34.6	
28	0	794.20	60	64	1.99	1588.75	1582	15	8.31E-03	31.9	
29	0	859.91*	33	73	0.99	1720.25	1717	10	4.62E-03	53.2	
30	0	910.09*	220	64	1.40	1820.68	1814	13	3.05E-02	10.3	
31	0	968.07	112	80	1.25	1936.72	1930	11	1.55E-02	18.1	
32	0	1118.70*	65	76	1.90	2238.20	2233	13	9.08E-03	30.4	
33	0	1458.81*	923	14	1.75	2918.98	2912	15	1.28E-01	3.4	
34	0	1727.42	38	0	0.71	3456.71	3450	16	5.28E-03	16.2	
35	0	1761.86*	83	0	1.81	3525.65	3519	13	1.16E-02	11.3	

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

VMS Nuclide Identification Report V3.1 Generated 16-MAR-2010 12:38:52

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969008.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:17:11
Sample ID        : G247969008 Sample quantity : 127.15 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.30 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.20 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	*	3.283E+01	3.683E+00	6.356E-01	5.644E-02	51.643
NB-95	+	765.81	*	1.929E-01	1.010E-01	9.317E-02	8.139E-03	2.070
CD-109	+	88.03	*	6.169E+00	1.142E+00	9.400E-01	9.177E-02	6.562
SN-126	+	64.28		8.773E-01	4.812E-01	4.590E-01	7.326E-02	1.912
	+	86.94		2.492E+00	1.109E+00	3.785E-01	1.575E-01	6.584
	+	87.57	*	5.994E-01	1.110E-01	9.121E-02	8.901E-03	6.572
CS-135	+	268.22	*	6.703E-01	2.972E-01	3.040E-01	3.173E-02	2.205
TL-208	+	277.37		1.100E+00	6.765E-01	7.408E-01	9.570E-02	1.484
	+	583.19	*	7.221E-01	1.384E-01	7.381E-02	6.973E-03	9.782
	+	860.56		6.295E-01	6.726E-01	6.115E-01	5.751E-02	1.030
PB-210	+	46.54	*	1.510E+00	1.034E+00	8.016E-01	8.642E-02	1.884
BI-211	+	72.87		2.565E+01	3.889E+00	3.594E+00	3.514E-01	7.138
	+	351.06	*	5.069E+00	7.900E-01	4.012E-01	3.745E-02	12.634
BI-212	+	727.33	*	2.710E+00	1.271E+00	1.012E+00	1.263E-01	2.677
	+	785.37		1.074E+01	7.482E+00	6.764E+00	5.927E-01	1.587
		1620.50		1.661E+00	3.250E+00	5.800E+00	4.998E-01	0.286
PB-212	+	74.82		3.069E+00	5.529E-01	4.284E-01	5.904E-02	7.164
	+	77.11		3.096E+00	3.868E-01	2.587E-01	2.522E-02	11.967
	+	238.63	*	2.337E+00	2.799E-01	1.097E-01	1.111E-02	21.304
	+	300.09		1.997E+00	1.394E+00	1.548E+00	1.703E-01	1.290
BI-214	+	609.32	*	1.845E+00	3.024E-01	1.619E-01	1.654E-02	11.394
	+	1120.29		1.322E+00	8.173E-01	6.819E-01	7.324E-02	1.939
		1764.49		1.580E+00	5.133E-01	1.060E+00	8.963E-02	1.491
PB-214	+	74.82		5.440E+00	9.308E-01	7.594E-01	9.551E-02	7.164
	+	77.11		5.458E+00	8.171E-01	4.561E-01	5.824E-02	11.967
	+	242.00		3.469E+00	1.046E+00	6.680E-01	7.178E-02	5.193
	+	295.22		2.017E+00	4.178E-01	2.692E-01	3.031E-02	7.492
	+	351.93	*	1.840E+00	3.042E-01	1.460E-01	1.582E-02	12.603
RA-224	+	240.99	*	6.134E+00	1.816E+00	1.177E+00	1.064E-01	5.212
RA-226	+	609.32	*	1.845E+00	3.024E-01	1.619E-01	1.654E-02	11.394
	+	1120.29		1.322E+00	8.173E-01	6.819E-01	7.324E-02	1.939
		1764.49		1.580E+00	5.133E-01	1.060E+00	8.963E-02	1.491
AC-228	+	338.32		2.630E+00	1.253E+00	4.274E-01	1.786E-01	6.153
	+	911.20	*	2.128E+00	5.048E-01	2.304E-01	2.693E-02	9.234

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	968.97		1.871E+00	8.182E-01	5.129E-01	1.252E-01	3.648
	+	338.32		2.630E+00	1.253E+00	4.274E-01	1.786E-01	6.153
	+	911.20	*	2.128E+00	5.048E-01	2.304E-01	2.693E-02	9.234
TH-228	+	968.97		1.871E+00	8.182E-01	5.129E-01	1.252E-01	3.648
	+	74.82		3.069E+00	4.667E-01	4.284E-01	4.212E-02	7.164
	+	77.11		3.096E+00	3.868E-01	2.587E-01	2.522E-02	11.967
TH-229	+	238.63	*	2.337E+00	2.799E-01	1.097E-01	1.111E-02	21.304
	+	300.09		1.997E+00	1.842E+00	1.548E+00	9.492E-01	1.290
	+	85.43		4.600E-01	2.050E-01	2.477E-01	2.415E-02	1.857
TH-232	+	88.47		9.241E-01	1.711E-01	1.410E-01	1.379E-02	6.553
	+	193.51	*	9.316E-02	6.045E-01	9.831E-01	8.501E-02	0.095
	+	210.85		3.837E+00	1.493E+00	1.516E+00	1.337E-01	2.531
TH-234	+	338.32		2.630E+00	6.471E-01	4.274E-01	3.851E-02	6.153
	+	911.20	*	2.128E+00	5.048E-01	2.304E-01	2.693E-02	9.234
	+	968.97		1.871E+00	8.182E-01	5.129E-01	1.252E-01	3.648
U-235	+	63.29	*	2.276E+00	1.270E+00	1.121E+00	2.133E-01	2.031
	+	92.59		4.395E+00	1.393E+00	8.108E-01	1.836E-01	5.420
	+	89.96		3.337E+00	1.195E+00	9.798E-01	2.457E-01	3.406
NP-237	+	93.35		3.319E+00	1.076E+00	6.140E-01	1.452E-01	5.406
	+	143.76	*	-1.060E-01	2.392E-01	3.817E-01	6.796E-02	-0.278
	+	163.33		-1.106E-02	5.151E-01	8.384E-01	1.503E-01	-0.013
U-238	+	185.72		2.160E-01	7.917E-02	7.519E-02	6.439E-03	2.872
	+	205.31		5.725E-01	6.204E-01	9.316E-01	1.697E-01	0.614
	+	86.48	*	1.788E+00	5.003E-01	2.946E-01	6.813E-02	6.071
ANH-511	+	95.86		4.080E-01	9.096E-01	1.388E+00	3.411E-01	0.294
	+	63.29	*	2.276E+00	1.270E+00	1.121E+00	2.133E-01	2.031
	+	92.59		4.395E+00	1.068E+00	8.108E-01	8.089E-02	5.420
	+	511.00	*	2.820E-01	1.046E-01	6.175E-02	5.515E-03	4.567

---- 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	*	3.867E-01	4.303E-01	7.506E-01	7.140E-02	0.515
NA-22		1274.54	*	-4.738E-02	6.830E-02	1.008E-01	8.492E-03	-0.470
NA-24		1368.63	*	-2.090E+00	6.830E-02	Half-Life too short		
SC-46		889.28	*	5.494E-03	5.203E-02	8.708E-02	7.623E-03	0.063
V-48	+	1120.55		2.312E-01	1.420E-01	1.799E-01	1.510E-02	1.285
		944.13		-3.835E-01	1.347E+00	2.147E+00	1.879E-01	-0.179
	+	983.53	*	-4.501E-02	1.139E-01	1.787E-01	1.559E-02	-0.252
CR-51		1312.11		-3.276E-03	1.116E-01	1.865E-01	1.583E-02	-0.018
MN-54		320.08	*	-1.773E-01	4.869E-01	8.017E-01	7.650E-02	-0.221
CO-56		834.85	*	1.572E-02	5.664E-02	9.626E-02	8.464E-03	0.163
		846.77	*	-6.922E-04	5.573E-02	9.248E-02	8.130E-03	-0.007
CO-57		1037.84		-9.248E-02	4.463E-01	7.130E-01	6.477E-02	-0.130
		1238.28		2.024E-01	1.466E-01	2.613E-01	2.246E-02	0.775
		1771.35		-5.850E-03	2.737E-01	4.451E-01	3.759E-02	-0.013
		122.06	*	-5.120E-03	2.652E-02	4.346E-02	5.091E-03	-0.118
		136.47		3.270E-03	2.333E-01	3.838E-01	4.317E-02	0.009

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-58		810.76	*	-8.992E-03	5.899E-02	9.701E-02	8.543E-03	-0.093
FE-59		1099.45	*	3.961E-02	1.457E-01	2.434E-01	2.234E-02	0.163
		1291.59		-9.145E-02	1.902E-01	2.861E-01	2.757E-02	-0.320
CO-60		1173.23		1.168E-01	6.642E-02	1.243E-01	1.015E-02	0.940
		1332.49	*	1.542E-02	5.388E-02	9.333E-02	7.955E-03	0.165
ZN-65		1115.54	*	1.239E-01	1.678E-01	2.568E-01	2.162E-02	0.482
SE-75		121.12		2.358E-02	1.407E-01	2.344E-01	3.182E-02	0.101
		136.00		1.135E-02	4.550E-02	7.561E-02	8.177E-03	0.150
		264.66	*	2.410E-02	6.260E-02	9.074E-02	8.338E-03	0.266
		279.54		-2.587E-02	1.443E-01	2.134E-01	2.025E-02	-0.121
		400.66		4.143E-02	3.269E-01	5.467E-01	6.004E-02	0.076
SR-85		514.00	*	7.797E-03	5.515E-02	7.996E-02	7.144E-03	0.098
Y-88		898.04		1.868E-02	5.871E-02	1.001E-01	8.790E-03	0.187
		1836.06	*	-1.261E-02	5.161E-02	7.973E-02	6.649E-03	-0.158
Y-91		1204.77	*	-4.054E+00	3.591E+01	5.736E+01	4.734E+00	-0.071
NB-94		702.65	*	-3.274E-02	4.832E-02	7.710E-02	6.614E-03	-0.425
		871.09		3.267E-02	4.647E-02	8.214E-02	7.208E-03	0.398
NB-95M		235.69	*	2.958E-02	1.751E-01	2.512E-01	2.569E-02	0.118
ZR-95		724.19		2.911E-01	1.632E-01	2.766E-01	2.591E-02	1.052
		756.73	*	1.386E-02	9.775E-02	1.658E-01	1.594E-02	0.084
MO-99		140.51		-9.054E+01	7.404E+01	1.073E+02	2.625E+01	-0.844
		181.07		-7.225E+00	5.977E+01	8.561E+01	1.604E+01	-0.084
		366.42		1.623E+02	3.153E+02	5.432E+02	4.755E+01	0.299
		739.50	*	1.600E+00	4.806E+01	8.087E+01	1.277E+01	0.020
		777.92		1.699E+01	1.394E+02	2.062E+02	1.805E+01	0.082
TC-99M		140.51	*	-3.399E+15	1.394E+02	Half-Life	too short	
RU-103		497.08	*	1.028E-02	5.416E-02	8.986E-02	1.271E-02	0.114
	+	610.33		2.042E+01	4.254E+00	4.023E+00	6.604E-01	5.076
RH-106		621.93	*	3.991E-01	4.723E-01	8.067E-01	1.073E-01	0.495
		1050.41		-4.077E-01	3.862E+00	6.240E+00	5.370E-01	-0.065
RU-106		621.93	*	3.991E-01	4.705E-01	8.067E-01	7.009E-02	0.495
		1050.41		-4.077E-01	3.862E+00	6.240E+00	5.370E-01	-0.065
AG-108M		433.94	*	3.959E-03	3.830E-02	6.365E-02	5.705E-03	0.062
		614.28		2.850E-02	5.541E-02	8.242E-02	7.423E-03	0.346
		722.91		-3.111E-02	5.895E-02	8.086E-02	7.209E-03	-0.385
AG-110M		657.76	*	-1.075E-03	5.118E-02	8.178E-02	7.128E-03	-0.013
		677.62		1.464E-01	4.349E-01	7.166E-01	6.263E-02	0.204
		706.68		2.391E-01	3.201E-01	5.660E-01	5.003E-02	0.422
		763.94		2.763E-01	2.429E-01	3.996E-01	3.582E-02	0.691
		884.68		-1.647E-02	6.370E-02	1.025E-01	9.256E-03	-0.161
		937.49		-1.010E-01	1.518E-01	2.319E-01	2.101E-02	-0.435
		1384.29		-1.146E-01	1.987E-01	3.023E-01	2.664E-02	-0.379
		1505.03		1.874E-01	4.340E-01	7.599E-01	6.571E-02	0.247
SN-113		391.69	*	-2.651E-02	5.424E-02	8.697E-02	7.557E-03	-0.305
CD-115		260.90		-4.170E-04	5.424E-02	Half-Life	too short	
		492.35		1.204E-04	5.424E-02	Half-Life	too short	
		527.90	*	-6.545E-06	5.424E-02	Half-Life	too short	
SN-117M		156.02		-4.997E+00	3.274E+00	4.922E+00	4.532E-01	-1.015
		158.56	*	-5.602E-03	7.700E-02	1.252E-01	1.125E-02	-0.045

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-123M	159.00	*		1.830E-03	3.336E-02	5.456E-02	4.911E-03	0.034
SB-124	602.73			3.115E-02	5.757E-02	8.640E-02	7.588E-03	0.361
	645.85			5.964E-01	6.564E-01	1.142E+00	1.032E-01	0.522
	722.78			-5.084E-01	6.273E-01	8.278E-01	7.314E-02	-0.614
	1690.97	*		-5.075E-02	1.087E-01	1.602E-01	1.428E-02	-0.317
SB-125	427.87	*		-2.832E-02	1.171E-01	1.901E-01	1.676E-02	-0.149
	+			463.37	6.261E-01	6.894E-01	6.518E-02	0.908
	600.60			3.776E-02	2.461E-01	3.725E-01	3.507E-02	0.101
	635.95			4.885E-03	3.866E-01	6.213E-01	5.782E-02	0.008
TE-125M	109.28	*		5.621E+00	1.053E+01	1.783E+01	2.216E+00	0.315
I-126	388.63			8.293E-02	2.465E-01	4.188E-01	3.544E-02	0.198
	666.33	*		-2.519E-02	4.241E-01	6.677E-01	5.637E-02	-0.038
	753.82			2.927E+00	3.023E+00	5.454E+00	4.752E-01	0.537
SB-126	414.70			2.560E-02	1.127E-01	1.895E-01	1.625E-02	0.135
	666.50			-1.476E-02	1.466E-01	2.300E-01	1.942E-02	-0.064
	695.00			8.215E-02	1.343E-01	2.365E-01	2.022E-02	0.347
	697.00			-4.637E-02	4.768E-01	7.978E-01	6.828E-02	-0.058
	720.70	*		8.086E-02	2.725E-01	4.132E-01	3.567E-02	0.196
	856.80			8.613E-01	9.136E-01	1.473E+00	1.295E-01	0.585
SB-127	252.40			-1.617E-01	1.055E+01	1.673E+01	7.026E+00	-0.010
	473.00			-3.694E+00	4.024E+00	6.030E+00	8.461E-01	-0.613
	685.70	*		-1.456E+00	3.864E+00	5.935E+00	7.445E-01	-0.245
	+			783.70	2.452E+01	1.953E+01	2.656E+00	1.256
I-131	80.19			-4.869E+00	5.733E+00	8.339E+00	8.187E-01	-0.584
	284.31			-9.795E-01	2.356E+00	3.898E+00	3.754E-01	-0.251
	364.49	*		-2.192E-03	1.942E-01	3.238E-01	2.999E-02	-0.007
	636.99			4.189E-01	3.152E+00	5.119E+00	4.671E-01	0.082
TE-132	49.72			-3.021E+00	1.004E+01	1.528E+01	2.022E+00	-0.198
	111.76			-8.426E+01	8.492E+01	1.317E+02	1.846E+01	-0.640
	116.30			1.066E+00	7.118E+01	1.180E+02	1.682E+01	0.009
	228.16	*		-1.100E+00	2.142E+00	3.315E+00	5.586E-01	-0.332
BA-133	81.00			-1.095E-01	8.536E-02	1.192E-01	1.927E-02	-0.918
	+			276.40	1.017E+00	7.736E-01	1.119E-01	1.315
	302.85			1.905E-02	1.815E-01	2.726E-01	3.662E-02	0.070
	356.01	*		-1.961E-02	5.476E-02	7.785E-02	1.021E-02	-0.252
	383.85			3.882E-02	3.619E-01	6.061E-01	7.494E-02	0.064
I-133	529.87	*		-4.103E-02	3.619E-01	Half-Life	too short	
	875.33			6.243E-01	3.619E-01	Half-Life	too short	
	1298.22			7.049E+00	3.619E-01	Half-Life	too short	
CS-134	563.25			-2.829E-01	4.905E-01	7.544E-01	6.779E-02	-0.375
	569.33			-1.634E-01	2.672E-01	4.090E-01	3.684E-02	-0.400
	604.72			2.203E-02	4.823E-02	7.160E-02	6.297E-03	0.308
	+			795.86	1.737E-01	1.228E-01	1.085E-02	1.414
	801.95	*		-9.394E-04	5.989E-01	9.515E-01	8.399E-02	-0.001
	1365.19			-9.583E-01	1.647E+00	2.520E+00	2.259E-01	-0.380
I-135	546.56			2.410E+14	1.647E+00	Half-Life	too short	
	836.80			3.335E+14	1.647E+00	Half-Life	too short	
	1038.76			-1.175E+13	1.647E+00	Half-Life	too short	
	1131.51			-1.095E+14	1.647E+00	Half-Life	too short	

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CS-136	+	1260.41	*	1.769E+14	1.647E+00	Half-Life	too short	
		1457.56		4.128E+16	1.647E+00	Half-Life	too short	
		1678.03		4.401E+13	1.647E+00	Half-Life	too short	
		1791.20		4.622E+14	1.647E+00	Half-Life	too short	
		153.25		1.852E+00	1.257E+00	2.154E+00	2.362E-01	0.860
		176.60		2.558E-01	7.036E-01	1.161E+00	1.087E-01	0.220
		273.65		8.909E-02	9.917E-01	1.101E+00	1.086E-01	0.081
		340.55		2.250E-01	2.342E-01	3.705E-01	3.451E-02	0.607
		818.51		3.940E-04	1.252E-01	2.086E-01	1.836E-02	0.002
		1048.07	*	-2.201E-02	2.005E-01	3.239E-01	2.908E-02	-0.068
BA-137M		1235.36		1.124E+00	1.158E+00	2.002E+00	2.314E-01	0.561
		661.66	*	3.493E-03	5.485E-02	8.727E-02	7.352E-03	0.040
		661.66	*	3.690E-03	5.795E-02	9.219E-02	7.782E-03	0.040
		165.86	*	9.951E-03	3.634E-02	5.986E-02	4.991E-03	0.166
BA-140		162.66		-9.313E-02	1.189E+00	1.930E+00	1.777E-01	-0.048
		304.85		-1.840E-01	2.192E+00	3.242E+00	9.542E-01	-0.057
		423.72		-1.213E+00	3.082E+00	4.911E+00	1.616E+00	-0.247
		537.26	*	3.415E-02	4.795E-01	7.835E-01	2.664E-01	0.044
LA-140	+	328.76		1.382E+00	6.517E-01	8.684E-01	8.285E-02	1.591
		487.02		-1.239E-01	2.228E-01	3.481E-01	3.275E-02	-0.356
		815.77		1.487E-01	5.854E-01	9.967E-01	9.750E-02	0.149
		1596.21	*	-1.262E-01	1.749E-01	2.581E-01	2.227E-02	-0.489
CE-141		145.44	*	1.352E-02	8.062E-02	1.320E-01	1.346E-02	0.102
CE-143		57.36		1.186E-03	8.062E-02	Half-Life	too short	
	+	293.27	*	1.328E-02	8.062E-02	Half-Life	too short	
		664.57		1.123E-02	8.062E-02	Half-Life	too short	
		721.93		-7.686E-03	8.062E-02	Half-Life	too short	
CE-144		80.12		-1.803E+00	2.219E+00	3.235E+00	3.151E-01	-0.557
		133.52	*	1.708E-01	2.487E-01	3.782E-01	6.319E-02	0.451
PM-144		476.78		1.317E-02	8.172E-02	1.357E-01	1.301E-02	0.097
		618.01		-5.087E-02	4.715E-02	6.823E-02	6.105E-03	-0.746
PR-144		696.49	*	2.938E-02	4.837E-02	8.507E-02	7.283E-03	0.345
		696.51	*	2.173E+00	3.625E+00	6.372E+00	5.453E-01	0.341
PM-146		1489.16		1.775E+00	1.711E+01	2.888E+01	2.497E+00	0.061
		453.88	*	-3.130E-02	5.334E-02	8.365E-02	8.970E-03	-0.374
		633.25		4.019E-01	2.043E+00	3.329E+00	1.271E+00	0.121
		735.93		3.041E-02	1.938E-01	3.294E-01	9.236E-02	0.092
ND-147		747.24		3.525E-02	1.309E-01	2.244E-01	3.283E-02	0.157
	+	91.11		1.389E+00	3.837E-01	5.902E-01	6.219E-02	2.354
		319.41		2.222E-02	5.130E+00	8.635E+00	7.876E-01	0.003
		531.02	*	-3.090E-01	9.380E-01	1.481E+00	2.242E-01	-0.209
PM-149		285.90	*	-2.537E-04	9.380E-01	Half-Life	too short	
EU-152		121.78		-3.270E-02	7.671E-02	1.243E-01	1.574E-02	-0.263
		244.70		-1.111E-01	4.116E-01	5.689E-01	5.157E-02	-0.195
		344.28	*	-7.532E-02	1.396E-01	1.812E-01	1.714E-02	-0.416
		778.90		7.786E-02	3.772E-01	5.638E-01	4.936E-02	0.138
		964.08		5.955E-01	5.033E-01	8.084E-01	7.065E-02	0.737
		1085.87		-3.350E-01	5.462E-01	8.265E-01	7.033E-02	-0.405
		1112.07		-1.219E-01	5.131E-01	7.319E-01	6.164E-02	-0.167

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		1408.01		1.694E-01	2.615E-01	4.699E-01	4.043E-02	0.361
		69.67		-8.757E-01	1.224E+00	1.913E+00	1.878E-01	-0.458
		97.43	*	-1.127E-01	9.156E-02	1.272E-01	1.301E-02	-0.885
EU-154		103.18		-1.229E-01	1.110E-01	1.754E-01	1.848E-02	-0.701
		123.07		-1.366E-02	5.465E-02	8.927E-02	1.231E-02	-0.153
		723.31		-2.071E-02	2.761E-01	4.008E-01	3.812E-02	-0.052
		873.19		2.546E-02	3.997E-01	6.665E-01	8.002E-02	0.038
		996.26		-5.083E-01	5.509E-01	8.076E-01	1.414E-01	-0.629
EU-155		1004.73		-3.717E-02	2.866E-01	4.631E-01	5.415E-02	-0.080
		1274.44	*	-1.026E-01	1.895E-01	2.848E-01	3.197E-02	-0.360
	+	86.55		7.279E-01	1.351E-01	1.854E-01	1.823E-02	3.926
		105.31	*	6.278E-02	1.058E-01	1.800E-01	1.933E-02	0.349
	+	86.79		2.003E+00	3.710E-01	5.152E-01	5.025E-02	3.888
TB-160		197.04		-3.092E-01	6.794E-01	1.069E+00	9.286E-02	-0.289
		215.65		1.248E-01	8.709E-01	1.408E+00	1.247E-01	0.089
	+	298.57		2.921E-01	2.032E-01	2.644E-01	2.427E-02	1.105
		879.36	*	1.028E-02	1.942E-01	3.234E-01	2.835E-02	0.032
		962.29		6.686E-01	9.630E-01	1.481E+00	1.294E-01	0.452
HO-166M	+	966.15		1.467E+00	5.478E-01	8.461E-01	7.393E-02	1.734
		1177.93		-8.562E-01	5.536E-01	7.330E-01	5.997E-02	-1.168
		1271.85		-3.380E-01	1.130E+00	1.754E+00	1.475E-01	-0.193
	+	80.57		-2.601E-01	2.396E-01	3.439E-01	3.350E-02	-0.756
		184.41		1.716E-01	6.290E-02	7.638E-02	6.530E-03	2.246
TA-182		280.46		-1.147E-02	1.088E-01	1.617E-01	1.484E-02	-0.071
		410.95		-8.775E-02	3.079E-01	5.002E-01	4.277E-02	-0.175
		711.68	*	2.315E-02	9.056E-02	1.552E-01	1.336E-02	0.149
		752.31		4.029E-02	3.711E-01	6.278E-01	5.468E-02	0.064
		810.29		-2.295E-02	8.587E-02	1.398E-01	1.228E-02	-0.164
IR-192		67.75		-8.554E-04	7.544E-02	1.214E-01	1.196E-02	-0.007
		100.11		1.797E-01	1.760E-01	3.035E-01	3.146E-02	0.592
		152.43		5.532E-01	4.136E-01	7.094E-01	6.743E-02	0.780
		222.11		1.790E-01	4.575E-01	7.462E-01	6.651E-02	0.240
		1121.30		4.525E-01	2.622E-01	4.424E-01	3.711E-02	1.023
HG-203		1189.05		-2.436E-01	5.178E-01	7.996E-01	6.566E-02	-0.305
		1221.41	*	2.613E-02	3.196E-01	5.192E-01	4.307E-02	0.050
		1231.02		-6.154E-01	7.729E-01	1.150E+00	9.562E-02	-0.535
	+	295.96		1.548E+00	3.049E-01	3.986E-01	3.684E-02	3.884
		308.46		-1.574E-02	1.128E-01	1.886E-01	1.735E-02	-0.083
BI-207		316.51	*	1.093E-02	4.450E-02	7.590E-02	6.944E-03	0.144
		468.07		4.390E-03	9.894E-02	1.431E-01	1.352E-02	0.031
	+	70.83		-7.727E-02	1.051E+00	1.586E+00	2.653E-01	-0.049
		72.87		6.776E+00	1.350E+00	1.040E+00	1.686E-01	6.515
	+	279.20	*	7.162E-03	5.340E-02	8.080E-02	7.585E-03	0.089
PB-211	+	72.81		1.476E+00	2.238E-01	2.245E-01	2.196E-02	6.574
	+	74.97		8.848E-01	1.341E-01	2.010E-01	1.962E-02	4.401
		569.70		-2.081E-02	4.140E-02	6.406E-02	5.696E-03	-0.325
		1063.66	*	4.638E-02	7.827E-02	1.350E-01	1.158E-02	0.343
		1770.23		-1.337E-01	5.219E-01	7.964E-01	6.727E-02	-0.168

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	427.09		8.611E-01	1.927E+00	3.214E+00	1.487E+00	0.268
		832.01		-3.718E-01	1.500E+00	2.422E+00	1.257E+00	-0.154
		271.23		9.930E-01	4.409E-01	5.397E-01	5.785E-02	1.840
		401.81	*	3.629E-01	5.197E-01	8.956E-01	1.325E-01	0.405
RA-223	+	81.07		-2.544E-01	1.906E-01	2.694E-01	2.624E-02	-0.944
		83.79		2.737E-01	1.220E-01	1.869E-01	1.821E-02	1.465
		94.87		3.267E+00	7.943E-01	7.560E-01	7.628E-02	4.322
		144.24		8.645E-02	7.991E-01	1.309E+00	1.442E-01	0.066
AC-227	+	154.21		4.241E-01	4.532E-01	7.669E-01	7.764E-02	0.553
		269.46		7.715E-01	3.402E-01	4.435E-01	4.135E-02	1.740
		323.87	*	5.149E-01	7.969E-01	1.239E+00	2.177E-01	0.416
		338.28		1.043E+01	2.715E+00	3.240E+00	4.002E-01	3.221
TH-227	+	79.69		-9.627E-01	1.098E+00	1.580E+00	2.816E-01	-0.609
		235.96		2.501E-01	2.123E-01	3.214E-01	3.430E-02	0.778
		256.23	*	-2.549E-02	3.076E-01	4.854E-01	6.025E-02	-0.053
		299.98		2.197E+00	1.541E+00	2.057E+00	2.692E-01	1.068
PA-231	+	304.50		1.199E+00	2.046E+00	3.174E+00	5.339E-01	0.378
		334.37		-5.972E-01	2.291E+00	3.074E+00	4.864E-01	-0.194
		79.80		-1.269E+00	1.459E+00	2.087E+00	4.642E-01	-0.608
		235.96		2.501E-01	2.121E-01	3.214E-01	3.248E-02	0.778
TH-231	+	256.23	*	-2.549E-02	3.076E-01	4.854E-01	6.761E-02	-0.053
		299.98		2.197E+00	1.541E+00	2.057E+00	2.692E-01	1.068
		304.50		1.199E+00	2.046E+00	3.174E+00	5.339E-01	0.378
		334.37		-5.972E-01	2.291E+00	3.074E+00	4.864E-01	-0.194
PA-233	+	283.69	*	-2.287E-01	1.643E+00	2.764E+00	4.125E-01	-0.083
		301.36		1.411E+00	9.888E-01	1.261E+00	1.583E-01	1.119
		81.07		-2.544E-01	1.906E-01	2.694E-01	2.624E-02	-0.944
		83.79		2.737E-01	1.220E-01	1.869E-01	1.821E-02	1.465
PA-234	+	94.87		3.267E+00	7.943E-01	7.560E-01	7.628E-02	4.322
		144.24		8.645E-02	7.991E-01	1.309E+00	1.442E-01	0.066
		154.21		4.241E-01	4.532E-01	7.669E-01	7.764E-02	0.553
		269.46		7.715E-01	3.402E-01	4.435E-01	4.135E-02	1.740
PA-234M	+	323.87	*	5.149E-01	7.969E-01	1.239E+00	2.177E-01	0.416
		338.28		1.043E+01	2.715E+00	3.240E+00	4.002E-01	3.221
		300.13		9.940E-01	7.016E-01	9.341E-01	1.416E-01	1.064
		311.90	*	-3.720E-02	7.446E-02	1.217E-01	1.141E-02	-0.306
PA-234M	+	340.48		9.892E-01	8.530E-01	1.321E+00	3.197E-01	0.749
		94.67		1.184E+00	3.066E-01	2.916E-01	3.925E-02	4.060
		98.44		-8.842E-03	9.728E-02	1.449E-01	8.123E-02	-0.061
		111.00		-1.806E-01	1.971E-01	3.073E-01	4.266E-02	-0.588
PA-234M	+	131.20		3.599E-01	1.908E-01	1.982E-01	2.201E-02	1.815
		569.50		-2.661E-01	3.714E-01	5.630E-01	5.006E-02	-0.473
		733.00		-2.765E-01	5.215E-01	7.758E-01	1.723E-01	-0.356
		880.51		-2.111E-01	3.730E-01	5.799E-01	5.083E-02	-0.364
PA-234M	+	883.24		1.353E-02	3.512E-01	5.840E-01	3.927E-01	0.023
		926.50		2.858E-02	2.417E-01	4.034E-01	1.021E-01	0.071
		946.00	*	4.489E-02	4.207E-01	7.003E-01	1.318E-01	0.064
		949.00		4.739E-01	6.626E-01	1.161E+00	1.016E-01	0.408
PA-234M	+	766.42		4.891E+01	3.540E+01	3.537E+01	1.796E+01	1.383

----- 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	*	2.405E+00	6.439E+00	1.106E+01	1.110E+00	0.217
		99.53		1.945E-01	1.578E-01	2.736E-01	2.828E-02	0.711
		103.37		-4.229E-02	9.804E-02	1.603E-01	1.691E-02	-0.264
		106.12		3.330E-02	8.486E-02	1.433E-01	1.534E-02	0.232
		117.23	*	-4.416E-01	4.244E-01	6.666E-01	7.593E-02	-0.663
		228.18		-1.382E-01	2.673E-01	4.147E-01	3.716E-02	-0.333
AM-241	+	277.60		5.026E-01	3.058E-01	3.868E-01	3.550E-02	1.299
CM-247		59.54	*	9.059E-03	7.249E-02	1.112E-01	1.181E-02	0.081
	+	278.00		2.135E+00	1.299E+00	1.642E+00	1.507E-01	1.300
CF-249		287.50		-2.855E-01	1.398E+00	2.340E+00	2.149E-01	-0.122
		402.40	*	4.354E-02	4.868E-02	8.496E-02	7.216E-03	0.512
		252.80		-4.200E-01	1.173E+00	1.821E+00	1.658E-01	-0.231
		333.37		5.658E-03	3.063E-01	3.303E-01	2.987E-02	0.017
CF-251		388.16	*	1.630E-02	4.850E-02	8.238E-02	6.977E-03	0.198
		177.52	*	-6.572E-02	1.511E-01	2.397E-01	2.030E-02	-0.274
		227.38		-2.416E-01	4.404E-01	6.824E-01	6.110E-02	-0.354
		285.41		-1.743E+00	2.407E+00	3.902E+00	3.584E-01	-0.447

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]G247969008      *
* Acquisition date   : 11-MAR-2010 14:17:11 Detector SN#      :              *
* Detector ID        : GAM17                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance : 2.200        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000       *
* Elapsed real time  : 0 02:00:10.30             Half life ratio : 8.000       *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247969008             Analyst initials: MXR1         *
* Batch Number       : 958216                 Sample Quantity : 1.2715E+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	3.283E+01	3.609E+00	6.355E-01	0.000E+00
NB-95	1.929E-01	9.894E-02	9.408E-02	0.000E+00
CD-109	6.169E+00	1.120E+00	9.797E-01	0.000E+00
SN-126	5.994E-01	1.088E-01	9.506E-02	0.000E+00
CS-135	6.703E-01	2.912E-01	3.118E-01	0.000E+00
TL-208	7.221E-01	1.356E-01	7.483E-02	0.000E+00
PB-210	1.510E+00	1.013E+00	8.429E-01	0.000E+00
BI-211	5.069E+00	7.742E-01	4.098E-01	0.000E+00
BI-212	2.710E+00	1.246E+00	1.023E+00	0.000E+00
PB-212	2.337E+00	2.743E-01	1.127E-01	0.000E+00
BI-214	1.845E+00	2.964E-01	1.640E-01	0.000E+00
PB-214	1.840E+00	2.981E-01	1.491E-01	0.000E+00
RA-224	6.134E+00	1.779E+00	1.209E+00	0.000E+00
RA-226	1.845E+00	2.964E-01	1.640E-01	0.000E+00
AC-228	2.128E+00	4.947E-01	2.320E-01	0.000E+00
RA-228	2.128E+00	4.947E-01	2.320E-01	0.000E+00
TH-228	2.337E+00	2.743E-01	1.127E-01	0.000E+00
TH-229	9.316E-02	5.924E-01	1.013E+00	0.000E+00
TH-232	2.128E+00	4.947E-01	2.320E-01	0.000E+00
TH-234	2.276E+00	1.245E+00	1.174E+00	0.000E+00
U-235	-1.060E-01	2.344E-01	3.950E-01	0.000E+00
NP-237	1.788E+00	4.903E-01	3.071E-01	0.000E+00
U-238	2.276E+00	1.245E+00	1.174E+00	0.000E+00
ANH-511	2.820E-01	1.025E-01	6.273E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	3.867E-01	4.216E-01	7.633E-01	0.000E+00 NOT IDENT.
NA-22	-4.738E-02	6.694E-02	1.010E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.460E+07	0.000E+00	0.000E+00 SHORT HLIF

SC-46	5.494E-03	5.099E-02	8.772E-02	0.000E+00	FAIL ABUN
V-48	-4.501E-02	1.116E-01	1.798E-01	0.000E+00	NOT IDENT.
CR-51	-1.773E-01	4.772E-01	8.200E-01	0.000E+00	NOT IDENT.
MN-54	1.572E-02	5.550E-02	9.707E-02	0.000E+00	NOT IDENT.
CO-56	-6.922E-04	5.462E-02	9.324E-02	0.000E+00	NOT IDENT.
CO-57	-5.120E-03	2.599E-02	4.508E-02	0.000E+00	NOT IDENT.
CO-58	-8.992E-03	5.781E-02	9.786E-02	0.000E+00	NOT IDENT.
FE-59	3.961E-02	1.428E-01	2.444E-01	0.000E+00	NOT IDENT.
CO-60	1.542E-02	5.280E-02	9.345E-02	0.000E+00	NOT IDENT.
ZN-65	1.239E-01	1.645E-01	2.578E-01	0.000E+00	NOT IDENT.
SE-75	2.410E-02	6.135E-02	9.308E-02	0.000E+00	NOT IDENT.
SR-85	7.797E-03	5.405E-02	8.122E-02	0.000E+00	NOT IDENT.
Y-88	-1.261E-02	5.058E-02	7.943E-02	0.000E+00	NOT IDENT.
Y-91	-4.054E+00	3.519E+01	5.752E+01	0.000E+00	NOT IDENT.
NB-94	-3.274E-02	4.735E-02	7.795E-02	0.000E+00	NOT IDENT.
NB-95M	2.958E-02	1.716E-01	2.581E-01	0.000E+00	NOT IDENT.
ZR-95	1.386E-02	9.580E-02	1.675E-01	0.000E+00	NOT IDENT.
MO-99	1.600E+00	4.709E+01	8.169E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.871E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.028E-02	5.308E-02	9.132E-02	0.000E+00	FAIL ABUN
RH-106	3.991E-01	4.628E-01	8.171E-01	0.000E+00	NOT IDENT.
RU-106	3.991E-01	4.611E-01	8.171E-01	0.000E+00	NOT IDENT.
AG-108M	3.959E-03	3.753E-02	6.482E-02	0.000E+00	NOT IDENT.
AG-110M	-1.075E-03	5.015E-02	8.276E-02	0.000E+00	NOT IDENT.
SN-113	-2.651E-02	5.316E-02	8.870E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	5.121E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-5.602E-03	7.546E-02	1.294E-01	0.000E+00	NOT IDENT.
TE-123M	1.830E-03	3.269E-02	5.638E-02	0.000E+00	NOT IDENT.
SB-124	-5.075E-02	1.065E-01	1.598E-01	0.000E+00	NOT IDENT.
SB-125	-2.832E-02	1.148E-01	1.937E-01	0.000E+00	FAIL ABUN
TE-125M	5.621E+00	1.032E+01	1.853E+01	0.000E+00	NOT IDENT.
I-126	-2.519E-02	4.156E-01	6.756E-01	0.000E+00	NOT IDENT.
SB-126	8.086E-02	2.671E-01	4.176E-01	0.000E+00	NOT IDENT.
SB-127	-1.456E+00	3.786E+00	6.002E+00	0.000E+00	FAIL ABUN
I-131	-2.192E-03	1.903E-01	3.306E-01	0.000E+00	NOT IDENT.
TE-132	-1.100E+00	2.099E+00	3.408E+00	0.000E+00	NOT IDENT.
BA-133	-1.961E-02	5.367E-02	7.951E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.845E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.095E-01	1.240E-01	0.000E+00	FAIL ABUN
I-135	0.000E+00	2.249E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.201E-02	1.965E-01	3.255E-01	0.000E+00	NOT IDENT.
BA-137M	3.493E-03	5.375E-02	8.831E-02	0.000E+00	NOT IDENT.
CS-137	3.690E-03	5.679E-02	9.329E-02	0.000E+00	NOT IDENT.
CE-139	9.951E-03	3.561E-02	6.182E-02	0.000E+00	NOT IDENT.
BA-140	3.415E-02	4.699E-01	7.953E-01	0.000E+00	NOT IDENT.
LA-140	-1.262E-01	1.714E-01	2.576E-01	0.000E+00	FAIL ABUN
CE-141	1.352E-02	7.901E-02	1.366E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.843E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.708E-01	2.438E-01	3.918E-01	0.000E+00	NOT IDENT.
PM-144	2.938E-02	4.740E-02	8.601E-02	0.000E+00	NOT IDENT.
PR-144	2.173E+00	3.552E+00	6.443E+00	0.000E+00	NOT IDENT.
PM-146	-3.130E-02	5.227E-02	8.513E-02	0.000E+00	NOT IDENT.
ND-147	-3.090E-01	9.192E-01	1.504E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	3.471E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-7.532E-02	1.368E-01	1.852E-01	0.000E+00	NOT IDENT.
GD-153	-1.127E-01	8.973E-02	1.324E-01	0.000E+00	NOT IDENT.
EU-154	-1.026E-01	1.857E-01	2.854E-01	0.000E+00	NOT IDENT.
EU-155	6.278E-02	1.037E-01	1.871E-01	0.000E+00	FAIL ABUN
TB-160	1.028E-02	1.903E-01	3.259E-01	0.000E+00	FAIL ABUN
HO-166M	2.315E-02	8.875E-02	1.569E-01	0.000E+00	FAIL ABUN
TA-182	2.613E-02	3.132E-01	5.206E-01	0.000E+00	NOT IDENT.
IR-192	1.093E-02	4.361E-02	7.766E-02	0.000E+00	FAIL ABUN
HG-203	7.162E-03	5.233E-02	8.282E-02	0.000E+00	FAIL ABUN
BI-207	4.638E-02	7.670E-02	1.357E-01	0.000E+00	FAIL ABUN
PB-211	-3.014E-01	9.358E-01	1.563E+00	0.000E+00	NOT IDENT.
RN-219	3.629E-01	5.093E-01	9.130E-01	0.000E+00	FAIL ABUN
RA-223	5.149E-01	7.810E-01	1.267E+00	0.000E+00	FAIL ABUN
AC-227	-2.549E-02	3.014E-01	4.982E-01	0.000E+00	FAIL ABUN
TH-227	-2.549E-02	3.014E-01	4.982E-01	0.000E+00	FAIL ABUN
PA-231	-2.287E-01	1.610E+00	2.832E+00	0.000E+00	FAIL ABUN
TH-231	5.149E-01	7.810E-01	1.267E+00	0.000E+00	FAIL ABUN
PA-233	-3.720E-02	7.297E-02	1.245E-01	0.000E+00	FAIL ABUN
PA-234	4.489E-02	4.123E-01	7.048E-01	0.000E+00	FAIL ABUN
PA-234M	2.405E+00	6.310E+00	1.113E+01	0.000E+00	FAIL ABUN
NP-239	-4.416E-01	4.159E-01	6.919E-01	0.000E+00	FAIL ABUN
AM-241	9.059E-03	7.104E-02	1.165E-01	0.000E+00	NOT IDENT.
CM-247	4.354E-02	4.771E-02	8.661E-02	0.000E+00	FAIL ABUN
CF-249	1.630E-02	4.753E-02	8.402E-02	0.000E+00	NOT IDENT.

CF-251	-6.572E-02	1.481E-01	2.473E-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]G247969008.CNF;1
Sample date        : 20-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:17:11
Sample ID          : G247969008 Sample quantity : 1.27150E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:10.30 0.1%
Energy tolerance   : 2.20000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 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	923	10.66*	7.787E-01	3.283E+01	3.283E+01	11.22
NB-95	765.81	74	99.81*	1.391E+00	1.568E-01	1.929E-01	52.34
CD-109	88.03	501	3.70*	6.675E+00	5.994E+00	6.169E+00	18.52
SN-126	64.28	193	9.60	6.774E+00	8.773E-01	8.773E-01	54.85
	86.94	501	8.90	6.675E+00	2.492E+00	2.492E+00	44.49
	87.57	501	37.00*	6.675E+00	5.994E-01	5.994E-01	18.52
CS-135	268.22	133	16.00*	3.649E+00	6.703E-01	6.703E-01	44.34
TL-208	277.37	88	6.60	3.580E+00	1.100E+00	1.100E+00	61.52
	583.19	377	85.00*	1.813E+00	7.221E-01	7.221E-01	19.16
	860.56	33	12.50	1.247E+00	6.295E-01	6.295E-01	106.85
PB-210	46.54	137	4.25*	6.303E+00	1.508E+00	1.510E+00	68.45
BI-211	72.87	726	1.23	6.795E+00	2.565E+01	2.565E+01	15.16
	351.06	646	12.92*	2.910E+00	5.069E+00	5.069E+00	15.59
BI-212	727.33	90	6.67*	1.465E+00	2.710E+00	2.710E+00	46.91
	785.37	54	1.10	1.360E+00	1.074E+01	1.074E+01	69.69
	1620.50	-----	1.47	7.161E-01	-----	Line Not Found	-----
PB-212	74.82	726	10.28	6.795E+00	3.069E+00	3.069E+00	18.01
	77.11	1216	17.10	6.782E+00	3.096E+00	3.096E+00	12.49
	238.63	1389	43.60*	4.024E+00	2.337E+00	2.337E+00	11.98
	300.09	75	3.30	3.344E+00	1.997E+00	1.997E+00	69.81
BI-214	609.32	494	45.49*	1.738E+00	1.845E+00	1.845E+00	16.40
	1120.29	65	14.92	9.781E-01	1.322E+00	1.322E+00	61.81
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
PB-214	74.82	726	5.80	6.795E+00	5.440E+00	5.440E+00	17.11
	77.11	1216	9.70	6.782E+00	5.458E+00	5.458E+00	14.97
	242.00	340	7.25	3.985E+00	3.469E+00	3.469E+00	30.16
	295.22	427	18.42	3.389E+00	2.017E+00	2.017E+00	20.71
	351.93	646	35.60*	2.910E+00	1.840E+00	1.840E+00	16.53
RA-224	240.99	340	4.10*	3.985E+00	6.134E+00	6.134E+00	29.60
RA-226	609.32	494	45.49*	1.738E+00	1.845E+00	1.845E+00	16.40
	1120.29	65	14.92	9.781E-01	1.322E+00	1.322E+00	61.81
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AC-228	338.32	302	11.27	3.013E+00	2.630E+00	2.630E+00	47.66
	911.20	220	25.80*	1.182E+00	2.128E+00	2.128E+00	23.73
	968.97	112	15.80	1.116E+00	1.871E+00	1.871E+00	43.73
RA-228	338.32	302	11.27	3.013E+00	2.630E+00	2.630E+00	47.66
	911.20	220	25.80*	1.182E+00	2.128E+00	2.128E+00	23.73
	968.97	112	15.80	1.116E+00	1.871E+00	1.871E+00	43.73
TH-228	74.82	726	10.28	6.795E+00	3.069E+00	3.069E+00	15.20
	77.11	1216	17.10	6.782E+00	3.096E+00	3.096E+00	12.49
	238.63	1389	43.60*	4.024E+00	2.337E+00	2.337E+00	11.98
TH-229	300.09	75	3.30	3.344E+00	1.997E+00	1.997E+00	92.25
	85.43	154	14.70	6.715E+00	4.600E-01	4.600E-01	44.57
	88.47	501	24.00	6.675E+00	9.240E-01	9.241E-01	18.52
TH-232	193.51	-----	4.41*	4.680E+00	-----	Line Not Found	-----
	210.85	161	2.80	4.432E+00	3.837E+00	3.837E+00	38.92
	338.32	302	11.27	3.013E+00	2.630E+00	2.630E+00	24.61
TH-234	911.20	220	25.80*	1.182E+00	2.128E+00	2.128E+00	23.73
	968.97	112	15.80	1.116E+00	1.871E+00	1.871E+00	43.73
	63.29	193	3.70*	6.774E+00	2.276E+00	2.276E+00	55.81
U-235	92.59	415	4.23	6.591E+00	4.395E+00	4.395E+00	31.69
	89.96	260	3.47	6.638E+00	3.337E+00	3.337E+00	35.80
	93.35	415	5.60	6.591E+00	3.319E+00	3.319E+00	32.41
NP-237	143.76	-----	10.96*	5.592E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
	185.72	201	57.20	4.807E+00	2.160E-01	2.160E-01	36.66
U-238	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
	86.48	501	12.40*	6.675E+00	1.788E+00	1.788E+00	27.98
	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
ANH-511	63.29	193	3.70*	6.774E+00	2.276E+00	2.276E+00	55.81
	92.59	415	4.23	6.591E+00	4.395E+00	4.395E+00	24.31
	511.00	197	100.00*	2.059E+00	2.820E-01	2.820E-01	37.08

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 2
Number of lines tentatively identified by NID 33 94.29%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.283E+01	3.283E+01	0.368E+01	11.22	
NB-95	64.03D	1.23	1.568E-01	1.929E-01	1.010E-01	52.34	
CD-109	461.40D	1.03	5.994E+00	6.169E+00	1.142E+00	18.52	
SN-126	2.30E+05Y	1.00	5.994E-01	5.994E-01	1.110E-01	18.52	
CS-135	2.30E+06Y	1.00	6.703E-01	6.703E-01	2.972E-01	44.34	
TL-208	1.41E+10Y	1.00	7.221E-01	7.221E-01	1.384E-01	19.16	
PB-210	22.20Y	1.00	1.508E+00	1.510E+00	1.034E+00	68.45	
BI-211	7.04E+08Y	1.00	5.069E+00	5.069E+00	0.790E+00	15.59	
BI-212	1.41E+10Y	1.00	2.710E+00	2.710E+00	1.271E+00	46.91	
PB-212	1.41E+10Y	1.00	2.337E+00	2.337E+00	0.280E+00	11.98	
BI-214	1600.00Y	1.00	1.845E+00	1.845E+00	0.302E+00	16.40	
PB-214	1600.00Y	1.00	1.840E+00	1.840E+00	0.304E+00	16.53	
RA-224	1.41E+10Y	1.00	6.134E+00	6.134E+00	1.816E+00	29.60	
RA-226	1600.00Y	1.00	1.845E+00	1.845E+00	0.302E+00	16.40	
AC-228	1.41E+10Y	1.00	2.128E+00	2.128E+00	0.505E+00	23.73	
RA-228	1.41E+10Y	1.00	2.128E+00	2.128E+00	0.505E+00	23.73	
TH-228	1.41E+10Y	1.00	2.337E+00	2.337E+00	0.280E+00	11.98	
TH-229	7340.00Y	1.00	9.240E-01	9.241E-01	1.711E-01	18.52	K
TH-232	1.41E+10Y	1.00	2.128E+00	2.128E+00	0.505E+00	23.73	
TH-234	4.47E+09Y	1.00	2.276E+00	2.276E+00	1.270E+00	55.81	
U-235	7.04E+08Y	1.00	2.160E-01	2.160E-01	0.792E-01	36.66	K
NP-237	2.14E+06Y	1.00	1.788E+00	1.788E+00	0.500E+00	27.98	
U-238	4.47E+09Y	1.00	2.276E+00	2.276E+00	1.270E+00	55.81	
ANH-511	1.00E+09Y	1.00	2.820E-01	2.820E-01	1.046E-01	37.08	

Total Activity : 8.074E+01 8.095E+01

Grand Total Activity : 8.074E+01 8.095E+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	129.12	146	399	0.90	257.92	254	9	2.03E-02	51.8	5.89E+00	T
0	327.94	104	134	1.09	655.73	652	10	1.44E-02	46.2	3.09E+00	T
0	462.77	50	119	1.34	925.52	921	11	6.94E-03	89.0	2.26E+00	T
0	794.20	60	64	1.99	1588.75	1582	15	8.31E-03	63.7	1.35E+00	T
0	1727.42	38	0	0.71	3456.71	3450	16	5.28E-03	32.4	6.82E-01	
0	1761.86	83	0	1.81	3525.65	3519	13	1.16E-02	22.5	6.72E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247969008.CNF;1
* Acquisition date   : 11-MAR-2010 14:17:11  Detector SN#      :
* Detector ID        : GAM17                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 2.20000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:10.30          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 20-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247969008           Analyst initials: MXR1
* Batch Number       : 958216               Sample Quantity : 1.27150E+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	3.283E+01	3.683E+00	6.356E-01	5.644E-02	51.643
NB-95	1.929E-01	1.010E-01	9.317E-02	8.139E-03	2.070
CD-109	6.169E+00	1.142E+00	9.400E-01	9.177E-02	6.562
SN-126	5.994E-01	1.110E-01	9.121E-02	8.901E-03	6.572
CS-135	6.703E-01	2.972E-01	3.040E-01	3.173E-02	2.205
TL-208	7.221E-01	1.384E-01	7.381E-02	6.973E-03	9.782
PB-210	1.510E+00	1.034E+00	8.016E-01	8.642E-02	1.884
BI-211	5.069E+00	7.900E-01	4.012E-01	3.745E-02	12.634
BI-212	2.710E+00	1.271E+00	1.012E+00	1.263E-01	2.677
PB-212	2.337E+00	2.799E-01	1.097E-01	1.111E-02	21.304
BI-214	1.845E+00	3.024E-01	1.619E-01	1.654E-02	11.394
PB-214	1.840E+00	3.042E-01	1.460E-01	1.582E-02	12.603
RA-224	6.134E+00	1.816E+00	1.177E+00	1.064E-01	5.212
RA-226	1.845E+00	3.024E-01	1.619E-01	1.654E-02	11.394
AC-228	2.128E+00	5.048E-01	2.304E-01	2.693E-02	9.234
RA-228	2.128E+00	5.048E-01	2.304E-01	2.693E-02	9.234
TH-228	2.337E+00	2.799E-01	1.097E-01	1.111E-02	21.304
TH-229	9.241E-01	1.711E-01	9.831E-01	8.501E-02	0.940

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	2.128E+00	5.048E-01	2.304E-01	2.693E-02	9.234
TH-234	2.276E+00	1.270E+00	1.121E+00	2.133E-01	2.031
U-235	2.160E-01	7.917E-02	3.817E-01	6.796E-02	0.566
NP-237	1.788E+00	5.003E-01	2.946E-01	6.813E-02	6.071
U-238	2.276E+00	1.270E+00	1.121E+00	2.133E-01	2.031
ANH-511	2.820E-01	1.046E-01	6.175E-02	5.515E-03	4.567

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.867E-01		4.303E-01	7.506E-01	7.140E-02	0.515
NA-22	-4.738E-02		6.830E-02	1.008E-01	8.492E-03	-0.470
NA-24	-2.090E+00		3.806E+01	Half-Life	too short	
SC-46	5.494E-03		5.203E-02	8.708E-02	7.623E-03	0.063
V-48	-4.501E-02		1.139E-01	1.787E-01	1.559E-02	-0.252
CR-51	-1.773E-01		4.869E-01	8.017E-01	7.650E-02	-0.221
MN-54	1.572E-02		5.664E-02	9.626E-02	8.464E-03	0.163
CO-56	-6.922E-04		5.573E-02	9.248E-02	8.130E-03	-0.007
CO-57	-5.120E-03		2.652E-02	4.346E-02	5.091E-03	-0.118
CO-58	-8.992E-03		5.899E-02	9.701E-02	8.543E-03	-0.093
FE-59	3.961E-02		1.457E-01	2.434E-01	2.234E-02	0.163
CO-60	1.542E-02		5.388E-02	9.333E-02	7.955E-03	0.165
ZN-65	1.239E-01		1.678E-01	2.568E-01	2.162E-02	0.482
SE-75	2.410E-02		6.260E-02	9.074E-02	8.338E-03	0.266
SR-85	7.797E-03		5.515E-02	7.996E-02	7.144E-03	0.098
Y-88	-1.261E-02		5.161E-02	7.973E-02	6.649E-03	-0.158
Y-91	-4.054E+00		3.591E+01	5.736E+01	4.734E+00	-0.071
NB-94	-3.274E-02		4.832E-02	7.710E-02	6.614E-03	-0.425
NB-95M	2.958E-02		1.751E-01	2.512E-01	2.569E-02	0.118
ZR-95	1.386E-02		9.775E-02	1.658E-01	1.594E-02	0.084
MO-99	1.600E+00		4.806E+01	8.087E+01	1.277E+01	0.020
TC-99M	-3.399E+15		1.465E+15	Half-Life	too short	
RU-103	1.028E-02		5.416E-02	8.986E-02	1.271E-02	0.114
RH-106	3.991E-01		4.723E-01	8.067E-01	1.073E-01	0.495
RU-106	3.991E-01		4.705E-01	8.067E-01	7.009E-02	0.495
AG-108M	3.959E-03		3.830E-02	6.365E-02	5.705E-03	0.062
AG-110M	-1.075E-03		5.118E-02	8.178E-02	7.128E-03	-0.013
SN-113	-2.651E-02		5.424E-02	8.697E-02	7.557E-03	-0.305
CD-115	-6.545E-06		2.613E-05	Half-Life	too short	
SN-117M	-5.602E-03		7.700E-02	1.252E-01	1.125E-02	-0.045
TE-123M	1.830E-03		3.336E-02	5.456E-02	4.911E-03	0.034
SB-124	-5.075E-02		1.087E-01	1.602E-01	1.428E-02	-0.317
SB-125	-2.832E-02		1.171E-01	1.901E-01	1.676E-02	-0.149
TE-125M	5.621E+00		1.053E+01	1.783E+01	2.216E+00	0.315
I-126	-2.519E-02		4.241E-01	6.677E-01	5.637E-02	-0.038
SB-126	8.086E-02		2.725E-01	4.132E-01	3.567E-02	0.196
SB-127	-1.456E+00		3.864E+00	5.935E+00	7.445E-01	-0.245

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-2.192E-03		1.942E-01	3.238E-01	2.999E-02	-0.007
TE-132	-1.100E+00		2.142E+00	3.315E+00	5.586E-01	-0.332
BA-133	-1.961E-02		5.476E-02	7.785E-02	1.021E-02	-0.252
I-133	-4.103E-02		9.414E-02	Half-Life too short		
CS-134	1.737E-01	+	1.117E-01	1.228E-01	1.085E-02	1.414
I-135	1.769E+14		1.147E+14	Half-Life too short		
CS-136	-2.201E-02		2.005E-01	3.239E-01	2.908E-02	-0.068
BA-137M	3.493E-03		5.485E-02	8.727E-02	7.352E-03	0.040
CS-137	3.690E-03		5.795E-02	9.219E-02	7.782E-03	0.040
CE-139	9.951E-03		3.634E-02	5.986E-02	4.991E-03	0.166
BA-140	3.415E-02		4.795E-01	7.835E-01	2.664E-01	0.044
LA-140	-1.262E-01		1.749E-01	2.581E-01	2.227E-02	-0.489
CE-141	1.352E-02		8.062E-02	1.320E-01	1.346E-02	0.102
CE-143	1.328E-02	+	1.961E-03	Half-Life too short		
CE-144	1.708E-01		2.487E-01	3.782E-01	6.319E-02	0.451
PM-144	2.938E-02		4.837E-02	8.507E-02	7.283E-03	0.345
PR-144	2.173E+00		3.625E+00	6.372E+00	5.453E-01	0.341
PM-146	-3.130E-02		5.334E-02	8.365E-02	8.970E-03	-0.374
ND-147	-3.090E-01		9.380E-01	1.481E+00	2.242E-01	-0.209
PM-149	-2.537E-04		1.771E-04	Half-Life too short		
EU-152	-7.532E-02		1.396E-01	1.812E-01	1.714E-02	-0.416
GD-153	-1.127E-01		9.156E-02	1.272E-01	1.301E-02	-0.885
EU-154	-1.026E-01		1.895E-01	2.848E-01	3.197E-02	-0.360
EU-155	6.278E-02		1.058E-01	1.800E-01	1.933E-02	0.349
TB-160	1.028E-02		1.942E-01	3.234E-01	2.835E-02	0.032
HO-166M	2.315E-02		9.056E-02	1.552E-01	1.336E-02	0.149
TA-182	2.613E-02		3.196E-01	5.192E-01	4.307E-02	0.050
IR-192	1.093E-02		4.450E-02	7.590E-02	6.944E-03	0.144
HG-203	7.162E-03		5.340E-02	8.080E-02	7.585E-03	0.089
BI-207	4.638E-02		7.827E-02	1.350E-01	1.158E-02	0.343
PB-211	-3.014E-01		9.549E-01	1.533E+00	7.416E-01	-0.197
RN-219	3.629E-01		5.197E-01	8.956E-01	1.325E-01	0.405
RA-223	5.149E-01		7.969E-01	1.239E+00	2.177E-01	0.416
AC-227	-2.549E-02		3.076E-01	4.854E-01	6.025E-02	-0.053
TH-227	-2.549E-02		3.076E-01	4.854E-01	6.761E-02	-0.053
PA-231	-2.287E-01		1.643E+00	2.764E+00	4.125E-01	-0.083
TH-231	5.149E-01		7.969E-01	1.239E+00	2.177E-01	0.416
PA-233	-3.720E-02		7.446E-02	1.217E-01	1.141E-02	-0.306
PA-234	4.489E-02		4.207E-01	7.003E-01	1.318E-01	0.064
PA-234M	2.405E+00		6.439E+00	1.106E+01	1.110E+00	0.217
NP-239	-4.416E-01		4.244E-01	6.666E-01	7.593E-02	-0.663
AM-241	9.059E-03		7.249E-02	1.112E-01	1.181E-02	0.081
CM-247	4.354E-02		4.868E-02	8.496E-02	7.216E-03	0.512
CF-249	1.630E-02		4.850E-02	8.238E-02	6.977E-03	0.198
CF-251	-6.572E-02		1.511E-01	2.397E-01	2.030E-02	-0.274

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]G247969008
* Acquisition date   : 11-MAR-2010 14:17:11 Detector SN#
* Detector ID        : GAM17 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 2.200
* Elapsed live time   : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time   : 0 02:00:10.30 Half life ratio : 8.000
*****
*
*                                     SAMPLE DATA
*
* Sample date        : 20-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247969008 Analyst initials: MXR1
* Batch Number       : 958216 Sample Quantity : 1.2715E+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	3.283E+01	3.609E+00	3.179E-01	1.841E+00
NB-95	1.929E-01	9.894E-02	4.707E-02	5.048E-02
CD-109	6.169E+00	1.120E+00	4.901E-01	5.712E-01
SN-126	5.994E-01	1.088E-01	4.756E-02	5.550E-02
CS-135	6.703E-01	2.912E-01	1.560E-01	1.486E-01
TL-208	7.221E-01	1.356E-01	3.744E-02	6.918E-02
PB-210	1.510E+00	1.013E+00	4.217E-01	5.169E-01
BI-211	5.069E+00	7.742E-01	2.050E-01	3.950E-01
BI-212	2.710E+00	1.246E+00	5.118E-01	6.355E-01
PB-212	2.337E+00	2.743E-01	5.639E-02	1.399E-01
BI-214	1.845E+00	2.964E-01	8.206E-02	1.512E-01
PB-214	1.840E+00	2.981E-01	7.460E-02	1.521E-01
RA-224	6.134E+00	1.779E+00	6.048E-01	9.078E-01
RA-226	1.845E+00	2.964E-01	8.206E-02	1.512E-01
AC-228	2.128E+00	4.947E-01	1.161E-01	2.524E-01
RA-228	2.128E+00	4.947E-01	1.161E-01	2.524E-01
TH-228	2.337E+00	2.743E-01	5.639E-02	1.399E-01
TH-229	9.316E-02	5.924E-01	5.068E-01	3.023E-01
TH-232	2.128E+00	4.947E-01	1.161E-01	2.524E-01
TH-234	2.276E+00	1.245E+00	5.871E-01	6.352E-01
U-235	-1.060E-01	2.344E-01	1.976E-01	1.196E-01
NP-237	1.788E+00	4.903E-01	1.536E-01	2.502E-01
U-238	2.276E+00	1.245E+00	5.871E-01	6.352E-01
ANH-511	2.820E-01	1.025E-01	3.138E-02	5.229E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	3.867E-01	4.216E-01	3.819E-01	2.151E-01 NOT IDENT.
NA-22	-4.738E-02	6.694E-02	5.053E-02	3.415E-02 NOT IDENT.
NA-24	-2.090E+06	7.460E+07	0.000E+00	3.806E+07 SHORT HLIF

SC-46	5.494E-03	5.099E-02	4.389E-02	2.601E-02	FAIL ABUN
V-48	-4.501E-02	1.116E-01	8.993E-02	5.695E-02	NOT IDENT.
CR-51	-1.773E-01	4.772E-01	4.103E-01	2.435E-01	NOT IDENT.
MN-54	1.572E-02	5.550E-02	4.856E-02	2.832E-02	NOT IDENT.
CO-56	-6.922E-04	5.462E-02	4.665E-02	2.787E-02	NOT IDENT.
CO-57	-5.120E-03	2.599E-02	2.255E-02	1.326E-02	NOT IDENT.
CO-58	-8.992E-03	5.781E-02	4.896E-02	2.949E-02	NOT IDENT.
FE-59	3.961E-02	1.428E-01	1.223E-01	7.283E-02	NOT IDENT.
CO-60	1.542E-02	5.280E-02	4.675E-02	2.694E-02	NOT IDENT.
ZN-65	1.239E-01	1.645E-01	1.290E-01	8.392E-02	NOT IDENT.
SE-75	2.410E-02	6.135E-02	4.657E-02	3.130E-02	NOT IDENT.
SR-85	7.797E-03	5.405E-02	4.063E-02	2.758E-02	NOT IDENT.
Y-88	-1.261E-02	5.058E-02	3.974E-02	2.581E-02	NOT IDENT.
Y-91	-4.054E+00	3.519E+01	2.878E+01	1.795E+01	NOT IDENT.
NB-94	-3.274E-02	4.735E-02	3.900E-02	2.416E-02	NOT IDENT.
NB-95M	2.958E-02	1.716E-01	1.291E-01	8.754E-02	NOT IDENT.
ZR-95	1.386E-02	9.580E-02	8.379E-02	4.888E-02	NOT IDENT.
MO-99	1.600E+00	4.709E+01	4.087E+01	2.403E+01	NOT IDENT.
TC-99M	-3.399E+21	2.871E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.028E-02	5.308E-02	4.569E-02	2.708E-02	FAIL ABUN
RH-106	3.991E-01	4.628E-01	4.088E-01	2.361E-01	NOT IDENT.
RU-106	3.991E-01	4.611E-01	4.088E-01	2.353E-01	NOT IDENT.
AG-108M	3.959E-03	3.753E-02	3.243E-02	1.915E-02	NOT IDENT.
AG-110M	-1.075E-03	5.015E-02	4.140E-02	2.559E-02	NOT IDENT.
SN-113	-2.651E-02	5.316E-02	4.438E-02	2.712E-02	NOT IDENT.
CD-115	-6.545E+00	5.121E+01	0.000E+00	2.613E+01	SHORT HLIF
SN-117M	-5.602E-03	7.546E-02	6.474E-02	3.850E-02	NOT IDENT.
TE-123M	1.830E-03	3.269E-02	2.821E-02	1.668E-02	NOT IDENT.
SB-124	-5.075E-02	1.065E-01	7.993E-02	5.434E-02	NOT IDENT.
SB-125	-2.832E-02	1.148E-01	9.689E-02	5.856E-02	FAIL ABUN
TE-125M	5.621E+00	1.032E+01	9.269E+00	5.266E+00	NOT IDENT.
I-126	-2.519E-02	4.156E-01	3.380E-01	2.121E-01	NOT IDENT.
SB-126	8.086E-02	2.671E-01	2.089E-01	1.363E-01	NOT IDENT.
SB-127	-1.456E+00	3.786E+00	3.003E+00	1.932E+00	FAIL ABUN
I-131	-2.192E-03	1.903E-01	1.654E-01	9.708E-02	NOT IDENT.
TE-132	-1.100E+00	2.099E+00	1.705E+00	1.071E+00	NOT IDENT.
BA-133	-1.961E-02	5.367E-02	3.978E-02	2.738E-02	FAIL ABUN
I-133	-4.103E+04	1.845E+05	0.000E+00	9.414E+04	SHORT HLIF
CS-134	1.737E-01	1.095E-01	6.201E-02	5.586E-02	FAIL ABUN
I-135	1.769E+20	2.249E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.201E-02	1.965E-01	1.628E-01	1.002E-01	NOT IDENT.
BA-137M	3.493E-03	5.375E-02	4.418E-02	2.743E-02	NOT IDENT.
CS-137	3.690E-03	5.679E-02	4.667E-02	2.897E-02	NOT IDENT.
CE-139	9.951E-03	3.561E-02	3.093E-02	1.817E-02	NOT IDENT.
BA-140	3.415E-02	4.699E-01	3.979E-01	2.398E-01	NOT IDENT.
LA-140	-1.262E-01	1.714E-01	1.289E-01	8.744E-02	FAIL ABUN
CE-141	1.352E-02	7.901E-02	6.832E-02	4.031E-02	NOT IDENT.
CE-143	1.328E+04	3.843E+03	0.000E+00	1.961E+03	SHORT HLIF
CE-144	1.708E-01	2.438E-01	1.960E-01	1.244E-01	NOT IDENT.
PM-144	2.938E-02	4.740E-02	4.303E-02	2.418E-02	NOT IDENT.
PR-144	2.173E+00	3.552E+00	3.223E+00	1.812E+00	NOT IDENT.
PM-146	-3.130E-02	5.227E-02	4.259E-02	2.667E-02	NOT IDENT.
ND-147	-3.090E-01	9.192E-01	7.523E-01	4.690E-01	FAIL ABUN
PM-149	-2.537E+02	3.471E+02	0.000E+00	1.771E+02	SHORT HLIF
EU-152	-7.532E-02	1.368E-01	9.264E-02	6.978E-02	NOT IDENT.
GD-153	-1.127E-01	8.973E-02	6.625E-02	4.578E-02	NOT IDENT.
EU-154	-1.026E-01	1.857E-01	1.428E-01	9.477E-02	NOT IDENT.
EU-155	6.278E-02	1.037E-01	9.359E-02	5.292E-02	FAIL ABUN
TB-160	1.028E-02	1.903E-01	1.630E-01	9.710E-02	FAIL ABUN
HO-166M	2.315E-02	8.875E-02	7.849E-02	4.528E-02	FAIL ABUN
TA-182	2.613E-02	3.132E-01	2.604E-01	1.598E-01	NOT IDENT.
IR-192	1.093E-02	4.361E-02	3.885E-02	2.225E-02	FAIL ABUN
HG-203	7.162E-03	5.233E-02	4.143E-02	2.670E-02	FAIL ABUN
BI-207	4.638E-02	7.670E-02	6.787E-02	3.913E-02	FAIL ABUN
PB-211	-3.014E-01	9.358E-01	7.818E-01	4.775E-01	NOT IDENT.
RN-219	3.629E-01	5.093E-01	4.568E-01	2.599E-01	FAIL ABUN
RA-223	5.149E-01	7.810E-01	6.338E-01	3.985E-01	FAIL ABUN
AC-227	-2.549E-02	3.014E-01	2.492E-01	1.538E-01	FAIL ABUN
TH-227	-2.549E-02	3.014E-01	2.492E-01	1.538E-01	FAIL ABUN
PA-231	-2.287E-01	1.610E+00	1.417E+00	8.217E-01	FAIL ABUN
TH-231	5.149E-01	7.810E-01	6.338E-01	3.985E-01	FAIL ABUN
PA-233	-3.720E-02	7.297E-02	6.229E-02	3.723E-02	FAIL ABUN
PA-234	4.489E-02	4.123E-01	3.526E-01	2.103E-01	FAIL ABUN
PA-234M	2.405E+00	6.310E+00	5.566E+00	3.219E+00	FAIL ABUN
NP-239	-4.416E-01	4.159E-01	3.462E-01	2.122E-01	FAIL ABUN
AM-241	9.059E-03	7.104E-02	5.830E-02	3.625E-02	NOT IDENT.
CM-247	4.354E-02	4.771E-02	4.333E-02	2.434E-02	FAIL ABUN
CF-249	1.630E-02	4.753E-02	4.204E-02	2.425E-02	NOT IDENT.

CF-251

-6.572E-02

1.481E-01

1.237E-01

7.555E-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	307.5206
57.36	0.0000
59.54	366.3668
63.29	419.0811
63.29	419.0811
64.28	474.2550
67.75	475.5927
69.67	507.4724
70.83	471.0421
72.81	479.8535
72.87	479.9193
72.87	479.9193
74.82	475.3040
74.82	475.3040
74.82	475.3040
74.97	475.4633
77.11	477.6996
77.11	477.6996
77.11	477.6996
79.69	480.3572
79.80	480.4679
80.12	480.7947
80.19	480.8650
80.57	481.2512
81.00	481.6887
81.07	481.7589
81.07	481.7589
83.79	375.0013
83.79	375.0013
85.43	315.8376
86.48	316.5097
86.55	316.5536
86.79	316.7045
86.94	268.5922
87.57	268.9314
88.03	269.1783
88.47	269.4134
89.96	270.2049
91.11	270.8119
92.59	271.5884
92.59	271.5884
93.35	271.9842
94.67	272.6671
94.87	272.7697
94.87	272.7697
95.86	290.0972
97.43	342.9537
98.44	308.3898
99.53	267.1485
100.11	273.0815
103.18	320.9955
103.37	296.4766
105.31	277.5372
106.12	285.5469
109.28	281.3732
111.00	311.9559
111.76	315.2409
116.30	269.2149
117.23	293.8734
121.12	245.9515
121.78	263.7968
122.06	251.2066
123.07	261.3995
131.20	255.7823
133.52	250.7080
136.00	261.6162

136.47	265.7943
140.51	303.5453
140.51	0.0000
143.76	299.9125
144.24	284.9576
144.24	284.9576
145.44	273.2932
152.43	236.0898
153.25	245.5615
154.21	249.9794
154.21	249.9794
156.02	305.0184
158.56	251.4364
159.00	247.4585
162.66	264.1879
163.33	262.3423
165.86	254.8768
176.60	219.3179
177.52	242.7863
181.07	219.4511
184.41	194.7838
185.72	227.0665
193.51	211.9237
197.04	235.4592
205.31	189.6779
210.85	185.8907
215.65	182.9877
222.11	219.7469
227.38	222.0592
228.16	217.7682
228.18	217.7722
235.69	216.0469
235.96	216.1055
235.96	216.1055
238.63	196.3642
238.63	196.3642
240.99	196.8191
242.00	197.0138
244.70	165.1765
252.40	162.3934
252.80	176.1826
256.23	166.4224
256.23	166.4224
260.90	0.0000
264.66	150.9490
268.22	168.8471
269.46	151.9560
269.46	151.9560
271.23	132.6498
273.65	132.9374
276.40	153.1345
277.37	161.4548
277.60	161.4885
278.00	161.5447
279.20	158.9035
279.54	158.9504
280.46	153.4462
283.69	148.2305
284.31	149.1940
285.41	148.4522
285.90	0.0000
287.50	146.0644
293.27	0.0000
295.22	149.6968
295.96	128.3928
298.57	157.2683
299.98	154.5882
299.98	154.5882
300.09	154.6040
300.09	154.6040
300.13	154.6093
301.36	156.1978
302.85	140.6094
304.50	120.6864
304.50	120.6864
304.85	142.2787
308.46	127.9226
311.90	137.3140

316.51	140.5444
319.41	134.5067
320.08	140.0325
323.87	105.0662
323.87	105.0662
328.76	120.8476
333.37	113.9284
334.37	119.5323
334.37	119.5323
338.28	111.5893
338.28	111.5893
338.32	111.5930
338.32	111.5930
338.32	111.5930
340.48	119.7202
340.55	119.7262
344.28	127.8441
351.06	121.0419
351.93	121.1192
356.01	113.6326
364.49	108.1266
366.42	96.9790
383.85	108.6563
388.16	101.3305
388.63	97.5378
391.69	107.3242
400.66	107.9736
401.81	102.2686
402.40	104.2394
404.85	126.6424
410.95	114.5340
414.70	90.4897
423.72	106.6765
427.09	88.2710
427.87	104.9967
433.94	98.5031
453.88	97.7278
463.37	89.2607
468.07	85.2865
473.00	86.7454
476.78	79.8607
477.60	71.8082
487.02	91.5216
492.35	0.0000
497.08	75.6824
511.00	85.5501
514.00	82.5946
527.90	0.0000
529.87	0.0000
531.02	78.1517
537.26	90.9586
546.56	0.0000
563.25	85.8400
569.33	85.0439
569.50	88.2407
569.70	83.9978
583.19	68.5117
600.60	66.2223
602.73	60.5254
604.72	64.0454
609.32	86.7407
609.32	86.7407
610.33	90.2535
614.28	71.2976
618.01	92.5459
621.93	69.8125
621.93	69.8125
633.25	70.1836
635.95	70.2734
636.99	69.2081
645.85	46.3284
657.76	74.3056
661.66	77.7695
661.66	77.7695
664.57	0.0000
666.33	82.3873
666.50	82.3941
677.62	59.3047

685.70	70.7443
695.00	65.8461
696.49	67.6923
696.51	67.6941
697.00	79.4449
702.65	88.6881
706.68	73.4300
711.68	77.2201
720.70	59.2760
721.93	0.0000
722.78	80.6257
722.91	76.0661
723.31	76.0783
724.19	57.8411
727.33	51.8204
733.00	64.1655
735.93	56.9004
739.50	67.0955
747.24	56.2448
752.31	59.1328
753.82	48.9991
756.73	53.6854
763.94	47.9620
765.81	58.8354
766.42	73.4087
777.92	46.6736
778.90	48.2483
783.70	54.2660
785.37	54.3014
795.86	47.0032
801.95	54.1814
810.29	64.2813
810.76	62.4019
815.77	55.8901
818.51	52.1560
832.01	69.5781
834.85	67.7429
836.80	0.0000
846.77	51.7522
856.80	43.2861
860.56	48.1616
871.09	40.6106
873.19	51.2855
875.33	0.0000
879.36	45.5806
880.51	50.4499
883.24	37.8746
884.68	43.7234
889.28	40.8762
898.04	45.8835
911.20	26.1536
911.20	26.1536
911.20	26.1536
926.50	45.3542
937.49	52.4527
944.13	42.6515
946.00	46.6489
949.00	46.6959
962.29	63.2035
964.08	59.9136
966.15	86.6011
968.97	43.3407
968.97	43.3407
968.97	43.3407
983.53	46.2291
996.26	64.5844
1001.03	41.4384
1004.73	44.5231
1037.84	46.0151
1038.76	0.0000
1048.07	53.3432
1050.41	52.3547
1050.41	52.3547
1063.66	44.3228
1085.87	49.8117
1099.45	48.9736
1112.07	56.7773
1115.54	57.5835

1120.29	52.4219
1120.29	52.4219
1120.55	52.4243
1121.30	43.6971
1131.51	0.0000
1173.23	34.0656
1177.93	68.2219
1189.05	71.6422
1204.77	65.5125
1221.41	65.8103
1231.02	77.8816
1235.36	66.0605
1238.28	57.4434
1260.41	0.0000
1271.85	48.1186
1274.44	50.3395
1274.54	53.6249
1291.59	41.7722
1298.22	0.0000
1312.11	24.8654
1332.49	27.7722
1365.19	28.0017
1368.63	0.0000
1384.29	25.3213
1408.01	23.5819
1457.56	0.0000
1460.82	14.7380
1489.16	17.3086
1505.03	23.1621
1596.21	31.5195
1620.50	13.8621
1678.03	0.0000
1690.97	14.0706
1764.49	5.2469
1764.49	5.2469
1770.23	9.1926
1771.35	8.1729
1791.20	0.0000
1836.06	13.4512

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247969008

Total Uranium Activity	6.7231E+00	ug/g
Total Uranium Counting Unc.	3.7056E+00	ug/g
Total Uranium Tpu	1.8906E-06	ug/g
Total Uranium Mda	1.7491E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 958216                SAMPLE ID   : G247969008                *
*  ANALYST       : MXR1                  DETECTOR    : GAM17                  *
*  SAMPLE DATE   : 20-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 11-MAR-2010 14:17:11.60  SAMPLE ALQT: 127.150 GRAM          *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.236E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.660E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.795E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.330E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 16:19:17.92

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247970001.CNF;1
Sample date        : 23-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:18:08
Sample ID          : G247970001 Sample quantity : 1.26980E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.85 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	75.01	442	478	1.18	149.14	144	15	6.14E-02	9.8	3.40E+00
2	2	77.28*	808	456	1.17	153.68	144	15	1.12E-01	5.9	
3	0	87.33	276	478	1.54	173.76	171	7	3.84E-02	14.4	
4	0	93.10*	291	601	1.36	185.31	182	9	4.04E-02	17.0	
5	0	105.69	90	333	1.03	210.47	208	7	1.26E-02	34.9	
6	0	129.09	94	335	1.23	257.25	255	7	1.31E-02	33.8	
7	0	185.95*	285	453	1.20	370.94	365	12	3.96E-02	16.7	
8	0	209.22	179	357	0.97	417.47	413	9	2.49E-02	20.4	
9	3	238.64*	1902	251	1.20	476.28	471	19	2.64E-01	2.7	1.30E+00
10	3	241.61*	443	313	1.77	482.22	471	19	6.16E-02	11.7	
11	0	269.84	146	232	1.84	538.67	534	9	2.02E-02	20.6	
12	0	278.01	80	284	1.50	555.00	549	10	1.11E-02	41.5	
13	4	295.17*	616	177	1.56	589.31	581	25	8.55E-02	5.6	3.52E+00
14	4	300.00*	183	204	2.07	598.96	581	25	2.54E-02	18.5	
15	0	327.77	134	253	1.46	654.48	649	12	1.86E-02	25.2	
16	0	338.13*	409	270	1.28	675.20	668	13	5.67E-02	9.8	
17	0	351.78*	1050	221	1.38	702.50	698	12	1.46E-01	4.3	
18	0	409.26	89	189	1.88	817.42	813	11	1.24E-02	31.5	
19	0	463.68	100	196	1.18	926.22	918	13	1.38E-02	30.8	
20	0	510.44*	234	179	2.28	1019.72	1013	14	3.25E-02	16.2	
21	0	582.75*	682	142	1.49	1164.29	1156	15	9.47E-02	5.5	
22	0	608.88*	698	267	1.60	1216.53	1209	17	9.70E-02	6.7	
23	0	726.85	176	112	1.45	1452.42	1445	14	2.45E-02	14.8	
24	0	767.94	115	103	1.86	1534.58	1528	14	1.60E-02	20.8	
25	0	795.14	81	118	1.51	1588.97	1581	14	1.13E-02	30.6	
26	0	860.79	94	151	1.16	1720.24	1711	19	1.31E-02	32.9	
27	0	910.35*	523	93	1.80	1819.34	1810	17	7.26E-02	6.2	
28	0	968.45*	207	130	1.79	1935.53	1930	11	2.88E-02	13.1	
29	0	1119.44*	166	114	2.07	2237.44	2231	16	2.30E-02	16.5	
30	0	1376.77	71	32	2.30	2752.03	2747	12	9.80E-03	20.2	
31	0	1459.55*	2623	29	2.28	2917.59	2906	24	3.64E-01	2.0	
32	0	1587.83	33	48	1.98	3174.12	3163	16	4.58E-03	50.1	
33	0	1762.80	151	19	2.45	3524.06	3514	23	2.10E-02	10.8	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 16:19:21

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247970001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 23-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:18:08
Sample ID         : G247970001 Sample quantity : 126.98 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA18 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.85 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance  : 1.50 keV Half life ratio : 8.00
Errors propagated : Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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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	*	3.840E+01	3.309E+00	4.322E-01	3.280E-02	88.847
CD-109	+	88.03	*	3.505E+00	1.060E+00	1.466E+00	1.355E-01	2.391
SN-126		64.28		3.214E-01	5.544E-01	9.365E-01	1.384E-01	0.343
	+	86.94		1.422E+00	7.184E-01	5.788E-01	2.400E-01	2.457
	+	87.57	*	3.421E-01	1.035E-01	1.424E-01	1.312E-02	2.403
EU-155	+	86.55		4.150E-01	1.256E-01	1.669E-01	1.538E-02	2.486
	+	105.31	*	1.648E-01	1.156E-01	1.540E-01	1.100E-02	1.070
HG-203		70.83		-3.617E-01	1.554E+00	2.283E+00	3.612E-01	-0.158
		72.87		1.508E+00	9.171E-01	1.409E+00	2.161E-01	1.070
	+	279.20	*	5.900E-02	4.907E-02	5.372E-02	3.239E-03	1.098
TL-208	+	277.37		5.735E-01	4.796E-01	5.151E-01	5.526E-02	1.113
	+	583.19	*	6.023E-01	8.120E-02	4.493E-02	3.516E-03	13.406
	+	860.56		7.666E-01	5.120E-01	3.944E-01	4.411E-02	1.944
BI-211		72.87		5.967E+00	3.547E+00	5.578E+00	4.605E-01	1.070
	+	351.06	*	4.405E+00	4.701E-01	2.756E-01	1.770E-02	15.984
PB-212	+	74.82		2.576E+00	6.021E-01	5.625E-01	7.212E-02	4.580
	+	77.11		2.657E+00	3.864E-01	3.183E-01	2.698E-02	8.347
	+	238.63	*	1.898E+00	1.716E-01	7.869E-02	5.672E-03	24.125
	+	300.09		2.742E+00	1.038E+00	1.004E+00	8.388E-02	2.730
BI-214	+	609.32	*	1.190E+00	1.912E-01	1.061E-01	9.537E-03	11.213
	+	1120.29		1.408E+00	4.851E-01	4.158E-01	4.004E-02	3.386
		1764.49		1.471E+00	3.254E-01	6.663E-01	4.051E-02	2.208
PB-214	+	74.82		4.566E+00	1.036E+00	9.969E-01	1.148E-01	4.580
	+	77.11		4.684E+00	7.831E-01	5.612E-01	6.637E-02	8.347
	+	242.00		2.679E+00	6.609E-01	4.777E-01	3.841E-02	5.607
	+	295.22		1.636E+00	2.321E-01	1.778E-01	1.544E-02	9.198
	+	351.93	*	1.599E+00	1.921E-01	9.875E-02	8.358E-03	16.191
RA-224	+	240.99	*	4.737E+00	1.136E+00	8.424E-01	4.693E-02	5.623
RA-226	+	609.32	*	1.190E+00	1.912E-01	1.061E-01	9.537E-03	11.213
	+	1120.29		1.408E+00	4.851E-01	4.158E-01	4.004E-02	3.386
		1764.49		1.471E+00	3.254E-01	6.663E-01	4.051E-02	2.208
AC-228	+	338.32		1.920E+00	8.760E-01	3.238E-01	1.335E-01	5.928
	+	911.20	*	2.153E+00	3.967E-01	1.711E-01	2.318E-02	12.580
	+	968.97		1.470E+00	5.310E-01	4.367E-01	1.089E-01	3.366

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.920E+00	8.760E-01	3.238E-01	1.335E-01	5.928
	+	911.20	*	2.153E+00	3.967E-01	1.711E-01	2.318E-02	12.580
	+	968.97		1.470E+00	5.310E-01	4.367E-01	1.089E-01	3.366
TH-228	+	74.82		2.576E+00	5.483E-01	5.625E-01	4.744E-02	4.580
	+	77.11		2.657E+00	3.864E-01	3.183E-01	2.698E-02	8.347
	+	238.63	*	1.898E+00	1.716E-01	7.869E-02	5.672E-03	24.125
	+	300.09		2.742E+00	1.952E+00	1.004E+00	6.115E-01	2.730
TH-232	+	338.32		1.920E+00	3.918E-01	3.238E-01	1.873E-02	5.928
	+	911.20	*	2.153E+00	3.967E-01	1.711E-01	2.318E-02	12.580
	+	968.97		1.470E+00	5.310E-01	4.367E-01	1.089E-01	3.366
NP-237	+	86.48	*	1.021E+00	3.757E-01	4.110E-01	9.399E-02	2.484
		95.86		-5.999E-01	9.807E-01	1.368E+00	3.253E-01	-0.439
ANH-511	+	511.00	*	1.604E-01	5.300E-02	3.953E-02	2.610E-03	4.057

---- 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	*	-1.650E-02	2.578E-01	4.236E-01	3.068E-02	-0.039
NA-22		1274.54	*	-1.619E-02	4.235E-02	6.770E-02	4.606E-03	-0.239
NA-24		1368.63	*	-9.629E-01	4.235E-02	Half-Life too short		
SC-46		889.28	*	-2.067E-03	3.257E-02	5.297E-02	5.909E-03	-0.039
	+	1120.55		2.401E-01	8.115E-02	1.108E-01	7.656E-03	2.166
V-48		944.13		-5.736E-04	7.659E-01	1.245E+00	1.317E-01	0.000
		983.53	*	5.960E-02	6.445E-02	1.110E-01	1.097E-02	0.537
		1312.11		1.017E-02	7.509E-02	1.243E-01	9.053E-03	0.082
CR-51		320.08	*	1.611E-01	3.188E-01	5.267E-01	3.386E-02	0.306
MN-54		834.85	*	5.489E-03	3.418E-02	5.671E-02	5.809E-03	0.097
CO-56		846.77	*	-3.111E-02	3.596E-02	5.538E-02	5.782E-03	-0.562
		1037.84		2.105E-01	2.729E-01	4.783E-01	4.427E-02	0.440
		1238.28		1.117E-01	8.649E-02	1.491E-01	9.943E-03	0.749
		1771.35		-8.376E-02	1.986E-01	2.481E-01	1.500E-02	-0.338
CO-57		122.06	*	2.055E-02	2.409E-02	3.991E-02	2.364E-03	0.515
		136.47		-6.034E-02	1.920E-01	3.017E-01	1.971E-02	-0.200
CO-58		810.76	*	4.912E-04	3.456E-02	5.702E-02	5.629E-03	0.009
FE-59		1099.45	*	-5.730E-02	7.854E-02	1.238E-01	1.019E-02	-0.463
		1291.59		-3.147E-02	1.089E-01	1.745E-01	1.467E-02	-0.180
CO-60		1173.23		1.811E-03	4.105E-02	6.813E-02	3.765E-03	0.027
		1332.49	*	2.265E-02	3.119E-02	5.437E-02	4.108E-03	0.417
ZN-65		1115.54	*	1.160E-01	9.651E-02	1.510E-01	1.064E-02	0.768
SE-75		121.12		1.202E-01	1.254E-01	2.082E-01	1.910E-02	0.578
		136.00		-1.924E-02	3.717E-02	5.791E-02	3.300E-03	-0.332
		264.66	*	3.244E-02	4.275E-02	6.415E-02	3.670E-03	0.506
		279.54		3.693E-02	1.078E-01	1.569E-01	9.708E-03	0.235
		400.66		-5.002E-02	2.028E-01	3.348E-01	3.039E-02	-0.149
SR-85		514.00	*	7.248E-02	3.884E-02	6.187E-02	4.099E-03	1.172
Y-88		898.04		-5.376E-02	3.562E-02	5.050E-02	5.725E-03	-1.064
		1836.06	*	-1.818E-03	2.695E-02	4.370E-02	2.489E-03	-0.042
Y-91		1204.77	*	-1.066E+01	1.968E+01	3.135E+01	1.853E+00	-0.340

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94		702.65	*	-7.209E-03	2.948E-02	4.853E-02	3.982E-03	-0.149
		871.09		-2.814E-03	3.038E-02	4.830E-02	5.238E-03	-0.058
NB-95		765.81	*	7.099E-02	4.208E-02	6.756E-02	6.180E-03	1.051
NB-95M		235.69	*	1.994E-01	1.251E-01	1.945E-01	1.432E-02	1.026
ZR-95		724.19		2.235E-01	9.752E-02	1.606E-01	1.486E-02	1.392
		756.73	*	4.663E-02	6.287E-02	1.086E-01	1.073E-02	0.429
MO-99		140.51		-3.273E+00	2.721E+01	4.251E+01	9.695E+00	-0.077
		181.07		-1.187E+01	2.165E+01	3.100E+01	5.429E+00	-0.383
		366.42		9.905E+01	1.023E+02	1.800E+02	1.040E+01	0.550
		739.50	*	7.459E+00	1.376E+01	2.272E+01	3.595E+00	0.328
		777.92		-7.675E+01	3.959E+01	5.563E+01	5.194E+00	-1.379
TC-99M		140.51	*	-6.583E+10	3.959E+01	Half-Life	too short	
RU-103		497.08	*	-1.574E-02	3.289E-02	5.239E-02	6.691E-03	-0.300
	+	610.33		1.250E+01	2.571E+00	2.470E+00	3.873E-01	5.060
RH-106		621.93	*	-5.015E-02	2.743E-01	4.367E-01	5.448E-02	-0.115
		1050.41		7.997E-01	2.230E+00	3.815E+00	3.260E-01	0.210
RU-106		621.93	*	-5.015E-02	2.742E-01	4.367E-01	3.214E-02	-0.115
		1050.41		7.997E-01	2.230E+00	3.815E+00	3.260E-01	0.210
AG-108M		433.94	*	-1.468E-02	2.450E-02	3.938E-02	2.539E-03	-0.373
		614.28		-3.190E-04	3.584E-02	4.982E-02	3.806E-03	-0.006
		722.91		1.799E-02	3.397E-02	5.101E-02	4.480E-03	0.353
AG-110M		657.76	*	-1.979E-02	2.776E-02	4.447E-02	3.508E-03	-0.445
		677.62		-2.275E-01	2.548E-01	4.018E-01	3.262E-02	-0.566
		706.68		1.887E-02	1.775E-01	2.980E-01	2.539E-02	0.063
		763.94		6.601E-02	1.450E-01	2.155E-01	2.013E-02	0.306
		884.68		1.044E-02	4.127E-02	6.870E-02	7.758E-03	0.152
		937.49		-4.231E-02	1.003E-01	1.581E-01	1.731E-02	-0.268
		1384.29		8.870E-02	1.583E-01	2.363E-01	1.829E-02	0.375
		1505.03		1.270E-01	2.355E-01	4.132E-01	2.966E-02	0.307
SN-113		391.69	*	2.568E-03	3.616E-02	6.081E-02	3.730E-03	0.042
CD-115		260.90		-2.477E+01	1.604E+02	2.606E+02	1.471E+01	-0.095
		492.35		-5.263E+00	4.280E+01	6.990E+01	4.525E+00	-0.075
		527.90	*	1.285E+01	1.275E+01	2.207E+01	1.484E+00	0.582
SN-117M		156.02		-3.910E-01	2.077E+00	3.499E+00	1.869E-01	-0.112
		158.56	*	2.226E-02	4.973E-02	8.551E-02	4.545E-03	0.260
TE-123M		159.00	*	7.485E-03	2.473E-02	4.231E-02	2.283E-03	0.177
SB-124		602.73		2.534E-02	3.856E-02	5.671E-02	4.102E-03	0.447
		645.85		-5.592E-01	4.280E-01	6.201E-01	5.011E-02	-0.902
		722.78		1.571E-01	3.435E-01	5.130E-01	4.462E-02	0.306
		1690.97	*	-6.787E-03	6.059E-02	9.849E-02	6.821E-03	-0.069
SB-125		427.87	*	4.206E-02	7.567E-02	1.295E-01	8.080E-03	0.325
	+	463.37		6.144E-01	3.804E-01	4.561E-01	3.255E-02	1.347
		600.60		-1.079E-01	1.698E-01	2.466E-01	1.965E-02	-0.438
		635.95		3.254E-02	2.278E-01	3.700E-01	3.053E-02	0.088
TE-125M		109.28	*	5.704E+00	1.032E+01	1.527E+01	1.370E+00	0.373
I-126		388.63		-1.042E-02	1.405E-01	2.347E-01	1.349E-02	-0.044
		666.33	*	2.435E-01	1.934E-01	3.454E-01	2.655E-02	0.705
		753.82		5.303E-01	1.639E+00	2.772E+00	2.485E-01	0.191
SB-126		414.70		-2.355E-02	7.560E-02	1.071E-01	6.333E-03	-0.220

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		666.50		8.102E-02	6.635E-02	1.183E-01	9.098E-03	0.685
		695.00		-9.412E-03	7.228E-02	1.199E-01	9.703E-03	-0.079
		697.00		3.663E-02	2.522E-01	4.246E-01	3.449E-02	0.086
		720.70	*	-2.069E-02	1.417E-01	2.005E-01	1.698E-02	-0.103
		856.80		4.342E-01	5.132E-01	7.757E-01	8.227E-02	0.560
		252.40		8.930E-01	4.468E+00	7.369E+00	3.028E+00	0.121
		473.00		-5.235E-01	1.598E+00	2.586E+00	3.011E-01	-0.202
I-131		685.70	*	-4.515E-01	1.307E+00	2.139E+00	2.392E-01	-0.211
		783.70		4.636E+00	3.618E+00	6.355E+00	8.379E-01	0.730
		80.19		-4.929E-02	5.156E+00	7.593E+00	6.625E-01	-0.006
		284.31		5.810E-01	1.357E+00	2.250E+00	1.433E-01	0.258
TE-132		364.49	*	-7.125E-02	1.053E-01	1.716E-01	1.108E-02	-0.415
		636.99		-3.281E-01	1.470E+00	2.328E+00	1.870E-01	-0.141
		49.72		-2.788E+01	3.091E+01	5.016E+01	5.347E+00	-0.556
		111.76		-3.456E+00	3.879E+01	6.239E+01	6.100E+00	-0.055
BA-133		116.30		1.713E+00	3.278E+01	5.287E+01	5.068E+00	0.032
		228.16	*	3.941E-01	8.080E-01	1.357E+00	1.979E-01	0.290
		81.00		-1.651E-01	1.067E-01	1.414E-01	2.203E-02	-1.167
		276.40		4.676E-01	3.704E-01	5.601E-01	7.023E-02	0.835
		302.85		-2.360E-02	1.336E-01	1.865E-01	2.123E-02	-0.127
I-133		356.01	*	-2.495E-02	4.141E-02	5.475E-02	6.169E-03	-0.456
		383.85		-5.173E-02	2.300E-01	3.815E-01	4.059E-02	-0.136
		529.87	*	-4.825E-03	2.300E-01	Half-Life	too short	
		875.33		-4.130E-02	2.300E-01	Half-Life	too short	
CS-134		1298.22		-5.222E-02	2.300E-01	Half-Life	too short	
		563.25		3.299E-01	3.152E-01	5.420E-01	3.830E-02	0.609
		569.33		-4.529E-02	1.815E-01	2.821E-01	2.017E-02	-0.161
		604.72		1.981E-02	3.449E-02	5.026E-02	3.654E-03	0.394
	+	795.86	*	1.019E-01	6.304E-02	7.919E-02	7.659E-03	1.286
CS-135		801.95		-9.035E-02	3.773E-01	5.461E-01	5.328E-02	-0.165
		1365.19		6.491E-01	9.845E-01	1.711E+00	1.362E-01	0.379
		268.22	*	1.810E-01	1.511E-01	2.310E-01	1.746E-02	0.784
	I-135	546.56		1.107E+11	1.511E-01	Half-Life	too short	
CS-136		836.80		1.569E+11	1.511E-01	Half-Life	too short	
		1038.76		1.281E+11	1.511E-01	Half-Life	too short	
		1131.51		8.943E+09	1.511E-01	Half-Life	too short	
		1260.41	*	-3.379E+10	1.511E-01	Half-Life	too short	
		1457.56		2.312E+13	1.511E-01	Half-Life	too short	
		1678.03		1.850E+10	1.511E-01	Half-Life	too short	
		1791.20		7.176E+09	1.511E-01	Half-Life	too short	
		153.25		5.738E-01	7.884E-01	1.368E+00	1.059E-01	0.419
		176.60		-3.095E-02	4.585E-01	7.695E-01	5.107E-02	-0.040
		273.65		-6.273E-01	7.943E-01	7.450E-01	5.022E-02	-0.842
BA-137M		340.55		6.123E-01	1.619E-01	2.707E-01	1.695E-02	2.262
		818.51		2.068E-02	6.545E-02	1.101E-01	1.099E-02	0.188
		1048.07	*	2.368E-02	9.853E-02	1.673E-01	1.500E-02	0.142
		1235.36		9.291E-01	5.764E-01	1.019E+00	1.038E-01	0.912
		661.66	*	-1.301E-02	2.939E-02	4.802E-02	3.660E-03	-0.271
CS-137		661.66	*	-1.374E-02	3.105E-02	5.072E-02	3.876E-03	-0.271

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CE-139		165.86	*	1.246E-02	2.595E-02	4.455E-02	2.338E-03	0.280
BA-140		162.66		-6.233E-01	7.611E-01	1.230E+00	7.598E-02	-0.507
		304.85		-6.269E-01	1.388E+00	1.882E+00	5.374E-01	-0.333
		423.72		-3.144E-01	1.724E+00	2.840E+00	9.175E-01	-0.111
		537.26	*	-1.578E-01	2.531E-01	3.889E-01	1.303E-01	-0.406
LA-140	+	328.76		8.260E-01	4.199E-01	5.054E-01	3.282E-02	1.634
		487.02		4.527E-02	1.168E-01	1.966E-01	1.403E-02	0.230
		815.77		1.350E-02	2.952E-01	4.878E-01	5.280E-02	0.028
		1596.21	*	-7.238E-02	7.427E-02	9.674E-02	6.638E-03	-0.748
CE-141		145.44	*	3.119E-02	6.188E-02	9.941E-02	5.676E-03	0.314
CE-143		57.36		-1.245E-03	6.188E-02	Half-Life	too short	
		293.27	*	1.382E-03	6.188E-02	Half-Life	too short	
		664.57		1.797E-03	6.188E-02	Half-Life	too short	
		721.93		3.763E-04	6.188E-02	Half-Life	too short	
CE-144		80.12		-1.339E-01	2.566E+00	3.771E+00	3.265E-01	-0.035
		133.52	*	2.435E-02	2.066E-01	2.948E-01	4.077E-02	0.083
PM-144		476.78		-1.032E-03	5.267E-02	8.679E-02	6.371E-03	-0.012
		618.01		-7.362E-03	3.038E-02	4.526E-02	3.447E-03	-0.163
		696.49	*	-3.714E-03	3.062E-02	5.081E-02	4.125E-03	-0.073
PR-144		696.51	*	-2.728E-01	2.293E+00	3.806E+00	3.089E-01	-0.072
		1489.16		-4.175E+00	1.074E+01	1.655E+01	1.196E+00	-0.252
PM-146		453.88	*	2.759E-02	3.440E-02	5.932E-02	5.182E-03	0.465
		633.25		-4.551E-01	1.190E+00	1.843E+00	6.993E-01	-0.247
		735.93		4.518E-03	1.190E-01	1.983E-01	5.563E-02	0.023
		747.24		1.662E-02	8.130E-02	1.367E-01	2.013E-02	0.122
ND-147		91.11		1.035E+00	3.887E-01	5.107E-01	4.807E-02	2.027
		319.41		-9.557E-01	3.077E+00	4.876E+00	2.817E-01	-0.196
		531.02	*	-3.447E-01	5.070E-01	7.903E-01	1.103E-01	-0.436
PM-149		285.90	*	-4.716E+01	1.060E+02	1.682E+02	2.379E+01	-0.280
EU-152		121.78		7.643E-02	6.913E-02	1.154E-01	8.857E-03	0.662
		244.70		-1.187E-02	3.054E-01	4.395E-01	2.455E-02	-0.027
		344.28	*	-6.314E-02	8.863E-02	1.243E-01	8.106E-03	-0.508
		778.90		-2.388E-01	2.164E-01	3.291E-01	3.077E-02	-0.725
		964.08		8.328E-01	3.183E-01	5.191E-01	5.317E-02	1.604
		1085.87		1.374E-01	3.548E-01	5.917E-01	4.583E-02	0.232
		1112.07		2.714E-01	3.010E-01	4.653E-01	3.312E-02	0.583
		1408.01		1.274E-01	1.728E-01	2.968E-01	2.204E-02	0.429
GD-153		69.67		-1.639E+00	1.925E+00	2.943E+00	2.389E-01	-0.557
		97.43	*	-7.110E-02	9.514E-02	1.309E-01	1.023E-02	-0.543
		103.18		-1.362E-01	1.153E-01	1.554E-01	1.120E-02	-0.876
EU-154		123.07		1.116E-03	4.999E-02	8.025E-02	7.578E-03	0.014
		723.31		1.954E-01	1.550E-01	2.454E-01	2.304E-02	0.796
		873.19		-1.360E-01	2.440E-01	3.822E-01	5.207E-02	-0.356
		996.26		-9.529E-02	3.172E-01	5.006E-01	9.010E-02	-0.190
		1004.73		-4.957E-02	1.944E-01	3.081E-01	3.788E-02	-0.161
		1274.44	*	-1.991E-02	1.184E-01	1.921E-01	1.933E-02	-0.104
TB-160	+	86.79		1.111E+00	3.361E-01	4.987E-01	4.562E-02	2.228
		197.04		3.738E-01	4.947E-01	8.367E-01	4.493E-02	0.447
		215.65		4.248E-01	6.549E-01	1.113E+00	6.074E-02	0.382

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HO-166M	+	298.57		3.898E-01	1.456E-01	1.805E-01	1.037E-02	2.159
		879.36	*	4.201E-02	1.189E-01	1.993E-01	2.190E-02	0.211
		962.29		9.689E-01	5.504E-01	8.713E-01	8.951E-02	1.112
		966.15		1.562E+00	3.142E-01	5.082E-01	5.186E-02	3.074
		1177.93		2.714E-01	3.367E-01	5.838E-01	3.259E-02	0.465
		1271.85		-1.033E-01	6.713E-01	1.091E+00	7.370E-02	-0.095
		80.57		-1.940E-01	2.842E-01	4.046E-01	3.515E-02	-0.480
		184.41		5.243E-02	3.580E-02	5.679E-02	3.017E-03	0.923
		280.46		-2.047E-02	8.075E-02	1.130E-01	6.447E-03	-0.181
		410.95		3.563E-01	2.410E-01	3.827E-01	2.253E-02	0.931
		711.68	*	2.344E-03	4.991E-02	8.346E-02	6.956E-03	0.028
TA-182		752.31		-6.041E-02	2.383E-01	3.893E-01	3.480E-02	-0.155
		810.29		-1.916E-02	5.182E-02	8.329E-02	8.201E-03	-0.230
		67.75		4.971E-02	1.205E-01	2.017E-01	1.621E-02	0.246
		100.11		2.877E-01	1.730E-01	2.960E-01	2.225E-02	0.972
		152.43		1.910E-01	3.285E-01	5.310E-01	2.856E-02	0.360
		222.11		2.876E-01	3.085E-01	5.284E-01	2.900E-02	0.544
		1121.30		5.223E-01	1.772E-01	3.000E-01	2.067E-02	1.741
		1189.05		1.181E-01	2.771E-01	4.703E-01	2.689E-02	0.251
		1221.41	*	-6.317E-03	1.911E-01	3.146E-01	1.924E-02	-0.020
		1231.02		-5.851E-01	4.744E-01	7.241E-01	4.516E-02	-0.808
	+	295.96		1.221E+00	1.544E-01	2.547E-01	1.486E-02	4.792
IR-192		308.46		5.419E-02	8.530E-02	1.420E-01	8.272E-03	0.382
		316.51	*	1.054E-02	3.005E-02	4.930E-02	2.859E-03	0.214
		468.07		3.096E-02	6.088E-02	9.082E-02	6.481E-03	0.341
BI-207		72.81		3.179E-01	2.034E-01	3.188E-01	2.632E-02	0.997
	+	74.97		7.426E-01	1.578E-01	2.376E-01	1.986E-02	3.126
		569.70		3.920E-03	2.813E-02	4.476E-02	3.137E-03	0.088
		1063.66	*	3.558E-02	4.568E-02	8.002E-02	6.605E-03	0.445
PB-210		1770.23		3.105E-02	3.621E-01	5.159E-01	3.121E-02	0.060
PB-211		46.54	*	-1.382E-01	5.151E+00	8.538E+00	6.545E-01	-0.016
		404.85	*	-2.608E-01	6.355E-01	8.757E-01	4.201E-01	-0.298
		427.09		1.481E-01	1.285E+00	2.149E+00	9.851E-01	0.069
		832.01		1.417E-01	8.909E-01	1.470E+00	7.666E-01	0.096
BI-212	+	727.33	*	2.338E+00	7.508E-01	1.004E+00	1.247E-01	2.329
		785.37		1.504E+00	2.910E+00	4.784E+00	4.522E-01	0.314
		1620.50		1.962E+00	2.284E+00	4.083E+00	2.761E-01	0.480
RN-219	+	271.23		6.268E-01	2.631E-01	3.831E-01	3.043E-02	1.636
		401.81	*	-1.286E-01	3.149E-01	5.145E-01	6.917E-02	-0.250
RA-223		81.07		-3.699E-01	2.368E-01	3.206E-01	2.796E-02	-1.154
		83.79		2.352E-01	1.365E-01	2.123E-01	1.892E-02	1.108
		94.87		1.305E+00	4.929E-01	7.852E-01	6.394E-02	1.662
		144.24		4.918E-01	6.505E-01	1.054E+00	7.333E-02	0.466
		154.21		2.893E-01	3.427E-01	5.966E-01	3.941E-02	0.485
	+	269.46		4.870E-01	2.028E-01	2.949E-01	1.749E-02	1.651
		323.87	*	5.512E-02	5.980E-01	8.455E-01	1.362E-01	0.065
AC-227	+	338.28		7.618E+00	1.683E+00	2.108E+00	2.159E-01	3.614
		79.69		-5.613E-01	1.284E+00	1.848E+00	3.187E-01	-0.304
		235.96		5.511E-01	1.659E-01	2.677E-01	2.132E-02	2.059

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227	+	256.23	* -1.207E-01	2.179E-01	3.478E-01	3.523E-02	-0.347
		299.98	3.016E+00	1.162E+00	1.412E+00	1.547E-01	2.137
		304.50	-8.953E-01	1.571E+00	2.122E+00	3.232E-01	-0.422
		334.37	9.037E-01	1.962E+00	2.402E+00	3.415E-01	0.376
		79.80	-4.116E-01	1.681E+00	2.445E+00	5.326E-01	-0.168
		235.96	5.511E-01	1.648E-01	2.677E-01	1.925E-02	2.059
TH-229	+	256.23	* -1.207E-01	2.181E-01	3.478E-01	4.151E-02	-0.347
		299.98	3.016E+00	1.162E+00	1.412E+00	1.547E-01	2.137
		304.50	-8.953E-01	1.571E+00	2.122E+00	3.232E-01	-0.422
		334.37	9.037E-01	1.962E+00	2.402E+00	3.415E-01	0.376
		85.43	2.586E-01	2.326E-01	3.543E-01	3.203E-02	0.730
		88.47	5.275E-01	1.596E-01	2.294E-01	2.101E-02	2.300
PA-231	+	193.51	* -1.145E-01	4.529E-01	7.503E-01	4.017E-02	-0.153
		210.85	1.719E+00	8.713E-01	1.390E+00	7.555E-02	1.237
		283.69	* 5.876E-01	1.264E+00	2.029E+00	2.654E-01	0.290
TH-231	+	301.36	1.938E+00	7.427E-01	8.750E-01	9.026E-02	2.215
		81.07	-3.699E-01	2.368E-01	3.206E-01	2.796E-02	-1.154
		83.79	2.352E-01	1.365E-01	2.123E-01	1.892E-02	1.108
PA-233	+	94.87	1.305E+00	4.929E-01	7.852E-01	6.394E-02	1.662
		144.24	4.918E-01	6.505E-01	1.054E+00	7.333E-02	0.466
		154.21	2.893E-01	3.427E-01	5.966E-01	3.941E-02	0.485
		269.46	4.870E-01	2.028E-01	2.949E-01	1.749E-02	1.651
		323.87	* 5.512E-02	5.980E-01	8.455E-01	1.362E-01	0.065
		338.28	7.618E+00	1.683E+00	2.108E+00	2.159E-01	3.614
		300.13	1.365E+00	5.358E-01	6.423E-01	8.584E-02	2.125
		311.90	* -4.847E-02	5.612E-02	8.642E-02	5.295E-03	-0.561
		340.48	2.717E+00	9.029E-01	1.124E+00	2.609E-01	2.416
		94.67	6.159E-01	1.939E-01	2.991E-01	3.617E-02	2.060
		98.44	4.711E-02	9.926E-02	1.488E-01	8.280E-02	0.317
		111.00	-6.962E-02	1.766E-01	2.805E-01	3.009E-02	-0.248
PA-234M	+	131.20	-2.158E-02	1.101E-01	1.547E-01	8.804E-03	-0.140
		569.50	7.907E-03	2.482E-01	3.924E-01	2.749E-02	0.020
		733.00	-1.433E-01	3.477E-01	4.757E-01	1.057E-01	-0.301
		880.51	1.799E-02	2.376E-01	3.908E-01	4.301E-02	0.046
		883.24	9.880E-02	2.516E-01	4.083E-01	2.759E-01	0.242
		926.50	-1.163E-01	1.575E-01	2.375E-01	6.207E-02	-0.490
		946.00	* -4.673E-02	2.580E-01	4.133E-01	8.153E-02	-0.113
		949.00	2.120E-01	3.826E-01	6.455E-01	6.779E-02	0.328
		766.42	1.725E+01	1.430E+01	1.806E+01	9.179E+00	0.955
		1001.03	* -1.927E-01	4.144E+00	6.689E+00	7.216E-01	-0.029
		63.29	* 1.508E+00	1.508E+00	2.553E+00	4.598E-01	0.591
		92.59	2.913E+00	1.179E+00	1.329E+00	2.927E-01	2.192
U-235	+	89.96	6.247E-01	1.182E+00	1.399E+00	3.458E-01	0.446
		93.35	2.201E+00	9.033E-01	9.881E-01	2.273E-01	2.227
		143.76	* 6.043E-02	1.961E-01	3.127E-01	4.877E-02	0.193
U-238	+	163.33	-9.788E-02	3.863E-01	6.370E-01	1.058E-01	-0.154
		185.72	1.926E-01	6.520E-02	7.764E-02	4.130E-03	2.481
		205.31	-6.489E-02	4.683E-01	6.791E-01	1.145E-01	-0.096
		63.29	* 1.508E+00	1.508E+00	2.553E+00	4.598E-01	0.591

----- 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		2.913E+00	1.020E+00	1.329E+00	1.125E-01	2.192
		99.53		2.901E-01	1.591E-01	2.734E-01	2.073E-02	1.061
		103.37		-7.998E-02	1.024E-01	1.415E-01	1.018E-02	-0.565
	+	106.12		1.314E-01	9.211E-02	1.343E-01	9.336E-03	0.978
		117.23	*	-1.964E-01	3.675E-01	5.779E-01	3.569E-02	-0.340
AM-241		228.18		9.686E-02	1.933E-01	3.255E-01	1.796E-02	0.298
	+	277.60		2.621E-01	2.179E-01	2.683E-01	1.528E-02	0.977
		59.54	*	5.609E-02	1.695E-01	2.869E-01	2.380E-02	0.195
CM-247	+	278.00		1.113E+00	9.256E-01	1.124E+00	6.401E-02	0.991
		287.50		2.437E-01	1.099E+00	1.672E+00	9.565E-02	0.146
		402.40	*	-2.190E-02	2.962E-02	4.612E-02	2.685E-03	-0.475
CF-249		252.80		-1.613E-01	8.296E-01	1.349E+00	7.579E-02	-0.120
		333.37		2.158E-01	2.286E-01	2.568E-01	1.485E-02	0.840
		388.16	*	8.011E-03	3.168E-02	5.380E-02	3.093E-03	0.149
CF-251		177.52	*	-5.622E-03	1.137E-01	1.909E-01	1.009E-02	-0.029
		227.38		-2.398E-01	3.184E-01	5.106E-01	2.814E-02	-0.470
		285.41		-1.004E+00	1.844E+00	2.917E+00	1.667E-01	-0.344

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]G247970001      *
* Acquisition date   : 11-MAR-2010 14:18:08 Detector SN#      :             *
* Detector ID        : GAM18 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 02:00:01.85 Half life ratio : 8.000    *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID          : G247970001 Analyst initials: MXR1          *
* Batch Number       : 958216 Sample Quantity : 1.2698E+02 GRAM    *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope      :             *
* MSD DPM             : 0.000 MSD Isotope      :                 *
* LCS DPM             : 0.000 LCS Isotope      :                 *
* LCSD DPM            : 0.000 LCSD Isotope     :                 *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.840E+01	3.243E+00	4.321E-01	0.000E+00
CD-109	3.505E+00	1.039E+00	1.528E+00	0.000E+00
SN-126	3.421E-01	1.014E-01	1.484E-01	0.000E+00
EU-155	1.648E-01	1.133E-01	1.601E-01	0.000E+00
HG-203	5.900E-02	4.809E-02	5.506E-02	0.000E+00
TL-208	6.023E-01	7.958E-02	4.554E-02	0.000E+00
BI-211	4.405E+00	4.607E-01	2.815E-01	0.000E+00
PB-212	1.898E+00	1.681E-01	8.082E-02	0.000E+00
BI-214	1.190E+00	1.874E-01	1.075E-01	0.000E+00
PB-214	1.599E+00	1.882E-01	1.009E-01	0.000E+00
RA-224	4.737E+00	1.113E+00	8.651E-01	0.000E+00
RA-226	1.190E+00	1.874E-01	1.075E-01	0.000E+00
AC-228	2.153E+00	3.888E-01	1.723E-01	0.000E+00
RA-228	2.153E+00	3.888E-01	1.723E-01	0.000E+00
TH-228	1.898E+00	1.681E-01	8.082E-02	0.000E+00
TH-232	2.153E+00	3.888E-01	1.723E-01	0.000E+00
NP-237	1.021E+00	3.682E-01	4.284E-01	0.000E+00
ANH-511	1.604E-01	5.194E-02	4.015E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.650E-02	2.527E-01	4.307E-01	0.000E+00 NOT IDENT.
NA-22	-1.619E-02	4.150E-02	6.782E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.005E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.067E-03	3.192E-02	5.336E-02	0.000E+00 FAIL ABUN
V-48	5.960E-02	6.316E-02	1.116E-01	0.000E+00 NOT IDENT.
CR-51	1.611E-01	3.125E-01	5.387E-01	0.000E+00 NOT IDENT.
MN-54	5.489E-03	3.349E-02	5.718E-02	0.000E+00 NOT IDENT.
CO-56	-3.111E-02	3.524E-02	5.583E-02	0.000E+00 NOT IDENT.
CO-57	2.055E-02	2.361E-02	4.139E-02	0.000E+00 NOT IDENT.

CO-58	4.912E-04	3.387E-02	5.752E-02	0.000E+00	NOT IDENT.
FE-59	-5.730E-02	7.697E-02	1.243E-01	0.000E+00	NOT IDENT.
CO-60	2.265E-02	3.057E-02	5.444E-02	0.000E+00	NOT IDENT.
ZN-65	1.160E-01	9.458E-02	1.516E-01	0.000E+00	NOT IDENT.
SE-75	3.244E-02	4.190E-02	6.579E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.806E-02	6.284E-02	0.000E+00	NOT IDENT.
Y-88	-1.818E-03	2.641E-02	4.353E-02	0.000E+00	NOT IDENT.
Y-91	-1.066E+01	1.928E+01	3.143E+01	0.000E+00	NOT IDENT.
NB-94	-7.209E-03	2.889E-02	4.906E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.124E-02	6.821E-02	0.000E+00	NOT IDENT.
NB-95M	1.994E-01	1.226E-01	1.998E-01	0.000E+00	NOT IDENT.
ZR-95	4.663E-02	6.161E-02	1.097E-01	0.000E+00	NOT IDENT.
MO-99	7.459E+00	1.348E+01	2.295E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.365E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.574E-02	3.223E-02	5.324E-02	0.000E+00	FAIL ABUN
RH-106	-5.015E-02	2.688E-01	4.423E-01	0.000E+00	NOT IDENT.
RU-106	-5.015E-02	2.687E-01	4.423E-01	0.000E+00	NOT IDENT.
AG-108M	-1.468E-02	2.401E-02	4.010E-02	0.000E+00	NOT IDENT.
AG-110M	-1.979E-02	2.720E-02	4.500E-02	0.000E+00	NOT IDENT.
SN-113	2.568E-03	3.544E-02	6.201E-02	0.000E+00	NOT IDENT.
CD-115	1.285E+01	1.250E+01	2.241E+01	0.000E+00	NOT IDENT.
SN-117M	2.226E-02	4.873E-02	8.835E-02	0.000E+00	NOT IDENT.
TE-123M	7.485E-03	2.423E-02	4.371E-02	0.000E+00	NOT IDENT.
SB-124	-6.787E-03	5.938E-02	9.824E-02	0.000E+00	NOT IDENT.
SB-125	4.206E-02	7.416E-02	1.318E-01	0.000E+00	FAIL ABUN
TE-125M	5.704E+00	1.011E+01	1.586E+01	0.000E+00	NOT IDENT.
I-126	2.435E-01	1.895E-01	3.494E-01	0.000E+00	NOT IDENT.
SB-126	-2.069E-02	1.388E-01	2.026E-01	0.000E+00	NOT IDENT.
SB-127	-4.515E-01	1.281E+00	2.163E+00	0.000E+00	NOT IDENT.
I-131	-7.125E-02	1.032E-01	1.751E-01	0.000E+00	NOT IDENT.
TE-132	3.941E-01	7.918E-01	1.395E+00	0.000E+00	NOT IDENT.
BA-133	-2.495E-02	4.058E-02	5.591E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.076E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.178E-02	7.990E-02	0.000E+00	FAIL ABUN
CS-135	1.810E-01	1.481E-01	2.369E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.214E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.368E-02	9.656E-02	1.681E-01	0.000E+00	NOT IDENT.
BA-137M	-1.301E-02	2.880E-02	4.858E-02	0.000E+00	NOT IDENT.
CS-137	-1.374E-02	3.043E-02	5.132E-02	0.000E+00	NOT IDENT.
CE-139	1.246E-02	2.543E-02	4.600E-02	0.000E+00	NOT IDENT.
BA-140	-1.578E-01	2.480E-01	3.947E-01	0.000E+00	NOT IDENT.
LA-140	-7.238E-02	7.279E-02	9.658E-02	0.000E+00	FAIL ABUN
CE-141	3.119E-02	6.064E-02	1.028E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.639E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	2.435E-02	2.024E-01	3.054E-01	0.000E+00	NOT IDENT.
PM-144	-3.714E-03	3.001E-02	5.137E-02	0.000E+00	NOT IDENT.
PR-144	-2.728E-01	2.247E+00	3.848E+00	0.000E+00	NOT IDENT.
PM-146	2.759E-02	3.371E-02	6.036E-02	0.000E+00	NOT IDENT.
ND-147	-3.447E-01	4.969E-01	8.022E-01	0.000E+00	NOT IDENT.
PM-149	-4.716E+01	1.039E+02	1.723E+02	0.000E+00	NOT IDENT.
EU-152	-6.314E-02	8.686E-02	1.270E-01	0.000E+00	NOT IDENT.
GD-153	-7.110E-02	9.324E-02	1.362E-01	0.000E+00	NOT IDENT.
EU-154	-1.991E-02	1.160E-01	1.924E-01	0.000E+00	NOT IDENT.
TB-160	4.201E-02	1.165E-01	2.008E-01	0.000E+00	FAIL ABUN
HO-166M	2.344E-03	4.891E-02	8.435E-02	0.000E+00	NOT IDENT.
TA-182	-6.317E-03	1.873E-01	3.153E-01	0.000E+00	NOT IDENT.
IR-192	1.054E-02	2.945E-02	5.043E-02	0.000E+00	FAIL ABUN
BI-207	3.558E-02	4.477E-02	8.039E-02	0.000E+00	FAIL ABUN
PB-210	-1.382E-01	5.048E+00	8.975E+00	0.000E+00	NOT IDENT.
PB-211	-2.608E-01	6.228E-01	8.925E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.358E-01	1.014E+00	0.000E+00	FAIL ABUN
RN-219	-1.286E-01	3.086E-01	5.244E-01	0.000E+00	FAIL ABUN
RA-223	5.512E-02	5.860E-01	8.646E-01	0.000E+00	FAIL ABUN
AC-227	-1.207E-01	2.136E-01	3.568E-01	0.000E+00	FAIL ABUN
TH-227	-1.207E-01	2.137E-01	3.568E-01	0.000E+00	FAIL ABUN
TH-229	-1.145E-01	4.439E-01	7.730E-01	0.000E+00	FAIL ABUN
PA-231	5.876E-01	1.239E+00	2.079E+00	0.000E+00	FAIL ABUN
TH-231	5.512E-02	5.860E-01	8.646E-01	0.000E+00	FAIL ABUN
PA-233	-4.847E-02	5.499E-02	8.842E-02	0.000E+00	FAIL ABUN
PA-234	-4.673E-02	2.529E-01	4.159E-01	0.000E+00	NOT IDENT.
PA-234M	-1.927E-01	4.061E+00	6.726E+00	0.000E+00	NOT IDENT.
TH-234	1.508E+00	1.478E+00	2.672E+00	0.000E+00	FAIL ABUN
U-235	6.043E-02	1.922E-01	3.235E-01	0.000E+00	FAIL ABUN
U-238	1.508E+00	1.478E+00	2.672E+00	0.000E+00	FAIL ABUN
NP-239	-1.964E-01	3.602E-01	5.996E-01	0.000E+00	FAIL ABUN
AM-241	5.609E-02	1.661E-01	3.006E-01	0.000E+00	NOT IDENT.
CM-247	-2.190E-02	2.902E-02	4.701E-02	0.000E+00	FAIL ABUN
CF-249	8.011E-03	3.104E-02	5.487E-02	0.000E+00	NOT IDENT.

