

Friday, February 26, 2010

Page 2 of 3

REQUEST NUMBER: 10-2136

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA.901.1	EPA.906.0	1	RE36-10-7520	R	2/24/2010	
		1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
HASL-300-AM-241		1	RE36-10-7520	R	2/24/2010	
		1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
HASL-300-ISOPU		1	RE36-10-7520	R	2/24/2010	
		1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	

Friday, February 26, 2010

REQUEST NUMBER: 10-2136

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
		1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	

Final Page of REQUEST NUMBER 10-2136

Friday, February 26, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2136

LOS ALAMOS

REQUEST NUMBER: 10-2136

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/28/2010

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
RE36-10-7458	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7458	1	POLY	H3	Ice	R
RE36-10-7453	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7453	1	POLY	H3	Ice	R
RE36-10-7454	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7454	1	POLY	H3	Ice	R
RE36-10-7460	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7460	1	POLY	H3	Ice	R
RE36-10-7456	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7456	1	POLY	H3	Ice	R
RE36-10-7455	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7455	1	POLY	H3	Ice	R
RE36-10-7459	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7459	1	POLY	H3	Ice	R
RE36-10-7457	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7457	1	POLY	H3	Ice	R
RE36-10-7520	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7520	1	POLY	H3	Ice	R
RE36-10-7519	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7519	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:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7453

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	OBT3		Allh
TIME COLLECTED (HH:MM)		0854		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	OK		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610599			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO	NA		
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO	NO/NA	BOREHOLE DECLINATION:	NA	BOREHOLE DIRECTION:	NA		

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

SAMPLE DESC:

Brown sandy silt, leaves, tuff fragments
 FD: RE36-10-7520

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-9

FIELD SCREENING/MEASUREMENT RESULTS:

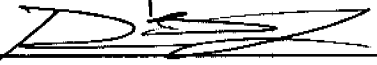

Alpha = 36 dpm
 Beta/Gamma = 2050 dpm

PID $\frac{\text{Ambient Reading}}{77m \ 2/24/10}$ = ppm

COLLECTED BY (PRINT)

L McFarlane

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7454

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		JR 2/24/10 OK QBT2
TIME COLLECTED (HH:MM)		0945		SUB-MEDIA:	TUFF 1		OK
PRS ID:	36-008	OK		SAMPLE TECH CODE:	HA		
LOCATION ID:	36-610599	↓		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		
TOP DEPTH:	0	0.5		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	1.0		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		BOREHOLE DIRECTION: NA

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

SAMPLE DESC:

Pinkish gray, tuff

FTB: RE36-10-7542

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-9

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 15 dpm
Beta/Gamma \leq 2100 dpm

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

73m 2/24/10

COLLECTED BY (PRINT)

TLMcFarlang

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Ewers (Signature)	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name) (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7455

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	OBT3		A11h
TIME COLLECTED (HH:MM)		1015		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610600	↓		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

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

SAMPLE DESC: moist brown silty sand

SAMPLE COMMENTS: NA

LOCATION DESC: 8-24

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 30 dpm
Beta/Gamma \leq 1760 dpm

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

73m 2/24/10

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Riley Wors	2/24/10	(Printed Name)	2/24/10
(Signature)	1634	(Signature)	4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7456

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA: QBT3		JR2/24/10	
TIME COLLECTED (HH:MM)		1025		SUB-MEDIA: TUFF 1		OK QBT2	
PRS ID:	36-008	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	36-610600	↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE:	GENERIC			FIELD PREP: NA			
TOP DEPTH:	0	73m 2/24/10 1.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH:	0	2.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE DESC:

Pinkish gray tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-24

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 36 dpm
Beta/Gamma \leq 1865 dpm

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

73m 2/24/10

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT)

Jon Robertson

RELINQUISHED BY (Printed Name) Riky Evans	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)	Date/Time 2/24/10 4:34
(Signature)		(Signature)	
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7457

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/24/2010	MEDIA:	QBT3	Allh
TIME COLLECTED (HH:MM)		1030	SUB-MEDIA:	TUFF 1	NA
PRS ID:	36-008	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610601	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

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

SAMPLE DESC:

Brownish black moist sandy silt, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-10

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 10 dpm
Beta/Gamma \leq 1720 dpm

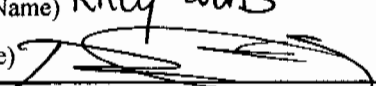
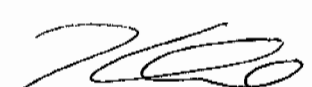
PID $\frac{\text{Ambient Reading}}{\text{}} = \text{ppm}$ 73m 2/24/10

COLLECTED BY (PRINT)

Th McFarlane

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1034	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7458

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/24/2010	MEDIA:	OBT3	4th
TIME COLLECTED (HH:MM)		1041	SUB-MEDIA:	TUFF 1	NA
PRS ID:	36-008	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	36-610601	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	2.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	3.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ NO3+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown sandy silt, roots, tuff fragments

FR: RE36-10-7530

SAMPLE COMMENTS:

LOCATION DESC:

8-10

FIELD SCREENING/MEASUREMENT RESULTS:

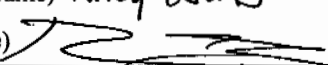
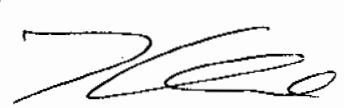
Alpha \leq 56 dpmBeta/Gamma \leq 1930 dpmPID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

73m 2/24/10

COLLECTED BY (PRINT)

T.M. O'Farrell

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7459

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		11 15		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610602	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

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

SAMPLE DESC:

Brown and black sandy silt, Tuff fragments, roots

FD: RE 36-10-7519

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-23

FIELD SCREENING/MEASUREMENT RESULTS:

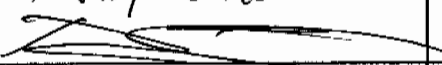
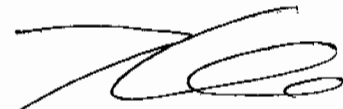
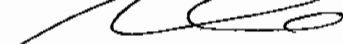
Alpha \pm 20 dpm
Beta/Gamma \pm 2010 dpmPID $\frac{\text{Ambient Reading}}{\text{}} = \text{ppm}$

73m 2/24/10

COLLECTED BY (PRINT)

Th McFarlane

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature) 	Date/Time 2/24/10 4134
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7460

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		JZ 2/24/10 OK QBT2
TIME COLLECTED (HH:MM)		1128		SUB-MEDIA:	TUFF 1		OK
PRS ID:	36-008			SAMPLE TECH CODE:	HA		
LOCATION ID:	36-610602			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0			SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0			SCREEN/PORT DESC:			NA
FIELD MATRIX:	R			EXCAVATED: YES (NO) / NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES / (NO) NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

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

SAMPLE DESC: Light brown Tuff, slightly moist, some soil

SAMPLE COMMENTS: NA

LOCATION DESC: 8-23

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \neq 41 dpm
Beta/Gamma \neq 1963 dpm

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

77m 2/24/10

COLLECTED BY (PRINT)

REVIEWED BY (PRINT)

Th McFarlane

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature)	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name) (Signature)	Date/Time 2/24/10 4334
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7519

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1115		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	UNK	36-610602		FIELD QC TYPE:	FD		
LOCATION TYPE:	GENERIC	ok		FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	QC		
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA				WATER FLOWING: YES/NO/NA			
BOREHOLE DECLINATION:	NA			BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	73m 2/24/10 8082+8270+NME D-EXP	500 ML AMBER GLASS	Ice	Y	
1		8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U- GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC Sample of RE 36-10-75 73m 2/24/10

7459

Brown and black sandy silt, tuff fragments, roots

SAMPLE COMMENTS:

NA

LOCATION DESC: 8-23

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 20 dpm
Beta/Gamma \leq 2016 dpmPID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

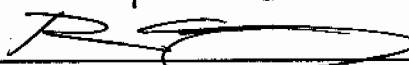

73m 2/24/10

COLLECTED BY (PRINT)

T MCFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/21/10 1634	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7520

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		0854 - 0945 - 7m 2/24/10		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-008			SAMPLE TECH CODE:	HA		ok
LOCATION ID:	UNK			FIELD QC TYPE:	ED		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	0.0	0.5 - 7m 2/24/10	SAMPLE USAGE:	QC		↓
BOTTOM DEPTH:	0	0.5	1.0 - 7m 2/24/10	SCREEN/PORT DESC:			NA
FIELD MATRIX:	R		S	EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA				WATER FLOWING: YES/NO/NA			
BOREHOLE DECLINATION:		NA		BOREHOLE DIRECTION:		NA	

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

SAMPLE DESC: QC Sample of RE36-10-7453

Brown sandy silt, leaves, tuff fragments

SAMPLE COMMENTS:

NA

LOCATION DESC:

8-9

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ _____ dpm

Beta/Gamma ≤ _____ dpm

PID $\frac{\text{Ambient Reading}}{7m \ 2/24/10} = \text{ppm}$

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) R. Key WMS (Signature)	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name) (Signature)	Date/Time 2/24/10 4134
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7530

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	NA		ok
TIME COLLECTED(HH:MM)		11 11		SUB-MEDIA:	OTHER		
PRS ID:	36-008	ok		SAMPLE TECH CODE:	DC		
LOCATION ID:	UNK	36-610601		FIELD QC TYPE:	FR		
LOCATION TYPE:	GENERIC	ok		FIELD PREP:	UF		
TOP DEPTH:	0			SAMPLE USAGE:	QC		
BOTTOM DEPTH:	0			SCREEN/PORT DESC:			NA
FIELD MATRIX:	W			EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				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)	N	
1	Normal	SW-846:6850	250 ML POLY	Ice	Y	
1	Normal	TCN	500 ML POLY	Sodium Hydroxide	Y	

SAMPLE DESC: QC Sample of RE 36-10-7458

SAMPLE COMMENTS: Rinsate


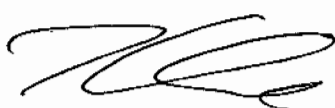
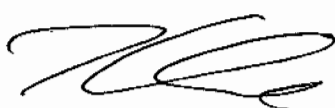
LOCATION DESC: NA

FIELD SCREENING/MEASUREMENT RESULTS: NA

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature) 	Date/Time 2/24/10 4:34
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2485

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

SAMPLE ID: RE36-10-7542

WORK ORDER:

AS PLANNED	AS COLLECTED	AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):	02/24/2010	MEDIA:	NA
TIME COLLECTED(HH:MM)	1014	SUB-MEDIA:	OTHER
PRS ID: 36-008	OK	SAMPLE TECH CODE:	DC
LOCATION ID: UNK	36-610599	FIELD QC TYPE:	FTB
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
1	Normal	8260B Trip Blank	40 ML SEPTUM AMBER GLASS	Ice	Y	

SAMPLE DESC: QC Sample of RE36-10-7454

SAMPLE COMMENTS:

FTB

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:

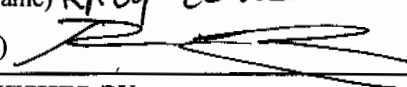

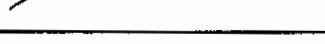
NA

COLLECTED BY (PRINT)

TL McFarlane

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature) 	Date/Time 2/24/10 4134
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Rad Screening Data Release Form

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

RF 36-10-7453

7454

7455

7456

7457

7458

7459

7460

7519

7520

RF 36-10-8283

8284

8285

8286

8464

8475

8477

8471

8479

8481

8484

8485

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):

RF 36-10-7530

Rinsete

7542

FTB

8296

FTB

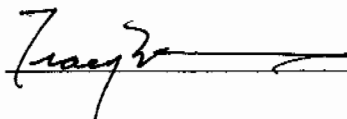
8493

Rinsete

Reason:

Print Last Name McFarland

Signature



Date 2/24/10

DATA VALIDATION COVER SHEET

5119-1

Data Validation Cover Sheet

Records Use only

**Section I.**REQUEST NUMBER: 10-2136 VALIDATION DATE: 04/06/10 LAB CODE: GELCONTRACT LABORATORY NAME: GEL Laboratories LLCVALIDATOR: John A. Bailey 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 |
| <input type="checkbox"/> GENERAL CHEMISTRY | <input checked="" type="checkbox"/> RADIOCHEMISTRY | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | PESTICIDES/POLYCHLORINATED BIPHENYLS |

☐ OTHER (DESCRIBE): _____**Section II. Completeness Check**

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


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

1. The gamma spec results that were rejected by the laboratory due to high peak width, interference, low abundance, or no valid peak were qualified R,R5a.
2. An MS was not analyzed for tritium. However, an LCS was analyzed, met acceptance criteria and, thus, no sample results were qualified.
3. It should be noted that the parent samples for the QC analyses for gamma spec and tritium were LANL samples from other RNs. No sample data were qualified as a result.


Reviewed by: Susan Ball**Level:** I**Date:** 04/07/10

VALIDATOR'S SIGNATURE: _____


*John Bailey*DATE: 04/06/10

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 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"/>	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 (Check One)				Assign Qualifier Listed Below if Criterion = Yes	
				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	21. The associated matrix spike recovery was <10%. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	R, R6	R, R6
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	22. The associated matrix spike recovery was <10%. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	UJ, R6a	J-, R6a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	23. The associated matrix spike recovery was above the UAL. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	UJ, R6b	J+, R6b
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24. Required matrix spike information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. If LCS information is present, do not Reject. Qualify data based on LCS information. MS/MSD is not applicable to Gamma Spectroscopy.	R, R6c	R, R6c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. Duplicate, dilution, or reanalysis.	UJ, R88	J, R88
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist.	UJ, R, R19	J, R, R19
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27. Quantification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB NQ, NQ

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7458
Sample ID: 248243001
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 14.2%

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	0.00363	0.0157	+/-0.00399	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00864	0.029	+/-0.00777	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	0.0115	0.0245	+/-0.00561	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.865	0.0961	+/-0.0831	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236	U	0.029	0.0589	+/-0.0168	0.100	pCi/g						
Uranium-238		1.00	0.0677	+/-0.0934	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.262	0.244	+/-0.0857	0.200	pCi/g		MXR1	03/19/10	1050	959280	4
Bismuth-211	UI	4.54	R,R5a	0.351	+/-0.358	pCi/g						
Bismuth-214		1.49		0.133	+/-0.122	pCi/g						
Cadmium-109	UI	3.54	R,R5a	1.23	+/-0.525	pCi/g						
Cerium-139	U	-0.00881	0.051	+/-0.0157	0.050	pCi/g						
Cesium-134	U	0.0741	0.0917	+/-0.0433	0.100	pCi/g						
Cesium-137		0.156	0.0639	+/-0.0354	0.100	pCi/g						
Cobalt-60	U	-0.0141	0.0673	+/-0.0221	0.100	pCi/g						
Europium-152	U	-0.102	0.146	+/-0.0514	0.200	pCi/g						
Lanthanum-140	U	-0.129	0.164	+/-0.0631		pCi/g						
Lead-212		1.83	0.0893	+/-0.126	0.100	pCi/g						
Lead-214		1.65	0.128	+/-0.138	0.100	pCi/g						
Mercury-203	U	-0.0742	0.0677	+/-0.0244	0.100	pCi/g						
Potassium-40		27.8	0.339	+/-1.54	1.00	pCi/g						
Radium-223	U	0.0174	1.03	+/-0.368		pCi/g						
Radium-224	UI	5.79	R,R5a	0.958	+/-0.724	pCi/g						
Radium-226		1.49	0.133	+/-0.122		pCi/g						
Radium-228		1.76	0.270	+/-0.217	0.500	pCi/g						
Ruthenium-106	U	-0.143	0.518	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.00697	0.0777	+/-0.0246	0.080	pCi/g						
Strontium-85	U	0.0123	0.0716	+/-0.0242		pCi/g						

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

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7458
248243001

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		0.553	0.0565	+/-0.0559	0.080	pCi/g						
Thorium-227	U	-0.087	0.421	+/-0.135		pCi/g						
Thorium-231	U	0.0174	1.03	+/-0.368		pCi/g						
Thorium-234	U	0.206	2.37	+/-0.750	2.00	pCi/g						
Tin-113	U	-0.0136	0.0806	+/-0.0246	0.100	pCi/g						
Uranium-235	U	0.155	0.357	+/-0.107	0.500	pCi/g						
Yttrium-88	U	0.00774	0.0616	+/-0.018	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-9.95	247	+/-71.9	250	pCi/L		KXK2	03/19/10	1105	964056	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"	90.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	72.7	(50%-105%)

Notes:

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

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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

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7453
Sample ID: 248243002
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 44.7%

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	0.00797	0.0244	+/-0.00357	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.000559	0.0206	+/-0.00605	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.0299	0.0174	+/-0.00723	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.15	0.0942	+/-0.104	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0681	0.0577	+/-0.0177	0.100	pCi/g						
Uranium-238		1.31	0.0663	+/-0.116	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.293	0.382	+/-0.117	0.200	pCi/g		MXR1	03/19/10	1051	959280	4
Bismuth-211	UI	4.56	R,R5a	0.394	+/-0.303	pCi/g						
Bismuth-214		1.38		0.135	+/-0.107	pCi/g						
Cadmium-109	UI	4.07	R,R5a	1.71	+/-0.641	pCi/g						
Cerium-139	U	-0.0157	0.0634	+/-0.0195	0.050	pCi/g						
Cesium-134	U	0.0671	0.112	+/-0.0309	0.100	pCi/g						
Cesium-137		0.661	0.0715	+/-0.055	0.100	pCi/g						
Cobalt-60	U	-0.0201	0.0687	+/-0.0227	0.100	pCi/g						
Europium-152	U	-0.0949	0.192	+/-0.066	0.200	pCi/g						
Lanthanum-140	U	-0.111	0.219	+/-0.0756		pCi/g						
Lead-212		1.70	0.121	+/-0.0898	0.100	pCi/g						
Lead-214		1.66	0.143	+/-0.119	0.100	pCi/g						
Mercury-203	U	0.0448	0.0936	+/-0.0264	0.100	pCi/g						
Potassium-40		25.0	0.575	+/-1.34	1.00	pCi/g						
Radium-223	U	-1.26	1.31	+/-0.430		pCi/g						
Radium-224	UI	3.73	R,R5a	1.29	+/-0.771	pCi/g						
Radium-226		1.38	0.135	+/-0.107		pCi/g						
Radium-228		2.01	0.250	+/-0.214	0.500	pCi/g						
Ruthenium-106	U	-0.121	0.570	+/-0.180	0.800	pCi/g						
Sodium-22	U	-0.00218	0.0987	+/-0.0305	0.080	pCi/g						
Strontium-85	U	0.0347	0.0842	+/-0.0277		pCi/g						
Thallium-208		0.584	0.0749	+/-0.0533	0.080	pCi/g						

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7453
Sample ID: 248243002

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	0.00274	0.499	+/-0.154		pCi/g						
Thorium-231	U	-1.26	1.31	+/-0.430		pCi/g						
Thorium-234	U	0.629	3.35	+/-0.965	2.00	pCi/g						
Tin-113	U	-0.0424	0.0896	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.0555	0.396	+/-0.119	0.500	pCi/g						
Yttrium-88	U	0.00969	0.068	+/-0.0197	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-72.3	245	+/-69.8	250	pCi/L		KXX2	03/19/10	1157	964056	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"	56.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	95.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	75.0	(50%-105%)

Notes:

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

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- C Analyte has been confirmed by GC/MS analysis
- 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 26, 2010

Client Sample ID: RE36-10-7454
Sample ID: 248243003
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 8.15%

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	0.0023	0.0193	+/-0.00169	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00059	0.0217	+/-0.00639	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	0.00819	0.0184	+/-0.00369	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.13	0.0678	+/-0.0954	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0498	0.0415	+/-0.014	0.100	pCi/g						
Uranium-238		1.11	0.0477	+/-0.0942	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.156	0.298	+/-0.0908	0.200	pCi/g		MXR1	03/19/10	1052	959280	4
Bismuth-211	UI	5.62	R,R5a	+/-0.350		pCi/g						
Bismuth-214		1.63		+/-0.127	0.200	pCi/g						
Cadmium-109	UI	4.16	R,R5a	+/-0.579		pCi/g						
Cerium-139	U	0.0374	0.0601	+/-0.0174	0.050	pCi/g						
Cesium-134	UI	0.188	R,R5a	+/-0.0377	0.100	pCi/g						
Cesium-137	U	0.00741	0.0775	+/-0.0228	0.100	pCi/g						
Cobalt-60	U	-0.00165	0.0737	+/-0.0225	0.100	pCi/g						
Europium-152	U	0.012	0.171	+/-0.0617	0.200	pCi/g						
Lanthanum-140	U	-0.0408	0.272	+/-0.0912		pCi/g						
Lead-212		2.52	0.108	+/-0.139	0.100	pCi/g						
Lead-214		2.04	0.128	+/-0.139	0.100	pCi/g						
Mercury-203	U	0.0468	0.0869	+/-0.0244	0.100	pCi/g						
Potassium-40		39.0	0.533	+/-2.05	1.00	pCi/g						
Radium-223	U	0.400	1.20	+/-0.390		pCi/g						
Radium-224	UI	6.60	R,R5a	+/-0.818		pCi/g						
Radium-226		1.63	0.126	+/-0.127		pCi/g						
Radium-228		2.48	0.292	+/-0.262	0.500	pCi/g						
Ruthenium-106	U	-0.101	0.601	+/-0.181	0.800	pCi/g						
Sodium-22	U	0.0073	0.086	+/-0.0257	0.080	pCi/g						
Strontium-85	U	0.0614	0.0811	+/-0.0247		pCi/g						
Thallium-208		0.746	0.0624	+/-0.058	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7454
248243003

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	0.0742	0.478	+/-0.137		pCi/g						
Thorium-231	U	0.400	1.20	+/-0.390		pCi/g						
Thorium-234		2.82	2.44	+/-1.14	2.00	pCi/g						
Tin-113	U	-0.00198	0.0851	+/-0.0256	0.100	pCi/g						
Uranium-235	U	0.185	0.403	+/-0.118	0.500	pCi/g						
Yttrium-88	U	0.0155	0.0681	+/-0.0193	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	68.7	244	+/-72.8	250	pCi/L		KXX2	03/19/10	1249	964056	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	99.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	99.9	(50%-105%)

Notes:

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

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- 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 26, 2010

Client Sample ID: RE36-10-7460
Sample ID: 248243004
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 9.49%

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	-0.000374	0.0163	+/-0.00148	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0097	0.0206	+/-0.00627	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	0.0082	0.0174	+/-0.00399	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.31	0.0857	+/-0.113	0.100	pCi/g		KXM4	03/25/10	0837	964864	3
Uranium-235/236		0.0785	0.0526	+/-0.0196	0.100	pCi/g						
Uranium-238		1.46	0.0604	+/-0.124	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0965	0.128	+/-0.040	0.200	pCi/g		MXR1	03/19/10	1052	959280	4
Bismuth-211	UI	5.74	R,R5a	0.413	+/-0.356	pCi/g						
Bismuth-214		1.82		0.147	+/-0.130	0.200	pCi/g					
Cadmium-109	UI	5.93	R,R5a	1.20	+/-0.521	pCi/g						
Cerium-139	U	0.00618		0.064	+/-0.019	0.050	pCi/g					
Cesium-134	UI	0.165	R,R5a	0.117	+/-0.0321	0.100	pCi/g					
Cesium-137		0.0986		0.0888	+/-0.0312	0.100	pCi/g					
Cobalt-60	U	0.0228		0.0842	+/-0.0248	0.100	pCi/g					
Europium-152	U	0.00694		0.201	+/-0.0776	0.200	pCi/g					
Lanthanum-140	U	-0.103		0.268	+/-0.0875	pCi/g						
Lead-212		2.35		0.111	+/-0.145	0.100	pCi/g					
Lead-214		2.08		0.150	+/-0.141	0.100	pCi/g					
Mercury-203	U	-0.00116		0.084	+/-0.0244	0.100	pCi/g					
Potassium-40		30.3		0.639	+/-1.41	1.00	pCi/g					
Radium-223	U	0.354		1.33	+/-0.439	pCi/g						
Radium-224	UI	6.29	R,R5a	1.19	+/-0.644	pCi/g						
Radium-226		1.82		0.147	+/-0.130	pCi/g						
Radium-228		2.70		0.268	+/-0.253	0.500	pCi/g					
Ruthenium-106	U	-0.0048		0.695	+/-0.213	0.800	pCi/g					
Sodium-22	U	-0.0865		0.081	+/-0.0294	0.080	pCi/g					
Strontium-85	U	-0.312		0.0873	+/-0.0358	pCi/g						
Thallium-208		0.696		0.0734	+/-0.0536	0.080	pCi/g					

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Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7460
Sample ID: 248243004

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	-0.0699	0.495	+/-0.145		pCi/g						
Thorium-231	U	0.354	1.33	+/-0.439		pCi/g						
Thorium-234		1.67	1.40	+/-0.457	2.00	pCi/g						
Tin-113	U	0.0434	0.108	+/-0.0308	0.100	pCi/g						
Uranium-235	U	-0.177	0.398	+/-0.124	0.500	pCi/g						
Yttrium-88	U	0.0191	0.061	+/-0.0164	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	49.2	244	+/-72.5	250	pCi/L	KXX2	03/19/10	1341	964056	5	

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	81.8	(50%-105%)

Notes:

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

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- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7456
Sample ID: 248243005
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 7.48%

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	0.00369	0.0159	+/-0.00195	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00402	0.0222	+/-0.00792	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	-0.000268	0.0188	+/-0.00316	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.11	0.0729	+/-0.0956	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.056	0.0447	+/-0.0142	0.100	pCi/g						
Uranium-238		1.06	0.0513	+/-0.0912	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0227	0.196	+/-0.0624	0.200	pCi/g		MXR1	03/19/10	1053	959280	4
Bismuth-211	UI	5.39	R,R5a	0.346	+/-0.336	pCi/g						
Bismuth-214		1.76		0.117	+/-0.133	pCi/g						
Cadmium-109	UI	4.92	R,R5a	1.06	+/-0.565	pCi/g						
Cerium-139	U	-0.00105	0.0554	+/-0.0169	0.050	pCi/g						
Cesium-134	U	0.0909	0.101	+/-0.0278	0.100	pCi/g						
Cesium-137	U	0.0366	0.0776	+/-0.0219	0.100	pCi/g						
Cobalt-60	U	0.0273	0.074	+/-0.0209	0.100	pCi/g						
Europium-152	U	-0.00602	0.164	+/-0.0562	0.200	pCi/g						
Lanthanum-140	U	-0.0782	0.205	+/-0.0763		pCi/g						
Lead-212		2.06	0.104	+/-0.118	0.100	pCi/g						
Lead-214		1.96	0.127	+/-0.134	0.100	pCi/g						
Mercury-203	U	-0.000801	0.0795	+/-0.0234	0.100	pCi/g						
Potassium-40		30.5	0.615	+/-1.59	1.00	pCi/g						
Radium-223	U	0.220	1.12	+/-0.370		pCi/g						
Radium-224	UI	5.42	R,R5a	1.11	+/-0.683	pCi/g						
Radium-226		1.76	0.117	+/-0.133		pCi/g						
Radium-228		1.90	0.243	+/-0.193	0.500	pCi/g						
Ruthenium-106	U	-0.101	0.559	+/-0.169	0.800	pCi/g						
Sodium-22	U	-0.00781	0.0794	+/-0.0243	0.080	pCi/g						
Strontium-85	UI	0.142	R,R5a	0.084	+/-0.023	pCi/g						
Thallium-208		0.544	0.0641	+/-0.0463	0.080	pCi/g						

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7456
Sample ID: 248243005

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	0.00433	0.452	+/-0.132		pCi/g						
Thorium-231	U	0.220	1.12	+/-0.370		pCi/g						
Thorium-234	U	1.72	1.76	+/-0.739	2.00	pCi/g						
Tin-113	U	0.0094	0.0838	+/-0.025	0.100	pCi/g						
Uranium-235	U	0.134	0.362	+/-0.108	0.500	pCi/g						
Yttrium-88	U	-0.00266	0.0607	+/-0.0181	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	138	245	+/-75.2	250	pCi/L		KXK2	03/19/10	1433	964056	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.0	(50%-105%)

Notes:

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

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- > Result is greater than value reported
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- 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 26, 2010

Client Sample ID: RE36-10-7455
Sample ID: 248243006
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 24.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0141	0.0162	+/-0.00393	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.012	0.019	+/-0.0055	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.028	0.016	+/-0.00689	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.24	0.0841	+/-0.108	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0684	0.0515	+/-0.0168	0.100	pCi/g						
Uranium-238		1.39	0.0592	+/-0.118	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0158	0.182	+/-0.0593	0.200	pCi/g		MXR1	03/19/10	1054	959280	4
Bismuth-211	UI	4.78	R,R5a	0.293	+/-0.396	pCi/g						
Bismuth-214		1.37		0.105	+/-0.112	pCi/g						
Cadmium-109	UI	1.84	R,R5a	1.23	+/-0.524	pCi/g						
Cerium-139	U	-0.022		0.0434	+/-0.0132	pCi/g						
Cesium-134	U	0.075		0.0876	+/-0.026	pCi/g						
Cesium-137		0.678		0.0524	+/-0.0547	pCi/g						
Cobalt-60	U	-0.00285		0.0571	+/-0.0178	pCi/g						
Europium-152	U	0.0554		0.147	+/-0.0436	pCi/g						
Lanthanum-140	U	0.0332		0.210	+/-0.0607	pCi/g						
Lead-212		1.60		0.089	+/-0.124	pCi/g						
Lead-214		1.73		0.107	+/-0.152	pCi/g						
Mercury-203	UI	0.0837	R,R5a	0.0589	+/-0.0276	pCi/g						
Potassium-40		24.2		0.471	+/-1.32	pCi/g						
Radium-223	U	0.126		0.979	+/-0.333	pCi/g						
Radium-224	UI	4.57	R,R5a	0.954	+/-0.609	pCi/g						
Radium-226		1.37		0.105	+/-0.112	pCi/g						
Radium-228		1.42		0.215	+/-0.171	pCi/g						
Ruthenium-106	U	0.194		0.517	+/-0.149	pCi/g						
Sodium-22	U	0.00982		0.066	+/-0.0197	pCi/g						
Strontium-85	UI	0.079	R,R5a	0.0748	+/-0.0221	pCi/g						
Thallium-208		0.494		0.051	+/-0.0488	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7455
Sample ID: 248243006

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	-0.0638	0.389	+/-0.119		pCi/g						
Thorium-231	U	0.126	0.979	+/-0.333		pCi/g						
Thorium-234		2.71	1.51	+/-0.868	2.00	pCi/g						
Tin-113	U	0.000991	0.0689	+/-0.020	0.100	pCi/g						
Uranium-235	U	-0.101	0.304	+/-0.0921	0.500	pCi/g						
Yttrium-88	U	-0.024	0.0476	+/-0.0171	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	115	244	+/-74.3	250	pCi/L		KXK2	03/19/10	1525	964056	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"	89.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	104	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.0	(50%-105%)

Notes:

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

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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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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7459
Sample ID: 248243007
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 18.8%

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	0.0122	0.0152	+/-0.00378	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0139	0.0217	+/-0.0073	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.0222	0.0184	+/-0.00667	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.22	0.0924	+/-0.109	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236	U	0.0542	0.0566	+/-0.0155	0.100	pCi/g						
Uranium-238		1.50	0.065	+/-0.128	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0845	0.334	+/-0.0991	0.200	pCi/g		MXR1	03/19/10	1055	959280	4
Bismuth-211	UI	4.55	R,R5a	0.425	+/-0.375	pCi/g						
Bismuth-214		1.69		0.139	+/-0.131	pCi/g						
Cadmium-109	UI	4.52	R,R5a	1.37	+/-0.665	pCi/g						
Cerium-139	U	0.00132	0.0625	+/-0.0193	0.050	pCi/g						
Cesium-134	U	0.081	0.116	+/-0.0324	0.100	pCi/g						
Cesium-137		0.615	0.0849	+/-0.0539	0.100	pCi/g						
Cobalt-60	U	0.0176	0.0835	+/-0.0245	0.100	pCi/g						
Europium-152	U	-0.0496	0.197	+/-0.0635	0.200	pCi/g						
Lanthanum-140	U	-0.00821	0.261	+/-0.0791		pCi/g						
Lead-212		1.97	0.118	+/-0.124	0.100	pCi/g						
Lead-214		1.65	0.154	+/-0.144	0.100	pCi/g						
Mercury-203	U	0.0661	0.0953	+/-0.030	0.100	pCi/g						
Potassium-40		27.2	0.679	+/-1.61	1.00	pCi/g						
Radium-223	U	-0.515	1.32	+/-0.415		pCi/g						
Radium-224	UI	5.95	R,R5a	1.27	+/-0.883	pCi/g						
Radium-226		1.69	0.139	+/-0.131		pCi/g						
Radium-228		1.85	0.257	+/-0.199	0.500	pCi/g						
Ruthenium-106	U	0.244	0.655	+/-0.187	0.800	pCi/g						
Sodium-22	U	0.015	0.0883	+/-0.0261	0.080	pCi/g						
Strontium-85	U	0.0829	0.0992	+/-0.0303		pCi/g						
Thallium-208		0.555	0.072	+/-0.0617	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7459
248243007

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	0.0693	0.544	+/-0.159		pCi/g						
Thorium-231	U	-0.515	1.32	+/-0.415		pCi/g						
Thorium-234	U	2.07	3.05	+/-0.886	2.00	pCi/g						
Tin-113	U	0.0207	0.103	+/-0.0307	0.100	pCi/g						
Uranium-235	U	0.124	0.413	+/-0.124	0.500	pCi/g						
Yttrium-88	U	-0.0176	0.0559	+/-0.0193	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	194	245	+/-76.9	250	pCi/L		KXX2	03/19/10	1618	964056	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"	96.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.1	(50%-105%)

Notes:

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

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- 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 26, 2010

Client Sample ID: RE36-10-7457
Sample ID: 248243008
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 18.8%

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	0.013	0.0188	+/-0.0044	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0143	0.0243	+/-0.00827	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.0285	0.0206	+/-0.00796	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.10	0.0999	+/-0.101	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236	U	0.0587	0.0613	+/-0.0168	0.100	pCi/g						
Uranium-238		1.31	0.0703	+/-0.117	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.247	0.548	+/-0.169	0.200	pCi/g		MXR1	03/19/10	1055	959280	4
Bismuth-211	UI	4.37	R,R5a	0.470	+/-0.383	pCi/g						
Bismuth-214		1.46		0.153	+/-0.126	pCi/g						
Cadmium-109	UI	2.04	R,R5a	1.81	+/-0.748	pCi/g						
Cerium-139	U	-0.000615		0.0725	+/-0.0224	pCi/g						
Cesium-134	U	0.0476		0.106	+/-0.0299	pCi/g						
Cesium-137		0.485		0.0869	+/-0.0535	pCi/g						
Cobalt-60	U	0.033		0.0879	+/-0.0252	pCi/g						
Europium-152	U	-0.0634		0.220	+/-0.091	pCi/g						
Lanthanum-140	U	-0.174		0.218	+/-0.083	pCi/g						
Lead-212		1.48		0.134	+/-0.116	pCi/g						
Lead-214		1.59		0.171	+/-0.146	pCi/g						
Mercury-203	U	0.0881		0.110	+/-0.0311	pCi/g						
Potassium-40		25.6		0.687	+/-1.59	pCi/g						
Radium-223	U	-0.0165		1.61	+/-0.483	pCi/g						
Radium-224	UI	4.11	R,R5a	1.43	+/-0.850	pCi/g						
Radium-226		1.46		0.153	+/-0.126	pCi/g						
Radium-228		1.60		0.285	+/-0.214	pCi/g						
Ruthenium-106	U	0.327		0.729	+/-0.213	pCi/g						
Sodium-22	U	-0.0205		0.096	+/-0.0311	pCi/g						
Strontium-85	UI	0.123	R,R5a	0.110	+/-0.034	pCi/g						
Thallium-208		0.469		0.0761	+/-0.0635	pCi/g						

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Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7457
248243008

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	-0.116	0.579	+/-0.175		pCi/g						
Thorium-231	U	-0.0165	1.61	+/-0.483		pCi/g						
Thorium-234	U	0.0965	4.45	+/-1.37	2.00	pCi/g						
Tin-113	U	0.041	0.106	+/-0.0308	0.100	pCi/g						
Uranium-235	U	0.160	0.456	+/-0.140	0.500	pCi/g						
Yttrium-88	U	0.0247	0.0818	+/-0.0226	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	76.0	246	+/-73.7	250	pCi/L	KXK2	03/19/10	1710	964056	5	

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	71.6	(50%-105%)

Notes:

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

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- 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 26, 2010

Client Sample ID: RE36-10-7520
Sample ID: 248243009
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 42.2%

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	0.0121	0.0211	+/-0.00413	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0086	0.0223	+/-0.00535	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.0261	0.0188	+/-0.00728	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.43	0.101	+/-0.126	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0878	0.0619	+/-0.0226	0.100	pCi/g						
Uranium-238		1.50	0.0711	+/-0.132	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0572	0.246	+/-0.0801	0.200	pCi/g		MXR1	03/19/10	1056	959280	4
Bismuth-211	UI	5.05	R,R5a	0.375	+/-0.395	pCi/g						
Bismuth-214		1.49		0.123	+/-0.123	pCi/g						
Cadmium-109	UI	4.99	R,R5a	1.25	+/-0.609	pCi/g						
Cerium-139	U	-0.00366		0.0574	+/-0.0172	pCi/g						
Cesium-134	UI	0.105	R,R5a	0.0932	+/-0.0409	pCi/g						
Cesium-137		0.583		0.0672	+/-0.0543	pCi/g						
Cobalt-60	U	-0.0087		0.0619	+/-0.0193	pCi/g						
Europium-152	U	-0.0811		0.171	+/-0.0658	pCi/g						
Lanthanum-140	U	-0.115		0.248	+/-0.0798	pCi/g						
Lead-212		2.11		0.103	+/-0.153	pCi/g						
Lead-214		1.83		0.131	+/-0.152	pCi/g						
Mercury-203	U	-0.0127		0.0801	+/-0.0253	pCi/g						
Potassium-40		32.2		0.537	+/-1.70	pCi/g						
Radium-223	U	-0.129		1.19	+/-0.412	pCi/g						
Radium-224	UI	5.08	R,R5a	1.10	+/-0.760	pCi/g						
Radium-226		1.49		0.123	+/-0.123	pCi/g						
Radium-228		2.08		0.236	+/-0.226	pCi/g						
Ruthenium-106	U	0.139		0.566	+/-0.168	pCi/g						
Sodium-22	U	0.0266		0.0773	+/-0.0226	pCi/g						
Strontium-85	UI	0.169	R,R5a	0.0916	+/-0.0289	pCi/g						
Thallium-208		0.592		0.0592	+/-0.056	pCi/g						

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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 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7520
248243009

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	-0.0457	0.455	+/-0.142		pCi/g						
Thorium-231	U	-0.129	1.19	+/-0.412		pCi/g						
Thorium-234		2.77	2.08	+/-1.07	2.00	pCi/g						
Tin-113	U	0.00492	0.0868	+/-0.0262	0.100	pCi/g						
Uranium-235	U	0.0913	0.379	+/-0.113	0.500	pCi/g						
Yttrium-88	U	0.010	0.0627	+/-0.0186	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	72.6	246	+/-73.5	250	pCi/L		KXK2	03/19/10	1802	964056	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"	64.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	68.8	(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

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 26, 2010

Client Sample ID: RE36-10-7519
Sample ID: 248243010
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 21%

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	0.00779	0.016	+/-0.00432	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00391	0.0203	+/-0.00343	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.037	0.0171	+/-0.00798	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.40	0.089	+/-0.120	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0643	0.0545	+/-0.0167	0.100	pCi/g						
Uranium-238		1.58	0.0626	+/-0.133	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0228	0.0859	+/-0.0288	0.200	pCi/g		MXR1	03/19/10	1057	959280	4
Bismuth-211	UI	5.03	R,R5a	0.372	+/-0.376	pCi/g						
Bismuth-214		1.44		0.130	+/-0.124	pCi/g						
Cadmium-109	UI	4.94	R,R5a	0.851	+/-0.494	pCi/g						
Cerium-139	U	-0.0327		0.0473	+/-0.0152	pCi/g						
Cesium-134	U	0.0764		0.109	+/-0.0305	pCi/g						
Cesium-137		0.749		0.0836	+/-0.0678	pCi/g						
Cobalt-60	U	0.0367		0.0894	+/-0.0254	pCi/g						
Europium-152	U	-0.0148		0.164	+/-0.0512	pCi/g						
Lanthanum-140	U	-0.0523		0.260	+/-0.0827	pCi/g						
Lead-212		1.99		0.0941	+/-0.131	pCi/g						
Lead-214		1.83		0.135	+/-0.146	pCi/g						
Mercury-203	U	0.00203		0.0795	+/-0.0251	pCi/g						
Potassium-40		28.2		0.511	+/-1.55	pCi/g						
Radium-223	U	0.382		1.20	+/-0.390	pCi/g						
Radium-224	UI	5.49	R,R5a	1.01	+/-0.714	pCi/g						
Radium-226		1.44		0.130	+/-0.124	pCi/g						
Radium-228		2.15		0.261	+/-0.245	pCi/g						
Ruthenium-106	U	-0.0807		0.647	+/-0.196	pCi/g						
Sodium-22	U	-0.0275		0.0851	+/-0.0276	pCi/g						
Strontium-85	U	0.0284		0.0782	+/-0.0263	pCi/g						
Thallium-208		0.499		0.0698	+/-0.056	pCi/g						

GEL LABORATORIES LLC

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Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7519
Sample ID: 248243010

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	-0.149	0.436	+/-0.142		pCi/g						
Thorium-231	U	0.382	1.20	+/-0.390		pCi/g						
Thorium-234		1.64	0.879	+/-0.479	2.00	pCi/g						
Tin-113	U	0.00406	0.0898	+/-0.0271	0.100	pCi/g						
Uranium-235	U	0.232	0.302	+/-0.114	0.500	pCi/g						
Yttrium-88	U	0.0165	0.0687	+/-0.0194	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	23.0	245	+/-71.9	250	pCi/L		KXK2	03/19/10	1854	964056	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"	85.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	95.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	79.2	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

BD Results are either below the MDC or tracer recovery is low

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

F Estimated Value

H Analytical holding time was exceeded

Friday, February 26, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2136

LOS ALAMOS

REQUEST NUMBER: 10-2136

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/28/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248243

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-7458	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7458	1	POLY	H3	Ice	R
RE36-10-7453	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7453	1	POLY	H3	Ice	R
RE36-10-7454	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7454	1	POLY	H3	Ice	R
RE36-10-7460	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7460	1	POLY	H3	Ice	R
RE36-10-7466	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7456	1	POLY	H3	Ice	R
RE36-10-7455	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7455	1	POLY	H3	Ice	R
RE36-10-7459	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7459	1	POLY	H3	Ice	R
RE36-10-7457	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7457	1	POLY	H3	Ice	R
RE36-10-7520	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7520	1	POLY	H3	Ice	R
RE36-10-7519	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7519	1	POLY	H3	Ice	R

Relinquished By:

Date Time

Received By:

Date Time

Printed Name

Signature

2/26/10 1400

Printed Name

Signature

Greg Tyler 2/27/10 0910

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL Rv:

Date

Time

Remarks:

Friday, February 26, 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: 10-2136

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/26/2010

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	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	

Friday, February 26, 2010

REQUEST NUMBER: 10-2136

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE36-10-7520	R	2/24/2010	
	EPA-906.0	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
	HASL-300-AM-241	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
	HASL-300-ISOPU	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
		1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	

REQUEST NUMBER: 10-2136

Friday, February 26, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
	HASL-300:ISOU	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	

Final Page of REQUEST NUMBER 10-2136



March 06, 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: 248243
SDG: 10-2136

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 27, 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,

A handwritten signature in black ink, appearing to read "Valerie Davis".

Valerie Davis
Project Manager

Purchase Order: 72733-001-09
Chain of Custody: 10-2136
Enclosures

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 248243
SDG: 10-2136

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 248243
SDG # : 10-2136**

March 06, 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 27, 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 original COC was received 3/2/10. 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 10/11C 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>
248243001	RE36-10-7458
248243002	RE36-10-7453
248243003	RE36-10-7454
248243004	RE36-10-7460
248243005	RE36-10-7456
248243006	RE36-10-7455
248243007	RE36-10-7459
248243008	RE36-10-7457
248243009	RE36-10-7520
248243010	RE36-10-7519

Case Narrative

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

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

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

A handwritten signature in black ink, appearing to read "for Valerie Davis".

Valerie Davis

Project Manager

List of current GEL Certifications as of 06 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

Friday, February 26, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2136

LOS ALAMOS

REQUEST NUMBER: 10-2136

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/28/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248243

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-7458	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7458	1	POLY	H3	Ice	R
RE36-10-7453	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7453	1	POLY	H3	Ice	R
RE36-10-7454	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7454	1	POLY	H3	Ice	R
RE36-10-7460	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7460	1	POLY	H3	Ice	R
RE36-10-7456	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7456	1	POLY	H3	Ice	R
RE36-10-7455	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7455	1	POLY	H3	Ice	R
RE36-10-7459	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7459	1	POLY	H3	Ice	R
RE36-10-7457	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7457	1	POLY	H3	Ice	R
RE36-10-7520	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7520	1	POLY	H3	Ice	R
RE36-10-7519	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-7519	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:

Page 6 of 756

Friday, February 26, 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: 10-2136

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/26/2010

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	CNTR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-801.1					
		1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	

Friday, February 26, 2010

Page 2 of 3

REQUEST NUMBER: 10-2136

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE36-10-7520	R	2/24/2010	
	EPA-906.0	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
	HASL-300:AM-241	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
	HASL-300:ISOPU	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	

Friday, February 26, 2010

REQUEST NUMBER: 10-2136

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	
	HASL-300:ISOU	1	RE36-10-7453	R	2/24/2010	
		1	RE36-10-7454	R	2/24/2010	
		1	RE36-10-7455	R	2/24/2010	
		1	RE36-10-7456	R	2/24/2010	
		1	RE36-10-7457	R	2/24/2010	
		1	RE36-10-7458	R	2/24/2010	
		1	RE36-10-7459	R	2/24/2010	
		1	RE36-10-7460	R	2/24/2010	
		1	RE36-10-7519	R	2/24/2010	
		1	RE36-10-7520	R	2/24/2010	

Final Page of REQUEST NUMBER 10-2136



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL		SDG/ARCOC/Work Order: 10-2136	
Received By: Greg Tyler		Date Received: 2/27/10	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		X	Maximum Counts Observed*: 60cpm
Classified Radioactive II by RSO?		X	
COC/Samples marked containing PCBs?		X	
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

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

Comments:

Fed Ex Tracking Numbers:

7209 7850 2525 1C 7209 7850 2570 5C
 7209 7850 2606 1C 7209 7850 2558 6C
 7209 7850 2547 1C 7209 7850 2536 6C
 7209 7850 2639 2C 7209 7850 2591 6C
 7209 7850 2580 2C 7209 7850 2514 10C
 7209 7850 2499 2C 7209 7850 2628 11C
 7209 7850 2617 3C 7209 7850 2503 11C
 7209 7850 2569 4C

Subject: Sample Receipt for 2/27/10

From: Dionne Francis <Dionne.Francis@gel.com>

Date: Mon, 01 Mar 2010 13:52:03 -0500

To: "Keith R. Greene" <kgreene@lanl.gov>, Joylene Valdez <joylenev@lanl.gov>, Valerie Davis <vsd@gel.com>

Keith,

The lab did not receive any original chain of custodies.

RN 10-2149: the lab did not receive the RAD poly container for sample WSTTH-10-13314.

RN 10-2148: the lab did not receive the GrossG container for sample WSTTH-10-13314

RN 10-2145: the lab did not receive the 40ml vial container for sample RE46-10-13543.

RN 10-2098: the Metals container for sample WST16-10-12239 will be preserved prior to analysis.

The following containers were rec'd without a COC:

RE36-10-7533 and 7535

250 poly Perchlorate, 500ml poly TCN, 1L poly Metals+U

RE36-10-7416 thru 7420, 7477 thru 7490, 7492 thru 7500, 7521 thru 7523

125ml poly Metals, 500ml amber glass 8270+NMED Exp, 500ml poly Perchlorate

RE36-10-7491

500ml amber glass H3, 8270+NMED Exp

Thanks,
Dionne

--

Dionne Francis
Project Manager Assistant
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC (USA) 29407
Direct: 843.769.7376 Ext. 4432
Main: 843.556.8171
Fax: 843.766.1178
E-mail: daf@gel.com
Web: www.gel.com

Let the Bible fill the memory, rule the heart, and guide the feet.

ORIGIN ID: SAFA (505) 865-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

SHIP DATE: 26FEB10
ACTWGT: 54.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

ORIGIN ID: SAFA (505) 865-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

SHIP DATE: 26FEB10
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2450

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: MR3A0223CY10

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: MR2A0515BYDQ

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1 of 2
TRKH 7209 7850 2525
0201
NN MASTER NN

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

1 of 2
TRKH 7209 7850 2606
0201
NN MASTER NN

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

29407
SC-US
CHS



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: MR3A0223FCY10

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

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GENERAL ENGINEERING LAB
2040 SAVAGE RD

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(843) 556-8171

REF: MR3A0223CY10

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1 of 2
TRKH 7209 7850 2547
0201
NN MASTER NN

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

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2 of 2
MPSH 7209 7850 2639
0263

SATURDAY ### A1
PRIORITY OVERNIGHT

Matr-N 7209 7850 2628 0201

X0 CHSA

29407
SC-US
CHS



JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26FEB10
ACTWGT: 67.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26FEB10
ACTWGT: 68.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: MR2A0515BYD0

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: MR3A0223CY10

FedEx
Express



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Express



TRK# 7209 7850 2580
0201

MM MASTER MM

X0 CHSA

29407
SC-US
CHS

1 of 2
SATURDAY ### A1
PRIORITY OVERNIGHT

TRK#

7209 7850 2499
0201

MM MASTER MM

X0 CHSA

29407
SC-US
CHS

1 of 3
SATURDAY ### A1
PRIORITY OVERNIGHT

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: MR2A0515BYD0

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 68.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: MR2A0515BYD0

FedEx
Express



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Express



MPSH 7209 7850 2617
0263

MatrM 7209 7850 2606 0201

X0 CHSA

29407
SC-US
CHS

2 of 2
SATURDAY ### A1
PRIORITY OVERNIGHT

TRK#

7209 7850 2569
0201

MM MASTER MM

X0 CHSA

29407
SC-US
CHS

1 of 2
SATURDAY ### A1
PRIORITY OVERNIGHT

ORIGIN ID: SAFA (506) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAG# BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26 FEB 10
ACTWGT: 63.0 LB MAN
CAD: 0014178/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 666-9171
REF: MR3A0223CY10

5c



2 of 2
IPSN 7209 7850 2570
str# 7209 7850 2569 0201

SATURDAY ### A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

X0 CHSA



LOS ALAMOS, NM 87545
UNITED STATES US

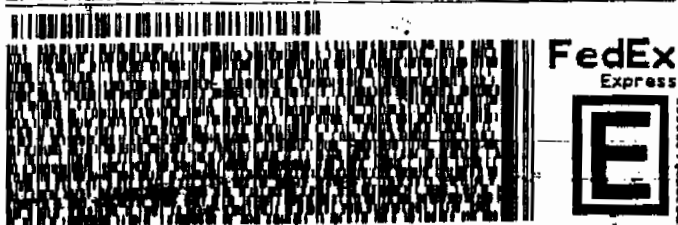
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VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 666-9171
REF: MR3A0223CY10

6c



2 of 2
IPSN 7209 7850 2536
str# 7209 7850 2525 0201

SATURDAY ### A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

X0 CHSA



ORIGIN ID: SAFA (506) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAG# BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26 FEB 10
ACTWGT: 58.0 LB MAN
CAD: 0014178/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 666-9171
REF: MR3A0223FCY10

6c



2 of 2
IPSN 7209 7850 2558
str# 7209 7850 2547 0201

SATURDAY ### A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

X0 CHSA



LOS ALAMOS, NM 87545
UNITED STATES US

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 666-9171
REF: MR2A0515BYD0

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2 of 2
IPSN 7209 7850 2591
str# 7209 7850 2580 0201

SATURDAY ### A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

X0 CHSA



ORIGIN ID: SAFA (805) 868-8888
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPA 03
LOS ALAMOS, NM 87545
UNITED STATES US
SHIP DATE: 26FEB10
ACTWT: 39.8 LB MAN
CRD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR3A0223CY10

10c

ORIGIN ID: SAFA (805) 868-8888
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPA 03
LOS ALAMOS, NM 87545
UNITED STATES US
SHIP DATE: 26FEB10
ACTWT: 48.0 LB MAN
CRD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR3A0223CY10

11c

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3 of 3
MPS# 7209 7850 2514
Matr# 7209 7850 2499 0201

SATURDAY ### A1
PRIORITY OVERNIGHT

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SC-US
CHS

X0 CHSA



1 of 2
TRKH 7209 7850 2628
Matr# MASTER MM

SATURDAY ### A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

X0 CHSA



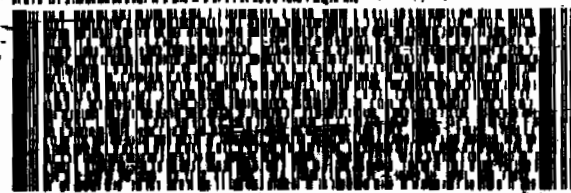
ORIGIN ID: SAFA (805) 868-8888
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPA 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26FEB10
ACTWT: 48.0 LB MAN
CRD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR3A0223CY10

11c



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2 of 3
MPS# 7209 7850 2503
Matr# 7209 7850 2499 0201

SATURDAY ### A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

X0 CHSA

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 10-2136**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 964861
Prep Batch Number: 959186

Sample ID	Client ID
248243001	RE36-10-7458
248243002	RE36-10-7453
248243003	RE36-10-7454
248243004	RE36-10-7460
248243005	RE36-10-7456
248243006	RE36-10-7455
248243007	RE36-10-7459
248243008	RE36-10-7457
248243009	RE36-10-7520
248243010	RE36-10-7519
1202070015	Method Blank (MB)
1202070016	248243001(RE36-10-7458) Sample Duplicate (DUP)
1202070017	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 1202070015 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248243001 (RE36-10-7458). The QC was from LANL work order 248243.

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 1202070015 (MB) was recounted due to a negative result greater than three times the error. Second count 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.

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:	964862
Prep Batch Number:	959186

Sample ID	Client ID
248243001	RE36-10-7458
248243002	RE36-10-7453
248243003	RE36-10-7454
248243004	RE36-10-7460
248243005	RE36-10-7456
248243006	RE36-10-7455
248243007	RE36-10-7459
248243008	RE36-10-7457
248243009	RE36-10-7520
248243010	RE36-10-7519
1202070018	Method Blank (MB)
1202070019	248243001(RE36-10-7458) Sample Duplicate (DUP)
1202070020	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 1202070018 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248243001 (RE36-10-7458). The QC was from LANL work order 248243.

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

Manual integration of alpha spectroscopy spectra 1202070020 (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:	964864
Prep Batch Number:	959186

Sample ID	Client ID
248243001	RE36-10-7458
248243002	RE36-10-7453
248243003	RE36-10-7454
248243004	RE36-10-7460
248243005	RE36-10-7456
248243006	RE36-10-7455
248243007	RE36-10-7459
248243008	RE36-10-7457
248243009	RE36-10-7520
248243010	RE36-10-7519
1202070021	Method Blank (MB)
1202070022	248243001(RE36-10-7458) Sample Duplicate (DUP)

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 1202070021 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248243001 (RE36-10-7458). The QC was from LANL work order 248243.

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:	GAMMA SPEC
Analytical Method:	DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method:	Dry Soil Prep
Analytical Batch Number:	959280
Prep Batch Number:	959186

Sample ID	Client ID
248243001	RE36-10-7458
248243002	RE36-10-7453
248243003	RE36-10-7454
248243004	RE36-10-7460
248243005	RE36-10-7456
248243006	RE36-10-7455
248243007	RE36-10-7459
248243008	RE36-10-7457
248243009	RE36-10-7520
248243010	RE36-10-7519
1202057355	Method Blank (MB)
1202057356	248248001(RE36-10-8464) Sample Duplicate (DUP)
1202057357	Laboratory Control Sample (LCS)

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

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 19.

Calibration Information:

Calibration Information

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

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used

before the expiration dates.

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 248248001 (RE36-10-8464). The QC was from LANL work order 248248.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The method blank 1202057355 (MB) result is greater than 1.65 times the CSU but less than the MDC for Bi-214, Hg-203, and Ra-226.

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 method blank 1202057355 (MB) result is greater than the decision level but less than the MDC for Hg-203.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to high peak-width.	Thorium-234	1202057356	RE36-10-8464(248248001DUP)
UI	Data rejected due to interference.	Bismuth-211	248243001	RE36-10-7458
			248243002	RE36-10-7453
			248243003	RE36-10-7454
			248243004	RE36-10-7460

			248243005	RE36-10-7456
			248243006	RE36-10-7455
			248243007	RE36-10-7459
			248243008	RE36-10-7457
			248243009	RE36-10-7520
			248243010	RE36-10-7519
			1202057356	RE36-10-8464(248248001DUP)
		Cadmium-109	248243001	RE36-10-7458
			248243002	RE36-10-7453
			248243003	RE36-10-7454
			248243004	RE36-10-7460
			248243005	RE36-10-7456
			248243006	RE36-10-7455
			248243007	RE36-10-7459
			248243008	RE36-10-7457
			248243009	RE36-10-7520
			248243010	RE36-10-7519
			1202057356	RE36-10-8464(248248001DUP)
		Mercury-203	248243006	RE36-10-7455
		Radium-224	248243001	RE36-10-7458
			248243002	RE36-10-7453
			248243003	RE36-10-7454
			248243004	RE36-10-7460
			248243005	RE36-10-7456
			248243006	RE36-10-7455
			248243007	RE36-10-7459
			248243008	RE36-10-7457
			248243009	RE36-10-7520
			248243010	RE36-10-7519
			1202057356	RE36-10-8464(248248001DUP)
UI	Data rejected due to low abundance.	Cesium-134	248243003	RE36-10-7454
			248243004	RE36-10-7460

			248243009	RE36-10-7520
			1202057356	RE36-10-8464(248248001DUP)
		Strontium-85	248243005	RE36-10-7456
			248243006	RE36-10-7455
			248243008	RE36-10-7457
			248243009	RE36-10-7520
			1202057356	RE36-10-8464(248248001DUP)
UI	Data rejected due to no valid peak.	Potassium-40	1202057355	MB for batch 959280

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 964056

Sample ID	Client ID
248243001	RE36-10-7458
248243002	RE36-10-7453
248243003	RE36-10-7454
248243004	RE36-10-7460
248243005	RE36-10-7456
248243006	RE36-10-7455
248243007	RE36-10-7459
248243008	RE36-10-7457
248243009	RE36-10-7520
248243010	RE36-10-7519
1202068216	Method Blank (MB)
1202068217	248248008(RE36-10-8481) Sample Duplicate (DUP)
1202068218	Laboratory Control Sample (LCS)

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

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 248248008 (RE36-10-8481). The QC was from LANL work order 248248.

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

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: *Sharon D. Austin 3/24/2010*

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: 10-2136 GEL Work Order: 248243

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 26, 2010

Client Sample ID: RE36-10-7458
Sample ID: 248243001
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 14.2%

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	0.00363	0.0157	+/-0.00399	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00864	0.029	+/-0.00777	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	0.0115	0.0245	+/-0.00561	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.865	0.0961	+/-0.0831	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236	U	0.029	0.0589	+/-0.0168	0.100	pCi/g						
Uranium-238		1.00	0.0677	+/-0.0934	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.262	0.244	+/-0.0857	0.200	pCi/g		MXR1	03/19/10	1050	959280	4
Bismuth-211	UI	4.54	0.351	+/-0.358		pCi/g						
Bismuth-214		1.49	0.133	+/-0.122	0.200	pCi/g						
Cadmium-109	UI	3.54	1.23	+/-0.525		pCi/g						
Cerium-139	U	-0.00881	0.051	+/-0.0157	0.050	pCi/g						
Cesium-134	U	0.0741	0.0917	+/-0.0433	0.100	pCi/g						
Cesium-137		0.156	0.0639	+/-0.0354	0.100	pCi/g						
Cobalt-60	U	-0.0141	0.0673	+/-0.0221	0.100	pCi/g						
Europium-152	U	-0.102	0.146	+/-0.0514	0.200	pCi/g						
Lanthanum-140	U	-0.129	0.164	+/-0.0631		pCi/g						
Lead-212		1.83	0.0893	+/-0.126	0.100	pCi/g						
Lead-214		1.65	0.128	+/-0.138	0.100	pCi/g						
Mercury-203	U	-0.0742	0.0677	+/-0.0244	0.100	pCi/g						
Potassium-40		27.8	0.339	+/-1.54	1.00	pCi/g						
Radium-223	U	0.0174	1.03	+/-0.368		pCi/g						
Radium-224	UI	5.79	0.958	+/-0.724		pCi/g						
Radium-226		1.49	0.133	+/-0.122		pCi/g						
Radium-228		1.76	0.270	+/-0.217	0.500	pCi/g						
Ruthenium-106	U	-0.143	0.518	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.00697	0.0777	+/-0.0246	0.080	pCi/g						
Strontium-85	U	0.0123	0.0716	+/-0.0242		pCi/g						

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Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7458
248243001

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		0.553	0.0565	+/-0.0559	0.080	pCi/g						
Thorium-227	U	-0.087	0.421	+/-0.135		pCi/g						
Thorium-231	U	0.0174	1.03	+/-0.368		pCi/g						
Thorium-234	U	0.206	2.37	+/-0.750	2.00	pCi/g						
Tin-113	U	-0.0136	0.0806	+/-0.0246	0.100	pCi/g						
Uranium-235	U	0.155	0.357	+/-0.107	0.500	pCi/g						
Yttrium-88	U	0.00774	0.0616	+/-0.018	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-9.95	247	+/-71.9	250	pCi/L		KXX2	03/19/10	1105	964056	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"	90.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	72.7	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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 26, 2010

Client Sample ID: RE36-10-7458 Project: LANL01004
Sample ID: 248243001 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.
UJ 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.

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 26, 2010

Client Sample ID: RE36-10-7453
Sample ID: 248243002
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 44.7%

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	0.00797	0.0244	+/-0.00357	0.050	pCi/g		KXM4	03/24/10	2055 964861	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	0.000559	0.0206	+/-0.00605	0.050	pCi/g		KXM4	03/25/10	0754 964862	2
Plutonium-239/240		0.0299	0.0174	+/-0.00723	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		1.15	0.0942	+/-0.104	0.100	pCi/g		KXM4	03/25/10	0836 964864	3
Uranium-235/236		0.0681	0.0577	+/-0.0177	0.100	pCi/g					
Uranium-238		1.31	0.0663	+/-0.116	0.100	pCi/g					
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	-0.293	0.382	+/-0.117	0.200	pCi/g		MXR1	03/19/10	1051 959280	4
Bismuth-211	UI	4.56	0.394	+/-0.303		pCi/g					
Bismuth-214		1.38	0.135	+/-0.107	0.200	pCi/g					
Cadmium-109	UI	4.07	1.71	+/-0.641		pCi/g					
Cerium-139	U	-0.0157	0.0634	+/-0.0195	0.050	pCi/g					
Cesium-134	U	0.0671	0.112	+/-0.0309	0.100	pCi/g					
Cesium-137		0.661	0.0715	+/-0.055	0.100	pCi/g					
Cobalt-60	U	-0.0201	0.0687	+/-0.0227	0.100	pCi/g					
Europium-152	U	-0.0949	0.192	+/-0.066	0.200	pCi/g					
Lanthanum-140	U	-0.111	0.219	+/-0.0756		pCi/g					
Lead-212		1.70	0.121	+/-0.0898	0.100	pCi/g					
Lead-214		1.66	0.143	+/-0.119	0.100	pCi/g					
Mercury-203	U	0.0448	0.0936	+/-0.0264	0.100	pCi/g					
Potassium-40		25.0	0.575	+/-1.34	1.00	pCi/g					
Radium-223	U	-1.26	1.31	+/-0.430		pCi/g					
Radium-224	UI	3.73	1.29	+/-0.771		pCi/g					
Radium-226		1.38	0.135	+/-0.107		pCi/g					
Radium-228		2.01	0.250	+/-0.214	0.500	pCi/g					
Ruthenium-106	U	-0.121	0.570	+/-0.180	0.800	pCi/g					
Sodium-22	U	-0.00218	0.0987	+/-0.0305	0.080	pCi/g					
Strontium-85	U	0.0347	0.0842	+/-0.0277		pCi/g					
Thallium-208		0.584	0.0749	+/-0.0533	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 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7453
248243002

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	0.00274	0.499	+/-0.154		pCi/g						
Thorium-231	U	-1.26	1.31	+/-0.430		pCi/g						
Thorium-234	U	0.629	3.35	+/-0.965	2.00	pCi/g						
Tin-113	U	-0.0424	0.0896	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.0555	0.396	+/-0.119	0.500	pCi/g						
Yttrium-88	U	0.00969	0.068	+/-0.0197	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-72.3	245	+/-69.8	250	pCi/L		KXK2	03/19/10	1157	964056	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"	56.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	95.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	75.0	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7453
Sample ID: 248243002
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 26, 2010

Client Sample ID: RE36-10-7454
Sample ID: 248243003
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 8.15%

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	0.0023	0.0193	+/-0.00169	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00059	0.0217	+/-0.00639	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	0.00819	0.0184	+/-0.00369	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.13	0.0678	+/-0.0954	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0498	0.0415	+/-0.014	0.100	pCi/g						
Uranium-238		1.11	0.0477	+/-0.0942	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.156	0.298	+/-0.0908	0.200	pCi/g		MXR1	03/19/10	1052	959280	4
Bismuth-211	UI	5.62	0.353	+/-0.350		pCi/g						
Bismuth-214		1.63	0.126	+/-0.127	0.200	pCi/g						
Cadmium-109	UI	4.16	1.41	+/-0.579		pCi/g						
Cerium-139	U	0.0374	0.0601	+/-0.0174	0.050	pCi/g						
Cesium-134	UI	0.188	0.113	+/-0.0377	0.100	pCi/g						
Cesium-137	U	0.00741	0.0775	+/-0.0228	0.100	pCi/g						
Cobalt-60	U	-0.00165	0.0737	+/-0.0225	0.100	pCi/g						
Europium-152	U	0.012	0.171	+/-0.0617	0.200	pCi/g						
Lanthanum-140	U	-0.0408	0.272	+/-0.0912		pCi/g						
Lead-212		2.52	0.108	+/-0.139	0.100	pCi/g						
Lead-214		2.04	0.128	+/-0.139	0.100	pCi/g						
Mercury-203	U	0.0468	0.0869	+/-0.0244	0.100	pCi/g						
Potassium-40		39.0	0.533	+/-2.05	1.00	pCi/g						
Radium-223	U	0.400	1.20	+/-0.390		pCi/g						
Radium-224	UI	6.60	1.16	+/-0.818		pCi/g						
Radium-226		1.63	0.126	+/-0.127		pCi/g						
Radium-228		2.48	0.292	+/-0.262	0.500	pCi/g						
Ruthenium-106	U	-0.101	0.601	+/-0.181	0.800	pCi/g						
Sodium-22	U	0.0073	0.086	+/-0.0257	0.080	pCi/g						
Strontium-85	U	0.0614	0.0811	+/-0.0247		pCi/g						
Thallium-208		0.746	0.0624	+/-0.058	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7454
Sample ID: 248243003
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	0.0742	0.478	+/-0.137		pCi/g						
Thorium-231	U	0.400	1.20	+/-0.390		pCi/g						
Thorium-234		2.82	2.44	+/-1.14	2.00	pCi/g						
Tin-113	U	-0.00198	0.0851	+/-0.0256	0.100	pCi/g						
Uranium-235	U	0.185	0.403	+/-0.118	0.500	pCi/g						
Yttrium-88	U	0.0155	0.0681	+/-0.0193	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	68.7	244	+/-72.8	250	pCi/L	KXK2	03/19/10	1249	964056	5	

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	99.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	99.9	(50%-105%)

Notes:

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

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- A The TIC is a suspected aldol-condensation product
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- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7454 Project: LANL01004
Sample ID: 248243003 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 26, 2010

Client Sample ID: RE36-10-7460
Sample ID: 248243004
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 9.49%

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	-0.000374	0.0163	+/-0.00148	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0097	0.0206	+/-0.00627	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	0.0082	0.0174	+/-0.00399	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.31	0.0857	+/-0.113	0.100	pCi/g		KXM4	03/25/10	0837	964864	3
Uranium-235/236		0.0785	0.0526	+/-0.0196	0.100	pCi/g						
Uranium-238		1.46	0.0604	+/-0.124	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0965	0.128	+/-0.040	0.200	pCi/g		MXR1	03/19/10	1052	959280	4
Bismuth-211	UI	5.74	0.413	+/-0.356		pCi/g						
Bismuth-214		1.82	0.147	+/-0.130	0.200	pCi/g						
Cadmium-109	UI	5.93	1.20	+/-0.521		pCi/g						
Cerium-139	U	0.00618	0.064	+/-0.019	0.050	pCi/g						
Cesium-134	UI	0.165	0.117	+/-0.0321	0.100	pCi/g						
Cesium-137		0.0986	0.0888	+/-0.0312	0.100	pCi/g						
Cobalt-60	U	0.0228	0.0842	+/-0.0248	0.100	pCi/g						
Europium-152	U	0.00694	0.201	+/-0.0776	0.200	pCi/g						
Lanthanum-140	U	-0.103	0.268	+/-0.0875		pCi/g						
Lead-212		2.35	0.111	+/-0.145	0.100	pCi/g						
Lead-214		2.08	0.150	+/-0.141	0.100	pCi/g						
Mercury-203	U	-0.00116	0.084	+/-0.0244	0.100	pCi/g						
Potassium-40		30.3	0.639	+/-1.41	1.00	pCi/g						
Radium-223	U	0.354	1.33	+/-0.439		pCi/g						
Radium-224	UI	6.29	1.19	+/-0.644		pCi/g						
Radium-226		1.82	0.147	+/-0.130		pCi/g						
Radium-228		2.70	0.268	+/-0.253	0.500	pCi/g						
Ruthenium-106	U	-0.0048	0.695	+/-0.213	0.800	pCi/g						
Sodium-22	U	-0.0865	0.081	+/-0.0294	0.080	pCi/g						
Strontium-85	U	-0.312	0.0873	+/-0.0358		pCi/g						
Thallium-208		0.696	0.0734	+/-0.0536	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7460
Sample ID: 248243004
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	-0.0699	0.495	+/-0.145		pCi/g					
Thorium-231	U	0.354	1.33	+/-0.439		pCi/g					
Thorium-234		1.67	1.40	+/-0.457	2.00	pCi/g					
Tin-113	U	0.0434	0.108	+/-0.0308	0.100	pCi/g					
Uranium-235	U	-0.177	0.398	+/-0.124	0.500	pCi/g					
Yttrium-88	U	0.0191	0.061	+/-0.0164	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	49.2	244	+/-72.5	250	pCi/L		KXK2	03/19/10	1341 964056	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	81.8	(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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Report Date: March 26, 2010

Client Sample ID: RE36-10-7460
Sample ID: 248243004
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 26, 2010

Client Sample ID: RE36-10-7456
Sample ID: 248243005
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 7.48%

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	0.00369	0.0159	+/-0.00195	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00402	0.0222	+/-0.00792	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240	U	-0.000268	0.0188	+/-0.00316	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.11	0.0729	+/-0.0956	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.056	0.0447	+/-0.0142	0.100	pCi/g						
Uranium-238		1.06	0.0513	+/-0.0912	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0227	0.196	+/-0.0624	0.200	pCi/g		MXR1	03/19/10	1053	959280	4
Bismuth-211	UI	5.39	0.346	+/-0.336		pCi/g						
Bismuth-214		1.76	0.117	+/-0.133	0.200	pCi/g						
Cadmium-109	UI	4.92	1.06	+/-0.565		pCi/g						
Cerium-139	U	-0.00105	0.0554	+/-0.0169	0.050	pCi/g						
Cesium-134	U	0.0909	0.101	+/-0.0278	0.100	pCi/g						
Cesium-137	U	0.0366	0.0776	+/-0.0219	0.100	pCi/g						
Cobalt-60	U	0.0273	0.074	+/-0.0209	0.100	pCi/g						
Europium-152	U	-0.00602	0.164	+/-0.0562	0.200	pCi/g						
Lanthanum-140	U	-0.0782	0.205	+/-0.0763		pCi/g						
Lead-212		2.06	0.104	+/-0.118	0.100	pCi/g						
Lead-214		1.96	0.127	+/-0.134	0.100	pCi/g						
Mercury-203	U	-0.000801	0.0795	+/-0.0234	0.100	pCi/g						
Potassium-40		30.5	0.615	+/-1.59	1.00	pCi/g						
Radium-223	U	0.220	1.12	+/-0.370		pCi/g						
Radium-224	UI	5.42	1.11	+/-0.683		pCi/g						
Radium-226		1.76	0.117	+/-0.133		pCi/g						
Radium-228		1.90	0.243	+/-0.193	0.500	pCi/g						
Ruthenium-106	U	-0.101	0.559	+/-0.169	0.800	pCi/g						
Sodium-22	U	-0.00781	0.0794	+/-0.0243	0.080	pCi/g						
Strontium-85	UI	0.142	0.084	+/-0.023		pCi/g						
Thallium-208		0.544	0.0641	+/-0.0463	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7456
248243005

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	0.00433	0.452	+/-0.132		pCi/g						
Thorium-231	U	0.220	1.12	+/-0.370		pCi/g						
Thorium-234	U	1.72	1.76	+/-0.739	2.00	pCi/g						
Tin-113	U	0.0094	0.0838	+/-0.025	0.100	pCi/g						
Uranium-235	U	0.134	0.362	+/-0.108	0.500	pCi/g						
Yttrium-88	U	-0.00266	0.0607	+/-0.0181	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	138	245	+/-75.2	250	pCi/L		KXK2	03/19/10	1433	964056	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.0	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
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- 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 26, 2010

Client Sample ID: RE36-10-7456
Sample ID: 248243005

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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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 26, 2010

Client Sample ID: RE36-10-7455
Sample ID: 248243006
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 24.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0141	0.0162	+/-0.00393	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.012	0.019	+/-0.0055	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.028	0.016	+/-0.00689	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.24	0.0841	+/-0.108	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0684	0.0515	+/-0.0168	0.100	pCi/g						
Uranium-238		1.39	0.0592	+/-0.118	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0158	0.182	+/-0.0593	0.200	pCi/g		MXR1	03/19/10	1054	959280	4
Bismuth-211	UI	4.78	0.293	+/-0.396		pCi/g						
Bismuth-214		1.37	0.105	+/-0.112	0.200	pCi/g						
Cadmium-109	UI	1.84	1.23	+/-0.524		pCi/g						
Cerium-139	U	-0.022	0.0434	+/-0.0132	0.050	pCi/g						
Cesium-134	U	0.075	0.0876	+/-0.026	0.100	pCi/g						
Cesium-137		0.678	0.0524	+/-0.0547	0.100	pCi/g						
Cobalt-60	U	-0.00285	0.0571	+/-0.0178	0.100	pCi/g						
Europium-152	U	0.0554	0.147	+/-0.0436	0.200	pCi/g						
Lanthanum-140	U	0.0332	0.210	+/-0.0607		pCi/g						
Lead-212		1.60	0.089	+/-0.124	0.100	pCi/g						
Lead-214		1.73	0.107	+/-0.152	0.100	pCi/g						
Mercury-203	UI	0.0837	0.0589	+/-0.0276	0.100	pCi/g						
Potassium-40		24.2	0.471	+/-1.32	1.00	pCi/g						
Radium-223	U	0.126	0.979	+/-0.333		pCi/g						
Radium-224	UI	4.57	0.954	+/-0.609		pCi/g						
Radium-226		1.37	0.105	+/-0.112		pCi/g						
Radium-228		1.42	0.215	+/-0.171	0.500	pCi/g						
Ruthenium-106	U	0.194	0.517	+/-0.149	0.800	pCi/g						
Sodium-22	U	0.00982	0.066	+/-0.0197	0.080	pCi/g						
Strontium-85	UI	0.079	0.0748	+/-0.0221		pCi/g						
Thallium-208		0.494	0.051	+/-0.0488	0.080	pCi/g						

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7455
Sample ID: 248243006
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	-0.0638	0.389	+/-0.119		pCi/g						
Thorium-231	U	0.126	0.979	+/-0.333		pCi/g						
Thorium-234		2.71	1.51	+/-0.868	2.00	pCi/g						
Tin-113	U	0.000991	0.0689	+/-0.020	0.100	pCi/g						
Uranium-235	U	-0.101	0.304	+/-0.0921	0.500	pCi/g						
Yttrium-88	U	-0.024	0.0476	+/-0.0171	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	115	244	+/-74.3	250	pCi/L		KXK2	03/19/10	1525	964056	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"	89.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	104	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.0	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- 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 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7455
248243006

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 26, 2010

Client Sample ID: RE36-10-7459
Sample ID: 248243007
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 18.8%

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	0.0122	0.0152	+/-0.00378	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0139	0.0217	+/-0.0073	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.0222	0.0184	+/-0.00667	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.22	0.0924	+/-0.109	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236	U	0.0542	0.0566	+/-0.0155	0.100	pCi/g						
Uranium-238		1.50	0.065	+/-0.128	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0845	0.334	+/-0.0991	0.200	pCi/g		MXR1	03/19/10	1055	959280	4
Bismuth-211	UI	4.55	0.425	+/-0.375		pCi/g						
Bismuth-214		1.69	0.139	+/-0.131	0.200	pCi/g						
Cadmium-109	UI	4.52	1.37	+/-0.665		pCi/g						
Cerium-139	U	0.00132	0.0625	+/-0.0193	0.050	pCi/g						
Cesium-134	U	0.081	0.116	+/-0.0324	0.100	pCi/g						
Cesium-137		0.615	0.0849	+/-0.0539	0.100	pCi/g						
Cobalt-60	U	0.0176	0.0835	+/-0.0245	0.100	pCi/g						
Europium-152	U	-0.0496	0.197	+/-0.0635	0.200	pCi/g						
Lanthanum-140	U	-0.00821	0.261	+/-0.0791		pCi/g						
Lead-212		1.97	0.118	+/-0.124	0.100	pCi/g						
Lead-214		1.65	0.154	+/-0.144	0.100	pCi/g						
Mercury-203	U	0.0661	0.0953	+/-0.030	0.100	pCi/g						
Potassium-40		27.2	0.679	+/-1.61	1.00	pCi/g						
Radium-223	U	-0.515	1.32	+/-0.415		pCi/g						
Radium-224	UI	5.95	1.27	+/-0.883		pCi/g						
Radium-226		1.69	0.139	+/-0.131		pCi/g						
Radium-228		1.85	0.257	+/-0.199	0.500	pCi/g						
Ruthenium-106	U	0.244	0.655	+/-0.187	0.800	pCi/g						
Sodium-22	U	0.015	0.0883	+/-0.0261	0.080	pCi/g						
Strontium-85	U	0.0829	0.0992	+/-0.0303		pCi/g						
Thallium-208		0.555	0.072	+/-0.0617	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE36-10-7459
248243007

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	0.0693	0.544	+/-0.159		pCi/g						
Thorium-231	U	-0.515	1.32	+/-0.415		pCi/g						
Thorium-234	U	2.07	3.05	+/-0.886	2.00	pCi/g						
Tin-113	U	0.0207	0.103	+/-0.0307	0.100	pCi/g						
Uranium-235	U	0.124	0.413	+/-0.124	0.500	pCi/g						
Yttrium-88	U	-0.0176	0.0559	+/-0.0193	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	194	245	+/-76.9	250	pCi/L		KXK2	03/19/10	1618	964056	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"	96.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.1	(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 26, 2010

Client Sample ID: RE36-10-7459 Project: LANL01004
Sample ID: 248243007 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 26, 2010

Client Sample ID: RE36-10-7457
Sample ID: 248243008
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 18.8%

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	0.013	0.0188	+/-0.0044	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0143	0.0243	+/-0.00827	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.0285	0.0206	+/-0.00796	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.10	0.0999	+/-0.101	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236	U	0.0587	0.0613	+/-0.0168	0.100	pCi/g						
Uranium-238		1.31	0.0703	+/-0.117	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.247	0.548	+/-0.169	0.200	pCi/g		MXR1	03/19/10	1055	959280	4
Bismuth-211	UI	4.37	0.470	+/-0.383		pCi/g						
Bismuth-214		1.46	0.153	+/-0.126	0.200	pCi/g						
Cadmium-109	UI	2.04	1.81	+/-0.748		pCi/g						
Cerium-139	U	-0.000615	0.0725	+/-0.0224	0.050	pCi/g						
Cesium-134	U	0.0476	0.106	+/-0.0299	0.100	pCi/g						
Cesium-137		0.485	0.0869	+/-0.0535	0.100	pCi/g						
Cobalt-60	U	0.033	0.0879	+/-0.0252	0.100	pCi/g						
Europium-152	U	-0.0634	0.220	+/-0.091	0.200	pCi/g						
Lanthanum-140	U	-0.174	0.218	+/-0.083		pCi/g						
Lead-212		1.48	0.134	+/-0.116	0.100	pCi/g						
Lead-214		1.59	0.171	+/-0.146	0.100	pCi/g						
Mercury-203	U	0.0881	0.110	+/-0.0311	0.100	pCi/g						
Potassium-40		25.6	0.687	+/-1.59	1.00	pCi/g						
Radium-223	U	-0.0165	1.61	+/-0.483		pCi/g						
Radium-224	UI	4.11	1.43	+/-0.850		pCi/g						
Radium-226		1.46	0.153	+/-0.126		pCi/g						
Radium-228		1.60	0.285	+/-0.214	0.500	pCi/g						
Ruthenium-106	U	0.327	0.729	+/-0.213	0.800	pCi/g						
Sodium-22	U	-0.0205	0.096	+/-0.0311	0.080	pCi/g						
Strontium-85	UI	0.123	0.110	+/-0.034		pCi/g						
Thallium-208		0.469	0.0761	+/-0.0635	0.080	pCi/g						

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Report Date: March 26, 2010

Client Sample ID: RE36-10-7457
Sample ID: 248243008

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	-0.116	0.579	+/-0.175		pCi/g						
Thorium-231	U	-0.0165	1.61	+/-0.483		pCi/g						
Thorium-234	U	0.0965	4.45	+/-1.37	2.00	pCi/g						
Tin-113	U	0.041	0.106	+/-0.0308	0.100	pCi/g						
Uranium-235	U	0.160	0.456	+/-0.140	0.500	pCi/g						
Yttrium-88	U	0.0247	0.0818	+/-0.0226	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	76.0	246	+/-73.7	250	pCi/L		KXK2	03/19/10	1710	964056	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	71.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7457
Sample ID: 248243008

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 26, 2010

Client Sample ID: RE36-10-7520
Sample ID: 248243009
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 42.2%

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	0.0121	0.0211	+/-0.00413	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0086	0.0223	+/-0.00535	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.0261	0.0188	+/-0.00728	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.43	0.101	+/-0.126	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0878	0.0619	+/-0.0226	0.100	pCi/g						
Uranium-238		1.50	0.0711	+/-0.132	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0572	0.246	+/-0.0801	0.200	pCi/g		MXR1	03/19/10	1056	959280	4
Bismuth-211	UI	5.05	0.375	+/-0.395		pCi/g						
Bismuth-214		1.49	0.123	+/-0.123	0.200	pCi/g						
Cadmium-109	UI	4.99	1.25	+/-0.609		pCi/g						
Cerium-139	U	-0.00366	0.0574	+/-0.0172	0.050	pCi/g						
Cesium-134	UI	0.105	0.0932	+/-0.0409	0.100	pCi/g						
Cesium-137		0.583	0.0672	+/-0.0543	0.100	pCi/g						
Cobalt-60	U	-0.0087	0.0619	+/-0.0193	0.100	pCi/g						
Europium-152	U	-0.0811	0.171	+/-0.0658	0.200	pCi/g						
Lanthanum-140	U	-0.115	0.248	+/-0.0798		pCi/g						
Lead-212		2.11	0.103	+/-0.153	0.100	pCi/g						
Lead-214		1.83	0.131	+/-0.152	0.100	pCi/g						
Mercury-203	U	-0.0127	0.0801	+/-0.0253	0.100	pCi/g						
Potassium-40		32.2	0.537	+/-1.70	1.00	pCi/g						
Radium-223	U	-0.129	1.19	+/-0.412		pCi/g						
Radium-224	UI	5.08	1.10	+/-0.760		pCi/g						
Radium-226		1.49	0.123	+/-0.123		pCi/g						
Radium-228		2.08	0.236	+/-0.226	0.500	pCi/g						
Ruthenium-106	U	0.139	0.566	+/-0.168	0.800	pCi/g						
Sodium-22	U	0.0266	0.0773	+/-0.0226	0.080	pCi/g						
Strontium-85	UI	0.169	0.0916	+/-0.0289		pCi/g						
Thallium-208		0.592	0.0592	+/-0.056	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 26, 2010

Client Sample ID: RE36-10-7520
Sample ID: 248243009
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	-0.0457	0.455	+/-0.142		pCi/g						
Thorium-231	U	-0.129	1.19	+/-0.412		pCi/g						
Thorium-234		2.77	2.08	+/-1.07	2.00	pCi/g						
Tin-113	U	0.00492	0.0868	+/-0.0262	0.100	pCi/g						
Uranium-235	U	0.0913	0.379	+/-0.113	0.500	pCi/g						
Yttrium-88	U	0.010	0.0627	+/-0.0186	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	72.6	246	+/-73.5	250	pCi/L		KXK2	03/19/10	1802	964056	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"	64.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	68.8	(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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Client Sample ID: RE36-10-7520
Sample ID: 248243009

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 26, 2010

Client Sample ID: RE36-10-7519
Sample ID: 248243010
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 21%

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	0.00779	0.016	+/-0.00432	0.050	pCi/g		KXM4	03/24/10	2055	964861	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00391	0.0203	+/-0.00343	0.050	pCi/g		KXM4	03/25/10	0754	964862	2
Plutonium-239/240		0.037	0.0171	+/-0.00798	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.40	0.089	+/-0.120	0.100	pCi/g		KXM4	03/25/10	0836	964864	3
Uranium-235/236		0.0643	0.0545	+/-0.0167	0.100	pCi/g						
Uranium-238		1.58	0.0626	+/-0.133	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0228	0.0859	+/-0.0288	0.200	pCi/g		MXR1	03/19/10	1057	959280	4
Bismuth-211	UI	5.03	0.372	+/-0.376		pCi/g						
Bismuth-214		1.44	0.130	+/-0.124	0.200	pCi/g						
Cadmium-109	UI	4.94	0.851	+/-0.494		pCi/g						
Cerium-139	U	-0.0327	0.0473	+/-0.0152	0.050	pCi/g						
Cesium-134	U	0.0764	0.109	+/-0.0305	0.100	pCi/g						
Cesium-137		0.749	0.0836	+/-0.0678	0.100	pCi/g						
Cobalt-60	U	0.0367	0.0894	+/-0.0254	0.100	pCi/g						
Europium-152	U	-0.0148	0.164	+/-0.0512	0.200	pCi/g						
Lanthanum-140	U	-0.0523	0.260	+/-0.0827		pCi/g						
Lead-212		1.99	0.0941	+/-0.131	0.100	pCi/g						
Lead-214		1.83	0.135	+/-0.146	0.100	pCi/g						
Mercury-203	U	0.00203	0.0795	+/-0.0251	0.100	pCi/g						
Potassium-40		28.2	0.511	+/-1.55	1.00	pCi/g						
Radium-223	U	0.382	1.20	+/-0.390		pCi/g						
Radium-224	UI	5.49	1.01	+/-0.714		pCi/g						
Radium-226		1.44	0.130	+/-0.124		pCi/g						
Radium-228		2.15	0.261	+/-0.245	0.500	pCi/g						
Ruthenium-106	U	-0.0807	0.647	+/-0.196	0.800	pCi/g						
Sodium-22	U	-0.0275	0.0851	+/-0.0276	0.080	pCi/g						
Strontium-85	U	0.0284	0.0782	+/-0.0263		pCi/g						
Thallium-208		0.499	0.0698	+/-0.056	0.080	pCi/g						

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

Report Date: March 26, 2010

Client Sample ID: RE36-10-7519
Sample ID: 248243010

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	-0.149	0.436	+/-0.142		pCi/g						
Thorium-231	U	0.382	1.20	+/-0.390		pCi/g						
Thorium-234		1.64	0.879	+/-0.479	2.00	pCi/g						
Tin-113	U	0.00406	0.0898	+/-0.0271	0.100	pCi/g						
Uranium-235	U	0.232	0.302	+/-0.114	0.500	pCi/g						
Yttrium-88	U	0.0165	0.0687	+/-0.0194	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	23.0	245	+/-71.9	250	pCi/L		KXK2	03/19/10	1854	964056	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"	85.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	95.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	79.2	(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
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Company : Los Alamos National Laboratory
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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 26, 2010

Client Sample ID: RE36-10-7519
Sample ID: 248243010
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.

QUALITY CONTROL DATA

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QC Summary

Report Date: March 26, 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: 248243

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	964861										
QC1202070016	248243001	DUP									
Americium-241		U	0.00363	U	0.000554	pCi/g	0.276	(0-1)	KXM4	03/24/1020:55	
		TPU:	+/-0.00399		+/-0.00158						
		Yield:	90.1		92.5						
QC1202070017	LCS										
Americium-241	33.1			27.7	pCi/g		83.4	(75%-125%)		03/24/1020:55	
		TPU:		+/-1.91							
		Yield:		104							
QC1202070015	MB										
Americium-241		U	-0.000578		pCi/g					03/25/1016:39	
		TPU:	+/-0.0017								
		Yield:	95.3								
Batch	964862										
QC1202070019	248243001	DUP									
Plutonium-238		U	0.00864	U	0.00234	pCi/g	0.189	(0-1)	KXM4	03/25/1007:54	
		TPU:	+/-0.00777		+/-0.00887						
		Yield:	77.1		91.5						
Plutonium-239/240		U	0.0115	U	0.00596	pCi/g	0.252	(0-1)			
		TPU:	+/-0.00561		+/-0.00541						
		Yield:	77.1		91.5						
QC1202070020	LCS										
Plutonium-238				7.35	pCi/g			(75%-125%)			
		TPU:		+/-0.586							
		Yield:		92.1							
Plutonium-239/240	41.8			39.0	pCi/g		93.3	(75%-125%)			
		TPU:		+/-2.61							
		Yield:		92.1							
QC1202070018	MB										
Plutonium-238		U	0.00182		pCi/g						
		TPU:	+/-0.00589								
		Yield:	92.1								
Plutonium-239/240		U	0.00212		pCi/g						
		TPU:	+/-0.00468								
		Yield:	92.1								
Batch	964864										
QC1202070022	248243001	DUP									
Uranium-233/234			0.865	0.917	pCi/g	0.138		(0-1)	KXM4	03/25/1009:39	
		TPU:	+/-0.0831		+/-0.104						
		Yield:	72.7		64.3						
Uranium-235/236		U	0.029	U	0.0477	pCi/g	0.256	(0-1)			
		TPU:	+/-0.0168		+/-0.0198						
		Yield:	72.7		64.3						
Uranium-238			1.00	1.13	pCi/g	0.309		(0-1)			
		TPU:	+/-0.0934		+/-0.122						

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QC Summary

Workorder: 248243

Page 2 of 6

Parmname		NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec												
Batch	964864											
		Yield:		72.7		64.3						
QC1202070023	LCS											
Uranium-233/234					5.72	pCi/g					03/25/1009:39	
		TPU:			+/-0.585							
		Yield:			90.3							
Uranium-235/236				U	0.257	pCi/g						
		TPU:			+/-0.0882							
		Yield:			90.3							
Uranium-238		5.75			5.26	pCi/g		91.5	(75%-125%)			
		TPU:			+/-0.548							
		Yield:			90.3							
QC1202070021	MB											
Uranium-233/234				U	0.00125	pCi/g					03/25/1008:36	
		TPU:			+/-0.00297							
		Yield:			90.7							
Uranium-235/236				U	-0.00315	pCi/g						
		TPU:			+/-0.00287							
		Yield:			90.7							
Uranium-238				U	-0.00765	pCi/g						
		TPU:			+/-0.00345							
		Yield:			90.7							
Rad Gamma Spec												
Batch	959280											
QC1202057356	248248001	DUP										
Americium-241			U	-0.0648	U	0.113	pCi/g	0.587	(0-1)	MXR1	03/19/1013:09	
		TPU:		+/-0.0839		+/-0.0675						
Bismuth-211			UI	4.49	UI	4.47	pCi/g	0.0169	(0-1)			
		TPU:		+/-0.315		+/-0.247						
Bismuth-214				1.48		1.47	pCi/g	0.0262	(0-1)			
		TPU:		+/-0.114		+/-0.0955						
Cadmium-109			UI	2.79	UI	2.19	pCi/g	0.289	(0-1)			
		TPU:		+/-0.560		+/-0.469						
Cerium-139			U	0.0185	U	0.00551	pCi/g	0.206	(0-1)			
		TPU:		+/-0.016		+/-0.0156						
Cesium-134			UI	0.136	UI	0.139	pCi/g	0.0245	(0-1)			
		TPU:		+/-0.0325		+/-0.0287						
Cesium-137			U	0.00378	U	0.000902	pCi/g	0.0375	(0-1)			
		TPU:		+/-0.0206		+/-0.0177						
Cobalt-60			U	-0.000633	U	-0.00125	pCi/g	0.00881	(0-1)			
		TPU:		+/-0.0175		+/-0.0172						
Europium-152			U	0.000894	U	0.0278	pCi/g	0.122	(0-1)			
		TPU:		+/-0.0572		+/-0.0533						
Lanthanum-140			U	-0.0264	U	0.0108	pCi/g	0.138	(0-1)			
		TPU:		+/-0.0745		+/-0.0601						
Lead-212				1.94		1.81	pCi/g	0.323	(0-1)			
		TPU:		+/-0.116		+/-0.0852						
Lead-214				1.63		1.62	pCi/g	0.0157	(0-1)			
		TPU:		+/-0.123		+/-0.100						
Mercury-203			UI	0.275	U	0.0224	pCi/g	1.57	(0-1)			
		TPU:		+/-0.0592		+/-0.0213						

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QC Summary

Workorder: 248243

Page 3 of 6

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	959280										
Potassium-40		30.2		33.6	pCi/g	0.542		(0-1)			
	TPU:	+/-1.64		+/-1.48							
Radium-223	U	-0.454	U	-0.231	pCi/g	0.153		(0-1)			
	TPU:	+/-0.395		+/-0.335							
Radium-224	UI	5.61	UI	5.04	pCi/g	0.201		(0-1)			
	TPU:	+/-0.736		+/-0.660							
Radium-226		1.48		1.47	pCi/g	0.0262		(0-1)			
	TPU:	+/-0.114		+/-0.0955							
Radium-228		1.87		2.03	pCi/g	0.214		(0-1)			
	TPU:	+/-0.194		+/-0.186							
Ruthenium-106	U	0.179	U	0.0759	pCi/g	0.166		(0-1)			
	TPU:	+/-0.163		+/-0.145							
Sodium-22	U	-0.0132	U	0.0282	pCi/g	0.470		(0-1)			
	TPU:	+/-0.023		+/-0.021							
Strontium-85	UI	0.123	UI	0.108	pCi/g	0.168		(0-1)			
	TPU:	+/-0.0241		+/-0.0209							
Thallium-208		0.575		0.561	pCi/g	0.075		(0-1)			
	TPU:	+/-0.0518		+/-0.0442							
Thorium-227	U	-0.0645	U	0.0954	pCi/g	0.317		(0-1)			
	TPU:	+/-0.135		+/-0.118							
Thorium-231	U	-0.454	U	-0.231	pCi/g	0.153		(0-1)			
	TPU:	+/-0.395		+/-0.335							
Thorium-234	U	1.36	UI	2.78	pCi/g	0.437		(0-1)			
	TPU:	+/-0.754		+/-0.862							
Tin-113	U	-0.0389	U	0.00338	pCi/g	0.458		(0-1)			
	TPU:	+/-0.0252		+/-0.021							
Uranium-235	U	0.041	U	0.00475	pCi/g	0.0858		(0-1)			
	TPU:	+/-0.107		+/-0.104							
Yttrium-88	U	0.020	U	-0.0149	pCi/g	0.470		(0-1)			
	TPU:	+/-0.020		+/-0.017							
QC1202057357	LCS										
Americium-241	16.3			13.9	pCi/g		85.3	(75%-125%)		03/19/10	11:17
	TPU:			+/-1.01							
Bismuth-211				2.98	pCi/g						
	TPU:			+/-0.297							
Bismuth-214				0.732	pCi/g						
	TPU:			+/-0.117							
Cadmium-109				32.7	pCi/g						
	TPU:			+/-2.28							
Cerium-139			U	0.0165	pCi/g						
	TPU:			+/-0.0223							
Cesium-134			U	-0.00703	pCi/g						
	TPU:			+/-0.0479							
Cesium-137	5.69			5.75	pCi/g		101	(75%-125%)			
	TPU:			+/-0.198							
Cobalt-60	6.49			6.48	pCi/g		99.8	(75%-125%)			
	TPU:			+/-0.282							
Europium-152			U	-0.0494	pCi/g						
	TPU:			+/-0.0911							
Lanthanum-140			U	-0.00642	pCi/g						
	TPU:			+/-0.0731							

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QC Summary

Workorder: 248243

Page 4 of 6

Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	959280								
Lead-212			1.28	pCi/g					
	TPU:		+/-0.0912						
Lead-214			1.08	pCi/g					
	TPU:		+/-0.112						
Mercury-203		U	0.0334	pCi/g					
	TPU:		+/-0.030						
Potassium-40		U	0.782	pCi/g					
	TPU:		+/-0.303						
Radium-223		U	-1.24	pCi/g					
	TPU:		+/-0.571						
Radium-224			4.11	pCi/g					
	TPU:		+/-0.961						
Radium-226			0.732	pCi/g					
	TPU:		+/-0.117						
Radium-228			1.75	pCi/g					
	TPU:		+/-0.318						
Ruthenium-106		U	-0.193	pCi/g					
	TPU:		+/-0.277						
Sodium-22		U	-0.0326	pCi/g					
	TPU:		+/-0.0253						
Strontium-85		U	-0.0862	pCi/g					
	TPU:		+/-0.0412						
Thallium-208			0.382	pCi/g					
	TPU:		+/-0.0606						
Thorium-227		U	0.255	pCi/g					
	TPU:		+/-0.218						
Thorium-231		U	-1.24	pCi/g					
	TPU:		+/-0.571						
Thorium-234		U	-0.593	pCi/g					
	TPU:		+/-1.52						
Tin-113		U	0.0324	pCi/g					
	TPU:		+/-0.0406						
Uranium-235		U	-0.34	pCi/g					
	TPU:		+/-0.159						
Yttrium-88		U	0.0338	pCi/g					
	TPU:		+/-0.0223						
QC1202057355	MB								
Americium-241		U	-0.0868	pCi/g					03/19/1011:16
	TPU:		+/-0.0464						
Bismuth-211		U	-0.0533	pCi/g					
	TPU:		+/-0.0677						
Bismuth-214		U	0.0422	pCi/g					
	TPU:		+/-0.0238						
Cadmium-109		U	0.102	pCi/g					
	TPU:		+/-0.181						
Cerium-139		U	0.00316	pCi/g					
	TPU:		+/-0.00821						
Cesium-134		U	0.00294	pCi/g					
	TPU:		+/-0.0128						
Cesium-137		U	-0.023	pCi/g					
	TPU:		+/-0.0111						

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QC Summary

Workorder: 248243

Page 5 of 6

Parname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	959280										
Cobalt-60			U	-0.00358	pCi/g						
	TPU:			+/-0.0097							
Europium-152			U	-0.00339	pCi/g						
	TPU:			+/-0.0287							
Lanthanum-140			U	-0.0152	pCi/g						
	TPU:			+/-0.0246							
Lead-212			U	-0.00233	pCi/g						
	TPU:			+/-0.0189							
Lead-214			U	0.00219	pCi/g						
	TPU:			+/-0.0236							
Mercury-203			U	0.0356	pCi/g						
	TPU:			+/-0.0111							
Potassium-40			UI	0.319	pCi/g						
	TPU:			+/-0.133							
Radium-223			U	0.0967	pCi/g						
	TPU:			+/-0.163							
Radium-224			U	-0.0336	pCi/g						
	TPU:			+/-0.179							
Radium-226			U	0.0422	pCi/g						
	TPU:			+/-0.0238							
Radium-228			U	-0.0592	pCi/g						
	TPU:			+/-0.0415							
Ruthenium-106			U	0.0254	pCi/g						
	TPU:			+/-0.0882							
Sodium-22			U	-0.0361	pCi/g						
	TPU:			+/-0.0114							
Strontium-85			U	-0.0635	pCi/g						
	TPU:			+/-0.0159							
Thallium-208			U	0.00926	pCi/g						
	TPU:			+/-0.0108							
Thorium-227			U	0.0636	pCi/g						
	TPU:			+/-0.0765							
Thorium-231			U	0.0967	pCi/g						
	TPU:			+/-0.163							
Thorium-234			U	-0.944	pCi/g						
	TPU:			+/-0.451							
Tin-113			U	-0.0016	pCi/g						
	TPU:			+/-0.012							
Uranium-235			U	-0.0664	pCi/g						
	TPU:			+/-0.0629							
Yttrium-88			U	-0.00235	pCi/g						
	TPU:			+/-0.0102							
Rad Liquid Scintillation											
Batch	964056										
QC1202068217 248248008 DUP											
Tritium		U	-19.8	U	69.3	pCi/L	0.308	(0-1)	KXX2	03/20/1004:27	
	TPU:		+/-71.1		+/-73.5						
QC1202068218 LCS											
Tritium	5530				6040	pCi/L	109	(80%-120%)		03/19/1010:47	
	TPU:				+/-505						

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QC Summary

Workorder: 248243

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation									
Batch	964056								
QC1202068216	MB								
Tritium		U	-16.2	pCi/L					03/20/1003:35
	TPU:		+/-70.3						

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#

964861

Product:

Am

Date:

3/26/10

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

Debbie Green 3/26/10

Secondary Review Performed By:

Jop LMS 3/26/10

3/27

LANL

Am/Cm Que Sheet

19-MAR-10

Batch #: 964861 Analyst: KXM4 First Client Due Date: 27-MAR-10 Internal Due Date: 6-MAR-10 Comments:
 Tracer(s): Am243/Cm244 Tracer Code: 445-96-2-VV Expiration Date: 3-9-11 Vol: 0.1ml
 LCS Isotope(s): Am243/Cm244 LCS Code(s): SM0244-B / NA Expiration Date: 4-30-20 / NA Vol(s): 0.15 / NA
 Spike Isotope(s): Am241/Cm244 Spike Code(s): NA / NA Expiration Date: NA / NA Vol(s): NA / NA
 Prep Date: 3-19-10 Initials: KM Pipet ID: 4497063 Balance ID: 5741072 Witness: gms 03/23/10

Sample ID	Client Description	Type	Hazard		Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry	
			Code	Min CRDL						Aliquot	Det #
248243001-1	RE36-10-7458	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	1	1	1.259	218
248243002-1	RE36-10-7453	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	2	2	1.258	219
248243003-1	RE36-10-7454	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	3	3	1.260	220
248243004-1	RE36-10-7460	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	4	4	1.253	227
248243005-1	RE36-10-7456	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	5	5	1.254	228
248243006-1	RE36-10-7455	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	6	6	1.251	229
248243007-1	RE36-10-7459	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	7	7	1.254	230
248243008-1	RE36-10-7457	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	8	8	1.258	235
248243009-1	RE36-10-7520	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	9	9	1.251	236
248243010-1	RE36-10-7519	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	10	10	1.251	237
1202070015-1	MB for batch 964861	MB	.05 pCi/g		SOIL	QC ACCOUNT		11	11	1	239
1202070016-1	RE36-10-7458(248243001DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	24-FEB-10	12	12	1.259	239
1202070017-1	LCS for batch 964861	LCS	.05 pCi/g		SOIL	QC ACCOUNT		13	13	0.120	240

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

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By:

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

Blank Correction Report

Batch ID 964861

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202070016	DUP	Americium-241	1.26 g	0.000554	0.00158	0.0154	-0.00045873	pCi/g	NO
1202070017	LCS	Americium-241	0.120 g	27.7	1.91	0.146	-0.00481667	pCi/g	NO
1202070015	MB	Americium-241	1.00 g	-0.000578	0.0017	0.0188	-0.000578	pCi/g	NQ
248243001	RE36-10-7458	Americium-241	1.26 g	0.00363	0.00399	0.0157	-0.00045873	pCi/g	NO
248243002	RE36-10-7453	Americium-241	1.26 g	0.00797	0.00357	0.0244	-0.00045873	pCi/g	NO
248243003	RE36-10-7454	Americium-241	1.26 g	0.0023	0.00169	0.0193	-0.00045873	pCi/g	NO
248243004	RE36-10-7460	Americium-241	1.25 g	-0.000374	0.00148	0.0163	-0.0004624	pCi/g	NO
248243005	RE36-10-7456	Americium-241	1.25 g	0.00369	0.00195	0.0159	-0.0004624	pCi/g	NO
248243006	RE36-10-7455	Americium-241	1.25 g	0.0141	0.00393	0.0162	-0.0004624	pCi/g	NO
248243007	RE36-10-7459	Americium-241	1.25 g	0.0122	0.00378	0.0152	-0.0004624	pCi/g	NO
248243008	RE36-10-7457	Americium-241	1.26 g	0.013	0.0044	0.0188	-0.00045873	pCi/g	NO
248243009	RE36-10-7520	Americium-241	1.25 g	0.0121	0.00413	0.0211	-0.0004624	pCi/g	NO
248243010	RE36-10-7519	Americium-241	1.25 g	0.00779	0.00432	0.016	-0.0004624	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 964861 SAMPLE ID : S0248243001_AM SAMPLE QTY : 1.259 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 90.112</p>	<p>CHAMBER : 218 DETECTOR S/N : 79411 AVERAGE %EFFICIENCY : 39.3974 COUNT DATE : 24-MAR-2010 20:55:23 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>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</p>
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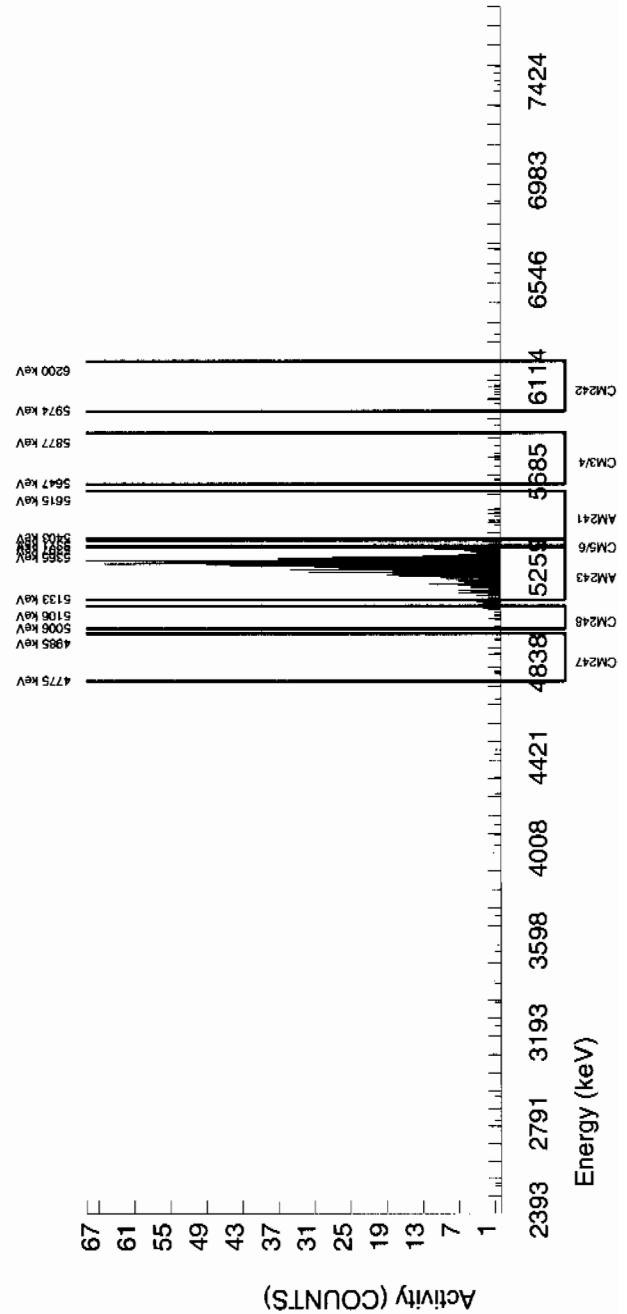
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0503E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5505.359	61.825	11.000	3.598	6.000	2.7707	99.94000	3.63E-03	3.99E-03	6.50E-03	1.57E-02	3.98E-03
AM-243	5270.000	5282.419	39.252	812.000	806.000	6.000	2.4495	99.78000	8.14E-01	5.83E-02	5.76E-03	1.42E-02	2.89E-02
CM-242	6102.000	6064.281	54.200	13.000	13.000	0.000	4.0092	100.00000	1.48E-02	4.22E-03	9.40E-03	2.15E-02	4.11E-03
CM-3/4	5795.020	5752.230	14.220	15.000	13.000	2.000	4.8510	100.00000	1.31E-02	4.25E-03	1.14E-02	2.55E-02	4.17E-03
CM-5/6	5386.000	5382.406	0.000	19.000	19.000	0.000	6.1294	86.09000	2.22E-02	5.29E-03	1.67E-02	3.66E-02	5.10E-03
CM-247	4946.000	4888.115	7.264	8.000	5.000	3.000	6.3427	79.30000	6.35E-03	4.23E-03	1.88E-02	4.09E-02	4.21E-03
CM-248	5078.600	5070.168	0.000	15.000	15.000	0.000	11.0244	91.00000	1.66E-02	4.41E-03	2.84E-02	5.98E-02	4.29E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 964861 SAMPLE ID : S0248243002_AM SAMPLE QTY : 1.258 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 56.376</p>	<p>CHAMBER : 219 DETECTOR S/N : 79412 AVERAGE %EFFICIENCY : 40.6279 COUNT DATE : 24-MAR-2010 20:55:26 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB 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-2010</p>
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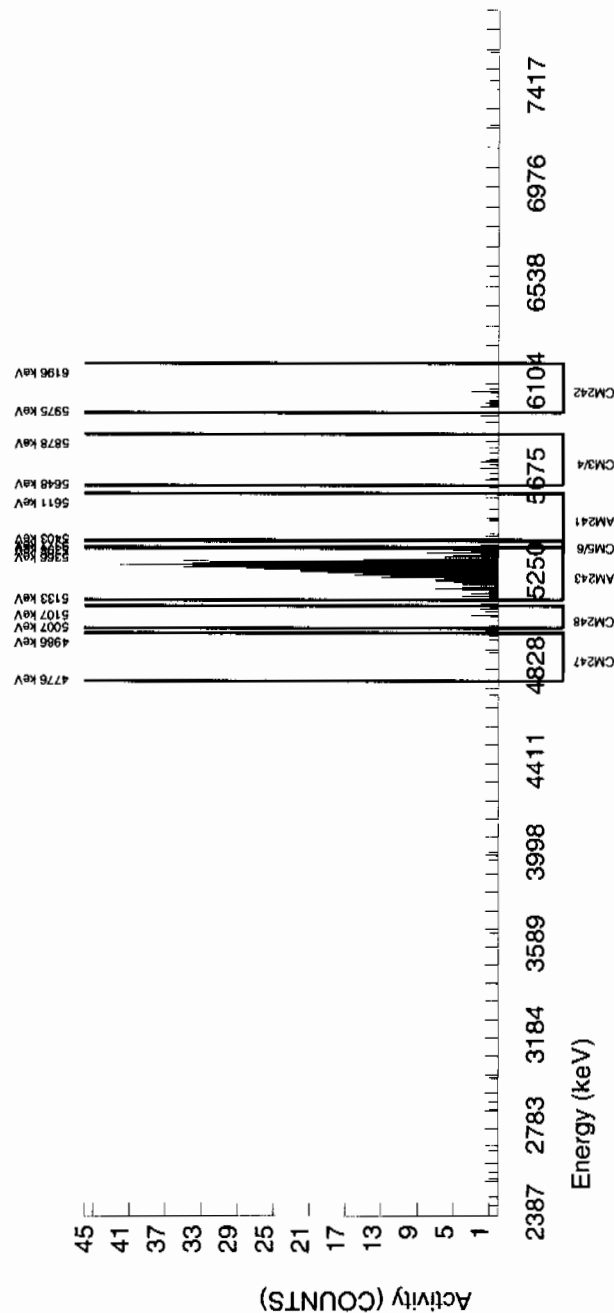
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.2827E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
AM-241	5479.150	5483.921	118.391	6.000	5.095	0.000	2.7707	99.94000	7.97E-03	3.57E-03	1.01E-02	2.44E-02	3.53E-03
AM-243	5270.000	5277.557	41.190	520.000	520.000	0.000	0.0000	99.78000	8.15E-01	6.55E-02	0.00E+00	4.25E-03	3.57E-02
CM-242	6102.000	6035.005	0.000	16.000	15.000	1.000	4.0092	100.0000	2.66E-02	7.51E-03	1.46E-02	3.34E-02	7.30E-03
CM-3/4	5795.020	5757.836	36.843	14.000	14.000	0.000	4.8510	100.0000	2.20E-02	6.05E-03	1.76E-02	3.95E-02	5.87E-03
CM-5/6	5386.000	5377.834	0.000	10.000	10.000	0.000	6.1294	86.09000	1.82E-02	5.87E-03	2.59E-02	5.67E-02	5.74E-03
CM-247	4946.000	4907.005	192.386	4.000	4.000	0.000	6.3427	79.30000	7.89E-03	3.98E-03	2.91E-02	6.35E-02	3.94E-03
CM-248	5078.600	5068.842	48.004	13.000	13.000	0.000	11.0244	91.00000	2.23E-02	6.37E-03	4.41E-02	9.28E-02	6.19E-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 : 964861	CHAMBER : 220	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248243003_AM	DETECTOR S/N : 79413	BKG FILE : B220.CNF:91
SAMPLE QTY : 1.260 G	AVERAGE %EFFICIENCY : 38.9430	BKG DATE : 21-MAR-2010
SAMPLE DATE : 24-FEB-2010 00:00:00	COUNT DATE : 24-MAR-2010 20:55:29	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W220.CNF:32
% YIELD : 74.311		CAL DATE : 28-FEB-2010

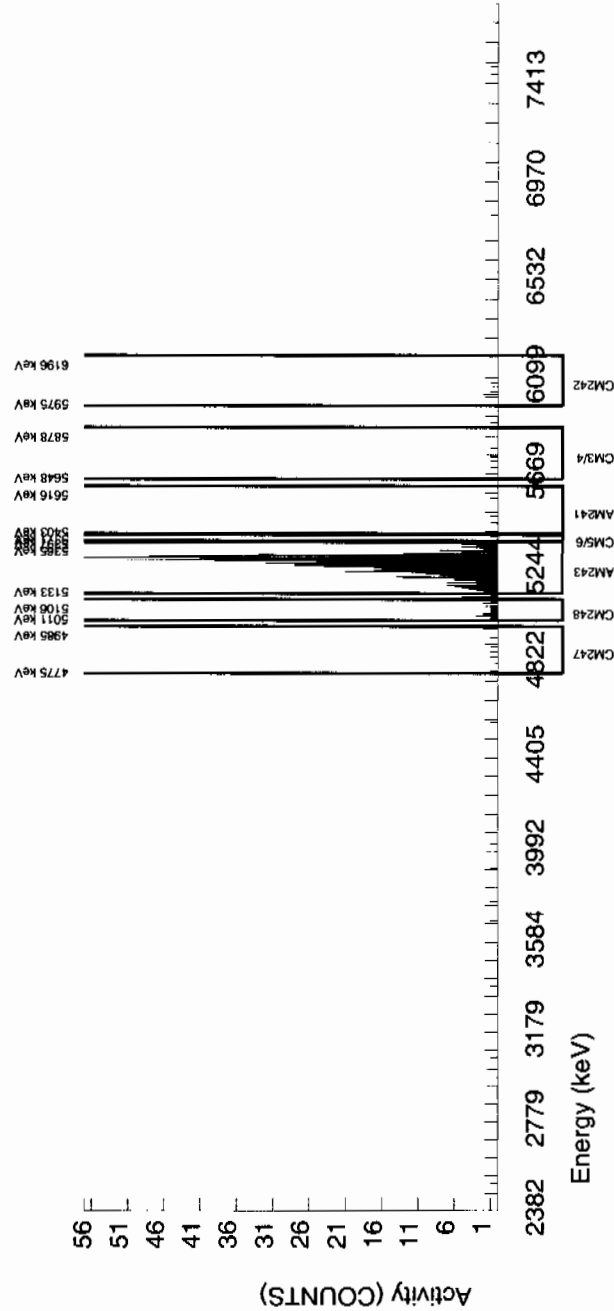
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.6908E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5503.634	108.365	3.000	1.857	0.000	2.7707	99.94000	2.30E-03	1.69E-03	7.97E-03	1.93E-02	1.68E-03
AM243	5270.000	5271.086	39.717	657.000	657.000	0.000	0.0000	99.78000	8.13E-01	6.12E-02	0.00E+00	3.36E-03	3.17E-02
CM-242	6102.000	6035.460	4.926	7.000	7.000	0.000	4.0092	100.0000	9.79E-03	3.75E-03	1.15E-02	2.64E-02	3.70E-03
CM-3/4	5795.020	5739.292	108.365	7.000	6.000	1.000	4.8510	100.0000	7.43E-03	3.54E-03	1.39E-02	3.12E-02	3.50E-03
CM-5/6	5386.000	5378.698	7.235	4.000	4.000	0.000	6.1294	86.09000	5.74E-03	2.89E-03	2.05E-02	4.48E-02	2.87E-03
CM-247	4946.000	4889.267	4.926	9.000	7.000	2.000	6.3427	79.30000	1.09E-02	5.21E-03	2.30E-02	5.02E-02	5.17E-03
CM-248	5078.600	5063.983	0.000	23.000	23.000	0.000	11.0244	91.00000	3.12E-02	6.81E-03	3.48E-02	7.33E-02	6.51E-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	:	964861
SAMPLE ID	:	S02482
SAMPLE QTY	:	1.29
SAMPLE DATE	:	24-FEB-2012
ANALYST	:	KXM4
% YIELD	:	88.643

CHAMBER : 227
DETECTOR S/N : 79420
AVERAGE %EFFICIENCY : 38.7585
COUNT DATE : 24-MAR-2010 20:55:32
ELAPSED LIVE TIME(SEC) : 60000.00

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LIB FILE : ENV_ALPHA_AM
BKG FILE : B227.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W227.CNF:30
CAL DATE : 28-FEB-2010
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TRACER	ID	: 445-96-2-VV
	NUCLIDE	: AM243
	NOMINAL	: 2.2753E+00 dpm
	RESULTS	: 2.0169E+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

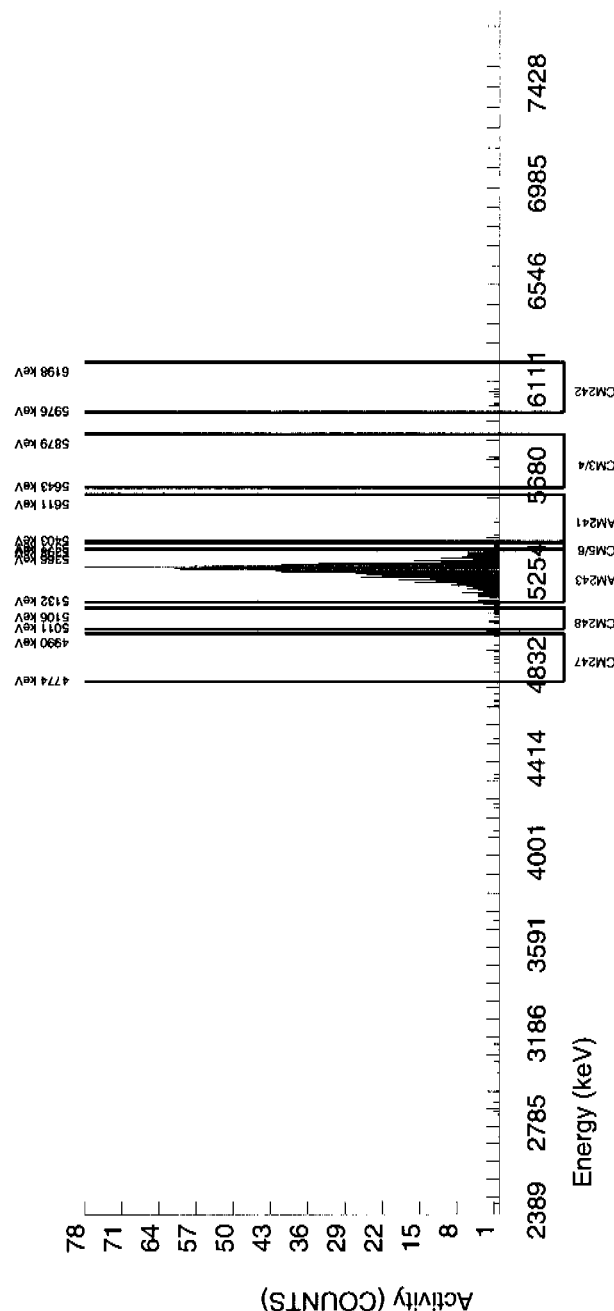
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5466.789	54.224	2.000	-0.357	1.000	2.7707	99.94000	-3.74E-04	1.48E-03	6.75E-03	1.63E-02	1.48E-03
AM243	5270.000	5276.470	36.540	782.000	780.000	2.000	1.4142	99.78000	8.18E-01	5.89E-02	3.45E-03	9.74E-03	2.94E-02
CM-242	6102.000	6043.835	63.981	9.000	9.000	0.000	4.0092	100.0000	1.07E-02	3.62E-03	9.76E-03	2.24E-02	3.55E-03
CM-3/4	5795.020	5750.177	9.859	8.000	8.000	0.000	4.8510	100.0000	8.40E-03	3.01E-03	1.18E-02	2.65E-02	2.97E-03
CM-5/6	5386.000	5378.220	0.000	11.000	11.000	0.000	6.1294	86.09000	1.34E-02	4.12E-03	1.73E-02	3.80E-02	4.03E-03
CM-247	4946.000	4909.708	0.000	9.000	7.000	2.000	6.3427	79.30000	9.24E-03	4.41E-03	1.95E-02	4.25E-02	4.38E-03
CM-248	5078.600	5068.256	0.000	15.000	15.000	0.000	11.0244	91.00000	1.72E-02	4.58E-03	2.95E-02	6.21E-02	4.45E-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 : 964861 SAMPLE ID : S0248243005_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.089	CHAMBER : 228 DETECTOR S/N : 79421 AVERAGE %EFFICIENCY : 38.2168 COUNT DATE : 24-MAR-2010 20:55:35 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B228.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W228.CNF;30 CAL DATE : 28-FEB-2010
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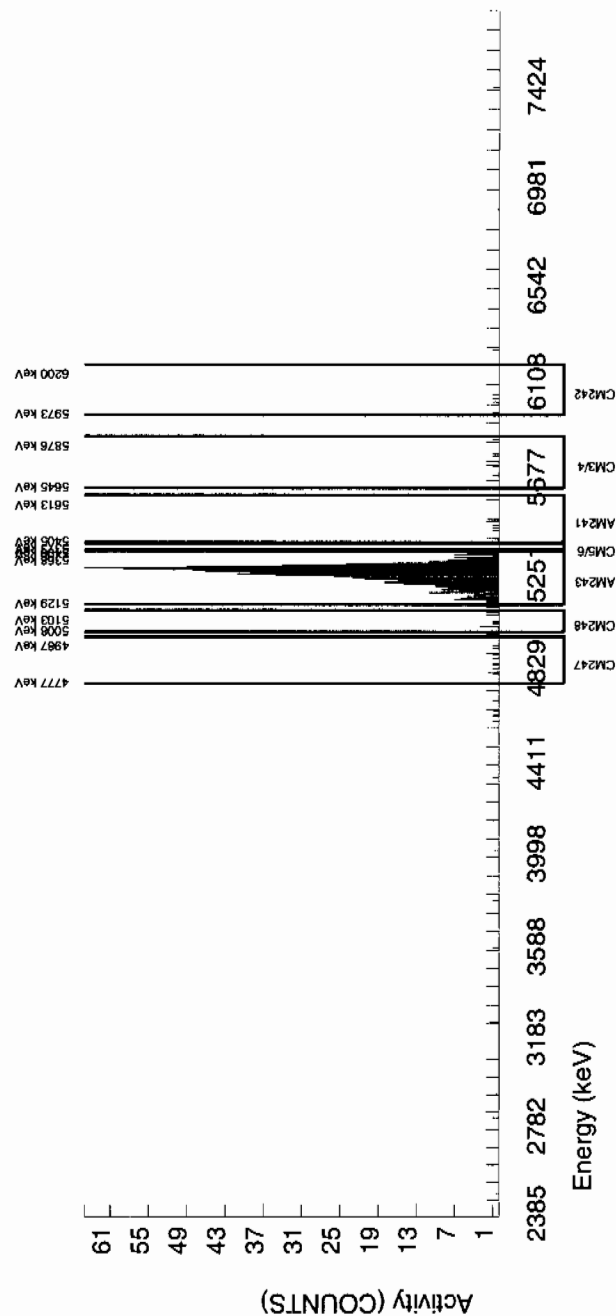
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0953E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5485.101	4.936	5.000	3.610	0.000	2.7707	99.94000	3.69E-03	1.95E-03	6.58E-03	1.59E-02	1.94E-03
AM243	5270.000	5271.878	46.242	799.000	799.000	0.000	0.0000	99.78000	8.17E-01	5.85E-02	0.00E+00	2.77E-03	2.89E-02
CM-242	6102.000	6034.263	78.980	5.000	5.000	0.000	4.0092	100.0000	5.78E-03	2.61E-03	9.52E-03	2.18E-02	2.58E-03
CM-3/4	5795.020	5766.100	7.250	9.000	9.000	0.000	4.8510	100.0000	9.21E-03	3.12E-03	1.15E-02	2.58E-02	3.07E-03
CM-5/6	5386.000	5383.955	4.936	2.000	2.000	0.000	6.1294	86.09000	2.37E-03	1.68E-03	1.69E-02	3.70E-02	1.68E-03
CM-247	4946.000	4901.724	0.000	10.000	9.000	1.000	6.3427	79.30000	1.16E-02	4.33E-03	1.90E-02	4.15E-02	4.27E-03
CM-248	5078.600	5058.926	0.000	14.000	13.000	1.000	11.0244	91.00000	1.46E-02	4.44E-03	2.88E-02	6.06E-02	4.34E-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

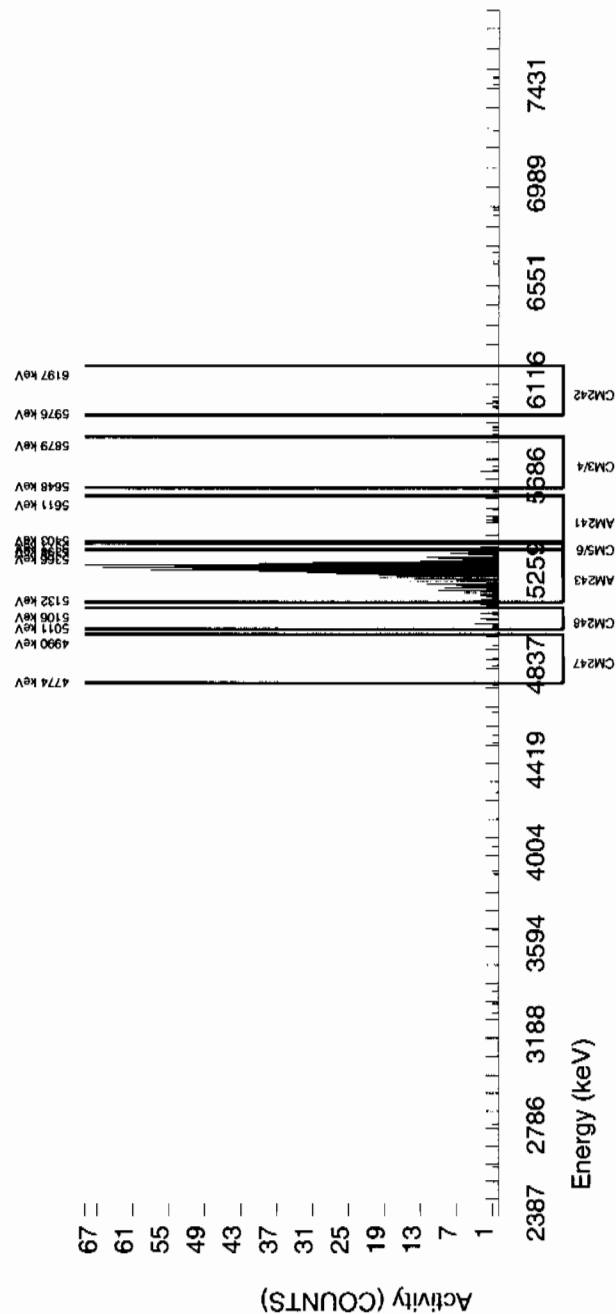
BATCH NUMBER : 964861 SAMPLE ID : S0248243006_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 89.848		CHAMBER : 229 DETECTOR S/N : 79422 AVERAGE %EFFICIENCY : 38.6797 COUNT DATE : 24-MAR-2010 20:55:38 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B229.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W229.CNF:30 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0443E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY									
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G
AM-241	5479.150	5517.616	66.707	15.000	13.627	0.000	2.7707	99.94000	1.41E-02
AM243	5270.000	5279.857	40.991	789.000	789.000	0.000	0.0000	99.78000	8.19E-01
CM-242	6102.000	6036.695	7.274	7.000	6.000	1.000	4.0092	100.0000	7.04E-03
CM-3/4	5795.020	5753.441	53.191	8.000	6.000	2.000	4.8510	100.0000	6.24E-03
CM-5/6	5386.000	5378.568	0.000	7.000	7.000	0.000	6.1294	86.09000	8.42E-03
CM-247	4946.000	4896.692	98.952	9.000	9.000	0.000	6.3427	79.30000	1.18E-02
CM-248	5078.600	5054.659	0.000	23.000	23.000	0.000	11.0244	91.00000	2.62E-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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964861 SAMPLE ID : S0248243007_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 96.765	CHAMBER : 230 DETECTOR S/N : 79423 AVERAGE %EFFICIENCY : 38.1908 COUNT DATE : 24-MAR-2010 20:55:42 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B230.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W230.CNF:30 CAL DATE : 28-FEB-2010
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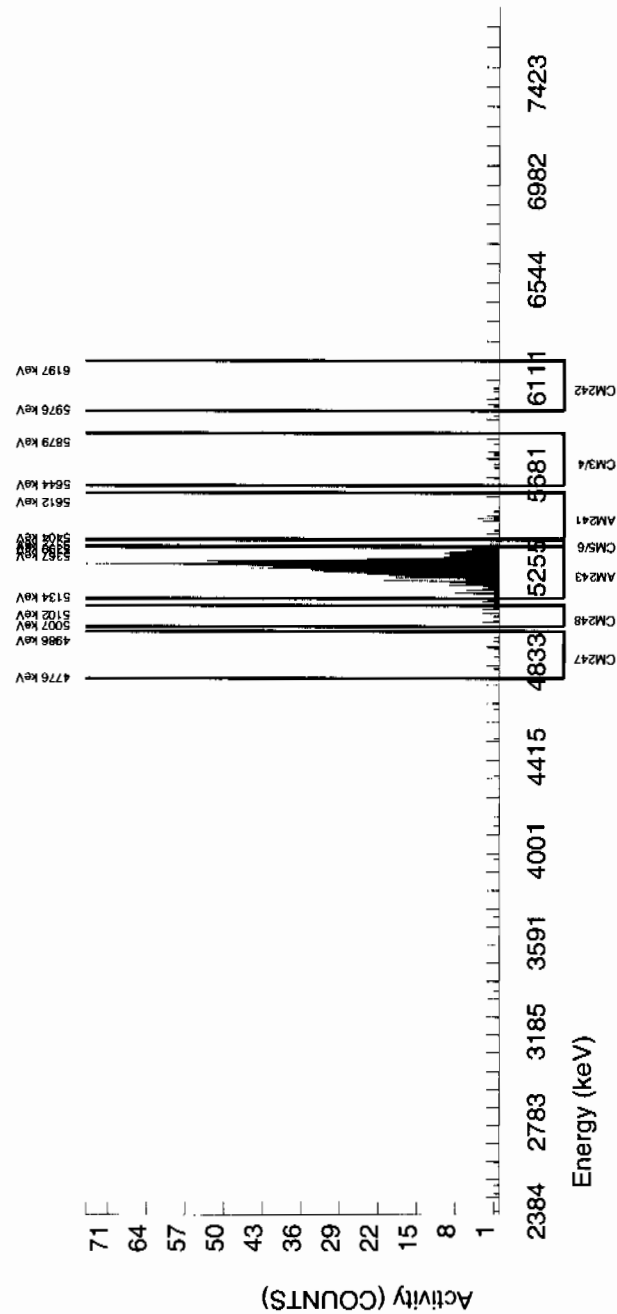
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.2017E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5496.865	14.866	15.000	12.540	1.000	2.7707	99.94000	1.22E-02	3.78E-03	6.27E-03	1.52E-02	3.71E-03
AM243	5270.000	5277.324	41.585	841.000	839.000	2.000	1.4142	99.78000	8.17E-01	5.78E-02	3.20E-03	9.05E-03	2.83E-02
CM-242	6102.000	6028.799	7.278	9.000	9.000	0.000	4.0092	100.0000	9.91E-03	3.36E-03	9.07E-03	2.08E-02	3.30E-03
CM-3/4	5795.020	5764.549	34.687	12.000	11.000	1.000	4.8510	100.0000	1.07E-02	3.58E-03	1.10E-02	2.46E-02	3.52E-03
CM-5/6	5386.000	5377.806	0.000	12.000	12.000	0.000	6.1294	86.09000	1.35E-02	4.00E-03	1.61E-02	3.53E-02	3.91E-03
CM-247	4946.000	4885.390	7.278	9.000	9.000	0.000	6.3427	79.30000	1.10E-02	3.74E-03	1.81E-02	3.95E-02	3.68E-03
CM-248	5078.600	5067.940	0.000	18.000	18.000	0.000	11.0244	91.00000	1.92E-02	4.68E-03	2.74E-02	5.77E-02	4.53E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 964861 SAMPLE ID : S0248243008_AM SAMPLE QTY : 1.258 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 74.761</p>	<p>CHAMBER : 235 DETECTOR S/N : 79428 AVERAGE %EFFICIENCY : 39.7692 COUNT DATE : 24-MAR-2010 20:55:44 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB 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-2010</p>
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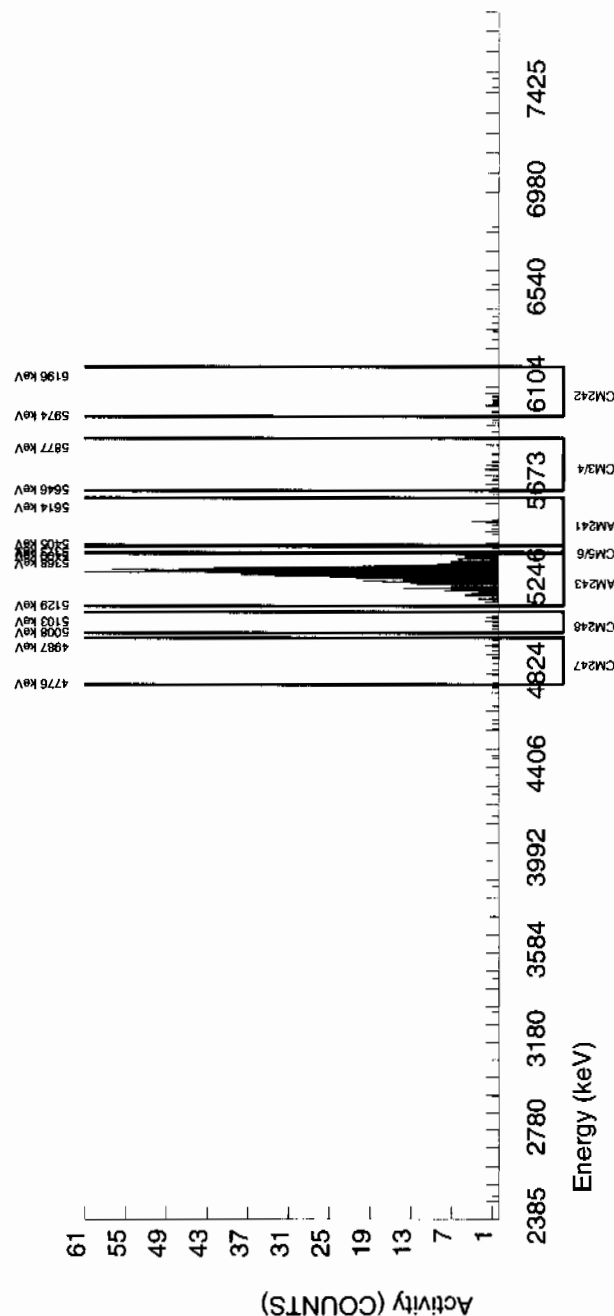
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.7010E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5483.668	5.704	13.000	10.826	1.000	2.7707	99.94000	1.30E-02	4.40E-03	7.77E-03	1.88E-02	4.32E-03
AM243	5270.000	5277.663	38.293	677.000	675.000	2.000	1.4142	99.78000	8.15E-01	6.09E-02	3.97E-03	1.12E-02	3.15E-02
CM-242	6102.000	6042.659	56.478	13.000	13.000	0.000	4.0092	100.0000	1.77E-02	5.05E-03	1.12E-02	2.57E-02	4.92E-03
CM-3/4	5795.020	5742.753	34.378	14.000	8.000	6.000	4.8510	100.0000	9.66E-03	5.44E-03	1.36E-02	3.04E-02	5.40E-03
CM-5/6	5386.000	5384.007	4.911	4.000	4.000	0.000	6.1294	86.09000	5.60E-03	2.82E-03	1.99E-02	4.37E-02	2.80E-03
CM-247	4946.000	4912.118	9.822	14.000	14.000	0.000	6.3427	79.30000	2.13E-02	5.84E-03	2.24E-02	4.89E-02	5.68E-03
CM-248	5078.600	5054.035	7.213	9.000	9.000	0.000	11.0244	91.00000	1.19E-02	4.04E-03	3.39E-02	7.15E-02	3.97E-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 :	964861
SAMPLE ID :	S02482
SAMPLE QTY :	1.2g
SAMPLE DATE :	24-FEB
ANALYST :	KXM4
% YIELD :	64.355

CHAMBER : 236

SAMPLE ID	S0248243009_AM
SAMPLE QTY	1.251 G
SAMPLE DATE	24-FEB-2010 00:00
ANALYST	KXM4
% YIELD	64.355

CHAMBER : 236
DETECTOR S/N : 79429
AVERAGE %EFFICIENCY : 41.3400
COUNT DATE : 24-MAR-2010 20:55:47
ELAPSED LIVE TIME(SEC) : 60000.00

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-VV
	NUCLIDE	: AM243
	NOMINAL	: 2.2753E+00 dpm
	RESULTS	: 1.4643E+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

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	5480.812	19.672	10.000	8.949	0.000	2.7707	99.94000	1.21E-02	4.13E-03	8.73E-03	2.11E-02	4.05E-03
AM243	5270.000	5278.750	52.877	607.000	604.000	3.000	1.7321	99.78000	8.19E-01	6.32E-02	5.47E-03	1.46E-02	3.35E-02
CM-242	6102.000	6046.623	83.604	16.000	16.000	0.000	4.0092	100.0000	2.45E-02	6.34E-03	1.26E-02	2.89E-02	6.13E-03
CM-3/4	5795.020	5767.938	137.086	10.000	5.000	5.000	4.8510	100.0000	6.79E-03	5.28E-03	1.53E-02	3.42E-02	5.26E-03
CM-5/6	5386.000	5375.390	0.000	11.000	11.000	0.000	6.1294	86.09000	1.73E-02	5.34E-03	2.24E-02	4.91E-02	5.21E-03
CM-247	4946.000	4871.525	0.000	7.000	4.000	3.000	6.3427	79.30000	6.83E-03	5.42E-03	2.52E-02	5.50E-02	5.40E-03
CM-248	5078.600	5063.999	4.918	7.000	7.000	0.000	11.0244	91.00000	1.04E-02	3.99E-03	3.81E-02	8.03E-02	3.93E-03

NOTES:

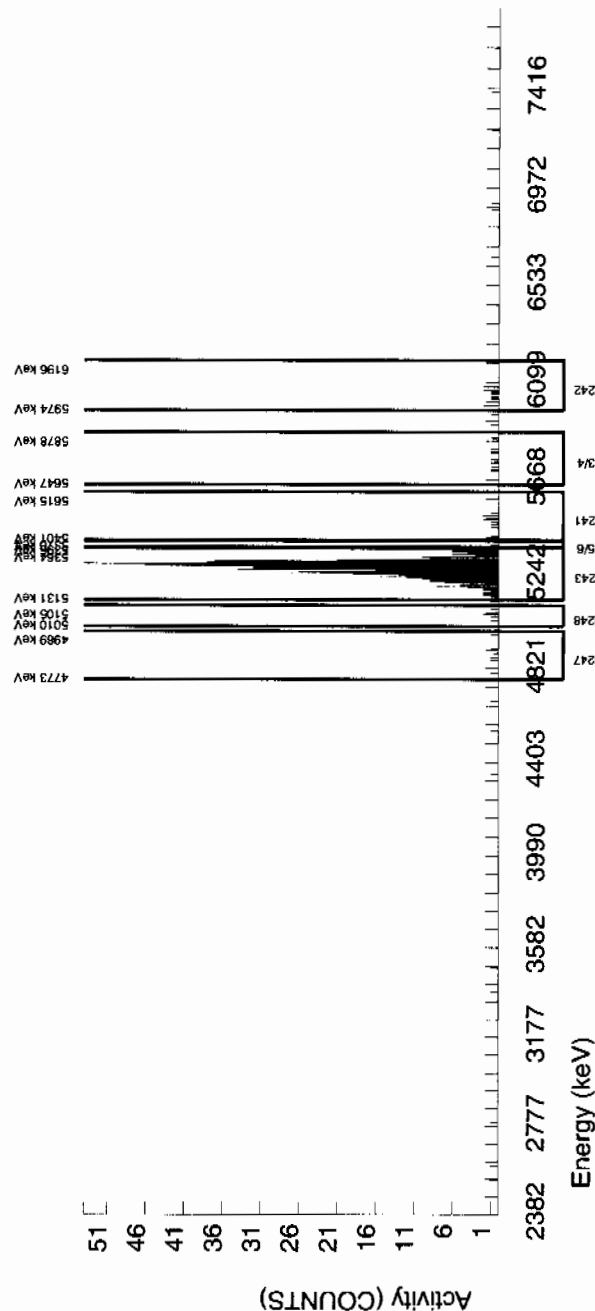
* BKG Sg calculated via blank population.

(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 : 964861 SAMPLE ID : S0248243010_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 85.749	CHAMBER : 237 DETECTOR S/N : 79430 AVERAGE %EFFICIENCY : 41.0426 COUNT DATE : 24-MAR-2010 20:55:51 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B237.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W237.CNF:30 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9511E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

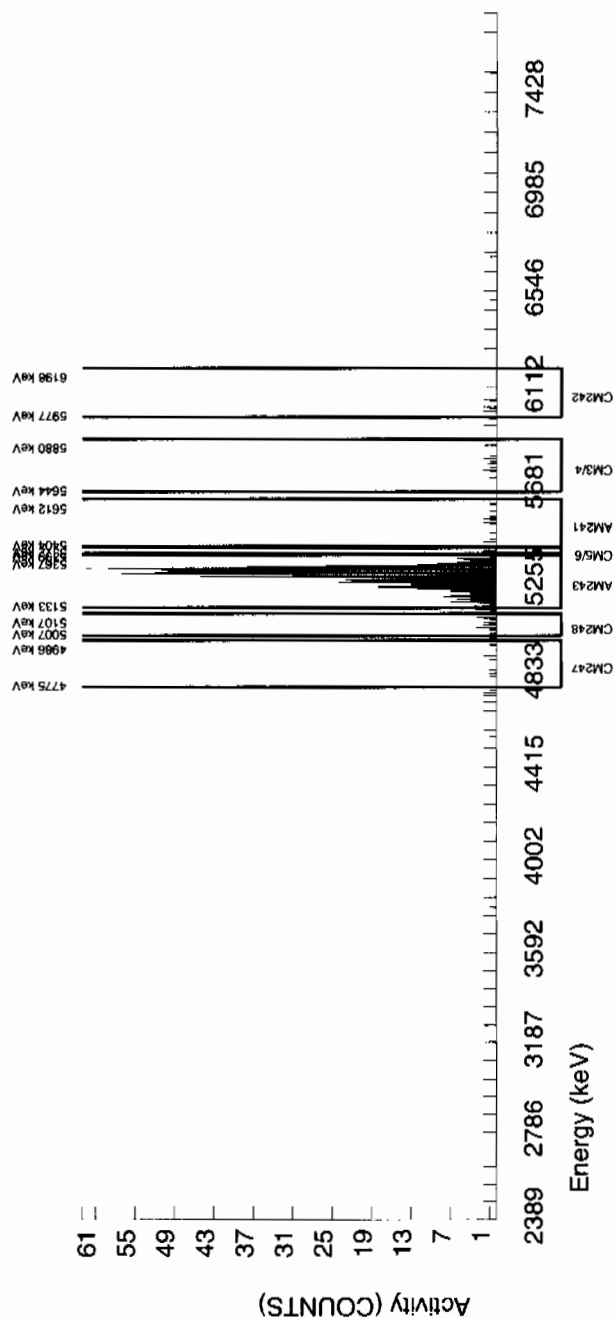
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5515.364	24.467	14.000	7.610	5.000	2.7707	99.94000	7.79E-03	4.32E-03	6.60E-03	1.60E-02	4.30E-03
AM-243	5270.000	5278.514	46.887	802.000	799.000	3.000	1.7321	99.78000	8.19E-01	5.87E-02	4.13E-03	1.10E-02	2.91E-02
CM-242	6102.000	6024.826	54.280	10.000	10.000	0.000	4.0092	100.0000	1.16E-02	3.73E-03	9.54E-03	2.19E-02	3.66E-03
CM-3/4	5795.020	5756.408	56.593	11.000	11.000	0.000	4.8510	100.0000	1.13E-02	3.48E-03	1.15E-02	2.59E-02	3.40E-03
CM-5/6	5386.000	5376.738	0.000	19.000	18.000	1.000	6.1294	86.09000	2.14E-02	5.48E-03	1.69E-02	3.71E-02	5.31E-03
CM-247	4946.000	4897.090	143.102	6.000	5.000	1.000	6.3427	79.30000	6.45E-03	3.44E-03	1.90E-02	4.16E-02	3.41E-03
CM-248	5078.600	5056.979	50.528	21.000	21.000	0.000	11.0244	91.00000	2.36E-02	5.36E-03	2.88E-02	6.07E-02	5.15E-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 : 964861 SAMPLE ID : S1202070015_AM SAMPLE QTY : 1.000 G SAMPLE DATE : 19-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 95.277	CHAMBER : 239 DETECTOR S/N : 79432 AVERAGE %EFFICIENCY : 39.3422 COUNT DATE : 25-MAR-2010 16:39:57 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B239.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W239.CNF;30 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.1678E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

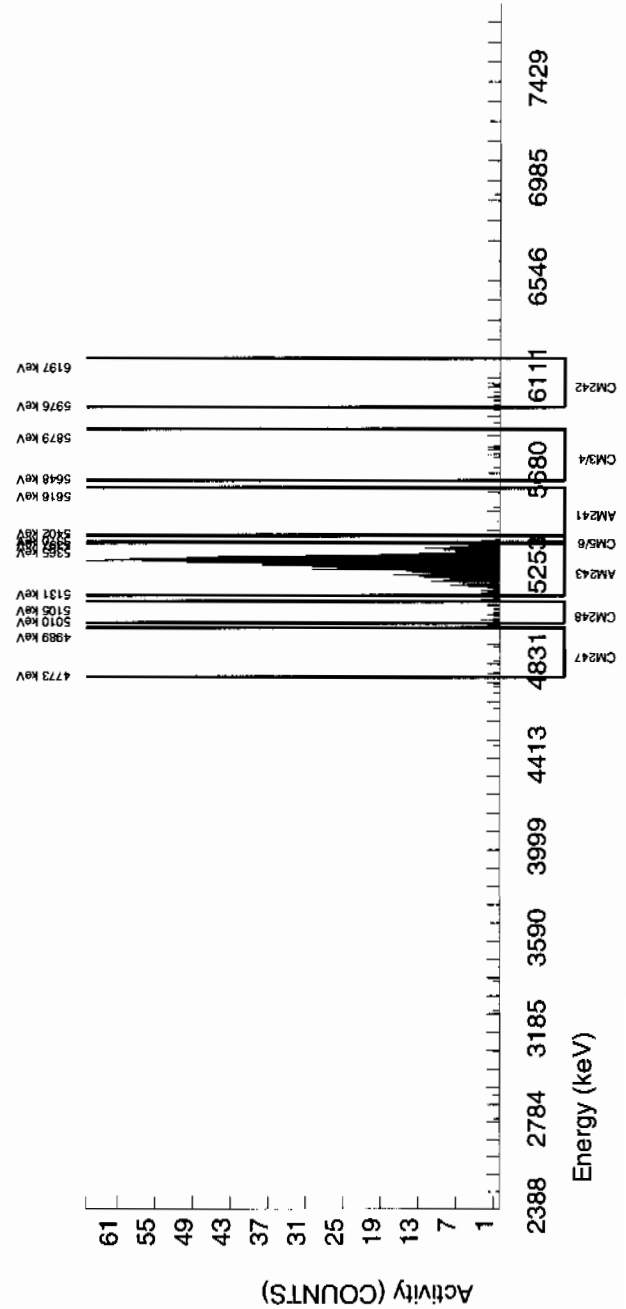
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5500.737	59.148	2.000	-0.481	1.000	2.7707	99.94000	-5.78E-04	1.70E-03	7.75E-03	1.88E-02	1.70E-03
AM243	5270.000	5277.437	46.556	851.000	851.000	0.000	0.0000	99.78000	1.02E+00	7.22E-02	0.00E+00	3.26E-03	3.51E-02
CM-242	6102.000	6052.585	19.613	12.000	12.000	0.000	4.0092	100.0000	1.49E-02	4.39E-03	1.12E-02	2.57E-02	4.29E-03
CM-3/4	5795.020	5768.392	17.098	12.000	12.000	0.000	4.8510	100.0000	1.44E-02	4.26E-03	1.36E-02	3.04E-02	4.17E-03
CM-5/6	5386.000	5376.184	0.000	8.000	8.000	0.000	6.1294	86.09000	1.12E-02	4.01E-03	1.99E-02	4.36E-02	3.95E-03
CM-247	4946.000	4814.555	7.239	7.000	6.000	1.000	6.3427	79.30000	9.09E-03	4.32E-03	2.24E-02	4.88E-02	4.29E-03
CM-248	5078.600	5058.196	64.077	15.000	13.000	2.000	11.0244	91.00000	1.72E-02	5.55E-03	3.39E-02	7.13E-02	5.44E-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 : 964861 SAMPLE ID : S1202070016_AM SAMPLE QTY : 1.259 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.478				CHAMBER : 239 DETECTOR S/N : 79432 AVERAGE %EFFICIENCY : 39.3422 COUNT DATE : 24-MAR-2010 20:55:56 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B239.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W239.CNF;30 CAL DATE : 28-FEB-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.1042E+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	5503.406	54.219	3.000	0.563	1.000	2.7707	99.94000	5.54E-04	1.58E-03	6.34E-03	1.54E-02	1.58E-03
AM-243	5270.000	5276.593	37.830	826.000	826.000	0.000	0.0000	99.78000	8.14E-01	5.78E-02	0.00E+00	2.67E-03	2.83E-02
CM-242	6102.000	6049.882	67.723	12.000	12.000	0.000	4.0092	100.0000	1.34E-02	3.94E-03	9.17E-03	2.10E-02	3.86E-03
CM-3/4	5795.020	5778.101	36.968	13.000	13.000	0.000	4.8510	100.0000	1.28E-02	3.64E-03	1.11E-02	2.49E-02	3.56E-03
CM-5/6	5386.000	5376.702	0.000	9.000	9.000	0.000	6.1294	86.09000	1.03E-02	3.49E-03	1.63E-02	3.57E-02	3.43E-03
CM-247	4946.000	4908.589	152.800	4.000	3.000	1.000	6.3427	79.30000	3.72E-03	2.78E-03	1.83E-02	4.00E-02	2.77E-03
CM-248	5078.600	5076.153	30.755	15.000	13.000	2.000	11.0244	91.00000	1.40E-02	4.54E-03	2.77E-02	5.84E-02	4.46E-03

NOTES:

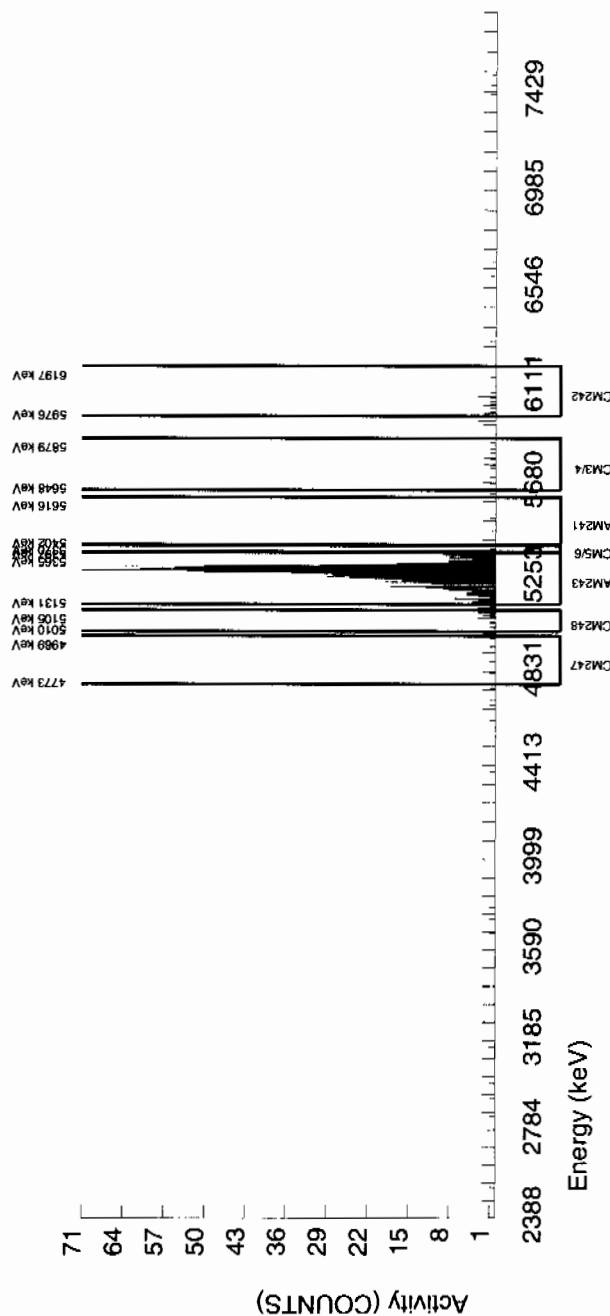
* BKG Sg calculated via blank population.