CF-251

-5.622E-03

1.114E-01

1.969E-01

0.000E+00 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247970001.CNF;1
Sample date        : 23-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 14:18:08
Sample ID          : G247970001 Sample quantity : 1.26980E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.85 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958216 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	2623	10.66*	1.894E+00	3.840E+01	3.840E+01	8.62
CD-109	88.03	276	3.70*	6.450E+00	3.421E+00	3.505E+00	30.25
SN-126	64.28	-----	9.60	3.245E+00	-----	Line Not Found	-----
	86.94	276	8.90	6.450E+00	1.422E+00	1.422E+00	50.51
	87.57	276	37.00*	6.450E+00	3.421E-01	3.421E-01	30.25
EU-155	86.55	276	30.70	6.450E+00	4.123E-01	4.150E-01	30.28
	105.31	90	21.10*	7.740E+00	1.637E-01	1.648E-01	70.13
HG-203	70.83	-----	3.69	4.309E+00	-----	Line Not Found	-----
	72.87	-----	6.19	4.622E+00	-----	Line Not Found	-----
	279.20	80	81.56*	6.250E+00	4.641E-02	5.900E-02	83.16
TL-208	277.37	80	6.60	6.250E+00	5.735E-01	5.735E-01	83.63
	583.19	682	85.00*	3.935E+00	6.023E-01	6.023E-01	13.48
	860.56	94	12.50	2.914E+00	7.666E-01	7.666E-01	66.79
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	1050	12.92*	5.452E+00	4.405E+00	4.405E+00	10.67
PB-212	74.82	442	10.28	4.938E+00	2.576E+00	2.576E+00	23.37
	77.11	808	17.10	5.257E+00	2.657E+00	2.657E+00	14.54
	238.63	1902	43.60*	6.793E+00	1.898E+00	1.898E+00	9.04
	300.09	183	3.30	5.986E+00	2.742E+00	2.742E+00	37.85
BI-214	609.32	698	45.49*	3.814E+00	1.190E+00	1.190E+00	16.07
	1120.29	166	14.92	2.335E+00	1.408E+00	1.408E+00	34.46
	1764.49	-----	15.30	1.694E+00	-----	Line Not Found	-----
PB-214	74.82	442	5.80	4.938E+00	4.566E+00	4.566E+00	22.68
	77.11	808	9.70	5.257E+00	4.684E+00	4.684E+00	16.72
	242.00	443	7.25	6.749E+00	2.679E+00	2.679E+00	24.67
	295.22	616	18.42	6.041E+00	1.636E+00	1.636E+00	14.19
	351.93	1050	35.60*	5.452E+00	1.599E+00	1.599E+00	12.01
RA-224	240.99	443	4.10*	6.749E+00	4.737E+00	4.737E+00	23.98
RA-226	609.32	698	45.49*	3.814E+00	1.190E+00	1.190E+00	16.07
	1120.29	166	14.92	2.335E+00	1.408E+00	1.408E+00	34.46
	1764.49	-----	15.30	1.694E+00	-----	Line Not Found	-----
AC-228	338.32	409	11.27	5.582E+00	1.920E+00	1.920E+00	45.64

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	523	25.80*	2.781E+00	2.153E+00	2.153E+00	18.43
	968.97	207	15.80	2.640E+00	1.470E+00	1.470E+00	36.13
	338.32	409	11.27	5.582E+00	1.920E+00	1.920E+00	45.64
	911.20	523	25.80*	2.781E+00	2.153E+00	2.153E+00	18.43
TH-228	968.97	207	15.80	2.640E+00	1.470E+00	1.470E+00	36.13
	74.82	442	10.28	4.938E+00	2.576E+00	2.576E+00	21.28
	77.11	808	17.10	5.257E+00	2.657E+00	2.657E+00	14.54
	238.63	1902	43.60*	6.793E+00	1.898E+00	1.898E+00	9.04
TH-232	300.09	183	3.30	5.986E+00	2.742E+00	2.742E+00	71.19
	338.32	409	11.27	5.582E+00	1.920E+00	1.920E+00	20.41
	911.20	523	25.80*	2.781E+00	2.153E+00	2.153E+00	18.43
	968.97	207	15.80	2.640E+00	1.470E+00	1.470E+00	36.13
NP-237	86.48	276	12.40*	6.450E+00	1.021E+00	1.021E+00	36.81
	95.86	-----	2.68	7.180E+00	-----	Line Not Found	-----
ANH-511	511.00	234	100.00*	4.312E+00	1.604E-01	1.604E-01	33.05

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 7
Number of lines tentatively identified by NID 26 78.79%

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	3.840E+01	3.840E+01	0.331E+01	8.62	
CD-109	461.40D	1.02	3.421E+00	3.505E+00	1.060E+00	30.25	
SN-126	2.30E+05Y	1.00	3.421E-01	3.421E-01	1.035E-01	30.25	
EU-155	4.75Y	1.01	1.637E-01	1.648E-01	1.156E-01	70.13	
HG-203	46.59D	1.27	4.641E-02	5.900E-02	4.907E-02	83.16	
TL-208	1.41E+10Y	1.00	6.023E-01	6.023E-01	0.812E-01	13.48	
BI-211	7.04E+08Y	1.00	4.405E+00	4.405E+00	0.470E+00	10.67	
PB-212	1.41E+10Y	1.00	1.898E+00	1.898E+00	0.172E+00	9.04	
BI-214	1600.00Y	1.00	1.190E+00	1.190E+00	0.191E+00	16.07	
PB-214	1600.00Y	1.00	1.599E+00	1.599E+00	0.192E+00	12.01	
RA-224	1.41E+10Y	1.00	4.737E+00	4.737E+00	1.136E+00	23.98	
RA-226	1600.00Y	1.00	1.190E+00	1.190E+00	0.191E+00	16.07	
AC-228	1.41E+10Y	1.00	2.153E+00	2.153E+00	0.397E+00	18.43	
RA-228	1.41E+10Y	1.00	2.153E+00	2.153E+00	0.397E+00	18.43	
TH-228	1.41E+10Y	1.00	1.898E+00	1.898E+00	0.172E+00	9.04	
TH-232	1.41E+10Y	1.00	2.153E+00	2.153E+00	0.397E+00	18.43	
NP-237	2.14E+06Y	1.00	1.021E+00	1.021E+00	0.376E+00	36.81	
ANH-511	1.00E+09Y	1.00	1.604E-01	1.604E-01	0.530E-01	33.05	

Total Activity : 6.754E+01 6.763E+01

Grand Total Activity : 6.754E+01 6.763E+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	93.10	291	601	1.36	185.31	182	9	4.04E-02	34.0	6.97E+00	T
0	129.09	94	335	1.23	257.25	255	7	1.31E-02	67.6	8.25E+00	
0	185.95	285	453	1.20	370.94	365	12	3.96E-02	33.4	7.65E+00	T
0	209.22	179	357	0.97	417.47	413	9	2.49E-02	40.9	7.26E+00	
0	269.84	146	232	1.84	538.67	534	9	2.02E-02	41.2	6.36E+00	T
0	327.77	134	253	1.46	654.48	649	12	1.86E-02	50.4	5.69E+00	T
0	409.26	89	189	1.88	817.42	813	11	1.24E-02	63.0	4.97E+00	
0	463.68	100	196	1.18	926.22	918	13	1.38E-02	61.5	4.59E+00	T
0	726.85	176	112	1.45	1452.42	1445	14	2.45E-02	29.6	3.34E+00	T
0	767.94	115	103	1.86	1534.58	1528	14	1.60E-02	41.6	3.20E+00	
0	795.14	81	118	1.51	1588.97	1581	14	1.13E-02	61.1	3.11E+00	T
0	1376.77	71	32	2.30	2752.03	2747	12	9.80E-03	40.3	1.98E+00	
0	1587.83	33	48	1.98	3174.12	3163	16	4.58E-03	****	1.79E+00	
0	1762.80	151	19	2.45	3524.06	3514	23	2.10E-02	21.7	1.70E+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]G247970001.CNF;1
* Acquisition date   : 11-MAR-2010 14:18:08  Detector SN#      :
* Detector ID        : GAM18                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.85          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G247970001            Analyst initials: MXR1
* Batch Number       : 958216                Sample Quantity  : 1.26980E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23.2MS Isotope       :
* MSD ID              :                      MSD Isotope       :
* LCS ID              : 1032-A                LCS Isotope       :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.840E+01	3.309E+00	4.322E-01	3.280E-02	88.847
CD-109	3.505E+00	1.060E+00	1.466E+00	1.355E-01	2.391
SN-126	3.421E-01	1.035E-01	1.424E-01	1.312E-02	2.403
EU-155	1.648E-01	1.156E-01	1.540E-01	1.100E-02	1.070
HG-203	5.900E-02	4.907E-02	5.372E-02	3.239E-03	1.098
TL-208	6.023E-01	8.120E-02	4.493E-02	3.516E-03	13.406
BI-211	4.405E+00	4.701E-01	2.756E-01	1.770E-02	15.984
PB-212	1.898E+00	1.716E-01	7.869E-02	5.672E-03	24.125
BI-214	1.190E+00	1.912E-01	1.061E-01	9.537E-03	11.213
PB-214	1.599E+00	1.921E-01	9.875E-02	8.358E-03	16.191
RA-224	4.737E+00	1.136E+00	8.424E-01	4.693E-02	5.623
RA-226	1.190E+00	1.912E-01	1.061E-01	9.537E-03	11.213
AC-228	2.153E+00	3.967E-01	1.711E-01	2.318E-02	12.580
RA-228	2.153E+00	3.967E-01	1.711E-01	2.318E-02	12.580
TH-228	1.898E+00	1.716E-01	7.869E-02	5.672E-03	24.125
TH-232	2.153E+00	3.967E-01	1.711E-01	2.318E-02	12.580
NP-237	1.021E+00	3.757E-01	4.110E-01	9.399E-02	2.484
ANH-511	1.604E-01	5.300E-02	3.953E-02	2.610E-03	4.057

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.650E-02		2.578E-01	4.236E-01	3.068E-02	-0.039
NA-22	-1.619E-02		4.235E-02	6.770E-02	4.606E-03	-0.239
NA-24	-9.629E-01		1.023E+00	Half-Life too short		
SC-46	-2.067E-03		3.257E-02	5.297E-02	5.909E-03	-0.039
V-48	5.960E-02		6.445E-02	1.110E-01	1.097E-02	0.537
CR-51	1.611E-01		3.188E-01	5.267E-01	3.386E-02	0.306
MN-54	5.489E-03		3.418E-02	5.671E-02	5.809E-03	0.097
CO-56	-3.111E-02		3.596E-02	5.538E-02	5.782E-03	-0.562
CO-57	2.055E-02		2.409E-02	3.991E-02	2.364E-03	0.515
CO-58	4.912E-04		3.456E-02	5.702E-02	5.629E-03	0.009
FE-59	-5.730E-02		7.854E-02	1.238E-01	1.019E-02	-0.463
CO-60	2.265E-02		3.119E-02	5.437E-02	4.108E-03	0.417
ZN-65	1.160E-01		9.651E-02	1.510E-01	1.064E-02	0.768
SE-75	3.244E-02		4.275E-02	6.415E-02	3.670E-03	0.506
SR-85	7.248E-02		3.884E-02	6.187E-02	4.099E-03	1.172
Y-88	-1.818E-03		2.695E-02	4.370E-02	2.489E-03	-0.042
Y-91	-1.066E+01		1.968E+01	3.135E+01	1.853E+00	-0.340
NB-94	-7.209E-03		2.948E-02	4.853E-02	3.982E-03	-0.149
NB-95	7.099E-02		4.208E-02	6.756E-02	6.180E-03	1.051
NB-95M	1.994E-01		1.251E-01	1.945E-01	1.432E-02	1.026
ZR-95	4.663E-02		6.287E-02	1.086E-01	1.073E-02	0.429
MO-99	7.459E+00		1.376E+01	2.272E+01	3.595E+00	0.328
TC-99M	-6.583E+10		2.737E+11	Half-Life too short		
RU-103	-1.574E-02		3.289E-02	5.239E-02	6.691E-03	-0.300
RH-106	-5.015E-02		2.743E-01	4.367E-01	5.448E-02	-0.115
RU-106	-5.015E-02		2.742E-01	4.367E-01	3.214E-02	-0.115
AG-108M	-1.468E-02		2.450E-02	3.938E-02	2.539E-03	-0.373
AG-110M	-1.979E-02		2.776E-02	4.447E-02	3.508E-03	-0.445
SN-113	2.568E-03		3.616E-02	6.081E-02	3.730E-03	0.042
CD-115	1.285E+01		1.275E+01	2.207E+01	1.484E+00	0.582
SN-117M	2.226E-02		4.973E-02	8.551E-02	4.545E-03	0.260
TE-123M	7.485E-03		2.473E-02	4.231E-02	2.283E-03	0.177
SB-124	-6.787E-03		6.059E-02	9.849E-02	6.821E-03	-0.069
SB-125	4.206E-02		7.567E-02	1.295E-01	8.080E-03	0.325
TE-125M	5.704E+00		1.032E+01	1.527E+01	1.370E+00	0.373
I-126	2.435E-01		1.934E-01	3.454E-01	2.655E-02	0.705
SB-126	-2.069E-02		1.417E-01	2.005E-01	1.698E-02	-0.103
SB-127	-4.515E-01		1.307E+00	2.139E+00	2.392E-01	-0.211
I-131	-7.125E-02		1.053E-01	1.716E-01	1.108E-02	-0.415
TE-132	3.941E-01		8.080E-01	1.357E+00	1.979E-01	0.290
BA-133	-2.495E-02		4.141E-02	5.475E-02	6.169E-03	-0.456
I-133	-4.825E-03		5.488E-03	Half-Life too short		
CS-134	1.019E-01	+	6.304E-02	7.919E-02	7.659E-03	1.286
CS-135	1.810E-01		1.511E-01	2.310E-01	1.746E-02	0.784
I-135	-3.379E+10		3.681E+10	Half-Life too short		
CS-136	2.368E-02		9.853E-02	1.673E-01	1.500E-02	0.142
BA-137M	-1.301E-02		2.939E-02	4.802E-02	3.660E-03	-0.271
CS-137	-1.374E-02		3.105E-02	5.072E-02	3.876E-03	-0.271

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-139	1.246E-02		2.595E-02	4.455E-02	2.338E-03	0.280
BA-140	-1.578E-01		2.531E-01	3.889E-01	1.303E-01	-0.406
LA-140	-7.238E-02		7.427E-02	9.674E-02	6.638E-03	-0.748
CE-141	3.119E-02		6.188E-02	9.941E-02	5.676E-03	0.314
CE-143	1.382E-03		1.856E-04	Half-Life too short		
CE-144	2.435E-02		2.066E-01	2.948E-01	4.077E-02	0.083
PM-144	-3.714E-03		3.062E-02	5.081E-02	4.125E-03	-0.073
PR-144	-2.728E-01		2.293E+00	3.806E+00	3.089E-01	-0.072
PM-146	2.759E-02		3.440E-02	5.932E-02	5.182E-03	0.465
ND-147	-3.447E-01		5.070E-01	7.903E-01	1.103E-01	-0.436
PM-149	-4.716E+01		1.060E+02	1.682E+02	2.379E+01	-0.280
EU-152	-6.314E-02		8.863E-02	1.243E-01	8.106E-03	-0.508
GD-153	-7.110E-02		9.514E-02	1.309E-01	1.023E-02	-0.543
EU-154	-1.991E-02		1.184E-01	1.921E-01	1.933E-02	-0.104
TB-160	4.201E-02		1.189E-01	1.993E-01	2.190E-02	0.211
HO-166M	2.344E-03		4.991E-02	8.346E-02	6.956E-03	0.028
TA-182	-6.317E-03		1.911E-01	3.146E-01	1.924E-02	-0.020
IR-192	1.054E-02		3.005E-02	4.930E-02	2.859E-03	0.214
BI-207	3.558E-02		4.568E-02	8.002E-02	6.605E-03	0.445
PB-210	-1.382E-01		5.151E+00	8.538E+00	6.545E-01	-0.016
PB-211	-2.608E-01		6.355E-01	8.757E-01	4.201E-01	-0.298
BI-212	2.338E+00	+	7.508E-01	1.004E+00	1.247E-01	2.329
RN-219	-1.286E-01		3.149E-01	5.145E-01	6.917E-02	-0.250
RA-223	5.512E-02		5.980E-01	8.455E-01	1.362E-01	0.065
AC-227	-1.207E-01		2.179E-01	3.478E-01	3.523E-02	-0.347
TH-227	-1.207E-01		2.181E-01	3.478E-01	4.151E-02	-0.347
TH-229	-1.145E-01		4.529E-01	7.503E-01	4.017E-02	-0.153
PA-231	5.876E-01		1.264E+00	2.029E+00	2.654E-01	0.290
TH-231	5.512E-02		5.980E-01	8.455E-01	1.362E-01	0.065
PA-233	-4.847E-02		5.612E-02	8.642E-02	5.295E-03	-0.561
PA-234	-4.673E-02		2.580E-01	4.133E-01	8.153E-02	-0.113
PA-234M	-1.927E-01		4.144E+00	6.689E+00	7.216E-01	-0.029
TH-234	1.508E+00		1.508E+00	2.553E+00	4.598E-01	0.591
U-235	6.043E-02		1.961E-01	3.127E-01	4.877E-02	0.193
U-238	1.508E+00		1.508E+00	2.553E+00	4.598E-01	0.591
NP-239	-1.964E-01		3.675E-01	5.779E-01	3.569E-02	-0.340
AM-241	5.609E-02		1.695E-01	2.869E-01	2.380E-02	0.195
CM-247	-2.190E-02		2.962E-02	4.612E-02	2.685E-03	-0.475
CF-249	8.011E-03		3.168E-02	5.380E-02	3.093E-03	0.149
CF-251	-5.622E-03		1.137E-01	1.909E-01	1.009E-02	-0.029

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247970001          *
* Acquisition date    : 11-MAR-2010 14:18:08 Detector SN# :                *
* Detector ID         : GAM18 Sensitivity : 5.000                        *
* Geometry            : CAN Energy tolerance: 1.500                      *
* Elapsed live time   : 0 02:00:00.00 Abundance limit : 75.000           *
* Elapsed real time   : 0 02:00:01.85 Half life ratio : 8.000            *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G247970001 Analyst initials: MXR1                *
* Batch Number       : 958216 Sample Quantity : 1.2698E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope :                 *
* MSD DPM             : 0.000 MSD Isotope :                             *
* LCS DPM             : 0.000 LCS Isotope :                             *
* LCSD DPM            : 0.000 LCSD Isotope :                             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.840E+01	3.243E+00	2.162E-01	1.655E+00
CD-109	3.505E+00	1.039E+00	7.642E-01	5.302E-01
SN-126	3.421E-01	1.014E-01	7.422E-02	5.175E-02
EU-155	1.648E-01	1.133E-01	8.008E-02	5.778E-02
HG-203	5.900E-02	4.809E-02	2.754E-02	2.453E-02
TL-208	6.023E-01	7.958E-02	2.279E-02	4.060E-02
BI-211	4.405E+00	4.607E-01	1.408E-01	2.350E-01
PB-212	1.898E+00	1.681E-01	4.043E-02	8.578E-02
BI-214	1.190E+00	1.874E-01	5.378E-02	9.562E-02
PB-214	1.599E+00	1.882E-01	5.046E-02	9.603E-02
RA-224	4.737E+00	1.113E+00	4.328E-01	5.680E-01
RA-226	1.190E+00	1.874E-01	5.378E-02	9.562E-02
AC-228	2.153E+00	3.888E-01	8.622E-02	1.984E-01
RA-228	2.153E+00	3.888E-01	8.622E-02	1.984E-01
TH-228	1.898E+00	1.681E-01	4.043E-02	8.578E-02
TH-232	2.153E+00	3.888E-01	8.622E-02	1.984E-01
NP-237	1.021E+00	3.682E-01	2.143E-01	1.879E-01
ANH-511	1.604E-01	5.194E-02	2.009E-02	2.650E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.650E-02	2.527E-01	2.155E-01	1.289E-01 NOT IDENT.
NA-22	-1.619E-02	4.150E-02	3.393E-02	2.118E-02 NOT IDENT.
NA-24	-9.629E+05	2.005E+06	0.000E+00	1.023E+06 SHORT HLIF
SC-46	-2.067E-03	3.192E-02	2.670E-02	1.628E-02 FAIL ABUN
V-48	5.960E-02	6.316E-02	5.583E-02	3.222E-02 NOT IDENT.
CR-51	1.611E-01	3.125E-01	2.695E-01	1.594E-01 NOT IDENT.
MN-54	5.489E-03	3.349E-02	2.861E-02	1.709E-02 NOT IDENT.
CO-56	-3.111E-02	3.524E-02	2.793E-02	1.798E-02 NOT IDENT.
CO-57	2.055E-02	2.361E-02	2.071E-02	1.204E-02 NOT IDENT.

CO-58	4.912E-04	3.387E-02	2.878E-02	1.728E-02	NOT IDENT.
FE-59	-5.730E-02	7.697E-02	6.220E-02	3.927E-02	NOT IDENT.
CO-60	2.265E-02	3.057E-02	2.723E-02	1.560E-02	NOT IDENT.
ZN-65	1.160E-01	9.458E-02	7.586E-02	4.826E-02	NOT IDENT.
SE-75	3.244E-02	4.190E-02	3.291E-02	2.138E-02	NOT IDENT.
SR-85	7.248E-02	3.806E-02	3.144E-02	1.942E-02	NOT IDENT.
Y-88	-1.818E-03	2.641E-02	2.178E-02	1.348E-02	NOT IDENT.
Y-91	-1.066E+01	1.928E+01	1.572E+01	9.839E+00	NOT IDENT.
NB-94	-7.209E-03	2.889E-02	2.454E-02	1.474E-02	NOT IDENT.
NB-95	7.099E-02	4.124E-02	3.413E-02	2.104E-02	NOT IDENT.
NB-95M	1.994E-01	1.226E-01	9.995E-02	6.255E-02	NOT IDENT.
ZR-95	4.663E-02	6.161E-02	5.488E-02	3.143E-02	NOT IDENT.
MO-99	7.459E+00	1.348E+01	1.148E+01	6.879E+00	NOT IDENT.
TC-99M	-6.583E+16	5.365E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.574E-02	3.223E-02	2.663E-02	1.645E-02	FAIL ABUN
RH-106	-5.015E-02	2.688E-01	2.213E-01	1.371E-01	NOT IDENT.
RU-106	-5.015E-02	2.687E-01	2.213E-01	1.371E-01	NOT IDENT.
AG-108M	-1.468E-02	2.401E-02	2.006E-02	1.225E-02	NOT IDENT.
AG-110M	-1.979E-02	2.720E-02	2.252E-02	1.388E-02	NOT IDENT.
SN-113	2.568E-03	3.544E-02	3.102E-02	1.808E-02	NOT IDENT.
CD-115	1.285E+01	1.250E+01	1.121E+01	6.376E+00	NOT IDENT.
SN-117M	2.226E-02	4.873E-02	4.420E-02	2.486E-02	NOT IDENT.
TE-123M	7.485E-03	2.423E-02	2.187E-02	1.236E-02	NOT IDENT.
SB-124	-6.787E-03	5.938E-02	4.915E-02	3.030E-02	NOT IDENT.
SB-125	4.206E-02	7.416E-02	6.596E-02	3.784E-02	FAIL ABUN
TE-125M	5.704E+00	1.011E+01	7.937E+00	5.159E+00	NOT IDENT.
I-126	2.435E-01	1.895E-01	1.748E-01	9.669E-02	NOT IDENT.
SB-126	-2.069E-02	1.388E-01	1.013E-01	7.084E-02	NOT IDENT.
SB-127	-4.515E-01	1.281E+00	1.082E+00	6.535E-01	NOT IDENT.
I-131	-7.125E-02	1.032E-01	8.761E-02	5.265E-02	NOT IDENT.
TE-132	3.941E-01	7.918E-01	6.979E-01	4.040E-01	NOT IDENT.
BA-133	-2.495E-02	4.058E-02	2.797E-02	2.071E-02	NOT IDENT.
I-133	-4.825E+03	1.076E+04	0.000E+00	5.488E+03	SHORT HLIF
CS-134	1.019E-01	6.178E-02	3.997E-02	3.152E-02	FAIL ABUN
CS-135	1.810E-01	1.481E-01	1.185E-01	7.556E-02	NOT IDENT.
I-135	-3.379E+16	7.214E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.368E-02	9.656E-02	8.412E-02	4.926E-02	NOT IDENT.
BA-137M	-1.301E-02	2.880E-02	2.431E-02	1.470E-02	NOT IDENT.
CS-137	-1.374E-02	3.043E-02	2.568E-02	1.553E-02	NOT IDENT.
CE-139	1.246E-02	2.543E-02	2.301E-02	1.297E-02	NOT IDENT.
BA-140	-1.578E-01	2.480E-01	1.975E-01	1.265E-01	NOT IDENT.
LA-140	-7.238E-02	7.279E-02	4.832E-02	3.714E-02	FAIL ABUN
CE-141	3.119E-02	6.064E-02	5.145E-02	3.094E-02	NOT IDENT.
CE-143	1.382E+03	3.639E+02	0.000E+00	1.856E+02	SHORT HLIF
CE-144	2.435E-02	2.024E-01	1.528E-01	1.033E-01	NOT IDENT.
PM-144	-3.714E-03	3.001E-02	2.570E-02	1.531E-02	NOT IDENT.
PR-144	-2.728E-01	2.247E+00	1.925E+00	1.147E+00	NOT IDENT.
PM-146	2.759E-02	3.371E-02	3.020E-02	1.720E-02	NOT IDENT.
ND-147	-3.447E-01	4.969E-01	4.014E-01	2.535E-01	NOT IDENT.
PM-149	-4.716E+01	1.039E+02	8.620E+01	5.300E+01	NOT IDENT.
EU-152	-6.314E-02	8.686E-02	6.354E-02	4.432E-02	NOT IDENT.
GD-153	-7.110E-02	9.324E-02	6.813E-02	4.757E-02	NOT IDENT.
EU-154	-1.991E-02	1.160E-01	9.627E-02	5.918E-02	NOT IDENT.
TB-160	4.201E-02	1.165E-01	1.005E-01	5.946E-02	FAIL ABUN
HO-166M	2.344E-03	4.891E-02	4.220E-02	2.495E-02	NOT IDENT.
TA-182	-6.317E-03	1.873E-01	1.578E-01	9.557E-02	NOT IDENT.
IR-192	1.054E-02	2.945E-02	2.523E-02	1.502E-02	FAIL ABUN
BI-207	3.558E-02	4.477E-02	4.022E-02	2.284E-02	FAIL ABUN
PB-210	-1.382E-01	5.048E+00	4.490E+00	2.575E+00	NOT IDENT.
PB-211	-2.608E-01	6.228E-01	4.465E-01	3.178E-01	NOT IDENT.
BI-212	-2.338E+00	7.358E-01	5.074E-01	3.754E-01	FAIL ABUN
RN-219	-1.286E-01	3.086E-01	2.624E-01	1.575E-01	FAIL ABUN
RA-223	5.512E-02	5.860E-01	4.326E-01	2.990E-01	FAIL ABUN
AC-227	-1.207E-01	2.136E-01	1.785E-01	1.090E-01	FAIL ABUN
TH-227	-1.207E-01	2.137E-01	1.785E-01	1.090E-01	FAIL ABUN
TH-229	-1.145E-01	4.439E-01	3.867E-01	2.265E-01	FAIL ABUN
PA-231	5.876E-01	1.239E+00	1.040E+00	6.320E-01	FAIL ABUN
TH-231	5.512E-02	5.860E-01	4.326E-01	2.990E-01	FAIL ABUN
PA-233	-4.847E-02	5.499E-02	4.423E-02	2.806E-02	FAIL ABUN
PA-234	-4.673E-02	2.529E-01	2.081E-01	1.290E-01	NOT IDENT.
PA-234M	-1.927E-01	4.061E+00	3.365E+00	2.072E+00	NOT IDENT.
TH-234	1.508E+00	1.478E+00	1.337E+00	7.542E-01	FAIL ABUN
U-235	6.043E-02	1.922E-01	1.619E-01	9.805E-02	FAIL ABUN
U-238	1.508E+00	1.478E+00	1.337E+00	7.542E-01	FAIL ABUN
NP-239	-1.964E-01	3.602E-01	3.000E-01	1.838E-01	FAIL ABUN
AM-241	5.609E-02	1.661E-01	1.504E-01	8.476E-02	NOT IDENT.
CM-247	-2.190E-02	2.902E-02	2.352E-02	1.481E-02	FAIL ABUN
CF-249	8.011E-03	3.104E-02	2.745E-02	1.584E-02	NOT IDENT.

CF-251	-5.622E-03	1.114E-01	9.851E-02	5.685E-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	313.7121
49.72	335.7645
57.36	0.0000
59.54	323.1761
63.29	357.5583
63.29	357.5583
64.28	384.3018
67.75	389.6359
69.67	469.2690
70.83	446.6061
72.81	417.2368
72.87	417.3132
72.87	417.3132
74.82	426.6195
74.82	426.6195
74.82	426.6195
74.97	426.8102
77.11	429.5113
77.11	429.5113
77.11	429.5113
79.69	419.8180
79.80	411.0141
80.12	411.3889
80.19	411.4689
80.57	446.2393
81.00	512.5269
81.07	512.6289
81.07	512.6289
83.79	402.0726
83.79	402.0726
85.43	465.8937
86.48	556.7132
86.55	556.8196
86.79	576.9088
86.94	577.1436
87.57	615.6415
88.03	630.6115
88.47	575.4282
89.96	511.3407
91.11	408.4530
92.59	638.1353
92.59	638.1353
93.35	505.5246
94.67	354.8424
94.87	355.0206
94.87	355.0206
95.86	405.6320
97.43	410.3315
98.44	371.6198
99.53	325.1415
100.11	328.7379
103.18	371.7558
103.37	349.7655
105.31	329.0977
106.12	352.5457
109.28	344.9363
111.00	387.6094
111.76	368.9054
116.30	338.9133
117.23	349.3876
121.12	323.7426
121.78	325.2871
122.06	334.2735
123.07	373.5400
131.20	371.3121
133.52	349.3694
136.00	369.6979

136.47	362.1094
140.51	376.2854
140.51	0.0000
143.76	384.2938
144.24	362.8163
144.24	362.8163
145.44	365.9148
152.43	357.6951
153.25	357.0436
154.21	358.5178
154.21	358.5178
156.02	375.4721
158.56	340.0179
159.00	344.6896
162.66	371.7200
163.33	352.5515
165.86	337.9367
176.60	351.9972
177.52	352.5051
181.07	348.7693
184.41	340.2400
185.72	333.9038
193.51	340.5807
197.04	311.3766
205.31	326.4289
210.85	301.3941
215.65	306.0488
222.11	292.1771
227.38	347.9360
228.16	311.1073
228.18	311.1146
235.69	309.7384
235.96	319.3287
235.96	319.3287
238.63	287.4777
238.63	287.4777
240.99	288.3141
242.00	288.6703
244.70	266.8514
252.40	261.0570
252.80	270.2573
256.23	272.3596
256.23	272.3596
260.90	253.4795
264.66	220.8351
268.22	231.5829
269.46	238.4818
269.46	238.4818
271.23	291.1420
273.65	326.3524
276.40	261.8765
277.37	239.5476
277.60	239.6075
278.00	222.4871
279.20	244.3911
279.54	244.4808
280.46	238.0692
283.69	219.5685
284.31	217.3279
285.41	241.6448
285.90	239.6785
287.50	212.4790
293.27	0.0000
295.22	207.1674
295.96	207.3289
298.57	207.8911
299.98	208.1932
299.98	208.1932
300.09	208.2171
300.09	208.2171
300.13	208.2231
301.36	211.0392
302.85	226.7040
304.50	232.2061
304.50	232.2061
304.85	232.2891
308.46	213.2108
311.90	237.5979

316.51	204.1261
319.41	220.9554
320.08	192.9193
323.87	193.1985
323.87	193.1985
328.76	258.8121
333.37	175.6396
334.37	202.1765
334.37	202.1765
338.28	219.4599
338.28	219.4599
338.32	219.4690
338.32	219.4690
338.32	219.4690
340.48	182.1184
340.55	182.1284
344.28	207.0064
351.06	199.9621
351.93	194.3110
356.01	206.2335
364.49	207.7917
366.42	163.7993
383.85	171.7789
388.16	166.8682
388.63	175.2351
391.69	174.7558
400.66	173.2511
401.81	168.7518
402.40	174.1182
404.85	162.0007
410.95	172.1861
414.70	180.5485
423.72	180.2472
427.09	173.1088
427.87	159.8871
433.94	175.9298
453.88	140.7201
463.37	140.7164
468.07	134.0007
473.00	156.4458
476.78	146.9975
477.60	140.1730
487.02	132.1525
492.35	145.6026
497.08	147.0736
511.00	153.5039
514.00	158.5303
527.90	117.4286
529.87	0.0000
531.02	153.4753
537.26	165.3905
546.56	0.0000
563.25	133.6375
569.33	150.9012
569.50	143.5791
569.70	143.5991
583.19	119.4032
600.60	172.1352
602.73	138.9470
604.72	156.9398
609.32	179.1703
609.32	179.1703
610.33	179.2763
614.28	152.4231
618.01	148.2523
621.93	138.3156
621.93	138.3156
633.25	125.0541
635.95	118.7051
636.99	130.7607
645.85	145.6311
657.76	132.2461
661.66	140.8041
661.66	140.8041
664.57	0.0000
666.33	113.4757
666.50	113.4857
677.62	135.4967

685.70	130.4753
695.00	151.7036
696.49	155.5676
696.51	155.5710
697.00	150.9211
702.65	154.1771
706.68	129.9983
711.68	122.7690
720.70	118.7141
721.93	0.0000
722.78	109.0713
722.91	109.0783
723.31	99.3292
724.19	117.2913
727.33	99.5250
733.00	116.1649
735.93	112.7808
739.50	106.2734
747.24	114.3588
752.31	131.9773
753.82	120.5037
756.73	112.9486
763.94	102.9556
765.81	109.6946
766.42	121.3645
777.92	146.2555
778.90	128.7639
783.70	103.6299
785.37	120.6092
795.86	96.0642
801.95	107.9472
810.29	122.7008
810.76	115.8003
815.77	108.1240
818.51	98.3232
832.01	118.8935
834.85	136.0470
836.80	0.0000
846.77	132.7305
856.80	107.3345
860.56	109.2415
871.09	105.2957
873.19	110.8428
875.33	0.0000
879.36	92.7773
880.51	96.9019
883.24	91.9061
884.68	90.9393
889.28	93.1606
898.04	119.1837
911.20	79.6870
911.20	79.6870
911.20	79.6870
926.50	113.2889
937.49	116.9150
944.13	91.0551
946.00	99.5014
949.00	90.1817
962.29	101.1875
964.08	104.8742
966.15	121.2459
968.97	175.4226
968.97	175.4226
968.97	175.4226
983.53	82.8861
996.26	105.7072
1001.03	102.6875
1004.73	112.4683
1037.84	91.0718
1038.76	0.0000
1048.07	98.8722
1050.41	97.0865
1050.41	97.0865
1063.66	90.0435
1085.87	93.5825
1099.45	108.2666
1112.07	88.4670
1115.54	110.2954

1120.29	110.9509
1120.29	110.9509
1120.55	110.9630
1121.30	117.2107
1131.51	0.0000
1173.23	120.7002
1177.93	112.1122
1189.05	111.5349
1204.77	132.7447
1221.41	149.2568
1231.02	183.4127
1235.36	128.0687
1238.28	132.1604
1260.41	0.0000
1271.85	104.4099
1274.44	109.5132
1274.54	115.5455
1291.59	85.8419
1298.22	0.0000
1312.11	78.2354
1332.49	48.0393
1365.19	41.2695
1368.63	0.0000
1384.29	50.8286
1408.01	58.4746
1457.56	0.0000
1460.82	40.2517
1489.16	43.7570
1505.03	42.1985
1596.21	42.2249
1620.50	42.4773
1678.03	0.0000
1690.97	25.5263
1764.49	16.9751
1764.49	16.9751
1770.23	17.7745
1771.35	23.1132
1791.20	0.0000
1836.06	23.3334

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247970001

Total Uranium Activity	4.5150E+00	ug/g
Total Uranium Counting Unc.	4.3986E+00	ug/g
Total Uranium Tpu	2.2442E-06	ug/g
Total Uranium Mda	3.9778E+00	ug/g

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*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 958216                SAMPLE ID   : G247970001                *
*  ANALYST       : MXR1                  DETECTOR    : GAM18                  *
*  SAMPLE DATE   : 23-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 11-MAR-2010 14:18:08.36  SAMPLE ALQT: 126.980 GRAM          *
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.088E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.287E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.478E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.206E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 21:29:08.22

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054948.CNF;1
Sample date        : 2-MAR-2010 00:00:00. Acquisition date : 11-MAR-2010 19:26:53
Sample ID          : G1202054948      Sample quantity   : 1.42620E+02 GRAM
Detector name      : GAM20             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:31.26  0.4%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 958216             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	92.99*	47	104	1.10	185.88	180	11	6.52E-03	52.6	
2	0	846.13	28	3	1.88	1690.95	1686	10	3.95E-03	21.4	
3	0	1040.55	10	4	1.33	2079.80	2075	8	1.39E-03	46.9	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054948.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 2-MAR-2010 00:00:00   Acquisition date : 11-MAR-2010 19:26:53
Sample ID        : G1202054948           Sample quantity  : 142.62 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA20              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:31.26   0.4%
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	*		9.026E-02	1.355E-01	2.393E-01	2.326E-02	0.377
NA-22	1274.54	*		-1.194E-02	1.910E-02	2.627E-02	2.176E-03	-0.455
NA-24	1368.63	*		6.833E-05	1.910E-02	Half-Life too short		
K-40	1460.82	*		5.443E-02	2.168E-01	4.042E-01	3.525E-02	0.135
SC-46	889.28	*		1.538E-02	1.797E-02	3.350E-02	3.340E-03	0.459
	1120.55			1.059E-02	1.835E-02	3.321E-02	2.840E-03	0.319
V-48	944.13			1.374E-01	2.940E-01	5.251E-01	5.124E-02	0.262
	983.53	*		-2.318E-03	2.031E-02	3.245E-02	3.102E-03	-0.071
	1312.11			5.799E-03	2.855E-02	4.800E-02	4.005E-03	0.121
CR-51	320.08	*		8.114E-02	1.349E-01	2.381E-01	2.386E-02	0.341
MN-54	834.85	*		-3.994E-03	1.542E-02	2.444E-02	2.469E-03	-0.163
CO-56	846.77	*	+	4.132E-02	1.820E-02	3.714E-02	3.743E-03	1.113
	1037.84			-8.747E-03	1.369E-01	1.899E-01	1.830E-02	-0.046
	1238.28			0.000E+00	2.832E-02	4.574E-02	3.870E-03	0.000
	1771.35			-8.360E-02	1.217E-01	1.575E-01	1.292E-02	-0.531
CO-57	122.06	*		-1.591E-03	9.884E-03	1.564E-02	1.305E-03	-0.102
	136.47			2.409E-02	8.434E-02	1.384E-01	1.252E-02	0.174
CO-58	810.76	*		1.084E-02	1.460E-02	2.735E-02	2.777E-03	0.396
FE-59	1099.45	*		-2.555E-02	3.239E-02	4.246E-02	4.004E-03	-0.602
	1291.59			-9.402E-03	4.149E-02	6.258E-02	5.951E-03	-0.150
CO-60	1173.23			8.364E-03	1.491E-02	2.734E-02	2.198E-03	0.306
	1332.49	*		-1.214E-02	1.815E-02	2.404E-02	2.014E-03	-0.505
ZN-65	1115.54	*		-1.331E-02	3.625E-02	5.452E-02	4.693E-03	-0.244
SE-75	121.12			1.636E-02	4.798E-02	7.964E-02	8.661E-03	0.205
	136.00			9.216E-03	1.607E-02	2.700E-02	2.282E-03	0.341
	264.66	*		-1.394E-03	1.807E-02	2.998E-02	2.969E-03	-0.047
	279.54			-1.377E-02	4.306E-02	6.936E-02	7.103E-03	-0.199
	400.66			1.068E-01	1.022E-01	1.884E-01	2.063E-02	0.567
SR-85	514.00	*		-7.222E-02	3.210E-02	4.178E-02	3.901E-03	-1.729
Y-88	898.04			1.998E-02	2.121E-02	3.793E-02	3.785E-03	0.527
	1836.06	*		5.420E-03	1.673E-02	3.016E-02	2.433E-03	0.180
Y-91	1204.77	*		3.381E+00	7.282E+00	1.296E+01	1.052E+00	0.261
NB-94	702.65	*		9.331E-03	1.625E-02	2.915E-02	2.949E-03	0.320
	871.09			-1.349E-02	1.604E-02	2.242E-02	2.247E-03	-0.602

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	765.81	*		-1.017E-02	1.796E-02	2.673E-02	2.716E-03	-0.380
NB-95M	235.69	*		-6.536E-02	5.430E-02	7.941E-02	8.546E-03	-0.823
ZR-95	724.19			1.769E-04	3.680E-02	6.164E-02	6.638E-03	0.003
	756.73	*		1.108E-02	2.871E-02	5.078E-02	5.555E-03	0.218
MO-99	140.51			-3.121E+00	2.659E+00	3.566E+00	8.441E-01	-0.875
	181.07			4.104E-01	1.869E+00	3.019E+00	5.716E-01	0.136
	366.42			8.008E+00	1.346E+01	2.343E+01	2.083E+00	0.342
	739.50	*		1.059E+00	1.587E+00	2.872E+00	4.781E-01	0.369
	777.92			1.264E+00	3.663E+00	6.469E+00	6.573E-01	0.195
TC-99M	140.51	*		-8.772E+03	3.663E+00	Half-Life too short		
RU-103	497.08	*		3.385E-03	1.613E-02	2.689E-02	3.858E-03	0.126
	610.33			3.562E-02	3.905E-01	6.102E-01	1.039E-01	0.058
RH-106	621.93	*		1.587E-02	1.580E-01	2.560E-01	3.614E-02	0.062
	1050.41			-3.379E-01	1.143E+00	1.761E+00	1.608E-01	-0.192
RU-106	621.93	*		1.587E-02	1.579E-01	2.560E-01	2.534E-02	0.062
	1050.41			-3.379E-01	1.143E+00	1.761E+00	1.608E-01	-0.192
AG-108M	433.94	*		4.115E-03	1.297E-02	2.204E-02	1.987E-03	0.187
	614.28			1.187E-03	1.758E-02	2.836E-02	2.869E-03	0.042
	722.91			3.734E-04	1.421E-02	2.389E-02	2.479E-03	0.016
CD-109	88.03	*		7.335E-02	2.933E-01	4.369E-01	4.132E-02	0.168
AG-110M	657.76	*		3.625E-03	1.474E-02	2.566E-02	2.629E-03	0.141
	677.62			7.068E-02	1.576E-01	2.790E-01	2.870E-02	0.253
	706.68			-6.131E-02	9.247E-02	1.391E-01	1.437E-02	-0.441
	763.94			1.361E-02	6.586E-02	1.134E-01	1.175E-02	0.120
	884.68			-2.390E-02	2.358E-02	3.169E-02	3.239E-03	-0.754
	937.49			-4.340E-04	4.581E-02	7.530E-02	7.577E-03	-0.006
	1384.29			-1.251E-03	7.318E-02	1.223E-01	1.059E-02	-0.010
	1505.03			-2.363E-02	1.336E-01	2.135E-01	1.810E-02	-0.111
SN-113	391.69	*		1.362E-04	1.738E-02	2.854E-02	2.462E-03	0.005
CD-115	260.90			-7.292E-01	1.133E+01	1.884E+01	1.854E+00	-0.039
	492.35			1.529E+00	3.027E+00	5.279E+00	4.852E-01	0.290
	527.90	*		1.622E-02	9.442E-01	1.527E+00	1.440E-01	0.011
SN-117M	156.02			-1.232E-01	7.032E-01	1.099E+00	9.451E-02	-0.112
	158.56	*		7.899E-03	1.736E-02	2.878E-02	2.484E-03	0.274
TE-123M	159.00	*		5.186E-03	1.093E-02	1.819E-02	1.580E-03	0.285
SB-124	602.73			6.391E-03	2.317E-02	3.817E-02	3.748E-03	0.167
	645.85			4.928E-02	2.005E-01	3.495E-01	3.640E-02	0.141
	722.78			-5.906E-03	1.326E-01	2.202E-01	2.271E-02	-0.027
	1690.97	*		-7.395E-03	3.836E-02	5.986E-02	5.215E-03	-0.124
SB-125	427.87	*		1.411E-03	3.981E-02	6.531E-02	5.777E-03	0.022
	463.37			-3.795E-02	1.262E-01	1.969E-01	1.891E-02	-0.193
	600.60			5.422E-02	1.099E-01	1.853E-01	1.923E-02	0.293
	635.95			-7.377E-02	1.184E-01	1.806E-01	1.907E-02	-0.408
TE-125M	109.28	*		-8.600E-01	3.599E+00	5.681E+00	5.889E-01	-0.151
I-126	388.63			7.226E-03	5.122E-02	8.563E-02	7.212E-03	0.084
	666.33	*		-2.924E-02	7.546E-02	1.200E-01	1.205E-02	-0.244
	753.82			3.937E-01	6.011E-01	1.098E+00	1.116E-01	0.359
SB-126	414.70			2.499E-02	2.201E-02	4.135E-02	3.543E-03	0.604
	666.50			-8.620E-03	2.574E-02	4.128E-02	4.147E-03	-0.209

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	695.00			8.750E-03	2.742E-02	4.787E-02	4.837E-03	0.183
	697.00			-4.946E-02	1.001E-01	1.570E-01	1.587E-02	-0.315
	720.70	*		-2.181E-02	3.988E-02	5.993E-02	6.077E-03	-0.364
	856.80			5.595E-03	1.333E-01	2.226E-01	2.238E-02	0.025
SN-126	64.28			1.740E-02	1.686E-01	2.985E-01	4.322E-02	0.058
	86.94			2.021E-02	1.158E-01	1.818E-01	7.545E-02	0.111
	87.57	*		-2.541E-04	2.988E-02	4.331E-02	4.073E-03	-0.006
SB-127	252.40			-6.890E-03	6.813E-01	1.141E+00	4.726E-01	-0.006
	473.00			1.744E-02	2.963E-01	4.848E-01	5.769E-02	0.036
	685.70	*		7.784E-02	2.089E-01	3.703E-01	4.185E-02	0.210
	783.70			-4.556E-01	5.460E-01	7.652E-01	9.449E-02	-0.595
I-131	80.19			-7.942E-01	8.586E-01	1.277E+00	1.098E-01	-0.622
	284.31			1.317E-01	4.052E-01	6.969E-01	7.169E-02	0.189
	364.49	*		-6.855E-03	3.862E-02	6.243E-02	5.836E-03	-0.110
	636.99			1.802E-01	4.217E-01	7.536E-01	7.806E-02	0.239
TE-132	49.72			-8.000E-01	1.324E+00	2.060E+00	1.858E-01	-0.388
	111.76			-4.250E-02	4.698E+00	7.120E+00	6.797E-01	-0.006
	116.30			5.461E-01	3.337E+00	5.457E+00	5.180E-01	0.100
	228.16	*		-7.541E-02	9.644E-02	1.495E-01	2.315E-02	-0.505
BA-133	81.00			-1.662E-02	2.735E-02	4.187E-02	6.507E-03	-0.397
	276.40			-3.191E-02	1.499E-01	2.447E-01	3.660E-02	-0.130
	302.85			3.589E-02	5.494E-02	9.747E-02	1.352E-02	0.368
	356.01	*		-1.507E-02	1.851E-02	2.730E-02	3.621E-03	-0.552
	383.85			-2.791E-02	1.258E-01	2.006E-01	2.480E-02	-0.139
I-133	529.87	*		4.748E-06	1.258E-01	Half-Life too short		
	875.33			7.855E-04	1.258E-01	Half-Life too short		
	1298.22			1.188E-03	1.258E-01	Half-Life too short		
CS-134	563.25			8.042E-02	1.520E-01	2.644E-01	2.565E-02	0.304
	569.33			-4.243E-02	8.550E-02	1.257E-01	1.227E-02	-0.338
	604.72			1.715E-03	1.981E-02	3.201E-02	3.152E-03	0.054
	795.86	*		5.144E-03	1.897E-02	3.294E-02	3.361E-03	0.156
	801.95			-8.942E-02	1.704E-01	2.430E-01	2.475E-02	-0.368
	1365.19			-1.351E-01	5.825E-01	9.286E-01	8.190E-02	-0.145
CS-135	268.22	*		3.025E-04	6.144E-02	1.027E-01	1.138E-02	0.003
I-135	546.56			4.662E+03	6.144E-02	Half-Life too short		
	836.80			8.160E+03	6.144E-02	Half-Life too short		
	1038.76			8.276E+03	6.144E-02	Half-Life too short		
	1131.51			-2.418E+03	6.144E-02	Half-Life too short		
	1260.41	*		-1.702E+02	6.144E-02	Half-Life too short		
	1457.56			-1.411E+04	6.144E-02	Half-Life too short		
	1678.03			7.175E+03	6.144E-02	Half-Life too short		
	1791.20			-1.997E+03	6.144E-02	Half-Life too short		
CS-136	153.25			8.714E-02	2.450E-01	4.040E-01	4.127E-02	0.216
	176.60			9.069E-02	1.529E-01	2.562E-01	2.495E-02	0.354
	273.65			7.011E-02	1.622E-01	2.816E-01	2.974E-02	0.249
	340.55			4.219E-02	4.470E-02	8.107E-02	7.811E-03	0.520
	818.51			7.859E-03	2.455E-02	4.292E-02	4.347E-03	0.183
	1048.07	*		-2.333E-02	3.700E-02	5.280E-02	5.007E-03	-0.442
	1235.36			3.372E-02	1.378E-01	2.353E-01	2.694E-02	0.143

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-137M		661.66	*	-4.280E-03	1.552E-02	2.507E-02	2.516E-03	-0.171
CS-137		661.66	*	-4.522E-03	1.640E-02	2.649E-02	2.662E-03	-0.171
CE-139		165.86	*	-9.546E-03	1.231E-02	1.795E-02	1.567E-03	-0.532
BA-140		162.66		2.551E-01	2.455E-01	4.273E-01	3.957E-02	0.597
		304.85		-1.162E-01	4.051E-01	6.484E-01	1.921E-01	-0.179
		423.72		1.230E-04	6.417E-01	1.048E+00	3.449E-01	0.000
		537.26	*	7.873E-03	8.061E-02	1.320E-01	4.506E-02	0.060
LA-140		328.76		9.839E-02	9.314E-02	1.705E-01	1.697E-02	0.577
		487.02		3.629E-02	4.442E-02	8.022E-02	7.747E-03	0.452
		815.77		-6.990E-02	1.102E-01	1.625E-01	1.788E-02	-0.430
		1596.21	*	1.022E-02	3.188E-02	5.686E-02	4.801E-03	0.180
CE-141		145.44	*	1.851E-02	2.265E-02	3.877E-02	3.348E-03	0.477
CE-143		57.36		-8.637E+00	1.924E+01	3.035E+01	2.836E+00	-0.285
		293.27	*	1.565E+00	3.901E+00	6.710E+00	1.474E+00	0.233
		664.57		3.516E+00	3.570E+01	6.084E+01	1.853E+01	0.058
		721.93		1.201E+01	3.119E+01	5.547E+01	1.582E+01	0.217
CE-144		80.12		-6.786E-01	7.237E-01	1.075E+00	9.208E-02	-0.631
		133.52	*	-3.315E-03	7.811E-02	1.246E-01	1.887E-02	-0.027
PM-144		476.78		3.839E-02	2.941E-02	5.537E-02	5.419E-03	0.693
		618.01		-6.557E-03	1.618E-02	2.423E-02	2.446E-03	-0.271
		696.49	*	2.082E-03	1.655E-02	2.820E-02	2.851E-03	0.074
PR-144		696.51	*	1.484E-01	1.234E+00	2.102E+00	2.124E-01	0.071
		1489.16		-2.089E+00	5.795E+00	8.734E+00	7.404E-01	-0.239
PM-146		453.88	*	-6.699E-03	1.860E-02	2.870E-02	3.106E-03	-0.233
		633.25		4.119E-01	6.323E-01	1.087E+00	4.188E-01	0.379
		735.93		2.385E-02	6.441E-02	1.130E-01	3.226E-02	0.211
		747.24		3.495E-03	4.309E-02	7.287E-02	1.133E-02	0.048
ND-147		91.11		1.106E-01	7.668E-02	1.253E-01	1.240E-02	0.882
		319.41		1.973E-01	1.000E+00	1.694E+00	1.630E-01	0.116
		531.02	*	4.182E-02	1.747E-01	2.920E-01	4.509E-02	0.143
PM-149		285.90	*	-2.402E+00	7.651E+00	1.233E+01	2.007E+00	-0.195
EU-152		121.78		7.767E-03	2.764E-02	4.561E-02	4.407E-03	0.170
		244.70		5.325E-02	1.365E-01	2.369E-01	2.298E-02	0.225
		344.28	*	-3.489E-02	4.052E-02	5.940E-02	5.794E-03	-0.587
		778.90		-1.306E-02	1.047E-01	1.707E-01	1.734E-02	-0.077
		964.08		1.152E-01	1.178E-01	2.232E-01	2.157E-02	0.516
		1085.87		1.554E-01	1.788E-01	3.346E-01	2.962E-02	0.465
		1112.07		-2.945E-02	1.334E-01	2.077E-01	1.792E-02	-0.142
		1408.01		-5.779E-02	7.200E-02	9.295E-02	7.853E-03	-0.622
GD-153		69.67		-1.968E-01	4.721E-01	7.438E-01	5.690E-02	-0.265
		97.43	*	5.204E-03	3.243E-02	4.778E-02	4.237E-03	0.109
		103.18		-2.222E-02	3.661E-02	5.533E-02	4.786E-03	-0.402
EU-154		123.07		1.218E-02	2.022E-02	3.423E-02	3.813E-03	0.356
		723.31		6.152E-03	6.696E-02	1.137E-01	1.239E-02	0.054
		873.19		6.471E-02	1.285E-01	2.297E-01	2.972E-02	0.282
		996.26		-1.234E-01	1.714E-01	2.412E-01	4.320E-02	-0.512
		1004.73		5.407E-02	1.018E-01	1.811E-01	2.219E-02	0.299
		1274.44	*	-2.977E-02	5.267E-02	7.330E-02	8.150E-03	-0.406
EU-155		86.55		9.623E-03	3.170E-02	5.280E-02	4.944E-03	0.182

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	105.31	*		-4.099E-02	3.941E-02	5.348E-02	4.647E-03	-0.767
	86.79			4.360E-02	8.193E-02	1.331E-01	1.239E-02	0.328
	197.04			1.279E-01	2.338E-01	3.945E-01	3.610E-02	0.324
	215.65			1.367E-01	2.897E-01	5.078E-01	4.769E-02	0.269
	298.57			-1.641E-02	4.339E-02	6.919E-02	6.800E-03	-0.237
	879.36	*		-2.337E-02	7.251E-02	1.048E-01	1.048E-02	-0.223
	962.29			1.380E-02	2.010E-01	3.344E-01	3.234E-02	0.041
	966.15			-4.392E-02	8.730E-02	1.316E-01	1.270E-02	-0.334
HO-166M	1177.93			-3.409E-02	1.246E-01	1.888E-01	1.521E-02	-0.181
	1271.85			-3.750E-02	2.721E-01	4.241E-01	3.506E-02	-0.088
	80.57			-6.469E-02	7.830E-02	1.175E-01	1.012E-02	-0.550
	184.41			-2.200E-02	1.559E-02	2.578E-02	2.315E-03	-0.854
	280.46			-1.610E-02	3.534E-02	5.607E-02	5.579E-03	-0.287
	410.95			-1.597E-01	1.024E-01	1.265E-01	1.080E-02	-1.262
	711.68	*		-9.082E-03	2.635E-02	4.179E-02	4.233E-03	-0.217
	752.31			9.112E-03	1.243E-01	2.098E-01	2.132E-02	0.043
TA-182	810.29			1.506E-02	2.355E-02	4.340E-02	4.399E-03	0.347
	67.75			3.893E-03	3.009E-02	4.986E-02	3.748E-03	0.078
	100.11			1.177E-03	5.881E-02	9.536E-02	8.350E-03	0.012
	152.43			3.107E-02	1.305E-01	2.128E-01	1.820E-02	0.146
	222.11			-8.873E-02	1.288E-01	2.018E-01	1.910E-02	-0.440
	1121.30			2.376E-02	5.243E-02	9.280E-02	7.932E-03	0.256
	1189.05			1.687E-02	9.534E-02	1.613E-01	1.304E-02	0.105
	1221.41	*		-1.540E-02	6.387E-02	9.709E-02	7.922E-03	-0.159
IR-192	1231.02			6.930E-02	1.505E-01	2.687E-01	2.198E-02	0.258
	295.96			-5.051E-03	4.339E-02	7.135E-02	7.066E-03	-0.071
	308.46			2.888E-03	3.896E-02	6.521E-02	6.376E-03	0.044
	316.51	*		-3.204E-03	1.417E-02	2.289E-02	2.214E-03	-0.140
	468.07			2.364E-04	3.081E-02	5.009E-02	4.816E-03	0.005
	70.83			9.140E-02	3.185E-01	5.345E-01	8.340E-02	0.171
	72.87			-8.402E-02	1.944E-01	3.047E-01	4.615E-02	-0.276
	279.20	*		-4.771E-03	1.440E-02	2.316E-02	2.351E-03	-0.206
BI-207	72.81			-2.431E-02	4.829E-02	7.526E-02	5.939E-03	-0.323
	74.97			-9.531E-03	3.295E-02	5.215E-02	4.211E-03	-0.183
	569.70			-1.292E-03	1.242E-02	1.957E-02	1.891E-03	-0.066
	1063.66	*		1.027E-02	2.367E-02	4.166E-02	3.761E-03	0.246
	1770.23			-6.738E-02	2.411E-01	3.637E-01	2.984E-02	-0.185
	277.37			5.450E-02	1.543E-01	2.663E-01	3.589E-02	0.205
	583.19	*		-2.182E-02	1.940E-02	2.474E-02	2.541E-03	-0.882
	860.56			4.708E-02	1.167E-01	2.066E-01	2.189E-02	0.228
PB-210	46.54	*		-5.129E-01	8.700E-01	1.332E+00	1.224E-01	-0.385
BI-211	72.87			-3.652E-01	8.436E-01	1.325E+00	1.046E-01	-0.276
PB-211	351.06	*		2.821E-02	1.009E-01	1.594E-01	1.527E-02	0.177
	404.85	*		-2.045E-01	3.154E-01	4.441E-01	2.148E-01	-0.460
	427.09			4.994E-02	7.067E-01	1.163E+00	5.384E-01	0.043
	832.01			-1.965E-01	4.242E-01	6.238E-01	3.252E-01	-0.315
	727.33	*		1.246E-01	2.350E-01	4.185E-01	5.675E-02	0.298
	785.37			-3.601E-01	1.282E+00	2.031E+00	2.063E-01	-0.177
	1620.50			-1.848E-02	1.119E+00	1.847E+00	1.555E-01	-0.010

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-212		74.82		-4.840E-02	1.136E-01	1.775E-01	2.243E-02	-0.273
		77.11		2.166E-02	6.484E-02	1.071E-01	8.860E-03	0.202
		238.63	*	-1.044E-02	2.960E-02	4.856E-02	5.185E-03	-0.215
		300.09		-2.037E-01	3.498E-01	5.273E-01	6.083E-02	-0.386
BI-214		609.32	*	-1.656E-02	4.158E-02	6.084E-02	6.797E-03	-0.272
		1120.29		3.417E-02	1.166E-01	2.005E-01	2.179E-02	0.170
		1764.49		-6.991E-02	1.464E-01	2.182E-01	1.792E-02	-0.320
PB-214		74.82		-8.578E-02	2.013E-01	3.146E-01	3.558E-02	-0.273
		77.11		3.819E-02	1.144E-01	1.888E-01	2.206E-02	0.202
		242.00		-1.840E-01	1.575E-01	2.355E-01	2.656E-02	-0.781
		295.22		-9.424E-03	6.192E-02	1.015E-01	1.199E-02	-0.093
RN-219		351.93	*	1.691E-02	3.630E-02	5.837E-02	6.446E-03	0.290
		271.23		6.040E-02	9.564E-02	1.691E-01	1.921E-02	0.357
		401.81	*	6.419E-02	1.675E-01	2.878E-01	4.253E-02	0.223
RA-223		81.07		-3.508E-02	6.204E-02	9.575E-02	8.297E-03	-0.366
		83.79		-7.621E-03	4.008E-02	6.471E-02	5.800E-03	-0.118
		94.87		2.541E-01	1.784E-01	2.950E-01	2.653E-02	0.862
		144.24		2.578E-01	3.012E-01	4.983E-01	4.726E-02	0.517
		154.21		-1.804E-02	1.558E-01	2.452E-01	2.306E-02	-0.074
		269.46		-2.018E-02	7.344E-02	1.192E-01	1.198E-02	-0.169
		323.87	*	-2.266E-01	2.811E-01	4.179E-01	7.448E-02	-0.542
		338.28		9.809E-02	4.152E-01	7.031E-01	8.871E-02	0.140
RA-224		240.99	*	-3.579E-01	2.839E-01	4.222E-01	4.081E-02	-0.848
RA-226		609.32	*	-1.656E-02	4.158E-02	6.084E-02	6.797E-03	-0.272
		1120.29		3.417E-02	1.166E-01	2.005E-01	2.179E-02	0.170
		1764.49		-6.991E-02	1.464E-01	2.182E-01	1.792E-02	-0.320
AC-227		79.69		-3.298E-01	3.672E-01	5.422E-01	9.319E-02	-0.608
		235.96		-6.615E-02	6.799E-02	1.017E-01	1.138E-02	-0.650
		256.23	*	9.977E-03	1.070E-01	1.807E-01	2.335E-02	0.055
		299.98		-1.857E-01	3.810E-01	5.801E-01	7.858E-02	-0.320
		304.50		-1.531E-01	6.451E-01	1.041E+00	1.787E-01	-0.147
		334.37		2.023E-01	6.970E-01	1.190E+00	1.909E-01	0.170
		79.80		-5.971E-01	5.067E-01	7.102E-01	1.544E-01	-0.841
		235.96		-6.615E-02	6.795E-02	1.017E-01	1.083E-02	-0.650
TH-227		256.23	*	9.977E-03	1.070E-01	1.807E-01	2.599E-02	0.055
		299.98		-1.857E-01	3.810E-01	5.801E-01	7.858E-02	-0.320
		304.50		-1.531E-01	6.451E-01	1.041E+00	1.787E-01	-0.147
		334.37		2.023E-01	6.970E-01	1.190E+00	1.909E-01	0.170
AC-228		338.32		2.564E-02	1.052E-01	1.775E-01	7.434E-02	0.144
		911.20	*	2.259E-02	6.528E-02	1.171E-01	1.472E-02	0.193
		968.97		-5.645E-02	1.239E-01	1.959E-01	4.847E-02	-0.288
RA-228		338.32		2.564E-02	1.052E-01	1.775E-01	7.434E-02	0.144
		911.20	*	2.259E-02	6.528E-02	1.171E-01	1.472E-02	0.193
		968.97		-5.645E-02	1.239E-01	1.959E-01	4.847E-02	-0.288
TH-228		74.82		-4.840E-02	1.135E-01	1.775E-01	1.446E-02	-0.273
		77.11		2.166E-02	6.484E-02	1.071E-01	8.860E-03	0.202
		238.63	*	-1.044E-02	2.960E-02	4.856E-02	5.185E-03	-0.215
		300.09		-2.037E-01	3.707E-01	5.273E-01	3.238E-01	-0.386
TH-229		85.43		-3.891E-02	7.430E-02	1.129E-01	1.033E-02	-0.345

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	88.47			-1.754E-03	4.486E-02	6.478E-02	6.102E-03	-0.027
	193.51	*		8.977E-03	1.920E-01	3.267E-01	2.975E-02	0.027
	210.85			-8.530E-02	3.487E-01	5.764E-01	5.379E-02	-0.148
PA-231	283.69	*		2.674E-01	5.898E-01	1.027E+00	1.582E-01	0.260
	301.36			-9.259E-02	2.409E-01	3.707E-01	4.826E-02	-0.250
TH-231	81.07			-3.508E-02	6.204E-02	9.575E-02	8.297E-03	-0.366
	83.79			-7.621E-03	4.008E-02	6.471E-02	5.800E-03	-0.118
	94.87			2.541E-01	1.784E-01	2.950E-01	2.653E-02	0.862
	144.24			2.578E-01	3.012E-01	4.983E-01	4.726E-02	0.517
	154.21			-1.804E-02	1.558E-01	2.452E-01	2.306E-02	-0.074
	269.46			-2.018E-02	7.344E-02	1.192E-01	1.198E-02	-0.169
	323.87	*		-2.266E-01	2.811E-01	4.179E-01	7.448E-02	-0.542
	338.28			9.809E-02	4.152E-01	7.031E-01	8.871E-02	0.140
TH-232	338.32			2.564E-02	1.047E-01	1.775E-01	1.663E-02	0.144
	911.20	*		2.259E-02	6.528E-02	1.171E-01	1.472E-02	0.193
	968.97			-5.645E-02	1.239E-01	1.959E-01	4.847E-02	-0.288
PA-233	300.13			-1.014E-01	1.745E-01	2.625E-01	4.083E-02	-0.386
	311.90	*		-2.551E-03	2.847E-02	4.679E-02	4.643E-03	-0.055
	340.48			2.462E-01	2.591E-01	4.603E-01	1.120E-01	0.535
PA-234	94.67			1.402E-01	6.984E-02	1.177E-01	1.492E-02	1.191
	98.44			-1.129E-03	3.153E-02	5.087E-02	2.839E-02	-0.022
	111.00			1.176E-02	7.449E-02	1.217E-01	1.458E-02	0.097
	131.20			1.498E-02	3.974E-02	6.597E-02	5.514E-03	0.227
	569.50			-6.468E-02	1.176E-01	1.708E-01	1.650E-02	-0.379
	733.00			-1.867E-01	1.632E-01	2.081E-01	4.753E-02	-0.897
	880.51			2.773E-03	1.419E-01	2.148E-01	2.147E-02	0.013
	883.24			-6.364E-02	1.390E-01	1.999E-01	1.347E-01	-0.318
	926.50			5.739E-03	7.309E-02	1.222E-01	3.143E-02	0.047
	946.00	*		-5.034E-02	1.285E-01	1.945E-01	3.756E-02	-0.259
	949.00			1.118E-02	1.778E-01	2.962E-01	2.884E-02	0.038
PA-234M	766.42			-1.647E+00	4.965E+00	7.568E+00	3.861E+00	-0.218
	1001.03	*		1.976E+00	2.436E+00	4.481E+00	4.793E-01	0.441
TH-234	63.29	*		5.384E-02	4.448E-01	7.899E-01	1.403E-01	0.068
+	92.59			4.074E-01	4.378E-01	5.696E-01	1.269E-01	0.715
U-235	89.96			9.224E-03	3.064E-01	4.455E-01	1.108E-01	0.021
+	93.35			3.077E-01	3.314E-01	4.319E-01	1.005E-01	0.712
	143.76	*		7.261E-02	8.932E-02	1.465E-01	2.471E-02	0.496
	163.33			1.508E-01	1.781E-01	3.029E-01	5.449E-02	0.498
	185.72			-1.072E-02	2.013E-02	3.541E-02	3.186E-03	-0.303
	205.31			9.477E-02	2.059E-01	3.592E-01	6.631E-02	0.264
NP-237	86.48	*		2.461E-02	7.844E-02	1.305E-01	2.992E-02	0.189
	95.86			7.951E-02	3.534E-01	5.239E-01	1.263E-01	0.152
U-238	63.29	*		5.384E-02	4.448E-01	7.899E-01	1.403E-01	0.068
+	92.59			4.074E-01	4.299E-01	5.696E-01	5.199E-02	0.715
NP-239	99.53			9.198E-03	5.709E-02	9.381E-02	8.236E-03	0.098
	103.37			-1.539E-02	3.361E-02	5.169E-02	4.468E-03	-0.298
	106.12			-9.348E-03	3.132E-02	4.659E-02	3.991E-03	-0.201
	117.23	*		-4.321E-02	1.440E-01	2.245E-01	1.880E-02	-0.192
	228.18			-6.665E-02	8.938E-02	1.397E-01	1.332E-02	-0.477

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	277.60			2.848E-02	7.092E-02	1.230E-01	1.224E-02	0.232
AM-241	59.54	*		-8.496E-03	3.909E-02	6.298E-02	4.928E-03	-0.135
CM-247	278.00			2.025E-02	3.034E-01	5.097E-01	5.072E-02	0.040
	287.50			-3.543E-02	5.622E-01	9.309E-01	9.225E-02	-0.038
	402.40	*		1.473E-03	1.559E-02	2.586E-02	2.186E-03	0.057
CF-249	252.80			2.331E-02	3.965E-01	6.682E-01	6.531E-02	0.035
	333.37			-4.750E-02	7.617E-02	1.166E-01	1.101E-02	-0.407
	388.16	*		-2.340E-03	1.736E-02	2.801E-02	2.362E-03	-0.084
CF-251	177.52	*		-1.401E-02	5.404E-02	8.316E-02	7.390E-03	-0.168
	227.38			-9.077E-02	1.452E-01	2.300E-01	2.191E-02	-0.395
	285.41			5.462E-02	9.626E-01	1.613E+00	1.601E-01	0.034
ANH-511	511.00	*		-2.557E-02	3.003E-02	5.562E-02	5.183E-03	-0.460

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]G1202054948      *
* Acquisition date   : 11-MAR-2010 19:26:53 Detector SN#      :              *
* Detector ID        : GAM20          Sensitivity             : 5.000          *
* Geometry           : CAN            Energy tolerance        : 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit         : 75.000          *
* Elapsed real time  : 0 02:00:31.26 Half life ratio         : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 2-MAR-2010 00:00:00 Nuclide Library    : SOLID          *
* Sample ID          : G1202054948      Analyst initials     : MXR1           *
* Batch Number       : 958216           Sample Quantity      : 1.4262E+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

---- 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	9.026E-02	1.328E-01	2.464E-01	0.000E+00 NOT IDENT.
NA-22	-1.194E-02	1.872E-02	2.647E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	9.740E+02	0.000E+00	0.000E+00 SHORT HLIF
K-40	5.443E-02	2.125E-01	4.061E-01	0.000E+00 NOT IDENT.
SC-46	1.538E-02	1.761E-02	3.403E-02	0.000E+00 NOT IDENT.
V-48	-2.318E-03	1.991E-02	3.289E-02	0.000E+00 NOT IDENT.
CR-51	8.114E-02	1.322E-01	2.473E-01	0.000E+00 NOT IDENT.
MN-54	-3.994E-03	1.512E-02	2.486E-02	0.000E+00 NOT IDENT.
CO-56	0.000E+00	1.784E-02	3.776E-02	0.000E+00 FAIL ABUN
CO-57	-1.591E-03	9.687E-03	1.656E-02	0.000E+00 NOT IDENT.
CO-58	1.084E-02	1.431E-02	2.784E-02	0.000E+00 NOT IDENT.
FE-59	-2.555E-02	3.174E-02	4.293E-02	0.000E+00 NOT IDENT.
CO-60	-1.214E-02	1.779E-02	2.420E-02	0.000E+00 NOT IDENT.
ZN-65	-1.331E-02	3.552E-02	5.510E-02	0.000E+00 NOT IDENT.
SE-75	-1.394E-03	1.771E-02	3.126E-02	0.000E+00 NOT IDENT.
SR-85	-7.222E-02	3.146E-02	4.294E-02	0.000E+00 NOT IDENT.
Y-88	5.420E-03	1.640E-02	3.014E-02	0.000E+00 NOT IDENT.
Y-91	3.381E+00	7.136E+00	1.308E+01	0.000E+00 NOT IDENT.
NB-94	9.331E-03	1.592E-02	2.976E-02	0.000E+00 NOT IDENT.
NB-95	-1.017E-02	1.760E-02	2.724E-02	0.000E+00 NOT IDENT.
NB-95M	-6.536E-02	5.321E-02	8.298E-02	0.000E+00 NOT IDENT.
ZR-95	1.108E-02	2.813E-02	5.177E-02	0.000E+00 NOT IDENT.
MO-99	1.059E+00	1.555E+00	2.929E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	7.244E+09	0.000E+00	0.000E+00 SHORT HLIF
RU-103	3.385E-03	1.580E-02	2.766E-02	0.000E+00 NOT IDENT.
RH-106	1.587E-02	1.548E-01	2.620E-01	0.000E+00 NOT IDENT.

RU-106	1.587E-02	1.548E-01	2.620E-01	0.000E+00	NOT IDENT.
AG-108M	4.115E-03	1.271E-02	2.274E-02	0.000E+00	NOT IDENT.
CD-109	7.335E-02	2.874E-01	4.659E-01	0.000E+00	NOT IDENT.
AG-110M	3.625E-03	1.444E-02	2.624E-02	0.000E+00	NOT IDENT.
SN-113	1.362E-04	1.703E-02	2.951E-02	0.000E+00	NOT IDENT.
CD-115	1.622E-02	9.253E-01	1.569E+00	0.000E+00	NOT IDENT.
SN-117M	7.899E-03	1.701E-02	3.032E-02	0.000E+00	NOT IDENT.
TE-123M	5.186E-03	1.071E-02	1.916E-02	0.000E+00	NOT IDENT.
SB-124	-7.395E-03	3.759E-02	5.994E-02	0.000E+00	NOT IDENT.
SB-125	1.411E-03	3.902E-02	6.739E-02	0.000E+00	NOT IDENT.
TE-125M	-8.600E-01	3.527E+00	6.031E+00	0.000E+00	NOT IDENT.
I-126	-2.924E-02	7.395E-02	1.226E-01	0.000E+00	NOT IDENT.
SB-126	-2.181E-02	3.908E-02	6.115E-02	0.000E+00	NOT IDENT.
SN-126	-2.541E-04	2.928E-02	4.618E-02	0.000E+00	NOT IDENT.
SB-127	7.784E-02	2.047E-01	3.783E-01	0.000E+00	NOT IDENT.
I-131	-6.855E-03	3.784E-02	6.464E-02	0.000E+00	NOT IDENT.
TE-132	-7.541E-02	9.451E-02	1.563E-01	0.000E+00	NOT IDENT.
BA-133	-1.507E-02	1.814E-02	2.828E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.586E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.144E-03	1.859E-02	3.354E-02	0.000E+00	NOT IDENT.
CS-135	3.025E-04	6.021E-02	1.071E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.716E+09	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.333E-02	3.626E-02	5.344E-02	0.000E+00	NOT IDENT.
BA-137M	-4.280E-03	1.521E-02	2.563E-02	0.000E+00	NOT IDENT.
CS-137	-4.522E-03	1.607E-02	2.708E-02	0.000E+00	NOT IDENT.
CE-139	-9.546E-03	1.207E-02	1.889E-02	0.000E+00	NOT IDENT.
BA-140	7.873E-03	7.900E-02	1.355E-01	0.000E+00	NOT IDENT.
LA-140	1.022E-02	3.125E-02	5.701E-02	0.000E+00	NOT IDENT.
CE-141	1.851E-02	2.220E-02	4.092E-02	0.000E+00	NOT IDENT.
CE-143	1.565E+00	3.823E+00	6.980E+00	0.000E+00	NOT IDENT.
CE-144	-3.315E-03	7.655E-02	1.317E-01	0.000E+00	NOT IDENT.
PM-144	2.082E-03	1.622E-02	2.880E-02	0.000E+00	NOT IDENT.
PR-144	1.484E-01	1.209E+00	2.146E+00	0.000E+00	NOT IDENT.
PM-146	-6.699E-03	1.823E-02	2.958E-02	0.000E+00	NOT IDENT.
ND-147	4.182E-02	1.712E-01	3.000E-01	0.000E+00	NOT IDENT.
PM-149	-2.402E+00	7.498E+00	1.283E+01	0.000E+00	NOT IDENT.
EU-152	-3.489E-02	3.971E-02	6.158E-02	0.000E+00	NOT IDENT.
GD-153	5.204E-03	3.178E-02	5.084E-02	0.000E+00	NOT IDENT.
EU-154	-2.977E-02	5.162E-02	7.386E-02	0.000E+00	NOT IDENT.
EU-155	-4.099E-02	3.862E-02	5.681E-02	0.000E+00	NOT IDENT.
TB-160	-2.337E-02	7.106E-02	1.065E-01	0.000E+00	NOT IDENT.
HO-166M	-9.082E-03	2.582E-02	4.265E-02	0.000E+00	NOT IDENT.
TA-182	-1.540E-02	6.259E-02	9.793E-02	0.000E+00	NOT IDENT.
IR-192	-3.204E-03	1.388E-02	2.377E-02	0.000E+00	NOT IDENT.
HG-203	-4.771E-03	1.411E-02	2.412E-02	0.000E+00	NOT IDENT.
BI-207	1.027E-02	2.320E-02	4.215E-02	0.000E+00	NOT IDENT.
TL-208	-2.182E-02	1.901E-02	2.536E-02	0.000E+00	NOT IDENT.
PB-210	-5.129E-01	8.526E-01	1.438E+00	0.000E+00	NOT IDENT.
BI-211	2.821E-02	9.892E-02	1.652E-01	0.000E+00	NOT IDENT.
PB-211	-2.045E-01	3.091E-01	4.588E-01	0.000E+00	NOT IDENT.
BI-212	1.246E-01	2.303E-01	4.270E-01	0.000E+00	NOT IDENT.
PB-212	-1.044E-02	2.901E-02	5.073E-02	0.000E+00	NOT IDENT.
BI-214	-1.656E-02	4.075E-02	6.231E-02	0.000E+00	NOT IDENT.
PB-214	1.691E-02	3.558E-02	6.048E-02	0.000E+00	NOT IDENT.
RN-219	6.419E-02	1.642E-01	2.974E-01	0.000E+00	NOT IDENT.
RA-223	-2.266E-01	2.755E-01	4.338E-01	0.000E+00	NOT IDENT.
RA-224	-3.579E-01	2.782E-01	4.410E-01	0.000E+00	NOT IDENT.
RA-226	-1.656E-02	4.075E-02	6.231E-02	0.000E+00	NOT IDENT.
AC-227	9.977E-03	1.048E-01	1.885E-01	0.000E+00	NOT IDENT.
TH-227	9.977E-03	1.048E-01	1.885E-01	0.000E+00	NOT IDENT.
AC-228	2.259E-02	6.397E-02	1.189E-01	0.000E+00	NOT IDENT.
RA-228	2.259E-02	6.397E-02	1.189E-01	0.000E+00	NOT IDENT.
TH-228	-1.044E-02	2.901E-02	5.073E-02	0.000E+00	NOT IDENT.
TH-229	8.977E-03	1.881E-01	3.428E-01	0.000E+00	NOT IDENT.
PA-231	2.674E-01	5.780E-01	1.069E+00	0.000E+00	NOT IDENT.
TH-231	-2.266E-01	2.755E-01	4.338E-01	0.000E+00	NOT IDENT.
TH-232	2.259E-02	6.397E-02	1.189E-01	0.000E+00	NOT IDENT.
PA-233	-2.551E-03	2.790E-02	4.861E-02	0.000E+00	NOT IDENT.
PA-234	-5.034E-02	1.259E-01	1.973E-01	0.000E+00	NOT IDENT.
PA-234M	1.976E+00	2.387E+00	4.539E+00	0.000E+00	NOT IDENT.
TH-234	5.384E-02	4.359E-01	8.478E-01	0.000E+00	FAIL ABUN
U-235	7.261E-02	8.753E-02	1.546E-01	0.000E+00	FAIL ABUN
NP-237	2.461E-02	7.687E-02	1.392E-01	0.000E+00	NOT IDENT.
U-238	5.384E-02	4.359E-01	8.478E-01	0.000E+00	FAIL ABUN
NP-239	-4.321E-02	1.412E-01	2.380E-01	0.000E+00	NOT IDENT.
AM-241	-8.496E-03	3.831E-02	6.768E-02	0.000E+00	NOT IDENT.
CM-247	1.473E-03	1.528E-02	2.672E-02	0.000E+00	NOT IDENT.
CF-249	-2.340E-03	1.702E-02	2.897E-02	0.000E+00	NOT IDENT.

CF-251	-1.401E-02	5.296E-02	8.742E-02	0.000E+00 NOT IDENT.
ANH-511	-2.557E-02	2.943E-02	5.718E-02	0.000E+00 NOT IDENT.


```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054948.CNF;1
Sample date        : 2-MAR-2010 00:00:00. Acquisition date : 11-MAR-2010 19:26:53
Sample ID          : G1202054948      Sample quantity   : 1.42620E+02 GRAM
Detector name      : GAM20             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:31.26  0.4%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 958216            Detector SN#      :
Matrix Spike ID    :                  LCS ID             : 1032-A
*****
```

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202054948

Page : 2
Acquisition date : 11-MAR-2010 19:26:53

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202054948

Page : 3
Acquisition date : 11-MAR-2010 19:26:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.99	47	104	1.10	185.88	180	11	6.52E-03	****	7.17E+00	T
0	846.13	28	3	1.88	1690.95	1686	10	3.95E-03	42.9	1.98E+00	T
0	1040.55	10	4	1.33	2079.80	2075	8	1.39E-03	93.8	1.66E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054948.CNF;1
* Acquisition date   : 11-MAR-2010 19:26:53  Detector SN#      :
* Detector ID        : GAM20                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:31.26          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 2-MAR-2010 00:00:00.  Nuclide Library : SOLID
* Sample ID          : G1202054948           Analyst initials: MXR1
* Batch Number       : 958216                Sample Quantity : 1.42620E+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

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	9.026E-02		1.355E-01	2.393E-01	2.326E-02	0.377
NA-22	-1.194E-02		1.910E-02	2.627E-02	2.176E-03	-0.455
NA-24	6.833E-05		4.969E-04	Half-Life too short		
K-40	5.443E-02		2.168E-01	4.042E-01	3.525E-02	0.135
SC-46	1.538E-02		1.797E-02	3.350E-02	3.340E-03	0.459
V-48	-2.318E-03		2.031E-02	3.245E-02	3.102E-03	-0.071
CR-51	8.114E-02		1.349E-01	2.381E-01	2.386E-02	0.341
MN-54	-3.994E-03		1.542E-02	2.444E-02	2.469E-03	-0.163
CO-56	4.132E-02	+	1.820E-02	3.714E-02	3.743E-03	1.113
CO-57	-1.591E-03		9.884E-03	1.564E-02	1.305E-03	-0.102
CO-58	1.084E-02		1.460E-02	2.735E-02	2.777E-03	0.396
FE-59	-2.555E-02		3.239E-02	4.246E-02	4.004E-03	-0.602
CO-60	-1.214E-02		1.815E-02	2.404E-02	2.014E-03	-0.505
ZN-65	-1.331E-02		3.625E-02	5.452E-02	4.693E-03	-0.244
SE-75	-1.394E-03		1.807E-02	2.998E-02	2.969E-03	-0.047
SR-85	-7.222E-02		3.210E-02	4.178E-02	3.901E-03	-1.729
Y-88	5.420E-03		1.673E-02	3.016E-02	2.433E-03	0.180

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	3.381E+00		7.282E+00	1.296E+01	1.052E+00	0.261
NB-94	9.331E-03		1.625E-02	2.915E-02	2.949E-03	0.320
NB-95	-1.017E-02		1.796E-02	2.673E-02	2.716E-03	-0.380
NB-95M	-6.536E-02		5.430E-02	7.941E-02	8.546E-03	-0.823
ZR-95	1.108E-02		2.871E-02	5.078E-02	5.555E-03	0.218
MO-99	1.059E+00		1.587E+00	2.872E+00	4.781E-01	0.369
TC-99M	-8.772E+03		3.696E+03	Half-Life too short		
RU-103	3.385E-03		1.613E-02	2.689E-02	3.858E-03	0.126
RH-106	1.587E-02		1.580E-01	2.560E-01	3.614E-02	0.062
RU-106	1.587E-02		1.579E-01	2.560E-01	2.534E-02	0.062
AG-108M	4.115E-03		1.297E-02	2.204E-02	1.987E-03	0.187
CD-109	7.335E-02		2.933E-01	4.369E-01	4.132E-02	0.168
AG-110M	3.625E-03		1.474E-02	2.566E-02	2.629E-03	0.141
SN-113	1.362E-04		1.738E-02	2.854E-02	2.462E-03	0.005
CD-115	1.622E-02		9.442E-01	1.527E+00	1.440E-01	0.011
SN-117M	7.899E-03		1.736E-02	2.878E-02	2.484E-03	0.274
TE-123M	5.186E-03		1.093E-02	1.819E-02	1.580E-03	0.285
SB-124	-7.395E-03		3.836E-02	5.986E-02	5.215E-03	-0.124
SB-125	1.411E-03		3.981E-02	6.531E-02	5.777E-03	0.022
TE-125M	-8.600E-01		3.599E+00	5.681E+00	5.889E-01	-0.151
I-126	-2.924E-02		7.546E-02	1.200E-01	1.205E-02	-0.244
SB-126	-2.181E-02		3.988E-02	5.993E-02	6.077E-03	-0.364
SN-126	-2.541E-04		2.988E-02	4.331E-02	4.073E-03	-0.006
SB-127	7.784E-02		2.089E-01	3.703E-01	4.185E-02	0.210
I-131	-6.855E-03		3.862E-02	6.243E-02	5.836E-03	-0.110
TE-132	-7.541E-02		9.644E-02	1.495E-01	2.315E-02	-0.505
BA-133	-1.507E-02		1.851E-02	2.730E-02	3.621E-03	-0.552
I-133	4.748E-06		1.830E-05	Half-Life too short		
CS-134	5.144E-03		1.897E-02	3.294E-02	3.361E-03	0.156
CS-135	3.025E-04		6.144E-02	1.027E-01	1.138E-02	0.003
I-135	-1.702E+02		1.896E+03	Half-Life too short		
CS-136	-2.333E-02		3.700E-02	5.280E-02	5.007E-03	-0.442
BA-137M	-4.280E-03		1.552E-02	2.507E-02	2.516E-03	-0.171
CS-137	-4.522E-03		1.640E-02	2.649E-02	2.662E-03	-0.171
CE-139	-9.546E-03		1.231E-02	1.795E-02	1.567E-03	-0.532
BA-140	7.873E-03		8.061E-02	1.320E-01	4.506E-02	0.060
LA-140	1.022E-02		3.188E-02	5.686E-02	4.801E-03	0.180
CE-141	1.851E-02		2.265E-02	3.877E-02	3.348E-03	0.477
CE-143	1.565E+00		3.901E+00	6.710E+00	1.474E+00	0.233
CE-144	-3.315E-03		7.811E-02	1.246E-01	1.887E-02	-0.027
PM-144	2.082E-03		1.655E-02	2.820E-02	2.851E-03	0.074
PR-144	1.484E-01		1.234E+00	2.102E+00	2.124E-01	0.071
PM-146	-6.699E-03		1.860E-02	2.870E-02	3.106E-03	-0.233
ND-147	4.182E-02		1.747E-01	2.920E-01	4.509E-02	0.143
PM-149	-2.402E+00		7.651E+00	1.233E+01	2.007E+00	-0.195
EU-152	-3.489E-02		4.052E-02	5.940E-02	5.794E-03	-0.587
GD-153	5.204E-03		3.243E-02	4.778E-02	4.237E-03	0.109
EU-154	-2.977E-02		5.267E-02	7.330E-02	8.150E-03	-0.406

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	-4.099E-02		3.941E-02	5.348E-02	4.647E-03	-0.767
TB-160	-2.337E-02		7.251E-02	1.048E-01	1.048E-02	-0.223
HO-166M	-9.082E-03		2.635E-02	4.179E-02	4.233E-03	-0.217
TA-182	-1.540E-02		6.387E-02	9.709E-02	7.922E-03	-0.159
IR-192	-3.204E-03		1.417E-02	2.289E-02	2.214E-03	-0.140
HG-203	-4.771E-03		1.440E-02	2.316E-02	2.351E-03	-0.206
BI-207	1.027E-02		2.367E-02	4.166E-02	3.761E-03	0.246
TL-208	-2.182E-02		1.940E-02	2.474E-02	2.541E-03	-0.882
PB-210	-5.129E-01		8.700E-01	1.332E+00	1.224E-01	-0.385
BI-211	2.821E-02		1.009E-01	1.594E-01	1.527E-02	0.177
PB-211	-2.045E-01		3.154E-01	4.441E-01	2.148E-01	-0.460
BI-212	1.246E-01		2.350E-01	4.185E-01	5.675E-02	0.298
PB-212	-1.044E-02		2.960E-02	4.856E-02	5.185E-03	-0.215
BI-214	-1.656E-02		4.158E-02	6.084E-02	6.797E-03	-0.272
PB-214	1.691E-02		3.630E-02	5.837E-02	6.446E-03	0.290
RN-219	6.419E-02		1.675E-01	2.878E-01	4.253E-02	0.223
RA-223	-2.266E-01		2.811E-01	4.179E-01	7.448E-02	-0.542
RA-224	-3.579E-01		2.839E-01	4.222E-01	4.081E-02	-0.848
RA-226	-1.656E-02		4.158E-02	6.084E-02	6.797E-03	-0.272
AC-227	9.977E-03		1.070E-01	1.807E-01	2.335E-02	0.055
TH-227	9.977E-03		1.070E-01	1.807E-01	2.599E-02	0.055
AC-228	2.259E-02		6.528E-02	1.171E-01	1.472E-02	0.193
RA-228	2.259E-02		6.528E-02	1.171E-01	1.472E-02	0.193
TH-228	-1.044E-02		2.960E-02	4.856E-02	5.185E-03	-0.215
TH-229	8.977E-03		1.920E-01	3.267E-01	2.975E-02	0.027
PA-231	2.674E-01		5.898E-01	1.027E+00	1.582E-01	0.260
TH-231	-2.266E-01		2.811E-01	4.179E-01	7.448E-02	-0.542
TH-232	2.259E-02		6.528E-02	1.171E-01	1.472E-02	0.193
PA-233	-2.551E-03		2.847E-02	4.679E-02	4.643E-03	-0.055
PA-234	-5.034E-02		1.285E-01	1.945E-01	3.756E-02	-0.259
PA-234M	1.976E+00		2.436E+00	4.481E+00	4.793E-01	0.441
TH-234	5.384E-02		4.448E-01	7.899E-01	1.403E-01	0.068
U-235	7.261E-02		8.932E-02	1.465E-01	2.471E-02	0.496
NP-237	2.461E-02		7.844E-02	1.305E-01	2.992E-02	0.189
U-238	5.384E-02		4.448E-01	7.899E-01	1.403E-01	0.068
NP-239	-4.321E-02		1.440E-01	2.245E-01	1.880E-02	-0.192
AM-241	-8.496E-03		3.909E-02	6.298E-02	4.928E-03	-0.135
CM-247	1.473E-03		1.559E-02	2.586E-02	2.186E-03	0.057
CF-249	-2.340E-03		1.736E-02	2.801E-02	2.362E-03	-0.084
CF-251	-1.401E-02		5.404E-02	8.316E-02	7.390E-03	-0.168
ANH-511	-2.557E-02		3.003E-02	5.562E-02	5.183E-03	-0.460

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]G1202054948          *
* Acquisition date   : 11-MAR-2010 19:26:53 Detector SN#      :              *
* Detector ID        : GAM20                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:31.26           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 2-MAR-2010 00:00:00 Nuclide Library : SOLID            *
* Sample ID          : G1202054948           Analyst initials: MXR1          *
* Batch Number       : 958216                Sample Quantity : 1.4262E+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

---- 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	9.026E-02	1.328E-01	1.233E-01	6.777E-02 NOT IDENT.
NA-22	-1.194E-02	1.872E-02	1.324E-02	9.549E-03 NOT IDENT.
NA-24	6.833E+01	9.740E+02	0.000E+00	4.969E+02 SHORT HLIF
K-40	5.443E-02	2.125E-01	2.032E-01	1.084E-01 NOT IDENT.
SC-46	1.538E-02	1.761E-02	1.703E-02	8.985E-03 NOT IDENT.
V-48	-2.318E-03	1.991E-02	1.645E-02	1.016E-02 NOT IDENT.
CR-51	8.114E-02	1.322E-01	1.237E-01	6.746E-02 NOT IDENT.
MN-54	-3.994E-03	1.512E-02	1.244E-02	7.712E-03 NOT IDENT.
CO-56	4.132E-02	1.784E-02	1.889E-02	9.100E-03 FAIL ABUN
CO-57	-1.591E-03	9.687E-03	8.286E-03	4.942E-03 NOT IDENT.
CO-58	1.084E-02	1.431E-02	1.393E-02	7.301E-03 NOT IDENT.
FE-59	-2.555E-02	3.174E-02	2.148E-02	1.620E-02 NOT IDENT.
CO-60	-1.214E-02	1.779E-02	1.211E-02	9.075E-03 NOT IDENT.
ZN-65	-1.331E-02	3.552E-02	2.757E-02	1.812E-02 NOT IDENT.
SE-75	-1.394E-03	1.771E-02	1.564E-02	9.035E-03 NOT IDENT.
SR-85	-7.222E-02	3.146E-02	2.148E-02	1.605E-02 NOT IDENT.
Y-88	5.420E-03	1.640E-02	1.508E-02	8.367E-03 NOT IDENT.
Y-91	3.381E+00	7.136E+00	6.541E+00	3.641E+00 NOT IDENT.
NB-94	9.331E-03	1.592E-02	1.489E-02	8.123E-03 NOT IDENT.
NB-95	-1.017E-02	1.760E-02	1.363E-02	8.980E-03 NOT IDENT.
NB-95M	-6.536E-02	5.321E-02	4.152E-02	2.715E-02 NOT IDENT.
ZR-95	1.108E-02	2.813E-02	2.590E-02	1.435E-02 NOT IDENT.
MO-99	1.059E+00	1.555E+00	1.465E+00	7.935E-01 NOT IDENT.
TC-99M	-8.772E+09	7.244E+09	0.000E+00	3.696E+09 SHORT HLIF
RU-103	3.385E-03	1.580E-02	1.384E-02	8.063E-03 NOT IDENT.
RH-106	1.587E-02	1.548E-01	1.311E-01	7.898E-02 NOT IDENT.

RU-106	1.587E-02	1.548E-01	1.311E-01	7.897E-02	NOT IDENT.
AG-108M	4.115E-03	1.271E-02	1.138E-02	6.485E-03	NOT IDENT.
CD-109	7.335E-02	2.874E-01	2.331E-01	1.466E-01	NOT IDENT.
AG-110M	3.625E-03	1.444E-02	1.313E-02	7.368E-03	NOT IDENT.
SN-113	1.362E-04	1.703E-02	1.476E-02	8.690E-03	NOT IDENT.
CD-115	1.622E-02	9.253E-01	7.850E-01	4.721E-01	NOT IDENT.
SN-117M	7.899E-03	1.701E-02	1.517E-02	8.678E-03	NOT IDENT.
TE-123M	5.186E-03	1.071E-02	9.586E-03	5.464E-03	NOT IDENT.
SB-124	-7.395E-03	3.759E-02	2.999E-02	1.918E-02	NOT IDENT.
SB-125	1.411E-03	3.902E-02	3.372E-02	1.991E-02	NOT IDENT.
TE-125M	-8.600E-01	3.527E+00	3.017E+00	1.800E+00	NOT IDENT.
I-126	-2.924E-02	7.395E-02	6.135E-02	3.773E-02	NOT IDENT.
SB-126	-2.181E-02	3.908E-02	3.060E-02	1.994E-02	NOT IDENT.
SN-126	-2.541E-04	2.928E-02	2.310E-02	1.494E-02	NOT IDENT.
SB-127	7.784E-02	2.047E-01	1.893E-01	1.044E-01	NOT IDENT.
I-131	-6.855E-03	3.784E-02	3.234E-02	1.931E-02	NOT IDENT.
TE-132	-7.541E-02	9.451E-02	7.820E-02	4.822E-02	NOT IDENT.
BA-133	-1.507E-02	1.814E-02	1.415E-02	9.254E-03	NOT IDENT.
I-133	4.748E+00	3.586E+01	0.000E+00	1.830E+01	SHORT HLIF
CS-134	5.144E-03	1.859E-02	1.678E-02	9.483E-03	NOT IDENT.
CS-135	3.025E-04	6.021E-02	5.357E-02	3.072E-02	NOT IDENT.
I-135	-1.702E+08	3.716E+09	0.000E+00	1.896E+09	SHORT HLIF
CS-136	-2.333E-02	3.626E-02	2.674E-02	1.850E-02	NOT IDENT.
BA-137M	-4.280E-03	1.521E-02	1.282E-02	7.762E-03	NOT IDENT.
CS-137	-4.522E-03	1.607E-02	1.355E-02	8.199E-03	NOT IDENT.
CE-139	-9.546E-03	1.207E-02	9.452E-03	6.157E-03	NOT IDENT.
BA-140	7.873E-03	7.900E-02	6.781E-02	4.030E-02	NOT IDENT.
LA-140	1.022E-02	3.125E-02	2.852E-02	1.594E-02	NOT IDENT.
CE-141	1.851E-02	2.220E-02	2.047E-02	1.133E-02	NOT IDENT.
CE-143	1.565E+00	3.823E+00	3.492E+00	1.951E+00	NOT IDENT.
CE-144	-3.315E-03	7.655E-02	6.588E-02	3.905E-02	NOT IDENT.
PM-144	2.082E-03	1.622E-02	1.441E-02	8.274E-03	NOT IDENT.
PR-144	1.484E-01	1.209E+00	1.074E+00	6.170E-01	NOT IDENT.
PM-146	-6.699E-03	1.823E-02	1.480E-02	9.302E-03	NOT IDENT.
ND-147	4.182E-02	1.712E-01	1.501E-01	8.734E-02	NOT IDENT.
PM-149	-2.402E+00	7.498E+00	6.418E+00	3.825E+00	NOT IDENT.
EU-152	-3.489E-02	3.971E-02	3.081E-02	2.026E-02	NOT IDENT.
GD-153	5.204E-03	3.178E-02	2.543E-02	1.622E-02	NOT IDENT.
EU-154	-2.977E-02	5.162E-02	3.695E-02	2.634E-02	NOT IDENT.
EU-155	-4.099E-02	3.862E-02	2.842E-02	1.971E-02	NOT IDENT.
TB-160	-2.337E-02	7.106E-02	5.326E-02	3.625E-02	NOT IDENT.
HO-166M	-9.082E-03	2.582E-02	2.134E-02	1.317E-02	NOT IDENT.
TA-182	-1.540E-02	6.259E-02	4.899E-02	3.194E-02	NOT IDENT.
IR-192	-3.204E-03	1.388E-02	1.189E-02	7.084E-03	NOT IDENT.
HG-203	-4.771E-03	1.411E-02	1.207E-02	7.199E-03	NOT IDENT.
BI-207	1.027E-02	2.320E-02	2.109E-02	1.184E-02	NOT IDENT.
TL-208	-2.182E-02	1.901E-02	1.269E-02	9.699E-03	NOT IDENT.
PB-210	-5.129E-01	8.526E-01	7.197E-01	4.350E-01	NOT IDENT.
BI-211	2.821E-02	9.892E-02	8.265E-02	5.047E-02	NOT IDENT.
PB-211	-2.045E-01	3.091E-01	2.295E-01	1.577E-01	NOT IDENT.
BI-212	1.246E-01	2.303E-01	2.136E-01	1.175E-01	NOT IDENT.
PB-212	-1.044E-02	2.901E-02	2.538E-02	1.480E-02	NOT IDENT.
BI-214	-1.656E-02	4.075E-02	3.117E-02	2.079E-02	NOT IDENT.
PB-214	1.691E-02	3.558E-02	3.026E-02	1.815E-02	NOT IDENT.
RN-219	6.419E-02	1.642E-01	1.488E-01	8.377E-02	NOT IDENT.
RA-223	-2.266E-01	2.755E-01	2.170E-01	1.406E-01	NOT IDENT.
RA-224	-3.579E-01	2.782E-01	2.206E-01	1.419E-01	NOT IDENT.
RA-226	-1.656E-02	4.075E-02	3.117E-02	2.079E-02	NOT IDENT.
AC-227	9.977E-03	1.048E-01	9.432E-02	5.348E-02	NOT IDENT.
TH-227	9.977E-03	1.048E-01	9.432E-02	5.348E-02	NOT IDENT.
AC-228	2.259E-02	6.397E-02	5.947E-02	3.264E-02	NOT IDENT.
RA-228	2.259E-02	6.397E-02	5.947E-02	3.264E-02	NOT IDENT.
TH-228	-1.044E-02	2.901E-02	2.538E-02	1.480E-02	NOT IDENT.
TH-229	8.977E-03	1.881E-01	1.715E-01	9.598E-02	NOT IDENT.
PA-231	2.674E-01	5.780E-01	5.350E-01	2.949E-01	NOT IDENT.
TH-231	-2.266E-01	2.755E-01	2.170E-01	1.406E-01	NOT IDENT.
TH-232	2.259E-02	6.397E-02	5.947E-02	3.264E-02	NOT IDENT.
PA-233	-2.551E-03	2.790E-02	2.432E-02	1.423E-02	NOT IDENT.
PA-234	-5.034E-02	1.259E-01	9.872E-02	6.425E-02	NOT IDENT.
PA-234M	1.976E+00	2.387E+00	2.271E+00	1.218E+00	NOT IDENT.
TH-234	5.384E-02	4.359E-01	4.241E-01	2.224E-01	FAIL ABUN
U-235	7.261E-02	8.753E-02	7.735E-02	4.466E-02	FAIL ABUN
NP-237	2.461E-02	7.687E-02	6.963E-02	3.922E-02	NOT IDENT.
U-238	5.384E-02	4.359E-01	4.241E-01	2.224E-01	FAIL ABUN
NP-239	-4.321E-02	1.412E-01	1.191E-01	7.202E-02	NOT IDENT.
AM-241	-8.496E-03	3.831E-02	3.386E-02	1.955E-02	NOT IDENT.
CM-247	1.473E-03	1.528E-02	1.337E-02	7.797E-03	NOT IDENT.
CF-249	-2.340E-03	1.702E-02	1.449E-02	8.682E-03	NOT IDENT.

CF-251	-1.401E-02	5.296E-02	4.373E-02	2.702E-02	NOT IDENT.
ANH-511	-2.557E-02	2.943E-02	2.861E-02	1.502E-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	65.1646
49.72	63.6473
57.36	66.6113
59.54	60.8961
63.29	62.3205
63.29	62.3205
64.28	65.4519
67.75	65.8506
69.67	71.1493
70.83	54.9937
72.81	70.5014
72.87	70.5084
72.87	70.5084
74.82	79.9594
74.82	79.9594
74.82	79.9594
74.97	79.9789
77.11	67.9071
77.11	67.9071
77.11	67.9071
79.69	78.5142
79.80	85.7605
80.12	79.6005
80.19	79.6091
80.57	75.5181
81.00	72.4627
81.07	72.4706
81.07	72.4706
83.79	73.8114
83.79	73.8114
85.43	77.1198
86.48	75.1523
86.55	75.1604
86.79	68.9212
86.94	78.9638
87.57	83.1142
88.03	75.3241
88.47	80.0832
89.96	78.6831
91.11	74.0844
92.59	73.7142
92.59	73.7142
93.35	73.7936
94.67	58.6165
94.87	58.6328
94.87	58.6328
95.86	63.4741
97.43	60.4312
98.44	60.5147
99.53	58.4781
100.11	57.4599
103.18	59.8330
103.37	57.7106
105.31	63.2151
106.12	54.7014
109.28	74.3096
111.00	72.3133
111.76	68.0613
116.30	55.4088
117.23	57.6471
121.12	53.5471
121.78	55.7766
122.06	65.6415
123.07	55.8622
131.20	55.2846
133.52	64.2983
136.00	62.2532

136.47	64.5101
140.51	81.5532
140.51	0.0000
143.76	44.8433
144.24	45.9882
144.24	45.9882
145.44	56.1549
152.43	55.4350
153.25	52.0846
154.21	63.4700
154.21	63.4700
156.02	64.7222
158.56	58.0577
159.00	52.3887
162.66	48.0075
163.33	50.3267
165.86	72.2368
176.60	49.8119
177.52	61.4484
181.07	54.6713
184.41	56.0049
185.72	49.0624
193.51	49.4037
197.04	51.3257
205.31	62.3849
210.85	61.7790
215.65	52.1355
222.11	54.2157
227.38	60.7944
228.16	63.5555
228.18	62.6486
235.69	82.1942
235.96	76.7300
235.96	76.7300
238.63	55.8346
238.63	55.8346
240.99	83.4435
242.00	78.9191
244.70	49.6548
252.40	46.2395
252.80	46.2532
256.23	47.2966
256.23	47.2966
260.90	48.3866
264.66	45.7177
268.22	42.0914
269.46	47.7448
269.46	47.7448
271.23	39.3680
273.65	44.1292
276.40	49.8573
277.37	39.5359
277.60	39.5423
278.00	43.3201
279.20	45.2402
279.54	45.2512
280.46	48.1094
283.69	35.9248
284.31	41.6146
285.41	46.3779
285.90	49.2340
287.50	50.2342
293.27	47.5739
295.22	50.4930
295.96	49.5641
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299.98	40.1383
300.09	42.0523
300.09	42.0523
300.13	42.0536
301.36	37.3046
302.85	30.6382
304.50	38.3386
304.50	38.3386
304.85	39.3058
308.46	38.4363
311.90	42.3726

316.51	40.5645
319.41	34.8322
320.08	30.9751
323.87	47.5420
323.87	47.5420
328.76	29.1948
333.37	43.9151
334.37	33.2005
334.37	33.2005
338.28	40.1298
338.28	40.1298
338.32	40.1310
338.32	40.1310
338.32	40.1310
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340.55	29.4031
344.28	41.2560
351.06	32.5443
351.93	29.6008
356.01	43.5173
364.49	50.6864
366.42	41.7872
383.85	33.1526
388.16	33.2306
388.63	27.1957
391.69	27.2410
400.66	20.2756
401.81	25.3597
402.40	28.4119
404.85	34.5447
410.95	40.7709
414.70	16.3403
423.72	29.7545
427.09	31.8609
427.87	28.7891
433.94	25.7832
453.88	30.2045
463.37	34.5282
468.07	32.5080
473.00	29.4308
476.78	17.9004
477.60	22.1209
487.02	17.9860
492.35	18.0301
497.08	23.3834
511.00	38.5041
514.00	147.7958
527.90	21.5509
529.87	0.0000
531.02	20.5012
537.26	18.3925
546.56	0.0000
563.25	17.5020
569.33	25.2222
569.50	25.2236
569.70	19.7419
583.19	25.3654
600.60	39.9792
602.73	45.5707
604.72	42.2699
609.32	34.5448
609.32	34.5448
610.33	30.0998
614.28	27.9129
618.01	30.1896
621.93	25.7564
621.93	25.7564
633.25	14.6210
635.95	25.2191
636.99	17.1199
645.85	18.9851
657.76	19.0697
661.66	23.6444
661.66	23.6444
664.57	21.8487
666.33	26.4179
666.50	26.4193
677.62	24.6968

685.70	15.5955
695.00	23.0109
696.49	25.7858
696.51	25.7858
697.00	32.2374
702.65	22.1502
706.68	25.8781
711.68	22.2205
720.70	17.6464
721.93	11.1498
722.78	15.8001
722.91	15.8010
723.31	16.7326
724.19	20.4569
727.33	13.0324
733.00	25.1826
735.93	16.8051
739.50	18.6948
747.24	18.7441
752.31	19.7147
753.82	15.0281
756.73	15.0430
763.94	16.9638
765.81	21.6894
766.42	18.8643
777.92	12.3081
778.90	16.1002
783.70	20.8683
785.37	18.0324
795.86	15.2367
801.95	12.4040
810.29	10.5233
810.76	9.5681
815.77	21.0832
818.51	14.3873
832.01	18.3010
834.85	18.3172
836.80	0.0000
846.77	14.5140
856.80	12.6172
860.56	12.6315
871.09	22.4194
873.19	13.6551
875.33	0.0000
879.36	18.5663
880.51	12.7074
883.24	19.5659
884.68	24.4678
889.28	12.7404
898.04	8.8431
911.20	8.8770
911.20	8.8770
911.20	8.8770
926.50	12.8788
937.49	13.9128
944.13	10.9522
946.00	15.9387
949.00	11.9643
962.29	15.0110
964.08	11.0134
966.15	24.0428
968.97	19.0487
968.97	19.0487
968.97	19.0487
983.53	10.0659
996.26	21.2117
1001.03	11.1251
1004.73	14.1733
1037.84	11.9156
1038.76	0.0000
1048.07	18.4333
1050.41	16.3945
1050.41	16.3945
1063.66	12.3381
1085.87	10.3403
1099.45	14.5257
1112.07	15.6123
1115.54	15.6262

1120.29	11.4727
1120.29	11.4727
1120.55	9.3872
1121.30	10.4321
1131.51	0.0000
1173.23	6.3387
1177.93	11.6338
1189.05	7.4228
1204.77	8.5145
1221.41	10.6846
1231.02	7.4956
1235.36	8.5750
1238.28	10.7256
1260.41	0.0000
1271.85	10.8076
1274.44	14.0582
1274.54	15.1396
1291.59	8.6840
1298.22	0.0000
1312.11	9.8134
1332.49	13.1426
1365.19	11.0293
1368.63	0.0000
1384.29	10.1505
1408.01	10.2010
1457.56	0.0000
1460.82	5.6243
1489.16	8.4840
1505.03	9.4560
1596.21	6.7357
1620.50	6.7662
1678.03	0.0000
1690.97	6.8533
1764.49	7.9339
1764.49	7.9339
1770.23	6.9490
1771.35	8.9363
1791.20	0.0000
1836.06	4.0155

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202054948

Total Uranium Activity	1.9376E-01	ug/g
Total Uranium Counting Unc.	1.2974E+00	ug/g
Total Uranium Tpu	6.6192E-07	ug/g
Total Uranium Mda	1.2623E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958216                          SAMPLE ID   : G1202054948
*  ANALYST       : MXR1                             DETECTOR    : GAM20
*  SAMPLE DATE   : 2-MAR-2010 00:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 11-MAR-2010 19:26:53.99          SAMPLE ALQT  : 142.620 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.089E-02
GROSS GAMMA ERROR  (pCi/GRAM )  : 3.114E-02
GROSS GAMMA MDA    (pCi/GRAM )  : 1.321E-01
GROSS GAMMA DLC    (pCi/GRAM )  : 6.165E-02

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 21:56:34.44

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054949.CNF;1
Sample date   : 23-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 19:27:29
Sample ID    : G1202054949 Sample quantity : 1.26980E+02 GRAM
Detector name : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
Energy tolerance : 1.80000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID : 958216 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	74.62	454	464	1.38	149.24	145	13	6.30E-02	9.4	4.54E+00
2	1	77.00	657	380	1.14	154.01	145	13	9.13E-02	6.4	
3	2	87.05	252	433	1.53	174.11	164	29	3.50E-02	16.1	1.73E+00
4	2	89.73	186	368	1.40	179.47	164	29	2.58E-02	20.0	
5	2	92.68*	263	385	1.56	185.35	164	29	3.65E-02	16.1	
6	0	128.63	140	436	1.25	257.26	252	11	1.94E-02	30.1	
7	0	185.88*	133	397	1.03	371.77	366	11	1.85E-02	31.2	
8	0	208.83	94	346	1.07	417.66	414	10	1.30E-02	38.7	
9	4	238.26*	1259	183	1.16	476.52	469	19	1.75E-01	3.4	1.23E+00
10	4	241.25	313	282	1.80	482.49	469	19	4.34E-02	14.4	
11	0	269.40	75	279	1.07	538.80	533	12	1.04E-02	46.1	
12	0	294.74	311	248	1.24	589.49	584	11	4.32E-02	11.3	
13	0	299.99	93	228	0.93	599.98	595	11	1.29E-02	33.4	
14	0	337.91	272	186	1.26	675.81	671	12	3.78E-02	11.7	
15	0	351.39*	565	199	1.28	702.78	698	11	7.85E-02	6.5	
16	0	510.16*	175	85	2.12	1020.32	1014	14	2.42E-02	15.8	
17	0	582.38*	394	118	1.51	1164.76	1157	17	5.47E-02	8.2	
18	0	608.58*	421	149	1.64	1217.15	1208	17	5.85E-02	8.3	
19	0	726.01	99	91	1.72	1452.03	1444	17	1.38E-02	24.0	
20	0	768.68	96	118	4.85	1537.36	1527	25	1.33E-02	32.2	
21	0	793.86	38	59	1.82	1587.72	1583	10	5.32E-03	41.1	
22	0	859.96	63	57	1.21	1719.93	1713	14	8.81E-03	28.6	
23	0	910.19*	295	50	1.81	1820.38	1813	17	4.10E-02	8.2	
24	1	963.81	58	35	2.12	1927.61	1921	23	8.08E-03	25.1	1.60E+00
25	1	967.82	183	27	2.13	1935.64	1921	23	2.54E-02	9.9	
26	0	1119.83	95	84	1.92	2239.66	2234	18	1.32E-02	26.0	
27	0	1459.10	1275	22	2.51	2918.20	2910	22	1.77E-01	3.0	
28	0	1508.66	17	11	2.80	3017.33	3009	12	2.30E-03	48.3	
29	0	1763.25*	37	21	1.88	3526.51	3518	14	5.18E-03	31.9	

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

VMS Nuclide Identification Report V3.1 Generated 11-MAR-2010 21:56:37

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054949.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 23-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 19:27:29
 Sample ID : G1202054949 Sample quantity : 126.98 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA23 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.80 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	*	3.544E+01	3.379E+00	6.287E-01	4.703E-02	56.373
CD-109	+	88.03	*	3.953E+00	1.330E+00	1.395E+00	1.362E-01	2.834
SN-126		64.28		8.107E-01	6.936E-01	1.183E+00	1.800E-01	0.685
	+	86.94		1.604E+00	8.436E-01	5.741E-01	2.388E-01	2.793
	+	87.57	*	3.857E-01	1.297E-01	1.369E-01	1.332E-02	2.817
CS-135	+	268.22	*	3.265E-01	3.023E-01	2.851E-01	2.178E-02	1.145
TL-208		277.37		3.481E-01	4.668E-01	7.707E-01	8.316E-02	0.452
	+	583.19	*	6.016E-01	1.059E-01	6.505E-02	4.213E-03	9.248
	+	860.56		9.321E-01	5.389E-01	4.909E-01	4.437E-02	1.899
BI-211	+	72.87		2.703E+01	5.634E+00	6.489E+00	5.724E-01	4.165
	+	351.06	*	3.755E+00	5.450E-01	3.993E-01	2.602E-02	9.403
PB-212	+	74.82		3.234E+00	7.438E-01	7.156E-01	9.432E-02	4.518
	+	77.11		2.644E+00	4.117E-01	3.925E-01	3.531E-02	6.736
	+	238.63	*	1.841E+00	1.829E-01	1.048E-01	7.600E-03	17.569
	+	300.09		2.128E+00	1.433E+00	1.395E+00	1.178E-01	1.525
BI-214	+	609.32	*	1.247E+00	2.277E-01	1.373E-01	1.041E-02	9.078
	+	1120.29		1.492E+00	7.867E-01	5.820E-01	5.442E-02	2.563
	+	1764.49		8.241E-01	5.288E-01	3.786E-01	2.354E-02	2.177
PB-214	+	74.82		5.731E+00	1.278E+00	1.268E+00	1.511E-01	4.518
	+	77.11		4.661E+00	8.213E-01	6.919E-01	8.445E-02	6.736
	+	242.00		2.772E+00	8.289E-01	6.058E-01	4.898E-02	4.576
	+	295.22		1.265E+00	3.068E-01	2.736E-01	2.398E-02	4.623
	+	351.93	*	1.363E+00	2.116E-01	1.425E-01	1.217E-02	9.563
RA-224	+	240.99	*	4.902E+00	1.438E+00	1.123E+00	6.327E-02	4.365
RA-226	+	609.32	*	1.247E+00	2.277E-01	1.373E-01	1.041E-02	9.078
	+	1120.29		1.492E+00	7.867E-01	5.820E-01	5.442E-02	2.563
	+	1764.49		8.241E-01	5.288E-01	3.786E-01	2.354E-02	2.177
AC-228	+	338.32		2.011E+00	9.528E-01	4.477E-01	1.846E-01	4.493
	+	911.20	*	2.217E+00	4.503E-01	2.770E-01	3.290E-02	8.003
	+	968.97		2.376E+00	7.462E-01	3.966E-01	9.640E-02	5.992
RA-228	+	338.32		2.011E+00	9.528E-01	4.477E-01	1.846E-01	4.493
	+	911.20	*	2.217E+00	4.503E-01	2.770E-01	3.290E-02	8.003
	+	968.97		2.376E+00	7.462E-01	3.966E-01	9.640E-02	5.992
TH-228	+	74.82		3.234E+00	6.751E-01	7.156E-01	6.419E-02	4.518

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		2.644E+00	4.117E-01	3.925E-01	3.531E-02	6.736
	+	238.63	*	1.841E+00	1.829E-01	1.048E-01	7.600E-03	17.569
	+	300.09		2.128E+00	1.924E+00	1.395E+00	8.495E-01	1.525
TH-229	+	85.43		9.709E-01	3.266E-01	3.553E-01	3.392E-02	2.733
	+	88.47		4.235E-01	1.740E-01	2.086E-01	2.017E-02	2.030
		193.51	*	5.579E-01	6.117E-01	1.028E+00	5.442E-02	0.543
		210.85		1.592E+00	1.207E+00	1.825E+00	9.907E-02	0.872
TH-232	+	338.32		2.011E+00	4.837E-01	4.477E-01	2.644E-02	4.493
	+	911.20	*	2.217E+00	4.503E-01	2.770E-01	3.290E-02	8.003
	+	968.97		2.376E+00	7.462E-01	3.966E-01	9.640E-02	5.992
U-235	+	89.96		2.929E+00	1.380E+00	1.417E+00	3.527E-01	2.067
	+	93.35		2.484E+00	9.854E-01	8.477E-01	1.963E-01	2.930
		143.76	*	1.400E-01	2.384E-01	3.938E-01	6.132E-02	0.356
		163.33		-3.698E-01	5.213E-01	8.190E-01	1.356E-01	-0.452
	+	185.72		1.254E-01	7.843E-02	7.353E-02	3.850E-03	1.705
		205.31		-8.194E-02	6.609E-01	9.253E-01	1.559E-01	-0.089
NP-237	+	86.48	*	1.151E+00	4.562E-01	4.147E-01	9.570E-02	2.775
		95.86		-3.967E-01	1.209E+00	1.726E+00	4.126E-01	-0.230
ANH-511	+	511.00	*	2.026E-01	6.503E-02	5.286E-02	3.070E-03	3.833

---- 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	*	8.886E-02	3.783E-01	6.329E-01	4.299E-02	0.140
NA-22		1274.54	*	-3.138E-02	5.893E-02	9.102E-02	6.113E-03	-0.345
NA-24		1368.63	*	-1.217E+00	5.893E-02	Half-Life too short		
SC-46		889.28	*	1.969E-02	4.714E-02	8.130E-02	7.264E-03	0.242
	+	1120.55		2.548E-01	1.333E-01	1.487E-01	9.688E-03	1.714
V-48		944.13		2.686E-01	1.178E+00	1.994E+00	1.737E-01	0.135
		983.53	*	8.106E-03	9.219E-02	1.539E-01	1.280E-02	0.053
		1312.11		9.886E-02	1.055E-01	1.883E-01	1.340E-02	0.525
CR-51		320.08	*	-2.642E-01	4.366E-01	7.086E-01	4.640E-02	-0.373
MN-54		834.85	*	8.766E-03	4.920E-02	8.328E-02	6.595E-03	0.105
CO-56		846.77	*	1.200E-02	4.931E-02	8.396E-02	6.831E-03	0.143
		1037.84		-7.897E-02	4.017E-01	6.554E-01	5.366E-02	-0.121
		1238.28		8.267E-02	1.268E-01	2.164E-01	1.440E-02	0.382
		1771.35		1.190E-01	2.668E-01	4.768E-01	2.950E-02	0.250
CO-57		122.06	*	6.173E-03	3.132E-02	5.016E-02	2.957E-03	0.123
		136.47		-3.618E-02	2.494E-01	4.065E-01	2.638E-02	-0.089
CO-58		810.76	*	-2.450E-02	4.890E-02	7.857E-02	5.903E-03	-0.312
FE-59		1099.45	*	8.418E-02	1.155E-01	2.020E-01	1.555E-02	0.417
		1291.59		-1.086E-01	1.589E-01	2.391E-01	1.985E-02	-0.454
CO-60		1173.23		1.598E-02	5.568E-02	9.353E-02	5.276E-03	0.171
		1332.49	*	8.448E-03	4.611E-02	7.662E-02	5.625E-03	0.110
ZN-65		1115.54	*	1.406E-01	1.486E-01	2.304E-01	1.522E-02	0.610
SE-75		121.12		8.512E-02	1.588E-01	2.661E-01	2.439E-02	0.320
		136.00		-1.181E-02	4.874E-02	7.916E-02	4.472E-03	-0.149
		264.66	*	-2.407E-02	6.318E-02	8.552E-02	4.980E-03	-0.281

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		279.54		2.751E-02	1.260E-01	2.146E-01	1.351E-02	0.128
		400.66		1.090E-01	3.146E-01	5.322E-01	4.825E-02	0.205
SR-85		514.00	*	5.684E-03	4.758E-02	6.840E-02	3.969E-03	0.083
Y-88		898.04		-1.094E-04	5.452E-02	9.078E-02	8.300E-03	-0.001
		1836.06	*	4.789E-03	4.128E-02	6.965E-02	4.101E-03	0.069
Y-91		1204.77	*	9.403E+00	2.916E+01	4.893E+01	2.918E+00	0.192
NB-94		702.65	*	1.695E-02	4.345E-02	7.212E-02	4.121E-03	0.235
		871.09		8.472E-03	3.981E-02	6.763E-02	5.808E-03	0.125
NB-95		765.81	*	9.354E-02	6.203E-02	9.928E-02	6.672E-03	0.942
NB-95M		235.69	*	9.260E-01	2.024E-01	3.317E-01	2.456E-02	2.791
ZR-95		724.19		3.043E-01	1.420E-01	2.363E-01	1.665E-02	1.287
		756.73	*	7.818E-02	9.204E-02	1.579E-01	1.218E-02	0.495
MO-99		140.51		-2.759E+01	3.707E+01	5.816E+01	1.325E+01	-0.474
		181.07		-2.050E+01	3.214E+01	4.361E+01	7.626E+00	-0.470
		366.42		-1.034E+02	1.543E+02	2.472E+02	1.449E+01	-0.418
		739.50	*	-1.310E+00	2.123E+01	3.397E+01	4.965E+00	-0.039
		777.92		2.335E+01	6.227E+01	9.427E+01	6.527E+00	0.248
TC-99M		140.51	*	-9.516E+11	6.227E+01	Half-Life too short		
RU-103		497.08	*	2.332E-02	4.749E-02	8.056E-02	1.002E-02	0.289
	+	610.33		1.314E+01	2.935E+00	3.130E+00	4.669E-01	4.198
RH-106		621.93	*	1.100E-01	3.823E-01	6.344E-01	7.241E-02	0.173
		1050.41		-1.073E-01	3.081E+00	5.067E+00	3.812E-01	-0.021
RU-106		621.93	*	1.100E-01	3.821E-01	6.344E-01	3.409E-02	0.173
		1050.41		-1.073E-01	3.081E+00	5.067E+00	3.812E-01	-0.021
AG-108M		433.94	*	-1.880E-02	3.291E-02	5.230E-02	3.269E-03	-0.359
		614.28		-3.189E-02	4.726E-02	6.119E-02	3.584E-03	-0.521
		722.91		-4.769E-02	6.034E-02	7.647E-02	4.908E-03	-0.624
AG-110M		657.76	*	-1.489E-02	4.306E-02	6.778E-02	3.767E-03	-0.220
		677.62		-4.701E-02	3.765E-01	6.022E-01	3.451E-02	-0.078
		706.68		-5.539E-02	2.725E-01	4.324E-01	2.655E-02	-0.128
		763.94		-9.314E-02	2.394E-01	3.155E-01	2.205E-02	-0.295
		884.68		-3.285E-02	6.231E-02	9.911E-02	9.036E-03	-0.331
		937.49		-5.500E-02	1.285E-01	2.049E-01	1.860E-02	-0.268
		1384.29		1.432E-02	1.708E-01	2.803E-01	2.122E-02	0.051
		1505.03		2.620E-01	3.425E-01	5.545E-01	3.938E-02	0.472
SN-113		391.69	*	-1.385E-03	5.410E-02	8.979E-02	5.531E-03	-0.015
CD-115		260.90		8.473E+01	2.367E+02	3.857E+02	2.215E+01	0.220
		492.35		-3.096E+01	6.908E+01	1.101E+02	6.430E+00	-0.281
		527.90	*	-1.889E+00	1.988E+01	3.236E+01	1.867E+00	-0.058
SN-117M		156.02		-3.100E+00	2.920E+00	4.560E+00	2.386E-01	-0.680
		158.56	*	6.137E-02	6.936E-02	1.168E-01	6.072E-03	0.525
TE-123M		159.00	*	3.718E-02	3.391E-02	5.755E-02	3.037E-03	0.646
SB-124		602.73		2.053E-02	5.266E-02	7.708E-02	4.226E-03	0.266
		645.85		-1.478E-01	5.740E-01	9.097E-01	5.461E-02	-0.162
		722.78		-5.406E-01	6.115E-01	7.653E-01	4.826E-02	-0.706
		1690.97	*	4.776E-02	8.280E-02	1.521E-01	1.064E-02	0.314
SB-125		427.87	*	-6.821E-02	1.008E-01	1.591E-01	9.664E-03	-0.429
		463.37		5.077E-01	3.531E-01	6.260E-01	4.243E-02	0.811
		600.60		1.620E-01	2.373E-01	3.576E-01	2.305E-02	0.453

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	635.95			-1.101E-01	3.237E-01	5.102E-01	3.247E-02	-0.216
I-126	109.28	*		-1.009E+01	1.196E+01	1.907E+01	1.735E+00	-0.529
	388.63			4.865E-02	2.082E-01	3.507E-01	2.028E-02	0.139
	666.33	*		-2.546E-02	2.960E-01	4.758E-01	2.462E-02	-0.054
	753.82			1.990E+00	2.445E+00	4.183E+00	2.729E-01	0.476
SB-126	414.70			-3.937E-02	8.750E-02	1.407E-01	8.189E-03	-0.280
	666.50			5.715E-03	1.006E-01	1.635E-01	8.468E-03	0.035
	695.00			-9.297E-03	1.152E-01	1.849E-01	1.035E-02	-0.050
	697.00			-1.542E-02	3.980E-01	6.407E-01	3.606E-02	-0.024
	720.70	*		2.873E-02	2.180E-01	3.073E-01	1.842E-02	0.093
	856.80			7.058E-01	7.219E-01	1.148E+00	9.551E-02	0.615
SB-127	252.40			-1.677E+00	6.347E+00	9.964E+00	4.097E+00	-0.168
	473.00			-1.279E-01	2.400E+00	3.940E+00	4.514E-01	-0.032
	685.70	*		-8.091E-01	1.970E+00	3.068E+00	2.958E-01	-0.264
	783.70			3.749E+00	5.123E+00	9.034E+00	1.053E+00	0.415
I-131	80.19			-3.120E+00	9.278E+00	9.559E+00	8.825E-01	-0.326
	284.31			-2.447E-01	1.907E+00	3.194E+00	2.071E-01	-0.077
	364.49	*		1.399E-01	1.445E-01	2.537E-01	1.660E-02	0.552
	636.99			6.650E-03	2.075E+00	3.366E+00	2.042E-01	0.002
TE-132	49.72			-7.141E+00	3.912E+01	6.539E+01	7.308E+00	-0.109
	111.76			-4.173E+01	5.129E+01	8.177E+01	8.126E+00	-0.510
	116.30			2.478E+01	4.497E+01	7.543E+01	7.316E+00	0.328
	228.16	*		-8.840E-01	1.150E+00	1.771E+00	2.593E-01	-0.499
BA-133	81.00			8.825E-02	1.610E-01	1.781E-01	2.824E-02	0.496
	276.40			2.612E-01	4.468E-01	7.082E-01	8.918E-02	0.369
	302.85			3.271E-02	1.825E-01	2.705E-01	3.097E-02	0.121
	356.01	*		2.934E-02	5.525E-02	8.337E-02	9.437E-03	0.352
	383.85			-8.872E-02	3.377E-01	5.530E-01	5.898E-02	-0.160
I-133	529.87	*		5.876E-04	3.377E-01	Half-Life	too short	
	875.33			9.863E-02	3.377E-01	Half-Life	too short	
	1298.22			3.539E-02	3.377E-01	Half-Life	too short	
CS-134	563.25			1.769E-01	4.498E-01	7.486E-01	4.330E-02	0.236
	569.33			-8.770E-02	2.319E-01	3.675E-01	2.136E-02	-0.239
	604.72			2.433E-02	4.736E-02	6.993E-02	3.849E-03	0.348
	795.86	*		9.409E-02	5.968E-02	1.008E-01	7.365E-03	0.933
	801.95			-4.495E-01	4.699E-01	7.021E-01	5.190E-02	-0.640
	1365.19			-3.402E-01	1.397E+00	2.186E+00	1.701E-01	-0.156
I-135	546.56			2.585E+10	1.397E+00	Half-Life	too short	
	836.80			8.413E+11	1.397E+00	Half-Life	too short	
	1038.76			1.170E+11	1.397E+00	Half-Life	too short	
	1131.51			-9.002E+10	1.397E+00	Half-Life	too short	
	1260.41	*		-2.565E+10	1.397E+00	Half-Life	too short	
	1457.56			3.905E+13	1.397E+00	Half-Life	too short	
	1678.03			2.110E+11	1.397E+00	Half-Life	too short	
	1791.20			3.865E+10	1.397E+00	Half-Life	too short	
CS-136	153.25			3.520E-01	1.073E+00	1.773E+00	1.361E-01	0.199
	176.60			1.636E-01	6.329E-01	1.039E+00	6.800E-02	0.158
	273.65			-9.807E-01	7.961E-01	1.006E+00	6.878E-02	-0.975
	340.55			3.248E-01	2.021E-01	3.250E-01	2.072E-02	0.999

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		1.145E-02	9.431E-02	1.594E-01	1.217E-02	0.072
		1048.07	*	-5.598E-02	1.436E-01	2.283E-01	1.819E-02	-0.245
		1235.36		1.229E+00	8.882E-01	1.572E+00	1.600E-01	0.782
BA-137M		661.66	*	2.276E-02	4.366E-02	7.349E-02	3.754E-03	0.310
CS-137		661.66	*	2.405E-02	4.613E-02	7.764E-02	3.988E-03	0.310
CE-139		165.86	*	3.284E-03	3.477E-02	5.683E-02	2.897E-03	0.058
BA-140		162.66		-6.096E-01	1.033E+00	1.642E+00	9.956E-02	-0.371
		304.85		2.485E-01	1.892E+00	2.793E+00	7.983E-01	0.089
		423.72		2.537E-02	2.296E+00	3.805E+00	1.228E+00	0.007
		537.26	*	-2.879E-01	3.633E-01	5.395E-01	1.797E-01	-0.534
LA-140		328.76		4.409E-01	3.813E-01	6.710E-01	4.434E-02	0.657
		487.02		8.323E-02	1.712E-01	2.908E-01	1.921E-02	0.286
		815.77		-3.321E-02	4.121E-01	6.854E-01	5.969E-02	-0.048
		1596.21	*	-7.408E-02	1.050E-01	1.561E-01	1.071E-02	-0.475
CE-141		145.44	*	-1.702E-02	7.658E-02	1.231E-01	6.945E-03	-0.138
CE-143		57.36		-1.789E-03	7.658E-02	Half-Life	too short	
	+	293.27	*	2.049E-03	7.658E-02	Half-Life	too short	
		664.57		-2.095E-03	7.658E-02	Half-Life	too short	
		721.93		-2.557E-03	7.658E-02	Half-Life	too short	
CE-144		80.12		-1.429E+00	4.542E+00	4.689E+00	4.298E-01	-0.305
		133.52	*	-1.026E-01	2.760E-01	3.885E-01	5.366E-02	-0.264
PM-144		476.78		3.021E-02	7.594E-02	1.283E-01	8.860E-03	0.235
		618.01		-1.631E-02	3.760E-02	5.891E-02	3.401E-03	-0.277
		696.49	*	-2.513E-02	4.811E-02	7.471E-02	4.203E-03	-0.336
PR-144		696.51	*	-1.863E+00	3.604E+00	5.599E+00	3.147E-01	-0.333
		1489.16		-2.743E+00	1.673E+01	2.633E+01	1.879E+00	-0.104
PM-146		453.88	*	6.624E-03	5.076E-02	8.448E-02	7.177E-03	0.078
		633.25		-7.213E-02	1.731E+00	2.800E+00	1.052E+00	-0.026
		735.93		-1.538E-01	1.912E-01	2.787E-01	7.633E-02	-0.552
		747.24		4.082E-02	1.249E-01	2.061E-01	2.761E-02	0.198
ND-147	+	91.11		1.023E+00	4.218E-01	6.809E-01	6.698E-02	1.502
		319.41		-1.260E+00	4.037E+00	6.658E+00	3.934E-01	-0.189
		531.02	*	1.506E-01	7.571E-01	1.256E+00	1.697E-01	0.120
PM-149		285.90	*	1.126E+01	1.560E+02	2.637E+02	3.743E+01	0.043
EU-152		121.78		2.139E-02	9.002E-02	1.444E-01	1.106E-02	0.148
		244.70		2.011E-01	4.068E-01	5.893E-01	3.333E-02	0.341
		344.28	*	-8.902E-02	1.398E-01	1.810E-01	1.199E-02	-0.492
		778.90		-3.546E-02	3.516E-01	5.034E-01	3.493E-02	-0.070
	+	964.08		8.131E-01	4.147E-01	7.203E-01	6.137E-02	1.129
		1085.87		2.765E-01	4.553E-01	7.922E-01	5.573E-02	0.349
		1112.07		9.672E-02	4.546E-01	7.064E-01	4.695E-02	0.137
		1408.01		2.645E-02	2.217E-01	3.644E-01	2.650E-02	0.073
GD-153		69.67		2.531E-01	2.518E+00	3.718E+00	3.249E-01	0.068
		97.43	*	-4.912E-02	1.128E-01	1.590E-01	1.299E-02	-0.309
		103.18		-9.434E-02	1.381E-01	2.226E-01	1.663E-02	-0.424
EU-154		123.07		2.606E-02	6.892E-02	1.013E-01	9.550E-03	0.257
		723.31		-1.272E-02	2.677E-01	3.696E-01	2.671E-02	-0.034
		873.19		-1.388E-01	3.376E-01	5.422E-01	6.453E-02	-0.256
		996.26		-2.897E-01	4.358E-01	6.717E-01	1.159E-01	-0.431

----- 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		-3.363E-01	2.942E-01	4.336E-01	4.876E-02	-0.776
		1274.44	*	-9.341E-02	1.666E-01	2.563E-01	2.564E-02	-0.364
		86.55		4.679E-01	1.575E-01	2.185E-01	2.124E-02	2.141
		105.31	*	1.877E-01	1.314E-01	2.264E-01	1.668E-02	0.829
TB-160	+	86.79		1.255E+00	4.222E-01	5.821E-01	5.624E-02	2.156
		197.04		-8.544E-01	6.531E-01	9.917E-01	5.279E-02	-0.862
		215.65		4.987E-01	9.405E-01	1.500E+00	8.194E-02	0.333
		298.57		3.031E-01	2.033E-01	2.487E-01	1.461E-02	1.219
	+	879.36	*	6.756E-02	1.731E-01	2.977E-01	2.604E-02	0.227
		962.29		1.545E+00	7.878E-01	1.253E+00	1.070E-01	1.233
		966.15		1.815E+00	3.921E-01	7.200E-01	6.120E-02	2.521
		1177.93		5.416E-02	4.692E-01	7.761E-01	4.415E-02	0.070
HO-166M	+	1271.85		-8.761E-02	9.118E-01	1.465E+00	9.780E-02	-0.060
		80.57		-1.192E-01	4.923E-01	5.114E-01	4.702E-02	-0.233
		184.41		9.960E-02	6.231E-02	7.581E-02	3.962E-03	1.314
		280.46		-3.886E-02	9.845E-02	1.630E-01	9.492E-03	-0.238
	+	410.95		1.447E-01	2.674E-01	4.581E-01	2.663E-02	0.316
		711.68	*	2.749E-02	7.284E-02	1.211E-01	7.087E-03	0.227
		752.31		6.291E-03	3.524E-01	5.671E-01	3.685E-02	0.011
		810.29		1.130E-03	6.987E-02	1.172E-01	8.765E-03	0.010
TA-182	+	67.75		-3.778E-02	1.470E-01	2.430E-01	2.115E-02	-0.156
		100.11		1.029E-01	2.155E-01	3.509E-01	2.746E-02	0.293
		152.43		3.303E-01	4.146E-01	6.968E-01	3.683E-02	0.474
		222.11		-3.232E-01	4.227E-01	6.557E-01	3.613E-02	-0.493
	+	1121.30		7.041E-01	3.683E-01	3.862E-01	2.511E-02	1.823
		1189.05		1.574E-01	3.925E-01	6.646E-01	3.856E-02	0.237
		1221.41	*	1.359E-01	2.784E-01	4.715E-01	2.894E-02	0.288
		1231.02		-6.786E-01	7.029E-01	1.063E+00	6.631E-02	-0.638
IR-192	+	295.96		9.457E-01	2.212E-01	3.205E-01	1.911E-02	2.951
		308.46		-2.246E-02	1.147E-01	1.907E-01	1.136E-02	-0.118
		316.51	*	-1.762E-02	3.946E-02	6.463E-02	3.834E-03	-0.273
		468.07		-1.768E-03	7.991E-02	1.315E-01	8.873E-03	-0.013
HG-203	+	70.83		4.962E-01	1.931E+00	2.867E+00	4.627E-01	0.173
		72.87		6.849E+00	1.680E+00	1.967E+00	3.078E-01	3.482
		279.20	*	2.138E-02	4.506E-02	7.756E-02	4.764E-03	0.276
		72.81		6.984E-01	2.807E-01	4.410E-01	3.890E-02	1.584
BI-207	+	74.97		9.320E-01	1.943E-01	3.145E-01	2.799E-02	2.964
		569.70		-1.297E-02	3.679E-02	5.847E-02	3.294E-03	-0.222
		1063.66	*	3.940E-02	6.297E-02	1.097E-01	8.056E-03	0.359
		1770.23		-7.150E-01	6.618E-01	9.060E-01	5.609E-02	-0.789
PB-210		46.54	*	-8.187E-02	6.107E+00	1.015E+01	7.844E-01	-0.008
PB-211		404.85	*	-5.618E-01	9.090E-01	1.387E+00	6.655E-01	-0.405
		427.09		-6.719E-01	1.691E+00	2.677E+00	1.227E+00	-0.251
		832.01		3.399E-01	1.241E+00	2.097E+00	1.085E+00	0.162
BI-212	+	727.33	*	2.344E+00	1.154E+00	1.298E+00	1.411E-01	1.806
		785.37		2.628E+00	3.740E+00	6.593E+00	4.647E-01	0.399
		1620.50		3.450E+00	2.760E+00	5.377E+00	3.647E-01	0.642
		271.23		3.563E-01	3.429E-01	5.081E-01	4.077E-02	0.701
RN-219		401.81	*	-5.948E-02	4.914E-01	8.101E-01	1.088E-01	-0.073

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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		1.927E-01	3.633E-01	4.023E-01	3.712E-02	0.479
		83.79		2.765E-01	1.456E-01	2.499E-01	2.354E-02	1.107
		94.87		1.230E+00	5.989E-01	9.402E-01	8.026E-02	1.308
		144.24		3.321E-01	8.065E-01	1.328E+00	9.164E-02	0.250
		154.21		2.482E-01	4.634E-01	7.711E-01	5.030E-02	0.322
	+	269.46		3.758E-01	3.476E-01	3.974E-01	2.398E-02	0.946
		323.87	*	-7.438E-01	7.933E-01	1.254E+00	2.026E-01	-0.593
AC-227	+	338.28		7.981E+00	2.035E+00	2.775E+00	2.861E-01	2.876
		79.69		8.113E-01	2.217E+00	2.419E+00	4.233E-01	0.335
		235.96		1.934E+00	2.975E-01	4.722E-01	3.779E-02	4.094
		256.23	*	-8.060E-02	2.981E-01	4.701E-01	4.786E-02	-0.171
	+	299.98		2.341E+00	1.585E+00	1.960E+00	2.162E-01	1.194
		304.50		3.256E-01	2.138E+00	3.161E+00	4.831E-01	0.103
		334.37		1.485E+00	2.162E+00	3.297E+00	4.704E-01	0.450
TH-227		79.80		8.775E-01	2.916E+00	3.164E+00	6.959E-01	0.277
		235.96		1.934E+00	2.900E-01	4.722E-01	3.415E-02	4.094
		256.23	*	-8.060E-02	2.982E-01	4.701E-01	5.632E-02	-0.171
	+	299.98		2.341E+00	1.585E+00	1.960E+00	2.162E-01	1.194
		304.50		3.256E-01	2.138E+00	3.161E+00	4.831E-01	0.103
		334.37		1.485E+00	2.162E+00	3.297E+00	4.704E-01	0.450
		283.69	*	5.586E-01	1.662E+00	2.843E+00	3.733E-01	0.197
PA-231	+	301.36		1.504E+00	1.017E+00	1.241E+00	1.289E-01	1.212
TH-231		81.07		1.927E-01	3.633E-01	4.023E-01	3.712E-02	0.479
		83.79		2.765E-01	1.456E-01	2.499E-01	2.354E-02	1.107
		94.87		1.230E+00	5.989E-01	9.402E-01	8.026E-02	1.308
		144.24		3.321E-01	8.065E-01	1.328E+00	9.164E-02	0.250
		154.21		2.482E-01	4.634E-01	7.711E-01	5.030E-02	0.322
	+	269.46		3.758E-01	3.476E-01	3.974E-01	2.398E-02	0.946
		323.87	*	-7.438E-01	7.933E-01	1.254E+00	2.026E-01	-0.593
PA-233	+	338.28		7.981E+00	2.035E+00	2.775E+00	2.861E-01	2.876
	+	300.13		1.059E+00	7.218E-01	8.865E-01	1.190E-01	1.195
		311.90	*	3.379E-02	7.323E-02	1.258E-01	7.864E-03	0.269
		340.48		1.541E+00	8.918E-01	1.339E+00	3.112E-01	1.151
		94.67		6.445E-01	2.288E-01	3.543E-01	4.381E-02	1.819
		98.44		6.422E-02	1.251E-01	1.777E-01	9.896E-02	0.362
		111.00		-1.264E-01	2.154E-01	3.468E-01	3.751E-02	-0.364
PA-234		131.20		1.276E-01	1.422E-01	2.137E-01	1.208E-02	0.597
		569.50		-9.317E-02	3.212E-01	5.127E-01	2.889E-02	-0.182
		733.00		1.138E-01	5.171E-01	7.358E-01	1.572E-01	0.155
		880.51		1.403E-01	3.380E-01	5.828E-01	5.110E-02	0.241
		883.24		-1.333E-01	3.681E-01	5.764E-01	3.876E-01	-0.231
		926.50		-4.449E-02	1.990E-01	3.233E-01	8.200E-02	-0.138
		946.00	*	4.329E-01	3.812E-01	6.774E-01	1.273E-01	0.639
		949.00		-2.636E-02	5.356E-01	8.851E-01	7.672E-02	-0.030
	PA-234M	766.42		2.895E+01	2.039E+01	2.628E+01	1.326E+01	1.102
		1001.03	*	-3.310E-01	5.517E+00	9.080E+00	8.664E-01	-0.036
	TH-234	63.29	*	2.302E+00	1.924E+00	3.256E+00	5.989E-01	0.707
	+	92.59		3.288E+00	1.285E+00	1.541E+00	3.421E-01	2.133
	U-238	63.29	*	2.302E+00	1.924E+00	3.256E+00	5.989E-01	0.707

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		3.288E+00	1.098E+00	1.541E+00	1.372E-01	2.133
		99.53		1.400E-01	2.073E-01	3.239E-01	2.557E-02	0.432
		103.37		-2.547E-02	1.239E-01	2.034E-01	1.515E-02	-0.125
		106.12		1.341E-01	1.047E-01	1.796E-01	1.288E-02	0.747
	*	117.23		-2.106E-02	4.953E-01	7.988E-01	4.972E-02	-0.026
		228.18		-2.018E-01	2.616E-01	4.051E-01	2.249E-02	-0.498
AM-241		277.60		1.988E-01	2.111E-01	3.526E-01	2.050E-02	0.564
CM-247	*	59.54		-3.284E-01	2.275E-01	3.596E-01	3.346E-02	-0.913
		278.00		5.893E-01	8.468E-01	1.471E+00	8.555E-02	0.401
CF-249		287.50		6.086E-01	1.521E+00	2.474E+00	1.446E-01	0.246
	*	402.40		1.937E-02	4.451E-02	7.569E-02	4.387E-03	0.256
		252.80		6.022E-01	1.092E+00	1.799E+00	1.026E-01	0.335
		333.37		1.964E-01	2.197E-01	3.416E-01	2.018E-02	0.575
CF-251	*	388.16		-7.672E-04	4.692E-02	7.796E-02	4.510E-03	-0.010
	*	177.52		2.473E-02	1.538E-01	2.513E-01	1.301E-02	0.098
		227.38		-2.046E-01	4.219E-01	6.628E-01	3.677E-02	-0.309
		285.41		-1.015E+00	2.526E+00	4.175E+00	2.438E-01	-0.243

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]G1202054949
* Acquisition date   : 11-MAR-2010 19:27:29 Detector SN#      :
* Detector ID        : GAM23                      Sensitivity   : 5.000
* Geometry           : CAN                        Energy tolerance: 1.800
* Elapsed live time   : 0 02:00:00.00             Abundance limit : 75.000
* Elapsed real time   : 0 02:00:01.81             Half life ratio : 8.000
*****
*
*                                     SAMPLE DATA
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202054949              Analyst initials: MXR1
* Batch Number       : 958216                   Sample Quantity : 1.2698E+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	3.544E+01	3.312E+00	6.285E-01	0.000E+00
CD-109	3.953E+00	1.303E+00	1.453E+00	0.000E+00
SN-126	3.857E-01	1.272E-01	1.427E-01	0.000E+00
CS-135	3.265E-01	2.963E-01	2.924E-01	0.000E+00
TL-208	6.016E-01	1.038E-01	6.595E-02	0.000E+00
BI-211	3.755E+00	5.341E-01	4.078E-01	0.000E+00
PB-212	1.841E+00	1.792E-01	1.076E-01	0.000E+00
BI-214	1.247E+00	2.232E-01	1.391E-01	0.000E+00
PB-214	1.363E+00	2.074E-01	1.455E-01	0.000E+00
RA-224	4.902E+00	1.409E+00	1.153E+00	0.000E+00
RA-226	1.247E+00	2.232E-01	1.391E-01	0.000E+00
AC-228	2.217E+00	4.413E-01	2.789E-01	0.000E+00
RA-228	2.217E+00	4.413E-01	2.789E-01	0.000E+00
TH-228	1.841E+00	1.792E-01	1.076E-01	0.000E+00
TH-229	5.579E-01	5.994E-01	1.059E+00	0.000E+00
TH-232	2.217E+00	4.413E-01	2.789E-01	0.000E+00
U-235	1.400E-01	2.337E-01	4.074E-01	0.000E+00
NP-237	1.151E+00	4.471E-01	4.322E-01	0.000E+00
ANH-511	2.026E-01	6.373E-02	5.369E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	8.886E-02	3.708E-01	6.434E-01	0.000E+00 NOT IDENT.
NA-22	-3.138E-02	5.775E-02	9.119E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.191E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.969E-02	4.620E-02	8.190E-02	0.000E+00 FAIL ABUN
V-48	8.106E-03	9.034E-02	1.548E-01	0.000E+00 NOT IDENT.
CR-51	-2.642E-01	4.279E-01	7.247E-01	0.000E+00 NOT IDENT.
MN-54	8.766E-03	4.822E-02	8.397E-02	0.000E+00 NOT IDENT.
CO-56	1.200E-02	4.833E-02	8.464E-02	0.000E+00 NOT IDENT.

CO-57	6.173E-03	3.069E-02	5.202E-02	0.000E+00	NOT IDENT.
CO-58	-2.450E-02	4.792E-02	7.926E-02	0.000E+00	NOT IDENT.
FE-59	8.418E-02	1.132E-01	2.028E-01	0.000E+00	NOT IDENT.
CO-60	8.448E-03	4.519E-02	7.671E-02	0.000E+00	NOT IDENT.
ZN-65	1.406E-01	1.456E-01	2.313E-01	0.000E+00	NOT IDENT.
SE-75	-2.407E-02	6.192E-02	8.771E-02	0.000E+00	NOT IDENT.
SR-85	5.684E-03	4.663E-02	6.947E-02	0.000E+00	NOT IDENT.
Y-88	4.789E-03	4.045E-02	6.938E-02	0.000E+00	NOT IDENT.
Y-91	9.403E+00	2.857E+01	4.906E+01	0.000E+00	NOT IDENT.
NB-94	1.695E-02	4.258E-02	7.290E-02	0.000E+00	NOT IDENT.
NB-95	9.354E-02	6.079E-02	1.002E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.984E-01	3.408E-01	0.000E+00	NOT IDENT.
ZR-95	7.818E-02	9.020E-02	1.594E-01	0.000E+00	NOT IDENT.
MO-99	-1.310E+00	2.081E+01	3.431E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.267E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.332E-02	4.654E-02	8.186E-02	0.000E+00	FAIL ABUN
RH-106	1.100E-01	3.746E-01	6.425E-01	0.000E+00	NOT IDENT.
RU-106	1.100E-01	3.745E-01	6.425E-01	0.000E+00	NOT IDENT.
AG-108M	-1.880E-02	3.225E-02	5.326E-02	0.000E+00	NOT IDENT.
AG-110M	-1.489E-02	4.220E-02	6.859E-02	0.000E+00	NOT IDENT.
SN-113	-1.385E-03	5.301E-02	9.156E-02	0.000E+00	NOT IDENT.
CD-115	-1.889E+00	1.949E+01	3.285E+01	0.000E+00	NOT IDENT.
SN-117M	6.137E-02	6.798E-02	1.207E-01	0.000E+00	NOT IDENT.
TE-123M	3.718E-02	3.323E-02	5.946E-02	0.000E+00	NOT IDENT.
SB-124	4.776E-02	8.114E-02	1.517E-01	0.000E+00	NOT IDENT.
SB-125	-6.821E-02	9.875E-02	1.620E-01	0.000E+00	NOT IDENT.
TE-125M	-1.009E+01	1.172E+01	1.981E+01	0.000E+00	NOT IDENT.
I-126	-2.546E-02	2.901E-01	4.814E-01	0.000E+00	NOT IDENT.
SB-126	2.873E-02	2.136E-01	3.105E-01	0.000E+00	NOT IDENT.
SB-127	-8.091E-01	1.930E+00	3.102E+00	0.000E+00	NOT IDENT.
I-131	1.399E-01	1.416E-01	2.590E-01	0.000E+00	NOT IDENT.
TE-132	-8.840E-01	1.127E+00	1.820E+00	0.000E+00	NOT IDENT.
BA-133	2.934E-02	5.415E-02	8.514E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.877E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.409E-02	5.848E-02	1.017E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.638E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.598E-02	1.407E-01	2.294E-01	0.000E+00	NOT IDENT.
BA-137M	2.276E-02	4.279E-02	7.436E-02	0.000E+00	NOT IDENT.
CS-137	2.405E-02	4.520E-02	7.855E-02	0.000E+00	NOT IDENT.
CE-139	3.284E-03	3.408E-02	5.868E-02	0.000E+00	NOT IDENT.
BA-140	-2.879E-01	3.560E-01	5.476E-01	0.000E+00	NOT IDENT.
LA-140	-7.408E-02	1.029E-01	1.558E-01	0.000E+00	NOT IDENT.
CE-141	-1.702E-02	7.505E-02	1.274E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.333E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.026E-01	2.705E-01	4.024E-01	0.000E+00	NOT IDENT.
PM-144	-2.513E-02	4.715E-02	7.553E-02	0.000E+00	NOT IDENT.
PR-144	-1.863E+00	3.532E+00	5.661E+00	0.000E+00	NOT IDENT.
PM-146	6.624E-03	4.974E-02	8.596E-02	0.000E+00	NOT IDENT.
ND-147	1.506E-01	7.419E-01	1.275E+00	0.000E+00	FAIL ABUN
PM-149	1.126E+01	1.529E+02	2.701E+02	0.000E+00	NOT IDENT.
EU-152	-8.902E-02	1.370E-01	1.850E-01	0.000E+00	FAIL ABUN
GD-153	-4.912E-02	1.105E-01	1.654E-01	0.000E+00	NOT IDENT.
EU-154	-9.341E-02	1.633E-01	2.568E-01	0.000E+00	NOT IDENT.
EU-155	1.877E-01	1.288E-01	2.353E-01	0.000E+00	FAIL ABUN
TB-160	6.756E-02	1.696E-01	3.000E-01	0.000E+00	FAIL ABUN
HO-166M	2.749E-02	7.138E-02	1.224E-01	0.000E+00	FAIL ABUN
TA-182	1.359E-01	2.729E-01	4.726E-01	0.000E+00	FAIL ABUN
IR-192	-1.762E-02	3.867E-02	6.611E-02	0.000E+00	FAIL ABUN
HG-203	2.138E-02	4.416E-02	7.948E-02	0.000E+00	FAIL ABUN
BI-207	3.940E-02	6.171E-02	1.102E-01	0.000E+00	FAIL ABUN
PB-210	-8.187E-02	5.985E+00	1.067E+01	0.000E+00	NOT IDENT.
PB-211	-5.618E-01	8.908E-01	1.414E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.131E+00	1.311E+00	0.000E+00	FAIL ABUN
RN-219	-5.948E-02	4.815E-01	8.258E-01	0.000E+00	NOT IDENT.
RA-223	-7.438E-01	7.775E-01	1.282E+00	0.000E+00	FAIL ABUN
AC-227	-8.060E-02	2.922E-01	4.824E-01	0.000E+00	FAIL ABUN
TH-227	-8.060E-02	2.922E-01	4.824E-01	0.000E+00	FAIL ABUN
PA-231	5.586E-01	1.629E+00	2.912E+00	0.000E+00	FAIL ABUN
TH-231	-7.438E-01	7.775E-01	1.282E+00	0.000E+00	FAIL ABUN
PA-233	3.379E-02	7.177E-02	1.287E-01	0.000E+00	FAIL ABUN
PA-234	4.329E-01	3.735E-01	6.817E-01	0.000E+00	NOT IDENT.
PA-234M	-3.310E-01	5.407E+00	9.130E+00	0.000E+00	NOT IDENT.
TH-234	2.302E+00	1.885E+00	3.408E+00	0.000E+00	FAIL ABUN
U-238	2.302E+00	1.885E+00	3.408E+00	0.000E+00	FAIL ABUN
NP-239	-2.106E-02	4.854E-01	8.289E-01	0.000E+00	NOT IDENT.
AM-241	-3.284E-01	2.229E-01	3.767E-01	0.000E+00	NOT IDENT.
CM-247	1.937E-02	4.362E-02	7.715E-02	0.000E+00	NOT IDENT.
CF-249	-7.672E-04	4.598E-02	7.950E-02	0.000E+00	NOT IDENT.

CF-251

2.473E-02

1.507E-01

2.593E-01

0.000E+00 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054949.CNF;1
Sample date       : 23-FEB-2010 12:00:00 Acquisition date : 11-MAR-2010 19:27:29
Sample ID        : G1202054949 Sample quantity : 1.26980E+02 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
Energy tolerance : 1.80000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 958216 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	1275	10.66*	9.976E-01	3.544E+01	3.544E+01	9.53
CD-109	88.03	252	3.70*	5.214E+00	3.857E+00	3.953E+00	33.64
SN-126	64.28	-----	9.60	2.723E+00	-----	Line Not Found	-----
	86.94	252	8.90	5.214E+00	1.604E+00	1.604E+00	52.61
	87.57	252	37.00*	5.214E+00	3.857E-01	3.857E-01	33.64
CS-135	268.22	75	16.00*	4.232E+00	3.265E-01	3.265E-01	92.60
TL-208	277.37	-----	6.60	4.139E+00	-----	Line Not Found	-----
	583.19	394	85.00*	2.279E+00	6.016E-01	6.016E-01	17.60
	860.56	63	12.50	1.610E+00	9.321E-01	9.321E-01	57.82
BI-211	72.87	454	1.23	4.034E+00	2.703E+01	2.703E+01	20.85
	351.06	565	12.92*	3.442E+00	3.755E+00	3.755E+00	14.51
PB-212	74.82	454	10.28	4.034E+00	3.234E+00	3.234E+00	23.00
	77.11	657	17.10	4.298E+00	2.644E+00	2.644E+00	15.57
	238.63	1259	43.60*	4.639E+00	1.841E+00	1.841E+00	9.94
	300.09	93	3.30	3.897E+00	2.128E+00	2.128E+00	67.35
BI-214	609.32	421	45.49*	2.194E+00	1.247E+00	1.247E+00	18.27
	1120.29	95	14.92	1.258E+00	1.492E+00	1.492E+00	52.74
	1764.49	37	15.30	8.743E-01	8.241E-01	8.241E-01	64.16
PB-214	74.82	454	5.80	4.034E+00	5.731E+00	5.731E+00	22.30
	77.11	657	9.70	4.298E+00	4.661E+00	4.661E+00	17.62
	242.00	313	7.25	4.597E+00	2.772E+00	2.772E+00	29.90
	295.22	311	18.42	3.950E+00	1.265E+00	1.265E+00	24.26
	351.93	565	35.60*	3.442E+00	1.363E+00	1.363E+00	15.53
RA-224	240.99	313	4.10*	4.597E+00	4.902E+00	4.902E+00	29.33
RA-226	609.32	421	45.49*	2.194E+00	1.247E+00	1.247E+00	18.27
	1120.29	95	14.92	1.258E+00	1.492E+00	1.492E+00	52.74
	1764.49	37	15.30	8.743E-01	8.241E-01	8.241E-01	64.16
AC-228	338.32	272	11.27	3.550E+00	2.011E+00	2.011E+00	47.38
	911.20	295	25.80*	1.527E+00	2.217E+00	2.217E+00	20.32
	968.97	183	15.80	1.442E+00	2.376E+00	2.376E+00	31.40
RA-228	338.32	272	11.27	3.550E+00	2.011E+00	2.011E+00	47.38
	911.20	295	25.80*	1.527E+00	2.217E+00	2.217E+00	20.32

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	183	15.80	1.442E+00	2.376E+00	2.376E+00	31.40
	74.82	454	10.28	4.034E+00	3.234E+00	3.234E+00	20.88
	77.11	657	17.10	4.298E+00	2.644E+00	2.644E+00	15.57
	238.63	1259	43.60*	4.639E+00	1.841E+00	1.841E+00	9.94
TH-229	300.09	93	3.30	3.897E+00	2.128E+00	2.128E+00	90.40
	85.43	252	14.70	5.214E+00	9.709E-01	9.709E-01	33.64
	88.47	186	24.00	5.403E+00	4.235E-01	4.235E-01	41.09
	193.51	-----	4.41*	5.353E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	5.059E+00	-----	Line Not Found	-----
	338.32	272	11.27	3.550E+00	2.011E+00	2.011E+00	24.05
	911.20	295	25.80*	1.527E+00	2.217E+00	2.217E+00	20.32
	968.97	183	15.80	1.442E+00	2.376E+00	2.376E+00	31.40
U-235	89.96	186	3.47	5.403E+00	2.929E+00	2.929E+00	47.11
	93.35	263	5.60	5.586E+00	2.484E+00	2.484E+00	39.67
	143.76	-----	10.96*	6.189E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.887E+00	-----	Line Not Found	-----
NP-237	185.72	133	57.20	5.487E+00	1.254E-01	1.254E-01	62.56
	205.31	-----	5.01	5.150E+00	-----	Line Not Found	-----
	86.48	252	12.40*	5.214E+00	1.151E+00	1.151E+00	39.64
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
ANH-511	511.00	175	100.00*	2.547E+00	2.026E-01	2.026E-01	32.10

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 5
Number of lines tentatively identified by NID 24 82.76%

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	3.544E+01	3.544E+01	0.338E+01	9.53	
CD-109	461.40D	1.02	3.857E+00	3.953E+00	1.330E+00	33.64	
SN-126	2.30E+05Y	1.00	3.857E-01	3.857E-01	1.297E-01	33.64	
CS-135	2.30E+06Y	1.00	3.265E-01	3.265E-01	3.023E-01	92.60	
TL-208	1.41E+10Y	1.00	6.016E-01	6.016E-01	1.059E-01	17.60	
BI-211	7.04E+08Y	1.00	3.755E+00	3.755E+00	0.545E+00	14.51	
PB-212	1.41E+10Y	1.00	1.841E+00	1.841E+00	0.183E+00	9.94	
BI-214	1600.00Y	1.00	1.247E+00	1.247E+00	0.228E+00	18.27	
PB-214	1600.00Y	1.00	1.363E+00	1.363E+00	0.212E+00	15.53	
RA-224	1.41E+10Y	1.00	4.902E+00	4.902E+00	1.438E+00	29.33	
RA-226	1600.00Y	1.00	1.247E+00	1.247E+00	0.228E+00	18.27	
AC-228	1.41E+10Y	1.00	2.217E+00	2.217E+00	0.450E+00	20.32	
RA-228	1.41E+10Y	1.00	2.217E+00	2.217E+00	0.450E+00	20.32	
TH-228	1.41E+10Y	1.00	1.841E+00	1.841E+00	0.183E+00	9.94	
TH-229	7340.00Y	1.00	4.235E-01	4.235E-01	1.740E-01	41.09	K
TH-232	1.41E+10Y	1.00	2.217E+00	2.217E+00	0.450E+00	20.32	
U-235	7.04E+08Y	1.00	1.254E-01	1.254E-01	0.784E-01	62.56	K
NP-237	2.14E+06Y	1.00	1.151E+00	1.151E+00	0.456E+00	39.64	
ANH-511	1.00E+09Y	1.00	2.026E-01	2.026E-01	0.650E-01	32.10	
Total Activity :			6.536E+01	6.546E+01			

Grand Total Activity : 6.536E+01 6.546E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202054949

Page : 4
Acquisition date : 11-MAR-2010 19:27:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.63	140	436	1.25	257.26	252	11	1.94E-02	60.2	6.33E+00	
0	208.83	94	346	1.07	417.66	414	10	1.30E-02	77.3	5.09E+00	
0	726.01	99	91	1.72	1452.03	1444	17	1.38E-02	48.0	1.88E+00	T
0	768.68	96	118	4.85	1537.36	1527	25	1.33E-02	64.4	1.78E+00	
0	793.86	38	59	1.82	1587.72	1583	10	5.32E-03	82.1	1.73E+00	
1	963.81	58	35	2.12	1927.61	1921	23	8.08E-03	50.3	1.45E+00	T
0	1508.66	17	11	2.80	3017.33	3009	12	2.30E-03	96.6	9.72E-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]G1202054949.CNF;1
* Acquisition date   : 11-MAR-2010 19:27:29   Detector SN#      :
* Detector ID        : GAM23                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.80000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.81          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 23-FEB-2010 12:00:00   Nuclide Library  : SOLID
* Sample ID          : G1202054949           Analyst initials: MXR1
* Batch Number       : 958216                Sample Quantity  : 1.26980E+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	3.544E+01	3.379E+00	6.287E-01	4.703E-02	56.373
CD-109	3.953E+00	1.330E+00	1.395E+00	1.362E-01	2.834
SN-126	3.857E-01	1.297E-01	1.369E-01	1.332E-02	2.817
CS-135	3.265E-01	3.023E-01	2.851E-01	2.178E-02	1.145
TL-208	6.016E-01	1.059E-01	6.505E-02	4.213E-03	9.248
BI-211	3.755E+00	5.450E-01	3.993E-01	2.602E-02	9.403
PB-212	1.841E+00	1.829E-01	1.048E-01	7.600E-03	17.569
BI-214	1.247E+00	2.277E-01	1.373E-01	1.041E-02	9.078
PB-214	1.363E+00	2.116E-01	1.425E-01	1.217E-02	9.563
RA-224	4.902E+00	1.438E+00	1.123E+00	6.327E-02	4.365
RA-226	1.247E+00	2.277E-01	1.373E-01	1.041E-02	9.078
AC-228	2.217E+00	4.503E-01	2.770E-01	3.290E-02	8.003
RA-228	2.217E+00	4.503E-01	2.770E-01	3.290E-02	8.003
TH-228	1.841E+00	1.829E-01	1.048E-01	7.600E-03	17.569
TH-229	4.235E-01	1.740E-01	1.028E+00	5.442E-02	0.412
TH-232	2.217E+00	4.503E-01	2.770E-01	3.290E-02	8.003
U-235	1.254E-01	7.843E-02	3.938E-01	6.132E-02	0.318
NP-237	1.151E+00	4.562E-01	4.147E-01	9.570E-02	2.775

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	2.026E-01	6.503E-02	5.286E-02	3.070E-03	3.833

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.886E-02		3.783E-01	6.329E-01	4.299E-02	0.140
NA-22	-3.138E-02		5.893E-02	9.102E-02	6.113E-03	-0.345
NA-24	-1.217E+00		1.628E+00	Half-Life too short		
SC-46	1.969E-02		4.714E-02	8.130E-02	7.264E-03	0.242
V-48	8.106E-03		9.219E-02	1.539E-01	1.280E-02	0.053
CR-51	-2.642E-01		4.366E-01	7.086E-01	4.640E-02	-0.373
MN-54	8.766E-03		4.920E-02	8.328E-02	6.595E-03	0.105
CO-56	1.200E-02		4.931E-02	8.396E-02	6.831E-03	0.143
CO-57	6.173E-03		3.132E-02	5.016E-02	2.957E-03	0.123
CO-58	-2.450E-02		4.890E-02	7.857E-02	5.903E-03	-0.312
FE-59	8.418E-02		1.155E-01	2.020E-01	1.555E-02	0.417
CO-60	8.448E-03		4.611E-02	7.662E-02	5.625E-03	0.110
ZN-65	1.406E-01		1.486E-01	2.304E-01	1.522E-02	0.610
SE-75	-2.407E-02		6.318E-02	8.552E-02	4.980E-03	-0.281
SR-85	5.684E-03		4.758E-02	6.840E-02	3.969E-03	0.083
Y-88	4.789E-03		4.128E-02	6.965E-02	4.101E-03	0.069
Y-91	9.403E+00		2.916E+01	4.893E+01	2.918E+00	0.192
NB-94	1.695E-02		4.345E-02	7.212E-02	4.121E-03	0.235
NB-95	9.354E-02		6.203E-02	9.928E-02	6.672E-03	0.942
NB-95M	9.260E-01		2.024E-01	3.317E-01	2.456E-02	2.791
ZR-95	7.818E-02		9.204E-02	1.579E-01	1.218E-02	0.495
MO-99	-1.310E+00		2.123E+01	3.397E+01	4.965E+00	-0.039
TC-99M	-9.516E+11		6.466E+11	Half-Life too short		
RU-103	2.332E-02		4.749E-02	8.056E-02	1.002E-02	0.289
RH-106	1.100E-01		3.823E-01	6.344E-01	7.241E-02	0.173
RU-106	1.100E-01		3.821E-01	6.344E-01	3.409E-02	0.173
AG-108M	-1.880E-02		3.291E-02	5.230E-02	3.269E-03	-0.359
AG-110M	-1.489E-02		4.306E-02	6.778E-02	3.767E-03	-0.220
SN-113	-1.385E-03		5.410E-02	8.979E-02	5.531E-03	-0.015
CD-115	-1.889E+00		1.988E+01	3.236E+01	1.867E+00	-0.058
SN-117M	6.137E-02		6.936E-02	1.168E-01	6.072E-03	0.525
TE-123M	3.718E-02		3.391E-02	5.755E-02	3.037E-03	0.646
SB-124	4.776E-02		8.280E-02	1.521E-01	1.064E-02	0.314
SB-125	-6.821E-02		1.008E-01	1.591E-01	9.664E-03	-0.429
TE-125M	-1.009E+01		1.196E+01	1.907E+01	1.735E+00	-0.529
I-126	-2.546E-02		2.960E-01	4.758E-01	2.462E-02	-0.054
SB-126	2.873E-02		2.180E-01	3.073E-01	1.842E-02	0.093
SB-127	-8.091E-01		1.970E+00	3.068E+00	2.958E-01	-0.264
I-131	1.399E-01		1.445E-01	2.537E-01	1.660E-02	0.552
TE-132	-8.840E-01		1.150E+00	1.771E+00	2.593E-01	-0.499
BA-133	2.934E-02		5.525E-02	8.337E-02	9.437E-03	0.352
I-133	5.876E-04		9.577E-03	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	9.409E-02		5.968E-02	1.008E-01	7.365E-03	0.933
I-135	-2.565E+10		8.359E+10	Half-Life too short		
CS-136	-5.598E-02		1.436E-01	2.283E-01	1.819E-02	-0.245
BA-137M	2.276E-02		4.366E-02	7.349E-02	3.754E-03	0.310
CS-137	2.405E-02		4.613E-02	7.764E-02	3.988E-03	0.310
CE-139	3.284E-03		3.477E-02	5.683E-02	2.897E-03	0.058
BA-140	-2.879E-01		3.633E-01	5.395E-01	1.797E-01	-0.534
LA-140	-7.408E-02		1.050E-01	1.561E-01	1.071E-02	-0.475
CE-141	-1.702E-02		7.658E-02	1.231E-01	6.945E-03	-0.138
CE-143	2.049E-03	+	3.231E-04	Half-Life too short		
CE-144	-1.026E-01		2.760E-01	3.885E-01	5.366E-02	-0.264
PM-144	-2.513E-02		4.811E-02	7.471E-02	4.203E-03	-0.336
PR-144	-1.863E+00		3.604E+00	5.599E+00	3.147E-01	-0.333
PM-146	6.624E-03		5.076E-02	8.448E-02	7.177E-03	0.078
ND-147	1.506E-01		7.571E-01	1.256E+00	1.697E-01	0.120
PM-149	1.126E+01		1.560E+02	2.637E+02	3.743E+01	0.043
EU-152	-8.902E-02		1.398E-01	1.810E-01	1.199E-02	-0.492
GD-153	-4.912E-02		1.128E-01	1.590E-01	1.299E-02	-0.309
EU-154	-9.341E-02		1.666E-01	2.563E-01	2.564E-02	-0.364
EU-155	1.877E-01		1.314E-01	2.264E-01	1.668E-02	0.829
TB-160	6.756E-02		1.731E-01	2.977E-01	2.604E-02	0.227
HO-166M	2.749E-02		7.284E-02	1.211E-01	7.087E-03	0.227
TA-182	1.359E-01		2.784E-01	4.715E-01	2.894E-02	0.288
IR-192	-1.762E-02		3.946E-02	6.463E-02	3.834E-03	-0.273
HG-203	2.138E-02		4.506E-02	7.756E-02	4.764E-03	0.276
BI-207	3.940E-02		6.297E-02	1.097E-01	8.056E-03	0.359
PB-210	-8.187E-02		6.107E+00	1.015E+01	7.844E-01	-0.008
PB-211	-5.618E-01		9.090E-01	1.387E+00	6.655E-01	-0.405
BI-212	2.344E+00	+	1.154E+00	1.298E+00	1.411E-01	1.806
RN-219	-5.948E-02		4.914E-01	8.101E-01	1.088E-01	-0.073
RA-223	-7.438E-01		7.933E-01	1.254E+00	2.026E-01	-0.593
AC-227	-8.060E-02		2.981E-01	4.701E-01	4.786E-02	-0.171
TH-227	-8.060E-02		2.982E-01	4.701E-01	5.632E-02	-0.171
PA-231	5.586E-01		1.662E+00	2.843E+00	3.733E-01	0.197
TH-231	-7.438E-01		7.933E-01	1.254E+00	2.026E-01	-0.593
PA-233	3.379E-02		7.323E-02	1.258E-01	7.864E-03	0.269
PA-234	4.329E-01		3.812E-01	6.774E-01	1.273E-01	0.639
PA-234M	-3.310E-01		5.517E+00	9.080E+00	8.664E-01	-0.036
TH-234	2.302E+00		1.924E+00	3.256E+00	5.989E-01	0.707
U-238	2.302E+00		1.924E+00	3.256E+00	5.989E-01	0.707
NP-239	-2.106E-02		4.953E-01	7.988E-01	4.972E-02	-0.026
AM-241	-3.284E-01		2.275E-01	3.596E-01	3.346E-02	-0.913
CM-247	1.937E-02		4.451E-02	7.569E-02	4.387E-03	0.256
CF-249	-7.672E-04		4.692E-02	7.796E-02	4.510E-03	-0.010
CF-251	2.473E-02		1.538E-01	2.513E-01	1.301E-02	0.098

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202054949          *
* Acquisition date   : 11-MAR-2010 19:27:29 Detector SN#      :             *
* Detector ID        : GAM23          Sensitivity              : 5.000         *
* Geometry           : CAN            Energy tolerance         : 1.800         *
* Elapsed live time  : 0 02:00:00.00 Abundance limit          : 75.000        *
* Elapsed real time  : 0 02:00:01.81 Half life ratio          : 8.000         *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library    : SOLID         *
* Sample ID          : G1202054949    Analyst initials       : MXR1          *
* Batch Number       : 958216          Sample Quantity        : 1.2698E+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	3.544E+01	3.312E+00	3.145E-01	1.690E+00
CD-109	3.953E+00	1.303E+00	7.270E-01	6.649E-01
SN-126	3.857E-01	1.272E-01	7.137E-02	6.487E-02
CS-135	3.265E-01	2.963E-01	1.463E-01	1.512E-01
TL-208	6.016E-01	1.038E-01	3.299E-02	5.294E-02
BI-211	3.755E+00	5.341E-01	2.040E-01	2.725E-01
PB-212	1.841E+00	1.792E-01	5.383E-02	9.145E-02
BI-214	1.247E+00	2.232E-01	6.960E-02	1.139E-01
PB-214	1.363E+00	2.074E-01	7.281E-02	1.058E-01
RA-224	4.902E+00	1.409E+00	5.770E-01	7.189E-01
RA-226	1.247E+00	2.232E-01	6.960E-02	1.139E-01
AC-228	2.217E+00	4.413E-01	1.395E-01	2.252E-01
RA-228	2.217E+00	4.413E-01	1.395E-01	2.252E-01
TH-228	1.841E+00	1.792E-01	5.383E-02	9.145E-02
TH-229	5.579E-01	5.994E-01	5.296E-01	3.058E-01
TH-232	2.217E+00	4.413E-01	1.395E-01	2.252E-01
U-235	1.400E-01	2.337E-01	2.038E-01	1.192E-01
NP-237	1.151E+00	4.471E-01	2.162E-01	2.281E-01
ANH-511	2.026E-01	6.373E-02	2.686E-02	3.251E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	8.886E-02	3.708E-01	3.219E-01	1.892E-01 NOT IDENT.
NA-22	-3.138E-02	5.775E-02	4.562E-02	2.946E-02 NOT IDENT.
NA-24	-1.217E+06	3.191E+06	0.000E+00	1.628E+06 SHORT HLIF
SC-46	1.969E-02	4.620E-02	4.097E-02	2.357E-02 FAIL ABUN
V-48	8.106E-03	9.034E-02	7.743E-02	4.609E-02 NOT IDENT.
CR-51	-2.642E-01	4.279E-01	3.626E-01	2.183E-01 NOT IDENT.
MN-54	8.766E-03	4.822E-02	4.201E-02	2.460E-02 NOT IDENT.
CO-56	1.200E-02	4.833E-02	4.234E-02	2.466E-02 NOT IDENT.

CO-57	6.173E-03	3.069E-02	2.603E-02	1.566E-02	NOT IDENT.
CO-58	-2.450E-02	4.792E-02	3.965E-02	2.445E-02	NOT IDENT.
FE-59	8.418E-02	1.132E-01	1.015E-01	5.776E-02	NOT IDENT.
CO-60	8.448E-03	4.519E-02	3.838E-02	2.306E-02	NOT IDENT.
ZN-65	1.406E-01	1.456E-01	1.157E-01	7.430E-02	NOT IDENT.
SE-75	-2.407E-02	6.192E-02	4.388E-02	3.159E-02	NOT IDENT.
SR-85	5.684E-03	4.663E-02	3.475E-02	2.379E-02	NOT IDENT.
Y-88	4.789E-03	4.045E-02	3.471E-02	2.064E-02	NOT IDENT.
Y-91	9.403E+00	2.857E+01	2.454E+01	1.458E+01	NOT IDENT.
NB-94	1.695E-02	4.258E-02	3.647E-02	2.172E-02	NOT IDENT.
NB-95	9.354E-02	6.079E-02	5.015E-02	3.102E-02	NOT IDENT.
NB-95M	9.260E-01	1.984E-01	1.705E-01	1.012E-01	NOT IDENT.
ZR-95	7.818E-02	9.020E-02	7.977E-02	4.602E-02	NOT IDENT.
MO-99	-1.310E+00	2.081E+01	1.717E+01	1.062E+01	NOT IDENT.
TC-99M	-9.516E+17	1.267E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.332E-02	4.654E-02	4.095E-02	2.375E-02	FAIL ABUN
RH-106	1.100E-01	3.746E-01	3.214E-01	1.911E-01	NOT IDENT.
RU-106	1.100E-01	3.745E-01	3.214E-01	1.911E-01	NOT IDENT.
AG-108M	-1.880E-02	3.225E-02	2.664E-02	1.646E-02	NOT IDENT.
AG-110M	-1.489E-02	4.220E-02	3.432E-02	2.153E-02	NOT IDENT.
SN-113	-1.385E-03	5.301E-02	4.581E-02	2.705E-02	NOT IDENT.
CD-115	-1.889E+00	1.949E+01	1.643E+01	9.942E+00	NOT IDENT.
SN-117M	6.137E-02	6.798E-02	6.040E-02	3.468E-02	NOT IDENT.
TE-123M	3.718E-02	3.323E-02	2.975E-02	1.696E-02	NOT IDENT.
SB-124	4.776E-02	8.114E-02	7.589E-02	4.140E-02	NOT IDENT.
SB-125	-6.821E-02	9.875E-02	8.104E-02	5.038E-02	NOT IDENT.
TE-125M	-1.009E+01	1.172E+01	9.909E+00	5.978E+00	NOT IDENT.
I-126	-2.546E-02	2.901E-01	2.408E-01	1.480E-01	NOT IDENT.
SB-126	2.873E-02	2.136E-01	1.554E-01	1.090E-01	NOT IDENT.
SB-127	-8.091E-01	1.930E+00	1.552E+00	9.849E-01	NOT IDENT.
I-131	1.399E-01	1.416E-01	1.296E-01	7.225E-02	NOT IDENT.
TE-132	-8.840E-01	1.127E+00	9.106E-01	5.750E-01	NOT IDENT.
BA-133	2.934E-02	5.415E-02	4.259E-02	2.763E-02	NOT IDENT.
I-133	5.876E+02	1.877E+04	0.000E+00	9.577E+03	SHORT HLIF
CS-134	9.409E-02	5.848E-02	5.090E-02	2.984E-02	NOT IDENT.
I-135	-2.565E+16	1.638E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.598E-02	1.407E-01	1.148E-01	7.178E-02	NOT IDENT.
BA-137M	2.276E-02	4.279E-02	3.720E-02	2.183E-02	NOT IDENT.
CS-137	2.405E-02	4.520E-02	3.930E-02	2.306E-02	NOT IDENT.
CE-139	3.284E-03	3.408E-02	2.936E-02	1.739E-02	NOT IDENT.
BA-140	-2.879E-01	3.560E-01	2.740E-01	1.816E-01	NOT IDENT.
LA-140	-7.408E-02	1.029E-01	7.795E-02	5.252E-02	NOT IDENT.
CE-141	-1.702E-02	7.505E-02	6.373E-02	3.829E-02	NOT IDENT.
CE-143	2.049E+03	6.333E+02	0.000E+00	3.231E+02	SHORT HLIF
CE-144	-1.026E-01	2.705E-01	2.013E-01	1.380E-01	NOT IDENT.
PM-144	-2.513E-02	4.715E-02	3.779E-02	2.405E-02	NOT IDENT.
PR-144	-1.863E+00	3.532E+00	2.832E+00	1.802E+00	NOT IDENT.
PM-146	6.624E-03	4.974E-02	4.300E-02	2.538E-02	NOT IDENT.
ND-147	1.506E-01	7.419E-01	6.381E-01	3.785E-01	FAIL ABUN
PM-149	1.126E+01	1.529E+02	1.351E+02	7.800E+01	NOT IDENT.
EU-152	-8.902E-02	1.370E-01	9.253E-02	6.989E-02	FAIL ABUN
GD-153	-4.912E-02	1.105E-01	8.276E-02	5.639E-02	NOT IDENT.
EU-154	-9.341E-02	1.633E-01	1.285E-01	8.329E-02	NOT IDENT.
EU-155	1.877E-01	1.288E-01	1.177E-01	6.571E-02	FAIL ABUN
TB-160	6.756E-02	1.696E-01	1.501E-01	8.655E-02	FAIL ABUN
HO-166M	2.749E-02	7.138E-02	6.123E-02	3.642E-02	FAIL ABUN
TA-182	1.359E-01	2.729E-01	2.365E-01	1.392E-01	FAIL ABUN
IR-192	-1.762E-02	3.867E-02	3.307E-02	1.973E-02	FAIL ABUN
HG-203	2.138E-02	4.416E-02	3.976E-02	2.253E-02	FAIL ABUN
BI-207	3.940E-02	6.171E-02	5.511E-02	3.148E-02	FAIL ABUN
PB-210	-8.187E-02	5.985E+00	5.341E+00	3.053E+00	NOT IDENT.
PB-211	-5.618E-01	8.908E-01	7.074E-01	4.545E-01	NOT IDENT.
BI-212	2.344E+00	1.131E+00	6.561E-01	5.771E-01	FAIL ABUN
RN-219	-5.948E-02	4.815E-01	4.131E-01	2.457E-01	NOT IDENT.
RA-223	-7.438E-01	7.775E-01	6.414E-01	3.967E-01	FAIL ABUN
AC-227	-8.060E-02	2.922E-01	2.413E-01	1.491E-01	FAIL ABUN
TH-227	-8.060E-02	2.922E-01	2.413E-01	1.491E-01	FAIL ABUN
PA-231	5.586E-01	1.629E+00	1.457E+00	8.312E-01	FAIL ABUN
TH-231	-7.438E-01	7.775E-01	6.414E-01	3.967E-01	FAIL ABUN
PA-233	3.379E-02	7.177E-02	6.437E-02	3.662E-02	FAIL ABUN
PA-234	4.329E-01	3.735E-01	3.411E-01	1.906E-01	NOT IDENT.
PA-234M	-3.310E-01	5.407E+00	4.568E+00	2.759E+00	NOT IDENT.
TH-234	2.302E+00	1.885E+00	1.705E+00	9.619E-01	FAIL ABUN
U-238	2.302E+00	1.885E+00	1.705E+00	9.619E-01	FAIL ABUN
NP-239	-2.106E-02	4.854E-01	4.147E-01	2.477E-01	NOT IDENT.
AM-241	-3.284E-01	2.229E-01	1.885E-01	1.137E-01	NOT IDENT.
CM-247	1.937E-02	4.362E-02	3.860E-02	2.225E-02	NOT IDENT.
CF-249	-7.672E-04	4.598E-02	3.978E-02	2.346E-02	NOT IDENT.

CF-251	2.473E-02	1.507E-01	1.297E-01	7.688E-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	334.2935
49.72	343.4709
57.36	0.0000
59.54	464.5781
63.29	406.9011
63.29	406.9011
64.28	400.9995
67.75	441.4125
69.67	453.1493
70.83	449.3906
72.81	494.3563
72.87	494.3983
72.87	494.3983
74.82	471.3664
74.82	471.3664
74.82	471.3664
74.97	471.4635
77.11	442.7086
77.11	442.7086
77.11	442.7086
79.69	418.3763
79.80	418.4367
80.12	452.8650
80.19	452.9067
80.57	453.1337
81.00	380.9998
81.07	381.0349
81.07	381.0349
83.79	372.8241
83.79	372.8241
85.43	373.6052
86.48	374.1021
86.55	374.1363
86.79	374.2479
86.94	374.3193
87.57	374.6154
88.03	374.8311
88.47	375.0364
89.96	375.7282
91.11	376.2593
92.59	376.9362
92.59	376.9362
93.35	377.2829
94.67	336.4096
94.87	358.1995
94.87	358.1995
95.86	395.8803
97.43	365.5065
98.44	330.1230
99.53	332.6198
100.11	348.8159
103.18	427.6263
103.37	407.1641
105.31	363.9124
106.12	371.1132
109.28	410.8311
111.00	376.0672
111.76	395.1447
116.30	355.3670
117.23	367.6373
121.12	339.1920
121.78	349.1180
122.06	349.2180
123.07	334.2686
131.20	345.0436
133.52	382.9870
136.00	380.6587

136.47	368.6766
140.51	412.7836
140.51	0.0000
143.76	333.4666
144.24	346.8767
144.24	346.8767
145.44	354.4074
152.43	329.9218
153.25	342.5018
154.21	343.8208
154.21	343.8208
156.02	391.7967
158.56	316.1975
159.00	305.9794
162.66	355.6788
163.33	354.8427
165.86	311.9316
176.60	312.6031
177.52	309.6856
181.07	330.1471
184.41	314.1293
185.72	282.1190
193.51	266.8120
197.04	319.7502
205.31	308.8499
210.85	277.3614
215.65	270.4121
222.11	285.4410
227.38	270.1412
228.16	283.3633
228.18	283.3673
235.69	245.3743
235.96	254.1837
235.96	254.1837
238.63	237.0756
238.63	237.0756
240.99	237.4464
242.00	214.7242
244.70	195.7093
252.40	219.2771
252.80	188.3162
256.23	215.3719
256.23	215.3719
260.90	197.0778
264.66	223.2086
268.22	198.6442
269.46	212.6744
269.46	212.6744
271.23	227.6977
273.65	271.1254
276.40	206.8287
277.37	202.4506
277.60	194.6039
278.00	198.0269
279.20	201.7723
279.54	204.5161
280.46	219.9515
283.69	191.4729
284.31	203.2883
285.41	208.8447
285.90	201.6718
287.50	193.4865
293.27	0.0000
295.22	209.1338
295.96	209.2236
298.57	209.5353
299.98	170.1943
299.98	170.1943
300.09	170.2057
300.09	170.2057
300.13	170.2103
301.36	187.0575
302.85	185.6931
304.50	184.3433
304.50	184.3433
304.85	184.3802
308.46	188.7244
311.90	160.6317

316.51	171.1622
319.41	166.8262
320.08	179.7966
323.87	215.2775
323.87	215.2775
328.76	173.2307
333.37	134.6542
334.37	147.1135
334.37	147.1135
338.28	169.4542
338.28	169.4542
338.32	169.4564
338.32	169.4564
338.32	169.4564
340.48	152.2497
340.55	152.2557
344.28	177.4570
351.06	167.1440
351.93	160.9668
356.01	142.5096
364.49	118.9002
366.42	154.9071
383.85	140.9939
388.16	142.2393
388.63	136.5430
391.69	148.2169
400.66	145.0057
401.81	148.9264
402.40	135.5128
404.85	159.7203
410.95	111.9275
414.70	118.8860
423.72	112.5803
427.09	113.7222
427.87	120.5685
433.94	116.9956
453.88	119.9850
463.37	122.4455
468.07	115.7632
473.00	113.0287
476.78	102.2821
477.60	102.3173
487.02	95.7340
492.35	121.9270
497.08	94.1239
511.00	95.6546
514.00	99.1286
527.90	100.3438
529.87	0.0000
531.02	104.5239
537.26	115.9622
546.56	0.0000
563.25	90.3934
569.33	98.8313
569.50	98.8383
569.70	102.9639
583.19	83.8101
600.60	81.5558
602.73	88.5631
604.72	99.0496
609.32	99.2096
609.32	99.2096
610.33	88.7976
614.28	92.4071
618.01	89.0363
621.93	83.9121
621.93	83.9121
633.25	86.3422
635.95	85.3684
636.99	81.1809
645.85	78.2510
657.76	92.3632
661.66	81.8520
661.66	81.8520
664.57	0.0000
666.33	94.7537
666.50	90.4993
677.62	81.2102

685.70	83.5644
695.00	111.7518
696.49	120.4055
696.51	120.4055
697.00	111.8228
702.65	91.5555
706.68	94.9072
711.68	73.4536
720.70	75.8259
721.93	0.0000
722.78	115.6172
722.91	115.6224
723.31	104.7970
724.19	72.2933
727.33	74.8960
733.00	70.6764
735.93	92.5060
739.50	81.7108
747.24	77.5349
752.31	82.0276
753.82	70.0297
756.73	67.9003
763.94	91.4591
765.81	69.5476
766.42	63.7023
777.92	59.8256
778.90	72.4413
783.70	66.2344
785.37	68.1073
795.86	50.6417
801.95	78.6907
810.29	67.6697
810.76	79.7309
815.77	66.8467
818.51	65.0397
832.01	72.7489
834.85	88.6740
836.80	0.0000
846.77	68.3632
856.80	62.7833
860.56	51.5670
871.09	56.5625
873.19	66.9698
875.33	0.0000
879.36	60.4674
880.51	57.6517
883.24	70.9335
884.68	73.7994
889.28	55.8911
898.04	74.0613
911.20	62.8848
911.20	62.8848
911.20	62.8848
926.50	55.4819
937.49	61.3932
944.13	63.4192
946.00	49.9910
949.00	60.6121
962.29	41.3705
964.08	49.2527
966.15	49.2786
968.97	43.0970
968.97	43.0970
968.97	43.0970
983.53	59.1955
996.26	66.1946
1001.03	61.3991
1004.73	74.1353
1037.84	60.9606
1038.76	0.0000
1048.07	65.0493
1050.41	56.2114
1050.41	56.2114
1063.66	48.4716
1085.87	45.7380
1099.45	51.8625
1112.07	73.3483
1115.54	75.5022

1120.29	63.1307
1120.29	63.1307
1120.55	63.1333
1121.30	63.1436
1131.51	0.0000
1173.23	59.8138
1177.93	66.9775
1189.05	62.0524
1204.77	72.4647
1221.41	81.9368
1231.02	112.8914
1235.36	83.2050
1238.28	90.4492
1260.41	0.0000
1271.85	50.7127
1274.44	65.2354
1274.54	65.2379
1291.59	55.0703
1298.22	0.0000
1312.11	34.4301
1332.49	32.4746
1365.19	28.4645
1368.63	0.0000
1384.29	24.3364
1408.01	30.8231
1457.56	0.0000
1460.82	23.6131
1489.16	28.0503
1505.03	14.8376
1596.21	26.3828
1620.50	12.2999
1678.03	0.0000
1690.97	9.5728
1764.49	13.5610
1764.49	13.5610
1770.23	30.0550
1771.35	11.6363
1791.20	0.0000
1836.06	13.7129

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202054949

Total Uranium Activity	6.9130E+00	ug/g
Total Uranium Counting Unc.	5.6102E+00	ug/g
Total Uranium Tpu	2.8623E-06	ug/g
Total Uranium Mda	5.0735E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 958216                SAMPLE ID   : G1202054949            *
*  ANALYST       : MXR1                  DETECTOR    : GAM23                *
*  SAMPLE DATE   : 23-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00      *
*  ANALYSIS DATE : 11-MAR-2010 19:27:29.28  SAMPLE ALQT: 126.980 GRAM      *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.045E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.500E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.697E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.798E+00

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VAX/VMS Nuclide Identification Report Generated 11-MAR-2010 20:36:11.33

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054950.CNF;1
Sample date        : 2-MAR-2010 00:00:00. Acquisition date : 11-MAR-2010 19:35:21
Sample ID          : G1202054950      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM21            Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:14.04  0.4%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 958216            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	49.25	150	999	1.33	98.48	95	7	4.17E-02	35.7	
2	0	59.56	8039	970	0.63	119.09	115	8	2.23E+00	1.3	
3	2	74.89*	226	309	0.82	149.74	145	14	6.28E-02	13.6	2.23E+00
4	2	77.09*	405	294	0.83	154.14	145	14	1.13E-01	8.1	
5	0	87.96*	1918	524	0.65	175.86	172	8	5.33E-01	3.1	
6	0	92.87*	165	273	2.09	185.68	182	8	4.57E-02	19.2	
7	0	121.92	311	227	0.73	243.76	240	7	8.63E-02	9.8	
8	0	129.36	64	298	1.00	258.62	255	9	1.79E-02	49.8	
9	0	143.76	66	167	1.60	287.41	284	7	1.84E-02	34.6	
10	0	185.61*	80	232	1.37	371.08	367	9	2.22E-02	36.2	
11	0	209.50	65	294	0.95	418.84	414	11	1.81E-02	52.2	
12	4	238.50*	443	133	0.83	476.81	473	15	1.23E-01	6.1	2.79E+00
13	4	241.54*	94	170	1.41	482.90	473	15	2.60E-02	27.9	
14	0	294.91*	108	177	1.42	589.59	586	10	3.01E-02	24.9	
15	0	338.79	43	139	0.74	677.34	673	8	1.18E-02	50.6	
16	0	351.74*	170	152	1.07	703.23	699	10	4.73E-02	15.6	
17	0	583.00*	105	90	1.02	1165.70	1160	12	2.93E-02	20.6	
18	0	608.71*	151	63	1.48	1217.10	1211	12	4.18E-02	13.5	
19	0	661.40	1664	94	1.33	1322.48	1317	12	4.62E-01	2.7	
20	0	727.04	38	30	1.40	1453.78	1450	8	1.06E-02	29.6	
21	0	860.79	46	41	1.47	1721.33	1716	12	1.28E-02	31.7	
22	0	911.43	120	94	2.02	1822.64	1814	20	3.32E-02	22.0	
23	0	1172.88	1191	30	1.72	2345.75	2337	17	3.31E-01	3.1	
24	0	1332.17*	1074	15	1.92	2664.51	2657	16	2.98E-01	3.2	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054950.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 2-MAR-2010 00:00:00   Acquisition date : 11-MAR-2010 19:35:21
Sample ID        : G1202054950           Sample quantity  : 155.44 GRAM
Sample type      : SOLID                 Sample geometry   :
Detector name    : GAMMA21              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:00:14.04   0.4%
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
CO-57	+	122.06	*	2.490E-01	5.675E-02	4.816E-02	5.533E-03	5.171
		136.47		2.826E-01	2.747E-01	4.530E-01	5.016E-02	0.624
CO-60	+	1173.23		6.502E+00	6.691E-01	1.400E-01	1.154E-02	46.438
	+	1332.49	*	6.615E+00	6.809E-01	9.913E-02	8.046E-03	66.727
CD-109	+	88.03	*	3.129E+01	3.517E+00	1.144E+00	1.076E-01	27.353
SN-126		64.28		4.358E-01	2.642E-01	4.561E-01	6.758E-02	0.955
	+	86.94		1.282E+01	5.380E+00	4.666E-01	1.937E-01	27.467
	+	87.57	*	3.083E+00	3.466E-01	1.125E-01	1.055E-02	27.402
BA-137M	+	661.66	*	5.726E+00	7.047E-01	1.318E-01	1.456E-02	43.436
CS-137	+	661.66	*	6.049E+00	7.451E-01	1.393E-01	1.540E-02	43.436
TL-208		277.37		-7.843E-02	6.181E-01	1.006E+00	1.281E-01	-0.078
	+	583.19	*	3.372E-01	1.438E-01	1.110E-01	1.208E-02	3.039
	+	860.56		1.480E+00	9.508E-01	1.187E+00	1.178E-01	1.247
BI-211		72.87		2.365E-01	2.441E+00	3.723E+00	3.117E-01	0.064
	+	351.06	*	2.122E+00	6.911E-01	6.069E-01	5.479E-02	3.497
PB-212	+	74.82		1.283E+00	3.864E-01	4.406E-01	5.687E-02	2.913
	+	77.11		1.385E+00	2.551E-01	2.663E-01	2.297E-02	5.201
	+	238.63	*	1.118E+00	1.763E-01	1.466E-01	1.465E-02	7.624
		300.09		1.056E+00	1.521E+00	2.330E+00	2.513E-01	0.453
PB-214	+	74.82		2.275E+00	6.728E-01	7.809E-01	9.070E-02	2.913
	+	77.11		2.442E+00	4.928E-01	4.695E-01	5.603E-02	5.201
	+	242.00		1.440E+00	8.184E-01	8.956E-01	9.503E-02	1.608
	+	295.22		7.941E-01	4.049E-01	3.736E-01	4.128E-02	2.126
	+	351.93	*	7.703E-01	2.544E-01	2.209E-01	2.335E-02	3.487
RA-224	+	240.99	*	2.547E+00	1.440E+00	1.576E+00	1.401E-01	1.616
TH-228	+	74.82		1.283E+00	3.660E-01	4.406E-01	3.773E-02	2.913
	+	77.11		1.385E+00	2.551E-01	2.663E-01	2.297E-02	5.201
	+	238.63	*	1.118E+00	1.763E-01	1.466E-01	1.465E-02	7.624
		300.09		1.056E+00	1.649E+00	2.330E+00	1.428E+00	0.453
U-235		89.96		9.996E-02	9.137E-01	1.209E+00	3.015E-01	0.083
	+	93.35		1.769E+00	7.950E-01	7.095E-01	1.668E-01	2.493
	+	143.76	*	4.451E-01	3.180E-01	3.721E-01	6.589E-02	1.196
		163.33		-6.224E-02	5.587E-01	9.495E-01	1.693E-01	-0.066
	+	185.72		1.239E-01	9.023E-02	9.171E-02	7.697E-03	1.351

Sample ID : G1202054950

Acquisition date : 11-MAR-2010 19:35:21

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	205.31			-4.888E-01	7.436E-01	1.060E+00	1.924E-01	-0.461
NP-237	+	86.48	*	9.198E+00	2.188E+00	3.732E-01	8.558E-02	24.648
		95.86		2.234E-01	8.929E-01	1.348E+00	3.294E-01	0.166
AM-241	+	59.54	*	1.338E+01	1.188E+00	1.694E-01	1.437E-02	78.992

---- 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	*	-1.362E-01	6.749E-01	1.116E+00	1.094E-01	-0.122
NA-22		1274.54	*	-5.265E-02	5.390E-02	6.301E-02	5.169E-03	-0.836
NA-24		1368.63	*	-7.890E-04	5.390E-02	Half-Life too short		
K-40		1460.82	*	1.284E+00	6.735E-01	1.440E+00	1.229E-01	0.891
SC-46		889.28	*	-3.609E-02	1.036E-01	1.679E-01	1.493E-02	-0.215
		1120.55		1.305E-01	1.279E-01	2.265E-01	1.914E-02	0.576
V-48		944.13		1.762E-01	2.295E+00	3.832E+00	3.360E-01	0.046
		983.53	*	-3.411E-02	1.639E-01	2.662E-01	2.329E-02	-0.128
		1312.11		-2.378E-02	8.061E-02	1.191E-01	9.705E-03	-0.200
CR-51		320.08	*	3.914E-01	5.764E-01	9.742E-01	9.050E-02	0.402
MN-54		834.85	*	3.288E-02	9.254E-02	1.597E-01	1.548E-02	0.206
CO-56		846.77	*	-2.877E-02	9.775E-02	1.600E-01	1.525E-02	-0.180
		1037.84		-4.805E-01	8.518E-01	1.328E+00	1.212E-01	-0.362
		1238.28		2.463E-02	1.121E-01	1.879E-01	1.595E-02	0.131
		1771.35		-3.014E-01	3.544E-01	3.763E-01	3.127E-02	-0.801
CO-58		810.76	*	-4.718E-02	9.060E-02	1.456E-01	1.457E-02	-0.324
FE-59		1099.45	*	-9.652E-02	2.153E-01	3.357E-01	3.097E-02	-0.288
		1291.59		8.073E-02	1.110E-01	2.153E-01	2.022E-02	0.375
ZN-65		1115.54	*	-1.018E-01	2.512E-01	3.953E-01	3.351E-02	-0.258
SE-75	+	121.12		1.279E+00	3.049E-01	3.919E-01	5.241E-02	3.265
		136.00		9.044E-02	5.181E-02	8.793E-02	9.346E-03	1.029
		264.66	*	-1.067E-02	6.870E-02	1.119E-01	1.005E-02	-0.095
		279.54		-1.966E-01	1.746E-01	2.632E-01	2.430E-02	-0.747
		400.66		-1.342E-01	5.247E-01	8.150E-01	8.702E-02	-0.165
SR-85		514.00	*	-1.648E-01	8.052E-02	1.118E-01	1.076E-02	-1.474
Y-88		898.04		1.465E-02	1.092E-01	1.843E-01	1.620E-02	0.079
		1836.06	*	3.418E-02	6.378E-02	1.188E-01	9.808E-03	0.288
Y-91		1204.77	*	1.133E+01	3.117E+01	5.339E+01	4.398E+00	0.212
NB-94		702.65	*	8.226E-03	7.135E-02	1.166E-01	1.270E-02	0.071
		871.09		2.043E-02	9.445E-02	1.608E-01	1.476E-02	0.127
NB-95		765.81	*	7.417E-03	9.097E-02	1.469E-01	1.535E-02	0.050
NB-95M		235.69	*	-7.008E-02	2.003E-01	2.907E-01	2.935E-02	-0.241
ZR-95		724.19		-1.228E-01	2.095E-01	2.688E-01	3.053E-02	-0.457
		756.73	*	-2.586E-02	1.579E-01	2.491E-01	2.809E-02	-0.104
MO-99		140.51		5.863E+00	7.665E+00	1.148E+01	2.800E+00	0.511
		181.07		2.404E+00	6.184E+00	9.687E+00	1.807E+00	0.248
		366.42		-1.168E+01	5.064E+01	7.952E+01	6.668E+00	-0.147
		739.50	*	-9.174E+00	8.139E+00	1.139E+01	1.932E+00	-0.805
		777.92		-6.470E-01	2.118E+01	3.377E+01	3.491E+00	-0.019
TC-99M		140.51	*	1.590E+04	2.118E+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
RU-103	497.08	*		2.942E-03	7.415E-02	1.243E-01	1.798E-02	0.024
	610.33			6.497E+00	2.211E+00	3.574E+00	6.251E-01	1.818
RH-106	621.93	*		2.799E-02	6.362E-01	1.045E+00	1.538E-01	0.027
	1050.41			7.833E-01	7.072E+00	1.173E+01	1.015E+00	0.067
RU-106	621.93	*		2.799E-02	6.362E-01	1.045E+00	1.122E-01	0.027
	1050.41			7.833E-01	7.072E+00	1.173E+01	1.015E+00	0.067
AG-108M	433.94	*		-1.784E-02	6.107E-02	1.013E-01	8.966E-03	-0.176
	614.28			9.919E-03	7.303E-02	1.068E-01	1.164E-02	0.093
	722.91			-2.110E-02	8.980E-02	1.220E-01	1.342E-02	-0.173
AG-110M	657.76	*		-3.002E-03	9.129E-02	1.295E-01	1.452E-02	-0.023
	677.62			-1.627E-01	6.701E-01	1.061E+00	1.187E-01	-0.153
	706.68			-2.969E-01	4.460E-01	6.689E-01	7.403E-02	-0.444
	763.94			1.705E-01	3.692E-01	6.171E-01	6.580E-02	0.276
	884.68			1.422E-01	1.317E-01	2.380E-01	2.197E-02	0.598
	937.49			-6.032E-02	3.426E-01	5.617E-01	5.097E-02	-0.107
	1384.29			-1.391E-01	2.014E-01	2.732E-01	2.305E-02	-0.509
	1505.03			-2.590E-01	4.652E-01	6.701E-01	5.576E-02	-0.386
SN-113	391.69	*		-3.664E-02	8.881E-02	1.365E-01	1.124E-02	-0.268
CD-115	260.90			-1.969E+01	4.347E+01	6.957E+01	6.218E+00	-0.283
	492.35			4.174E+00	1.492E+01	2.547E+01	2.383E+00	0.164
	527.90	*		-4.437E+00	4.432E+00	6.693E+00	6.549E-01	-0.663
SN-117M	156.02			-1.125E+00	2.142E+00	3.576E+00	3.228E-01	-0.314
	158.56	*		-1.611E-02	5.106E-02	8.605E-02	7.575E-03	-0.187
TE-123M	159.00	*		6.419E-03	3.377E-02	5.837E-02	5.145E-03	0.110
SB-124	602.73			-2.125E-02	7.640E-02	1.056E-01	1.116E-02	-0.201
	645.85			-1.348E-01	1.028E+00	1.656E+00	1.874E-01	-0.081
	722.78			-1.353E-01	8.536E-01	1.174E+00	1.284E-01	-0.115
	1690.97	*		-5.121E-02	1.345E-01	1.956E-01	1.707E-02	-0.262
SB-125	427.87	*		-8.614E-02	1.818E-01	2.980E-01	2.577E-02	-0.289
	463.37			3.732E-01	6.196E-01	1.077E+00	1.035E-01	0.346
	600.60			3.178E-02	3.251E-01	5.387E-01	5.962E-02	0.059
	635.95			-1.321E-01	6.053E-01	9.683E-01	1.105E-01	-0.136
TE-125M	109.28	*		2.404E+00	9.661E+00	1.562E+01	1.897E+00	0.154
I-126	388.63			-6.185E-02	2.491E-01	3.881E-01	3.108E-02	-0.159
	666.33	*		-3.615E-02	4.157E-01	5.843E-01	6.446E-02	-0.062
	753.82			2.119E+00	3.202E+00	5.453E+00	5.754E-01	0.389
SB-126	414.70			8.443E-03	1.096E-01	1.869E-01	1.550E-02	0.045
	666.50			5.308E-02	1.346E-01	2.011E-01	2.218E-02	0.264
	695.00			4.767E-02	1.311E-01	2.190E-01	2.393E-02	0.218
	697.00			-2.917E-01	4.578E-01	6.946E-01	7.583E-02	-0.420
	720.70	*		1.587E-01	2.368E-01	4.056E-01	4.376E-02	0.391
	856.80			4.858E-02	9.926E-01	1.457E+00	1.368E-01	0.033
SB-127	252.40			-1.561E+00	2.705E+00	4.183E+00	1.725E+00	-0.373
	473.00			-2.813E-01	1.480E+00	2.453E+00	2.930E-01	-0.115
	685.70	*		8.523E-01	1.132E+00	1.955E+00	2.364E-01	0.436
	783.70			1.199E+00	3.385E+00	5.584E+00	6.951E-01	0.215
I-131	80.19			1.278E+00	2.558E+00	3.958E+00	3.503E-01	0.323
	284.31			-3.784E-01	1.593E+00	2.565E+00	2.391E-01	-0.148
	364.49	*		-7.188E-03	1.460E-01	2.325E-01	2.060E-02	-0.031

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	+	636.99	-1.257E+00	2.298E+00	3.560E+00	3.997E-01	-0.353
		49.72	5.381E+00	3.880E+00	4.408E+00	4.177E-01	1.221
		111.76	-1.844E+00	1.153E+01	1.815E+01	2.111E+00	-0.102
		116.30	-4.097E+00	9.972E+00	1.536E+01	1.832E+00	-0.267
BA-133	*	228.16	7.632E-02	3.469E-01	5.846E-01	8.799E-02	0.131
		81.00	-3.157E-02	8.662E-02	1.276E-01	1.998E-02	-0.248
		276.40	3.932E-02	5.862E-01	9.657E-01	1.381E-01	0.041
		302.85	-1.317E-01	2.565E-01	4.027E-01	5.341E-02	-0.327
		356.01	5.813E-02	8.808E-02	1.332E-01	1.717E-02	0.437
I-133	*	383.85	-3.768E-02	5.809E-01	9.197E-01	1.110E-01	-0.041
		529.87	-5.548E-05	5.809E-01	Half-Life	too short	
		875.33	4.614E-04	5.809E-01	Half-Life	too short	
CS-134		1298.22	2.910E-03	5.809E-01	Half-Life	too short	
		563.25	4.048E-01	7.652E-01	1.315E+00	1.347E-01	0.308
		569.33	3.418E-01	4.119E-01	7.228E-01	7.471E-02	0.473
		604.72	1.752E-02	6.498E-02	9.700E-02	1.028E-02	0.181
		795.86	-1.120E-02	1.158E-01	1.831E-01	1.869E-02	-0.061
CS-135	*	801.95	-2.693E-03	9.322E-01	1.572E+00	1.593E-01	-0.002
		1365.19	1.777E-01	1.431E+00	2.475E+00	2.125E-01	0.072
		268.22	-1.620E-01	2.491E-01	3.917E-01	4.011E-02	-0.414
I-135		546.56	1.994E+04	2.491E-01	Half-Life	too short	
		836.80	1.227E+04	2.491E-01	Half-Life	too short	
		1038.76	-5.344E+04	2.491E-01	Half-Life	too short	
		1131.51	-1.361E+04	2.491E-01	Half-Life	too short	
		1260.41	-4.489E+03	2.491E-01	Half-Life	too short	
		1457.56	-2.552E+04	2.491E-01	Half-Life	too short	
		1678.03	-3.085E+04	2.491E-01	Half-Life	too short	
		1791.20	1.198E+04	2.491E-01	Half-Life	too short	
CS-136		153.25	3.414E-01	7.564E-01	1.326E+00	1.433E-01	0.257
		176.60	-3.243E-01	4.827E-01	7.898E-01	7.260E-02	-0.411
		273.65	-2.030E-01	6.494E-01	1.045E+00	1.007E-01	-0.194
		340.55	7.154E-02	2.100E-01	3.106E-01	2.801E-02	0.230
		818.51	-3.742E-02	1.436E-01	2.365E-01	2.341E-02	-0.158
CE-139	*	1048.07	-4.118E-02	2.281E-01	3.687E-01	3.322E-02	-0.112
		1235.36	6.845E-01	6.180E-01	1.161E+00	1.332E-01	0.590
		165.86	1.255E-02	3.877E-02	6.717E-02	5.460E-03	0.187
BA-140		162.66	-5.843E-01	7.766E-01	1.276E+00	1.151E-01	-0.458
		304.85	2.059E+00	1.824E+00	3.015E+00	8.850E-01	0.683
		423.72	1.216E-01	2.934E+00	4.985E+00	1.637E+00	0.024
LA-140	*	537.26	-3.200E-02	4.196E-01	6.916E-01	2.369E-01	-0.046
		328.76	-6.643E-02	4.114E-01	6.570E-01	6.096E-02	-0.101
		487.02	-5.434E-02	2.046E-01	3.353E-01	3.281E-02	-0.162
		815.77	-7.375E-02	6.086E-01	1.014E+00	1.097E-01	-0.073
		1596.21	-8.488E-02	1.026E-01	1.281E-01	1.072E-02	-0.662
CE-141	*	145.44	-2.132E-02	7.494E-02	1.046E-01	1.049E-02	-0.204
CE-143	*	57.36	3.048E+01	5.975E+01	9.363E+01	9.276E+00	0.326
		293.27	2.336E+01	1.582E+01	2.477E+01	5.341E+00	0.943
		664.57	1.085E+02	2.292E+02	3.397E+02	1.046E+02	0.320
		721.93	9.329E+00	2.220E+02	3.143E+02	9.038E+01	0.030

Sample ID : G1202054950

Acquisition date : 11-MAR-2010 19:35:21

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-144		80.12		9.925E-01	2.154E+00	3.327E+00	2.936E-01	0.298
		133.52	*	-2.122E-01	2.775E-01	3.731E-01	6.186E-02	-0.569
PM-144		476.78		1.589E-02	1.445E-01	2.440E-01	2.406E-02	0.065
		618.01		3.035E-03	6.456E-02	1.062E-01	1.156E-02	0.029
		696.49	*	-4.182E-02	8.128E-02	1.252E-01	1.368E-02	-0.334
PR-144		696.51	*	-3.132E+00	6.065E+00	9.344E+00	1.020E+00	-0.335
		1489.16		-6.265E+00	2.142E+01	3.309E+01	2.749E+00	-0.189
PM-146		453.88	*	4.484E-02	9.743E-02	1.684E-01	1.815E-02	0.266
		633.25		6.341E-01	3.248E+00	5.380E+00	2.085E+00	0.118
		735.93		1.907E-01	3.428E-01	5.739E-01	1.649E-01	0.332
		747.24		7.246E-02	2.300E-01	3.803E-01	6.023E-02	0.191
ND-147		91.11		-1.251E-01	2.061E-01	2.582E-01	2.635E-02	-0.485
		319.41		1.672E+00	4.364E+00	7.241E+00	6.411E-01	0.231
		531.02	*	5.434E-01	8.045E-01	1.403E+00	2.198E-01	0.387
PM-149		285.90	*	4.440E-01	2.943E+01	4.815E+01	7.560E+00	0.009
EU-152	+	121.78		7.261E-01	1.692E-01	2.329E-01	2.901E-02	3.117
		244.70		-9.447E-02	5.445E-01	7.966E-01	7.091E-02	-0.119
		344.28	*	-2.551E-02	1.857E-01	2.956E-01	2.710E-02	-0.086
		778.90		2.226E-01	6.007E-01	9.967E-01	1.029E-01	0.223
		964.08		-7.160E-01	9.384E-01	1.474E+00	1.292E-01	-0.486
		1085.87		6.720E-01	1.110E+00	1.912E+00	1.637E-01	0.351
		1112.07		1.110E-02	8.300E-01	1.357E+00	1.151E-01	0.008
		1408.01		-3.898E-02	3.037E-01	4.940E-01	4.064E-02	-0.079
GD-153		69.67		-2.487E-01	1.184E+00	1.930E+00	1.582E-01	-0.129
		97.43	*	-8.822E-02	8.125E-02	1.212E-01	1.198E-02	-0.728
		103.18		3.518E-02	1.134E-01	1.847E-01	1.886E-02	0.190
EU-154	+	123.07		5.131E-01	1.229E-01	1.421E-01	1.934E-02	3.610
		723.31		-2.699E-01	4.129E-01	5.230E-01	6.007E-02	-0.516
		873.19		5.380E-01	7.651E-01	1.347E+00	1.654E-01	0.399
		996.26		8.402E-01	1.032E+00	1.801E+00	3.157E-01	0.466
		1004.73		-6.089E-01	5.673E-01	8.316E-01	9.742E-02	-0.732
		1274.44	*	-1.366E-01	1.477E-01	1.735E-01	1.919E-02	-0.787
EU-155	+	86.55		3.730E+00	4.219E-01	2.098E-01	1.967E-02	17.778
		105.31	*	4.733E-02	1.149E-01	1.878E-01	1.958E-02	0.252
TB-160	+	86.79		9.424E+00	1.060E+00	6.546E-01	6.096E-02	14.397
		197.04		3.811E-01	7.296E-01	1.261E+00	1.076E-01	0.302
		215.65		-3.182E-01	1.080E+00	1.779E+00	1.551E-01	-0.179
		298.57		3.660E-02	2.044E-01	3.015E-01	2.690E-02	0.121
		879.36	*	-3.682E-01	3.529E-01	5.331E-01	4.825E-02	-0.691
		962.29		-3.680E-01	1.553E+00	2.542E+00	2.228E-01	-0.145
		966.15		5.165E-01	5.978E-01	1.043E+00	9.136E-02	0.495
		1177.93		-3.229E-02	6.796E-01	9.428E-01	7.769E-02	-0.034
		1271.85		1.220E-01	8.119E-01	1.355E+00	1.110E-01	0.090
HO-166M		80.57		7.394E-02	2.405E-01	3.683E-01	3.261E-02	0.201
	+	184.41		9.847E-02	7.168E-02	7.391E-02	6.191E-03	1.332
		280.46		-4.679E-02	1.360E-01	2.175E-01	1.940E-02	-0.215
		410.95		1.201E-01	4.908E-01	7.907E-01	6.514E-02	0.152
		711.68	*	6.122E-02	1.418E-01	2.377E-01	2.577E-02	0.258
		752.31		2.590E-01	6.422E-01	1.071E+00	1.131E-01	0.242

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TA-182		810.29		-9.851E-02	1.417E-01	2.235E-01	2.234E-02	-0.441
		67.75		1.862E-02	6.659E-02	1.111E-01	9.004E-03	0.168
		100.11		1.192E-01	1.667E-01	2.782E-01	2.790E-02	0.429
		152.43		-2.709E-01	4.390E-01	6.509E-01	6.073E-02	-0.416
		222.11		-7.444E-01	5.277E-01	8.065E-01	7.074E-02	-0.923
		1121.30		2.374E-01	3.669E-01	6.314E-01	5.334E-02	0.376
		1189.05		5.249E-02	5.482E-01	9.009E-01	7.424E-02	0.058
		1221.41	*	3.633E-02	2.615E-01	4.334E-01	3.568E-02	0.084
IR-192		1231.02		2.122E-01	6.816E-01	1.157E+00	9.516E-02	0.183
	+	295.96		5.586E-01	2.825E-01	3.526E-01	3.168E-02	1.584
		308.46		-4.636E-02	1.545E-01	2.454E-01	2.195E-02	-0.189
		316.51	*	1.313E-02	6.220E-02	1.021E-01	9.076E-03	0.129
		468.07		6.180E-02	1.455E-01	2.506E-01	2.416E-02	0.247
HG-203		70.83		-5.429E-02	9.377E-01	1.422E+00	2.257E-01	-0.038
		72.87		5.441E-02	5.614E-01	8.565E-01	1.319E-01	0.064
		279.20	*	-3.303E-02	5.720E-02	9.000E-02	8.216E-03	-0.367
BI-207		72.81		9.676E-03	1.402E-01	2.136E-01	1.787E-02	0.045
	+	74.97		3.698E-01	1.054E-01	1.691E-01	1.436E-02	2.187
		569.70		2.185E-02	6.632E-02	1.122E-01	1.149E-02	0.195
		1063.66	*	-9.188E-02	1.525E-01	2.362E-01	2.036E-02	-0.389
PB-210		1770.23		-9.722E-01	8.514E-01	8.018E-01	6.663E-02	-1.212
PB-211		46.54	*	7.211E-01	8.373E-01	1.357E+00	1.283E-01	0.531
		404.85	*	8.208E-02	1.547E+00	2.458E+00	1.187E+00	0.033
		427.09		-1.919E+00	3.180E+00	4.957E+00	2.292E+00	-0.387
BI-212		832.01		9.471E-01	2.440E+00	4.149E+00	2.160E+00	0.228
	+	727.33	*	1.949E+00	1.186E+00	2.005E+00	2.810E-01	0.972
		785.37		3.377E+00	7.911E+00	1.313E+01	1.348E+00	0.257
BI-214		1620.50		1.440E+00	3.327E+00	6.143E+00	5.138E-01	0.234
	+	609.32	*	9.401E-01	2.767E-01	3.949E-01	4.683E-02	2.380
		1120.29		7.484E-01	8.050E-01	1.412E+00	1.523E-01	0.530
RN-219		1764.49		9.345E-01	4.969E-01	1.098E+00	9.131E-02	0.851
		271.23		3.870E-01	3.786E-01	6.560E-01	6.901E-02	0.590
RA-223		401.81	*	8.226E-01	8.545E-01	1.436E+00	2.094E-01	0.573
		81.07		-7.714E-02	1.962E-01	2.887E-01	2.567E-02	-0.267
		83.79		1.882E-01	1.212E-01	1.957E-01	1.778E-02	0.962
		94.87		2.963E-01	4.226E-01	6.580E-01	6.410E-02	0.450
	+	144.24		1.492E+00	1.045E+00	1.386E+00	1.505E-01	1.077
RA-226		154.21		4.217E-01	4.602E-01	8.214E-01	8.180E-02	0.513
		269.46		-4.397E-02	2.878E-01	4.683E-01	4.262E-02	-0.094
		323.87	*	-3.893E-02	1.140E+00	1.838E+00	3.205E-01	-0.021
	+	338.28		2.330E+00	2.375E+00	3.204E+00	3.890E-01	0.727
	+	609.32	*	9.401E-01	2.767E-01	3.949E-01	4.683E-02	2.380
AC-227		1120.29		7.484E-01	8.050E-01	1.412E+00	1.523E-01	0.530
		1764.49		9.345E-01	4.969E-01	1.098E+00	9.131E-02	0.851
		79.69		4.444E-02	1.083E+00	1.637E+00	2.835E-01	0.027
		235.96		-7.872E-02	2.517E-01	3.662E-01	3.862E-02	-0.215
		256.23	*	7.201E-02	4.175E-01	6.957E-01	8.540E-02	0.104
		299.98		1.161E+00	1.674E+00	2.562E+00	3.308E-01	0.453
		304.50		3.321E+00	2.812E+00	4.833E+00	8.062E-01	0.687

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		334.37		-2.514E+00	3.588E+00	4.794E+00	7.508E-01	-0.524
		79.80		3.995E-01	1.419E+00	2.170E+00	4.741E-01	0.184
		235.96		-7.872E-02	2.517E-01	3.662E-01	3.652E-02	-0.215
		256.23	*	7.201E-02	4.175E-01	6.957E-01	9.604E-02	0.104
		299.98		1.161E+00	1.674E+00	2.562E+00	3.308E-01	0.453
AC-228		304.50		3.321E+00	2.812E+00	4.833E+00	8.062E-01	0.687
		334.37		-2.514E+00	3.588E+00	4.794E+00	7.508E-01	-0.524
	+	338.32		5.871E-01	6.427E-01	8.075E-01	3.370E-01	0.727
	+	911.20	*	1.972E+00	8.960E-01	9.217E-01	1.078E-01	2.139
		968.97		4.870E-01	8.632E-01	1.467E+00	3.582E-01	0.332
RA-228	+	338.32		5.871E-01	6.427E-01	8.075E-01	3.370E-01	0.727
	+	911.20	*	1.972E+00	8.960E-01	9.217E-01	1.078E-01	2.139
		968.97		4.870E-01	8.632E-01	1.467E+00	3.582E-01	0.332
TH-229		85.43		-1.500E-02	2.102E-01	3.147E-01	2.898E-02	-0.048
	+	88.47		4.752E+00	5.343E-01	5.224E-01	4.926E-02	9.097
		193.51	*	-5.290E-01	7.231E-01	1.171E+00	9.940E-02	-0.452
PA-231	+	210.85		2.285E+00	2.393E+00	2.194E+00	1.903E-01	1.042
		283.69	*	1.179E+00	2.405E+00	4.046E+00	5.975E-01	0.291
		301.36		-3.175E-01	9.863E-01	1.571E+00	1.942E-01	-0.202
TH-231		81.07		-7.714E-02	1.962E-01	2.887E-01	2.567E-02	-0.267
		83.79		1.882E-01	1.212E-01	1.957E-01	1.778E-02	0.962
		94.87		2.963E-01	4.226E-01	6.580E-01	6.410E-02	0.450
	+	144.24		1.492E+00	1.045E+00	1.386E+00	1.505E-01	1.077
		154.21		4.217E-01	4.602E-01	8.214E-01	8.180E-02	0.513
TH-232		269.46		-4.397E-02	2.878E-01	4.683E-01	4.262E-02	-0.094
		323.87	*	-3.893E-02	1.140E+00	1.838E+00	3.205E-01	-0.021
	+	338.28		2.330E+00	2.375E+00	3.204E+00	3.890E-01	0.727
	+	338.32		5.871E-01	5.964E-01	8.075E-01	7.039E-02	0.727
	+	911.20	*	1.972E+00	8.960E-01	9.217E-01	1.078E-01	2.139
PA-233		968.97		4.870E-01	8.632E-01	1.467E+00	3.582E-01	0.332
		300.13		5.258E-01	7.590E-01	1.160E+00	1.741E-01	0.453
		311.90	*	-7.594E-02	1.165E-01	1.801E-01	1.644E-02	-0.422
PA-234		340.48		4.775E-01	1.195E+00	1.770E+00	4.264E-01	0.270
		94.67		1.368E-01	1.585E-01	2.481E-01	3.275E-02	0.551
		98.44		1.982E-02	8.765E-02	1.415E-01	7.927E-02	0.140
		111.00		-5.934E-02	2.003E-01	3.126E-01	4.268E-02	-0.190
		131.20		7.797E-02	1.370E-01	2.063E-01	2.249E-02	0.378
PA-234M		569.50		2.133E-01	5.905E-01	1.002E+00	1.025E-01	0.213
		733.00		-5.483E-01	8.995E-01	1.287E+00	2.972E-01	-0.426
		880.51		-1.886E-01	7.391E-01	1.208E+00	1.091E-01	-0.156
		883.24		2.253E-02	7.872E-01	1.318E+00	8.869E-01	0.017
		926.50		1.085E-01	5.571E-01	9.388E-01	2.378E-01	0.116
TH-234		946.00	*	-2.210E-01	9.789E-01	1.597E+00	3.007E-01	-0.138
		949.00		1.887E-01	1.435E+00	2.406E+00	2.109E-01	0.078
		766.42		-2.886E+00	2.583E+01	4.087E+01	2.088E+01	-0.071
		1001.03	*	1.068E+01	1.214E+01	2.150E+01	2.163E+00	0.497
		63.29	*	3.815E-01	6.732E-01	1.137E+00	2.053E-01	0.335
U-238	+	92.59		2.342E+00	1.040E+00	1.136E+00	2.555E-01	2.062
		63.29	*	3.815E-01	6.732E-01	1.137E+00	2.053E-01	0.335

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		2.342E+00	9.251E-01	1.136E+00	1.093E-01	2.062
		99.53		1.426E-01	1.585E-01	2.669E-01	2.668E-02	0.534
		103.37		4.110E-02	1.054E-01	1.723E-01	1.761E-02	0.239
		106.12		2.284E-02	8.873E-02	1.438E-01	1.494E-02	0.159
	*	117.23		-2.122E-01	4.473E-01	6.858E-01	7.633E-02	-0.309
CM-247		228.18		6.893E-02	3.252E-01	5.479E-01	4.830E-02	0.126
		277.60		-1.647E-01	2.896E-01	4.574E-01	4.081E-02	-0.360
		278.00		1.500E-01	1.169E+00	1.933E+00	1.724E-01	0.078
		287.50		1.132E+00	2.012E+00	3.405E+00	3.039E-01	0.333
	*	402.40		2.362E-02	8.018E-02	1.297E-01	1.052E-02	0.182
CF-249		252.80		-1.092E+00	1.514E+00	2.385E+00	2.129E-01	-0.458
		333.37		-3.939E-01	3.500E-01	4.859E-01	4.257E-02	-0.811
CF-251	*	388.16		1.868E-02	7.728E-02	1.252E-01	1.003E-02	0.149
	*	177.52		4.634E-02	1.662E-01	2.862E-01	2.372E-02	0.162
		227.38		1.322E-01	5.400E-01	9.116E-01	8.030E-02	0.145
ANH-511		285.41		2.559E-01	3.659E+00	6.009E+00	5.363E-01	0.043
	*	511.00		5.354E-02	7.344E-02	1.364E-01	1.308E-02	0.392

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]G1202054950      *
* Acquisition date   : 11-MAR-2010 19:35:21 Detector SN#      :              *
* Detector ID        : GAM21          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 01:00:14.04 Half life ratio        : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 2-MAR-2010 00:00:00 Nuclide Library    : SOLID          *
* Sample ID          : G1202054950    Analyst initials:      : MXR1           *
* Batch Number       : 958216         Sample Quantity       : 1.5544E+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)	
CO-57	2.490E-01	5.562E-02	5.187E-02	0.000E+00
CO-60	6.615E+00	6.673E-01	1.002E-01	0.000E+00
CD-109	3.129E+01	3.447E+00	1.242E+00	0.000E+00
SN-126	3.083E+00	3.396E-01	1.222E-01	0.000E+00
BA-137M	5.726E+00	6.906E-01	1.359E-01	0.000E+00
CS-137	6.049E+00	7.302E-01	1.436E-01	0.000E+00
TL-208	3.372E-01	1.409E-01	1.148E-01	0.000E+00
BI-211	2.122E+00	6.773E-01	6.363E-01	0.000E+00
PB-212	1.118E+00	1.728E-01	1.553E-01	0.000E+00
PB-214	7.703E-01	2.493E-01	2.316E-01	0.000E+00
RA-224	2.547E+00	1.411E+00	1.669E+00	0.000E+00
TH-228	1.118E+00	1.728E-01	1.553E-01	0.000E+00
U-235	4.451E-01	3.117E-01	3.992E-01	0.000E+00
NP-237	9.198E+00	2.145E+00	4.054E-01	0.000E+00
AM-241	1.338E+01	1.164E+00	1.857E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.362E-01	6.614E-01	1.161E+00	0.000E+00 NOT IDENT.
NA-22	-5.265E-02	5.282E-02	6.379E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.350E+03	0.000E+00	0.000E+00 SHORT HLIF
K-40	1.284E+00	6.600E-01	1.452E+00	0.000E+00 NOT IDENT.
SC-46	-3.609E-02	1.015E-01	1.717E-01	0.000E+00 NOT IDENT.
V-48	-3.411E-02	1.606E-01	2.715E-01	0.000E+00 NOT IDENT.
CR-51	3.914E-01	5.649E-01	1.024E+00	0.000E+00 NOT IDENT.
MN-54	3.288E-02	9.069E-02	1.636E-01	0.000E+00 NOT IDENT.
CO-56	-2.877E-02	9.580E-02	1.638E-01	0.000E+00 NOT IDENT.
CO-58	-4.718E-02	8.879E-02	1.493E-01	0.000E+00 NOT IDENT.
FE-59	-9.652E-02	2.110E-01	3.413E-01	0.000E+00 NOT IDENT.
ZN-65	-1.018E-01	2.462E-01	4.017E-01	0.000E+00 NOT IDENT.

SE-75	-1.067E-02	6.733E-02	1.182E-01	0.000E+00	FAIL ABUN
SR-85	-1.648E-01	7.891E-02	1.161E-01	0.000E+00	NOT IDENT.
Y-88	3.418E-02	6.250E-02	1.190E-01	0.000E+00	NOT IDENT.
Y-91	1.133E+01	3.055E+01	5.414E+01	0.000E+00	NOT IDENT.
NB-94	8.226E-03	6.993E-02	1.201E-01	0.000E+00	NOT IDENT.
NB-95	7.417E-03	8.915E-02	1.509E-01	0.000E+00	NOT IDENT.
NB-95M	-7.008E-02	1.963E-01	3.080E-01	0.000E+00	NOT IDENT.
ZR-95	-2.586E-02	1.547E-01	2.558E-01	0.000E+00	NOT IDENT.
MO-99	-9.174E+00	7.977E+00	1.171E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.027E+10	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.942E-03	7.266E-02	1.291E-01	0.000E+00	NOT IDENT.
RH-106	2.799E-02	6.235E-01	1.079E+00	0.000E+00	NOT IDENT.
RU-106	2.799E-02	6.235E-01	1.079E+00	0.000E+00	NOT IDENT.
AG-108M	-1.784E-02	5.985E-02	1.056E-01	0.000E+00	NOT IDENT.
AG-110M	-3.002E-03	8.946E-02	1.335E-01	0.000E+00	NOT IDENT.
SN-113	-3.664E-02	8.704E-02	1.427E-01	0.000E+00	NOT IDENT.
CD-115	-4.437E+00	4.344E+00	6.942E+00	0.000E+00	NOT IDENT.
SN-117M	-1.611E-02	5.004E-02	9.208E-02	0.000E+00	NOT IDENT.
TE-123M	6.419E-03	3.310E-02	6.245E-02	0.000E+00	NOT IDENT.
SB-124	-5.121E-02	1.318E-01	1.964E-01	0.000E+00	NOT IDENT.
SB-125	-8.614E-02	1.782E-01	3.108E-01	0.000E+00	NOT IDENT.
TE-125M	2.404E+00	9.468E+00	1.687E+01	0.000E+00	NOT IDENT.
I-126	-3.615E-02	4.074E-01	6.023E-01	0.000E+00	NOT IDENT.
SB-126	1.587E-01	2.321E-01	4.171E-01	0.000E+00	NOT IDENT.
SB-127	8.523E-01	1.109E+00	2.014E+00	0.000E+00	NOT IDENT.
I-131	-7.188E-03	1.430E-01	2.435E-01	0.000E+00	NOT IDENT.
TE-132	7.632E-02	3.400E-01	6.198E-01	0.000E+00	FAIL ABUN
BA-133	5.813E-02	8.632E-02	1.396E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.674E+02	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-1.120E-02	1.135E-01	1.878E-01	0.000E+00	NOT IDENT.
CS-135	-1.620E-01	2.441E-01	4.135E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.329E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.118E-02	2.235E-01	3.753E-01	0.000E+00	NOT IDENT.
CE-139	1.255E-02	3.800E-02	7.180E-02	0.000E+00	NOT IDENT.
BA-140	-3.200E-02	4.112E-01	7.170E-01	0.000E+00	NOT IDENT.
LA-140	-8.488E-02	1.005E-01	1.289E-01	0.000E+00	NOT IDENT.
CE-141	-2.132E-02	7.344E-02	1.122E-01	0.000E+00	NOT IDENT.
CE-143	2.336E+01	1.551E+01	2.609E+01	0.000E+00	NOT IDENT.
CE-144	-2.122E-01	2.719E-01	4.009E-01	0.000E+00	NOT IDENT.
PM-144	-4.182E-02	7.965E-02	1.289E-01	0.000E+00	NOT IDENT.
PR-144	-3.132E+00	5.944E+00	9.619E+00	0.000E+00	NOT IDENT.
PM-146	4.484E-02	9.548E-02	1.754E-01	0.000E+00	NOT IDENT.
ND-147	5.434E-01	7.884E-01	1.454E+00	0.000E+00	NOT IDENT.
PM-149	4.440E-01	2.884E+01	5.076E+01	0.000E+00	NOT IDENT.
EU-152	-2.551E-02	1.820E-01	3.101E-01	0.000E+00	FAIL ABUN
GD-153	-8.822E-02	7.963E-02	1.313E-01	0.000E+00	NOT IDENT.
EU-154	-1.366E-01	1.448E-01	1.757E-01	0.000E+00	FAIL ABUN
EU-155	4.733E-02	1.126E-01	2.030E-01	0.000E+00	FAIL ABUN
TB-160	-3.682E-01	3.459E-01	5.453E-01	0.000E+00	FAIL ABUN
HO-166M	6.122E-02	1.389E-01	2.445E-01	0.000E+00	FAIL ABUN
TA-182	3.633E-02	2.562E-01	4.393E-01	0.000E+00	NOT IDENT.
IR-192	1.313E-02	6.096E-02	1.074E-01	0.000E+00	FAIL ABUN
HG-203	-3.303E-02	5.605E-02	9.492E-02	0.000E+00	NOT IDENT.
BI-207	-9.188E-02	1.494E-01	2.404E-01	0.000E+00	FAIL ABUN
PB-210	7.211E-01	8.206E-01	1.496E+00	0.000E+00	NOT IDENT.
PB-211	8.208E-02	1.516E+00	2.567E+00	0.000E+00	NOT IDENT.
BI-212	1.949E+00	1.162E+00	2.061E+00	0.000E+00	FAIL ABUN
BI-214	0.000E+00	2.712E-01	4.080E-01	0.000E+00	FAIL ABUN
RN-219	8.226E-01	8.375E-01	1.501E+00	0.000E+00	NOT IDENT.
RA-223	-3.893E-02	1.117E+00	1.931E+00	0.000E+00	FAIL ABUN
RA-226	0.000E+00	2.712E-01	4.080E-01	0.000E+00	FAIL ABUN
AC-227	7.201E-02	4.092E-01	7.354E-01	0.000E+00	NOT IDENT.
TH-227	7.201E-02	4.092E-01	7.354E-01	0.000E+00	NOT IDENT.
AC-228	0.000E+00	8.781E-01	9.419E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	8.781E-01	9.419E-01	0.000E+00	FAIL ABUN
TH-229	-5.290E-01	7.086E-01	1.247E+00	0.000E+00	FAIL ABUN
PA-231	1.179E+00	2.356E+00	4.266E+00	0.000E+00	NOT IDENT.
TH-231	-3.893E-02	1.117E+00	1.931E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	8.781E-01	9.419E-01	0.000E+00	FAIL ABUN
PA-233	-7.594E-02	1.141E-01	1.894E-01	0.000E+00	NOT IDENT.
PA-234	-2.210E-01	9.594E-01	1.630E+00	0.000E+00	NOT IDENT.
PA-234M	1.068E+01	1.190E+01	2.191E+01	0.000E+00	NOT IDENT.
TH-234	3.815E-01	6.598E-01	1.245E+00	0.000E+00	FAIL ABUN
U-238	3.815E-01	6.598E-01	1.245E+00	0.000E+00	FAIL ABUN
NP-239	-2.122E-01	4.384E-01	7.393E-01	0.000E+00	NOT IDENT.
CM-247	2.362E-02	7.858E-02	1.355E-01	0.000E+00	NOT IDENT.
CF-249	1.868E-02	7.574E-02	1.309E-01	0.000E+00	NOT IDENT.
CF-251	4.634E-02	1.628E-01	3.054E-01	0.000E+00	NOT IDENT.

ANH-511	5.354E-02	7.197E-02	1.416E-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]G1202054950.CNF;1
Sample date        : 2-MAR-2010 00:00:00. Acquisition date : 11-MAR-2010 19:35:21
Sample ID          : G1202054950      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM21            Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:14.04  0.4%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 958216            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	311	85.60*	7.221E+00	2.428E-01	2.490E-01	22.79
	136.47	-----	10.68	6.782E+00	-----	Line Not Found	-----
CO-60	1173.23	1191	99.85	8.894E-01	6.479E+00	6.502E+00	10.29
	1332.49	1074	99.98*	7.871E-01	6.592E+00	6.615E+00	10.29
CD-109	88.03	1918	3.70*	8.123E+00	3.083E+01	3.129E+01	11.24
SN-126	64.28	-----	9.60	8.201E+00	-----	Line Not Found	-----
	86.94	1918	8.90	8.123E+00	1.282E+01	1.282E+01	41.98
	87.57	1918	37.00*	8.123E+00	3.083E+00	3.083E+00	11.24
BA-137M	661.66	1664	89.90*	1.563E+00	5.722E+00	5.726E+00	12.31
CS-137	661.66	1664	85.10*	1.563E+00	6.045E+00	6.049E+00	12.32
TL-208	277.37	-----	6.60	3.801E+00	-----	Line Not Found	-----
	583.19	105	85.00*	1.778E+00	3.372E-01	3.372E-01	42.65
	860.56	46	12.50	1.201E+00	1.480E+00	1.480E+00	64.22
BI-211	72.87	-----	1.23	8.278E+00	-----	Line Not Found	-----
	351.06	170	12.92*	2.997E+00	2.122E+00	2.122E+00	32.56
PB-212	74.82	226	10.28	8.275E+00	1.283E+00	1.283E+00	30.11
	77.11	405	17.10	8.264E+00	1.385E+00	1.385E+00	18.42
	238.63	443	43.60*	4.387E+00	1.118E+00	1.118E+00	15.77
	300.09	-----	3.30	3.518E+00	-----	Line Not Found	-----
PB-214	74.82	226	5.80	8.275E+00	2.275E+00	2.275E+00	29.58
	77.11	405	9.70	8.264E+00	2.442E+00	2.442E+00	20.18
	242.00	94	7.25	4.336E+00	1.440E+00	1.440E+00	56.82
	295.22	108	18.42	3.579E+00	7.941E-01	7.941E-01	50.99
	351.93	170	35.60*	2.997E+00	7.703E-01	7.703E-01	33.02
RA-224	240.99	94	4.10*	4.336E+00	2.547E+00	2.547E+00	56.53
TH-228	74.82	226	10.28	8.275E+00	1.283E+00	1.283E+00	28.52
	77.11	405	17.10	8.264E+00	1.385E+00	1.385E+00	18.42
	238.63	443	43.60*	4.387E+00	1.118E+00	1.118E+00	15.77
	300.09	-----	3.30	3.518E+00	-----	Line Not Found	-----
U-235	89.96	-----	3.47	8.084E+00	-----	Line Not Found	-----
	93.35	165	5.60	8.022E+00	1.769E+00	1.769E+00	44.94
	143.76	66	10.96*	6.567E+00	4.451E-01	4.451E-01	71.46

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	163.33	-----	5.08	6.017E+00	-----	Line Not Found	-----
	185.72	80	57.20	5.454E+00	1.239E-01	1.239E-01	72.80
	205.31	-----	5.01	5.015E+00	-----	Line Not Found	-----
NP-237	86.48	1918	12.40*	8.123E+00	9.198E+00	9.198E+00	23.79
	95.86	-----	2.68	7.953E+00	-----	Line Not Found	-----
AM-241	59.54	8039	35.90*	8.083E+00	1.338E+01	1.338E+01	8.88

Flag: "*" = Keyline

Total number of lines in spectrum 24
Number of unidentified lines 1
Number of lines tentatively identified by NID 23 95.83%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.03	2.428E-01	2.490E-01	0.568E-01	22.79	
CO-60	5.27Y	1.00	6.592E+00	6.615E+00	0.681E+00	10.29	
CD-109	461.40D	1.01	3.083E+01	3.129E+01	0.352E+01	11.24	
SN-126	2.30E+05Y	1.00	3.083E+00	3.083E+00	0.347E+00	11.24	
BA-137M	30.08Y	1.00	5.722E+00	5.726E+00	0.705E+00	12.31	
CS-137	30.08Y	1.00	6.045E+00	6.049E+00	0.745E+00	12.32	
TL-208	1.41E+10Y	1.00	3.372E-01	3.372E-01	1.438E-01	42.65	
BI-211	7.04E+08Y	1.00	2.122E+00	2.122E+00	0.691E+00	32.56	
PB-212	1.41E+10Y	1.00	1.118E+00	1.118E+00	0.176E+00	15.77	
PB-214	1600.00Y	1.00	7.703E-01	7.703E-01	2.544E-01	33.02	
RA-224	1.41E+10Y	1.00	2.547E+00	2.547E+00	1.440E+00	56.53	
TH-228	1.41E+10Y	1.00	1.118E+00	1.118E+00	0.176E+00	15.77	
U-235	7.04E+08Y	1.00	4.451E-01	4.451E-01	3.180E-01	71.46	
NP-237	2.14E+06Y	1.00	9.198E+00	9.198E+00	2.188E+00	23.79	
AM-241	432.60Y	1.00	1.338E+01	1.338E+01	0.119E+01	8.88	
Total Activity :			8.355E+01	8.405E+01			

Grand Total Activity : 8.355E+01 8.405E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	49.25	150	999	1.33	98.48	95	7	4.17E-02	71.5	7.56E+00	T
0	129.36	64	298	1.00	258.62	255	9	1.79E-02	99.6	7.00E+00	
0	209.50	65	294	0.95	418.84	414	11	1.81E-02	****	4.93E+00	T
0	338.79	43	139	0.74	677.34	673	8	1.18E-02	****	3.11E+00	T
0	608.71	151	63	1.48	1217.10	1211	12	4.18E-02	26.9	1.70E+00	T
0	727.04	38	30	1.40	1453.78	1450	8	1.06E-02	59.2	1.42E+00	T
0	911.43	120	94	2.02	1822.64	1814	20	3.32E-02	43.9	1.14E+00	T

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054950.CNF;1
* Acquisition date   : 11-MAR-2010 19:35:21  Detector SN#      :
* Detector ID        : GAM21                  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 01:00:14.04          Half life ratio    : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 2-MAR-2010 00:00:00.  Nuclide Library : SOLID
* Sample ID          : G1202054950          Analyst initials: MXR1
* Batch Number       : 958216               Sample Quantity  : 1.55440E+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
CO-57	2.490E-01	5.675E-02	4.816E-02	5.533E-03	5.171
CO-60	6.615E+00	6.809E-01	9.913E-02	8.046E-03	66.727
CD-109	3.129E+01	3.517E+00	1.144E+00	1.076E-01	27.353
SN-126	3.083E+00	3.466E-01	1.125E-01	1.055E-02	27.402
BA-137M	5.726E+00	7.047E-01	1.318E-01	1.456E-02	43.436
CS-137	6.049E+00	7.451E-01	1.393E-01	1.540E-02	43.436
TL-208	3.372E-01	1.438E-01	1.110E-01	1.208E-02	3.039
BI-211	2.122E+00	6.911E-01	6.069E-01	5.479E-02	3.497
PB-212	1.118E+00	1.763E-01	1.466E-01	1.465E-02	7.624
PB-214	7.703E-01	2.544E-01	2.209E-01	2.335E-02	3.487
RA-224	2.547E+00	1.440E+00	1.576E+00	1.401E-01	1.616
TH-228	1.118E+00	1.763E-01	1.466E-01	1.465E-02	7.624
U-235	4.451E-01	3.180E-01	3.721E-01	6.589E-02	1.196
NP-237	9.198E+00	2.188E+00	3.732E-01	8.558E-02	24.648
AM-241	1.338E+01	1.188E+00	1.694E-01	1.437E-02	78.992

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.362E-01		6.749E-01	1.116E+00	1.094E-01	-0.122

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-5.265E-02		5.390E-02	6.301E-02	5.169E-03	-0.836
NA-24	-7.890E-04		1.199E-03	Half-Life too short		
K-40	1.284E+00		6.735E-01	1.440E+00	1.229E-01	0.891
SC-46	-3.609E-02		1.036E-01	1.679E-01	1.493E-02	-0.215
V-48	-3.411E-02		1.639E-01	2.662E-01	2.329E-02	-0.128
CR-51	3.914E-01		5.764E-01	9.742E-01	9.050E-02	0.402
MN-54	3.288E-02		9.254E-02	1.597E-01	1.548E-02	0.206
CO-56	-2.877E-02		9.775E-02	1.600E-01	1.525E-02	-0.180
CO-58	-4.718E-02		9.060E-02	1.456E-01	1.457E-02	-0.324
FE-59	-9.652E-02		2.153E-01	3.357E-01	3.097E-02	-0.288
ZN-65	-1.018E-01		2.512E-01	3.953E-01	3.351E-02	-0.258
SE-75	-1.067E-02		6.870E-02	1.119E-01	1.005E-02	-0.095
SR-85	-1.648E-01		8.052E-02	1.118E-01	1.076E-02	-1.474
Y-88	3.418E-02		6.378E-02	1.188E-01	9.808E-03	0.288
Y-91	1.133E+01		3.117E+01	5.339E+01	4.398E+00	0.212
NB-94	8.226E-03		7.135E-02	1.166E-01	1.270E-02	0.071
NB-95	7.417E-03		9.097E-02	1.469E-01	1.535E-02	0.050
NB-95M	-7.008E-02		2.003E-01	2.907E-01	2.935E-02	-0.241
ZR-95	-2.586E-02		1.579E-01	2.491E-01	2.809E-02	-0.104
MO-99	-9.174E+00		8.139E+00	1.139E+01	1.932E+00	-0.805
TC-99M	1.590E+04		1.034E+04	Half-Life too short		
RU-103	2.942E-03		7.415E-02	1.243E-01	1.798E-02	0.024
RH-106	2.799E-02		6.362E-01	1.045E+00	1.538E-01	0.027
RU-106	2.799E-02		6.362E-01	1.045E+00	1.122E-01	0.027
AG-108M	-1.784E-02		6.107E-02	1.013E-01	8.966E-03	-0.176
AG-110M	-3.002E-03		9.129E-02	1.295E-01	1.452E-02	-0.023
SN-113	-3.664E-02		8.881E-02	1.365E-01	1.124E-02	-0.268
CD-115	-4.437E+00		4.432E+00	6.693E+00	6.549E-01	-0.663
SN-117M	-1.611E-02		5.106E-02	8.605E-02	7.575E-03	-0.187
TE-123M	6.419E-03		3.377E-02	5.837E-02	5.145E-03	0.110
SB-124	-5.121E-02		1.345E-01	1.956E-01	1.707E-02	-0.262
SB-125	-8.614E-02		1.818E-01	2.980E-01	2.577E-02	-0.289
TE-125M	2.404E+00		9.661E+00	1.562E+01	1.897E+00	0.154
I-126	-3.615E-02		4.157E-01	5.843E-01	6.446E-02	-0.062
SB-126	1.587E-01		2.368E-01	4.056E-01	4.376E-02	0.391
SB-127	8.523E-01		1.132E+00	1.955E+00	2.364E-01	0.436
I-131	-7.188E-03		1.460E-01	2.325E-01	2.060E-02	-0.031
TE-132	7.632E-02		3.469E-01	5.846E-01	8.799E-02	0.131
BA-133	5.813E-02		8.808E-02	1.332E-01	1.717E-02	0.437
I-133	-5.548E-05		8.541E-05	Half-Life too short		
CS-134	-1.120E-02		1.158E-01	1.831E-01	1.869E-02	-0.061
CS-135	-1.620E-01		2.491E-01	3.917E-01	4.011E-02	-0.414
I-135	-4.489E+03		6.782E+03	Half-Life too short		
CS-136	-4.118E-02		2.281E-01	3.687E-01	3.322E-02	-0.112
CE-139	1.255E-02		3.877E-02	6.717E-02	5.460E-03	0.187
BA-140	-3.200E-02		4.196E-01	6.916E-01	2.369E-01	-0.046
LA-140	-8.488E-02		1.026E-01	1.281E-01	1.072E-02	-0.662
CE-141	-2.132E-02		7.494E-02	1.046E-01	1.049E-02	-0.204

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-143	2.336E+01		1.582E+01	2.477E+01	5.341E+00	0.943
CE-144	-2.122E-01		2.775E-01	3.731E-01	6.186E-02	-0.569
PM-144	-4.182E-02		8.128E-02	1.252E-01	1.368E-02	-0.334
PR-144	-3.132E+00		6.065E+00	9.344E+00	1.020E+00	-0.335
PM-146	4.484E-02		9.743E-02	1.684E-01	1.815E-02	0.266
ND-147	5.434E-01		8.045E-01	1.403E+00	2.198E-01	0.387
PM-149	4.440E-01		2.943E+01	4.815E+01	7.560E+00	0.009
EU-152	-2.551E-02		1.857E-01	2.956E-01	2.710E-02	-0.086
GD-153	-8.822E-02		8.125E-02	1.212E-01	1.198E-02	-0.728
EU-154	-1.366E-01		1.477E-01	1.735E-01	1.919E-02	-0.787
EU-155	4.733E-02		1.149E-01	1.878E-01	1.958E-02	0.252
TB-160	-3.682E-01		3.529E-01	5.331E-01	4.825E-02	-0.691
HO-166M	6.122E-02		1.418E-01	2.377E-01	2.577E-02	0.258
TA-182	3.633E-02		2.615E-01	4.334E-01	3.568E-02	0.084
IR-192	1.313E-02		6.220E-02	1.021E-01	9.076E-03	0.129
HG-203	-3.303E-02		5.720E-02	9.000E-02	8.216E-03	-0.367
BI-207	-9.188E-02		1.525E-01	2.362E-01	2.036E-02	-0.389
PB-210	7.211E-01		8.373E-01	1.357E+00	1.283E-01	0.531
PB-211	8.208E-02		1.547E+00	2.458E+00	1.187E+00	0.033
BI-212	1.949E+00	+	1.186E+00	2.005E+00	2.810E-01	0.972
BI-214	9.401E-01	+	2.767E-01	3.949E-01	4.683E-02	2.380
RN-219	8.226E-01		8.545E-01	1.436E+00	2.094E-01	0.573
RA-223	-3.893E-02		1.140E+00	1.838E+00	3.205E-01	-0.021
RA-226	9.401E-01	+	2.767E-01	3.949E-01	4.683E-02	2.380
AC-227	7.201E-02		4.175E-01	6.957E-01	8.540E-02	0.104
TH-227	7.201E-02		4.175E-01	6.957E-01	9.604E-02	0.104
AC-228	1.972E+00	+	8.960E-01	9.217E-01	1.078E-01	2.139
RA-228	1.972E+00	+	8.960E-01	9.217E-01	1.078E-01	2.139
TH-229	-5.290E-01		7.231E-01	1.171E+00	9.940E-02	-0.452
PA-231	1.179E+00		2.405E+00	4.046E+00	5.975E-01	0.291
TH-231	-3.893E-02		1.140E+00	1.838E+00	3.205E-01	-0.021
TH-232	1.972E+00	+	8.960E-01	9.217E-01	1.078E-01	2.139
PA-233	-7.594E-02		1.165E-01	1.801E-01	1.644E-02	-0.422
PA-234	-2.210E-01		9.789E-01	1.597E+00	3.007E-01	-0.138
PA-234M	1.068E+01		1.214E+01	2.150E+01	2.163E+00	0.497
TH-234	3.815E-01		6.732E-01	1.137E+00	2.053E-01	0.335
U-238	3.815E-01		6.732E-01	1.137E+00	2.053E-01	0.335
NP-239	-2.122E-01		4.473E-01	6.858E-01	7.633E-02	-0.309
CM-247	2.362E-02		8.018E-02	1.297E-01	1.052E-02	0.182
CF-249	1.868E-02		7.728E-02	1.252E-01	1.003E-02	0.149
CF-251	4.634E-02		1.662E-01	2.862E-01	2.372E-02	0.162
ANH-511	5.354E-02		7.344E-02	1.364E-01	1.308E-02	0.392

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]G1202054950
* Acquisition date   : 11-MAR-2010 19:35:21 Detector SN#
* Detector ID        : GAM21 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 01:00:14.04 Half life ratio : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 2-MAR-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202054950 Analyst initials: MXR1
* Batch Number       : 958216 Sample Quantity : 1.5544E+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
CO-57	2.490E-01	5.562E-02	2.595E-02	2.838E-02
CO-60	6.615E+00	6.673E-01	5.015E-02	3.404E-01
CD-109	3.129E+01	3.447E+00	6.213E-01	1.759E+00
SN-126	3.083E+00	3.396E-01	6.112E-02	1.733E-01
BA-137M	5.726E+00	6.906E-01	6.799E-02	3.523E-01
CS-137	6.049E+00	7.302E-01	7.182E-02	3.726E-01
TL-208	3.372E-01	1.409E-01	5.742E-02	7.190E-02
BI-211	2.122E+00	6.773E-01	3.183E-01	3.455E-01
PB-212	1.118E+00	1.728E-01	7.769E-02	8.816E-02
PB-214	7.703E-01	2.493E-01	1.159E-01	1.272E-01
RA-224	2.547E+00	1.411E+00	8.349E-01	7.198E-01
TH-228	1.118E+00	1.728E-01	7.769E-02	8.816E-02
U-235	4.451E-01	3.117E-01	1.997E-01	1.590E-01
NP-237	9.198E+00	2.145E+00	2.028E-01	1.094E+00
AM-241	1.338E+01	1.164E+00	9.290E-02	5.938E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.362E-01	6.614E-01	5.809E-01	3.375E-01 NOT IDENT.
NA-22	-5.265E-02	5.282E-02	3.192E-02	2.695E-02 NOT IDENT.
NA-24	-7.890E+02	2.350E+03	0.000E+00	1.199E+03 SHORT HLIF
K-40	1.284E+00	6.600E-01	7.266E-01	3.368E-01 NOT IDENT.
SC-46	-3.609E-02	1.015E-01	8.590E-02	5.179E-02 NOT IDENT.
V-48	-3.411E-02	1.606E-01	1.358E-01	8.194E-02 NOT IDENT.
CR-51	3.914E-01	5.649E-01	5.122E-01	2.882E-01 NOT IDENT.
MN-54	3.288E-02	9.069E-02	8.185E-02	4.627E-02 NOT IDENT.
CO-56	-2.877E-02	9.580E-02	8.196E-02	4.888E-02 NOT IDENT.
CO-58	-4.718E-02	8.879E-02	7.469E-02	4.530E-02 NOT IDENT.
FE-59	-9.652E-02	2.110E-01	1.707E-01	1.077E-01 NOT IDENT.
ZN-65	-1.018E-01	2.462E-01	2.010E-01	1.256E-01 NOT IDENT.