(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 : 964861 SAMPLE ID : S1202070017_AM SAMPLE QTY : 0.120 G SAMPLE DATE : 19-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 103.901	CHAMBER : 240 DETECTOR S/N : 79433 AVERAGE %EFFICIENCY : 38.7048 COUNT DATE : 24-MAR-2010 20:55:58 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B240.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W240.CNF;30 CAL DATE : 28-FEB-2010
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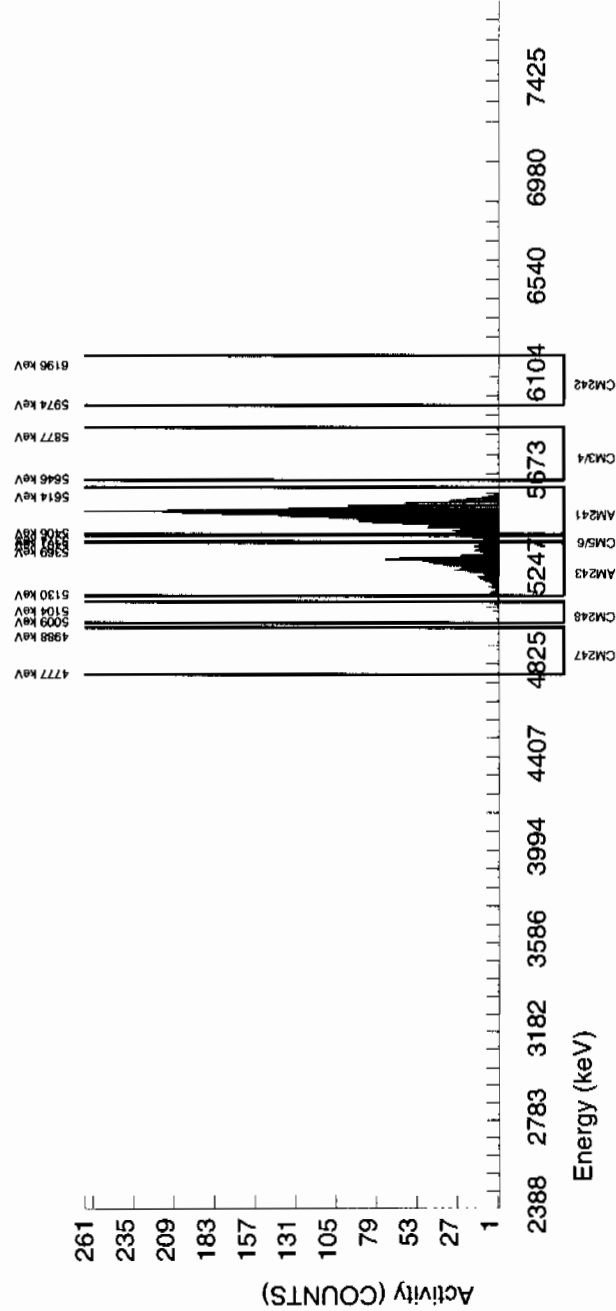
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.3641E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5500.380	38.507	2963.000	2961.411	0.000	2.7707	99.94000	2.77E+01	1.91E+00	6.02E-02	1.46E-01	5.08E-01
AM-243	5270.000	5279.440	35.400	914.000	913.000	1.000	1.0000	99.78000	8.54E+00	6.35E-01	2.18E-02	6.89E-02	2.83E-01
CM-242	6102.000	6041.996	77.852	6.000	6.000	0.000	4.0092	100.0000	5.75E-02	2.38E-02	8.71E-02	1.99E-01	2.35E-02
CM-3/4	5795.020	5753.641	0.000	14.000	14.000	0.000	4.8510	100.0000	1.31E-01	3.60E-02	1.05E-01	2.36E-01	3.49E-02
CM-5/6	5386.000	5389.229	0.000	82.000	82.000	0.000	6.1294	86.09000	8.89E-01	1.15E-01	1.55E-01	3.39E-01	9.82E-02
CM-247	4946.000	4870.842	7.203	10.000	8.000	2.000	6.3427	79.30000	9.42E-02	4.13E-02	1.74E-01	3.79E-01	4.08E-02
CM-248	5078.600	5062.205	0.000	21.000	20.000	1.000	11.0244	91.00000	2.05E-01	5.00E-02	2.63E-01	5.54E-01	4.81E-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# 964862 Product: Pu Date: 3/25/10

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 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: E. Bell 3/25/10Secondary Review Performed By: K. Bell 3/26/10

LAUL

Plutonium Que Sheet

19-MAR-10

Batch #: 964862 W-16 W-16 Analyst: KXM4 First Client Due Date: 27-MAR-10 Internal Due Date: 16-MAR-10
 Tracer Isotope(s): Pu-239 238 Tracer Code: 1430-C Expiration Date: 3-4-11 Vol: 3.1
 LCS Isotope(s): Pu-239 238 LCS Code: SM 0764-B Expiration Date: 4-30-10 Vol: 0.1
 Spike Isotope(s): Pu-239 238 Spike Code: NA Expiration Date: NA Vol: NA
 Prep Date: 2-19-10 Initials: LM Pipet ID: 4497083 Balance ID: 50410272 Witness: gmp 03/23/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry	Pu
248243001-1	RE36-10-7458	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	1	1	1.254	17
248243002-1	RE36-10-7453	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	2	2	1.254	18
248243003-1	RE36-10-7454	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	3	3	1.260	19
248243004-1	RE36-10-7460	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	4	4	1.253	20
248243005-1	RE36-10-7456	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	5	5	1.254	22
248243006-1	RE36-10-7455	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	6	6	1.251	23
248243007-1	RE36-10-7459	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	7	7	1.254	24
248243008-1	RE36-10-7457	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	8	8	1.250	25
248243009-1	RE36-10-7520	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	9	9	1.251	26
248243010-1	RE36-10-7519	SAMPLE	.05 pCi/g		SOIL	LANL010	24-FEB-10	10	10	1.251	27
1202070018-1	MB for batch 964862	MB	.05 pCi/g		SOIL	QC ACCOUNT		11	11	1	13
1202070019-1	RE36-10-7458(248243001DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	24-FEB-10	12	12	1.259	14
1202070020-1	LCS for batch 964862	LCS	.05 pCi/g		SOIL	QC ACCOUNT		13	13	0.120	16

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

Solid Sample Dissolution by LEACH or DIGESTION
 Circle One

Data Reviewed By: gmp 3/25/10

Blank Correction Report

Batch ID 964862

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202070019	DUP	Plutonium-238	1.26 g	0.00234	0.00887	0.0215	.001444444	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00596	0.00541	0.0182	.001682540	pCi/g	YES
1202070020	LCS	Plutonium-238	0.120 g	4.29	0.384	0.225	.015166667	pCi/g	NO
		Plutonium-239/240	0.120 g	39.0	2.61	0.190	.017666667	pCi/g	NO
1202070018	MB	Plutonium-238	1.00 g	0.00182	0.00589	0.0252	.00182	pCi/g	YES
		Plutonium-239/240	1.00 g	0.00212	0.00468	0.0213	.00212	pCi/g	YES
248243001	RE36-10-7458	Plutonium-238	1.25 g	0.00864	0.00777	0.029	.001456	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0115	0.00561	0.0245	.001696	pCi/g	NO
248243002	RE36-10-7453	Plutonium-238	1.26 g	0.000559	0.00605	0.0206	.001444444	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0299	0.00723	0.0174	.001682540	pCi/g	NO
248243003	RE36-10-7454	Plutonium-238	1.26 g	0.00059	0.00639	0.0217	.001444444	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00819	0.00369	0.0184	.001682540	pCi/g	YES
248243004	RE36-10-7460	Plutonium-238	1.25 g	0.0097	0.00627	0.0206	.001456	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0082	0.00399	0.0174	.001696	pCi/g	YES
248243005	RE36-10-7456	Plutonium-238	1.25 g	-0.00402	0.00792	0.0222	.001456	pCi/g	YES
		Plutonium-239/240	1.25 g	-0.000268	0.00316	0.0188	.001696	pCi/g	YES
248243006	RE36-10-7455	Plutonium-238	1.25 g	0.012	0.0055	0.019	.001456	pCi/g	NO
		Plutonium-239/240	1.25 g	0.028	0.00689	0.016	.001696	pCi/g	NO
248243007	RE36-10-7459	Plutonium-238	1.25 g	0.0139	0.0073	0.0217	.001456	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0222	0.00667	0.0184	.001696	pCi/g	NO
248243008	RE36-10-7457	Plutonium-238	1.26 g	0.0143	0.00827	0.0243	.001444444	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0285	0.00796	0.0206	.001682540	pCi/g	NO
248243009	RE36-10-7520	Plutonium-238	1.25 g	0.0086	0.00535	0.0223	.001456	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0261	0.00728	0.0188	.001696	pCi/g	NO
248243010	RE36-10-7519	Plutonium-238	1.25 g	0.00391	0.00343	0.0203	.001456	pCi/g	YES
		Plutonium-239/240	1.25 g	0.037	0.00798	0.0171	.001696	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964862 SAMPLE ID : S0248243001_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 77.076	CHAMBER : 017 DETECTOR S/N : 78791 AVERAGE %EFFICIENCY : 29.7179 COUNT DATE : 25-MAR-2010 07:54:18 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B017.CNF:1948 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W017.CNF:1264 CAL DATE : 4-MAR-2010
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TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0180E+00 dpm RESULTS : 2.3261E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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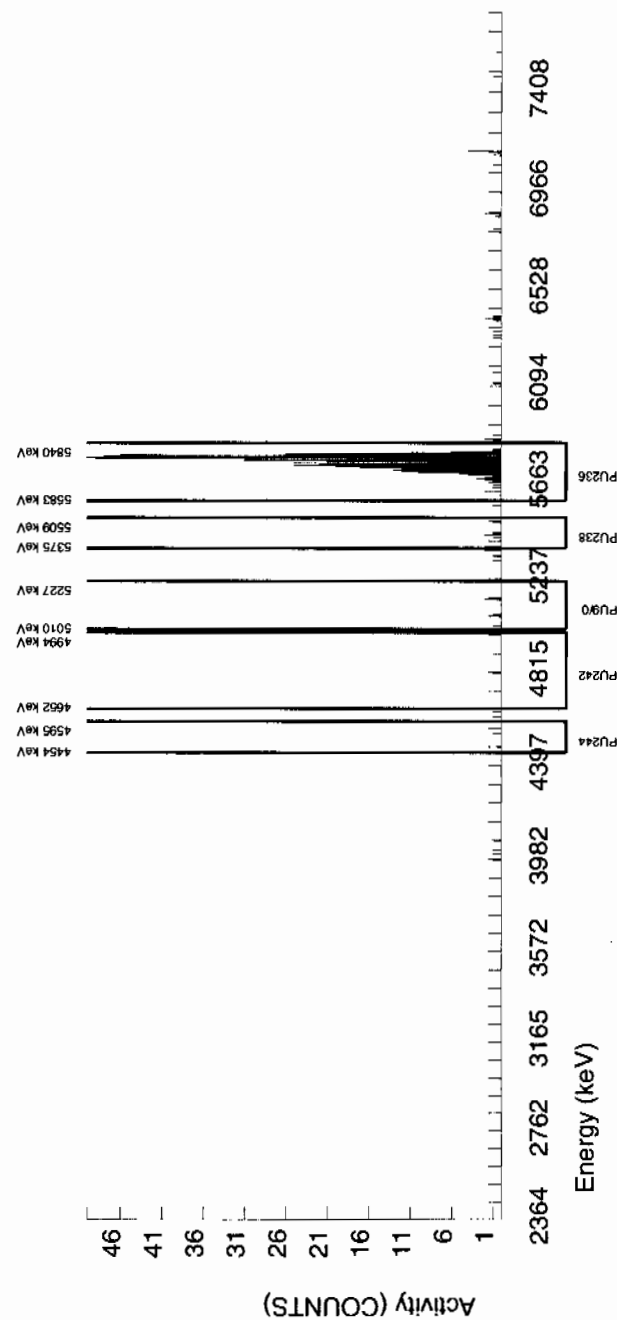
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5763.037	33.043	501.000	488.040	12.960	3.6000	100.0000	1.08E+00	8.42E-02	1.69E-02	3.97E-02	5.02E-02
PU-238	5499.000	5426.787	57.029	9.000	3.960	5.040	2.4495	99.900000	8.64E-03	7.77E-03	1.15E-02	2.90E-02	7.75E-03
PU-9/0	5155.000	5118.953	9.298	6.000	5.280	0.720	1.9732	99.900000	1.15E-02	5.61E-03	9.28E-03	2.45E-02	5.57E-03
PU242	4890.000	4775.545	79.345	2.000	0.560	1.440	*****	100.0000	1.22E-03	3.80E-03	5.86E-01	1.18E+00	3.80E-03
PU-244	4589.000	4547.765	4.959	1.000	0.280	0.720	6.4609	99.900000	6.10E-04	2.69E-03	3.04E-02	6.67E-02	2.69E-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 : 964862 SAMPLE ID : S0248243002_PU SAMPLE QTY : 1.258 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 95.812	CHAMBER : 018 DETECTOR S/N : 78782 AVERAGE %EFFICIENCY : 33.5036 COUNT DATE : 25-MAR-2010 07:54:18 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B018.CNF;1100 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W018.CNF;308 CAL DATE : 4-MAR-2010
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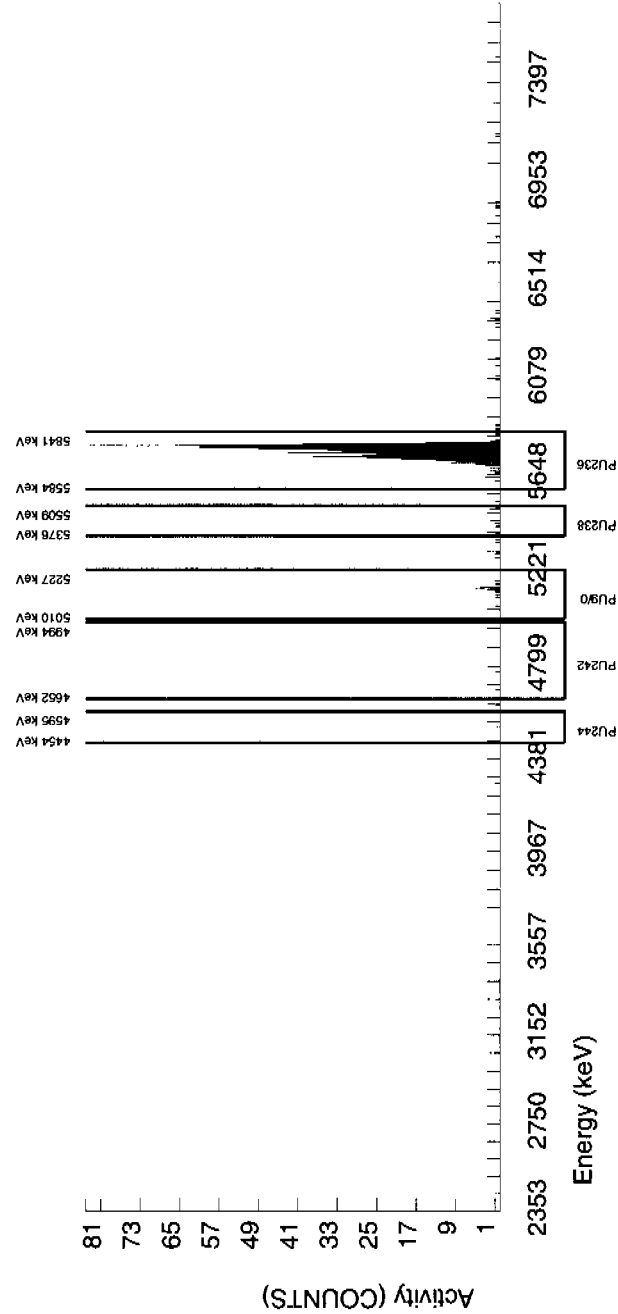
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0180E+00 dpm RESULTS : 2.8916E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5759.431	39.356	689.000	683.960	5.040	2.2450	100.0000	1.08E+00	7.41E-02	7.50E-03	1.92E-02	4.16E-02
PU-238	5499.000	5454.298	51.828	9.000	0.360	8.640	2.4495	99.900000	5.59E-04	6.05E-03	8.20E-03	2.06E-02	6.05E-03
PU-9/0	5155.000	5146.085	9.594	20.000	19.280	0.720	1.9732	99.900000	2.99E-02	7.23E-03	6.60E-03	1.74E-02	7.02E-03
PU242	4890.000	4823.500	0.000	3.000	0.120	2.880	*****	100.0000	1.86E-04	3.49E-03	4.17E-01	8.37E-01	3.49E-03
PU-244	4589.000	4531.908	4.936	1.000	1.000	0.000	6.4609	99.900000	1.55E-03	1.55E-03	2.16E-02	4.74E-02	1.55E-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 : 964862	CHAMBER : 019	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248243003_PU	DETECTOR S/N : 78786	BKG FILE : B019.CNF;1112
SAMPLE QTY : 1.260 G	AVERAGE %EFFICIENCY : 30.6248	BKG DATE : 21-MAR-2010
SAMPLE DATE : 24-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 07:54:19	BKG LIVE TIME(SEC) : 59999.99
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W019.CNF;309
% YIELD : 99.124		CAL DATE : 4-MAR-2010

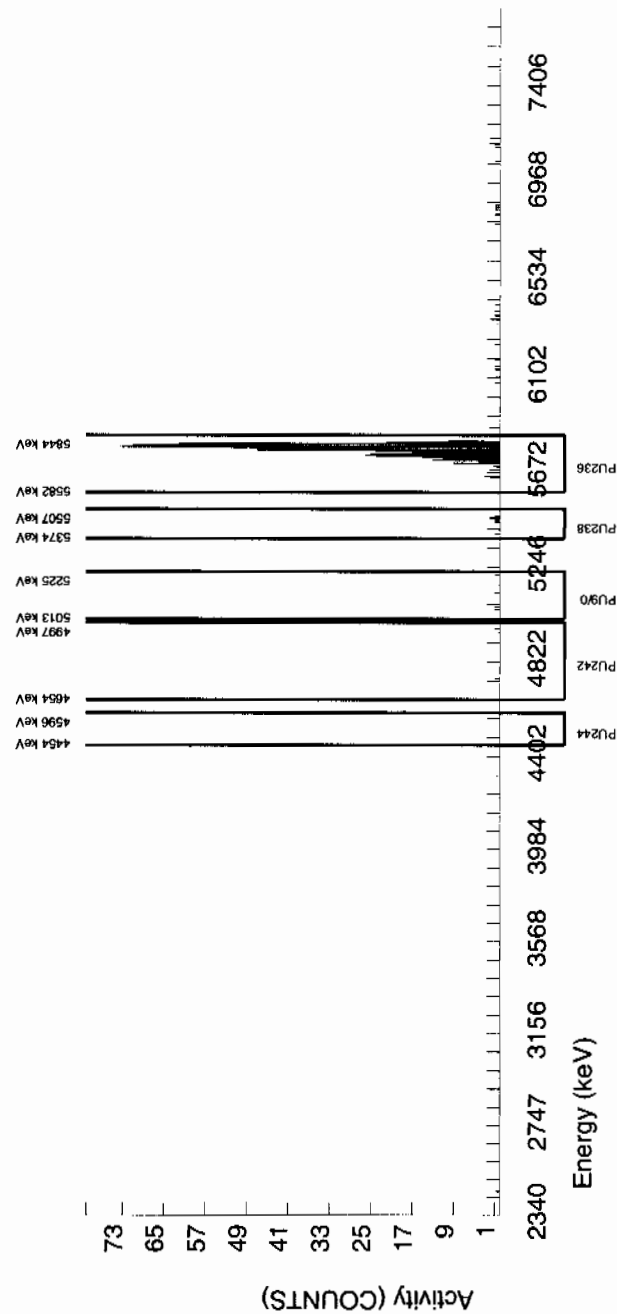
TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0180E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.9915E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5783.964	34.720	654.000	646.800	7.200	2.6833	100.0000	1.08E+00	7.55E-02	9.47E-03	2.34E-02	4.28E-02
PU-238	5499.000	5460.585	14.565	9.000	0.360	8.640	2.4495	99.900000	5.90E-04	6.39E-03	8.65E-03	2.17E-02	6.39E-03
PU-9/0	5155.000	5129.196	151.986	5.000	5.000	0.000	1.9732	99.900000	8.19E-03	3.69E-03	6.97E-03	1.84E-02	3.66E-03
PU242	4890.000	4896.300	217.847	3.000	2.280	0.720	*****	100.0000	3.73E-03	3.08E-03	4.40E-01	8.84E-01	3.07E-03
PU-244	4589.000	4524.910	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.64E-03	2.28E-02	5.01E-02	1.64E-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 : 964862 SAMPLE ID : S0248243004_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.146	CHAMBER : 020 DETECTOR S/N : 78787 AVERAGE %EFFICIENCY : 34.9079 COUNT DATE : 25-MAR-2010 07:54:19 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B020.CNF;1107 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W020.CNF;322 CAL DATE : 4-MAR-2010
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TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0180E+00 dpm RESULTS : 2.7809E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

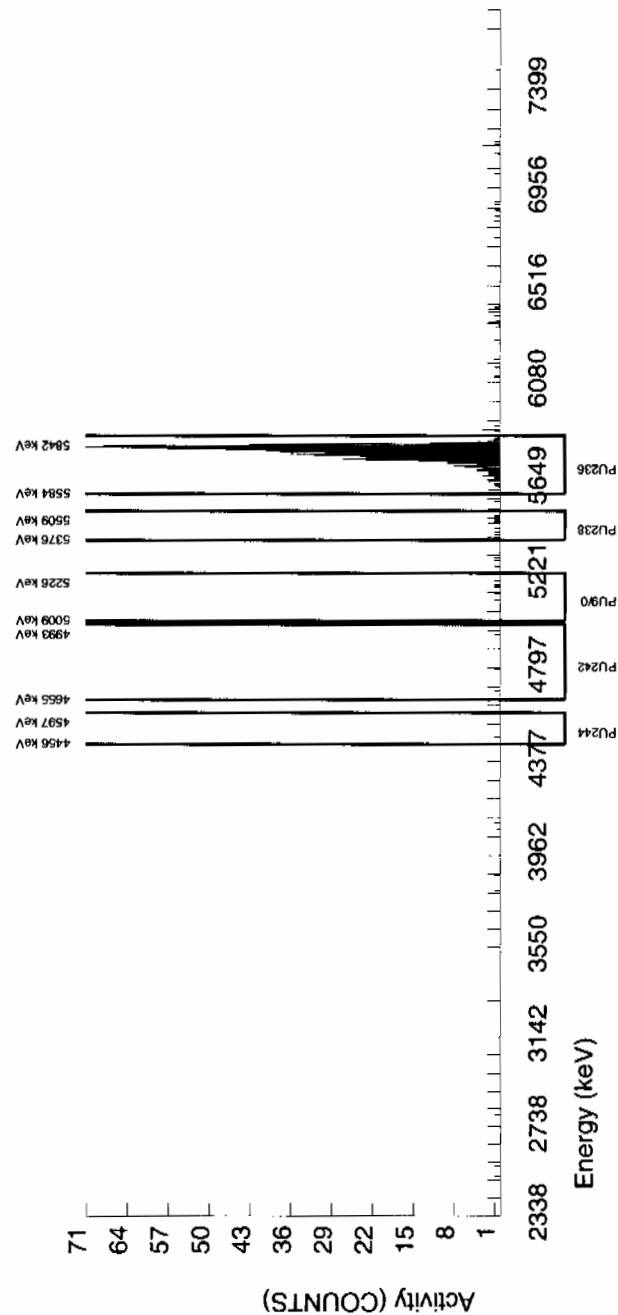
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5773.811	32.714	694.000	685.360	8.640	2.9394	100.0000	1.08E+00	7.45E-02	9.84E-03	2.39E-02	4.19E-02
PU-238	5499.000	5457.466	11.504	12.000	6.240	5.760	2.4495	99.90000	9.70E-03	6.27E-03	8.21E-03	2.06E-02	6.25E-03
PU-9/0	5155.000	5159.766	84.570	6.000	5.280	0.720	1.9732	99.90000	8.20E-03	3.99E-03	6.61E-03	1.74E-02	3.97E-03
PU242	4890.000	4816.498	238.785	3.000	0.840	2.160	*****	100.0000	1.30E-03	3.31E-03	4.17E-01	8.39E-01	3.31E-03
PU-244	4589.000	4521.220	59.696	2.000	2.000	0.000	6.4609	99.90000	3.11E-03	2.20E-03	2.17E-02	4.75E-02	2.20E-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 : 964862	CHAMBER : 022	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248243005_PU	DETECTOR S/N : 72530	BKG FILE : B022.CNF;1119
SAMPLE QTY : 1.254 G	AVERAGE %EFFICIENCY : 32.3779	BKG DATE : 21-MAR-2010
SAMPLE DATE : 24-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 07:54:19	BKG LIVE TIME(SEC) : 59999.99
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W022.CNF;320
% YIELD : 92.197		CAL DATE : 4-MAR-2010

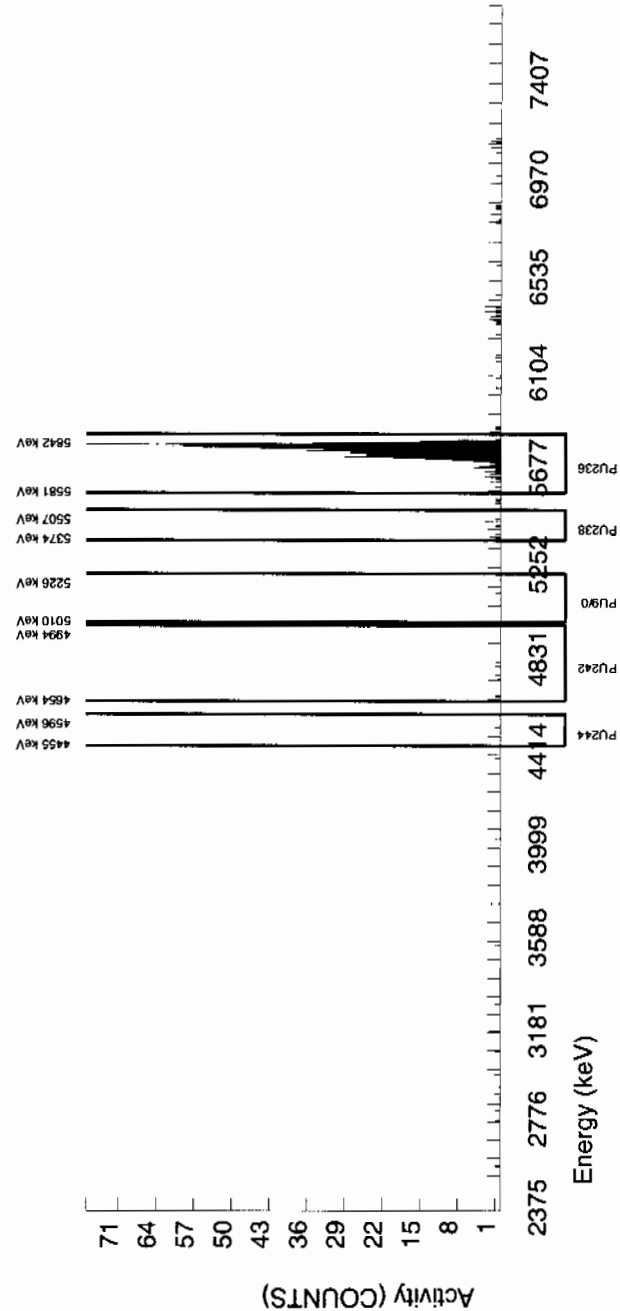
TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0180E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.7825E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5776.234	27.006	649.000	636.040	12.960	3.6000	100.0000	1.08E+00	7.66E-02	1.30E-02	3.05E-02	4.37E-02
PU-238	5499.000	5438.142	74.878	12.000	-2.400	14.400	2.4495	99.90000	-4.02E-03	7.92E-03	8.84E-03	2.22E-02	7.92E-03
PU-9/0	5155.000	5175.901	59.902	2.000	-0.160	2.160	1.9732	99.90000	-2.68E-04	3.16E-03	7.12E-03	1.88E-02	3.15E-03
PU242	4890.000	4744.494	134.156	5.000	3.560	1.440	*****	100.0000	5.95E-03	4.12E-03	4.49E-01	9.03E-01	4.11E-03
PU-244	4589.000	4523.068	44.927	2.000	2.000	0.000	6.4609	99.90000	3.35E-03	2.37E-03	2.33E-02	5.12E-02	2.37E-03

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964862 SAMPLE ID : S0248243006_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 104.161	CHAMBER : 023 DETECTOR S/N : 78264 AVERAGE %EFFICIENCY : 33.6228 COUNT DATE : 25-MAR-2010 07:54:19 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B023.CNF:1119 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W023.CNF:303 CAL DATE : 4-MAR-2010
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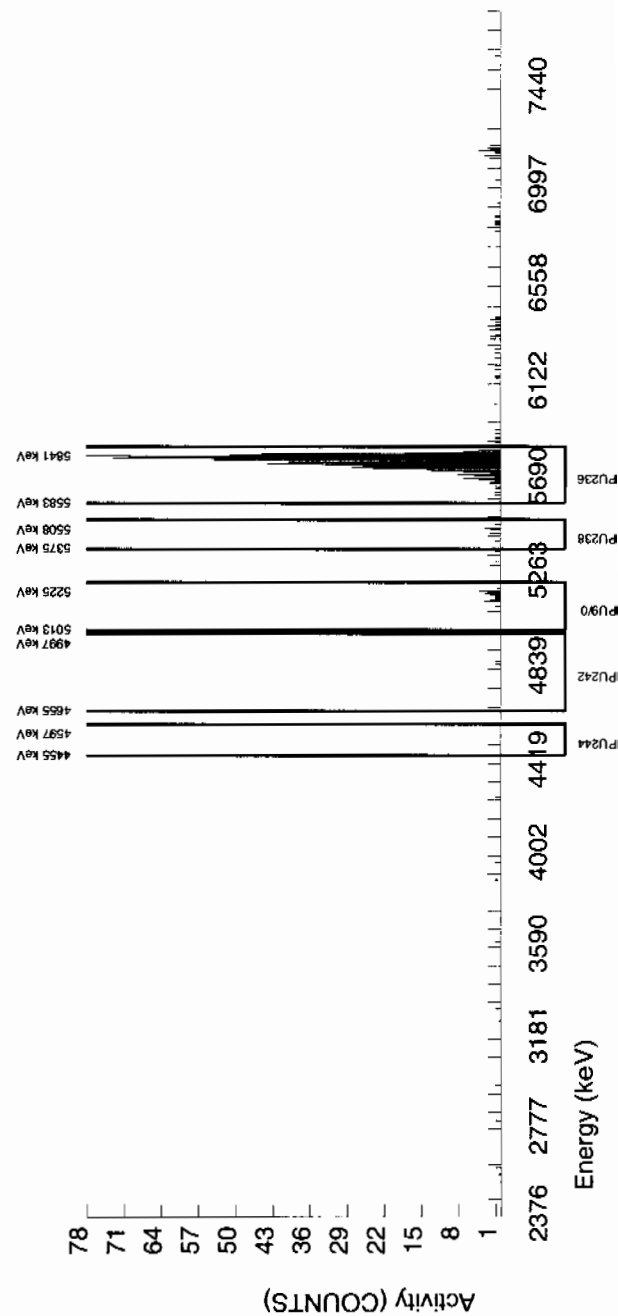
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0180E+00 dpm RESULTS : 3.1435E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5779.656	47.847	757.000	746.200	10.800	3.2863	100.0000	1.09E+00	7.28E-02	1.01E-02	2.41E-02	4.03E-02
PU-238	5499.000	5460.983	28.416	12.000	8.400	3.600	2.4495	99.900000	1.20E-02	5.50E-03	7.55E-03	1.90E-02	5.46E-03
PU-9/0	5155.000	5161.696	44.854	21.000	19.560	1.440	1.9732	99.900000	2.80E-02	6.89E-03	6.08E-03	1.60E-02	6.71E-03
PU242	4890.000	4873.095	19.948	2.000	-2.320	4.320	*****	100.0000	-3.31E-03	3.23E-03	3.84E-01	7.72E-01	3.23E-03
PU-244	4589.000	4525.979	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.03E-03	1.76E-03	1.99E-02	4.37E-02	1.76E-03

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964862
SAMPLE ID : S0248243007_PU
SAMPLE QTY : 1.254 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 89.182

CHAMBER : 024
DETECTOR S/N : 76542
AVERAGE %EFFICIENCY : 34.2324
COUNT DATE : 25-MAR-2010 07:54:19
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_PU
BKG FILE : B024.CNF;1112
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W024.CNF;303
CAL DATE : 4-MAR-2010

TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.6915E+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

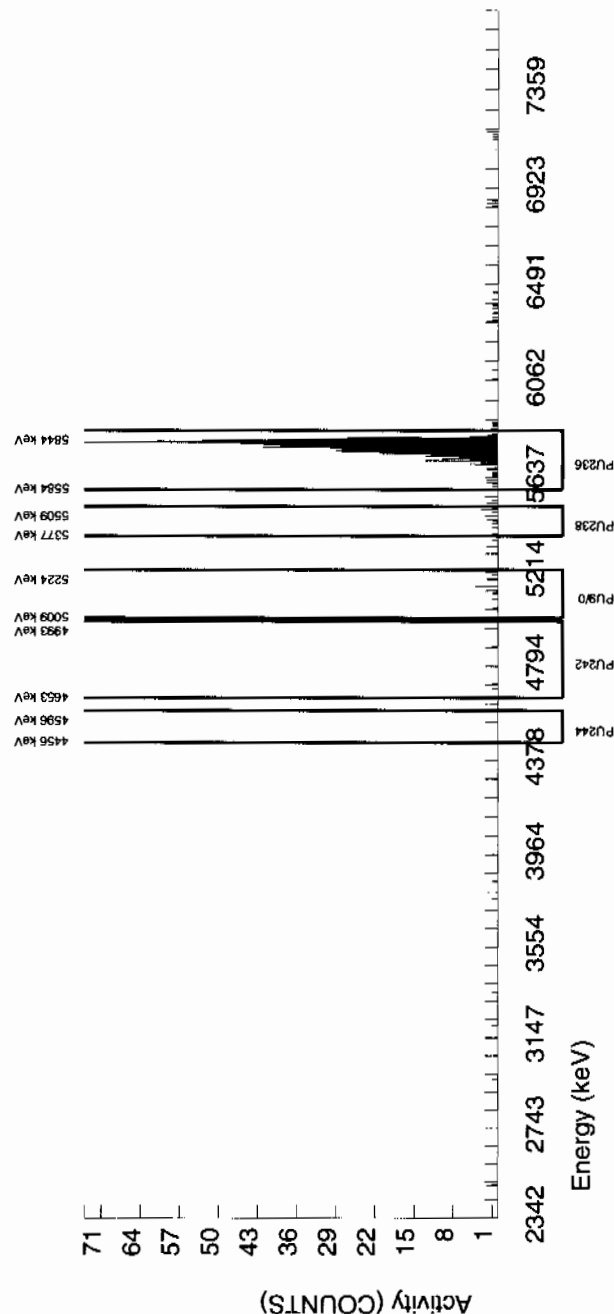
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5776.982	38.181	662.000	650.480	11.520	3.3941	100.0000	1.08E+00	7.59E-02	1.20E-02	2.84E-02	4.31E-02
PU-238	5499.000	5463.210	46.078	15.000	8.520	6.480	2.4495	99.900000	1.39E-02	7.30E-03	8.64E-03	2.17E-02	7.26E-03
PU-9/0	5155.000	5158.754	4.991	15.000	13.560	1.440	1.9732	99.900000	2.22E-02	6.67E-03	6.96E-03	1.84E-02	6.55E-03
PU242	4890.000	4798.144	184.685	4.000	1.840	2.160	*****	100.0000	3.01E-03	3.86E-03	4.39E-01	8.83E-01	3.85E-03
PU-244	4589.000	4481.565	4.991	1.000	-0.440	1.440	6.4609	99.900000	-7.20E-04	2.34E-03	2.28E-02	5.00E-02	2.33E-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 : 964862
SAMPLE ID : S0248243008_PU
SAMPLE QTY : 1.258 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 79.555

CHAMBER : 025
DETECTOR S/N : 45-149AA5
AVERAGE %EFFICIENCY : 34.1770
COUNT DATE : 25-MAR-2010 07:54:20
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B025.CNF;1123
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W025.CNF;330
CAL DATE : 4-MAR-2010

TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.4009E+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

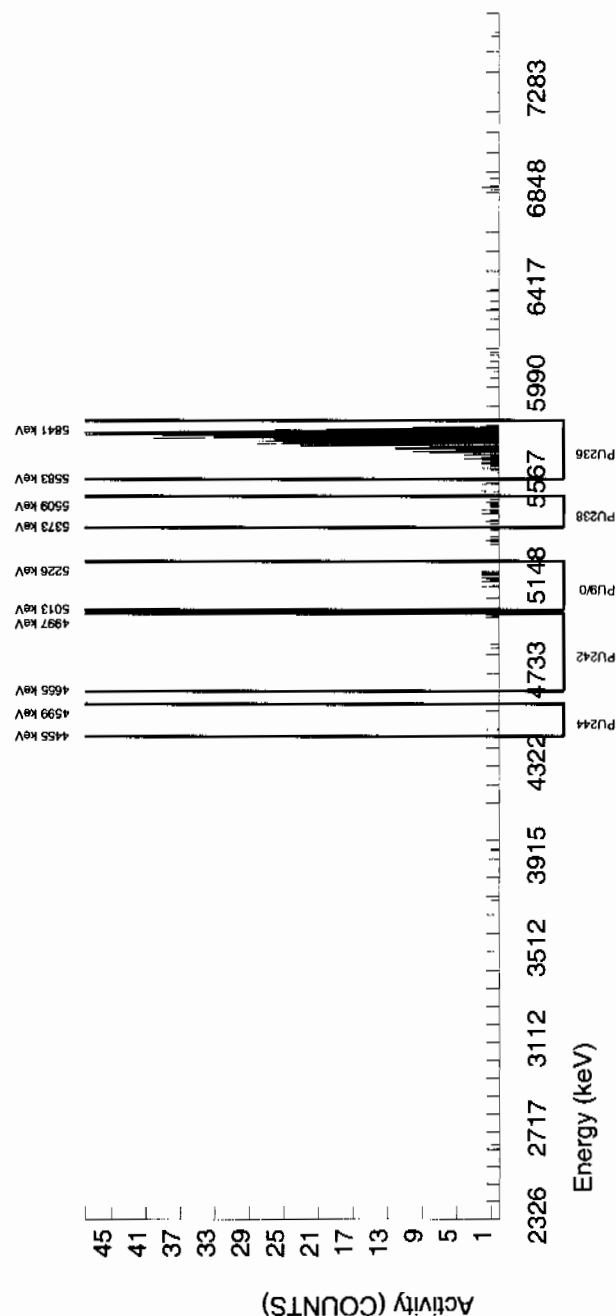
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5765.044	63.168	593.000	579.320	13.680	3.6986	100.0000	1.08E+00	7.89E-02	1.46E-02	3.41E-02	4.58E-02
PU-238	5499.000	5446.380	21.736	15.000	7.800	7.200	2.4495	99.900000	1.43E-02	8.27E-03	9.68E-03	2.43E-02	8.23E-03
PU-9/0	5155.000	5157.086	67.995	17.000	15.560	1.440	1.9732	99.900000	2.85E-02	7.96E-03	7.79E-03	2.06E-02	7.78E-03
PU242	4890.000	4924.307	136.193	4.000	3.280	0.720	*****	100.0000	6.00E-03	3.90E-03	4.92E-01	9.89E-01	3.89E-03
PU-244	4589.000	4526.817	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.83E-03	2.55E-02	5.60E-02	1.83E-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 : 964862
SAMPLE ID : S0248243009_PU
SAMPLE QTY : 1.251 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 88.590

CHAMBER	:	026
DETECTOR S/N	:	78204
AVERAGE %EFFICIENCY	:	33.6708
COUNT DATE	:	25-MAR-2010 07:54:20
ELAPSED LIVE TIME(SEC)	:	43199.99

LIB FILE	:	ENV_ALPHA_PU
BKG FILE	:	B026.CNF;1124
BKG DATE	:	21-MAR-2010
BKG LIVE TIME(SEC)	:	60000.00
EFF FILE	:	W026.CNF;304
CAL DATE	:	4-MAR-2010

TRACER	:	1430-C
ID	:	PU-236
NUCLIDE	:	3.0180E+00 dpm
NOMINAL	:	2.6736E+00 dpm
RESULTS	:	

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

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

NUCLIDE ACTIVITY SUMMARY

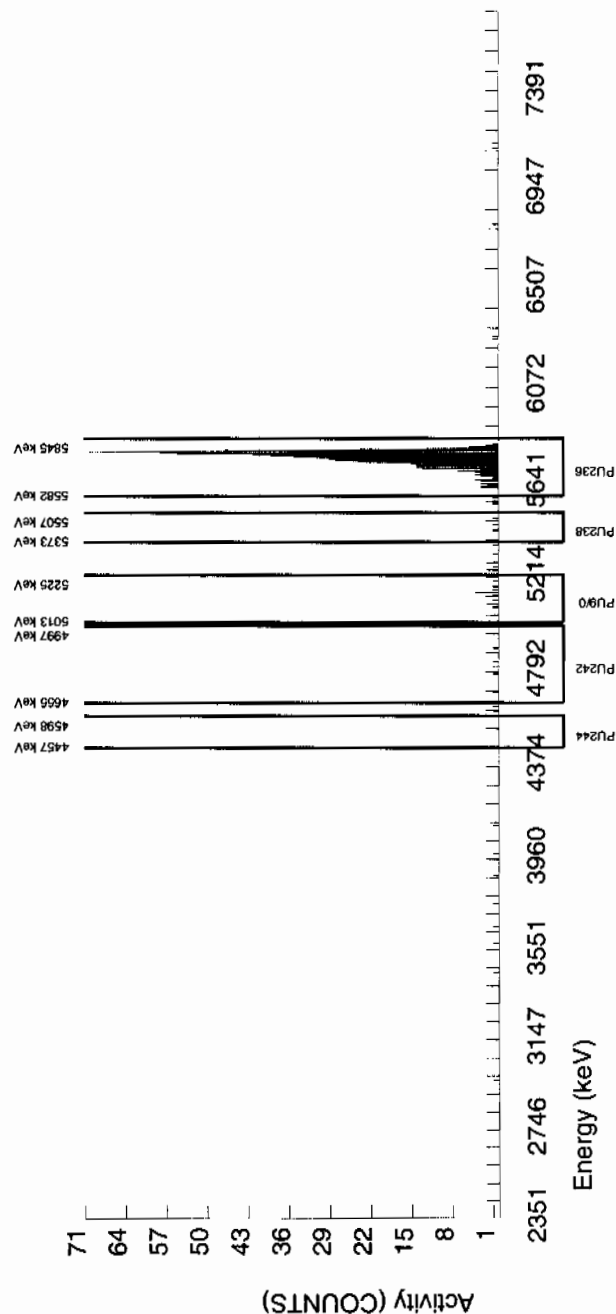
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5761.981	31.073	637.000	635.560	1.440	1.2000	100.0000	1.09E+00	7.61E-02	4.34E-03	1.32E-02	4.32E-02
PU-238	5499.000	5422.777	0.000	8.000	5.120	2.880	2.4495	99.90000	8.60E-03	5.35E-03	8.87E-03	2.23E-02	5.33E-03
PU-9/0	5155.000	5143.542	4.920	17.000	15.560	1.440	1.9732	99.90000	1.61E-02	7.28E-03	7.14E-03	1.88E-02	7.13E-03
PU242	4890.000	4823.290	191.898	7.000	1.960	5.040	*****	100.0000	3.29E-03	5.47E-03	4.51E-01	9.06E-01	5.47E-03
PU-244	4589.000	4527.499	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.21E-03	2.07E-03	2.34E-02	5.13E-02	2.07E-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 : 964862 SAMPLE ID : S0248243010_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 95.910	CHAMBER : 027 DETECTOR S/N : 42484 AVERAGE %EFFICIENCY : 34.2191 COUNT DATE : 25-MAR-2010 07:54:20 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B027.CNF;1130 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W027.CNF;331 CAL DATE : 4-MAR-2010
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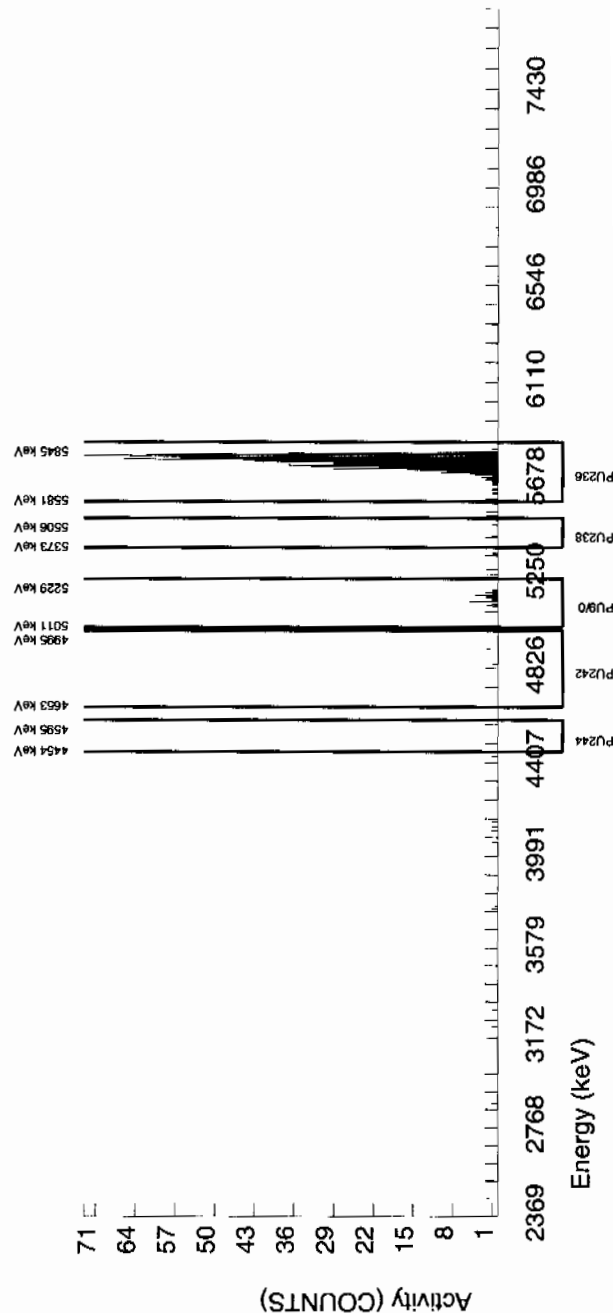
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0180E+00 dpm RESULTS : 2.8945E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5767.067	50.345	700.000	699.280	0.720	0.8485	100.0000	1.09E+00	7.38E-02	2.79E-03	9.71E-03	4.11E-02
PU-238	5499.000	5448.850	114.244	4.000	2.560	1.440	2.4495	99.90000	3.91E-03	3.43E-03	8.06E-03	2.03E-02	3.43E-03
PU-9/0	5155.000	5148.282	29.784	25.000	24.280	0.720	1.9732	99.90000	3.70E-02	7.98E-03	6.49E-03	1.71E-02	7.71E-03
PU242	4890.000	4852.736	4.967	1.000	-1.160	2.160	*****	100.0000	-1.77E-03	2.44E-03	4.10E-01	8.24E-01	2.44E-03
PU-244	4589.000	4524.284	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.53E-03	2.13E-02	4.67E-02	1.53E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964862	CHAMBER : 013	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S1202070018_PU	DETECTOR S/N : 78790	BKG FILE : B013.CNF;1105
SAMPLE QTY : 1.000 G	AVERAGE %EFFICIENCY : 35.8414	BKG DATE : 21-MAR-2010
SAMPLE DATE : 19-MAR-2010 00:00:00	COUNT DATE : 25-MAR-2010 07:54:18	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W013.CNF;330
% YIELD : 92.114		CAL DATE : 4-MAR-2010

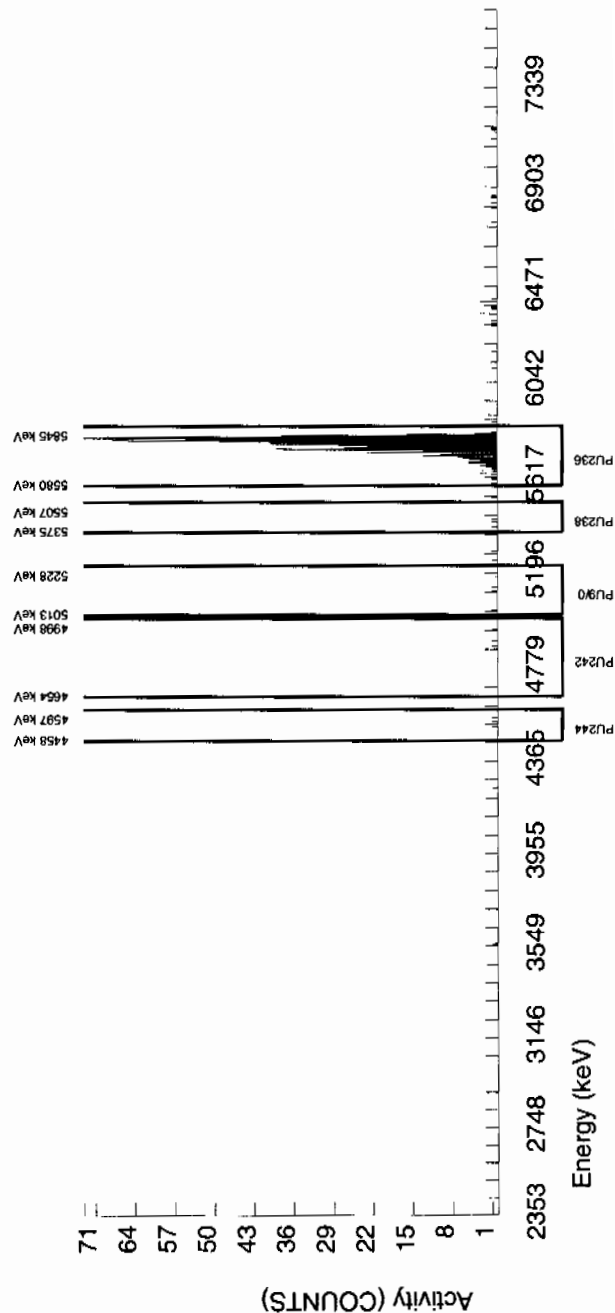
TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 2.9722E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.7378E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5770.648	55.629	720.000	703.440	16.560	4.0694	100.0000	1.34E+00	9.17E-02	1.66E-02	3.84E-02	5.15E-02
PU-238	5498.000	5426.560	4.914	6.000	0.960	5.040	2.4495	99.90000	1.82E-03	5.89E-03	1.00E-02	2.52E-02	5.89E-03
PU-9/0	5155.000	5121.633	142.506	4.000	1.120	2.880	1.9732	99.90000	2.12E-03	4.68E-03	8.07E-03	2.13E-02	4.67E-03
PU242	4890.000	4860.718	245.700	4.000	3.280	0.720	*****	100.0000	6.22E-03	4.04E-03	5.10E-01	1.02E+00	4.03E-03
PU-244	4589.000	4545.667	44.226	3.000	2.280	0.720	6.4609	99.90000	4.32E-03	3.57E-03	2.64E-02	5.80E-02	3.56E-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 : 964862 SAMPLE ID : S1202070019_PU SAMPLE QTY : 1.259 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 91.474	CHAMBER : 014 DETECTOR S/N : 67616 AVERAGE %EFFICIENCY : 33.5532 COUNT DATE : 25-MAR-2010 07:54:18 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B014.CNF;1106 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W014.CNF;328 CAL DATE : 4-MAR-2010
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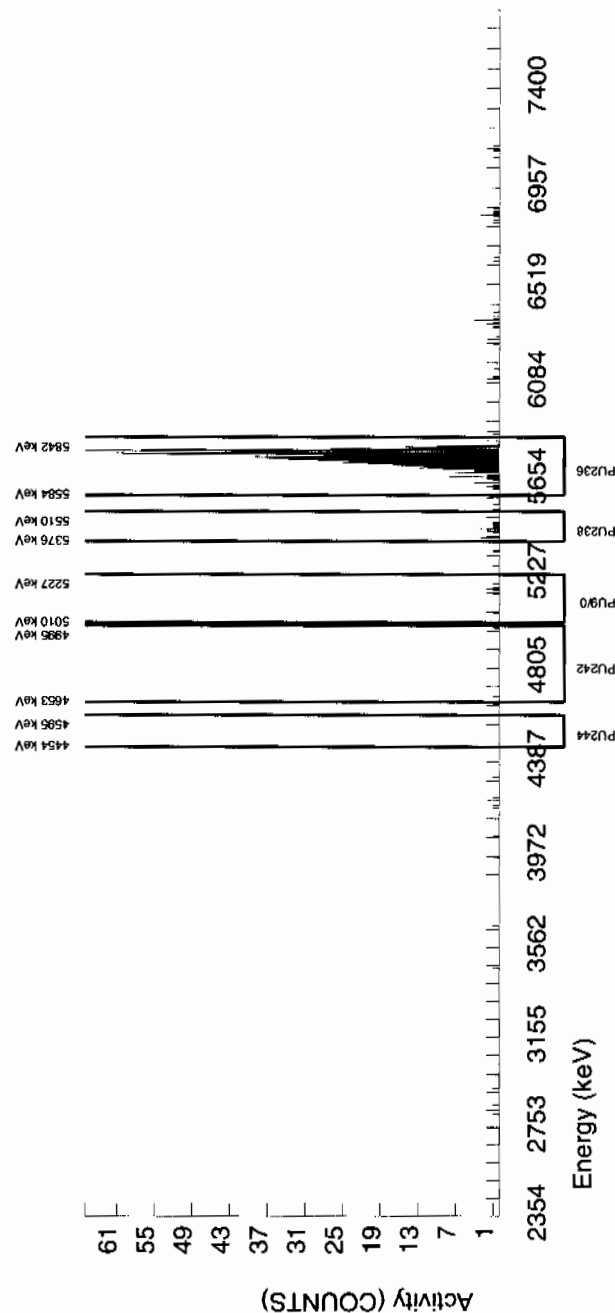
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0180E+00 dpm RESULTS : 2.7607E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5760.821	44.916	677.000	653.960	23.040	4.8000	100.0000	1.08E+00	7.62E-02	1.68E-02	3.79E-02	4.35E-02
PU-238	5499.000	5432.472	44.593	18.000	1.440	16.560	2.4495	99.90000	2.34E-03	8.87E-03	8.56E-03	2.15E-02	8.87E-03
PU-9/0	5155.000	5152.558	9.910	8.000	3.680	4.320	1.9732	99.90000	5.96E-03	5.41E-03	6.90E-03	1.82E-02	5.40E-03
PU242	4890.000	4836.524	292.331	2.000	0.560	1.440	*****	100.0000	9.07E-04	2.82E-03	4.35E-01	8.75E-01	2.82E-03
PU-244	4589.000	4524.693	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.62E-03	2.26E-02	4.96E-02	1.62E-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 REPORT

BATCH NUMBER : 964862 SAMPLE ID : S1202070020_PU SAMPLE QTY : 0.120 G SAMPLE DATE : 19-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.128		CHAMBER : 016 DETECTOR S/N : 78774 AVERAGE %EFFICIENCY : 33.4863 COUNT DATE : 25-MAR-2010 07:54:18 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B016.CNF;1101 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W016.CNF;313 CAL DATE : 4-MAR-2010
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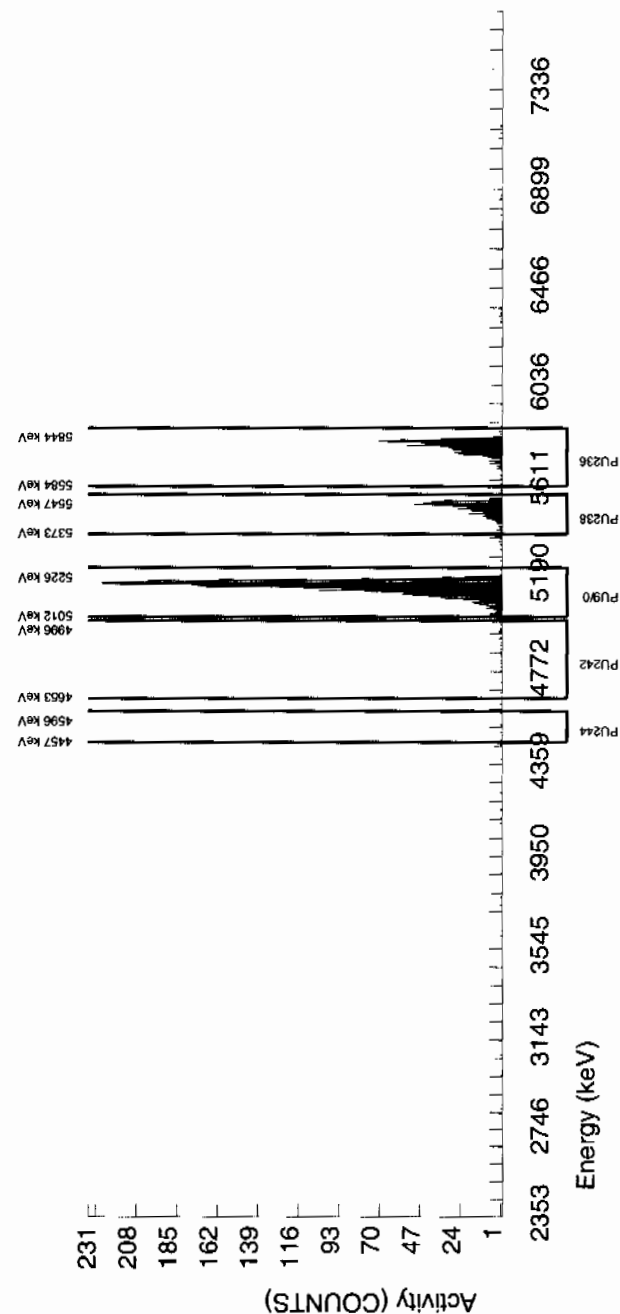
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 2.9722E+00 dpm RESULTS : 2.7383E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5766.403	34.139	671.000	657.320	13.680	3.6986	100.0000	1.12E+01	8.35E-01	1.35E-01	3.15E-01	4.43E-01
PU-238	5499.000	5494.446	27.664	436.000	434.560	1.440	2.4495	99.900000	7.35E+00	5.86E-01	8.94E-02	2.25E-01	3.54E-01
PU-9/0	5155.000	5148.668	36.299	2309.000	2308.280	0.720	1.9732	99.900000	3.90E+01	2.61E+00	7.20E-02	1.90E-01	8.13E-01
PU-242	4890.000	4883.200	0.000	30.000	25.680	4.320	*****	100.0000	4.34E-01	1.01E-01	4.54E+00	9.13E+00	9.72E-02
PU-244	4589.000	4541.071	0.000	6.000	5.280	0.720	6.4609	99.900000	8.93E-02	4.36E-02	2.36E-01	5.17E-01	4.32E-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# 964864

Product: U

Date: 3/25/10

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 RDU/ 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 RDU/ 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 staled.	✓		
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]

3/25/10

Secondary Review Performed By: [Signature]

3/26/10

LAWL

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Uranium Que Sheet

12-MAR-10

Batch #: 964864 Analyst: KXM4 First Client Due Date: 27-MAR-10 Internal Due Date: 16-MAR-10
 Tracer Isotope: U-238 Tracer Code: 12-83-14 Expiration Date: 12-9-16 Vol: 0.124
 LCS Isotope: U-238 LCS Code: 38M 0744-A Expiration Date: 10-31-20 Vol: 0.16
 Spike Isotope: U-238 Spike Code: NA Expiration Date: NA Vol: NA
 Prep Date: 3-17-10 Initials: KM Pipet ID: 1974058 Balance ID: 50110212
 Witness: NDA 3/17/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot @ 1/10	U Det #
248243001-1	RE36-10-7458	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	1	1	0.512	169
248243002-1	RE36-10-7453	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	2	2	0.517	170
248243003-1	RE36-10-7454	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	3	3	0.519	171
248243004-1	RE36-10-7460	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	4	4	0.513	172
248243005-1	RE36-10-7456	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	5	5	0.512	161
248243006-1	RE36-10-7455	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	6	6	0.519	162
248243007-1	RE36-10-7459	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	7	7	0.502	164
248243008-1	RE36-10-7457	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	8	8	0.504	165
248243009-1	RE36-10-7520	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	9	9	0.520	166
248243010-1	RE36-10-7519	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	10	10	0.512	167
1202070021-1	MB for batch 964864	MB		.1 pCi/g	SOIL	QC ACCOUNT		11	11	1	168
1202070022-1	RE36-10-7458(248243001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	24-FEB-10	12	12	0.520	119
1202070023-1	LCS for batch 964864	LCS		.1 pCi/g	SOIL	QC ACCOUNT		13	13	0.102	120

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: E. H. H. 3/25/10

Blank Correction Report

Batch ID 964864

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202070022	DUP	Uranium-233/234	0.520 g	0.917	0.104	0.173	.002403846	pCi/g	NO
		Uranium-235/236	0.520 g	0.0477	0.0198	0.106	-.00605769	pCi/g	NO
		Uranium-238	0.520 g	1.13	0.122	0.122	-.01471154	pCi/g	NO
1202070023	LCS	Uranium-233/234	0.102 g	5.72	0.585	0.624	.012254902	pCi/g	NO
		Uranium-235/236	0.102 g	0.257	0.0882	0.383	-.03088235	pCi/g	NO
		Uranium-238	0.102 g	5.26	0.548	0.439	-.075	pCi/g	NO
1202070021	MB	Uranium-233/234	1.00 g	0.00125	0.00297	0.040	.00125	pCi/g	YES
		Uranium-235/236	1.00 g	-0.00315	0.00287	0.0245	-.00315	pCi/g	NO
		Uranium-238	1.00 g	-0.00765	0.00345	0.0282	-.00765	pCi/g	NO
248243001	RE36-10-7458	Uranium-233/234	0.512 g	0.865	0.0831	0.0961	.002441406	pCi/g	NO
		Uranium-235/236	0.512 g	0.029	0.0168	0.0589	-.00615234	pCi/g	NO
		Uranium-238	0.512 g	1.00	0.0934	0.0677	-.01494141	pCi/g	NO
248243002	RE36-10-7453	Uranium-233/234	0.517 g	1.15	0.104	0.0942	.002417795	pCi/g	NO
		Uranium-235/236	0.517 g	0.0681	0.0177	0.0577	-.00609284	pCi/g	NO
		Uranium-238	0.517 g	1.31	0.116	0.0663	-.01479691	pCi/g	NO
248243003	RE36-10-7454	Uranium-233/234	0.519 g	1.13	0.0954	0.0678	.002408478	pCi/g	NO
		Uranium-235/236	0.519 g	0.0498	0.014	0.0415	-.00606936	pCi/g	NO
		Uranium-238	0.519 g	1.11	0.0942	0.0477	-.01473988	pCi/g	NO
248243004	RE36-10-7460	Uranium-233/234	0.513 g	1.31	0.113	0.0857	.002436647	pCi/g	NO
		Uranium-235/236	0.513 g	0.0785	0.0196	0.0526	-.00614035	pCi/g	NO
		Uranium-238	0.513 g	1.46	0.124	0.0604	-.01491228	pCi/g	NO
248243005	RE36-10-7456	Uranium-233/234	0.512 g	1.11	0.0956	0.0729	.002441406	pCi/g	NO
		Uranium-235/236	0.512 g	0.056	0.0142	0.0447	-.00615234	pCi/g	NO
		Uranium-238	0.512 g	1.06	0.0912	0.0513	-.01494141	pCi/g	NO
248243006	RE36-10-7455	Uranium-233/234	0.519 g	1.24	0.108	0.0841	.002408478	pCi/g	NO
		Uranium-235/236	0.519 g	0.0684	0.0168	0.0515	-.00606936	pCi/g	NO
		Uranium-238	0.519 g	1.39	0.118	0.0592	-.01473988	pCi/g	NO
248243007	RE36-10-7459	Uranium-233/234	0.502 g	1.22	0.109	0.0924	.002490040	pCi/g	NO
		Uranium-235/236	0.502 g	0.0542	0.0155	0.0566	-.00627490	pCi/g	NO
		Uranium-238	0.502 g	1.50	0.128	0.065	-.01523904	pCi/g	NO
248243008	RE36-10-7457	Uranium-233/234	0.504 g	1.10	0.101	0.0999	.002480159	pCi/g	NO
		Uranium-235/236	0.504 g	0.0587	0.0168	0.0613	-.00625	pCi/g	NO
		Uranium-238	0.504 g	1.31	0.117	0.0703	-.01517857	pCi/g	NO
248243009	RE36-10-7520	Uranium-233/234	0.520 g	1.43	0.126	0.101	.002403846	pCi/g	NO
		Uranium-235/236	0.520 g	0.0878	0.0226	0.0619	-.00605769	pCi/g	NO
		Uranium-238	0.520 g	1.50	0.132	0.0711	-.01471154	pCi/g	NO
248243010	RE36-10-7519	Uranium-233/234	0.512 g	1.40	0.120	0.089	.002441406	pCi/g	NO
		Uranium-235/238	0.512 g	0.0643	0.0167	0.0545	-.00615234	pCi/g	NO
		Uranium-238	0.512 g	1.58	0.133	0.0626	-.01494141	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964864		CHAMBER : 169		LIB FILE : ENV_ALPHA_UU	
SAMPLE ID : S0248243001_UU		DETECTOR S/N : 72548		BKG FILE : B169.CNF;183	
SAMPLE QTY : 0.512 G		AVERAGE %EFFICIENCY : 39.6957		BKG DATE : 21-MAR-2010	
SAMPLE DATE : 24-FEB-2010 00:00:00		COUNT DATE : 25-MAR-2010 08:36:52		BKG LIVE TIME(SEC) : 60000.00	
ANALYST : KXM4		ELAPSED LIVE TIME(SEC) : 52050.82		EFF FILE : W169.CNF;70	
% YIELD : 72.658				CAL DATE : 22-MAR-2010	

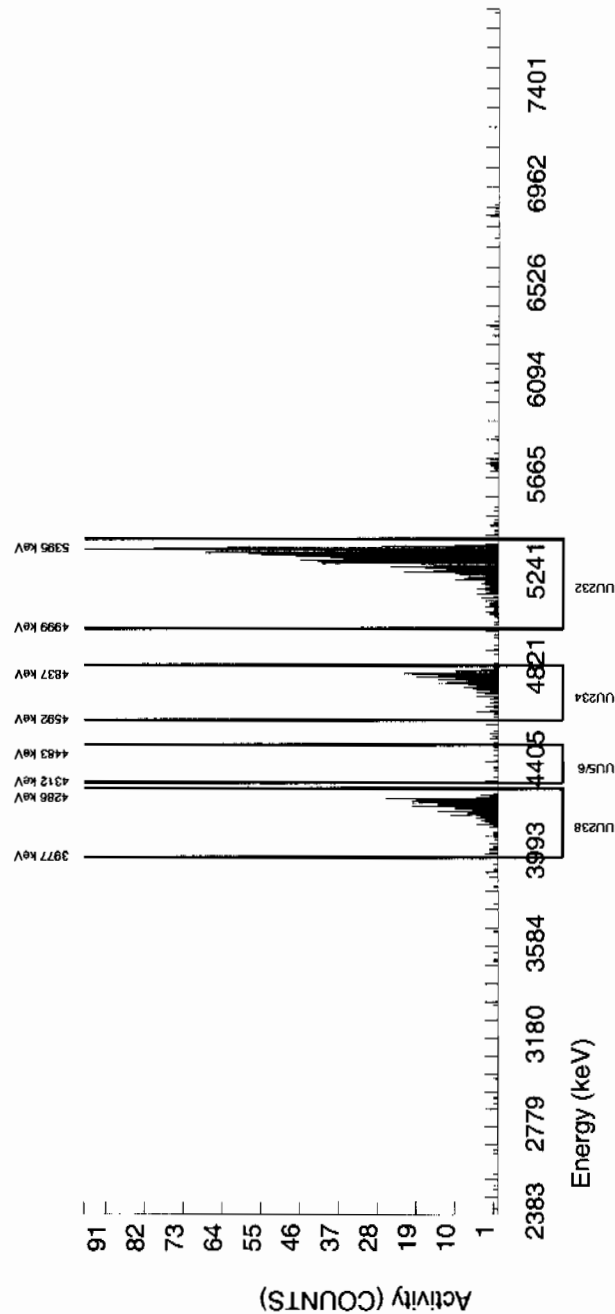
TRACER		MS/MSD		LCS/LCSD	
ID : 1283-H		ID : 0244-A		ID : 0244-A	
NUCLIDE : U232		NUCLIDE : U-238		NUCLIDE : U-238	
NOMINAL : 4.5028E+00 dpm		NOMINAL : 5.7500E+00 pCi/G		NOMINAL : 5.7500E+00 pCi/G	
RESULTS : 3.2717E+00 dpm					

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	5309.502	40.803	1137.000	1125.722	11.278	3.3582	100.0000	3.96E+00	3.08E-01	2.65E-02	6.26E-02	1.19E-01
U-3/4	4763.020	4769.937	55.896	248.000	245.992	0.868	5.4790	100.0000	8.65E-01	8.31E-02	4.33E-02	9.61E-02	5.53E-02
U-235	4391.000	4423.221	0.000	11.000	6.662	4.338	2.4127	80.90000	2.90E-02	1.68E-02	2.36E-02	5.89E-02	1.67E-02
U-238	4184.730	4195.966	57.601	287.000	284.397	2.603	3.6781	100.0000	1.00E+00	9.34E-02	2.91E-02	6.77E-02	5.98E-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

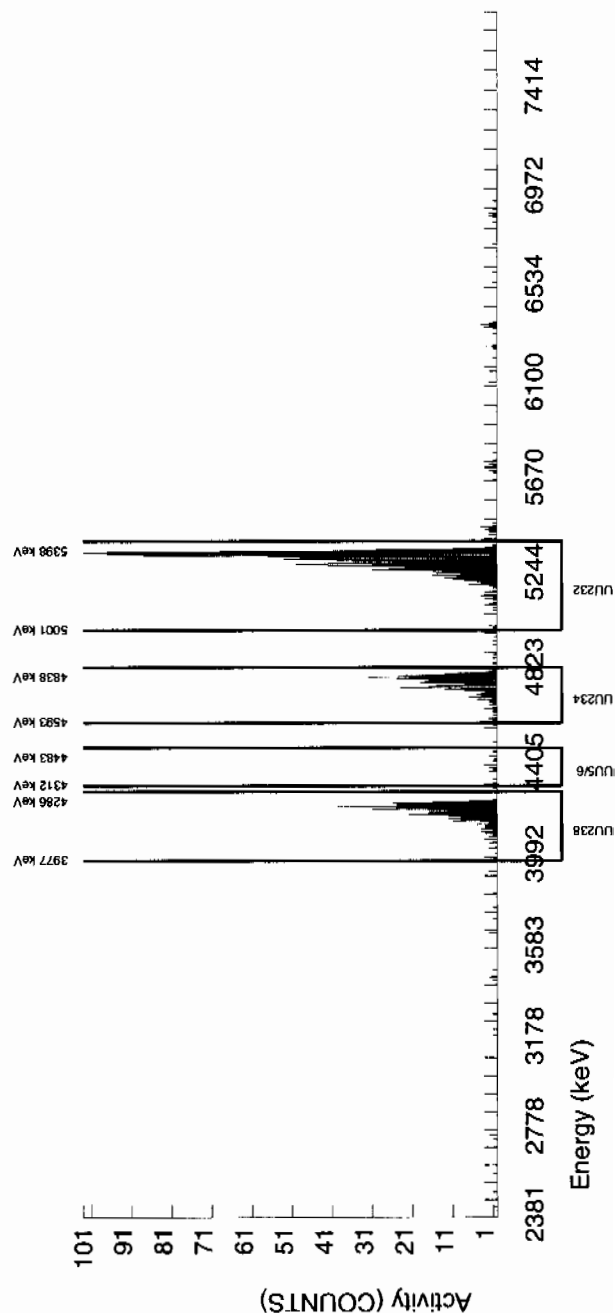


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964864				CHAMBER : 170				LIB FILE : ENV_ALPHA_UU					
SAMPLE ID : S0248243002_UU				DETECTOR S/N : 72549				BKG FILE : B170.CNF;181					
SAMPLE QTY : 0.517 G				AVERAGE %EFFICIENCY : 38.8803				BKG DATE : 21-MAR-2010					
SAMPLE DATE : 24-FEB-2010 00:00:00				COUNT DATE : 25-MAR-2010 08:36:55				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : KXM4				ELAPSED LIVE TIME(SEC) : 52055.63				EFF FILE : W170.CNF;60					
% YIELD : 74.987								CAL DATE : 22-MAR-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 1283-H				ID : 0244-A				ID : 0244-A					
NUCLIDE : U232				NUCLIDE : U-238				NUCLIDE : U-238					
NOMINAL : 4.5028E+00 dpm				NOMINAL : 5.7500E+00 pCi/G				NOMINAL : 5.7500E+00 pCi/G					
RESULTS : 3.3766E+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	5314.953	37.289	1145.000	1138.059	6.941	2.6345	100.0000	3.92E+00	3.04E-01	2.04E-02	5.01E-02	1.17E-01
U-3/4	4763.020	4767.591	56.853	336.000	334.847	0.000	5.4790	100.0000	1.15E+00	1.04E-01	4.24E-02	9.42E-02	6.30E-02
U-235	4391.000	4406.284	73.330	16.000	16.000	0.000	2.4127	80.90000	6.81E-02	1.77E-02	2.31E-02	5.77E-02	1.70E-02
U-238	4184.730	4199.423	53.242	385.000	381.530	3.470	3.6781	100.0000	1.31E+00	1.16E-01	2.85E-02	6.63E-02	6.78E-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 : 964864 SAMPLE ID : S0248243003_UU SAMPLE QTY : 0.519 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 99.909		LIB FILE : ENV_ALPHA_UU BKG FILE : B171.CNF:188 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W171.CNF:77 CAL DATE : 22-MAR-2010
AVERAGE %EFFICIENCY : 40.4087 COUNT DATE : 25-MAR-2010 08:36:59 ELAPSED LIVE TIME(SEC) : 52058.54		

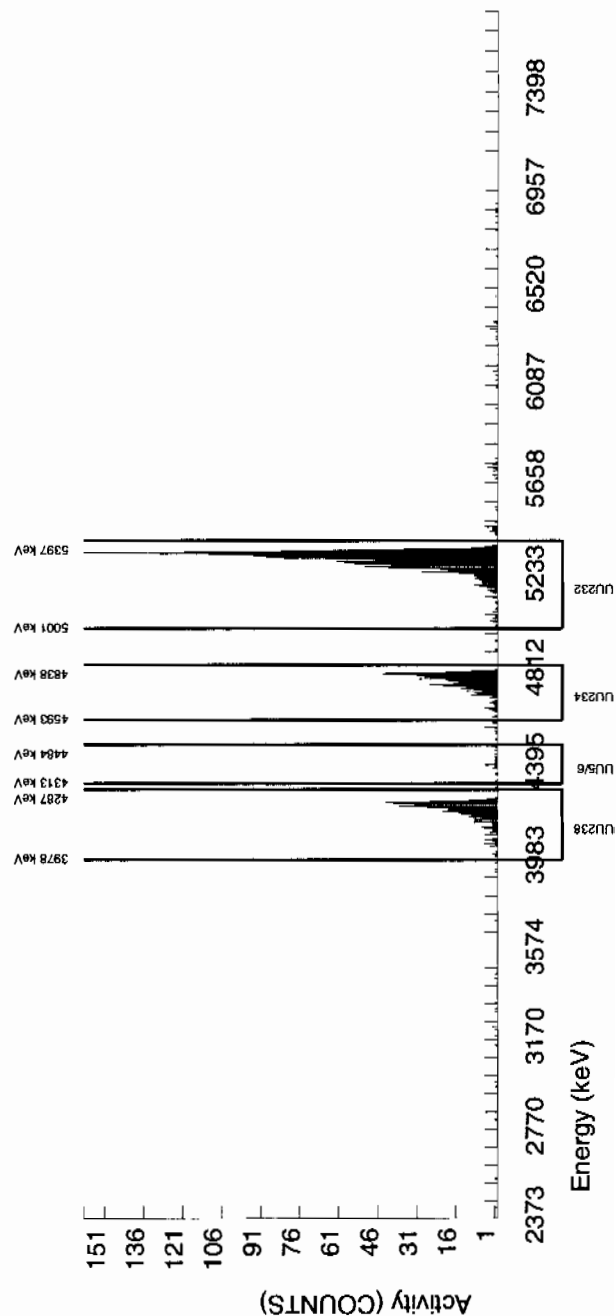
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm RESULTS : 4.4987E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5313.864	35.584	1589.000	1575.985	13.015	3.6076	100.0000	3.91E+00	2.91E-01	2.01E-02	4.69E-02	9.92E-02
U-3/4	4763.020	4767.067	56.933	461.000	456.800	2.603	5.4790	100.0000	1.13E+00	9.54E-02	3.05E-02	6.78E-02	5.32E-02
U-235	4391.000	4408.122	7.236	18.000	16.265	1.735	2.4127	80.900000	4.98E-02	1.40E-02	1.66E-02	4.15E-02	1.35E-02
U-238	4184.730	4194.888	31.929	454.000	449.662	4.338	3.6781	100.0000	1.11E+00	9.42E-02	2.05E-02	4.77E-02	5.30E-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

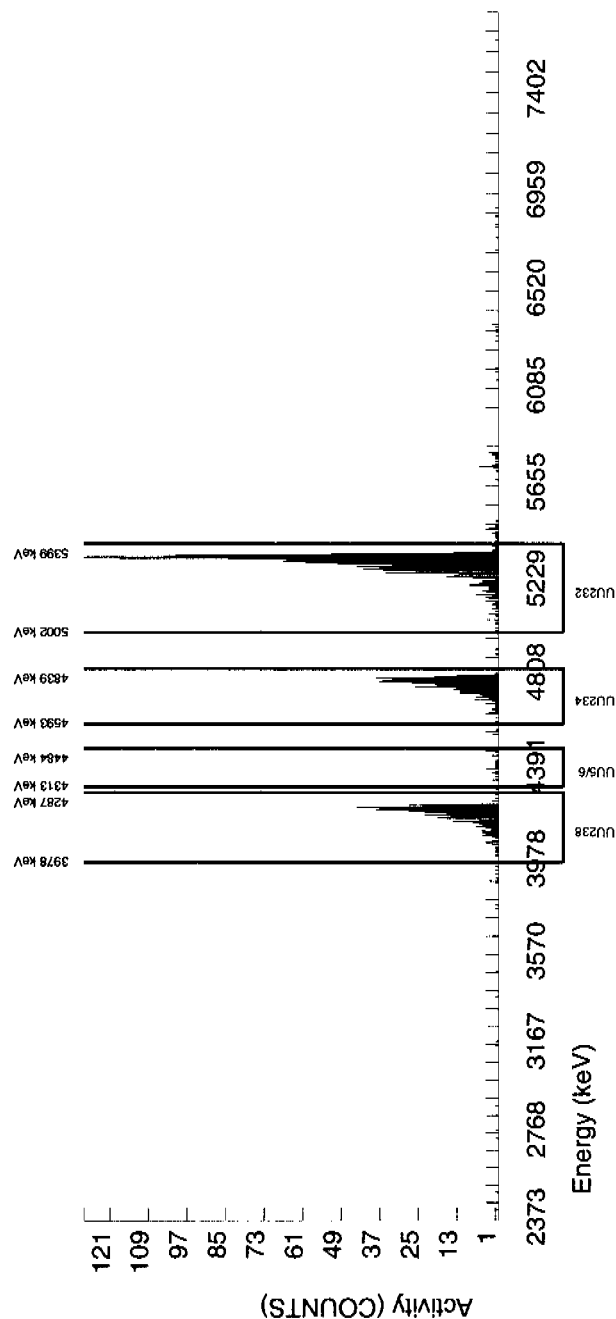


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964864 SAMPLE ID : S0248243004_UU SAMPLE QTY : 0.513 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 81.826				CHAMBER : 172 DETECTOR S/N : 78772 AVERAGE %EFFICIENCY : 39.4139 COUNT DATE : 25-MAR-2010 08:37:01 ELAPSED LIVE TIME(SEC) : 52103.89				LIB FILE : ENV_ALPHA_UU BKG FILE : B172.CNF;186 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W172.CNF;70 CAL DATE : 22-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm RESULTS : 3.6845E+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	5314.904	34.529	1267.000	1260.053	6.947	2.6358	100.0000	3.95E+00	3.02E-01	1.86E-02	4.57E-02	1.12E-01
U-3/4	4763.020	4767.600	44.193	420.000	417.855	0.868	5.4790	100.0000	1.31E+00	1.13E-01	3.86E-02	8.57E-02	6.42E-02
U-235	4391.000	4411.882	107.786	22.000	20.263	1.737	2.4127	80.90000	7.85E-02	1.96E-02	2.10E-02	5.26E-02	1.88E-02
U-238	4184.730	4193.086	47.320	467.000	466.132	0.868	3.6781	100.0000	1.46E+00	1.24E-01	2.59E-02	6.04E-02	6.78E-02

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964864 SAMPLE ID : S0248243005_UU SAMPLE QTY : 0.512 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 96.961	CHAMBER : 161 DETECTOR S/N : 70321 AVERAGE %EFFICIENCY : 39.1643 COUNT DATE : 25-MAR-2010 08:36:29 ELAPSED LIVE TIME(SEC) : 52122.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B161.CNF:183 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W161.CNF:65 CAL DATE : 22-MAR-2010
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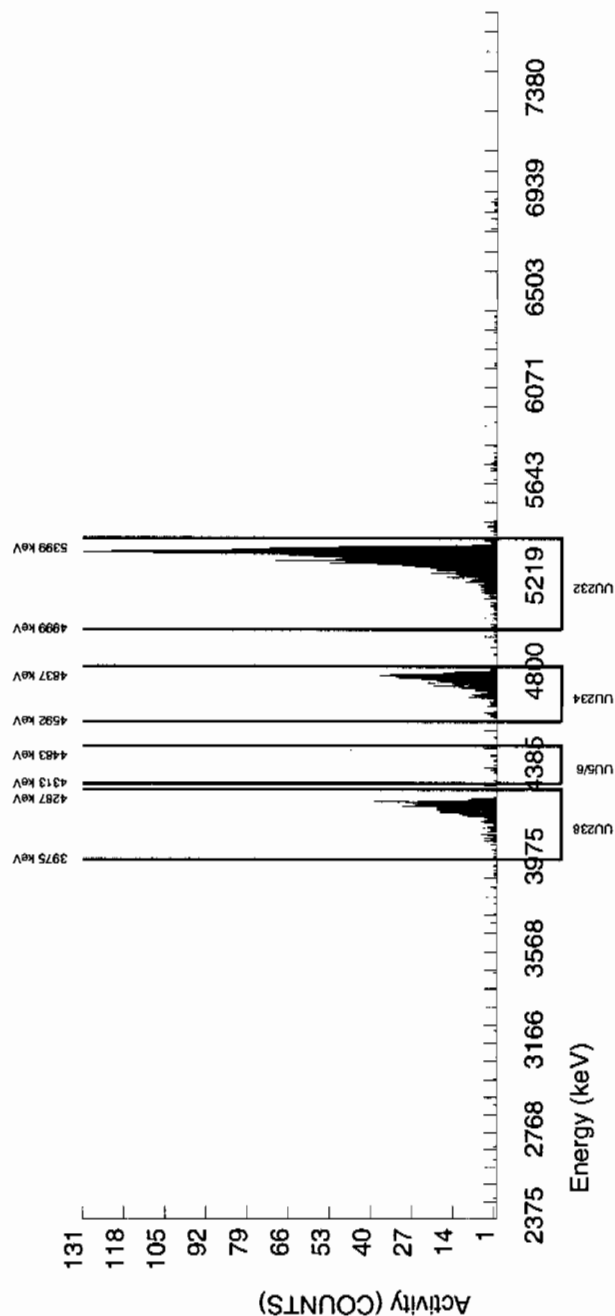
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm RESULTS : 4.3660E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLG pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.797	56.114	1492.000	1484.182	7.818	2.7961	100.0000	3.96E+00	2.97E-01	1.68E-02	4.08E-02	1.03E-01
U-3/4	4763.020	4769.589	58.673	422.000	417.890	2.606	5.4790	100.0000	1.11E+00	9.56E-02	3.29E-02	7.29E-02	5.48E-02
U-235	4391.000	4408.006	97.751	17.000	17.000	0.000	2.4127	80.900000	5.60E-02	1.42E-02	1.79E-02	4.47E-02	1.36E-02
U-238	4184.730	4195.720	30.784	396.000	396.000	0.000	3.6781	100.0000	1.06E+00	9.12E-02	2.21E-02	5.13E-02	5.31E-02