SE-75	-1.067E-02	6.733E-02	5.914E-02	3.435E-02	FAIL ABUN
SR-85	-1.648E-01	7.891E-02	5.806E-02	4.026E-02	NOT IDENT.
Y-88	3.418E-02	6.250E-02	5.955E-02	3.189E-02	NOT IDENT.
Y-91	1.133E+01	3.055E+01	2.708E+01	1.558E+01	NOT IDENT.
NB-94	8.226E-03	6.993E-02	6.006E-02	3.568E-02	NOT IDENT.
NB-95	7.417E-03	8.915E-02	7.548E-02	4.549E-02	NOT IDENT.
NB-95M	-7.008E-02	1.963E-01	1.541E-01	1.001E-01	NOT IDENT.
ZR-95	-2.586E-02	1.547E-01	1.280E-01	7.895E-02	NOT IDENT.
MO-99	-9.174E+00	7.977E+00	5.858E+00	4.070E+00	NOT IDENT.
TC-99M	1.590E+10	2.027E+10	0.000E+00	1.034E+10	SHORT HLIF
RU-103	2.942E-03	7.266E-02	6.458E-02	3.707E-02	NOT IDENT.
RH-106	2.799E-02	6.235E-01	5.400E-01	3.181E-01	NOT IDENT.
RU-106	2.799E-02	6.235E-01	5.400E-01	3.181E-01	NOT IDENT.
AG-108M	-1.784E-02	5.985E-02	5.283E-02	3.054E-02	NOT IDENT.
AG-110M	-3.002E-03	8.946E-02	6.678E-02	4.564E-02	NOT IDENT.
SN-113	-3.664E-02	8.704E-02	7.138E-02	4.441E-02	NOT IDENT.
CD-115	-4.437E+00	4.344E+00	3.473E+00	2.216E+00	NOT IDENT.
SN-117M	-1.611E-02	5.004E-02	4.607E-02	2.553E-02	NOT IDENT.
TE-123M	6.419E-03	3.310E-02	3.124E-02	1.689E-02	NOT IDENT.
SB-124	-5.121E-02	1.318E-01	9.828E-02	6.727E-02	NOT IDENT.
SB-125	-8.614E-02	1.782E-01	1.555E-01	9.091E-02	NOT IDENT.
TE-125M	2.404E+00	9.468E+00	8.440E+00	4.831E+00	NOT IDENT.
I-126	-3.615E-02	4.074E-01	3.013E-01	2.079E-01	NOT IDENT.
SB-126	1.587E-01	2.321E-01	2.087E-01	1.184E-01	NOT IDENT.
SB-127	8.523E-01	1.109E+00	1.007E+00	5.660E-01	NOT IDENT.
I-131	-7.188E-03	1.430E-01	1.218E-01	7.298E-02	NOT IDENT.
TE-132	7.632E-02	3.400E-01	3.101E-01	1.735E-01	FAIL ABUN
BA-133	5.813E-02	8.632E-02	6.982E-02	4.404E-02	NOT IDENT.
I-133	-5.548E+01	1.674E+02	0.000E+00	8.541E+01	SHORT HLIF
CS-134	-1.120E-02	1.135E-01	9.397E-02	5.790E-02	NOT IDENT.
CS-135	-1.620E-01	2.441E-01	2.069E-01	1.245E-01	NOT IDENT.
I-135	-4.489E+09	1.329E+10	0.000E+00	6.782E+09	SHORT HLIF
CS-136	-4.118E-02	2.235E-01	1.878E-01	1.141E-01	NOT IDENT.
CE-139	1.255E-02	3.800E-02	3.592E-02	1.939E-02	NOT IDENT.
BA-140	-3.200E-02	4.112E-01	3.587E-01	2.098E-01	NOT IDENT.
LA-140	-8.488E-02	1.005E-01	6.449E-02	5.128E-02	NOT IDENT.
CE-141	-2.132E-02	7.344E-02	5.613E-02	3.747E-02	NOT IDENT.
CE-143	2.336E+01	1.551E+01	1.305E+01	7.911E+00	NOT IDENT.
CE-144	-2.122E-01	2.719E-01	2.006E-01	1.387E-01	NOT IDENT.
PM-144	-4.182E-02	7.965E-02	6.450E-02	4.064E-02	NOT IDENT.
PR-144	-3.132E+00	5.944E+00	4.812E+00	3.033E+00	NOT IDENT.
PM-146	4.484E-02	9.548E-02	8.774E-02	4.872E-02	NOT IDENT.
ND-147	5.434E-01	7.884E-01	7.276E-01	4.023E-01	NOT IDENT.
PM-149	4.440E-01	2.884E+01	2.539E+01	1.471E+01	NOT IDENT.
EU-152	-2.551E-02	1.820E-01	1.551E-01	9.284E-02	FAIL ABUN
GD-153	-8.822E-02	7.963E-02	6.569E-02	4.063E-02	NOT IDENT.
EU-154	-1.366E-01	1.448E-01	8.790E-02	7.387E-02	FAIL ABUN
EU-155	4.733E-02	1.126E-01	1.016E-01	5.747E-02	FAIL ABUN
TB-160	-3.682E-01	3.459E-01	2.728E-01	1.765E-01	FAIL ABUN
HO-166M	6.122E-02	1.389E-01	1.223E-01	7.088E-02	FAIL ABUN
TA-182	3.633E-02	2.562E-01	2.198E-01	1.307E-01	NOT IDENT.
IR-192	1.313E-02	6.096E-02	5.371E-02	3.110E-02	FAIL ABUN
HG-203	-3.303E-02	5.605E-02	4.749E-02	2.860E-02	NOT IDENT.
BI-207	-9.188E-02	1.494E-01	1.203E-01	7.624E-02	FAIL ABUN
PB-210	7.211E-01	8.206E-01	7.486E-01	4.186E-01	NOT IDENT.
PB-211	8.208E-02	1.516E+00	1.284E+00	7.736E-01	NOT IDENT.
BI-212	1.949E+00	1.162E+00	1.031E+00	5.928E-01	FAIL ABUN
BI-214	9.401E-01	2.712E-01	2.041E-01	1.384E-01	FAIL ABUN
RN-219	8.226E-01	8.375E-01	7.507E-01	4.273E-01	NOT IDENT.
RA-223	-3.893E-02	1.117E+00	9.662E-01	5.699E-01	FAIL ABUN
RA-226	9.401E-01	2.712E-01	2.041E-01	1.384E-01	FAIL ABUN
AC-227	7.201E-02	4.092E-01	3.679E-01	2.088E-01	NOT IDENT.
TH-227	7.201E-02	4.092E-01	3.679E-01	2.088E-01	NOT IDENT.
AC-228	1.972E+00	8.781E-01	4.712E-01	4.480E-01	FAIL ABUN
RA-228	1.972E+00	8.781E-01	4.712E-01	4.480E-01	FAIL ABUN
TH-229	-5.290E-01	7.086E-01	6.237E-01	3.615E-01	FAIL ABUN
PA-231	1.179E+00	2.356E+00	2.134E+00	1.202E+00	NOT IDENT.
TH-231	-3.893E-02	1.117E+00	9.662E-01	5.699E-01	FAIL ABUN
TH-232	1.972E+00	8.781E-01	4.712E-01	4.480E-01	FAIL ABUN
PA-233	-7.594E-02	1.141E-01	9.475E-02	5.823E-02	NOT IDENT.
PA-234	-2.210E-01	9.594E-01	8.156E-01	4.895E-01	NOT IDENT.
PA-234M	1.068E+01	1.190E+01	1.096E+01	6.071E+00	NOT IDENT.
TH-234	3.815E-01	6.598E-01	6.228E-01	3.366E-01	FAIL ABUN
U-238	3.815E-01	6.598E-01	6.228E-01	3.366E-01	FAIL ABUN
NP-239	-2.122E-01	4.384E-01	3.699E-01	2.237E-01	NOT IDENT.
CM-247	2.362E-02	7.858E-02	6.779E-02	4.009E-02	NOT IDENT.
CF-249	1.868E-02	7.574E-02	6.547E-02	3.864E-02	NOT IDENT.
CF-251	4.634E-02	1.628E-01	1.528E-01	8.308E-02	NOT IDENT.

ANH-511

5.354E-02

7.197E-02

7.086E-02

3.672E-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	305.4245
49.72	546.9866
57.36	718.7045
59.54	478.9696
63.29	211.1297
63.29	211.1297
64.28	184.6222
67.75	238.6447
69.67	289.2765
70.83	281.8506
72.81	279.8756
72.87	279.9359
72.87	279.9359
74.82	278.5217
74.82	278.5217
74.82	278.5217
74.97	278.6722
77.11	280.7794
77.11	280.7794
77.11	280.7794
79.69	249.5102
79.80	239.9509
80.12	240.2111
80.19	240.2678
80.57	246.1080
81.00	271.3862
81.07	271.4500
81.07	271.4500
83.79	227.7894
83.79	227.7894
85.43	282.3925
86.48	281.9336
86.55	281.9966
86.79	282.2103
86.94	226.5848
87.57	227.0370
88.03	227.3668
88.47	227.6803
89.96	222.3267
91.11	216.6793
92.59	200.4163
92.59	200.4163
93.35	200.8761
94.67	156.1322
94.87	148.9929
94.87	148.9929
95.86	153.7811
97.43	185.8247
98.44	151.2876
99.53	138.5652
100.11	140.9980
103.18	159.9972
103.37	160.0818
105.31	167.6456
106.12	157.9355
109.28	151.3746
111.00	164.5466
111.76	163.7369
116.30	153.0030
117.23	156.8204
121.12	166.4904
121.78	166.7593
122.06	166.8733
123.07	170.0120
131.20	146.2712
133.52	183.8077
136.00	144.6533

136.47	161.6992
140.51	133.1115
140.51	0.0000
143.76	142.2193
144.24	142.3644
144.24	142.3644
145.44	152.5706
152.43	166.0349
153.25	146.7204
154.21	139.4877
154.21	139.4877
156.02	178.5574
158.56	162.6101
159.00	153.4736
162.66	182.5982
163.33	170.9289
165.86	171.7591
176.60	163.8766
177.52	145.8124
181.07	130.4828
184.41	147.1593
185.72	162.1113
193.51	172.3555
197.04	150.7950
205.31	166.0999
210.85	159.7114
215.65	175.7821
222.11	191.5945
227.38	151.4469
228.16	146.8814
228.18	146.8861
235.69	178.1800
235.96	172.4991
235.96	172.4991
238.63	155.8367
238.63	155.8367
240.99	156.3525
242.00	156.5733
244.70	139.6963
252.40	145.0883
252.80	145.1666
256.23	139.9199
256.23	139.9199
260.90	143.7580
264.66	126.5272
268.22	141.1176
269.46	133.3220
269.46	133.3220
271.23	116.5405
273.65	151.1597
276.40	132.4685
277.37	127.5637
277.60	140.7675
278.00	116.5184
279.20	131.9122
279.54	145.1646
280.46	125.0045
283.69	114.2741
284.31	130.6979
285.41	122.6929
285.90	125.8353
287.50	106.6025
293.27	91.3412
295.22	120.0003
295.96	120.1041
298.57	129.3000
299.98	118.5876
299.98	118.5876
300.09	118.6039
300.09	118.6039
300.13	118.6085
301.36	141.6999
302.85	148.2056
304.50	98.2953
304.50	98.2953
304.85	99.3797
308.46	111.3440
311.90	129.7040

316.51	124.0126
319.41	112.7134
320.08	102.1563
323.87	114.3341
323.87	114.3341
328.76	129.9780
333.37	136.0181
334.37	131.2987
334.37	131.2987
338.28	130.2124
338.28	130.2124
338.32	130.2173
338.32	130.2173
338.32	130.2173
340.48	104.4102
340.55	104.4180
344.28	119.0169
351.06	109.9487
351.93	110.0464
356.01	96.1351
364.49	110.3196
366.42	109.4126
383.85	102.1747
388.16	92.3280
388.63	103.7728
391.69	112.0723
400.66	114.1485
401.81	92.3372
402.40	108.5555
404.85	113.4242
410.95	94.2594
414.70	99.8265
423.72	101.4971
427.09	107.9879
427.87	105.4015
433.94	105.0577
453.88	111.3355
463.37	110.3652
468.07	105.2856
473.00	117.6445
476.78	101.3995
477.60	105.1529
487.02	78.9754
492.35	74.6326
497.08	77.7074
511.00	81.3533
514.00	135.5692
527.90	80.4368
529.87	0.0000
531.02	58.5427
537.26	74.2248
546.56	0.0000
563.25	66.7300
569.33	60.1064
569.50	70.9519
569.70	70.9607
583.19	55.6855
600.60	51.2864
602.73	56.3914
604.72	45.1691
609.32	55.6143
609.32	55.6143
610.33	53.4236
614.28	48.6870
618.01	56.9331
621.93	56.0524
621.93	56.0524
633.25	65.6797
635.95	66.8150
636.99	75.0852
645.85	64.1116
657.76	69.9788
661.66	67.8426
661.66	67.8426
664.57	75.2761
666.33	63.6314
666.50	53.5906
677.62	60.0441

685.70	50.7964
695.00	60.6373
696.49	77.7229
696.51	77.7251
697.00	73.4852
702.65	55.5547
706.68	62.1029
711.68	59.0518
720.70	49.6331
721.93	57.0072
722.78	55.3047
722.91	55.3094
723.31	60.5083
724.19	60.5356
727.33	38.9817
733.00	64.5466
735.93	52.2158
739.50	78.4709
747.24	55.8108
752.31	53.7642
753.82	51.6099
756.73	58.2874
763.94	56.2964
765.81	60.7706
766.42	64.1048
777.92	51.1407
778.90	50.0537
783.70	62.4395
785.37	61.3765
795.86	67.3077
801.95	60.3082
810.29	66.8818
810.76	66.8981
815.77	63.4358
818.51	68.0566
832.01	56.6265
834.85	65.8477
836.80	0.0000
846.77	69.8992
856.80	61.6016
860.56	62.9432
871.09	66.9691
873.19	58.6549
875.33	0.0000
879.36	75.6251
880.51	65.3892
883.24	67.3400
884.68	52.4098
889.28	72.2119
898.04	65.9053
911.20	64.3958
911.20	64.3958
911.20	64.3958
926.50	83.8922
937.49	89.0788
944.13	90.2914
946.00	93.2465
949.00	86.6294
962.29	103.5700
964.08	129.7994
966.15	95.0093
968.97	104.8280
968.97	104.8280
968.97	104.8280
983.53	71.2819
996.26	57.9110
1001.03	50.1558
1004.73	69.9288
1037.84	71.8488
1038.76	0.0000
1048.07	64.1219
1050.41	60.1670
1050.41	60.1670
1063.66	72.5695
1085.87	55.9023
1099.45	56.1843
1112.07	59.5265
1115.54	75.0175

1120.29	54.5579
1120.29	54.5579
1120.55	51.4746
1121.30	58.6978
1131.51	0.0000
1173.23	30.4217
1177.93	24.5171
1189.05	27.4244
1204.77	18.0285
1221.41	15.9976
1231.02	18.1887
1235.36	12.8578
1238.28	16.0876
1260.41	0.0000
1271.85	8.6754
1274.44	13.0236
1274.54	14.1096
1291.59	3.2739
1298.22	0.0000
1312.11	9.8864
1332.49	11.9764
1365.19	5.5833
1368.63	0.0000
1384.29	10.2955
1408.01	13.1962
1457.56	0.0000
1460.82	3.8286
1489.16	10.6137
1505.03	12.5990
1596.21	10.9270
1620.50	3.9989
1678.03	0.0000
1690.97	8.1426
1764.49	1.0363
1764.49	1.0363
1770.23	10.3772
1771.35	7.2660
1791.20	0.0000
1836.06	4.2158

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202054950

Total Uranium Activity	1.3408E+00	ug/g
Total Uranium Counting Unc.	1.9681E+00	ug/g
Total Uranium Tpu	1.0041E-06	ug/g
Total Uranium Mda	1.8551E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 958216                          SAMPLE ID   : G1202054950
*  ANALYST       : MXR1                             DETECTOR    : GAM21
*  SAMPLE DATE   : 2-MAR-2010 00:00:00.00          COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 11-MAR-2010 19:35:21.56          SAMPLE ALQT  : 155.440 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.776E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.589E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.647E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.762E+00

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Radiochemistry Batch Checklist, Rev10

Batch# 964049 Product: H3 Date: 3/23/10

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: [Signature] 3/23/10

Secondary Review Performed By: [Signature] 3/23/10

LANL

3/12 - 3/23/10 of 694

Tritium Que Sheet

17-MAR-10

Batch #: 964049

Analyst: KLK 3-17-10

First Client Due Date 23-MAR-10

Internal Due Date: 12-MAR-10

Spike Isotope: Hydrogen-3

Spike Code: 0134-K

Expiration Date: 3/27/10

Vol: 0.1

LCS Isotope: Hydrogen-3

LCS Code: 0134-K

Expiration Date: 3/27/10

Vol: 0.1

Prep Date: 3/12/10

Initials: KLK

Pipet ID: 2970968

Witness: KLK

* recopied: 28 3/17/10

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 Dist (mL)
247964001-1	RE36-10-8489	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	47-2	1	551.39	544.70	16.69	31.9
247964002-1	RE36-10-8486	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	41	2	453.93	439.14	14.79	
247964003-1	RE36-10-8487	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	41	3	464.45	448.66	15.79	
247964004-1	RE36-10-8462	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	42	4	471.93	446.45	25.48	
247964005-1	RE36-10-8463	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	46	5	473.97	466.86	7.11	
247969001-1	RE36-10-8463	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	8	44	6	421.30	404.92	11.38	
247969002-1	RE36-10-8490	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	45	7	537.59	510.17	27.42	
247969002-1	RE36-10-8470	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	46	8	498.47	467.56	30.91	
247969003-1	RE36-10-8476	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	47	9	485.30	464.92	20.38	
247969004-1	RE36-10-8480	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	48	10	441.61	393.92	47.69	
247969005-1	RE36-10-8474	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	49	11	402.71	351.16	51.55	
247969006-1	RE36-10-8478	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	50	12	545.30	519.67	25.63	
247969007-1	RE36-10-8483	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	51	13	423.95	414.20	9.75	
247969008-1	RE36-10-8482	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	20-FEB-10	10	52	14	497.38	472.51	24.87	
248028001-1	RE15-10-8389	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	53	15	421.49	382.71	38.78	
248028002-1	RE15-10-8388	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	54	16	446.11	412.21	33.90	
248028003-1	RE15-10-8390	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	55	17	478.79	406.01	72.78	
248028004-1	RE15-10-8392	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	56	18	440.35	394.48	45.87	
248028005-1	RE15-10-8391	SAMPLE	25	pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	57	19	445.60	397.03	48.57	
202068192-1	MB for batch 964049	MB	25	pCi/mL SOIL	QC ACCOUNT	QC ACCOUNT		10	58-2	20	20.00	0	20.00	
202068193-1	RE15-10-8391(248028005DUP)	DUP	25	pCi/mL SOIL	QC ACCOUNT	QC ACCOUNT	19-FEB-10	10	59	19	445.60	397.03	48.57	
202068194-1	LCS for batch 964049	LCS	25	pCi/mL SOIL	QC ACCOUNT	QC ACCOUNT		10	60	21	20.00	0	20.00	

Bkg Rack #: 35, 37, 47, 58-1
dailies ✓

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) 4140128, LS6000 (Brown) 7060655, Wallac

(Pink) 2700082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG06095108

Calibration Used: Ecocint Ultra 10 mL sample/13 mL Ecocint Ultra

Data Reviewed By: KLK 3/23/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

DATE	3/12/2010	INITIALS	KXK2	BATCH NUMBER	964049				
Sample #	Flask (g)	Sample Wet (g)	Sample Wet & Flask (g)	% Moisture of Sample (Balance Interface using % Moisture Batch)	Total Moisture in Sample (mL)	Sample Dry (g)	Sample Dry & Flask (g)	mLs aliquoted into LSC vial	Collection Tube Number
247774003	200	561.32	761.32	0.012	6.62	544.70	744.70	10	
247964001	200	453.93	653.93	0.048	21.79	432.14	632.14	10	
247964002	200	464.45	664.45	0.034	15.79	448.66	648.66	10	
247964003	200	471.93	671.93	0.054	25.48	446.45	646.45	10	
247964004	200	473.97	673.97	0.015	7.11	466.86	666.86	7	
247964005	200	421.30	621.30	0.027	11.38	409.92	609.92	8	
247969001	200	537.59	737.59	0.051	27.42	510.17	710.17	10	
247969002	200	498.47	698.47	0.062	30.91	467.56	667.56	10	
247969003	200	485.30	685.30	0.042	20.38	464.92	664.92	10	
247969004	200	441.61	641.61	0.108	47.69	393.92	593.92	10	
247969005	200	402.71	602.71	0.128	51.55	351.16	551.16	10	
247969006	200	545.30	745.30	0.047	25.63	519.67	719.67	10	
247969007	200	423.95	623.95	0.023	9.75	414.20	614.20	8	
247969008	200	497.38	697.38	0.050	24.87	472.51	672.51	10	
248028001	200	421.49	621.49	0.092	38.78	382.71	582.71	10	
248028002	200	446.11	646.11	0.076	33.90	412.21	612.21	10	
248028003	200	478.79	678.79	0.152	72.78	406.01	606.01	10	
248028004	200	440.35	640.35	0.195	85.87	354.48	554.48	10	
248028005	200	445.60	645.60	0.109	48.57	397.03	597.03	10	
MB	200	20.00	220.00	1.000	20.00	0.00	200.00	10	
DUP	200	445.60	645.60	0.108	48.57	397.03	597.03	10	
LCS	200	20.00	220.00	1.000	20.00	0.00	200.00	10	

Tritium Solid

Filename : H3VAC.XLS
File type : Excel
Version # : 1.2.6

Batch : 964049
Analyst : KKK2
Prep Date : 3/12/2010

Spike S/N :
Spike Exp Date :
Spike Activity (dpm/ml):
Spike Volume Added:

LCS S/N : 0134-K
LCS Exp Date : 3/27/2010
LCS Activity (dpm/ml): 2457.20
LCS Volume Added: 0.10

Procedure Code : LSC_VH3S
Paramname : Tritium
Required MDC : 250 pCi/L
Half-life of Tritium : 12.32 years

Pipet, 0.1 ml Stdev : +/- 0.000701 ml
Pipet, 0.5 ml Stdev : +/- 0.002564 ml
Pipet, 1.0 ml Stdev : +/- 0.005480 ml
Pipet, 5.0 ml Stdev : +/- 0.025728 ml

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry: 10mL DW/13mL
Eosoint Ultra

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	247964001.1	453.93	0.0218	0.0100	2.5729E-05	432.14	4.80%	2	2/19/2010 12:00
2	247964002.1	464.45	0.0158	0.0100	2.5729E-05	448.66	3.40%	3	2/19/2010 12:00
3	247964003.1	471.93	0.0255	0.0100	2.5729E-05	446.45	5.40%	4	2/19/2010 12:00
4	247964004.1	473.97	0.0071	0.0070	2.5729E-05	466.86	1.50%	5	2/19/2010 12:00
5	247964005.1	421.30	0.0114	0.0080	2.5729E-05	409.92	2.70%	6	2/19/2010 12:00
6	247969001.1	537.59	0.0274	0.0100	2.5729E-05	510.17	5.10%	7	2/20/2010 12:00
7	247969002.1	498.47	0.0309	0.0100	2.5729E-05	467.56	6.20%	8	2/20/2010 12:00
8	247969003.1	485.30	0.0204	0.0100	2.5729E-05	464.92	4.20%	9	2/20/2010 12:00
9	247969004.1	441.81	0.0477	0.0100	2.5729E-05	393.92	10.80%	10	2/20/2010 12:00
10	247969005.1	402.71	0.0516	0.0100	2.5729E-05	351.16	12.80%	11	2/20/2010 12:00
11	247969006.1	545.30	0.0256	0.0100	2.5729E-05	519.67	4.70%	12	2/20/2010 12:00
12	247969007.1	423.95	0.0098	0.0080	2.5729E-05	414.20	2.30%	13	2/20/2010 12:00
13	247969008.1	497.38	0.0249	0.0100	2.5729E-05	472.51	5.00%	14	2/20/2010 12:00
14	248028001.1	421.49	0.0388	0.0100	2.5729E-05	382.71	9.20%	15	2/19/2010 12:00
15	248028002.1	446.11	0.0339	0.0100	2.5729E-05	412.21	7.60%	16	2/19/2010 12:00
16	248028003.1	478.79	0.0728	0.0100	2.5729E-05	406.01	15.20%	17	2/19/2010 12:00
17	248028004.1	440.35	0.0859	0.0100	2.5729E-05	354.48	19.50%	18	2/19/2010 12:00
18	248028005.1	445.60	0.0486	0.0100	2.5729E-05	397.03	10.90%	19	2/19/2010 12:00
19	1202068192.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	20	3/12/2010 0:00
20	1202068193.1	445.60	0.0486	0.0100	2.5729E-05	397.03	10.90%	19	2/19/2010 12:00
21	1202068194.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	21	3/12/2010 0:00

Count raw Data			Background			Counting			Quench#			Gross			Background			Count			Sample			Calibration Data				Detector			Backgrounds		
Pos.	Rack	Position #	Counting Time (min.)	Quench#	Gross cpm	cpm	Time (min.)	Count Start Date/Time	Count End Date/Time	Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Error (cpm/dpm)	Position #	Rack	Count Start Date/Time															
1	47-2		120	117.3	3.27	2.72	120	3/19/2010 14:45		0.996	LSCGOLD	8/20/2008	8/31/2010	0.1811	0.00782	47-1		3/19/2010 12:41															
2	41		35.0297	762.66	1.75	1.86	50	3/15/2010 10:24		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2754	0.00782	38		3/15/2010 8:47															
3	42		35.0297	761.36	1.81	1.86	50	3/15/2010 11:02		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2733	0.00782	38		3/15/2010 8:47															
4	40		60.0297	759.63	1.43	1.04	60	3/22/2010 17:53		0.995	LSCORANGE	7/23/2009	7/31/2010	0.2705	0.00782	39		3/22/2010 16:51															
5	44		50.0297	763.87	1.82	1.86	50	3/15/2010 12:17		0.998	LSCORANGE	7/23/2009	7/31/2010	0.2775	0.00782	38		3/15/2010 8:47															
6	45		35.0297	764.73	1.87	1.86	50	3/15/2010 13:09		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2787	0.00782	38		3/15/2010 8:47															
7	48		35.0297	759.12	2.88	1.86	50	3/15/2010 13:47		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2697	0.00782	38		3/15/2010 8:47															
8	47		35.0297	756.76	1.43	1.86	50	3/15/2010 14:25		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2658	0.00782	38		3/15/2010 8:47															
9	48		35.0297	756.01	2.16	1.86	50	3/15/2010 15:02		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2645	0.00782	38		3/15/2010 8:47															
10	49		35.0297	758.97	1.43	1.86	50	3/15/2010 15:40		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2694	0.00782	38		3/15/2010 8:47															
11	50		35.0297	760.61	2.24	1.86	50	3/15/2010 16:17		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2721	0.00782	38		3/15/2010 8:47															
12	51		35.0296	761.87	1.81	1.86	50	3/15/2010 16:55		0.998	LSCORANGE	7/23/2009	7/31/2010	0.2741	0.00782	38		3/15/2010 8:47															
13	52		50.0296	756.87	1.69	1.86	50	3/15/2010 17:32		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2660	0.00782	38		3/15/2010 8:47															
14	53		35.0296	761.41	2.57	1.86	50	3/15/2010 18:25		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2734	0.00782	38		3/15/2010 8:47															
15	54		35.013	758.42	2.39	1.86	50	3/15/2010 19:02		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2685	0.00782	38		3/15/2010 8:47															
16	55		35.0296	760.82	2.62	1.86	50	3/15/2010 19:40		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2724	0.00782	38		3/15/2010 8:47															
17	56		35.0296	760.37	1.19	1.86	50	3/15/2010 20:17		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2717	0.00782	38		3/15/2010 8:47															
18	57		35.0296	760.94	2.39	1.86	50	3/15/2010 20:55		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2726	0.00782	38		3/15/2010 8:47															
19	58-2		120	729.89	2.53	2.69	120	3/17/2010 15:23		0.999	LSCYELLOW	8/21/2008	8/31/2010	0.2000	0.00782	58-1		3/17/2010 13:21															
20	59		35.0296	762.33	2.42	1.86	50	3/15/2010 22:10		0.996	LSCORANGE	7/23/2009	7/31/2010	0.2749	0.00782	38		3/15/2010 8:47															
21	60		15.0296	770.89	37.04	1.86	50	3/15/2010 22:48		0.999	LSCORANGE	7/23/2009	7/31/2010	0.2884	0.00782	38		3/15/2010 8:47															

Notes:

- 1 - Results are decay corrected to Sample Date/Time
- 2 - Reference Date for Spike Activity (dpm/ml) is the Batch Prep Date
- 3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to activity below MDC for 1202068193.1

Results		Decision Level		Critical Level		Required MDC		Sample Act. MDC		Sample Act. Conc.		Sample Act. Error		Net Count Rate		Net Count Rate Error		1 SIGMA Counting Uncertainty		1 SIGMA Total Prop. Uncertainty		Sample QC		Sample Type		RPD		RER		Nominal pCi/L		Recovery	
Pos.	pCi/L	pCi/L	pCi/L	MDC	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	CPM	CPM	CPM	CPM	pCi/L	pCi/L	pCi/L	pCi/L												
1	123.9121	87.4830	250	181.2104	137.3762	0.406	0.550	0.223	55.8048	56.6191	SAMPLE																						
2	114.9300	81.1416	250	176.3428	-18.0586	2.684	-0.110	0.295	48.4607	48.4618	SAMPLE																						
3	115.8139	81.7656	250	177.6990	-8.2716	5.961	-0.050	0.298	49.3110	49.3121	SAMPLE																						
4	103.6821	73.2004	250	156.3477	93.2317	0.520	0.390	0.203	48.4914	48.9254	SAMPLE																						
5	129.3934	91.3529	250	194.9179	-8.1463	6.780	-0.040	0.271	55.2343	55.2350	SAMPLE																						
6	113.5442	80.1632	250	174.2165	1.6219	30.093	0.010	0.301	48.8084	48.8095	SAMPLE																						
7	117.3625	82.8589	250	180.0752	137.4680	0.411	0.820	0.337	56.5247	57.3298	SAMPLE																						
8	119.0712	84.0853	250	182.6968	-73.1364	0.650	-0.430	0.279	47.5022	47.5034	SAMPLE																						
9	119.6278	84.4583	250	183.5510	51.2639	1.048	0.300	0.314	53.7226	53.8411	SAMPLE																						
10	117.4706	82.9353	250	180.2411	-72.1533	0.650	-0.430	0.278	48.8637	48.8649	SAMPLE																						
11	116.3177	82.1213	250	178.4721	63.1376	0.637	0.360	0.318	52.8361	53.0188	SAMPLE																						
12	144.3148	101.8875	250	221.4294	-10.3072	5.961	-0.050	0.298	61.4461	61.4474	SAMPLE																						
13	107.9921	76.2434	250	162.6791	-28.8953	1.567	-0.170	0.266	45.2771	45.2778	SAMPLE																						
14	115.7851	81.7453	250	177.6549	117.4274	0.468	0.710	0.332	54.9694	55.5943	SAMPLE																						
15	117.9013	83.2393	250	180.9067	89.2467	0.613	0.530	0.325	54.6783	55.0305	SAMPLE																						
16	116.1926	82.0330	250	176.2801	126.1392	0.440	0.760	0.335	55.5381	56.2286	SAMPLE																						
17	116.5056	82.2540	250	178.7604	-111.5013	0.398	-0.670	0.267	44.3905	44.3917	SAMPLE																						
18	116.1105	81.9750	250	178.1542	87.9034	0.613	0.530	0.325	53.8471	54.1940	SAMPLE																						
19	111.2132	78.5174	250	162.6705	-36.0676	1.304	-0.160	0.209	47.0159	47.0160	MB																						
20	115.1613	81.3049	250	176.6979	92.1198	0.582	0.560	0.326	53.6234	54.0059	DUP																						
21	146.0612	103.1205	250	237.4319	5497.3234	0.046	35.180	1.582	247.1545	455.7176	LCS																						
																		248028005.1			0.0%	0.0185			5534.2351			99.3%					

REGISTRY

MON 15 MAR 2010 8:45

*** DIRECTORY PATH :S:\LSC\O\DA\964049A0 ***

PARAMETER GROUP: 8
ID: H-3 (1)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	38	BKG	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	39	247774003	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	40	247964001	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	41	247964002	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	42	247964003	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	43	247964004	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
7	44	247964005	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
8	45	247969001	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
9	46	247969002	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
10	47	247969003	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
11	48	247969004	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
12	49	247969005	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
13	50	247969006	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
14	51	247969007	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
15	52	247969008	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
16	53	248028001	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
17	54	248028002	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
18	55	248028003	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
19	56	248028004	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
20	57	248028005	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
21	58	1202068192	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
22	59	1202068193	35:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
23	60	1202068194	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.	2.	3.	4.	5.	6.	7.
POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
SEND SPECTRA		12				
RESOLUTION OF SPECTRA		1024				

REGISTRY

LISTING Y
INSTRUMENT NUMBER 1

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
Q013801N.001	15 MAR 2010	9:38				
38	BKG	50:01.780	732.56	1.86	3.06	7.91
Q023901N.001	15 MAR 2010	9:45				
39	247774003	4:10.780	766.60	2467.18	2712.90	2717.55
Q034001N.001	15 MAR 2010	10:22				
40	247964001	35:00.780	763.08	3.18	4.38	8.88
Q044101N.001	15 MAR 2010	11:00				
41	247964002	35:01.780	762.66	1.75	2.83	7.77
Q054201N.001	15 MAR 2010	11:38				
42	247964003	35:01.780	761.36	1.81	2.77	7.42
Q064301N.001	15 MAR 2010	12:15				
43	247964004	35:01.780	761.06	1.95	3.21	8.21
Q074401N.001	15 MAR 2010	13:08				
44	247964005	50:01.779	763.97	1.82	3.10	8.01
Q084501N.001	15 MAR 2010	13:45				
45	247969001	35:01.779	764.73	1.87	3.06	7.77
Q094601N.001	15 MAR 2010	14:23				
46	247969002	35:01.779	759.12	2.68	4.29	9.08
Q104701N.001	15 MAR 2010	15:01				
47	247969003	35:01.779	756.76	1.43	2.68	7.53
Q114801N.001	15 MAR 2010	15:38				
48	247969004	35:01.779	756.01	2.16	3.44	9.17
Q124901N.001	15 MAR 2010	16:16				
49	247969005	35:01.779	758.97	1.43	2.68	7.56
Q135001N.001	15 MAR 2010	16:53				
50	247969006	35:01.779	760.61	2.24	4.03	9.55
Q145101N.001	15 MAR 2010	17:31				
51	247969007	35:01.778	761.87	1.81	2.92	8.50
Q155201N.001	15 MAR 2010	18:23				
52	247969008	50:01.778	756.87	1.69	3.04	7.46
Q165301N.001	15 MAR 2010	19:01				
53	248028001	35:01.778	761.41	2.57	4.03	9.75
Q175401N.001	15 MAR 2010	19:38				
54	248028002	35:00.778	758.42	2.39	3.88	9.29
Q185501N.001	15 MAR 2010	20:16				
55	248028003	35:01.777	760.82	2.62	4.14	9.43
Q195601N.001	15 MAR 2010	20:53				
56	248028004	35:01.777	760.37	1.19	2.60	7.48
Q205701N.001	15 MAR 2010	21:31				
57	248028005	35:01.777	760.94	2.39	3.71	8.76
Q215801N.001	15 MAR 2010	22:09				
58	1202068192	35:01.777	771.26	1.28	2.62	7.80
Q225901N.001	15 MAR 2010	22:46				
59	1202068193	35:01.776	762.33	2.42	3.94	8.94
Q236001N.001	15 MAR 2010	23:04				
60	1202068194	15:01.776	770.89	37.04	41.95	46.92

Instrument Type:
Data Capture Date:
FileName:
File Info:

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MON 15 MAR 2010 8:45
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s:\scfiles\orange\964049A0\U964049A0.xls

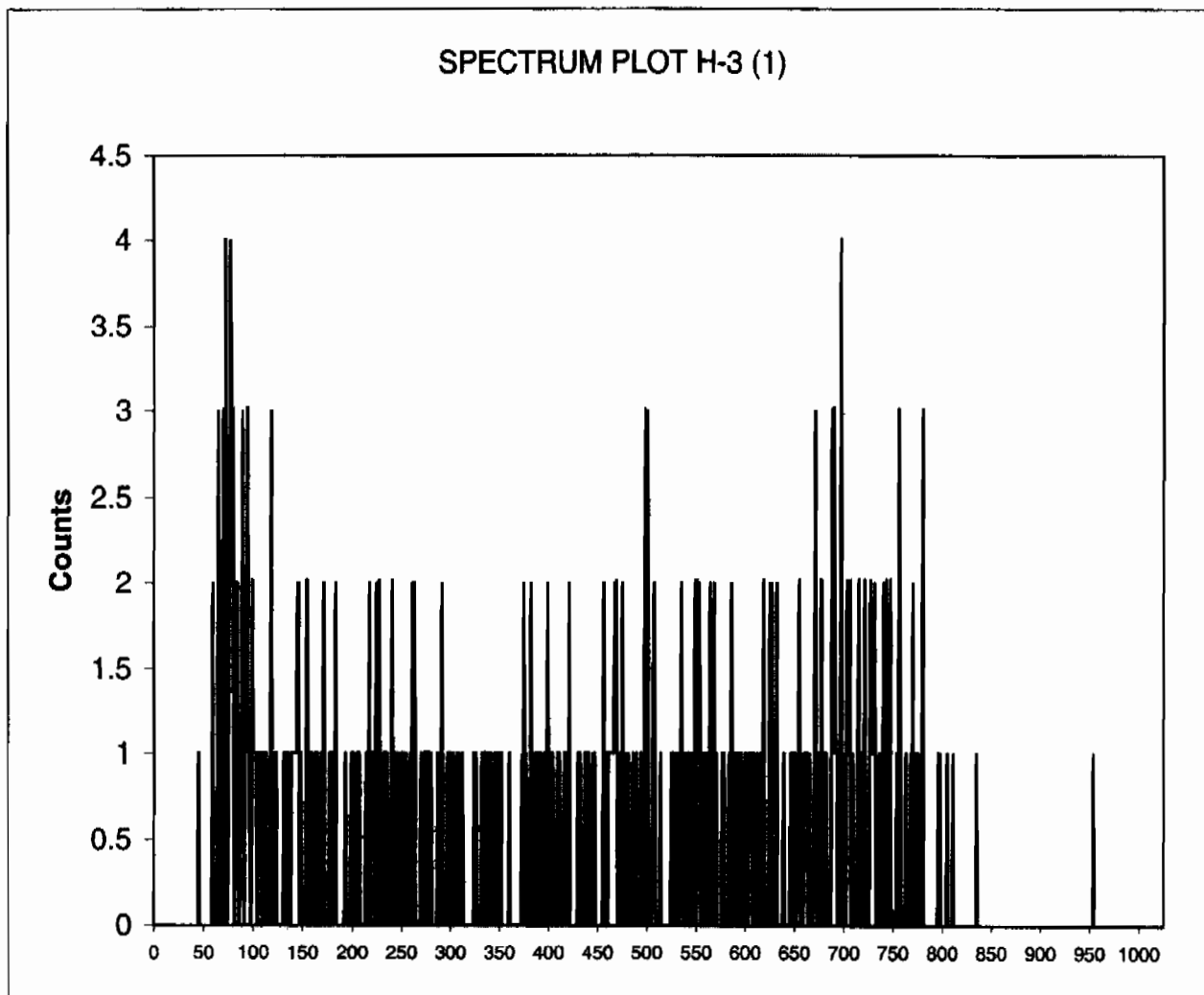
ID:
Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

1, BKG, 50.02967:
732.56
50-175

Channel Counts



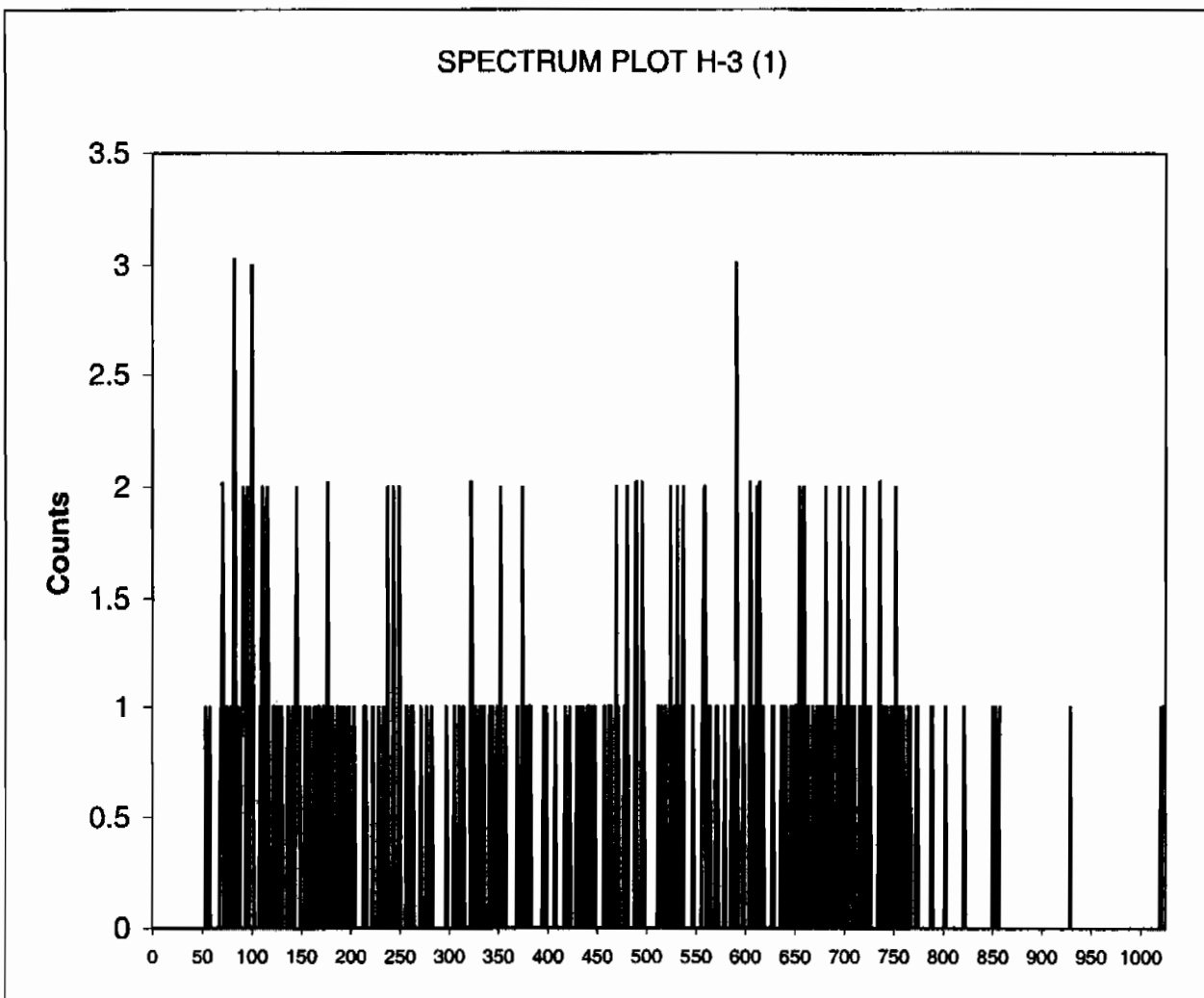
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File Info: s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 4, 247964002, 35.02967:
Quench: 762.66
Start, End, X-Axis 50-175

Channel Counts



31 0
32 0
33 0
34 0
35 0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 15 MAR 2010 8:45
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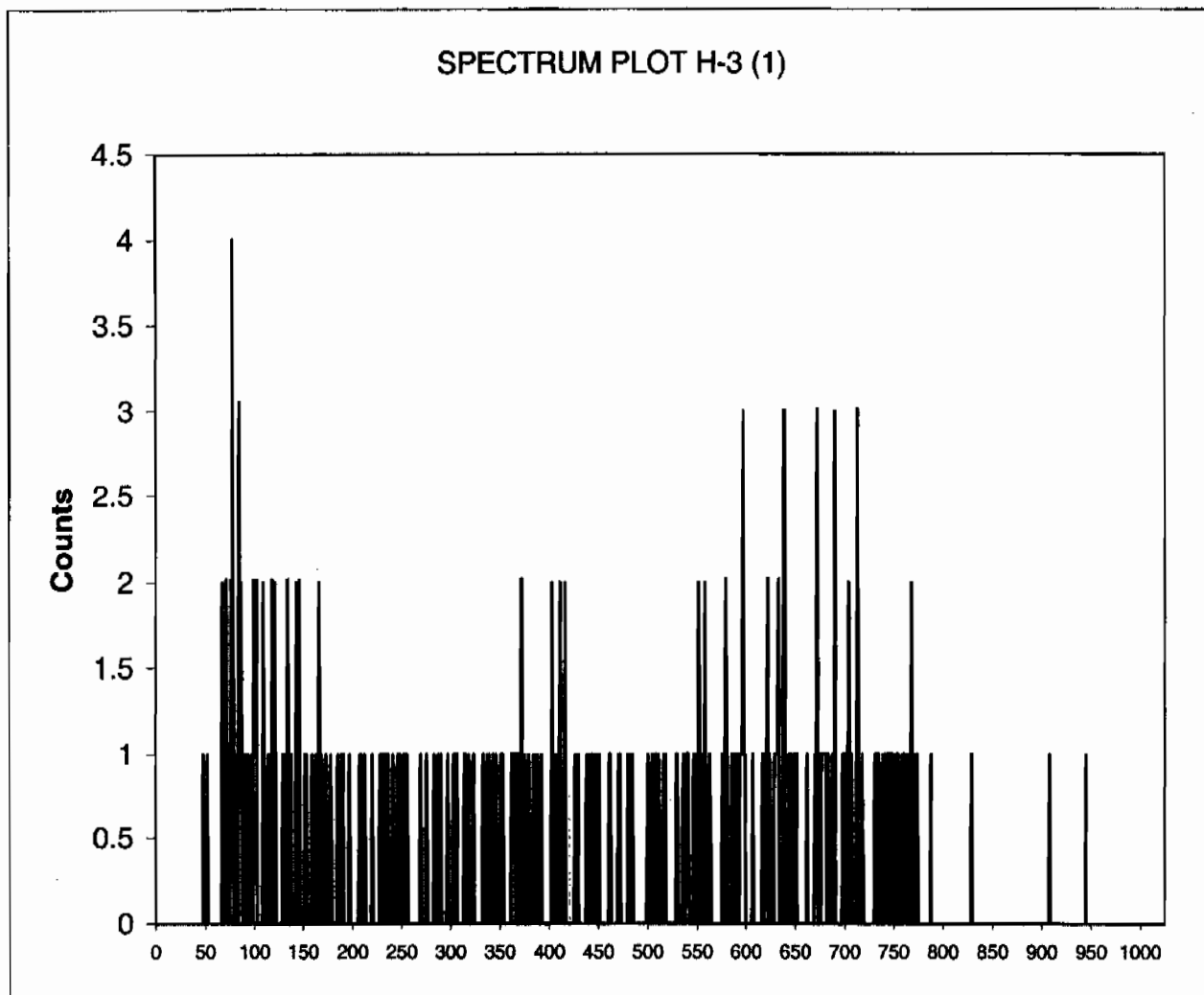
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Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

5, 247964003, 35.02967:
761.36
50-175

Channel Counts



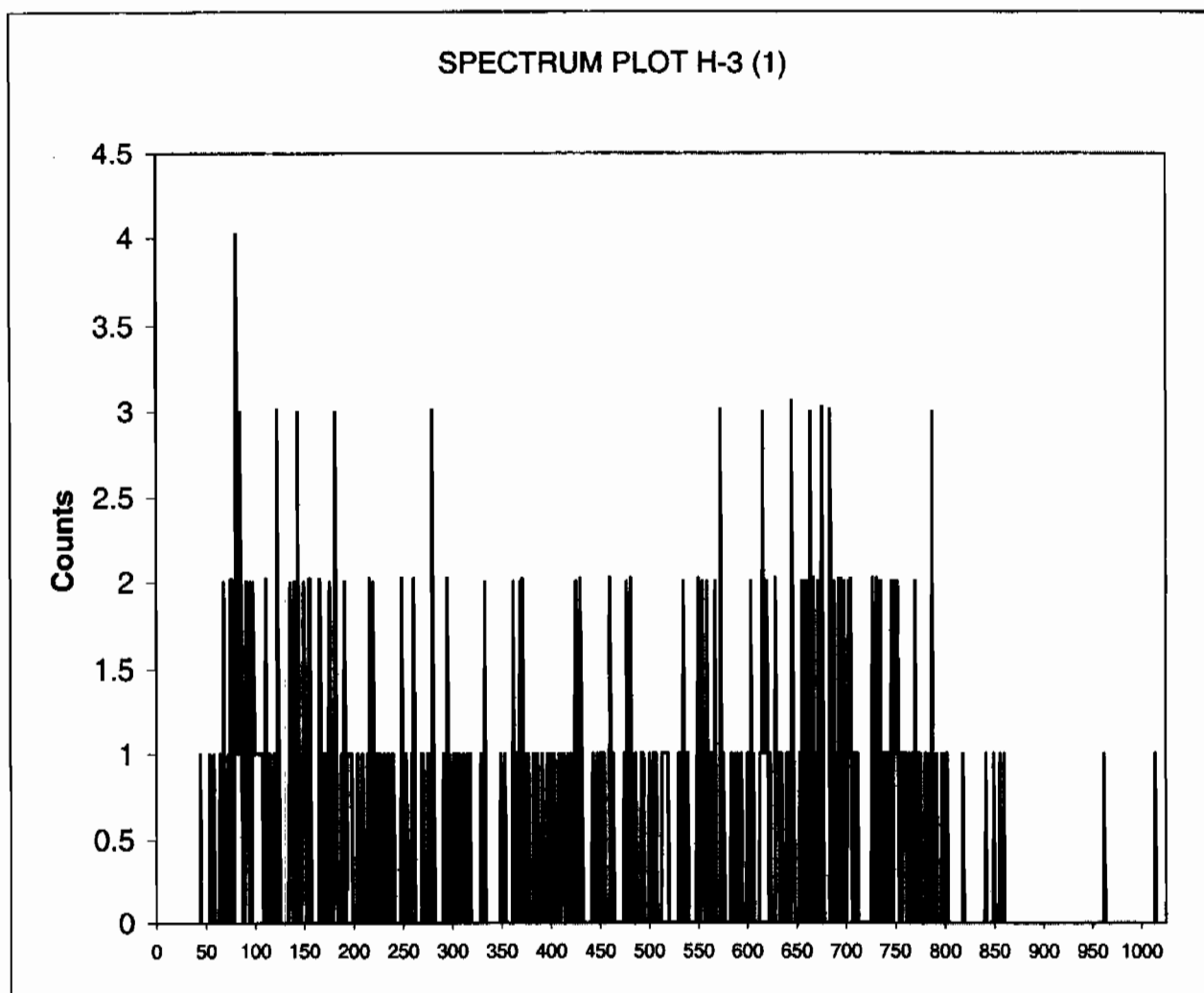
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Data Capture Date: MON 15 MAR 2010 8:45
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File Info: s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 7, 247964005, 50.02965:
Quench: 763.97
Start, End, X-Axis 50-175

Channel Counts



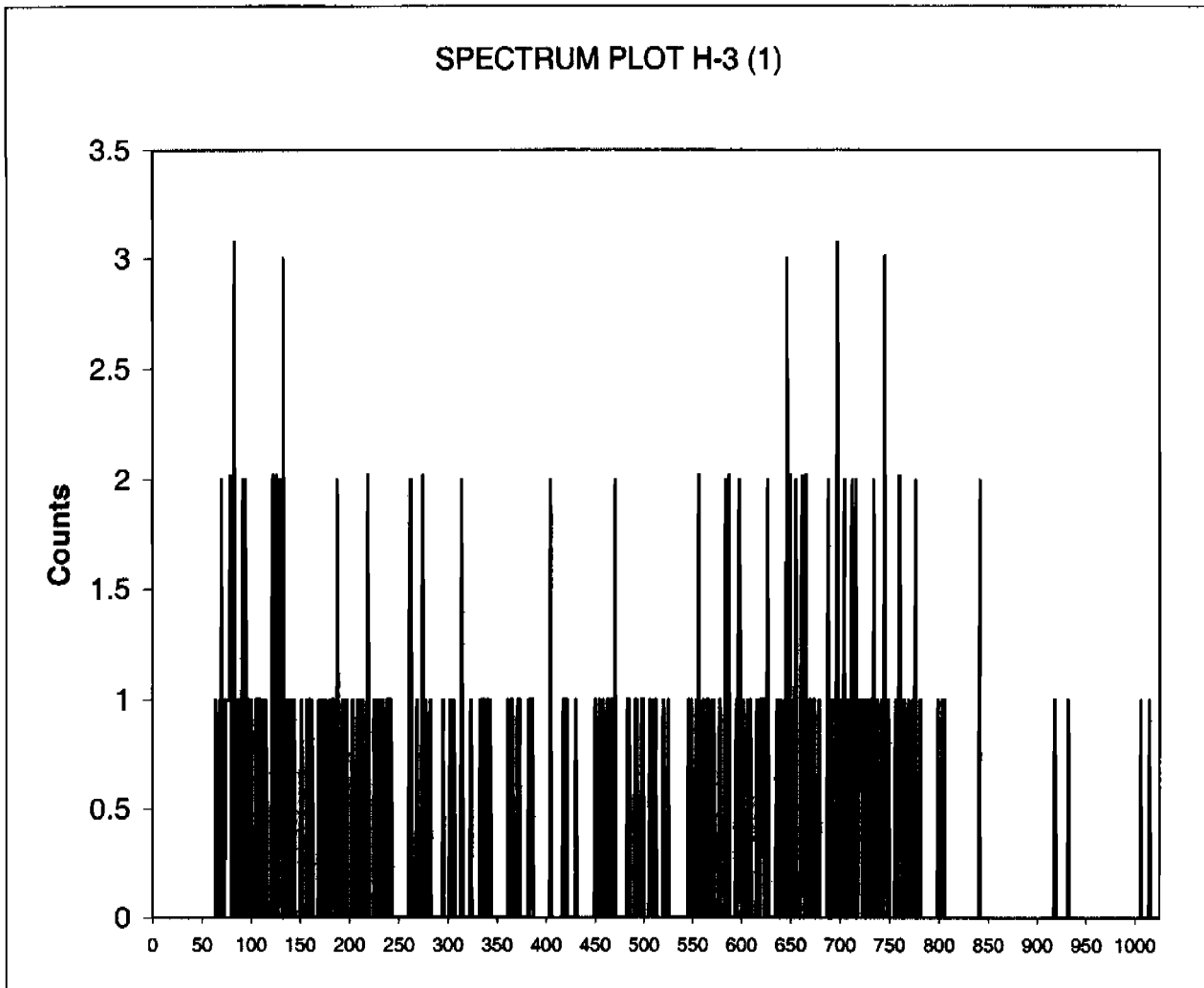
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Data Capture Date:
FileName:
File Info:

Quantulus
MON 15 MAR 2010 8:45
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ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 8, 247969001, 35.02965:
Quench: 764.73
Start, End, X-Axis 50-175

Channel Counts



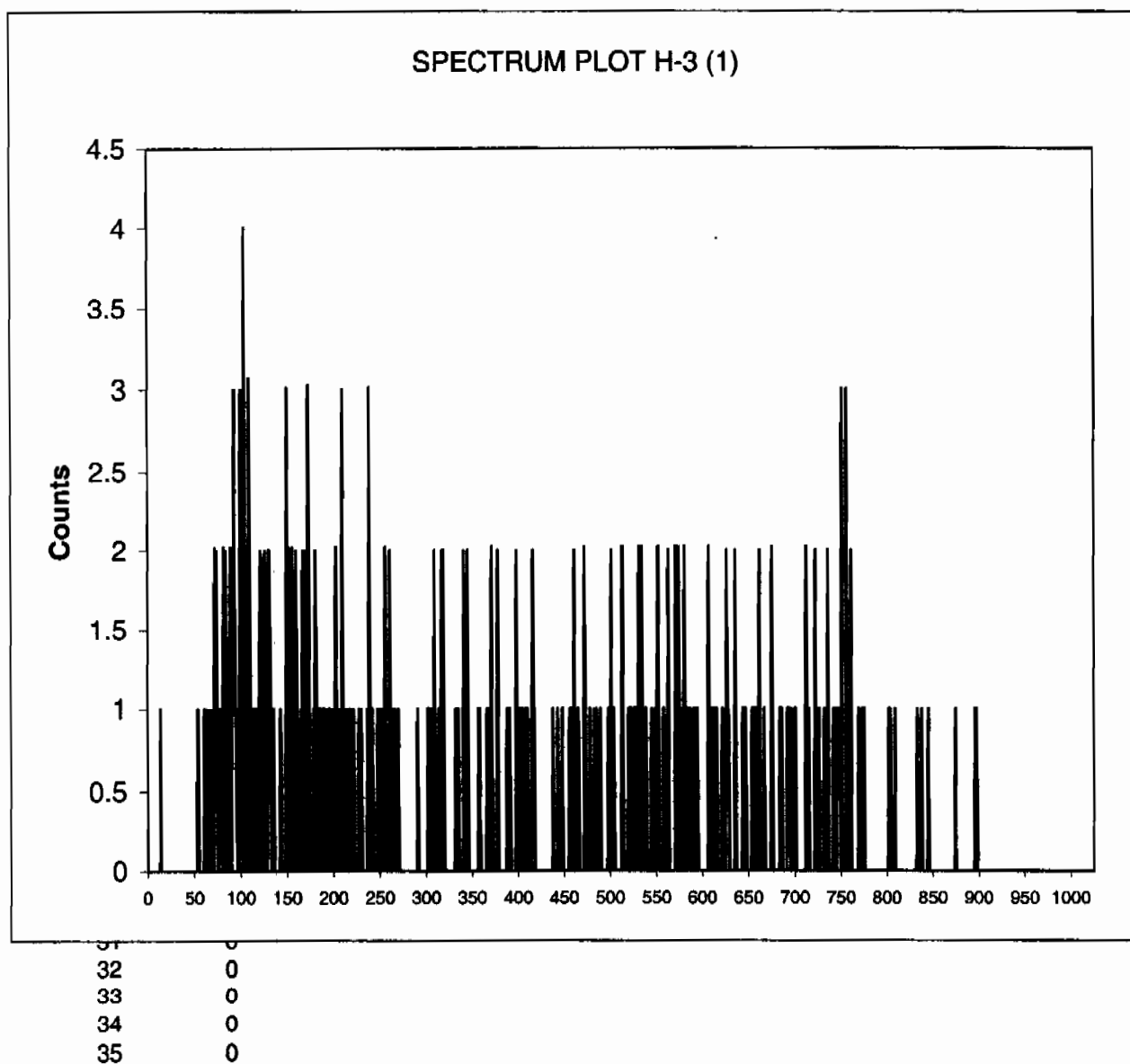
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ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 9, 247969002, 35.02965:
Quench: 759.12
Start, End, X-Axis 50-175

Channel Counts

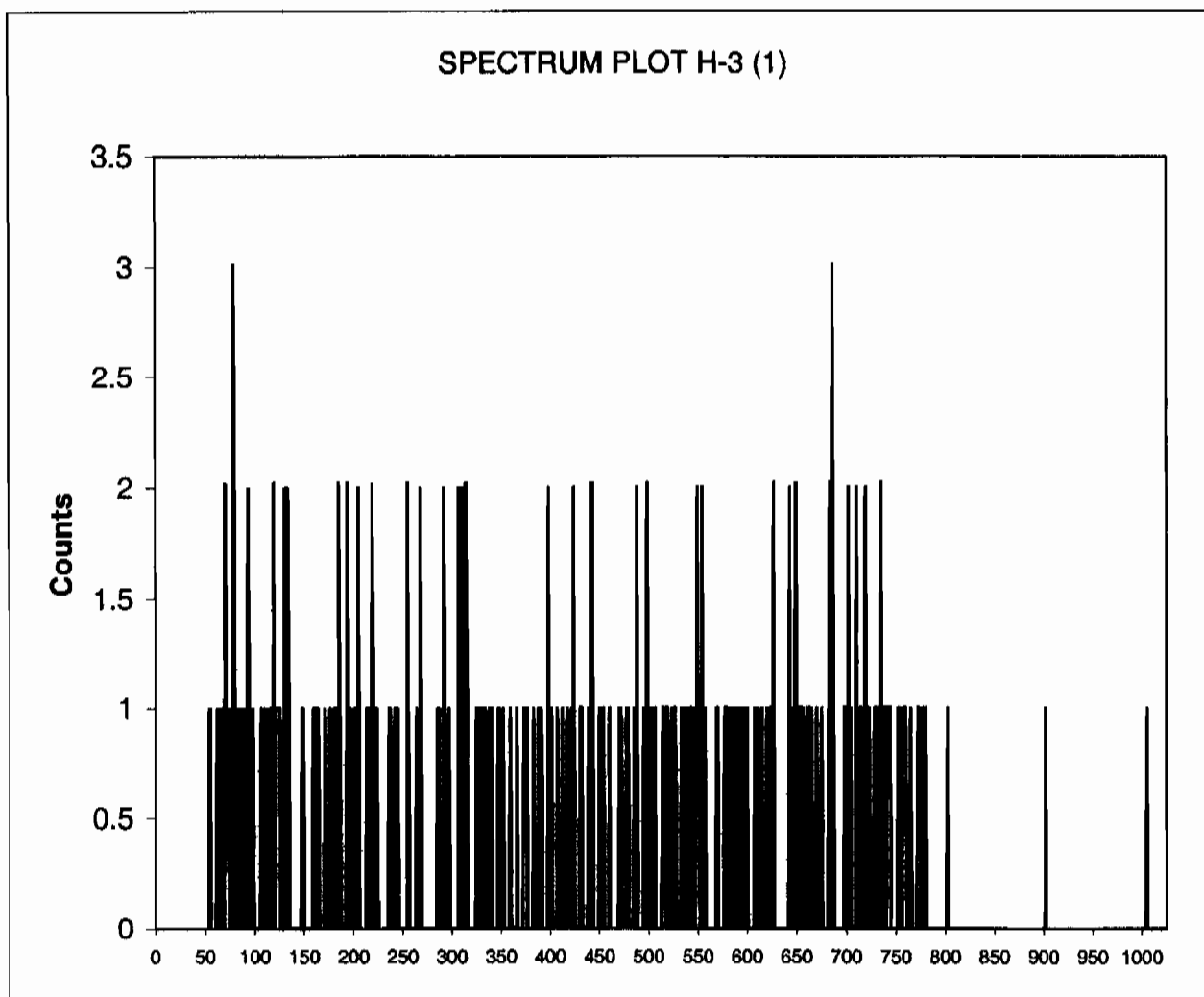


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ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 10, 247969003, 35.02965:
Quench: 756.76
Start, End, X-Axis: 50-175

Channel Counts



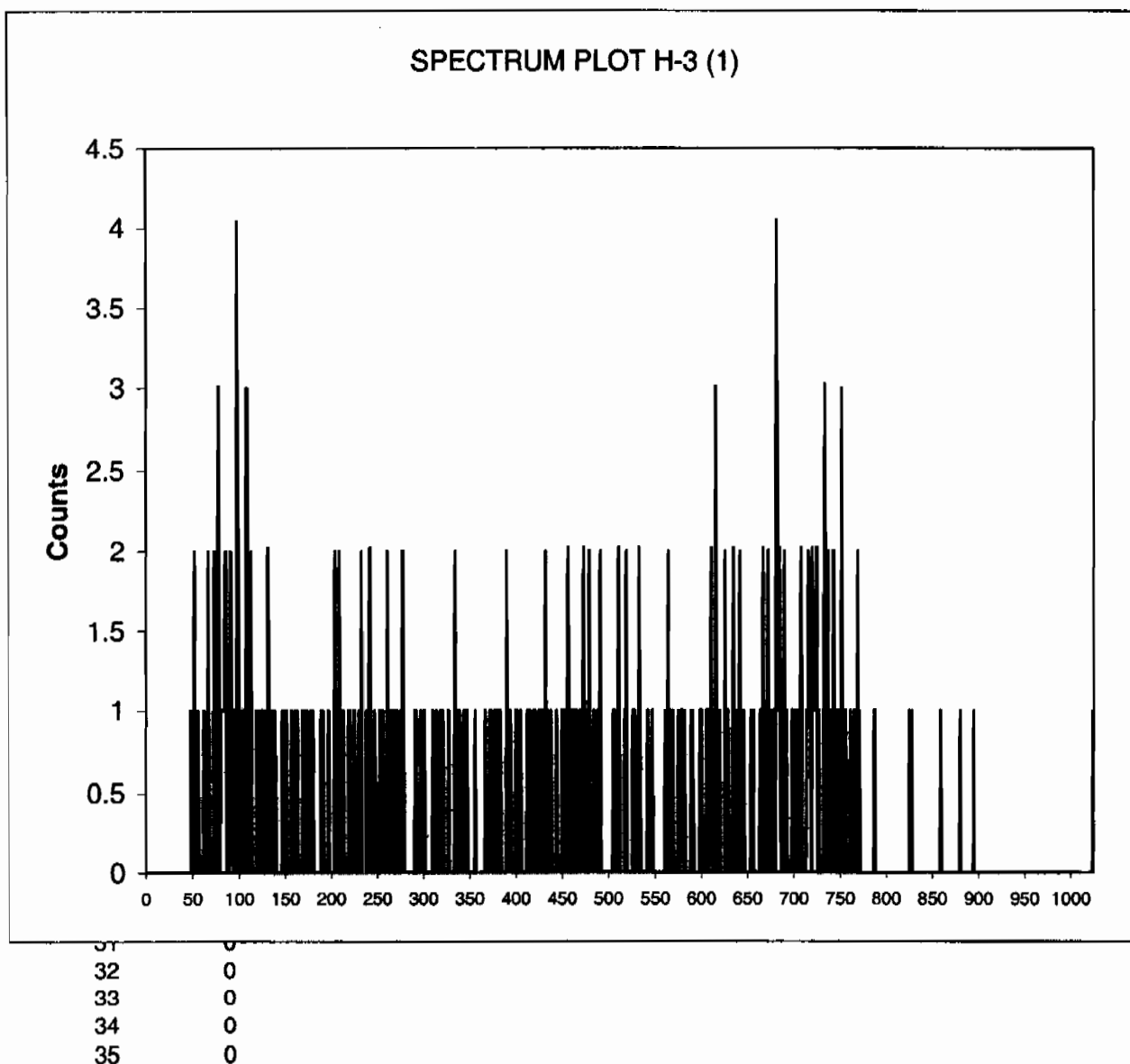
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ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 11, 247969004, 35.02965:
Quench: 756.01
Start, End, X-Axis 50-175

Channel Counts



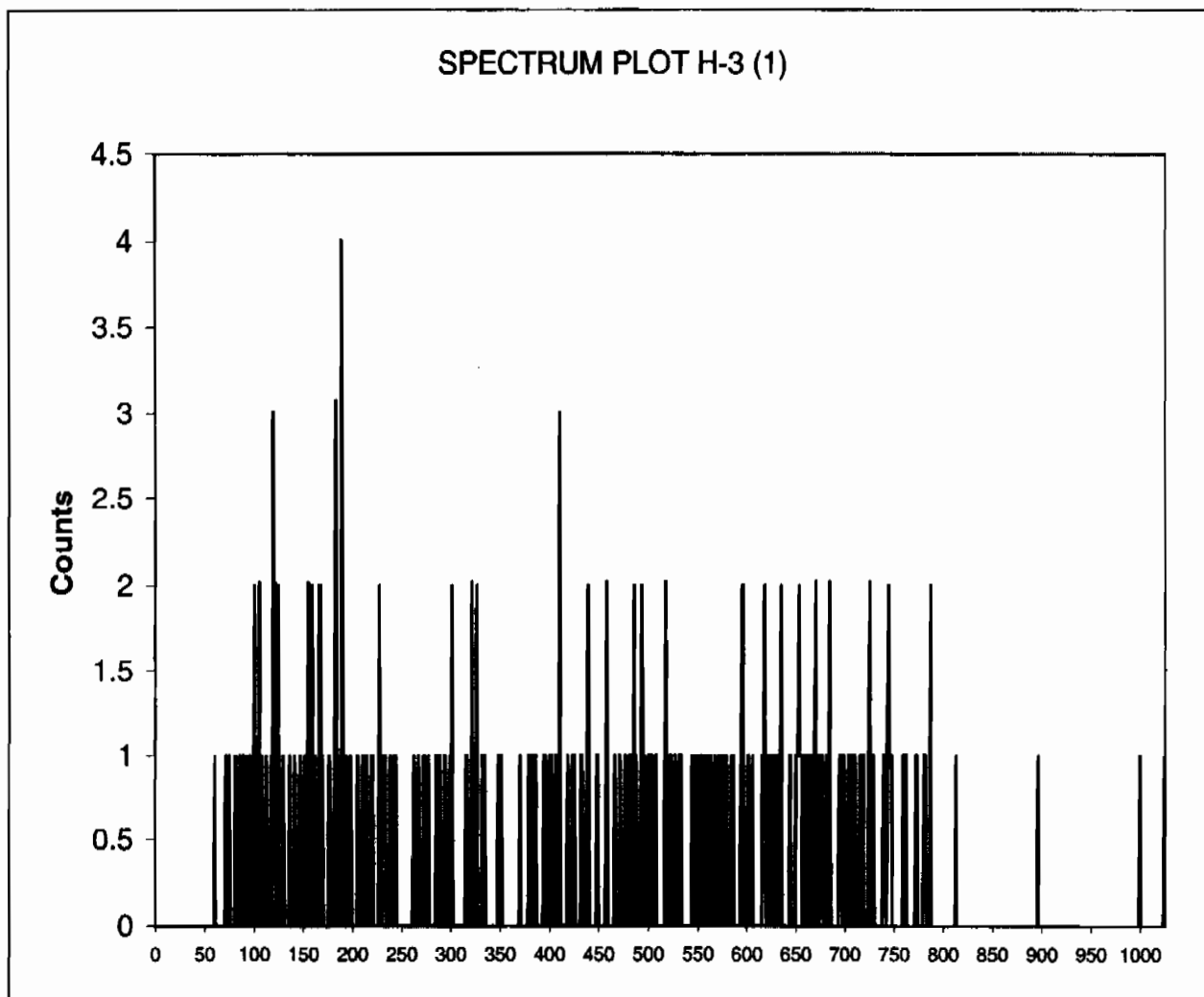
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File Info:

Quantulus
MON 15 MAR 2010 8:45
s:\sc\files\orange\964049A0\SQ124901N.001.xls
s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 12, 247969005, 35.02965:
Quench: 758.97
Start, End, X-Axis 50-175

Channel Counts



31 0
32 0
33 0
34 0
35 0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 15 MAR 2010 8:45
s:\sc\files\orange\964049A0\SQ135001N.001.xls
s:\sc\files\orange\964049A0\U964049A0.xls

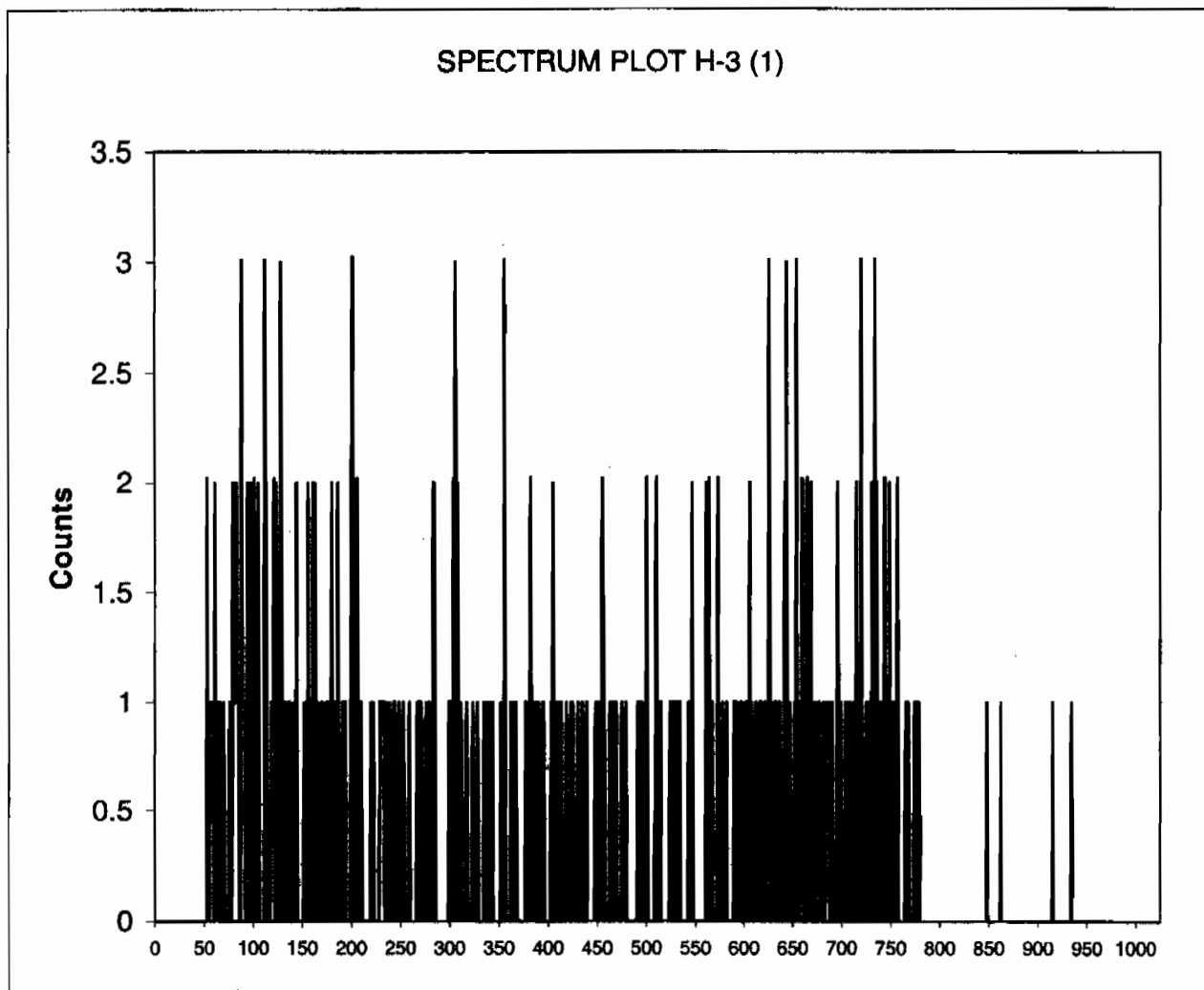
ID:
Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

13, 247969006, 35.02965:
760.61
50-175

Channel Counts



31	0
32	0
33	0
34	0
35	0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 15 MAR 2010 8:45
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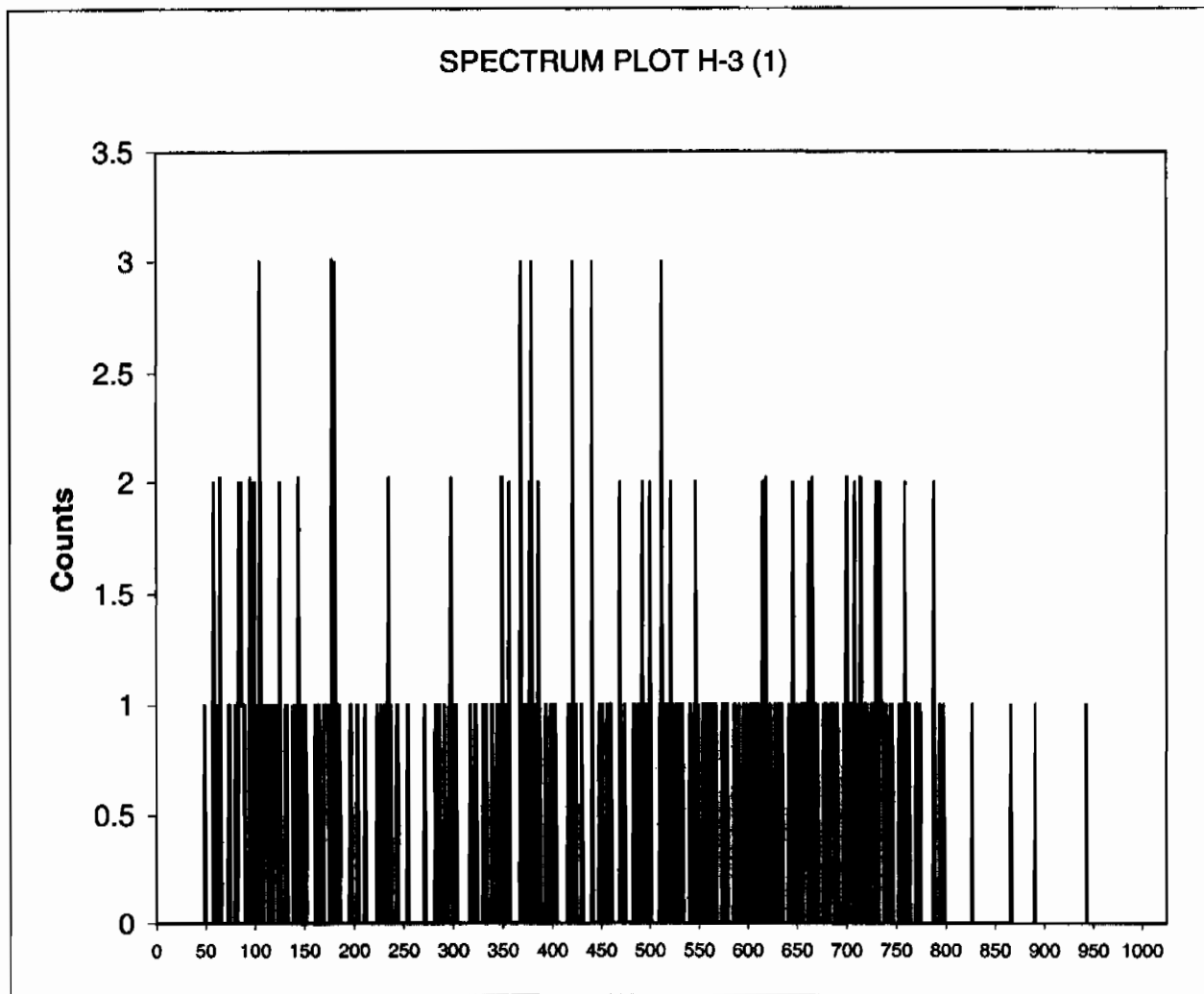
ID:
Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

14, 247969007, 35.02963:
761.87
50-175

Channel Counts



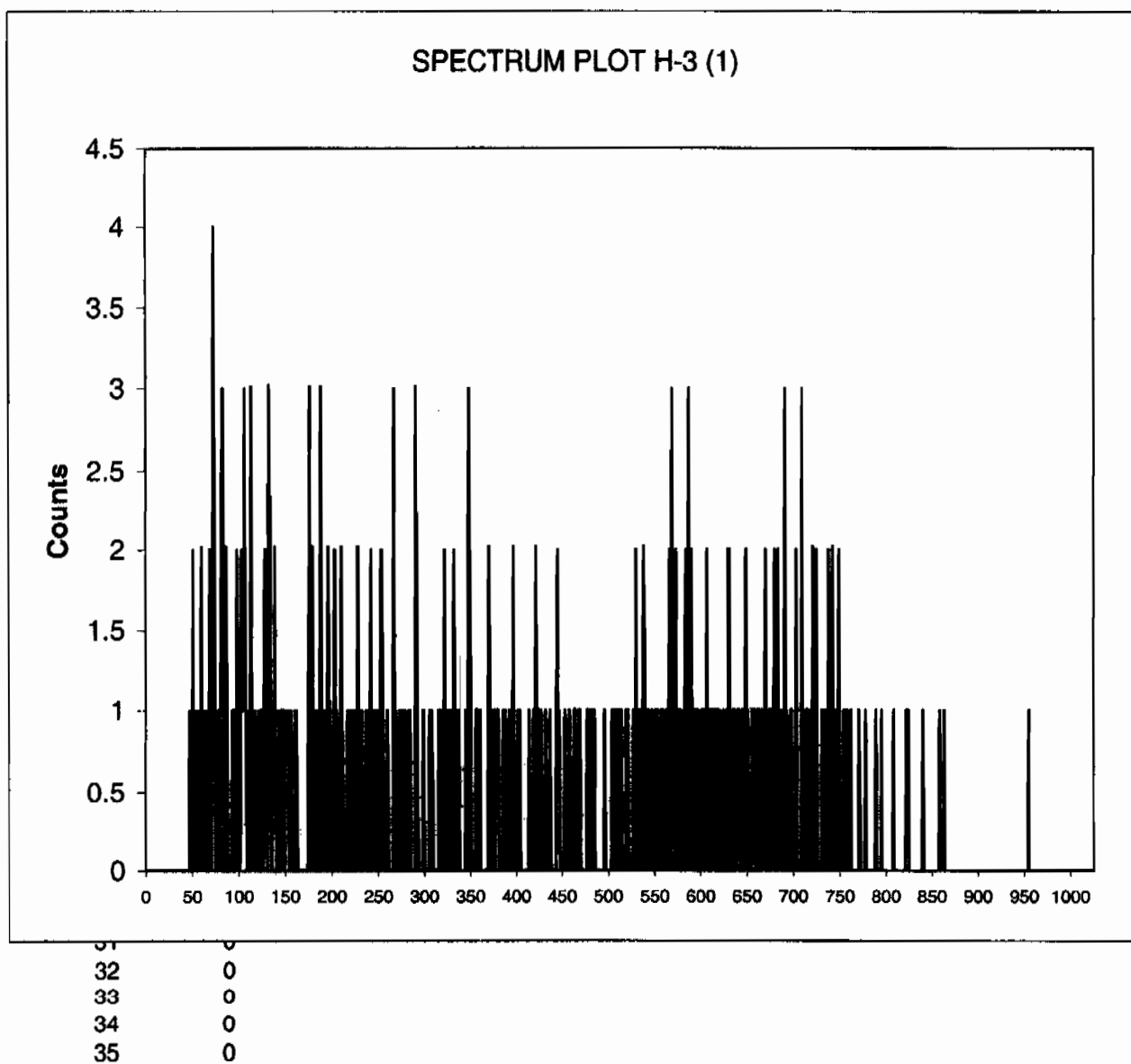
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35	0

Instrument Type: Quantulus
Data Capture Date: MON 15 MAR 2010 8:45
FileName: s:\sc\files\orange\964049A0\SQ155201N.001.xls
File Info: s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 15, 247969008, 50.02963:
Quench: 756.87
Start, End, X-Axis 50-175

Channel Counts

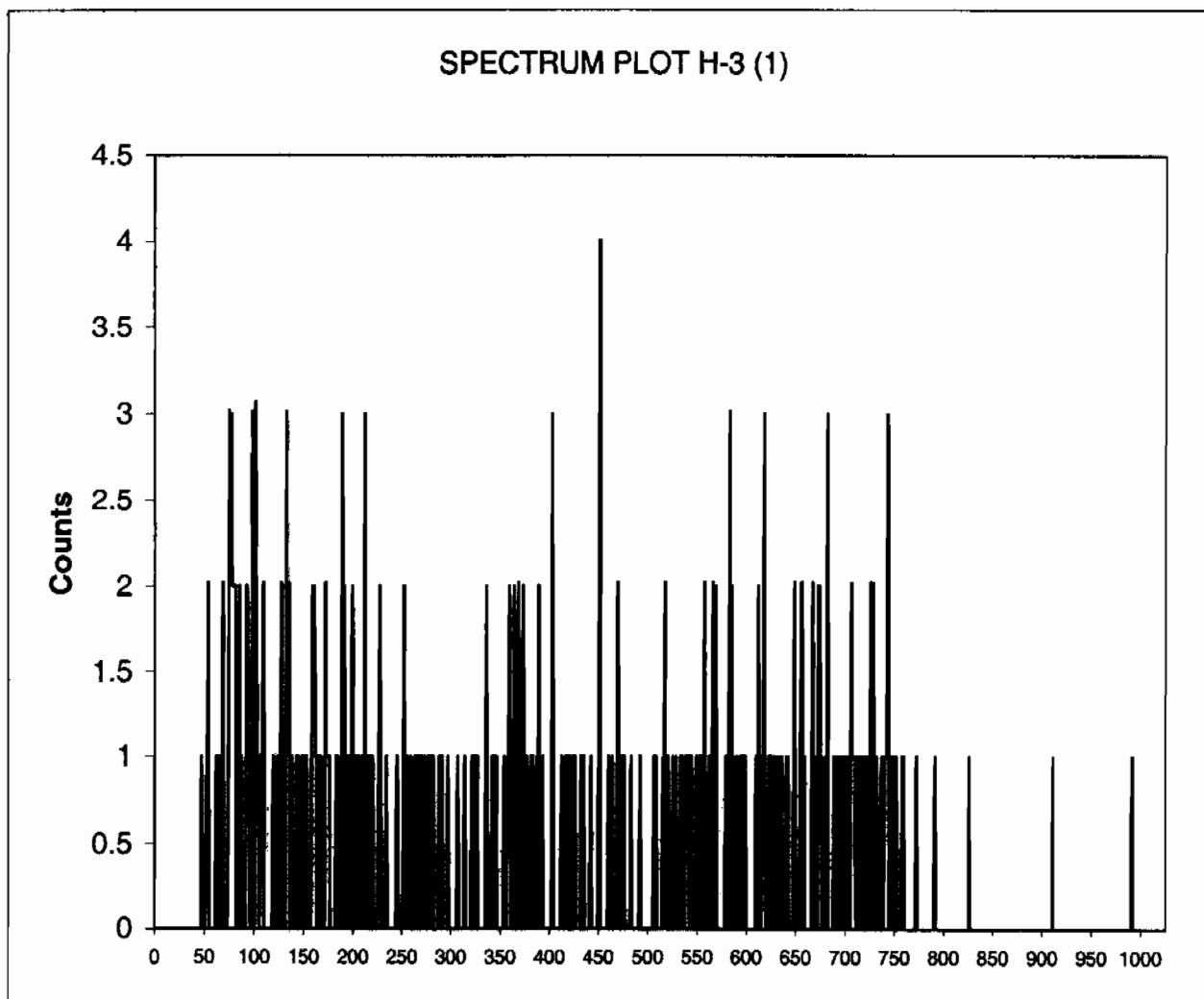


Instrument Type: Quantulus
Data Capture Date: MON 15 MAR 2010 8:45
FileName: s:\sc\files\orange\964049A0\SQ165301N.001.xls
File Info: s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 16, 248028001, 35.02963:
Quench: 761.41
Start, End, X-Axis 50-175

Channel Counts



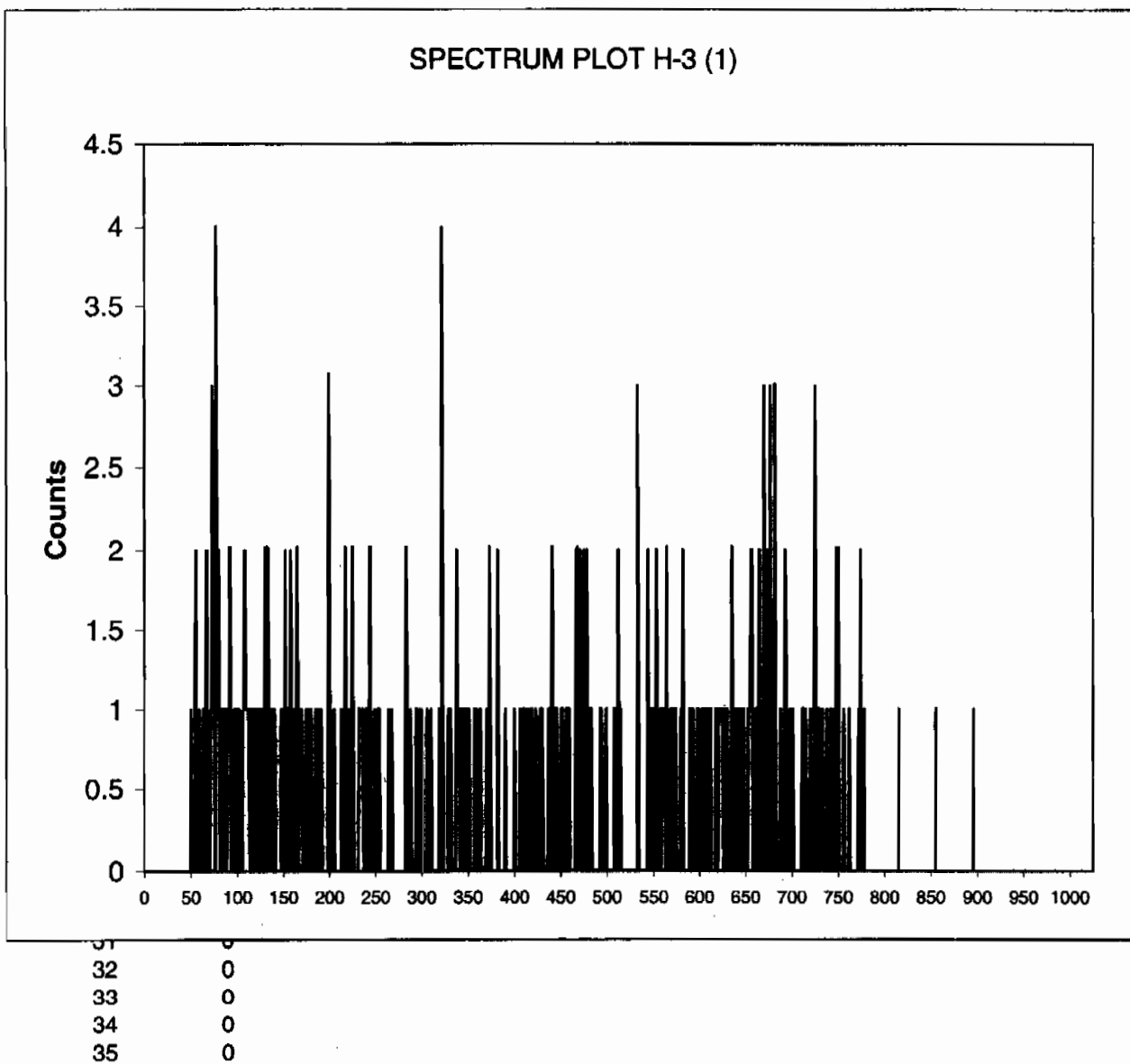
31 0
32 0
33 0
34 0
35 0

Instrument Type: Quantulus
Data Capture Date: MON 15 MAR 2010 8:45
FileName: s:\sc\files\orange\964049A0\SQ175401N.001.xls
File Info: s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 17, 248028002, 35.01297:
Quench: 758.42
Start, End, X-Axis 50-175

Channel Counts

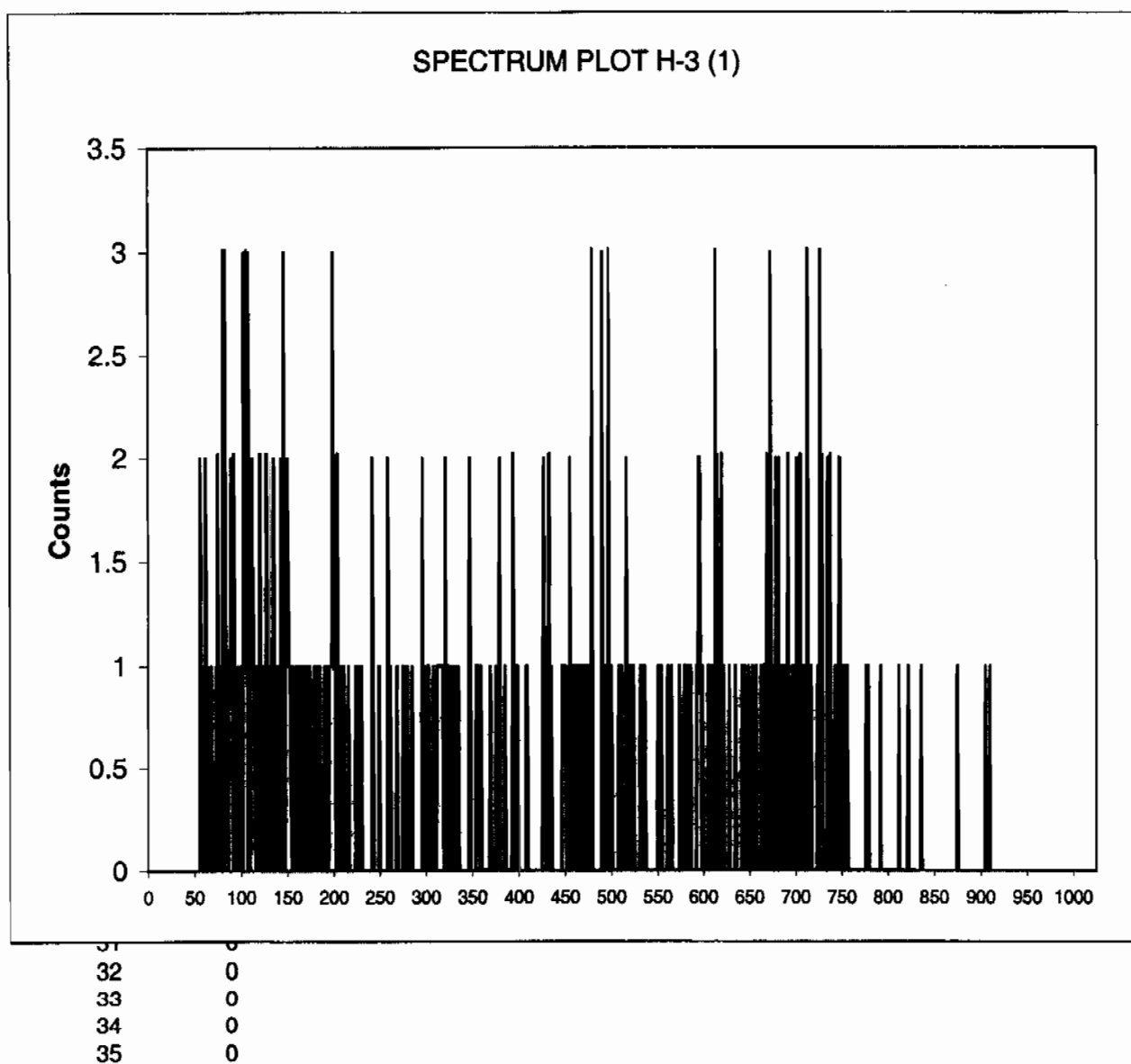


Instrument Type: Quantulus
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FileName: s:\sc\files\orange\964049A0\SQ185501N.001.xls
File Info: s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 18, 248028003, 35.02962:
Quench: 760.82
Start, End, X-Axis 50-175

Channel Counts

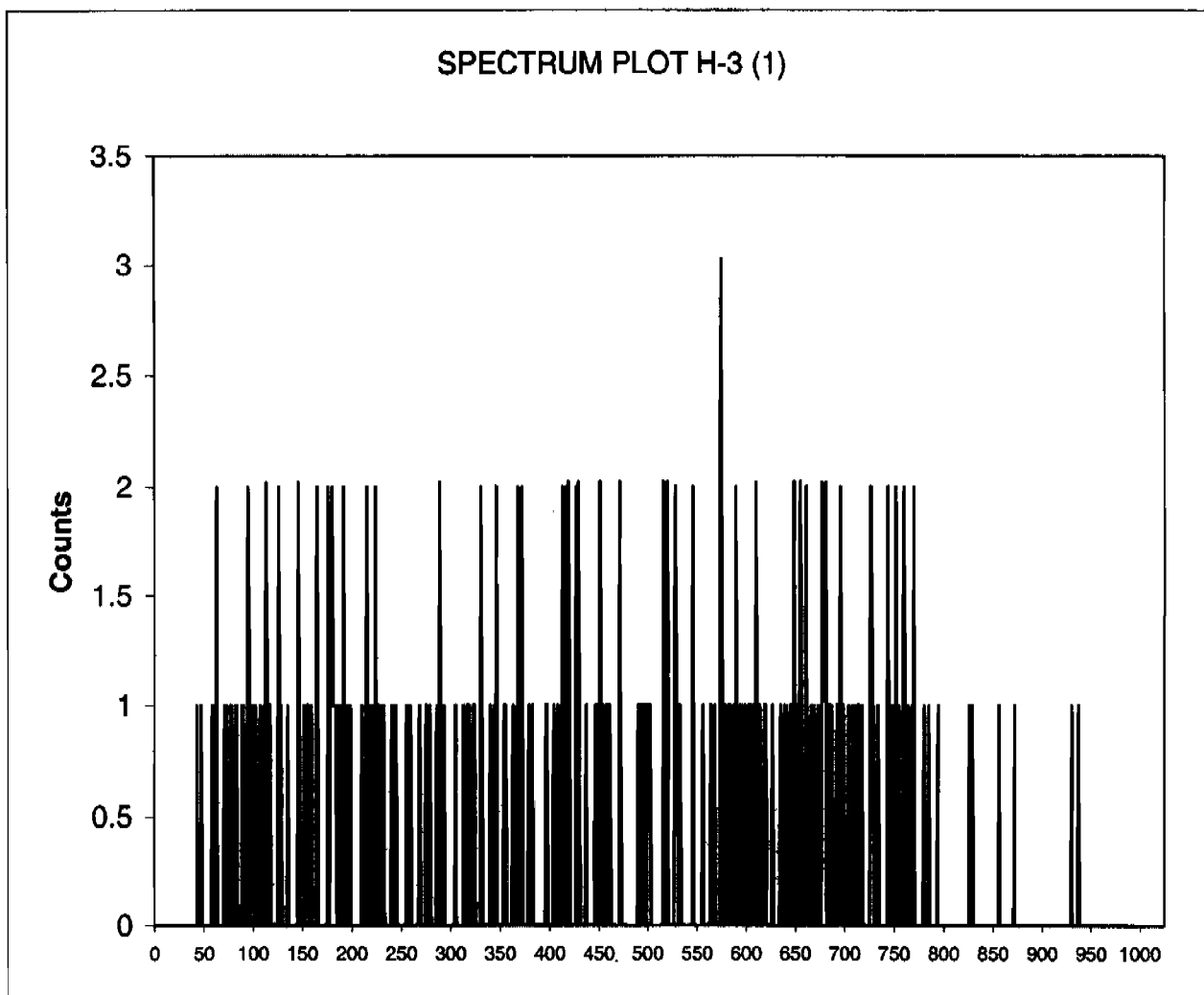


Instrument Type:	Quantulus
Data Capture Date:	MON 15 MAR 2010 8:45
FileName:	s:\isc\files\orange\964049A0\SQ195601N.001.xls
File Info:	s:\isc\files\orange\964049A0\U964049A0.xls

ID:	H-3 (1)
Comments:	ORANGE

Sample, Rack-Pos, Time:	19, 248028004, 35.02962:
Quench:	760.37
Start, End, X-Axis	50-175

Channel Counts



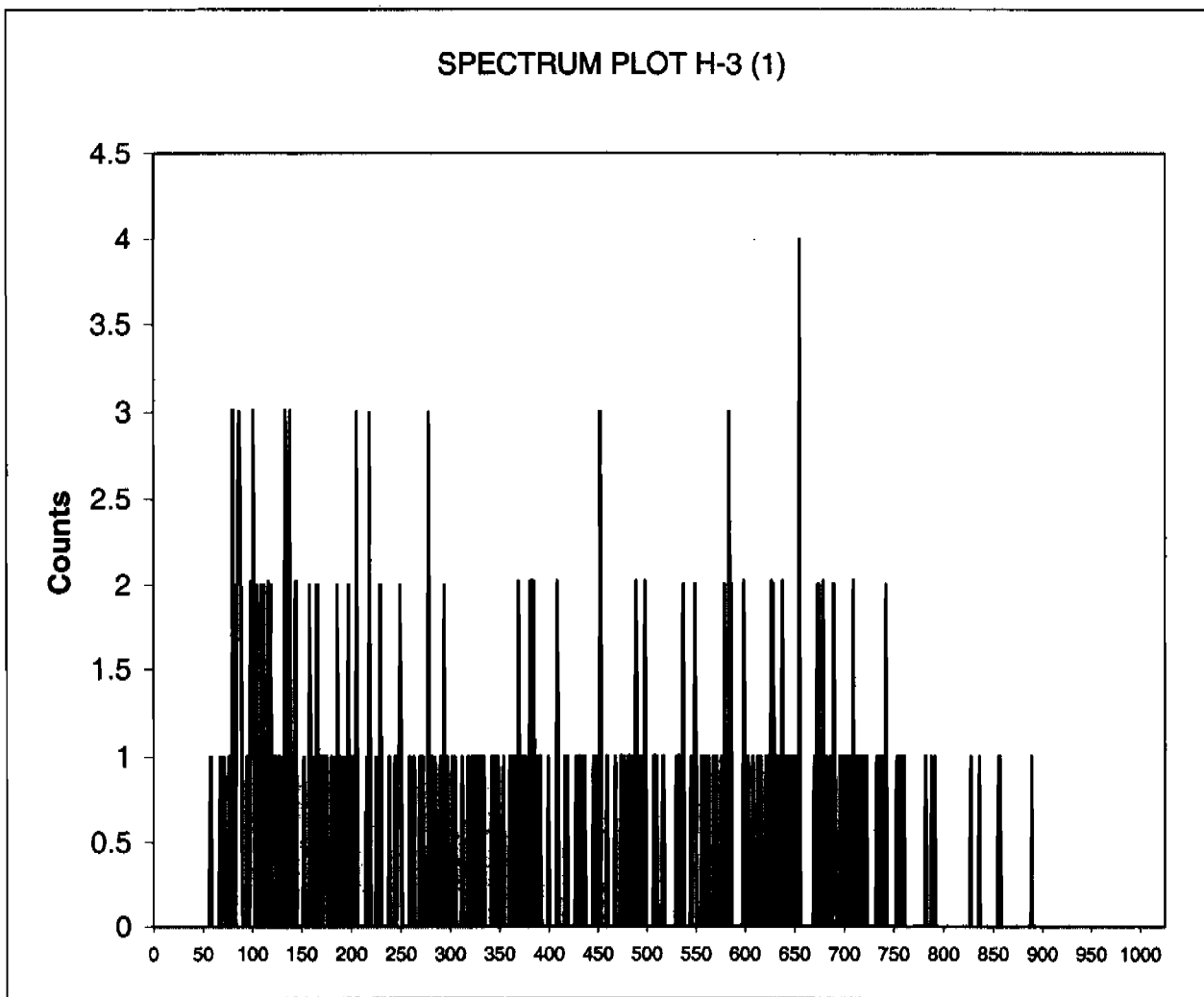
31	0
32	0
33	0
34	0
35	0

Instrument Type: Quantulus
Data Capture Date: MON 15 MAR 2010 8:45
FileName: s:\sc\files\orange\964049A0\SQ205701N.001.xls
File Info: s:\sc\files\orange\964049A0\U964049A0.xls

ID: H-3 (1)
Comments: ORANGE

Sample, Rack-Pos, Time: 20, 248028005, 35.02962:
Quench: 760.94
Start, End, X-Axis 50-175

Channel Counts



31 0
32 0
33 0
34 0
35 0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 15 MAR 2010 8:45
s:\sc\files\orange\964049A0\SQ225901N.001.xls
s:\sc\files\orange\964049A0\U964049A0.xls

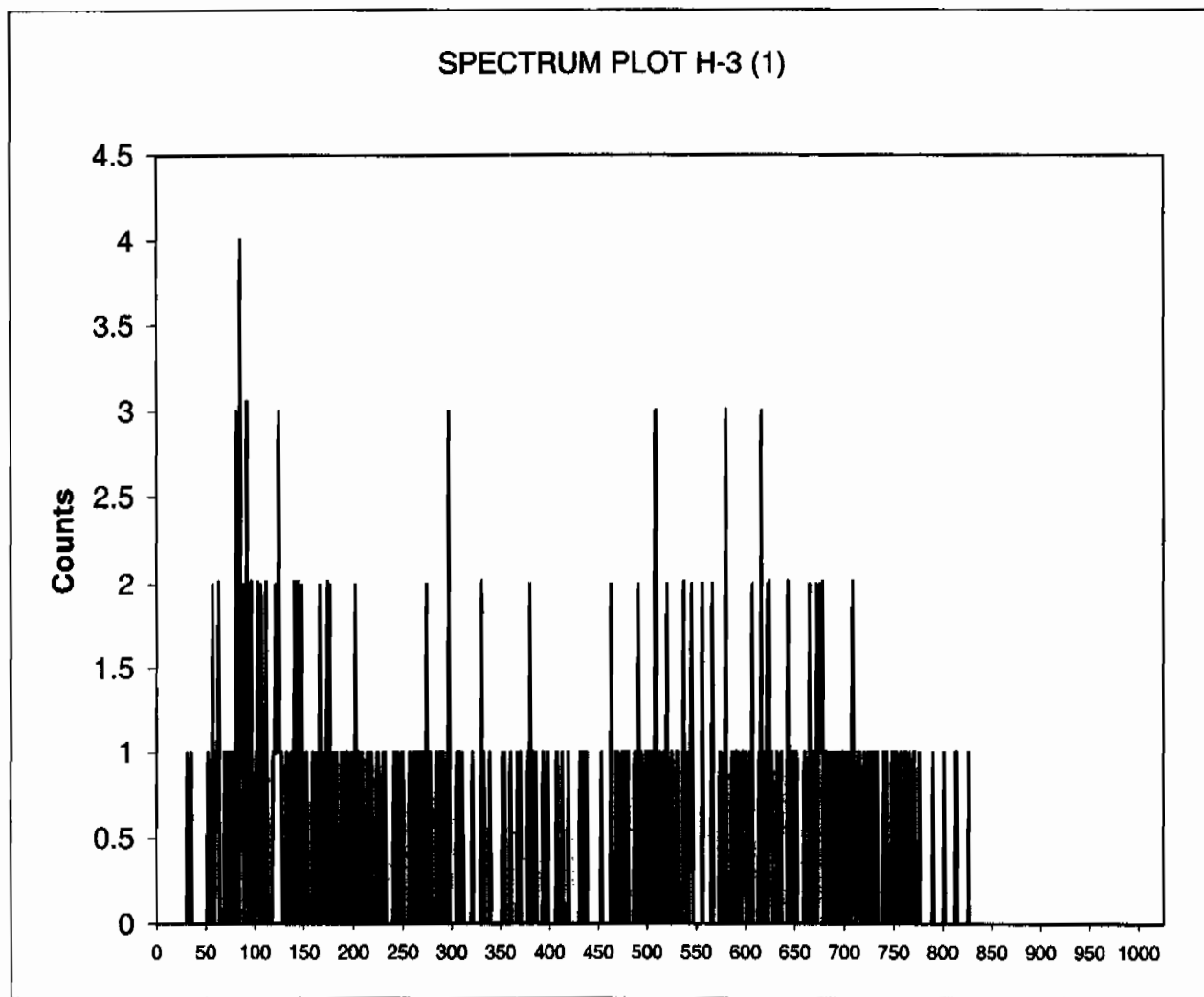
ID:
Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

22, 1202068193, 35.0296:
762.33
50-175

Channel Counts



31	0
32	0
33	0
34	0
35	1

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 15 MAR 2010 8:45
s:\sc\files\orange\964049A0\SQ236001N.001.xls
s:\sc\files\orange\964049A0\U964049A0.xls

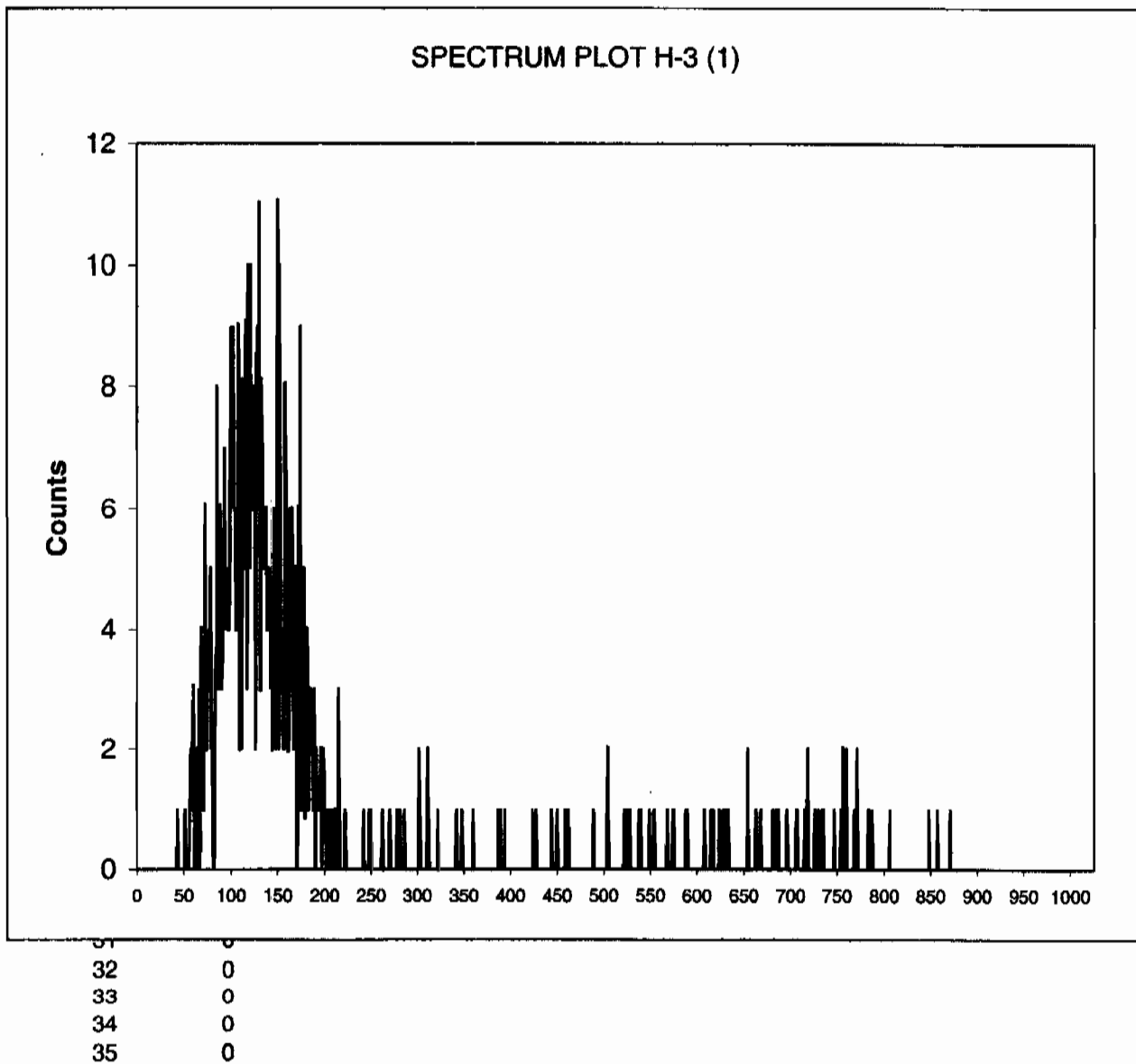
ID:
Comments:

H-3 (1)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

23, 1202068194, 15.0296:
770.89
50-175

Channel Counts



PROTOCOL : 10 H-3 120 min
DATE : 2010/03/17
TIME : 13:21
ID : P10AS259

H-3

Wallac 1414 WinSpectral v1.40 S/N 4140127

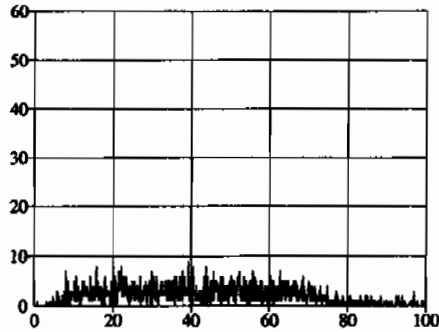
Counting mode : DPM
Quench Index : SQP(E)
Isotope(s) : H3
H3 = ,12.43 y
Protocol name : H-3 120 min
Counting time : 7200
Repeats : 1
Cycles : 1
Replicates : 1
2 sigma % : 0.00
Minimum cpm : 0.00 Checking time: 10
Sp. library of isotope H3 : Wallac
Vial type : Diffuse
Liquid system : HlSafe
Advanced modes : Chemilum
Output to Display :
POS,DPM1,CPMw2,CLMM,FNCT2,
RACK,RACKPOS,FNCT1,SQPE,DATE,
TIME,CPMw1,CPM,CPM1,CTIME
Additions to Display : Listing,Header,Spectrum
Header : H-3
Spectrum : Rnd.Cos,Beta
Window 1 : 25- 190 /Beta
Window 2 : 25- 190 /Rnd.Cos
Window 3 : 1-1024 /Beta
Window 4 : 1-1024 /Beta
Window 5 : 1-1024 /Beta
Window 6 : 1-1024 /Beta
FNCT1 = FNCT1 : CTIME/60
FNCT2 = FNCT2 : CPMW1-CPMW2
FNCT3 = FNCT3 :
FNCT4 = FNCT4 :

Total activity:

H3 20.6 DPM 0.000 kBq

H-3

6kg Rack_position 58 1 Count_Time(min) 120.00 Quench_number 734.15 H-3_CPM 2.69 Run_Date 3/17/2010 1:21 PM

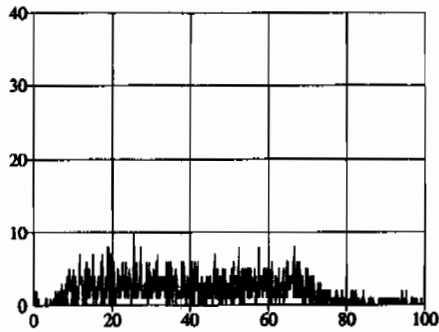


/ Counts
Chem

/ Counts
Beta

Gross_B_CPM 2.80 LUMEX 0.00
Lumex_CPM 0.10 DPM 10.40

mb Rack_position 58 2 Count_Time(min) 120.00 Quench_number 729.69 H-3_CPM 2.53 Run_Date 3/17/2010 3:23 PM



/ Counts
Chem

/ Counts
Beta

Gross_B_CPM 2.60 LUMEX 0.00
Lumex_CPM 0.10 DPM 10.20

ID: TRITIUM

19 MAR 2010 12:39

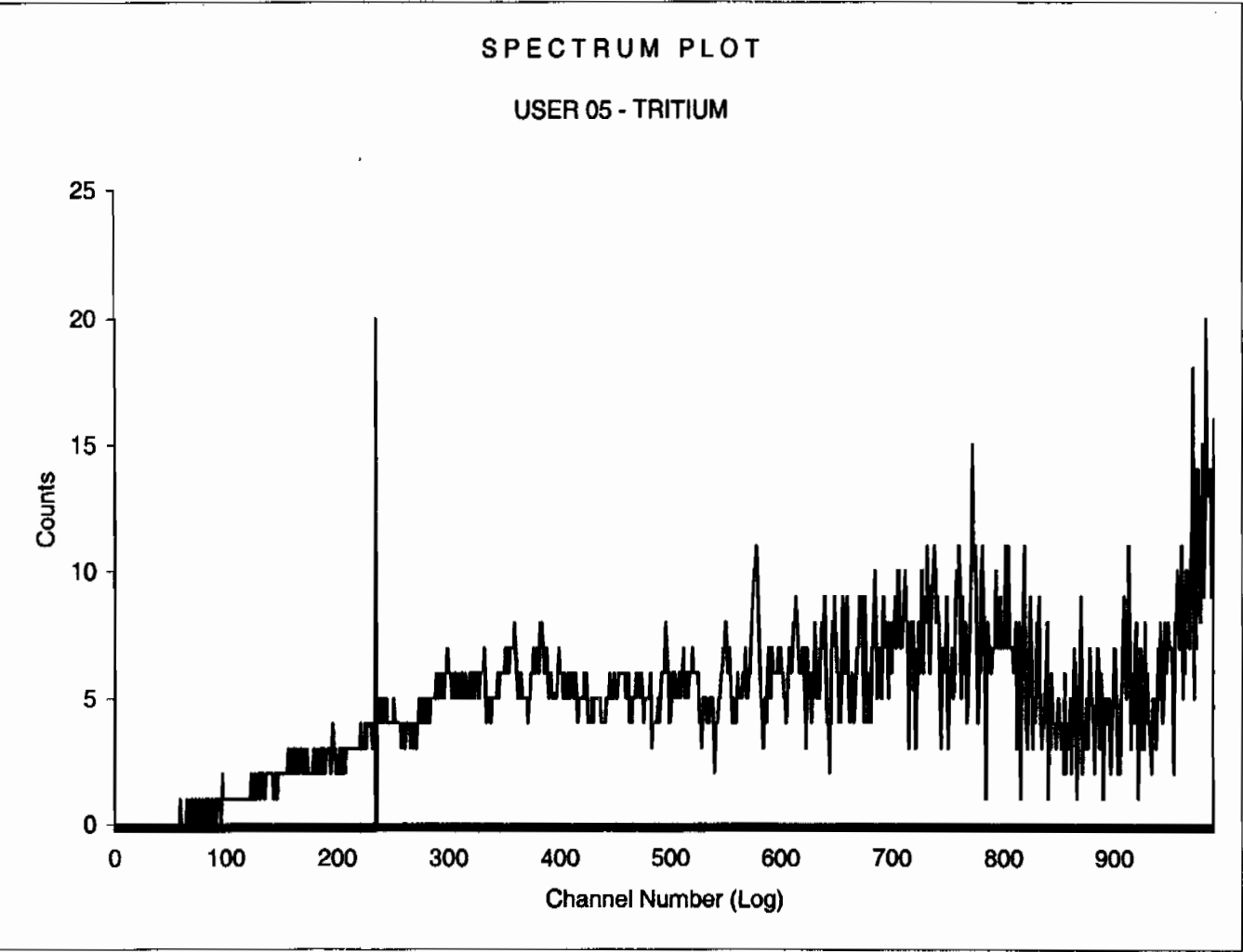
USER: 5 COMMENT: GOLD
 PRESET TIME : 120.00
 DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD
 COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : EDIT
 TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF
 SCINTILLATOR: LIQUID LUMEX: YES LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 0.0 - 235.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0
 CHAN: 0.0 - 1000.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	47-1	120.00	118.1	2.72	11.56	44.54	2.74	0.60	123.12
2	47-2	120.00	117.3	3.27	10.29	42.72	2.80	0.37	246.70
3	47-3	120.00	117.3	3.09	10.52	44.72	2.73	0.24	370.20
MISSING SAMPLE									
7	47-7	INVALID SAMPLE COUNT: HW ABORT: COUNT RATE TOO LOW							
8	47-8	INVALID SAMPLE COUNT: HW ABORT: COUNT RATE TOO LOW							
9	47-9	INVALID SAMPLE COUNT: HW ABORT: COUNT RATE TOO LOW							

4/3/23/10

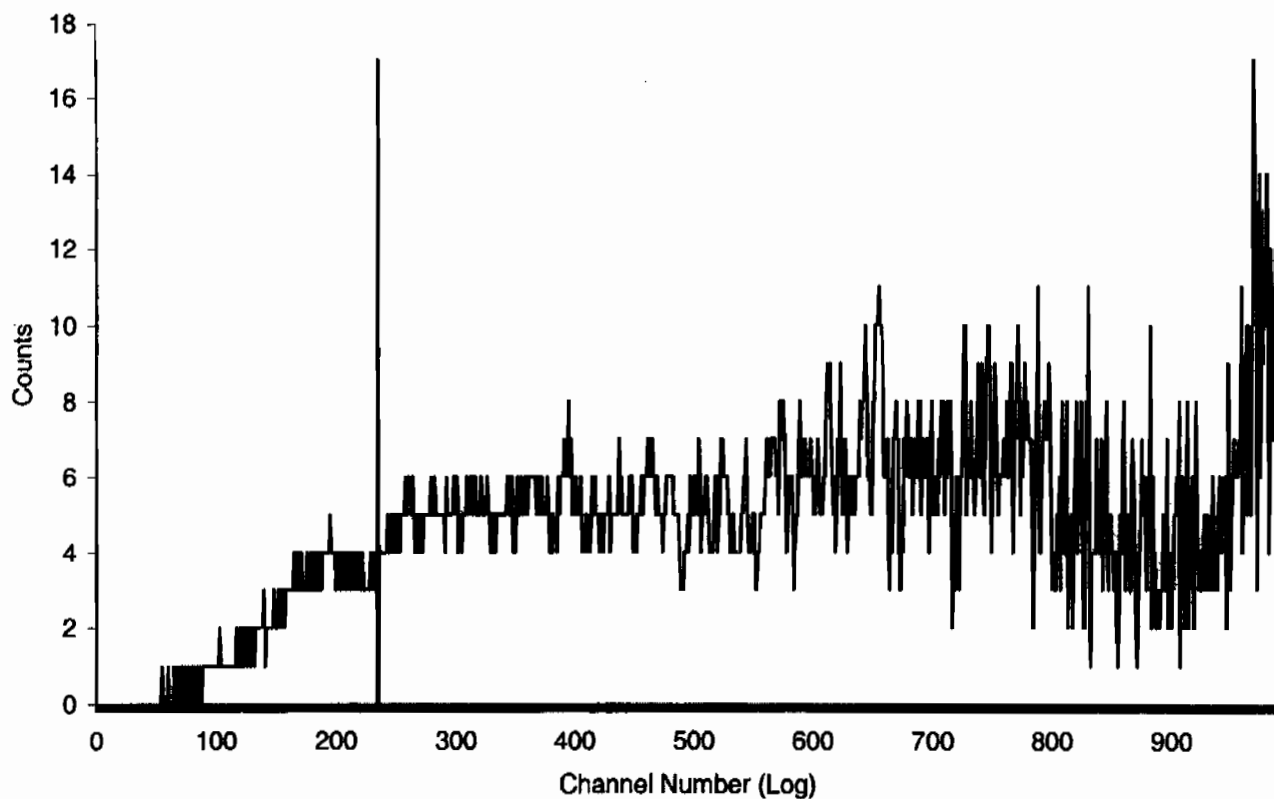
Sample Count Start Time:	19 Mar 2010 12:41:56		
Data Capture Date	19 Mar 2010 14:42:23		
User Filename	S05031947-1A.XLS		
	U05031947-1A.XLS		
Spectrum Type	Log Counts		
User Number	05		
User Id	TRITIUM		
User Comment	GOLD		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	47-1	120.00
H#, Total Counts:	118.1	5625	
Win1: Tritium - Start, End, Counts:	0	235	330
Win2: - Start, End, Counts:	0	990	4841



Sample Count Start Time:	19 Mar 2010 14:45:31		
Data Capture Date	19 Mar 2010 16:45:58		
User Filename	S05031947-2A.XLS		
	U05031947-1A.XLS		
Spectrum Type	Log Counts		
User Number	05		
User Id	TRITIUM		
User Comment	GOLD		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	47-2	120.00
H#, Total Counts:	117.3	5542	
Win1: Tritium - Start, End, Counts:	0	235	396
Win2: - Start, End, Counts:	0	990	4663

SPECTRUM PLOT

USER 05 - TRITIUM



REGISTRY

MON 22 MAR 2010 16:49

*** DIRECTORY PATH :S:\LSC\O\DA\964049A1 ***

PARAMETER GROUP: 8
ID: H-3 (2)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	39	BKG	60:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	40	247964005	60:00	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
Q013901N.001	22 MAR 2010	17:52				
39	BKG	60:01.780	761.94	1.04	2.13	7.53
Q024001N.001	22 MAR 2010	18:54				
40	247964005	60:01.780	759.63	1.43	3.10	8.25

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 22 MAR 2010 16:49
s:\sc\files\orange\964049A1\SQ013901N.001.xls
s:\sc\files\orange\964049A1\U964049A1.xls

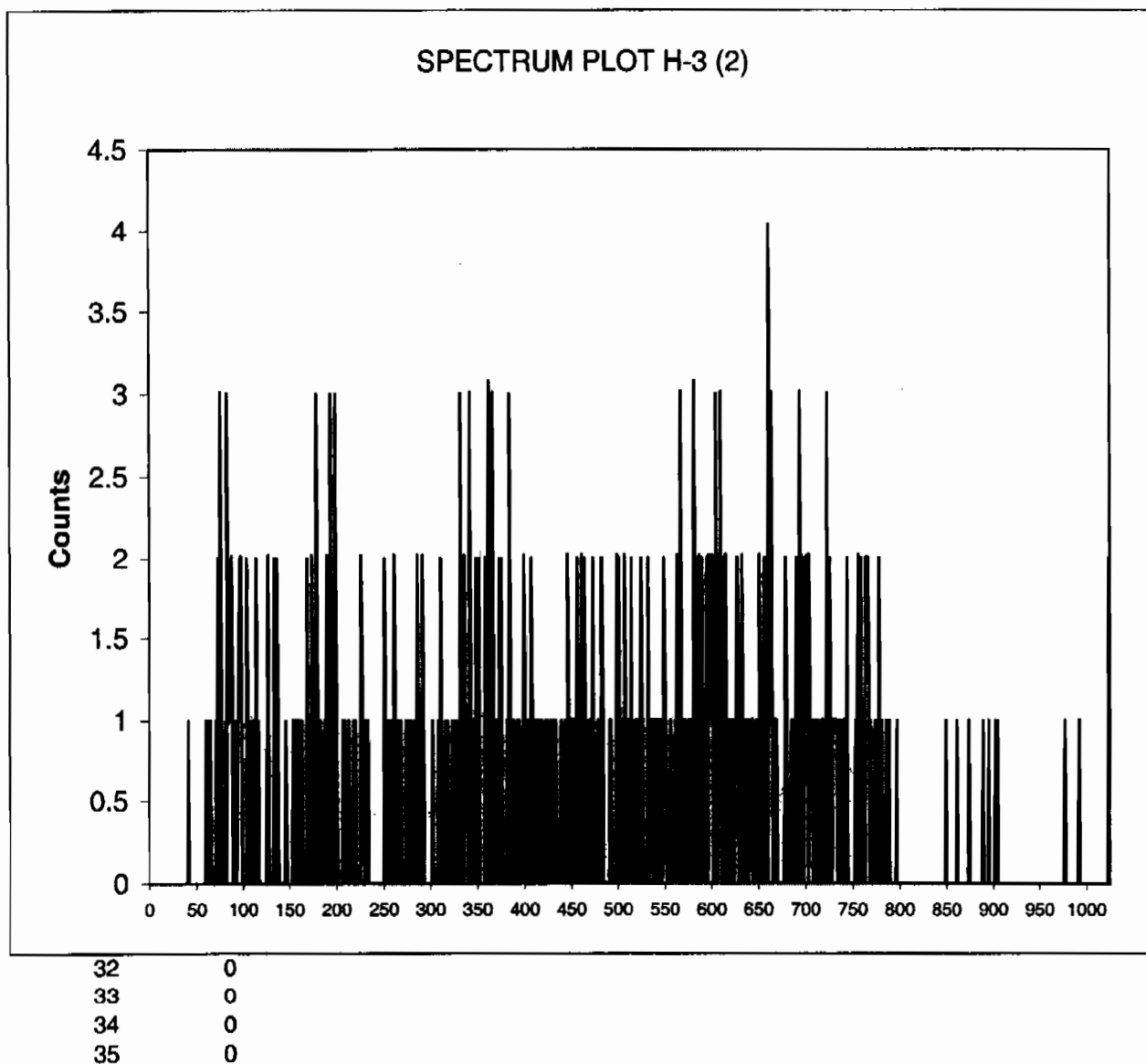
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

1, BKG, 60.02967:
761.94
50-175

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
MON 22 MAR 2010 16:49
s:\scfiles\orange\964049A1\SQ024001N.001.xls
s:\scfiles\orange\964049A1\U964049A1.xls