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964864 SAMPLE ID : S0248243006_UU SAMPLE QTY : 0.519 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 84.990	CHAMBER : 162 DETECTOR S/N : 70323 AVERAGE %EFFICIENCY : 38.1976 COUNT DATE : 25-MAR-2010 08:36:31 ELAPSED LIVE TIME(SEC) : 52171.87	LIB FILE : ENV_ALPHA_UU BKG FILE : B162.CNF:183 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W162.CNF:71 CAL DATE : 22-MAR-2010
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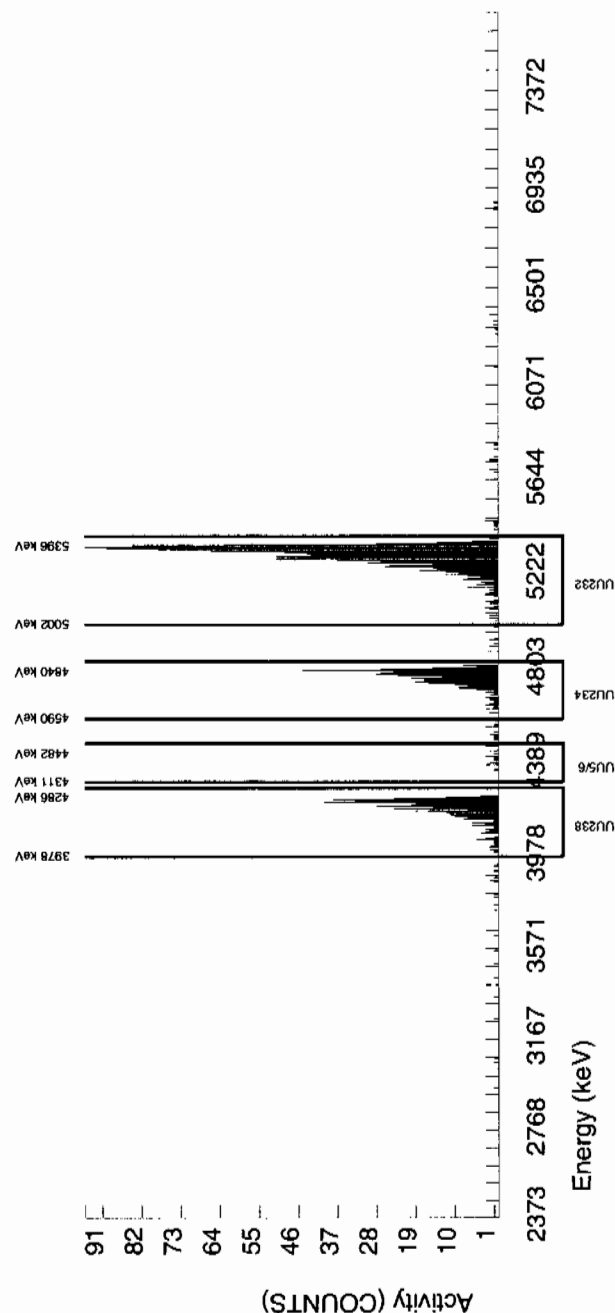
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm RESULTS : 3.8270E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.315	67.301	1277.000	1270.044	6.956	2.6375	100.0000	3.91E+00	2.99E-01	1.82E-02	4.48E-02	1.10E-01
U-3/4	4763.020	4775.816	31.599	406.000	403.844	0.870	5.4790	100.0000	1.24E+00	1.08E-01	3.79E-02	8.41E-02	6.19E-02
U-235	4391.000	4417.372	61.440	18.000	18.000	0.000	2.4127	80.90000	6.84E-02	1.68E-02	2.06E-02	5.15E-02	1.61E-02
U-238	4184.730	4197.004	46.773	451.000	451.000	0.000	3.6781	100.0000	1.39E+00	1.18E-01	2.54E-02	5.92E-02	6.53E-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 : 964864 SAMPLE ID : S0248243007_UU SAMPLE QTY : 0.502 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 78.142	CHAMBER : 164 DETECTOR S/N : 70325 AVERAGE %EFFICIENCY : 39.0800 COUNT DATE : 25-MAR-2010 08:36:37 ELAPSED LIVE TIME(SEC) : 52225.02	LIB FILE : ENV_ALPHA_UU BKG FILE : B164.CNF:181 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W164.CNF:60 CAL DATE : 22-MAR-2010
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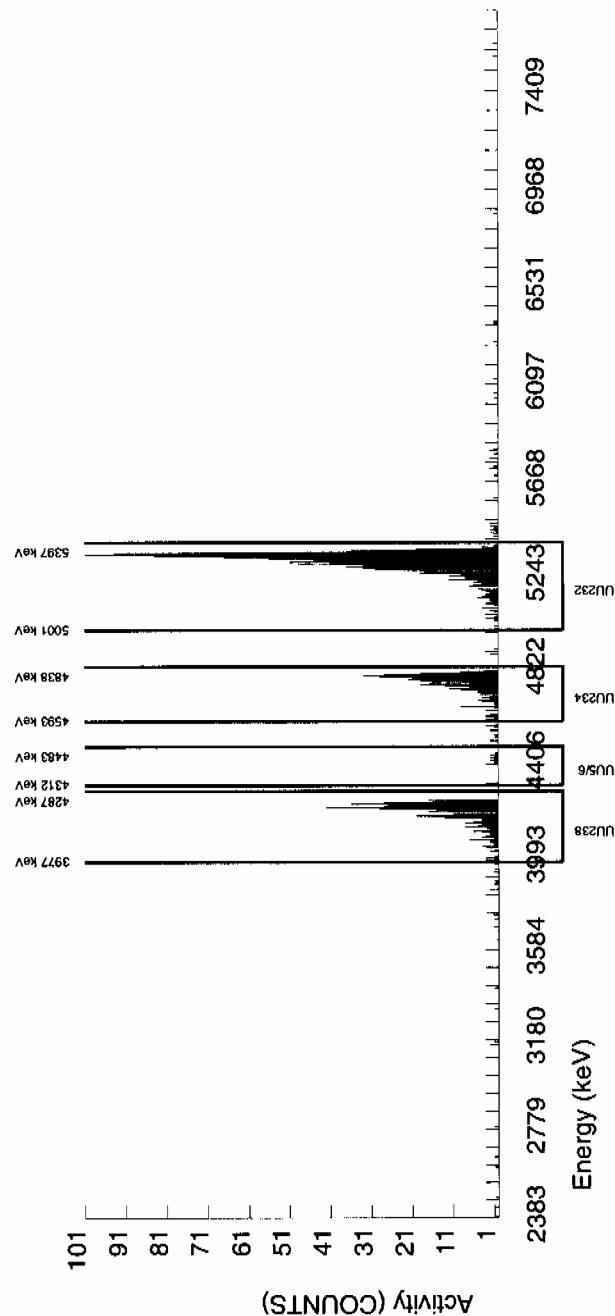
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm RESULTS : 3.5186E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.075	47.039	1202.000	1195.907	6.093	2.4684	100.0000	4.04E+00	3.11E-01	1.87E-02	4.66E-02	1.17E-01
U-3/4	4763.020	4766.342	57.072	366.000	362.177	2.611	5.4790	100.0000	1.22E+00	1.09E-01	4.16E-02	9.24E-02	6.47E-02
U-235	4391.000	4424.729	27.103	13.000	13.000	0.000	2.4127	80.90000	5.42E-02	1.55E-02	2.26E-02	5.66E-02	1.50E-02
U-238	4184.730	4190.835	30.328	443.000	443.000	0.000	3.6781	100.0000	1.50E+00	1.28E-01	2.79E-02	6.50E-02	7.11E-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 : 964864	CHAMBER : 165	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248243008_UU	DETECTOR S/N : 72544	BKG FILE : B165.CNF;180
SAMPLE QTY : 0.504 G	AVERAGE %EFFICIENCY : 39.2873	BKG DATE : 21-MAR-2010
SAMPLE DATE : 24-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 08:36:39	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 52229.01	EFF FILE : W165.CNF;60
% YIELD : 71.550		CAL DATE : 22-MAR-2010

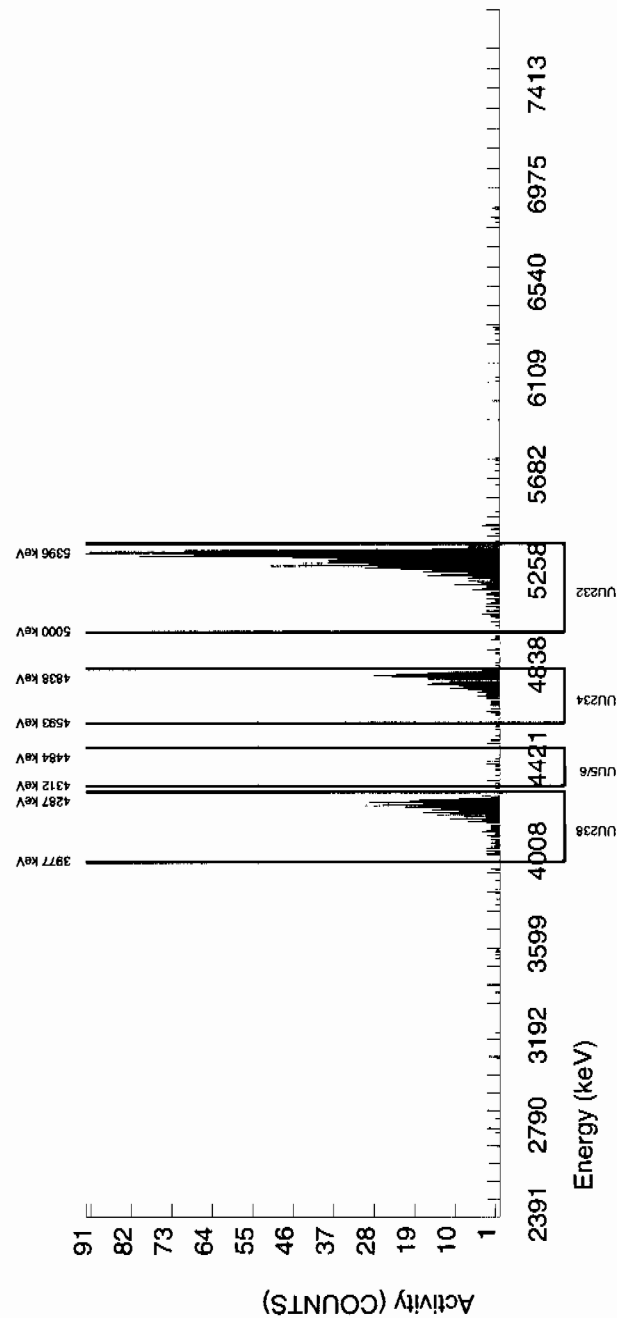
TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5028E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.2218E+00 dpm		

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	5319.249	68.288	1107.000	1100.907	6.093	2.4685	100.0000	4.02E+00	3.14E-01	2.03E-02	5.05E-02	1.22E-01
U-3/4	4763.020	4779.875	53.524	303.000	300.144	1.741	5.4790	100.0000	1.10E+00	1.01E-01	4.50E-02	9.99E-02	6.36E-02
U-235	4391.000	4397.323	6.153	13.000	13.000	0.000	2.4127	80.900000	5.87E-02	1.68E-02	2.45E-02	6.12E-02	1.63E-02
U-238	4184.730	4201.224	57.566	361.000	358.389	2.611	3.6781	100.0000	1.31E+00	1.17E-01	3.02E-02	7.03E-02	6.96E-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 : 964864 SAMPLE ID : S0248243009_UU SAMPLE QTY : 0.520 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 68.762	CHAMBER : 166 DETECTOR S/N : 74545 AVERAGE %EFFICIENCY : 39.2197 COUNT DATE : 25-MAR-2010 08:36:42 ELAPSED LIVE TIME(SEC) : 52234.07	LIB FILE : ENV_ALPHA_UU BKG FILE : B166.CNF;181 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W166.CNF;60 CAL DATE : 22-MAR-2010
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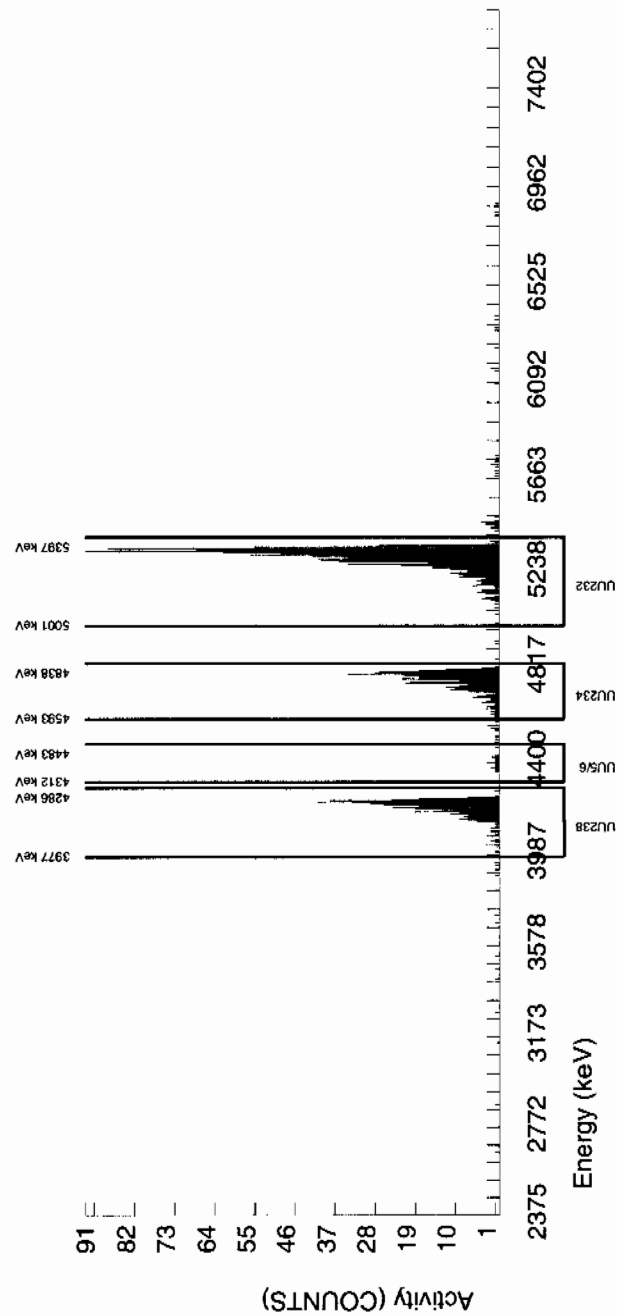
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm RESULTS : 3.0962E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.144	39.395	1065.000	1056.294	8.706	2.9505	100.0000	3.90E+00	3.06E-01	2.45E-02	5.90E-02	1.21E-01
U-3/4	4763.020	4763.896	56.406	389.000	387.930	0.000	5.4790	100.0000	1.43E+00	1.26E-01	4.55E-02	1.01E-01	7.27E-02
U-235	4391.000	4394.487	96.293	21.000	19.259	1.741	2.4127	80.90000	8.78E-02	2.25E-02	2.48E-02	6.19E-02	2.16E-02
U-238	4184.730	4200.861	40.647	411.000	407.518	3.482	3.6781	100.0000	1.50E+00	1.32E-01	3.05E-02	7.11E-02	7.51E-02

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

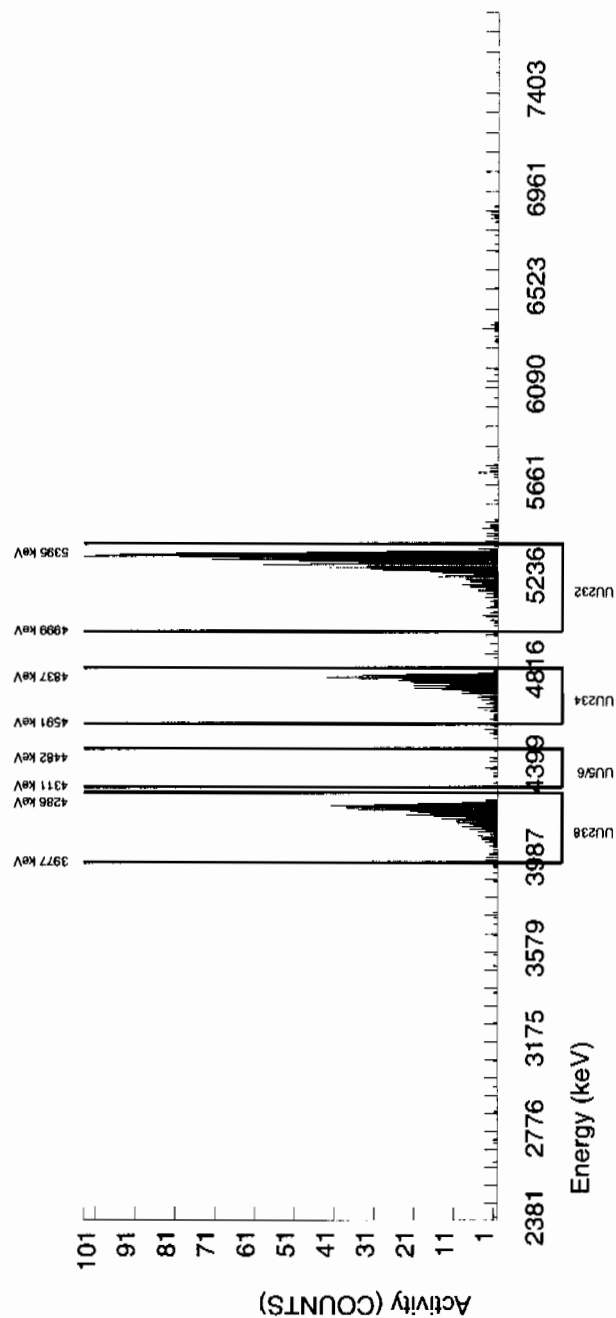
BATCH NUMBER : 964864 SAMPLE ID : S0248243010_UU SAMPLE QTY : 0.512 G SAMPLE DATE : 24-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 79.242	CHAMBER : 167 DETECTOR S/N : 72546 AVERAGE %EFFICIENCY : 39.2132 COUNT DATE : 25-MAR-2010 08:36:46 ELAPSED LIVE TIME(SEC) : 52237.65	LIB FILE : ENV_ALPHA_UU BKG FILE : B167.CNF:181 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W167.CNF:60 CAL DATE : 22-MAR-2010
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TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm RESULTS : 3.5681E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE	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	5313.466	54.441	1225.000	1217.164	7.836	2.7992	100.0000	3.96E+00	3.04E-01	2.05E-02	4.98E-02	1.14E-01
U-3/4	4763.020	4770.245	36.882	433.000	430.026	1.741	5.4790	100.0000	1.40E+00	1.20E-01	4.01E-02	8.90E-02	6.77E-02
U-235	4391.000	4398.964	112.929	16.000	16.000	0.000	2.4127	80.90000	6.43E-02	1.67E-02	2.18E-02	5.45E-02	1.61E-02
U-238	4184.730	4193.890	49.867	486.000	485.129	0.871	3.6781	100.0000	1.58E+00	1.33E-01	2.69E-02	6.26E-02	7.17E-02

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964864
SAMPLE ID : S1202070021_UU
SAMPLE QTY : 1.000 G
SAMPLE DATE : 17-MAR-2010 00:00:00
ANALYST : KXM4
% YIELD : 90.697

CHAMBER : 168
DETECTOR S/N : 72547
AVERAGE %EFFICIENCY : 38.9748
COUNT DATE : 25-MAR-2010 08:36:50
ELAPSED LIVE TIME(SEC) : 52242.18

LIB FILE : ENV_ALPHA_UU
BKG FILE : B168.CNF;181
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W168.CNF;60
CAL DATE : 22-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5002E+00 dpm
RESULTS : 4.0816E+00 dpm

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

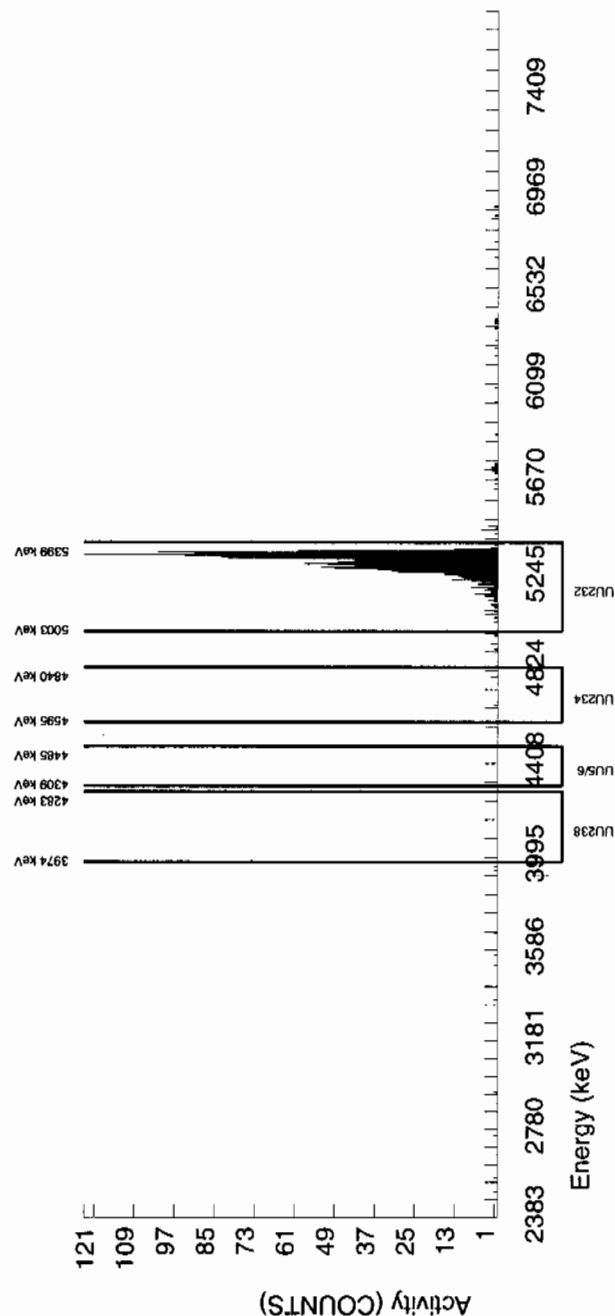
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

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	5316.615	33.650	1390.000	1384.776	5.224	2.2857	100.0000	2.03E+00	1.53E-01	7.53E-03	1.90E-02	5.47E-02
U-3/4	4763.020	4718.555	4.937	4.000	0.856	1.741	5.4790	100.0000	1.25E-03	2.97E-03	1.80E-02	4.00E-02	2.97E-03
U-235	4391.000	4397.188	0.000	0.000	-1.741	1.741	2.4127	80.90000	-3.15E-03	2.87E-03	9.82E-03	2.45E-02	2.87E-03
U-238	4184.730	4128.401	0.000	0.000	-5.224	5.224	3.6781	100.0000	-7.65E-03	3.45E-03	1.21E-02	2.82E-02	3.45E-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	: 964864	CHAMBER	: 119	LIB FILE	: ENV_ALPHA_UU
SAMPLE ID	: S1202070022_UU	DETECTOR S/N	: 79450	BKG FILE	: B119.CNF:471
SAMPLE QTY	: 0.520 G	AVERAGE %EFFICIENCY	: 25.9082	BKG DATE	: 21-MAR-2010
SAMPLE DATE	: 24-FEB-2010 00:00:00	COUNT DATE	: 25-MAR-2010 09:39:50	BKG LIVE TIME(SEC)	: 60000.00
ANALYST	: KXM4	ELAPSED LIVE TIME(SEC)	: 48459.56	EFF FILE	: W119.CNF:123
% YIELD	: 64.304			CAL DATE	: 19-MAR-2010

TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5028E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5314.109	63.199	607.000	605.385	1.615	1.2710	100.0000	3.90E+00	3.40E-01	1.81E-02	5.36E-02	1.59E-01
U-3/4	4763.020	4765.811	33.798	143.000	142.387	0.000	5.4790	100.0000	9.17E-01	1.04E-01	7.80E-02	1.73E-01	7.68E-02
U-235	4391.000	4411.033	4.947	6.000	6.000	0.000	2.4127	80.90000	4.77E-02	1.98E-02	4.25E-02	1.06E-01	1.95E-02
U-238	4184.730	4203.583	50.034	176.000	176.000	0.000	3.6781	100.0000	1.13E+00	1.22E-01	5.24E-02	1.22E-01	8.54E-02

NOTES:

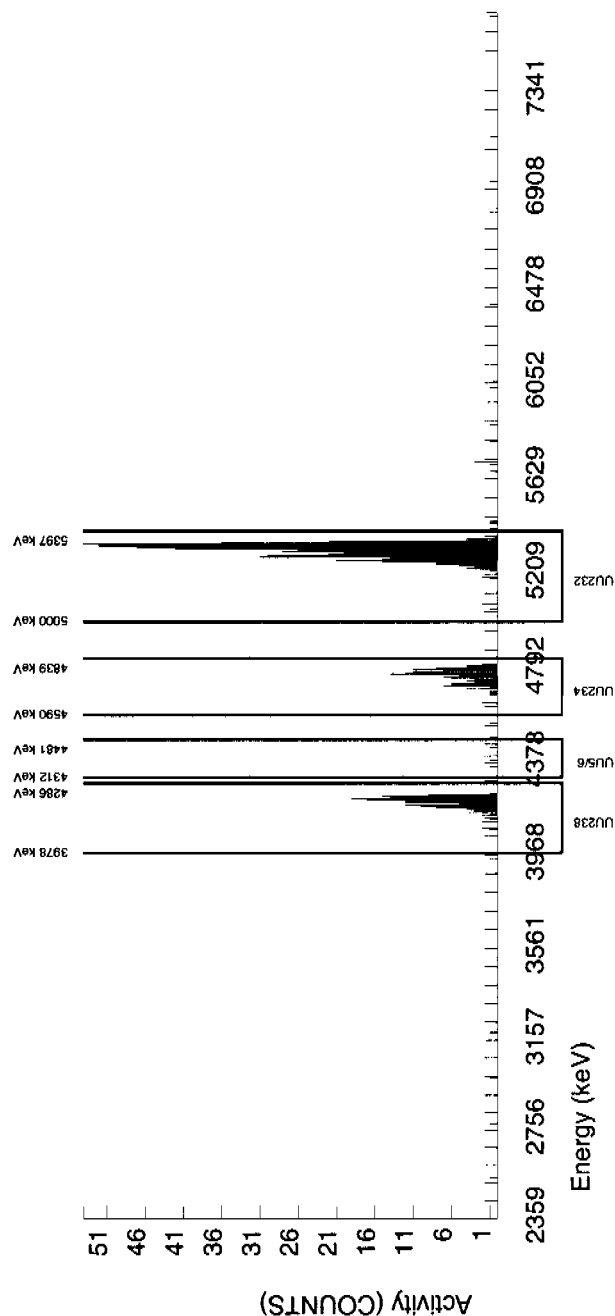
* BKG Sg calculated via blank population.

(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 : 964864 SAMPLE ID : S1202070023_UU SAMPLE QTY : 0.102 G SAMPLE DATE : 17-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 90.287	CHAMBER : 120 DETECTOR S/N : 74430 AVERAGE %EFFICIENCY : 26.1668 COUNT DATE : 25-MAR-2010 09:39:51 ELAPSED LIVE TIME(SEC) : 48464.53	LIB FILE : ENV_ALPHA_UU BKG FILE : B120.CNF:475 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W120.CNF:130 CAL DATE : 19-MAR-2010
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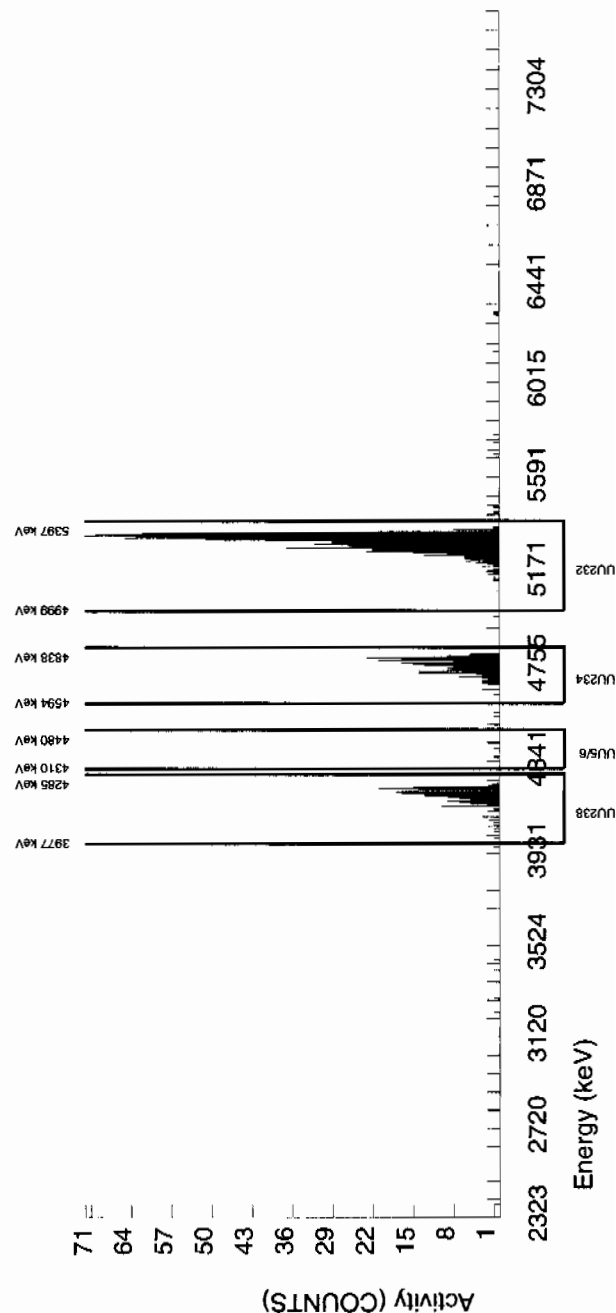
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5002E+00 dpm RESULTS : 4.0631E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.250	68.720	861.000	858.577	2.423	1.5567	100.0000	1.99E+01	1.73E+00	7.97E-02	2.22E-01	6.80E-01
U-3/4	4763.020	4763.340	72.838	249.000	247.322	0.808	5.4790	100.0000	5.72E+00	5.85E-01	2.80E-01	6.24E-01	3.65E-01
U-235	4391.000	4410.376	7.258	9.000	9.000	0.000	2.4127	80.90000	2.57E-01	8.82E-02	1.53E-01	3.83E-01	8.58E-02
U-238	4184.730	4193.474	44.327	229.000	227.385	1.615	3.6781	100.0000	5.26E+00	5.48E-01	1.88E-01	4.39E-01	3.51E-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# 959280 Product: KS Date: 3/22/10

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.			NA
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly stated.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

H. E. L. 3/22/10

Secondary Review Performed By:

K. B. 3/22/10

L. A. L.

3/27/10

Gamma Spec Que Sheet

1.4-3/12/10

03/01/2010

Batch #: 959280 Analyst: MXR1 First Client Due Date: 03/27/2010 Internal Due Date: 03/16/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: MS Expiration Date: 3/5/10 Vol: 1.0mL Nominal Concentration: 660 6.95
 Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 3/2/10 Vol: 1.0mL Nominal Concentration: 5.687 16.29
 Initials: MS Prep Date: 3/5/10 Library: SOLD Witness: MS

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Aliquot (1g/F)	Detector	Sealing Date/Time (if Applicable)
248243001-1	RE36-10-7458	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	99.82	6		3/4/10
248243002-1	RE36-10-7453	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	115.76	23		
248243003-1	RE36-10-7454	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	137.38	12		
248243004-1	RE36-10-7460	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	131.47	5		
248243005-1	RE36-10-7456	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	128.52	1		
248243006-1	RE36-10-7455	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	122.33	1		
248243007-1	RE36-10-7459	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	118.82	6		
248243008-1	RE36-10-7457	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	106.76	5		3/5/10
248243009-1	RE36-10-7520	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	106.82	23		
248243010-1	RE36-10-7519	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	102.03	25		
248248001-1	RE36-10-8464	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	152.09	1		3/4/10
248248002-1	RE36-10-8475	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	134.14	9		
248248003-1	RE36-10-8471	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	142.38	4		
248248004-1	RE36-10-8485	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	126.45	7		
248248005-1	RE36-10-8477	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	138.46	8		
248248006-1	RE36-10-8479	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	133.77	21		
248248007-1	RE36-10-8484	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	151.47	20		
248248008-1	RE36-10-8481	SAMPLE	LANL010	SOIL	24-FEB-10 12:00:00	CG	118.77	29		
1202057355-1	MB	MB	QC ACCOUNT	SOIL	3/5/10	CG	157.09	2		3/5/10
1202057356-1	DUP RE36-10-8464(248248001)	DUP	QC ACCOUNT	SOIL	24-FEB-10 12:00:00	MS	152.09	14		3/4/10
1202057357-1	LCS	LCS	QC ACCOUNT	SOIL	3/5/10	CG	151.73	4		3/5/10

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: Stenland 3/22/10
 daily
 no history
 3/23/10
 Page 1 of 1

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
959280	248243001	SAMPLE	19-MAR-10		Americium-241	-0.2616	0.2436	0.200
					Cerium-139	-0.00881	0.05099	0.050
					Thorium-234	0.2061	2.374	2.00
959280	248243002	SAMPLE	19-MAR-10		Americium-241	-0.293	0.3816	0.200
					Cerium-139	-0.0157	0.06342	0.050
					Cesium-134	0.06706	0.1116	0.100
					Sodium-22	-0.00218	0.09874	0.080
					Thorium-234	0.6285	3.349	2.00
959280	248243003	SAMPLE	19-MAR-10		Americium-241	0.1564	0.2975	0.200
					Cerium-139	0.0374	0.0601	0.050
					Sodium-22	0.0073	0.08596	0.080
959280	248243004	SAMPLE	19-MAR-10		Cerium-139	0.00618	0.06397	0.050
					Europium-152	0.00694	0.201	0.200
					Sodium-22	-0.08651	0.08097	0.080
					Tin-113	0.04341	0.1075	0.100
959280	248243005	SAMPLE	19-MAR-10		Cerium-139	-0.00105	0.05537	0.050
					Cesium-134	0.09085	0.1014	0.100
959280	248243006	SAMPLE	19-MAR-10					
959280	248243007	SAMPLE	19-MAR-10		Americium-241	-0.08446	0.3339	0.200
					Cerium-139	0.00132	0.06248	0.050
					Cesium-134	0.08098	0.1157	0.100
					Sodium-22	0.01501	0.08828	0.080
					Thorium-234	2.068	3.049	2.00
					Tin-113	0.02074	0.1026	0.100
959280	248243008	SAMPLE	19-MAR-10		Americium-241	-0.2468	0.5479	0.200
					Cerium-139	-0.00062	0.07249	0.050
					Cesium-134	0.04759	0.1055	0.100
					Europium-152	-0.06343	0.2195	0.200
					Mercury-203	0.08809	0.1101	0.100
					Sodium-22	-0.02053	0.09603	0.080
					Thorium-234	0.09645	4.452	2.00
					Tin-113	0.04099	0.1059	0.100
959280	248243009	SAMPLE	19-MAR-10		Americium-241	0.0572	0.2457	0.200
					Cerium-139	-0.00366	0.05738	0.050
959280	248243010	SAMPLE	19-MAR-10		Cesium-134	0.07639	0.1091	0.100
					Sodium-22	-0.0275	0.08511	0.080
959280	248248001	SAMPLE	19-MAR-10		Americium-241	-0.06477	0.2927	0.200
					Cerium-139	0.01847	0.05834	0.050
					Thorium-234	1.363	2.666	2.00
959280	248248002	SAMPLE	19-MAR-10		Americium-241	0.1984	0.3061	0.200
					Cerium-139	-0.0001	0.05853	0.050
959280	248248003	SAMPLE	19-MAR-10		Americium-241	0.1738	0.2293	0.200
					Cerium-139	0.00868	0.05462	0.050
					Thorium-234	1.655	2.06	2.00
959280	248248004	SAMPLE	19-MAR-10		Cerium-139	-0.03127	0.05235	0.050

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
959280	248248005	SAMPLE	19-MAR-10		Americium-241	-0.04522	0.2945	0.200
					Thorium-234	1.734	2.537	2.00
959280	248248006	SAMPLE	19-MAR-10		Cesium-137	0.06573	0.1025	0.100
					Sodium-22	0.04886	0.1096	0.080
959280	248248007	SAMPLE	19-MAR-10					
959280	248248008	SAMPLE	19-MAR-10		Americium-241	-0.2809	0.3568	0.200
					Cerium-139	-0.02893	0.06597	0.050
					Europium-152	-0.0694	0.2024	0.200
					Sodium-22	-0.01046	0.08916	0.080
					Thorium-234	0.4806	3.184	2.00
959280	1202057355	MB	19-MAR-10					
959280	1202057356	DUP	19-MAR-10		Americium-241	0.113	0.2172	0.200
					Cerium-139	0.00551	0.05327	0.050
959280	1202057357	LCS	19-MAR-10		Cerium-139	0.01646	0.0783	0.050
					Cesium-134	-0.00703	0.1621	0.100
					Europium-152	-0.04939	0.2888	0.200
					Mercury-203	0.03339	0.1093	0.100
					Potassium-40	0.7819	1.175	1.00
					Ruthenium-106	-0.1933	0.8836	0.800
					Thorium-234	-0.593	4.958	2.00
					Tin-113	0.03235	0.1431	0.100
					Uranium-235	-0.3401	0.515	0.500

Gamma Review Report based on Result > MDA for Batch:959280

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248243001	24-FEB-10 12:00	19-MAR-10 10:50	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	1.756	0.2173	pCi/g	0.2697	N	911.1	3	1.794 IDENTIFIED	10.76	<input type="checkbox"/>
Annihilation Rad. HE	0.09876	0.03873	pCi/g	0.04877	N	510.8	1	1.356 IDENTIFIED	38.93	<input type="checkbox"/>
Barium-137m <i>ML</i>	0.1473	0.03346	pCi/g	0.06049	N	661.4	2	1.081 IDENTIFIED	22.28	<input type="checkbox"/>
Bismuth-211 <i>INT</i>	4.536	0.3584	pCi/g	0.3511	Y	351.8	2	1.081 IDENTIFIED	5.714	<input checked="" type="checkbox"/> <i>ML</i>
Bismuth-212 HE	2.024	0.4165	pCi/g	1.317	N	0	4	0 FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214 <i>V</i>	1.486	0.1218	pCi/g	0.1328	0.200	609.2	2	1.352 IDENTIFIED	6.244	<input type="checkbox"/>
Cadmium-109 <i>INT</i>	3.539	0.5247	pCi/g	1.231	Y	87.14	3	1.002 IDENTIFIED	14.04	<input checked="" type="checkbox"/> <i>ML</i>
Cadmium-115 HE	30.69	69.81	pCi/g	0	N	0	4	0 SHORT_HLIF	0	<input type="checkbox"/>
Cerium-143 <i>-</i>	29520	5910	pCi/g	0	N	0	4	0 SHORT_HLIF	0	<input type="checkbox"/>
Cesium-137 <i>V</i>	0.1556	0.03535	pCi/g	0.0639	0.100	661.4	2	1.081 IDENTIFIED	22.28	<input type="checkbox"/>
Gross Gamma <i>V</i>	10.11	1.458	pCi/g	3.566	N	0				<input type="checkbox"/>
Lead-212 <i>V</i>	1.831	0.1257	pCi/g	0.08933	0.100	238.5	2	0.9979 IDENTIFIED	3.449	<input type="checkbox"/>
Lead-214 <i>V</i>	1.646	0.1378	pCi/g	0.1277	0.100	351.8	2	1.081 IDENTIFIED	5.714	<input type="checkbox"/>
Neptunium-237 <i>ML</i>	1.02	0.1852	pCi/g	0.3578	N	87.14	3	1.002 IDENTIFIED	14.04	<input type="checkbox"/>
Potassium-40 <i>V</i>	27.75	1.541	pCi/g	0.3386	1.00	1460	1	1.939 IDENTIFIED	3.398	<input type="checkbox"/>
Promethium-149 HE	231.9	579.5	pCi/g	0	N	0	4	0 SHORT_HLIF	0	<input type="checkbox"/>
Radium-224 <i>INT</i>	5.794	0.7236	pCi/g	0.9577	Y	241.6	1	1.737 IDENTIFIED	11.2	<input checked="" type="checkbox"/> <i>ML</i>
Radium-226 <i>V</i>	1.486	0.1218	pCi/g	0.1328	Y	609.2	2	1.352 IDENTIFIED	6.244	<input type="checkbox"/>
Radium-228 <i>V</i>	1.756	0.2173	pCi/g	0.2697	0.500	911.1	3	1.794 IDENTIFIED	10.76	<input type="checkbox"/>
Thallium-208 <i>V</i>	0.5525	0.05585	pCi/g	0.05653	0.080	583	1	1.498 IDENTIFIED	8.813	<input type="checkbox"/>
Thorium-228 <i>ML</i>	1.831	0.1257	pCi/g	0.08933	N	238.5	2	0.9979 IDENTIFIED	3.449	<input type="checkbox"/>
Thorium-232 <i>ML</i>	1.756	0.2173	pCi/g	0.2697	N	911.1	3	1.794 IDENTIFIED	10.76	<input type="checkbox"/>
Tin-126 <i>ML</i>	0.3419	0.05069	pCi/g	0.1195	N	87.14	3	1.002 IDENTIFIED	14.04	<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
248243002	24-FEB-10 12:00	19-MAR-10 10:51	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.011	0.2136	pCi/g	0.2499	N	910.1	3	1.856 IDENTIFIED	8.805	<input type="checkbox"/>
Annihilation Rad. HE	0.1127	0.03495	pCi/g	0.05837	N	510.4	1	1.609 IDENTIFIED	30.89	<input type="checkbox"/>
Barium-137m <i>ML</i>	0.6258	0.05204	pCi/g	0.06766	N	660.8	2	1.772 IDENTIFIED	7.914	<input type="checkbox"/>
Bismuth-211 <i>INT</i>	4.561	0.3028	pCi/g	0.3935	Y	351.5	2	1.351 IDENTIFIED	5.784	<input checked="" type="checkbox"/> <i>ML</i>
Bismuth-212 <i>LA</i>	2.965	0.482	pCi/g	1.47	N	0	6	0 FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214 <i>V</i>	1.38	0.1073	pCi/g	0.1345	0.200	608.5	2	1.589 IDENTIFIED	6.783	<input type="checkbox"/>
Cadmium-109 <i>INT</i>	4.07	0.641	pCi/g	1.711	Y	87.05	3	1.106 IDENTIFIED	14.99	<input checked="" type="checkbox"/> <i>ML</i>
Cadmium-115 HE	66.57	79.12	pCi/g	0	N	0	6	0 SHORT_HLIF	0	<input type="checkbox"/>
Cerium-143 <i>-</i>	73370	11460	pCi/g	0	N	0	6	0 SHORT_HLIF	0	<input type="checkbox"/>
Cesium-137 <i>V</i>	0.6611	0.05501	pCi/g	0.07147	0.100	660.8	2	1.772 IDENTIFIED	7.914	<input type="checkbox"/>
Gross Gamma <i>V</i>	9.608	1.236	pCi/g	4.223	N	0				<input type="checkbox"/>
Lead-212 <i>V</i>	1.698	0.08977	pCi/g	0.1205	0.100	238.3	2	1.095 IDENTIFIED	3.849	<input type="checkbox"/>
Lead-214 <i>V</i>	1.655	0.119	pCi/g	0.1431	0.100	351.5	2	1.351 IDENTIFIED	5.784	<input type="checkbox"/>
Molybdenum-99 HE	69.81	54.92	pCi/g	0	N	0	6	0 SHORT_HLIF	0	<input type="checkbox"/>
Neptunium-237 <i>ML</i>	1.173	0.222	pCi/g	0.5569	N	87.05	3	1.106 IDENTIFIED	14.99	<input type="checkbox"/>
Niobium-95m <i>LA</i>	0.7767	0.1123	pCi/g	0.3671	N	0	6	0 NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40 <i>V</i>	24.95	1.34	pCi/g	0.5754	1.00	1459	1	2.205 IDENTIFIED	3.85	<input type="checkbox"/>
Radium-224 <i>INT</i>	3.729	0.7706	pCi/g	1.292	Y	241.3	1	1.787 IDENTIFIED	20.47	<input checked="" type="checkbox"/> <i>ML</i>
Radium-226 <i>V</i>	1.38	0.1073	pCi/g	0.1345	Y	608.5	2	1.589 IDENTIFIED	6.783	<input type="checkbox"/>
Radium-228 <i>V</i>	2.011	0.2136	pCi/g	0.2499	0.500	910.1	3	1.856 IDENTIFIED	8.805	<input type="checkbox"/>
Silver-110m <i>LA</i>	0.1674	0.03026	pCi/g	0.1059	N	0	6	0 FAIL_ABUND	0	<input type="checkbox"/>
Thallium-208 <i>V</i>	0.5839	0.05328	pCi/g	0.07492	0.080	582.5	1	1.558 IDENTIFIED	8.531	<input type="checkbox"/>
Thorium-228 <i>ML</i>	1.698	0.08977	pCi/g	0.1205	N	238.3	2	1.095 IDENTIFIED	3.849	<input type="checkbox"/>
Thorium-232 <i>ML</i>	2.011	0.2136	pCi/g	0.2499	N	910.1	3	1.856 IDENTIFIED	8.805	<input type="checkbox"/>

Tin-126 *ML* 0.3931 0.06193 pCi/g 0.1852 N 87.05 3 1.106 IDENTIFIED 14.99 ☐

*** = 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
248243003	24-FEB-10 12:00	19-MAR-10 10:52	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.475	0.2621	pCi/g	0.2924	N	911.1 3	1.819	IDENTIFIED	8.423	<input type="checkbox"/>
Annihilation Rad.	0.2129	0.03568	pCi/g	0.0535	N	510.6 1	1.52	IDENTIFIED	16.18	<input type="checkbox"/>
Bismuth-211 <i>JNT</i>	5.62	0.3499	pCi/g	0.3525	Y	351.8 2	1.248	IDENTIFIED	4.352	<input checked="" type="checkbox"/> <i>UJ</i>
Bismuth-212 <i>ML</i>	3.135	0.4926	pCi/g	1.449	N	0 8 0		FAIL_ABUND 0		<input type="checkbox"/>
Bismuth-214 <i>V</i>	1.628	0.1269	pCi/g	0.1257	0.200	609.3 2	1.399	IDENTIFIED	5.816	<input type="checkbox"/>
Cadmium-109 <i>JNT</i>	4.163	0.5792	pCi/g	1.409	Y	87.19 3	0.9877	IDENTIFIED	13.11	<input checked="" type="checkbox"/> <i>UJ</i>
Cadmium-115 HE	7.601	73.5	pCi/g	0	N	0 8 0		SHORT_HLIF 0		<input type="checkbox"/>
Cerium-143	43470	7094	pCi/g	0	N	0 8 0		SHORT_HLIF 0		<input type="checkbox"/>
Cesium-134 <i>ML</i>	0.1882	0.0377	pCi/g	0.1132	0.100	0 8 0		FAIL_ABUND 0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Cesium-135 HE	0.3385	0.09933	pCi/g	0.3246	N	0 8 0		NOT_IDENTI 0		<input type="checkbox"/>
Gross Gamma	13.29	1.649	pCi/g	4.572	N	0				<input type="checkbox"/>
Lead-212 <i>V</i>	2.522	0.1392	pCi/g	0.1081	0.100	238.7 2	1.063	IDENTIFIED	2.65	<input type="checkbox"/>
Lead-214 <i>V</i>	2.04	0.1389	pCi/g	0.1282	0.100	351.8 2	1.248	IDENTIFIED	4.352	<input type="checkbox"/>
Molybdenum-99 HE	29.02	52.26	pCi/g	0	N	0 8 0		SHORT_HLIF 0		<input type="checkbox"/>
Neptunium-237 <i>ML</i>	1.2	0.209	pCi/g	0.4541	N	87.19 3	0.9877	IDENTIFIED	13.11	<input type="checkbox"/>
Potassium-40 <i>V</i>	39.04	2.051	pCi/g	0.5327	1.00	1461 1	2.089	IDENTIFIED	2.652	<input type="checkbox"/>
Promethium-149 HE	743.5	643.9	pCi/g	0	N	0 8 0		SHORT_HLIF 0		<input type="checkbox"/>
Radium-224 <i>JNT</i>	6.597	0.8179	pCi/g	1.159	Y	241.6 1	1.793	IDENTIFIED	11.64	<input checked="" type="checkbox"/> <i>UJ</i>
Radium-226 <i>V</i>	1.628	0.1269	pCi/g	0.1257	Y	609.3 2	1.399	IDENTIFIED	5.816	<input type="checkbox"/>
Radium-228 <i>V</i>	2.475	0.2621	pCi/g	0.2924	0.500	911.1 3	1.819	IDENTIFIED	8.423	<input type="checkbox"/>
Sodium-24 HE	1.45E+09	2.46E+09	pCi/g	0	N	0 8 0		SHORT_HLIF 0		<input type="checkbox"/>
Thallium-208 <i>V</i>	0.7461	0.058	pCi/g	0.06237	0.080	583.2 1	1.433	IDENTIFIED	6.15	<input type="checkbox"/>
Thorium-228 <i>ML</i>	2.522	0.1392	pCi/g	0.1081	N	238.7 2	1.063	IDENTIFIED	2.65	<input type="checkbox"/>
Thorium-232 <i>ML</i>	2.475	0.2621	pCi/g	0.2924	N	911.1 3	1.819	IDENTIFIED	8.423	<input type="checkbox"/>
Thorium-234 <i>V</i>	2.818	1.138	pCi/g	2.44	2.00	63.56 2	1.002	IDENTIFIED	39.38	<input type="checkbox"/>
Tin-126 <i>ML</i>	0.4021	0.05595	pCi/g	0.1505	N	87.19 3	0.9877	IDENTIFIED	13.11	<input type="checkbox"/>
Total Uranium	8.4705	3.39E-06	ug/g	3.6334	N	0				<input type="checkbox"/>
Uranium-238 HE	2.818	1.138	pCi/g	2.44	N	63.56 2	1.002	IDENTIFIED	39.38	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248243004	24-FEB-10 12:00	19-MAR-10 10:52	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.696	0.2525	pCi/g	0.2677	N	910.4 3	2.013	IDENTIFIED	6.883	<input type="checkbox"/>
Barium-137m HE	0.09332	0.02955	pCi/g	0.08403	N	661.2 2	1.092	IDENTIFIED	31.49	<input type="checkbox"/>
Bismuth-211 <i>JNT</i>	5.736	0.356	pCi/g	0.4131	Y	351.5 2	1.331	IDENTIFIED	4.784	<input checked="" type="checkbox"/> <i>UJ</i>
Bismuth-212 HE	2.087	0.7285	pCi/g	1.469	N	0 6 0		FAIL_ABUND 0		<input type="checkbox"/>
Bismuth-214 <i>V</i>	1.82	0.1298	pCi/g	0.1468	0.200	608.7 2	1.553	IDENTIFIED	5.752	<input type="checkbox"/>
Cadmium-109 <i>JNT</i>	5.926	0.521	pCi/g	1.201	Y	86.79 3	1.393	IDENTIFIED	7.923	<input checked="" type="checkbox"/> <i>UJ</i>
Cerium-143	97610	13850	pCi/g	0	N	0 6 0		SHORT_HLIF 0		<input type="checkbox"/>
Cesium-134 <i>ML</i>	0.165	0.03208	pCi/g	0.1171	0.100	0 6 0		FAIL_ABUND 0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Cesium-135 <i>ML</i>	0.6377	0.1507	pCi/g	0.307	N	269.6 1	1.626	IDENTIFIED	23.01	<input type="checkbox"/>
Cesium-137 <i>V</i>	0.09858	0.03122	pCi/g	0.08877	0.100	661.2 2	1.092	IDENTIFIED	31.49	<input type="checkbox"/>
Gross Gamma	12.2	1.435	pCi/g	4.92	N	0				<input type="checkbox"/>
Lead-210 HE	1.763	0.4245	pCi/g	1.023	N	46.06 1	1.312	IDENTIFIED	23.76	<input type="checkbox"/>
Lead-212 <i>V</i>	2.351	0.145	pCi/g	0.1112	0.100	238.2 2	1.253	IDENTIFIED	2.953	<input type="checkbox"/>
Lead-214 <i>V</i>	2.082	0.1414	pCi/g	0.1503	0.100	351.5 2	1.331	IDENTIFIED	4.784	<input type="checkbox"/>
Neptunium-237 <i>ML</i>	1.708	0.2337	pCi/g	0.3448	N	86.79 3	1.393	IDENTIFIED	7.923	<input type="checkbox"/>
Niobium-95m <i>ML</i>	1.775	0.149	pCi/g	0.4385	N	0 6 0		NOT_IDENTI 0		<input type="checkbox"/>
Potassium-40 <i>V</i>	30.26	1.41	pCi/g	0.6388	1.00	1460 1	2.32	IDENTIFIED	3.47	<input type="checkbox"/>
Promethium-149 HE	386	608.1	pCi/g	0	N	0 6 0		SHORT_HLIF 0		<input type="checkbox"/>
Radium-224 <i>JNT</i>	6.292	0.6438	pCi/g	1.192	Y	241.2 1	1.829	IDENTIFIED	8.988	<input checked="" type="checkbox"/> <i>UJ</i>

Radium-226	✓	1.82	0.1298	pCi/g	0.1468	Y	608.7	2	1.553	IDENTIFIED	5.752	<input type="checkbox"/>
Radium-228	✓	2.696	0.2525	pCi/g	0.2677	0.500	910.4	3	2.013	IDENTIFIED	6.883	<input type="checkbox"/>
Sodium-24	HE	1.67E+09	2.92E+09	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	✓	0.6956	0.05359	pCi/g	0.07344	0.080	582.7	1	1.552	IDENTIFIED	6.773	<input type="checkbox"/>
Thorium-228	u	2.351	0.145	pCi/g	0.1112	N	238.2	2	1.253	IDENTIFIED	2.953	<input type="checkbox"/>
Thorium-232	u	2.696	0.2525	pCi/g	0.2677	N	910.4	3	2.013	IDENTIFIED	6.883	<input type="checkbox"/>
Thorium-234	✓	1.67	0.4574	pCi/g	1.402	2.00	62.69	2	1.436	IDENTIFIED	25.85	<input type="checkbox"/>
Tin-126	u	0.5724	0.05034	pCi/g	0.1159	N	86.79	3	1.393	IDENTIFIED	7.923	<input type="checkbox"/>
Total Uranium		4.8855	1.36E-06	ug/g	2.0894	N		0				<input type="checkbox"/>
Uranium-238	HE	1.67	0.4574	pCi/g	1.402	N	62.69	2	1.436	IDENTIFIED	25.85	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248243005	24-FEB-10 12:00	19-MAR-10 10:53	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	u	1.903	0.1926	pCi/g	0.243	N	911.5	3	1.64	IDENTIFIED 8.152 <input type="checkbox"/>
Annihilation Rad.		0.1924	0.03763	pCi/g	0.04477	N	511.1	1	1.611	IDENTIFIED 19.05 <input type="checkbox"/>
Bismuth-211	JNT	5.392	0.3364	pCi/g	0.3456	Y	352.1	2	1.198	IDENTIFIED 4.337 <input checked="" type="checkbox"/> u
Bismuth-212	HE	1.958	0.4814	pCi/g	1.262	N	0	6	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.758	0.1328	pCi/g	0.1174	0.200	609.6	2	1.455	IDENTIFIED 5.483 <input type="checkbox"/>
Cadmium-109	JNT	4.923	0.5651	pCi/g	1.064	Y	87.26	3	1.276	IDENTIFIED 10.49 <input checked="" type="checkbox"/> u
Cerium-143	-	30970	5965	pCi/g	0	N	0	6	0	SHORT_HLIF 0 <input type="checkbox"/>
Gross Gamma	-	11.11	1.504	pCi/g	3.763	N		0		<input type="checkbox"/>
Iodine-133	HE	6.05E+05	1.61E+06	pCi/g	0	N	0	6	0	SHORT_HLIF 0 <input type="checkbox"/>
Iodine-135	-	7.72E+23	0	pCi/g	0	N	0	6	0	SHORT_HLIF 0 <input type="checkbox"/>
Lead-212	✓	2.064	0.1181	pCi/g	0.1035	0.100	238.8	2	1.156	IDENTIFIED 3.104 <input type="checkbox"/>
Lead-214	✓	1.957	0.1335	pCi/g	0.1272	0.100	352.1	2	1.198	IDENTIFIED 4.337 <input type="checkbox"/>
Neptunium-237	u	1.419	0.2206	pCi/g	0.3091	N	87.26	3	1.276	IDENTIFIED 10.49 <input type="checkbox"/>
Potassium-40	✓	30.51	1.594	pCi/g	0.6149	1.00	1461	1	2.155	IDENTIFIED 2.977 <input type="checkbox"/>
Radium-224	JNT	5.424	0.6833	pCi/g	1.109	Y	241.8	1	1.625	IDENTIFIED 11.87 <input checked="" type="checkbox"/> u
Radium-226	✓	1.758	0.1328	pCi/g	0.1174	Y	609.6	2	1.455	IDENTIFIED 5.483 <input type="checkbox"/>
Radium-228	✓	1.903	0.1926	pCi/g	0.243	0.500	911.5	3	1.64	IDENTIFIED 8.152 <input type="checkbox"/>
Sodium-24	HE	6.41E+08	2.17E+09	pCi/g	0	N	0	6	0	SHORT_HLIF 0 <input type="checkbox"/>
Strontium-85	u	0.1418	0.02297	pCi/g	0.08404	Y	0	6	0	NOT_IDENTI 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.5444	0.04633	pCi/g	0.06412	0.080	583.4	1	1.21	IDENTIFIED 7.043 <input type="checkbox"/>
Thorium-228	u	2.064	0.1181	pCi/g	0.1035	N	238.8	2	1.156	IDENTIFIED 3.104 <input type="checkbox"/>
Thorium-232	u	1.903	0.1926	pCi/g	0.243	N	911.5	3	1.64	IDENTIFIED 8.152 <input type="checkbox"/>
Tin-126	u	0.4755	0.05459	pCi/g	0.103	N	87.26	3	1.276	IDENTIFIED 10.49 <input type="checkbox"/>
Total Uranium		5.1918	2.20E-06	ug/g	2.6222	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
248243006	24-FEB-10 12:00	19-MAR-10 10:54	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	u	1.422	0.171	pCi/g	0.2145	N	911.7	3	1.431	IDENTIFIED 10.27 <input type="checkbox"/>
Annihilation Rad.	HE	0.09868	0.03678	pCi/g	0.04065	N	510.9	1	1.491	IDENTIFIED 36.88 <input type="checkbox"/>
Barium-137m	u	0.642	0.05172	pCi/g	0.04958	N	661.9	2	1.283	IDENTIFIED 6.521 <input type="checkbox"/>
Bismuth-211	JNT	4.778	0.396	pCi/g	0.2933	Y	352	2	1.147	IDENTIFIED 5.048 <input checked="" type="checkbox"/> u
Bismuth-212	HE	1.977	0.4302	pCi/g	1.16	N	0	6	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.367	0.1116	pCi/g	0.1054	0.200	609.6	2	1.352	IDENTIFIED 5.868 <input type="checkbox"/>
Cadmium-109	JNT	1.842	0.5237	pCi/g	1.234	Y	86.57	3	1.268	IDENTIFIED 28.05 <input checked="" type="checkbox"/> u
Cerium-143		16400	4181	pCi/g	0	N	0	6	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-137	✓	0.6782	0.05467	pCi/g	0.05238	0.100	661.9	2	1.283	IDENTIFIED 6.521 <input type="checkbox"/>
Gross Gamma		9.674	1.327	pCi/g	3.627	N		0		<input type="checkbox"/>
Iodine-133	HE	1.61E+05	1.38E+06	pCi/g	0	N	0	6	0	SHORT_HLIF 0 <input type="checkbox"/>
Lead-212	✓	1.595	0.1243	pCi/g	0.08901	0.100	238.7	2	0.9001	IDENTIFIED 3.388 <input type="checkbox"/>
Lead-214	✓	1.734	0.1515	pCi/g	0.1067	0.100	352	2	1.147	IDENTIFIED 5.048 <input type="checkbox"/>

Mercury-203	INT	0.08367	0.02761	pCi/g	0.0589	0.100	277.7	1	0.8755	IDENTIFIED	32.07	✓ UI
Neptunium-237	HE	0.5309	0.1609	pCi/g	0.3585	N	86.57	3	1.268	IDENTIFIED	28.05	□
Potassium-40	✓	24.21	1.318	pCi/g	0.471	1.00	1462	1	1.932	IDENTIFIED	3.306	□
Radium-224	INT	4.574	0.6087	pCi/g	0.9542	Y	241.7	1	1.512	IDENTIFIED	11.49	✓ UI
Radium-226	✓	1.367	0.1116	pCi/g	0.1054	Y	609.6	2	1.352	IDENTIFIED	5.868	□
Radium-228	✓	1.422	0.171	pCi/g	0.2145	0.500	911.7	3	1.431	IDENTIFIED	10.27	□
Sodium-24	HE	2.73E+09	1.67E+09	pCi/g	0	N	0	6	0	SHORT_HLIF	0	□
Strontium-85	LA	0.07904	0.02214	pCi/g	0.07479	Y	0	6	0	NOT_IDENTI	0	✓ UI Data rejected due to low abundance.
Technetium-99m		2.25E+25	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	□
Thallium-208	✓	0.4944	0.04878	pCi/g	0.051	0.080	583.3	1	1.482	IDENTIFIED	8.26	□
Thorium-228	u	1.595	0.1243	pCi/g	0.08901	N	238.7	2	0.9001	IDENTIFIED	3.388	□
Thorium-232	u	1.422	0.171	pCi/g	0.2145	N	911.7	3	1.431	IDENTIFIED	10.27	□
Thorium-234	✓	2.705	0.8681	pCi/g	1.51	2.00	63.45	2	1.059	IDENTIFIED	30.84	□
Tin-126	HE	0.1779	0.05059	pCi/g	0.1196	N	86.57	3	1.268	IDENTIFIED	28.05	□
Total Uranium		8.0003	2.58E-06	ug/g	2.2478	N	0					□
Uranium-238	HE	2.705	0.8681	pCi/g	1.51	N	63.45	2	1.059	IDENTIFIED	30.84	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
248243007	24-FEB-10 12:00	19-MAR-10 10:55	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	1.853	0.1987	pCi/g	0.2566	N	911.3	3	1.744	IDENTIFIED	8.863	
Annihilation Rad.	0.1671	0.04556	pCi/g	0.05823	N	511.1	1	2.169	IDENTIFIED	26.92	
Barium-137m	0.5817	0.05103	pCi/g	0.08034	N	661.8	2	1.356	IDENTIFIED	7.782	
Bismuth-211	4.552	0.3752	pCi/g	0.4246	Y	352	2	1.231	IDENTIFIED	6.779	✓ UI
Bismuth-212	2.528	0.5951	pCi/g	1.41	N	0	6	0	FAIL_ABUND	0	
Bismuth-214	1.686	0.1311	pCi/g	0.1385	0.200	609.4	2	1.411	IDENTIFIED	5.992	
Cadmium-109	4.516	0.6653	pCi/g	1.368	Y	87.29	3	1.329	IDENTIFIED	13.66	✓ UI
Cadmium-115	36.88	79.73	pCi/g	0	N	0	6	0	SHORT_HLIF	0	
Cerium-143	35020	6598	pCi/g	0	N	0	6	0	SHORT_HLIF	0	
Cesium-137	0.6145	0.05393	pCi/g	0.08488	0.100	661.8	2	1.356	IDENTIFIED	7.782	
Gross Gamma	10.51	1.435	pCi/g	4.091	N	0					
Iodine-135	1.25E+24	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	
Lead-212	1.97	0.1237	pCi/g	0.118	0.100	238.7	2	1.152	IDENTIFIED	3.621	
Lead-214	1.652	0.1436	pCi/g	0.1544	0.100	352	2	1.231	IDENTIFIED	6.779	
Neptunium-237	1.302	0.2354	pCi/g	0.4014	N	87.29	3	1.329	IDENTIFIED	13.66	
Potassium-40	27.24	1.611	pCi/g	0.6785	1.00	1461	1	2.039	IDENTIFIED	3.574	
Promethium-149	11.58	662.4	pCi/g	0	N	0	6	0	SHORT_HLIF	0	
Radium-224	5.945	0.8832	pCi/g	1.266	Y	241.6	1	1.846	IDENTIFIED	14.13	✓ UI
Radium-226	1.686	0.1311	pCi/g	0.1385	Y	609.4	2	1.411	IDENTIFIED	5.992	
Radium-228	1.853	0.1987	pCi/g	0.2566	0.500	911.3	3	1.744	IDENTIFIED	8.863	
Technetium-99m	1.11E+26	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	
Thallium-208	0.5546	0.06166	pCi/g	0.07198	0.080	583.3	1	1.598	IDENTIFIED	10.14	
Thorium-228	1.97	0.1237	pCi/g	0.118	N	238.7	2	1.152	IDENTIFIED	3.621	
Thorium-232	1.853	0.1987	pCi/g	0.2566	N	911.3	3	1.744	IDENTIFIED	8.863	
Tin-126	0.4362	0.06427	pCi/g	0.1328	N	87.29	3	1.329	IDENTIFIED	13.66	
Total Uranium	6.2109	2.64E-06	ug/g	4.5388	N	0					

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
248243008	24-FEB-10 12:00	19-MAR-10 10:55	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	u	1.6	0.2142	pCi/g	0.2847	N	911.2	3	1.675	IDENTIFIED 11.94	<input type="checkbox"/>
Annihilation Rad.	HE	0.13	0.04585	pCi/g	0.05826	N	510.9	1	2.216	IDENTIFIED 35	<input type="checkbox"/>
Barium-137m	u	0.4588	0.05059	pCi/g	0.08224	N	661.6	2	1.476	IDENTIFIED 10.23	<input type="checkbox"/>
Bismuth-211	INT	4.373	0.3832	pCi/g	0.4695	Y	352	2	1.242	IDENTIFIED 7.22	<input checked="" type="checkbox"/> UI
Bismuth-214	V	1.457	0.1264	pCi/g	0.1529	0.200	609.2	2	1.596	IDENTIFIED 7.102	<input type="checkbox"/>
Cadmium-109	INT	2.043	0.748	pCi/g	1.806	Y	87.57	3	1.275	IDENTIFIED 36.09	<input checked="" type="checkbox"/> UI

Cadmium-115	HE	1.506	88.49	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Cerium-143		49650	8609	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-137	✓	0.4847	0.05346	pCi/g	0.08688	0.100	661.6	2	1.476	IDENTIFIED	10.23	<input type="checkbox"/>
Gross Gamma		8.637	1.34	pCi/g	2.999	N		0				<input type="checkbox"/>
Iodine-133	HE	1.51E+06	2.15E+06	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.48	0.116	pCi/g	0.1337	0.100	238.8	2	1.317	IDENTIFIED	5.073	<input type="checkbox"/>
Lead-214	✓	1.587	0.1458	pCi/g	0.1707	0.100	352	2	1.242	IDENTIFIED	7.22	<input type="checkbox"/>
Neptunium-237	HE	0.5889	0.2243	pCi/g	0.5347	N	87.57	3	1.275	IDENTIFIED	36.09	<input type="checkbox"/>
Niobium-95m	HE	0.4755	0.1167	pCi/g	0.3714	N	0	5	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	✓	25.57	1.588	pCi/g	0.6874	1.00	1460	1	2.037	IDENTIFIED	3.796	<input type="checkbox"/>
Radium-224	INT	4.111	0.8499	pCi/g	1.433	Y	241.8	1	1.854	IDENTIFIED	19.92	<input checked="" type="checkbox"/> V F
Radium-226	✓	1.457	0.1264	pCi/g	0.1529	Y	609.2	2	1.596	IDENTIFIED	7.102	<input type="checkbox"/>
Radium-228	✓	1.6	0.2142	pCi/g	0.2847	0.500	911.2	3	1.675	IDENTIFIED	11.94	<input type="checkbox"/>
Strontium-85	LA	0.1229	0.03401	pCi/g	0.1103	Y	0	5	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.4687	0.06347	pCi/g	0.07607	0.080	583.3	1	1.755	IDENTIFIED	12.75	<input type="checkbox"/>
Thorium-228	UL	1.48	0.116	pCi/g	0.1337	N	238.8	2	1.317	IDENTIFIED	5.073	<input type="checkbox"/>
Thorium-232	UL	1.6	0.2142	pCi/g	0.2847	N	911.2	3	1.675	IDENTIFIED	11.94	<input type="checkbox"/>
Tin-126	HE	0.1974	0.07226	pCi/g	0.1758	N	87.57	3	1.275	IDENTIFIED	36.09	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue	
248243009	24-FEB-10 12:00	19-MAR-10 10:56	23	SAMPLE	LOAD	1	LANL	LANL01004	GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	UL	2.083	0.2257	pCi/g	0.2363	N	911.4	3	1.995	IDENTIFIED	8.461	
Annihilation Rad.	HE	0.115	0.03523	pCi/g	0.0522	N	510.9	1	2.245	IDENTIFIED	30.23	
Barium-137m	UL	0.5514	0.05134	pCi/g	0.06359	N	661.8	2	1.644	IDENTIFIED	7.674	
Bismuth-211	INT	5.05	0.3952	pCi/g	0.3749	Y	352	2	1.358	IDENTIFIED	5.237	Y V
Bismuth-212	✓	1.892	0.3938	pCi/g	0.7757	N	727.6	1	1.678	IDENTIFIED	19.59	
Bismuth-214	✓	1.493	0.1231	pCi/g	0.1233	0.200	609.3	2	1.66	IDENTIFIED	5.825	
Cadmium-109	INT	4.992	0.6091	pCi/g	1.247	Y	87.25	3	1.3	IDENTIFIED	11.26	Y V
Cadmium-115	HE	77.18	70.06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Cerium-143	-	45030	7675	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Cesium-134	LA	0.1045	0.04088	pCi/g	0.09321	0.100	0	10	0	FAIL_ABUND	0	Y UI Data rejected due to low abundance.
Cesium-137	Y	0.5825	0.05426	pCi/g	0.06717	0.100	661.8	2	1.644	IDENTIFIED	7.674	
Gross Gamma		11.75	1.559	pCi/g	3.149	N	0					
Iodine-133	HE	3.01E+06	1.71E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Lead-212	✓	2.111	0.1533	pCi/g	0.1029	0.100	238.7	2	1.163	IDENTIFIED	2.977	
Lead-214	✓	1.833	0.1521	pCi/g	0.1309	0.100	352	2	1.358	IDENTIFIED	5.237	
Molybdenum-99	HE	34.54	45.07	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Neptunium-237	UL	1.439	0.2315	pCi/g	0.3645	N	87.25	3	1.3	IDENTIFIED	11.26	
Niobium-95	HE	0.1035	0.02966	pCi/g	0.09209	N	0	10	0	NOT_IDENTI	0	
Niobium-95m	HE	0.3317	0.08862	pCi/g	0.2685	N	0	10	0	NOT_IDENTI	0	
Potassium-40	✓	32.23	1.7	pCi/g	0.5367	1.00	1461	1	2.467	IDENTIFIED	2.616	
Radium-224	INT	5.084	0.7601	pCi/g	1.102	Y	241.8	1	1.886	IDENTIFIED	13.57	Y V
Radium-226	✓	1.493	0.1231	pCi/g	0.1233	Y	609.3	2	1.66	IDENTIFIED	5.825	
Radium-228	✓	2.083	0.2257	pCi/g	0.2363	0.500	911.4	3	1.995	IDENTIFIED	8.461	
Silver-110m	HE	0.08462	0.02419	pCi/g	0.07576	N	0	10	0	NOT_IDENTI	0	
Sodium-24	HE	1.42E+09	2.33E+09	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Strontium-85	LA	0.1686	0.02886	pCi/g	0.09155	Y	0	10	0	NOT_IDENTI	0	Y UI Data rejected due to low abundance.
Thallium-208	✓	0.5916	0.05597	pCi/g	0.05919	0.080	583.1	1	1.827	IDENTIFIED	7.756	
Thorium-228	UL	2.111	0.1533	pCi/g	0.1029	N	238.7	2	1.163	IDENTIFIED	2.977	
Thorium-232	UL	2.083	0.2257	pCi/g	0.2363	N	911.4	3	1.995	IDENTIFIED	8.461	
Thorium-234	✓	2.767	1.073	pCi/g	2.075	2.00	63.19	2	0.8779	IDENTIFIED	37.74	
Tin-126	UL	0.4822	0.05885	pCi/g	0.1209	N	87.25	3	1.3	IDENTIFIED	11.26	
Total Uranium		8.275	3.19E-06	ug/g	3.0901	N	0					
Uranium-238	HE	2.767	1.073	pCi/g	2.075	N	63.19	2	0.8779	IDENTIFIED	37.74	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248243010	24-FEB-10 12:00	19-MAR-10 10:57	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	2.147	0.2449	pCi/g	0.2611	N	911.2 3	1.63	IDENTIFIED	9.631	
Annihilation Rad.	0.1762	0.04229	pCi/g	0.05695	N	510.9 1	1.701	IDENTIFIED	23.44	
Barium-137m	0.7092	0.06415	pCi/g	0.07914	N	661.7 2	1.511	IDENTIFIED	7.152	
Bismuth-211	5.028	0.3762	pCi/g	0.3717	Y	351.9 2	1.218	IDENTIFIED	5.322	✓ Vt
Bismuth-212	2.299	0.458	pCi/g	1.494	N	0 7 0		FAIL_ABUND 0		
Bismuth-214	1.444	0.1241	pCi/g	0.1298	0.200	609.3 2	1.344	IDENTIFIED	6.099	
Cadmium-109	4.935	0.4936	pCi/g	0.8509	Y	87.24 3	1.129	IDENTIFIED	8.45	✓ Vt
Cadmium-115	16.85	81.95	pCi/g	0	N	0 7 0		SHORT_HLIF 0		
Cerium-143	23910	5373	pCi/g	0	N	0 7 0		SHORT_HLIF 0		
Cesium-137	0.7492	0.0678	pCi/g	0.08361	0.100	661.7 2	1.511	IDENTIFIED	7.152	
Gross Gamma	11.51	1.461	pCi/g	3.864	N	0				
Iodine-135	4.13E+23 0		pCi/g	0	N	0 7 0		SHORT_HLIF 0		
Lead-210	2.678	0.4103	pCi/g	0.6747	N	46.6 1	0.8013	IDENTIFIED	14.44	
Lead-212	1.986	0.1312	pCi/g	0.09406	0.100	238.6 2	0.9562	IDENTIFIED	3.32	
Lead-214	1.825	0.1455	pCi/g	0.1352	0.100	351.9 2	1.218	IDENTIFIED	5.322	
Neptunium-237	1.423	0.2061	pCi/g	0.2436	N	87.24 3	1.129	IDENTIFIED	8.45	
Potassium-40	28.21	1.549	pCi/g	0.5113	1.00	1461 1	2.143	IDENTIFIED	3.467	
Promethium-149	68.35	632.5	pCi/g	0	N	0 7 0		SHORT_HLIF 0		
Radium-224	5.494	0.7143	pCi/g	1.009	Y	241.7 1	1.588	IDENTIFIED	11.89	✓ Vt
Radium-226	1.444	0.1241	pCi/g	0.1298	Y	609.3 2	1.344	IDENTIFIED	6.099	
Radium-228	2.147	0.2449	pCi/g	0.2611	0.500	911.2 3	1.63	IDENTIFIED	9.631	
Sodium-24	6.46E+07 2.30E+09		pCi/g	0	N	0 7 0		SHORT_HLIF 0		
Technetium-99m	3.15E+25 0		pCi/g	0	N	0 7 0		SHORT_HLIF 0		
Thallium-208	0.4994	0.05599	pCi/g	0.06981	0.080	583.4 1	1.295	IDENTIFIED	9.694	
Thorium-228	1.986	0.1312	pCi/g	0.09406	N	238.6 2	0.9562	IDENTIFIED	3.32	
Thorium-232	2.147	0.2449	pCi/g	0.2611	N	911.2 3	1.63	IDENTIFIED	9.631	
Thorium-234	1.638	0.4794	pCi/g	0.8792	2.00	63.35 2	0.7877	IDENTIFIED	27.69	
Tin-126	0.4767	0.04769	pCi/g	0.08203	N	87.24 3	1.129	IDENTIFIED	8.45	
Total Uranium	4.9801	1.43E-06	ug/g	1.3104	N	0				
Uranium-238	1.638	0.4794	pCi/g	0.8792	N	63.35 2	0.7877	IDENTIFIED	27.69	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248248001	24-FEB-10 12:00	19-MAR-10 10:58	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.871	0.1942	pCi/g	0.2386	N	911.7 3	1.613	IDENTIFIED	8.5	
Annihilation Rad.	0.1492	0.03768	pCi/g	0.04843	N	511.4 1	2.047	IDENTIFIED	24.9	
Bismuth-211	4.485	0.3149	pCi/g	0.3672	Y	352.2 2	1.311	IDENTIFIED	5.355	✓ Vt
Bismuth-212	1.819	0.3875	pCi/g	1.211	N	0 6 0		FAIL_ABUND 0		
Bismuth-214	1.477	0.1142	pCi/g	0.1191	0.200	609.7 2	1.399	IDENTIFIED	5.936	
Cadmium-109	2.786	0.5599	pCi/g	1.458	Y	87.13 3	1.029	IDENTIFIED	19.54	✓ Vt
Cadmium-115	57.6	65.96	pCi/g	0	N	0 6 0		SHORT_HLIF 0		
Cerium-143	13840	4350	pCi/g	0	N	0 6 0		SHORT_HLIF 0		
Cesium-134	0.1363	0.03253	pCi/g	0.1017	0.100	0 6 0		FAIL_ABUND 0		
Gross Gamma	10.08	1.326	pCi/g	3.929	N	0				
Lead-212	1.941	0.1158	pCi/g	0.103	0.100	239 2	1.229	IDENTIFIED	3.116	
Lead-214	1.628	0.1228	pCi/g	0.1295	0.100	352.2 2	1.311	IDENTIFIED	5.355	
Mercury-203	0.2747	0.05915	pCi/g	0.06973	0.100	278.9 1	6.269	IDENTIFIED	21.02	✓ UI Data rejected due to high peak-width.
Neptunium-237	0.8031	0.182	pCi/g	0.4516	N	87.13 3	1.029	IDENTIFIED	19.54	
Potassium-40	30.18	1.637	pCi/g	0.5196	1.00	1461 1	2.026	IDENTIFIED	3.106	
Radium-224	5.605	0.736	pCi/g	1.104	Y	242.1 1	1.821	IDENTIFIED	12.32	✓ Vt
Radium-226	1.477	0.1142	pCi/g	0.1191	Y	609.7 2	1.399	IDENTIFIED	5.936	
Radium-228	1.871	0.1942	pCi/g	0.2386	0.500	911.7 3	1.613	IDENTIFIED	8.5	
Sodium-24	2.01E+09 1.97E+09		pCi/g	0	N	0 6 0		SHORT_HLIF 0		

Strontium-85	✓	0.1226	0.0241	pCi/g	0.09016	Y	0	6	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Thallium-208	✓	0.575	0.05182	pCi/g	0.05856	0.080	583.6	1	1.504	IDENTIFIED	7.787	<input type="checkbox"/>	
Thorium-228	✓	1.941	0.1158	pCi/g	0.103	N	239	2	1.229	IDENTIFIED	3.116	<input type="checkbox"/>	
Thorium-232	✓	1.871	0.1942	pCi/g	0.2386	N	911.7	3	1.613	IDENTIFIED	8.5	<input type="checkbox"/>	
Tin-126	✓	0.2691	0.05409	pCi/g	0.1416	N	87.13	3	1.029	IDENTIFIED	19.54	<input type="checkbox"/>	
Total Uranium		4.0734	2.24E-06	ug/g	3.9685	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
248248002	24-FEB-10 12:00	19-MAR-10 10:58	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	2.501	0.2242	pCi/g	0.2576	N	911.7 3	1.814	IDENTIFIED 6.815		
Annihilation Rad.	0.1781	0.03566	pCi/g	0.04774	N	511 1	1.757	IDENTIFIED 19.8		
Bismuth-211	4.977	0.2898	pCi/g	0.3653	Y	351.8 2	1.333	IDENTIFIED 4.87	UI	
Bismuth-212	3.315	0.4652	pCi/g	1.355	N	0 6 0		FAIL_ABUND 0		
Bismuth-214	1.632	0.1047	pCi/g	0.1217	0.200	609.4 2	1.409	IDENTIFIED 5.047		
Cadmium-109	4.459	0.4999	pCi/g	1.397	Y	87.27 3	1.393	IDENTIFIED 10.29	UI	
Cerium-143	65260	9301	pCi/g	0	N	0 6 0		SHORT_HLIF 0		
Cesium-135	0.3981	0.1012	pCi/g	0.3366	N	0 6 0		NOT_IDENTI 0		
Gross Gamma	12.45	1.705	pCi/g	4.877	N	0				
Iodine-133	2.89E+06	1.74E+06	pCi/g	0	N	0 6 0		SHORT_HLIF 0		
Lead-212	2.268	0.1038	pCi/g	0.09809	0.100	238.6 2	1.244	IDENTIFIED 2.77		
Lead-214	1.806	0.1164	pCi/g	0.1328	0.100	351.8 2	1.333	IDENTIFIED 4.87		
Neptunium-237	1.285	0.1973	pCi/g	0.4445	N	87.27 3	1.393	IDENTIFIED 10.29		
Niobium-95m	0.6726	0.09472	pCi/g	0.3134	N	0 6 0		NOT_IDENTI 0		
Potassium-40	33.65	1.557	pCi/g	0.4414	1.00	1461 1	1.976	IDENTIFIED 2.745		
Radium-224	6.533	0.8202	pCi/g	1.051	Y	241.5 1	2.083	IDENTIFIED 12.23	UI	
Radium-226	1.632	0.1047	pCi/g	0.1217	Y	609.4 2	1.409	IDENTIFIED 5.047		
Radium-228	2.501	0.2242	pCi/g	0.2576	0.500	911.7 3	1.814	IDENTIFIED 6.815		
Strontium-85	0.1319	0.02559	pCi/g	0.08889	Y	0 6 0		NOT_IDENTI 0	UI	Data rejected due to low abundance.
Thallium-208	0.5688	0.04576	pCi/g	0.06206	0.080	583.3 1	1.396	IDENTIFIED 7.295		
Thorium-228	2.268	0.1038	pCi/g	0.09809	N	238.6 2	1.244	IDENTIFIED 2.77		
Thorium-232	2.501	0.2242	pCi/g	0.2576	N	911.7 3	1.814	IDENTIFIED 6.815		
Thorium-234	3.48	1.113	pCi/g	2.548	2.00	63.48 2	1.375	IDENTIFIED 30.72		
Tin-126	0.4308	0.04829	pCi/g	0.1356	N	87.27 3	1.393	IDENTIFIED 10.29		
Total Uranium	10.401	3.31E-06	ug/g	3.7939	N	0				
Uranium-238	3.48	1.113	pCi/g	2.548	N	63.48 2	1.375	IDENTIFIED 30.72		