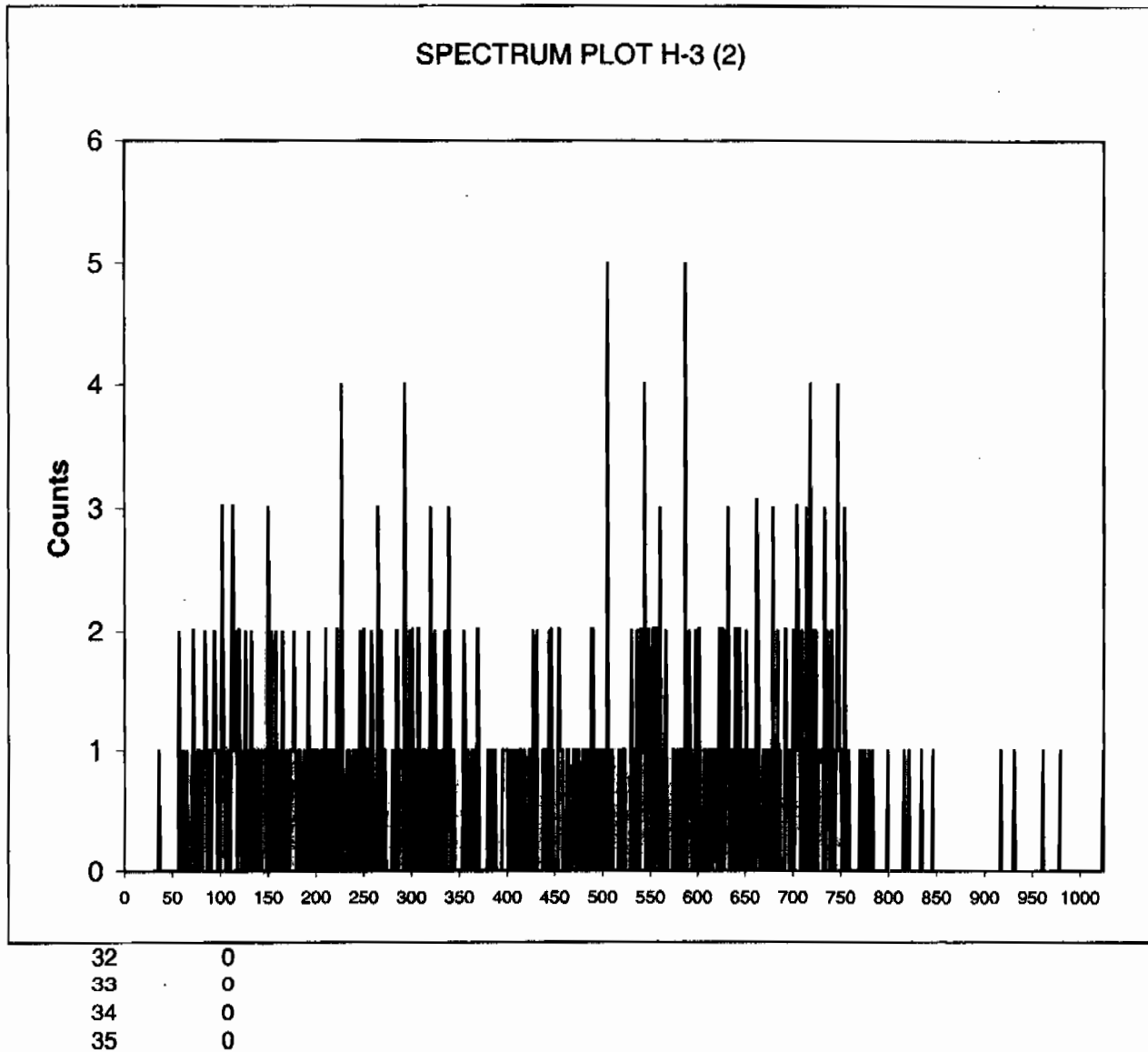
ID:
Comments:

H-3 (2)
ORANGE

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

2, 247964005, 60.02967:
759.63
50-175

Channel Counts



Tritium Que Sheet

VACUUM

11-MAR-10

Batch #: 964049 Analyst: KKK2 First Client Due Date 23-MAR-10 Internal Due Date: 12-MAR-10
 Spike Isotope: Hydrogen-3 Spike Code: 0134-K Expiration Date: 3/27/10 Vol: 0.1 mL
 LCS Isotope: Hydrogen-3 LCS Code: 0134-K Expiration Date: 3/27/10 Vol: 0.1 mL

Prep Date: 3/12/10 Initials: Pipet ID: 29709168 Witness: EC 1/2/10

Sample ID	Client Samp ID	Type	Hazard Code	Min CRDL	Matrix	Client	Sample Date	Aliquot in vial (gmL)	LSC Rack #	Dist Rig #	Vol added for Dist (mL)	Initial Sample Aliquot (gmL)	Final Wt (g)	Dist Vol (mL)
24774003-1	RE15-10-8257	SAMPLE		.25 pCi/mL SOIL	LANL010		16-FEB-10	10		1		551.324		48.09
247964001-1	RE36-10-8489	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		2		453.925		34.85
247964002-1	RE36-10-8486	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		3		404.45		54.818
247964003-1	RE36-10-8487	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		4		471.93		15.102
247964004-1	RE36-10-8462	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	8		5		473.97		27.267
247964005-1	RE36-10-8463	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		6		471.30		51.473
247969001-1	RE36-10-8490	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	10		7		537.59		61.953
247969002-1	RE36-10-8470	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	10		8		498.47		41.684
247969003-1	RE36-10-8476	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	10		9		485.30		108.04
247969004-1	RE36-10-8480	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	10		1		441.01		128.28
247969005-1	RE36-10-8474	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	10		2		442.71		47.446
247969006-1	RE36-10-8478	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	10		3		545.30		22.989
247969007-1	RE36-10-8483	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	8		4		423.95		50.373
247969008-1	RE36-10-8482	SAMPLE		.25 pCi/mL SOIL	LANL010		20-FEB-10	10		5		497.28		97.170
248028001-1	RE15-10-8389	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		6		421.49		75.633
248028002-1	RE15-10-8388	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		7		446.11		151.94
248028003-1	RE15-10-8390	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		8		478.79		194.81
248028004-1	RE15-10-8392	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		9		440.35		109.23
248028005-1	RE15-10-8391	SAMPLE		.25 pCi/mL SOIL	LANL010		19-FEB-10	10		1		445.60		20
1202068192-1	MB for batch 964049	MB		.25 pCi/mL SOIL	QC ACCOUNT			10		2		20		20
1202068193-1	RE15-10-8391(248028005DUP)	DUP		.25 pCi/mL SOIL	QC ACCOUNT		19-FEB-10	10		3		445.60		109.23
1202068194-1	LCS for batch 964049	LCS		.25 pCi/mL SOIL	QC ACCOUNT			10		4		20		20

DO NOT REPORT

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 : Ecoscint Ultra (10 mL sample/13 mL Ecoscint Ultra)

Data Reviewed By:

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

DATE	3/12/2010	INITIALS	KXK2	BATCH NUMBER	964049	
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
247774003	551.32	0.012	6.62	544.70	10	
247964001	453.93	0.048	21.79	432.14	10	
247964002	464.45	0.034	15.79	448.66	10	
247964003	471.93	0.054	25.48	446.45	10	
247964004	473.97	0.015	7.11	466.86	10	
247964005	421.30	0.027	11.38	409.92	8	
247969001	537.59	0.051	27.42	510.17	10	
247969002	498.47	0.062	30.91	467.56	10	
247969003	485.30	0.042	20.38	464.92	10	
247969004	441.61	0.108	47.69	393.92	10	
247969005	402.71	0.128	51.55	351.16	10	
247969006	545.30	0.047	25.63	519.67	10	
247969007	423.95	0.023	9.75	414.20	10	
247969008	497.38	0.050	24.87	472.51	8	
248028001	421.49	0.092	38.78	382.71	10	
248028002	446.11	0.076	33.90	412.21	10	
248028003	478.79	0.152	72.78	406.01	10	
248028004	440.35	0.195	85.87	354.48	10	
248028005	445.60	0.109	48.57	397.03	10	
MB	20.00	1.000	20.00	0.00	10	
DUP	445.60	0.109	48.57	397.03	10	
LCS	20.00	1.000	20.00	0.00	10	

Tritium GL-RAD-A-002

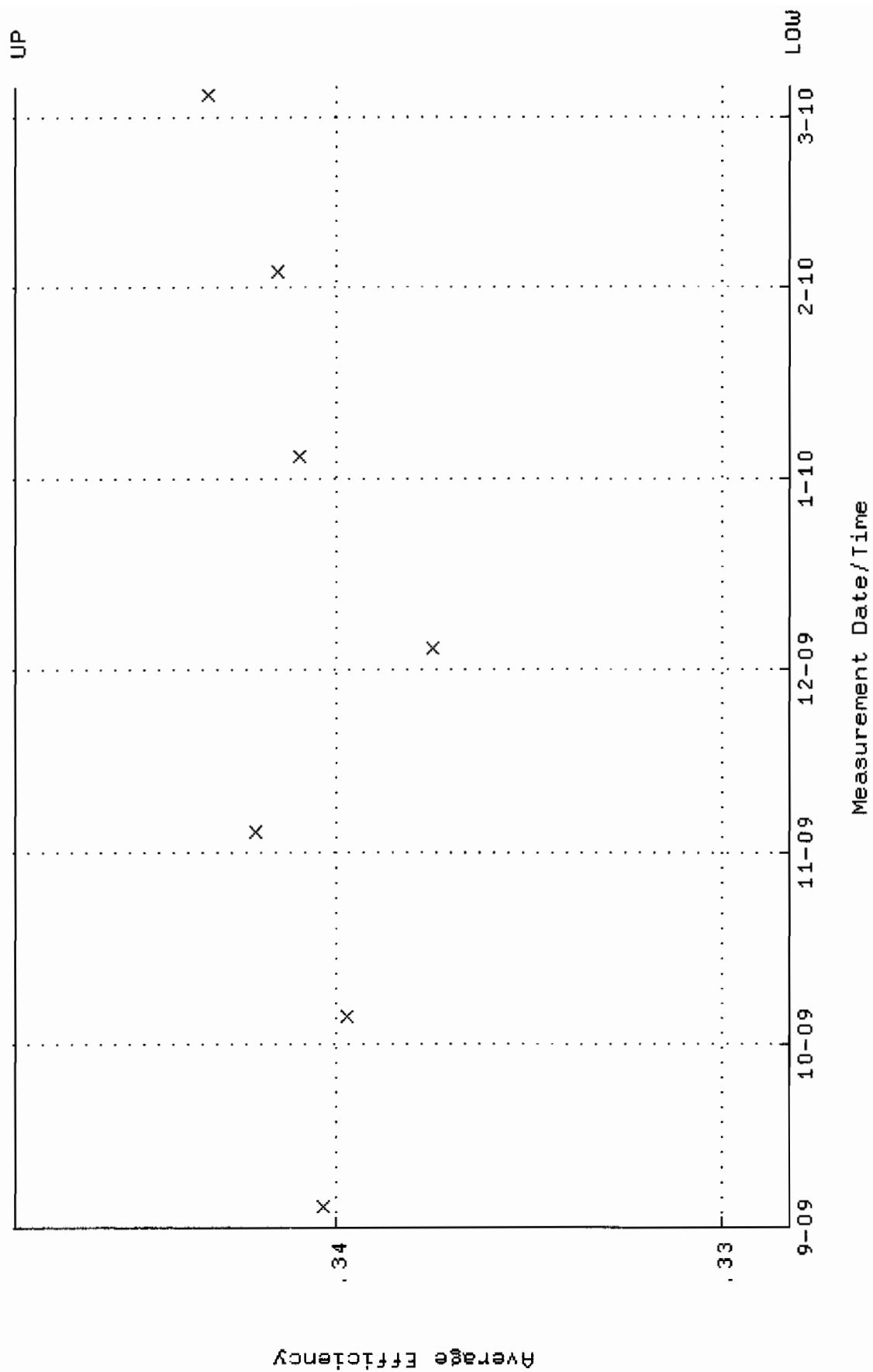
Sample Id	Sample Type	Run Date/Time	Instrument Name	Vacuum Flask Rig #	Flask Weight (A) g	Aliquot g	Flask & Sample Wet Sample (B) g	Amount of Moisture Collected in vial mL	Prepped Allot in scintillation vial mL	Flask & Sample Dry Sample (C) g	Loss (B-A) -(C-A) (B-A) Fill Down	Tritium Result pCi/mL Fill Down	Result Units
1202068192	MB	17-MAR-2010 15:23:00	LSC YELLOW	20	200	20	220	20	.01	200	1	-.036067806	
247774003		15-MAR-2010 09:40:49	LSCORANGE	1	200	561.32	751.32	6.62	.01	744.7	.01200754552	395.85681	
247964001		15-MAR-2010 09:46:59	LSCORANGE	2	200	453.93	653.93	21.79	.01	632.14	.048088	.2161716	
247964002		15-MAR-2010 10:24:58	LSCORANGE	3	200	494.45	694.45	15.79	.01	648.66	.034125	-.018058623	
247964003		15-MAR-2010 11:02:58	LSCORANGE	4	200	471.93	671.93	25.48	.01	646.45	.054048	-.0082715908	
247964004		15-MAR-2010 11:39:58	LSCORANGE	5	200	473.97	673.97	7.11	.01	666.86	.015102	.014915457	
247964005		15-MAR-2010 12:17:58	LSCORANGE	6	200	421.3	621.3	11.38	.01	609.92	.027267	-.0081462661	
247969001		15-MAR-2010 13:06:58	LSCORANGE	7	200	537.59	737.59	27.42	.01	710.17	.051473	.001621897	
247969002		15-MAR-2010 13:47:58	LSCORANGE	8	200	498.47	698.47	30.91	.01	667.56	.061953	.13746798	
247969003		15-MAR-2010 14:26:58	LSCORANGE	9	200	486.3	686.3	20.38	.01	664.92	.041684	-.073136398	
	CCV		LSCORANGE										
247969004		15-MAR-2010 15:02:58	LSCORANGE	10	200	441.61	641.61	47.69	.01	593.92	.10804	.051263925	
247969005		15-MAR-2010 15:40:58	LSCORANGE	11	200	402.71	602.71	51.55	.01	551.16	.12828	-.072153286	
247969006		15-MAR-2010 16:17:58	LSCORANGE	12	200	545.3	745.3	25.63	.01	719.67	.047449	.063137561	
247969007		15-MAR-2010 16:55:58	LSCORANGE	13	200	423.95	623.95	9.76	.01	614.2	.022989	-.0082457284	
247969008		15-MAR-2010 17:32:58	LSCORANGE	14	200	497.38	697.38	24.87	.01	672.51	.050373	-.036119145	
248028001		15-MAR-2010 18:25:58	LSCORANGE	15	200	421.49	621.49	38.78	.01	582.71	.092176	.11742736	
248028002		15-MAR-2010 19:02:59	LSCORANGE	16	200	446.11	646.11	33.9	.01	612.21	.075633	.089246852	
248028003		15-MAR-2010 19:40:58	LSCORANGE	17	200	478.79	678.79	72.78	.01	606.01	.15194	.12613925	
248028004		15-MAR-2010 20:17:58	LSCORANGE	18	200	440.35	640.35	85.87	.01	554.48	.19481	-.11150131	
248028005		15-MAR-2010 20:55:58	LSCORANGE	19	200	445.6	645.6	45.57	.01	597.03	.10923	.087903406	

1202068194	LCS	15-MAR-2010 22:48:58	LSCORANGE	21	200	20	220	20	.01	200	1	5.4973234	
	CCV		LSCORANGE										

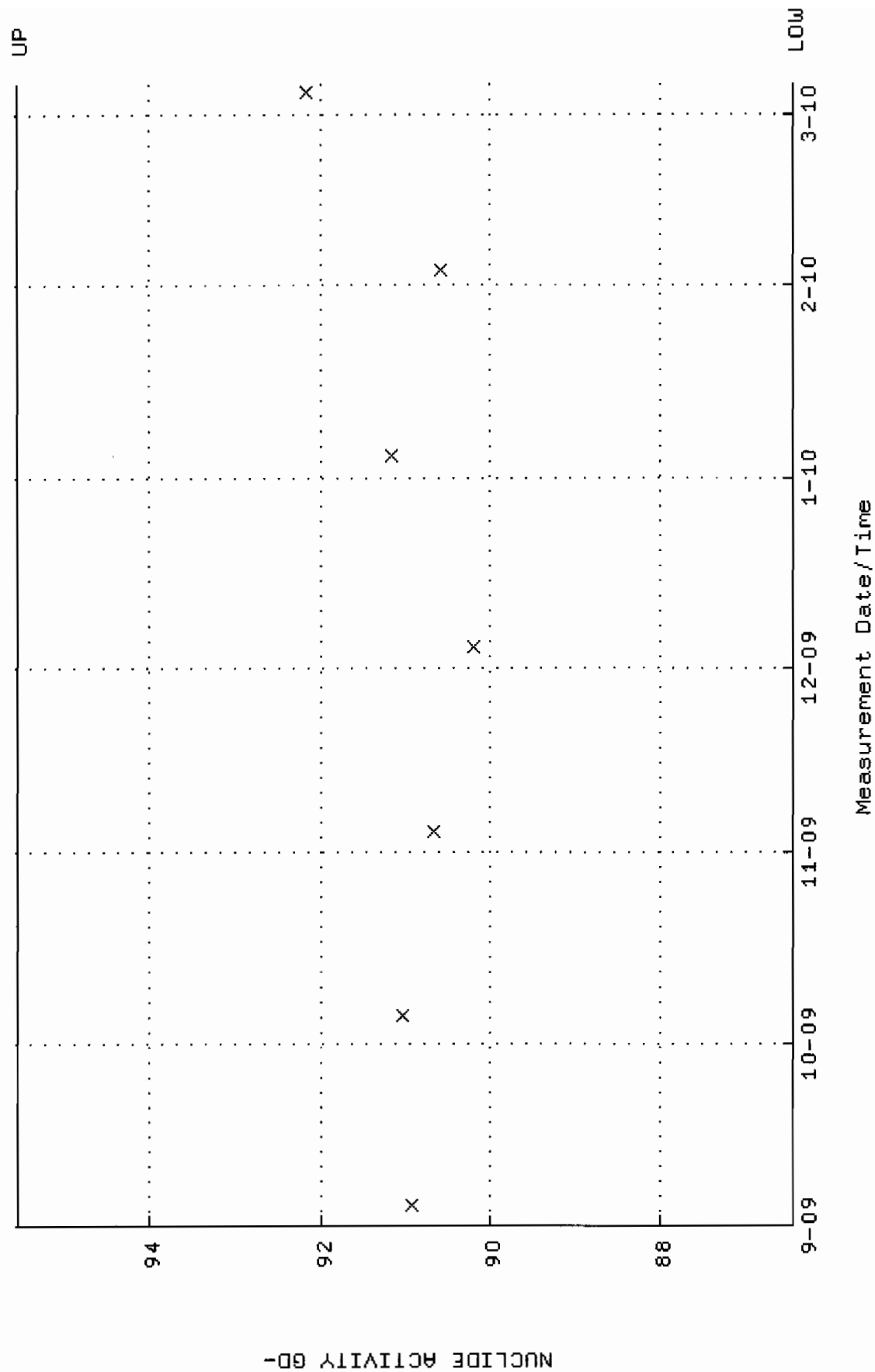
GEL Laboratories LLC

BACKGROUND AND EFFICIENCY DATA

QA filename : DKA100:[ENV_ALPHA.QA.W]W009.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: 0.328261 through 0.348261



QA filename : DKA100:[ENV_ALPHA.QA.W]W009.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: 86.4475 through 95.5473

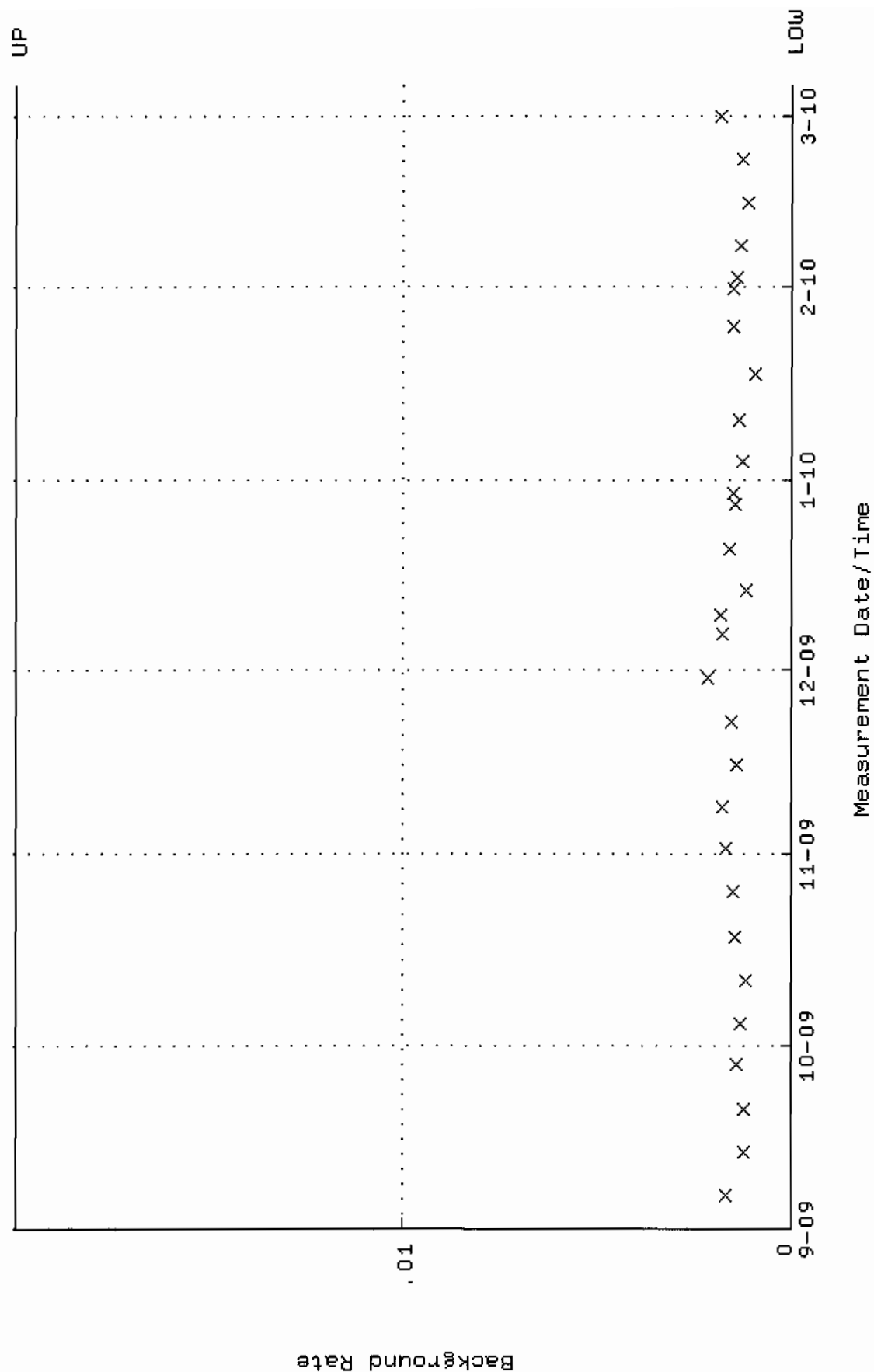


QA filename : DKA100:[ENV_ALPHA.QA.B]B009.QAF;1

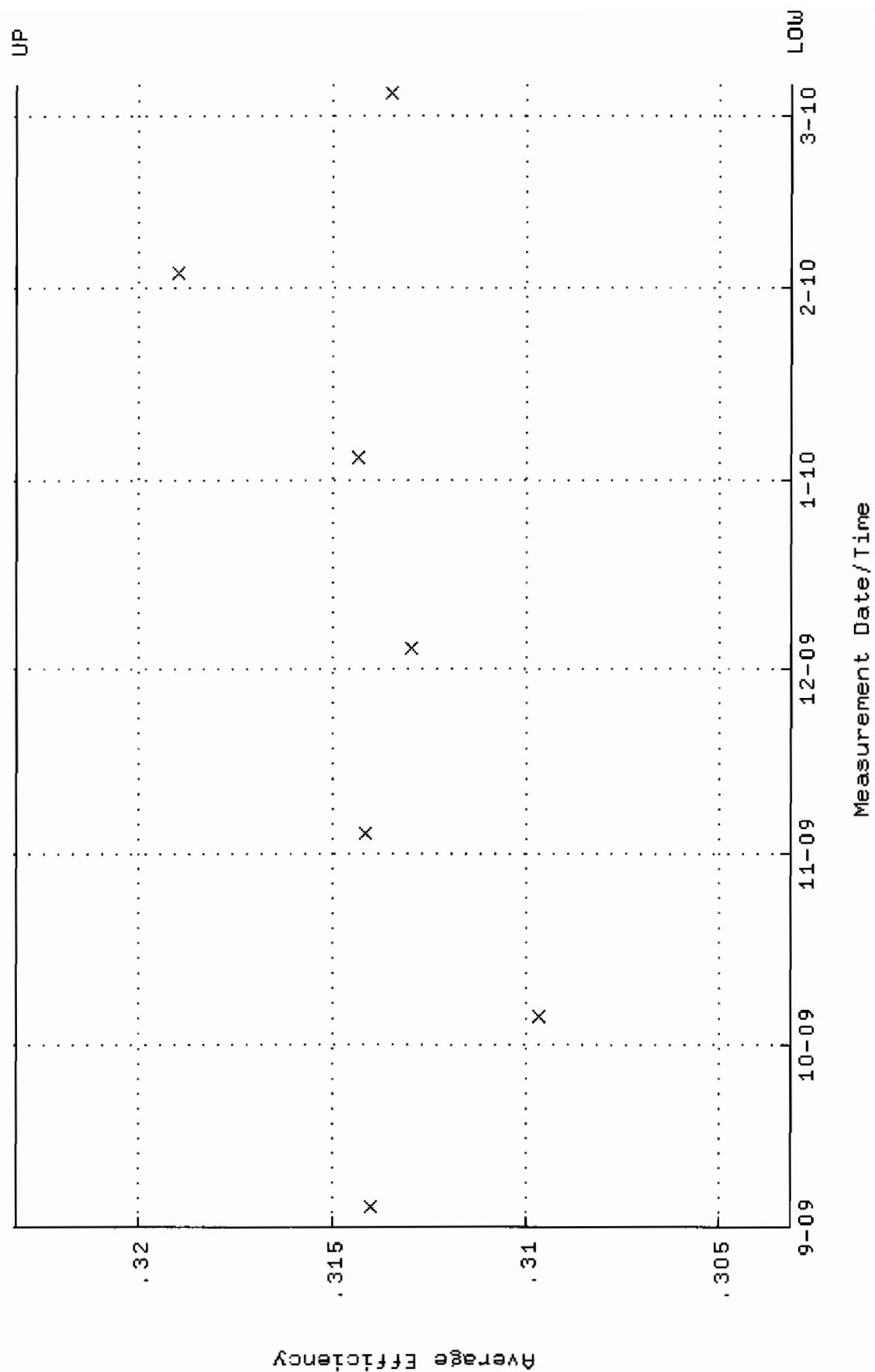
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00

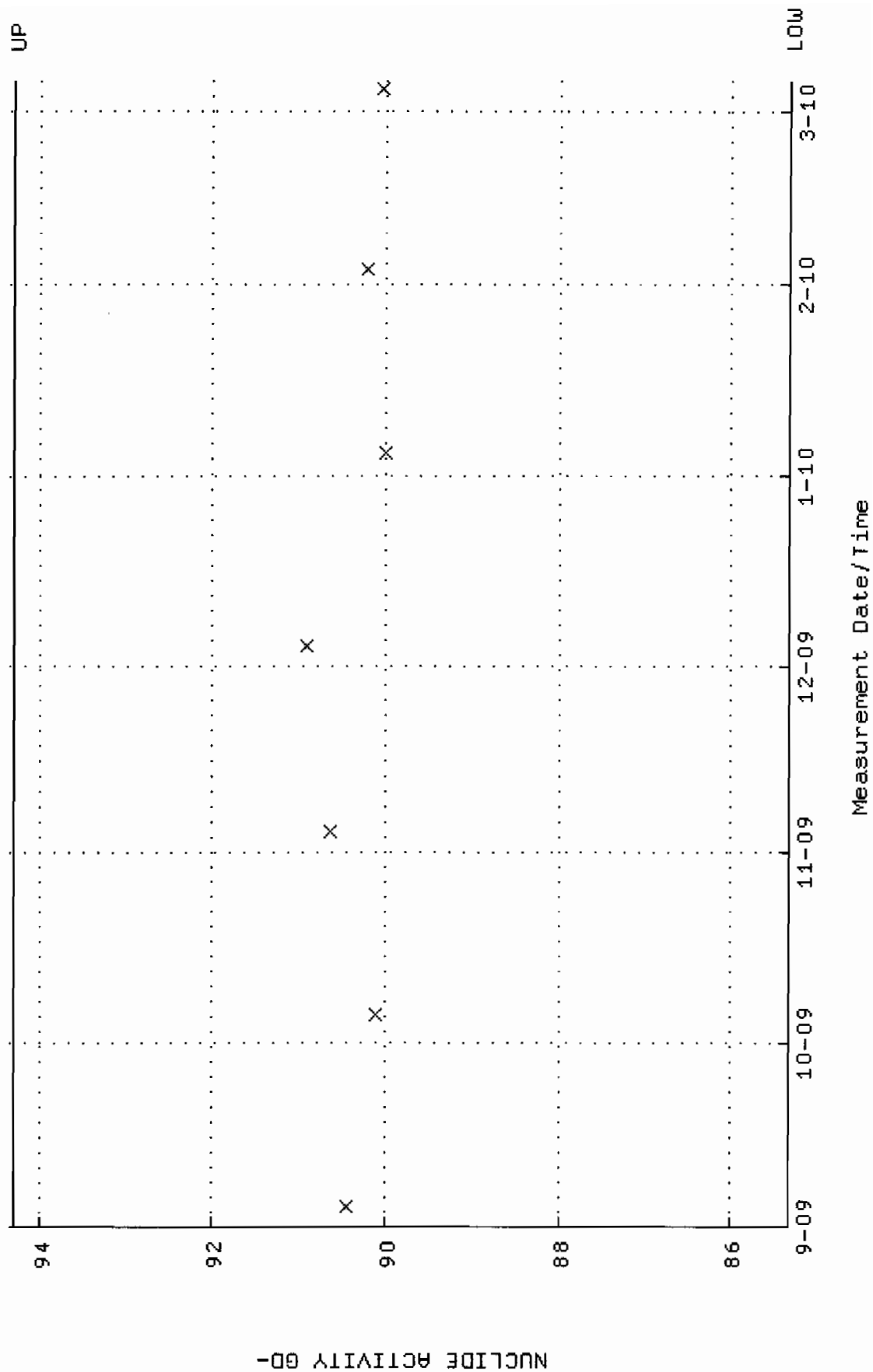
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



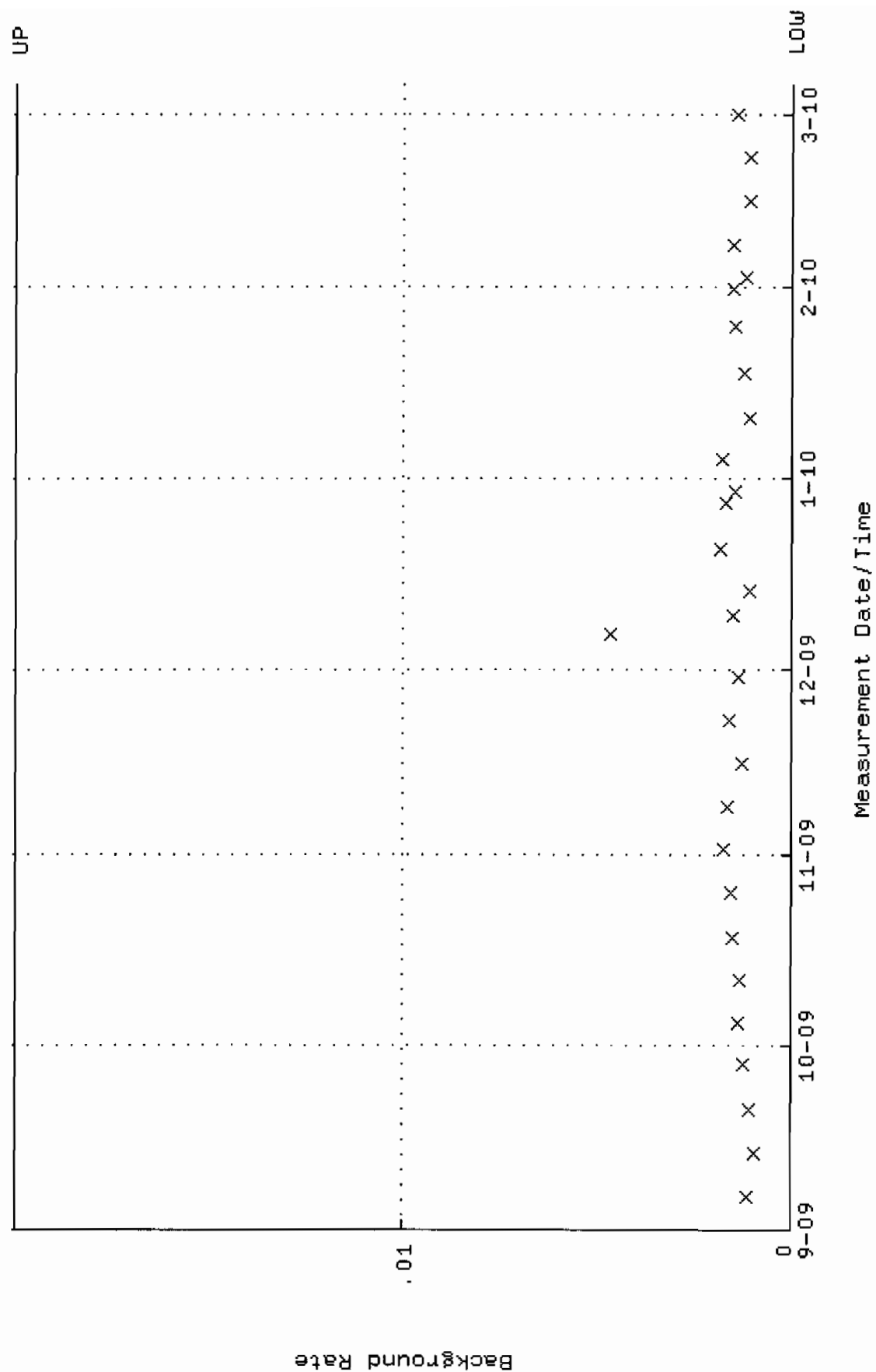
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.303169 through 0.323169



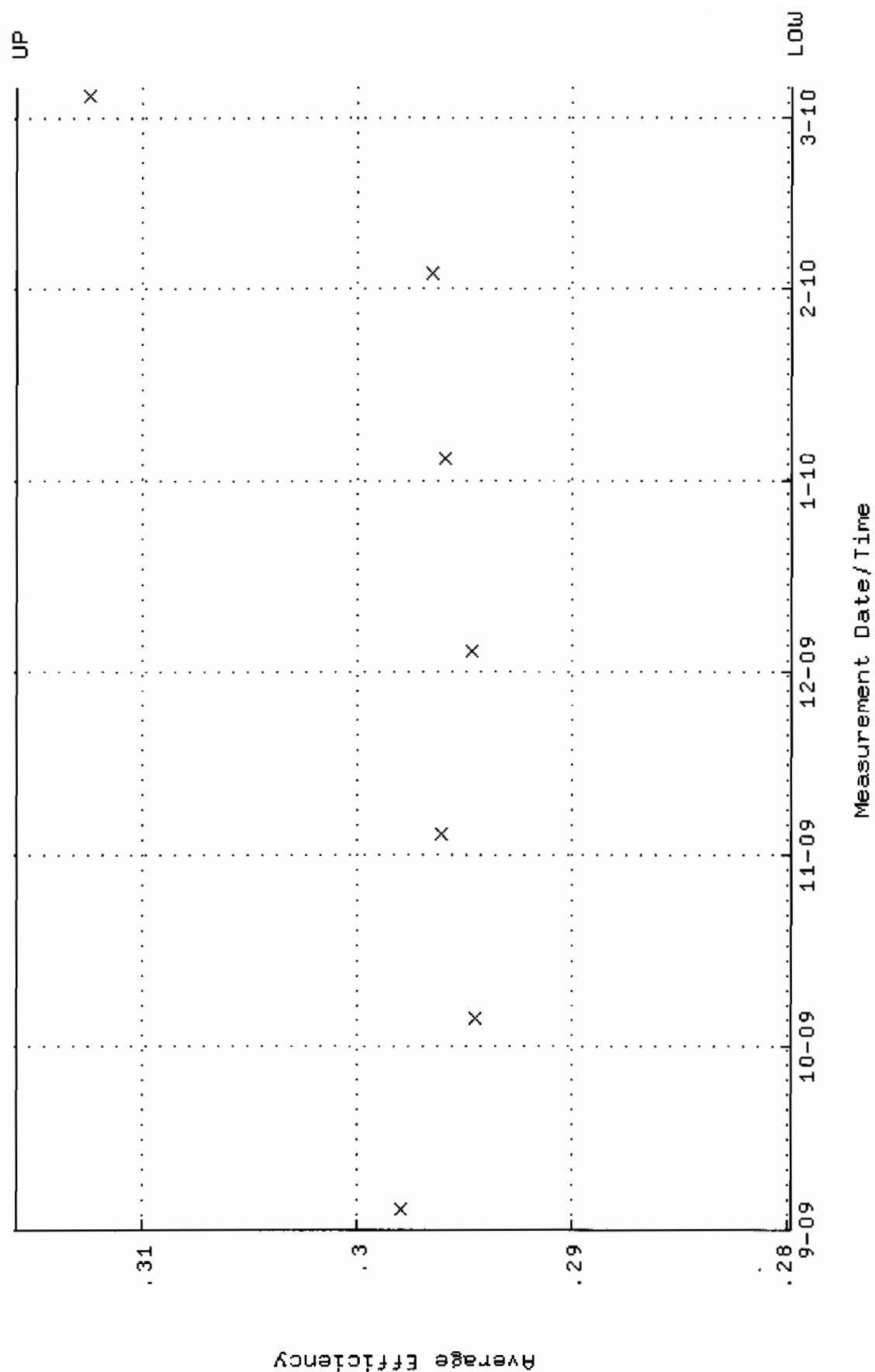
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.3273 through 94.3091



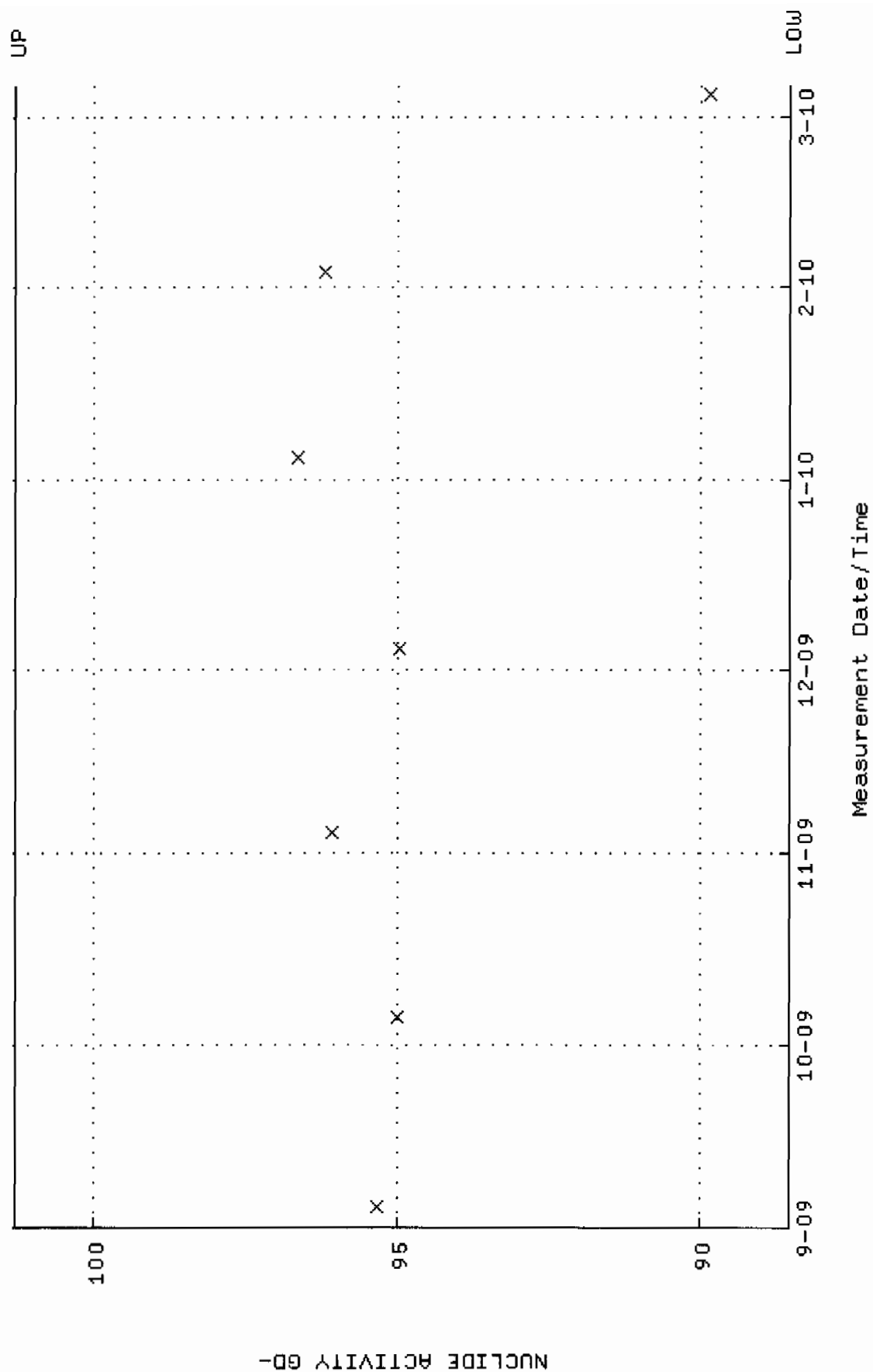
QA filename : DKA100:[ENV_ALPHA.QA.B]B010.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



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



QA filename : DKA100:[ENV_ALPHA.QA.W]W011.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: 88.5390 through 101.289

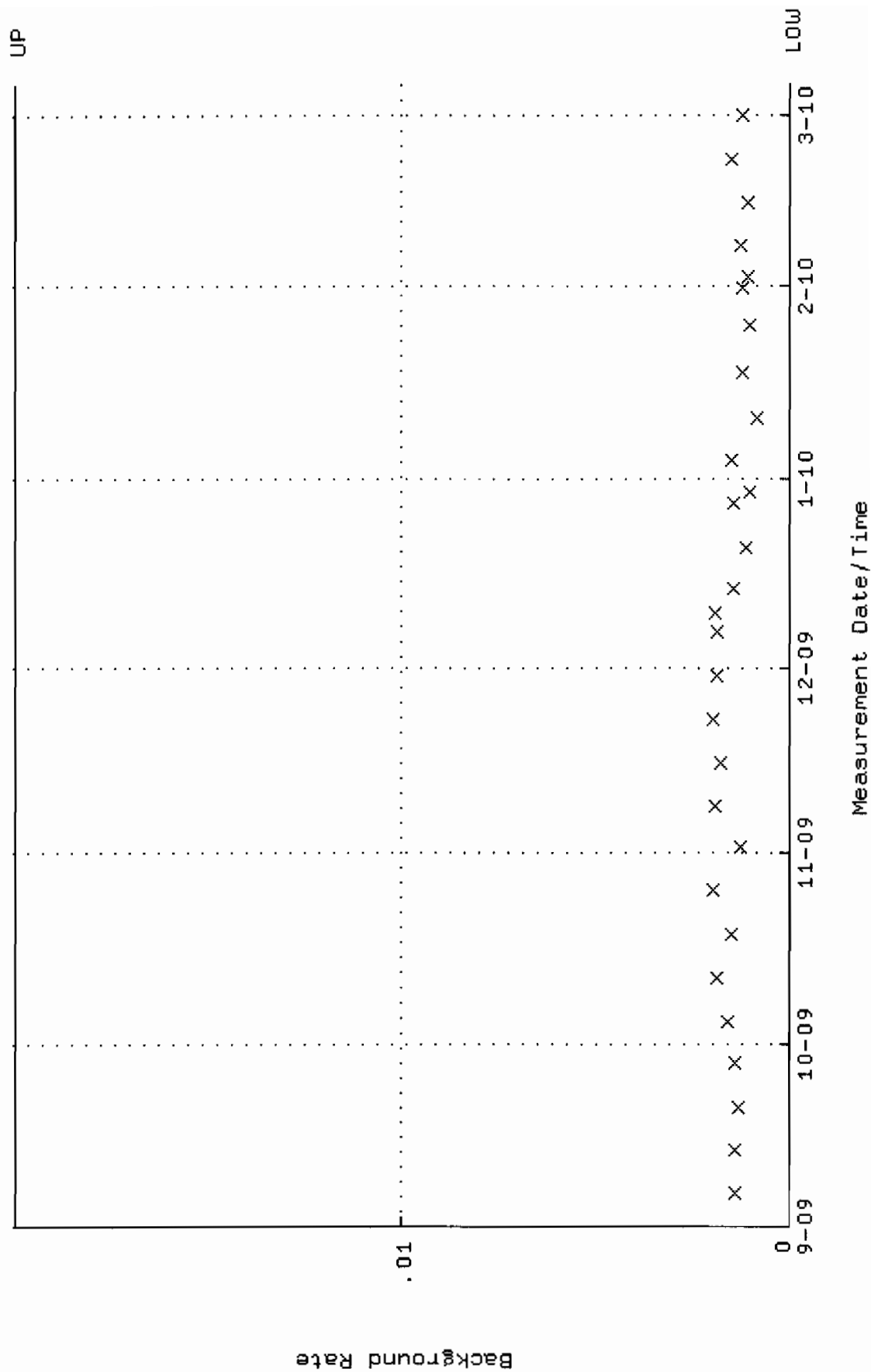


QA filename : DKA100:[ENV_ALPHA.QA.B]B011.QAF;2

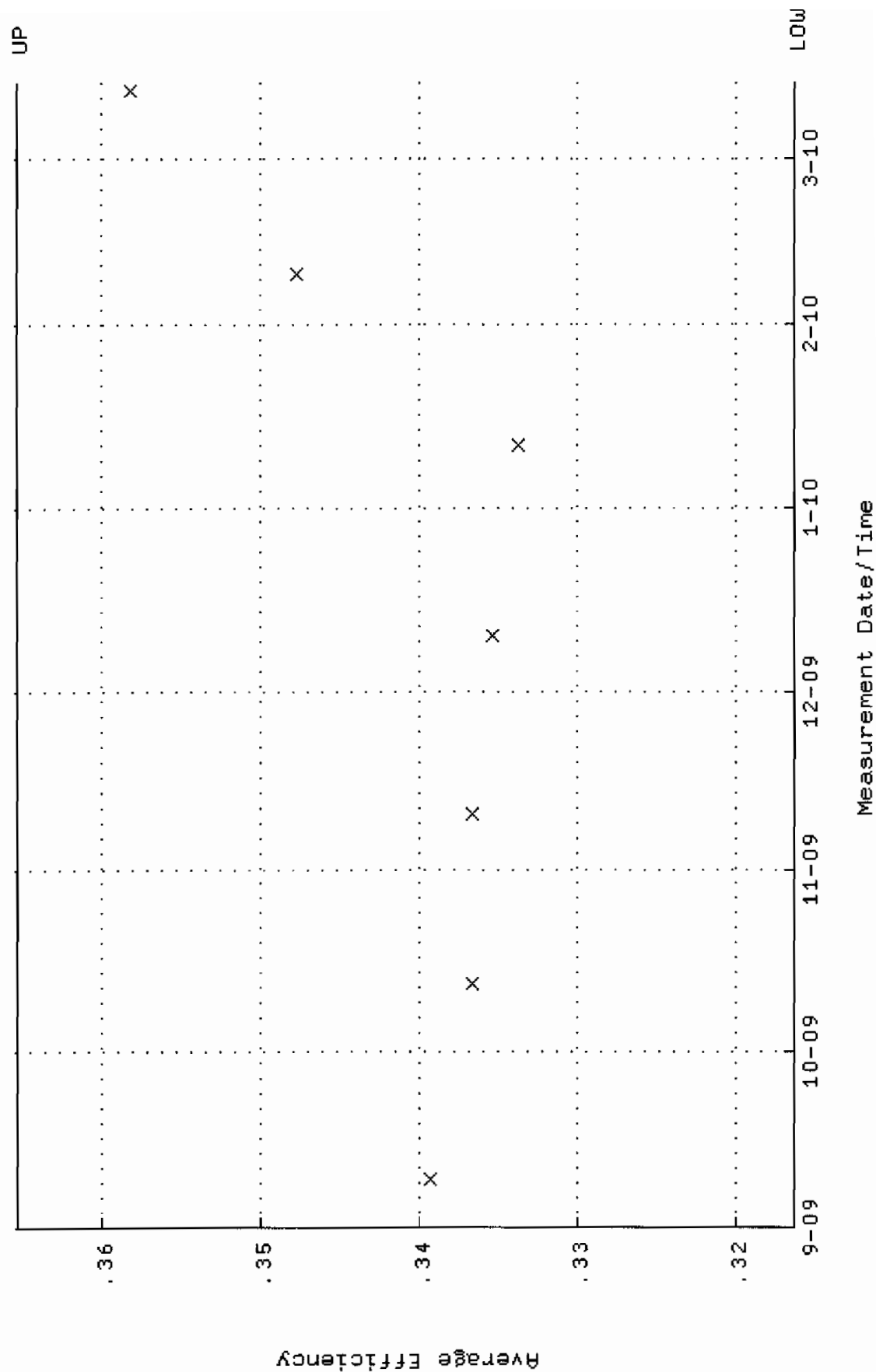
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00

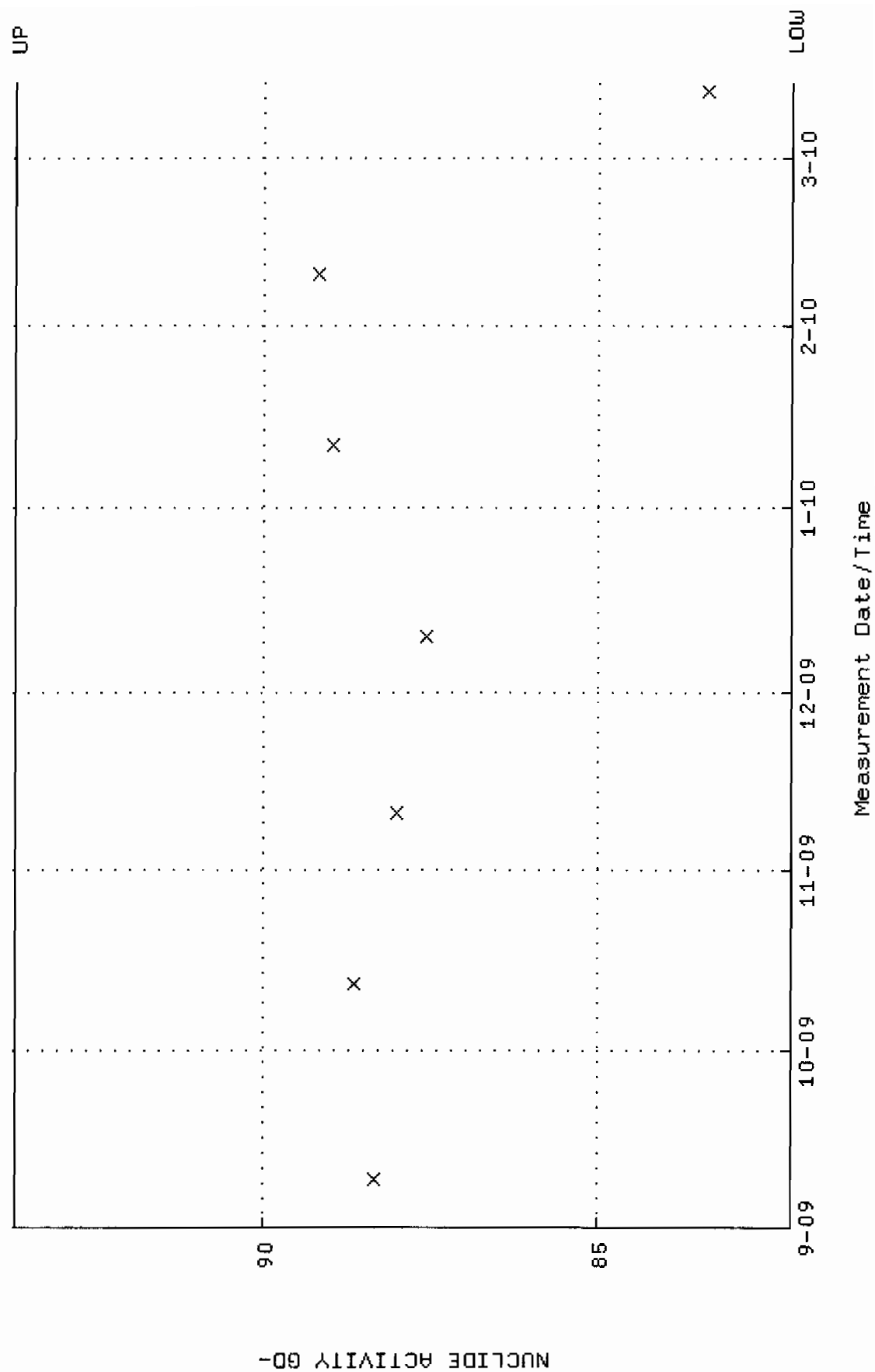
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



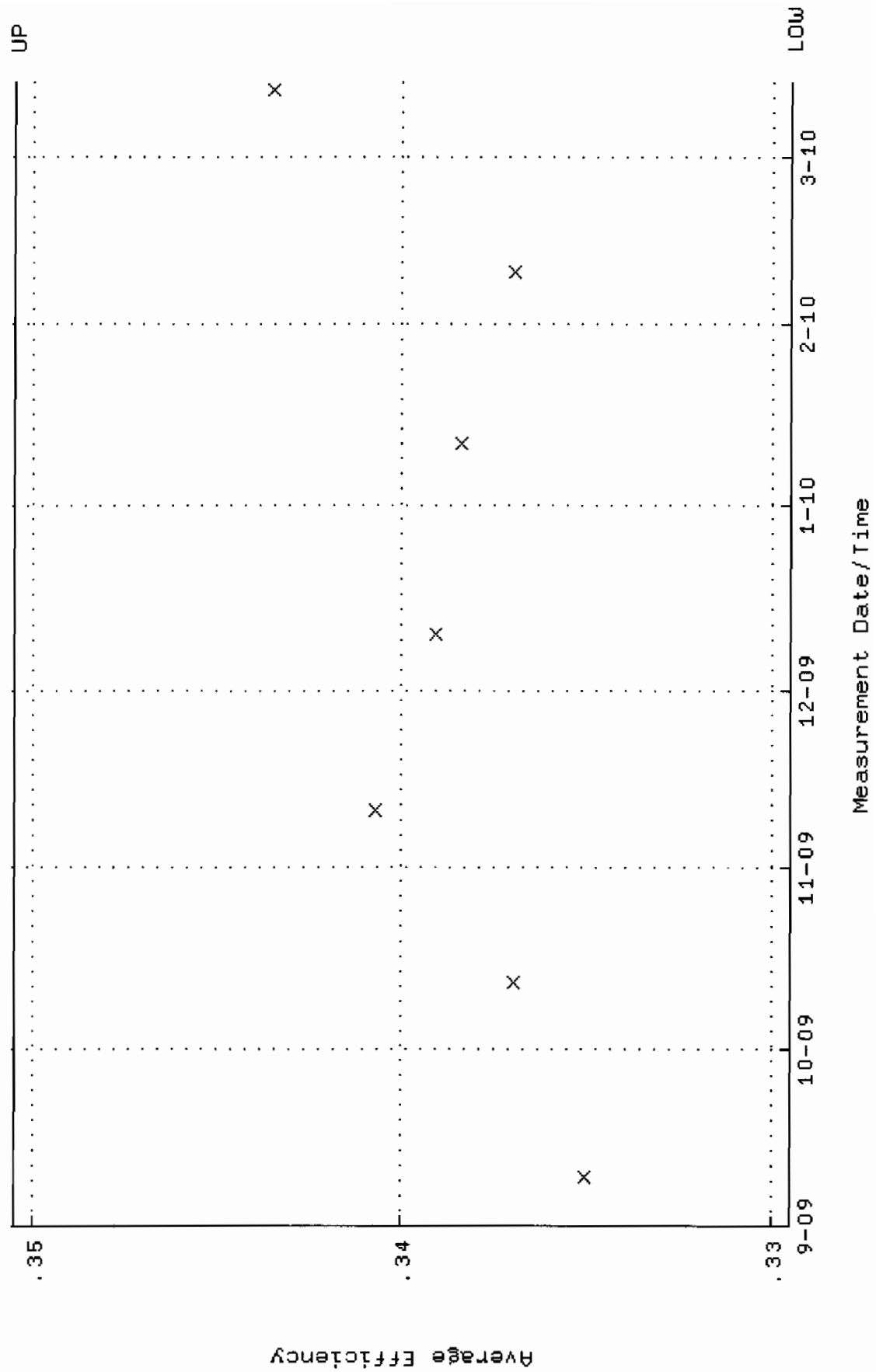
QA filename : DKA100: [ENV_ALPHA.QA.W]W083.QAF; 5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.316282 through 0.365366



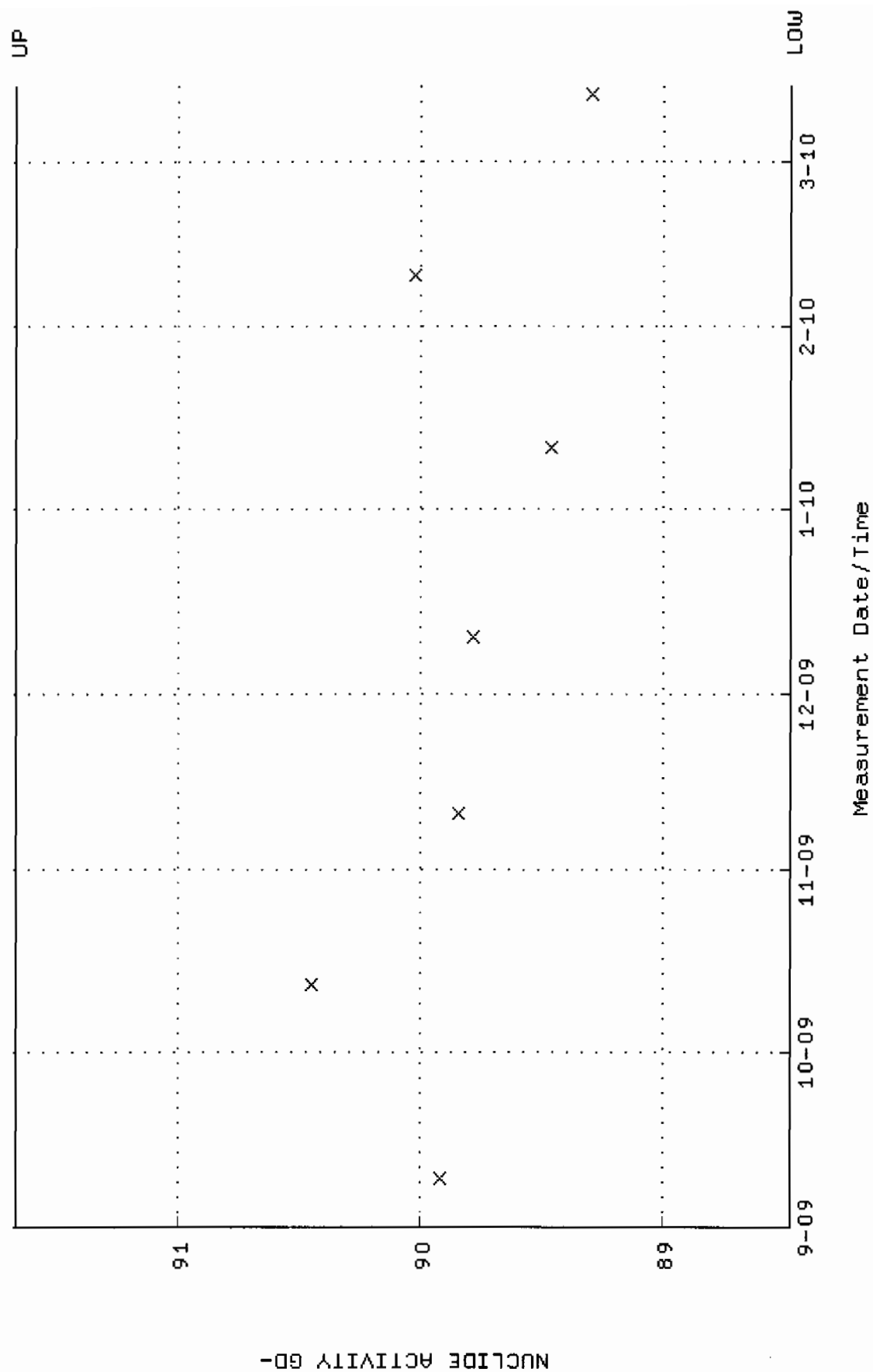
QA filename : DKA100:[ENV_ALPHA.QA.W]W083.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.1020 through 93.7348



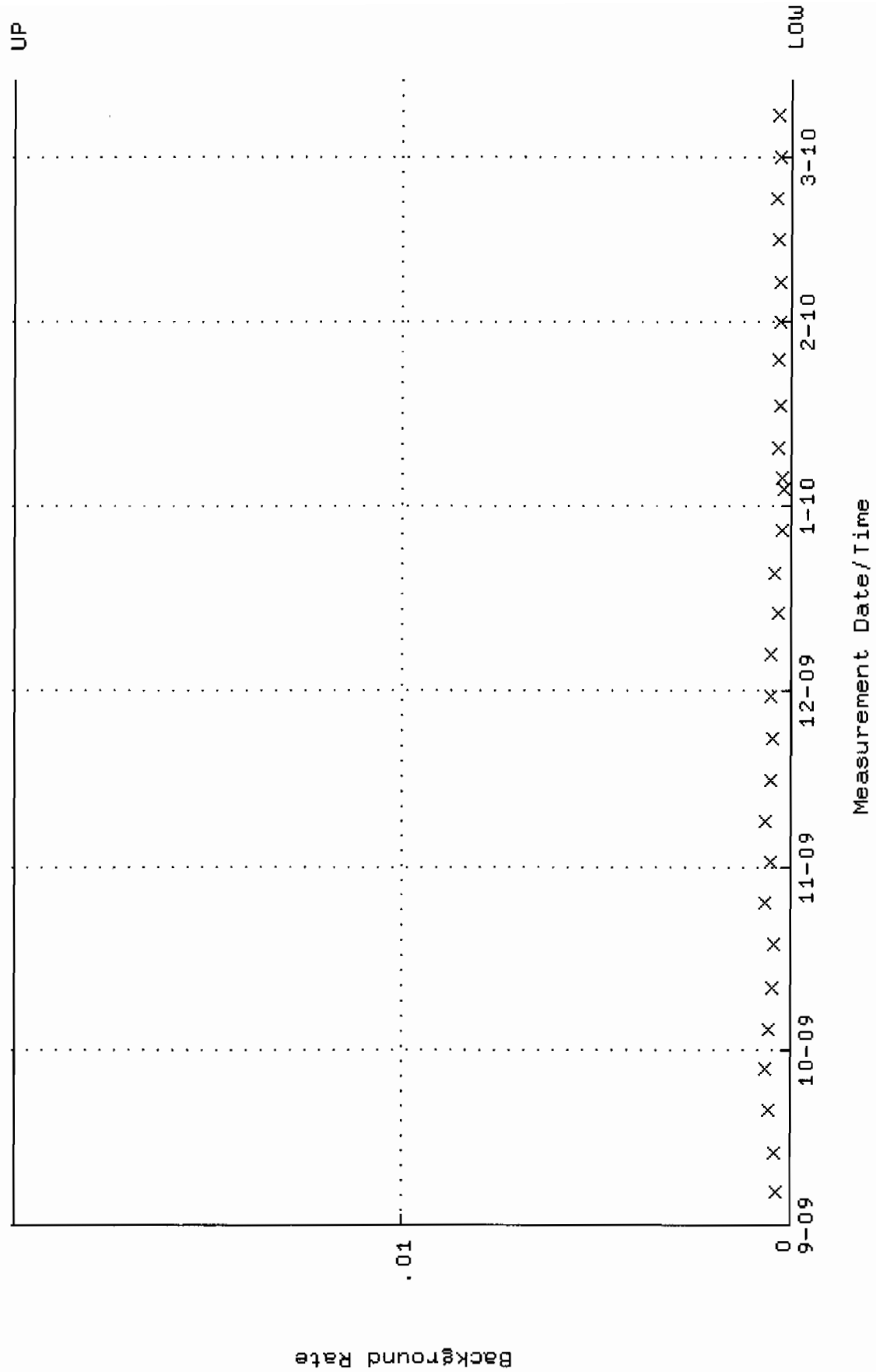
QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.329490 through 0.350492



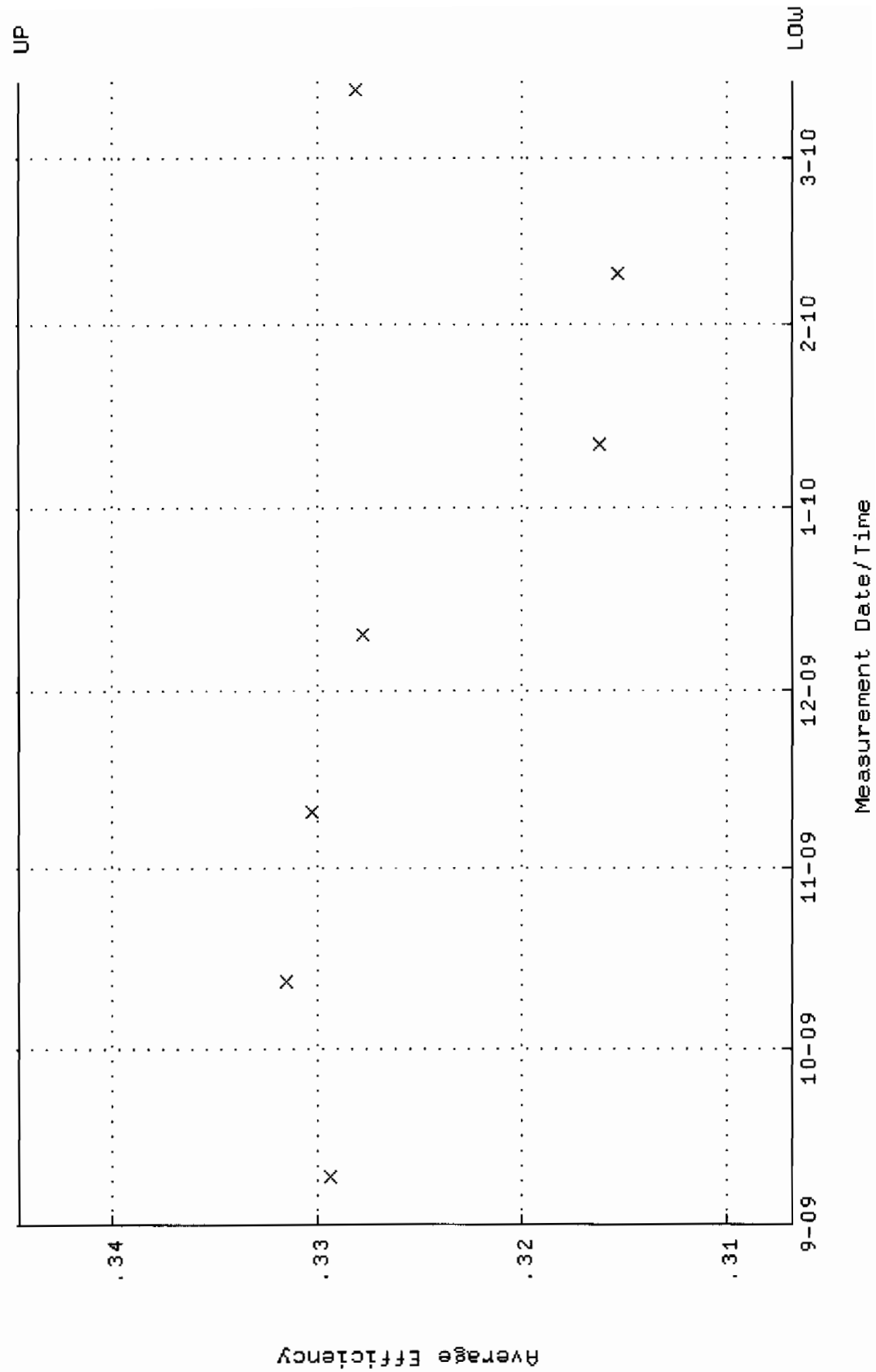
QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4771 through 91.6651



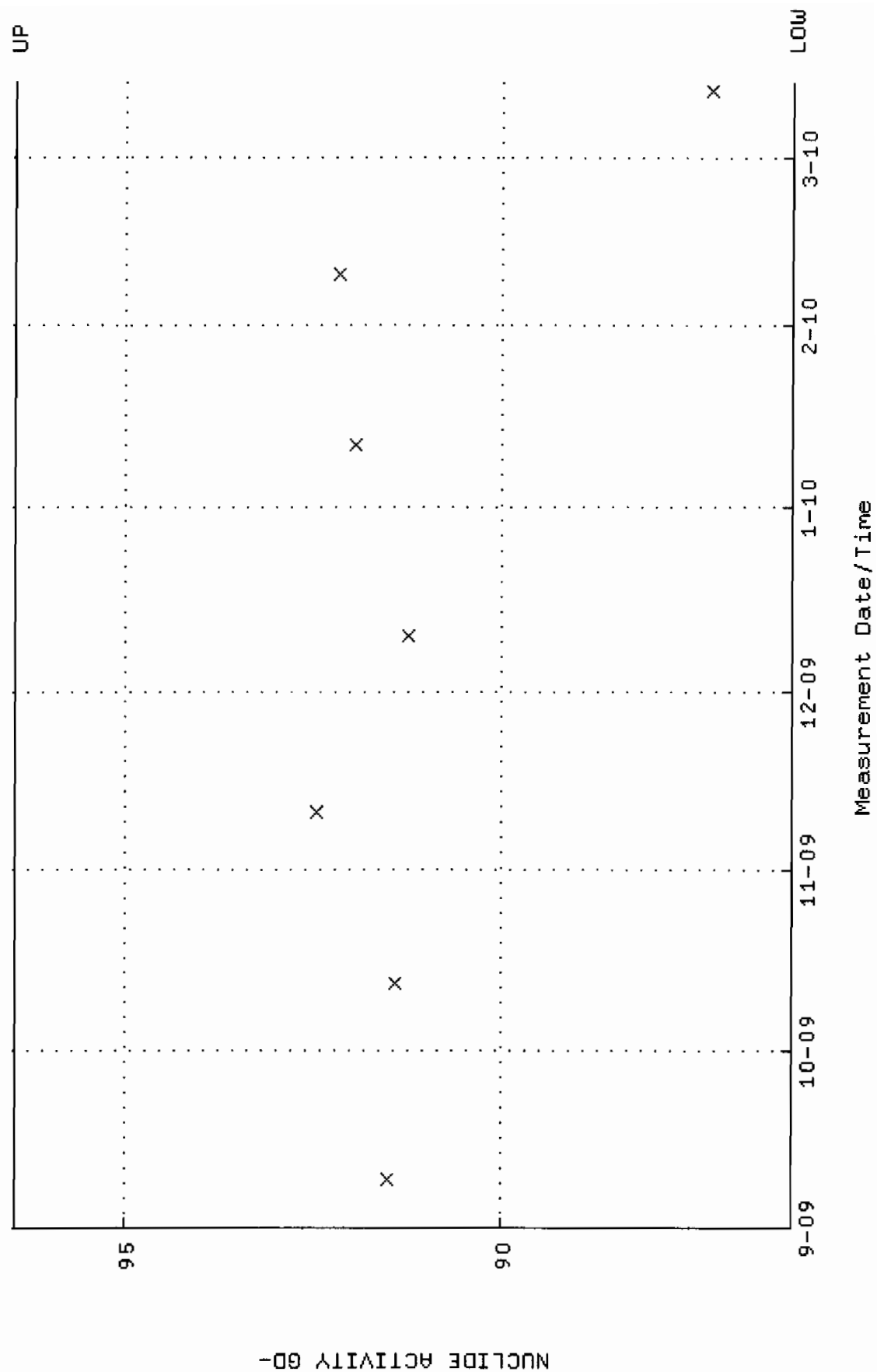
QA filename : DKA100:[ENV_ALPHA.QA.B]B084.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



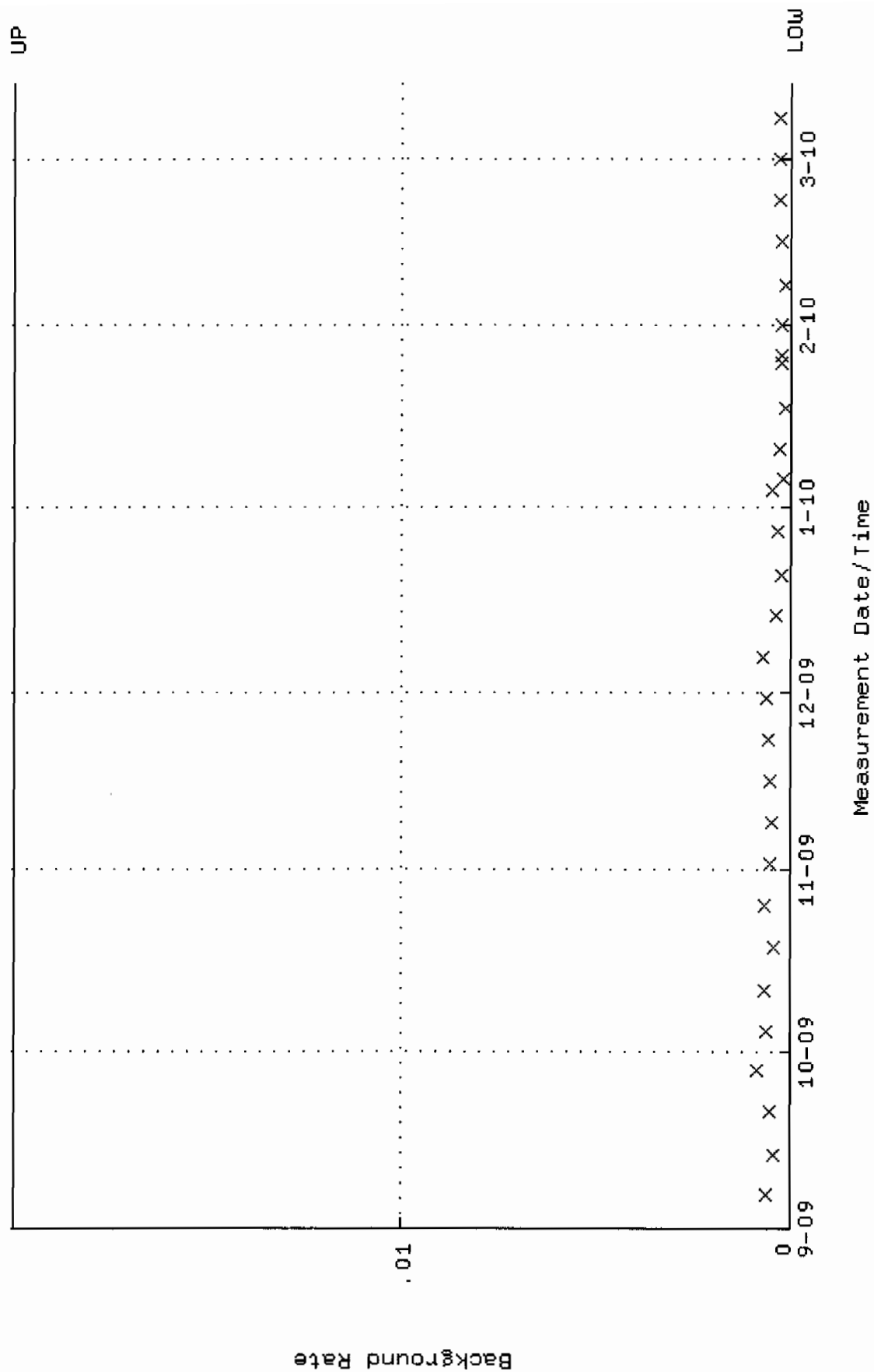
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.306815 through 0.344543



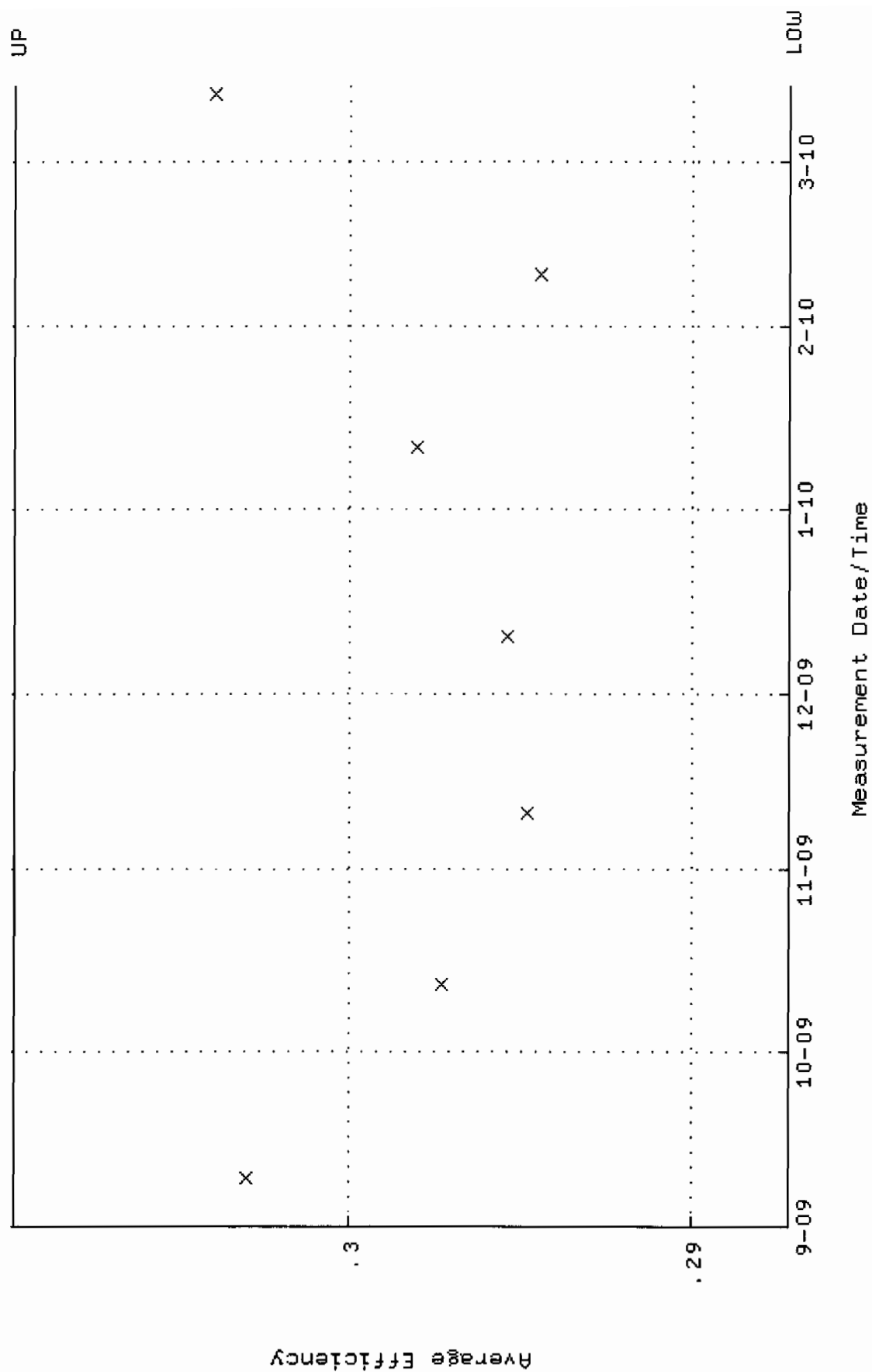
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1313 through 96.4525



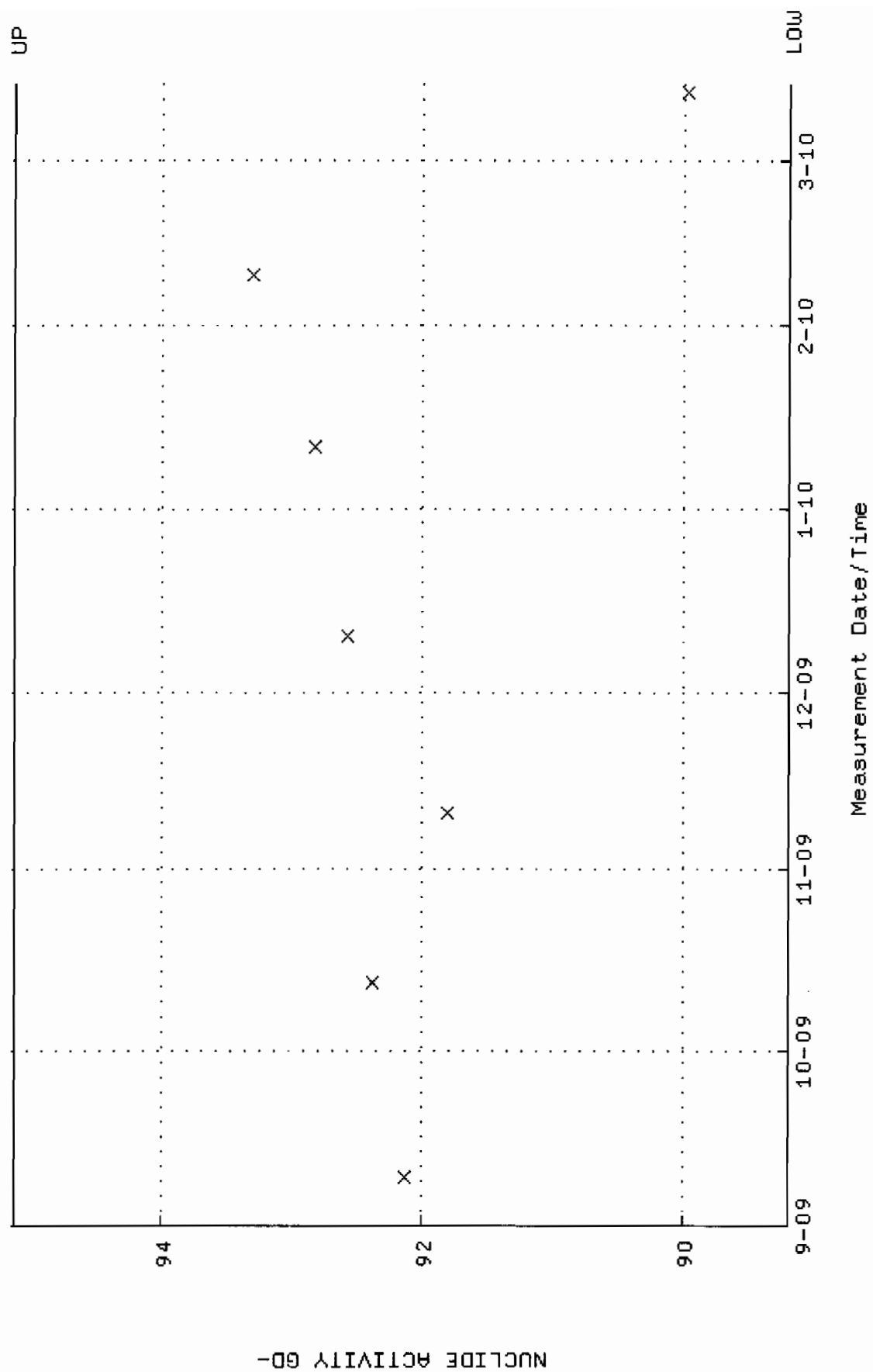
QA filename : DKA100:[ENV_ALPHA.QA.B]B085.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



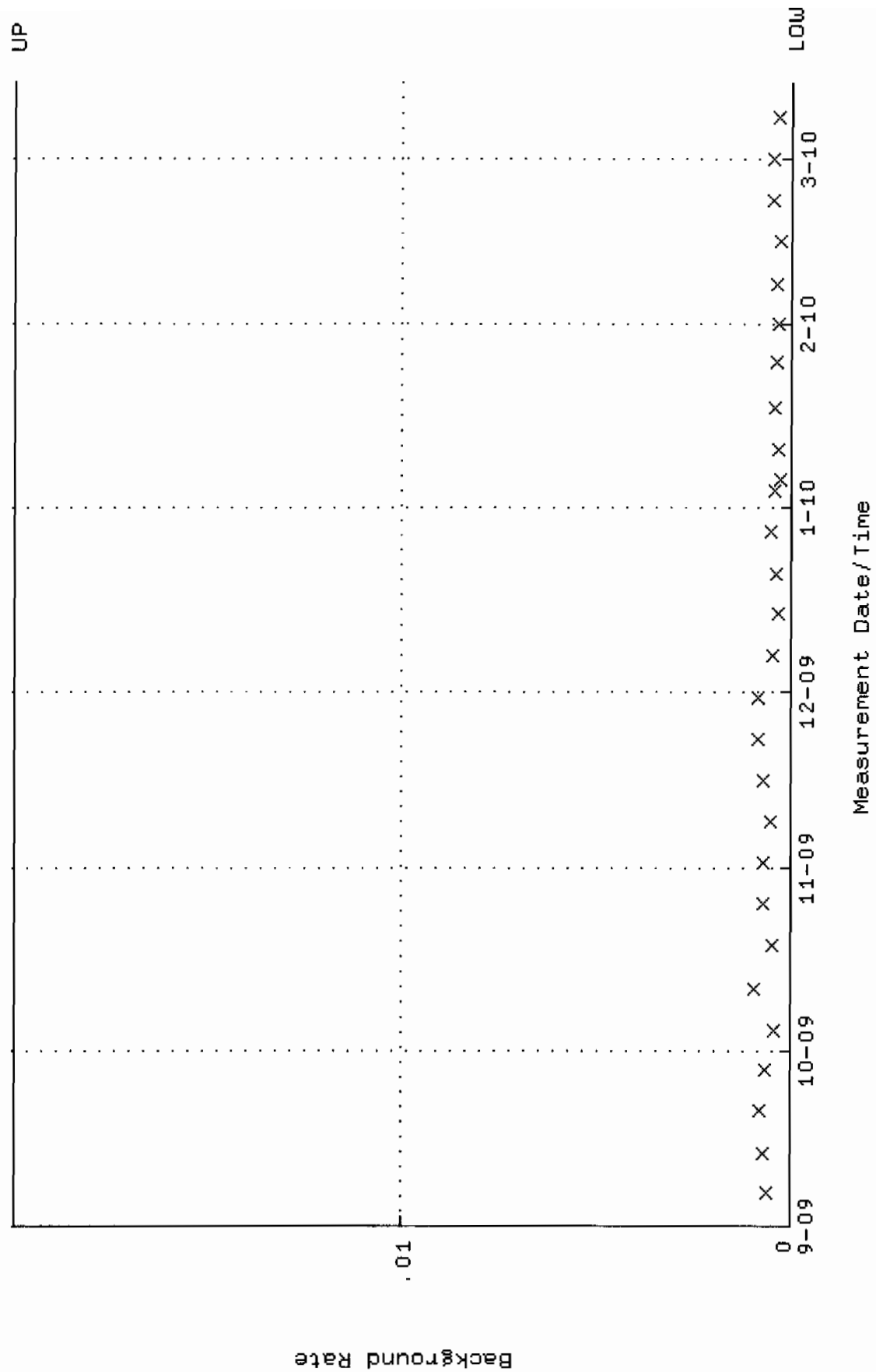
QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.287158 through 0.309794



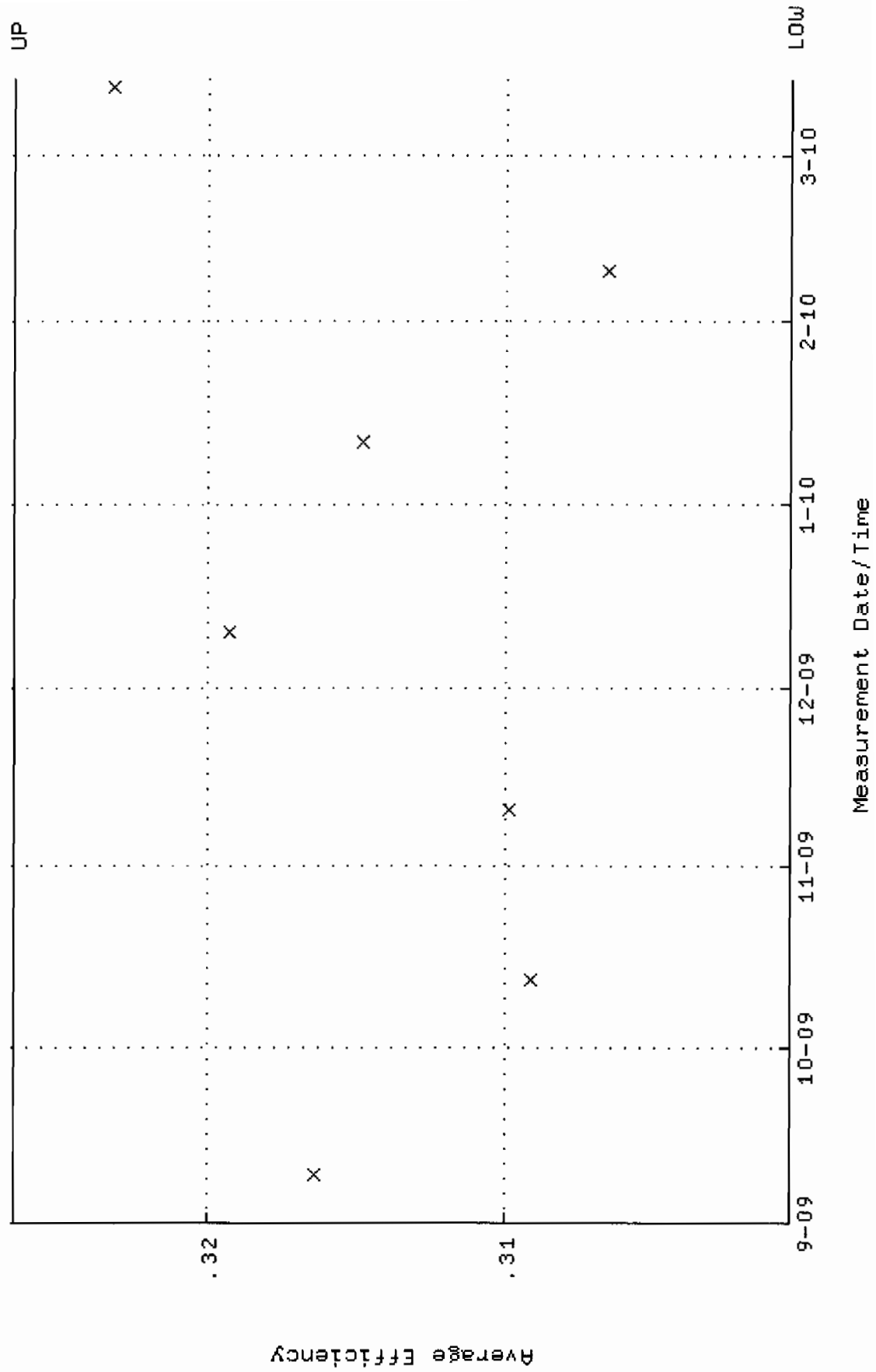
QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1886 through 95.1274



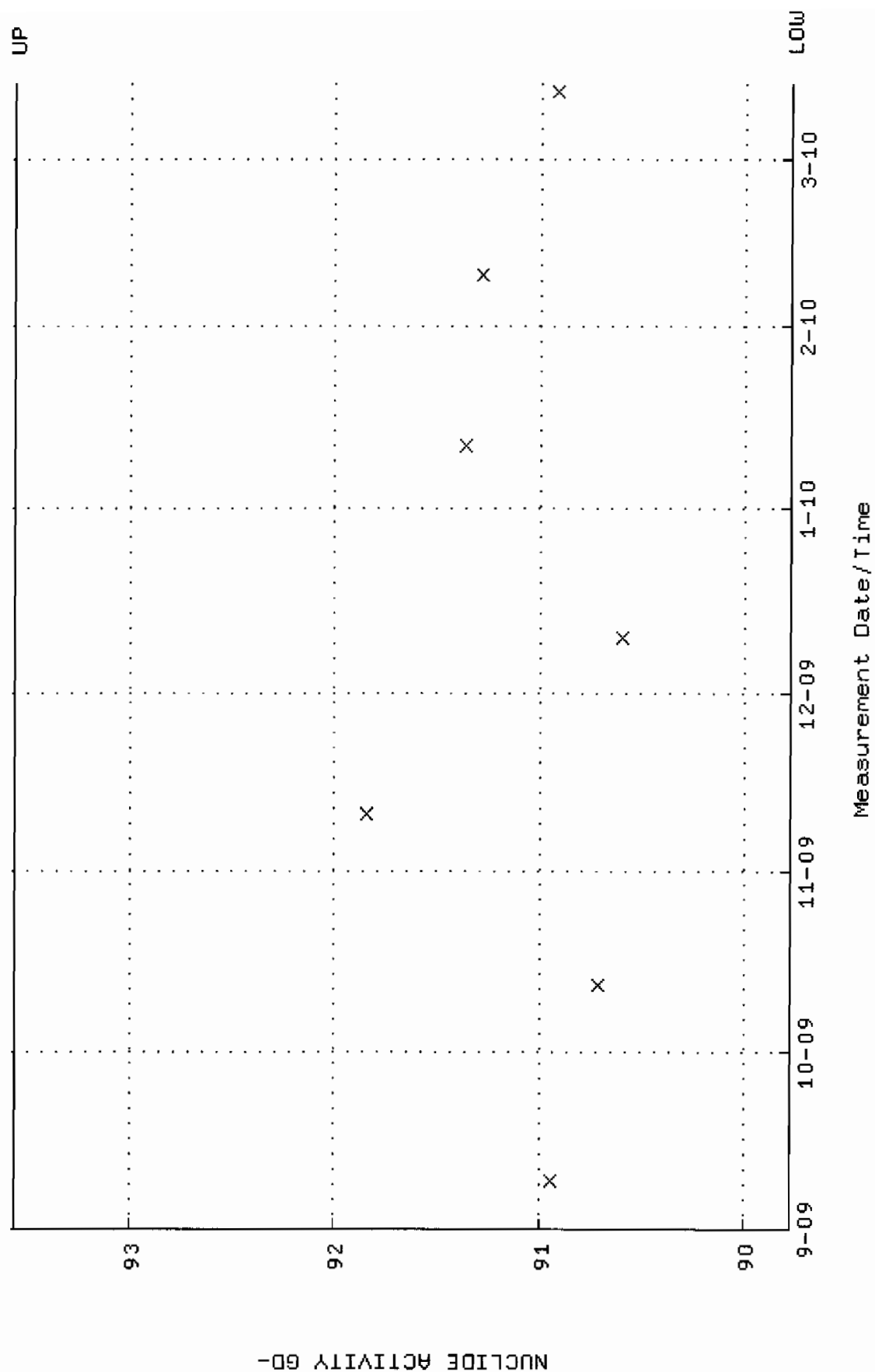
QA filename : DKA100:[ENV_ALPHA.QA.B]B086.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



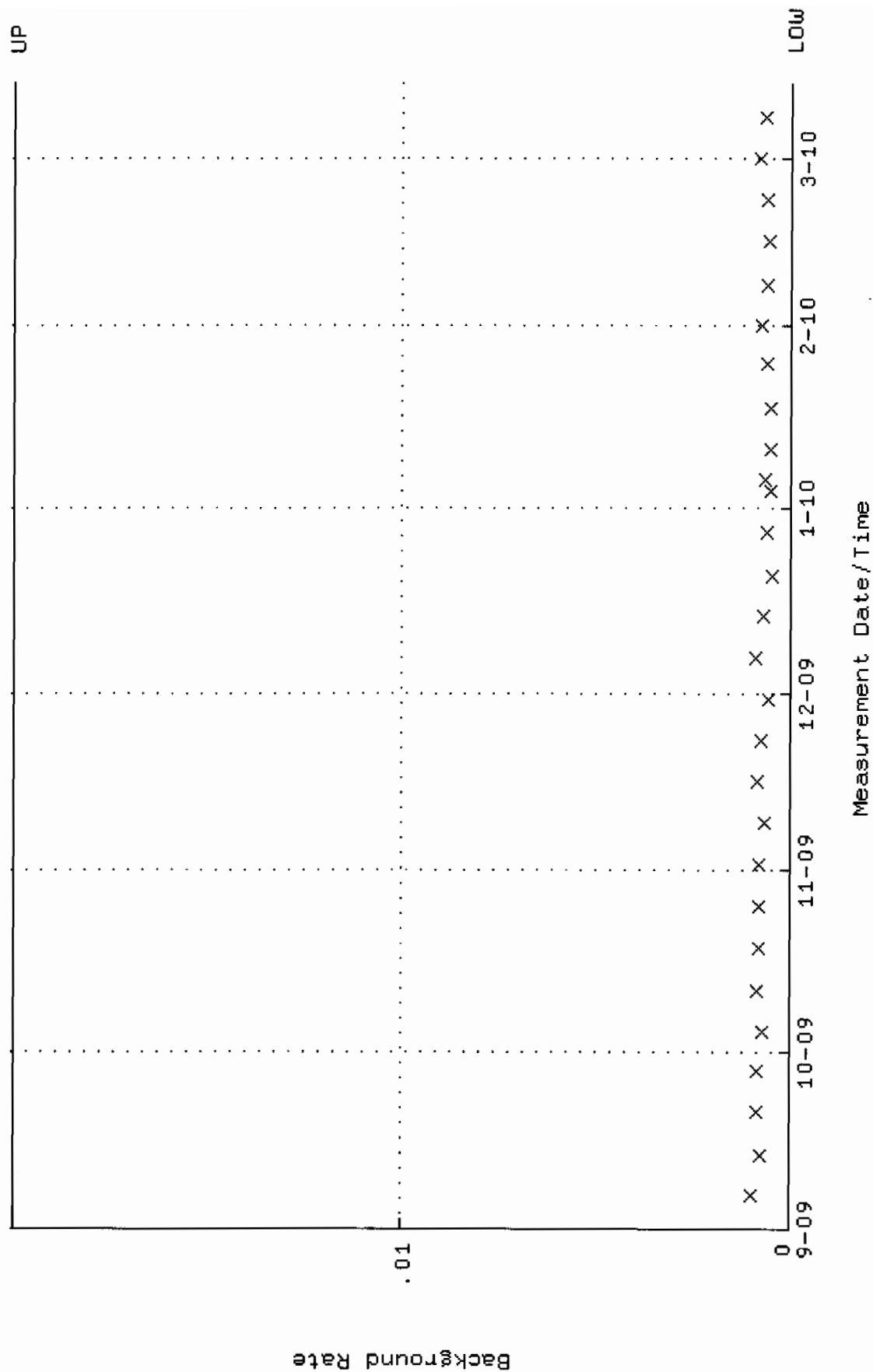
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.300487 through 0.326465



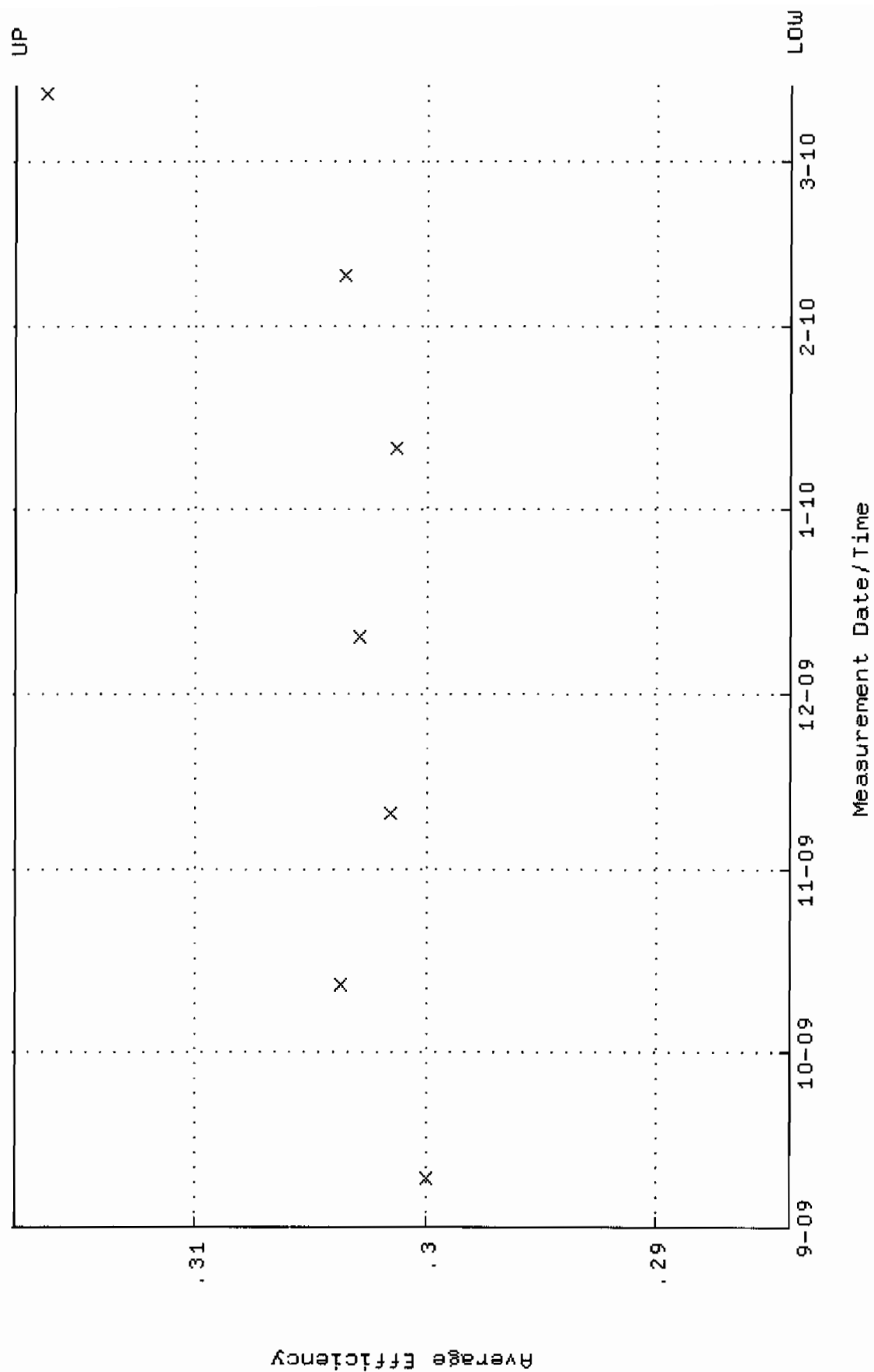
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF; 4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.7763 through 93.5625



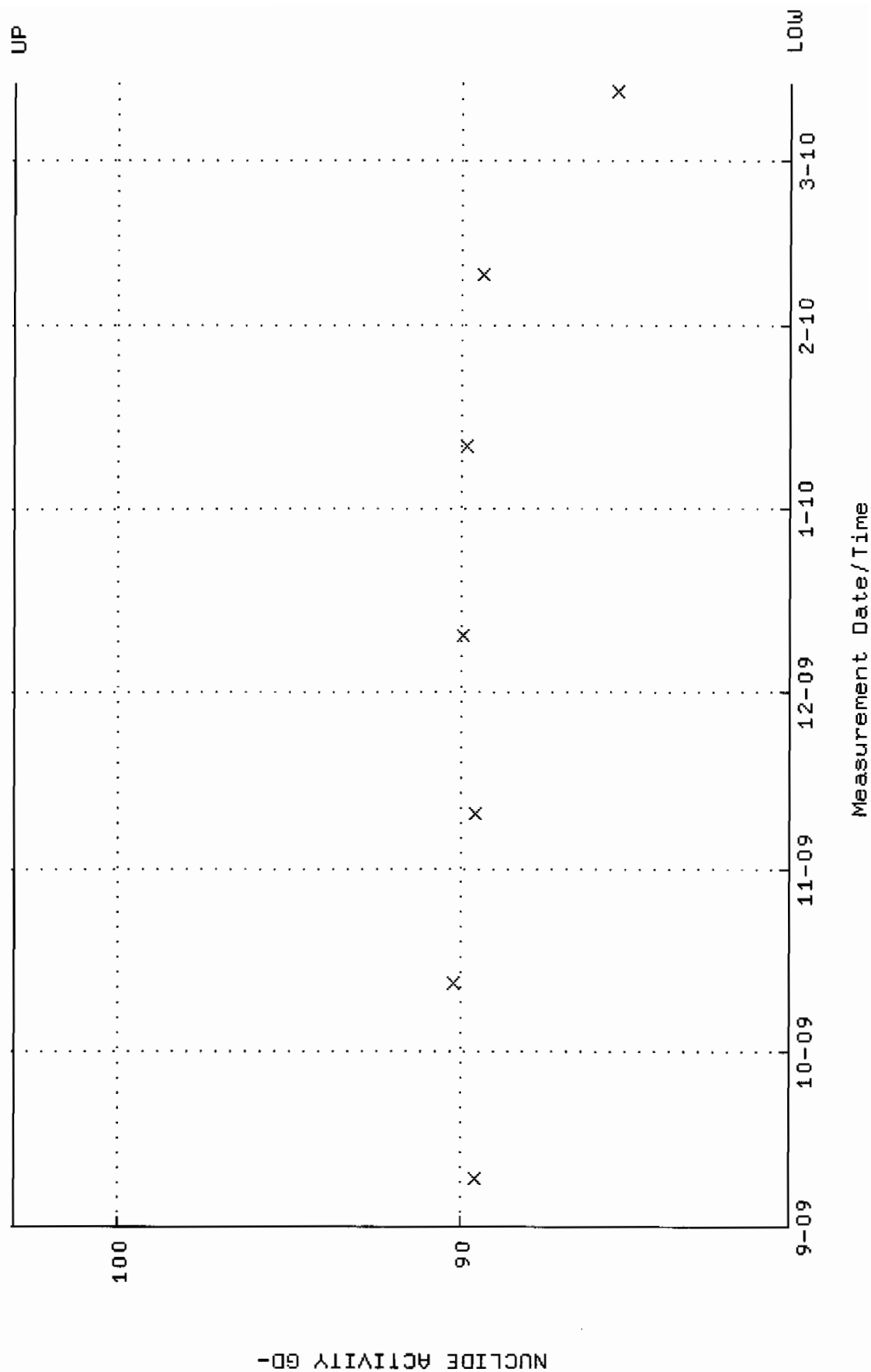
QA filename : DKA100:[ENV_ALPHA.QA.B]B087.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



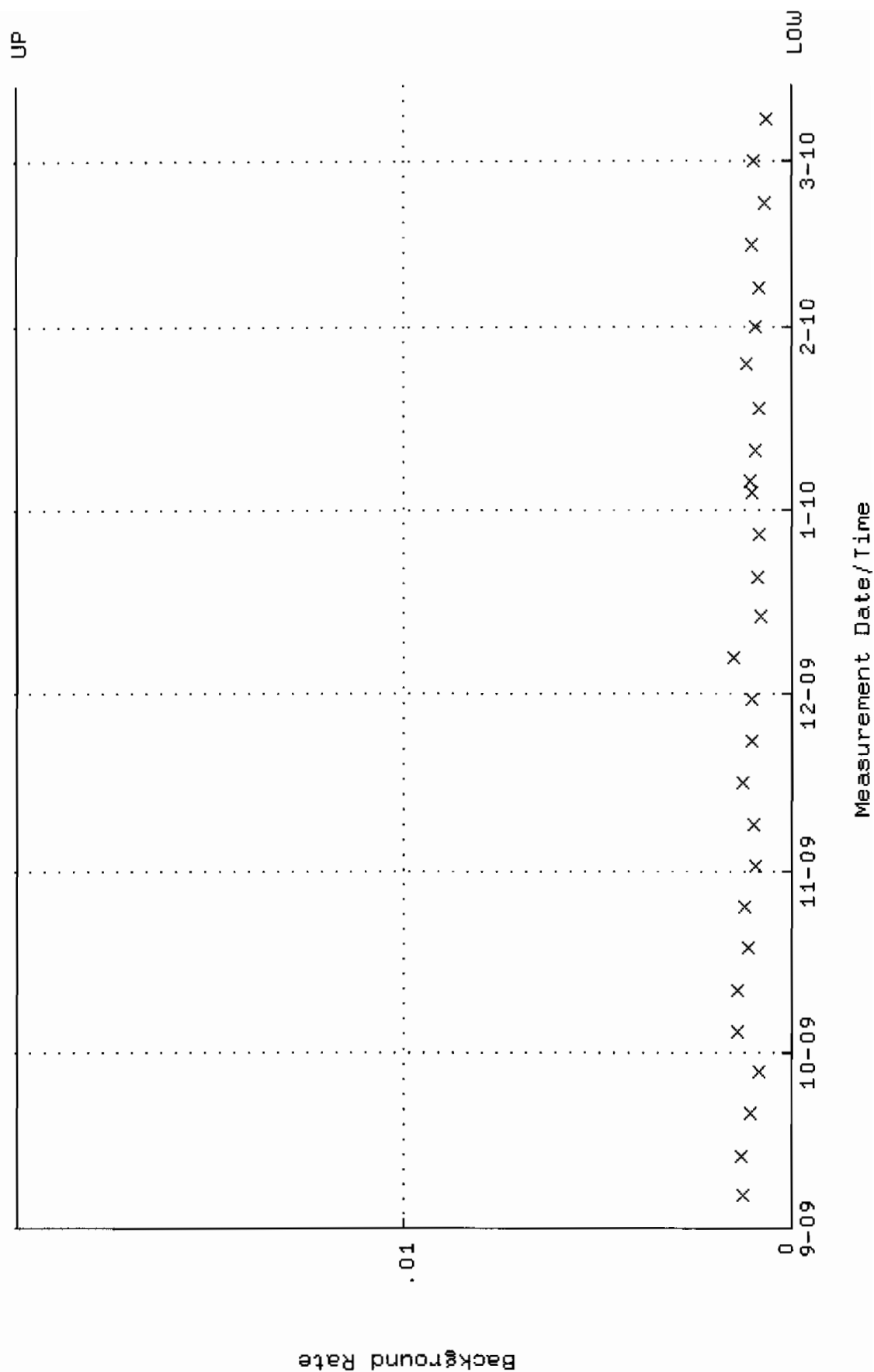
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.284264 through 0.317864



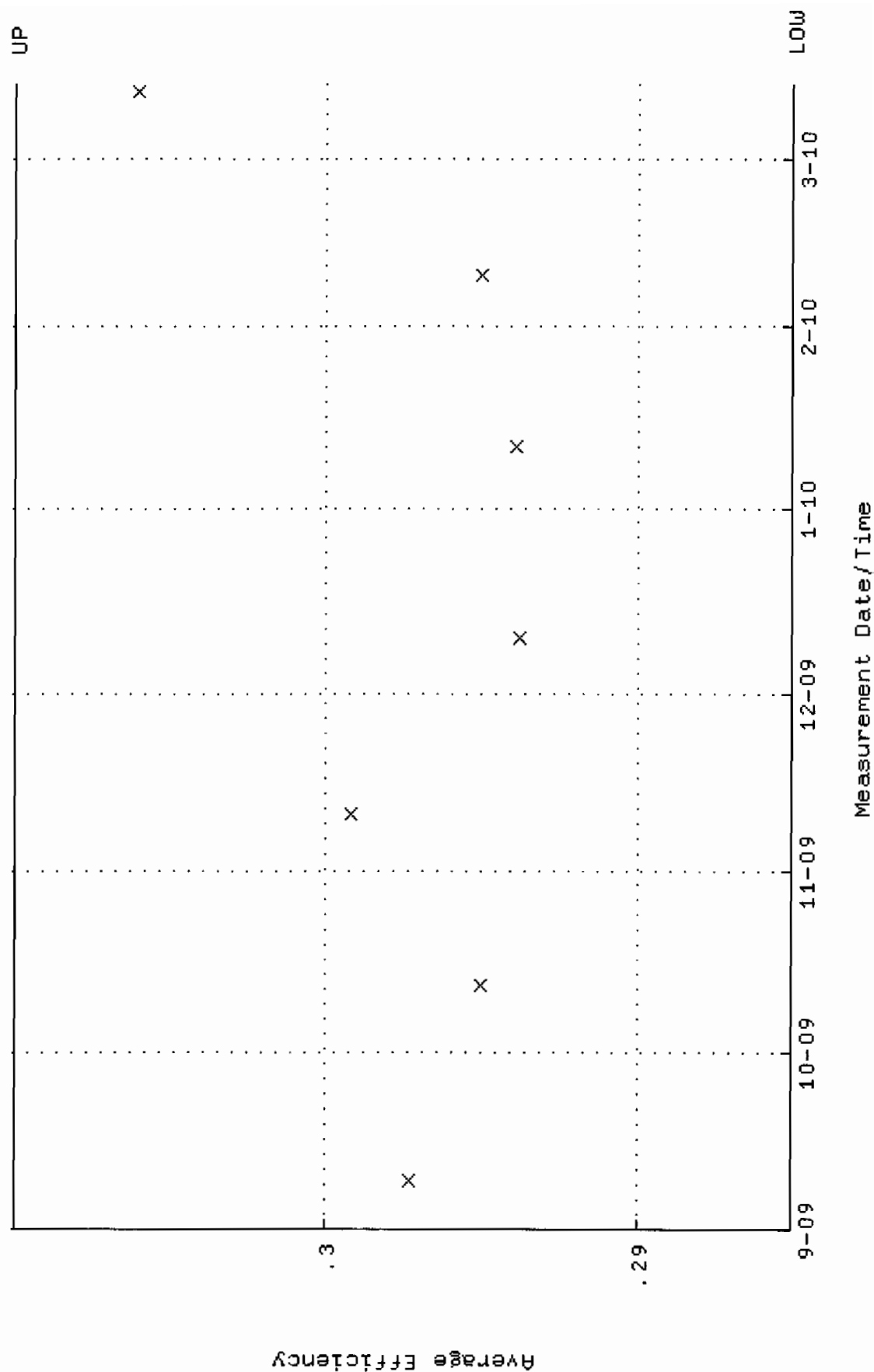
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.4493 through 103.037



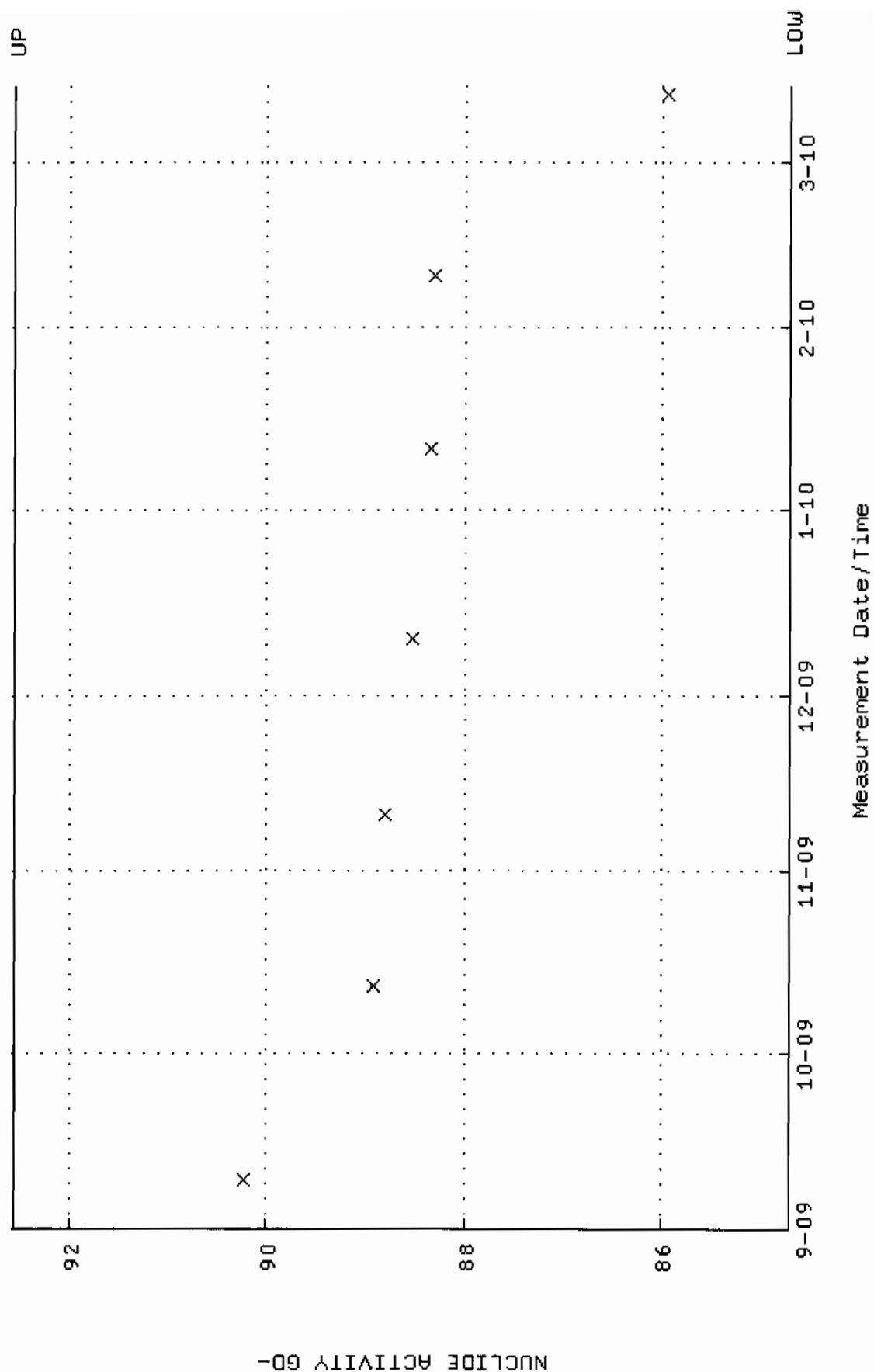
QA filename : DKA100:[ENV_ALPHA.QA.B]B088.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



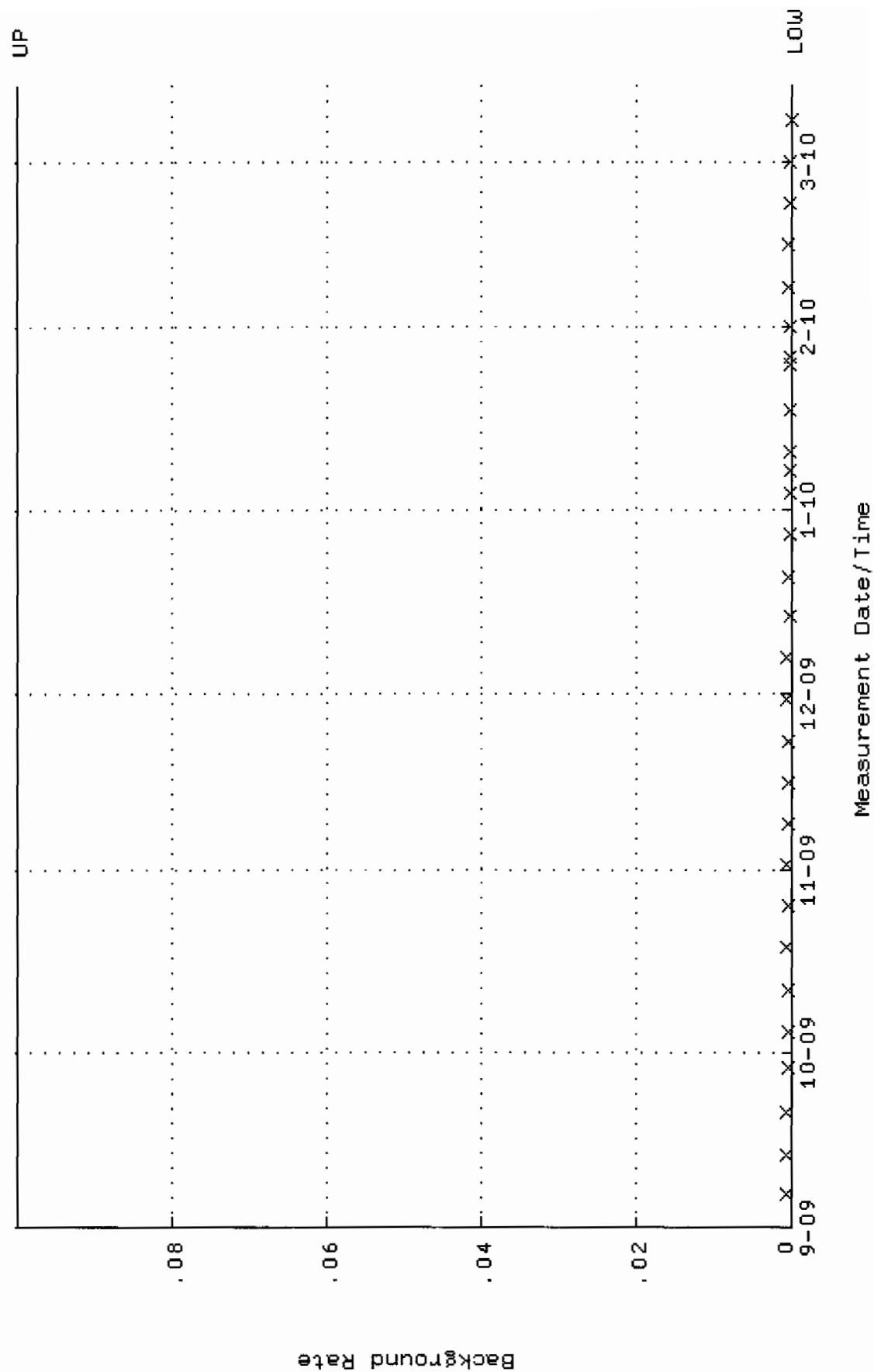
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.285061 through 0.309915



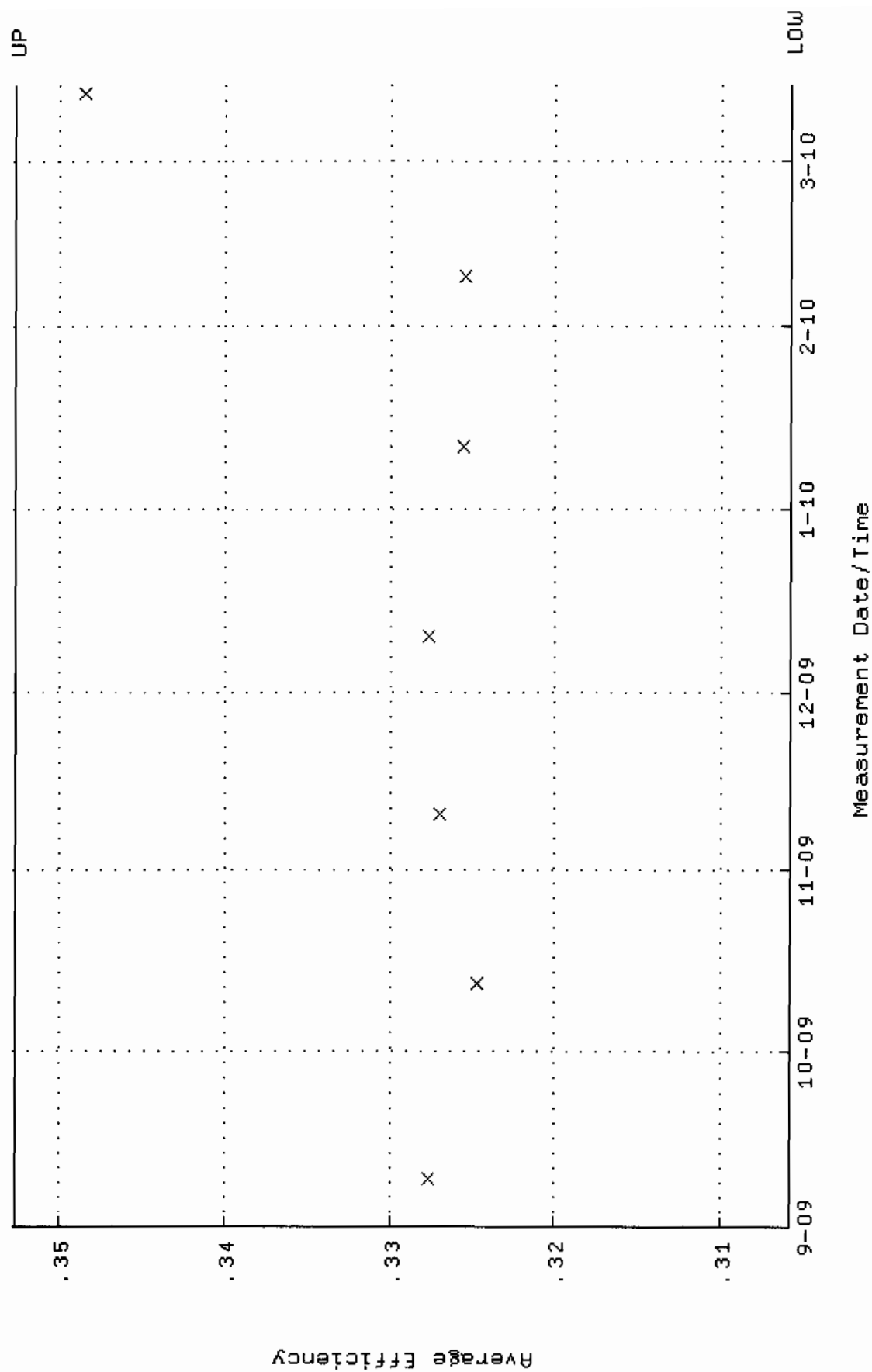
QA filename : DKA100:[ENV-ALPHA.QA.W]W089.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.7074 through 92.5526