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue			
248248003	24-FEB-10 12:00	19-MAR-10 10:59	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP			
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment			
Actinium-228	M	1.947	0.1845	pCi/g	0.2318	N	911.6	3	1.567	IDENTIFIED	7.304	<input type="checkbox"/>	
Annihilation Rad.		0.1926	0.0318	pCi/g	0.04667	N	511.1	1	2.246	IDENTIFIED	16.24	<input type="checkbox"/>	
Bismuth-211	INT	4.977	0.2786	pCi/g	0.3173	Y	351.8	2	1.503	IDENTIFIED	4.615	<input checked="" type="checkbox"/> UI	
Bismuth-212	M	2.327	0.4469	pCi/g	1.197	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	V	1.519	0.1002	pCi/g	0.1081	0.200	609.3	2	1.658	IDENTIFIED	5.256	<input type="checkbox"/>	
Cadmium-109	INT	3.141	0.5003	pCi/g	1.518	Y	87.11	3	1.359	IDENTIFIED	15.33	<input checked="" type="checkbox"/> UI	
Cerium-143	-	67440	9264	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.1468	0.04149	pCi/g	0.09244	0.100	0	8	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Cesium-135	HE	0.4043	0.08767	pCi/g	0.2945	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Gross Gamma	-	11.19	1.412	pCi/g	4.193	N	0					<input type="checkbox"/>	
Lead-212	V	1.883	0.0889	pCi/g	0.09597	0.100	238.5	2	1.327	IDENTIFIED	2.967	<input type="checkbox"/>	
Lead-214	V	1.806	0.1127	pCi/g	0.1154	0.100	351.8	2	1.503	IDENTIFIED	4.615	<input type="checkbox"/>	
Neptunium-237	M	0.9054	0.1726	pCi/g	0.4455	N	87.11	3	1.359	IDENTIFIED	15.33	<input type="checkbox"/>	
Niobium-95m	LA	0.7823	0.0899	pCi/g	0.307	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	V	35.44	1.592	pCi/g	0.5015	1.00	1461	1	1.977	IDENTIFIED	2.645	<input type="checkbox"/>	

Promethium-149 HE	768.1	546.5	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224 <i>INT</i>	5.031	0.5962	pCi/g	1.028	Y	241.5	1	1.881	IDENTIFIED	11.5	<input checked="" type="checkbox"/>	<i>UI</i>
Radium-226 <i>✓</i>	1.519	0.1002	pCi/g	0.1081	Y	609.3	2	1.658	IDENTIFIED	5.256	<input type="checkbox"/>	
Radium-228 <i>✓</i>	1.947	0.1845	pCi/g	0.2318	0.500	911.6	3	1.567	IDENTIFIED	7.304	<input type="checkbox"/>	
Sodium-24 HE	1.80E+09	2.19E+09	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Strontium-85 <i>LA</i>	0.1394	0.02407	pCi/g	0.08393	Y	0	8	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	<i>UI</i> Data rejected due to low abundance.
Thallium-208 <i>✓</i>	0.6314	0.04772	pCi/g	0.05842	0.080	583.2	1	1.597	IDENTIFIED	6.744	<input type="checkbox"/>	
Thorium-228 <i>u</i>	1.883	0.0889	pCi/g	0.09597	N	238.5	2	1.327	IDENTIFIED	2.967	<input type="checkbox"/>	
Thorium-232 <i>u</i>	1.947	0.1845	pCi/g	0.2318	N	911.6	3	1.567	IDENTIFIED	7.304	<input type="checkbox"/>	
Tin-126 <i>u</i>	0.3034	0.04833	pCi/g	0.1477	N	87.11	3	1.359	IDENTIFIED	15.33	<input type="checkbox"/>	
Total Uranium	4.9248	2.58E-06	ug/g	3.0674	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
248248004	24-FEB-10 12:00	19-MAR-10 11:00	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>u</i>	2.425	0.2403	pCi/g	0.2672	N	910.8	3	1.796	IDENTIFIED	8.001 <input type="checkbox"/>
Annihilation Rad.	0.1543	0.04849	pCi/g	0.05405	N	510.3	1	2.007	IDENTIFIED	31.11 <input type="checkbox"/>
Bismuth-211 <i>INT</i>	5.253	0.3882	pCi/g	0.3684	Y	352	2	1.349	IDENTIFIED	5.736 <input checked="" type="checkbox"/> <i>UI</i>
Bismuth-212 HE	2.097	0.55	pCi/g	1.487	N	0	5	0	FAIL_ABUND	0 <input type="checkbox"/>
Bismuth-214 <i>✓</i>	1.767	0.1417	pCi/g	0.1451	0.200	609.2	2	1.301	IDENTIFIED	6.184 <input type="checkbox"/>
Cadmium-109 <i>INT</i>	4.78	0.5113	pCi/g	1.058	Y	87.38	3	1.224	IDENTIFIED	9.521 <input checked="" type="checkbox"/> <i>UI</i>
Cadmium-115 HE	39.46	82.7	pCi/g	0	N	0	5	0	SHORT_HLIF	0 <input type="checkbox"/>
Cerium-143	26630	5587	pCi/g	0	N	0	5	0	SHORT_HLIF	0 <input type="checkbox"/>
Cesium-134 <i>LA</i>	0.1386	0.05629	pCi/g	0.132	0.100	0	5	0	FAIL_ABUND	0 <input checked="" type="checkbox"/> <i>UI</i> Data rejected due to low abundance.
Gross Gamma	11.16	1.515	pCi/g	4.276	N		0			<input type="checkbox"/>
Lead-210 HE	1.576	0.4429	pCi/g	0.8315	N	46.44	1	0.8426	IDENTIFIED	27.57 <input type="checkbox"/>
Lead-212 <i>✓</i>	2.386	0.1417	pCi/g	0.1113	0.100	238.7	2	1.088	IDENTIFIED	3.097 <input type="checkbox"/>
Lead-214 <i>✓</i>	1.906	0.1504	pCi/g	0.134	0.100	352	2	1.349	IDENTIFIED	5.736 <input type="checkbox"/>
Neptunium-237 <i>u</i>	1.378	0.2064	pCi/g	0.3035	N	87.38	3	1.224	IDENTIFIED	9.521 <input type="checkbox"/>
Potassium-40 <i>✓</i>	25.96	1.561	pCi/g	0.7454	1.00	1460	1	1.92	IDENTIFIED	4.054 <input type="checkbox"/>
Radium-224 <i>INT</i>	5.361	0.9291	pCi/g	1.193	Y	241.7	1	1.939	IDENTIFIED	16.73 <input checked="" type="checkbox"/> <i>UI</i>
Radium-226 <i>✓</i>	1.767	0.1417	pCi/g	0.1451	Y	609.2	2	1.301	IDENTIFIED	6.184 <input type="checkbox"/>
Radium-228 <i>✓</i>	2.425	0.2403	pCi/g	0.2672	0.500	910.8	3	1.796	IDENTIFIED	8.001 <input type="checkbox"/>
Sodium-24 HE	1.98E+09	2.77E+09	pCi/g	0	N	0	5	0	SHORT_HLIF	0 <input type="checkbox"/>
Thallium-208 <i>✓</i>	0.7112	0.06582	pCi/g	0.07343	0.080	583.2	1	1.189	IDENTIFIED	7.959 <input type="checkbox"/>
Thorium-228 <i>u</i>	2.386	0.1417	pCi/g	0.1113	N	238.7	2	1.088	IDENTIFIED	3.097 <input type="checkbox"/>
Thorium-232 <i>u</i>	2.425	0.2403	pCi/g	0.2672	N	910.8	3	1.796	IDENTIFIED	8.001 <input type="checkbox"/>
Thorium-234 <i>✓</i>	2.653	0.6142	pCi/g	1.121	2.00	63.36	2	1.117	IDENTIFIED	21.11 <input type="checkbox"/>
Tin-126	0.4617	0.04939	pCi/g	0.102	N	87.38	3	1.224	IDENTIFIED	9.521 <input type="checkbox"/>
Total Uranium	8.104	1.83E-06	ug/g	1.6704	N		0			<input type="checkbox"/>
Uranium-235 <i>u</i>	0.4598	0.1508	pCi/g	0.3541	0.500	143.8	1	1.508	IDENTIFIED	31.56 <input checked="" type="checkbox"/> <i>UI</i>
Uranium-238 <i>u</i>	2.653	0.6142	pCi/g	1.121	N	63.36	2	1.117	IDENTIFIED	21.11 <input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248248005	24-FEB-10 12:00	19-MAR-10 11:00	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>u</i>	2.137	0.1931	pCi/g	0.1836	N	910.6	3	1.959	IDENTIFIED	5.976 <input type="checkbox"/>
Annihilation Rad.	0.1092	0.02812	pCi/g	0.03616	N	510.7	1	1.813	IDENTIFIED	25.54 <input type="checkbox"/>
Bismuth-211 <i>INT</i>	4.739	0.2503	pCi/g	0.2615	Y	351.8	2	1.342	IDENTIFIED	4.195 <input checked="" type="checkbox"/> <i>UI</i>
Bismuth-212 <i>LA</i>	2.539	0.429	pCi/g	0.9884	N	0	11	0	FAIL_ABUND	0 <input type="checkbox"/>
Bismuth-214 <i>✓</i>	1.28	0.09228	pCi/g	0.08495	0.200	609.1	2	1.62	IDENTIFIED	5.638 <input type="checkbox"/>
Cadmium-109 <i>INT</i>	3.169	0.4783	pCi/g	1.297	Y	87.32	3	1.175	IDENTIFIED	14.38 <input checked="" type="checkbox"/> <i>UI</i>
Cerium-143	49200	6921	pCi/g	0	N	0	11	0	SHORT_HLIF	0 <input type="checkbox"/>
Cesium-134 <i>LA</i>	0.1277	0.02682	pCi/g	0.07546	0.100	0	11	0	FAIL_ABUND	0 <input checked="" type="checkbox"/> <i>UI</i> Data rejected due to low abundance.
Europium-155 HE	0.1999	0.04854	pCi/g	0.1765	N	0	11	0	FAIL_ABUND	0 <input type="checkbox"/>

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Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>u</i>	2.101	0.2048	pCi/g	0.2063	N	911.8 3	1.701	IDENTIFIED 7.452	<input type="checkbox"/>	
Annihilation Rad. HE	0.1083	0.03271	pCi/g	0.04609	N	510.8 1	1.631	IDENTIFIED 29.84	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	4.641	0.3108	pCi/g	0.2878	Y	352 2	1.184	IDENTIFIED 4.687	<input checked="" type="checkbox"/> <i>U</i>	
Bismuth-212 <i>u</i>	2.49	0.4044	pCi/g	1.126	N	0 5 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.452	0.1096	pCi/g	0.1032	0.200	609.6 2	1.387	IDENTIFIED 5.078	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	4.755	0.5044	pCi/g	1.078	Y	87.35 3	1.361	IDENTIFIED 9.515	<input checked="" type="checkbox"/> <i>U</i>	
Cerium-143 <i>-</i>	35640	5854	pCi/g	0	N	0 5 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 <i>u</i>	0.1637	0.03128	pCi/g	0.09272	0.100	0 5 0		FAIL_ABUND 0	<input checked="" type="checkbox"/> <i>UI</i>	Data rejected due to low abundance.
Europium-155 HE	0.1777	0.0667	pCi/g	0.1617	N	105.4 1	1.456	IDENTIFIED 37.28	<input type="checkbox"/>	
Gross Gamma <i>-</i>	11.61	1.425	pCi/g	4.138	N	0			<input type="checkbox"/>	
Iodine-135 <i>-</i>	6.93E+23 0		pCi/g	0	N	0 5 0		SHORT_HLIF 0	<input type="checkbox"/>	
Lead-212 <i>✓</i>	2.201	0.1301	pCi/g	0.08394	0.100	238.7 2	1.223	IDENTIFIED 2.54	<input type="checkbox"/>	
Lead-214 <i>✓</i>	1.684	0.122	pCi/g	0.1047	0.100	352 2	1.184	IDENTIFIED 4.687	<input type="checkbox"/>	
Neptunium-237 <i>u</i>	1.371	0.2044	pCi/g	0.314	N	87.35 3	1.361	IDENTIFIED 9.515	<input type="checkbox"/>	
Potassium-40 <i>✓</i>	32.06	1.606	pCi/g	0.4452	1.00	1462 1	2.028	IDENTIFIED 2.462	<input type="checkbox"/>	
Radium-224 <i>INT</i>	5.186	0.6953	pCi/g	0.8994	Y	241.7 1	1.771	IDENTIFIED 12.5	<input checked="" type="checkbox"/> <i>U</i>	
Radium-226 <i>✓</i>	1.452	0.1096	pCi/g	0.1032	Y	609.6 2	1.387	IDENTIFIED 5.078	<input type="checkbox"/>	
Radium-228 <i>✓</i>	2.101	0.2048	pCi/g	0.2063	0.500	911.8 3	1.701	IDENTIFIED 7.452	<input type="checkbox"/>	
Technetium-99m	9.02E+25 0		pCi/g	0	N	0 5 0		SHORT_HLIF 0	<input type="checkbox"/>	
Thallium-208 <i>✓</i>	0.6249	0.05394	pCi/g	0.05841	0.080	583.4 1	1.346	IDENTIFIED 6.937	<input type="checkbox"/>	
Thorium-228 <i>u</i>	2.201	0.1301	pCi/g	0.08394	N	238.7 2	1.223	IDENTIFIED 2.54	<input type="checkbox"/>	
Thorium-232 <i>u</i>	2.101	0.2048	pCi/g	0.2063	N	911.8 3	1.701	IDENTIFIED 7.452	<input type="checkbox"/>	
Thorium-234 <i>Y</i>	1.958	0.7933	pCi/g	1.687	2.00	63.12 2	0.756	IDENTIFIED 39.53	<input type="checkbox"/>	
Tin-126 <i>u</i>	0.4593	0.04873	pCi/g	0.1045	N	87.35 3	1.361	IDENTIFIED 9.515	<input type="checkbox"/>	
Total Uranium	5.7276	2.36E-06 ug/g		2.5122	N	0			<input type="checkbox"/>	
Uranium-238 HE	1.958	0.7933	pCi/g	1.687	N	63.12 2	0.756	IDENTIFIED 39.53	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248248008	24-FEB-10 12:00	19-MAR-10 11:03	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>u</i>	2.282	0.2605	pCi/g	0.2774	N	911 3	1.33	IDENTIFIED 8.498	<input type="checkbox"/>	
Annihilation Rad.	0.1479	0.04137	pCi/g	0.06448	N	510.5 1	1.466	IDENTIFIED 27.61	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	5.38	0.3716	pCi/g	0.4311	Y	351.8 2	1.212	IDENTIFIED 4.98	<input checked="" type="checkbox"/> <i>U</i>	
Bismuth-212 HE	2.236	0.4953	pCi/g	1.398	N	0 12 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.502	0.123	pCi/g	0.1356	0.200	609.2 2	1.429	IDENTIFIED 6.449	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	4.061	0.6612	pCi/g	1.938	Y	87.17 3	1.226	IDENTIFIED 15.59	<input checked="" type="checkbox"/> <i>U</i>	
Cadmium-115 HE	29.94	83.12	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cerium-143	72340	10810	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 <i>u</i>	0.176	0.05056	pCi/g	0.1195	0.100	0 12 0		FAIL_ABUND 0	<input checked="" type="checkbox"/> <i>UI</i>	Data rejected due to low abundance.
Gross Gamma	12.85	1.733	pCi/g	5.332	N	0			<input type="checkbox"/>	
Iodine-133 HE	2.29E+06 2.03E+06		pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Iodine-135	2.28E+24 0		pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Lead-212 <i>✓</i>	2.4	0.1395	pCi/g	0.1228	0.100	238.5 2	1.129	IDENTIFIED 2.984	<input type="checkbox"/>	
Lead-214 <i>✓</i>	1.952	0.1452	pCi/g	0.1644	0.100	351.8 2	1.212	IDENTIFIED 4.98	<input type="checkbox"/>	
Molybdenum-99 HE	61.91	54.34	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Neptunium-237 <i>u</i>	1.171	0.2267	pCi/g	0.5469	N	87.17 3	1.226	IDENTIFIED 15.59	<input type="checkbox"/>	
Niobium-95 HE	0.1168	0.03444	pCi/g	0.1119	N	0 12 0		NOT_IDENTI 0	<input type="checkbox"/>	
Niobium-95m <i>u</i>	0.8793	0.1186	pCi/g	0.3814	N	0 12 0		NOT_IDENTI 0	<input type="checkbox"/>	
Potassium-40 <i>✓</i>	37.05	2.264	pCi/g	0.7056	1.00	1461 1	1.954	IDENTIFIED 2.786	<input type="checkbox"/>	
Promethium-149 HE	585.7	686.4	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Radium-224 <i>INT</i>	6.447	0.9063	pCi/g	1.315	Y	241.5 1	1.99	IDENTIFIED 13.34	<input checked="" type="checkbox"/> <i>U</i>	
Radium-226 <i>✓</i>	1.502	0.123	pCi/g	0.1356	Y	609.2 2	1.429	IDENTIFIED 6.449	<input type="checkbox"/>	
Radium-228 <i>✓</i>	2.282	0.2605	pCi/g	0.2774	0.500	911 3	1.33	IDENTIFIED 8.498	<input type="checkbox"/>	
Sodium-24 HE	7.35E+08 2.58E+09		pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Strontium-85 <i>u</i>	0.1127	0.03325	pCi/g	0.1042	Y	0 12 0		NOT_IDENTI 0	<input checked="" type="checkbox"/> <i>UI</i>	Data rejected due to low abundance.
Thallium-208 <i>✓</i>	0.7513	0.06124	pCi/g	0.0641	0.080	583 1	1.362	IDENTIFIED 6.67	<input type="checkbox"/>	

Thorium-228 *MM* 2.4 0.1395 pCi/g 0.1228 N 238.5 2 1.129 IDENTIFIED 2.984 ☐
 Thorium-232 *MM* 2.282 0.2605 pCi/g 0.2774 N 911 3 1.33 IDENTIFIED 8.498 ☐
 Tin-126 *MM* 0.3923 0.06387 pCi/g 0.188 N 87.17 3 1.226 IDENTIFIED 15.59 ☐

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202057355		19-MAR-10 11:16	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Cerium-143 HE	20.69	24.4	pCi/g	0	N	0	3	0	SHORT_HLIF 0	<input type="checkbox"/>	
Iodine-135 HE	4.40E+14	2.90E+14	pCi/g	0	N	0	3	0	SHORT_HLIF 0	<input type="checkbox"/>	
Potassium-40 <i>NVP</i>	0.3192	0.133	pCi/g	0.2831	1.00	1460	1	0.898	IDENTIFIED 41.39	<input checked="" type="checkbox"/>	<i>UUF</i>
Sodium-24 HE	1.25E+05	99980	pCi/g	0	N	0	3	0	SHORT_HLIF 0	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202057356	24-FEB-10 12:00	19-MAR-10 13:09	23	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>MM</i>	2.034	0.1862	pCi/g	0.2155	N	911.7	3	1.938	IDENTIFIED 6.88	<input type="checkbox"/>	
Annihilation Rad. HE	0.09806	0.02935	pCi/g	0.04603	N	511.2	1	1.97	IDENTIFIED 29.79	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	4.466	0.2465	pCi/g	0.3005	Y	351.8	2	1.628	IDENTIFIED 4.521	<input checked="" type="checkbox"/>	<i>UUF</i>
Bismuth-212 <i>LA</i>	2.163	0.4675	pCi/g	1.142	N	0	9	0	FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 <i>V</i>	1.466	0.09546	pCi/g	0.1113	0.200	609.4	2	1.492	IDENTIFIED 5.147	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	2.191	0.4686	pCi/g	1.524	Y	87.09	3	1.409	IDENTIFIED 20.95	<input checked="" type="checkbox"/>	<i>UUF</i>
Cerium-143	53060	7815	pCi/g	0	N	0	9	0	SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 <i>LA</i>	0.1393	0.02868	pCi/g	0.08231	0.100	0	9	0	FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-135 HE	0.2936	0.08778	pCi/g	0.2892	N	0	9	0	NOT_IDENTI 0	<input type="checkbox"/>	
Gross Gamma	10.9	1.329	pCi/g	4.646	N	0	0	0		<input type="checkbox"/>	
Iodine-133 HE	1.23E+06	1.51E+06	pCi/g	0	N	0	9	0	SHORT_HLIF 0	<input type="checkbox"/>	
Lead-212 <i>V</i>	1.811	0.08517	pCi/g	0.08949	0.100	238.6	2	1.332	IDENTIFIED 2.938	<input type="checkbox"/>	
Lead-214 <i>V</i>	1.621	0.1	pCi/g	0.1093	0.100	351.8	2	1.628	IDENTIFIED 4.521	<input type="checkbox"/>	
Molybdenum-99 HE	34.3	40.71	pCi/g	0	N	0	9	0	SHORT_HLIF 0	<input type="checkbox"/>	
Neptunium-237 HE	0.6314	0.1504	pCi/g	0.4128	N	87.09	3	1.409	IDENTIFIED 20.95	<input type="checkbox"/>	
Niobium-95m <i>LA</i>	0.7263	0.08431	pCi/g	0.2907	N	0	9	0	NOT_IDENTI 0	<input type="checkbox"/>	
Potassium-40 <i>V</i>	33.56	1.479	pCi/g	0.4708	1.00	1462	1	2.053	IDENTIFIED 2.502	<input type="checkbox"/>	
Radium-224 <i>INT</i>	5.044	0.6599	pCi/g	0.9584	Y	241.6	1	2.062	IDENTIFIED 12.76	<input checked="" type="checkbox"/>	<i>UUF</i>
Radium-226 <i>V</i>	1.466	0.09546	pCi/g	0.1113	Y	609.4	2	1.492	IDENTIFIED 5.147	<input type="checkbox"/>	
Radium-228 <i>V</i>	2.034	0.1862	pCi/g	0.2155	0.500	911.7	3	1.938	IDENTIFIED 6.88	<input type="checkbox"/>	
Sodium-24 HE	6.69E+08	2.07E+09	pCi/g	0	N	0	9	0	SHORT_HLIF 0	<input type="checkbox"/>	
Strontium-85 <i>LA</i>	0.1075	0.02091	pCi/g	0.07309	Y	0	9	0	NOT_IDENTI 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208 <i>V</i>	0.5606	0.04417	pCi/g	0.05579	0.080	583.2	1	1.46	IDENTIFIED 7.102	<input type="checkbox"/>	
Thorium-228 <i>MM</i>	1.811	0.08517	pCi/g	0.08949	N	238.6	2	1.332	IDENTIFIED 2.938	<input type="checkbox"/>	
Thorium-232 <i>MM</i>	2.034	0.1862	pCi/g	0.2155	N	911.7	3	1.938	IDENTIFIED 6.88	<input type="checkbox"/>	
Thorium-234 <i>APW</i>	2.776	0.8617	pCi/g	1.921	2.00	63.86	2	3.117	IDENTIFIED 29.77	<input checked="" type="checkbox"/>	UI Data rejected due to high peak-width.
Tin-126 HE	0.2116	0.04526	pCi/g	0.1456	N	87.09	3	1.409	IDENTIFIED 20.95	<input type="checkbox"/>	
Total Uranium	8.2604	2.56E-06	ug/g	2.8598	N	0	0	0		<input type="checkbox"/>	
Uranium-238 HE	2.776	0.8617	pCi/g	1.921	N	63.86	2	3.117	IDENTIFIED 29.77	<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
1202057357		19-MAR-10 11:17	0	LCS	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.752	0.3181	pCi/g	0.8539	N	0	8	0	FAIL_ABUND 0	<input type="checkbox"/>	
Americium-241 <i>V</i>	13.9	1.007	pCi/g	0.7788	0.200	59.55	1	0.9812	IDENTIFIED 3.552	<input type="checkbox"/>	
Barium-137m	5.438	0.1866	pCi/g	0.1148	N	662.2	2	1.459	IDENTIFIED 2.41	<input type="checkbox"/>	
Bismuth-211	2.977	0.2968	pCi/g	0.5828	Y	352.2	2	1.243	IDENTIFIED 9.381	<input type="checkbox"/>	
Bismuth-212 HE	2.118	0.5159	pCi/g	1.846	N	0	8	0	FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214	0.7318	0.1166	pCi/g	0.2211	0.200	609.8	2	1.444	IDENTIFIED 15.49	<input type="checkbox"/>	
Cadmium-109	32.68	2.28	pCi/g	2.384	Y	88.03	2	1.074	IDENTIFIED 3.546	<input type="checkbox"/>	

Cerium-143	✓	193.6	93.99	pCi/g 0	N	0	8	0	SHORT_HLIF 0	<input type="checkbox"/>
Cesium-137		5.745	0.1977	pCi/g 0.1213	0.100	662.2	2	1.459	IDENTIFIED 2.41	<input type="checkbox"/>
Cobalt-57		0.1643	0.04022	pCi/g 0.06439	N	122.5	1	1.452	IDENTIFIED 24.23	<input type="checkbox"/>
Cobalt-60	✓	6.481	0.2817	pCi/g 0.07587	0.100	1334	1	1.995	IDENTIFIED 2.675	<input type="checkbox"/>
Gross Gamma		28.16	2.927	pCi/g 4.08	N		0			<input type="checkbox"/>
Iodine-133	HE	5354	3283	pCi/g 0	N	0	8	0	SHORT_HLIF 0	<input type="checkbox"/>
Lead-212		1.276	0.0912	pCi/g 0.1602	0.100	238.8	2	1.087	IDENTIFIED 5.893	<input type="checkbox"/>
Lead-214		1.081	0.1118	pCi/g 0.2193	0.100	352.2	2	1.243	IDENTIFIED 9.381	<input type="checkbox"/>
Neptunium-237		3.016	0.4624	pCi/g 1.102	N	0	8	0	NOT_IDENTI 0	<input type="checkbox"/>
Radium-224		4.108	0.961	pCi/g 1.717	Y	241.8	1	1.865	IDENTIFIED 23.16	<input type="checkbox"/>
Radium-226		0.7318	0.1166	pCi/g 0.2211	Y	609.8	2	1.444	IDENTIFIED 15.49	<input type="checkbox"/>
Radium-228		1.752	0.3181	pCi/g 0.8539	0.500	0	8	0	FAIL_ABUND 0	<input type="checkbox"/>
Technetium-99m		1.42E+16	4.93E+15	pCi/g 0	N	0	8	0	SHORT_HLIF 0	<input type="checkbox"/>
Thallium-208		0.3821	0.06058	pCi/g 0.103	0.080	583.5	1	1.288	IDENTIFIED 15.54	<input type="checkbox"/>
Thorium-228		1.276	0.0912	pCi/g 0.1602	N	238.8	2	1.087	IDENTIFIED 5.893	<input type="checkbox"/>
Thorium-232		1.752	0.3181	pCi/g 0.8539	N	0	8	0	FAIL_ABUND 0	<input type="checkbox"/>
Tin-126		3.197	0.2231	pCi/g 0.2351	N	88.03	2	1.074	IDENTIFIED 3.546	<input type="checkbox"/>

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

Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Paramname	Result	Uncertainty	Units	DL	RDL
959280	248248008	SAMPLE	19-MAR-10	Lead-214	1.952	0.1452	pCi/g	0.08225	0.100
				Molybdenum-99	61.91	54.34	pCi/g	0	N
				Potassium-40	37.05	2.264	pCi/g	0.365	1.00
				Promethium-149	585.7	686.4	pCi/g	0	N
				Radium-224	6.447	0.9063	pCi/g	0.6579	Y
				Radium-226	1.502	0.123	pCi/g	0.06782	Y
				Radium-228	2.282	0.2605	pCi/g	0.1388	0.500
				Sodium-24	7.35E+08	2.58E+09	pCi/g	0	N
				Strontium-85	0.1127	0.03325	pCi/g	0.05215	Y
				Thallium-208	0.7513	0.06124	pCi/g	0.03207	0.080
				Thorium-227	0.3052	0.1625	pCi/g	0.2841	Y
959280	1202057355	MB	19-MAR-10	Cerium-143	20.69	24.4	pCi/g	0	N
				Iodine-135	4.40E+14	2.90E+14	pCi/g	0	N
				Mercury-203	0.03555	0.01112	pCi/g	0.02159	0.100
				Potassium-40	0.3192	0.133	pCi/g	0.1416	1.00
				Sodium-24	1.25E+05	99980	pCi/g	0	N
				Yttrium-91	8.418	4.034	pCi/g	8.171	N
959280	1202057356	DUP	19-MAR-10	Americium-241	0.113	0.06753	pCi/g	0.1086	0.200
				Bismuth-211	4.466	0.2465	pCi/g	0.1503	Y
				Bismuth-214	1.466	0.09546	pCi/g	0.05568	0.200
				Cadmium-109	2.191	0.4686	pCi/g	0.7625	Y
				Cerium-143	53060	7815	pCi/g	0	N
				Cesium-134	0.1393	0.02868	pCi/g	0.04118	0.100
				Gross Gamma	10.9	1.329	pCi/g	2.277	N
				Iodine-133	1.23E+06	1.51E+06	pCi/g	0	N
				Lead-212	1.811	0.08517	pCi/g	0.04477	0.100
				Lead-214	1.621	0.1	pCi/g	0.05467	0.100
				Molybdenum-99	34.3	40.71	pCi/g	0	N
				Potassium-40	33.56	1.479	pCi/g	0.2356	1.00
				Radium-224	5.044	0.6589	pCi/g	0.4795	Y
				Radium-226	1.466	0.09546	pCi/g	0.05568	Y
				Radium-228	2.034	0.1862	pCi/g	0.1078	0.500
				Sodium-24	6.69E+08	2.07E+09	pCi/g	0	N
				Strontium-85	0.1075	0.02091	pCi/g	0.03657	Y
				Thallium-208	0.5606	0.04417	pCi/g	0.02791	0.080
				Thorium-234	2.776	0.8617	pCi/g	0.9609	2.00
959280	1202057357	LCS	19-MAR-10	Americium-241	13.9	1.007	pCi/g	0.3896	0.200

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:51:17.71

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243001.CNF;1
Sample date      : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:50:48
Sample ID        : G248243001 Sample quantity : 9.98200E+01 GRAM
Detector name    : GAM16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID         : 959280 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	4	74.90*	326	304	0.92	149.99	145	13	4.53E-02	10.3	3.56E+00
2	4	77.11*	587	301	0.93	154.42	145	13	8.15E-02	6.3	
3	5	83.98*	143	244	1.29	168.15	165	13	1.99E-02	20.0	5.91E-01
4	5	87.14	210	273	1.00	174.47	165	13	2.92E-02	14.0	
5	4	89.88	136	183	1.01	179.95	178	16	1.88E-02	16.0	1.89E+00
6	4	92.81*	260	310	1.29	185.82	178	16	3.61E-02	14.2	
7	0	129.17	76	258	0.95	258.54	255	7	1.06E-02	37.1	
8	0	185.78*	224	310	1.31	371.75	366	11	3.11E-02	17.4	
9	0	209.16	84	246	1.09	418.52	414	9	1.16E-02	35.5	
10	5	238.53*	1109	109	1.00	477.25	470	19	1.54E-01	3.4	1.67E+00
11	5	241.62	327	154	1.74	483.44	470	19	4.54E-02	11.2	
12	0	270.34	66	145	0.87	540.87	537	8	9.12E-03	34.2	
13	0	295.14*	371	168	1.06	590.48	585	10	5.16E-02	8.4	
14	0	299.94	80	149	1.21	600.07	596	9	1.11E-02	29.9	
15	0	329.70	154	205	4.69	659.59	651	21	2.13E-02	24.6	
16	0	338.05*	213	144	1.11	676.29	672	11	2.96E-02	12.9	
17	0	351.78*	614	153	1.08	703.75	699	11	8.53E-02	5.7	
18	0	409.38	47	70	1.37	818.94	815	8	6.56E-03	33.9	
19	0	462.75	62	103	0.92	925.66	921	11	8.60E-03	34.1	
20	0	510.76*	78	123	1.36	1021.68	1014	16	1.08E-02	38.9	
21	0	583.03*	333	102	1.50	1166.20	1159	15	4.63E-02	8.8	
22	0	609.19*	463	84	1.35	1218.51	1212	12	6.43E-02	6.2	
23	0	661.42*	85	62	1.08	1322.96	1317	12	1.17E-02	22.3	
24	0	727.09*	80	44	1.47	1454.26	1450	9	1.11E-02	19.6	
25	0	795.08	31	60	1.43	1590.21	1582	15	4.24E-03	58.2	
26	0	860.61	66	28	1.46	1721.25	1716	12	9.21E-03	20.0	
27	0	911.08*	220	81	1.79	1822.18	1813	14	3.05E-02	10.8	
28	3	964.27	48	29	2.13	1928.51	1923	20	6.74E-03	26.7	9.76E-01
29	3	968.74	121	29	1.96	1937.45	1923	20	1.68E-02	12.2	
30	0	1120.36*	82	73	1.36	2240.59	2234	15	1.14E-02	25.8	
31	0	1237.96	70	58	0.90	2475.70	2470	16	9.75E-03	26.7	
32	0	1377.45	42	19	1.94	2754.58	2749	12	5.77E-03	26.8	
33	0	1460.42*	950	17	1.94	2920.44	2912	15	1.32E-01	3.4	
34	0	1764.38*	79	7	1.36	3528.05	3522	14	1.09E-02	14.1	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:51:20

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243001.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:50:48
 Sample ID : G248243001 Sample quantity : 99.820 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA16 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

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	*	2.775E+01	3.083E+00	3.416E-01	3.003E-02	81.234
CD-109	+	88.03	*	3.539E+00	1.049E+00	1.233E+00	1.188E-01	2.869
SN-126		64.28		-1.875E-01	5.490E-01	8.495E-01	1.238E-01	-0.221
	+	86.94		1.421E+00	7.129E-01	4.969E-01	2.065E-01	2.860
	+	87.57	*	3.419E-01	1.014E-01	1.197E-01	1.148E-02	2.856
BA-137M	+	661.66	*	1.473E-01	6.691E-02	6.090E-02	5.405E-03	2.418
CS-137	+	661.66	*	1.556E-01	7.069E-02	6.434E-02	5.720E-03	2.418
TL-208		277.37		2.790E-01	4.228E-01	6.967E-01	1.047E-01	0.400
	+	583.19	*	5.525E-01	1.117E-01	5.690E-02	5.634E-03	9.711
	+	860.56		1.039E+00	4.276E-01	4.862E-01	4.866E-02	2.138
BI-211		72.87		1.519E-01	3.195E+00	4.950E+00	4.024E-01	0.031
	+	351.06	*	4.536E+00	7.169E-01	3.529E-01	3.859E-02	12.855
PB-212	+	74.82		2.334E+00	5.652E-01	5.598E-01	7.156E-02	4.169
	+	77.11		2.407E+00	3.662E-01	3.213E-01	2.729E-02	7.492
	+	238.63	*	1.831E+00	2.514E-01	8.971E-02	1.066E-02	20.407
	+	300.09		2.057E+00	1.260E+00	1.298E+00	1.712E-01	1.585
BI-214	+	609.32	*	1.486E+00	2.435E-01	1.337E-01	1.419E-02	11.114
	+	1120.29		1.365E+00	7.186E-01	4.915E-01	5.301E-02	2.776
	+	1764.49		1.828E+00	5.381E-01	4.022E-01	3.329E-02	4.545
PB-214	+	74.82		4.137E+00	9.743E-01	9.923E-01	1.139E-01	4.169
	+	77.11		4.244E+00	7.343E-01	5.664E-01	6.706E-02	7.492
	+	242.00		3.277E+00	8.402E-01	5.458E-01	6.808E-02	6.004
	+	295.22		1.689E+00	3.646E-01	2.225E-01	2.998E-02	7.592
	+	351.93	*	1.646E+00	2.756E-01	1.284E-01	1.569E-02	12.827
RA-224	+	240.99	*	5.794E+00	1.447E+00	9.617E-01	1.060E-01	6.025
RA-226	+	609.32	*	1.486E+00	2.435E-01	1.337E-01	1.419E-02	11.114
	+	1120.29		1.365E+00	7.186E-01	4.915E-01	5.301E-02	2.776
	+	1764.49		1.828E+00	5.381E-01	4.022E-01	3.329E-02	4.545
AC-228	+	338.32		1.750E+00	8.673E-01	3.661E-01	1.547E-01	4.780
	+	911.20	*	1.756E+00	4.345E-01	2.717E-01	3.317E-02	6.461
	+	968.97		1.667E+00	5.774E-01	4.141E-01	1.018E-01	4.025
RA-228	+	338.32		1.750E+00	8.673E-01	3.661E-01	1.547E-01	4.780
	+	911.20	*	1.756E+00	4.345E-01	2.717E-01	3.317E-02	6.461
	+	968.97		1.667E+00	5.774E-01	4.141E-01	1.018E-01	4.025

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.334E+00	5.183E-01	5.598E-01	4.688E-02	4.169
	+	77.11		2.407E+00	3.662E-01	3.213E-01	2.729E-02	7.492
	+	238.63	*	1.831E+00	2.514E-01	8.971E-02	1.066E-02	20.407
	+	300.09		2.057E+00	1.768E+00	1.298E+00	8.011E-01	1.585
TH-229	+	85.43		6.100E-01	2.507E-01	3.058E-01	2.856E-02	1.995
	+	88.47		5.271E-01	1.563E-01	1.829E-01	1.754E-02	2.881
		193.51	*	-2.995E-02	5.757E-01	9.385E-01	9.154E-02	-0.032
		210.85		8.234E-01	1.014E+00	1.552E+00	1.585E-01	0.531
TH-232	+	338.32		1.750E+00	4.918E-01	3.661E-01	3.996E-02	4.780
	+	911.20	*	1.756E+00	4.345E-01	2.717E-01	3.317E-02	6.461
	+	968.97		1.667E+00	5.774E-01	4.141E-01	1.018E-01	4.025
U-235	+	89.96		2.285E+00	9.251E-01	1.342E+00	3.342E-01	1.703
	+	93.35		2.644E+00	9.733E-01	6.610E-01	1.540E-01	4.000
		143.76	*	1.548E-01	2.140E-01	3.585E-01	6.066E-02	0.432
		163.33		-1.294E-01	4.518E-01	7.340E-01	1.331E-01	-0.176
	+	185.72		2.391E-01	8.608E-02	6.680E-02	6.381E-03	3.580
		205.31		-1.828E-01	5.673E-01	8.042E-01	1.518E-01	-0.227
NP-237	+	86.48	*	1.020E+00	3.705E-01	3.584E-01	8.243E-02	2.847
		95.86		-5.842E-02	9.135E-01	1.387E+00	3.346E-01	-0.042
ANH-511	+	511.00	*	9.876E-02	7.746E-02	4.907E-02	4.667E-03	2.013

---- 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	*	-3.052E-01	3.873E-01	5.989E-01	6.057E-02	-0.510
NA-22		1274.54	*	-6.972E-03	4.920E-02	7.839E-02	6.523E-03	-0.089
NA-24		1368.63	*	-7.202E+02	4.920E-02	Half-Life too short		
SC-46		889.28	*	-3.676E-03	4.218E-02	6.980E-02	6.598E-03	-0.053
	+	1120.55		2.463E-01	1.286E-01	1.618E-01	1.367E-02	1.522
V-48		944.13		-1.885E-01	1.246E+00	2.036E+00	1.902E-01	-0.093
		983.53	*	2.695E-02	1.024E-01	1.747E-01	1.608E-02	0.154
		1312.11		-5.792E-02	1.185E-01	1.777E-01	1.492E-02	-0.326
CR-51		320.08	*	-1.940E-01	4.926E-01	7.555E-01	8.829E-02	-0.257
MN-54		834.85	*	-2.308E-03	4.308E-02	7.199E-02	6.762E-03	-0.032
CO-56		846.77	*	1.447E-02	4.712E-02	8.122E-02	7.643E-03	0.178
		1037.84		1.271E-01	3.567E-01	6.111E-01	5.739E-02	0.208
	+	1238.28		3.495E-01	1.891E-01	2.394E-01	2.031E-02	1.460
		1771.35		-3.491E-01	3.360E-01	4.453E-01	3.679E-02	-0.784
CO-57		122.06	*	-3.997E-03	2.578E-02	4.286E-02	3.562E-03	-0.093
		136.47		-3.747E-02	2.097E-01	3.463E-01	3.145E-02	-0.108
CO-58		810.76	*	-5.892E-02	4.589E-02	6.675E-02	6.253E-03	-0.883
FE-59		1099.45	*	1.802E-02	1.128E-01	1.885E-01	1.752E-02	0.096
		1291.59		7.713E-02	1.648E-01	2.813E-01	2.686E-02	0.274
CO-60		1173.23		1.222E-02	4.718E-02	7.926E-02	6.373E-03	0.154
		1332.49	*	-1.413E-02	4.411E-02	6.791E-02	5.728E-03	-0.208
ZN-65		1115.54	*	-1.984E-02	1.154E-01	1.595E-01	1.354E-02	-0.124
SE-75		121.12		5.778E-03	1.343E-01	2.255E-01	2.445E-02	0.026
		136.00		-5.790E-03	4.121E-02	6.819E-02	5.789E-03	-0.085

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		264.66	*	-2.107E-02	4.626E-02	7.160E-02	8.357E-03	-0.294
		279.54		-2.384E-01	1.296E-01	1.737E-01	2.127E-02	-1.372
		400.66		2.145E-01	2.984E-01	5.215E-01	6.058E-02	0.411
SR-85		514.00	*	1.234E-02	4.847E-02	7.204E-02	6.850E-03	0.171
Y-88		898.04		2.378E-02	4.698E-02	7.872E-02	7.476E-03	0.302
		1836.06	*	7.739E-03	3.603E-02	6.216E-02	5.047E-03	0.124
Y-91		1204.77	*	4.959E+00	2.654E+01	4.407E+01	3.584E+00	0.113
NB-94		702.65	*	8.703E-03	3.625E-02	5.969E-02	5.396E-03	0.146
		871.09		4.190E-02	3.247E-02	6.143E-02	5.798E-03	0.682
NB-95		765.81	*	-1.226E-02	5.881E-02	9.226E-02	8.528E-03	-0.133
NB-95M		235.69	*	-3.014E-02	1.520E-01	2.154E-01	2.564E-02	-0.140
ZR-95		724.19		2.218E-02	1.289E-01	1.846E-01	1.810E-02	0.120
		756.73	*	3.399E-02	9.096E-02	1.508E-01	1.518E-02	0.225
MO-99		140.51		-9.268E-05	9.096E-02	Half-Life	too short	
		181.07		-6.258E-05	9.096E-02	Half-Life	too short	
		366.42		1.127E-04	9.096E-02	Half-Life	too short	
		739.50	*	-3.572E-05	9.096E-02	Half-Life	too short	
		777.92		-3.599E-06	9.096E-02	Half-Life	too short	
TC-99M		140.51	*	-5.589E+19	9.096E-02	Half-Life	too short	
RU-103		497.08	*	-6.263E-03	5.021E-02	8.212E-02	1.194E-02	-0.076
	+	610.33		1.761E+01	3.667E+00	4.032E+00	6.720E-01	4.367
RH-106		621.93	*	-1.433E-01	3.357E-01	5.213E-01	7.092E-02	-0.275
		1050.41		1.248E+00	2.818E+00	4.863E+00	4.323E-01	0.257
RU-106		621.93	*	-1.433E-01	3.354E-01	5.213E-01	4.767E-02	-0.275
		1050.41		1.248E+00	2.818E+00	4.863E+00	4.323E-01	0.257
AG-108M		433.94	*	-3.206E-03	3.130E-02	5.181E-02	5.014E-03	-0.062
		614.28		-3.222E-03	4.563E-02	6.438E-02	6.087E-03	-0.050
		722.91		2.229E-03	4.486E-02	6.330E-02	5.934E-03	0.035
AG-110M		657.76	*	1.896E-02	4.162E-02	6.254E-02	5.725E-03	0.303
		677.62		-1.369E-01	3.199E-01	4.914E-01	4.512E-02	-0.279
		706.68		1.058E-01	2.528E-01	4.219E-01	3.920E-02	0.251
		763.94		-8.659E-03	2.006E-01	3.194E-01	3.021E-02	-0.027
		884.68		3.677E-02	5.378E-02	9.579E-02	9.294E-03	0.384
		937.49		-1.920E-01	1.350E-01	1.902E-01	1.835E-02	-1.009
		1384.29		-4.869E-02	1.834E-01	2.511E-01	2.192E-02	-0.194
		1505.03		-2.286E-01	3.073E-01	4.511E-01	3.858E-02	-0.507
SN-113		391.69	*	-1.357E-02	4.918E-02	8.100E-02	7.688E-03	-0.167
CD-115		260.90		-9.899E-04	4.918E-02	Half-Life	too short	
		492.35		-2.410E-05	4.918E-02	Half-Life	too short	
		527.90	*	3.069E-05	4.918E-02	Half-Life	too short	
SN-117M		156.02		-9.376E-02	3.493E+00	5.770E+00	5.090E-01	-0.016
		158.56	*	-2.244E-02	8.375E-02	1.365E-01	1.213E-02	-0.164
TE-123M		159.00	*	-6.967E-03	3.031E-02	4.951E-02	4.428E-03	-0.141
SB-124		602.73		-1.332E-02	5.584E-02	7.739E-02	7.158E-03	-0.172
		645.85		-9.835E-02	6.071E-01	9.685E-01	9.169E-02	-0.102
		722.78		-8.229E-02	5.086E-01	6.961E-01	6.473E-02	-0.118
		1690.97	*	-2.825E-02	8.499E-02	1.301E-01	1.142E-02	-0.217
SB-125		427.87	*	-3.097E-02	9.525E-02	1.551E-01	1.481E-02	-0.200
	+	463.37		6.995E-01	4.819E-01	5.973E-01	6.022E-02	1.171

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		600.60		-2.308E-03	2.116E-01	3.444E-01	3.395E-02	-0.007
		635.95		-2.475E-01	2.687E-01	3.887E-01	3.780E-02	-0.637
TE-125M		109.28	*	1.562E+00	1.048E+01	1.776E+01	1.839E+00	0.088
I-126		388.63		2.775E-02	2.758E-01	4.665E-01	4.364E-02	0.059
		666.33	*	9.582E-02	4.012E-01	5.851E-01	5.204E-02	0.164
		753.82		5.769E-01	3.329E+00	5.414E+00	4.986E-01	0.107
SB-126		414.70		-1.969E-02	1.289E-01	2.060E-01	1.927E-02	-0.096
		666.50		-5.924E-03	1.479E-01	2.077E-01	1.848E-02	-0.029
		695.00		-1.053E-03	1.184E-01	1.905E-01	1.717E-02	-0.006
		697.00		7.002E-02	4.106E-01	6.733E-01	6.072E-02	0.104
		720.70	*	-2.114E-01	2.631E-01	3.694E-01	3.363E-02	-0.572
		856.80		-6.965E-01	8.104E-01	1.009E+00	9.512E-02	-0.690
SB-127		252.40		6.996E+00	1.757E+01	2.862E+01	1.229E+01	0.244
		473.00		2.133E+00	7.080E+00	1.200E+01	1.877E+00	0.178
		685.70	*	-1.285E+00	5.519E+00	8.670E+00	1.229E+00	-0.148
		783.70		4.874E-01	1.710E+01	2.735E+01	4.147E+00	0.018
I-131		80.19		6.957E+00	1.071E+01	1.390E+01	1.238E+00	0.501
		284.31		3.554E-01	3.164E+00	5.086E+00	6.266E-01	0.070
		364.49	*	-6.978E-02	2.337E-01	3.860E-01	4.104E-02	-0.181
		636.99		-2.746E+00	3.209E+00	4.714E+00	4.519E-01	-0.583
TE-132		49.72		-3.119E+01	1.028E+02	1.585E+02	2.086E+01	-0.197
		111.76		1.110E+02	1.793E+02	3.089E+02	4.122E+01	0.359
		116.30		3.815E+00	1.499E+02	2.521E+02	3.354E+01	0.015
		228.16	*	6.534E-01	4.199E+00	6.855E+00	1.284E+00	0.095
BA-133		81.00		-4.534E-02	1.023E-01	1.398E-01	2.189E-02	-0.324
		276.40		5.782E-01	3.916E-01	6.655E-01	1.088E-01	0.869
		302.85		-1.128E-01	1.682E-01	2.204E-01	3.361E-02	-0.512
		356.01	*	7.885E-04	4.722E-02	7.056E-02	1.004E-02	0.011
		383.85		-1.770E-01	3.091E-01	4.978E-01	6.508E-02	-0.356
I-133		529.87	*	-3.631E+00	3.091E-01	Half-Life	too short	
		875.33		-6.158E+01	3.091E-01	Half-Life	too short	
		1298.22		8.948E+01	3.091E-01	Half-Life	too short	
CS-134		563.25		8.698E-02	3.980E-01	6.636E-01	6.295E-02	0.131
		569.33		-1.128E-01	2.328E-01	3.479E-01	3.305E-02	-0.324
		604.72		-7.747E-03	4.278E-02	5.964E-02	5.522E-03	-0.130
	+	795.86	*	7.410E-02	8.659E-02	9.231E-02	8.655E-03	0.803
		801.95		-4.082E-01	4.655E-01	6.319E-01	5.925E-02	-0.646
		1365.19		-4.847E-01	1.490E+00	2.285E+00	2.029E-01	-0.212
CS-135		268.22	*	1.071E-01	1.784E-01	2.671E-01	3.406E-02	0.401
I-135		546.56		-4.164E+18	1.784E-01	Half-Life	too short	
		836.80		1.194E+19	1.784E-01	Half-Life	too short	
		1038.76		5.155E+18	1.784E-01	Half-Life	too short	
		1131.51		-1.395E+18	1.784E-01	Half-Life	too short	
		1260.41	*	-7.448E+17	1.784E-01	Half-Life	too short	
		1457.56		2.769E+20	1.784E-01	Half-Life	too short	
		1678.03		-2.375E+18	1.784E-01	Half-Life	too short	
		1791.20		2.333E+18	1.784E-01	Half-Life	too short	
CS-136		153.25		7.278E-01	1.376E+00	2.329E+00	2.420E-01	0.312
		176.60		7.016E-02	7.665E-01	1.265E+00	1.286E-01	0.055

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		273.65		-9.042E-01	9.540E-01	1.235E+00	1.533E-01	-0.732
		340.55		3.041E-01	2.330E-01	3.843E-01	4.276E-02	0.791
		818.51		-2.713E-02	1.220E-01	2.008E-01	1.884E-02	-0.135
		1048.07	*	-5.356E-02	1.766E-01	2.812E-01	2.605E-02	-0.190
		1235.36		1.097E+00	1.214E+00	1.887E+00	2.166E-01	0.582
CE-139		165.86	*	-8.814E-03	3.149E-02	5.116E-02	4.640E-03	-0.172
BA-140		162.66		7.526E-01	1.250E+00	2.122E+00	2.025E-01	0.355
		304.85		-4.978E-01	2.443E+00	3.371E+00	1.021E+00	-0.148
		423.72		1.492E+00	3.092E+00	5.283E+00	1.749E+00	0.282
		537.26	*	2.784E-01	4.232E-01	7.184E-01	2.453E-01	0.388
LA-140	+	328.76		2.402E+00	1.216E+00	8.816E-01	1.017E-01	2.725
		487.02		2.935E-02	2.201E-01	3.682E-01	3.682E-02	0.080
		815.77		2.994E-01	5.601E-01	9.854E-01	1.015E-01	0.304
		1596.21	*	-1.285E-01	1.262E-01	1.651E-01	1.406E-02	-0.778
CE-141		145.44	*	1.342E-03	7.303E-02	1.214E-01	1.062E-02	0.011
CE-143		57.36		3.986E-02	7.303E-02	Half-Life	too short	
		293.27	*	2.952E-02	7.303E-02	Half-Life	too short	
		664.57		2.749E-02	7.303E-02	Half-Life	too short	
		721.93		-5.686E-02	7.303E-02	Half-Life	too short	
CE-144		80.12		1.993E+00	3.003E+00	3.901E+00	3.425E-01	0.511
		133.52	*	3.082E-02	2.131E-01	3.419E-01	5.183E-02	0.090
PM-144		476.78		-4.283E-02	7.191E-02	1.133E-01	1.155E-02	-0.378
		618.01		2.765E-02	3.494E-02	6.075E-02	5.709E-03	0.455
		696.49	*	-2.154E-03	3.474E-02	5.557E-02	5.014E-03	-0.039
PR-144		696.51	*	-1.568E-01	2.611E+00	4.178E+00	3.767E-01	-0.038
		1489.16		-4.908E+00	1.307E+01	2.042E+01	1.746E+00	-0.240
PM-146		453.88	*	-8.045E-03	4.349E-02	7.123E-02	8.046E-03	-0.113
		633.25		3.462E-01	1.342E+00	2.228E+00	8.534E-01	0.155
		735.93		7.301E-02	1.398E-01	2.355E-01	6.641E-02	0.310
		747.24		-7.515E-02	1.188E-01	1.774E-01	2.649E-02	-0.424
ND-147	+	91.11		1.213E+00	4.062E-01	8.036E-01	8.038E-02	1.510
		319.41		-5.337E+00	6.207E+00	9.142E+00	1.038E+00	-0.584
		531.02	*	-1.453E-01	8.881E-01	1.437E+00	2.222E-01	-0.101
PM-149		285.90	*	2.319E-04	8.881E-01	Half-Life	too short	
EU-152		121.78		-2.288E-02	7.256E-02	1.197E-01	1.153E-02	-0.191
		244.70		-1.694E-01	3.476E-01	4.758E-01	5.291E-02	-0.356
		344.28	*	-1.018E-01	1.028E-01	1.472E-01	1.644E-02	-0.692
		778.90		2.206E-02	2.900E-01	4.666E-01	4.329E-02	0.047
	+	964.08		7.201E-01	3.897E-01	6.253E-01	5.801E-02	1.152
		1085.87		-5.395E-02	4.625E-01	7.511E-01	6.520E-02	-0.072
		1112.07		4.046E-02	3.290E-01	5.332E-01	4.536E-02	0.076
		1408.01		2.829E-01	2.299E-01	4.254E-01	3.623E-02	0.665
GD-153		69.67		1.470E+00	1.705E+00	2.899E+00	2.284E-01	0.507
		97.43	*	-4.255E-02	8.882E-02	1.311E-01	1.165E-02	-0.324
		103.18		-6.071E-02	1.095E-01	1.800E-01	1.551E-02	-0.337
EU-154		123.07		-3.779E-03	5.204E-02	8.685E-02	9.652E-03	-0.044
		723.31		-1.668E-03	2.027E-01	2.836E-01	2.820E-02	-0.006
		873.19		-6.331E-02	2.735E-01	4.454E-01	5.568E-02	-0.142
		996.26		-3.074E-01	3.839E-01	5.710E-01	1.013E-01	-0.538

---- 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		-3.498E-02	2.339E-01	3.808E-01	4.572E-02	-0.092
		1274.44	*	-1.604E-02	1.373E-01	2.193E-01	2.445E-02	-0.073
		86.55		4.158E-01	1.234E-01	1.929E-01	1.842E-02	2.156
		105.31	*	5.608E-02	1.057E-01	1.822E-01	1.576E-02	0.308
TB-160	+	86.79		1.186E+00	3.516E-01	5.540E-01	5.261E-02	2.140
		197.04		-5.905E-01	6.785E-01	1.037E+00	1.021E-01	-0.569
		215.65		3.254E-01	8.480E-01	1.405E+00	1.454E-01	0.232
		298.57		3.123E-01	1.904E-01	2.381E-01	2.795E-02	1.312
HO-166M	+	879.36	*	-3.174E-02	1.503E-01	2.454E-01	2.318E-02	-0.129
		962.29		5.312E-01	7.180E-01	1.131E+00	1.049E-01	0.470
		966.15		8.201E-01	2.932E-01	5.641E-01	5.229E-02	1.454
		1177.93		1.655E-02	3.909E-01	6.414E-01	5.166E-02	0.026
		1271.85		4.841E-01	8.306E-01	1.441E+00	1.197E-01	0.336
		80.57		1.558E-01	3.200E-01	4.100E-01	3.618E-02	0.380
		184.41		1.900E-01	6.839E-02	7.265E-02	6.915E-03	2.615
		280.46		-1.256E-01	9.239E-02	1.313E-01	1.575E-02	-0.957
		410.95		2.474E-01	2.954E-01	4.682E-01	4.371E-02	0.528
		711.68	*	-4.597E-02	7.169E-02	1.079E-01	9.792E-03	-0.426
		752.31		-1.365E-01	3.330E-01	5.112E-01	4.706E-02	-0.267
		810.29		-9.311E-02	6.361E-02	9.005E-02	8.418E-03	-1.034
TA-182	+	67.75		-1.658E-01	1.210E-01	1.710E-01	1.323E-02	-0.970
		100.11		3.536E-02	1.797E-01	3.064E-01	2.680E-02	0.115
		152.43		-6.256E-02	3.905E-01	6.419E-01	5.609E-02	-0.097
		222.11		1.284E-02	3.729E-01	6.057E-01	6.370E-02	0.021
		1121.30		6.705E-01	3.502E-01	4.350E-01	3.672E-02	1.542
		1189.05		-2.282E-01	3.845E-01	5.882E-01	4.757E-02	-0.388
IR-192	+	1221.41	*	1.166E-01	2.275E-01	3.893E-01	3.184E-02	0.300
		1231.02		-1.342E-01	6.576E-01	9.440E-01	7.744E-02	-0.142
		295.96		1.345E+00	2.770E-01	3.711E-01	4.390E-02	3.623
		308.46		-3.210E-02	1.122E-01	1.741E-01	2.020E-02	-0.184
		316.51	*	3.591E-03	4.029E-02	6.424E-02	7.342E-03	0.056
		468.07		-5.837E-03	8.304E-02	1.201E-01	1.210E-02	-0.049
HG-203	+	70.83		2.184E+00	1.502E+00	2.437E+00	3.831E-01	0.896
		72.87		4.251E-02	8.939E-01	1.385E+00	2.115E-01	0.031
		279.20	*	-7.416E-02	4.882E-02	6.804E-02	8.280E-03	-1.090
BI-207	+	72.81		9.200E-03	1.842E-01	2.854E-01	2.319E-02	0.032
		74.97		6.730E-01	1.492E-01	2.350E-01	1.952E-02	2.864
		569.70		-9.879E-03	3.555E-02	5.416E-02	5.085E-03	-0.182
		1063.66	*	5.298E-02	5.912E-02	1.060E-01	9.343E-03	0.500
PB-210		1770.23		1.157E-01	5.658E-01	8.510E-01	7.033E-02	0.136
PB-211		46.54	*	1.992E+00	3.670E+00	5.918E+00	5.472E-01	0.337
		404.85	*	-1.975E-01	8.791E-01	1.262E+00	6.124E-01	-0.156
		427.09		-1.125E+00	1.724E+00	2.606E+00	1.209E+00	-0.432
		832.01		-3.291E-01	1.072E+00	1.724E+00	8.965E-01	-0.191
BI-212	+	727.33	*	2.024E+00	8.329E-01	1.327E+00	1.700E-01	1.526
		785.37		1.714E+00	3.553E+00	6.223E+00	5.783E-01	0.275
		1620.50		4.918E-01	2.644E+00	4.564E+00	3.877E-01	0.108
RN-219	+	271.23		4.779E-01	3.325E-01	4.526E-01	5.906E-02	1.056
		401.81	*	-3.553E-03	4.603E-01	7.713E-01	1.178E-01	-0.005

----- 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		-1.172E-01	2.305E-01	3.140E-01	2.787E-02	-0.373
	+	83.79		3.630E-01	1.492E-01	2.260E-01	2.070E-02	1.606
		94.87		5.861E-01	4.521E-01	7.350E-01	6.647E-02	0.797
		144.24		2.166E-01	7.093E-01	1.174E+00	1.124E-01	0.184
		154.21		2.091E-01	4.125E-01	6.977E-01	6.690E-02	0.300
	+	269.46		3.713E-01	2.576E-01	3.498E-01	4.159E-02	1.061
		323.87	*	1.742E-02	7.368E-01	1.037E+00	1.948E-01	0.017
	+	338.28		6.945E+00	2.038E+00	2.655E+00	3.666E-01	2.616
AC-227		79.69		1.778E-01	1.342E+00	1.911E+00	3.304E-01	0.093
		235.96		2.107E-02	1.699E-01	2.469E-01	3.035E-02	0.085
		256.23	*	-8.704E-02	2.691E-01	4.227E-01	5.998E-02	-0.206
	+	299.98		2.263E+00	1.395E+00	1.826E+00	2.736E-01	1.239
		304.50		-8.383E-02	1.937E+00	2.721E+00	4.976E-01	-0.031
		334.37		1.408E+00	2.216E+00	2.688E+00	4.578E-01	0.524
	TH-227	79.80		2.782E-01	1.770E+00	2.524E+00	5.509E-01	0.110
		235.96		2.107E-02	1.699E-01	2.469E-01	2.915E-02	0.085
PA-231		256.23	*	-8.704E-02	2.692E-01	4.227E-01	6.566E-02	-0.206
	+	299.98		2.263E+00	1.395E+00	1.826E+00	2.736E-01	1.239
		304.50		-8.383E-02	1.937E+00	2.721E+00	4.976E-01	-0.031
		334.37		1.408E+00	2.216E+00	2.688E+00	4.578E-01	0.524
	PA-231	283.69	*	5.925E-01	1.548E+00	2.531E+00	4.245E-01	0.234
	+	301.36		1.454E+00	8.948E-01	1.115E+00	1.616E-01	1.304
	TH-231	81.07		-1.172E-01	2.305E-01	3.140E-01	2.787E-02	-0.373
	+	83.79		3.630E-01	1.492E-01	2.260E-01	2.070E-02	1.606
PA-233		94.87		5.861E-01	4.521E-01	7.350E-01	6.647E-02	0.797
		144.24		2.166E-01	7.093E-01	1.174E+00	1.124E-01	0.184
		154.21		2.091E-01	4.125E-01	6.977E-01	6.690E-02	0.300
	+	269.46		3.713E-01	2.576E-01	3.498E-01	4.159E-02	1.061
		323.87	*	1.742E-02	7.368E-01	1.037E+00	1.948E-01	0.017
	+	338.28		6.945E+00	2.038E+00	2.655E+00	3.666E-01	2.616
	+	300.13		1.024E+00	6.363E-01	8.178E-01	1.375E-01	1.252
		311.90	*	-1.679E-02	6.805E-02	1.058E-01	1.237E-02	-0.159
PA-234		340.48		9.438E-01	6.976E-01	1.103E+00	2.753E-01	0.856
		94.67		3.024E-01	1.712E-01	2.794E-01	3.552E-02	1.082
		98.44		4.477E-02	9.780E-02	1.480E-01	8.263E-02	0.302
		111.00		-6.891E-02	1.834E-01	3.031E-01	3.618E-02	-0.227
		131.20		3.287E-02	1.178E-01	1.794E-01	1.500E-02	0.183
		569.50		-1.502E-01	3.189E-01	4.774E-01	4.482E-02	-0.315
		733.00		-2.547E-01	4.001E-01	5.654E-01	1.267E-01	-0.450
		880.51		-1.002E-01	2.934E-01	4.725E-01	4.464E-02	-0.212
PA-234M		883.24		2.328E-01	3.448E-01	5.515E-01	3.714E-01	0.422
		926.50		-1.547E-01	1.888E-01	2.786E-01	7.120E-02	-0.555
		946.00	*	1.603E-02	3.052E-01	5.103E-01	9.749E-02	0.031
		949.00		8.360E-02	4.739E-01	8.022E-01	7.482E-02	0.104
	PA-234M	766.42		1.548E+01	1.625E+01	2.478E+01	1.260E+01	0.625
		1001.03	*	1.287E+00	5.053E+00	8.655E+00	9.011E-01	0.149
	TH-234	63.29	*	2.061E-01	1.500E+00	2.376E+00	4.237E-01	0.087
	+	92.59		3.500E+00	1.267E+00	1.459E+00	3.257E-01	2.399
U-238		63.29	*	2.061E-01	1.500E+00	2.376E+00	4.237E-01	0.087

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		3.500E+00	1.048E+00	1.459E+00	1.344E-01	2.399
		99.53		1.226E-01	1.571E-01	2.741E-01	2.405E-02	0.447
		103.37		-6.659E-02	9.757E-02	1.593E-01	1.372E-02	-0.418
		106.12		5.532E-02	8.383E-02	1.451E-01	1.237E-02	0.381
	*	117.23		4.388E-02	3.823E-01	6.451E-01	5.369E-02	0.068
		228.18		3.396E-02	2.278E-01	3.718E-01	3.970E-02	0.091
AM-241		277.60		1.801E-01	1.883E-01	3.157E-01	3.779E-02	0.570
	*	59.54		-2.616E-01	1.714E-01	2.438E-01	1.913E-02	-1.073
CM-247		278.00		5.640E-01	8.128E-01	1.344E+00	1.610E-01	0.420
		287.50		1.678E-01	1.321E+00	2.124E+00	2.529E-01	0.079
CF-249	*	402.40		-2.479E-02	4.170E-02	6.704E-02	6.232E-03	-0.370
		252.80		-2.364E-01	9.695E-01	1.533E+00	1.737E-01	-0.154
		333.37		1.116E-01	2.019E-01	3.165E-01	3.494E-02	0.352
CF-251	*	388.16		1.765E-02	4.333E-02	7.468E-02	7.000E-03	0.236
	*	177.52		2.335E-02	1.359E-01	2.251E-01	2.104E-02	0.104
		227.38		1.158E-01	3.656E-01	6.025E-01	6.421E-02	0.192
		285.41		-7.928E-01	2.395E+00	3.730E+00	4.451E-01	-0.213

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]G248243001      *
* Acquisition date   : 19-MAR-2010 10:50:48 Detector SN#      :              *
* Detector ID        : GAM16 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.72 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID          : G248243001 Analyst initials: MXR1          *
* Batch Number       : 959280 Sample Quantity : 9.9820E+01 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope      :              *
* LCS DPM             : 0.000 LCS Isotope      :              *
* LCSD DPM           : 0.000 LCSD Isotope     :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.775E+01	3.021E+00	3.386E-01	0.000E+00
CD-109	3.539E+00	1.028E+00	1.231E+00	0.000E+00
SN-126	3.419E-01	9.935E-02	1.195E-01	0.000E+00
BA-137M	1.473E-01	6.557E-02	6.049E-02	0.000E+00
CS-137	1.556E-01	6.928E-02	6.390E-02	0.000E+00
TL-208	5.525E-01	1.095E-01	5.653E-02	0.000E+00
BI-211	4.536E+00	7.025E-01	3.511E-01	0.000E+00
PB-212	1.831E+00	2.464E-01	8.933E-02	0.000E+00
BI-214	1.486E+00	2.386E-01	1.328E-01	0.000E+00
PB-214	1.646E+00	2.701E-01	1.277E-01	0.000E+00
RA-224	5.794E+00	1.418E+00	9.577E-01	0.000E+00
RA-226	1.486E+00	2.386E-01	1.328E-01	0.000E+00
AC-228	1.756E+00	4.258E-01	2.697E-01	0.000E+00
RA-228	1.756E+00	4.258E-01	2.697E-01	0.000E+00
TH-228	1.831E+00	2.464E-01	8.933E-02	0.000E+00
TH-229	-2.995E-02	5.642E-01	9.350E-01	0.000E+00
TH-232	1.756E+00	4.258E-01	2.697E-01	0.000E+00
U-235	1.548E-01	2.097E-01	3.574E-01	0.000E+00
NP-237	1.020E+00	3.631E-01	3.578E-01	0.000E+00
ANH-511	9.876E-02	7.591E-02	4.877E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.052E-01	3.795E-01	5.953E-01	0.000E+00 NOT IDENT.
NA-22	-6.972E-03	4.822E-02	7.773E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.739E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.676E-03	4.134E-02	6.928E-02	0.000E+00 FAIL ABUN
V-48	2.695E-02	1.004E-01	1.733E-01	0.000E+00 NOT IDENT.
CR-51	-1.940E-01	4.828E-01	7.518E-01	0.000E+00 NOT IDENT.
MN-54	-2.308E-03	4.222E-02	7.146E-02	0.000E+00 NOT IDENT.

CO-56	1.447E-02	4.618E-02	8.062E-02	0.000E+00	FAIL ABUN
CO-57	-3.997E-03	2.526E-02	4.275E-02	0.000E+00	NOT IDENT.
CO-58	-5.892E-02	4.497E-02	6.626E-02	0.000E+00	NOT IDENT.
FE-59	1.802E-02	1.106E-01	1.870E-01	0.000E+00	NOT IDENT.
CO-60	-1.413E-02	4.323E-02	6.733E-02	0.000E+00	NOT IDENT.
ZN-65	-1.984E-02	1.131E-01	1.582E-01	0.000E+00	NOT IDENT.
SE-75	-2.107E-02	4.534E-02	7.128E-02	0.000E+00	NOT IDENT.
SR-85	1.234E-02	4.750E-02	7.160E-02	0.000E+00	NOT IDENT.
Y-88	7.739E-03	3.531E-02	6.158E-02	0.000E+00	NOT IDENT.
Y-91	4.959E+00	2.601E+01	4.371E+01	0.000E+00	NOT IDENT.
NB-94	8.703E-03	3.552E-02	5.928E-02	0.000E+00	NOT IDENT.
NB-95	-1.226E-02	5.763E-02	9.160E-02	0.000E+00	NOT IDENT.
NB-95M	-3.014E-02	1.490E-01	2.145E-01	0.000E+00	NOT IDENT.
ZR-95	3.399E-02	8.914E-02	1.497E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.157E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.010E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.263E-03	4.921E-02	8.162E-02	0.000E+00	FAIL ABUN
RH-106	-1.433E-01	3.290E-01	5.179E-01	0.000E+00	NOT IDENT.
RU-106	-1.433E-01	3.287E-01	5.179E-01	0.000E+00	NOT IDENT.
AG-108M	-3.206E-03	3.068E-02	5.152E-02	0.000E+00	NOT IDENT.
AG-110M	1.896E-02	4.079E-02	6.212E-02	0.000E+00	NOT IDENT.
SN-113	-1.357E-02	4.820E-02	8.056E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.368E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.244E-02	8.207E-02	1.361E-01	0.000E+00	NOT IDENT.
TE-123M	-6.967E-03	2.971E-02	4.935E-02	0.000E+00	NOT IDENT.
SB-124	-2.825E-02	8.329E-02	1.289E-01	0.000E+00	NOT IDENT.
SB-125	-3.097E-02	9.335E-02	1.542E-01	0.000E+00	FAIL ABUN
TE-125M	1.562E+00	1.027E+01	1.772E+01	0.000E+00	NOT IDENT.
I-126	9.582E-02	3.932E-01	5.811E-01	0.000E+00	NOT IDENT.
SB-126	-2.114E-01	2.579E-01	3.668E-01	0.000E+00	NOT IDENT.
SB-127	-1.285E+00	5.409E+00	8.611E+00	0.000E+00	NOT IDENT.
I-131	-6.978E-02	2.290E-01	3.840E-01	0.000E+00	NOT IDENT.
TE-132	6.534E-01	4.115E+00	6.827E+00	0.000E+00	NOT IDENT.
BA-133	7.885E-04	4.628E-02	7.019E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.313E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.410E-02	8.486E-02	9.165E-02	0.000E+00	FAIL ABUN
CS-135	1.071E-01	1.748E-01	2.659E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.795E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.356E-02	1.731E-01	2.790E-01	0.000E+00	NOT IDENT.
CE-139	-8.814E-03	3.086E-02	5.099E-02	0.000E+00	NOT IDENT.
BA-140	2.784E-01	4.148E-01	7.139E-01	0.000E+00	NOT IDENT.
LA-140	-1.285E-01	1.237E-01	1.636E-01	0.000E+00	FAIL ABUN
CE-141	1.342E-03	7.157E-02	1.210E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.158E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	3.082E-02	2.089E-01	3.410E-01	0.000E+00	NOT IDENT.
PM-144	-2.154E-03	3.404E-02	5.519E-02	0.000E+00	NOT IDENT.
PR-144	-1.568E-01	2.559E+00	4.149E+00	0.000E+00	NOT IDENT.
PM-146	-8.045E-03	4.262E-02	7.082E-02	0.000E+00	NOT IDENT.
ND-147	-1.453E-01	8.704E-01	1.428E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.136E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.018E-01	1.007E-01	1.464E-01	0.000E+00	FAIL ABUN
GD-153	-4.255E-02	8.704E-02	1.309E-01	0.000E+00	NOT IDENT.
EU-154	-1.604E-02	1.345E-01	2.175E-01	0.000E+00	NOT IDENT.
EU-155	5.608E-02	1.036E-01	1.818E-01	0.000E+00	FAIL ABUN
TB-160	-3.174E-02	1.473E-01	2.436E-01	0.000E+00	FAIL ABUN
HO-166M	-4.597E-02	7.026E-02	1.072E-01	0.000E+00	FAIL ABUN
TA-182	1.166E-01	2.230E-01	3.861E-01	0.000E+00	FAIL ABUN
IR-192	3.591E-03	3.948E-02	6.393E-02	0.000E+00	FAIL ABUN
HG-203	-7.416E-02	4.785E-02	6.772E-02	0.000E+00	NOT IDENT.
BI-207	5.298E-02	5.794E-02	1.051E-01	0.000E+00	FAIL ABUN
PB-210	1.992E+00	3.597E+00	5.917E+00	0.000E+00	NOT IDENT.
PB-211	-1.975E-01	8.616E-01	1.255E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.163E-01	1.317E+00	0.000E+00	FAIL ABUN
RN-219	-3.553E-03	4.511E-01	7.671E-01	0.000E+00	FAIL ABUN
RA-223	1.742E-02	7.221E-01	1.032E+00	0.000E+00	FAIL ABUN
AC-227	-8.704E-02	2.637E-01	4.209E-01	0.000E+00	FAIL ABUN
TH-227	-8.704E-02	2.638E-01	4.209E-01	0.000E+00	FAIL ABUN
PA-231	5.925E-01	1.517E+00	2.519E+00	0.000E+00	FAIL ABUN
TH-231	1.742E-02	7.221E-01	1.032E+00	0.000E+00	FAIL ABUN
PA-233	-1.679E-02	6.669E-02	1.053E-01	0.000E+00	FAIL ABUN
PA-234	1.603E-02	2.991E-01	5.064E-01	0.000E+00	NOT IDENT.
PA-234M	1.287E+00	4.952E+00	8.587E+00	0.000E+00	NOT IDENT.
TH-234	2.061E-01	1.470E+00	2.374E+00	0.000E+00	FAIL ABUN
U-238	2.061E-01	1.470E+00	2.374E+00	0.000E+00	FAIL ABUN
NP-239	4.388E-02	3.746E-01	6.435E-01	0.000E+00	NOT IDENT.
AM-241	-2.616E-01	1.680E-01	2.436E-01	0.000E+00	NOT IDENT.
CM-247	-2.479E-02	4.086E-02	6.667E-02	0.000E+00	NOT IDENT.
CF-249	1.765E-02	4.246E-02	7.428E-02	0.000E+00	NOT IDENT.