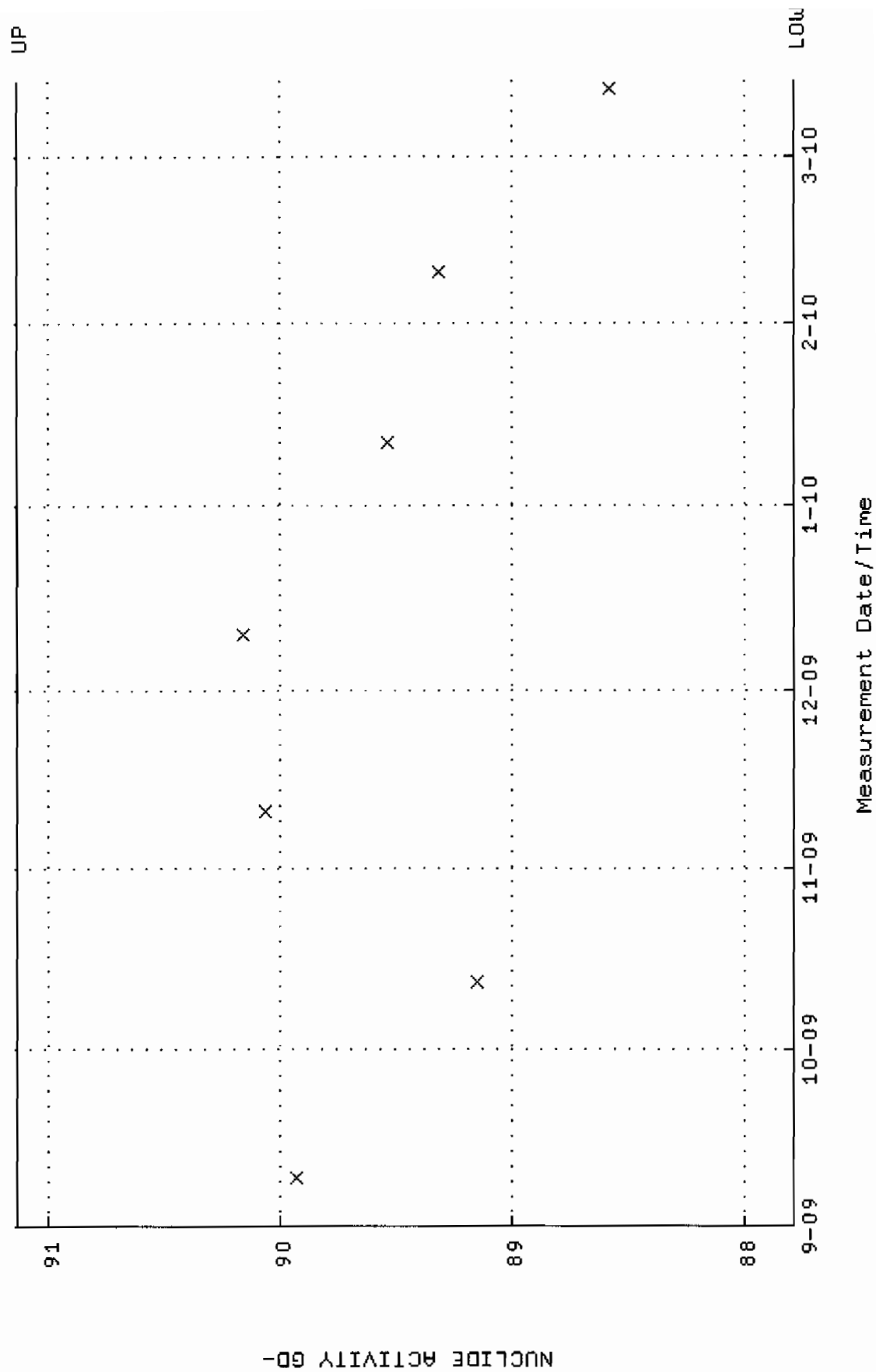
QA filename : DKA100:[ENV_ALPHA.QA.B]B089.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



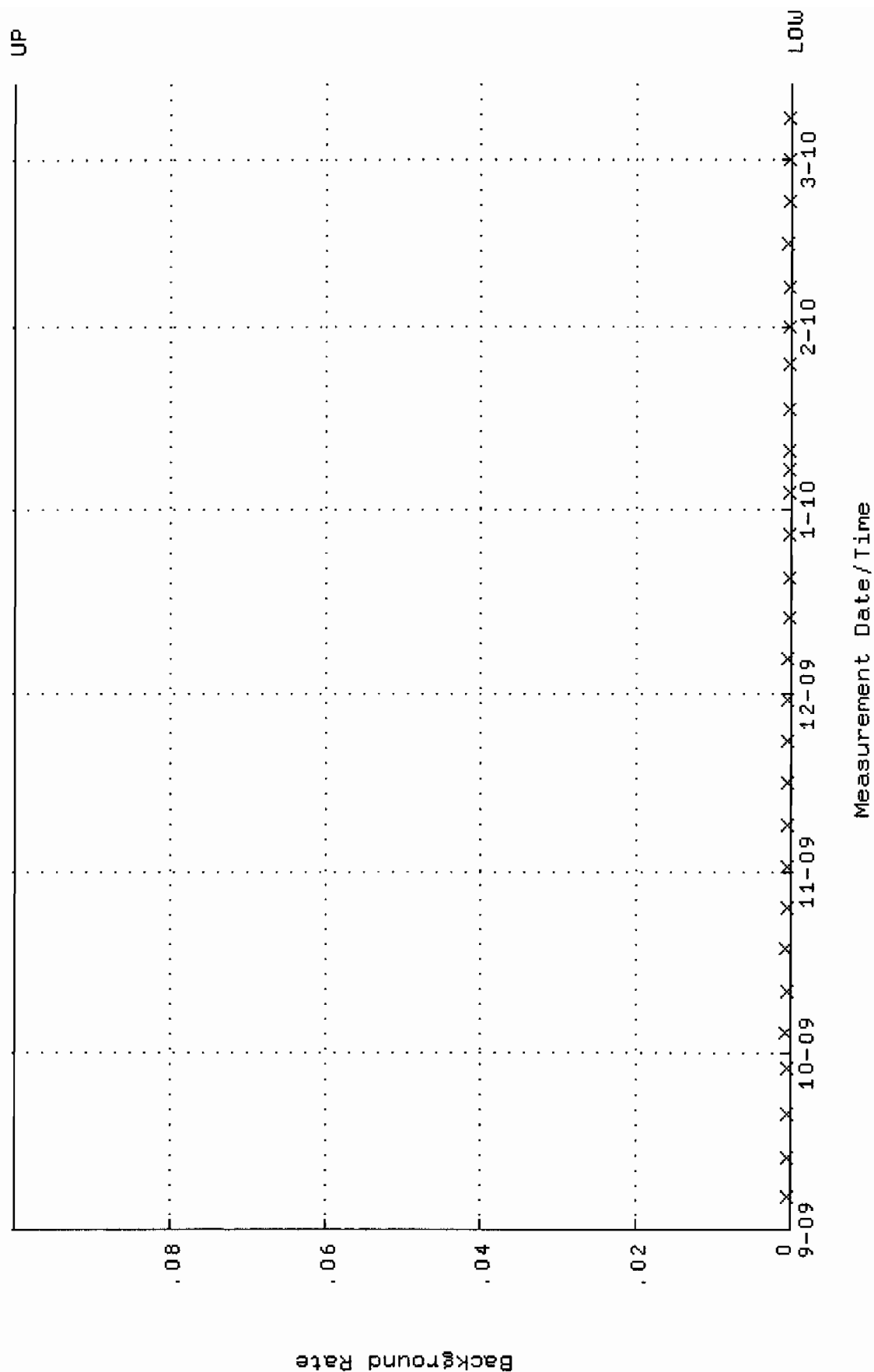
QA filename : DKA100:[ENV_ALPHA.QA.W]W090.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.305824 through 0.352694



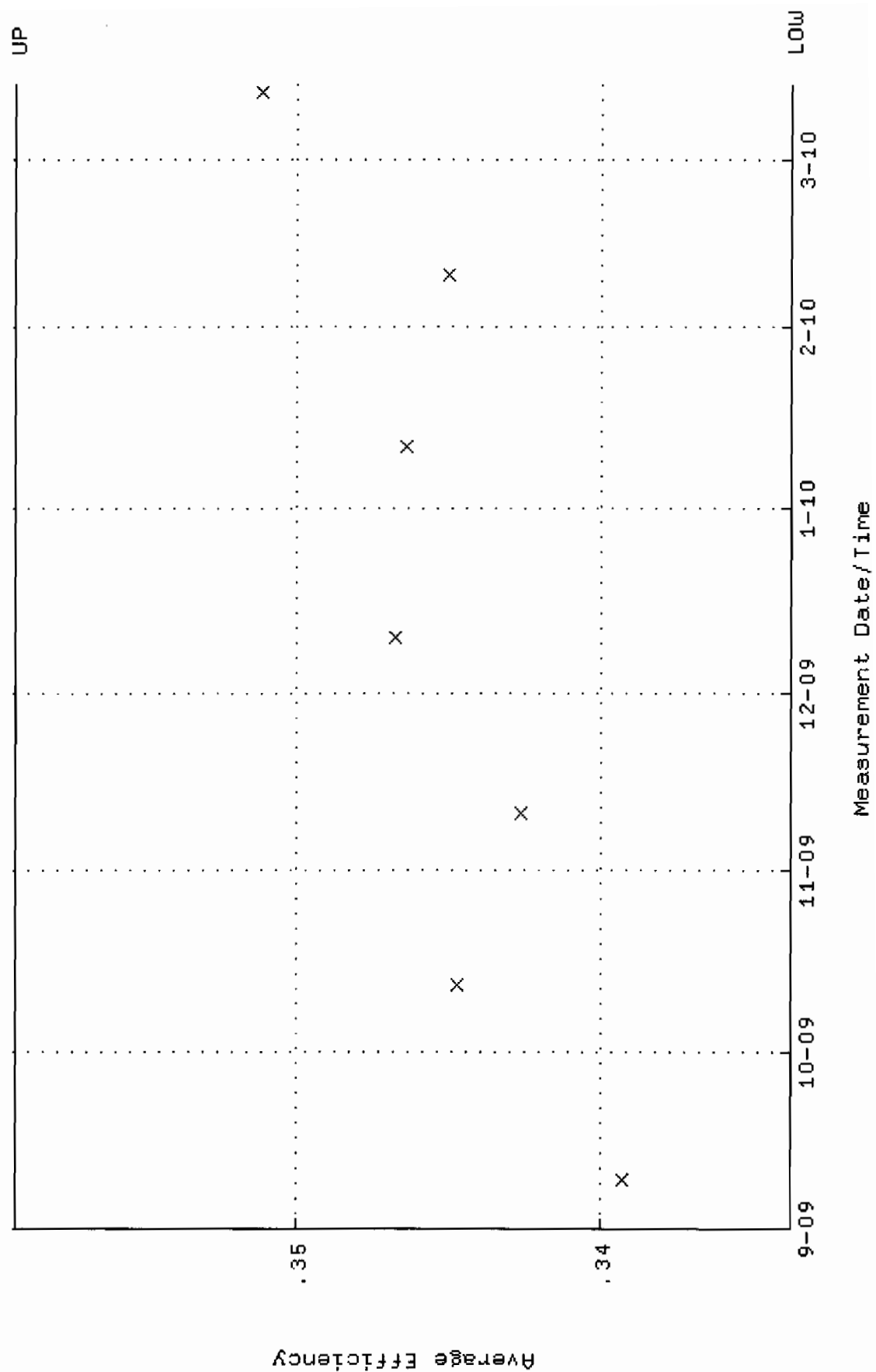
QA filename : DKA100: [ENV_ALPHA.QA.W]W090.QAF; 3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7860 through 91.1302



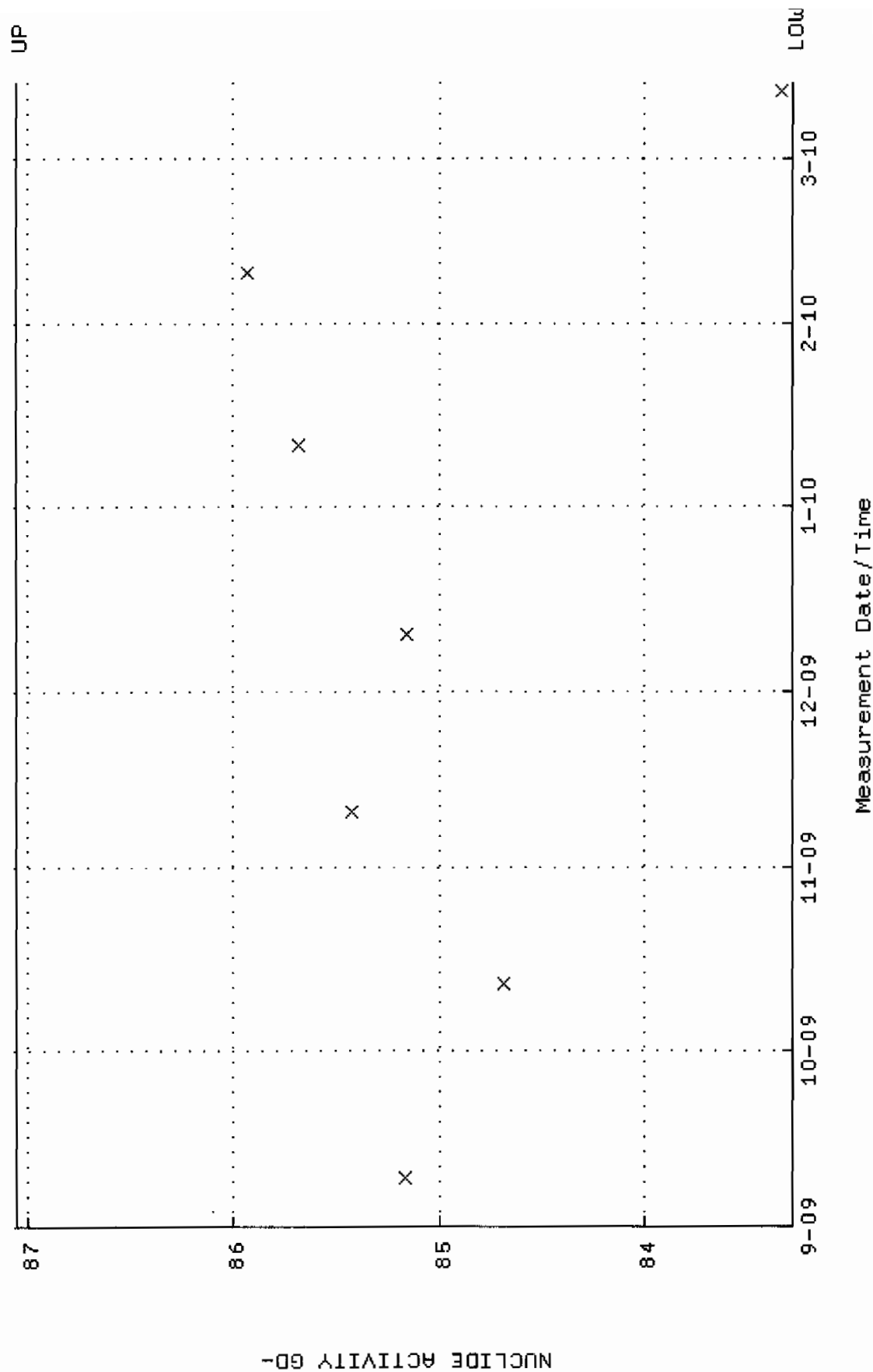
QA filename : DKA100:[ENV_ALPHA.QA.B]B090.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



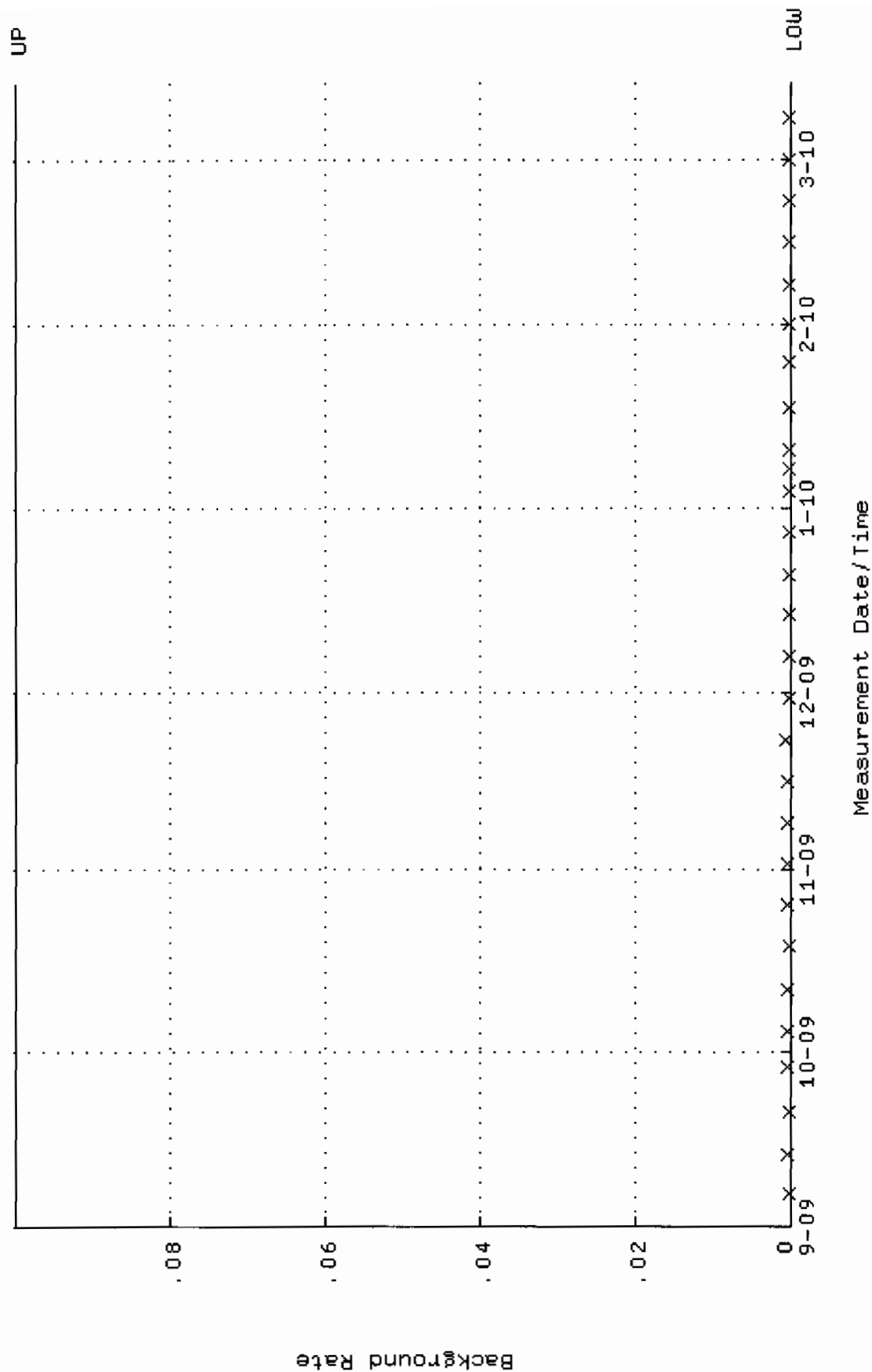
QA filename : DKA100: [ENV_ALPHA.QA.W]W091.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.333733 through 0.359273



QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.2831 through 87.0563



QA filename : DKA100:[ENV_ALPHA.QA.B]B091.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

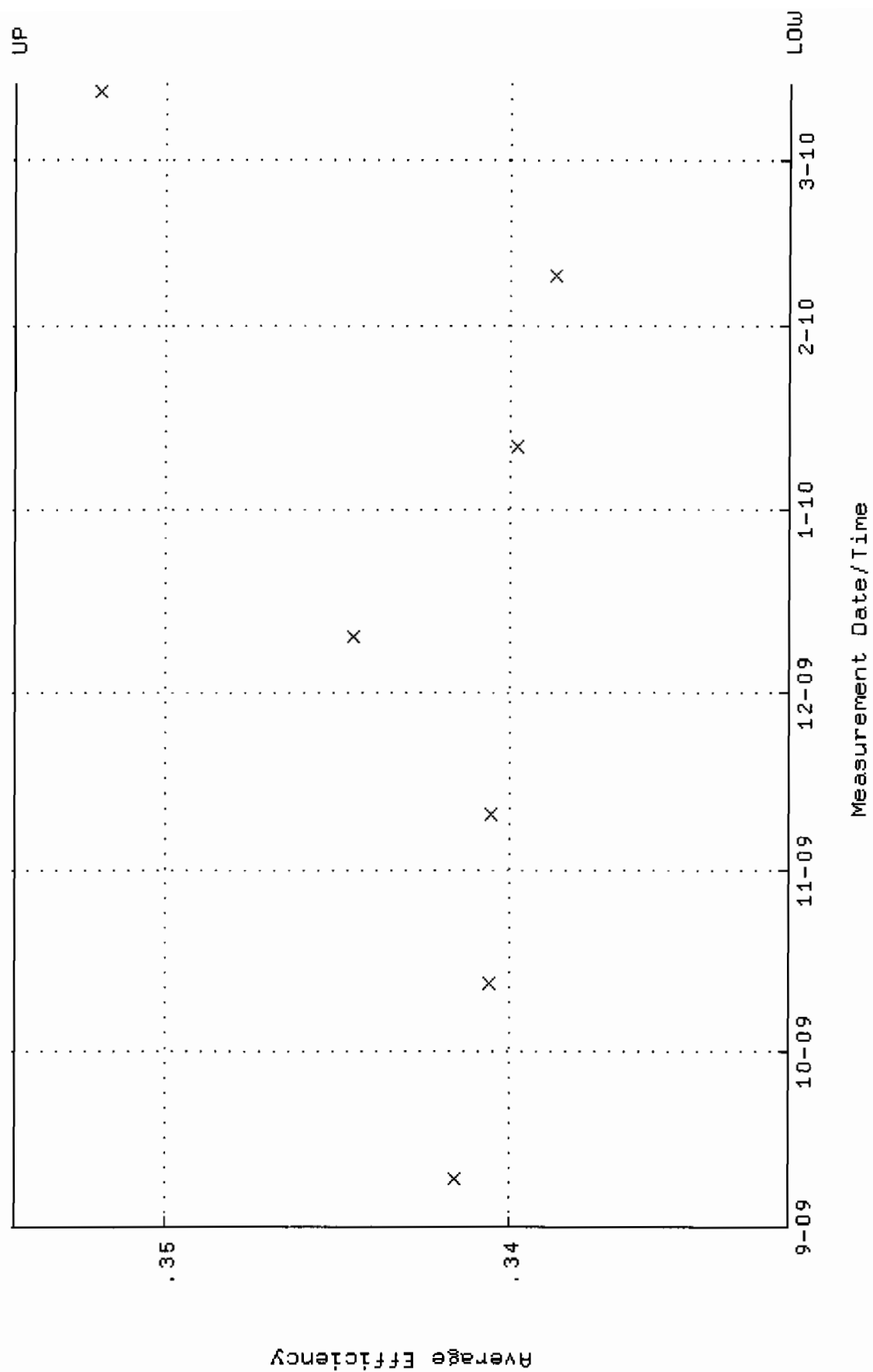


QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2

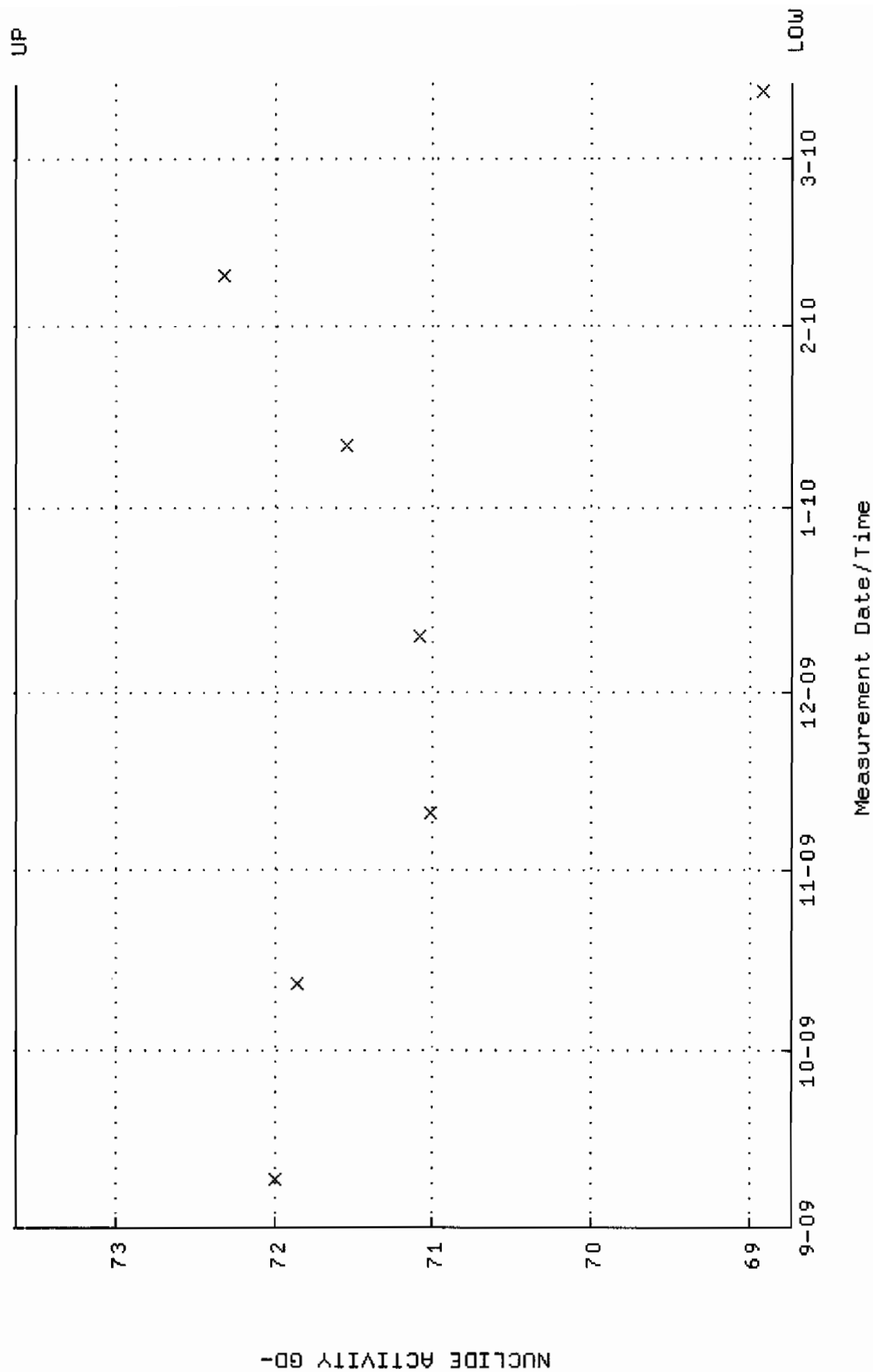
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00

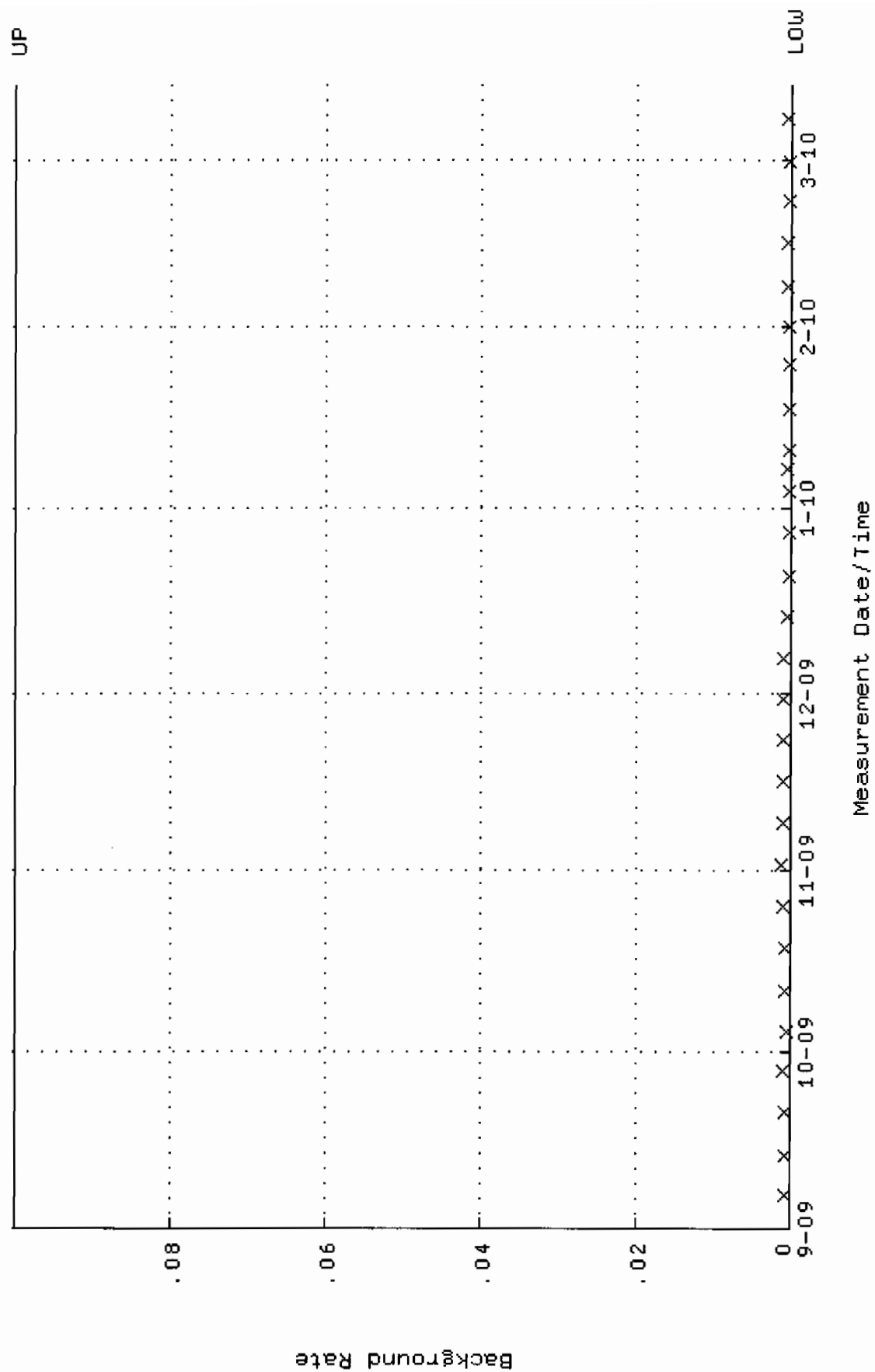
Lower/Upper Lmts: 0.331877 through 0.354429



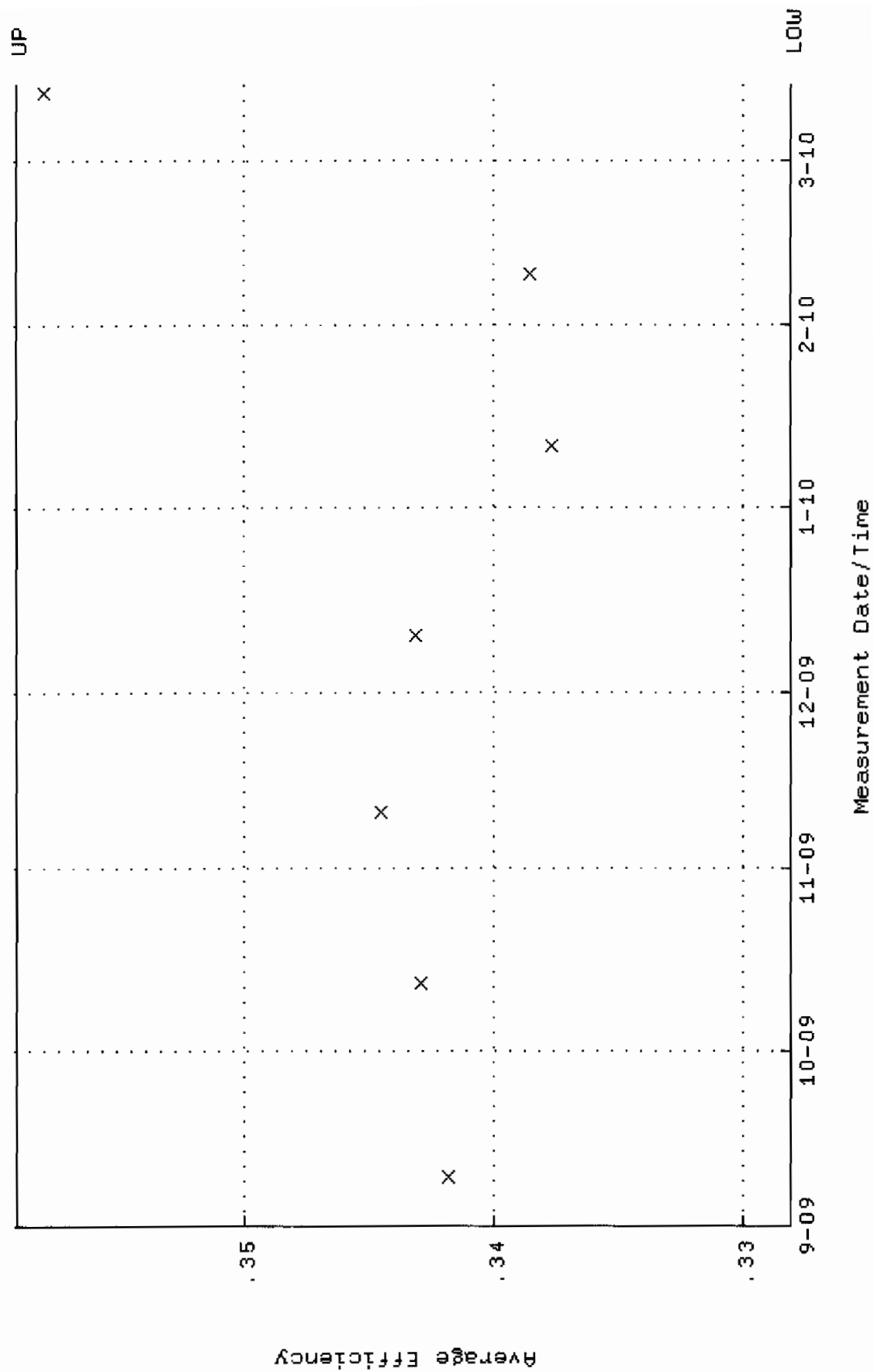
QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 68.7313 through 73.6359



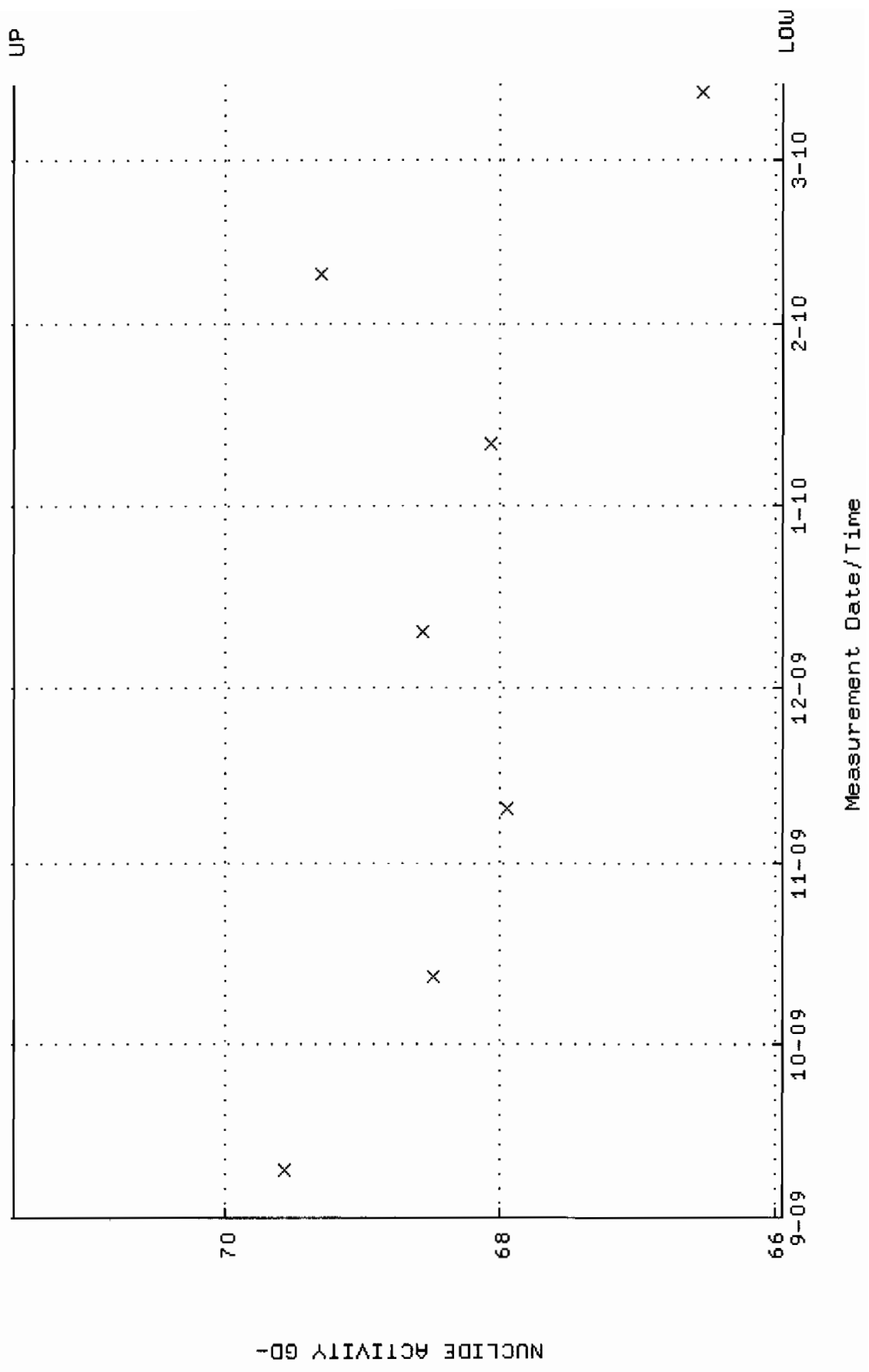
QA filename : DKA100:[ENV_ALPHA.QA.B]B099.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



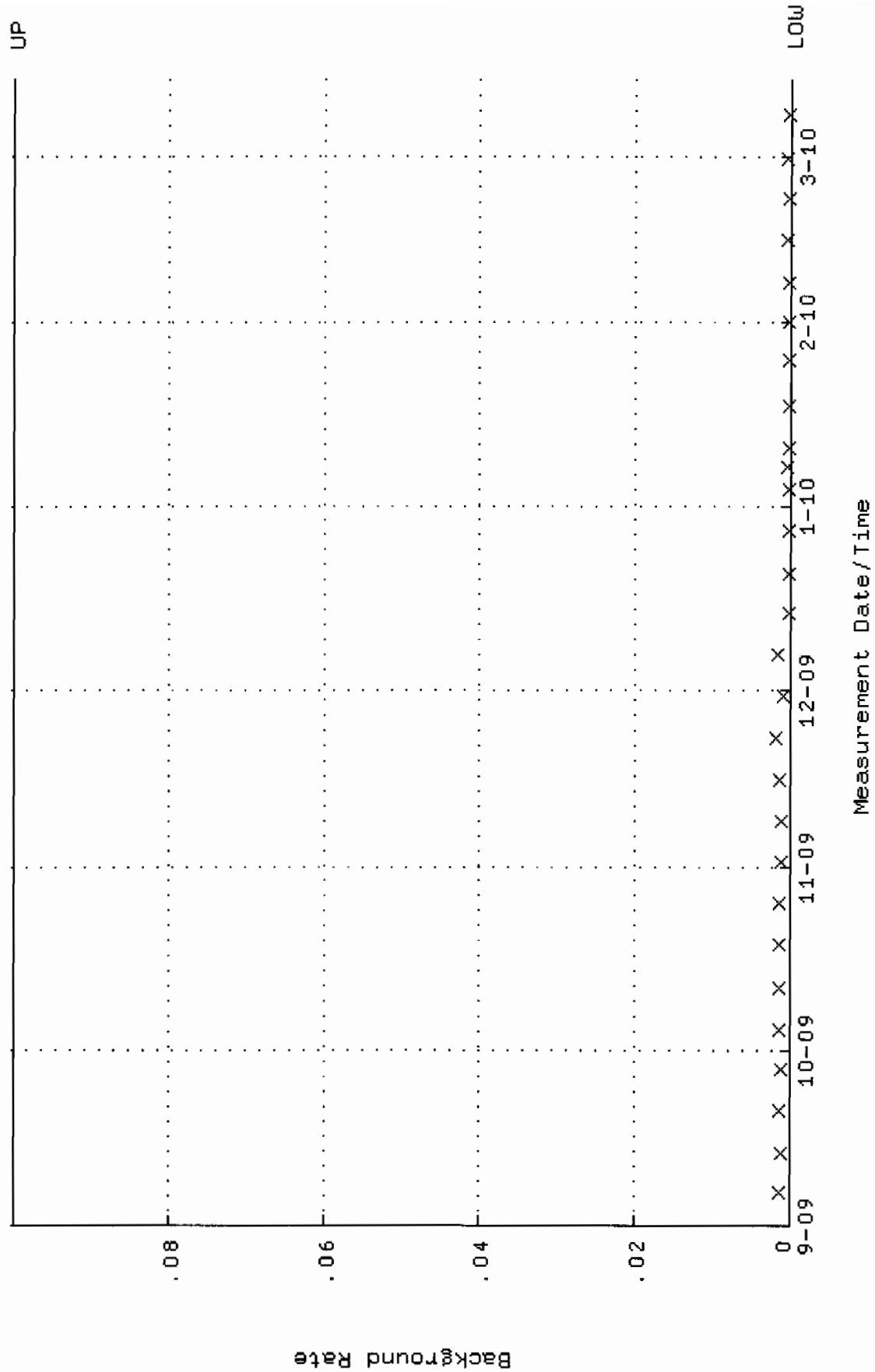
QA filename : DKA100:[ENV_ALPHA.QA.W]W100.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.328134 through 0.359116



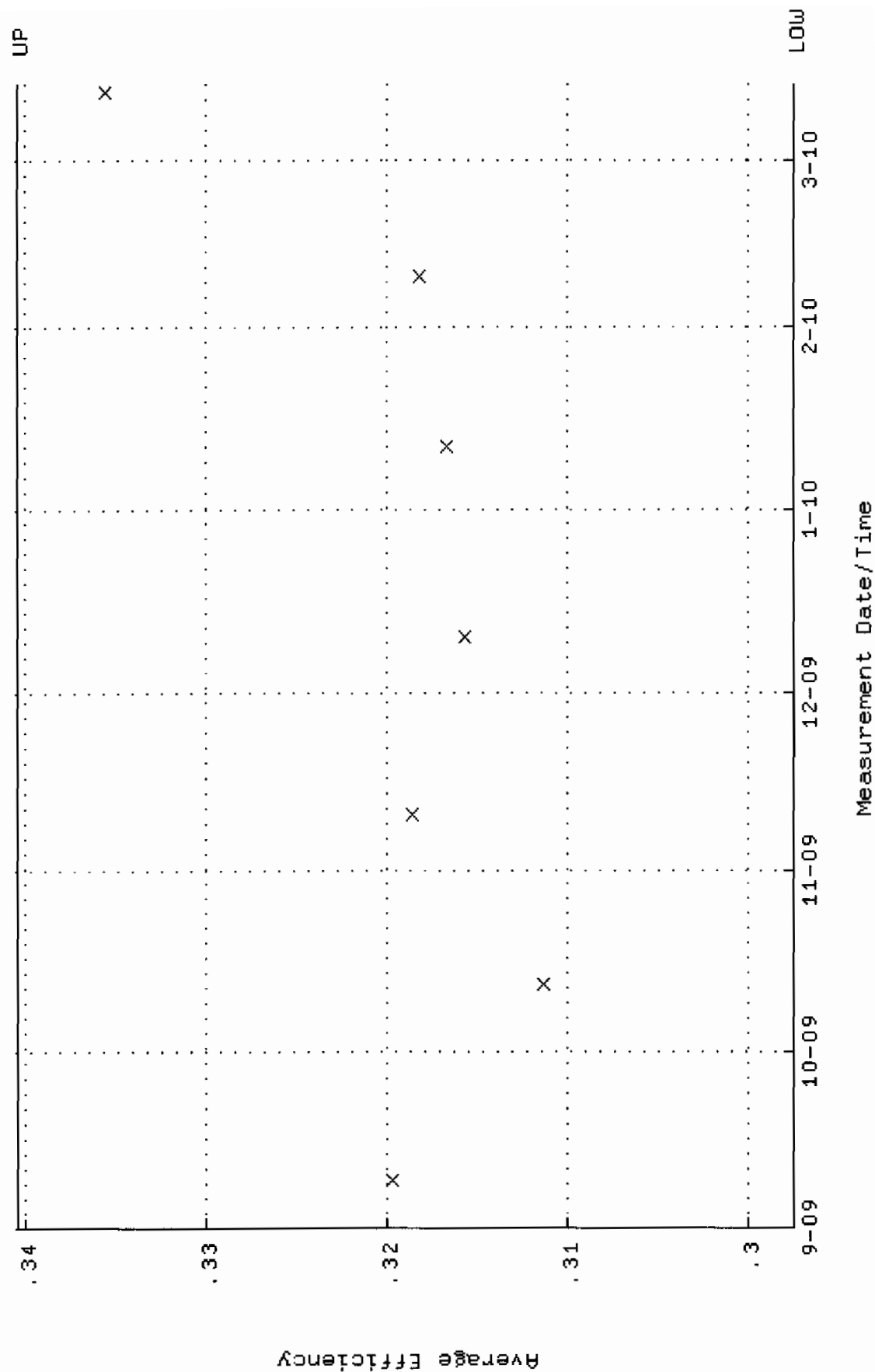
QA filename : DKA100:[ENV_ALPHA.QA.W]W100.QAF;2
Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
Lower/Upper Lmts: 65.9445 through 71.5395



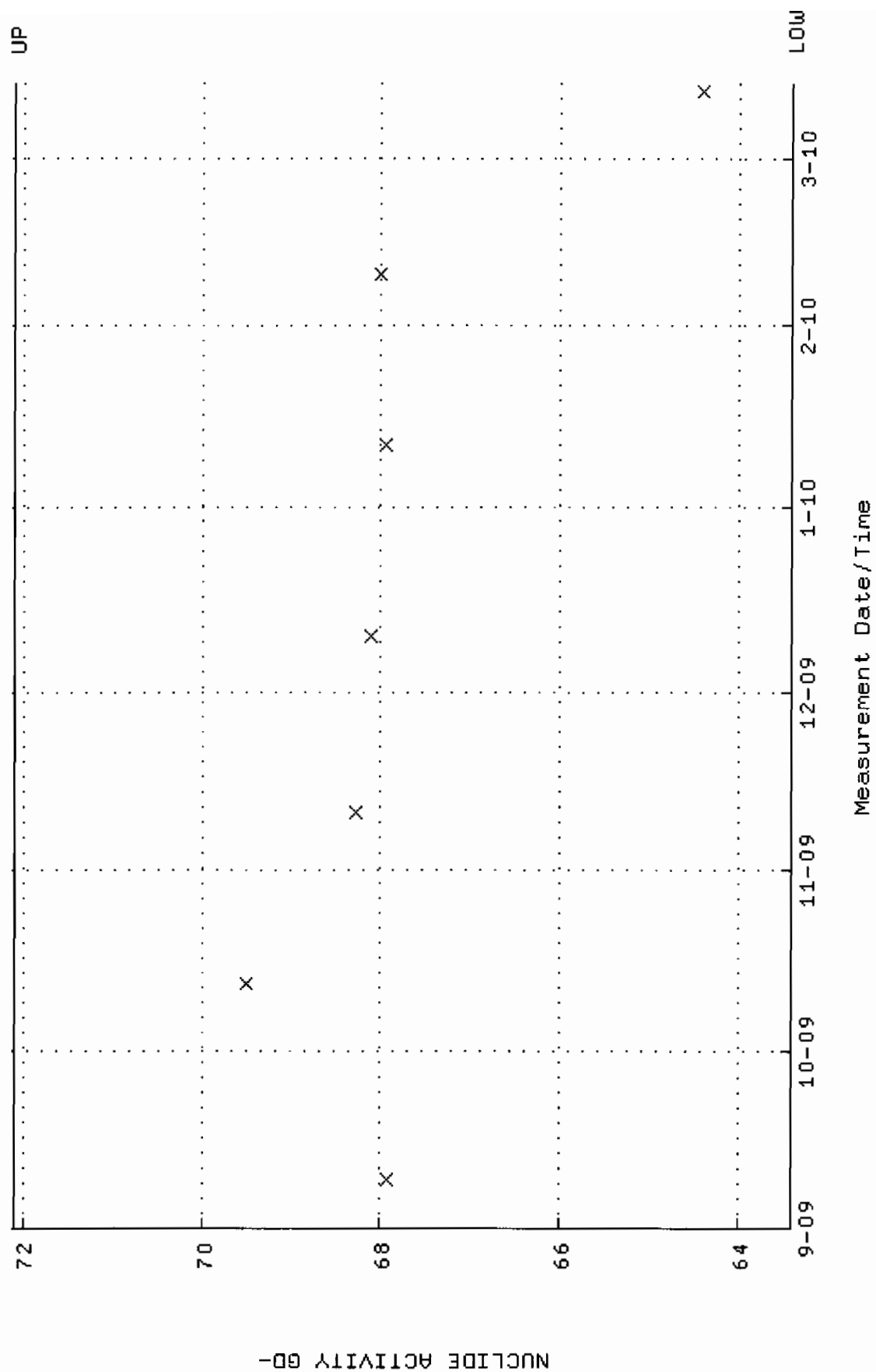
QA filename : DKA100:[ENVY_ALPHA.QA.B]B100.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W112.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: 0.297499 through 0.340389



QA filename : DKA100:[ENV_ALPHA.QA.W]W112.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: 63.4111 through 72.0947

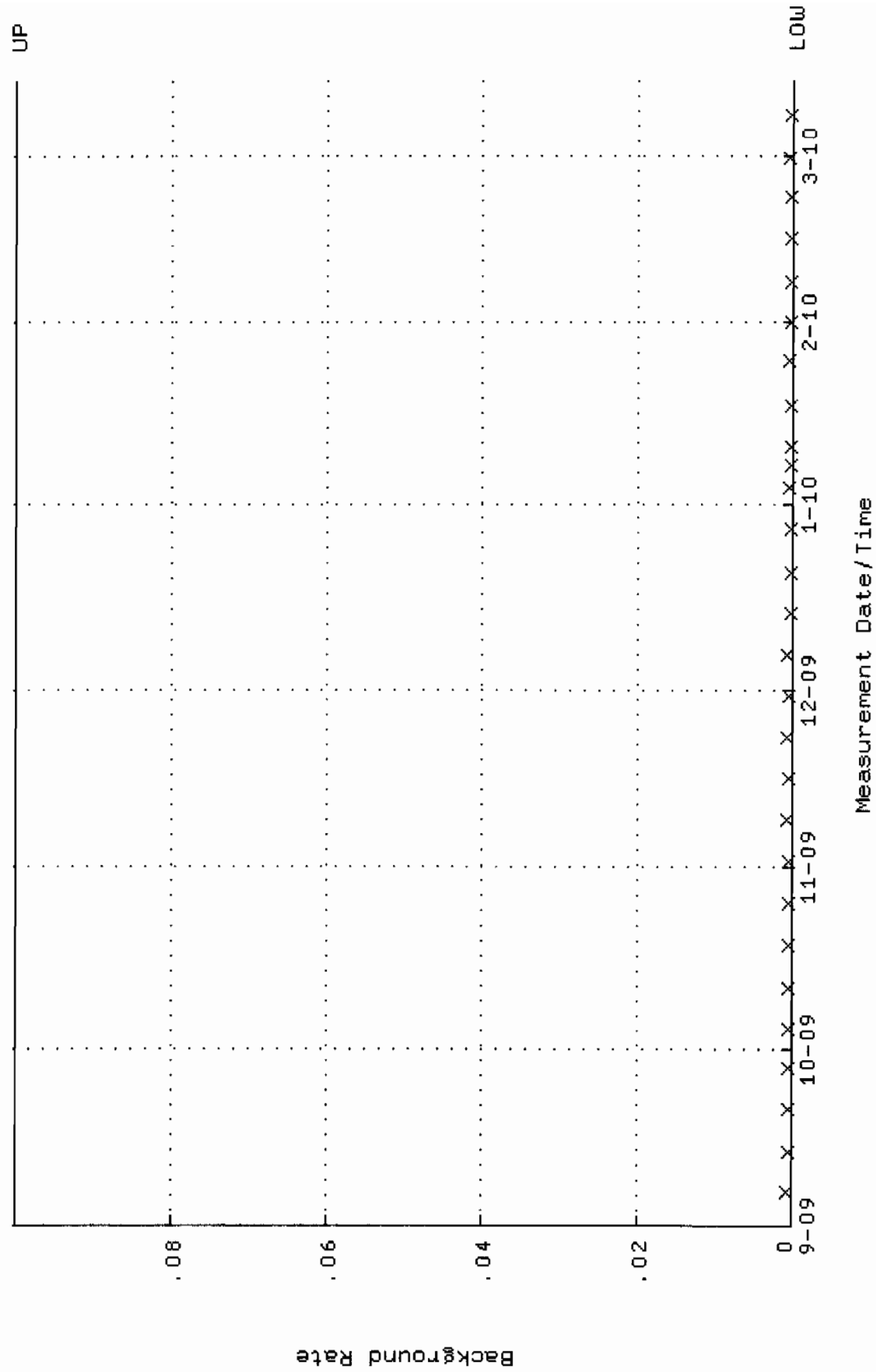


QA filename : DKA100:[ENV_ALPHA.QA.B]B112.QAF;2

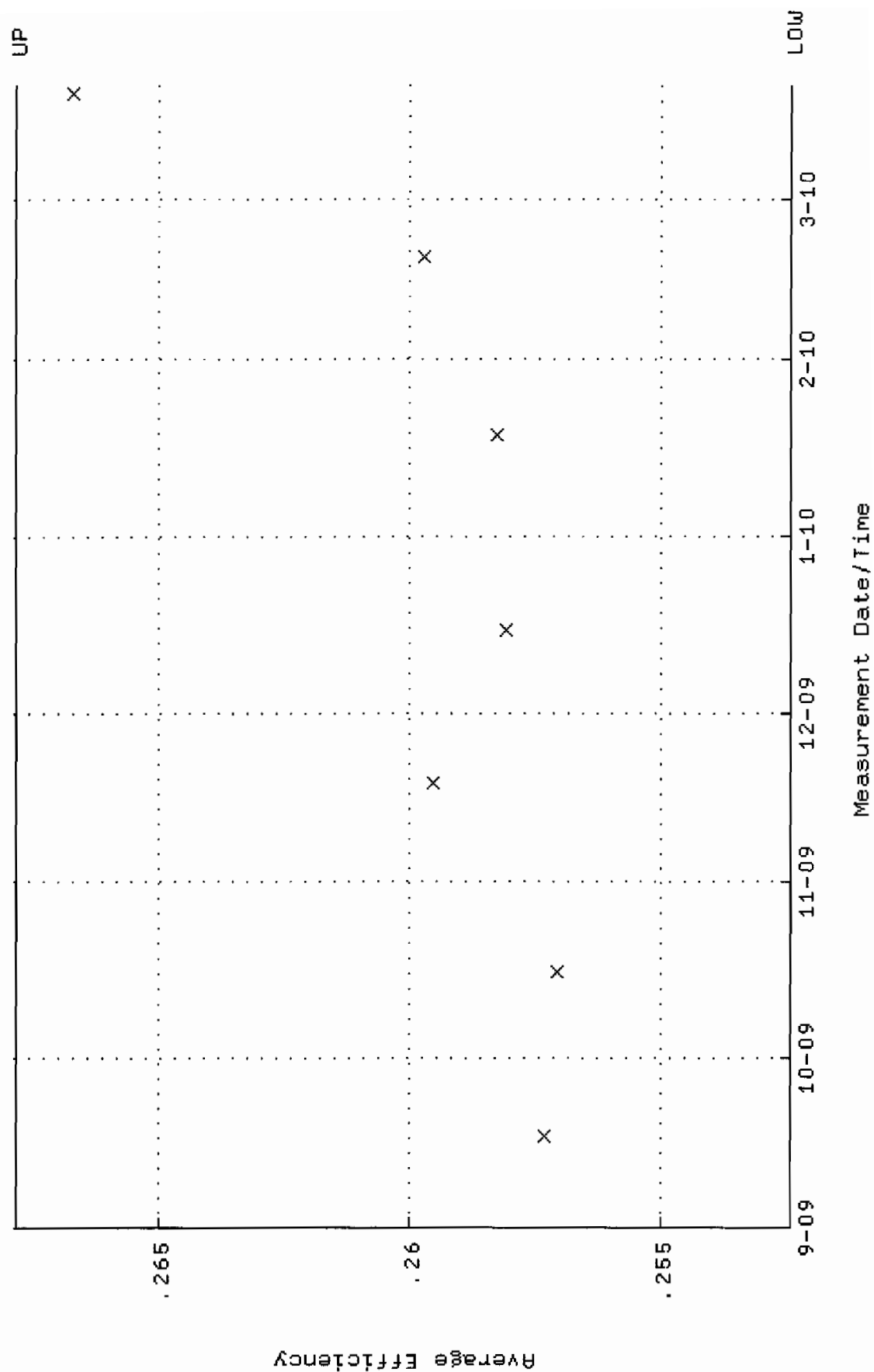
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00

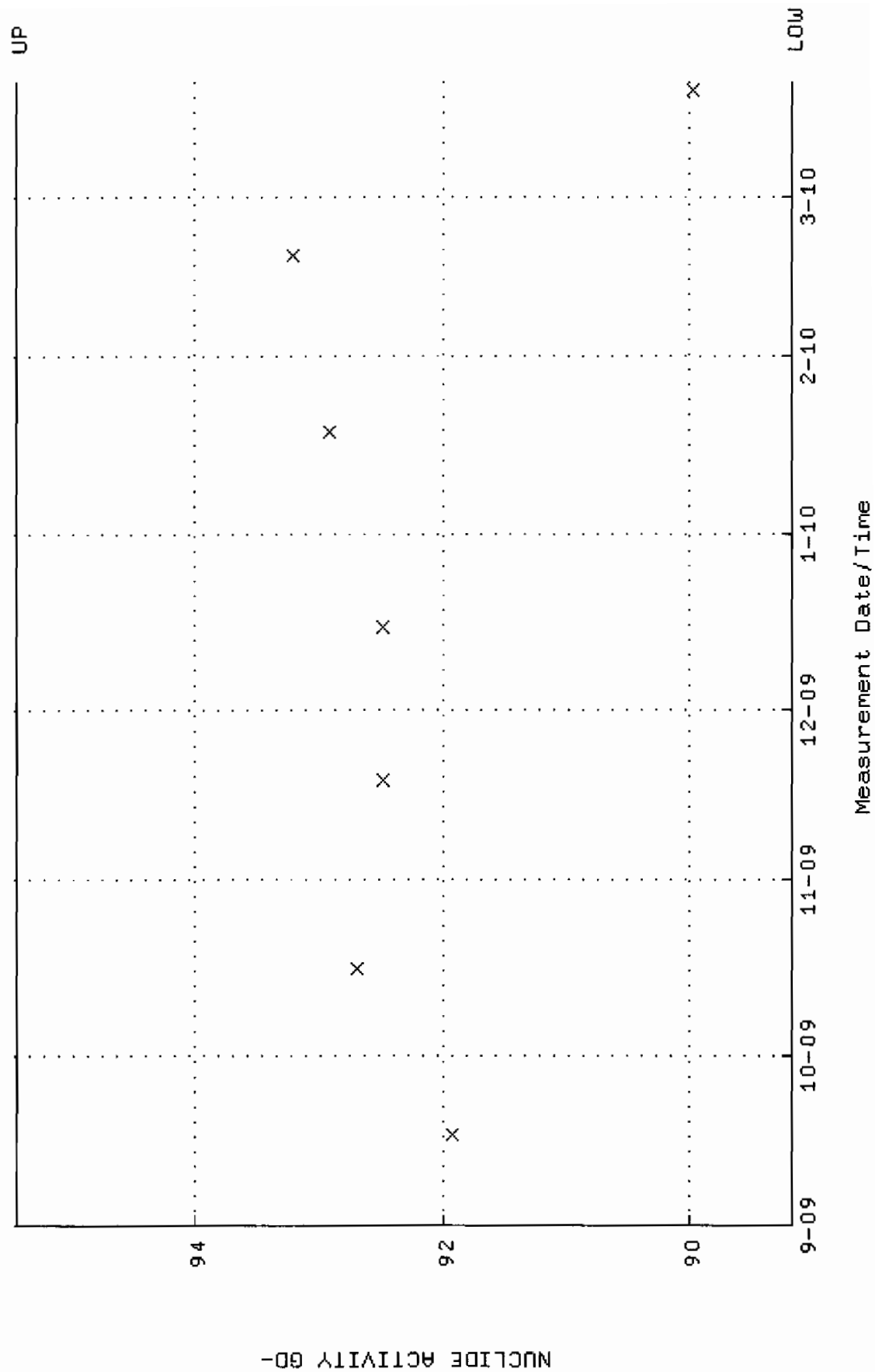
Lower/Upper Lmts: 0.000000E+00 through 0.100000



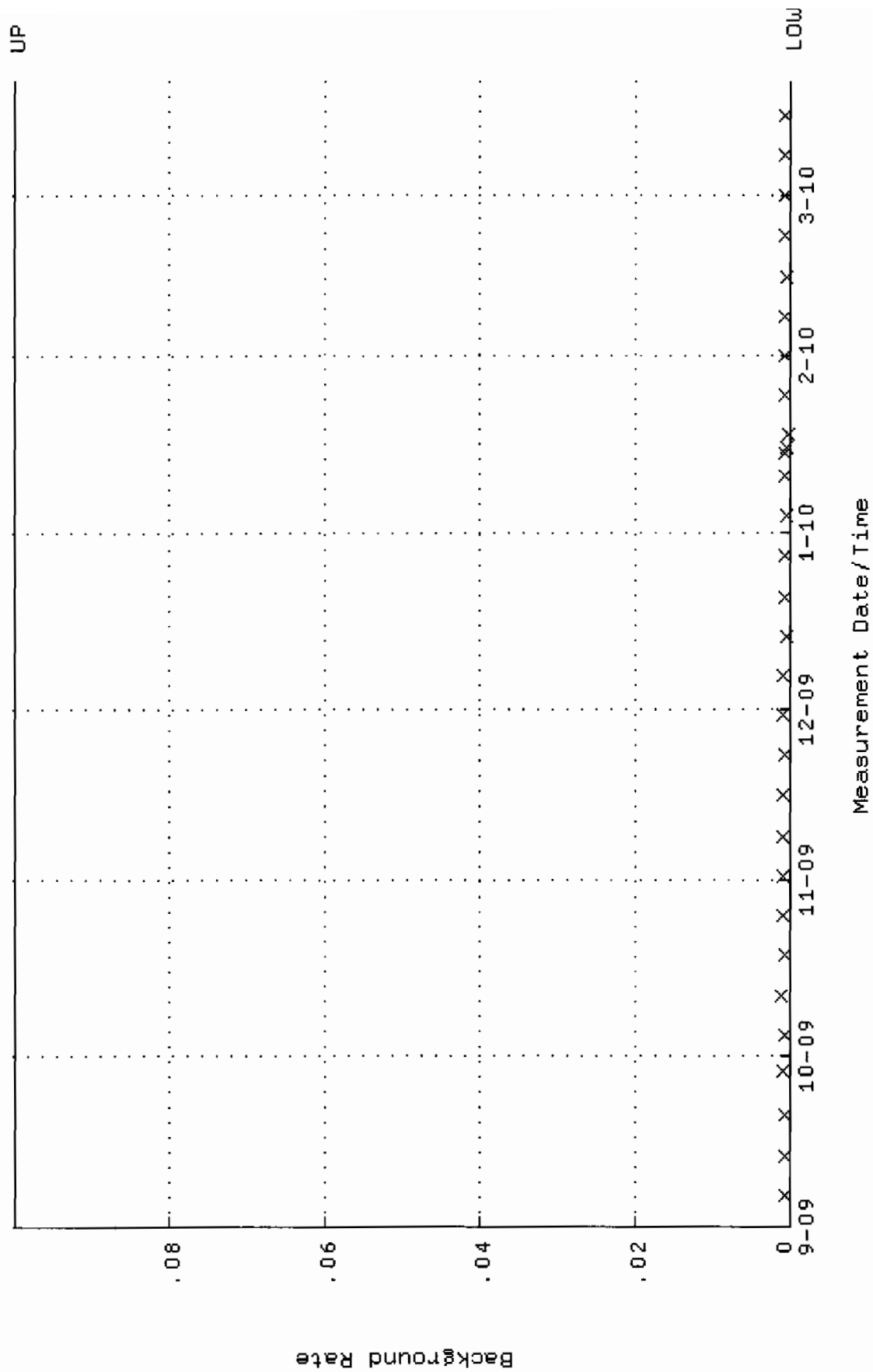
QA filename : DKA100: [ENV_ALPHA.QA.W]W124.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.252448 through 0.267830



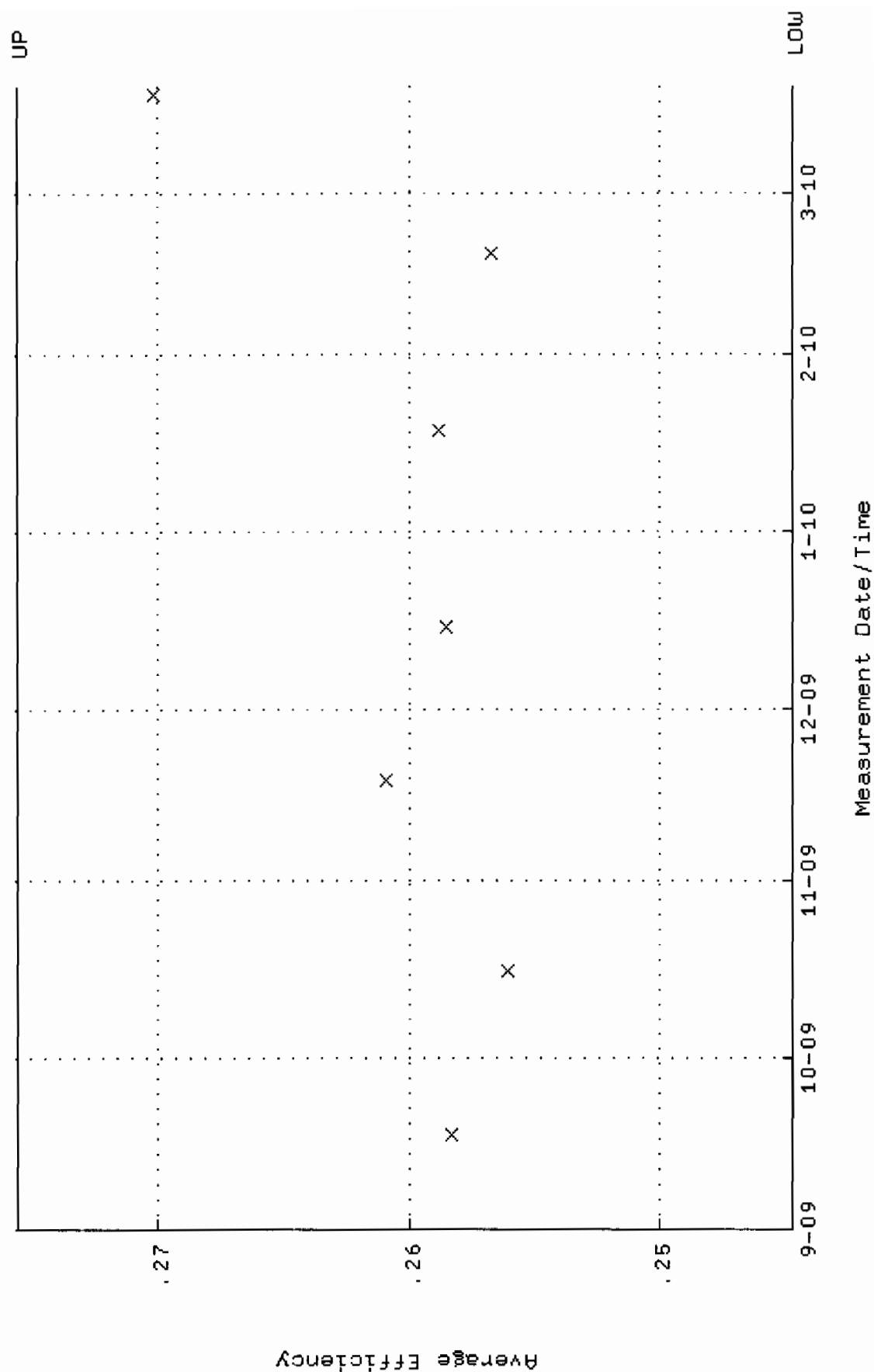
QA filename : DKA100:[ENV_ALPHA.QA.W]w124.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1805 through 95.4483



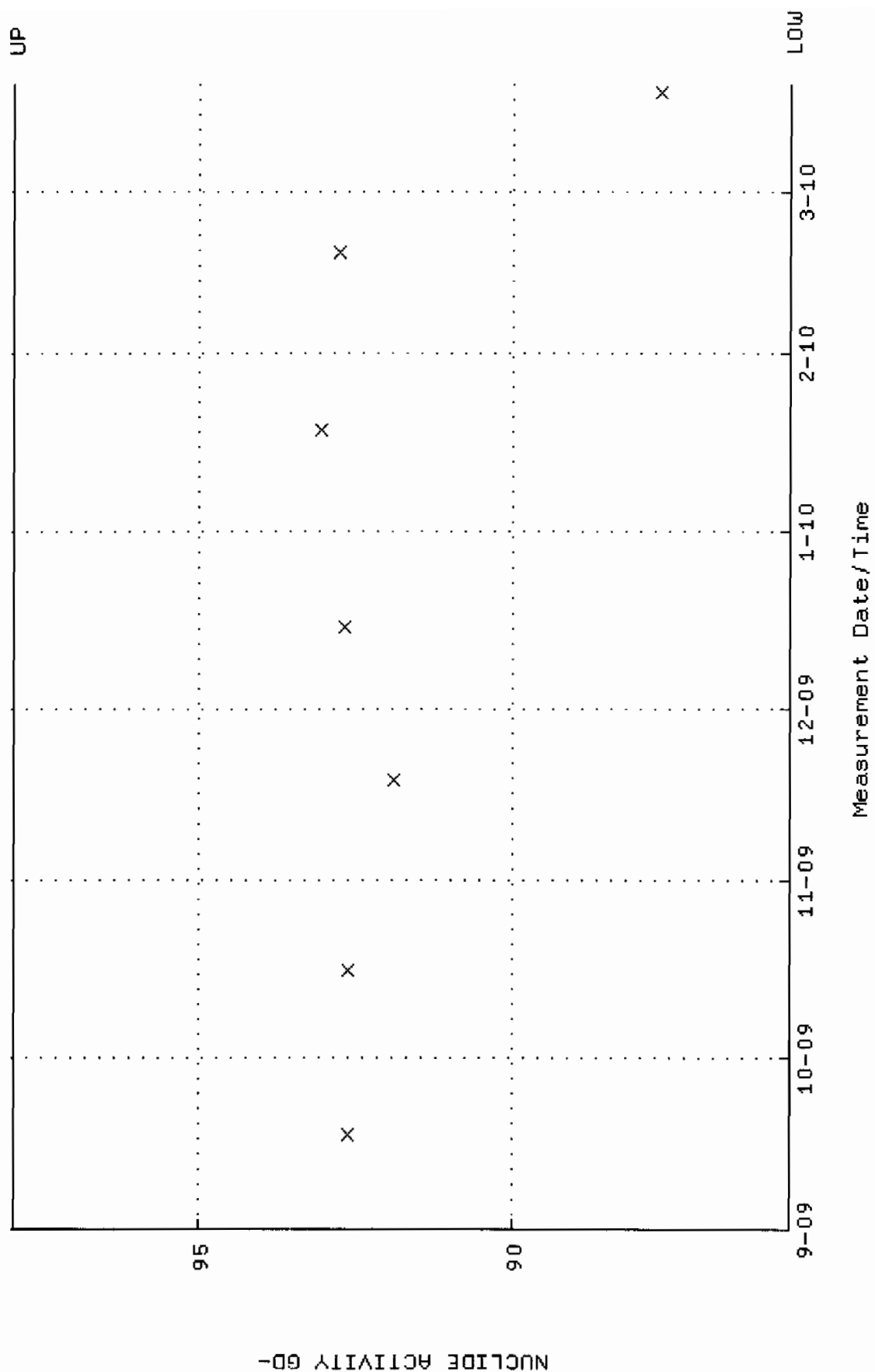
QA filename : DKA100:[ENV_ALPHA.QA.B]B124.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:56 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



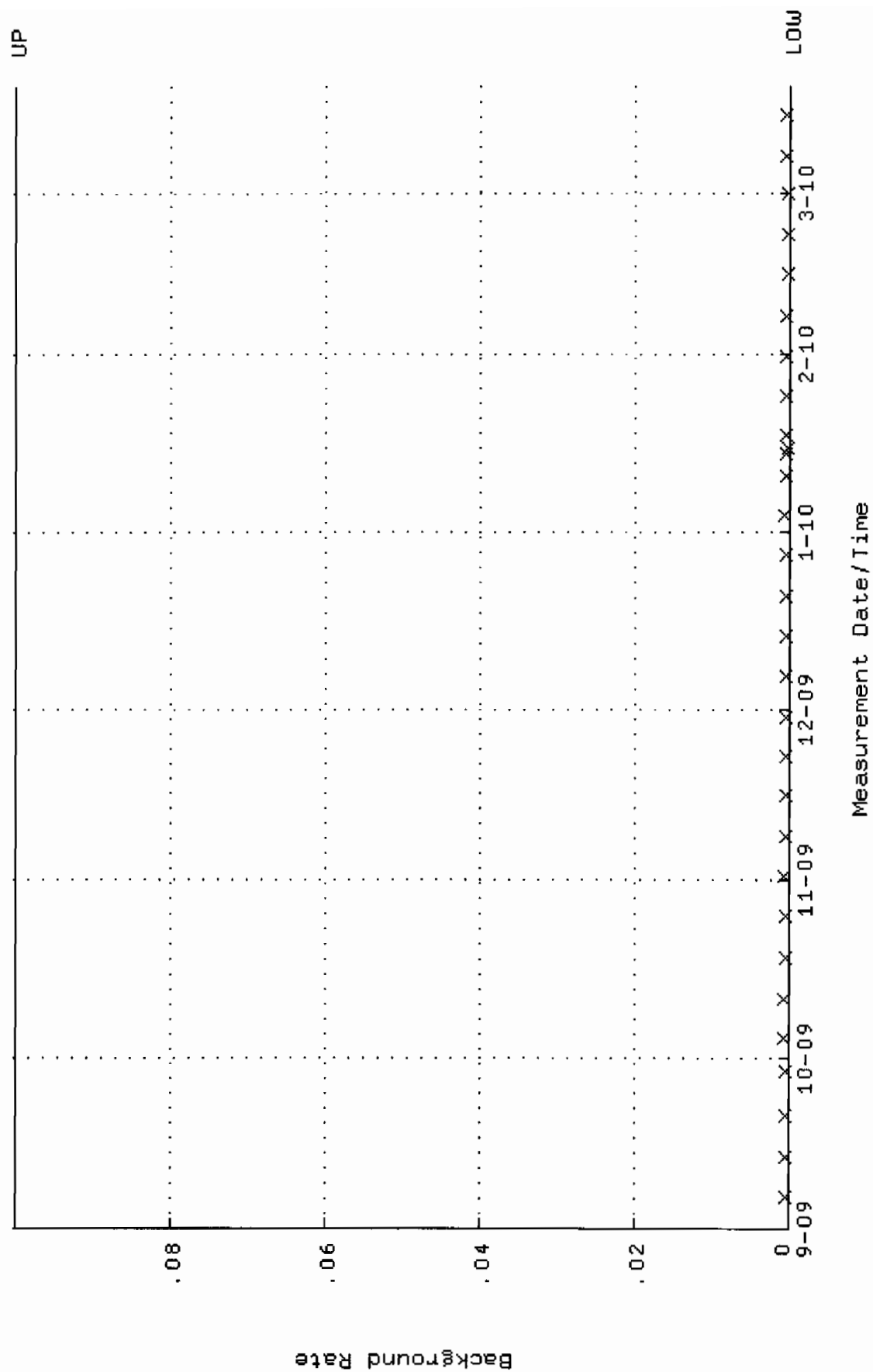
QA filename : DKA100:[ENV_ALPHA.QA.W]w125.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.244676 through 0.275622



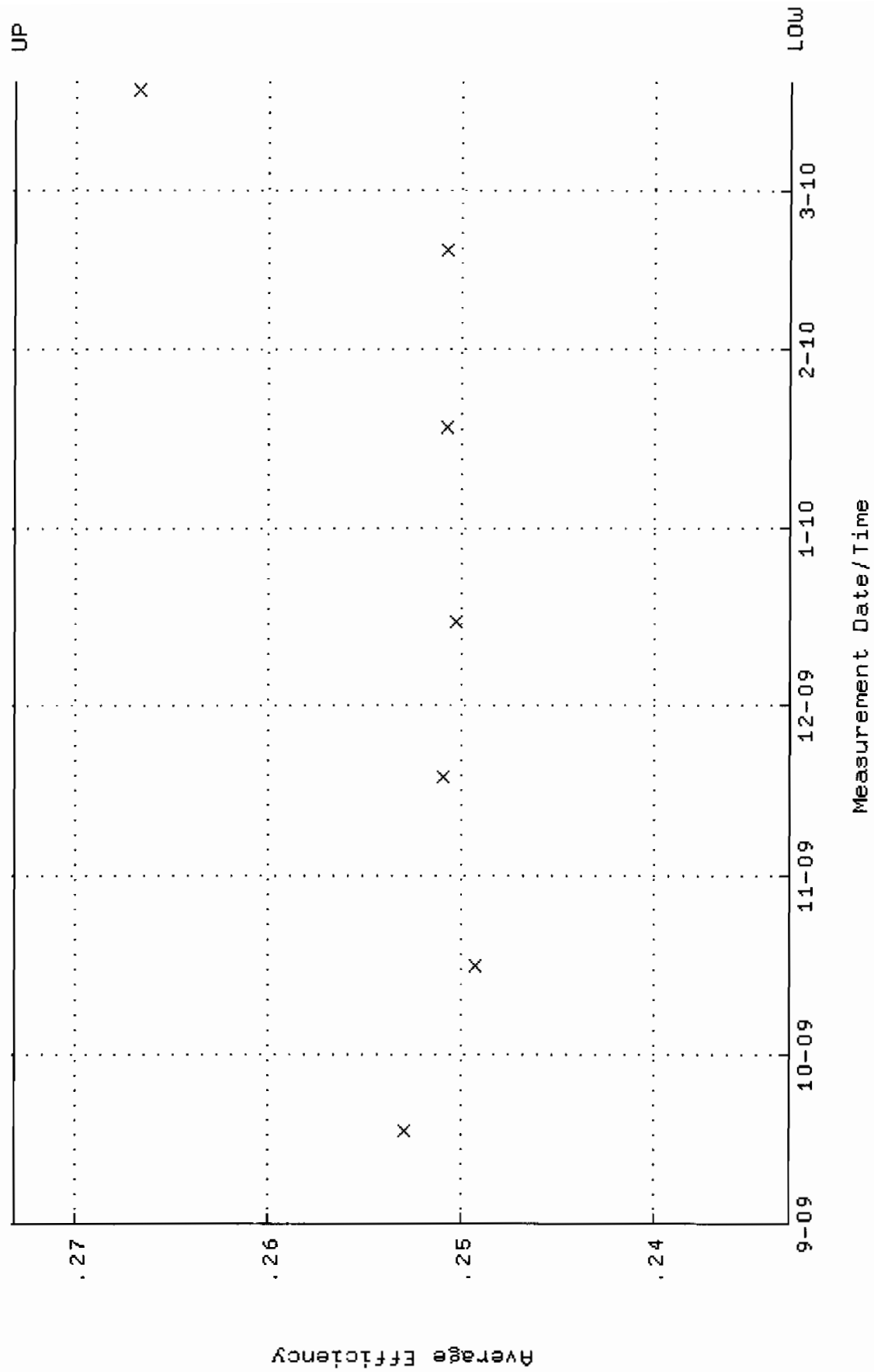
QA filename : DKA100:[ENV-ALPHA.QA.W]W125.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5532 through 97.9632



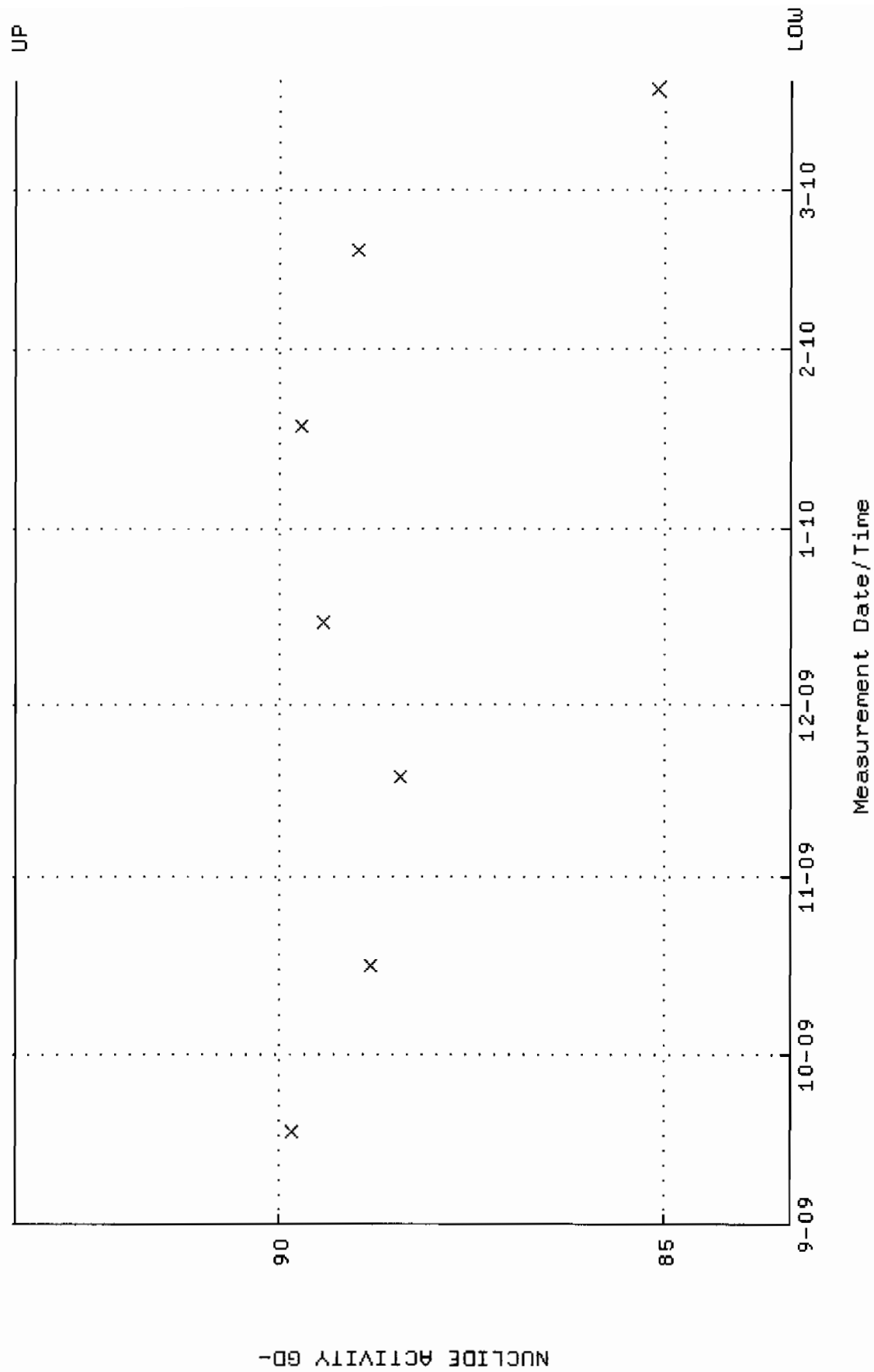
QA filename : DKA100:[ENV_ALPHA.QA.B]B125.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:01 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



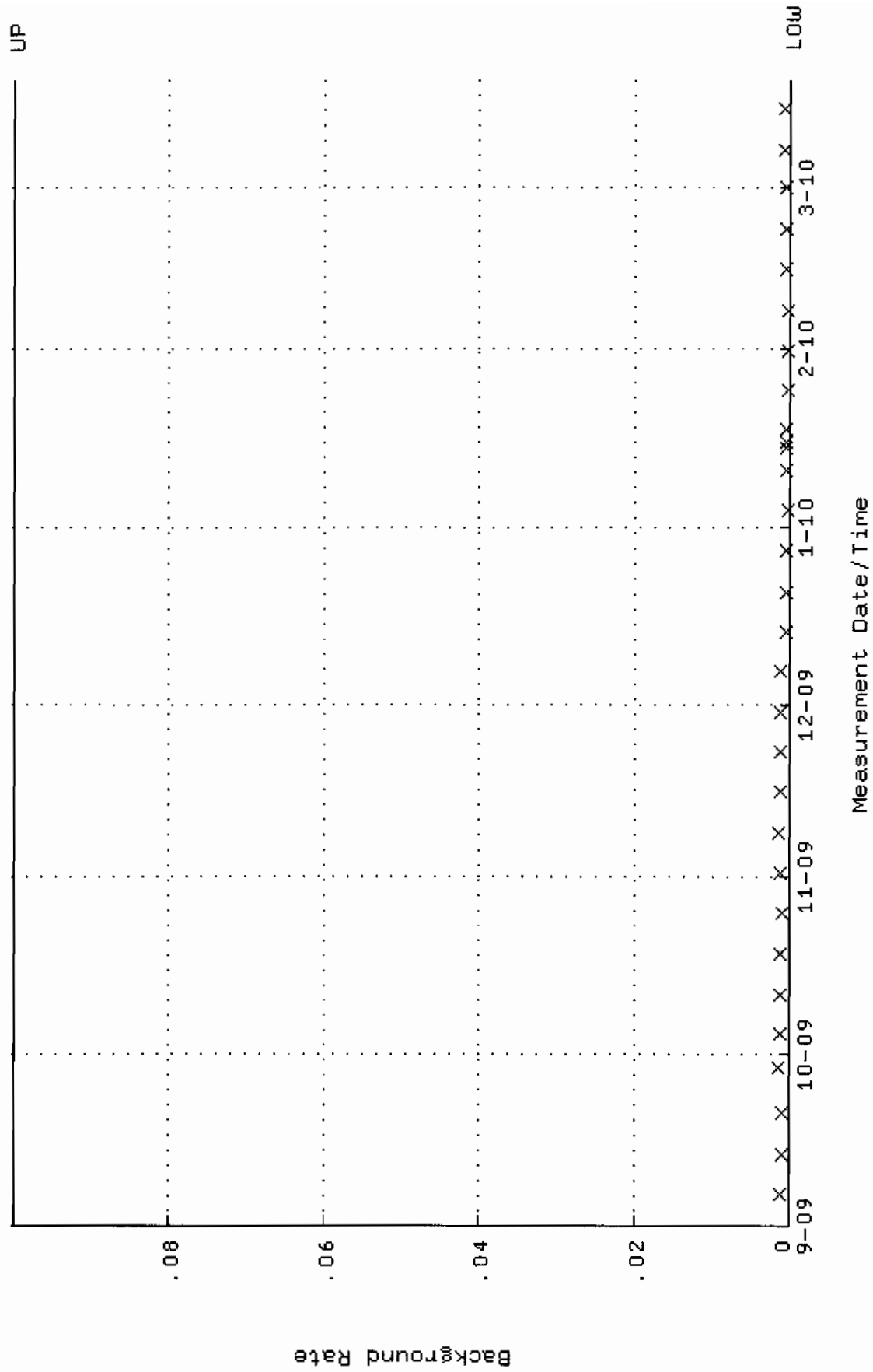
QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.233045 through 0.273065



QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
 Parameter Name : NLAIVITY-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

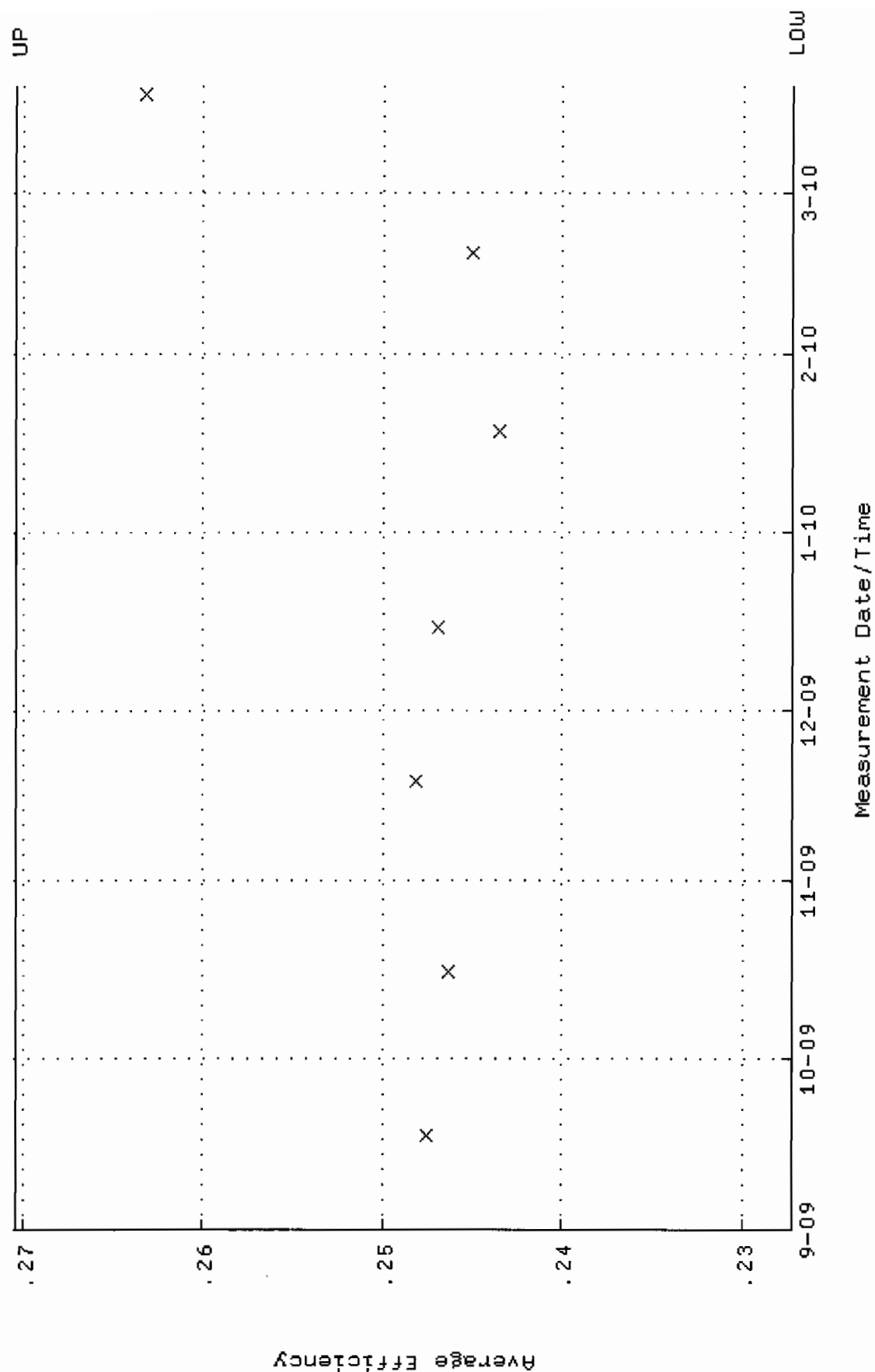


QA filename : DKA100:[ENV_ALPHA,QA.W]w127.QAF;1

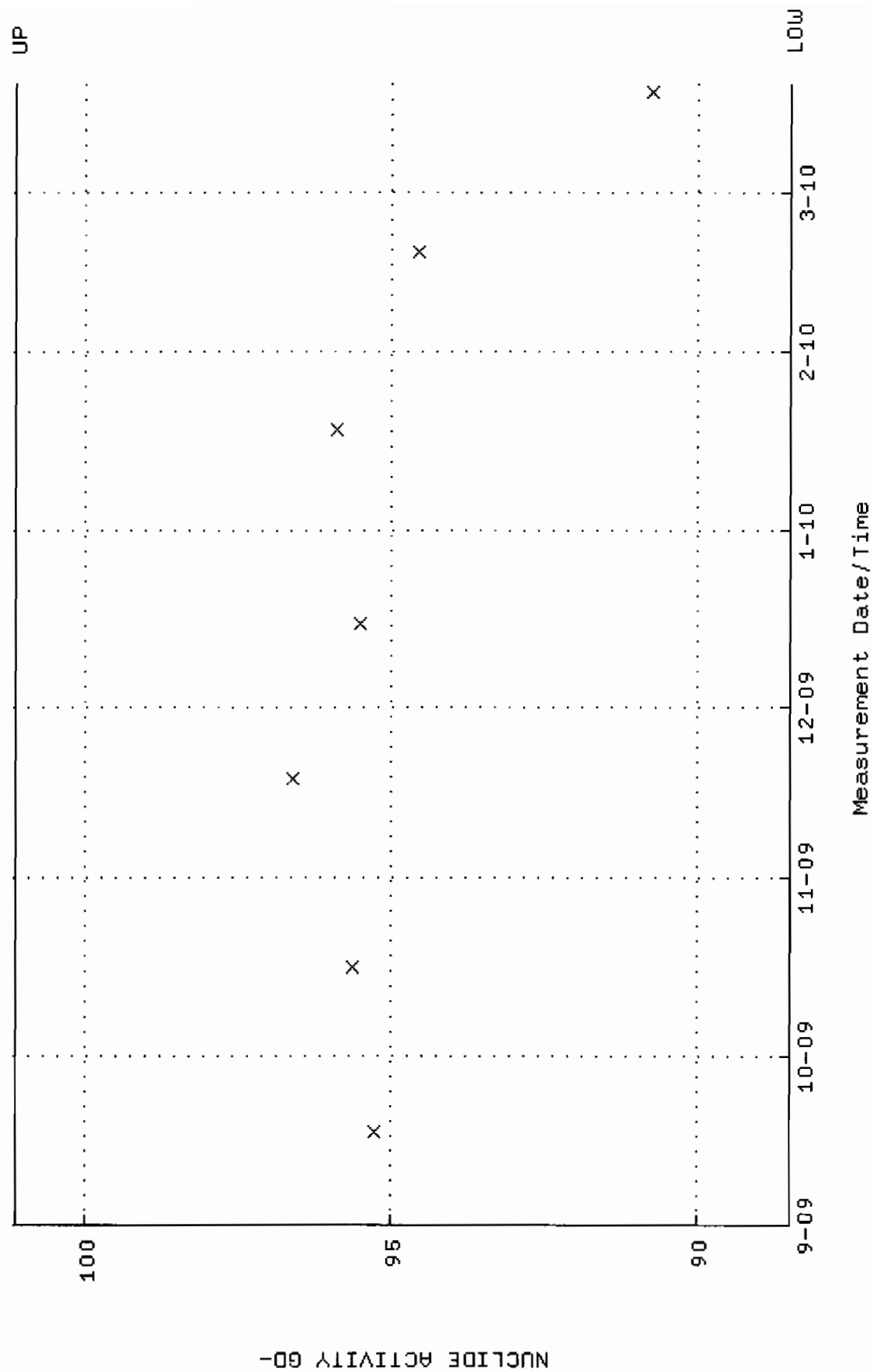
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00

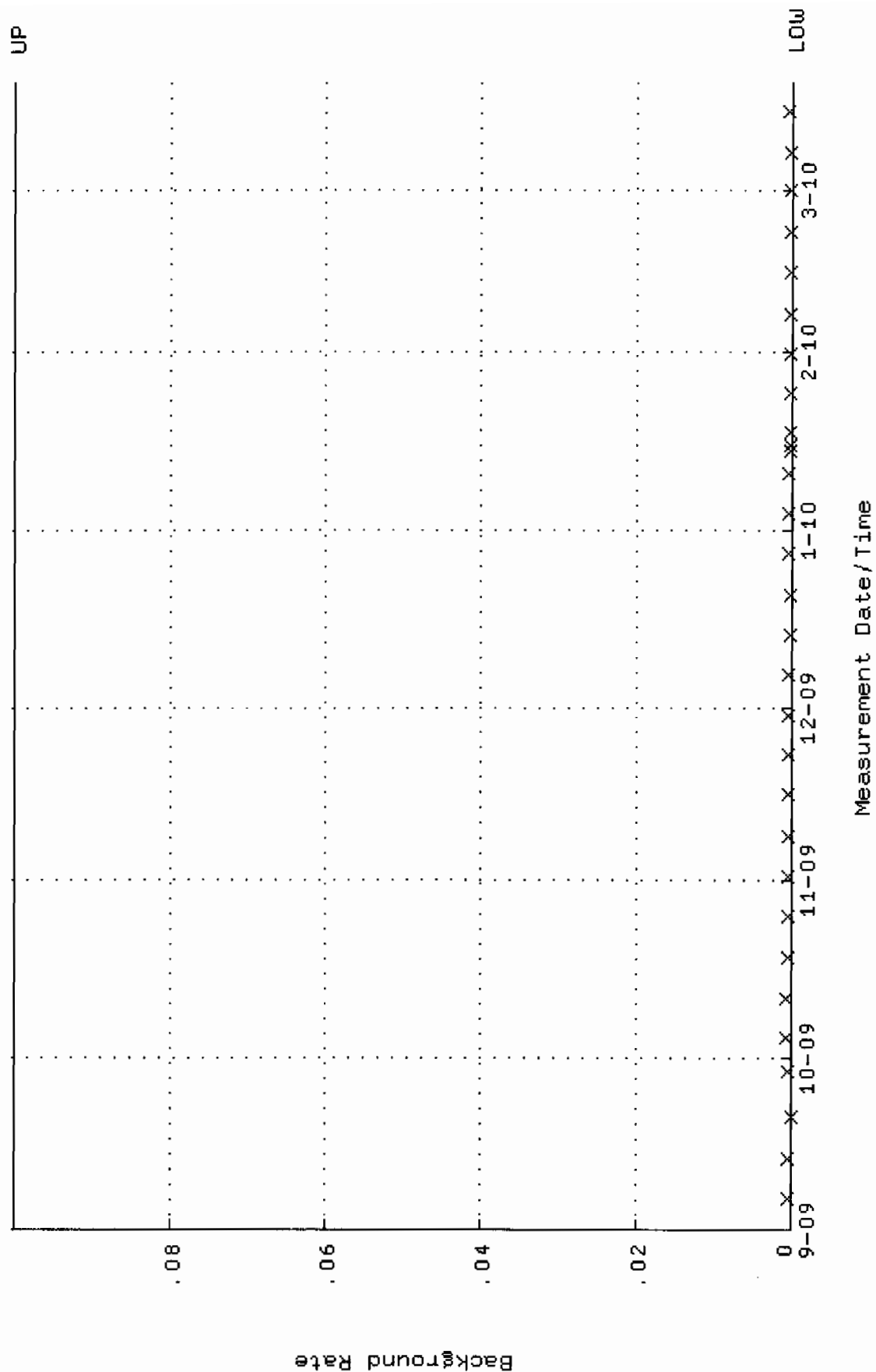
Lower/Upper Lmts: 0.227212 through 0.270396



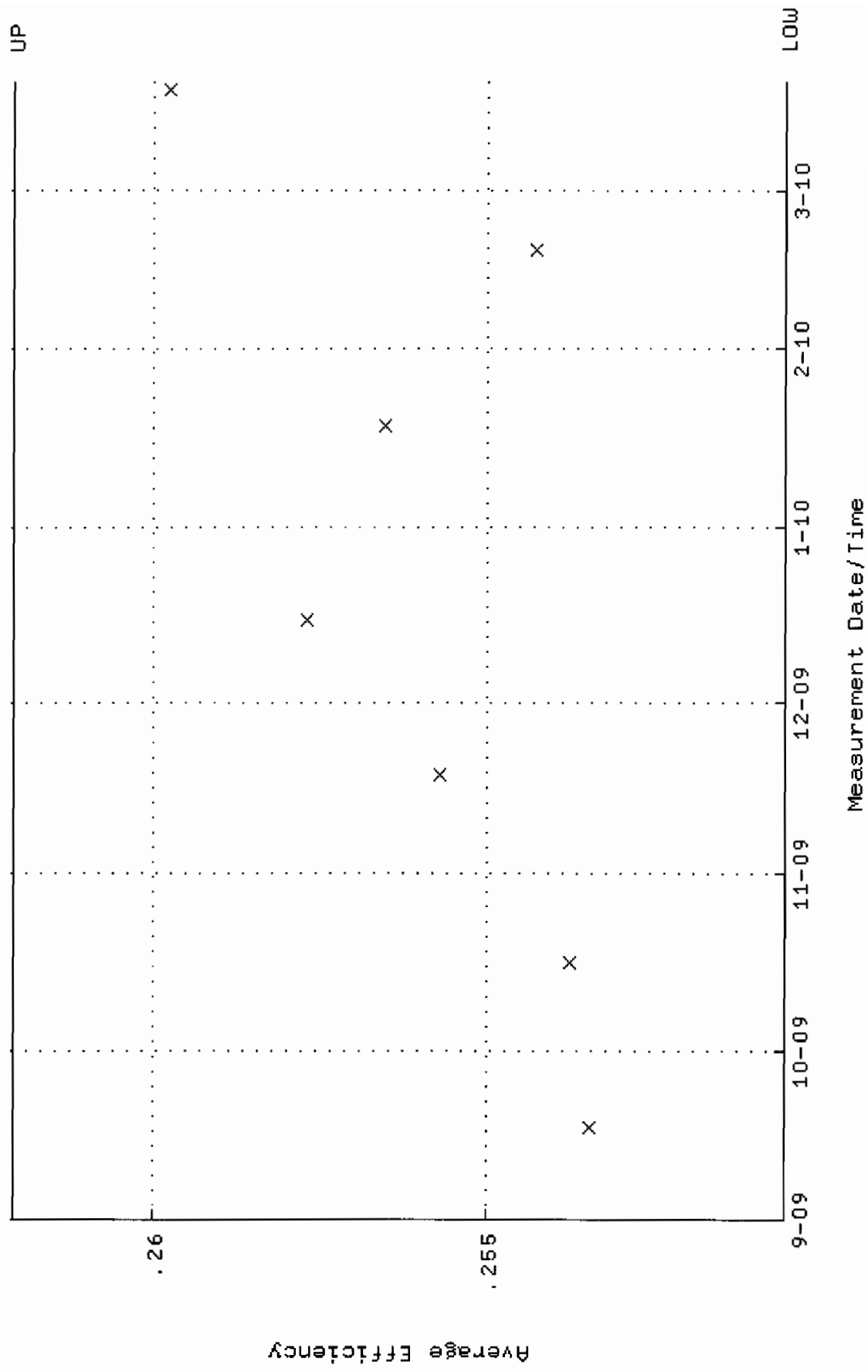
QA filename : DKA100:[ENV_ALPHA.QA.W]w127.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4641 through 101.145



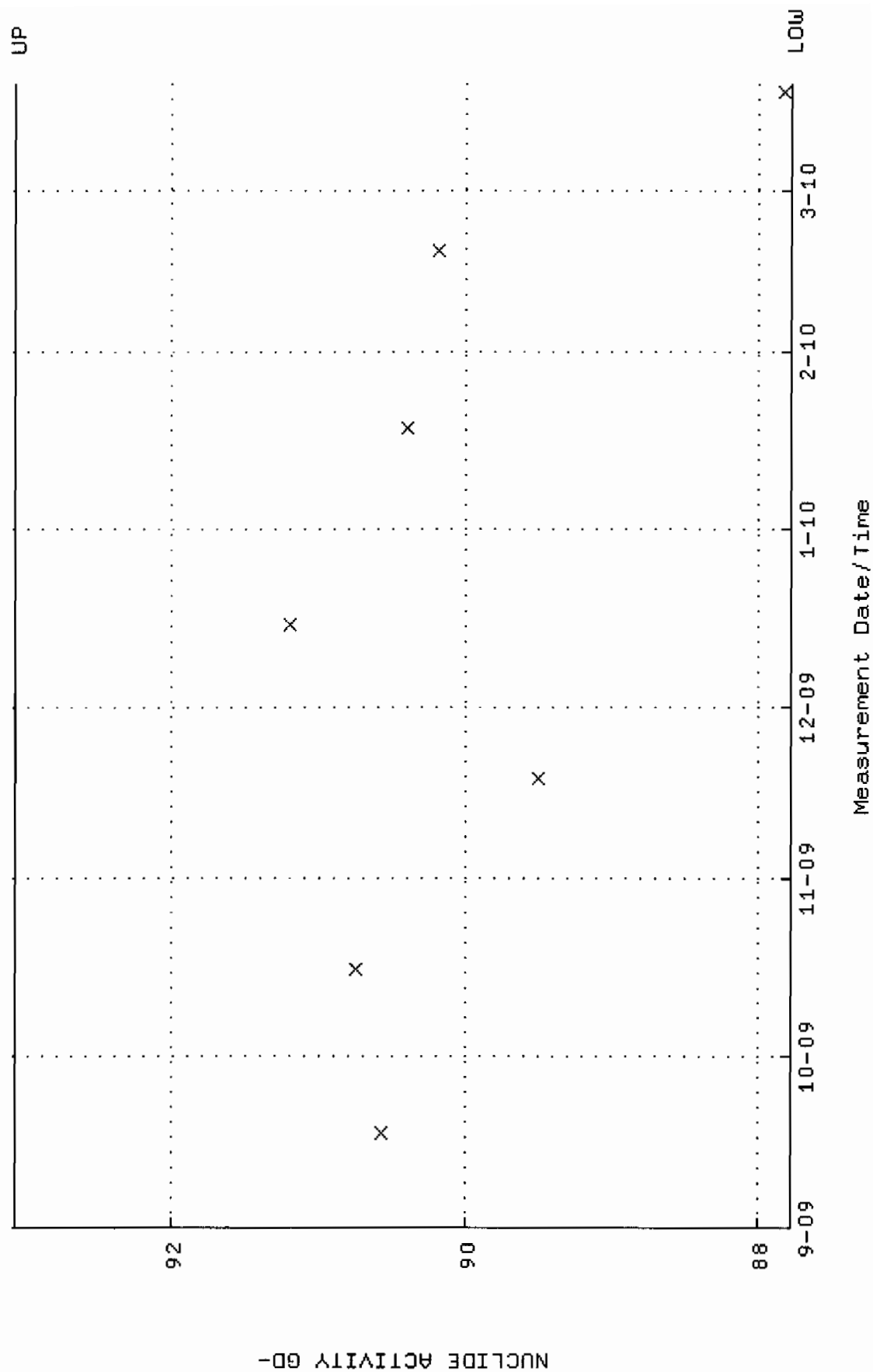
QA filename : DKA100:[ENV_ALPHA.QA.B]B127.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



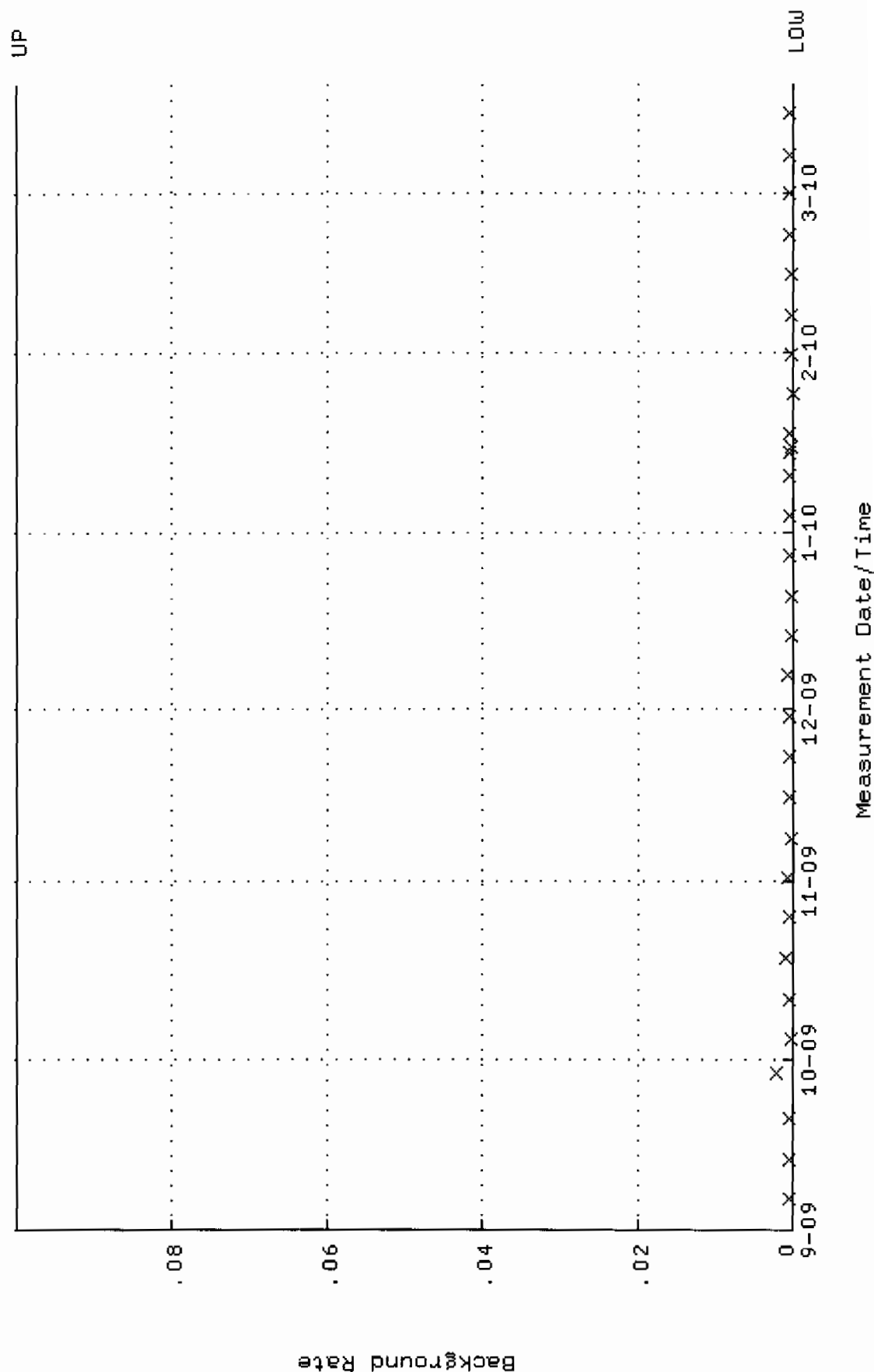
QA filename : DKA100:[ENV_ALPHA.QA.W]W128.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:16 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250562 through 0.262084



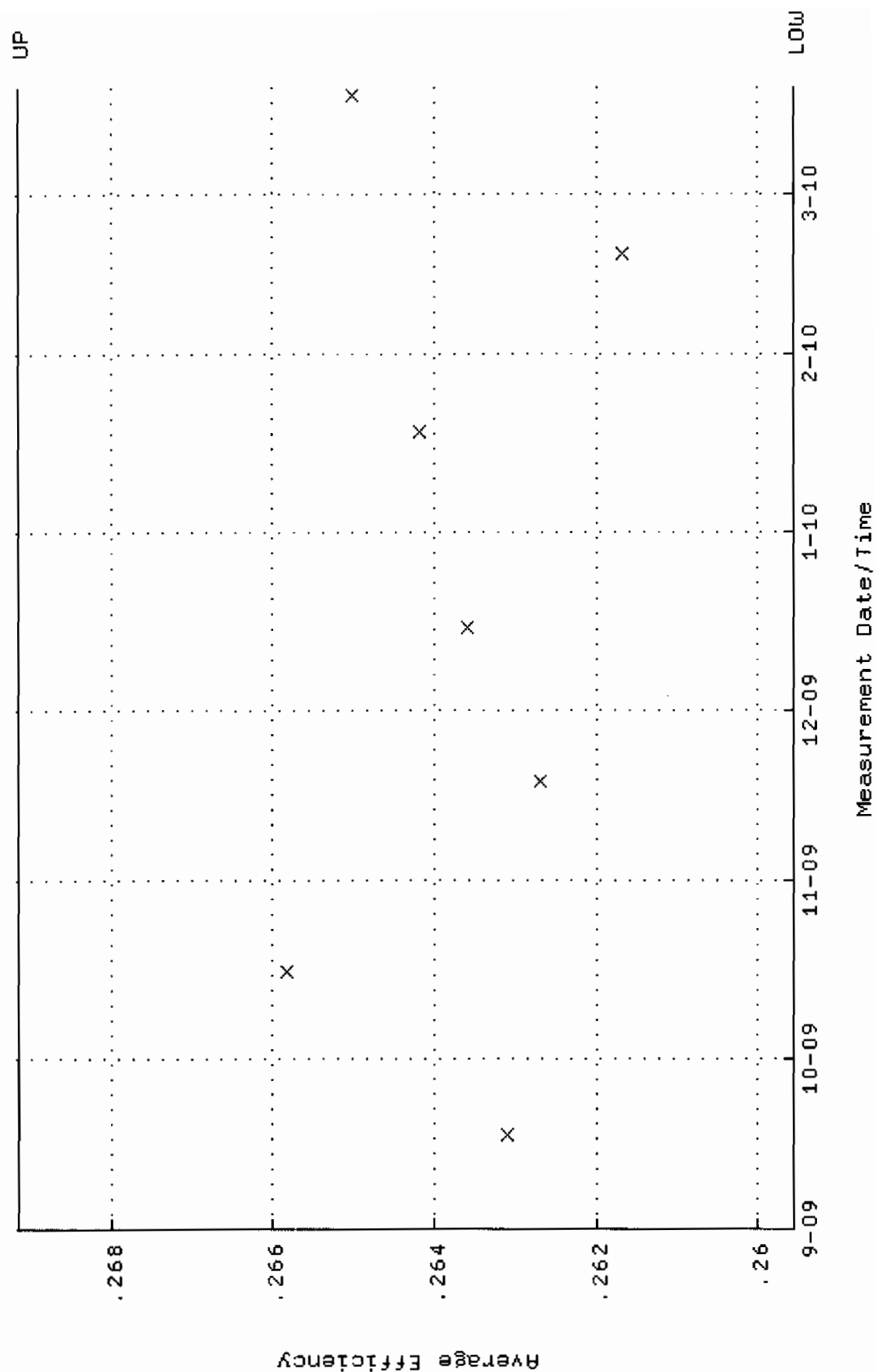
QA filename : DKA100:[ENV_ALPHA.QA.W]w128.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:16 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7731 through 93.0795



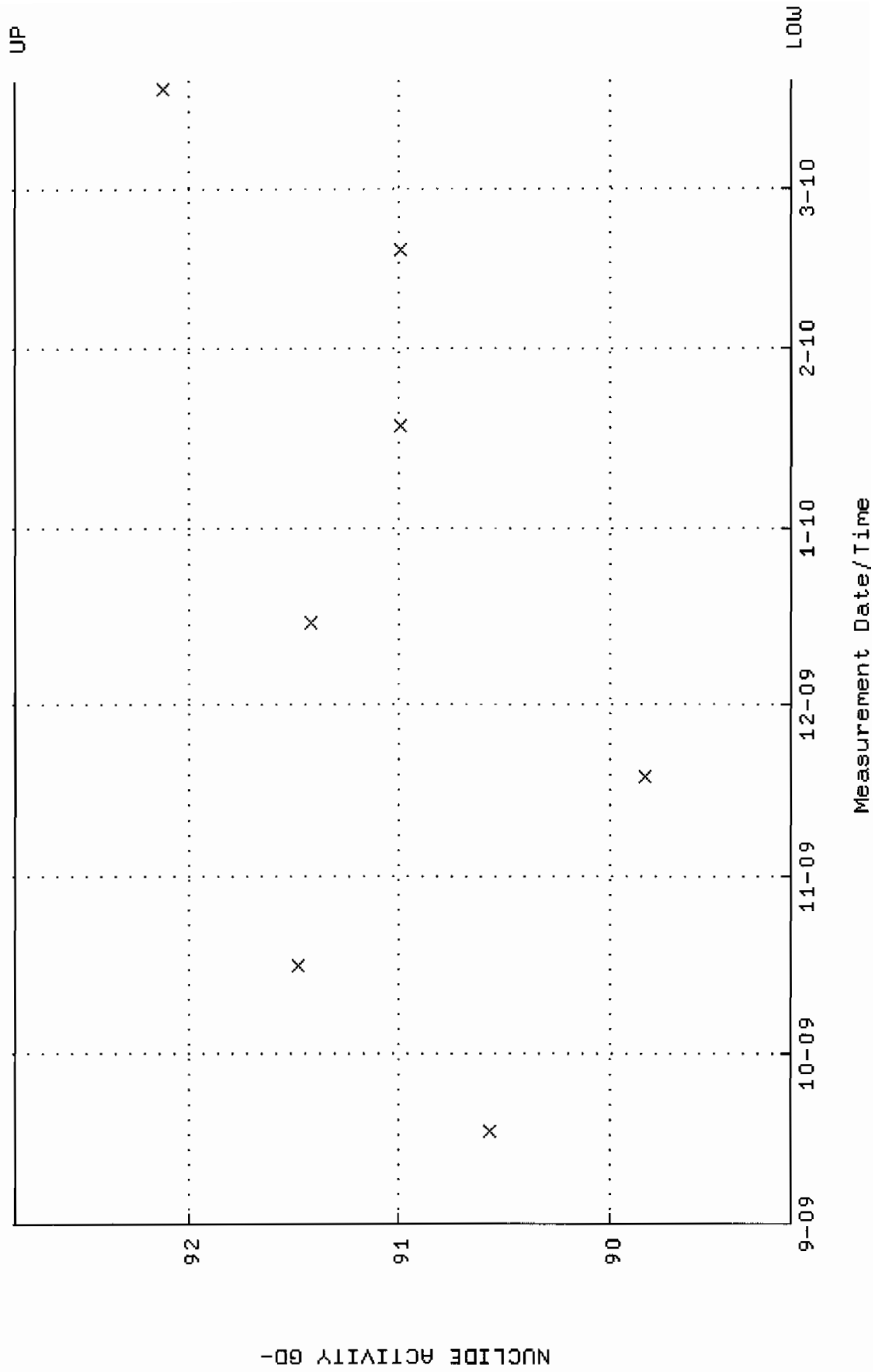
QA filename : DKA100:[ENV_ALPHA.QA.B]B128.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:14 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



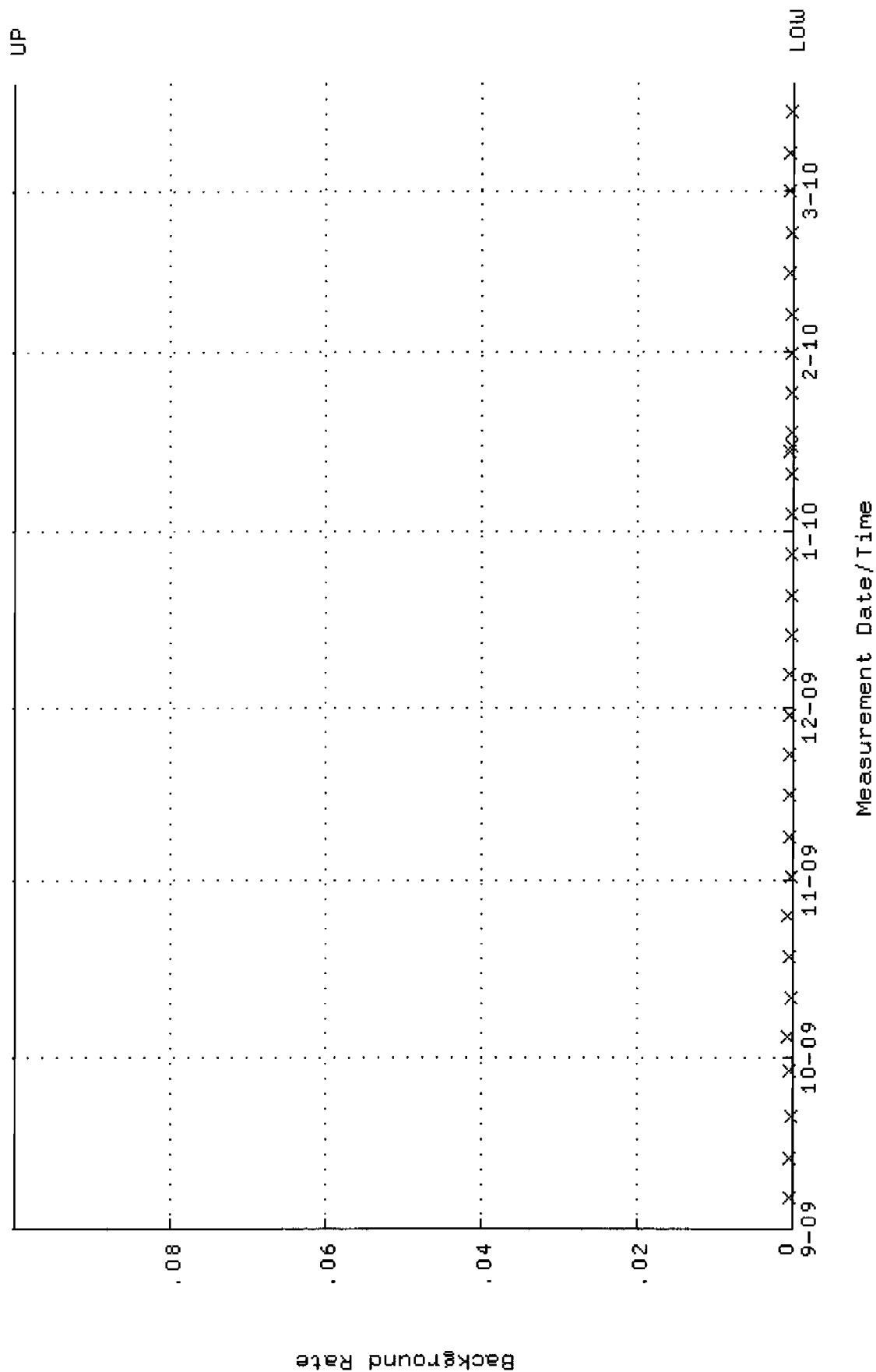
QA filename : DKA100:[ENV_ALPHA.QA.W]W129.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:21 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.259560 through 0.269146



QA filename : DKA100:[ENV_ALPHA.QA.W]W129.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:21 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1401 through 92.8201



QA filename : DKA100:[ENV_ALPHA.QA.B]B129.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:19 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

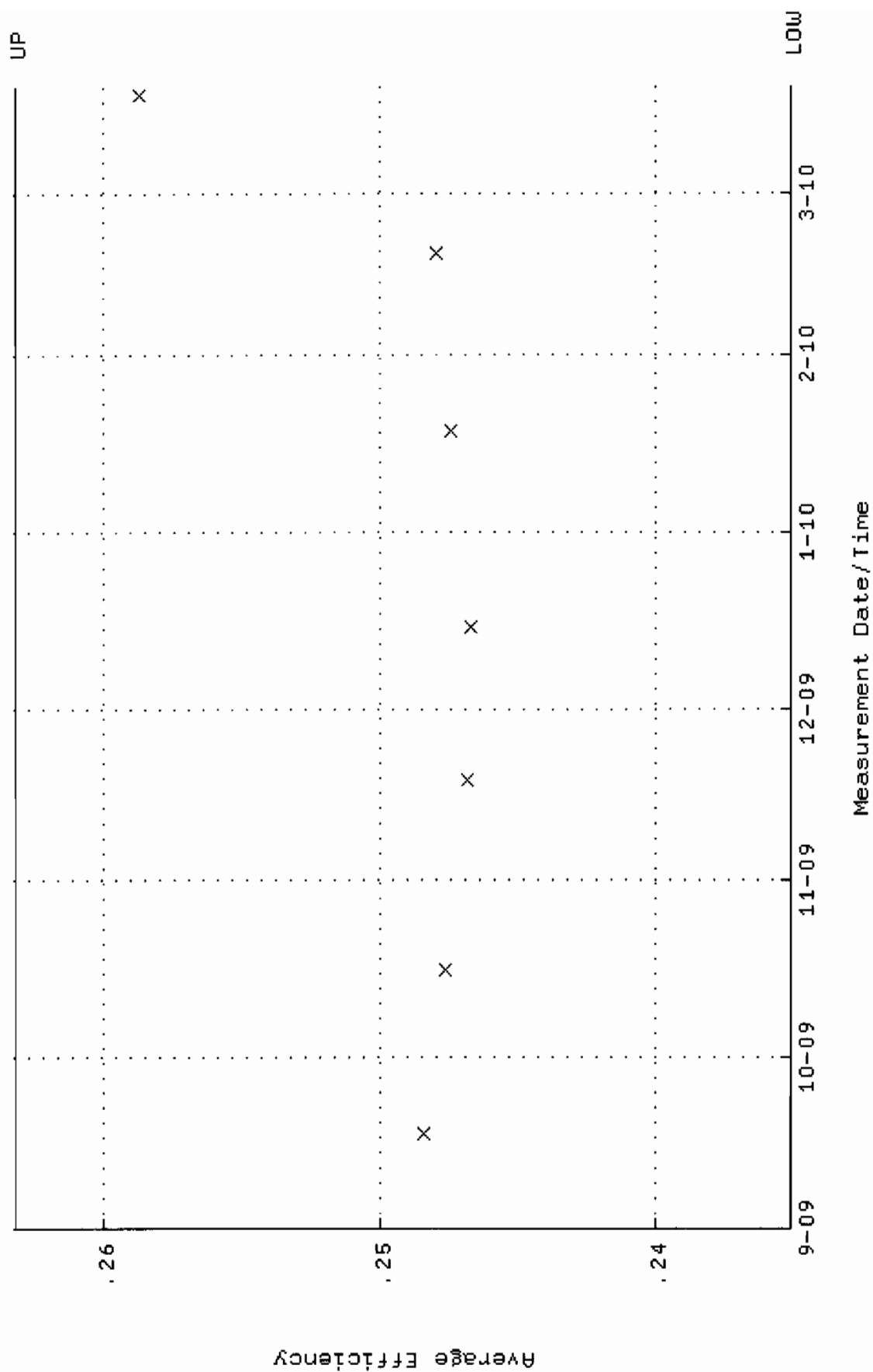


QA filename : DKA100:[ENV_ALPHA.QA.W]W130.QAF;1

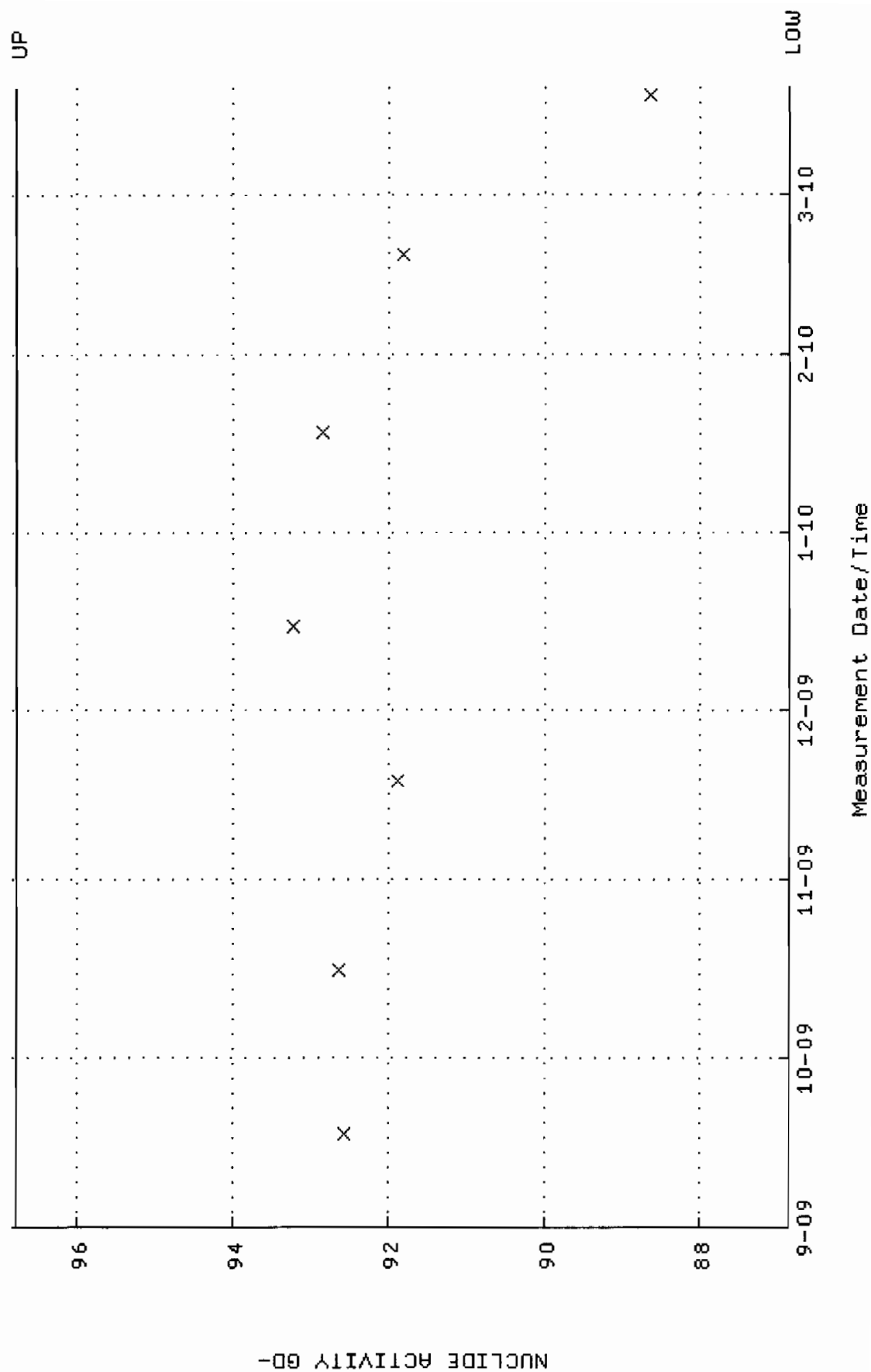
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:24:25 through 19-MAR-2010 12:00:00

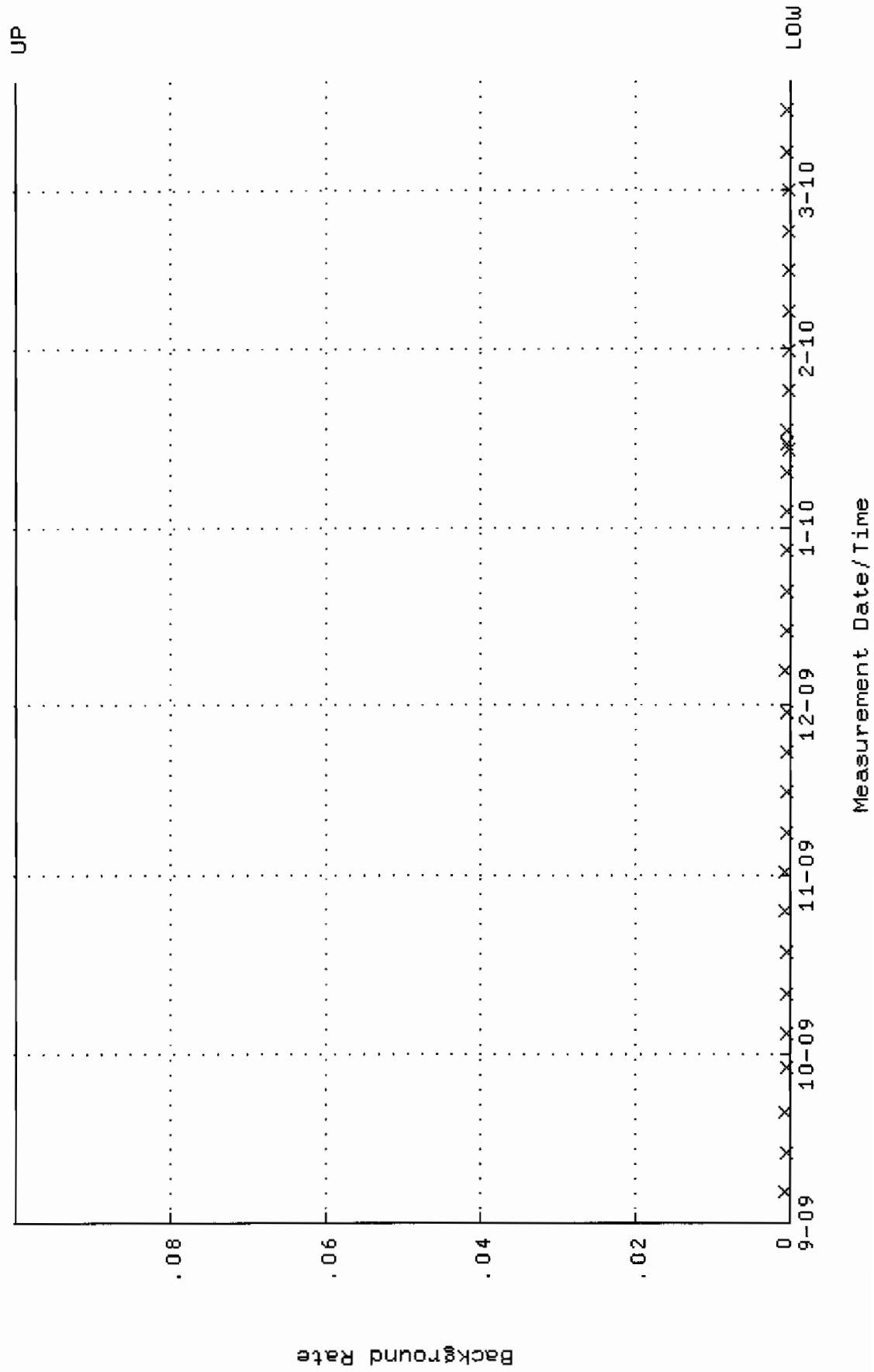
Lower/Upper Lmts: 0.235120 through 0.263192



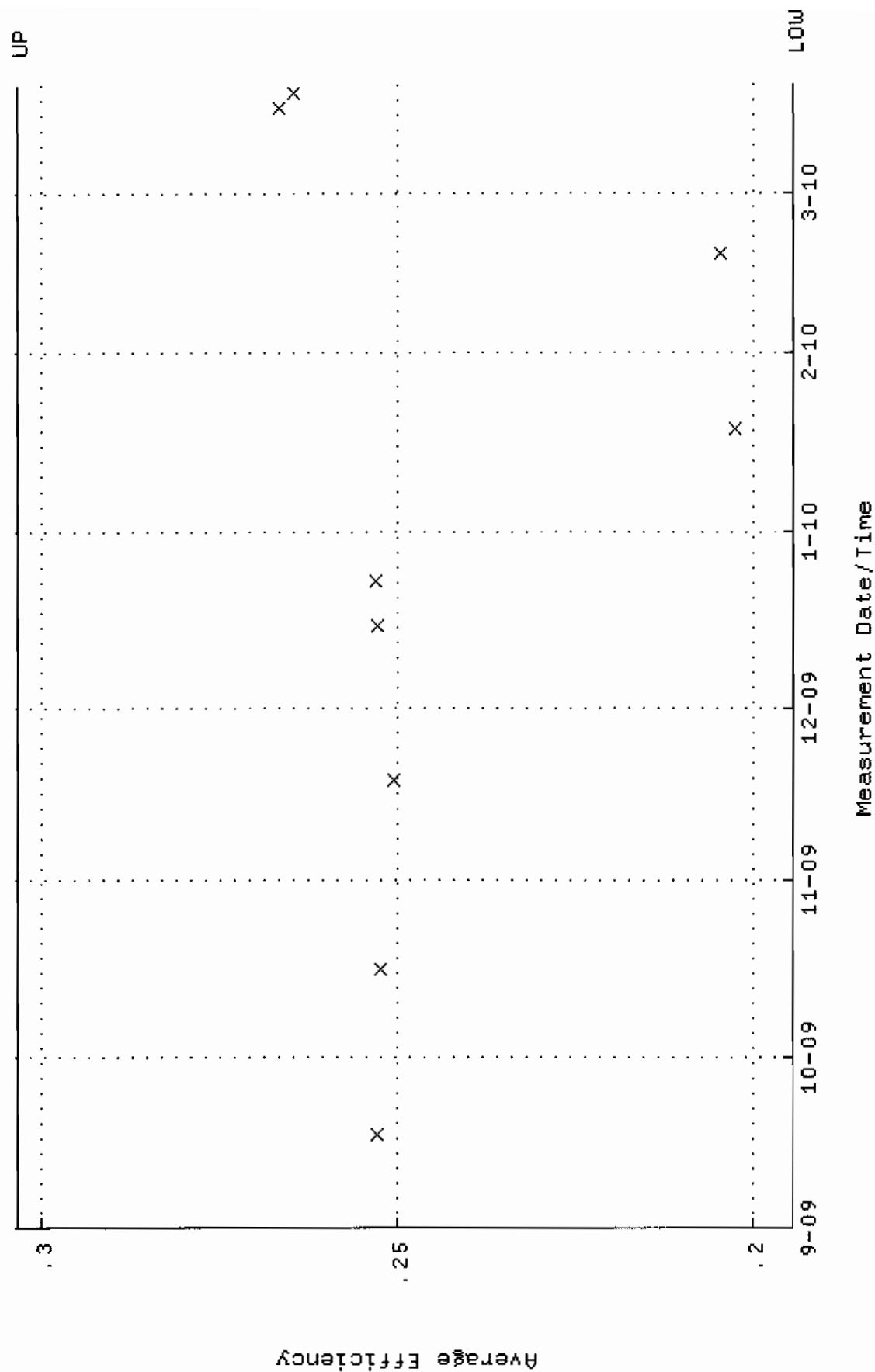
QA filename : DKA100:[ENV_ALPHA.QA.W]W130.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:25 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.8592 through 96.7952



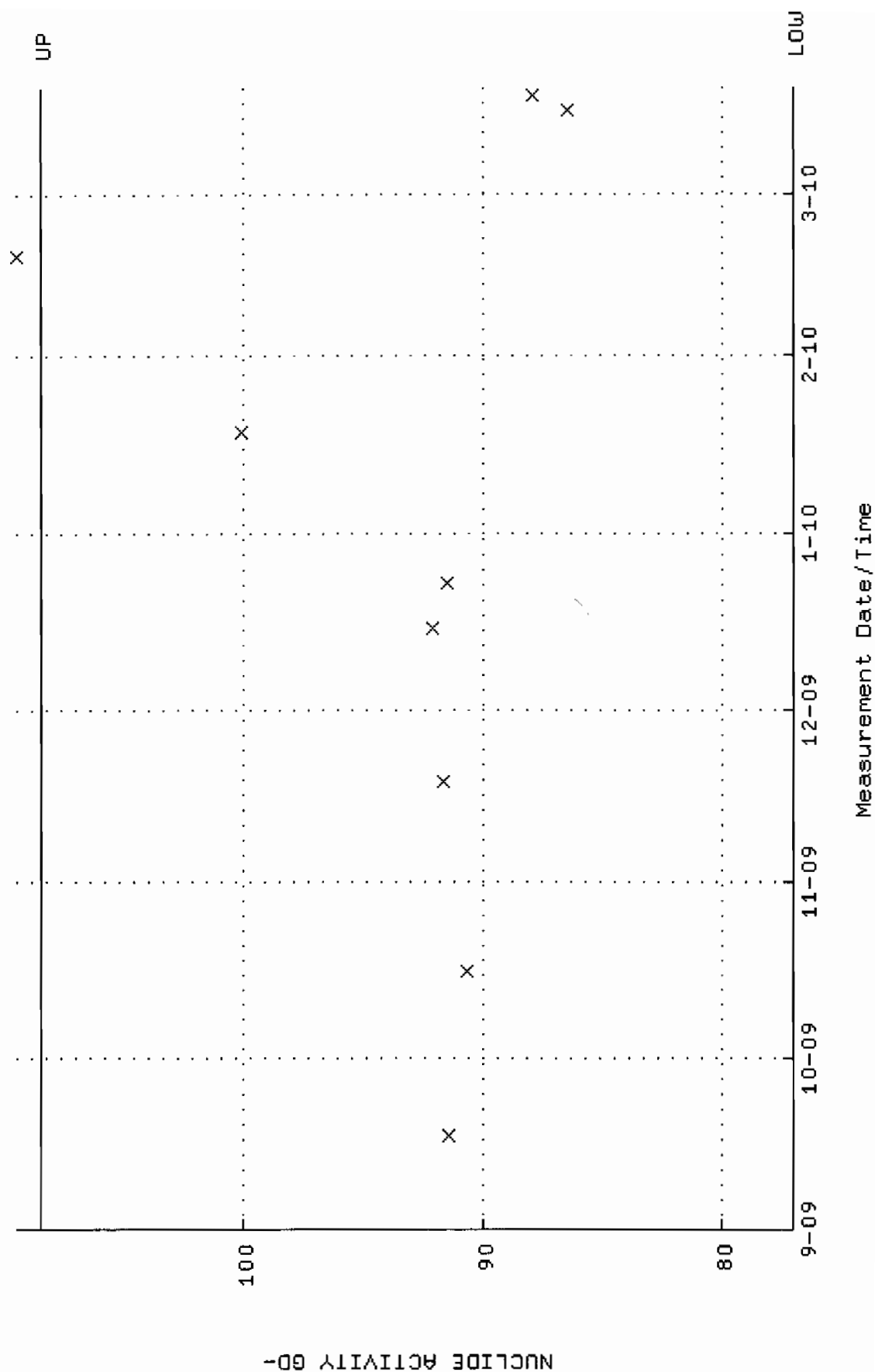
QA filename : DKA100:[ENV_ALPHA.QA.B]B130.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:24 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



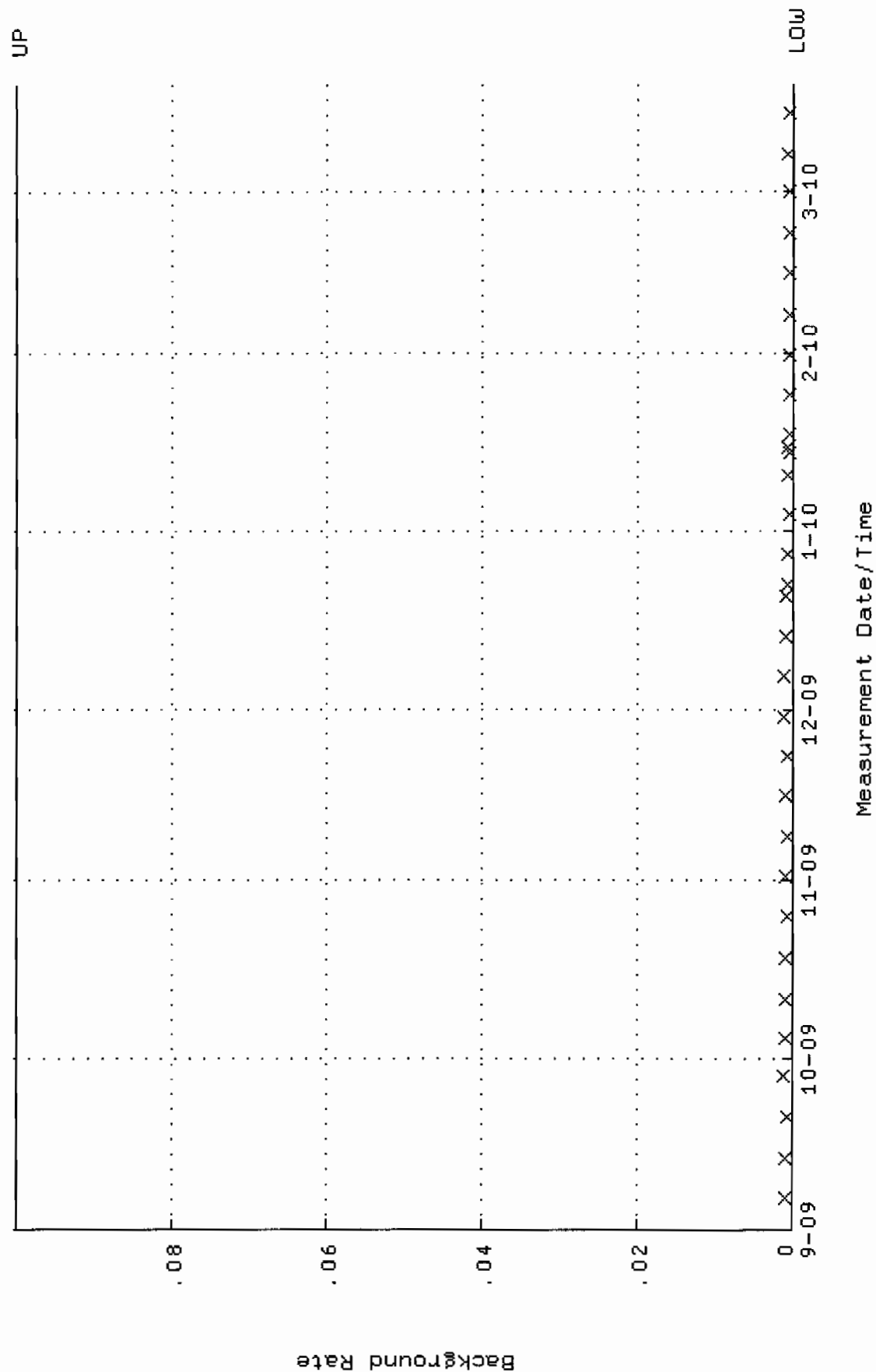
QA filename : DKA100:[ENV_ALPHA.QA.W]W135.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:53 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.194457 through 0.303279



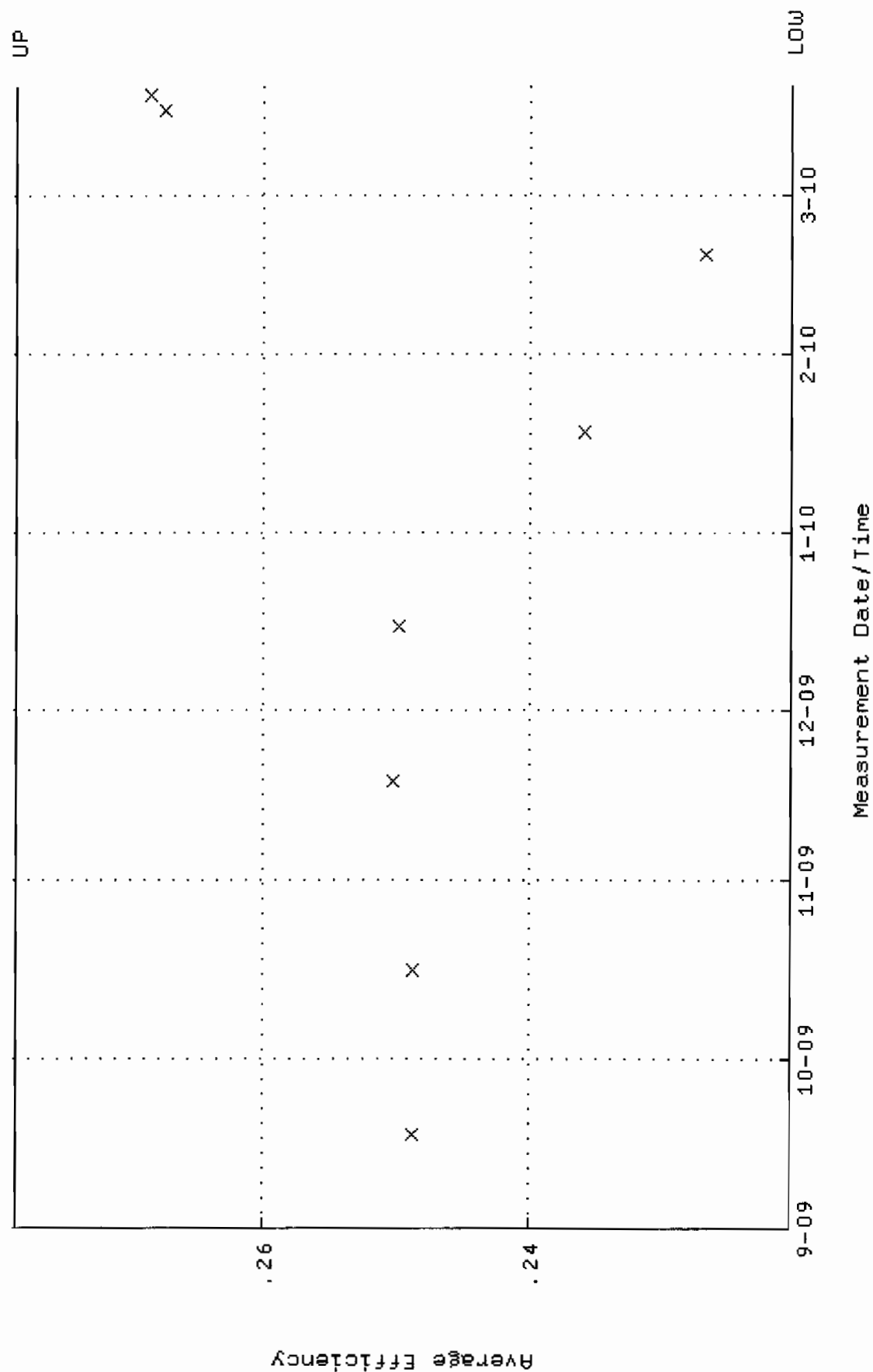
QA filename : DKA100:[ENV_ALPHA.QA.W]w135.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:53 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 77.0697 through 108.428



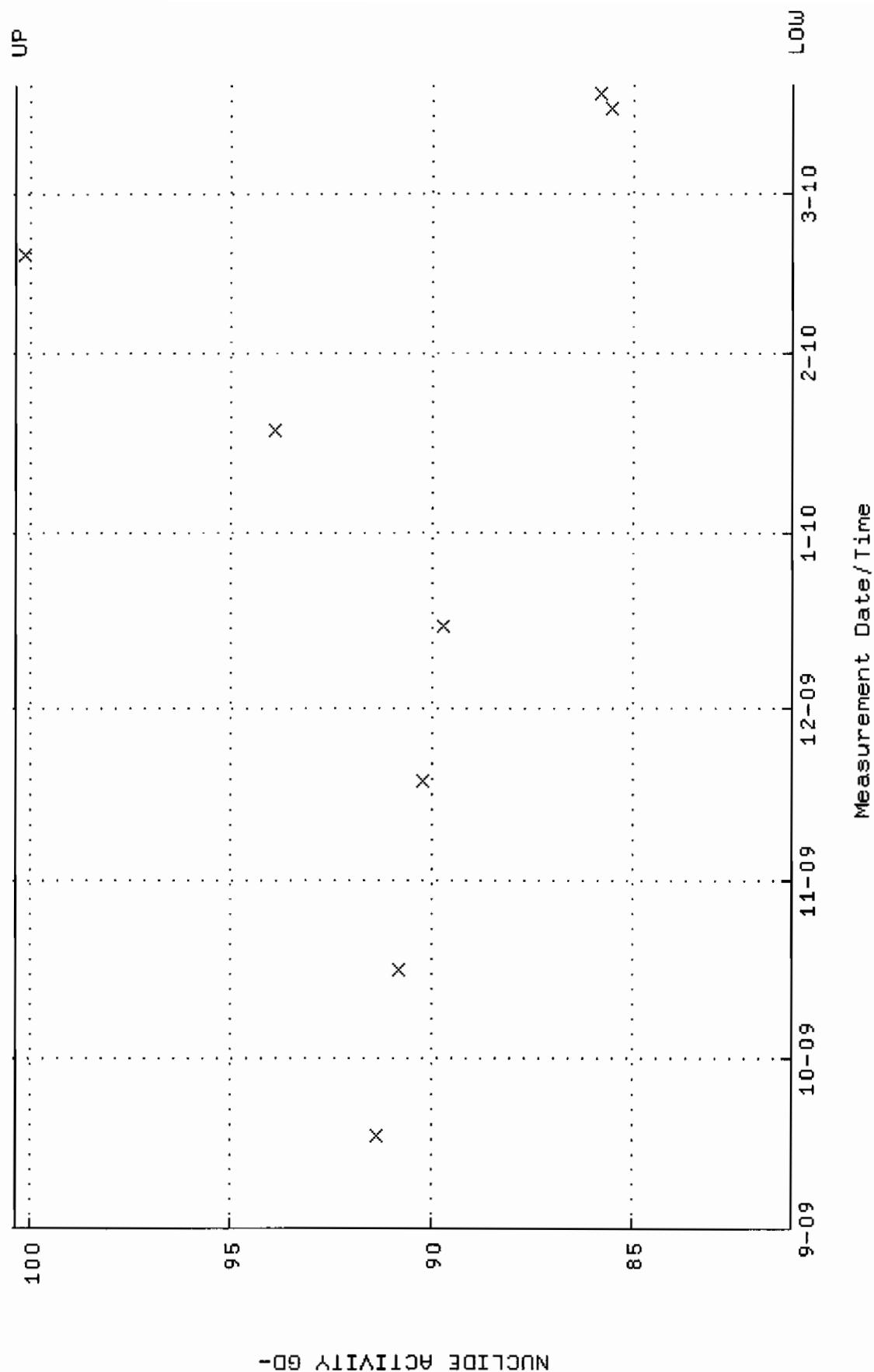
QA filename : DKA100:[ENV_ALPHA.QA.B]B135.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:45 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



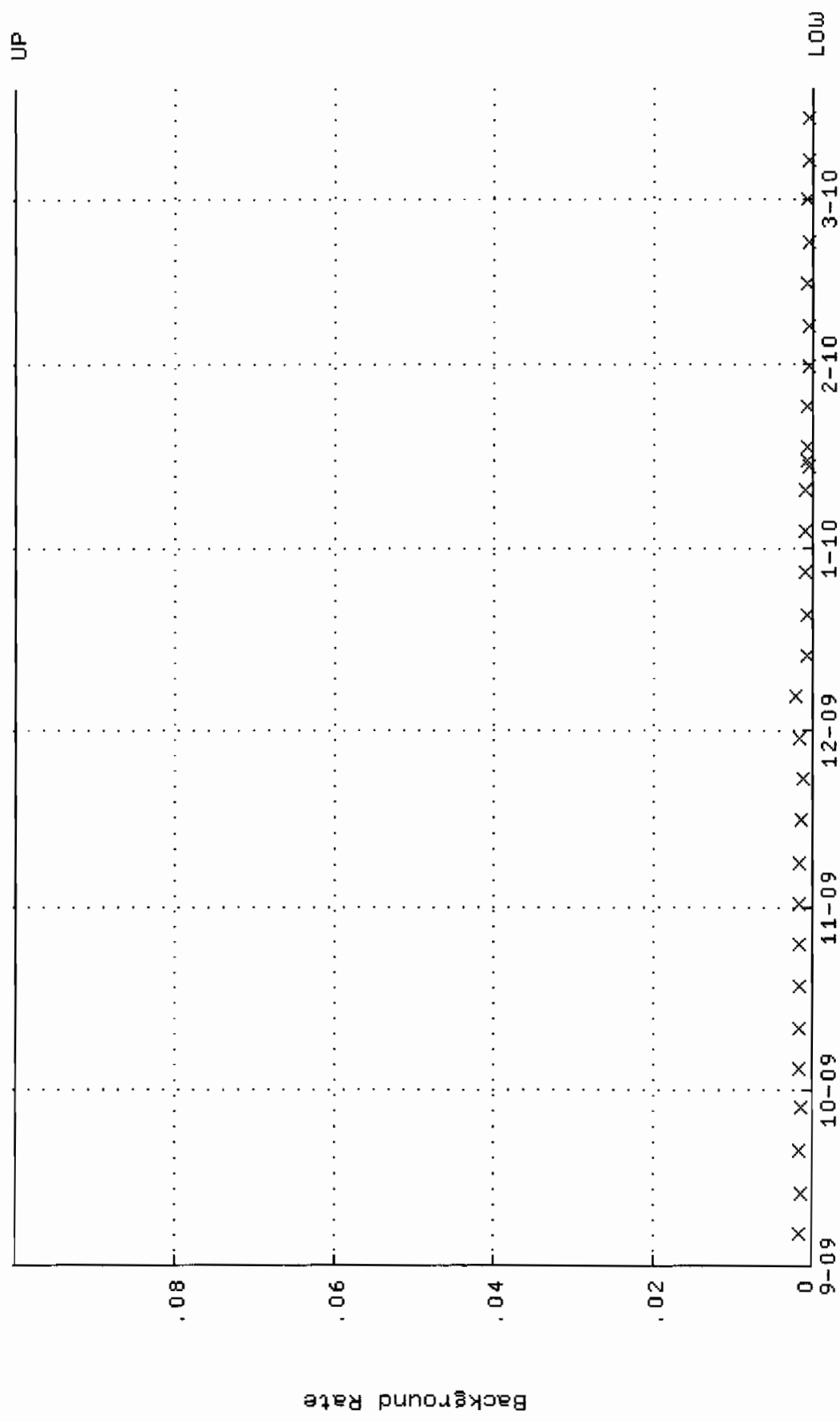
QA filename : DKA100:[ENV_ALPHA.QA.W]w136.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:58 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.220355 through 0.278559



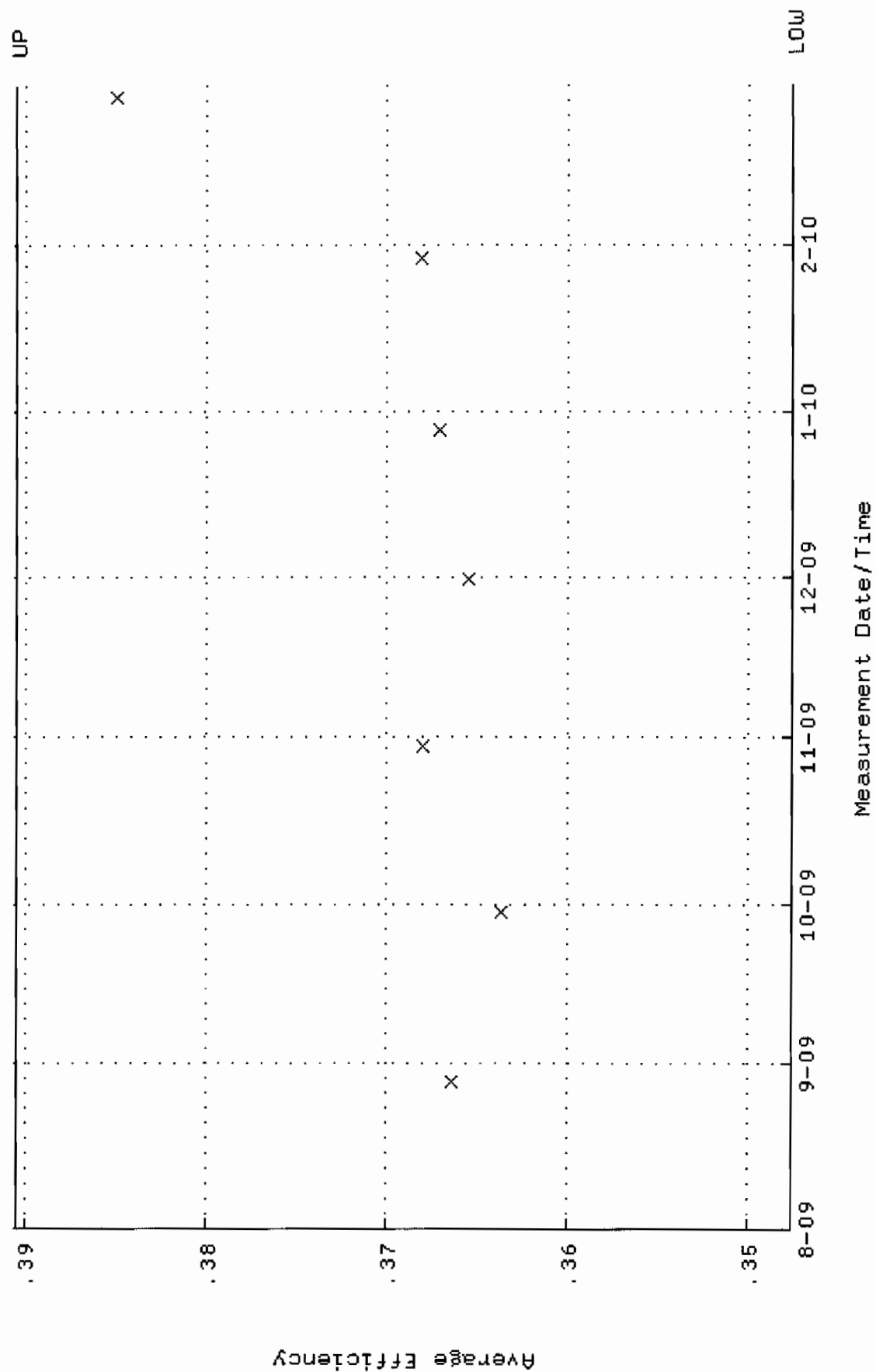
QA filename : DKA100:[ENV_ALPHA.QA.W]W136.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:58 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.0690 through 100.381



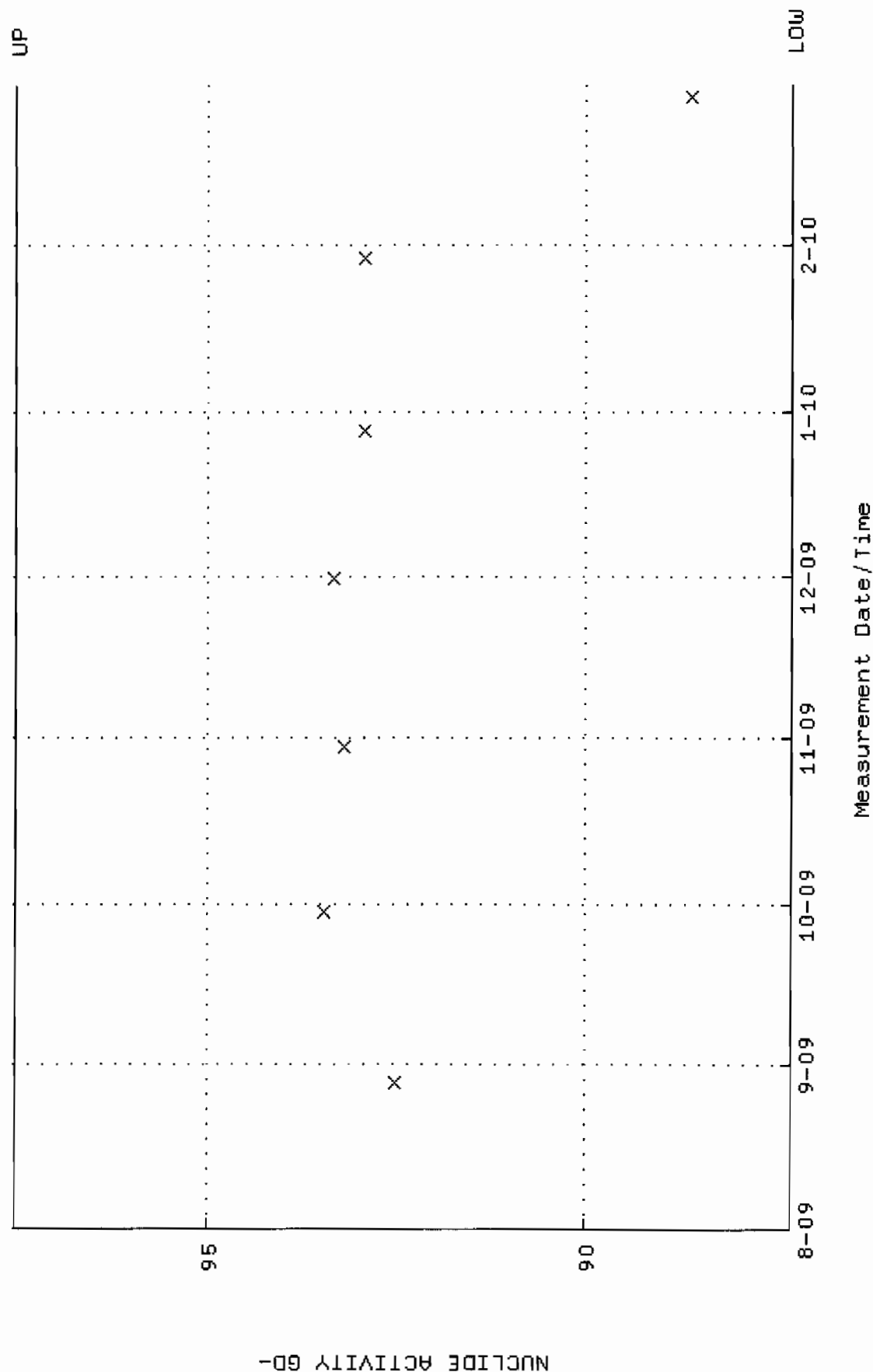
QA filename : DKA100:[ENV_ALPHA.QA.B]B136.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:49 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W217.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.347554 through 0.390494



QA filename : DKA100:[ENV_ALPHA.QA.W]w217.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.2610 through 97.5406

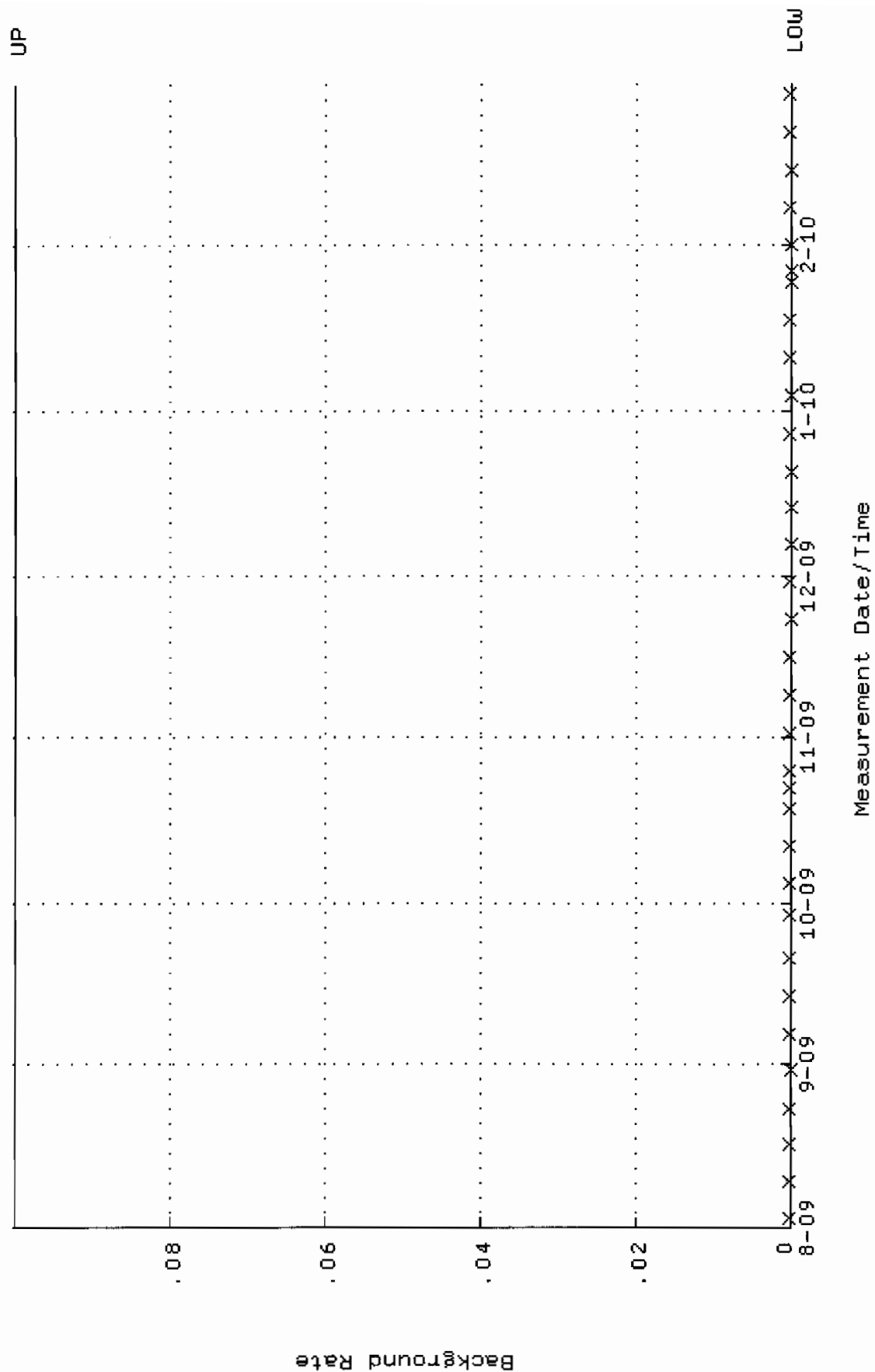


QA filename : DKA100:[ENV_ALPHA.QA.B]B217.QAF;1

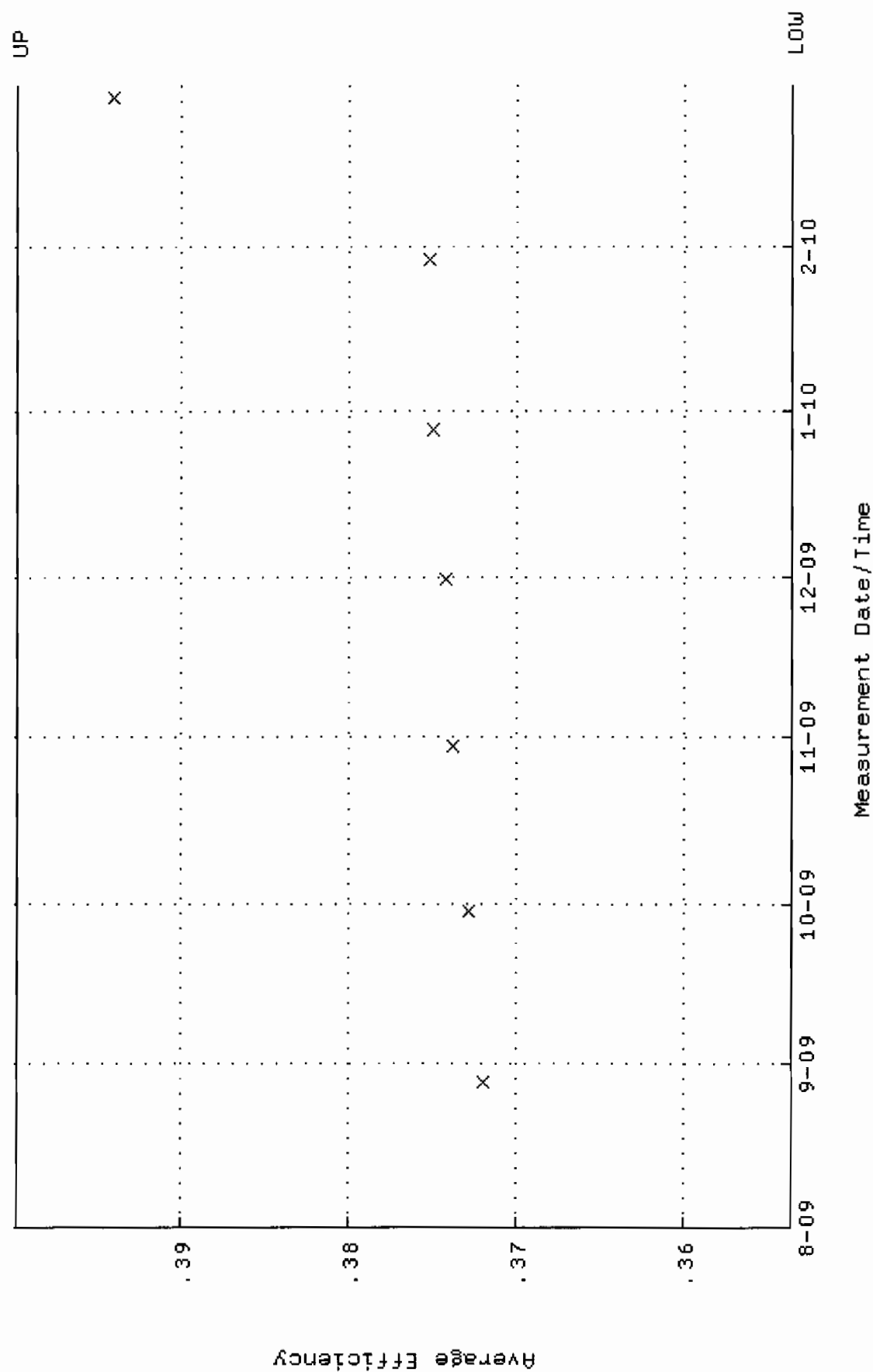
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:44 through 2-MAR-2010 12:00:00

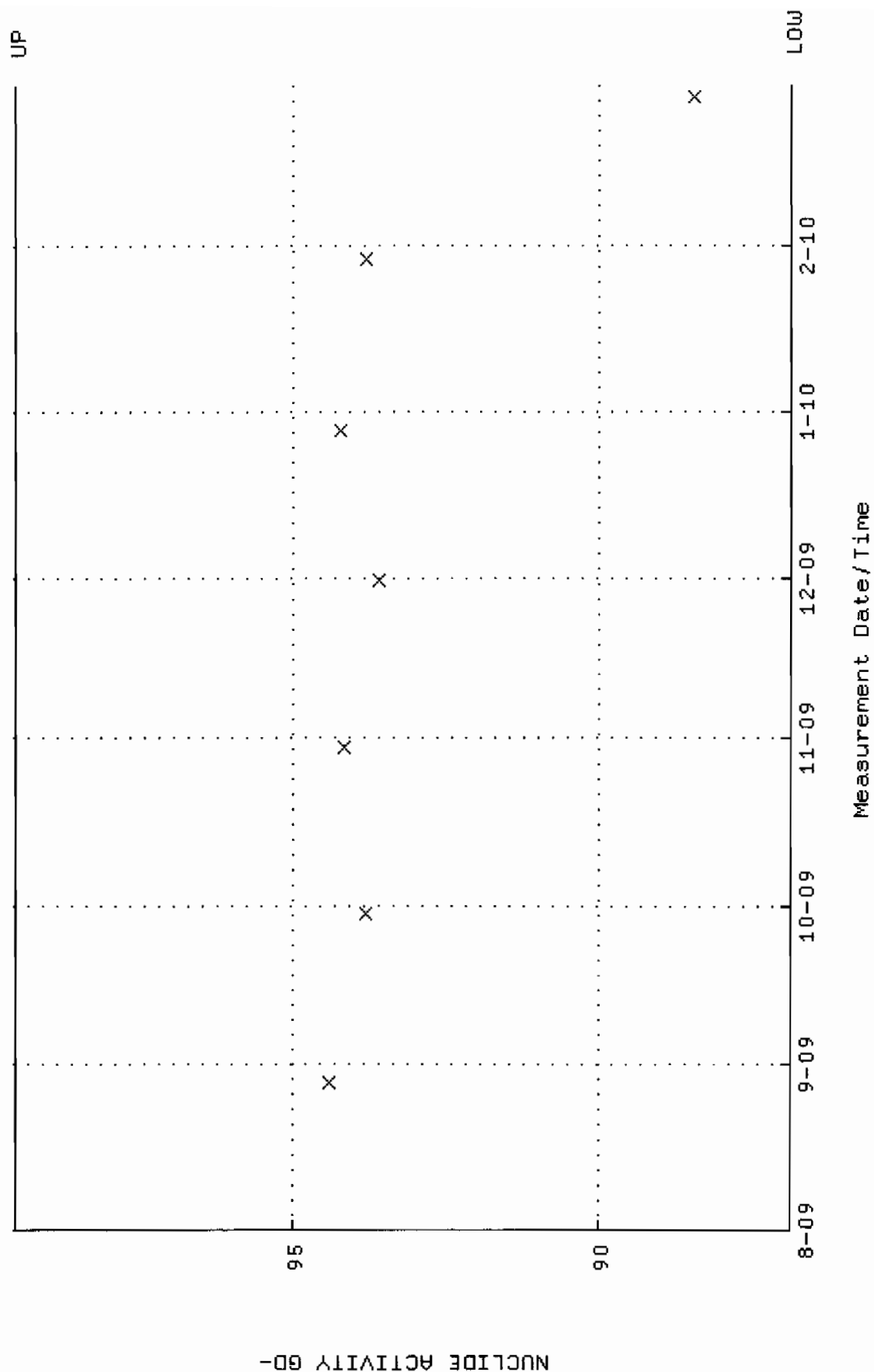
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]w218.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:14 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.353641 through 0.399809



QA filename : DKA100:[ENV-ALPHA.QA.W]W218.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:14 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.8733 through 99.5183

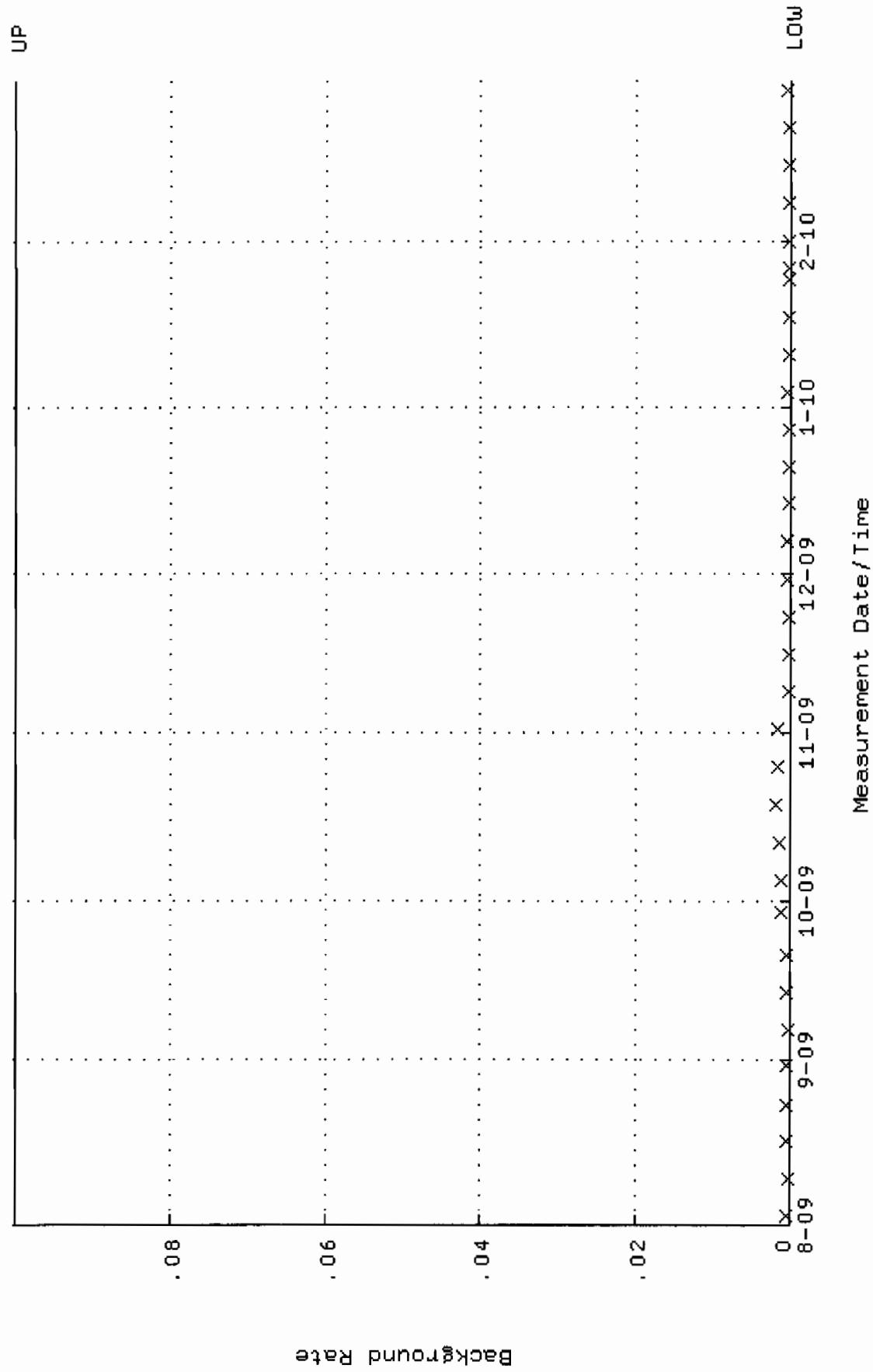


QA filename : DKA100:[ENV_ALPHA.QA.B]B218.QAF;1

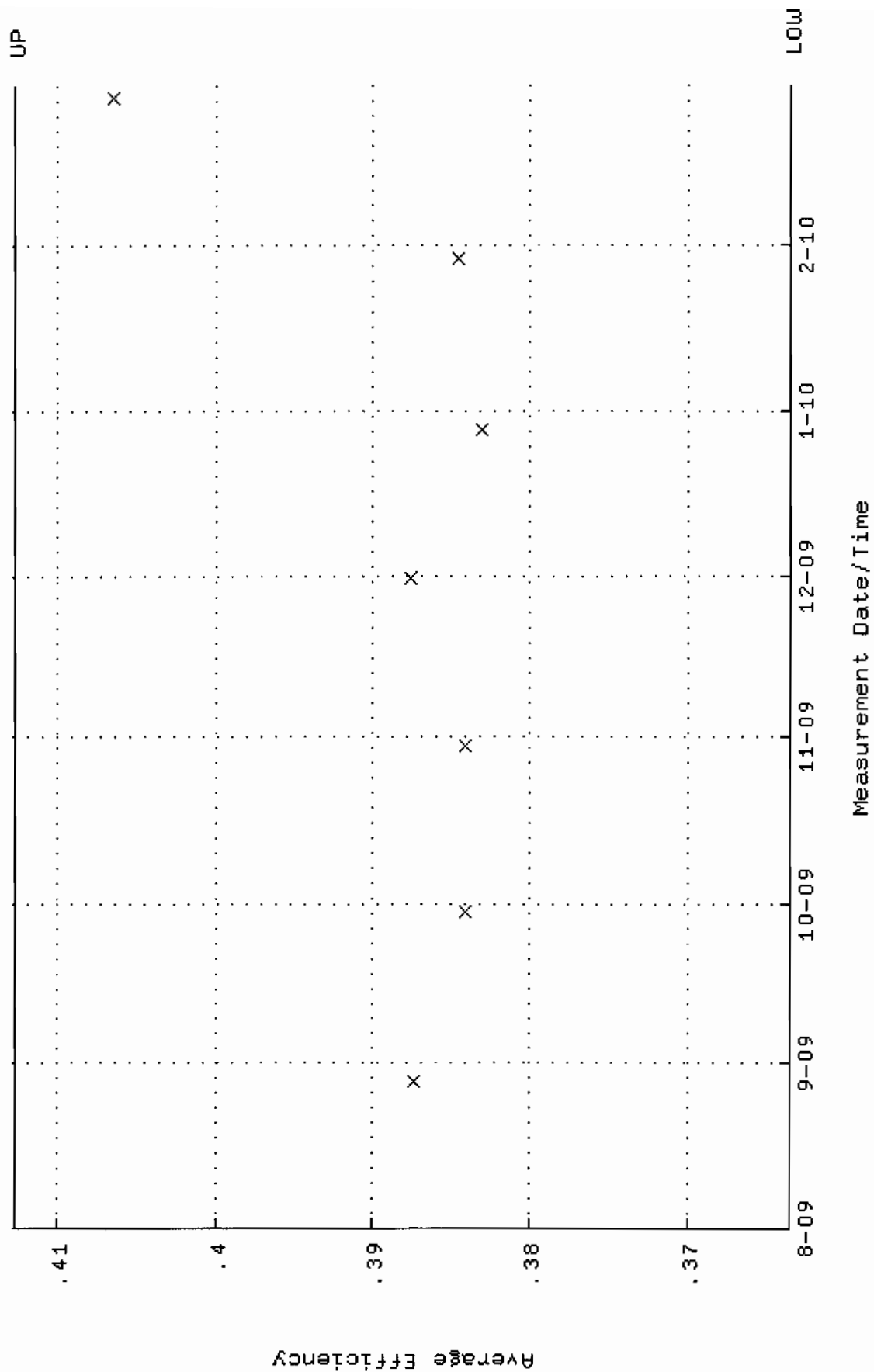
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:48 through 2-MAR-2010 12:00:00

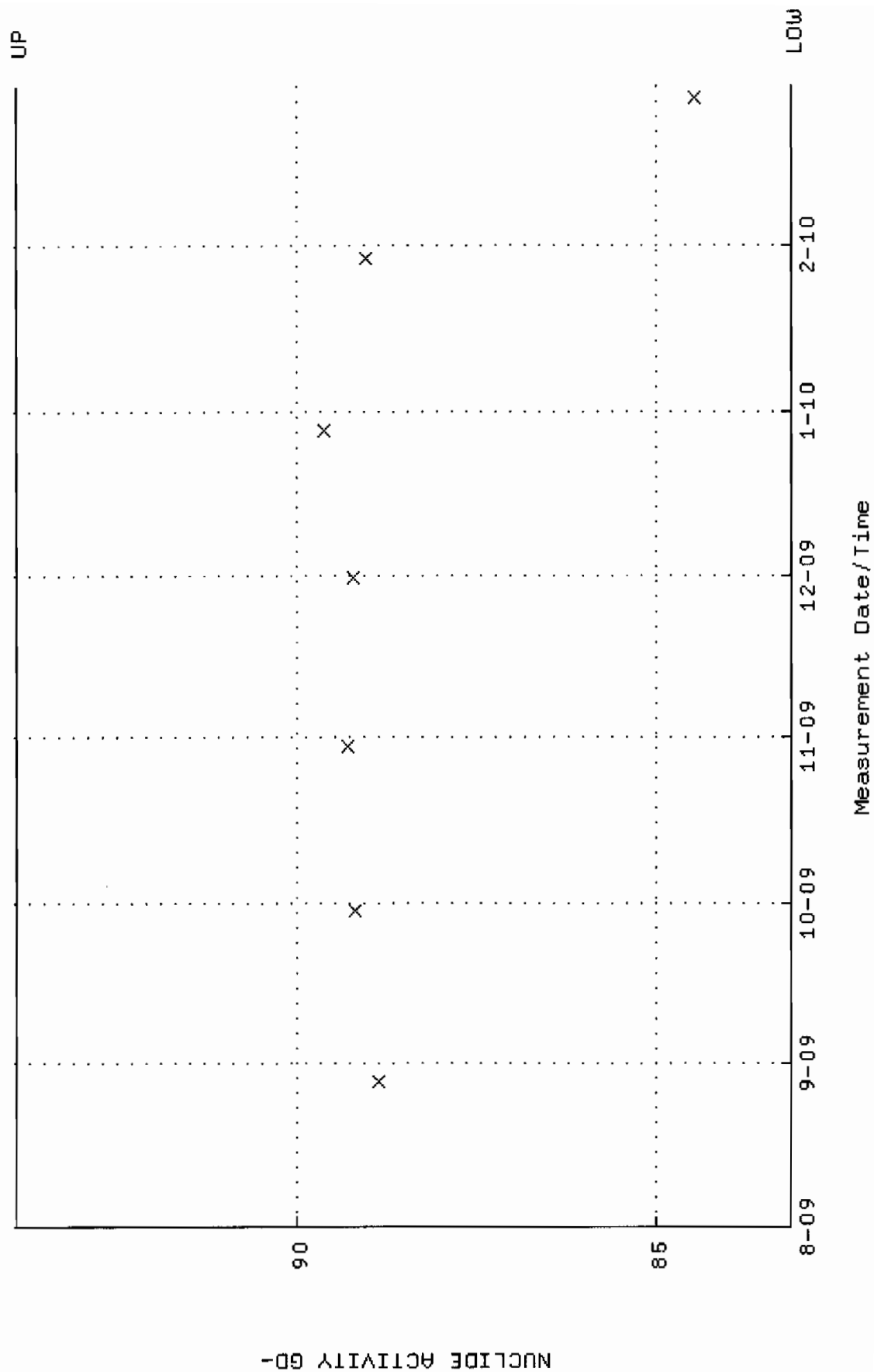
Lower/Upper Lmts: 0.000000E+00 through 0.100000



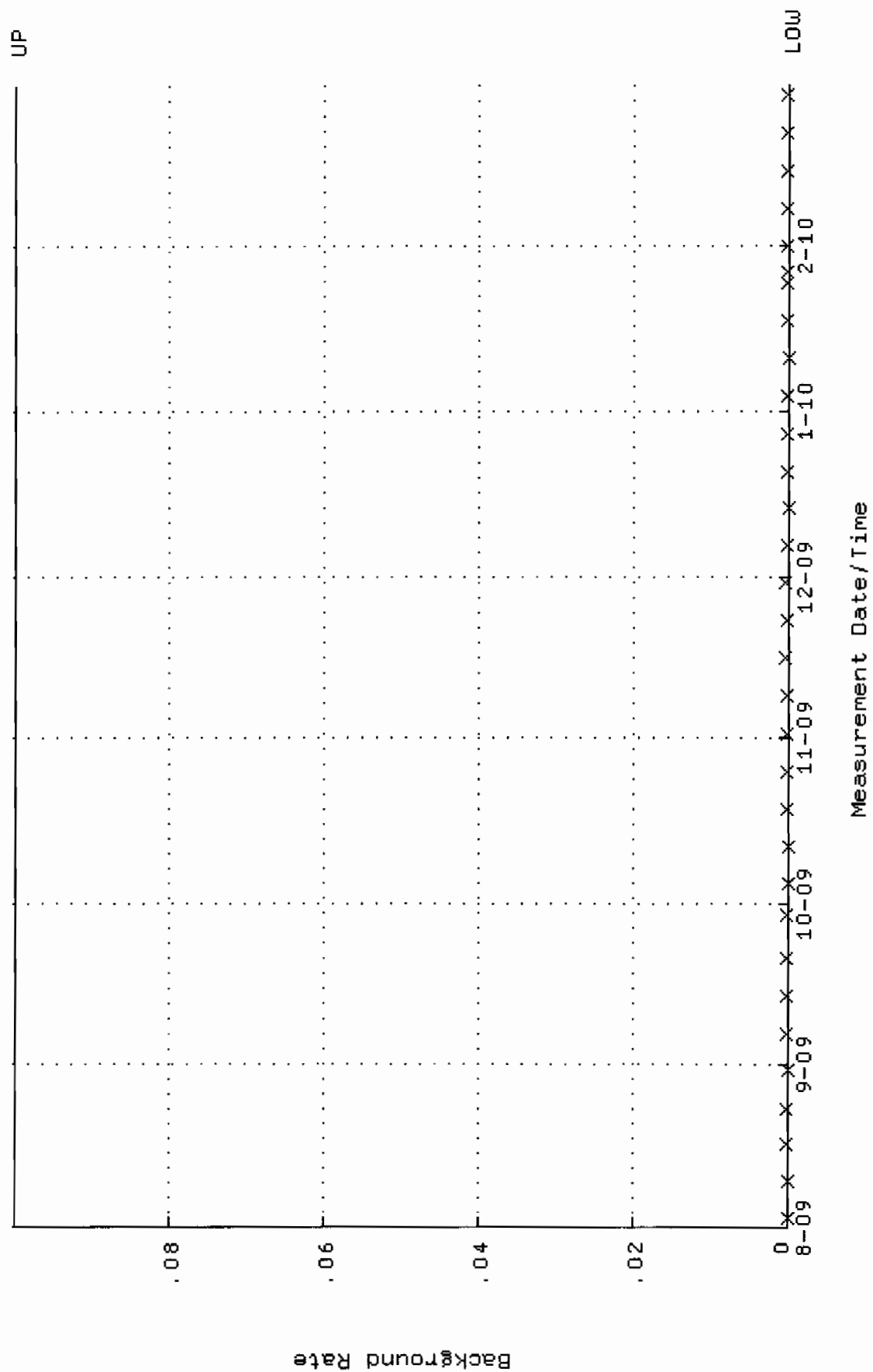
QA filename : DKA100:[ENV_ALPHA.QA.W]W219.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363471 through 0.412689



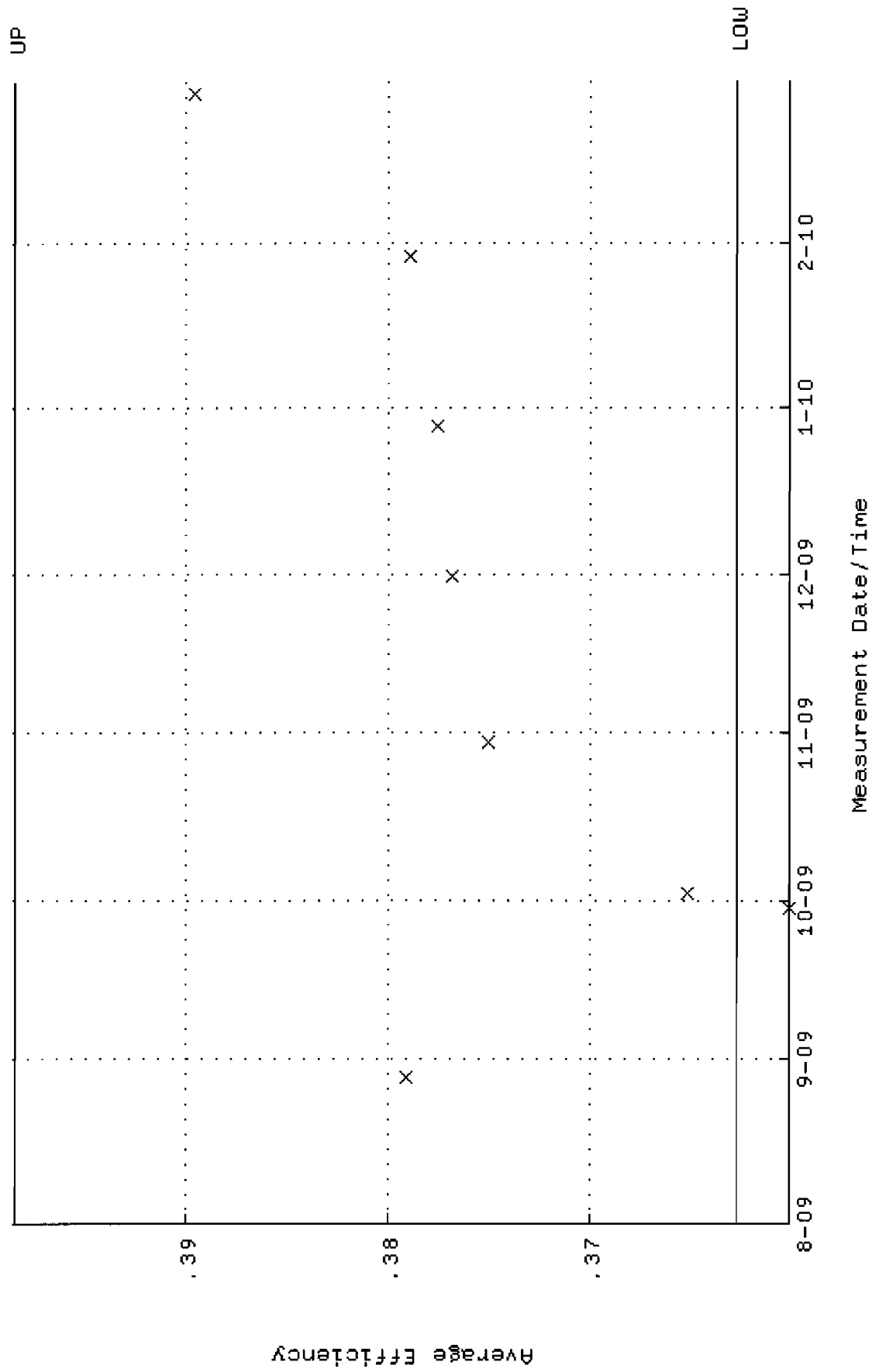
QA filename : DKA100:[ENV_ALPHA.QA.W]W219.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.1251 through 93.8923



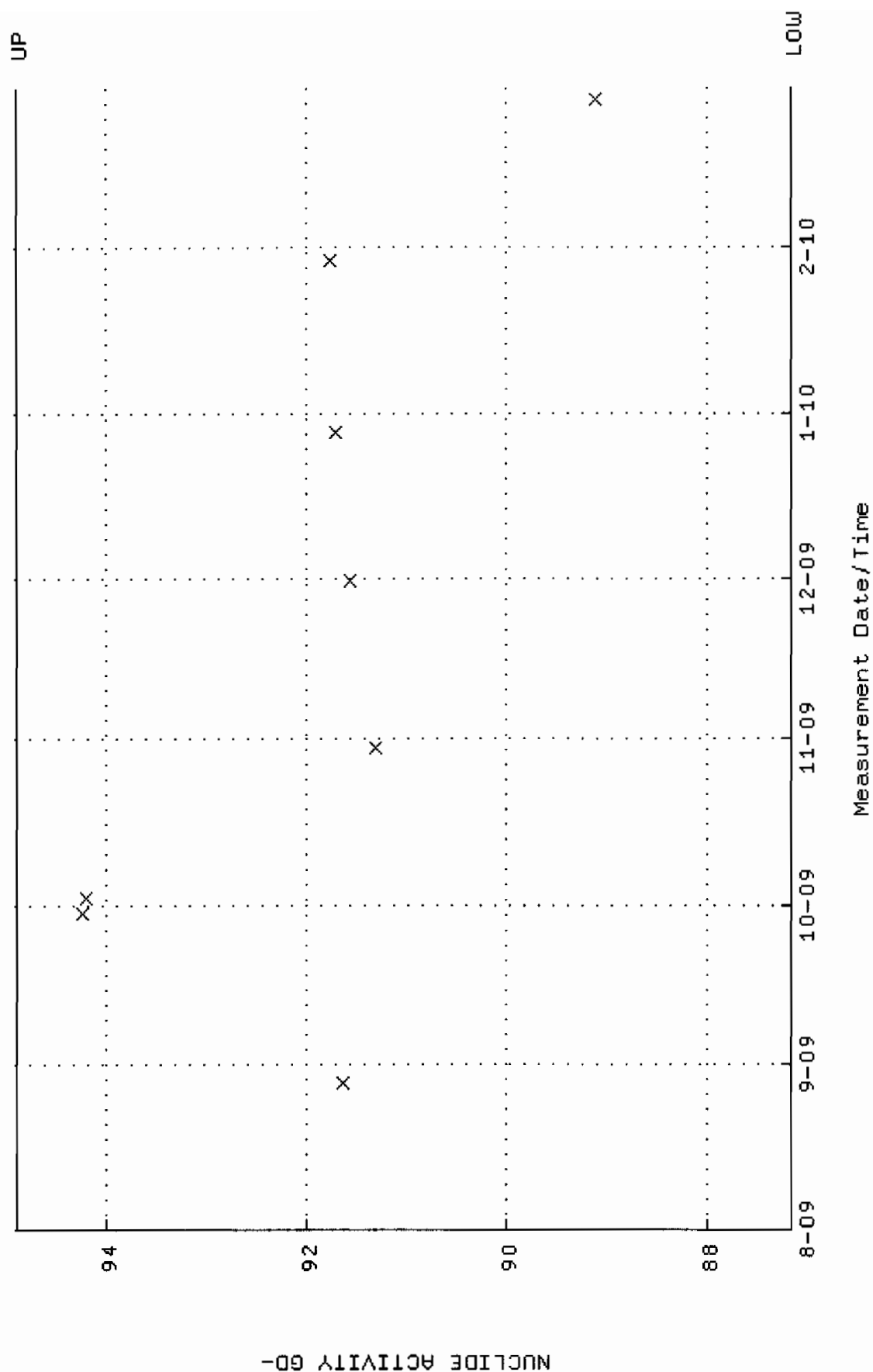
QA filename : DKA100:[ENV_ALPHA.QA.B]B219.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:52 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV-ALPHA.QA.W]U220.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:23 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.362894 through 0.398402



QA filename : DKA100:[ENV_ALPHA.QA.W]W220.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:23 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.1542 through 94.9022

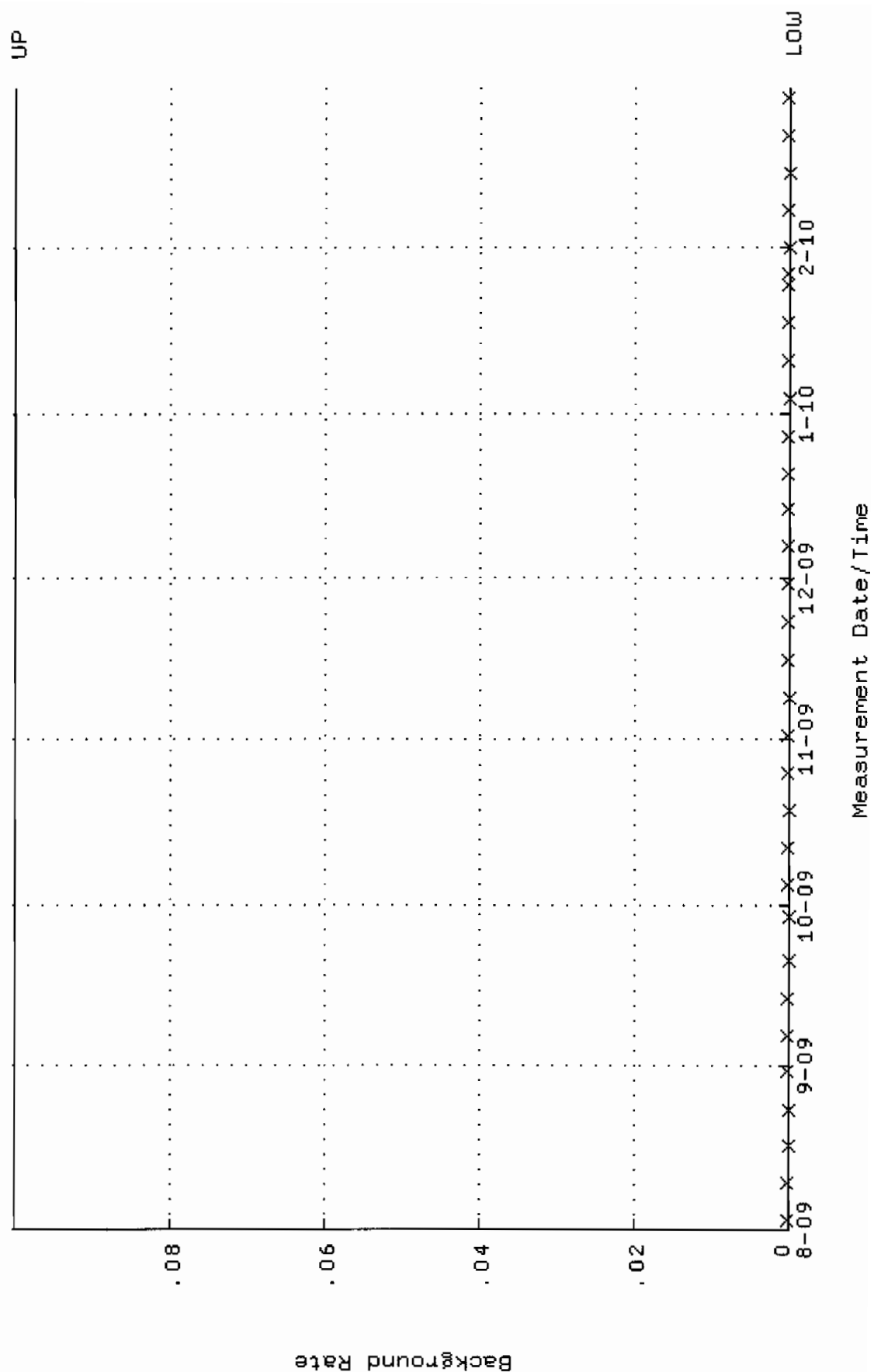


QA filename : DKA100:[ENV_ALPHA.QA.B]B220.QAF;1

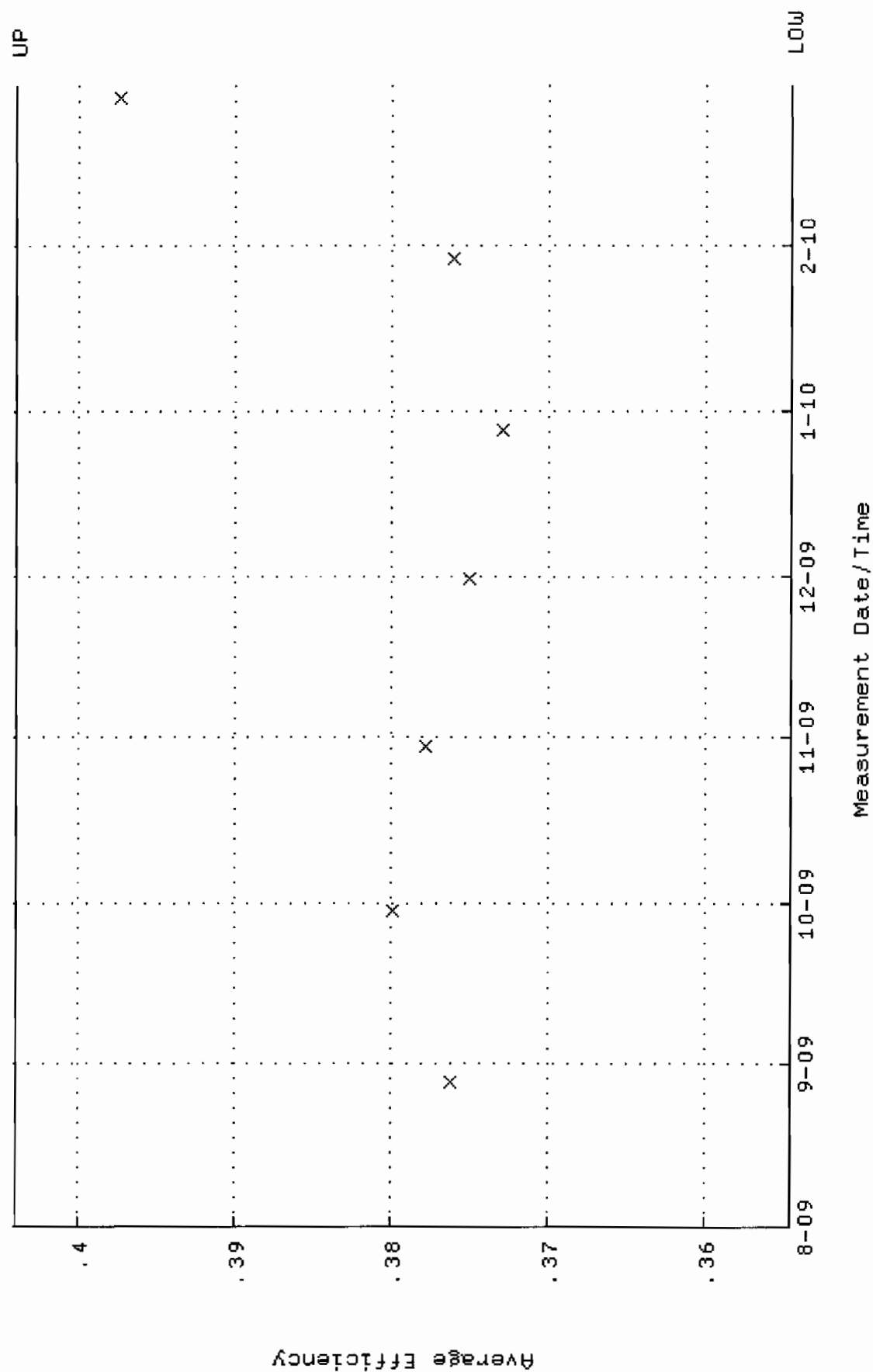
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:56 through 2-MAR-2010 12:00:00

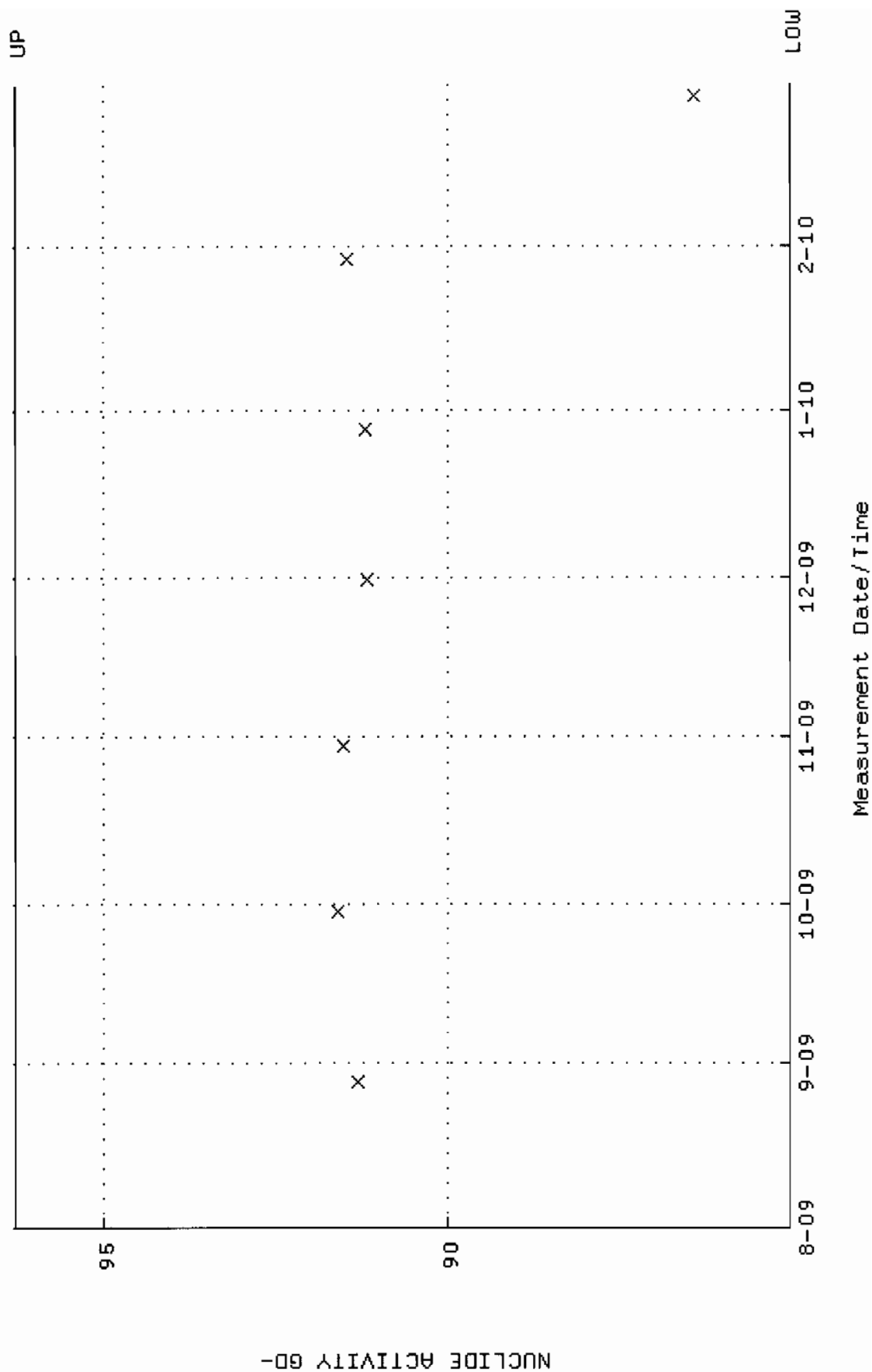
Lower/Upper Lmts: 0.000000E+00 through 0.100000



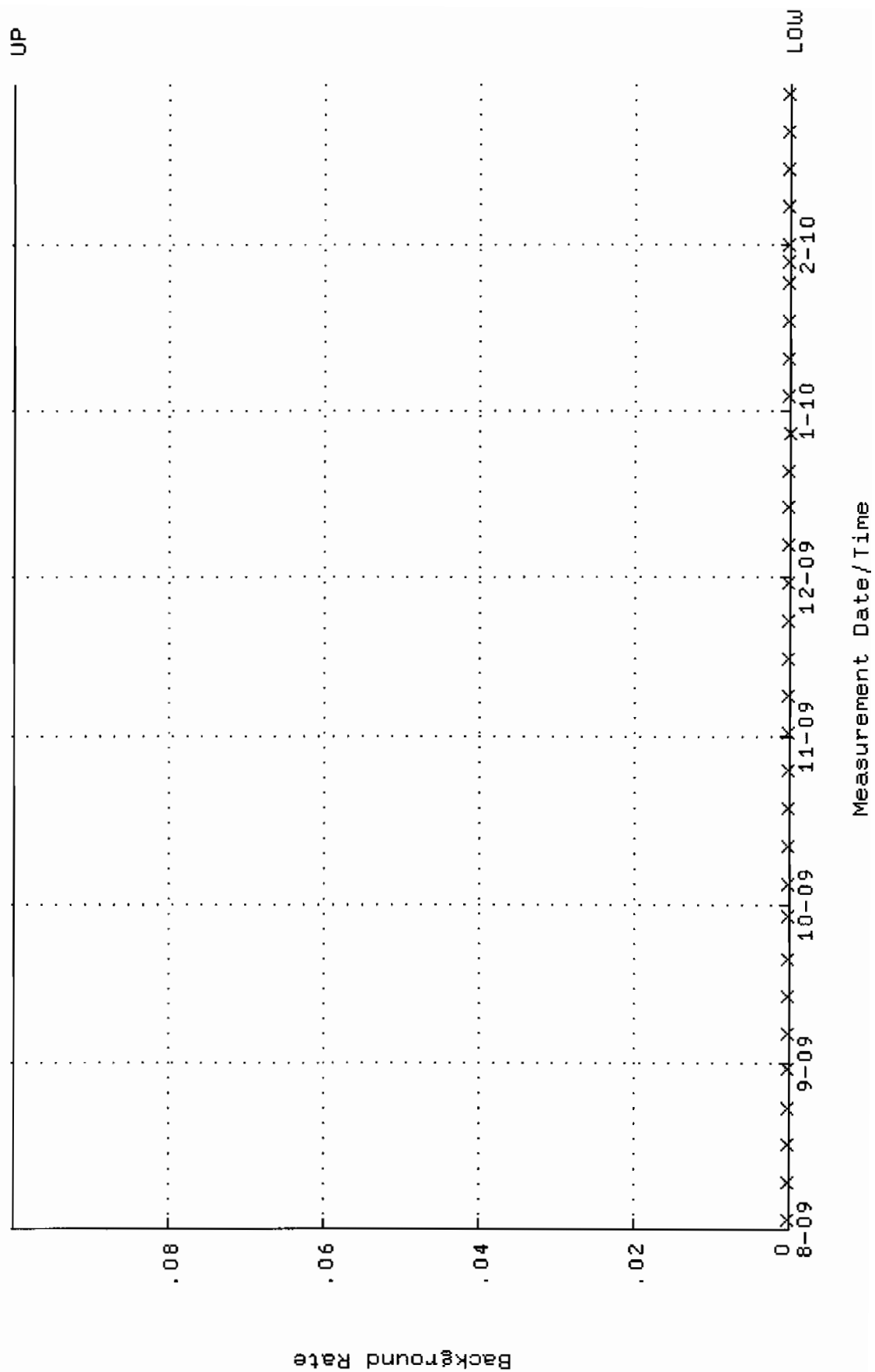
QA filename : DKA100:[ENV_ALPHA.QA.W]w221.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.354487 through 0.403989



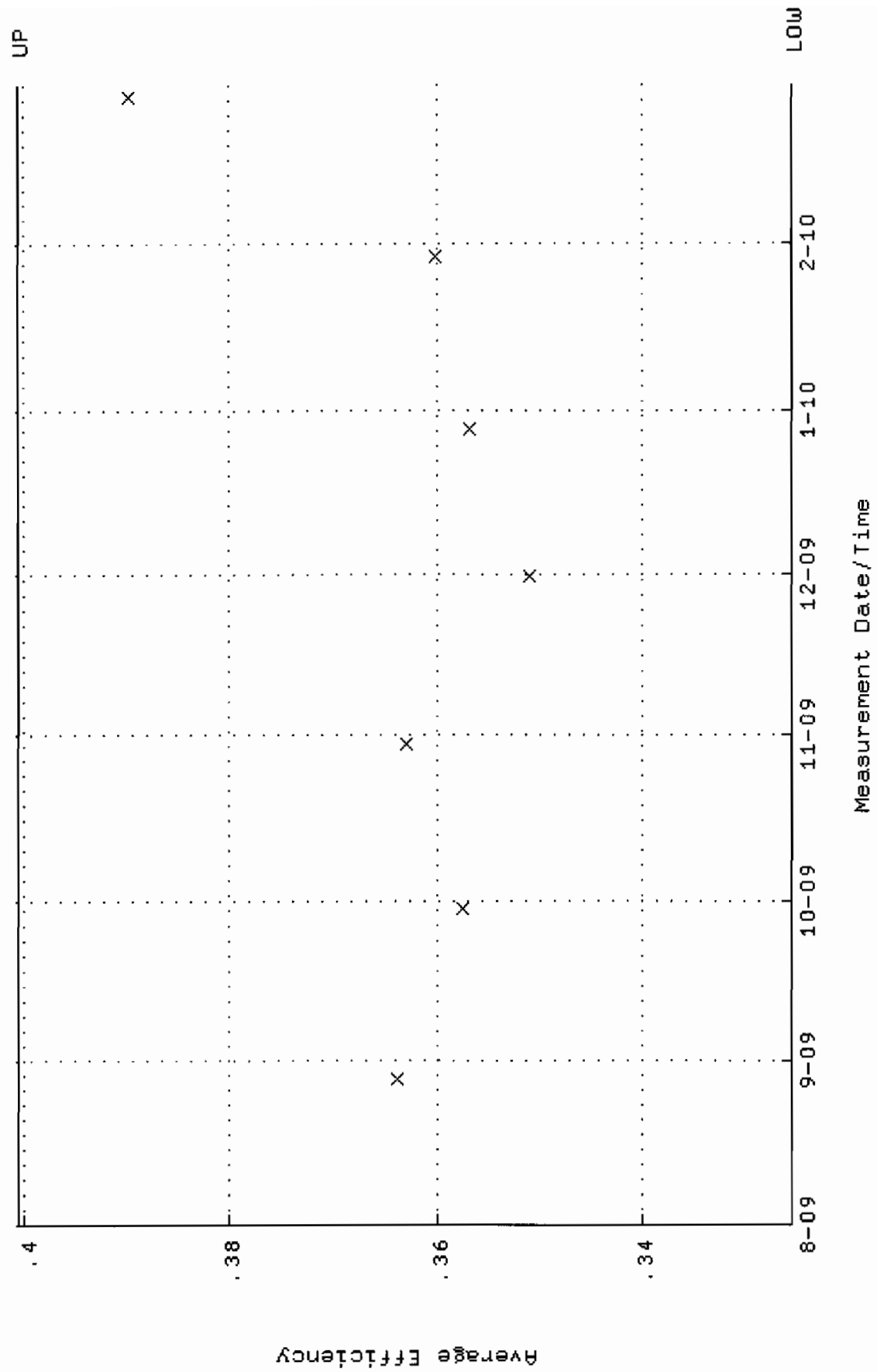
QA filename : DKA100:[ENV-ALPHA.QA.W]W221.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.0275 through 96.2669



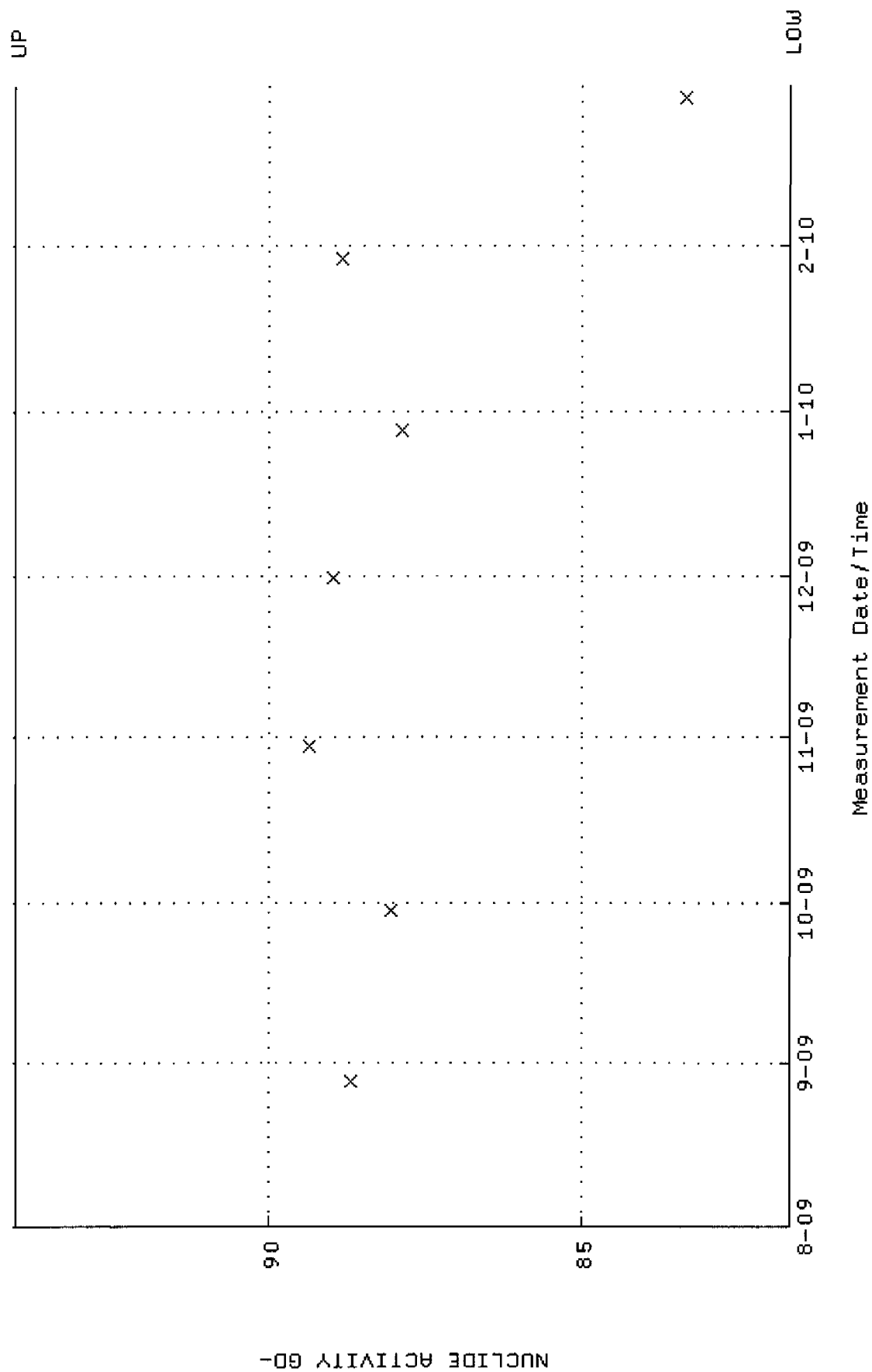
QA filename : DKA100:[ENV_ALPHA.QA.B]B221.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-AUG-2009 17:26:01 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



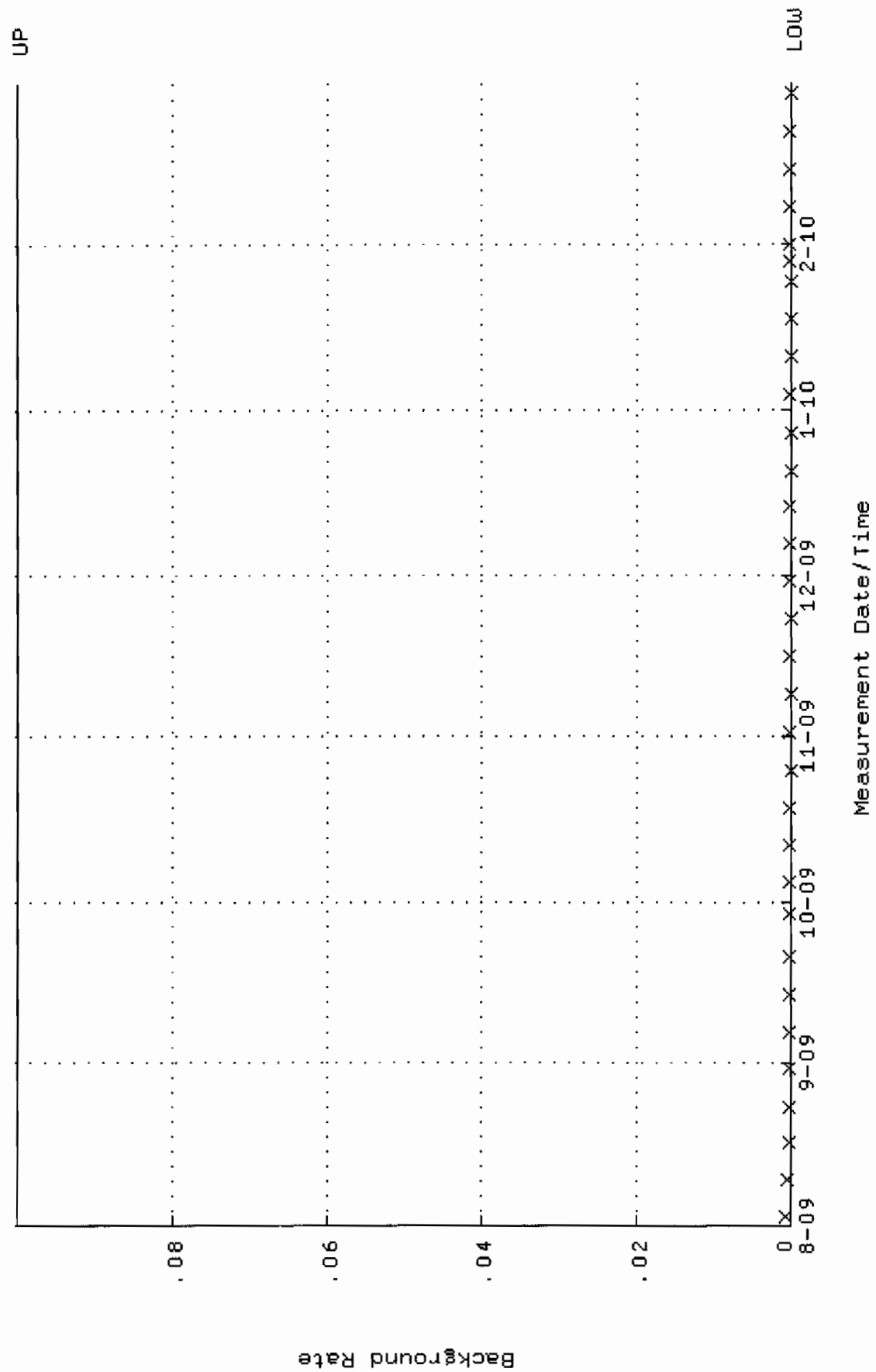
QA filename : DKA100:[ENV_ALPHA.QA.W]W222.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.325585 through 0.400497



QA filename : DKA100:[ENV_ALPHA.QA.W]W222.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:32 through 2-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 : 2-AUG-2009 17:26:05 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

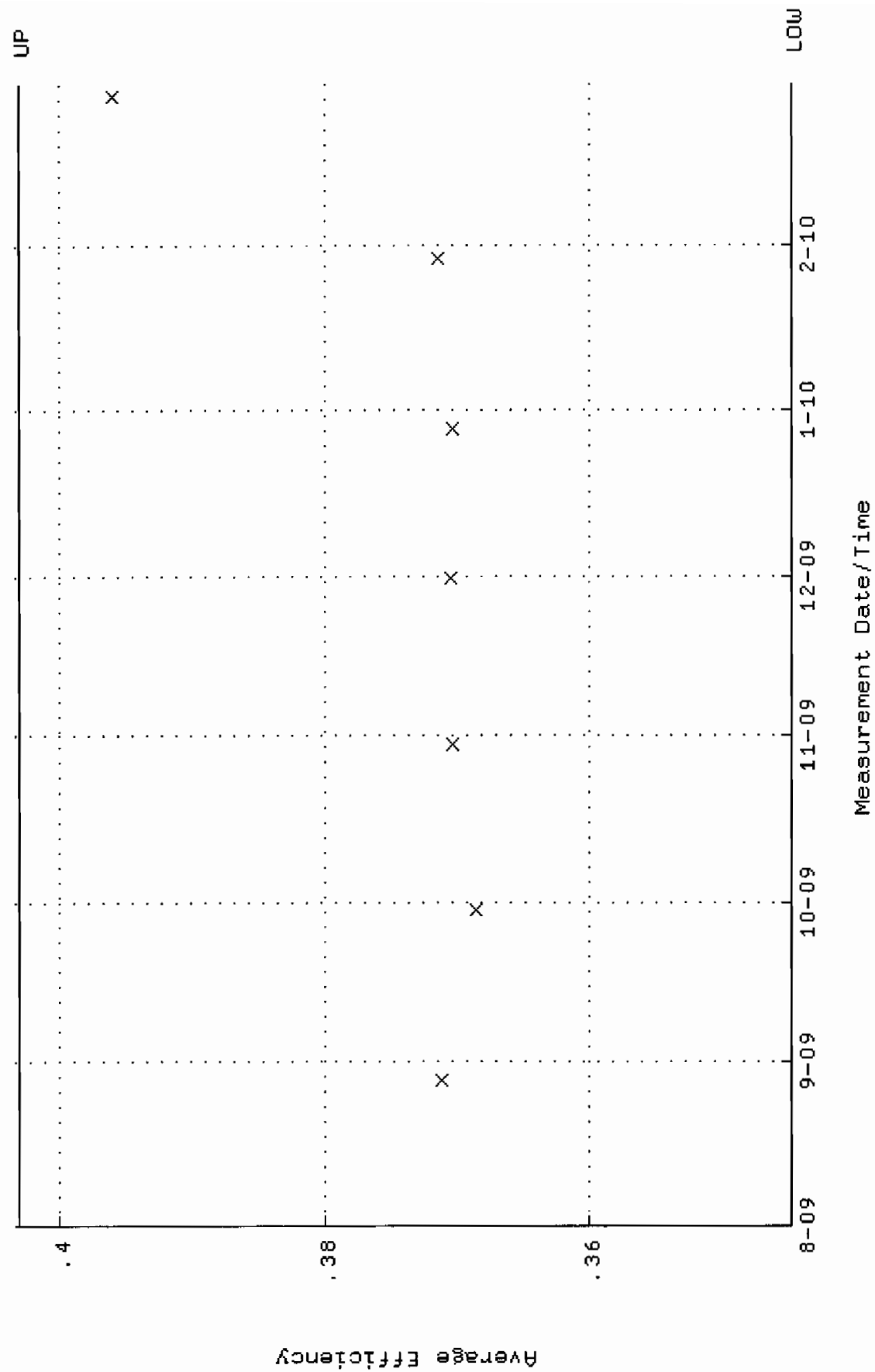


QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1

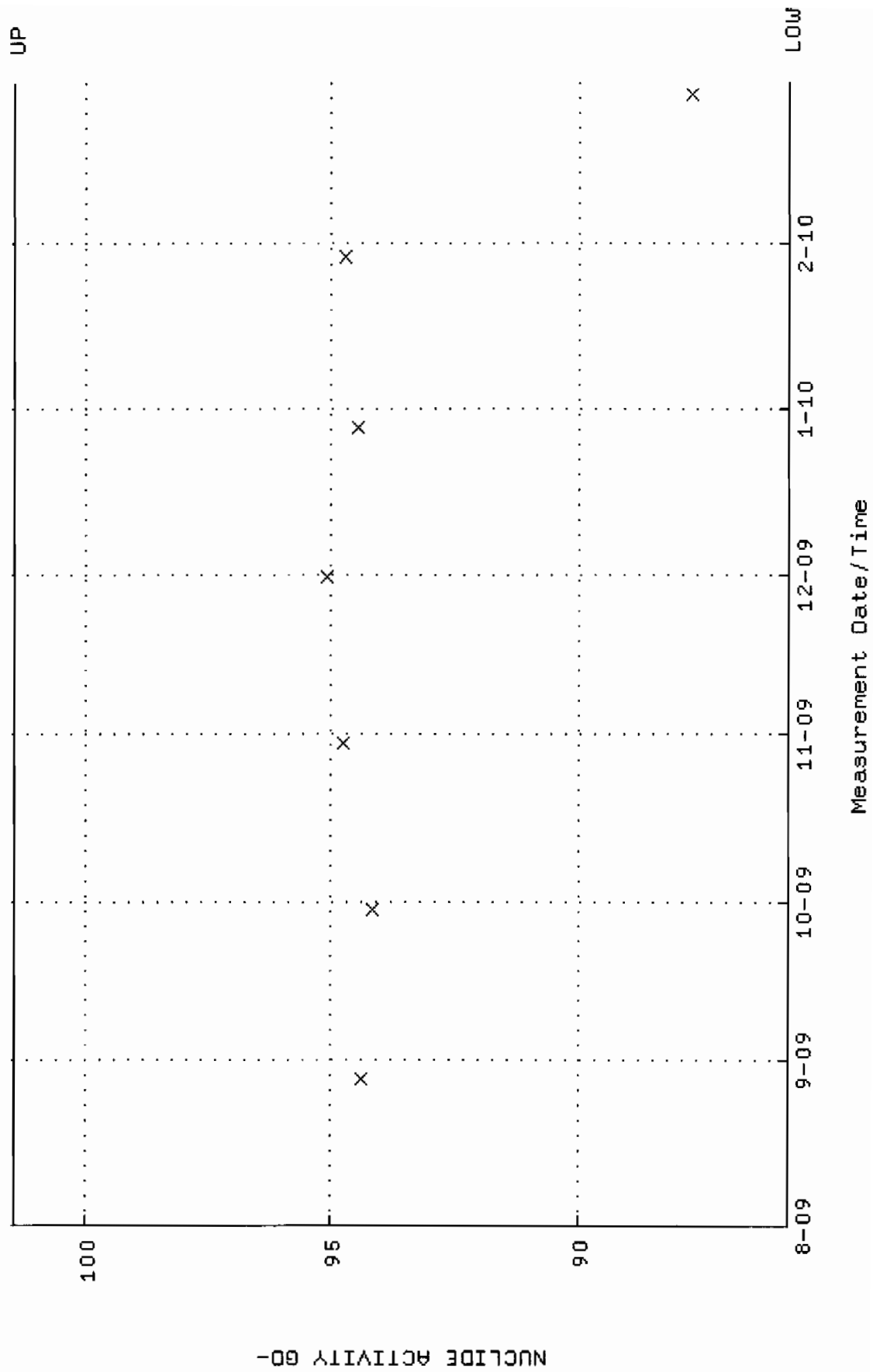
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 28-AUG-2009 07:07:38 through 2-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 : 28-AUG-2009 07:07:38 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.7275 through 101.456

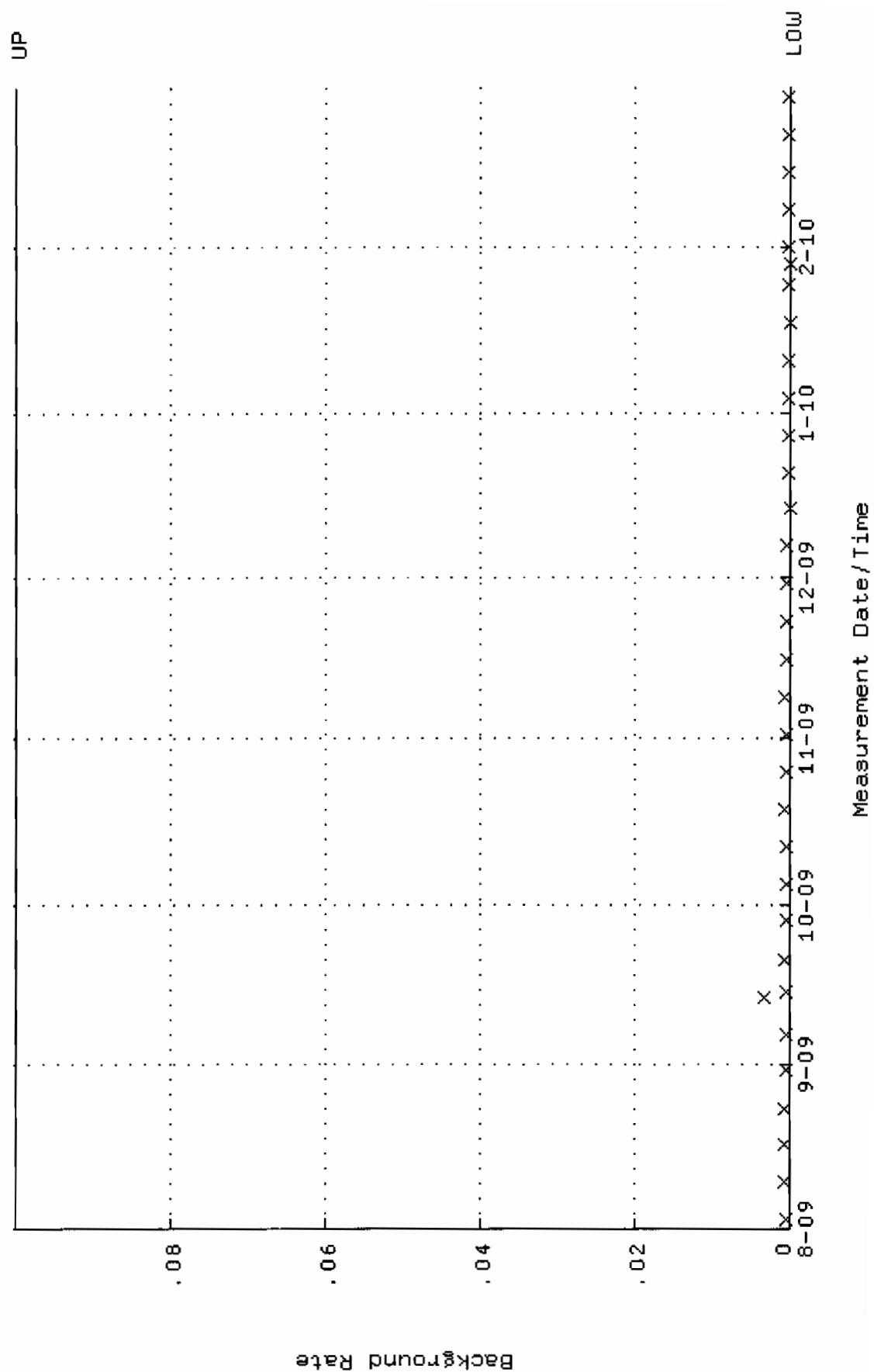


QA filename : DKA100:[ENV_ALPHA.QA.B]B223.QAF;1

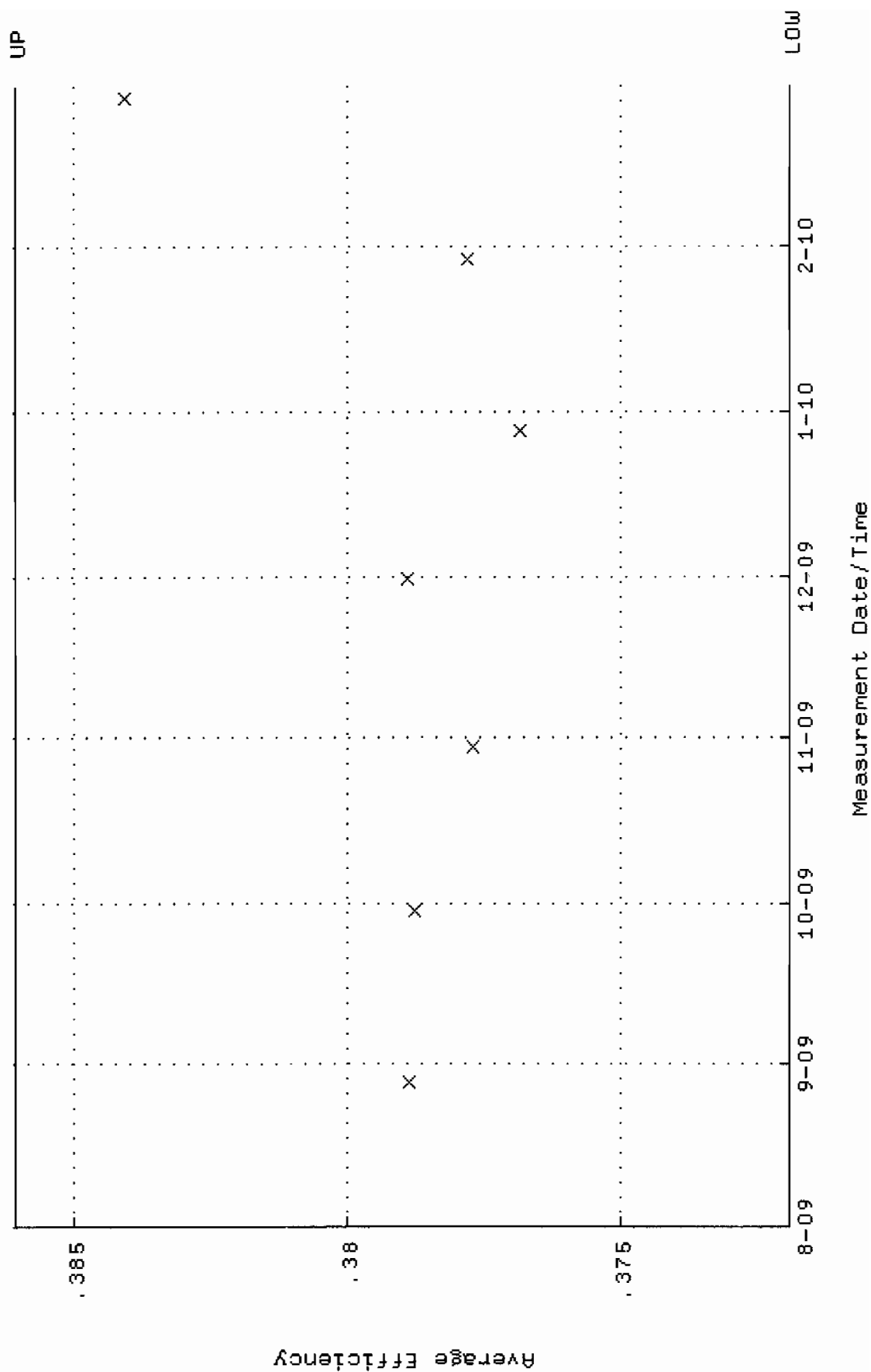
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:08 through 2-MAR-2010 12:00:00

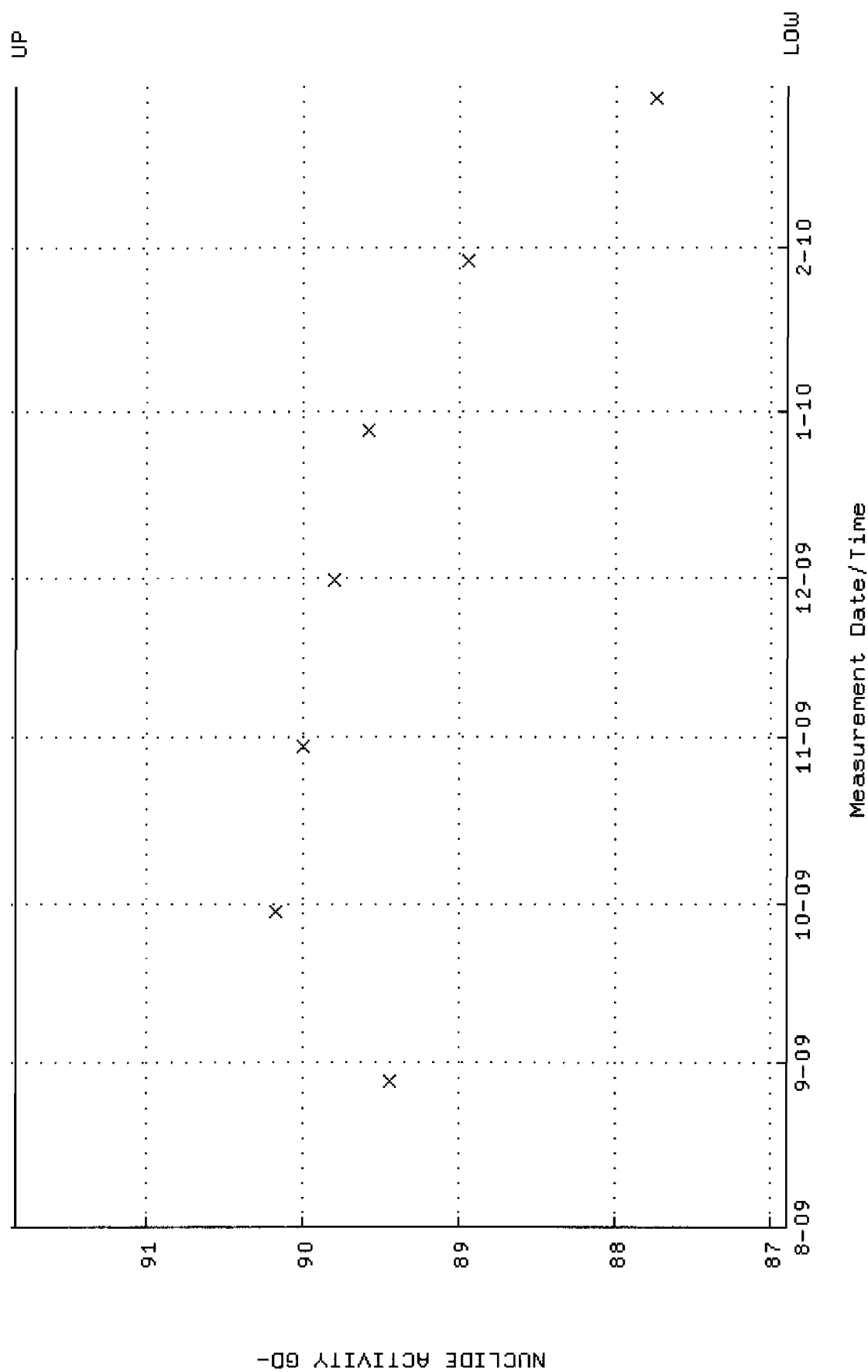
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV-ALPHA.QA.W]W224.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.371921 through 0.386057



QA filename : DKA100:[ENV_ALPHA.QA.W]U224.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.9006 through 91.8482

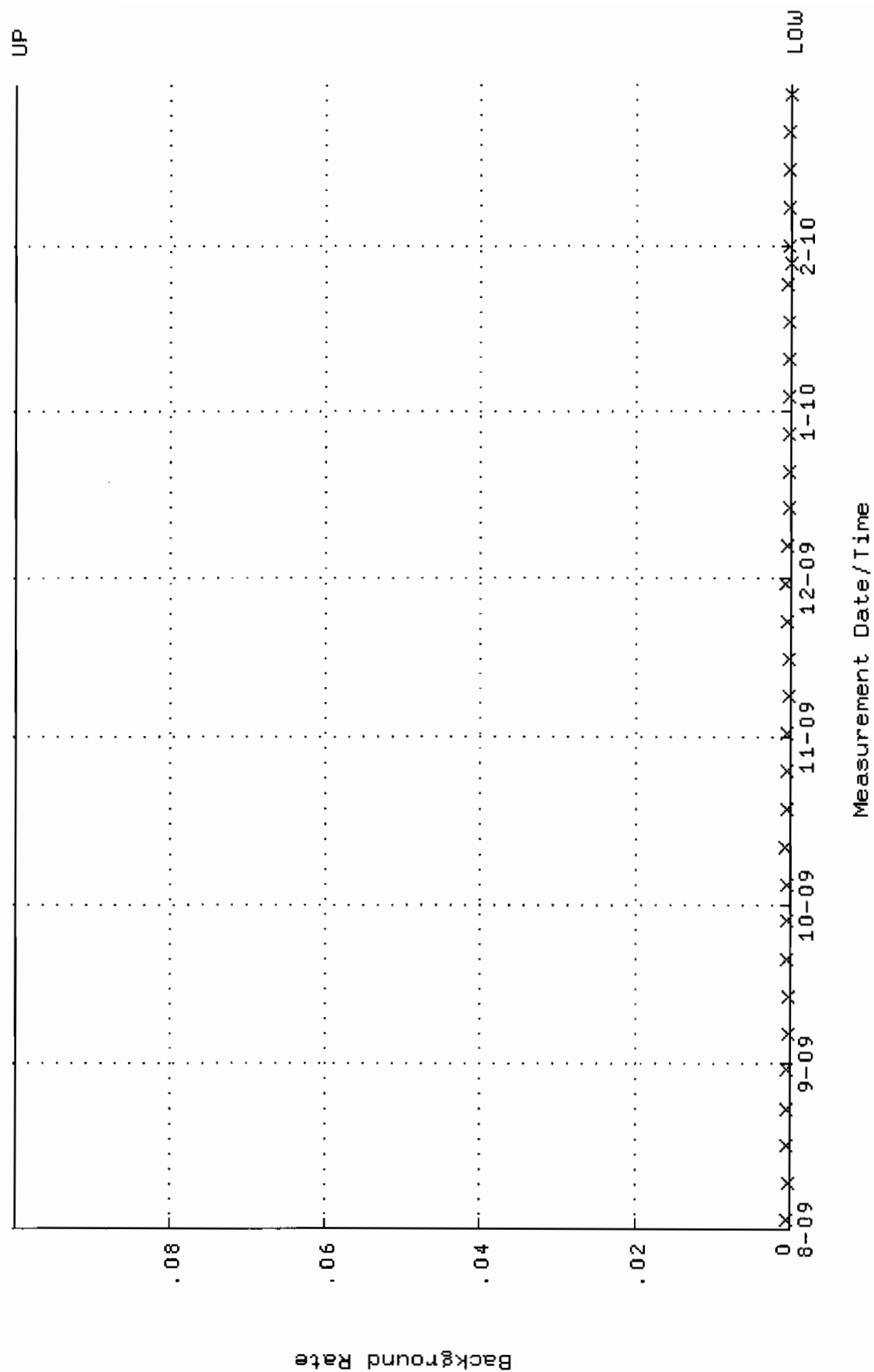


QA filename : DKA100:[ENV_ALPHA.QA.B]B224.QAF;1

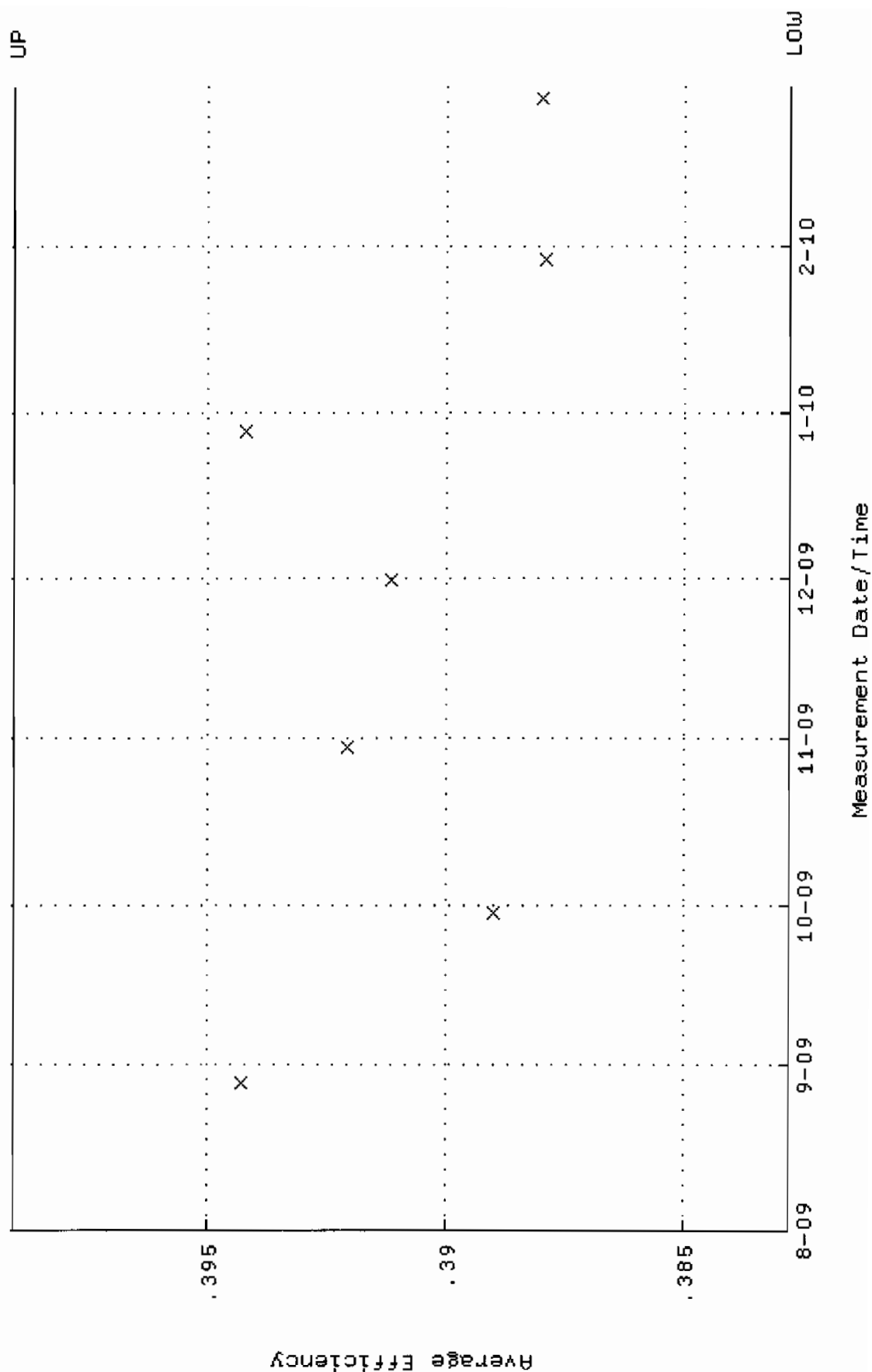
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:12 through 2-MAR-2010 12:00:00