CF-251	2.335E-02	1.332E-01	2.244E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:51:18.70

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243001.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:50:48
Sample ID          : G248243001          Sample quantity   : 9.98200E+01 GRAM
Detector name      : GAM16              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time  : 0 02:00:01.72  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 959280              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	950	10.66*	1.208E+00	2.775E+01	2.775E+01	11.11
CD-109	88.03	210	3.70*	6.251E+00	3.419E+00	3.539E+00	29.65
SN-126	64.28	-----	9.60	3.681E+00	-----	Line Not Found	-----
	86.94	210	8.90	6.251E+00	1.421E+00	1.421E+00	50.16
	87.57	210	37.00*	6.251E+00	3.419E-01	3.419E-01	29.65
BA-137M	661.66	85	89.90*	2.406E+00	1.470E-01	1.473E-01	45.44
CS-137	661.66	85	85.10*	2.406E+00	1.553E-01	1.556E-01	45.44
TL-208	277.37	-----	6.60	4.694E+00	-----	Line Not Found	-----
	583.19	333	85.00*	2.668E+00	5.525E-01	5.525E-01	20.22
	860.56	66	12.50	1.919E+00	1.039E+00	1.039E+00	41.14
BI-211	72.87	-----	1.23	4.872E+00	-----	Line Not Found	-----
	351.06	614	12.92*	3.941E+00	4.536E+00	4.536E+00	15.80
PB-212	74.82	326	10.28	5.115E+00	2.334E+00	2.334E+00	24.22
	77.11	587	17.10	5.363E+00	2.407E+00	2.407E+00	15.21
	238.63	1109	43.60*	5.226E+00	1.831E+00	1.831E+00	13.73
	300.09	80	3.30	4.434E+00	2.057E+00	2.057E+00	61.26
BI-214	609.32	463	45.49*	2.575E+00	1.486E+00	1.486E+00	16.39
	1120.29	82	14.92	1.516E+00	1.364E+00	1.365E+00	52.66
	1764.49	79	15.30	1.056E+00	1.828E+00	1.828E+00	29.43
PB-214	74.82	326	5.80	5.115E+00	4.137E+00	4.137E+00	23.55
	77.11	587	9.70	5.363E+00	4.244E+00	4.244E+00	17.30
	242.00	327	7.25	5.179E+00	3.277E+00	3.277E+00	25.64
	295.22	371	18.42	4.487E+00	1.689E+00	1.689E+00	21.58
	351.93	614	35.60*	3.941E+00	1.646E+00	1.646E+00	16.74
RA-224	240.99	327	4.10*	5.179E+00	5.794E+00	5.794E+00	24.98
RA-226	609.32	463	45.49*	2.575E+00	1.486E+00	1.486E+00	16.39
	1120.29	82	14.92	1.516E+00	1.364E+00	1.365E+00	52.66
	1764.49	79	15.30	1.056E+00	1.828E+00	1.828E+00	29.43
AC-228	338.32	213	11.27	4.059E+00	1.750E+00	1.750E+00	49.55
	911.20	220	25.80*	1.824E+00	1.756E+00	1.756E+00	24.75
	968.97	121	15.80	1.727E+00	1.667E+00	1.667E+00	34.65
RA-228	338.32	213	11.27	4.059E+00	1.750E+00	1.750E+00	49.55

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	220	25.80*	1.824E+00	1.756E+00	1.756E+00	24.75
	968.97	121	15.80	1.727E+00	1.667E+00	1.667E+00	34.65
	74.82	326	10.28	5.115E+00	2.334E+00	2.334E+00	22.21
	77.11	587	17.10	5.363E+00	2.407E+00	2.407E+00	15.21
	238.63	1109	43.60*	5.226E+00	1.831E+00	1.831E+00	13.73
TH-229	300.09	80	3.30	4.434E+00	2.057E+00	2.057E+00	85.96
	85.43	143	14.70	6.011E+00	6.100E-01	6.100E-01	41.09
	88.47	210	24.00	6.251E+00	5.271E-01	5.271E-01	29.65
	193.51	-----	4.41*	5.998E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.681E+00	-----	Line Not Found	-----
TH-232	338.32	213	11.27	4.059E+00	1.750E+00	1.750E+00	28.10
	911.20	220	25.80*	1.824E+00	1.756E+00	1.756E+00	24.75
	968.97	121	15.80	1.727E+00	1.667E+00	1.667E+00	34.65
U-235	89.96	136	3.47	6.431E+00	2.285E+00	2.285E+00	40.48
	93.35	260	5.60	6.597E+00	2.644E+00	2.644E+00	36.81
	143.76	-----	10.96*	6.943E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.588E+00	-----	Line Not Found	-----
	185.72	224	57.20	6.147E+00	2.391E-01	2.391E-01	36.00
NP-237	205.31	-----	5.01	5.780E+00	-----	Line Not Found	-----
	86.48	210	12.40*	6.251E+00	1.020E+00	1.020E+00	36.32
	95.86	-----	2.68	6.742E+00	-----	Line Not Found	-----
ANH-511	511.00	78	100.00*	2.965E+00	9.876E-02	9.876E-02	78.44

Flag: "*" = Keyline

Total number of lines in spectrum 34
Number of unidentified lines 4
Number of lines tentatively identified by NID 30 88.24%

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	2.775E+01	2.775E+01	0.308E+01	11.11	
CD-109	461.40D	1.04	3.419E+00	3.539E+00	1.049E+00	29.65	
SN-126	2.30E+05Y	1.00	3.419E-01	3.419E-01	1.014E-01	29.65	
BA-137M	30.08Y	1.00	1.470E-01	1.473E-01	0.669E-01	45.44	
CS-137	30.08Y	1.00	1.553E-01	1.556E-01	0.707E-01	45.44	
TL-208	1.41E+10Y	1.00	5.525E-01	5.525E-01	1.117E-01	20.22	
BI-211	7.04E+08Y	1.00	4.536E+00	4.536E+00	0.717E+00	15.80	
PB-212	1.41E+10Y	1.00	1.831E+00	1.831E+00	0.251E+00	13.73	
BI-214	1600.00Y	1.00	1.486E+00	1.486E+00	0.244E+00	16.39	
PB-214	1600.00Y	1.00	1.646E+00	1.646E+00	0.276E+00	16.74	
RA-224	1.41E+10Y	1.00	5.794E+00	5.794E+00	1.447E+00	24.98	
RA-226	1600.00Y	1.00	1.486E+00	1.486E+00	0.244E+00	16.39	
AC-228	1.41E+10Y	1.00	1.756E+00	1.756E+00	0.435E+00	24.75	
RA-228	1.41E+10Y	1.00	1.756E+00	1.756E+00	0.435E+00	24.75	
TH-228	1.41E+10Y	1.00	1.831E+00	1.831E+00	0.251E+00	13.73	
TH-229	7340.00Y	1.00	5.271E-01	5.271E-01	1.563E-01	29.65	K
TH-232	1.41E+10Y	1.00	1.756E+00	1.756E+00	0.435E+00	24.75	
U-235	7.04E+08Y	1.00	2.391E-01	2.391E-01	0.861E-01	36.00	K
NP-237	2.14E+06Y	1.00	1.020E+00	1.020E+00	0.370E+00	36.32	
ANH-511	1.00E+09Y	1.00	9.876E-02	9.876E-02	7.746E-02	78.44	

Total Activity : 5.813E+01 5.825E+01

Grand Total Activity : 5.813E+01 5.825E+01

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

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

Unidentified Energy Lines
Sample ID : G248243001

Page : 4
Acquisition date : 19-MAR-2010 10:50:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.17	76	258	0.95	258.54	255	7	1.06E-02	74.1	7.13E+00	
0	209.16	84	246	1.09	418.52	414	9	1.16E-02	71.1	5.71E+00	
0	270.34	66	145	0.87	540.87	537	8	9.12E-03	68.3	4.78E+00	T
0	329.70	154	205	4.69	659.59	651	21	2.13E-02	49.3	4.14E+00	T
0	409.38	47	70	1.37	818.94	815	8	6.56E-03	67.9	3.52E+00	
0	462.75	62	103	0.92	925.66	921	11	8.60E-03	68.1	3.20E+00	T
0	727.09	80	44	1.47	1454.26	1450	9	1.11E-02	39.1	2.22E+00	T
0	795.08	31	60	1.43	1590.21	1582	15	4.24E-03	****	2.06E+00	T
3	964.27	48	29	2.13	1928.51	1923	20	6.74E-03	53.3	1.73E+00	T
0	1237.96	70	58	0.90	2475.70	2470	16	9.75E-03	53.4	1.39E+00	T
0	1377.45	42	19	1.94	2754.58	2749	12	5.77E-03	53.6	1.27E+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]G248243001.CNF;1  *
* Acquisition date   : 19-MAR-2010 10:50:48  Detector SN#      :              *
* Detector ID        : GAM16                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:01.72           Half life ratio : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G248243001           Analyst initials: MXR1          *
* Batch Number       : 959280               Sample Quantity : 9.98200E+01 GRAM  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16.1MS Isotope         :              *
* MSD ID             :                      MSD Isotope          :              *
* LCS ID             : 1032-A               LCS Isotope          :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.775E+01	3.083E+00	3.416E-01	3.003E-02	81.234
CD-109	3.539E+00	1.049E+00	1.233E+00	1.188E-01	2.869
SN-126	3.419E-01	1.014E-01	1.197E-01	1.148E-02	2.856
BA-137M	1.473E-01	6.691E-02	6.090E-02	5.405E-03	2.418
CS-137	1.556E-01	7.069E-02	6.434E-02	5.720E-03	2.418
TL-208	5.525E-01	1.117E-01	5.690E-02	5.634E-03	9.711
BI-211	4.536E+00	7.169E-01	3.529E-01	3.859E-02	12.855
PB-212	1.831E+00	2.514E-01	8.971E-02	1.066E-02	20.407
BI-214	1.486E+00	2.435E-01	1.337E-01	1.419E-02	11.114
PB-214	1.646E+00	2.756E-01	1.284E-01	1.569E-02	12.827
RA-224	5.794E+00	1.447E+00	9.617E-01	1.060E-01	6.025
RA-226	1.486E+00	2.435E-01	1.337E-01	1.419E-02	11.114
AC-228	1.756E+00	4.345E-01	2.717E-01	3.317E-02	6.461
RA-228	1.756E+00	4.345E-01	2.717E-01	3.317E-02	6.461
TH-228	1.831E+00	2.514E-01	8.971E-02	1.066E-02	20.407
TH-229	5.271E-01	1.563E-01	9.385E-01	9.154E-02	0.562
TH-232	1.756E+00	4.345E-01	2.717E-01	3.317E-02	6.461
U-235	2.391E-01	8.608E-02	3.585E-01	6.066E-02	0.667

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.020E+00	3.705E-01	3.584E-01	8.243E-02	2.847
ANH-511	9.876E-02	7.746E-02	4.907E-02	4.667E-03	2.013

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.052E-01		3.873E-01	5.989E-01	6.057E-02	-0.510
NA-22	-6.972E-03		4.920E-02	7.839E-02	6.523E-03	-0.089
NA-24	-7.202E+02		2.418E+03	Half-Life	too short	
SC-46	-3.676E-03		4.218E-02	6.980E-02	6.598E-03	-0.053
V-48	2.695E-02		1.024E-01	1.747E-01	1.608E-02	0.154
CR-51	-1.940E-01		4.926E-01	7.555E-01	8.829E-02	-0.257
MN-54	-2.308E-03		4.308E-02	7.199E-02	6.762E-03	-0.032
CO-56	1.447E-02		4.712E-02	8.122E-02	7.643E-03	0.178
CO-57	-3.997E-03		2.578E-02	4.286E-02	3.562E-03	-0.093
CO-58	-5.892E-02		4.589E-02	6.675E-02	6.253E-03	-0.883
FE-59	1.802E-02		1.128E-01	1.885E-01	1.752E-02	0.096
CO-60	-1.413E-02		4.411E-02	6.791E-02	5.728E-03	-0.208
ZN-65	-1.984E-02		1.154E-01	1.595E-01	1.354E-02	-0.124
SE-75	-2.107E-02		4.626E-02	7.160E-02	8.357E-03	-0.294
SR-85	1.234E-02		4.847E-02	7.204E-02	6.850E-03	0.171
Y-88	7.739E-03		3.603E-02	6.216E-02	5.047E-03	0.124
Y-91	4.959E+00		2.654E+01	4.407E+01	3.584E+00	0.113
NB-94	8.703E-03		3.625E-02	5.969E-02	5.396E-03	0.146
NB-95	-1.226E-02		5.881E-02	9.226E-02	8.528E-03	-0.133
NB-95M	-3.014E-02		1.520E-01	2.154E-01	2.564E-02	-0.140
ZR-95	3.399E-02		9.096E-02	1.508E-01	1.518E-02	0.225
MO-99	-3.572E-05		4.672E-05	Half-Life	too short	
TC-99M	-5.589E+19		5.153E+19	Half-Life	too short	
RU-103	-6.263E-03		5.021E-02	8.212E-02	1.194E-02	-0.076
RH-106	-1.433E-01		3.357E-01	5.213E-01	7.092E-02	-0.275
RU-106	-1.433E-01		3.354E-01	5.213E-01	4.767E-02	-0.275
AG-108M	-3.206E-03		3.130E-02	5.181E-02	5.014E-03	-0.062
AG-110M	1.896E-02		4.162E-02	6.254E-02	5.725E-03	0.303
SN-113	-1.357E-02		4.918E-02	8.100E-02	7.688E-03	-0.167
CD-115	3.069E-05		6.981E-05	Half-Life	too short	
SN-117M	-2.244E-02		8.375E-02	1.365E-01	1.213E-02	-0.164
TE-123M	-6.967E-03		3.031E-02	4.951E-02	4.428E-03	-0.141
SB-124	-2.825E-02		8.499E-02	1.301E-01	1.142E-02	-0.217
SB-125	-3.097E-02		9.525E-02	1.551E-01	1.481E-02	-0.200
TE-125M	1.562E+00		1.048E+01	1.776E+01	1.839E+00	0.088
I-126	9.582E-02		4.012E-01	5.851E-01	5.204E-02	0.164
SB-126	-2.114E-01		2.631E-01	3.694E-01	3.363E-02	-0.572
SB-127	-1.285E+00		5.519E+00	8.670E+00	1.229E+00	-0.148
I-131	-6.978E-02		2.337E-01	3.860E-01	4.104E-02	-0.181
TE-132	6.534E-01		4.199E+00	6.855E+00	1.284E+00	0.095
BA-133	7.885E-04		4.722E-02	7.056E-02	1.004E-02	0.011

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-3.631E+00		1.691E+00	Half-Life too short		
CS-134	7.410E-02	+	8.659E-02	9.231E-02	8.655E-03	0.803
CS-135	1.071E-01		1.784E-01	2.671E-01	3.406E-02	0.401
I-135	-7.448E+17		1.426E+18	Half-Life too short		
CS-136	-5.356E-02		1.766E-01	2.812E-01	2.605E-02	-0.190
CE-139	-8.814E-03		3.149E-02	5.116E-02	4.640E-03	-0.172
BA-140	2.784E-01		4.232E-01	7.184E-01	2.453E-01	0.388
LA-140	-1.285E-01		1.262E-01	1.651E-01	1.406E-02	-0.778
CE-141	1.342E-03		7.303E-02	1.214E-01	1.062E-02	0.011
CE-143	2.952E-02		5.910E-03	Half-Life too short		
CE-144	3.082E-02		2.131E-01	3.419E-01	5.183E-02	0.090
PM-144	-2.154E-03		3.474E-02	5.557E-02	5.014E-03	-0.039
PR-144	-1.568E-01		2.611E+00	4.178E+00	3.767E-01	-0.038
PM-146	-8.045E-03		4.349E-02	7.123E-02	8.046E-03	-0.113
ND-147	-1.453E-01		8.881E-01	1.437E+00	2.222E-01	-0.101
PM-149	2.319E-04		5.795E-04	Half-Life too short		
EU-152	-1.018E-01		1.028E-01	1.472E-01	1.644E-02	-0.692
GD-153	-4.255E-02		8.882E-02	1.311E-01	1.165E-02	-0.324
EU-154	-1.604E-02		1.373E-01	2.193E-01	2.445E-02	-0.073
EU-155	5.608E-02		1.057E-01	1.822E-01	1.576E-02	0.308
TB-160	-3.174E-02		1.503E-01	2.454E-01	2.318E-02	-0.129
HO-166M	-4.597E-02		7.169E-02	1.079E-01	9.792E-03	-0.426
TA-182	1.166E-01		2.275E-01	3.893E-01	3.184E-02	0.300
IR-192	3.591E-03		4.029E-02	6.424E-02	7.342E-03	0.056
HG-203	-7.416E-02		4.882E-02	6.804E-02	8.280E-03	-1.090
BI-207	5.298E-02		5.912E-02	1.060E-01	9.343E-03	0.500
PB-210	1.992E+00		3.670E+00	5.918E+00	5.472E-01	0.337
PB-211	-1.975E-01		8.791E-01	1.262E+00	6.124E-01	-0.156
BI-212	2.024E+00	+	8.329E-01	1.327E+00	1.700E-01	1.526
RN-219	-3.553E-03		4.603E-01	7.713E-01	1.178E-01	-0.005
RA-223	1.742E-02		7.368E-01	1.037E+00	1.948E-01	0.017
AC-227	-8.704E-02		2.691E-01	4.227E-01	5.998E-02	-0.206
TH-227	-8.704E-02		2.692E-01	4.227E-01	6.566E-02	-0.206
PA-231	5.925E-01		1.548E+00	2.531E+00	4.245E-01	0.234
TH-231	1.742E-02		7.368E-01	1.037E+00	1.948E-01	0.017
PA-233	-1.679E-02		6.805E-02	1.058E-01	1.237E-02	-0.159
PA-234	1.603E-02		3.052E-01	5.103E-01	9.749E-02	0.031
PA-234M	1.287E+00		5.053E+00	8.655E+00	9.011E-01	0.149
TH-234	2.061E-01		1.500E+00	2.376E+00	4.237E-01	0.087
U-238	2.061E-01		1.500E+00	2.376E+00	4.237E-01	0.087
NP-239	4.388E-02		3.823E-01	6.451E-01	5.369E-02	0.068
AM-241	-2.616E-01		1.714E-01	2.438E-01	1.913E-02	-1.073
CM-247	-2.479E-02		4.170E-02	6.704E-02	6.232E-03	-0.370
CF-249	1.765E-02		4.333E-02	7.468E-02	7.000E-03	0.236
CF-251	2.335E-02		1.359E-01	2.251E-01	2.104E-02	0.104

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]G248243001          *
* Acquisition date   : 19-MAR-2010 10:50:48 Detector SN#      :              *
* Detector ID        : GAM16                                           Sensitivity      : 5.000          *
* Geometry           : CAN                                           Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 02:00:01.72 Half life ratio : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243001 Analyst initials: MXR1              *
* Batch Number       : 959280 Sample Quantity : 9.9820E+01 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                *
*****
*
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 MS Isotope           :          *
* MSD DPM             : 0.000 MSD Isotope                        :          *
* LCS DPM             : 0.000 LCS Isotope                       :          *
* LCSD DPM            : 0.000 LCSD Isotope                     :          *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.775E+01	3.021E+00	1.694E-01	1.541E+00
CD-109	3.539E+00	1.028E+00	6.160E-01	5.247E-01
SN-126	3.419E-01	9.935E-02	5.978E-02	5.069E-02
BA-137M	1.473E-01	6.557E-02	3.026E-02	3.346E-02
CS-137	1.556E-01	6.928E-02	3.197E-02	3.535E-02
TL-208	5.525E-01	1.095E-01	2.828E-02	5.585E-02
BI-211	4.536E+00	7.025E-01	1.756E-01	3.584E-01
PB-212	1.831E+00	2.464E-01	4.469E-02	1.257E-01
BI-214	1.486E+00	2.386E-01	6.644E-02	1.218E-01
PB-214	1.646E+00	2.701E-01	6.388E-02	1.378E-01
RA-224	5.794E+00	1.418E+00	4.791E-01	7.236E-01
RA-226	1.486E+00	2.386E-01	6.644E-02	1.218E-01
AC-228	1.756E+00	4.258E-01	1.349E-01	2.173E-01
RA-228	1.756E+00	4.258E-01	1.349E-01	2.173E-01
TH-228	1.831E+00	2.464E-01	4.469E-02	1.257E-01
TH-229	-2.995E-02	5.642E-01	4.678E-01	2.878E-01
TH-232	1.756E+00	4.258E-01	1.349E-01	2.173E-01
U-235	1.548E-01	2.097E-01	1.788E-01	1.070E-01
NP-237	1.020E+00	3.631E-01	1.790E-01	1.852E-01
ANH-511	9.876E-02	7.591E-02	2.440E-02	3.873E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.052E-01	3.795E-01	2.978E-01	1.936E-01 NOT IDENT.
NA-22	-6.972E-03	4.822E-02	3.889E-02	2.460E-02 NOT IDENT.
NA-24	-7.202E+08	4.739E+09	0.000E+00	2.418E+09 SHORT HLIF
SC-46	-3.676E-03	4.134E-02	3.466E-02	2.109E-02 FAIL ABUN
V-48	2.695E-02	1.004E-01	8.671E-02	5.121E-02 NOT IDENT.
CR-51	-1.940E-01	4.828E-01	3.761E-01	2.463E-01 NOT IDENT.
MN-54	-2.308E-03	4.222E-02	3.575E-02	2.154E-02 NOT IDENT.

CO-56	1.447E-02	4.618E-02	4.033E-02	2.356E-02	FAIL ABUN
CO-57	-3.997E-03	2.526E-02	2.139E-02	1.289E-02	NOT IDENT.
CO-58	-5.892E-02	4.497E-02	3.315E-02	2.295E-02	NOT IDENT.
FE-59	1.802E-02	1.106E-01	9.356E-02	5.642E-02	NOT IDENT.
CO-60	-1.413E-02	4.323E-02	3.369E-02	2.205E-02	NOT IDENT.
ZN-65	-1.984E-02	1.131E-01	7.915E-02	5.770E-02	NOT IDENT.
SE-75	-2.107E-02	4.534E-02	3.566E-02	2.313E-02	NOT IDENT.
SR-85	1.234E-02	4.750E-02	3.582E-02	2.423E-02	NOT IDENT.
Y-88	7.739E-03	3.531E-02	3.081E-02	1.802E-02	NOT IDENT.
Y-91	4.959E+00	2.601E+01	2.187E+01	1.327E+01	NOT IDENT.
NB-94	8.703E-03	3.552E-02	2.966E-02	1.812E-02	NOT IDENT.
NB-95	-1.226E-02	5.763E-02	4.583E-02	2.940E-02	NOT IDENT.
NB-95M	-3.014E-02	1.490E-01	1.073E-01	7.601E-02	NOT IDENT.
ZR-95	3.399E-02	8.914E-02	7.491E-02	4.548E-02	NOT IDENT.
MO-99	-3.572E+01	9.157E+01	0.000E+00	4.672E+01	SHORT HLIF
TC-99M	-5.589E+25	1.010E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.263E-03	4.921E-02	4.084E-02	2.511E-02	FAIL ABUN
RH-106	-1.433E-01	3.290E-01	2.591E-01	1.678E-01	NOT IDENT.
RU-106	-1.433E-01	3.287E-01	2.591E-01	1.677E-01	NOT IDENT.
AG-108M	-3.206E-03	3.068E-02	2.577E-02	1.565E-02	NOT IDENT.
AG-110M	1.896E-02	4.079E-02	3.108E-02	2.081E-02	NOT IDENT.
SN-113	-1.357E-02	4.820E-02	4.030E-02	2.459E-02	NOT IDENT.
CD-115	3.069E+01	1.368E+02	0.000E+00	6.981E+01	SHORT HLIF
SN-117M	-2.244E-02	8.207E-02	6.809E-02	4.187E-02	NOT IDENT.
TE-123M	-6.967E-03	2.971E-02	2.469E-02	1.516E-02	NOT IDENT.
SB-124	-2.825E-02	8.329E-02	6.450E-02	4.249E-02	NOT IDENT.
SB-125	-3.097E-02	9.335E-02	7.714E-02	4.763E-02	FAIL ABUN
TE-125M	1.562E+00	1.027E+01	8.865E+00	5.239E+00	NOT IDENT.
I-126	9.582E-02	3.932E-01	2.907E-01	2.006E-01	NOT IDENT.
SB-126	-2.114E-01	2.579E-01	1.835E-01	1.316E-01	NOT IDENT.
SB-127	-1.285E+00	5.409E+00	4.308E+00	2.760E+00	NOT IDENT.
I-131	-6.978E-02	2.290E-01	1.921E-01	1.168E-01	NOT IDENT.
TE-132	6.534E-01	4.115E+00	3.416E+00	2.100E+00	NOT IDENT.
BA-133	7.885E-04	4.628E-02	3.511E-02	2.361E-02	NOT IDENT.
I-133	-3.631E+06	3.313E+06	0.000E+00	1.691E+06	SHORT HLIF
CS-134	7.410E-02	8.486E-02	4.585E-02	4.329E-02	FAIL ABUN
CS-135	1.071E-01	1.748E-01	1.330E-01	8.918E-02	NOT IDENT.
I-135	-7.448E+23	2.795E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.356E-02	1.731E-01	1.396E-01	8.829E-02	NOT IDENT.
CE-139	-8.814E-03	3.086E-02	2.551E-02	1.574E-02	NOT IDENT.
BA-140	2.784E-01	4.148E-01	3.572E-01	2.116E-01	NOT IDENT.
LA-140	-1.285E-01	1.237E-01	8.187E-02	6.310E-02	FAIL ABUN
CE-141	1.342E-03	7.157E-02	6.054E-02	3.652E-02	NOT IDENT.
CE-143	2.952E+04	1.158E+04	0.000E+00	5.910E+03	SHORT HLIF
CE-144	3.082E-02	2.089E-01	1.706E-01	1.066E-01	NOT IDENT.
PM-144	-2.154E-03	3.404E-02	2.761E-02	1.737E-02	NOT IDENT.
PR-144	-1.568E-01	2.559E+00	2.076E+00	1.305E+00	NOT IDENT.
PM-146	-8.045E-03	4.262E-02	3.543E-02	2.174E-02	NOT IDENT.
ND-147	-1.453E-01	8.704E-01	7.144E-01	4.441E-01	FAIL ABUN
PM-149	2.319E+02	1.136E+03	0.000E+00	5.795E+02	SHORT HLIF
EU-152	-1.018E-01	1.007E-01	7.325E-02	5.140E-02	FAIL ABUN
GD-153	-4.255E-02	8.704E-02	6.548E-02	4.441E-02	NOT IDENT.
EU-154	-1.604E-02	1.345E-01	1.088E-01	6.863E-02	NOT IDENT.
EU-155	5.608E-02	1.036E-01	9.096E-02	5.286E-02	FAIL ABUN
TB-160	-3.174E-02	1.473E-01	1.219E-01	7.515E-02	FAIL ABUN
HO-166M	-4.597E-02	7.026E-02	5.362E-02	3.585E-02	FAIL ABUN
TA-182	1.166E-01	2.230E-01	1.932E-01	1.138E-01	FAIL ABUN
IR-192	3.591E-03	3.948E-02	3.198E-02	2.014E-02	FAIL ABUN
HG-203	-7.416E-02	4.785E-02	3.388E-02	2.441E-02	NOT IDENT.
BI-207	5.298E-02	5.794E-02	5.260E-02	2.956E-02	FAIL ABUN
PB-210	1.992E+00	3.597E+00	2.960E+00	1.835E+00	NOT IDENT.
PB-211	-1.975E-01	8.616E-01	6.280E-01	4.396E-01	NOT IDENT.
BI-212	2.024E+00	8.163E-01	6.591E-01	4.165E-01	FAIL ABUN
RN-219	-3.553E-03	4.511E-01	3.838E-01	2.301E-01	FAIL ABUN
RA-223	1.742E-02	7.221E-01	5.163E-01	3.684E-01	FAIL ABUN
AC-227	-8.704E-02	2.637E-01	2.106E-01	1.345E-01	FAIL ABUN
TH-227	-8.704E-02	2.638E-01	2.106E-01	1.346E-01	FAIL ABUN
PA-231	5.925E-01	1.517E+00	1.260E+00	7.742E-01	FAIL ABUN
TH-231	1.742E-02	7.221E-01	5.163E-01	3.684E-01	FAIL ABUN
PA-233	-1.679E-02	6.669E-02	5.267E-02	3.402E-02	FAIL ABUN
PA-234	1.603E-02	2.991E-01	2.534E-01	1.526E-01	NOT IDENT.
PA-234M	1.287E+00	4.952E+00	4.296E+00	2.527E+00	NOT IDENT.
TH-234	2.061E-01	1.470E+00	1.188E+00	7.499E-01	FAIL ABUN
U-238	2.061E-01	1.470E+00	1.188E+00	7.499E-01	FAIL ABUN
NP-239	4.388E-02	3.746E-01	3.219E-01	1.911E-01	NOT IDENT.
AM-241	-2.616E-01	1.680E-01	1.219E-01	8.570E-02	NOT IDENT.
CM-247	-2.479E-02	4.086E-02	3.335E-02	2.085E-02	NOT IDENT.
CF-249	1.765E-02	4.246E-02	3.716E-02	2.166E-02	NOT IDENT.

CF-251

2.335E-02

1.332E-01

1.122E-01

6.795E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	170.4656
49.72	193.5215
57.36	0.0000
59.54	290.5900
63.29	262.6501
63.29	262.6501
64.28	267.0275
67.75	273.1067
69.67	240.5654
70.83	213.5960
72.81	285.2967
72.87	285.3364
72.87	285.3364
74.82	282.4088
74.82	282.4088
74.82	282.4088
74.97	282.5073
77.11	283.8918
77.11	283.8918
77.11	283.8918
79.69	256.4713
79.80	256.5338
80.12	225.9082
80.19	225.9431
80.57	228.7021
81.00	267.4998
81.07	267.5410
81.07	267.5410
83.79	247.1261
83.79	247.1261
85.43	247.9887
86.48	248.5367
86.55	248.5731
86.79	248.6969
86.94	248.7771
87.57	253.0161
88.03	253.2574
88.47	253.4883
89.96	293.5830
91.11	195.7410
92.59	196.3241
92.59	196.3241
93.35	196.6220
94.67	197.1369
94.87	197.2142
94.87	197.2142
95.86	208.2066
97.43	212.8333
98.44	195.9207
99.53	196.7742
100.11	212.1443
103.18	224.1262
103.37	227.7936
105.31	213.3082
106.12	210.0186
109.28	212.1244
111.00	228.2296
111.76	202.1303
116.30	192.7136
117.23	189.3425
121.12	192.4334
121.78	209.3151
122.06	207.5596
123.07	209.7611
131.20	208.7551
133.52	204.9816
136.00	202.7344

136.47	204.7742
140.51	0.0000
140.51	0.0000
143.76	190.7306
144.24	197.5780
144.24	197.5780
145.44	200.8083
152.43	232.9175
153.25	216.6687
154.21	215.0132
154.21	215.0132
156.02	211.6558
158.56	205.5481
159.00	201.7523
162.66	180.1201
163.33	208.8514
165.86	196.7085
176.60	182.4295
177.52	190.6707
181.07	0.0000
184.41	180.1692
185.72	180.4589
193.51	203.6519
197.04	211.6936
205.31	191.4180
210.85	164.4278
215.65	164.7778
222.11	152.1973
227.38	148.8013
228.16	157.4337
228.18	157.4367
235.69	165.6383
235.96	164.0769
235.96	164.0769
238.63	136.5666
238.63	136.5666
240.99	136.8934
242.00	137.0330
244.70	129.8303
252.40	111.1983
252.80	128.6916
256.23	141.1567
256.23	141.1567
260.90	0.0000
264.66	119.1313
268.22	116.2088
269.46	118.0054
269.46	118.0054
271.23	113.2040
273.65	160.1748
276.40	111.5133
277.37	123.8881
277.60	111.6353
278.00	120.6101
279.20	158.7504
279.54	162.1544
280.46	151.0977
283.69	116.7398
284.31	123.5419
285.41	133.7806
285.90	0.0000
287.50	119.3880
293.27	0.0000
295.22	110.5603
295.96	129.3540
298.57	129.6439
299.98	117.8462
299.98	117.8462
300.09	117.8568
300.09	117.8568
300.13	117.8610
301.36	102.5958
302.85	126.6952
304.50	114.8720
304.50	114.8720
304.85	114.9068
308.46	115.8299
311.90	108.1119

316.51	106.2159
319.41	129.6139
320.08	115.7898
323.87	97.5642
323.87	97.5642
328.76	97.9487
333.37	99.7120
334.37	70.2759
334.37	70.2759
338.28	91.6395
338.28	91.6395
338.32	91.6427
338.32	91.6427
338.32	91.6427
340.48	83.3231
340.55	83.3274
344.28	108.5930
351.06	105.8954
351.93	105.9644
356.01	94.3231
364.49	97.9779
366.42	0.0000
383.85	103.0063
388.16	95.0911
388.63	99.6960
391.69	98.0773
400.66	94.0764
401.81	107.9968
402.40	113.5802
404.85	100.6370
410.95	84.7068
414.70	92.5816
423.72	74.9377
427.09	97.6349
427.87	86.4128
433.94	83.9250
453.88	77.3527
463.37	75.8863
468.07	72.4438
473.00	71.5012
476.78	87.1587
477.60	88.1701
487.02	68.2045
492.35	0.0000
497.08	77.4281
511.00	69.1573
514.00	76.0031
527.90	0.0000
529.87	0.0000
531.02	55.9487
537.26	52.1301
546.56	0.0000
563.25	67.0917
569.33	77.5029
569.50	77.5099
569.70	73.4392
583.19	54.4363
600.60	80.8207
602.73	81.3213
604.72	76.4188
609.32	80.1324
609.32	80.1324
610.33	78.2958
614.28	73.4422
618.01	51.2101
621.93	60.7329
621.93	60.7329
633.25	41.0602
635.95	55.8726
636.99	61.1736
645.85	63.5486
657.76	47.7148
661.66	56.5503
661.66	56.5503
664.57	0.0000
666.33	53.0360
666.50	61.5955
677.62	51.5903

685.70	50.7006
695.00	47.6617
696.49	49.8605
696.51	49.8619
697.00	46.6192
702.65	55.4311
706.68	60.9731
711.68	72.0183
720.70	67.6055
721.93	0.0000
722.78	57.8918
722.91	52.6318
723.31	52.6406
724.19	61.4380
727.33	49.4357
733.00	47.8260
735.93	34.1815
739.50	0.0000
747.24	69.7964
752.31	67.7240
753.82	61.1012
756.73	53.3892
763.94	69.1653
765.81	81.4990
766.42	64.7703
777.92	0.0000
778.90	50.5083
783.70	60.7269
785.37	55.8167
795.86	49.7229
801.95	58.2589
810.29	63.6460
810.76	62.7486
815.77	46.4703
818.51	51.0795
832.01	53.1813
834.85	60.5811
836.80	0.0000
846.77	47.9477
856.80	46.2781
860.56	44.4891
871.09	23.2623
873.19	38.1792
875.33	0.0000
879.36	40.1330
880.51	44.8184
883.24	36.4511
884.68	36.4701
889.28	39.3422
898.04	33.8282
911.20	53.4999
911.20	53.4999
911.20	53.4999
926.50	48.4114
937.49	67.6545
944.13	38.2031
946.00	37.2719
949.00	40.1810
962.29	48.0518
964.08	44.2346
966.15	44.2660
968.97	41.7401
968.97	41.7401
968.97	41.7401
983.53	34.8460
996.26	47.6302
1001.03	37.9698
1004.73	44.8399
1037.84	36.4544
1038.76	0.0000
1048.07	43.4930
1050.41	36.6007
1050.41	36.6007
1063.66	34.7676
1085.87	49.0120
1099.45	40.1758
1112.07	38.0895
1115.54	47.0996

1120.29	40.4297
1120.29	40.4297
1120.55	40.4316
1121.30	40.4414
1131.51	0.0000
1173.23	37.9846
1177.93	37.0072
1189.05	58.7812
1204.77	46.6150
1221.41	43.7104
1231.02	61.1196
1235.36	55.7188
1238.28	43.9154
1260.41	0.0000
1271.85	29.5449
1274.44	36.9585
1274.54	38.0145
1291.59	33.9453
1298.22	0.0000
1312.11	30.9300
1332.49	30.0221
1365.19	29.1938
1368.63	0.0000
1384.29	21.7295
1408.01	20.7655
1457.56	0.0000
1460.82	6.3262
1489.16	17.6471
1505.03	24.2385
1596.21	19.0365
1620.50	12.4403
1678.03	0.0000
1690.97	11.6592
1764.49	13.8114
1764.49	13.8114
1770.23	10.1589
1771.35	8.4678
1791.20	0.0000
1836.06	8.0062

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243001

Total Uranium Activity	6.8487E-01	ug/g
Total Uranium Counting Unc.	4.3736E+00	ug/g
Total Uranium Tpu	2.2314E-06	ug/g
Total Uranium Mda	3.5348E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 959280                SAMPLE ID   : G248243001                *
*  ANALYST       : MXR1                  DETECTOR    : GAM16                    *
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 19-MAR-2010 10:50:48.82  SAMPLE ALQT: 99.820 GRAM            *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.011E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.458E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.566E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.720E+00

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VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 14:44:05.43

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243002.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:51:39
Sample ID          : G248243002          Sample quantity  : 1.15760E+02 GRAM
Detector name      : GAM23              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.69  0.0%
Energy tolerance   : 2.00000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 959280            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	6	74.68*	366	368	0.95	149.36	145	33	5.09E-02	9.7	1.68E+00
2	6	76.93	538	343	0.93	153.86	145	33	7.47E-02	7.0	
3	6	87.05	234	336	1.11	174.11	145	33	3.25E-02	15.0	
4	0	92.80*	267	410	1.70	185.60	182	10	3.70E-02	16.2	
5	0	185.61*	217	370	1.26	371.22	365	13	3.01E-02	20.0	
6	3	238.32*	1059	207	1.10	476.64	472	17	1.47E-01	3.8	1.13E+00
7	3	241.32	217	292	1.79	482.65	472	17	3.01E-02	20.5	
8	0	269.62	64	245	1.70	539.24	534	12	8.93E-03	50.3	
9	0	294.59	359	217	1.31	589.19	584	13	4.98E-02	9.9	
10	0	299.83	104	152	1.08	599.66	596	10	1.44E-02	24.2	
11	0	337.61*	233	183	1.34	675.21	667	13	3.23E-02	14.0	
12	0	351.54*	625	145	1.35	703.07	697	14	8.68E-02	5.8	
13	0	510.37*	88	114	1.61	1020.74	1014	14	1.23E-02	30.9	
14	0	582.47*	349	105	1.56	1164.94	1156	16	4.84E-02	8.5	
15	0	608.49	425	82	1.59	1216.99	1208	15	5.90E-02	6.8	
16	0	660.79	354	87	1.77	1321.58	1315	17	4.91E-02	7.9	
17	0	726.51	115	46	1.89	1453.02	1447	13	1.59E-02	15.3	
18	0	860.27	35	52	1.71	1720.53	1715	12	4.91E-03	45.5	
19	0	910.09	244	43	1.86	1820.19	1811	16	3.39E-02	8.8	
20	0	935.99	61	39	6.86	1871.97	1863	19	8.49E-03	28.5	
21	1	963.44	46	62	2.12	1926.88	1917	39	6.34E-03	34.4	2.64E+00
22	1	967.86	127	44	2.13	1935.73	1917	39	1.77E-02	14.5	
23	0	1118.99	118	42	2.55	2237.99	2228	19	1.63E-02	16.2	
24	0	1459.27*	818	29	2.21	2918.54	2908	19	1.14E-01	3.8	
25	0	1608.18	19	0	1.50	3216.37	3208	15	2.64E-03	22.9	
26	0	1762.92*	59	17	2.39	3525.84	3516	16	8.15E-03	20.8	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 14:44:08

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243002.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:51:39
 Sample ID : G248243002 Sample quantity : 115.76 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA23 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 2.00 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.495E+01	2.679E+00	5.775E-01	4.321E-02	43.207
CD-109	+	88.03	*	4.070E+00	1.282E+00	1.671E+00	1.631E-01	2.436
SN-126		64.28		3.588E-02	7.098E-01	1.190E+00	1.812E-01	0.030
	+	86.94		1.634E+00	8.380E-01	7.837E-01	3.259E-01	2.086
	+	87.57	*	3.931E-01	1.239E-01	1.808E-01	1.760E-02	2.174
CS-135	+	268.22	*	3.080E-01	3.110E-01	3.225E-01	2.464E-02	0.955
BA-137M	+	661.66	*	6.258E-01	1.041E-01	6.737E-02	3.442E-03	9.288
CS-137	+	661.66	*	6.611E-01	1.100E-01	7.117E-02	3.656E-03	9.288
TL-208		277.37		4.509E-01	4.891E-01	8.148E-01	8.792E-02	0.553
	+	583.19	*	5.839E-01	1.066E-01	7.452E-02	4.826E-03	7.836
	+	860.56		5.695E-01	5.204E-01	5.242E-01	4.738E-02	1.086
BI-211	+	72.87		2.389E+01	5.118E+00	6.965E+00	6.144E-01	3.431
	+	351.06	*	4.561E+00	6.055E-01	3.895E-01	2.538E-02	11.710
PB-212	+	74.82		2.859E+00	6.726E-01	8.294E-01	1.093E-01	3.447
	+	77.11		2.376E+00	3.940E-01	4.701E-01	4.230E-02	5.055
	+	238.63	*	1.698E+00	1.795E-01	1.188E-01	8.621E-03	14.284
	+	300.09		2.617E+00	1.286E+00	1.424E+00	1.202E-01	1.837
BI-214	+	609.32	*	1.380E+00	2.145E-01	1.338E-01	1.015E-02	10.312
	+	1120.29		2.028E+00	6.847E-01	5.768E-01	5.393E-02	3.516
	+	1764.49		1.422E+00	5.970E-01	3.596E-01	2.236E-02	3.953
PB-214	+	74.82		5.067E+00	1.157E+00	1.470E+00	1.752E-01	3.447
	+	77.11		4.189E+00	7.758E-01	8.287E-01	1.011E-01	5.055
	+	242.00		2.109E+00	8.801E-01	7.229E-01	5.845E-02	2.917
	+	295.22		1.598E+00	3.474E-01	2.715E-01	2.381E-02	5.886
	+	351.93	*	1.655E+00	2.380E-01	1.417E-01	1.209E-02	11.684
RA-224	+	240.99	*	3.729E+00	1.541E+00	1.274E+00	7.178E-02	2.927
RA-226	+	609.32	*	1.380E+00	2.145E-01	1.338E-01	1.015E-02	10.312
	+	1120.29		2.028E+00	6.847E-01	5.768E-01	5.393E-02	3.516
	+	1764.49		1.422E+00	5.970E-01	3.596E-01	2.236E-02	3.953
AC-228	+	338.32		1.884E+00	9.385E-01	4.746E-01	1.957E-01	3.970
	+	911.20	*	2.011E+00	4.273E-01	2.497E-01	2.966E-02	8.056
	+	968.97		1.815E+00	6.863E-01	4.273E-01	1.039E-01	4.247
RA-228	+	338.32		1.884E+00	9.385E-01	4.746E-01	1.957E-01	3.970
	+	911.20	*	2.011E+00	4.273E-01	2.497E-01	2.966E-02	8.056

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.815E+00	6.863E-01	4.273E-01	1.039E-01	4.247
	+	74.82		2.859E+00	6.133E-01	8.294E-01	7.439E-02	3.447
	+	77.11		2.376E+00	3.940E-01	4.701E-01	4.230E-02	5.055
	+	238.63	*	1.698E+00	1.795E-01	1.188E-01	8.621E-03	14.284
	+	300.09		2.617E+00	2.035E+00	1.424E+00	8.671E-01	1.837
TH-229	+	85.43		9.896E-01	3.117E-01	4.657E-01	4.447E-02	2.125
	+	88.47		6.061E-01	1.909E-01	2.352E-01	2.275E-02	2.577
		193.51	*	2.460E-01	6.564E-01	1.080E+00	5.719E-02	0.228
		210.85		3.964E-01	1.116E+00	1.829E+00	9.928E-02	0.217
TH-232	+	338.32		1.884E+00	5.381E-01	4.746E-01	2.803E-02	3.970
	+	911.20	*	2.011E+00	4.273E-01	2.497E-01	2.966E-02	8.056
	+	968.97		1.815E+00	6.863E-01	4.273E-01	1.039E-01	4.247
NP-237	+	86.48	*	1.173E+00	4.439E-01	5.437E-01	1.255E-01	2.158
		95.86		-9.570E-01	1.269E+00	1.742E+00	4.165E-01	-0.549
ANH-511	+	511.00	*	1.127E-01	6.991E-02	5.798E-02	3.368E-03	1.943

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	2.285E-01	4.331E-01	7.391E-01	5.021E-02	0.309
NA-22		1274.54	*	-2.182E-03	6.095E-02	9.897E-02	6.647E-03	-0.022
NA-24		1368.63	*	-2.470E+03	6.095E-02	Half-Life too short		
SC-46		889.28	*	1.523E-02	4.597E-02	7.915E-02	7.072E-03	0.192
	+	1120.55		3.661E-01	1.211E-01	1.598E-01	1.041E-02	2.291
V-48		944.13		9.430E-01	1.579E+00	2.458E+00	2.141E-01	0.384
		983.53	*	-3.516E-02	1.299E-01	2.046E-01	1.702E-02	-0.172
		1312.11		1.580E-02	1.312E-01	2.167E-01	1.542E-02	0.073
CR-51		320.08	*	9.986E-01	5.567E-01	1.011E+00	6.620E-02	0.988
MN-54		834.85	*	-8.532E-03	4.661E-02	7.675E-02	6.077E-03	-0.111
CO-56		846.77	*	1.766E-02	4.924E-02	8.493E-02	6.910E-03	0.208
		1037.84		1.530E-01	4.064E-01	6.956E-01	5.695E-02	0.220
		1238.28		6.059E-02	1.278E-01	2.166E-01	1.441E-02	0.280
		1771.35		-3.223E-02	2.637E-01	4.251E-01	2.630E-02	-0.076
CO-57		122.06	*	1.920E-03	3.188E-02	5.256E-02	3.099E-03	0.037
		136.47		-1.175E-01	2.548E-01	4.095E-01	2.657E-02	-0.287
CO-58		810.76	*	-2.265E-02	4.966E-02	7.964E-02	5.983E-03	-0.284
FE-59		1099.45	*	2.554E-02	1.188E-01	1.998E-01	1.539E-02	0.128
		1291.59		2.421E-02	1.747E-01	2.890E-01	2.399E-02	0.084
CO-60		1173.23		-3.237E-03	5.402E-02	8.796E-02	4.962E-03	-0.037
		1332.49	*	-2.010E-02	4.535E-02	6.890E-02	5.058E-03	-0.292
ZN-65		1115.54	*	1.667E-01	1.380E-01	2.237E-01	1.477E-02	0.746
SE-75		121.12		5.572E-02	1.673E-01	2.788E-01	2.555E-02	0.200
		136.00		7.476E-03	5.012E-02	8.263E-02	4.668E-03	0.090
		264.66	*	-8.388E-03	6.823E-02	9.414E-02	5.482E-03	-0.089
		279.54		8.456E-02	1.418E-01	2.453E-01	1.545E-02	0.345
		400.66		-1.672E-01	3.497E-01	5.641E-01	5.114E-02	-0.296
SR-85		514.00	*	3.472E-02	5.544E-02	8.363E-02	4.853E-03	0.415
Y-88		898.04		-1.522E-02	5.426E-02	8.799E-02	8.045E-03	-0.173

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1836.06	*		9.692E-03	3.932E-02	6.843E-02	4.029E-03	0.142
Y-91	1204.77	*		9.629E+00	2.975E+01	5.013E+01	2.990E+00	0.192
NB-94	702.65	*		-1.628E-02	4.041E-02	6.278E-02	3.587E-03	-0.259
	871.09			8.564E-04	4.142E-02	6.922E-02	5.945E-03	0.012
NB-95	765.81	*		3.898E-02	5.886E-02	9.968E-02	6.699E-03	0.391
NB-95M	235.69	*		7.767E-01	2.246E-01	3.618E-01	2.678E-02	2.147
ZR-95	724.19			2.585E-01	1.603E-01	2.585E-01	1.821E-02	1.000
	756.73	*		3.746E-02	9.045E-02	1.512E-01	1.167E-02	0.248
MO-99	140.51			-4.557E-05	9.045E-02	Half-Life	too short	
	181.07			9.464E-05	9.045E-02	Half-Life	too short	
	366.42			-5.790E-04	9.045E-02	Half-Life	too short	
	739.50	*		6.981E-05	9.045E-02	Half-Life	too short	
	777.92			-6.782E-06	9.045E-02	Half-Life	too short	
TC-99M	140.51	*		-2.752E+19	9.045E-02	Half-Life	too short	
RU-103	497.08	*		7.046E-03	5.195E-02	8.628E-02	1.073E-02	0.082
	610.33		+	1.636E+01	3.299E+00	3.794E+00	5.659E-01	4.311
RH-106	621.93	*		-1.209E-01	3.611E-01	5.677E-01	6.480E-02	-0.213
	1050.41			6.088E-01	2.873E+00	4.850E+00	3.649E-01	0.126
RU-106	621.93	*		-1.209E-01	3.609E-01	5.677E-01	3.050E-02	-0.213
	1050.41			6.088E-01	2.873E+00	4.850E+00	3.649E-01	0.126
AG-108M	433.94	*		-9.025E-03	3.639E-02	5.920E-02	3.700E-03	-0.152
	614.28			3.291E-02	4.428E-02	6.786E-02	3.975E-03	0.485
	722.91			-5.146E-03	5.425E-02	7.438E-02	4.773E-03	-0.069
AG-110M	657.76	*		1.674E-01	6.052E-02	1.054E-01	5.859E-03	1.588
	677.62			9.543E-02	3.947E-01	6.515E-01	3.734E-02	0.146
	706.68			5.907E-02	2.763E-01	4.537E-01	2.785E-02	0.130
	763.94			-2.142E-01	2.168E-01	3.161E-01	2.210E-02	-0.678
	884.68			-1.744E-02	5.872E-02	9.494E-02	8.655E-03	-0.184
	937.49		+	4.151E-01	2.395E-01	2.296E-01	2.084E-02	1.808
	1384.29			1.875E-01	1.870E-01	3.450E-01	2.612E-02	0.543
	1505.03			2.855E-01	3.408E-01	6.199E-01	4.403E-02	0.461
SN-113	391.69	*		-4.236E-02	5.617E-02	8.880E-02	5.470E-03	-0.477
CD-115	260.90			-1.839E-03	5.617E-02	Half-Life	too short	
	492.35			7.084E-05	5.617E-02	Half-Life	too short	
	527.90	*		6.657E-05	5.617E-02	Half-Life	too short	
SN-117M	156.02			4.459E-01	4.080E+00	6.687E+00	3.499E-01	0.067
	158.56	*		-8.195E-02	9.908E-02	1.556E-01	8.088E-03	-0.527
TE-123M	159.00	*		-2.656E-02	3.601E-02	5.680E-02	2.997E-03	-0.468
SB-124	602.73			-4.001E-02	5.696E-02	7.299E-02	4.002E-03	-0.548
	645.85			4.333E-01	6.569E-01	1.124E+00	6.749E-02	0.386
	722.78			-1.540E-01	5.896E-01	7.904E-01	4.984E-02	-0.195
	1690.97	*		-2.079E-02	1.011E-01	1.613E-01	1.129E-02	-0.129
SB-125	427.87	*		-1.517E-02	9.980E-02	1.634E-01	9.925E-03	-0.093
	463.37			6.695E-01	3.562E-01	6.487E-01	4.397E-02	1.032
	600.60			-6.663E-02	2.531E-01	3.448E-01	2.223E-02	-0.193
	635.95			2.411E-01	3.283E-01	5.656E-01	3.599E-02	0.426
TE-125M	109.28	*		-4.006E+00	1.322E+01	2.155E+01	1.967E+00	-0.186
I-126	388.63			4.186E-01	3.129E-01	5.591E-01	3.234E-02	0.749
	666.33	*		2.781E-01	4.466E-01	6.725E-01	3.480E-02	0.413

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	753.82		-1.990E-01	3.204E+00	5.115E+00	3.336E-01	-0.039
	414.70		-9.288E-02	1.427E-01	2.265E-01	1.318E-02	-0.410
	666.50		8.533E-02	1.554E-01	2.322E-01	1.202E-02	0.367
	695.00		2.953E-03	1.427E-01	2.308E-01	1.292E-02	0.013
	697.00		1.455E-01	5.030E-01	8.323E-01	4.685E-02	0.175
SB-127	720.70	*	4.632E-03	3.132E-01	4.356E-01	2.610E-02	0.011
	856.80		5.198E-01	1.048E+00	1.600E+00	1.331E-01	0.325
	252.40		-1.655E+00	2.120E+01	3.379E+01	1.413E+01	-0.049
	473.00		-1.041E+00	7.942E+00	1.296E+01	1.778E+00	-0.080
	685.70	*	1.060E+00	6.498E+00	1.065E+01	1.305E+00	0.100
I-131	783.70		2.292E+00	1.695E+01	2.875E+01	3.994E+00	0.080
	80.19		-3.243E+01	1.187E+01	1.727E+01	1.605E+00	-1.878
	284.31		-3.907E+00	3.584E+00	5.699E+00	3.742E-01	-0.686
TE-132	364.49	*	7.488E-02	2.672E-01	4.531E-01	3.001E-02	0.165
	636.99		2.658E+00	3.792E+00	6.510E+00	4.007E-01	0.408
	49.72		-9.067E+01	1.720E+02	2.829E+02	3.775E+01	-0.321
BA-133	111.76		7.787E+01	2.226E+02	3.717E+02	4.583E+01	0.209
	116.30		-1.620E+02	1.925E+02	3.047E+02	3.698E+01	-0.532
	228.16	*	-3.105E+00	4.984E+00	7.724E+00	1.264E+00	-0.402
	81.00		-3.653E-01	1.322E-01	1.769E-01	2.805E-02	-2.065
	276.40		3.365E-01	4.876E-01	7.472E-01	9.410E-02	0.450
I-133	302.85		1.560E-02	1.852E-01	2.728E-01	3.123E-02	0.057
	356.01	*	2.577E-02	5.708E-02	8.502E-02	9.624E-03	0.303
	383.85		-1.232E-01	3.494E-01	5.681E-01	6.058E-02	-0.217
CS-134	529.87	*	-2.262E+00	3.494E-01	Half-Life too short		
	875.33		-2.112E+01	3.494E-01	Half-Life too short		
	1298.22		-1.598E+02	3.494E-01	Half-Life too short		
I-135	563.25		2.948E-01	4.777E-01	8.139E-01	4.708E-02	0.362
	569.33		8.047E-02	2.622E-01	4.213E-01	2.450E-02	0.191
	604.72		-1.528E-02	4.644E-02	6.272E-02	3.452E-03	-0.244
	795.86	*	6.706E-02	6.181E-02	1.114E-01	8.134E-03	0.602
	801.95		9.865E-02	5.301E-01	8.998E-01	6.651E-02	0.110
CS-136	1365.19		7.240E-01	1.508E+00	2.610E+00	2.031E-01	0.277
	546.56		1.907E+17	1.508E+00	Half-Life too short		
	836.80		5.210E+18	1.508E+00	Half-Life too short		
	1038.76		9.777E+18	1.508E+00	Half-Life too short		
	1131.51		3.589E+16	1.508E+00	Half-Life too short		
CE-139	1260.41	*	-8.771E+17	1.508E+00	Half-Life too short		
	1457.56		5.393E+20	1.508E+00	Half-Life too short		
	1678.03		6.157E+18	1.508E+00	Half-Life too short		
	1791.20		6.139E+17	1.508E+00	Half-Life too short		
	153.25		3.593E-01	1.585E+00	2.610E+00	2.006E-01	0.138
CE-139	176.60		2.063E-01	8.546E-01	1.404E+00	9.206E-02	0.147
	273.65		-1.833E+00	1.160E+00	1.405E+00	9.624E-02	-1.305
	340.55		4.951E-01	3.129E-01	4.978E-01	3.179E-02	0.995
	818.51		-1.979E-02	1.279E-01	2.109E-01	1.612E-02	-0.094
	1048.07	*	5.750E-02	1.775E-01	3.033E-01	2.419E-02	0.190
CE-139	1235.36		1.453E+00	1.182E+00	2.103E+00	2.142E-01	0.691
	165.86	*	-1.570E-02	3.894E-02	6.231E-02	3.177E-03	-0.252

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140		162.66		1.049E+00	1.529E+00	2.559E+00	1.552E-01	0.410
		304.85		6.092E-01	2.712E+00	4.030E+00	1.152E+00	0.151
		423.72		1.137E+00	3.371E+00	5.681E+00	1.834E+00	0.200
		537.26	*	2.139E-01	4.941E-01	8.277E-01	2.756E-01	0.258
LA-140		328.76		1.088E+00	5.886E-01	1.045E+00	6.906E-02	1.041
		487.02		1.060E-01	2.442E-01	4.148E-01	2.739E-02	0.256
		815.77		3.264E-01	5.785E-01	1.017E+00	8.855E-02	0.321
		1596.21	*	-1.113E-01	1.512E-01	2.204E-01	1.512E-02	-0.505
CE-141		145.44	*	-8.939E-02	9.117E-02	1.418E-01	7.999E-03	-0.630
CE-143		57.36		-5.076E-02	9.117E-02	Half-Life	too short	
	+	293.27	*	7.337E-02	9.117E-02	Half-Life	too short	
		664.57		1.277E-01	9.117E-02	Half-Life	too short	
		721.93		-1.961E-02	9.117E-02	Half-Life	too short	
CE-144		80.12		-8.970E+00	3.325E+00	4.856E+00	4.452E-01	-1.847
		133.52	*	8.605E-02	2.509E-01	4.165E-01	5.753E-02	0.207
PM-144		476.78		5.451E-02	7.910E-02	1.365E-01	9.425E-03	0.399
		618.01		1.903E-02	3.759E-02	6.375E-02	3.684E-03	0.298
		696.49	*	1.565E-02	4.175E-02	6.961E-02	3.920E-03	0.225
PR-144		696.51	*	1.187E+00	3.139E+00	5.234E+00	2.942E-01	0.227
		1489.16		-9.182E+00	1.702E+01	2.497E+01	1.782E+00	-0.368
PM-146		453.88	*	4.679E-03	4.993E-02	8.297E-02	7.049E-03	0.056
		633.25		-1.034E+00	1.773E+00	2.657E+00	9.987E-01	-0.389
		735.93		-1.387E-01	1.840E-01	2.677E-01	7.330E-02	-0.518
		747.24		3.644E-02	1.101E-01	1.829E-01	2.450E-02	0.199
ND-147	+	91.11		2.367E+00	7.982E-01	1.092E+00	1.074E-01	2.167
		319.41		5.875E+00	6.792E+00	1.188E+01	7.021E-01	0.495
		531.02	*	-7.635E-02	1.152E+00	1.877E+00	2.536E-01	-0.041
PM-149		285.90	*	-9.445E-05	1.152E+00	Half-Life	too short	
EU-152		121.78		5.433E-03	9.004E-02	1.484E-01	1.137E-02	0.037
		244.70		3.511E-01	4.485E-01	6.620E-01	3.745E-02	0.530
		344.28	*	-9.487E-02	1.321E-01	1.903E-01	1.260E-02	-0.499
		778.90		2.025E-02	2.972E-01	5.018E-01	3.482E-02	0.040
	+	964.08		6.999E-01	4.846E-01	7.171E-01	6.110E-02	0.976
		1085.87		-2.642E-01	5.014E-01	7.814E-01	5.498E-02	-0.338
		1112.07		-2.777E-01	4.642E-01	5.977E-01	3.973E-02	-0.465
		1408.01		-1.812E-01	2.252E-01	3.196E-01	2.324E-02	-0.567
GD-153		69.67		3.020E+00	2.663E+00	4.101E+00	3.583E-01	0.736
		97.43	*	-3.191E-04	1.173E-01	1.705E-01	1.393E-02	-0.002
		103.18		-7.999E-02	1.412E-01	2.281E-01	1.705E-02	-0.351
EU-154		123.07		-2.949E-02	6.409E-02	1.033E-01	9.740E-03	-0.285
		723.31		1.114E-01	2.527E-01	3.691E-01	2.667E-02	0.302
		873.19		6.229E-02	3.381E-01	5.735E-01	6.825E-02	0.109
		996.26		-3.690E-01	4.509E-01	6.774E-01	1.169E-01	-0.545
		1004.73		-1.887E-01	2.760E-01	4.253E-01	4.783E-02	-0.444
		1274.44	*	-7.820E-03	1.718E-01	2.788E-01	2.789E-02	-0.028
EU-155	+	86.55		4.782E-01	1.508E-01	2.327E-01	2.262E-02	2.055
		105.31	*	1.442E-01	1.303E-01	2.235E-01	1.647E-02	0.645
TB-160	+	86.79		1.363E+00	4.295E-01	6.556E-01	6.335E-02	2.080
		197.04		-2.673E-01	7.564E-01	1.197E+00	6.373E-02	-0.223

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		215.65		1.087E+00	9.436E-01	1.604E+00	8.762E-02	0.678
	+	298.57		3.972E-01	1.937E-01	2.675E-01	1.572E-02	1.485
		879.36	*	-5.141E-02	1.824E-01	2.959E-01	2.587E-02	-0.174
	+	962.29		1.416E+00	9.803E-01	1.236E+00	1.056E-01	1.145
	+	966.15		1.477E+00	4.458E-01	7.597E-01	6.457E-02	1.944
		1177.93		2.444E-01	4.734E-01	8.143E-01	4.632E-02	0.300
		1271.85		-3.841E-01	1.009E+00	1.576E+00	1.052E-01	-0.244
		80.57		-1.013E+00	3.536E-01	5.101E-01	4.690E-02	-1.985
	+	184.41		1.780E-01	7.178E-02	8.274E-02	4.324E-03	2.152
		280.46		8.882E-03	1.043E-01	1.765E-01	1.028E-02	0.050
TA-182		410.95		1.992E-01	3.118E-01	5.360E-01	3.116E-02	0.372
		711.68	*	-4.765E-03	7.990E-02	1.282E-01	7.501E-03	-0.037
		752.31		-5.025E-02	3.105E-01	4.904E-01	3.187E-02	-0.102
		810.29		-2.077E-02	6.855E-02	1.116E-01	8.347E-03	-0.186
		67.75		-1.669E-01	1.616E-01	2.579E-01	2.245E-02	-0.647
		100.11		2.067E-01	2.266E-01	3.868E-01	3.027E-02	0.534
		152.43		2.246E-01	4.445E-01	7.403E-01	3.912E-02	0.303
		222.11		4.420E-02	4.530E-01	7.328E-01	4.038E-02	0.060
		1121.30		4.412E-01	2.429E-01	4.086E-01	2.657E-02	1.080
		1189.05		-1.950E-01	4.073E-01	6.349E-01	3.684E-02	-0.307
IR-192		1221.41	*	-1.441E-01	2.633E-01	4.076E-01	2.502E-02	-0.354
		1231.02		-4.261E-01	7.046E-01	1.091E+00	6.807E-02	-0.390
	+	295.96		1.272E+00	2.641E-01	3.679E-01	2.194E-02	3.457
		308.46		1.110E-02	1.235E-01	2.084E-01	1.242E-02	0.053
		316.51	*	-4.870E-02	4.506E-02	7.097E-02	4.210E-03	-0.686
		468.07		-5.684E-02	8.673E-02	1.361E-01	9.180E-03	-0.418
		70.83		2.258E+00	2.278E+00	3.454E+00	5.574E-01	0.654
	+	72.87		6.685E+00	1.672E+00	2.311E+00	3.616E-01	2.893
		279.20	*	4.480E-02	5.286E-02	9.246E-02	5.679E-03	0.485
	+	72.81		1.375E+00	2.946E-01	4.687E-01	4.133E-02	2.934
HG-203	+	74.97		8.244E-01	1.766E-01	3.357E-01	2.987E-02	2.456
		569.70		7.186E-03	4.007E-02	6.373E-02	3.590E-03	0.113
		1063.66	*	7.457E-02	6.466E-02	1.180E-01	8.668E-03	0.632
		1770.23		-1.405E+00	6.984E-01	7.126E-01	4.412E-02	-1.972
		46.54	*	2.375E+00	6.529E+00	1.082E+01	8.359E-01	0.220
		404.85	*	-4.026E-01	9.657E-01	1.532E+00	7.350E-01	-0.263
		427.09		-6.318E-01	1.710E+00	2.714E+00	1.244E+00	-0.233
		832.01		1.042E+00	1.303E+00	2.131E+00	1.103E+00	0.489
	+	727.33	*	2.965E+00	9.640E-01	1.465E+00	1.592E-01	2.024
		785.37		-1.635E-01	3.760E+00	6.285E+00	4.430E-01	-0.026
BI-207		1620.50		2.828E+00	2.867E+00	5.462E+00	3.705E-01	0.518
	+	271.23		4.563E-01	4.608E-01	5.141E-01	4.125E-02	0.888
		401.81	*	-2.169E-01	5.235E-01	8.466E-01	1.137E-01	-0.256
		81.07		-8.291E-01	2.793E-01	3.995E-01	3.686E-02	-2.076
		83.79		-3.654E-01	1.668E-01	2.487E-01	2.343E-02	-1.469
		94.87		6.935E-01	6.138E-01	9.392E-01	8.017E-02	0.738
		144.24		-3.303E-02	8.080E-01	1.310E+00	9.036E-02	-0.025
		154.21		2.575E-01	4.674E-01	7.796E-01	5.085E-02	0.330
	+	269.46		3.545E-01	3.576E-01	4.103E-01	2.476E-02	0.864

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227	+	323.87	*	-1.256E+00	8.594E-01	1.293E+00	2.088E-01	-0.972
		338.28		7.476E+00	2.227E+00	2.915E+00	3.005E-01	2.565
		79.69		-4.054E+00	1.746E+00	2.429E+00	4.252E-01	-1.669
	+	235.96		1.714E+00	2.965E-01	4.788E-01	3.832E-02	3.580
		256.23	*	2.744E-03	3.073E-01	4.921E-01	5.010E-02	0.006
TH-227	+	299.98		2.878E+00	1.429E+00	2.002E+00	2.208E-01	1.438
		304.50		3.774E-01	2.126E+00	3.153E+00	4.818E-01	0.120
		334.37		-1.687E+00	2.358E+00	3.220E+00	4.594E-01	-0.524
	+	79.80		-5.409E+00	2.412E+00	3.191E+00	7.018E-01	-1.695
		235.96		1.714E+00	2.906E-01	4.788E-01	3.463E-02	3.580
PA-231	+	256.23	*	2.744E-03	3.073E-01	4.921E-01	5.896E-02	0.006
		299.98		2.878E+00	1.429E+00	2.002E+00	2.208E-01	1.438
		304.50		3.774E-01	2.126E+00	3.153E+00	4.818E-01	0.120
	+	334.37		-1.687E+00	2.358E+00	3.220E+00	4.594E-01	-0.524
		283.69	*	-8.400E-01	1.766E+00	2.902E+00	3.811E-01	-0.289
TH-231	+	301.36		1.849E+00	9.153E-01	1.260E+00	1.309E-01	1.468
		81.07		-8.291E-01	2.793E-01	3.995E-01	3.686E-02	-2.076
		83.79		-3.654E-01	1.668E-01	2.487E-01	2.343E-02	-1.469
	+	94.87		6.935E-01	6.138E-01	9.392E-01	8.017E-02	0.738
		144.24		-3.303E-02	8.080E-01	1.310E+00	9.036E-02	-0.025
PA-233	+	154.21		2.575E-01	4.674E-01	7.796E-01	5.085E-02	0.330
		269.46		3.545E-01	3.576E-01	4.103E-01	2.476E-02	0.864
		323.87	*	-1.256E+00	8.594E-01	1.293E+00	2.088E-01	-0.972
	+	338.28		7.476E+00	2.227E+00	2.915E+00	3.005E-01	2.565
		300.13		1.302E+00	6.541E-01	9.087E-01	1.220E-01	1.433
PA-234	+	311.90	*	2.650E-02	7.545E-02	1.290E-01	8.069E-03	0.205
		340.48		1.644E+00	9.690E-01	1.444E+00	3.356E-01	1.138
		94.67		9.850E-01	3.418E-01	3.564E-01	4.407E-02	2.764
	+	98.44		1.308E-01	1.437E-01	1.902E-01	1.060E-01	0.687
		111.00		-4.392E-02	2.246E-01	3.675E-01	3.975E-02	-0.119
PA-234M	+	131.20		-1.583E-01	1.326E-01	2.068E-01	1.169E-02	-0.765
		569.50		8.854E-02	3.573E-01	5.714E-01	3.220E-02	0.155
		733.00		4.579E-02	5.010E-01	7.035E-01	1.503E-01	0.065
	+	880.51		1.265E-01	3.388E-01	5.839E-01	5.119E-02	0.217
		883.24		3.395E-01	3.979E-01	5.970E-01	4.015E-01	0.569
TH-234	+	926.50		1.437E-01	2.112E-01	3.485E-01	8.838E-02	0.412
		946.00	*	1.397E-01	3.624E-01	5.980E-01	1.124E-01	0.234
		949.00		1.361E-01	5.081E-01	8.659E-01	7.505E-02	0.157
	+	766.42		2.684E+00	1.496E+01	2.427E+01	1.224E+01	0.111
		1001.03	*	6.126E-01	5.890E+00	9.817E+00	9.367E-01	0.062
U-235	+	63.29	*	6.285E-01	1.930E+00	3.260E+00	5.997E-01	0.193
		92.59		3.656E+00	1.434E+00	1.619E+00	3.593E-01	2.258
		89.96		1.296E+00	1.652E+00	1.819E+00	4.527E-01	0.713
	+	93.35		2.761E+00	1.099E+00	1.203E+00	2.786E-01	2.295
		143.76	*	5.551E-02	2.372E-01	3.886E-01	6.051E-02	0.143
U-238	+	163.33		4.470E-01	5.407E-01	9.025E-01	1.495E-01	0.495
		185.72		2.241E-01	9.035E-02	1.062E-01	5.563E-03	2.109
		205.31		-9.634E-01	6.647E-01	9.584E-01	1.615E-01	-1.005
	+	63.29	*	6.285E-01	1.930E+00	3.260E+00	5.997E-01	0.193

---- 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		3.656E+00	1.226E+00	1.619E+00	1.441E-01	2.258
		99.53		3.183E-01	2.027E-01	3.429E-01	2.708E-02	0.928
		103.37		-1.386E-03	1.237E-01	2.044E-01	1.523E-02	-0.007
		106.12		8.338E-02	1.022E-01	1.738E-01	1.246E-02	0.480
		117.23	*	-3.488E-01	4.877E-01	7.790E-01	4.849E-02	-0.448
		228.18		-1.675E-01	2.693E-01	4.193E-01	2.328E-02	-0.400
		277.60		2.300E-01	2.223E-01	3.735E-01	2.172E-02	0.616
AM-241		59.54	*	-2.930E-01	2.334E-01	3.712E-01	3.454E-02	-0.789
CM-247		278.00		1.055E+00	9.051E-01	1.603E+00	9.321E-02	0.658
		287.50		1.468E+00	1.530E+00	2.568E+00	1.501E-01	0.572
CF-249		402.40	*	3.068E-03	4.754E-02	7.922E-02	4.592E-03	0.039
		252.80		-2.200E-02	1.146E+00	1.833E+00	1.045E-01	-0.012
		333.37		-1.616E-01	2.453E-01	3.381E-01	1.998E-02	-0.478
CF-251		388.16	*	6.258E-02	4.948E-02	8.807E-02	5.095E-03	0.711
		177.52	*	2.280E-02	1.480E-01	2.421E-01	1.253E-02	0.094
		227.38		3.119E-03	4.378E-01	7.044E-01	3.907E-02	0.004
		285.41		-1.361E+00	2.669E+00	4.384E+00	2.560E-01	-0.311

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]G248243002      *
* Acquisition date   : 19-MAR-2010 10:51:39 Detector SN#      :              *
* Detector ID        : GAM23                      Sensitivity    : 5.000        *
* Geometry           : CAN                      Energy tolerance : 2.000        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000       *
* Elapsed real time  : 0 02:00:01.69             Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243002             Analyst initials: MXR1         *
* Batch Number       : 959280                 Sample Quantity : 1.1576E+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	2.495E+01	2.626E+00	5.754E-01	0.000E+00
CD-109	4.070E+00	1.256E+00	1.711E+00	0.000E+00
SN-126	3.931E-01	1.214E-01	1.852E-01	0.000E+00
CS-135	3.080E-01	3.047E-01	3.267E-01	0.000E+00
BA-137M	6.258E-01	1.020E-01	6.766E-02	0.000E+00
CS-137	6.611E-01	1.078E-01	7.147E-02	0.000E+00
TL-208	5.839E-01	1.044E-01	7.492E-02	0.000E+00
BI-211	4.561E+00	5.934E-01	3.935E-01	0.000E+00
PB-212	1.698E+00	1.759E-01	1.205E-01	0.000E+00
BI-214	1.380E+00	2.102E-01	1.345E-01	0.000E+00
PB-214	1.655E+00	2.332E-01	1.431E-01	0.000E+00
RA-224	3.729E+00	1.510E+00	1.292E+00	0.000E+00
RA-226	1.380E+00	2.102E-01	1.345E-01	0.000E+00
AC-228	2.011E+00	4.187E-01	2.499E-01	0.000E+00
RA-228	2.011E+00	4.187E-01	2.499E-01	0.000E+00
TH-228	1.698E+00	1.759E-01	1.205E-01	0.000E+00
TH-229	2.460E-01	6.433E-01	1.098E+00	0.000E+00
TH-232	2.011E+00	4.187E-01	2.499E-01	0.000E+00
NP-237	1.173E+00	4.351E-01	5.569E-01	0.000E+00
ANH-511	1.127E-01	6.851E-02	5.837E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.285E-01	4.244E-01	7.446E-01	0.000E+00 NOT IDENT.
NA-22	-2.182E-03	5.973E-02	9.874E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.289E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.523E-02	4.505E-02	7.925E-02	0.000E+00 FAIL ABUN
V-48	-3.516E-02	1.273E-01	2.046E-01	0.000E+00 NOT IDENT.
CR-51	9.986E-01	5.456E-01	1.023E+00	0.000E+00 NOT IDENT.
MN-54	-8.532E-03	4.568E-02	7.689E-02	0.000E+00 NOT IDENT.

CO-56	1.766E-02	4.826E-02	8.508E-02	0.000E+00	NOT IDENT.
CO-57	1.920E-03	3.124E-02	5.365E-02	0.000E+00	NOT IDENT.
CO-58	-2.265E-02	4.867E-02	7.981E-02	0.000E+00	NOT IDENT.
FE-59	2.554E-02	1.164E-01	1.997E-01	0.000E+00	NOT IDENT.
CO-60	-2.010E-02	4.444E-02	6.871E-02	0.000E+00	NOT IDENT.
ZN-65	1.667E-01	1.353E-01	2.234E-01	0.000E+00	NOT IDENT.
SE-75	-8.388E-03	6.686E-02	9.539E-02	0.000E+00	NOT IDENT.
SR-85	3.472E-02	5.433E-02	8.418E-02	0.000E+00	NOT IDENT.
Y-88	9.692E-03	3.854E-02	6.801E-02	0.000E+00	NOT IDENT.
Y-91	9.629E+00	2.915E+01	5.004E+01	0.000E+00	NOT IDENT.
NB-94	-1.628E-02	3.960E-02	6.300E-02	0.000E+00	NOT IDENT.
NB-95	3.898E-02	5.768E-02	9.995E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.201E-01	3.671E-01	0.000E+00	NOT IDENT.
ZR-95	3.746E-02	8.864E-02	1.517E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.076E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.102E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	7.046E-03	5.091E-02	8.689E-02	0.000E+00	FAIL ABUN
RH-106	-1.209E-01	3.539E-01	5.704E-01	0.000E+00	NOT IDENT.
RU-106	-1.209E-01	3.537E-01	5.704E-01	0.000E+00	NOT IDENT.
AG-108M	-9.025E-03	3.566E-02	5.970E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	5.931E-02	1.059E-01	0.000E+00	FAIL ABUN
SN-113	-4.236E-02	5.504E-02	8.963E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.551E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-8.195E-02	9.710E-02	1.585E-01	0.000E+00	NOT IDENT.
TE-123M	-2.656E-02	3.529E-02	5.784E-02	0.000E+00	NOT IDENT.
SB-124	-2.079E-02	9.903E-02	1.605E-01	0.000E+00	NOT IDENT.
SB-125	-1.517E-02	9.780E-02	1.647E-01	0.000E+00	NOT IDENT.
TE-125M	-4.006E+00	1.296E+01	2.203E+01	0.000E+00	NOT IDENT.
I-126	2.781E-01	4.377E-01	6.753E-01	0.000E+00	NOT IDENT.
SB-126	4.632E-03	3.069E-01	4.370E-01	0.000E+00	NOT IDENT.
SB-127	1.060E+00	6.368E+00	1.069E+01	0.000E+00	NOT IDENT.
I-131	7.488E-02	2.618E-01	4.577E-01	0.000E+00	NOT IDENT.
TE-132	-3.105E+00	4.884E+00	7.838E+00	0.000E+00	NOT IDENT.
BA-133	2.577E-02	5.594E-02	8.590E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.925E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.706E-02	6.057E-02	1.116E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.994E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.750E-02	1.739E-01	3.031E-01	0.000E+00	NOT IDENT.
CE-139	-1.570E-02	3.816E-02	6.342E-02	0.000E+00	NOT IDENT.
BA-140	2.139E-01	4.842E-01	8.329E-01	0.000E+00	NOT IDENT.
LA-140	-1.113E-01	1.482E-01	2.194E-01	0.000E+00	NOT IDENT.
CE-141	-8.939E-02	8.934E-02	1.445E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.246E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	8.605E-02	2.459E-01	4.249E-01	0.000E+00	NOT IDENT.
PM-144	1.565E-02	4.092E-02	6.987E-02	0.000E+00	NOT IDENT.
PR-144	1.187E+00	3.076E+00	5.253E+00	0.000E+00	NOT IDENT.
PM-146	4.679E-03	4.893E-02	8.363E-02	0.000E+00	NOT IDENT.
ND-147	-7.635E-02	1.129E+00	1.889E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.286E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-9.487E-02	1.294E-01	1.923E-01	0.000E+00	FAIL ABUN
GD-153	-3.191E-04	1.149E-01	1.745E-01	0.000E+00	NOT IDENT.
EU-154	-7.820E-03	1.684E-01	2.781E-01	0.000E+00	NOT IDENT.
EU-155	1.442E-01	1.277E-01	2.285E-01	0.000E+00	FAIL ABUN
TB-160	-5.141E-02	1.787E-01	2.963E-01	0.000E+00	FAIL ABUN
HO-166M	-4.765E-03	7.830E-02	1.286E-01	0.000E+00	FAIL ABUN
TA-182	-1.441E-01	2.580E-01	4.068E-01	0.000E+00	NOT IDENT.
IR-192	-4.870E-02	4.416E-02	7.178E-02	0.000E+00	FAIL ABUN
HG-203	4.480E-02	5.180E-02	9.363E-02	0.000E+00	FAIL ABUN
BI-207	7.457E-02	6.336E-02	1.179E-01	0.000E+00	FAIL ABUN
PB-210	2.375E+00	6.399E+00	1.115E+01	0.000E+00	NOT IDENT.
PB-211	-4.026E-01	9.464E-01	1.546E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.447E-01	1.470E+00	0.000E+00	FAIL ABUN
RN-219	-2.169E-01	5.130E-01	8.543E-01	0.000E+00	FAIL ABUN
RA-223	-1.256E+00	8.422E-01	1.307E+00	0.000E+00	FAIL ABUN
AC-227	2.744E-03	3.012E-01	4.988E-01	0.000E+00	FAIL ABUN
TH-227	2.744E-03	3.012E-01	4.988E-01	0.000E+00	FAIL ABUN
PA-231	-8.400E-01	1.731E+00	2.938E+00	0.000E+00	FAIL ABUN
TH-231	-1.256E+00	8.422E-01	1.307E+00	0.000E+00	FAIL ABUN
PA-233	2.650E-02	7.394E-02	1.305E-01	0.000E+00	FAIL ABUN
PA-234	1.397E-01	3.552E-01	5.984E-01	0.000E+00	FAIL ABUN
PA-234M	6.126E-01	5.772E+00	9.817E+00	0.000E+00	NOT IDENT.
TH-234	6.285E-01	1.891E+00	3.349E+00	0.000E+00	FAIL ABUN
U-235	5.551E-02	2.325E-01	3.961E-01	0.000E+00	FAIL ABUN
U-238	6.285E-01	1.891E+00	3.349E+00	0.000E+00	FAIL ABUN
NP-239	-3.488E-01	4.779E-01	7.956E-01	0.000E+00	NOT IDENT.
AM-241	-2.930E-01	2.287E-01	3.816E-01	0.000E+00	NOT IDENT.
CM-247	3.068E-03	4.659E-02	7.995E-02	0.000E+00	NOT IDENT.
CF-249	6.258E-02	4.849E-02	8.891E-02	0.000E+00	NOT IDENT.