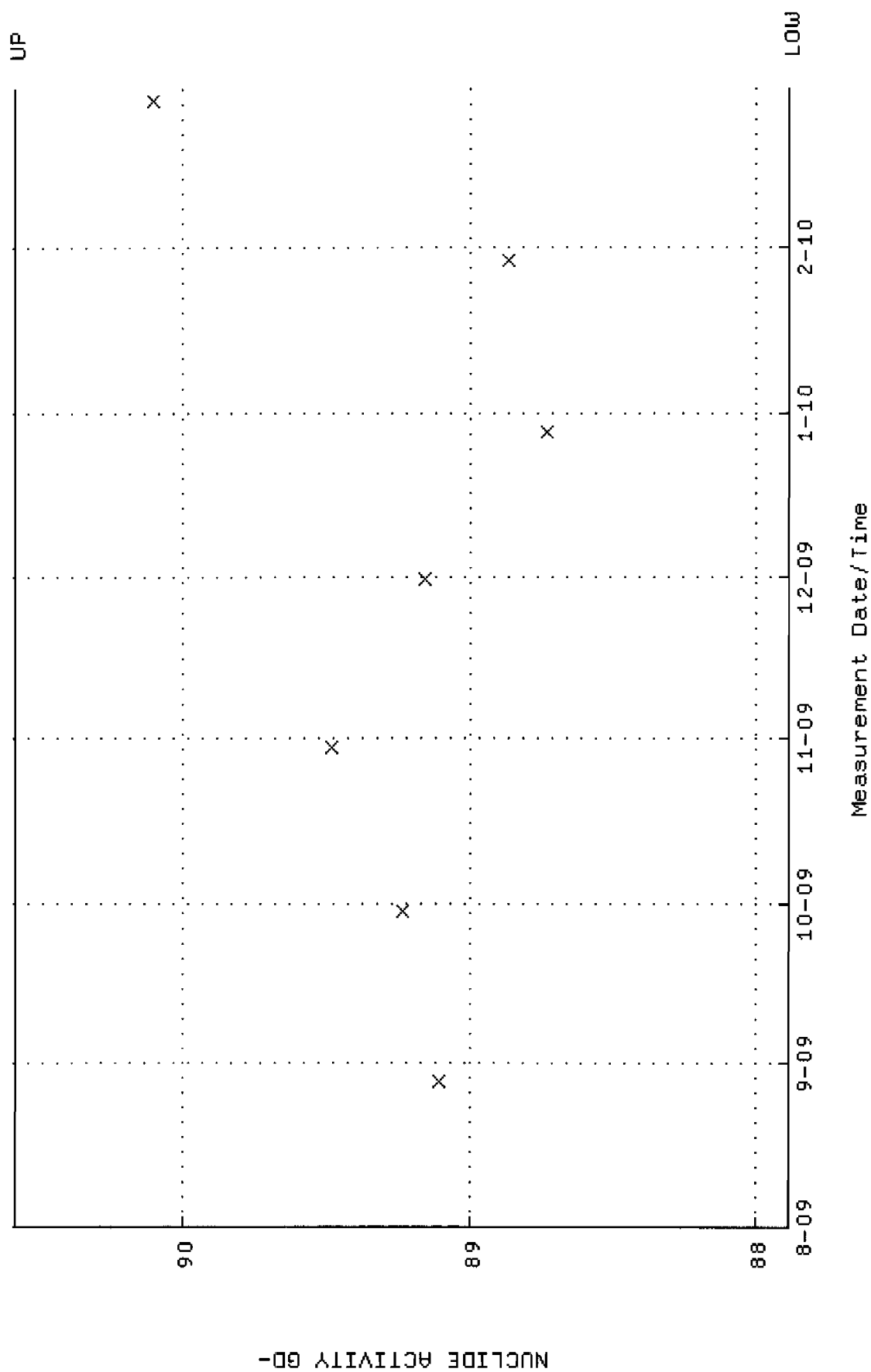
Lower/Upper Lmts: 0.000000E+00 through 0.100000



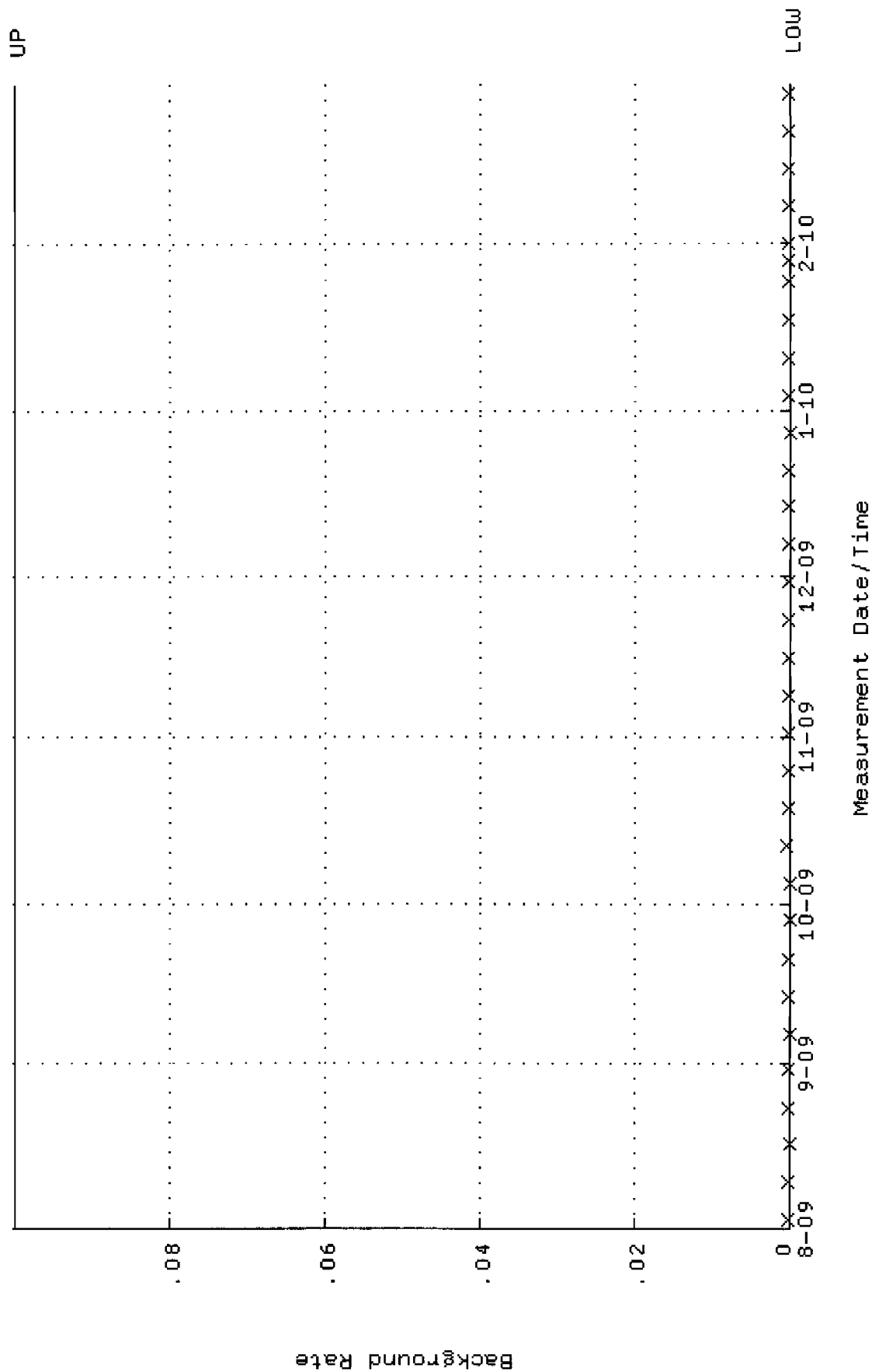
QA filename : DKA100:[ENV_ALPHA.QA.W]W225.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.382792 through 0.399070



QA filename : DKA100:[ENV-ALPHA.QA.W]W225.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:50 through 2-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 : 2-AUG-2009 17:26:16 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

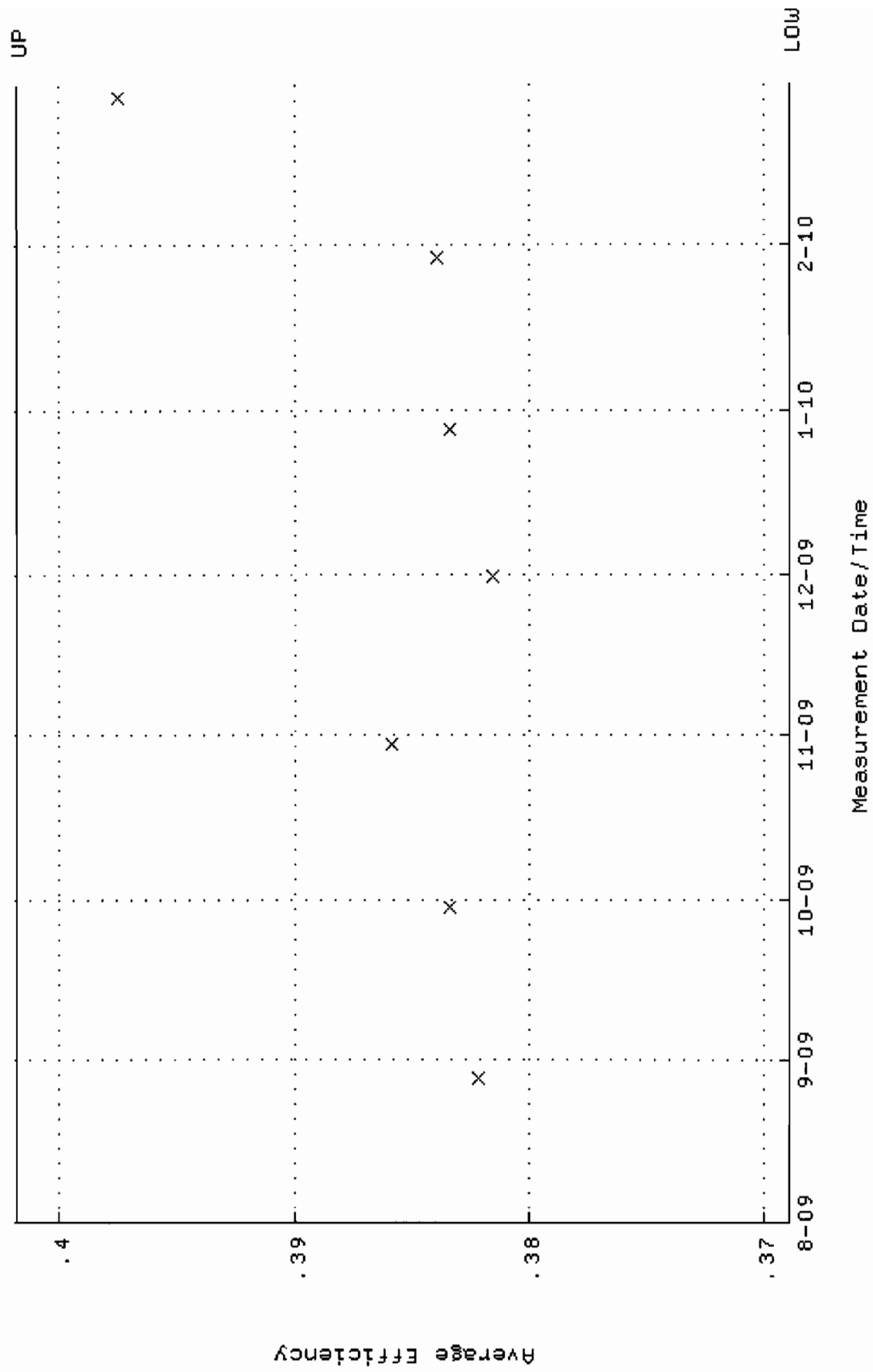


QA filename : DKA100:[ENV_ALPHA.QA.W]W234.QAF;1

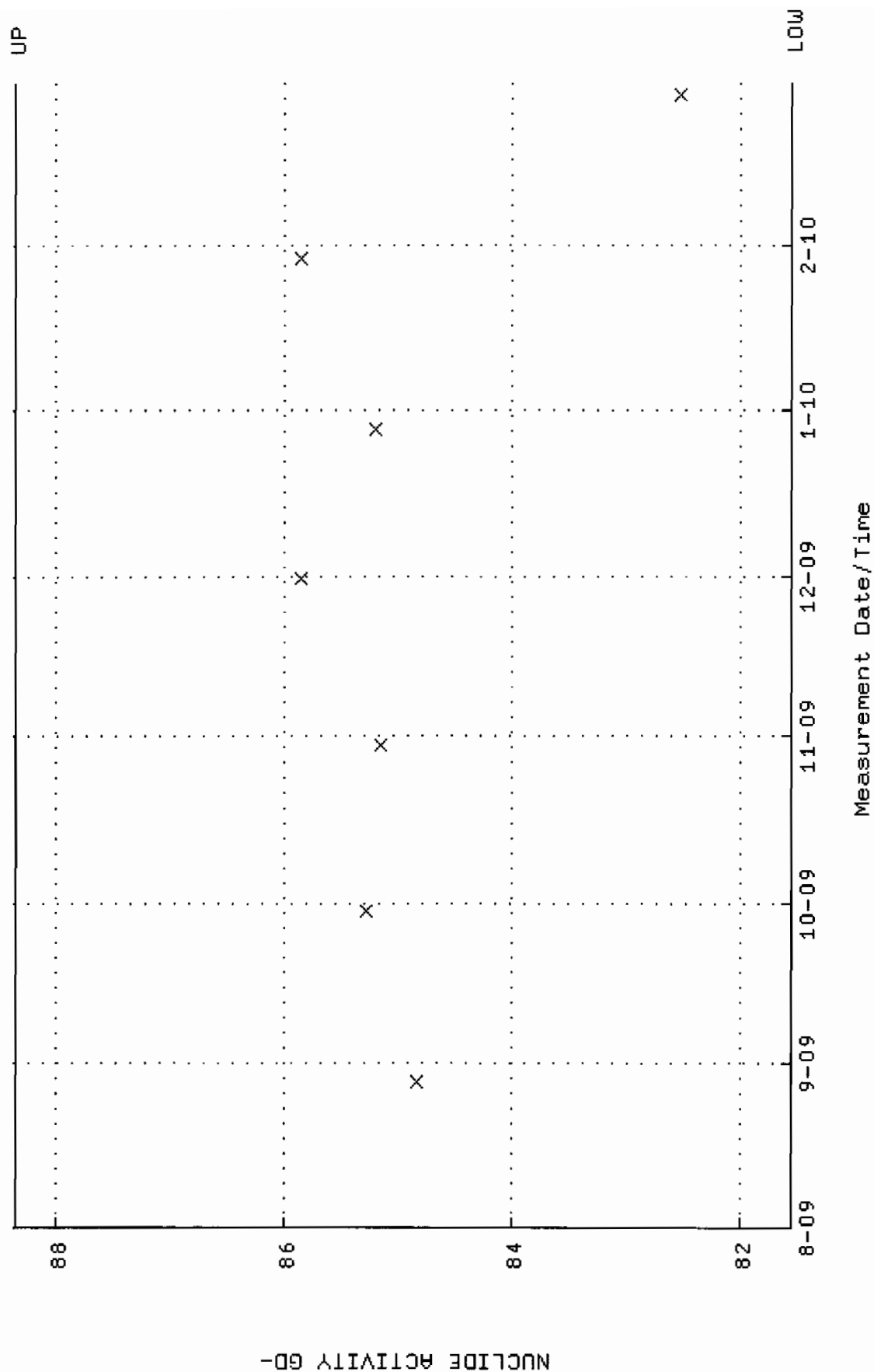
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 28-AUG-2009 07:08:41 through 2-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 : 28-AUG-2009 07:08:41 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5490 through 88.3592

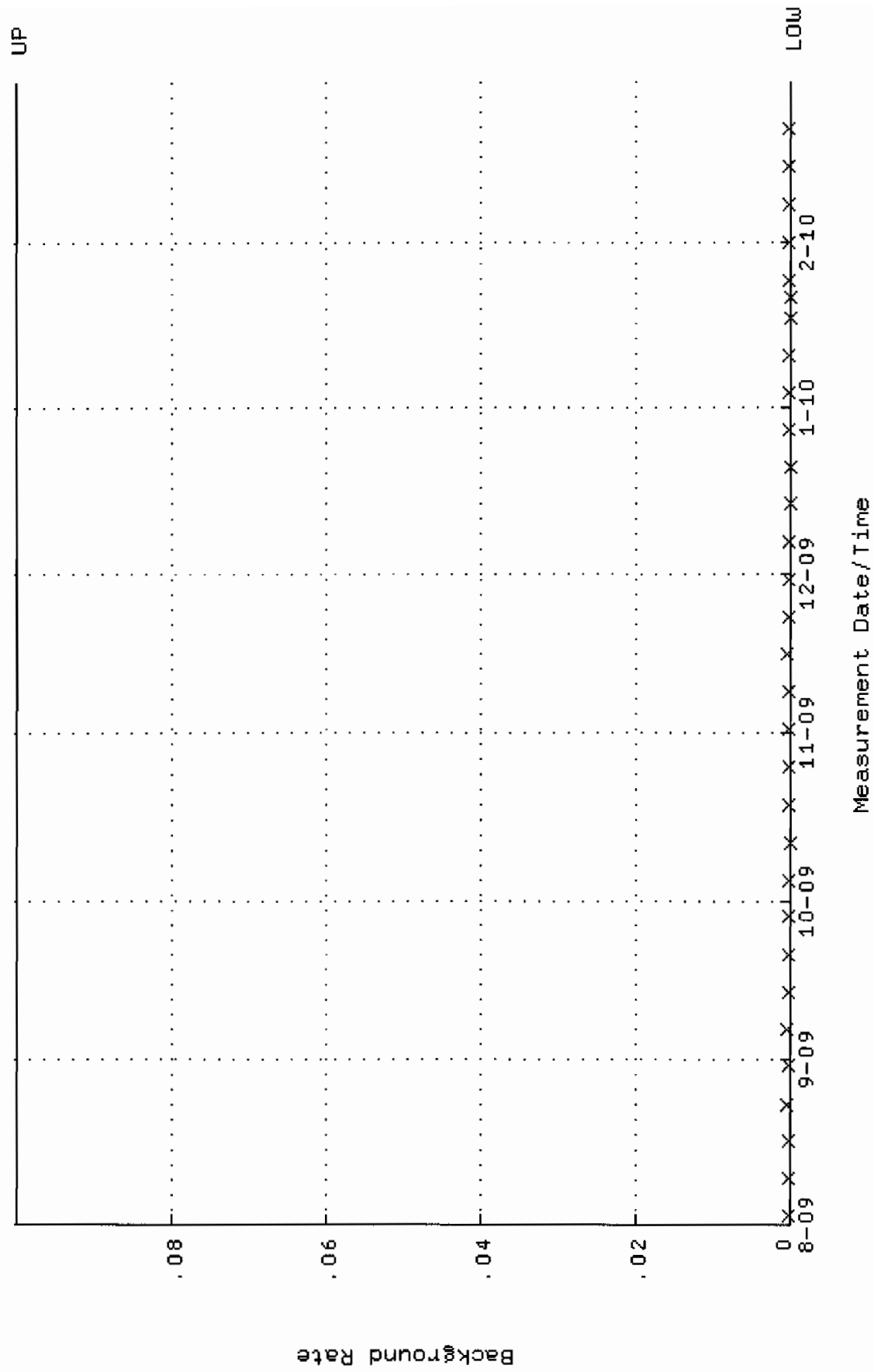


QA filename : DKA100:[ENV_ALPHA.QA.B]B234.QAF;1

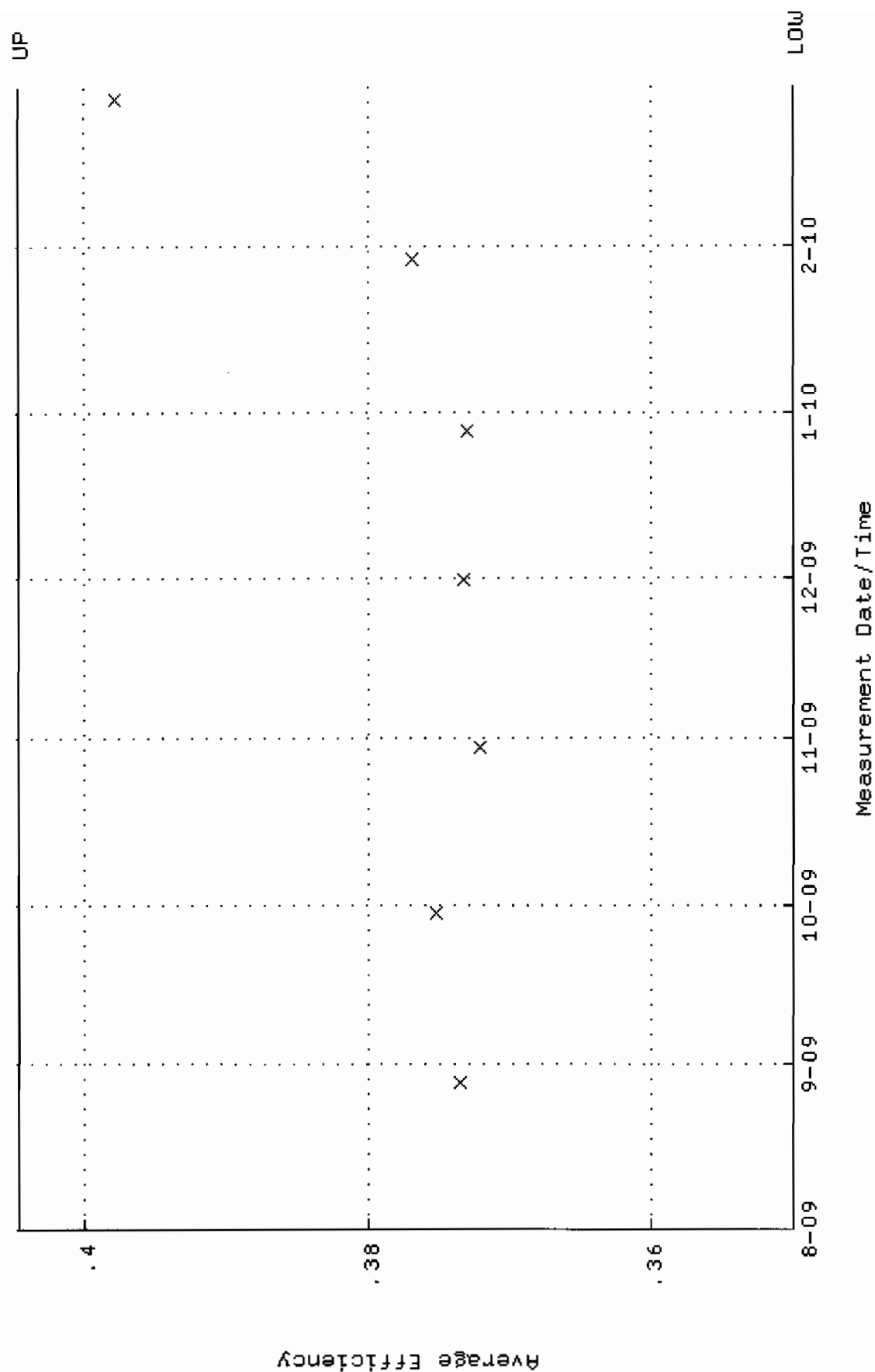
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:56 through 2-MAR-2010 12:00:00

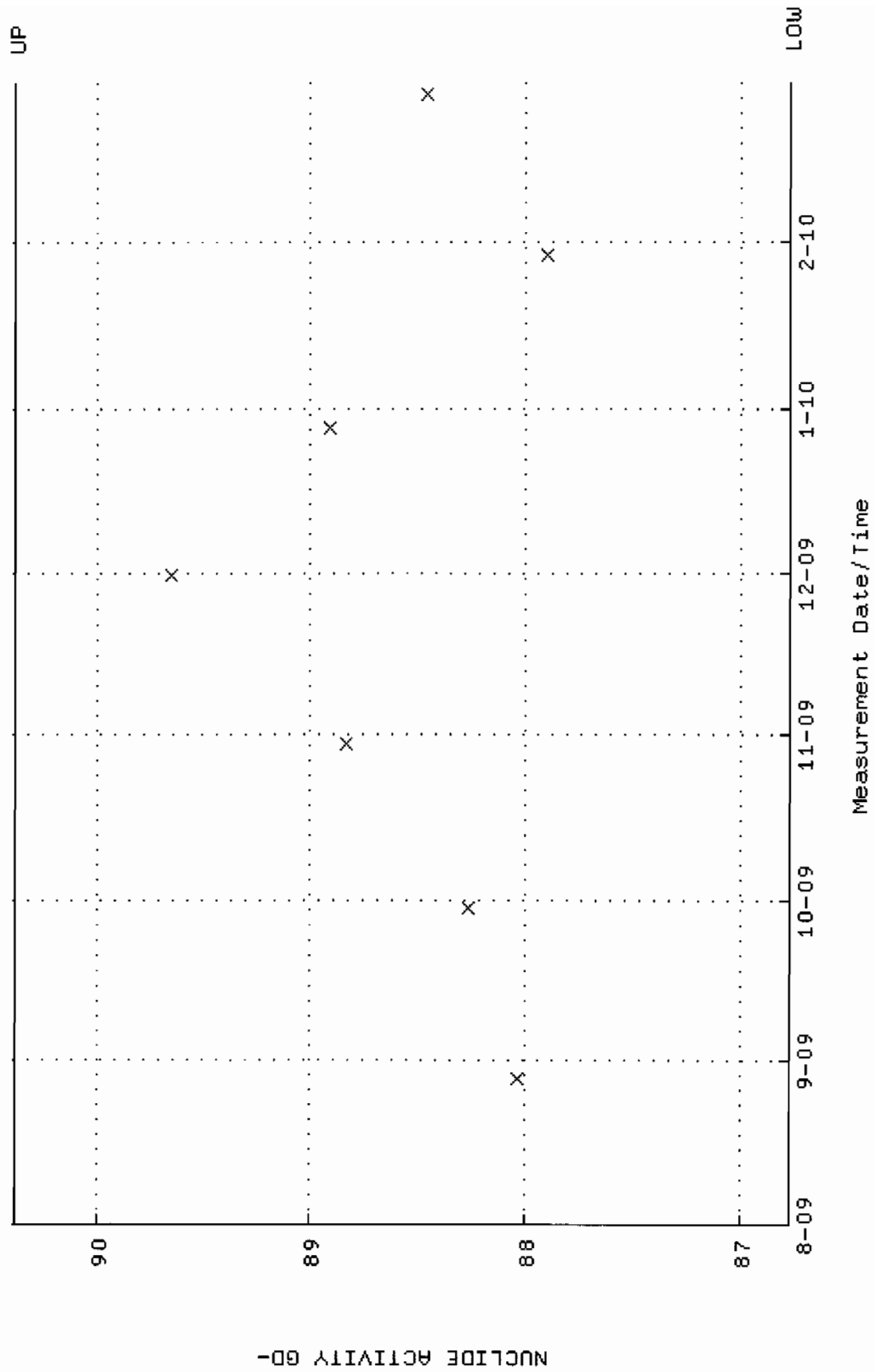
Lower/Upper Lmts: 0.000000E+00 through 0.100000



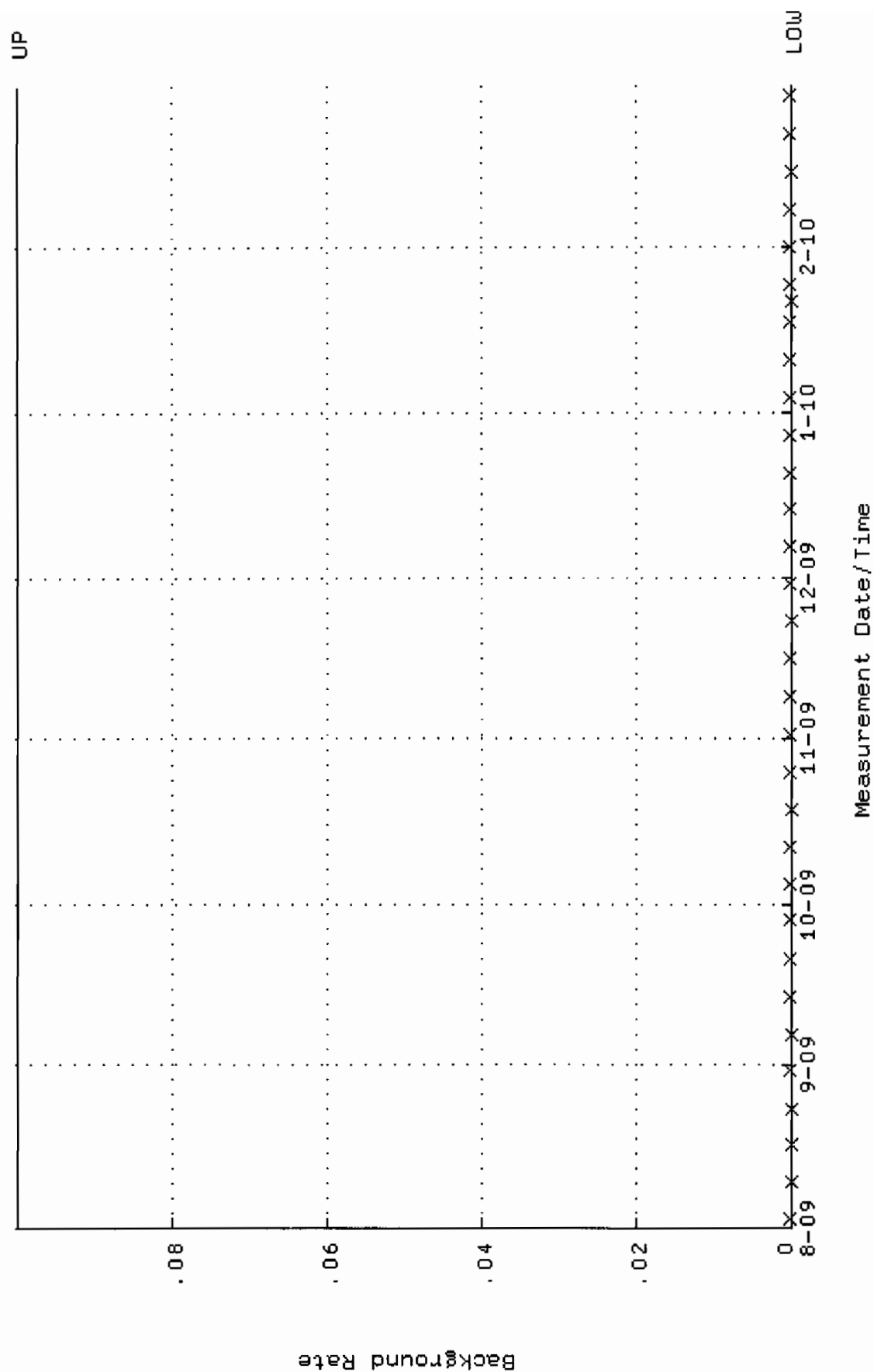
QA filename : DKA100:[ENV_ALPHA.QA.W]W235.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:45 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.350020 through 0.404668



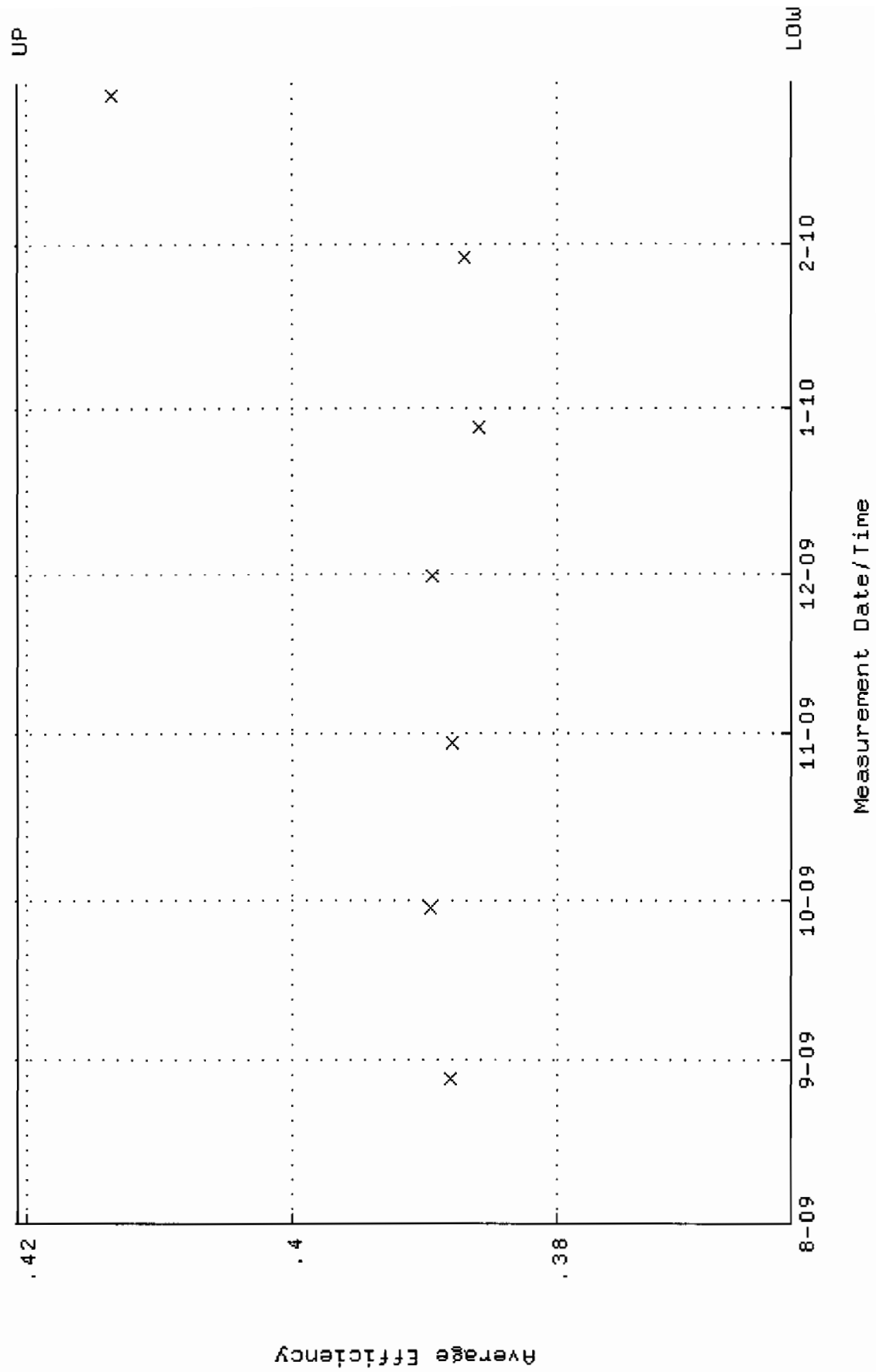
QA filename : DKA100:[ENV_ALPHA.QA.W]W235.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:45 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7703 through 90.3803



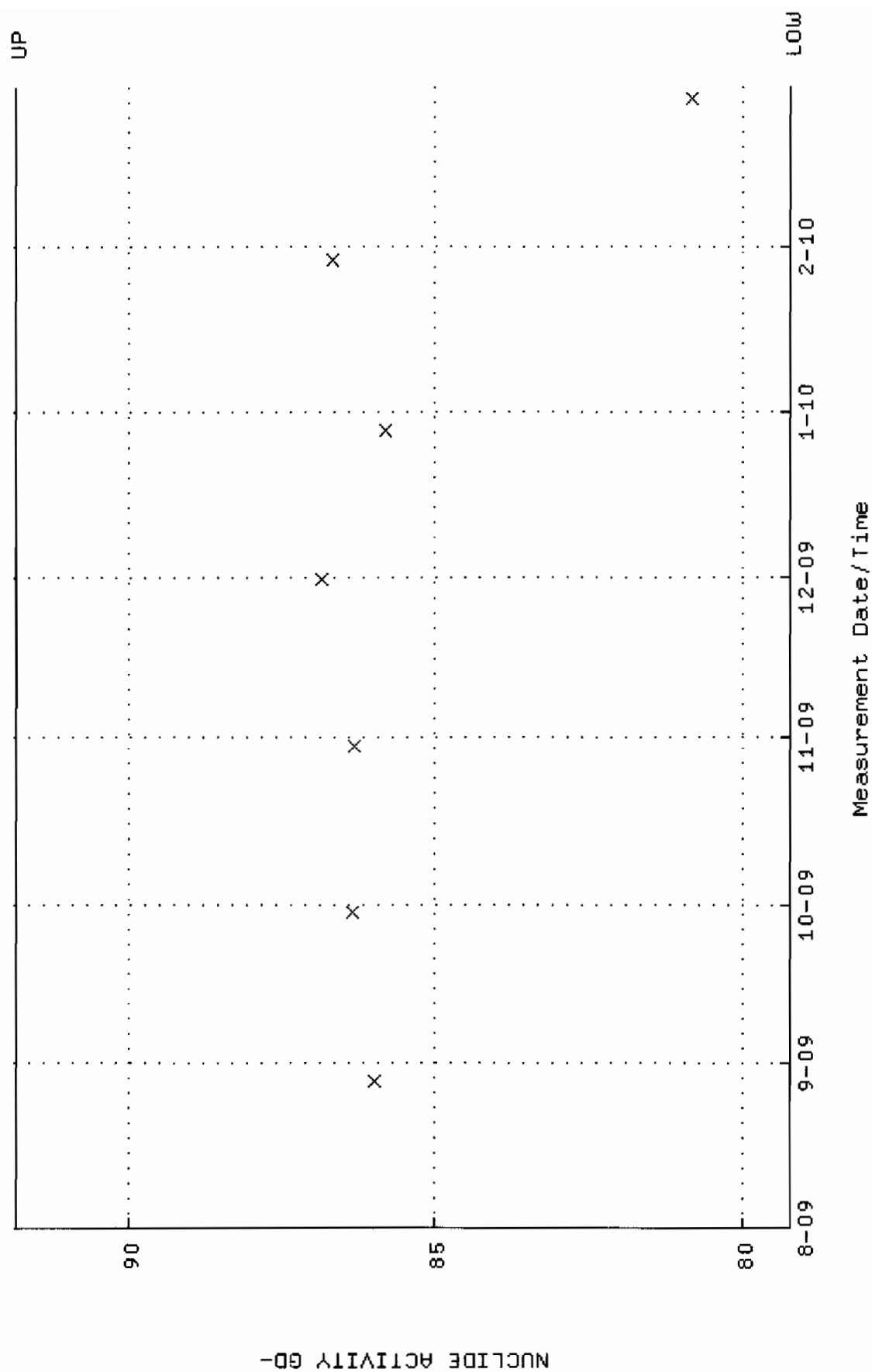
QA filename : DKA100:[ENV_ALPHA.QA.B]B235.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:00 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W236.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:51 through 2-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 : 28-AUG-2009 07:08:51 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 79.2135 through 91.8401

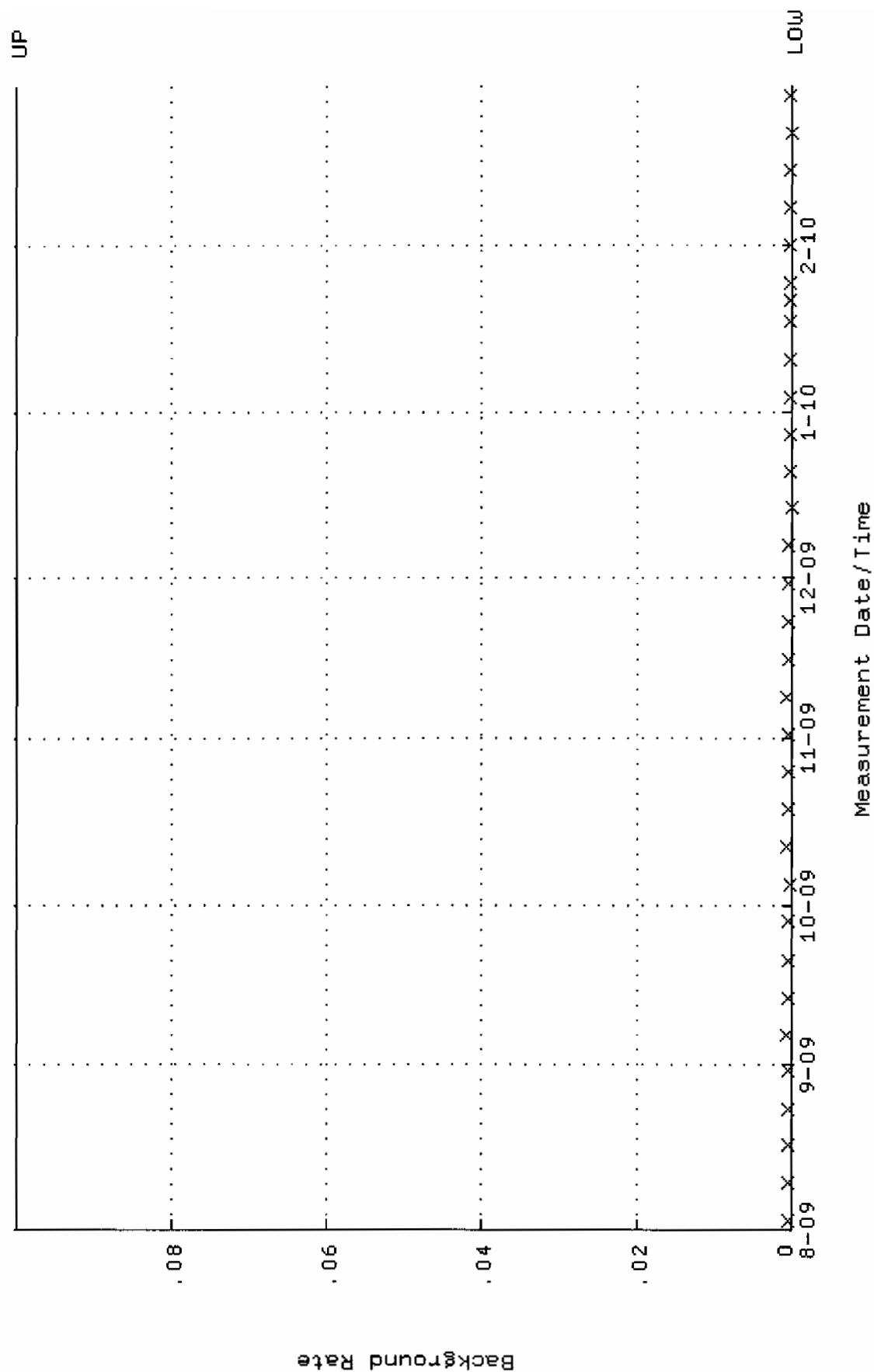


QA filename : DKA100:[ENV_ALPHA.QA.B]B236.QAF;1

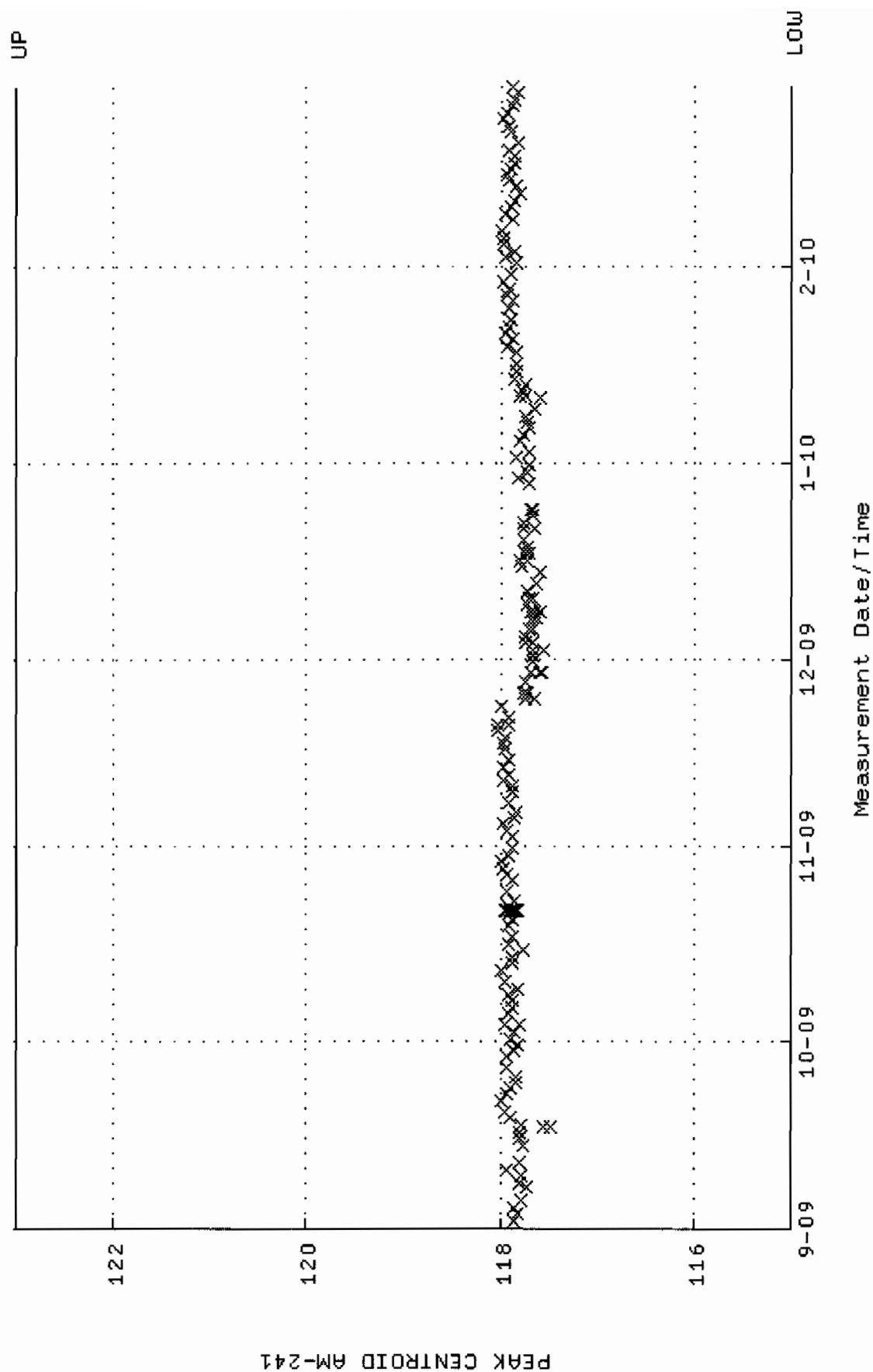
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:27:04 through 2-MAR-2010 12:00:00

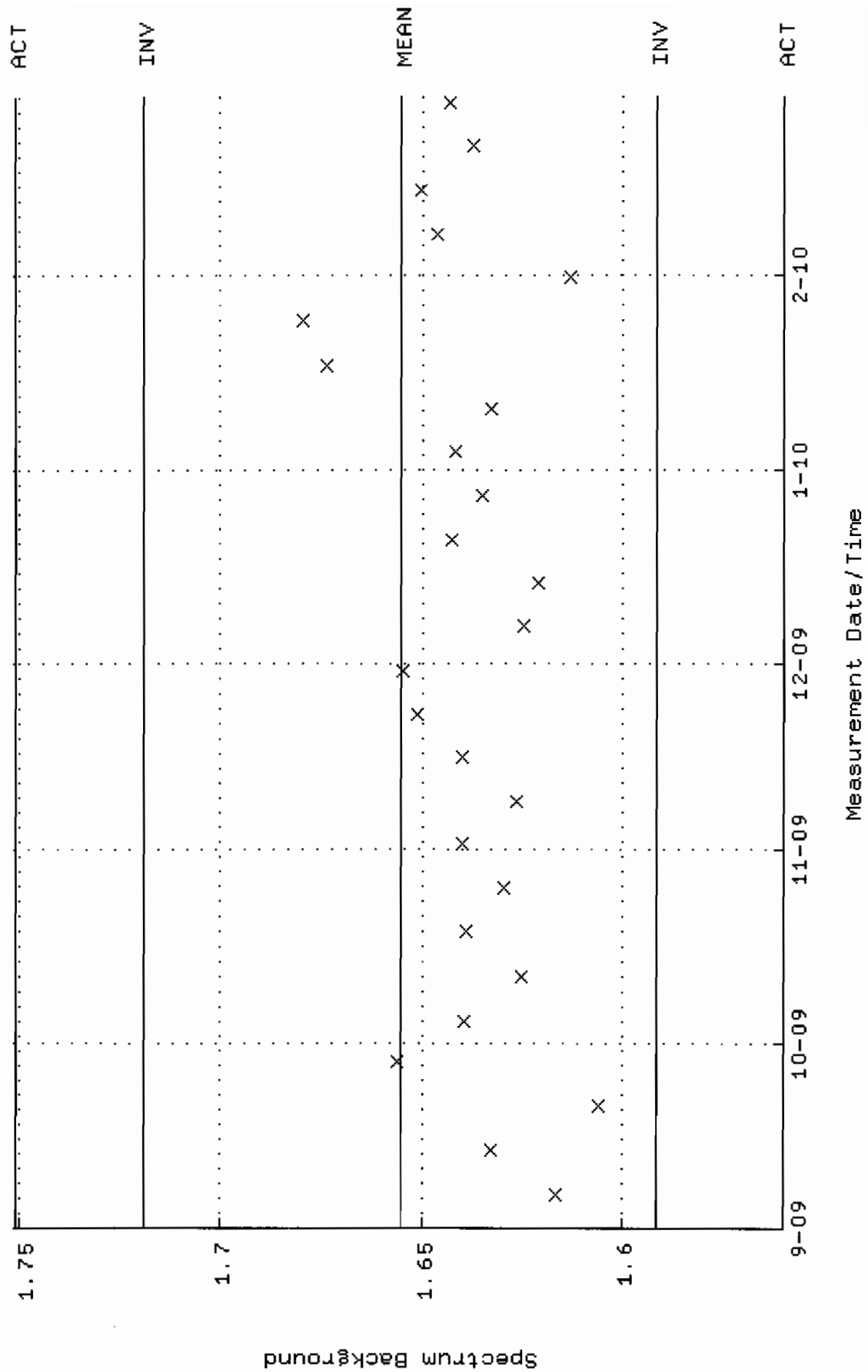
Lower/Upper Lmts: 0.000000E+00 through 0.100000



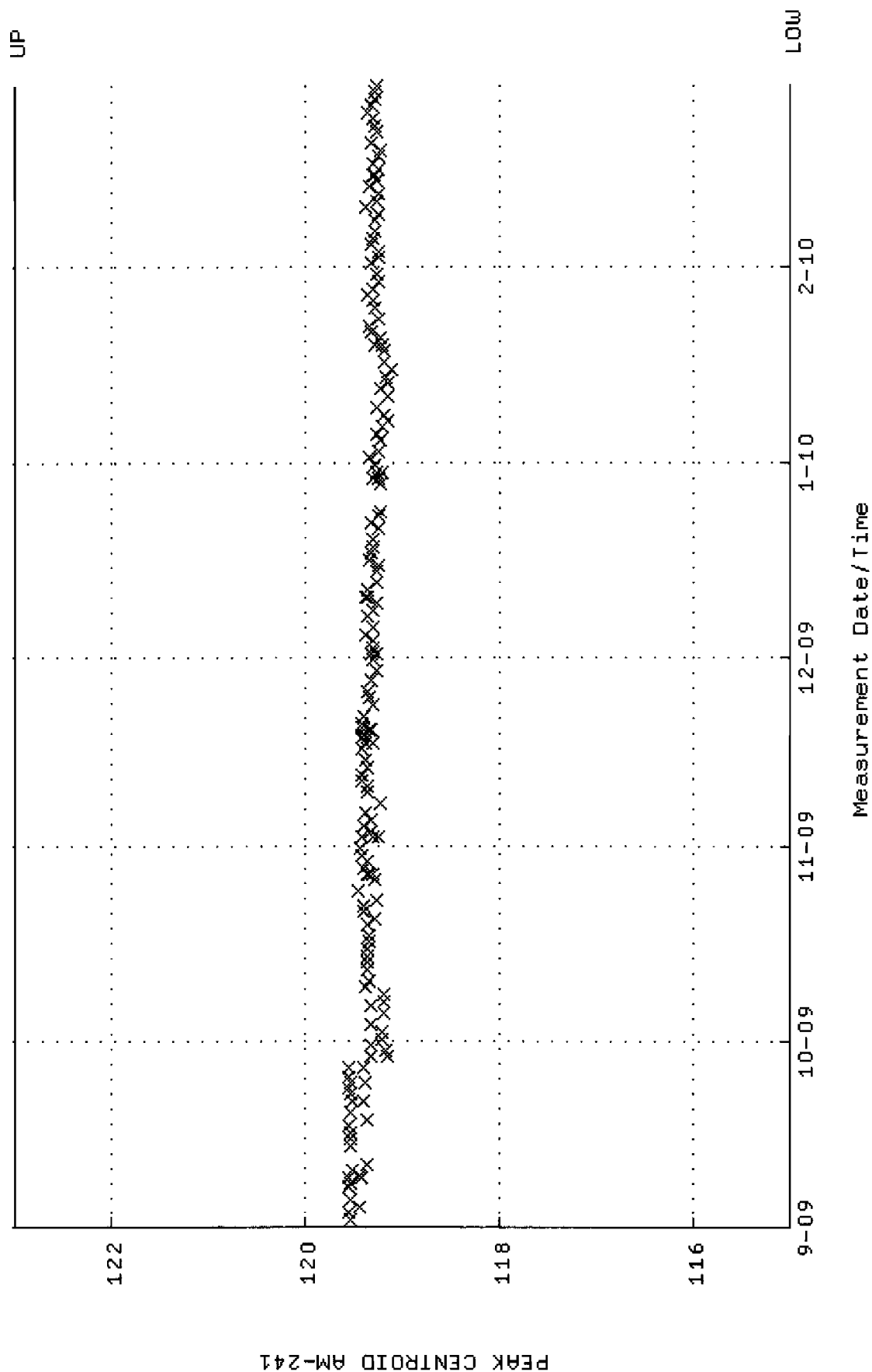
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM11_JAR.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 06:47:51 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



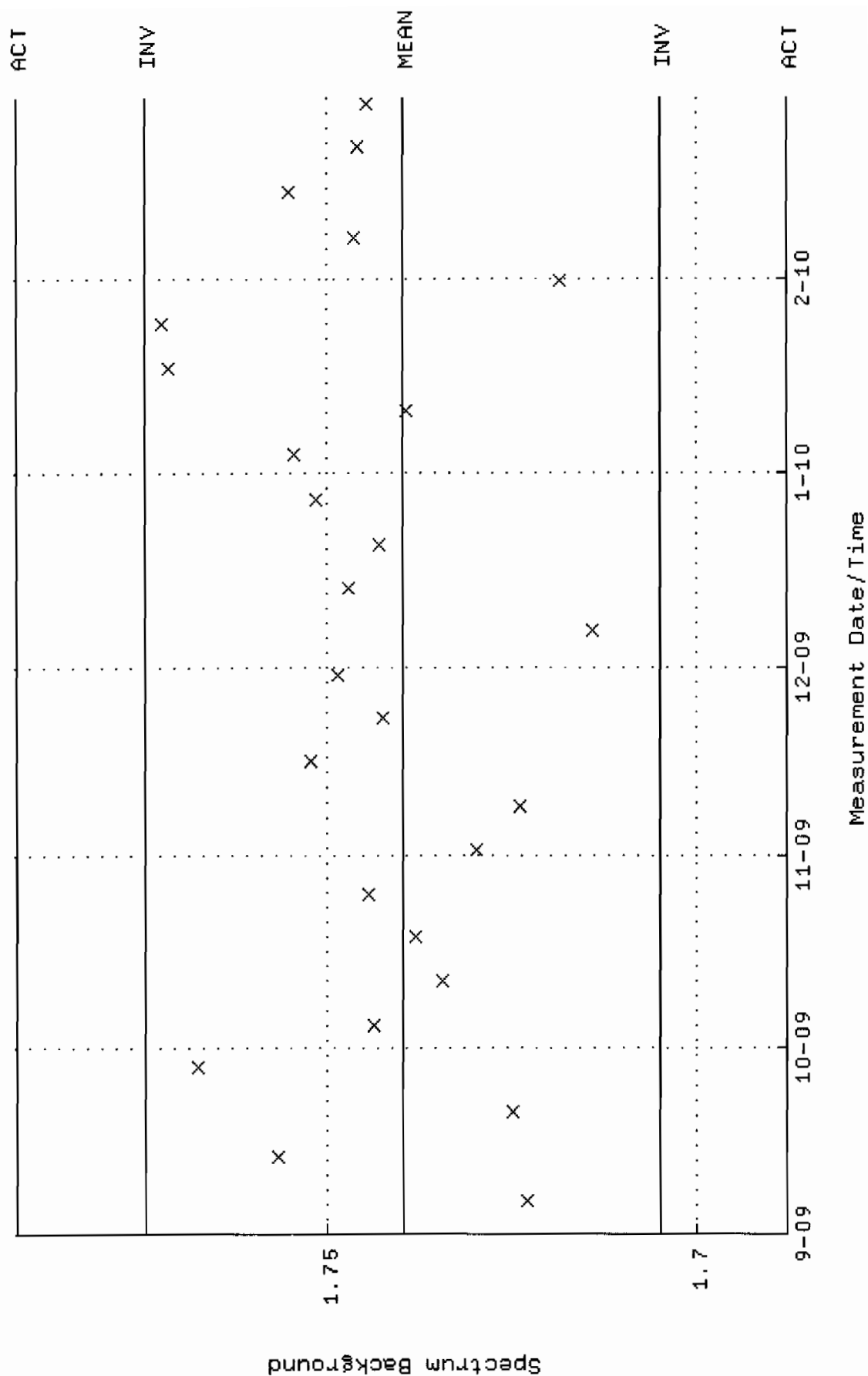
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM11.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:41:47 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



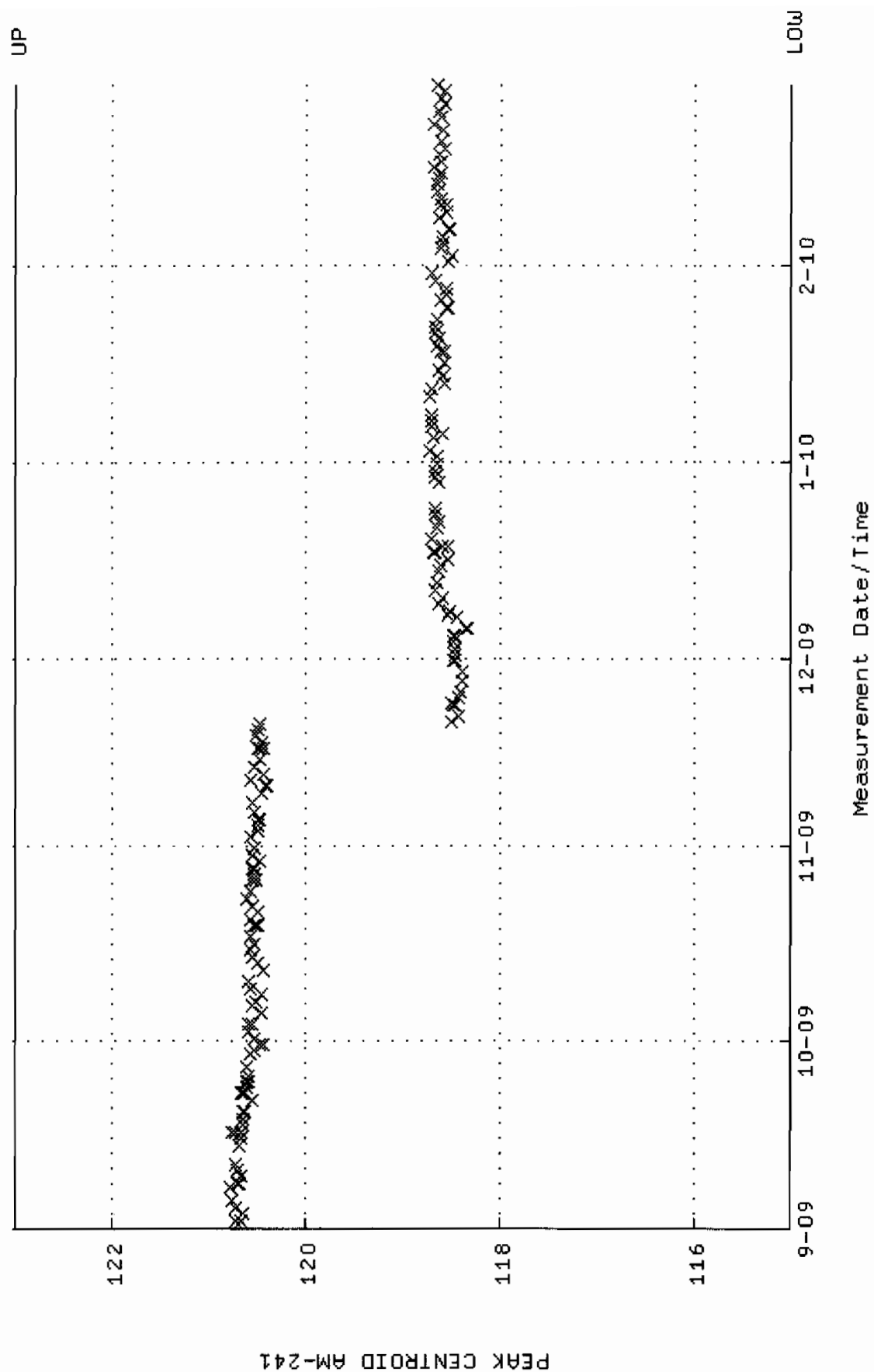
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM16-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



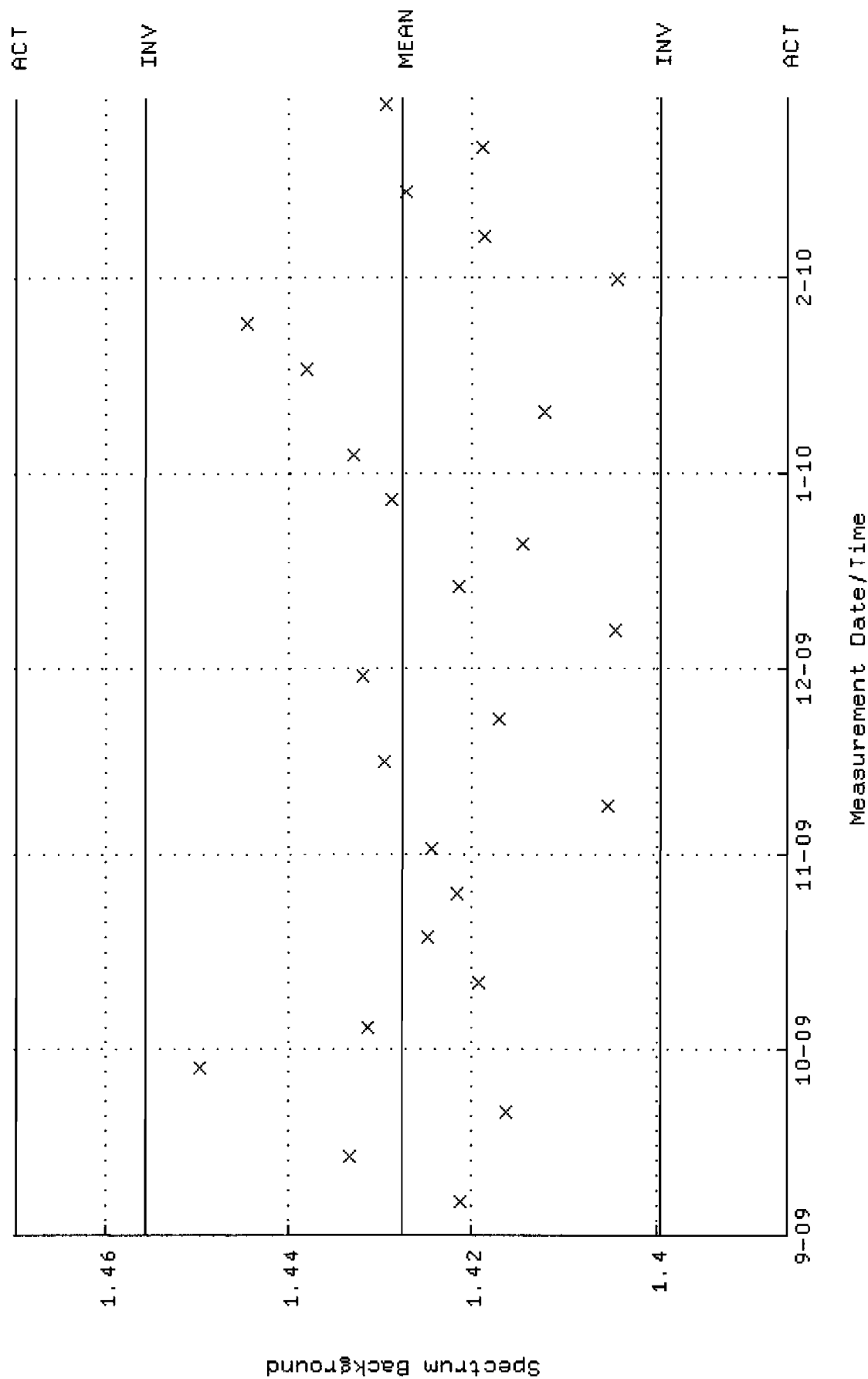
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:09 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



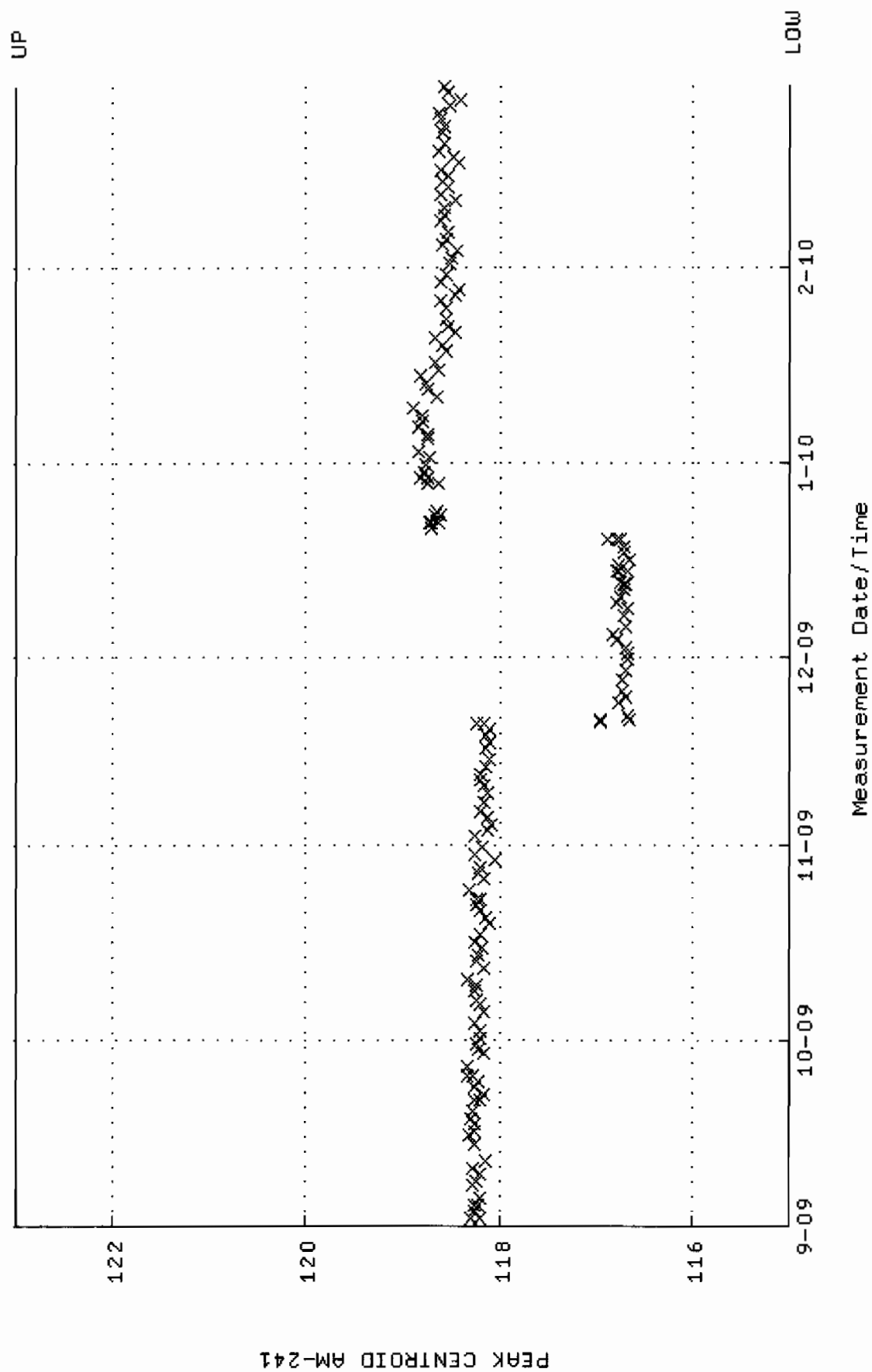
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM17-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:49 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



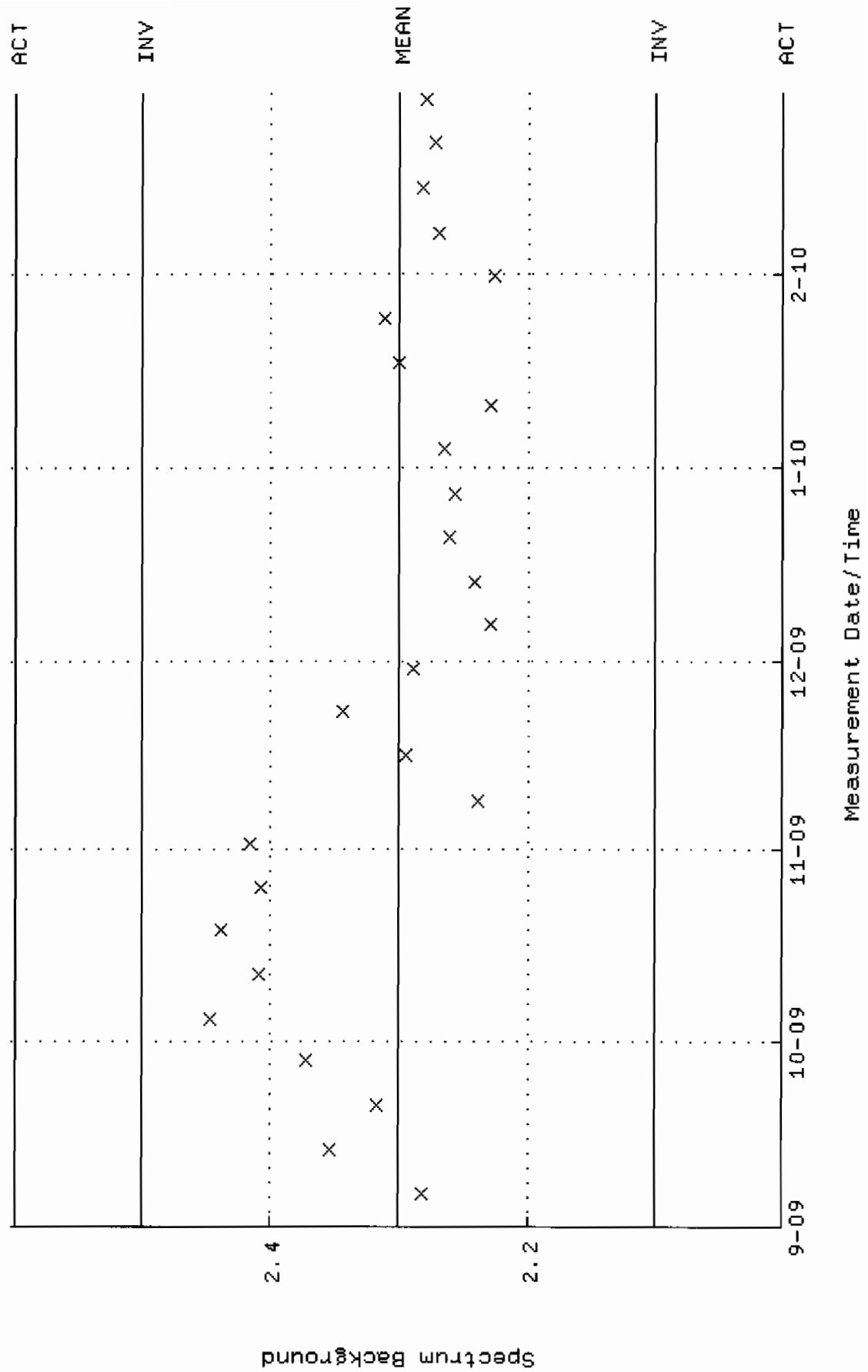
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM17.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



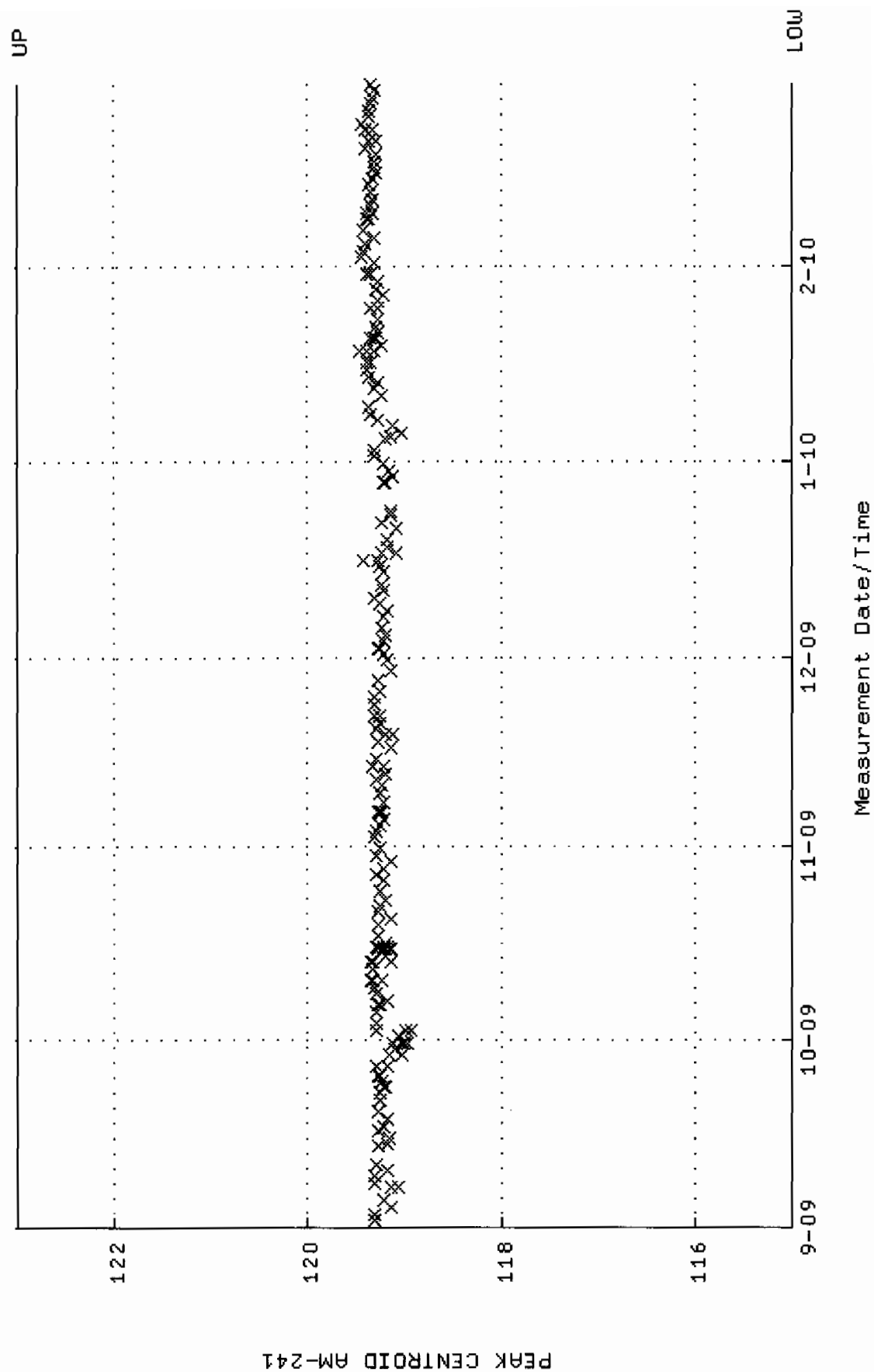
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM18_CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:13:07 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



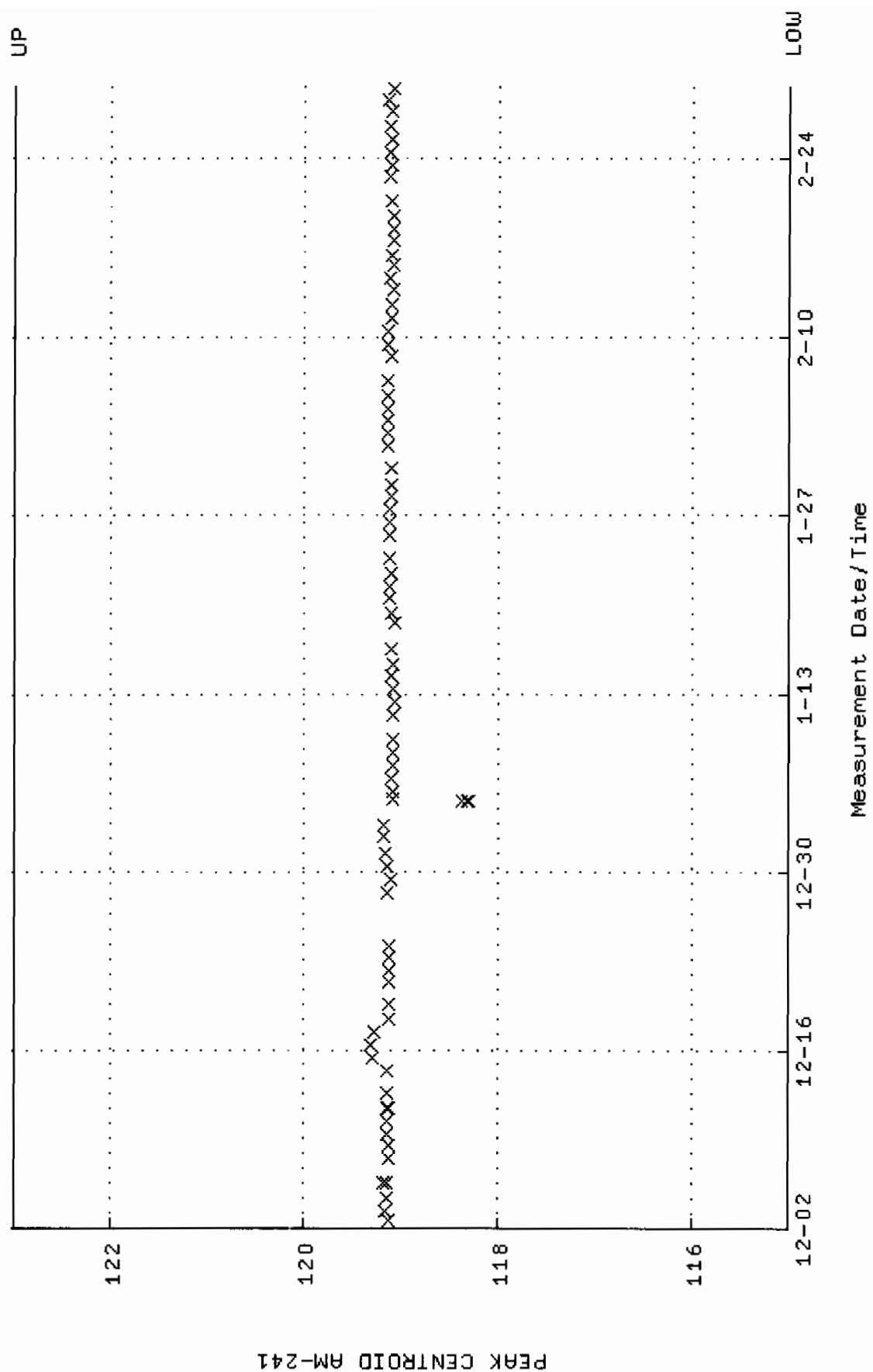
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM18.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:03 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



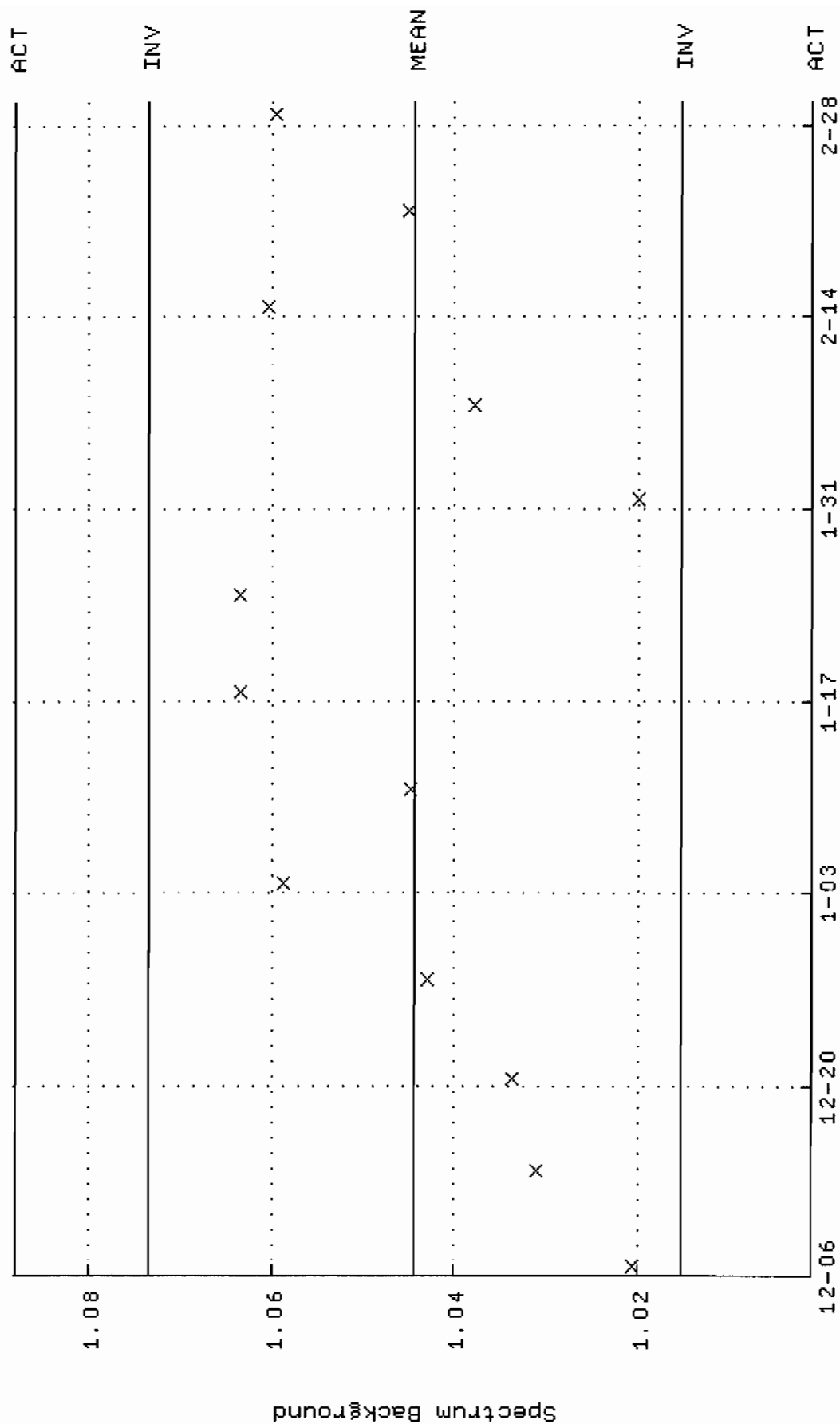
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM20_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:11 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



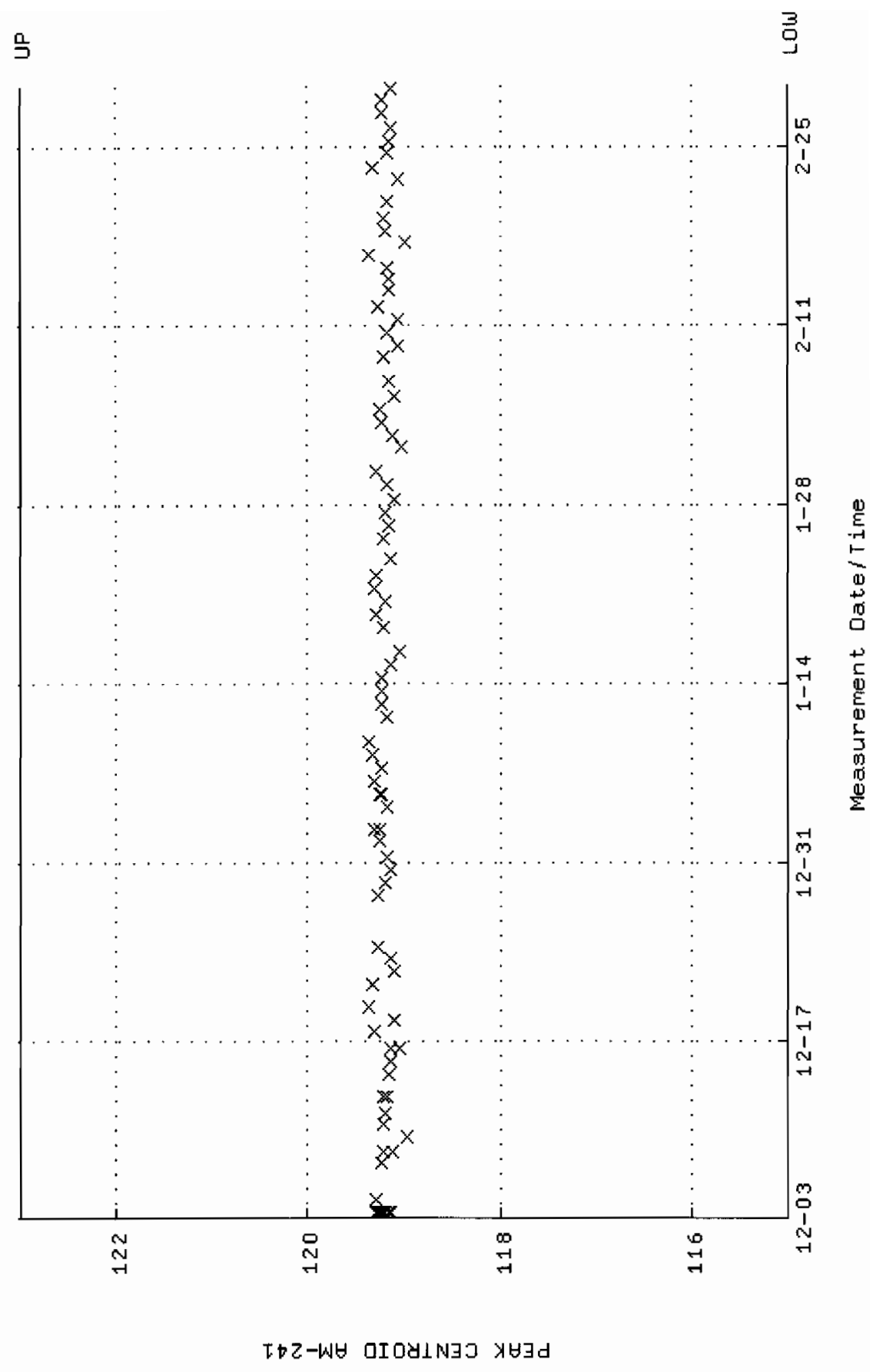
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM21-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-DEC-2009 13:07:42 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



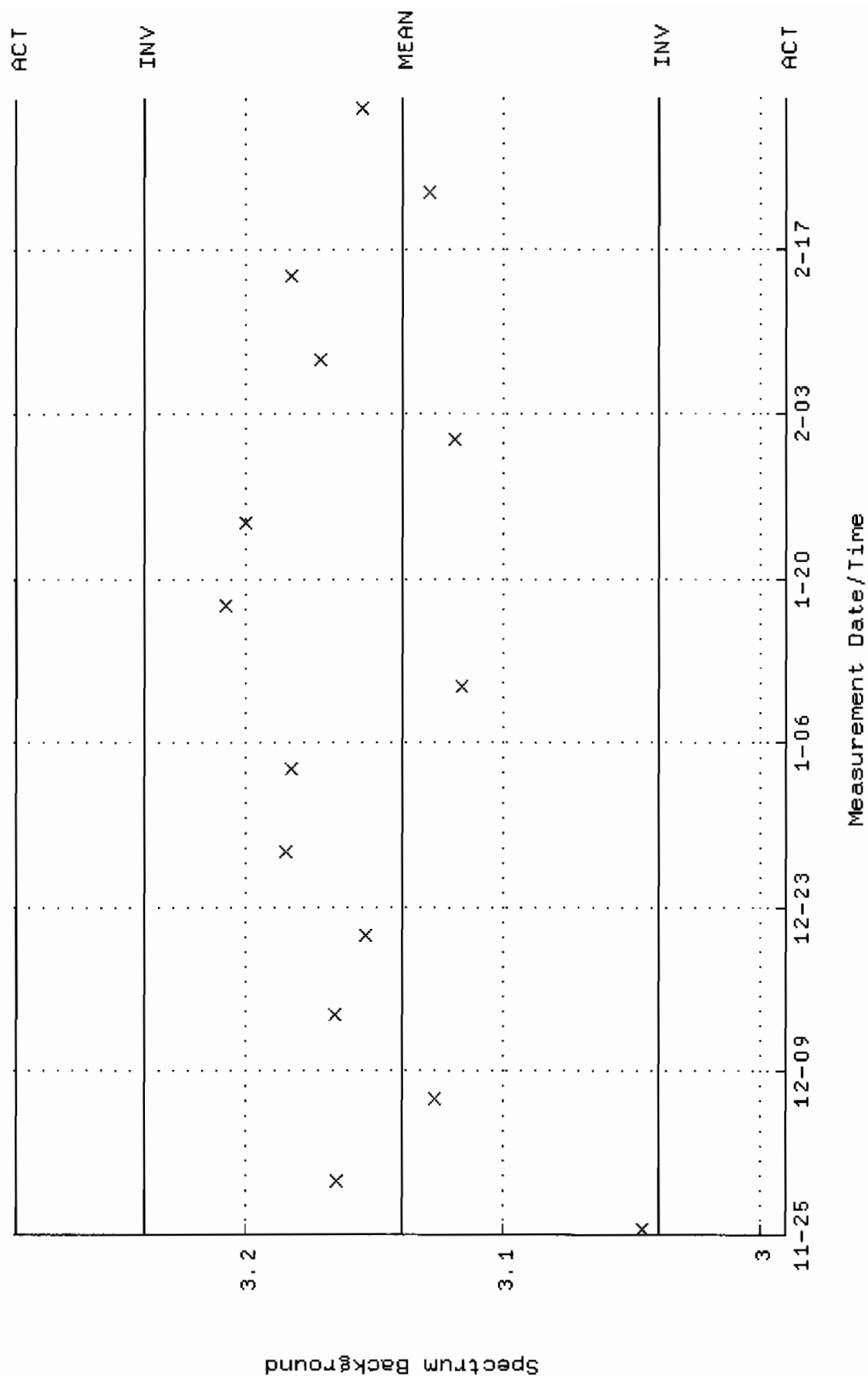
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM21.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-DEC-2009 15:25:38 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.04443 +- 1.452671E-02 (1.39 %)



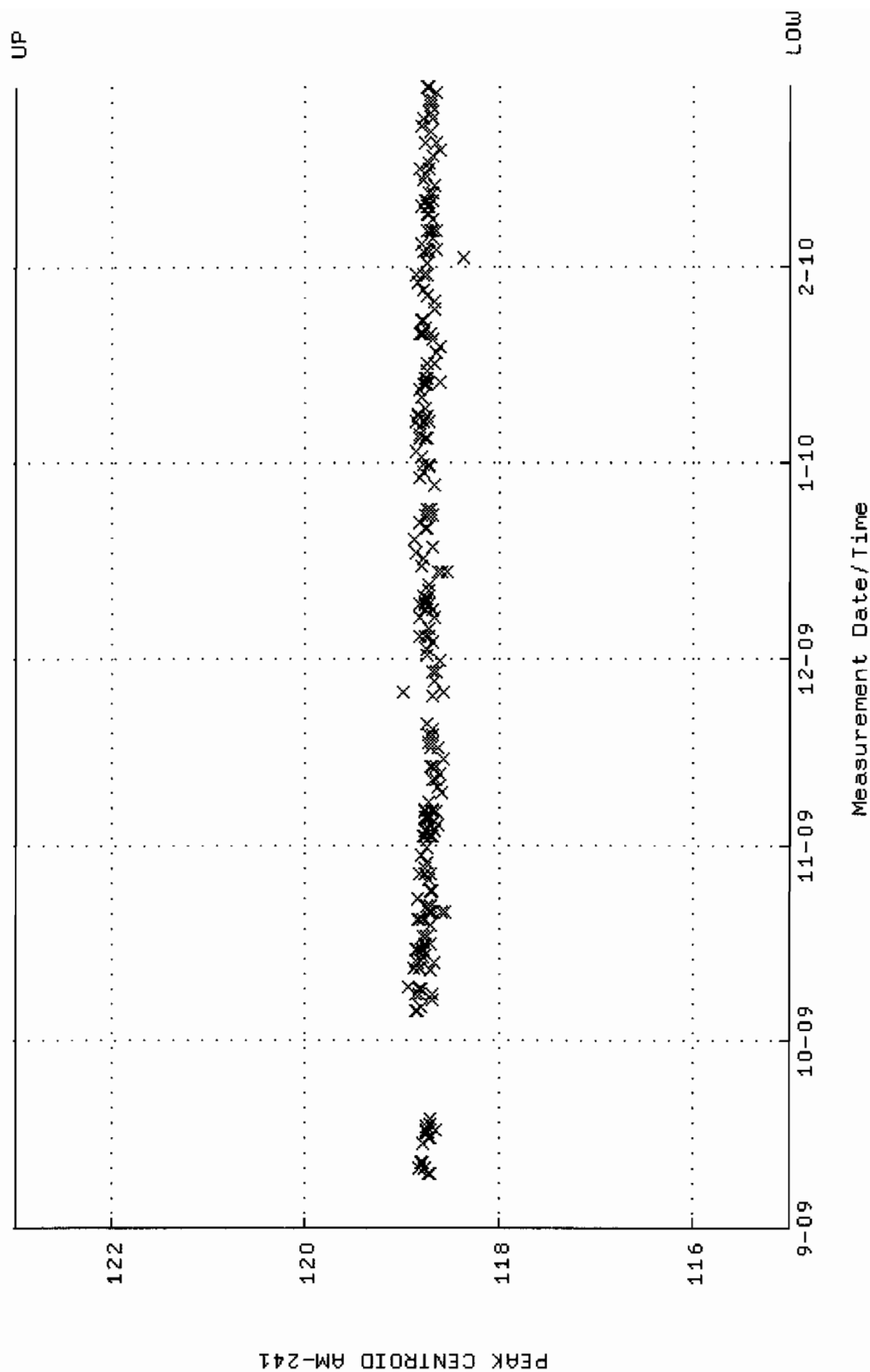
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM22_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



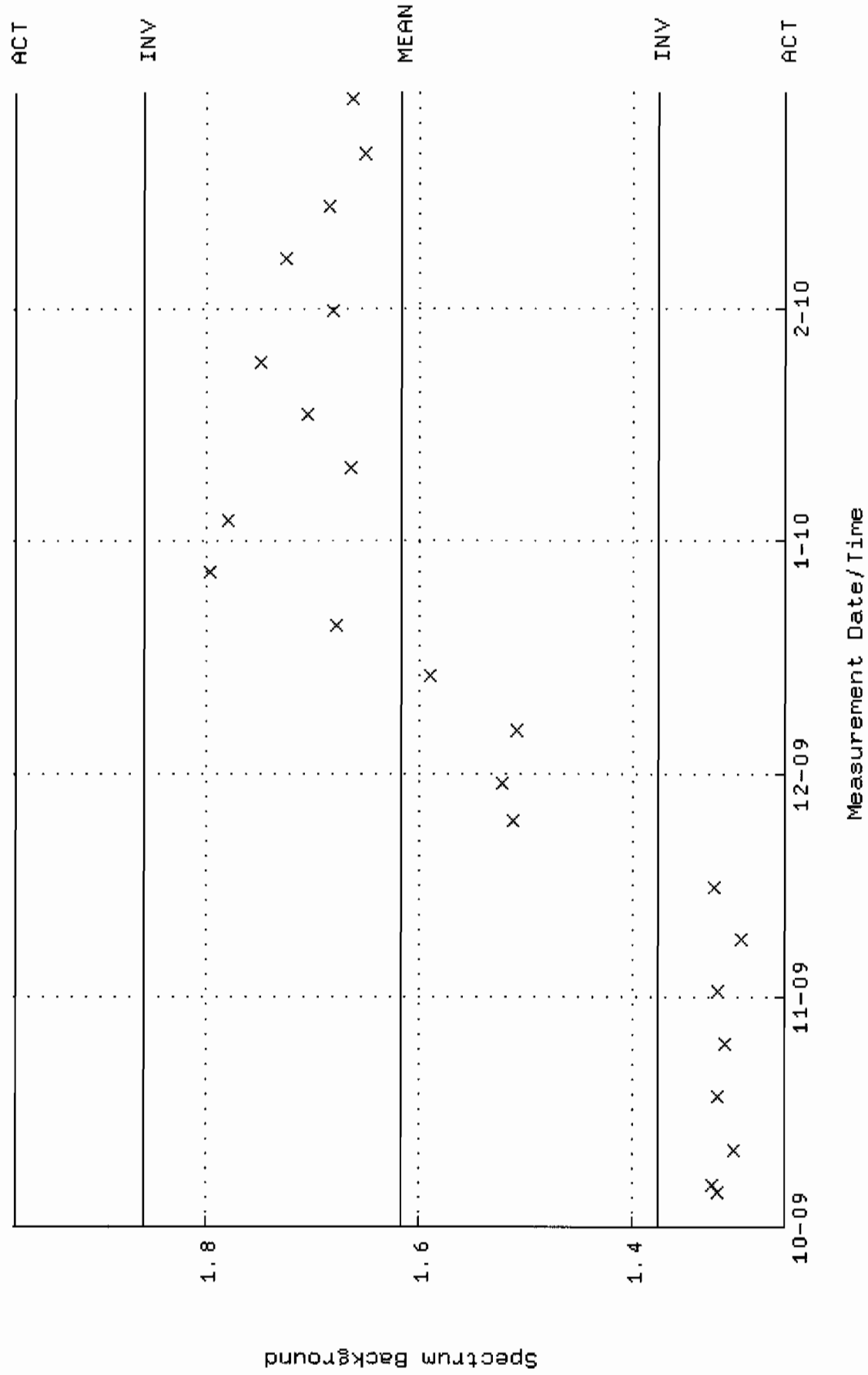
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)

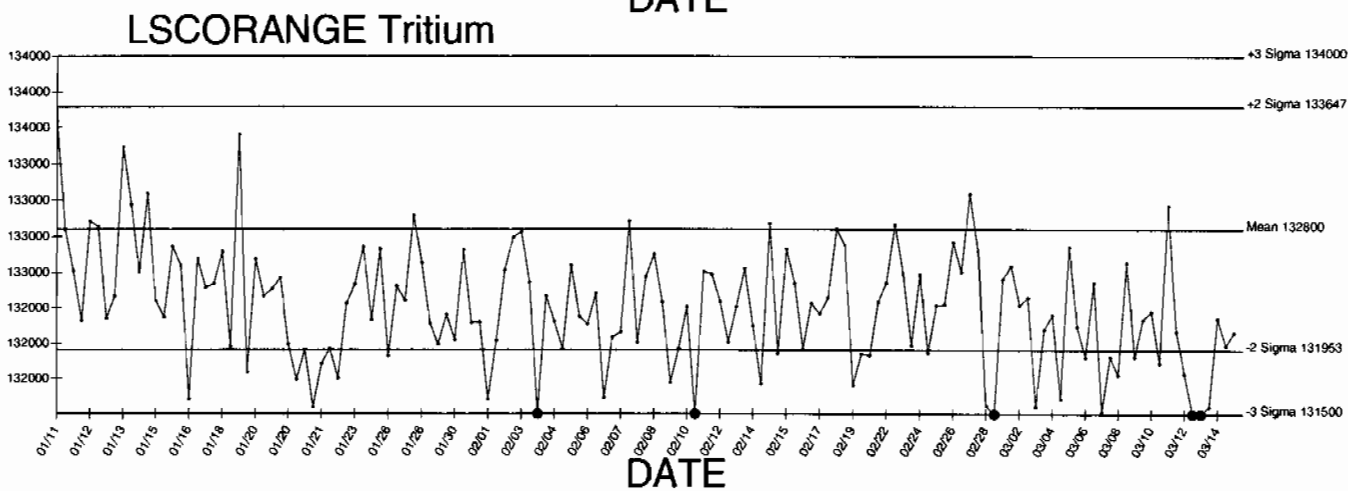
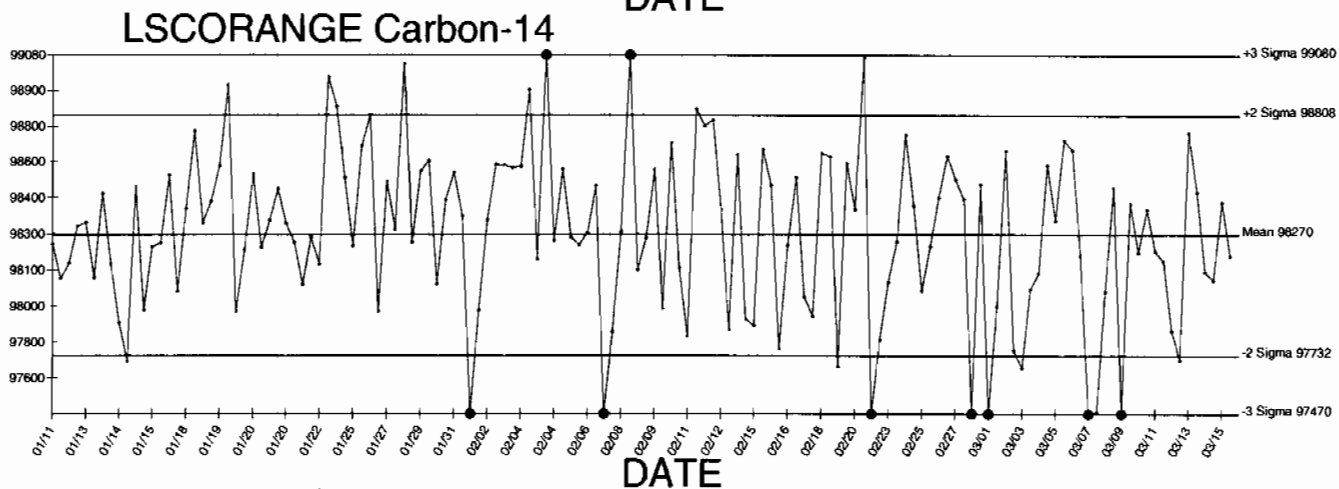
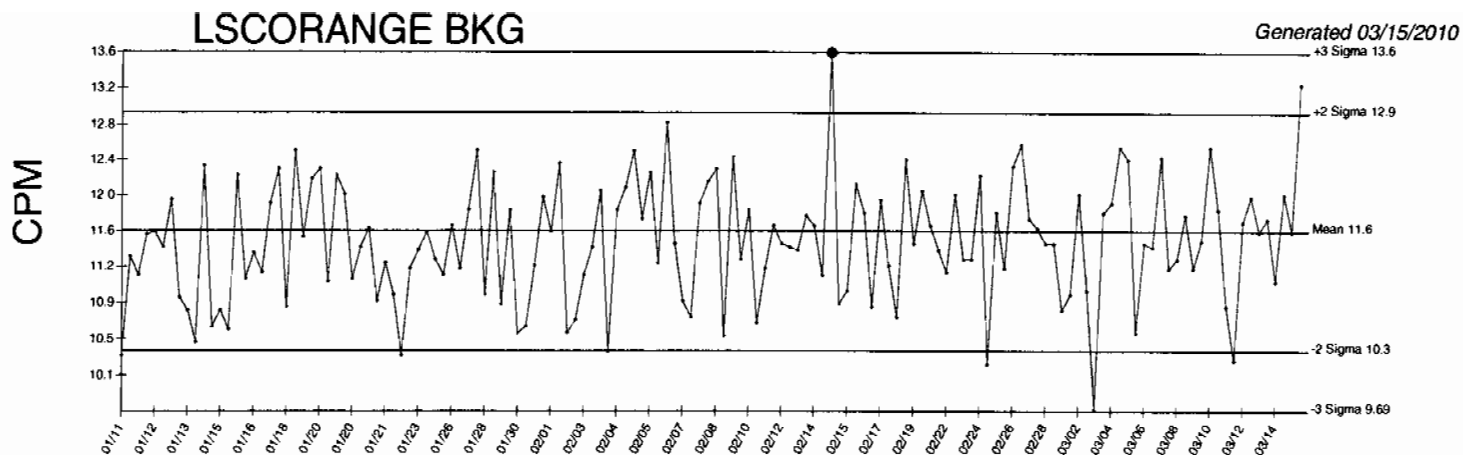


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM23-CAN.QAF;1
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:19:12 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000

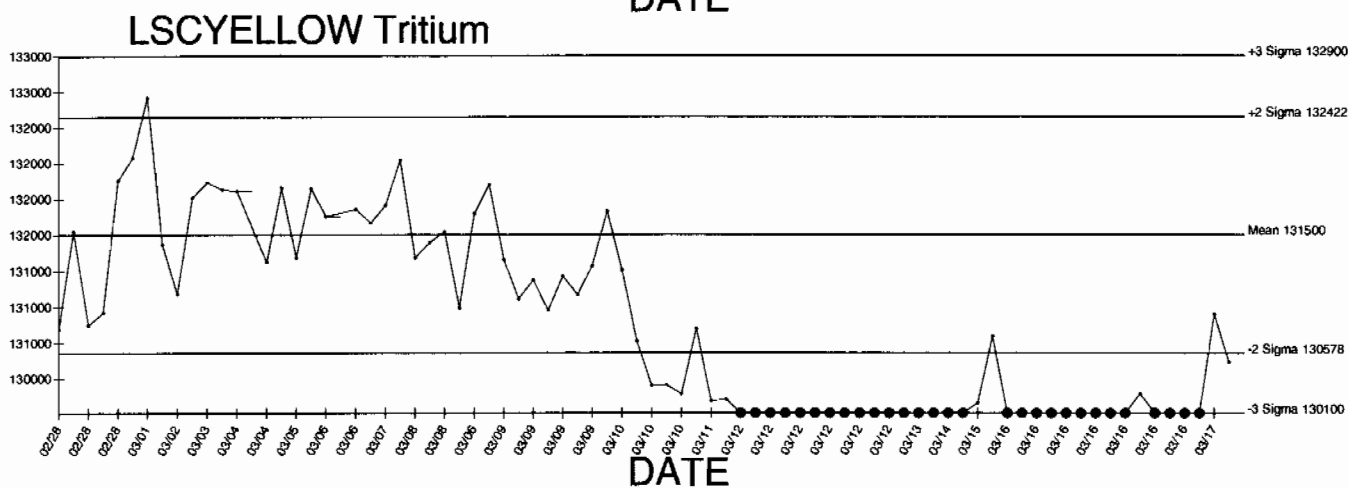
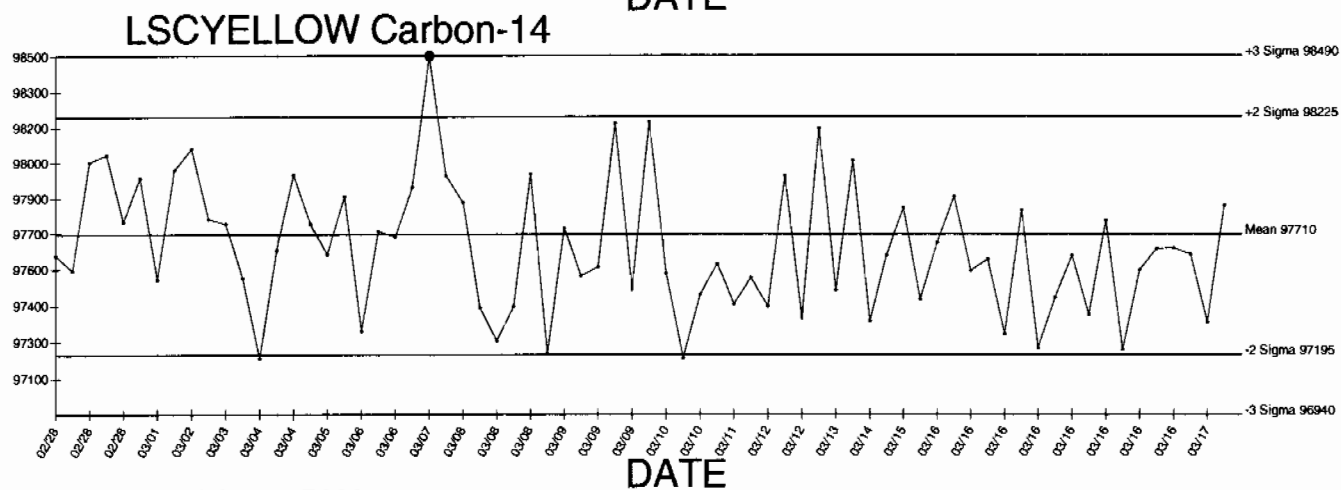
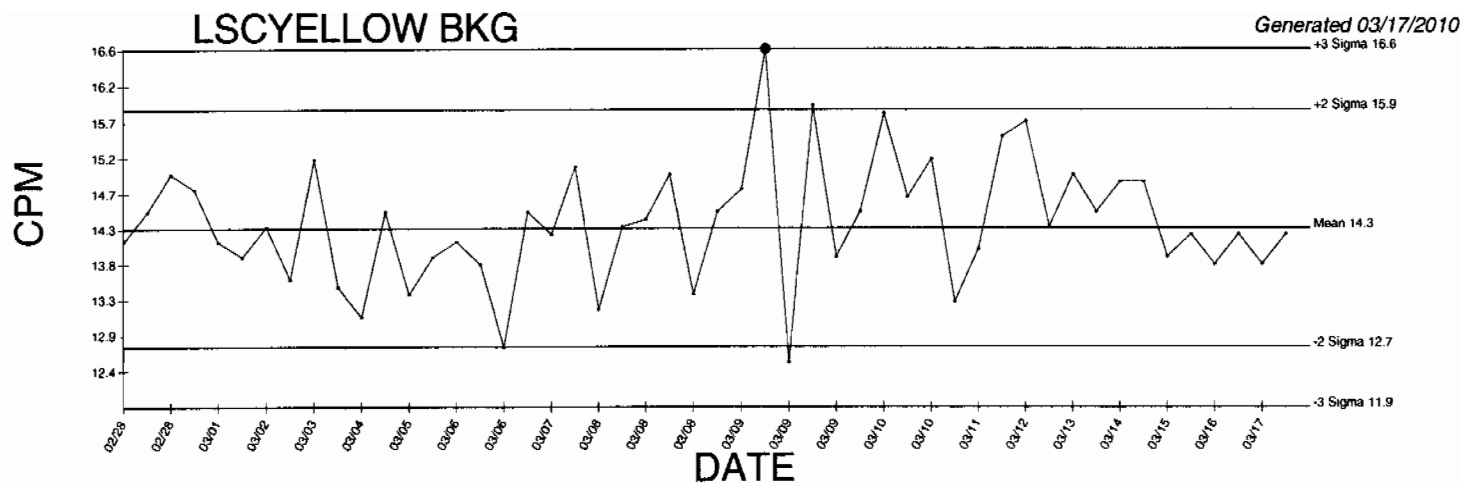


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM23.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-OCT-2009 15:13:53 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)





● Denotes Outlier



● 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
signature

W. F. Case

2C-5-023-A61a

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	0134	Isotope:	Tritium
Prepared By:	Angela Johnson	Prepared By:	Angela Johnson
Carrier Conc:	DI WATER	Prep Date:	02/21/2001
Reference Date:	03/01/1996	Verification Date:	09/10/2008
Ampoule Mass (g):	5 g	Expiration Date:	03/27/2010
Uncertainty:	+/- 2.5 %	Primary Code:	0134-A
LogBook No:	RC S 023 061	Dilution(mL):	100 mL
		Mass of Parent(g):	3.3659 g
		Density(g/mL):	1.0004
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/20/2004	Amanda Fehr	5.86	1000	0134-H	5773.1566 dpm/mL	07/25/2006	07/25/2007
12/20/2005	Amanda Fehr	5.5451	1000	0134-I	5462.92 dpm/mL	12/20/2006	12/20/2007
07/11/2007	Daniel Roy	5.5863	1000	0134-J	5503.5128 dpm/ml	07/29/2008	07/29/2009
03/25/2009	Mary Aders	5.4917	1000	0134-K	5410.3147 dpm/ml	03/27/2009	03/27/2010

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

M. Aders	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff Mass. Used (mL)	Standard	Source DPM/mL
4/9/2009	0134-K N1	1097.2000	54.0000	1043.2000	0.380548	1.0000	2741.3099
	0134-K N2	1073.2000	54.0000	1019.2000	0.380548	1.0000	2678.242955
	0134-K N3	1085.2000	54.0000	1031.2000	0.380548	1.0000	2709.776428
						Average =	2709.776428

Mean Value (Counting) = 2709.776428
Stddev = 31.53347278

Certificate Value = 2581.86 dpm/mL
Lower Limit = 2646.709482 dpm/mL
Upper Limit = 2772.843373 dpm/mL
Rule 1 Pass/Fail ***exception taken due to full recovery of standard**
Two sigma = 63.06894556 dpm/mL
10 % of Mean = 270.9776428 dpm/mL
Rule 2 (Pass/Fail) **Pass**

104.954429 **Pass**
0.01163693 **Rule 3 (Pass/Fail)**

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. Ten mL of Ecocint 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 Ecocint Ultra liquid scintillation cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on Silver for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 4/9/09 using 0020-A (H-3). Calibration data is recorded in this logbook under H-3 0020. Each verification source calculation was performed as follows:

$$\text{Source dpm/g} = (A - B)/(C)(D)$$

where:

- A = Var. source cpm.
- B = BKG cpm.
- C = System efficiency, (cpm/dpm), and
- D = mass used for standard verification.

Reference RAD SOP M-001

Handwritten:
Amanda J. Fehr 4/9/09

1032

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

74047-278

.5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. 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. Myers 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-c

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
Sr-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 - Var. Jar. 1
Mixed Gamma N1	2534	pCi/L
Mixed Gamma N2	2510	pCi/L
Mixed Gamma N3	2413	pCi/L

Mean Value (Counting) = 2485.67
Stdev = 64.065
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
in verification
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Cs-137

Isotope	Result	
Mixed Gamma N1	854.2	pCi/L - VER-JAR-1
Mixed Gamma N2	907.6	pCi/L - VER-JAR-3
Mixed Gamma N3	898.9	pCi/L - VER-JAR-2

Mean Value (Counting) =
Stdev =

886.90
28.651
95.01
Rule 3 (Pass/Fail)

Certificate Value =
Lower Limit =
Upper Limit =
Rule 1 (Pass/Fail)
Two sigma =
10 % of Mean =
Rule 2 (Pass/Fail)

933.44144
829.597644
944.202356
Pass
57.30235597
88.69000000
Pass

12/2/09
12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - VER-JAN-5
Mixed Gamma N1	1572	pCi/L - VER-JAN-2
Mixed Gamma N2	1495	pCi/L - VER-JAN-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 = 152.26866667
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Stamps issued 12/2/09

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATA 4/14/2000 *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 TRM-1 and 2
 7 " baghouse dirt

Use 1/4 gm x 10 samples WITH Together
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM-1	TRM-2	TRM-3	TRM-4
U-238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U-234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th-230	471 ± 11	24.5 ± 0.6	58.5 ± 2.1	44.0 ± 1.6
Ra-226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb-210	24	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 & Staley 5/1/04

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

CERTIFICATE OF CALIBRATION

ALPHA STANDARD SOLUTION

Radionuclide Am-243
Half Life: 7380 \pm 40 years
Catalog No.: 7243
Source No.: 445-96-2

Customer: GENERAL ENGINEERING LABS
P.O.No.: 9290-RAD
Reference Date: January 1 1994 12:00 PST.
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(NO₃)₃ in 2N HNO₃
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:	05/11/2009
Ampoule Mass (g):	5.3739 g	Expiration Date:	05/11/2010
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Julie Strock	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/30/2008	09/29/2009
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Am-243 Standard 445-96-2-SS

M. Aders 5/15/2009	Isotope	Value	Uncertainty
	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590
Mean Value (Counting) =	1.340	101.99	Pass
Stdev =	0.043588989	Rule 3 (Pass/Fail)	
Target =	1.314		
Lower Limit =	1.252822021		
Upper Limit =	1.427177979		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.087177979		
10 % of Mean =	0.134		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard 445-96-2-SS using 0.1 mL for each source. Each standard was combined with 0.1 mL of Cm-244 standard 0533-O and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

Mary G. Aders 5/15/09
Rahm
 07509



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

Page 1 of 3

Date of Issue: 4 November 2009

Signed:

(Authorised Signatory)

Checked by: *Ch Ali*

Name: Dr Arvic Harms

for Managing Director

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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.

Reference: 2009100356

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Checked by: *Cr all*

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
03/01/2010	Ashley Drochter	15.2331	200	1430-C	35.3496 dpm/mL	03/01/2010	03/01/2011

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
L 3/5/10



Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

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%
5.20453 grams 1M HNO₃ solution.

Source Prepared By: WLS

W. Mao, Radiochemist

QA Approved: DM Montgomery

D. M. Montgomery, QA Manager

Date: 12-11-08

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parent Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parent Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

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
Date: 12/10/09

Serial #	Value	Uncertainty
1283-H N1	2.020	pCi/L 0.238
1283-H N2	2.000	pCi/L 0.234
1283-H N3	2.060	pCi/L 0.242

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: 958216

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247964001	SAMPLE	MXR1	GAM16	10-MAR-10 21:17	DONE	CAN	16-NOV-09 00:00
247964002	SAMPLE	MXR1	GAM25	10-MAR-10 21:17	DONE	CAN	07-OCT-09 00:00
247964003	SAMPLE	MXR1	GAM05	10-MAR-10 23:08	DONE	CAN	11-JUN-09 00:00
247964004	SAMPLE	MXR1	GAM13	10-MAR-10 23:09	DONE	CAN	11-FEB-10 00:00
247964005	SAMPLE	MXR1	GAM15	10-MAR-10 23:10	DONE	CAN	03-FEB-10 00:00
247969001	SAMPLE	MXR1	GAM18	10-MAR-10 23:10	DONE	CAN	23-APR-09 00:00
247969002	SAMPLE	MXR1	GAM21	10-MAR-10 23:10	DONE	CAN	28-JUL-09 00:00
247969003	SAMPLE	MXR1	GAM22	10-MAR-10 23:11	DONE	CAN	02-DEC-09 00:00
247969004	SAMPLE	MXR1	GAM23	10-MAR-10 23:11	DONE	CAN	02-JUN-09 00:00
247969005	SAMPLE	MXR1	GAM16	10-MAR-10 23:25	DONE	CAN	16-NOV-09 00:00
247969006	SAMPLE	MXR1	GAM23	11-MAR-10 14:14	DONE	CAN	02-JUN-09 00:00
247969007	SAMPLE	MXR1	GAM11	11-MAR-10 14:15	DONE	CAN	18-NOV-09 00:00
247969008	SAMPLE	MXR1	GAM17	11-MAR-10 14:17	DONE	CAN	06-JAN-10 00:00
247970001	SAMPLE	MXR1	GAM18	11-MAR-10 14:18	DONE	CAN	23-APR-09 00:00
247970002	SAMPLE	MXR1	GAM21	11-MAR-10 14:18	DONE	CAN	28-JUL-09 00:00
247970003	SAMPLE	MXR1	GAM15	11-MAR-10 16:04	DONE	CAN	03-FEB-10 00:00
247970004	SAMPLE	MXR1	GAM05	11-MAR-10 18:12	DONE	CAN	11-JUN-09 00:00
247970005	SAMPLE	MXR1	GAM04	11-MAR-10 19:25	DONE	CAN	05-MAY-09 00:00
247970006	SAMPLE	MXR1	GAM06	11-MAR-10 19:25	DONE	CAN	16-FEB-10 00:00
247970007	SAMPLE	MXR1	GAM14	11-MAR-10 19:26	DONE	CAN	06-MAR-09 00:00
1202054948	MB	MXR1	GAM20	11-MAR-10 19:26	DONE	CAN	26-AUG-09 00:00
1202054949	DUP	MXR1	GAM23	11-MAR-10 19:27	DONE	CAN	02-JUN-09 00:00
1202054950	LCS	MXR1	GAM21	11-MAR-10 19:35	DONE	CAN	28-JUL-09 00:00

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 962401

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247964004	SAMPLE	JXH2	1215	22-MAR-10 03:05	DONE		
247964005	SAMPLE	JXH2	1216	22-MAR-10 03:05	DONE		
247969001	SAMPLE	JXH2	1217	22-MAR-10 03:05	DONE		
247969002	SAMPLE	JXH2	1218	22-MAR-10 03:05	DONE		
247969003	SAMPLE	JXH2	1219	22-MAR-10 03:05	DONE		
247969004	SAMPLE	JXH2	1220	22-MAR-10 03:05	DONE		
247969005	SAMPLE	JXH2	1221	22-MAR-10 03:05	DONE		
247969006	SAMPLE	JXH2	1222	22-MAR-10 03:05	DONE		
247969007	SAMPLE	JXH2	1223	22-MAR-10 03:05	DONE		
247969008	SAMPLE	JXH2	1224	22-MAR-10 03:05	DONE		
247970001	SAMPLE	JXH2	1225	22-MAR-10 03:05	DONE		
247970002	SAMPLE	JXH2	1226	22-MAR-10 03:06	DONE		
247970003	SAMPLE	JXH2	1229	22-MAR-10 03:06	DONE		
247970004	SAMPLE	JXH2	1230	22-MAR-10 03:06	DONE		
247970005	SAMPLE	JXH2	1231	22-MAR-10 03:06	DONE		
247970006	SAMPLE	JXH2	1232	22-MAR-10 03:06	DONE		
247970007	SAMPLE	JXH2	1233	22-MAR-10 03:06	DONE		
1202064503	MB	JXH2	1234	22-MAR-10 03:06	DONE		
1202064504	DUP	JXH2	1235	22-MAR-10 03:06	DONE		
1202064505	LCS	JXH2	1236	22-MAR-10 03:06	DONE		
247964001	SAMPLE	JXH2	1209	22-MAR-10 11:14	DONE		
247964002	SAMPLE	JXH2	1210	22-MAR-10 11:14	DONE		
247964003	SAMPLE	JXH2	1211	22-MAR-10 11:14	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 962402

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202064508	LCS	JXH2	1112	22-MAR-10 09:59	DONE		
247964001	SAMPLE	JXH2	1013	22-MAR-10 22:24	DONE		
247964002	SAMPLE	JXH2	1014	22-MAR-10 22:24	DONE		
247964003	SAMPLE	JXH2	1016	22-MAR-10 22:24	DONE		
247964004	SAMPLE	JXH2	1017	22-MAR-10 22:24	DONE		
247964005	SAMPLE	JXH2	1018	22-MAR-10 22:24	DONE		
247969001	SAMPLE	JXH2	1083	22-MAR-10 22:24	DONE		
247969002	SAMPLE	JXH2	1084	22-MAR-10 22:24	DONE		
247969003	SAMPLE	JXH2	1085	22-MAR-10 22:24	DONE		
247969004	SAMPLE	JXH2	1086	22-MAR-10 22:24	DONE		
247969005	SAMPLE	JXH2	1087	22-MAR-10 22:24	DONE		
247969006	SAMPLE	JXH2	1088	22-MAR-10 22:24	DONE		
247969007	SAMPLE	JXH2	1089	22-MAR-10 22:24	DONE		
247969008	SAMPLE	JXH2	1090	22-MAR-10 22:24	DONE		
247970001	SAMPLE	JXH2	1091	22-MAR-10 22:24	DONE		
247970002	SAMPLE	JXH2	1093	22-MAR-10 22:24	DONE		
247970003	SAMPLE	JXH2	1094	22-MAR-10 22:24	DONE		
247970004	SAMPLE	JXH2	1095	22-MAR-10 22:24	DONE		
247970005	SAMPLE	JXH2	1096	22-MAR-10 22:24	DONE		
247970006	SAMPLE	JXH2	1097	22-MAR-10 22:24	DONE		
247970007	SAMPLE	JXH2	1098	22-MAR-10 22:24	DONE		
1202064506	MB	JXH2	1099	22-MAR-10 22:24	DONE		
1202064507	DUP	JXH2	1100	22-MAR-10 22:24	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 962404

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247970006	SAMPLE	JXH2	1007	20-MAR-10 12:43	DONE		
247970007	SAMPLE	JXH2	1008	20-MAR-10 12:43	DONE		
1202064509	MB	JXH2	1009	20-MAR-10 12:43	DONE		
1202064510	DUP	JXH2	1010	20-MAR-10 12:43	DONE		
1202064511	LCS	JXH2	1011	20-MAR-10 12:43	DONE		
247964001	SAMPLE	JXH2	1119	22-MAR-10 21:19	DONE		
247964002	SAMPLE	JXH2	1120	22-MAR-10 21:19	DONE		
247964003	SAMPLE	JXH2	1121	22-MAR-10 21:19	DONE		
247964004	SAMPLE	JXH2	1122	22-MAR-10 21:19	DONE		
247964005	SAMPLE	JXH2	1123	22-MAR-10 21:19	DONE		
247969001	SAMPLE	JXH2	1124	22-MAR-10 21:19	DONE		
247969002	SAMPLE	JXH2	1125	22-MAR-10 21:20	DONE		
247969003	SAMPLE	JXH2	1126	22-MAR-10 21:20	DONE		
247969004	SAMPLE	JXH2	1127	22-MAR-10 21:20	DONE		
247969005	SAMPLE	JXH2	1128	22-MAR-10 21:20	DONE		
247969006	SAMPLE	JXH2	1129	22-MAR-10 21:20	DONE		
247969007	SAMPLE	JXH2	1130	22-MAR-10 21:20	DONE		
247969008	SAMPLE	JXH2	1135	22-MAR-10 21:20	DONE		
247970001	SAMPLE	JXH2	1136	22-MAR-10 21:20	DONE		
247970002	SAMPLE	JXH2	1139	22-MAR-10 21:20	DONE		
247970003	SAMPLE	JXH2	1140	22-MAR-10 21:20	DONE		
247970004	SAMPLE	JXH2	1141	22-MAR-10 21:20	DONE		
247970005	SAMPLE	JXH2	1142	22-MAR-10 21:20	DONE		

Instrument Run Log

Instrument Type: LSC

Batch ID: 964049

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247964002	SAMPLE	KXK2	LSCORANGE	15-MAR-10 10:24	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247964003	SAMPLE	KXK2	LSCORANGE	15-MAR-10 11:02	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247964005	SAMPLE	KXK2	LSCORANGE	15-MAR-10 12:17	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969001	SAMPLE	KXK2	LSCORANGE	15-MAR-10 13:09	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969002	SAMPLE	KXK2	LSCORANGE	15-MAR-10 13:47	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969003	SAMPLE	KXK2	LSCORANGE	15-MAR-10 14:25	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969004	SAMPLE	KXK2	LSCORANGE	15-MAR-10 15:02	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969005	SAMPLE	KXK2	LSCORANGE	15-MAR-10 15:40	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969006	SAMPLE	KXK2	LSCORANGE	15-MAR-10 16:17	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969007	SAMPLE	KXK2	LSCORANGE	15-MAR-10 16:55	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
247969008	SAMPLE	KXK2	LSCORANGE	15-MAR-10 17:32	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
248028001	SAMPLE	KXK2	LSCORANGE	15-MAR-10 18:25	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
248028002	SAMPLE	KXK2	LSCORANGE	15-MAR-10 19:02	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
248028003	SAMPLE	KXK2	LSCORANGE	15-MAR-10 19:40	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
248028004	SAMPLE	KXK2	LSCORANGE	15-MAR-10 20:17	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
248028005	SAMPLE	KXK2	LSCORANGE	15-MAR-10 20:55	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
1202068193	DUP	KXK2	LSCORANGE	15-MAR-10 22:10	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
1202068194	LCS	KXK2	LSCORANGE	15-MAR-10 22:48	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00
1202068192	MB	KXK2	LSCYELLOW	17-MAR-10 15:23	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247964001	SAMPLE	KXK2	LSCGOLD	19-MAR-10 14:45	DONE	10mL DW/13mL Ecoscint Ultra	20-AUG-09 00:00
247964004	SAMPLE	KXK2	LSCORANGE	22-MAR-10 17:53	DONE	10mL DW/13mL Ecoscint Ultra	24-JUL-09 00:00