CF-251	2.280E-02	1.451E-01	2.463E-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]G248243002.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:51:39
Sample ID          : G248243002 Sample quantity      : 1.15760E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 0.0%
Energy tolerance   : 2.00000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity          : 5.00000
Batch ID           : 959280 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	818	10.66*	9.975E-01	2.495E+01	2.495E+01	10.74
CD-109	88.03	234	3.70*	5.214E+00	3.931E+00	4.070E+00	31.50
SN-126	64.28	-----	9.60	2.723E+00	-----	Line Not Found	-----
	86.94	234	8.90	5.214E+00	1.634E+00	1.634E+00	51.27
	87.57	234	37.00*	5.214E+00	3.931E-01	3.931E-01	31.50
CS-135	268.22	64	16.00*	4.230E+00	3.080E-01	3.080E-01	100.96
BA-137M	661.66	354	89.90*	2.043E+00	6.249E-01	6.258E-01	16.63
CS-137	661.66	354	85.10*	2.043E+00	6.601E-01	6.611E-01	16.64
TL-208	277.37	-----	6.60	4.139E+00	-----	Line Not Found	-----
	583.19	349	85.00*	2.278E+00	5.839E-01	5.839E-01	18.25
	860.56	35	12.50	1.609E+00	5.695E-01	5.695E-01	91.38
BI-211	72.87	366	1.23	4.041E+00	2.389E+01	2.389E+01	21.42
	351.06	625	12.92*	3.441E+00	4.561E+00	4.561E+00	13.28
PB-212	74.82	366	10.28	4.041E+00	2.859E+00	2.859E+00	23.53
	77.11	538	17.10	4.290E+00	2.376E+00	2.376E+00	16.58
	238.63	1059	43.60*	4.638E+00	1.698E+00	1.698E+00	10.58
	300.09	104	3.30	3.898E+00	2.617E+00	2.617E+00	49.13
BI-214	609.32	425	45.49*	2.194E+00	1.380E+00	1.380E+00	15.54
	1120.29	118	14.92	1.259E+00	2.028E+00	2.028E+00	33.76
	1764.49	59	15.30	8.744E-01	1.422E+00	1.422E+00	41.99
PB-214	74.82	366	5.80	4.041E+00	5.067E+00	5.067E+00	22.84
	77.11	538	9.70	4.290E+00	4.189E+00	4.189E+00	18.52
	242.00	217	7.25	4.596E+00	2.109E+00	2.109E+00	41.73
	295.22	359	18.42	3.952E+00	1.598E+00	1.598E+00	21.74
	351.93	625	35.60*	3.441E+00	1.655E+00	1.655E+00	14.38
RA-224	240.99	217	4.10*	4.596E+00	3.729E+00	3.729E+00	41.33
RA-226	609.32	425	45.49*	2.194E+00	1.380E+00	1.380E+00	15.54
	1120.29	118	14.92	1.259E+00	2.028E+00	2.028E+00	33.76
	1764.49	59	15.30	8.744E-01	1.422E+00	1.422E+00	41.99
AC-228	338.32	233	11.27	3.553E+00	1.884E+00	1.884E+00	49.82
	911.20	244	25.80*	1.527E+00	2.011E+00	2.011E+00	21.24
	968.97	127	15.80	1.442E+00	1.815E+00	1.815E+00	37.81

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	233	11.27	3.553E+00	1.884E+00	1.884E+00	49.82
	911.20	244	25.80*	1.527E+00	2.011E+00	2.011E+00	21.24
	968.97	127	15.80	1.442E+00	1.815E+00	1.815E+00	37.81
TH-228	74.82	366	10.28	4.041E+00	2.859E+00	2.859E+00	21.45
	77.11	538	17.10	4.290E+00	2.376E+00	2.376E+00	16.58
	238.63	1059	43.60*	4.638E+00	1.698E+00	1.698E+00	10.58
TH-229	300.09	104	3.30	3.898E+00	2.617E+00	2.617E+00	77.78
	85.43	234	14.70	5.214E+00	9.895E-01	9.896E-01	31.50
	88.47	234	24.00	5.214E+00	6.061E-01	6.061E-01	31.50
	193.51	-----	4.41*	5.353E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.059E+00	-----	Line Not Found	-----
TH-232	338.32	233	11.27	3.553E+00	1.884E+00	1.884E+00	28.56
	911.20	244	25.80*	1.527E+00	2.011E+00	2.011E+00	21.24
	968.97	127	15.80	1.442E+00	1.815E+00	1.815E+00	37.81
NP-237	86.48	234	12.40*	5.214E+00	1.173E+00	1.173E+00	37.84
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
ANH-511	511.00	88	100.00*	2.546E+00	1.127E-01	1.127E-01	62.05

Flag: "*" = Keyline

Total number of lines in spectrum 26
Number of unidentified lines 1
Number of lines tentatively identified by NID 25 96.15%

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	2.495E+01	2.495E+01	0.268E+01	10.74	
CD-109	461.40D	1.04	3.931E+00	4.070E+00	1.282E+00	31.50	
SN-126	2.30E+05Y	1.00	3.931E-01	3.931E-01	1.239E-01	31.50	
CS-135	2.30E+06Y	1.00	3.080E-01	3.080E-01	3.110E-01	100.96	
BA-137M	30.08Y	1.00	6.249E-01	6.258E-01	1.041E-01	16.63	
CS-137	30.08Y	1.00	6.601E-01	6.611E-01	1.100E-01	16.64	
TL-208	1.41E+10Y	1.00	5.839E-01	5.839E-01	1.066E-01	18.25	
BI-211	7.04E+08Y	1.00	4.561E+00	4.561E+00	0.606E+00	13.28	
PB-212	1.41E+10Y	1.00	1.698E+00	1.698E+00	0.180E+00	10.58	
BI-214	1600.00Y	1.00	1.380E+00	1.380E+00	0.215E+00	15.54	
PB-214	1600.00Y	1.00	1.655E+00	1.655E+00	0.238E+00	14.38	
RA-224	1.41E+10Y	1.00	3.729E+00	3.729E+00	1.541E+00	41.33	
RA-226	1600.00Y	1.00	1.380E+00	1.380E+00	0.215E+00	15.54	
AC-228	1.41E+10Y	1.00	2.011E+00	2.011E+00	0.427E+00	21.24	
RA-228	1.41E+10Y	1.00	2.011E+00	2.011E+00	0.427E+00	21.24	
TH-228	1.41E+10Y	1.00	1.698E+00	1.698E+00	0.180E+00	10.58	
TH-229	7340.00Y	1.00	6.061E-01	6.061E-01	1.909E-01	31.50	K
TH-232	1.41E+10Y	1.00	2.011E+00	2.011E+00	0.427E+00	21.24	
NP-237	2.14E+06Y	1.00	1.173E+00	1.173E+00	0.444E+00	37.84	
ANH-511	1.00E+09Y	1.00	1.127E-01	1.127E-01	0.699E-01	62.05	
Total Activity :			5.548E+01	5.562E+01			

Grand Total Activity : 5.548E+01 5.562E+01

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

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

Unidentified Energy Lines
Sample ID : G248243002

Page : 4
Acquisition date : 19-MAR-2010 10:51:39

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.80	267	410	1.70	185.60	182	10	3.70E-02	32.3	5.59E+00	T
0	185.61	217	370	1.26	371.22	365	13	3.01E-02	40.0	5.49E+00	T
0	726.51	115	46	1.89	1453.02	1447	13	1.59E-02	30.6	1.88E+00	T
0	935.99	61	39	6.86	1871.97	1863	19	8.49E-03	57.0	1.49E+00	T
1	963.44	46	62	2.12	1926.88	1917	39	6.34E-03	68.7	1.45E+00	T
0	1608.18	19	0	1.50	3216.37	3208	15	2.64E-03	45.9	9.27E-01	

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243002.CNF;1
* Acquisition date   : 19-MAR-2010 10:51:39   Detector SN#      :
* Detector ID        : GAM23                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 2.00000
* Elapsed live time  : 0 02:00:00.00          Abundance limit      : 75.00000
* Elapsed real time  : 0 02:00:01.69          Half life ratio     : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G248243002             Analyst initials    : MXR1
* Batch Number       : 959280                 Sample Quantity     : 1.15760E+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      :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.495E+01	2.679E+00	5.775E-01	4.321E-02	43.207
CD-109	4.070E+00	1.282E+00	1.671E+00	1.631E-01	2.436
SN-126	3.931E-01	1.239E-01	1.808E-01	1.760E-02	2.174
CS-135	3.080E-01	3.110E-01	3.225E-01	2.464E-02	0.955
BA-137M	6.258E-01	1.041E-01	6.737E-02	3.442E-03	9.288
CS-137	6.611E-01	1.100E-01	7.117E-02	3.656E-03	9.288
TL-208	5.839E-01	1.066E-01	7.452E-02	4.826E-03	7.836
BI-211	4.561E+00	6.055E-01	3.895E-01	2.538E-02	11.710
PB-212	1.698E+00	1.795E-01	1.188E-01	8.621E-03	14.284
BI-214	1.380E+00	2.145E-01	1.338E-01	1.015E-02	10.312
PB-214	1.655E+00	2.380E-01	1.417E-01	1.209E-02	11.684
RA-224	3.729E+00	1.541E+00	1.274E+00	7.178E-02	2.927
RA-226	1.380E+00	2.145E-01	1.338E-01	1.015E-02	10.312
AC-228	2.011E+00	4.273E-01	2.497E-01	2.966E-02	8.056
RA-228	2.011E+00	4.273E-01	2.497E-01	2.966E-02	8.056
TH-228	1.698E+00	1.795E-01	1.188E-01	8.621E-03	14.284
TH-229	6.061E-01	1.909E-01	1.080E+00	5.719E-02	0.561
TH-232	2.011E+00	4.273E-01	2.497E-01	2.966E-02	8.056

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.173E+00	4.439E-01	5.437E-01	1.255E-01	2.158
ANH-511	1.127E-01	6.991E-02	5.798E-02	3.368E-03	1.943

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.285E-01		4.331E-01	7.391E-01	5.021E-02	0.309
NA-22	-2.182E-03		6.095E-02	9.897E-02	6.647E-03	-0.022
NA-24	-2.470E+03		2.699E+03	Half-Life	too short	
SC-46	1.523E-02		4.597E-02	7.915E-02	7.072E-03	0.192
V-48	-3.516E-02		1.299E-01	2.046E-01	1.702E-02	-0.172
CR-51	9.986E-01		5.567E-01	1.011E+00	6.620E-02	0.988
MN-54	-8.532E-03		4.661E-02	7.675E-02	6.077E-03	-0.111
CO-56	1.766E-02		4.924E-02	8.493E-02	6.910E-03	0.208
CO-57	1.920E-03		3.188E-02	5.256E-02	3.099E-03	0.037
CO-58	-2.265E-02		4.966E-02	7.964E-02	5.983E-03	-0.284
FE-59	2.554E-02		1.188E-01	1.998E-01	1.539E-02	0.128
CO-60	-2.010E-02		4.535E-02	6.890E-02	5.058E-03	-0.292
ZN-65	1.667E-01		1.380E-01	2.237E-01	1.477E-02	0.746
SE-75	-8.388E-03		6.823E-02	9.414E-02	5.482E-03	-0.089
SR-85	3.472E-02		5.544E-02	8.363E-02	4.853E-03	0.415
Y-88	9.692E-03		3.932E-02	6.843E-02	4.029E-03	0.142
Y-91	9.629E+00		2.975E+01	5.013E+01	2.990E+00	0.192
NB-94	-1.628E-02		4.041E-02	6.278E-02	3.587E-03	-0.259
NB-95	3.898E-02		5.886E-02	9.968E-02	6.699E-03	0.391
NB-95M	7.767E-01		2.246E-01	3.618E-01	2.678E-02	2.147
ZR-95	3.746E-02		9.045E-02	1.512E-01	1.167E-02	0.248
MO-99	6.981E-05		5.492E-05	Half-Life	too short	
TC-99M	-2.752E+19		5.621E+19	Half-Life	too short	
RU-103	7.046E-03		5.195E-02	8.628E-02	1.073E-02	0.082
RH-106	-1.209E-01		3.611E-01	5.677E-01	6.480E-02	-0.213
RU-106	-1.209E-01		3.609E-01	5.677E-01	3.050E-02	-0.213
AG-108M	-9.025E-03		3.639E-02	5.920E-02	3.700E-03	-0.152
AG-110M	1.674E-01		6.052E-02	1.054E-01	5.859E-03	1.588
SN-113	-4.236E-02		5.617E-02	8.880E-02	5.470E-03	-0.477
CD-115	6.657E-05		7.912E-05	Half-Life	too short	
SN-117M	-8.195E-02		9.908E-02	1.556E-01	8.088E-03	-0.527
TE-123M	-2.656E-02		3.601E-02	5.680E-02	2.997E-03	-0.468
SB-124	-2.079E-02		1.011E-01	1.613E-01	1.129E-02	-0.129
SB-125	-1.517E-02		9.980E-02	1.634E-01	9.925E-03	-0.093
TE-125M	-4.006E+00		1.322E+01	2.155E+01	1.967E+00	-0.186
I-126	2.781E-01		4.466E-01	6.725E-01	3.480E-02	0.413
SB-126	4.632E-03		3.132E-01	4.356E-01	2.610E-02	0.011
SB-127	1.060E+00		6.498E+00	1.065E+01	1.305E+00	0.100
I-131	7.488E-02		2.672E-01	4.531E-01	3.001E-02	0.165
TE-132	-3.105E+00		4.984E+00	7.724E+00	1.264E+00	-0.402
BA-133	2.577E-02		5.708E-02	8.502E-02	9.624E-03	0.303

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-2.262E+00		2.003E+00	Half-Life too short		
CS-134	6.706E-02		6.181E-02	1.114E-01	8.134E-03	0.602
I-135	-8.771E+17		1.528E+18	Half-Life too short		
CS-136	5.750E-02		1.775E-01	3.033E-01	2.419E-02	0.190
CE-139	-1.570E-02		3.894E-02	6.231E-02	3.177E-03	-0.252
BA-140	2.139E-01		4.941E-01	8.277E-01	2.756E-01	0.258
LA-140	-1.113E-01		1.512E-01	2.204E-01	1.512E-02	-0.505
CE-141	-8.939E-02		9.117E-02	1.418E-01	7.999E-03	-0.630
CE-143	7.337E-02	+	1.146E-02	Half-Life too short		
CE-144	8.605E-02		2.509E-01	4.165E-01	5.753E-02	0.207
PM-144	1.565E-02		4.175E-02	6.961E-02	3.920E-03	0.225
PR-144	1.187E+00		3.139E+00	5.234E+00	2.942E-01	0.227
PM-146	4.679E-03		4.993E-02	8.297E-02	7.049E-03	0.056
ND-147	-7.635E-02		1.152E+00	1.877E+00	2.536E-01	-0.041
PM-149	-9.445E-05		6.559E-04	Half-Life too short		
EU-152	-9.487E-02		1.321E-01	1.903E-01	1.260E-02	-0.499
GD-153	-3.191E-04		1.173E-01	1.705E-01	1.393E-02	-0.002
EU-154	-7.820E-03		1.718E-01	2.788E-01	2.789E-02	-0.028
EU-155	1.442E-01		1.303E-01	2.235E-01	1.647E-02	0.645
TB-160	-5.141E-02		1.824E-01	2.959E-01	2.587E-02	-0.174
HO-166M	-4.765E-03		7.990E-02	1.282E-01	7.501E-03	-0.037
TA-182	-1.441E-01		2.633E-01	4.076E-01	2.502E-02	-0.354
IR-192	-4.870E-02		4.506E-02	7.097E-02	4.210E-03	-0.686
HG-203	4.480E-02		5.286E-02	9.246E-02	5.679E-03	0.485
BI-207	7.457E-02		6.466E-02	1.180E-01	8.668E-03	0.632
PB-210	2.375E+00		6.529E+00	1.082E+01	8.359E-01	0.220
PB-211	-4.026E-01		9.657E-01	1.532E+00	7.350E-01	-0.263
BI-212	2.965E+00	+	9.640E-01	1.465E+00	1.592E-01	2.024
RN-219	-2.169E-01		5.235E-01	8.466E-01	1.137E-01	-0.256
RA-223	-1.256E+00		8.594E-01	1.293E+00	2.088E-01	-0.972
AC-227	2.744E-03		3.073E-01	4.921E-01	5.010E-02	0.006
TH-227	2.744E-03		3.073E-01	4.921E-01	5.896E-02	0.006
PA-231	-8.400E-01		1.766E+00	2.902E+00	3.811E-01	-0.289
TH-231	-1.256E+00		8.594E-01	1.293E+00	2.088E-01	-0.972
PA-233	2.650E-02		7.545E-02	1.290E-01	8.069E-03	0.205
PA-234	1.397E-01		3.624E-01	5.980E-01	1.124E-01	0.234
PA-234M	6.126E-01		5.890E+00	9.817E+00	9.367E-01	0.062
TH-234	6.285E-01		1.930E+00	3.260E+00	5.997E-01	0.193
U-235	5.551E-02		2.372E-01	3.886E-01	6.051E-02	0.143
U-238	6.285E-01		1.930E+00	3.260E+00	5.997E-01	0.193
NP-239	-3.488E-01		4.877E-01	7.790E-01	4.849E-02	-0.448
AM-241	-2.930E-01		2.334E-01	3.712E-01	3.454E-02	-0.789
CM-247	3.068E-03		4.754E-02	7.922E-02	4.592E-03	0.039
CF-249	6.258E-02		4.948E-02	8.807E-02	5.095E-03	0.711
CF-251	2.280E-02		1.480E-01	2.421E-01	1.253E-02	0.094

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248243002          *
* Acquisition date   : 19-MAR-2010 10:51:39 Detector SN#      :             *
* Detector ID        : GAM23                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 2.000        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.69             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243002             Analyst initials: MXR1          *
* Batch Number       : 959280                 Sample Quantity : 1.1576E+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	2.495E+01	2.626E+00	2.879E-01	1.340E+00
CD-109	4.070E+00	1.256E+00	8.561E-01	6.410E-01
SN-126	3.931E-01	1.214E-01	9.265E-02	6.193E-02
CS-135	3.080E-01	3.047E-01	1.635E-01	1.555E-01
BA-137M	6.258E-01	1.020E-01	3.385E-02	5.204E-02
CS-137	6.611E-01	1.078E-01	3.576E-02	5.501E-02
TL-208	5.839E-01	1.044E-01	3.748E-02	5.328E-02
BI-211	4.561E+00	5.934E-01	1.969E-01	3.028E-01
PB-212	1.698E+00	1.759E-01	6.030E-02	8.977E-02
BI-214	1.380E+00	2.102E-01	6.729E-02	1.073E-01
PB-214	1.655E+00	2.332E-01	7.161E-02	1.190E-01
RA-224	3.729E+00	1.510E+00	6.464E-01	7.706E-01
RA-226	1.380E+00	2.102E-01	6.729E-02	1.073E-01
AC-228	2.011E+00	4.187E-01	1.250E-01	2.136E-01
RA-228	2.011E+00	4.187E-01	1.250E-01	2.136E-01
TH-228	1.698E+00	1.759E-01	6.030E-02	8.977E-02
TH-229	2.460E-01	6.433E-01	5.491E-01	3.282E-01
TH-232	2.011E+00	4.187E-01	1.250E-01	2.136E-01
NP-237	1.173E+00	4.351E-01	2.786E-01	2.220E-01
ANH-511	1.127E-01	6.851E-02	2.920E-02	3.495E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	2.285E-01	4.244E-01	3.725E-01	2.165E-01	NOT IDENT.
NA-22	-2.182E-03	5.973E-02	4.940E-02	3.048E-02	NOT IDENT.
NA-24	-2.470E+09	5.289E+09	0.000E+00	2.699E+09	SHORT HLIF
SC-46	1.523E-02	4.505E-02	3.965E-02	2.299E-02	FAIL ABUN
V-48	-3.516E-02	1.273E-01	1.024E-01	6.494E-02	NOT IDENT.
CR-51	9.986E-01	5.456E-01	5.116E-01	2.784E-01	NOT IDENT.
MN-54	-8.532E-03	4.568E-02	3.847E-02	2.331E-02	NOT IDENT.

CO-56	1.766E-02	4.826E-02	4.256E-02	2.462E-02	NOT IDENT.
CO-57	1.920E-03	3.124E-02	2.684E-02	1.594E-02	NOT IDENT.
CO-58	-2.265E-02	4.867E-02	3.993E-02	2.483E-02	NOT IDENT.
FE-59	2.554E-02	1.164E-01	9.989E-02	5.939E-02	NOT IDENT.
CO-60	-2.010E-02	4.444E-02	3.437E-02	2.267E-02	NOT IDENT.
ZN-65	1.667E-01	1.353E-01	1.118E-01	6.902E-02	NOT IDENT.
SE-75	-8.388E-03	6.686E-02	4.772E-02	3.411E-02	NOT IDENT.
SR-85	3.472E-02	5.433E-02	4.212E-02	2.772E-02	NOT IDENT.
Y-88	9.692E-03	3.854E-02	3.403E-02	1.966E-02	NOT IDENT.
Y-91	9.629E+00	2.915E+01	2.503E+01	1.487E+01	NOT IDENT.
NB-94	-1.628E-02	3.960E-02	3.152E-02	2.021E-02	NOT IDENT.
NB-95	3.898E-02	5.768E-02	5.000E-02	2.943E-02	NOT IDENT.
NB-95M	7.767E-01	2.201E-01	1.836E-01	1.123E-01	NOT IDENT.
ZR-95	3.746E-02	8.864E-02	7.588E-02	4.522E-02	NOT IDENT.
MO-99	6.981E+01	1.076E+02	0.000E+00	5.492E+01	SHORT HLIF
TC-99M	-2.752E+25	1.102E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	7.046E-03	5.091E-02	4.347E-02	2.598E-02	FAIL ABUN
RH-106	-1.209E-01	3.539E-01	2.854E-01	1.805E-01	NOT IDENT.
RU-106	-1.209E-01	3.537E-01	2.854E-01	1.804E-01	NOT IDENT.
AG-108M	-9.025E-03	3.566E-02	2.987E-02	1.820E-02	NOT IDENT.
AG-110M	1.674E-01	5.931E-02	5.296E-02	3.026E-02	FAIL ABUN
SN-113	-4.236E-02	5.504E-02	4.484E-02	2.808E-02	NOT IDENT.
CD-115	6.657E+01	1.551E+02	0.000E+00	7.912E+01	SHORT HLIF
SN-117M	-8.195E-02	9.710E-02	7.929E-02	4.954E-02	NOT IDENT.
TE-123M	-2.656E-02	3.529E-02	2.894E-02	1.801E-02	NOT IDENT.
SB-124	-2.079E-02	9.903E-02	8.028E-02	5.053E-02	NOT IDENT.
SB-125	-1.517E-02	9.780E-02	8.242E-02	4.990E-02	NOT IDENT.
TE-125M	-4.006E+00	1.296E+01	1.102E+01	6.610E+00	NOT IDENT.
I-126	2.781E-01	4.377E-01	3.378E-01	2.233E-01	NOT IDENT.
SB-126	4.632E-03	3.069E-01	2.186E-01	1.566E-01	NOT IDENT.
SB-127	1.060E+00	6.368E+00	5.350E+00	3.249E+00	NOT IDENT.
I-131	7.488E-02	2.618E-01	2.290E-01	1.336E-01	NOT IDENT.
TE-132	-3.105E+00	4.884E+00	3.921E+00	2.492E+00	NOT IDENT.
BA-133	2.577E-02	5.594E-02	4.298E-02	2.854E-02	NOT IDENT.
I-133	-2.262E+06	3.925E+06	0.000E+00	2.003E+06	SHORT HLIF
CS-134	6.706E-02	6.057E-02	5.585E-02	3.090E-02	NOT IDENT.
I-135	-8.771E+23	2.994E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.750E-02	1.739E-01	1.517E-01	8.874E-02	NOT IDENT.
CE-139	-1.570E-02	3.816E-02	3.173E-02	1.947E-02	NOT IDENT.
BA-140	2.139E-01	4.842E-01	4.167E-01	2.471E-01	NOT IDENT.
LA-140	-1.113E-01	1.482E-01	1.098E-01	7.559E-02	NOT IDENT.
CE-141	-8.939E-02	8.934E-02	7.230E-02	4.558E-02	NOT IDENT.
CE-143	7.337E+04	2.246E+04	0.000E+00	1.146E+04	SHORT HLIF
CE-144	8.605E-02	2.459E-01	2.126E-01	1.254E-01	NOT IDENT.
PM-144	1.565E-02	4.092E-02	3.495E-02	2.088E-02	NOT IDENT.
PR-144	1.187E+00	3.076E+00	2.628E+00	1.569E+00	NOT IDENT.
PM-146	4.679E-03	4.893E-02	4.184E-02	2.497E-02	NOT IDENT.
ND-147	-7.635E-02	1.129E+00	9.452E-01	5.760E-01	FAIL ABUN
PM-149	-9.445E+01	1.286E+03	0.000E+00	6.559E+02	SHORT HLIF
EU-152	-9.487E-02	1.294E-01	9.620E-02	6.603E-02	FAIL ABUN
GD-153	-3.191E-04	1.149E-01	8.728E-02	5.863E-02	NOT IDENT.
EU-154	-7.820E-03	1.684E-01	1.391E-01	8.592E-02	NOT IDENT.
EU-155	1.442E-01	1.277E-01	1.143E-01	6.517E-02	FAIL ABUN
TB-160	-5.141E-02	1.787E-01	1.482E-01	9.119E-02	FAIL ABUN
HO-166M	-4.765E-03	7.830E-02	6.433E-02	3.995E-02	FAIL ABUN
TA-182	-1.441E-01	2.580E-01	2.035E-01	1.316E-01	NOT IDENT.
IR-192	-4.870E-02	4.416E-02	3.591E-02	2.253E-02	FAIL ABUN
HG-203	4.480E-02	5.180E-02	4.685E-02	2.643E-02	FAIL ABUN
BI-207	7.457E-02	6.336E-02	5.900E-02	3.233E-02	FAIL ABUN
PB-210	2.375E+00	6.399E+00	5.577E+00	3.265E+00	NOT IDENT.
PB-211	-4.026E-01	9.464E-01	7.735E-01	4.829E-01	NOT IDENT.
BI-212	2.965E+00	9.447E-01	7.352E-01	4.820E-01	FAIL ABUN
RN-219	-2.169E-01	5.130E-01	4.274E-01	2.618E-01	FAIL ABUN
RA-223	-1.256E+00	8.422E-01	6.539E-01	4.297E-01	FAIL ABUN
AC-227	2.744E-03	3.012E-01	2.496E-01	1.537E-01	FAIL ABUN
TH-227	2.744E-03	3.012E-01	2.496E-01	1.537E-01	FAIL ABUN
PA-231	-8.400E-01	1.731E+00	1.470E+00	8.831E-01	FAIL ABUN
TH-231	-1.256E+00	8.422E-01	6.539E-01	4.297E-01	FAIL ABUN
PA-233	2.650E-02	7.394E-02	6.530E-02	3.772E-02	FAIL ABUN
PA-234	1.397E-01	3.552E-01	2.994E-01	1.812E-01	FAIL ABUN
PA-234M	6.126E-01	5.772E+00	4.912E+00	2.945E+00	NOT IDENT.
TH-234	6.285E-01	1.891E+00	1.676E+00	9.648E-01	FAIL ABUN
U-235	5.551E-02	2.325E-01	1.982E-01	1.186E-01	FAIL ABUN
U-238	6.285E-01	1.891E+00	1.676E+00	9.648E-01	FAIL ABUN
NP-239	-3.488E-01	4.779E-01	3.981E-01	2.438E-01	NOT IDENT.
AM-241	-2.930E-01	2.287E-01	1.909E-01	1.167E-01	NOT IDENT.
CM-247	3.068E-03	4.659E-02	4.000E-02	2.377E-02	NOT IDENT.
CF-249	6.258E-02	4.849E-02	4.448E-02	2.474E-02	NOT IDENT.

CF-251	2.280E-02	1.451E-01	1.232E-01	7.402E-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	291.8291
49.72	318.0287
57.36	0.0000
59.54	405.4668
63.29	366.9542
63.29	366.9542
64.28	379.6004
67.75	424.5789
69.67	375.1236
70.83	396.7863
72.81	473.2557
72.87	473.2960
72.87	473.2960
74.82	526.1545
74.82	526.1545
74.82	526.1545
74.97	526.2628
77.11	527.8012
77.11	527.8012
77.11	527.8012
79.69	529.6264
79.80	529.7029
80.12	529.9281
80.19	529.9770
80.57	530.2426
81.00	530.5422
81.07	530.5910
81.07	530.5910
83.79	532.4694
83.79	532.4694
85.43	533.5848
86.48	534.2946
86.55	534.3434
86.79	534.5027
86.94	579.7150
87.57	543.0322
88.03	438.2640
88.47	396.1923
89.96	439.3130
91.11	343.4572
92.59	583.7679
92.59	583.7679
93.35	435.3264
94.67	322.4571
94.87	339.5917
94.87	339.5917
95.86	363.2784
97.43	320.4014
98.44	294.3077
99.53	273.9659
100.11	303.2637
103.18	356.1922
103.37	332.7783
105.31	302.1160
106.12	304.3521
109.28	344.8223
111.00	331.6498
111.76	321.0550
116.30	336.5067
117.23	329.8799
121.12	294.2989
121.78	314.4629
122.06	314.5530
123.07	330.8699
131.20	374.8722
133.52	315.1159
136.00	300.6799

136.47	317.0214
140.51	0.0000
140.51	0.0000
143.76	279.4185
144.24	295.8654
144.24	295.8654
145.44	329.8951
152.43	297.0324
153.25	310.6172
154.21	289.2625
154.21	289.2625
156.02	297.9717
158.56	312.0642
159.00	308.0469
162.66	284.1283
163.33	279.1015
165.86	316.0907
176.60	234.9768
177.52	238.3005
181.07	0.0000
184.41	252.2745
185.72	252.5335
193.51	267.8750
197.04	269.6560
205.31	335.6597
210.85	277.7921
215.65	198.7961
222.11	234.4307
227.38	232.0165
228.16	247.3980
228.18	247.4015
235.69	254.1376
235.96	241.9127
235.96	241.9127
238.63	253.5392
238.63	253.5392
240.99	253.9357
242.00	254.1049
244.70	192.1830
252.40	184.9458
252.80	182.7775
256.23	185.3975
256.23	185.3975
260.90	0.0000
264.66	196.4236
268.22	211.1713
269.46	180.2136
269.46	180.2136
271.23	179.2896
273.65	244.1924
276.40	184.3474
277.37	179.9561
277.60	176.6058
278.00	177.3241
279.20	181.0546
279.54	191.0019
280.46	195.6126
283.69	195.0856
284.31	207.8058
285.41	196.1874
285.90	0.0000
287.50	151.6210
293.27	0.0000
295.22	171.2472
295.96	171.3208
298.57	100.2125
299.98	142.8417
299.98	142.8417
300.09	147.4103
300.09	147.4103
300.13	147.4143
301.36	162.7248
302.85	159.8178
304.50	150.8264
304.50	150.8264
304.85	150.8566
308.46	155.7434
311.90	143.1917

316.51	174.8431
319.41	147.4707
320.08	128.1627
323.87	214.3536
323.87	214.3536
328.76	143.0723
333.37	164.0615
334.37	167.2449
334.37	167.2449
338.28	158.2814
338.28	158.2814
338.32	158.2834
338.32	158.2834
338.32	158.2834
340.48	139.8212
340.55	139.8267
344.28	164.1144
351.06	132.1531
351.93	132.2116
356.01	120.5851
364.49	117.9565
366.42	0.0000
383.85	126.7039
388.16	109.7820
388.63	106.9428
391.69	133.8733
400.66	151.7278
401.81	145.0831
402.40	134.5518
404.85	153.9473
410.95	125.4360
414.70	127.5850
423.72	92.1994
427.09	97.1985
427.87	91.3987
433.94	114.0707
453.88	96.3814
463.37	92.8216
468.07	108.8372
473.00	95.1820
476.78	85.4006
477.60	89.4034
487.02	78.7811
492.35	0.0000
497.08	78.1028
511.00	95.6546
514.00	90.7278
527.90	0.0000
529.87	0.0000
531.02	90.3167
537.26	76.2909
546.56	0.0000
563.25	89.3662
569.33	83.3889
569.50	83.3948
569.70	83.4007
583.19	91.3978
600.60	86.7615
602.73	85.0900
604.72	86.8856
609.32	78.3234
609.32	78.3234
610.33	73.1274
614.28	57.5365
618.01	61.8016
621.93	67.1297
621.93	67.1297
633.25	77.9186
635.95	60.0740
636.99	63.2578
645.85	62.3893
657.76	67.2375
661.66	66.9698
661.66	66.9698
664.57	0.0000
666.33	58.5557
666.50	58.5583
677.62	67.3189

685.70	63.2089
695.00	66.6212
696.49	64.5029
696.51	64.5029
697.00	66.6636
702.65	74.3216
706.68	73.3374
711.68	78.8546
720.70	64.9937
721.93	0.0000
722.78	74.0673
722.91	74.0706
723.31	72.2738
724.19	72.2933
727.33	65.1270
733.00	56.1787
735.93	71.8282
739.50	0.0000
747.24	49.1418
752.31	54.6851
753.82	56.8991
756.73	50.3776
763.94	88.8983
765.81	68.0834
766.42	80.1770
777.92	0.0000
778.90	56.0370
783.70	61.6348
785.37	65.3462
795.86	65.5441
801.95	66.5845
810.29	57.4729
810.76	60.2617
815.77	46.4213
818.51	52.0317
832.01	49.4319
834.85	68.1390
836.80	0.0000
846.77	48.6971
856.80	56.3440
860.56	48.8812
871.09	52.7917
873.19	49.9916
875.33	0.0000
879.36	55.7434
880.51	48.2006
883.24	35.9397
884.68	51.0919
889.28	39.7869
898.04	58.8692
911.20	42.4676
911.20	42.4676
911.20	42.4676
926.50	35.7125
937.49	51.8005
944.13	36.2395
946.00	41.5310
949.00	42.3323
962.29	41.5084
964.08	41.5268
966.15	41.5486
968.97	41.5775
968.97	41.5775
968.97	41.5775
983.53	56.1078
996.26	60.3539
1001.03	45.8057
1004.73	63.4052
1037.84	44.2456
1038.76	0.0000
1048.07	35.4814
1050.41	37.4743
1050.41	37.4743
1063.66	36.6010
1085.87	57.6696
1099.45	40.8916
1112.07	61.7268
1115.54	48.0469

1120.29	51.5353
1120.29	51.5353
1120.55	51.5374
1121.30	54.9821
1131.51	0.0000
1173.23	49.6759
1177.93	45.6665
1189.05	60.0179
1204.77	53.0728
1221.41	66.5737
1231.02	84.1554
1235.36	60.6061
1238.28	68.8647
1260.41	0.0000
1271.85	50.7127
1274.44	52.8096
1274.54	52.8116
1291.59	38.4453
1298.22	0.0000
1312.11	30.2567
1332.49	30.3794
1365.19	22.1390
1368.63	0.0000
1384.29	16.9297
1408.01	32.9489
1457.56	0.0000
1460.82	16.5598
1489.16	25.8926
1505.03	15.1467
1596.21	22.6138
1620.50	12.2999
1678.03	0.0000
1690.97	14.3591
1764.49	10.1708
1764.49	10.1708
1770.23	33.9331
1771.35	10.6666
1791.20	0.0000
1836.06	8.8154

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243002

Total Uranium Activity	1.8955E+00	ug/g
Total Uranium Counting Unc.	5.6267E+00	ug/g
Total Uranium Tpu	2.8708E-06	ug/g
Total Uranium Mda	4.9858E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280                      SAMPLE ID   : G248243002
*  ANALYST       : MXR1                        DETECTOR    : GAM23
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:51:39.11    SAMPLE ALQT  : 115.760 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.608E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.236E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.223E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.058E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:53:02.91

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243003.CNF;1
Sample date   : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:52:17
Sample ID    : G248243003 Sample quantity : 1.37380E+02 GRAM
Detector name : GAM12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID      : 959280 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	63.56*	124	665	1.00	126.34	122	9	1.72E-02	39.4	
2	2	74.90*	631	586	1.21	149.02	143	14	8.76E-02	7.6	4.37E+00
3	2	77.20	894	368	0.88	153.62	143	14	1.24E-01	4.8	
4	4	87.19*	302	520	0.99	173.61	165	13	4.19E-02	13.1	2.60E+00
5	5	89.94	194	369	0.85	179.10	177	13	2.69E-02	16.3	1.95E+00
6	5	92.93*	391	619	1.49	185.09	177	13	5.42E-02	13.0	
7	0	186.01*	185	580	1.19	371.29	366	11	2.57E-02	27.1	
8	0	209.30	184	439	1.23	417.88	414	11	2.55E-02	23.2	
9	5	238.65*	1882	218	1.06	476.59	469	19	2.61E-01	2.6	1.25E+00
10	5	241.57	459	326	1.79	482.42	469	19	6.37E-02	11.6	
11	2	270.26*	157	240	1.56	539.82	535	33	2.18E-02	19.2	2.03E+00
12	2	277.31	87	213	1.57	553.90	535	33	1.22E-02	32.7	
13	0	295.24*	572	174	1.08	589.78	586	9	7.94E-02	5.9	
14	0	299.97	124	204	1.35	599.24	595	9	1.73E-02	22.5	
15	0	327.88	94	161	0.95	655.07	652	8	1.30E-02	25.6	
16	0	338.46*	343	322	1.10	676.22	669	14	4.77E-02	12.5	
17	0	351.85*	936	175	1.25	703.01	696	12	1.30E-01	4.4	
18	0	409.51	54	115	0.84	818.34	815	8	7.44E-03	37.4	
19	0	463.08	124	96	1.34	925.48	921	9	1.72E-02	16.9	
20	0	510.64*	205	142	1.52	1020.61	1013	15	2.85E-02	16.2	
21	0	583.25*	549	126	1.43	1165.82	1160	14	7.62E-02	6.1	
22	0	609.35*	618	145	1.40	1218.00	1213	13	8.58E-02	5.8	
23	0	727.10	150	78	1.36	1453.50	1447	12	2.09E-02	14.3	
24	0	768.61	68	111	1.22	1536.50	1529	13	9.44E-03	34.5	
25	0	794.87	94	61	2.02	1589.01	1584	12	1.31E-02	19.4	
26	0	861.06	73	57	1.88	1721.37	1714	11	1.01E-02	23.4	
27	0	911.13*	376	102	1.82	1821.49	1812	18	5.23E-02	8.4	
28	0	934.62	66	92	2.20	1868.45	1861	20	9.16E-03	37.4	
29	2	964.38	67	57	2.21	1927.95	1922	23	9.33E-03	26.0	2.91E+00
30	2	968.93*	230	65	1.86	1937.05	1922	23	3.20E-02	9.3	
31	0	1120.44*	129	101	1.70	2239.97	2232	15	1.80E-02	19.3	
32	0	1238.13*	82	63	1.30	2475.27	2469	12	1.14E-02	22.6	
33	0	1460.79*	1637	37	2.09	2920.38	2910	21	2.27E-01	2.7	
34	0	1588.13	21	29	1.41	3174.91	3170	11	2.98E-03	52.3	
35	0	1730.14	29	11	2.05	3458.74	3450	12	4.08E-03	27.9	
36	0	1765.17*	94	32	2.40	3528.75	3516	18	1.30E-02	17.1	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:53:05

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:52:17
Sample ID        : G248243003 Sample quantity : 137.38 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 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	*	3.904E+01	4.102E+00	5.311E-01	4.817E-02	73.512
CD-109	+	88.03	*	4.163E+00	1.158E+00	1.332E+00	1.254E-01	3.126
SN-126	+	64.28		1.086E+00	8.700E-01	8.596E-01	1.250E-01	1.264
	+	86.94		1.672E+00	8.208E-01	5.949E-01	2.469E-01	2.810
	+	87.57	*	4.021E-01	1.119E-01	1.422E-01	1.332E-02	2.828
TL-208	+	277.37		8.618E-01	5.731E-01	6.699E-01	8.413E-02	1.287
	+	583.19	*	7.461E-01	1.160E-01	6.107E-02	5.808E-03	12.219
	+	860.56		9.373E-01	4.499E-01	5.279E-01	5.624E-02	1.775
BI-211		72.87		8.466E+00	4.092E+00	6.391E+00	5.117E-01	1.325
	+	351.06	*	5.620E+00	6.998E-01	3.418E-01	3.045E-02	16.444
PB-212	+	74.82		3.673E+00	7.288E-01	6.306E-01	8.005E-02	5.825
	+	77.11		2.986E+00	3.778E-01	3.625E-01	3.025E-02	8.238
	+	238.63	*	2.522E+00	2.784E-01	1.041E-01	1.008E-02	24.235
	+	300.09		2.598E+00	1.200E+00	1.304E+00	1.380E-01	1.991
BI-214	+	609.32	*	1.628E+00	2.538E-01	1.232E-01	1.279E-02	13.214
	+	1120.29		1.769E+00	7.097E-01	5.231E-01	5.731E-02	3.381
	+	1764.49		1.770E+00	6.239E-01	1.965E-01	1.663E-02	9.004
PB-214	+	74.82		6.511E+00	1.239E+00	1.118E+00	1.272E-01	5.825
	+	77.11		5.265E+00	7.950E-01	6.391E-01	7.498E-02	8.238
	+	242.00		3.731E+00	9.500E-01	6.330E-01	6.534E-02	5.894
	+	295.22		2.113E+00	3.398E-01	2.364E-01	2.565E-02	8.938
	+	351.93	*	2.040E+00	2.778E-01	1.243E-01	1.302E-02	16.408
RA-224	+	240.99	*	6.597E+00	1.636E+00	1.115E+00	9.524E-02	5.914
RA-226	+	609.32	*	1.628E+00	2.538E-01	1.232E-01	1.279E-02	13.214
	+	1120.29		1.769E+00	7.097E-01	5.231E-01	5.731E-02	3.381
	+	1764.49		1.770E+00	6.239E-01	1.965E-01	1.663E-02	9.004
AC-228	+	338.32		2.294E+00	1.114E+00	4.056E-01	1.691E-01	5.656
	+	911.20	*	2.475E+00	5.241E-01	2.888E-01	3.706E-02	8.570
	+	968.97		2.611E+00	8.118E-01	4.130E-01	1.026E-01	6.321
RA-228	+	338.32		2.294E+00	1.114E+00	4.056E-01	1.691E-01	5.656
	+	911.20	*	2.475E+00	5.241E-01	2.888E-01	3.706E-02	8.570
	+	968.97		2.611E+00	8.118E-01	4.130E-01	1.026E-01	6.321
TH-228	+	74.82		3.673E+00	6.366E-01	6.306E-01	5.196E-02	5.825
	+	77.11		2.986E+00	3.778E-01	3.625E-01	3.025E-02	8.238

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	2.522E+00	2.784E-01	1.041E-01	1.008E-02	24.235
	+	300.09		2.598E+00	1.973E+00	1.304E+00	7.986E-01	1.991
TH-232	+	338.32		2.294E+00	6.040E-01	4.056E-01	3.465E-02	5.656
	+	911.20	*	2.475E+00	5.241E-01	2.888E-01	3.706E-02	8.570
	+	968.97		2.611E+00	8.118E-01	4.130E-01	1.026E-01	6.321
TH-234	+	63.29	*	2.818E+00	2.276E+00	2.293E+00	4.085E-01	1.229
	+	92.59		4.318E+00	1.479E+00	1.065E+00	2.370E-01	4.054
U-235	+	89.96		2.679E+00	1.099E+00	1.690E+00	4.197E-01	1.585
	+	93.35		3.262E+00	1.139E+00	8.005E-01	1.860E-01	4.075
		143.76	*	1.851E-01	2.361E-01	3.839E-01	6.396E-02	0.482
		163.33		-2.746E-01	5.027E-01	7.679E-01	1.355E-01	-0.358
	+	185.72		1.610E-01	8.823E-02	7.352E-02	5.973E-03	2.189
		205.31		1.169E-01	5.987E-01	8.833E-01	1.589E-01	0.132
NP-237	+	86.48	*	1.200E+00	4.181E-01	4.290E-01	9.831E-02	2.797
		95.86		-2.224E-01	1.101E+00	1.579E+00	3.801E-01	-0.141
U-238	+	63.29	*	2.818E+00	2.276E+00	2.293E+00	4.085E-01	1.229
	+	92.59		4.318E+00	1.190E+00	1.065E+00	9.622E-02	4.054
ANH-511	+	511.00	*	2.129E-01	7.136E-02	5.225E-02	4.571E-03	4.075

---- 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	*	1.310E-02	3.930E-01	6.299E-01	5.844E-02	0.021
NA-22		1274.54	*	7.301E-03	5.130E-02	8.548E-02	7.289E-03	0.085
NA-24		1368.63	*	1.453E+03	5.130E-02	Half-Life too short		
SC-46		889.28	*	-1.749E-02	4.959E-02	7.766E-02	7.956E-03	-0.225
	+	1120.55		3.192E-01	1.263E-01	1.684E-01	1.459E-02	1.896
V-48		944.13		-9.007E-01	1.545E+00	1.954E+00	1.966E-01	-0.461
		983.53	*	2.030E-02	1.157E-01	1.968E-01	1.935E-02	0.103
		1312.11		-1.099E-02	1.323E-01	2.153E-01	1.867E-02	-0.051
CR-51		320.08	*	-4.281E-01	4.882E-01	7.603E-01	6.901E-02	-0.563
MN-54		834.85	*	3.530E-02	4.677E-02	7.994E-02	7.978E-03	0.442
CO-56		846.77	*	2.476E-02	4.595E-02	7.801E-02	7.833E-03	0.317
		1037.84		-4.425E-01	3.524E-01	5.155E-01	5.076E-02	-0.858
	+	1238.28		3.355E-01	1.543E-01	2.324E-01	2.003E-02	1.444
		1771.35		-1.987E+00	4.744E-01	2.682E-01	2.265E-02	-7.411
CO-57		122.06	*	2.513E-02	2.904E-02	4.817E-02	3.995E-03	0.522
		136.47		3.877E-02	2.429E-01	3.909E-01	3.423E-02	0.099
CO-58		810.76	*	-1.704E-02	4.815E-02	7.605E-02	7.506E-03	-0.224
FE-59		1099.45	*	-7.635E-02	1.267E-01	2.007E-01	1.919E-02	-0.380
		1291.59		-1.640E-01	1.627E-01	2.393E-01	2.335E-02	-0.685
CO-60		1173.23		-7.740E-04	5.422E-02	8.971E-02	7.240E-03	-0.009
		1332.49	*	-1.650E-03	4.491E-02	7.334E-02	6.419E-03	-0.022
ZN-65		1115.54	*	-1.438E-01	1.303E-01	1.620E-01	1.414E-02	-0.887
SE-75		121.12		1.506E-01	1.556E-01	2.585E-01	2.799E-02	0.583
		136.00		2.613E-02	4.750E-02	7.756E-02	6.322E-03	0.337
		264.66	*	-1.546E-02	5.352E-02	8.095E-02	7.025E-03	-0.191
		279.54		8.152E-02	1.270E-01	2.160E-01	1.943E-02	0.377

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		-8.135E-03	3.105E-01	5.017E-01	5.384E-02	-0.016
SR-85		514.00	*	6.142E-02	4.931E-02	7.920E-02	6.938E-03	0.776
Y-88		898.04		-1.046E-02	5.585E-02	8.888E-02	9.172E-03	-0.118
		1836.06	*	1.547E-02	3.858E-02	6.823E-02	5.650E-03	0.227
Y-91		1204.77	*	4.944E+00	2.834E+01	4.746E+01	3.899E+00	0.104
NB-94		702.65	*	-1.601E-02	3.621E-02	5.757E-02	5.297E-03	-0.278
		871.09		3.219E-04	3.738E-02	6.061E-02	6.158E-03	0.005
NB-95		765.81	*	6.896E-02	6.594E-02	1.019E-01	9.776E-03	0.677
NB-95M		235.69	*	5.664E-02	1.697E-01	2.539E-01	2.485E-02	0.223
ZR-95		724.19		6.843E-02	1.369E-01	2.038E-01	2.042E-02	0.336
		756.73	*	-1.320E-02	9.423E-02	1.512E-01	1.567E-02	-0.087
MO-99		140.51		-1.724E-04	9.423E-02	Half-Life	too short	
		181.07		-7.109E-06	9.423E-02	Half-Life	too short	
		366.42		-9.296E-05	9.423E-02	Half-Life	too short	
		739.50	*	2.902E-05	9.423E-02	Half-Life	too short	
		777.92		-9.188E-05	9.423E-02	Half-Life	too short	
TC-99M		140.51	*	-1.042E+20	9.423E-02	Half-Life	too short	
RU-103		497.08	*	-2.122E-02	4.824E-02	7.891E-02	1.106E-02	-0.269
	+	610.33		1.929E+01	3.898E+00	3.930E+00	6.492E-01	4.910
RH-106		621.93	*	-1.013E-01	3.617E-01	5.888E-01	7.932E-02	-0.172
		1050.41		-9.599E-01	2.982E+00	4.850E+00	4.525E-01	-0.198
RU-106		621.93	*	-1.013E-01	3.616E-01	5.888E-01	5.268E-02	-0.172
		1050.41		-9.599E-01	2.982E+00	4.850E+00	4.525E-01	-0.198
AG-108M		433.94	*	-2.584E-03	3.253E-02	5.207E-02	4.512E-03	-0.050
		614.28		-6.824E-03	4.117E-02	5.840E-02	5.383E-03	-0.117
		722.91		-2.158E-02	5.030E-02	6.832E-02	6.551E-03	-0.316
AG-110M		657.76	*	7.481E-03	4.161E-02	6.966E-02	6.391E-03	0.107
		677.62		8.470E-02	3.453E-01	5.803E-01	5.379E-02	0.146
		706.68		-1.177E-01	2.531E-01	4.023E-01	3.806E-02	-0.292
		763.94		1.404E-01	2.127E-01	3.215E-01	3.150E-02	0.437
		884.68		-1.843E-03	5.954E-02	9.608E-02	1.005E-02	-0.019
		937.49		8.473E-02	1.254E-01	2.140E-01	2.218E-02	0.396
		1384.29		-9.071E-02	1.921E-01	2.966E-01	2.678E-02	-0.306
		1505.03		-3.288E-01	3.779E-01	5.473E-01	4.831E-02	-0.601
SN-113		391.69	*	-1.977E-03	5.116E-02	8.271E-02	6.924E-03	-0.024
CD-115		260.90		6.985E-04	5.116E-02	Half-Life	too short	
		492.35		2.226E-04	5.116E-02	Half-Life	too short	
		527.90	*	7.601E-06	5.116E-02	Half-Life	too short	
SN-117M		156.02		-2.702E+00	3.902E+00	6.009E+00	4.795E-01	-0.450
		158.56	*	6.192E-03	9.079E-02	1.445E-01	1.152E-02	0.043
TE-123M		159.00	*	-8.291E-03	3.343E-02	5.245E-02	4.211E-03	-0.158
SB-124		602.73		-5.567E-02	5.155E-02	7.026E-02	6.282E-03	-0.792
		645.85		4.270E-01	5.651E-01	9.860E-01	9.284E-02	0.433
		722.78		-2.547E-01	5.520E-01	7.469E-01	7.106E-02	-0.341
		1690.97	*	4.005E-02	8.301E-02	1.497E-01	1.345E-02	0.268
SB-125		427.87	*	-1.028E-02	1.047E-01	1.676E-01	1.426E-02	-0.061
	+	463.37		1.146E+00	4.005E-01	6.308E-01	5.802E-02	1.817
		600.60		1.689E-01	1.909E-01	3.351E-01	3.202E-02	0.504
		635.95		2.098E-02	3.125E-01	5.207E-01	5.009E-02	0.040

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28	*		6.382E-01	1.198E+01	1.941E+01	1.999E+00	0.033
I-126	388.63			-1.270E-02	2.796E-01	4.520E-01	3.672E-02	-0.028
	666.33	*		2.342E-01	3.829E-01	6.580E-01	5.892E-02	0.356
	753.82			-1.676E-01	3.296E+00	5.380E+00	5.124E-01	-0.031
SB-126	414.70			-2.117E-02	1.573E-01	2.194E-01	1.811E-02	-0.097
	666.50			7.721E-02	1.337E-01	2.293E-01	2.054E-02	0.337
	695.00			1.234E-01	1.396E-01	2.431E-01	2.224E-02	0.508
	697.00			4.597E-01	4.814E-01	8.411E-01	7.707E-02	0.547
	720.70	*		2.604E-01	2.858E-01	4.440E-01	4.137E-02	0.586
	856.80			-3.657E-01	8.860E-01	1.170E+00	1.181E-01	-0.313
SB-127	252.40			2.085E+00	1.941E+01	3.244E+01	1.372E+01	0.064
	473.00			1.185E+00	7.572E+00	1.224E+01	1.848E+00	0.097
	685.70	*		3.154E-01	5.684E+00	9.415E+00	1.341E+00	0.033
	783.70			1.535E+01	1.697E+01	2.928E+01	4.515E+00	0.524
I-131	80.19			1.822E+01	1.271E+01	1.604E+01	1.403E+00	1.136
	284.31			4.464E-01	3.574E+00	5.233E+00	4.803E-01	0.085
	364.49	*		-5.286E-02	2.542E-01	4.088E-01	3.643E-02	-0.129
	636.99			2.259E+00	3.516E+00	6.074E+00	5.762E-01	0.372
TE-132	49.72			-9.346E+01	1.063E+02	1.706E+02	2.241E+01	-0.548
	111.76			9.264E+00	2.090E+02	3.341E+02	4.446E+01	0.028
	116.30			1.170E+02	1.756E+02	2.893E+02	3.843E+01	0.404
	228.16	*		2.290E-01	4.551E+00	7.632E+00	1.340E+00	0.030
BA-133	81.00			1.223E-01	1.337E-01	1.629E-01	2.535E-02	0.751
	276.40	+		7.977E-01	5.330E-01	7.206E-01	1.019E-01	1.107
	302.85			-7.839E-03	1.705E-01	2.456E-01	3.216E-02	-0.032
	356.01	*		2.726E-02	4.901E-02	7.304E-02	9.370E-03	0.373
	383.85			-1.432E-02	3.220E-01	5.212E-01	6.317E-02	-0.027
I-133	529.87	*		-1.390E-01	3.220E-01	Half-Life	too short	
	875.33			4.064E+01	3.220E-01	Half-Life	too short	
	1298.22			5.055E+01	3.220E-01	Half-Life	too short	
CS-134	563.25			2.760E-01	4.254E-01	7.375E-01	6.617E-02	0.374
	569.33			9.482E-02	2.330E-01	3.985E-01	3.593E-02	0.238
	604.72			-1.910E-02	4.265E-02	5.899E-02	5.287E-03	-0.324
	795.86	+	*	1.882E-01	7.540E-02	1.115E-01	1.096E-02	1.688
	801.95			-9.646E-02	4.891E-01	7.069E-01	6.961E-02	-0.136
	1365.19			5.111E-02	1.350E+00	2.219E+00	2.036E-01	0.023
CS-135	268.22	*		3.385E-01	1.987E-01	3.131E-01	3.128E-02	1.081
I-135	546.56			2.217E+18	1.987E-01	Half-Life	too short	
	836.80			4.557E+18	1.987E-01	Half-Life	too short	
	1038.76			-5.492E+18	1.987E-01	Half-Life	too short	
	1131.51			1.297E+18	1.987E-01	Half-Life	too short	
	1260.41	*		-1.768E+18	1.987E-01	Half-Life	too short	
	1457.56			3.751E+20	1.987E-01	Half-Life	too short	
	1678.03			-3.246E+18	1.987E-01	Half-Life	too short	
	1791.20			4.453E+18	1.987E-01	Half-Life	too short	
CS-136	153.25			8.760E-01	1.492E+00	2.423E+00	2.362E-01	0.362
	176.60			2.200E-01	8.167E-01	1.398E+00	1.258E-01	0.157
	273.65			9.648E-02	8.026E-01	1.337E+00	1.256E-01	0.072
	340.55			7.774E-01	3.002E-01	4.826E-01	4.281E-02	1.611

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		6.935E-02	1.367E-01	2.309E-01	2.288E-02	0.300
		1048.07	*	-1.061E-01	1.828E-01	2.899E-01	2.811E-02	-0.366
		1235.36		1.162E+00	1.246E+00	1.916E+00	2.218E-01	0.606
BA-137M		661.66	*	7.015E-03	4.311E-02	7.203E-02	6.426E-03	0.097
CS-137		661.66	*	7.411E-03	4.554E-02	7.609E-02	6.801E-03	0.097
CE-139		165.86	*	3.740E-02	3.482E-02	5.746E-02	4.574E-03	0.651
BA-140		162.66		-1.304E+00	1.439E+00	2.167E+00	1.861E-01	-0.602
		304.85		-1.243E+00	2.626E+00	3.631E+00	1.063E+00	-0.342
		423.72		4.956E-01	3.371E+00	5.478E+00	1.798E+00	0.090
		537.26	*	1.206E-01	4.571E-01	7.762E-01	2.637E-01	0.155
LA-140	+	328.76		1.186E+00	6.163E-01	9.553E-01	8.679E-02	1.242
		487.02		-1.004E-01	2.298E-01	3.545E-01	3.256E-02	-0.283
		815.77		-3.579E-02	6.091E-01	9.871E-01	1.063E-01	-0.036
		1596.21	*	-4.078E-02	1.824E-01	2.713E-01	2.378E-02	-0.150
CE-141		145.44	*	7.484E-03	8.607E-02	1.377E-01	1.127E-02	0.054
CE-143		57.36		9.271E-03	8.607E-02	Half-Life	too short	
		293.27	*	4.347E-02	8.607E-02	Half-Life	too short	
		664.57		6.843E-03	8.607E-02	Half-Life	too short	
		721.93		3.295E-02	8.607E-02	Half-Life	too short	
CE-144		80.12		5.148E+00	3.563E+00	4.499E+00	3.874E-01	1.144
		133.52	*	-3.310E-02	2.332E-01	3.711E-01	5.569E-02	-0.089
PM-144		476.78		-1.976E-02	7.421E-02	1.164E-01	1.089E-02	-0.170
		618.01		2.814E-03	3.562E-02	5.951E-02	5.464E-03	0.047
		696.49	*	2.396E-02	4.094E-02	7.000E-02	6.416E-03	0.342
PR-144		696.51	*	1.822E+00	3.078E+00	5.265E+00	4.823E-01	0.346
		1489.16		-8.239E+00	1.461E+01	2.174E+01	1.919E+00	-0.379
PM-146		453.88	*	3.550E-02	4.736E-02	7.955E-02	8.343E-03	0.446
		633.25		-3.069E-01	1.635E+00	2.670E+00	1.022E+00	-0.115
		735.93		-1.356E-01	1.818E-01	2.753E-01	7.786E-02	-0.492
		747.24		-1.330E-01	1.101E-01	1.592E-01	2.406E-02	-0.835
ND-147	+	91.11		1.423E+00	4.855E-01	9.313E-01	9.151E-02	1.528
		319.41		-4.598E+00	5.924E+00	9.290E+00	8.018E-01	-0.495
		531.02	*	-5.581E-01	1.030E+00	1.664E+00	2.507E-01	-0.335
PM-149		285.90	*	7.435E-04	1.030E+00	Half-Life	too short	
EU-152		121.78		7.639E-02	8.257E-02	1.371E-01	1.318E-02	0.557
		244.70		6.538E-02	3.804E-01	5.641E-01	4.827E-02	0.116
		344.28	*	1.195E-02	1.235E-01	1.659E-01	1.498E-02	0.072
		778.90		-1.330E-01	2.975E-01	4.682E-01	4.529E-02	-0.284
	+	964.08		8.209E-01	4.345E-01	6.485E-01	6.454E-02	1.266
		1085.87		9.312E-02	4.237E-01	7.194E-01	6.482E-02	0.129
		1112.07		2.166E-01	4.001E-01	6.294E-01	5.508E-02	0.344
		1408.01		8.627E-02	2.245E-01	3.810E-01	3.359E-02	0.226
GD-153		69.67		-1.160E-01	2.186E+00	3.212E+00	2.499E-01	-0.036
		97.43	*	-1.502E-02	1.063E-01	1.530E-01	1.338E-02	-0.098
		103.18		-1.895E-02	1.278E-01	2.060E-01	1.754E-02	-0.092
EU-154		123.07		-1.172E-02	5.928E-02	9.451E-02	1.048E-02	-0.124
		723.31		-6.469E-02	2.265E-01	3.126E-01	3.172E-02	-0.207
		873.19		-1.493E-01	3.261E-01	5.056E-01	6.604E-02	-0.295
		996.26		-4.258E-01	4.496E-01	6.891E-01	1.244E-01	-0.618

----- 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		-5.287E-02	2.524E-01	4.162E-01	5.181E-02	-0.127
		1274.44	*	2.715E-02	1.454E-01	2.431E-01	2.748E-02	0.112
		86.55		4.891E-01	1.362E-01	2.188E-01	2.044E-02	2.235
		105.31	*	7.272E-02	1.213E-01	2.004E-01	1.714E-02	0.363
TB-160	+	86.79		1.395E+00	3.881E-01	6.225E-01	5.779E-02	2.240
		197.04		-2.636E-01	6.646E-01	1.097E+00	9.020E-02	-0.240
		215.65		5.342E-01	9.440E-01	1.509E+00	1.264E-01	0.354
		298.57		3.944E-01	1.806E-01	2.483E-01	2.153E-02	1.588
HO-166M	+	879.36	*	2.144E-02	1.761E-01	2.880E-01	2.937E-02	0.074
		962.29		7.927E-01	7.967E-01	1.215E+00	1.211E-01	0.652
		966.15		1.543E+00	3.520E-01	6.477E-01	6.439E-02	2.383
		1177.93		-3.113E-02	4.420E-01	7.277E-01	5.889E-02	-0.043
		1271.85		8.072E-02	8.388E-01	1.393E+00	1.185E-01	0.058
		80.57		5.207E-01	3.793E-01	4.772E-01	4.129E-02	1.091
		184.41		8.146E-02	4.608E-02	7.487E-02	6.074E-03	1.088
		280.46		4.392E-02	9.405E-02	1.588E-01	1.377E-02	0.277
	+	410.95		4.171E-01	3.136E-01	4.715E-01	3.880E-02	0.885
		711.68	*	4.535E-02	7.109E-02	1.219E-01	1.129E-02	0.372
		752.31		3.466E-01	3.164E-01	5.571E-01	5.301E-02	0.622
		810.29		-6.831E-02	6.931E-02	1.030E-01	1.014E-02	-0.663
TA-182		67.75		-2.378E-02	1.448E-01	2.121E-01	1.623E-02	-0.112
		100.11		4.744E-02	2.045E-01	3.347E-01	2.886E-02	0.142
		152.43		2.460E-01	4.150E-01	6.750E-01	5.393E-02	0.364
		222.11		4.905E-01	4.072E-01	7.103E-01	5.981E-02	0.691
	+	1121.30		8.690E-01	3.438E-01	4.577E-01	3.962E-02	1.899
		1189.05		1.265E-01	4.146E-01	7.007E-01	5.706E-02	0.181
IR-192	+	1221.41	*	2.060E-01	2.541E-01	4.425E-01	3.668E-02	0.465
		1231.02		3.550E-01	6.534E-01	9.816E-01	8.178E-02	0.362
		295.96		1.682E+00	2.479E-01	3.702E-01	3.234E-02	4.543
		308.46		1.260E-03	1.123E-01	1.848E-01	1.608E-02	0.007
	*	316.51		3.608E-02	3.924E-02	6.745E-02	5.839E-03	0.535
		468.07		1.088E-02	9.115E-02	1.287E-01	1.184E-02	0.085
HG-203		70.83		2.963E-02	1.859E+00	2.737E+00	4.287E-01	0.011
		72.87		2.369E+00	1.185E+00	1.788E+00	2.718E-01	1.325
		279.20	*	4.682E-02	4.877E-02	8.385E-02	7.452E-03	0.558
BI-207	+	72.81		4.451E-01	2.342E-01	3.646E-01	2.918E-02	1.221
		74.97		1.059E+00	1.831E-01	2.725E-01	2.226E-02	3.887
		569.70		2.254E-02	3.553E-02	6.154E-02	5.478E-03	0.366
		1063.66	*	3.679E-02	6.541E-02	1.136E-01	1.047E-02	0.324
		1770.23		-6.429E-01	5.030E-01	4.528E-01	3.826E-02	-1.420
PB-210		46.54	*	4.321E+00	3.521E+00	6.027E+00	5.569E-01	0.717
PB-211	*	404.85		-4.011E-01	1.012E+00	1.359E+00	6.566E-01	-0.295
		427.09		4.455E-01	1.715E+00	2.790E+00	1.289E+00	0.160
BI-212	+	832.01		-4.733E-01	1.251E+00	1.935E+00	1.008E+00	-0.245
		727.33	*	3.135E+00	9.851E-01	1.425E+00	1.849E-01	2.201
		785.37		3.385E+00	3.551E+00	6.194E+00	6.014E-01	0.547
		1620.50		1.201E+00	2.615E+00	4.501E+00	3.931E-01	0.267
RN-219	+	271.23		9.289E-01	3.685E-01	5.054E-01	5.198E-02	1.838
		401.81	*	4.183E-02	4.688E-01	7.624E-01	1.114E-01	0.055

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		2.582E-01	2.998E-01	3.665E-01	3.189E-02	0.705
		83.79		7.265E-02	1.529E-01	2.266E-01	2.032E-02	0.321
		94.87		1.467E+00	5.579E-01	8.816E-01	7.833E-02	1.664
		144.24		1.125E+00	7.795E-01	1.299E+00	1.181E-01	0.866
		154.21		2.920E-01	4.459E-01	7.260E-01	6.438E-02	0.402
	+	269.46		7.217E-01	2.838E-01	4.044E-01	3.567E-02	1.785
AC-227		323.87	*	4.004E-01	7.802E-01	1.160E+00	2.011E-01	0.345
	+	338.28		9.104E+00	2.517E+00	2.817E+00	3.385E-01	3.232
		79.69		2.206E+00	1.537E+00	2.150E+00	3.701E-01	1.026
		235.96		3.169E-01	1.990E-01	3.115E-01	3.193E-02	1.017
		256.23	*	7.418E-02	2.738E-01	4.606E-01	5.547E-02	0.161
	+	299.98		2.858E+00	1.336E+00	1.868E+00	2.379E-01	1.530
TH-227		304.50		9.192E-01	1.923E+00	2.866E+00	4.744E-01	0.321
		334.37		5.807E-01	2.121E+00	3.102E+00	4.826E-01	0.187
		79.80		3.093E+00	2.080E+00	2.853E+00	6.208E-01	1.084
		235.96		3.169E-01	1.987E-01	3.115E-01	3.009E-02	1.017
		256.23	*	7.418E-02	2.738E-01	4.606E-01	6.264E-02	0.161
	+	299.98		2.858E+00	1.336E+00	1.868E+00	2.379E-01	1.530
TH-229		304.50		9.192E-01	1.923E+00	2.866E+00	4.744E-01	0.321
		334.37		5.807E-01	2.121E+00	3.102E+00	4.826E-01	0.187
		85.43		3.923E-01	2.690E-01	4.096E-01	3.743E-02	0.958
	+	88.47		6.200E-01	1.725E-01	2.730E-01	2.558E-02	2.271
		193.51	*	-4.343E-02	5.561E-01	9.361E-01	7.668E-02	-0.046
		210.85		2.520E+00	1.143E+00	1.842E+00	1.535E-01	1.368
PA-231		283.69	*	-1.434E-01	1.796E+00	2.594E+00	3.791E-01	-0.055
	+	301.36		1.836E+00	8.553E-01	1.183E+00	1.441E-01	1.552
TH-231		81.07		2.582E-01	2.998E-01	3.665E-01	3.189E-02	0.705
		83.79		7.265E-02	1.529E-01	2.266E-01	2.032E-02	0.321
		94.87		1.467E+00	5.579E-01	8.816E-01	7.833E-02	1.664
		144.24		1.125E+00	7.795E-01	1.299E+00	1.181E-01	0.866
		154.21		2.920E-01	4.459E-01	7.260E-01	6.438E-02	0.402
	+	269.46		7.217E-01	2.838E-01	4.044E-01	3.567E-02	1.785
PA-233		323.87	*	4.004E-01	7.802E-01	1.160E+00	2.011E-01	0.345
	+	338.28		9.104E+00	2.517E+00	2.817E+00	3.385E-01	3.232
	+	300.13		1.293E+00	6.124E-01	8.454E-01	1.256E-01	1.530
		311.90	*	-5.332E-02	6.952E-02	1.093E-01	9.720E-03	-0.488
		340.48		2.542E+00	1.038E+00	1.409E+00	3.387E-01	1.805
		94.67		6.747E-01	2.183E-01	3.338E-01	4.204E-02	2.021
PA-234		98.44		5.096E-02	1.042E-01	1.658E-01	9.251E-02	0.307
		111.00		1.144E-01	2.081E-01	3.423E-01	4.071E-02	0.334
		131.20		-6.096E-02	1.244E-01	1.955E-01	1.591E-02	-0.312
		569.50		2.041E-01	3.155E-01	5.468E-01	4.868E-02	0.373
		733.00		4.325E-01	4.966E-01	7.564E-01	1.703E-01	0.572
		880.51		6.626E-02	3.218E-01	5.302E-01	5.410E-02	0.125
		883.24		-1.075E-01	3.327E-01	5.095E-01	3.437E-01	-0.211
		926.50		-5.104E-02	2.126E-01	3.000E-01	7.751E-02	-0.170
		946.00	*	-3.006E-01	3.286E-01	4.705E-01	9.158E-02	-0.639
		949.00		2.097E-01	4.966E-01	8.295E-01	8.328E-02	0.253
		766.42		2.457E+01	2.026E+01	2.571E+01	1.309E+01	0.956
PA-234M		766.42		2.457E+01	2.026E+01	2.571E+01	1.309E+01	0.956

----- 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	*		3.806E-01	5.689E+00	9.585E+00	1.047E+00	0.040
	99.53			1.085E-01	1.797E-01	2.978E-01	2.575E-02	0.364
	103.37			1.418E-02	1.131E-01	1.841E-01	1.566E-02	0.077
	106.12			5.590E-02	9.556E-02	1.578E-01	1.331E-02	0.354
	117.23	*		-1.906E-01	4.439E-01	7.023E-01	5.820E-02	-0.271
	228.18			1.466E-02	2.470E-01	4.144E-01	3.506E-02	0.035
AM-241	277.60	+		3.939E-01	2.595E-01	3.485E-01	3.020E-02	1.130
CM-247	59.54	*		1.564E-01	1.815E-01	2.792E-01	2.199E-02	0.560
	278.00	+		1.673E+00	1.102E+00	1.481E+00	1.284E-01	1.129
CF-249	287.50			9.419E-01	1.442E+00	2.290E+00	1.986E-01	0.411
	402.40	*		8.797E-03	4.360E-02	7.135E-02	5.828E-03	0.123
	252.80			1.499E-01	1.056E+00	1.768E+00	1.519E-01	0.085
	333.37			3.493E-02	2.662E-01	3.257E-01	2.791E-02	0.107
CF-251	388.16	*		-1.640E-02	4.452E-02	7.055E-02	5.735E-03	-0.233
	177.52	*		6.653E-02	1.406E-01	2.422E-01	1.951E-02	0.275
	227.38			-2.334E-01	4.075E-01	6.664E-01	5.635E-02	-0.350
	285.41			4.158E-01	2.631E+00	3.860E+00	3.348E-01	0.108

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]G248243003      *
* Acquisition date   : 19-MAR-2010 10:52:17 Detector SN#      :              *
* Detector ID        : GAM12 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time: 0 02:00:00.00 Abundance limit : 75.000    *
* Elapsed real time: 0 02:00:01.93 Half life ratio : 8.000     *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248243003 Analyst initials: MXR1           *
* Batch Number      : 959280 Sample Quantity : 1.3738E+02 GRAM      *
* Recovery          : 1.00000 Carrier Weight : 0.00000           *
*****
*
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME : 25-FEB-2010 20:55:17 MS Isotope      :              *
* MSD DPM           : 0.000 MSD Isotope      :                  *
* LCS DPM           : 0.000 LCS Isotope      :                  *
* LCSD DPM          : 0.000 LCSD Isotope     :                  *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.904E+01	4.020E+00	5.327E-01	0.000E+00
CD-109	4.163E+00	1.135E+00	1.409E+00	0.000E+00
SN-126	4.021E-01	1.097E-01	1.505E-01	0.000E+00
TL-208	7.461E-01	1.137E-01	6.237E-02	0.000E+00
BI-211	5.620E+00	6.858E-01	3.525E-01	0.000E+00
PB-212	2.522E+00	2.728E-01	1.081E-01	0.000E+00
BI-214	1.628E+00	2.487E-01	1.257E-01	0.000E+00
PB-214	2.040E+00	2.722E-01	1.282E-01	0.000E+00
RA-224	6.597E+00	1.603E+00	1.159E+00	0.000E+00
RA-226	1.628E+00	2.487E-01	1.257E-01	0.000E+00
AC-228	2.475E+00	5.136E-01	2.924E-01	0.000E+00
RA-228	2.475E+00	5.136E-01	2.924E-01	0.000E+00
TH-228	2.522E+00	2.728E-01	1.081E-01	0.000E+00
TH-232	2.475E+00	5.136E-01	2.924E-01	0.000E+00
TH-234	2.818E+00	2.231E+00	2.440E+00	0.000E+00
U-235	1.851E-01	2.314E-01	4.026E-01	0.000E+00
NP-237	1.200E+00	4.097E-01	4.541E-01	0.000E+00
U-238	2.818E+00	2.231E+00	2.440E+00	0.000E+00
ANH-511	2.129E-01	6.993E-02	5.350E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.310E-02	3.852E-01	6.458E-01	0.000E+00 NOT IDENT.
NA-22	7.301E-03	5.027E-02	8.596E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.816E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.749E-02	4.859E-02	7.867E-02	0.000E+00 FAIL ABUN
V-48	2.030E-02	1.133E-01	1.990E-01	0.000E+00 NOT IDENT.
CR-51	-4.281E-01	4.785E-01	7.855E-01	0.000E+00 NOT IDENT.
MN-54	3.530E-02	4.583E-02	8.107E-02	0.000E+00 NOT IDENT.
CO-56	2.476E-02	4.503E-02	7.909E-02	0.000E+00 FAIL ABUN

CO-57	2.513E-02	2.846E-02	5.067E-02	0.000E+00	NOT IDENT.
CO-58	-1.704E-02	4.719E-02	7.717E-02	0.000E+00	NOT IDENT.
FE-59	-7.635E-02	1.242E-01	2.025E-01	0.000E+00	NOT IDENT.
CO-60	-1.650E-03	4.401E-02	7.369E-02	0.000E+00	NOT IDENT.
ZN-65	-1.438E-01	1.277E-01	1.634E-01	0.000E+00	NOT IDENT.
SE-75	-1.546E-02	5.245E-02	8.393E-02	0.000E+00	NOT IDENT.
SR-85	6.142E-02	4.832E-02	8.109E-02	0.000E+00	NOT IDENT.
Y-88	1.547E-02	3.780E-02	6.812E-02	0.000E+00	NOT IDENT.
Y-91	4.944E+00	2.778E+01	4.778E+01	0.000E+00	NOT IDENT.
NB-94	-1.601E-02	3.548E-02	5.859E-02	0.000E+00	NOT IDENT.
NB-95	6.896E-02	6.462E-02	1.035E-01	0.000E+00	NOT IDENT.
NB-95M	5.664E-02	1.663E-01	2.638E-01	0.000E+00	NOT IDENT.
ZR-95	-1.320E-02	9.234E-02	1.536E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.024E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.188E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.122E-02	4.727E-02	8.084E-02	0.000E+00	FAIL ABUN
RH-106	-1.013E-01	3.545E-01	6.006E-01	0.000E+00	NOT IDENT.
RU-106	-1.013E-01	3.543E-01	6.006E-01	0.000E+00	NOT IDENT.
AG-108M	-2.584E-03	3.188E-02	5.349E-02	0.000E+00	NOT IDENT.
AG-110M	7.481E-03	4.077E-02	7.097E-02	0.000E+00	NOT IDENT.
SN-113	-1.977E-03	5.013E-02	8.512E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.441E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	6.192E-03	8.897E-02	1.512E-01	0.000E+00	NOT IDENT.
TE-123M	-8.291E-03	3.276E-02	5.490E-02	0.000E+00	NOT IDENT.
SB-124	4.005E-02	8.135E-02	1.497E-01	0.000E+00	NOT IDENT.
SB-125	-1.028E-02	1.026E-01	1.722E-01	0.000E+00	FAIL ABUN
TE-125M	6.382E-01	1.174E+01	2.045E+01	0.000E+00	NOT IDENT.
I-126	2.342E-01	3.752E-01	6.703E-01	0.000E+00	NOT IDENT.
SB-126	2.604E-01	2.801E-01	4.516E-01	0.000E+00	NOT IDENT.
SB-127	3.154E-01	5.570E+00	9.586E+00	0.000E+00	NOT IDENT.
I-131	-5.286E-02	2.491E-01	4.213E-01	0.000E+00	NOT IDENT.
TE-132	2.290E-01	4.460E+00	7.935E+00	0.000E+00	NOT IDENT.
BA-133	2.726E-02	4.803E-02	7.531E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.385E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.390E-02	1.132E-01	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.947E-01	3.246E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.795E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.061E-01	1.791E-01	2.927E-01	0.000E+00	NOT IDENT.
BA-137M	7.015E-03	4.224E-02	7.338E-02	0.000E+00	NOT IDENT.
CS-137	7.411E-03	4.463E-02	7.752E-02	0.000E+00	NOT IDENT.
CE-139	3.740E-02	3.413E-02	6.010E-02	0.000E+00	NOT IDENT.
BA-140	1.206E-01	4.479E-01	7.941E-01	0.000E+00	NOT IDENT.
LA-140	-4.078E-02	1.788E-01	2.716E-01	0.000E+00	FAIL ABUN
CE-141	7.484E-03	8.435E-02	1.443E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.390E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.310E-02	2.285E-01	3.897E-01	0.000E+00	NOT IDENT.
PM-144	2.396E-02	4.012E-02	7.125E-02	0.000E+00	NOT IDENT.
PR-144	1.822E+00	3.016E+00	5.359E+00	0.000E+00	NOT IDENT.
PM-146	3.550E-02	4.641E-02	8.164E-02	0.000E+00	NOT IDENT.
ND-147	-5.581E-01	1.010E+00	1.703E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.262E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	1.195E-02	1.210E-01	1.712E-01	0.000E+00	FAIL ABUN
GD-153	-1.502E-02	1.042E-01	1.616E-01	0.000E+00	NOT IDENT.
EU-154	2.715E-02	1.425E-01	2.445E-01	0.000E+00	NOT IDENT.
EU-155	7.272E-02	1.188E-01	2.113E-01	0.000E+00	FAIL ABUN
TB-160	2.144E-02	1.726E-01	2.918E-01	0.000E+00	FAIL ABUN
HO-166M	4.535E-02	6.967E-02	1.240E-01	0.000E+00	FAIL ABUN
TA-182	2.060E-01	2.490E-01	4.454E-01	0.000E+00	FAIL ABUN
IR-192	3.608E-02	3.846E-02	6.970E-02	0.000E+00	FAIL ABUN
HG-203	4.682E-02	4.779E-02	8.685E-02	0.000E+00	NOT IDENT.
BI-207	3.679E-02	6.411E-02	1.146E-01	0.000E+00	FAIL ABUN
PB-210	4.321E+00	3.451E+00	6.450E+00	0.000E+00	NOT IDENT.
PB-211	-4.011E-01	9.921E-01	1.398E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.654E-01	1.449E+00	0.000E+00	FAIL ABUN
RN-219	4.183E-02	4.594E-01	7.843E-01	0.000E+00	FAIL ABUN
RA-223	4.004E-01	7.646E-01	1.199E+00	0.000E+00	FAIL ABUN
AC-227	7.418E-02	2.683E-01	4.779E-01	0.000E+00	FAIL ABUN
TH-227	7.418E-02	2.683E-01	4.779E-01	0.000E+00	FAIL ABUN
TH-229	-4.343E-02	5.450E-01	9.763E-01	0.000E+00	FAIL ABUN
PA-231	-1.434E-01	1.760E+00	2.686E+00	0.000E+00	FAIL ABUN
TH-231	4.004E-01	7.646E-01	1.199E+00	0.000E+00	FAIL ABUN
PA-233	-5.332E-02	6.812E-02	1.130E-01	0.000E+00	FAIL ABUN
PA-234	-3.006E-01	3.221E-01	4.760E-01	0.000E+00	NOT IDENT.
PA-234M	3.806E-01	5.575E+00	9.686E+00	0.000E+00	NOT IDENT.
NP-239	-1.906E-01	4.350E-01	7.392E-01	0.000E+00	FAIL ABUN
AM-241	1.564E-01	1.779E-01	2.975E-01	0.000E+00	NOT IDENT.
CM-247	8.797E-03	4.273E-02	7.340E-02	0.000E+00	FAIL ABUN
CF-249	-1.640E-02	4.363E-02	7.262E-02	0.000E+00	NOT IDENT.

CF-251	6.653E-02	1.378E-01	2.530E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:53:03.85

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243003.CNF;1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:52:17
Sample ID        : G248243003 Sample quantity   : 1.37380E+02 GRAM
Detector name    : GAM12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 959280 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	1637	10.66*	1.075E+00	3.904E+01	3.904E+01	10.51
CD-109	88.03	302	3.70*	5.541E+00	4.021E+00	4.163E+00	27.83
SN-126	64.28	124	9.60	3.240E+00	1.086E+00	1.086E+00	80.09
	86.94	302	8.90	5.541E+00	1.672E+00	1.672E+00	49.10
	87.57	302	37.00*	5.541E+00	4.021E-01	4.021E-01	27.83
TL-208	277.37	87	6.60	4.203E+00	8.618E-01	8.618E-01	66.50
	583.19	549	85.00*	2.364E+00	7.461E-01	7.461E-01	15.55
	860.56	73	12.50	1.693E+00	9.373E-01	9.373E-01	48.01
BI-211	72.87	-----	1.23	4.356E+00	-----	Line Not Found	-----
	351.06	936	12.92*	3.521E+00	5.620E+00	5.620E+00	12.45
PB-212	74.82	631	10.28	4.565E+00	3.673E+00	3.673E+00	19.84
	77.11	894	17.10	4.785E+00	2.986E+00	2.986E+00	12.65
	238.63	1882	43.60*	4.675E+00	2.522E+00	2.522E+00	11.04
	300.09	124	3.30	3.968E+00	2.598E+00	2.598E+00	46.20
BI-214	609.32	618	45.49*	2.280E+00	1.628E+00	1.628E+00	15.59
	1120.29	129	14.92	1.341E+00	1.769E+00	1.769E+00	40.13
	1764.49	94	15.30	9.450E-01	1.770E+00	1.770E+00	35.26
PB-214	74.82	631	5.80	4.565E+00	6.510E+00	6.511E+00	19.02
	77.11	894	9.70	4.785E+00	5.265E+00	5.265E+00	15.10
	242.00	459	7.25	4.636E+00	3.731E+00	3.731E+00	25.46
	295.22	572	18.42	4.015E+00	2.113E+00	2.113E+00	16.08
	351.93	936	35.60*	3.521E+00	2.040E+00	2.040E+00	13.62
RA-224	240.99	459	4.10*	4.636E+00	6.597E+00	6.597E+00	24.80
RA-226	609.32	618	45.49*	2.280E+00	1.628E+00	1.628E+00	15.59
	1120.29	129	14.92	1.341E+00	1.769E+00	1.769E+00	40.13
	1764.49	94	15.30	9.450E-01	1.770E+00	1.770E+00	35.26
AC-228	338.32	343	11.27	3.626E+00	2.294E+00	2.294E+00	48.57
	911.20	376	25.80*	1.611E+00	2.475E+00	2.475E+00	21.18
	968.97	230	15.80	1.525E+00	2.611E+00	2.611E+00	31.10
RA-228	338.32	343	11.27	3.626E+00	2.294E+00	2.294E+00	48.57
	911.20	376	25.80*	1.611E+00	2.475E+00	2.475E+00	21.18
	968.97	230	15.80	1.525E+00	2.611E+00	2.611E+00	31.10

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	631	10.28	4.565E+00	3.673E+00	3.673E+00	17.33
	77.11	894	17.10	4.785E+00	2.986E+00	2.986E+00	12.65
	238.63	1882	43.60*	4.675E+00	2.522E+00	2.522E+00	11.04
	300.09	124	3.30	3.968E+00	2.598E+00	2.598E+00	75.97
TH-232	338.32	343	11.27	3.626E+00	2.294E+00	2.294E+00	26.33
	911.20	376	25.80*	1.611E+00	2.475E+00	2.475E+00	21.18
	968.97	230	15.80	1.525E+00	2.611E+00	2.611E+00	31.10
TH-234	63.29	124	3.70*	3.240E+00	2.818E+00	2.818E+00	80.76
	92.59	391	4.23	5.842E+00	4.318E+00	4.318E+00	34.25
U-235	89.96	194	3.47	5.696E+00	2.679E+00	2.679E+00	41.03
	93.35	391	5.60	5.842E+00	3.262E+00	3.262E+00	34.92
	143.76	-----	10.96*	6.165E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.865E+00	-----	Line Not Found	-----
	185.72	185	57.20	5.482E+00	1.610E-01	1.610E-01	54.82
NP-237	205.31	-----	5.01	5.165E+00	-----	Line Not Found	-----
	86.48	302	12.40*	5.541E+00	1.200E+00	1.200E+00	34.84
	95.86	-----	2.68	5.962E+00	-----	Line Not Found	-----
U-238	63.29	124	3.70*	3.240E+00	2.818E+00	2.818E+00	80.76
	92.59	391	4.23	5.842E+00	4.318E+00	4.318E+00	27.57
ANH-511	511.00	205	100.00*	2.634E+00	2.129E-01	2.129E-01	33.51

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248243003

Page : 3
Acquisition date : 19-MAR-2010 10:52:17

Total number of lines in spectrum 36
Number of unidentified lines 5
Number of lines tentatively identified by NID 31 86.11%

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	3.904E+01	3.904E+01	0.410E+01	10.51	
CD-109	461.40D	1.04	4.021E+00	4.163E+00	1.158E+00	27.83	
SN-126	2.30E+05Y	1.00	4.021E-01	4.021E-01	1.119E-01	27.83	
TL-208	1.41E+10Y	1.00	7.461E-01	7.461E-01	1.160E-01	15.55	
BI-211	7.04E+08Y	1.00	5.620E+00	5.620E+00	0.700E+00	12.45	
PB-212	1.41E+10Y	1.00	2.522E+00	2.522E+00	0.278E+00	11.04	
BI-214	1600.00Y	1.00	1.628E+00	1.628E+00	0.254E+00	15.59	
PB-214	1600.00Y	1.00	2.040E+00	2.040E+00	0.278E+00	13.62	
RA-224	1.41E+10Y	1.00	6.597E+00	6.597E+00	1.636E+00	24.80	
RA-226	1600.00Y	1.00	1.628E+00	1.628E+00	0.254E+00	15.59	
AC-228	1.41E+10Y	1.00	2.475E+00	2.475E+00	0.524E+00	21.18	
RA-228	1.41E+10Y	1.00	2.475E+00	2.475E+00	0.524E+00	21.18	
TH-228	1.41E+10Y	1.00	2.522E+00	2.522E+00	0.278E+00	11.04	
TH-232	1.41E+10Y	1.00	2.475E+00	2.475E+00	0.524E+00	21.18	
TH-234	4.47E+09Y	1.00	2.818E+00	2.818E+00	2.276E+00	80.76	
U-235	7.04E+08Y	1.00	1.610E-01	1.610E-01	0.882E-01	54.82	K
NP-237	2.14E+06Y	1.00	1.200E+00	1.200E+00	0.418E+00	34.84	
U-238	4.47E+09Y	1.00	2.818E+00	2.818E+00	2.276E+00	80.76	
ANH-511	1.00E+09Y	1.00	2.129E-01	2.129E-01	0.714E-01	33.51	

Total Activity : 8.140E+01 8.155E+01

Grand Total Activity : 8.140E+01 8.155E+01

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

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

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.30	184	439	1.23	417.88	414	11	2.55E-02	46.3	5.10E+00	
2	270.26	157	240	1.56	539.82	535	33	2.18E-02	38.3	4.28E+00	T
0	327.88	94	161	0.95	655.07	652	8	1.30E-02	51.1	3.71E+00	T
0	409.51	54	115	0.84	818.34	815	8	7.44E-03	74.7	3.13E+00	T
0	463.08	124	96	1.34	925.48	921	9	1.72E-02	33.7	2.85E+00	T
0	727.10	150	78	1.36	1453.50	1447	12	2.09E-02	28.6	1.96E+00	T
0	768.61	68	111	1.22	1536.50	1529	13	9.44E-03	69.0	1.87E+00	
0	794.87	94	61	2.02	1589.01	1584	12	1.31E-02	38.8	1.82E+00	T
0	934.62	66	92	2.20	1868.45	1861	20	9.16E-03	74.8	1.57E+00	
2	964.38	67	57	2.21	1927.95	1922	23	9.33E-03	52.0	1.53E+00	T
0	1238.13	82	63	1.30	2475.27	2469	12	1.14E-02	45.2	1.23E+00	T
0	1588.13	21	29	1.41	3174.91	3170	11	2.98E-03	****	1.01E+00	
0	1730.14	29	11	2.05	3458.74	3450	12	4.08E-03	55.8	9.56E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243003.CNF;1
* Acquisition date   : 19-MAR-2010 10:52:17   Detector SN#      :
* Detector ID        : GAM12                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:01.93           Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G248243003             Analyst initials  : MXR1
* Batch Number       : 959280                 Sample Quantity   : 1.37380E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 25-FEB-2010 20:55:17.3MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope        :
*****

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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	3.904E+01	4.102E+00	5.311E-01	4.817E-02	73.512
CD-109	4.163E+00	1.158E+00	1.332E+00	1.254E-01	3.126
SN-126	4.021E-01	1.119E-01	1.422E-01	1.332E-02	2.828
TL-208	7.461E-01	1.160E-01	6.107E-02	5.808E-03	12.219
BI-211	5.620E+00	6.998E-01	3.418E-01	3.045E-02	16.444
PB-212	2.522E+00	2.784E-01	1.041E-01	1.008E-02	24.235
BI-214	1.628E+00	2.538E-01	1.232E-01	1.279E-02	13.214
PB-214	2.040E+00	2.778E-01	1.243E-01	1.302E-02	16.408
RA-224	6.597E+00	1.636E+00	1.115E+00	9.524E-02	5.914
RA-226	1.628E+00	2.538E-01	1.232E-01	1.279E-02	13.214
AC-228	2.475E+00	5.241E-01	2.888E-01	3.706E-02	8.570
RA-228	2.475E+00	5.241E-01	2.888E-01	3.706E-02	8.570
TH-228	2.522E+00	2.784E-01	1.041E-01	1.008E-02	24.235
TH-232	2.475E+00	5.241E-01	2.888E-01	3.706E-02	8.570
TH-234	2.818E+00	2.276E+00	2.293E+00	4.085E-01	1.229
U-235	1.610E-01	8.823E-02	3.839E-01	6.396E-02	0.419
NP-237	1.200E+00	4.181E-01	4.290E-01	9.831E-02	2.797
U-238	2.818E+00	2.276E+00	2.293E+00	4.085E-01	1.229

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	2.129E-01	7.136E-02	5.225E-02	4.571E-03	4.075

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.310E-02		3.930E-01	6.299E-01	5.844E-02	0.021
NA-22	7.301E-03		5.130E-02	8.548E-02	7.289E-03	0.085
NA-24	1.453E+03		2.457E+03	Half-Life too short		
SC-46	-1.749E-02		4.959E-02	7.766E-02	7.956E-03	-0.225
V-48	2.030E-02		1.157E-01	1.968E-01	1.935E-02	0.103
CR-51	-4.281E-01		4.882E-01	7.603E-01	6.901E-02	-0.563
MN-54	3.530E-02		4.677E-02	7.994E-02	7.978E-03	0.442
CO-56	2.476E-02		4.595E-02	7.801E-02	7.833E-03	0.317
CO-57	2.513E-02		2.904E-02	4.817E-02	3.995E-03	0.522
CO-58	-1.704E-02		4.815E-02	7.605E-02	7.506E-03	-0.224
FE-59	-7.635E-02		1.267E-01	2.007E-01	1.919E-02	-0.380
CO-60	-1.650E-03		4.491E-02	7.334E-02	6.419E-03	-0.022
ZN-65	-1.438E-01		1.303E-01	1.620E-01	1.414E-02	-0.887
SE-75	-1.546E-02		5.352E-02	8.095E-02	7.025E-03	-0.191
SR-85	6.142E-02		4.931E-02	7.920E-02	6.938E-03	0.776
Y-88	1.547E-02		3.858E-02	6.823E-02	5.650E-03	0.227
Y-91	4.944E+00		2.834E+01	4.746E+01	3.899E+00	0.104
NB-94	-1.601E-02		3.621E-02	5.757E-02	5.297E-03	-0.278
NB-95	6.896E-02		6.594E-02	1.019E-01	9.776E-03	0.677
NB-95M	5.664E-02		1.697E-01	2.539E-01	2.485E-02	0.223
ZR-95	-1.320E-02		9.423E-02	1.512E-01	1.567E-02	-0.087
MO-99	2.902E-05		5.226E-05	Half-Life too short		
TC-99M	-1.042E+20		6.064E+19	Half-Life too short		
RU-103	-2.122E-02		4.824E-02	7.891E-02	1.106E-02	-0.269
RH-106	-1.013E-01		3.617E-01	5.888E-01	7.932E-02	-0.172
RU-106	-1.013E-01		3.616E-01	5.888E-01	5.268E-02	-0.172
AG-108M	-2.584E-03		3.253E-02	5.207E-02	4.512E-03	-0.050
AG-110M	7.481E-03		4.161E-02	6.966E-02	6.391E-03	0.107
SN-113	-1.977E-03		5.116E-02	8.271E-02	6.924E-03	-0.024
CD-115	7.601E-06		7.350E-05	Half-Life too short		
SN-117M	6.192E-03		9.079E-02	1.445E-01	1.152E-02	0.043
TE-123M	-8.291E-03		3.343E-02	5.245E-02	4.211E-03	-0.158
SB-124	4.005E-02		8.301E-02	1.497E-01	1.345E-02	0.268
SB-125	-1.028E-02		1.047E-01	1.676E-01	1.426E-02	-0.061
TE-125M	6.382E-01		1.198E+01	1.941E+01	1.999E+00	0.033
I-126	2.342E-01		3.829E-01	6.580E-01	5.892E-02	0.356
SB-126	2.604E-01		2.858E-01	4.440E-01	4.137E-02	0.586
SB-127	3.154E-01		5.684E+00	9.415E+00	1.341E+00	0.033
I-131	-5.286E-02		2.542E-01	4.088E-01	3.643E-02	-0.129
TE-132	2.290E-01		4.551E+00	7.632E+00	1.340E+00	0.030
BA-133	2.726E-02		4.901E-02	7.304E-02	9.370E-03	0.373
I-133	-1.390E-01		1.727E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.882E-01	+	7.540E-02	1.115E-01	1.096E-02	1.688
CS-135	3.385E-01		1.987E-01	3.131E-01	3.128E-02	1.081
I-135	-1.768E+18		1.426E+18	Half-Life	too short	
CS-136	-1.061E-01		1.828E-01	2.899E-01	2.811E-02	-0.366
BA-137M	7.015E-03		4.311E-02	7.203E-02	6.426E-03	0.097
CS-137	7.411E-03		4.554E-02	7.609E-02	6.801E-03	0.097
CE-139	3.740E-02		3.482E-02	5.746E-02	4.574E-03	0.651
BA-140	1.206E-01		4.571E-01	7.762E-01	2.637E-01	0.155
LA-140	-4.078E-02		1.824E-01	2.713E-01	2.378E-02	-0.150
CE-141	7.484E-03		8.607E-02	1.377E-01	1.127E-02	0.054
CE-143	4.347E-02		7.094E-03	Half-Life	too short	
CE-144	-3.310E-02		2.332E-01	3.711E-01	5.569E-02	-0.089
PM-144	2.396E-02		4.094E-02	7.000E-02	6.416E-03	0.342
PR-144	1.822E+00		3.078E+00	5.265E+00	4.823E-01	0.346
PM-146	3.550E-02		4.736E-02	7.955E-02	8.343E-03	0.446
ND-147	-5.581E-01		1.030E+00	1.664E+00	2.507E-01	-0.335
PM-149	7.435E-04		6.439E-04	Half-Life	too short	
EU-152	1.195E-02		1.235E-01	1.659E-01	1.498E-02	0.072
GD-153	-1.502E-02		1.063E-01	1.530E-01	1.338E-02	-0.098
EU-154	2.715E-02		1.454E-01	2.431E-01	2.748E-02	0.112
EU-155	7.272E-02		1.213E-01	2.004E-01	1.714E-02	0.363
TB-160	2.144E-02		1.761E-01	2.880E-01	2.937E-02	0.074
HO-166M	4.535E-02		7.109E-02	1.219E-01	1.129E-02	0.372
TA-182	2.060E-01		2.541E-01	4.425E-01	3.668E-02	0.465
IR-192	3.608E-02		3.924E-02	6.745E-02	5.839E-03	0.535
HG-203	4.682E-02		4.877E-02	8.385E-02	7.452E-03	0.558
BI-207	3.679E-02		6.541E-02	1.136E-01	1.047E-02	0.324
PB-210	4.321E+00		3.521E+00	6.027E+00	5.569E-01	0.717
PB-211	-4.011E-01		1.012E+00	1.359E+00	6.566E-01	-0.295
BI-212	3.135E+00	+	9.851E-01	1.425E+00	1.849E-01	2.201
RN-219	4.183E-02		4.688E-01	7.624E-01	1.114E-01	0.055
RA-223	4.004E-01		7.802E-01	1.160E+00	2.011E-01	0.345
AC-227	7.418E-02		2.738E-01	4.606E-01	5.547E-02	0.161
TH-227	7.418E-02		2.738E-01	4.606E-01	6.264E-02	0.161
TH-229	-4.343E-02		5.561E-01	9.361E-01	7.668E-02	-0.046
PA-231	-1.434E-01		1.796E+00	2.594E+00	3.791E-01	-0.055
TH-231	4.004E-01		7.802E-01	1.160E+00	2.011E-01	0.345
PA-233	-5.332E-02		6.952E-02	1.093E-01	9.720E-03	-0.488
PA-234	-3.006E-01		3.286E-01	4.705E-01	9.158E-02	-0.639
PA-234M	3.806E-01		5.689E+00	9.585E+00	1.047E+00	0.040
NP-239	-1.906E-01		4.439E-01	7.023E-01	5.820E-02	-0.271
AM-241	1.564E-01		1.815E-01	2.792E-01	2.199E-02	0.560
CM-247	8.797E-03		4.360E-02	7.135E-02	5.828E-03	0.123
CF-249	-1.640E-02		4.452E-02	7.055E-02	5.735E-03	-0.233
CF-251	6.653E-02		1.406E-01	2.422E-01	1.951E-02	0.275

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]G248243003          *
* Acquisition date   : 19-MAR-2010 10:52:17 Detector SN#                   *
* Detector ID        : GAM12                                           Sensitivity : 5.000      *
* Geometry           : CAN                                           Energy tolerance: 1.500  *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 02:00:01.93 Half life ratio : 8.000           *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248243003 Analyst initials: MXR1                 *
* Batch Number      : 959280 Sample Quantity : 1.3738E+02 GRAM          *
* Recovery          : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*                                     *                                       *
* CALIB. DATE/TIME  : 25-FEB-2010 20:55:17 MS Isotope                   :
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.904E+01	4.020E+00	2.665E-01	2.051E+00
CD-109	4.163E+00	1.135E+00	7.049E-01	5.792E-01
SN-126	4.021E-01	1.097E-01	7.529E-02	5.595E-02
TL-208	7.461E-01	1.137E-01	3.120E-02	5.800E-02
BI-211	5.620E+00	6.858E-01	1.763E-01	3.499E-01
PB-212	2.522E+00	2.728E-01	5.409E-02	1.392E-01
BI-214	1.628E+00	2.487E-01	6.289E-02	1.269E-01
PB-214	2.040E+00	2.722E-01	6.413E-02	1.389E-01
RA-224	6.597E+00	1.603E+00	5.797E-01	8.179E-01
RA-226	1.628E+00	2.487E-01	6.289E-02	1.269E-01
AC-228	2.475E+00	5.136E-01	1.463E-01	2.621E-01
RA-228	2.475E+00	5.136E-01	1.463E-01	2.621E-01
TH-228	2.522E+00	2.728E-01	5.409E-02	1.392E-01
TH-232	2.475E+00	5.136E-01	1.463E-01	2.621E-01
TH-234	2.818E+00	2.231E+00	1.221E+00	1.138E+00
U-235	1.851E-01	2.314E-01	2.014E-01	1.181E-01
NP-237	1.200E+00	4.097E-01	2.272E-01	2.090E-01
U-238	2.818E+00	2.231E+00	1.221E+00	1.138E+00
ANH-511	2.129E-01	6.993E-02	2.676E-02	3.568E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.310E-02	3.852E-01	3.231E-01	1.965E-01 NOT IDENT.
NA-22	7.301E-03	5.027E-02	4.301E-02	2.565E-02 NOT IDENT.
NA-24	1.453E+09	4.816E+09	0.000E+00	2.457E+09 SHORT HLIF
SC-46	-1.749E-02	4.859E-02	3.936E-02	2.479E-02 FAIL ABUN
V-48	2.030E-02	1.133E-01	9.954E-02	5.783E-02 NOT IDENT.
CR-51	-4.281E-01	4.785E-01	3.930E-01	2.441E-01 NOT IDENT.
MN-54	3.530E-02	4.583E-02	4.056E-02	2.338E-02 NOT IDENT.
CO-56	2.476E-02	4.503E-02	3.957E-02	2.297E-02 FAIL ABUN

CO-57	2.513E-02	2.846E-02	2.535E-02	1.452E-02	NOT IDENT.
CO-58	-1.704E-02	4.719E-02	3.861E-02	2.407E-02	NOT IDENT.
FE-59	-7.635E-02	1.242E-01	1.013E-01	6.336E-02	NOT IDENT.
CO-60	-1.650E-03	4.401E-02	3.687E-02	2.245E-02	NOT IDENT.
ZN-65	-1.438E-01	1.277E-01	8.175E-02	6.517E-02	NOT IDENT.
SE-75	-1.546E-02	5.245E-02	4.199E-02	2.676E-02	NOT IDENT.
SR-85	6.142E-02	4.832E-02	4.057E-02	2.465E-02	NOT IDENT.
Y-88	1.547E-02	3.780E-02	3.408E-02	1.929E-02	NOT IDENT.
Y-91	4.944E+00	2.778E+01	2.391E+01	1.417E+01	NOT IDENT.
NB-94	-1.601E-02	3.548E-02	2.931E-02	1.810E-02	NOT IDENT.
NB-95	6.896E-02	6.462E-02	5.177E-02	3.297E-02	NOT IDENT.
NB-95M	5.664E-02	1.663E-01	1.320E-01	8.485E-02	NOT IDENT.
ZR-95	-1.320E-02	9.234E-02	7.685E-02	4.711E-02	NOT IDENT.
MO-99	2.902E+01	1.024E+02	0.000E+00	5.226E+01	SHORT HLIF
TC-99M	-1.042E+26	1.188E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.122E-02	4.727E-02	4.044E-02	2.412E-02	FAIL ABUN
RH-106	-1.013E-01	3.545E-01	3.005E-01	1.809E-01	NOT IDENT.
RU-106	-1.013E-01	3.543E-01	3.005E-01	1.808E-01	NOT IDENT.
AG-108M	-2.584E-03	3.188E-02	2.676E-02	1.626E-02	NOT IDENT.
AG-110M	7.481E-03	4.077E-02	3.551E-02	2.080E-02	NOT IDENT.
SN-113	-1.977E-03	5.013E-02	4.259E-02	2.558E-02	NOT IDENT.
CD-115	7.601E+00	1.441E+02	0.000E+00	7.350E+01	SHORT HLIF
SN-117M	6.192E-03	8.897E-02	7.566E-02	4.540E-02	NOT IDENT.
TE-123M	-8.291E-03	3.276E-02	2.747E-02	1.671E-02	NOT IDENT.
SB-124	4.005E-02	8.135E-02	7.490E-02	4.151E-02	NOT IDENT.
SB-125	-1.028E-02	1.026E-01	8.615E-02	5.234E-02	FAIL ABUN
TE-125M	6.382E-01	1.174E+01	1.023E+01	5.991E+00	NOT IDENT.
I-126	2.342E-01	3.752E-01	3.354E-01	1.914E-01	NOT IDENT.
SB-126	2.604E-01	2.801E-01	2.259E-01	1.429E-01	NOT IDENT.
SB-127	3.154E-01	5.570E+00	4.796E+00	2.842E+00	NOT IDENT.
I-131	-5.286E-02	2.491E-01	2.108E-01	1.271E-01	NOT IDENT.
TE-132	2.290E-01	4.460E+00	3.970E+00	2.275E+00	NOT IDENT.
BA-133	2.726E-02	4.803E-02	3.768E-02	2.450E-02	FAIL ABUN
I-133	-1.390E+05	3.385E+06	0.000E+00	1.727E+06	SHORT HLIF
CS-134	1.882E-01	7.390E-02	5.664E-02	3.770E-02	FAIL ABUN
CS-135	3.385E-01	1.947E-01	1.624E-01	9.933E-02	NOT IDENT.
I-135	-1.768E+24	2.795E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.061E-01	1.791E-01	1.465E-01	9.139E-02	NOT IDENT.
BA-137M	7.015E-03	4.224E-02	3.671E-02	2.155E-02	NOT IDENT.
CS-137	7.411E-03	4.463E-02	3.878E-02	2.277E-02	NOT IDENT.
CE-139	3.740E-02	3.413E-02	3.007E-02	1.741E-02	NOT IDENT.
BA-140	1.206E-01	4.479E-01	3.973E-01	2.285E-01	NOT IDENT.
LA-140	-4.078E-02	1.788E-01	1.359E-01	9.120E-02	FAIL ABUN
CE-141	7.484E-03	8.435E-02	7.220E-02	4.303E-02	NOT IDENT.
CE-143	4.347E+04	1.390E+04	0.000E+00	7.094E+03	SHORT HLIF
CE-144	-3.310E-02	2.285E-01	1.950E-01	1.166E-01	NOT IDENT.
PM-144	2.396E-02	4.012E-02	3.564E-02	2.047E-02	NOT IDENT.
PR-144	1.822E+00	3.016E+00	2.681E+00	1.539E+00	NOT IDENT.
PM-146	3.550E-02	4.641E-02	4.084E-02	2.368E-02	NOT IDENT.
ND-147	-5.581E-01	1.010E+00	8.519E-01	5.151E-01	FAIL ABUN
PM-149	7.435E+02	1.262E+03	0.000E+00	6.439E+02	SHORT HLIF
EU-152	1.195E-02	1.210E-01	8.566E-02	6.174E-02	FAIL ABUN
GD-153	-1.502E-02	1.042E-01	8.086E-02	5.315E-02	NOT IDENT.
EU-154	2.715E-02	1.425E-01	1.223E-01	7.268E-02	NOT IDENT.
EU-155	7.272E-02	1.188E-01	1.057E-01	6.063E-02	FAIL ABUN
TB-160	2.144E-02	1.726E-01	1.460E-01	8.804E-02	FAIL ABUN
HO-166M	4.535E-02	6.967E-02	6.206E-02	3.554E-02	FAIL ABUN
TA-182	2.060E-01	2.490E-01	2.228E-01	1.270E-01	FAIL ABUN
IR-192	3.608E-02	3.846E-02	3.487E-02	1.962E-02	FAIL ABUN
HG-203	4.682E-02	4.779E-02	4.345E-02	2.439E-02	NOT IDENT.
BI-207	3.679E-02	6.411E-02	5.735E-02	3.271E-02	FAIL ABUN
PB-210	4.321E+00	3.451E+00	3.227E+00	1.761E+00	NOT IDENT.
PB-211	-4.011E-01	9.921E-01	6.992E-01	5.062E-01	NOT IDENT.
BI-212	3.135E+00	9.654E-01	7.248E-01	4.926E-01	FAIL ABUN
RN-219	4.183E-02	4.594E-01	3.924E-01	2.344E-01	FAIL ABUN
RA-223	4.004E-01	7.646E-01	5.996E-01	3.901E-01	FAIL ABUN
AC-227	7.418E-02	2.683E-01	2.391E-01	1.369E-01	FAIL ABUN
TH-227	7.418E-02	2.683E-01	2.391E-01	1.369E-01	FAIL ABUN
TH-229	-4.343E-02	5.450E-01	4.884E-01	2.781E-01	FAIL ABUN
PA-231	-1.434E-01	1.760E+00	1.344E+00	8.979E-01	FAIL ABUN
TH-231	4.004E-01	7.646E-01	5.996E-01	3.901E-01	FAIL ABUN
PA-233	-5.332E-02	6.812E-02	5.651E-02	3.476E-02	FAIL ABUN
PA-234	-3.006E-01	3.221E-01	2.381E-01	1.643E-01	NOT IDENT.
PA-234M	3.806E-01	5.575E+00	4.846E+00	2.844E+00	NOT IDENT.
NP-239	-1.906E-01	4.350E-01	3.698E-01	2.219E-01	FAIL ABUN
AM-241	1.564E-01	1.779E-01	1.488E-01	9.076E-02	NOT IDENT.
CM-247	8.797E-03	4.273E-02	3.672E-02	2.180E-02	FAIL ABUN
CF-249	-1.640E-02	4.363E-02	3.633E-02	2.226E-02	NOT IDENT.

CF-251

6.653E-02

1.378E-01

1.266E-01

7.032E-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	324.8183
49.72	408.0081
57.36	0.0000
59.54	396.7229
63.29	457.4948
63.29	457.4948
64.28	468.8446
67.75	508.1384
69.67	520.7382
70.83	535.4872
72.81	560.2610
72.87	560.3323
72.87	560.3323
74.82	540.5956
74.82	540.5956
74.82	540.5956
74.97	540.7683
77.11	543.1890
77.11	543.1890
77.11	543.1890
79.69	393.0836
79.80	393.1705
80.12	404.5789
80.19	404.6357
80.57	404.9442
81.00	417.4846
81.07	417.5431
81.07	417.5431
83.79	494.8673
83.79	494.8673
85.43	528.7263
86.48	529.7944
86.55	529.8653
86.79	530.1068
86.94	530.2616
87.57	530.8967
88.03	438.6820
88.47	439.0460
89.96	691.4205
91.11	425.6833
92.59	426.8436
92.59	426.8436
93.35	427.4373
94.67	365.9124
94.87	366.0428
94.87	366.0428
95.86	407.4382
97.43	396.0071
98.44	373.6236
99.53	364.8735
100.11	375.7681
103.18	399.9773
103.37	388.4629
105.31	386.5538
106.12	381.7607
109.28	382.6912
111.00	370.9019
111.76	381.0172
116.30	341.6165
117.23	363.7676
121.12	325.6595
121.78	332.5280
122.06	330.4885
123.07	374.6905
131.20	420.1206
133.52	378.2622
136.00	349.5384

136.47	366.4804
140.51	0.0000
140.51	0.0000
143.76	353.3107
144.24	323.1407
144.24	323.1407
145.44	382.3061
152.43	341.4673
153.25	354.3642
154.21	346.8211
154.21	346.8211
156.02	380.7902
158.56	323.5180
159.00	337.4702
162.66	358.6257
163.33	343.9229
165.86	295.2147
176.60	328.0711
177.52	320.4995
181.07	0.0000
184.41	343.6477
185.72	329.7624
193.51	306.6394
197.04	324.0280
205.31	310.9243
210.85	293.7319
215.65	283.9229
222.11	262.3737
227.38	325.0355
228.16	303.9080
228.18	303.9130
235.69	313.0535
235.96	313.1352
235.96	313.1352
238.63	278.8204
238.63	278.8204
240.99	279.4413
242.00	279.7064
244.70	231.1268
252.40	236.7601
252.80	237.7987
256.23	223.2687
256.23	223.2687
260.90	0.0000
264.66	216.6172
268.22	197.4906
269.46	228.5942
269.46	228.5942
271.23	212.6987
273.65	213.1418
276.40	213.6420
277.37	213.8199
277.60	213.8602
278.00	213.9340
279.20	214.1522
279.54	214.2126
280.46	214.3771
283.69	209.4862
284.31	198.6452
285.41	192.5659
285.90	0.0000
287.50	189.5012
293.27	0.0000
295.22	189.3867
295.96	165.8108
298.57	166.1620
299.98	180.6076
299.98	180.6076
300.09	180.6243
300.09	180.6243
300.13	193.3057
301.36	206.1814
302.85	195.3136
304.50	170.1290
304.50	170.1290
304.85	211.5271
308.46	182.4220
311.90	191.9092

316.51	148.4584
319.41	189.0012
320.08	192.1133
323.87	164.6269
323.87	164.6269
328.76	189.5309
333.37	181.5129
334.37	177.3086
334.37	177.3086
338.28	170.2745
338.28	170.2745
338.32	170.2796
338.32	170.2796
338.32	170.2796
340.48	161.7645
340.55	161.7741
344.28	149.5132
351.06	150.2417
351.93	150.3353
356.01	132.1816
364.49	159.9733
366.42	0.0000
383.85	146.3025
388.16	156.2202
388.63	146.7670
391.69	143.8878
400.66	160.6909
401.81	155.4859
402.40	157.6746
404.85	180.9712
410.95	137.1113
414.70	156.3329
423.72	136.0514
427.09	128.7581
427.87	140.7275
433.94	126.0378
453.88	112.1524
463.37	107.9072
468.07	117.0678
473.00	117.8412
476.78	122.5499
477.60	112.5755
487.02	112.0499
492.35	0.0000
497.08	115.3766
511.00	117.1558
514.00	106.1244
527.90	0.0000
529.87	0.0000
531.02	121.1525
537.26	108.6516
546.56	0.0000
563.25	112.8851
569.33	116.9678
569.50	110.4262
569.70	110.4377
583.19	93.2669
600.60	88.3455
602.73	126.3343
604.72	118.9728
609.32	101.1063
609.32	101.1063
610.33	101.1529
614.28	92.4163
618.01	95.7690
621.93	105.5339
621.93	105.5339
633.25	103.1886
635.95	98.4863
636.99	88.8712
645.85	72.7386
657.76	102.3699
661.66	112.3131
661.66	112.3131
664.57	0.0000
666.33	92.9683
666.50	92.9752
677.62	82.6055

685.70	78.9434
695.00	89.1606
696.49	97.1482
696.51	97.1482
697.00	88.2438
702.65	95.4094
706.68	108.5130
711.68	89.7825
720.70	76.7659
721.93	0.0000
722.78	106.8958
722.91	106.9010
723.31	103.5755
724.19	101.9422
727.33	98.7271
733.00	77.1496
735.93	109.8170
739.50	0.0000
747.24	97.1555
752.31	73.0143
753.82	96.3939
756.73	93.4577
763.94	81.4961
765.81	100.2467
766.42	93.4727
777.92	0.0000
778.90	89.1431
783.70	79.0415
785.37	71.9021
795.86	56.7188
801.95	78.2597
810.29	93.3157
810.76	80.8888
815.77	86.2341
818.51	78.0011
832.01	98.2456
834.85	86.8379
836.80	0.0000
846.77	60.9439
856.80	68.5452
860.56	77.4369
871.09	63.5918
873.19	76.3664
875.33	0.0000
879.36	71.2169
880.51	66.9929
883.24	71.3135
884.68	73.4793
889.28	77.8619
898.04	89.8652
911.20	89.1946
911.20	89.1946
911.20	89.1946
926.50	63.2674
937.49	56.3748
944.13	63.3791
946.00	68.4910
949.00	58.7646
962.29	80.1493
964.08	61.2404
966.15	61.2814
968.97	61.3375
968.97	61.3375
968.97	61.3375
983.53	69.6945
996.26	95.7544
1001.03	76.5342
1004.73	79.3932
1037.84	71.8147
1038.76	0.0000
1048.07	72.9727
1050.41	73.0234
1050.41	73.0234
1063.66	73.3154
1085.87	58.6598
1099.45	87.3918
1112.07	68.6426
1115.54	99.7930

1120.29	67.8481
1120.29	67.8481
1120.55	67.8539
1121.30	73.7402
1131.51	0.0000
1173.23	81.4741
1177.93	73.8105
1189.05	89.6191
1204.77	82.1748
1221.41	81.5613
1231.02	74.3114
1235.36	91.3020
1238.28	82.9131
1260.41	0.0000
1271.85	52.7736
1274.44	59.7827
1274.54	59.7852
1291.59	67.0518
1298.22	0.0000
1312.11	53.3170
1332.49	44.4888
1365.19	33.6351
1368.63	0.0000
1384.29	46.0785
1408.01	41.1914
1457.56	0.0000
1460.82	22.9355
1489.16	31.4783
1505.03	49.4919
1596.21	38.6719
1620.50	20.5153
1678.03	0.0000
1690.97	12.2079
1764.49	5.0030
1764.49	5.0030
1770.23	16.6956
1771.35	88.7444
1791.20	0.0000
1836.06	13.5264

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243003

Total Uranium Activity	8.4705E+00	ug/g
Total Uranium Counting Unc.	6.6367E+00	ug/g
Total Uranium Tpu	3.3861E-06	ug/g
Total Uranium Mda	3.6334E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248243003
*  ANALYST       : MXR1            DETECTOR    : GAM12
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:52:17.70  SAMPLE ALQT: 137.380 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.329E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.649E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.572E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.228E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:53:53.44

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243004.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:52:55
Sample ID          : G248243004          Sample quantity  : 1.31470E+02 GRAM
Detector name      : GAM05              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:02.02  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 959280             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	46.06*	199	526	1.31	93.11	89	9	2.77E-02	23.8	
2	0	62.69*	174	631	1.44	126.37	123	7	2.42E-02	25.8	
3	2	74.28*	1114	946	1.60	149.54	143	16	1.55E-01	6.5	8.92E+00
4	2	76.76*	1344	580	1.07	154.50	143	16	1.87E-01	4.1	
5	7	83.77	203	504	1.42	168.52	165	28	2.81E-02	19.0	1.46E+00
6	7	86.79	584	540	1.39	174.55	165	28	8.11E-02	7.9	
7	7	89.63	323	497	1.26	180.23	165	28	4.49E-02	13.6	
8	7	92.56*	503	569	1.59	186.09	165	28	6.99E-02	10.9	
9	0	128.72	141	499	1.09	258.40	254	10	1.96E-02	30.8	
10	0	185.32*	234	428	1.35	371.58	366	11	3.24E-02	18.9	
11	0	209.12	202	377	1.16	419.19	414	12	2.80E-02	20.5	
12	2	238.23*	1716	234	1.25	477.39	472	16	2.38E-01	3.0	1.17E+00
13	2	241.24	428	226	1.83	483.41	472	16	5.94E-02	9.0	
14	0	269.64	156	281	1.63	540.20	535	12	2.16E-02	23.0	
15	0	294.74*	557	197	1.25	590.38	584	12	7.74E-02	6.7	
16	0	299.84	143	216	1.14	600.57	596	12	1.99E-02	22.2	
17	0	327.23	88	228	0.96	655.34	651	11	1.23E-02	34.6	
18	0	337.87*	377	239	1.22	676.61	670	14	5.23E-02	10.2	
19	0	351.53*	913	208	1.33	703.93	698	14	1.27E-01	4.8	
20	0	462.21*	61	149	1.15	925.21	919	12	8.46E-03	43.6	
21	0	582.74*	468	120	1.55	1166.16	1161	12	6.50E-02	6.8	
22	0	608.69*	630	140	1.55	1218.03	1211	15	8.75E-02	5.8	
23	0	661.19	59	82	1.09	1322.97	1318	10	8.22E-03	31.5	
24	0	727.45	90	151	1.83	1455.42	1446	19	1.25E-02	34.4	
25	0	794.49*	74	29	1.93	1589.41	1585	10	1.03E-02	19.0	
26	0	860.00*	68	59	1.54	1720.34	1715	12	9.41E-03	25.8	
27	0	910.43*	368	52	2.01	1821.11	1813	16	5.11E-02	6.9	
28	1	963.79	89	50	2.19	1927.74	1919	28	1.23E-02	19.1	3.03E+00
29	1	968.22	253	44	2.19	1936.61	1919	28	3.51E-02	8.4	
30	0	1119.82*	119	65	1.58	2239.53	2232	13	1.65E-02	16.9	
31	0	1376.65	30	21	1.64	2752.65	2748	10	4.23E-03	33.0	
32	0	1460.00*	1134	62	2.32	2919.15	2907	22	1.57E-01	3.5	
33	0	1763.96	116	15	1.97	3526.26	3518	15	1.61E-02	11.8	
34	0	1846.57	14	0	0.72	3691.21	3687	8	1.94E-03	26.7	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:53:56

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:52:55
Sample ID         : G248243004 Sample quantity : 131.47 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA5 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.02 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	*	3.026E+01	2.820E+00	6.381E-01	3.969E-02	47.420
CD-109	+	88.03	*	5.926E+00	1.042E+00	1.145E+00	8.720E-02	5.175
SN-126		64.28		4.960E-01	3.623E-01	5.381E-01	8.019E-02	0.922
	+	86.94		2.380E+00	1.050E+00	4.585E-01	1.887E-01	5.191
	+	87.57	*	5.724E-01	1.007E-01	1.105E-01	8.413E-03	5.182
CS-135	+	268.22	*	6.377E-01	3.013E-01	2.980E-01	3.188E-02	2.140
BA-137M	+	661.66	*	9.332E-02	5.910E-02	8.280E-02	5.445E-03	1.127
CS-137	+	661.66	*	9.858E-02	6.243E-02	8.747E-02	5.771E-03	1.127
TL-208		277.37		3.405E-01	4.493E-01	7.537E-01	9.808E-02	0.452
	+	583.19	*	6.956E-01	1.072E-01	7.222E-02	5.304E-03	9.632
	+	860.56		9.729E-01	5.113E-01	6.327E-01	6.420E-02	1.538
PB-210	+	46.54	*	1.763E+00	8.490E-01	9.656E-01	7.448E-02	1.826
BI-211	+	72.87		3.217E+01	4.876E+00	3.661E+00	2.882E-01	8.788
	+	351.06	*	5.736E+00	7.121E-01	4.028E-01	3.192E-02	14.242
PB-212	+	74.82		3.849E+00	6.933E-01	4.395E-01	5.488E-02	8.759
	+	77.11		2.800E+00	3.177E-01	2.589E-01	2.015E-02	10.815
	+	238.63	*	2.351E+00	2.900E-01	1.077E-01	1.166E-02	21.823
	+	300.09		3.087E+00	1.410E+00	1.318E+00	1.415E-01	2.343
BI-214	+	609.32	*	1.820E+00	2.596E-01	1.444E-01	1.219E-02	12.598
	+	1120.29		1.804E+00	6.353E-01	6.376E-01	6.126E-02	2.830
	+	1764.49		2.507E+00	6.104E-01	3.983E-01	2.303E-02	6.295
PB-214	+	74.82		6.823E+00	1.167E+00	7.789E-01	8.681E-02	8.759
	+	77.11		4.935E+00	6.923E-01	4.564E-01	5.175E-02	10.815
	+	242.00		3.558E+00	7.568E-01	6.514E-01	7.402E-02	5.462
	+	295.22		2.126E+00	3.691E-01	2.317E-01	2.568E-02	9.175
	+	351.93	*	2.082E+00	2.828E-01	1.465E-01	1.411E-02	14.209
RA-224	+	240.99	*	6.292E+00	1.288E+00	1.155E+00	1.130E-01	5.449
RA-226	+	609.32	*	1.820E+00	2.596E-01	1.444E-01	1.219E-02	12.598
	+	1120.29		1.804E+00	6.353E-01	6.376E-01	6.126E-02	2.830
	+	1764.49		2.507E+00	6.104E-01	3.983E-01	2.303E-02	6.295
AC-228	+	338.32		2.625E+00	1.216E+00	4.642E-01	1.929E-01	5.654
	+	911.20	*	2.696E+00	5.050E-01	2.652E-01	3.366E-02	10.167
	+	968.97		3.193E+00	9.505E-01	5.375E-01	1.324E-01	5.941
RA-228	+	338.32		2.625E+00	1.216E+00	4.642E-01	1.929E-01	5.654

Sample ID : G248243004

Acquisition date : 19-MAR-2010 10:52:55

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	911.20	*	2.696E+00	5.050E-01	2.652E-01	3.366E-02	10.167
	+	968.97		3.193E+00	9.505E-01	5.375E-01	1.324E-01	5.941
	+	74.82		3.849E+00	5.852E-01	4.395E-01	3.479E-02	8.759
	+	77.11		2.800E+00	3.177E-01	2.589E-01	2.015E-02	10.815
	+	238.63	*	2.351E+00	2.900E-01	1.077E-01	1.166E-02	21.823
TH-229	+	300.09		3.087E+00	2.335E+00	1.318E+00	8.072E-01	2.343
	+	85.43		1.441E+00	2.534E-01	2.764E-01	2.113E-02	5.213
	+	88.47		4.923E-01	1.398E-01	1.708E-01	1.313E-02	2.883
		193.51	*	-2.198E-01	6.820E-01	1.078E+00	1.077E-01	-0.204
		210.85		3.204E+00	1.215E+00	1.878E+00	1.871E-01	1.706
TH-232	+	338.32		2.625E+00	5.760E-01	4.642E-01	3.639E-02	5.654
	+	911.20	*	2.696E+00	5.050E-01	2.652E-01	3.366E-02	10.167
TH-234	+	968.97		3.193E+00	9.505E-01	5.375E-01	1.324E-01	5.941
	+	63.29	*	1.670E+00	9.148E-01	1.330E+00	2.414E-01	1.255
U-235	+	92.59		4.377E+00	1.354E+00	9.813E-01	2.159E-01	4.460
	+	89.96		3.405E+00	1.245E+00	1.186E+00	2.893E-01	2.870
	+	93.35		3.306E+00	1.047E+00	7.431E-01	1.714E-01	4.449
		143.76	*	-1.771E-01	2.475E-01	3.828E-01	7.302E-02	-0.463
		163.33		-4.630E-02	5.426E-01	8.713E-01	1.636E-01	-0.053
NP-237	+	185.72		2.056E-01	8.025E-02	8.090E-02	8.074E-03	2.541
		205.31		-3.925E-01	6.936E-01	9.294E-01	1.750E-01	-0.422
	+	86.48	*	1.708E+00	4.674E-01	3.286E-01	7.332E-02	5.198
		95.86		-9.439E-01	1.079E+00	1.454E+00	3.507E-01	-0.649
	+	63.29	*	1.670E+00	9.148E-01	1.330E+00	2.414E-01	1.255
U-238	+	92.59		4.377E+00	1.021E+00	9.813E-01	8.246E-02	4.460

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	2.740E-02	4.340E-01	7.114E-01	5.095E-02	0.039
NA-22		1274.54	*	-8.651E-02	5.882E-02	8.069E-02	4.700E-03	-1.072
NA-24		1368.63	*	1.666E+03	5.882E-02	Half-Life too short		
SC-46		889.28	*	2.416E-02	5.445E-02	9.313E-02	9.354E-03	0.259
V-48	+	1120.55		3.257E-01	1.126E-01	1.775E-01	1.221E-02	1.835
		944.13		-1.121E+00	1.666E+00	2.588E+00	2.503E-01	-0.433
		983.53	*	1.336E-01	1.360E-01	2.399E-01	2.197E-02	0.557
CR-51		1312.11		-5.643E-02	1.428E-01	2.205E-01	1.278E-02	-0.256
		320.08	*	-4.288E-01	5.638E-01	8.743E-01	7.726E-02	-0.490
MN-54		834.85	*	-7.358E-03	5.103E-02	8.385E-02	7.682E-03	-0.088
CO-56		846.77	*	-9.153E-03	5.221E-02	8.536E-02	7.983E-03	-0.107
CO-57		1037.84		-2.043E-01	4.321E-01	6.782E-01	5.976E-02	-0.301
		1238.28		1.612E-01	1.285E-01	2.254E-01	1.393E-02	0.715
		1771.35		1.426E-02	3.283E-01	4.670E-01	2.697E-02	0.031
		122.06	*	1.744E-02	2.987E-02	4.939E-02	7.008E-03	0.353
		136.47		4.050E-03	2.562E-01	4.155E-01	5.563E-02	0.010
CO-58		810.76	*	-1.887E-02	5.089E-02	8.199E-02	7.217E-03	-0.230
FE-59		1099.45	*	-1.750E-03	1.372E-01	2.239E-01	1.812E-02	-0.008
		1291.59		-2.663E-02	1.759E-01	2.800E-01	2.080E-02	-0.095

---- 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			-3.142E-02	6.298E-02	9.831E-02	5.702E-03	-0.320
	1332.49	*		2.283E-02	4.950E-02	8.401E-02	4.862E-03	0.272
ZN-65	1115.54	*		9.498E-02	1.319E-01	2.005E-01	1.401E-02	0.474
SE-75	121.12			5.069E-02	1.572E-01	2.582E-01	4.034E-02	0.196
	136.00			9.209E-03	5.034E-02	8.208E-02	1.070E-02	0.112
	264.66	*		1.384E-02	6.154E-02	9.089E-02	8.677E-03	0.152
	279.54			-1.329E-02	1.293E-01	2.150E-01	2.060E-02	-0.062
	400.66			1.292E-01	3.342E-01	5.611E-01	5.116E-02	0.230
SR-85	514.00	*		-3.120E-01	7.162E-02	8.566E-02	5.491E-03	-3.642
Y-88	898.04			-3.369E-02	5.853E-02	9.218E-02	9.424E-03	-0.365
	1836.06	*		1.912E-02	3.286E-02	6.116E-02	3.499E-03	0.313
Y-91	1204.77	*		-7.955E+00	3.015E+01	4.787E+01	2.782E+00	-0.166
NB-94	702.65	*		1.178E-02	4.608E-02	7.836E-02	5.607E-03	0.150
	871.09			1.622E-02	4.350E-02	7.414E-02	7.225E-03	0.219
NB-95	765.81	*		6.663E-02	6.047E-02	1.074E-01	8.690E-03	0.620
NB-95M	235.69	*		1.775E+00	2.981E-01	4.248E-01	4.654E-02	4.179
ZR-95	724.19			3.278E-01	1.551E-01	2.606E-01	2.162E-02	1.258
	756.73	*		-3.844E-02	1.002E-01	1.625E-01	1.450E-02	-0.237
MO-99	140.51			-4.807E-05	1.002E-01	Half-Life	too short	
	181.07			-1.065E-04	1.002E-01	Half-Life	too short	
	366.42			-8.218E-05	1.002E-01	Half-Life	too short	
	739.50	*		-1.692E-05	1.002E-01	Half-Life	too short	
	777.92			-1.281E-04	1.002E-01	Half-Life	too short	
TC-99M	140.51	*		-2.909E+19	1.002E-01	Half-Life	too short	
RU-103	497.08	*		2.618E-03	5.837E-02	9.537E-02	1.211E-02	0.027
	610.33			2.011E+01	3.726E+00	4.236E+00	6.512E-01	4.748
RH-106	621.93	*		-4.803E-03	4.249E-01	6.839E-01	8.231E-02	-0.007
	1050.41			2.621E+00	3.210E+00	5.624E+00	4.579E-01	0.466
RU-106	621.93	*		-4.803E-03	4.249E-01	6.839E-01	4.508E-02	-0.007
	1050.41			2.621E+00	3.210E+00	5.624E+00	4.579E-01	0.466
AG-108M	433.94	*		-2.551E-03	4.058E-02	6.632E-02	4.282E-03	-0.038
	614.28			5.864E-04	5.222E-02	7.262E-02	5.052E-03	0.008
	722.91			5.494E-03	5.281E-02	7.699E-02	5.981E-03	0.071
AG-110M	657.76	*		1.862E-02	5.480E-02	7.844E-02	5.423E-03	0.237
	677.62			-6.367E-01	4.156E-01	6.200E-01	4.409E-02	-1.027
	706.68			3.003E-02	2.872E-01	4.841E-01	3.634E-02	0.062
	763.94			-2.118E-01	2.155E-01	3.337E-01	2.774E-02	-0.635
	884.68			-2.965E-02	6.550E-02	1.042E-01	1.064E-02	-0.284
	937.49			-6.020E-02	1.534E-01	2.450E-01	2.457E-02	-0.246
	1384.29			1.596E-01	1.961E-01	3.359E-01	2.070E-02	0.475
	1505.03			-3.715E-01	3.374E-01	4.740E-01	2.786E-02	-0.784
SN-113	391.69	*		4.341E-02	6.162E-02	1.050E-01	6.512E-03	0.413
CD-115	260.90			-7.577E-04	6.162E-02	Half-Life	too short	
	492.35			5.083E-04	6.162E-02	Half-Life	too short	
	527.90	*		-6.372E-05	6.162E-02	Half-Life	too short	
SN-117M	156.02			-4.076E+00	4.255E+00	6.591E+00	7.268E-01	-0.618
	158.56	*		7.742E-02	1.011E-01	1.670E-01	1.796E-02	0.464
TE-123M	159.00	*		3.408E-02	3.676E-02	6.098E-02	6.552E-03	0.559
SB-124	602.73			-1.574E-02	6.079E-02	8.226E-02	5.417E-03	-0.191

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		645.85		1.645E-01	6.414E-01	1.053E+00	7.604E-02	0.156
		722.78		4.372E-02	5.645E-01	8.209E-01	6.301E-02	0.053
SB-125		1690.97	*	-1.605E-02	9.178E-02	1.466E-01	9.318E-03	-0.110
	+	427.87	*	-2.138E-02	1.209E-01	1.965E-01	1.230E-02	-0.109
		463.37		6.021E-01	5.274E-01	6.428E-01	4.556E-02	0.937
		600.60		2.406E-02	2.372E-01	3.632E-01	2.687E-02	0.066
		635.95		6.312E-02	3.601E-01	5.868E-01	4.391E-02	0.108
TE-125M		109.28	*	-5.589E+00	1.251E+01	1.967E+01	2.556E+00	-0.284
I-126		388.63		-4.168E-02	3.298E-01	5.401E-01	3.214E-02	-0.077
		666.33	*	4.201E-01	4.959E-01	7.452E-01	4.948E-02	0.564
		753.82		1.409E+00	3.542E+00	6.071E+00	4.801E-01	0.232
SB-126		414.70		-9.222E-02	1.460E-01	2.311E-01	1.377E-02	-0.399
		666.50		1.488E-01	1.737E-01	2.613E-01	1.735E-02	0.570
		695.00		-3.113E-02	1.578E-01	2.611E-01	1.840E-02	-0.119
		697.00		1.216E-01	5.591E-01	9.493E-01	6.715E-02	0.128
		720.70	*	-8.238E-02	3.319E-01	4.668E-01	3.462E-02	-0.176
		856.80		6.391E-01	1.109E+00	1.677E+00	1.596E-01	0.381
SB-127		252.40		8.352E+00	2.058E+01	3.458E+01	1.471E+01	0.242
		473.00		1.679E+00	8.464E+00	1.399E+01	1.944E+00	0.120
		685.70	*	5.747E+00	7.378E+00	1.290E+01	1.673E+00	0.445
		783.70		1.998E+01	1.906E+01	3.359E+01	4.910E+00	0.595
I-131		80.19		-5.231E+00	1.203E+01	1.215E+01	9.556E-01	-0.431
		284.31		-2.028E+00	3.372E+00	5.442E+00	5.261E-01	-0.373
		364.49	*	-2.195E-01	2.786E-01	4.401E-01	3.340E-02	-0.499
		636.99		2.113E+00	3.911E+00	6.544E+00	4.784E-01	0.323
TE-132		49.72		-3.768E+01	2.811E+01	3.829E+01	4.811E+00	-0.984
		111.76		-2.529E+01	2.078E+02	3.373E+02	5.357E+01	-0.075
		116.30		-8.882E-01	1.798E+02	2.928E+02	4.859E+01	-0.003
		228.16	*	-4.162E+00	4.575E+00	7.319E+00	1.339E+00	-0.569
BA-133		81.00		-2.079E-03	1.226E-01	1.274E-01	1.915E-02	-0.016
		276.40		3.174E-01	4.451E-01	7.003E-01	1.019E-01	0.453
		302.85		4.254E-03	1.814E-01	2.630E-01	3.468E-02	0.016
		356.01	*	2.774E-04	5.803E-02	8.330E-02	1.007E-02	0.003
		383.85		5.802E-02	3.682E-01	6.121E-01	6.649E-02	0.095
I-133		529.87	*	-2.586E+00	3.682E-01	Half-Life	too short	
		875.33		-7.130E+01	3.682E-01	Half-Life	too short	
		1298.22		-1.863E+01	3.682E-01	Half-Life	too short	
CS-134		563.25		-1.331E-01	5.113E-01	8.023E-01	5.329E-02	-0.166
		569.33		1.458E-01	2.880E-01	4.720E-01	3.162E-02	0.309
		604.72		9.725E-03	4.990E-02	7.070E-02	4.676E-03	0.138
	+	795.86	*	1.650E-01	6.417E-02	1.158E-01	9.972E-03	1.425
		801.95		-2.074E-01	5.277E-01	8.147E-01	7.082E-02	-0.255
		1365.19		4.115E-01	1.592E+00	2.646E+00	1.691E-01	0.156
I-135		546.56		-5.291E+18	1.592E+00	Half-Life	too short	
		836.80		1.312E+19	1.592E+00	Half-Life	too short	
		1038.76		-2.708E+18	1.592E+00	Half-Life	too short	
		1131.51		-4.036E+18	1.592E+00	Half-Life	too short	
		1260.41	*	-2.402E+18	1.592E+00	Half-Life	too short	
		1457.56		5.544E+20	1.592E+00	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	1678.03			2.140E+17	1.592E+00	Half-Life	too short	
	1791.20			-7.438E+18	1.592E+00	Half-Life	too short	
	153.25			9.523E-01	1.596E+00	2.623E+00	3.313E-01	0.363
	176.60			1.305E+00	9.127E-01	1.530E+00	1.645E-01	0.853
	273.65			-7.297E-01	1.023E+00	1.418E+00	1.426E-01	-0.515
	340.55			6.265E-01	3.198E-01	5.088E-01	4.142E-02	1.231
CE-139	818.51			7.930E-02	1.430E-01	2.473E-01	2.206E-02	0.321
	1048.07	*		-4.378E-02	2.096E-01	3.371E-01	2.889E-02	-0.130
	1235.36			1.119E+00	1.179E+00	2.035E+00	2.016E-01	0.550
	165.86	*		6.180E-03	3.803E-02	6.161E-02	6.116E-03	0.100
	162.66			-4.308E-02	1.545E+00	2.488E+00	2.683E-01	-0.017
	304.85			-5.510E-01	2.762E+00	3.935E+00	1.153E+00	-0.140
BA-140	423.72			2.387E-01	3.792E+00	6.245E+00	2.018E+00	0.038
	537.26	*		-1.871E-02	5.307E-01	8.593E-01	2.873E-01	-0.022
	328.76			6.861E-01	6.707E-01	1.023E+00	8.852E-02	0.670
	487.02			-1.488E-02	2.565E-01	4.167E-01	2.927E-02	-0.036
	815.77			-3.271E-01	6.417E-01	1.023E+00	1.007E-01	-0.320
	1596.21	*		-1.031E-01	1.751E-01	2.681E-01	1.576E-02	-0.385
CE-141	145.44	*		3.941E-02	8.854E-02	1.452E-01	1.776E-02	0.271
CE-143	57.36			6.617E-03	8.854E-02	Half-Life	too short	
	293.27	*		9.761E-02	8.854E-02	Half-Life	too short	
	664.57			3.997E-02	8.854E-02	Half-Life	too short	
	721.93			-2.699E-02	8.854E-02	Half-Life	too short	
CE-144	80.12			-1.378E+00	3.366E+00	3.407E+00	2.633E-01	-0.404
	133.52	*		-2.271E-01	2.843E-01	3.830E-01	7.001E-02	-0.593
PM-144	476.78			6.683E-02	7.972E-02	1.368E-01	9.942E-03	0.488
	618.01			-1.909E-02	4.439E-02	6.794E-02	4.693E-03	-0.281
PR-144	696.49	*		9.238E-03	4.637E-02	7.866E-02	5.565E-03	0.117
	696.51	*		7.270E-01	3.487E+00	5.918E+00	4.183E-01	0.123
	1489.16			-3.184E+00	1.374E+01	2.207E+01	1.297E+00	-0.144
PM-146	453.88	*		5.168E-02	5.476E-02	9.210E-02	8.025E-03	0.561
	633.25			1.337E-01	1.875E+00	3.032E+00	1.146E+00	0.044
	735.93			1.185E-01	1.949E-01	3.057E-01	8.481E-02	0.388
	747.24			-8.150E-02	1.358E-01	2.169E-01	3.063E-02	-0.376
ND-147	91.11	+		2.834E+00	6.685E-01	9.117E-01	8.116E-02	3.108
	319.41			-3.913E+00	6.678E+00	1.077E+01	9.044E-01	-0.363
	531.02	*		-1.235E+00	1.310E+00	1.877E+00	2.594E-01	-0.658
PM-149	285.90	*		3.860E-04	1.310E+00	Half-Life	too short	
EU-152	121.78			4.884E-02	8.449E-02	1.397E-01	2.087E-02	0.350
	244.70			3.251E-01	4.113E-01	6.273E-01	6.116E-02	0.518
	344.28	*		6.937E-03	1.552E-01	1.959E-01	1.610E-02	0.035
	778.90			-2.668E-01	3.401E-01	5.330E-01	4.417E-02	-0.501
	964.08	+		1.205E+00	4.742E-01	7.350E-01	6.925E-02	1.640
	1085.87			1.941E-01	4.796E-01	8.125E-01	6.117E-02	0.239
GD-153	1112.07			-7.406E-02	4.732E-01	6.490E-01	4.570E-02	-0.114
	1408.01			1.835E-02	2.201E-01	3.713E-01	2.169E-02	0.049
	69.67			-2.286E+00	1.488E+00	2.025E+00	1.610E-01	-1.129
	97.43	*		1.123E-01	1.004E-01	1.502E-01	1.392E-02	0.747
	103.18			-4.805E-02	1.253E-01	2.021E-01	2.090E-02	-0.238

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

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EU-154		123.07		-2.876E-03	6.459E-02	9.688E-02	1.543E-02	-0.030
		723.31		2.204E-01	2.448E-01	3.827E-01	3.234E-02	0.576
		873.19		4.868E-02	3.540E-01	5.926E-01	7.562E-02	0.082
		996.26		5.027E-03	5.006E-01	7.777E-01	1.373E-01	0.006
		1004.73		-1.070E-01	2.678E-01	4.239E-01	5.008E-02	-0.252
EU-155		1274.44	*	-2.398E-01	1.673E-01	2.292E-01	2.162E-02	-1.046
	+	86.55		6.963E-01	1.228E-01	1.856E-01	1.434E-02	3.752
		105.31	*	1.071E-01	1.195E-01	1.996E-01	2.162E-02	0.536
TB-160	+	86.79		1.985E+00	3.491E-01	5.288E-01	4.033E-02	3.754
		197.04		-3.706E-01	7.859E-01	1.217E+00	1.217E-01	-0.305
		215.65		1.690E-01	9.982E-01	1.547E+00	1.539E-01	0.109
	+	298.57		4.687E-01	2.121E-01	2.648E-01	2.356E-02	1.770
		879.36	*	1.109E-01	1.954E-01	3.373E-01	3.333E-02	0.329
HO-166M	+	962.29		2.438E+00	9.591E-01	1.409E+00	1.331E-01	1.731
		966.15		2.258E+00	4.560E-01	8.315E-01	7.811E-02	2.716
		1177.93		1.688E-02	5.373E-01	8.684E-01	5.039E-02	0.019
		1271.85		8.019E-01	9.745E-01	1.699E+00	9.873E-02	0.472
	+	80.57		-1.820E-01	3.617E-01	3.634E-01	2.806E-02	-0.501
		184.41		1.633E-01	6.375E-02	8.020E-02	8.003E-03	2.037
		280.46		-6.682E-02	9.589E-02	1.547E-01	1.433E-02	-0.432
		410.95		1.349E-01	3.063E-01	5.153E-01	3.058E-02	0.262
		711.68	*	-2.032E-02	7.854E-02	1.292E-01	9.412E-03	-0.157
		752.31		2.146E-01	3.677E-01	6.369E-01	5.022E-02	0.337
TA-182		810.29		-2.014E-02	7.055E-02	1.145E-01	1.005E-02	-0.176
		67.75		3.678E-02	9.085E-02	1.335E-01	1.069E-02	0.275
		100.11		2.088E-01	1.983E-01	3.333E-01	3.254E-02	0.627
		152.43		4.522E-01	4.475E-01	7.436E-01	8.481E-02	0.608
		222.11		1.359E-01	4.290E-01	7.308E-01	7.248E-02	0.186
IR-192	+	1121.30		8.867E-01	3.065E-01	4.810E-01	3.301E-02	1.843
		1189.05		-5.777E-02	4.419E-01	7.109E-01	4.128E-02	-0.081
		1221.41	*	-9.489E-03	2.696E-01	4.363E-01	2.536E-02	-0.022
		1231.02		-5.528E-01	6.550E-01	9.871E-01	5.740E-02	-0.560
	+	295.96		1.692E+00	2.729E-01	3.750E-01	3.381E-02	4.511
HG-203		308.46		1.406E-01	1.221E-01	2.130E-01	1.856E-02	0.660
		316.51	*	3.042E-02	4.469E-02	7.656E-02	6.498E-03	0.397
		468.07		6.985E-02	1.016E-01	1.520E-01	1.076E-02	0.459
BI-207	+	70.83		-2.783E-01	1.255E+00	1.801E+00	2.826E-01	-0.155
		72.87		9.000E+00	1.793E+00	1.516E+00	2.295E-01	5.936
	+	279.20	*	-1.159E-03	4.885E-02	8.154E-02	7.734E-03	-0.014
PB-211	+	72.81		1.852E+00	2.806E-01	3.097E-01	2.439E-02	5.978
	+	74.97		1.110E+00	1.682E-01	2.419E-01	1.893E-02	4.588
		569.70		3.874E-02	4.396E-02	7.357E-02	4.815E-03	0.527
		1063.66	*	2.861E-02	6.770E-02	1.148E-01	9.089E-03	0.249
BI-212		1770.23		1.860E-01	5.905E-01	9.011E-01	5.205E-02	0.206
		404.85	*	-9.926E-01	1.050E+00	1.452E+00	6.967E-01	-0.684
		427.09		-5.228E-01	2.017E+00	3.239E+00	1.485E+00	-0.161
BI-212	+	832.01		-3.870E-01	1.339E+00	2.151E+00	1.118E+00	-0.180
		727.33	*	2.087E+00	1.457E+00	1.450E+00	1.699E-01	1.439
		785.37		2.523E+00	4.097E+00	7.102E+00	5.956E-01	0.355

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219		1620.50		1.385E-02	3.245E+00	5.378E+00	3.156E-01	0.003
		271.23		6.704E-01	3.381E-01	5.334E-01	5.829E-02	1.257
		401.81	*	3.819E-01	5.104E-01	8.689E-01	1.171E-01	0.439
RA-223		81.07		-8.696E-03	2.774E-01	2.881E-01	2.222E-02	-0.030
	+	83.79		2.957E-01	1.147E-01	1.909E-01	1.464E-02	1.549
		94.87		5.896E-01	5.313E-01	7.921E-01	6.976E-02	0.744
		144.24		-2.922E-01	8.293E-01	1.311E+00	1.699E-01	-0.223
		154.21		2.659E-01	4.821E-01	7.917E-01	9.393E-02	0.336
AC-227	+	269.46		7.341E-01	3.451E-01	4.243E-01	4.072E-02	1.730
		323.87	*	3.543E-01	8.769E-01	1.297E+00	2.225E-01	0.273
	+	338.28		1.042E+01	2.449E+00	2.981E+00	3.436E-01	3.494
		79.69		2.493E-01	1.612E+00	1.696E+00	2.851E-01	0.147
		235.96		3.121E+00	4.517E-01	5.528E-01	6.284E-02	5.647
TH-227		256.23	*	-6.992E-02	2.894E-01	4.799E-01	6.136E-02	-0.146
	+	299.98		3.396E+00	1.569E+00	1.916E+00	2.467E-01	1.772
		304.50		-8.416E-01	2.157E+00	3.030E+00	5.031E-01	-0.278
		334.37		1.421E+00	2.704E+00	3.551E+00	5.409E-01	0.400
		79.80		-6.329E-01	2.170E+00	2.211E+00	4.741E-01	-0.286
PA-231		235.96		3.121E+00	4.388E-01	5.528E-01	5.991E-02	5.647
	+	256.23	*	-6.992E-02	2.894E-01	4.799E-01	6.843E-02	-0.146
		299.98		3.396E+00	1.569E+00	1.916E+00	2.467E-01	1.772
		304.50		-8.416E-01	2.157E+00	3.030E+00	5.031E-01	-0.278
		334.37		1.421E+00	2.704E+00	3.551E+00	5.409E-01	0.400
TH-231		283.69	*	-1.615E+00	1.678E+00	2.636E+00	3.936E-01	-0.613
		301.36		1.561E+00	7.791E-01	1.229E+00	1.513E-01	1.270
PA-233		81.07		-8.696E-03	2.774E-01	2.881E-01	2.222E-02	-0.030
	+	83.79		2.957E-01	1.147E-01	1.909E-01	1.464E-02	1.549
		94.87		5.896E-01	5.313E-01	7.921E-01	6.976E-02	0.744
		144.24		-2.922E-01	8.293E-01	1.311E+00	1.699E-01	-0.223
		154.21		2.659E-01	4.821E-01	7.917E-01	9.393E-02	0.336
PA-234	+	269.46		7.341E-01	3.451E-01	4.243E-01	4.072E-02	1.730
		323.87	*	3.543E-01	8.769E-01	1.297E+00	2.225E-01	0.273
	+	338.28		1.042E+01	2.449E+00	2.981E+00	3.436E-01	3.494
		300.13		1.537E+00	7.198E-01	8.717E-01	1.305E-01	1.763
	+	311.90	*	-1.064E-01	7.826E-02	1.207E-01	1.066E-02	-0.882
PA-234M		340.48		2.082E+00	1.031E+00	1.478E+00	3.514E-01	1.409
		94.67		4.640E-01	1.994E-01	2.993E-01	3.744E-02	1.550
		98.44		1.488E-01	1.355E-01	1.627E-01	9.096E-02	0.915
		111.00		-4.859E-02	2.181E-01	3.457E-01	5.041E-02	-0.141
		131.20		7.822E-02	1.392E-01	2.024E-01	2.718E-02	0.386
PA-234M		569.50		2.300E-01	3.959E-01	6.516E-01	4.264E-02	0.353
		733.00		-4.831E-01	5.521E-01	7.046E-01	1.537E-01	-0.686
		880.51		3.309E-01	3.600E-01	6.363E-01	6.299E-02	0.520
		883.24		1.321E-01	3.869E-01	6.401E-01	4.315E-01	0.206
		926.50		-1.106E-01	2.178E-01	3.402E-01	8.754E-02	-0.325
PA-234M		946.00	*	-1.195E-01	3.948E-01	6.332E-01	1.220E-01	-0.189
		949.00		2.714E-01	5.559E-01	9.527E-01	9.158E-02	0.285
		766.42		2.075E+01	1.813E+01	2.679E+01	1.357E+01	0.775
		1001.03	*	3.050E+00	5.925E+00	1.004E+01	1.026E+00	0.304

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	99.53			2.426E-01	1.798E-01	2.948E-01	2.846E-02	0.823
	103.37			5.227E-02	1.091E-01	1.808E-01	1.876E-02	0.289
	106.12			7.429E-02	9.463E-02	1.578E-01	1.720E-02	0.471
	117.23	*		-1.933E-01	4.584E-01	7.344E-01	9.657E-02	-0.263
	228.18			-2.271E-01	2.457E-01	3.969E-01	3.923E-02	-0.572
	277.60			1.370E-01	2.063E-01	3.455E-01	3.216E-02	0.396
AM-241	59.54	*		9.652E-02	7.993E-02	1.210E-01	1.083E-02	0.798
CM-247	278.00			6.669E-01	8.552E-01	1.473E+00	1.370E-01	0.453
	287.50			1.237E+00	1.519E+00	2.413E+00	2.202E-01	0.513
	402.40	*		2.228E-02	4.649E-02	7.843E-02	4.614E-03	0.284
CF-249	252.80			-3.943E-01	1.107E+00	1.828E+00	1.767E-01	-0.216
	333.37			-1.141E-01	3.914E-01	3.624E-01	2.897E-02	-0.315
	388.16	*		-2.873E-02	5.218E-02	8.352E-02	4.988E-03	-0.344
CF-251	177.52	*		4.607E-02	1.588E-01	2.579E-01	2.569E-02	0.179
	227.38			-4.787E-01	4.042E-01	6.441E-01	6.369E-02	-0.743
	285.41			-5.749E-01	2.490E+00	4.095E+00	3.754E-01	-0.140
ANH-511	511.00	*		6.369E-02	5.517E-02	1.008E-01	6.452E-03	0.632

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]G248243004      *
* Acquisition date   : 19-MAR-2010 10:52:55 Detector SN#                   *
* Detector ID        : GAM05 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:02.02 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                     *
* Sample date       : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248243004 Analyst initials: MXR1                   *
* Batch Number      : 959280 Sample Quantity : 1.3147E+02 GRAM            *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                               *
*                                     *                                     *
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 11-JUN-2009 16:41:00 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.026E+01	2.763E+00	6.388E-01	0.000E+00
CD-109	5.926E+00	1.021E+00	1.201E+00	0.000E+00
SN-126	5.724E-01	9.866E-02	1.159E-01	0.000E+00
CS-135	6.377E-01	2.953E-01	3.070E-01	0.000E+00
BA-137M	9.332E-02	5.792E-02	8.403E-02	0.000E+00
CS-137	9.858E-02	6.119E-02	8.877E-02	0.000E+00
TL-208	6.956E-01	1.050E-01	7.344E-02	0.000E+00
PB-210	1.763E+00	8.320E-01	1.023E+00	0.000E+00
BI-211	5.736E+00	6.979E-01	4.131E-01	0.000E+00
PB-212	2.351E+00	2.842E-01	1.112E-01	0.000E+00
BI-214	1.820E+00	2.544E-01	1.468E-01	0.000E+00
PB-214	2.082E+00	2.771E-01	1.503E-01	0.000E+00
RA-224	6.292E+00	1.262E+00	1.192E+00	0.000E+00
RA-226	1.820E+00	2.544E-01	1.468E-01	0.000E+00
AC-228	2.696E+00	4.949E-01	2.677E-01	0.000E+00
RA-228	2.696E+00	4.949E-01	2.677E-01	0.000E+00
TH-228	2.351E+00	2.842E-01	1.112E-01	0.000E+00
TH-229	-2.198E-01	6.684E-01	1.117E+00	0.000E+00
TH-232	2.696E+00	4.949E-01	2.677E-01	0.000E+00
TH-234	1.670E+00	8.965E-01	1.402E+00	0.000E+00
U-235	-1.771E-01	2.425E-01	3.984E-01	0.000E+00
NP-237	1.708E+00	4.581E-01	3.448E-01	0.000E+00
U-238	1.670E+00	8.965E-01	1.402E+00	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.740E-02	4.253E-01	7.260E-01	0.000E+00 NOT IDENT.
NA-22	-8.651E-02	5.765E-02	8.097E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.725E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	2.416E-02	5.336E-02	9.403E-02	0.000E+00 FAIL ABUN

V-48	1.336E-01	1.333E-01	2.418E-01	0.000E+00	NOT IDENT.
CR-51	-4.288E-01	5.525E-01	8.982E-01	0.000E+00	NOT IDENT.
MN-54	-7.358E-03	5.001E-02	8.476E-02	0.000E+00	NOT IDENT.
CO-56	-9.153E-03	5.117E-02	8.627E-02	0.000E+00	NOT IDENT.
CO-57	1.744E-02	2.927E-02	5.154E-02	0.000E+00	NOT IDENT.
CO-58	-1.887E-02	4.987E-02	8.292E-02	0.000E+00	NOT IDENT.
FE-59	-1.750E-03	1.344E-01	2.252E-01	0.000E+00	NOT IDENT.
CO-60	2.283E-02	4.851E-02	8.424E-02	0.000E+00	NOT IDENT.
ZN-65	9.498E-02	1.293E-01	2.016E-01	0.000E+00	NOT IDENT.
SE-75	1.384E-02	6.031E-02	9.365E-02	0.000E+00	NOT IDENT.
SR-85	-3.120E-01	7.019E-02	8.730E-02	0.000E+00	NOT IDENT.
Y-88	1.912E-02	3.221E-02	6.098E-02	0.000E+00	NOT IDENT.
Y-91	-7.955E+00	2.955E+01	4.808E+01	0.000E+00	NOT IDENT.
NB-94	1.178E-02	4.516E-02	7.945E-02	0.000E+00	NOT IDENT.
NB-95	6.663E-02	5.926E-02	1.088E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.921E-01	4.385E-01	0.000E+00	NOT IDENT.
ZR-95	-3.844E-02	9.822E-02	1.646E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.110E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.163E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.618E-03	5.720E-02	9.726E-02	0.000E+00	NOT IDENT.
RH-106	-4.803E-03	4.164E-01	6.947E-01	0.000E+00	NOT IDENT.
RU-106	-4.803E-03	4.164E-01	6.947E-01	0.000E+00	NOT IDENT.
AG-108M	-2.551E-03	3.977E-02	6.778E-02	0.000E+00	NOT IDENT.
AG-110M	1.862E-02	5.370E-02	7.962E-02	0.000E+00	NOT IDENT.
SN-113	4.341E-02	6.039E-02	1.075E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.691E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	7.742E-02	9.908E-02	1.735E-01	0.000E+00	NOT IDENT.
TE-123M	3.408E-02	3.602E-02	6.336E-02	0.000E+00	NOT IDENT.
SB-124	-1.605E-02	8.994E-02	1.463E-01	0.000E+00	NOT IDENT.
SB-125	-2.138E-02	1.185E-01	2.009E-01	0.000E+00	FAIL ABUN
TE-125M	-5.589E+00	1.226E+01	2.056E+01	0.000E+00	NOT IDENT.
I-126	4.201E-01	4.860E-01	7.561E-01	0.000E+00	NOT IDENT.
SB-126	-8.238E-02	3.252E-01	4.730E-01	0.000E+00	NOT IDENT.
SB-127	5.747E+00	7.231E+00	1.309E+01	0.000E+00	NOT IDENT.
I-131	-2.195E-01	2.730E-01	4.511E-01	0.000E+00	NOT IDENT.
TE-132	-4.162E+00	4.484E+00	7.560E+00	0.000E+00	NOT IDENT.
BA-133	2.774E-04	5.687E-02	8.542E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.418E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.288E-02	1.171E-01	0.000E+00	FAIL ABUN
I-135	0.000E+00	3.527E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.378E-02	2.054E-01	3.394E-01	0.000E+00	NOT IDENT.
CE-139	6.180E-03	3.727E-02	6.397E-02	0.000E+00	NOT IDENT.
BA-140	-1.871E-02	5.201E-01	8.751E-01	0.000E+00	NOT IDENT.
LA-140	-1.031E-01	1.716E-01	2.680E-01	0.000E+00	NOT IDENT.
CE-141	3.941E-02	8.677E-02	1.511E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.714E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.271E-01	2.786E-01	3.990E-01	0.000E+00	NOT IDENT.
PM-144	9.238E-03	4.544E-02	7.976E-02	0.000E+00	NOT IDENT.
PR-144	7.270E-01	3.417E+00	6.001E+00	0.000E+00	NOT IDENT.
PM-146	5.168E-02	5.367E-02	9.407E-02	0.000E+00	NOT IDENT.
ND-147	-1.235E+00	1.284E+00	1.912E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.192E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	6.937E-03	1.521E-01	2.010E-01	0.000E+00	FAIL ABUN
GD-153	1.123E-01	9.835E-02	1.573E-01	0.000E+00	NOT IDENT.
EU-154	-2.398E-01	1.640E-01	2.300E-01	0.000E+00	NOT IDENT.
EU-155	1.071E-01	1.171E-01	2.088E-01	0.000E+00	FAIL ABUN
TB-160	1.109E-01	1.915E-01	3.406E-01	0.000E+00	FAIL ABUN
HO-166M	-2.032E-02	7.697E-02	1.309E-01	0.000E+00	FAIL ABUN
TA-182	-9.489E-03	2.642E-01	4.381E-01	0.000E+00	FAIL ABUN
IR-192	3.042E-02	4.380E-02	7.866E-02	0.000E+00	FAIL ABUN
HG-203	-1.159E-03	4.787E-02	8.395E-02	0.000E+00	FAIL ABUN
BI-207	2.861E-02	6.634E-02	1.155E-01	0.000E+00	FAIL ABUN
PB-211	-9.926E-01	1.029E+00	1.486E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.428E+00	1.469E+00	0.000E+00	FAIL ABUN
RN-219	3.819E-01	5.002E-01	8.893E-01	0.000E+00	NOT IDENT.
RA-223	3.543E-01	8.594E-01	1.332E+00	0.000E+00	FAIL ABUN
AC-227	-6.992E-02	2.836E-01	4.947E-01	0.000E+00	FAIL ABUN
TH-227	-6.992E-02	2.836E-01	4.947E-01	0.000E+00	FAIL ABUN
PA-231	-1.615E+00	1.644E+00	2.713E+00	0.000E+00	NOT IDENT.
TH-231	3.543E-01	8.594E-01	1.332E+00	0.000E+00	FAIL ABUN
PA-233	-1.064E-01	7.669E-02	1.240E-01	0.000E+00	FAIL ABUN
PA-234	-1.195E-01	3.869E-01	6.387E-01	0.000E+00	NOT IDENT.
PA-234M	3.050E+00	5.806E+00	1.012E+01	0.000E+00	NOT IDENT.
NP-239	-1.933E-01	4.492E-01	7.668E-01	0.000E+00	NOT IDENT.
AM-241	9.652E-02	7.834E-02	1.277E-01	0.000E+00	NOT IDENT.
CM-247	2.228E-02	4.556E-02	8.026E-02	0.000E+00	NOT IDENT.
CF-249	-2.873E-02	5.114E-02	8.552E-02	0.000E+00	NOT IDENT.
CF-251	4.607E-02	1.556E-01	2.675E-01	0.000E+00	NOT IDENT.

ANH-511	6.369E-02	5.406E-02	1.027E-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]G248243004.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:52:55
Sample ID          : G248243004 Sample quantity      : 1.31470E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.02 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 959280 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	1134	10.66*	1.004E+00	3.026E+01	3.026E+01	9.32
CD-109	88.03	584	3.70*	7.867E+00	5.724E+00	5.926E+00	17.59
SN-126	64.28	-----	9.60	8.070E+00	-----	Line Not Found	-----
	86.94	584	8.90	7.867E+00	2.380E+00	2.380E+00	44.11
	87.57	584	37.00*	7.867E+00	5.724E-01	5.724E-01	17.59
CS-135	268.22	156	16.00*	4.355E+00	6.377E-01	6.377E-01	47.25
BA-137M	661.66	59	89.90*	2.017E+00	9.319E-02	9.332E-02	63.33
CS-137	661.66	59	85.10*	2.017E+00	9.844E-02	9.858E-02	63.33
TL-208	277.37	-----	6.60	4.261E+00	-----	Line Not Found	-----
	583.19	468	85.00*	2.260E+00	6.956E-01	6.956E-01	15.41
	860.56	68	12.50	1.590E+00	9.729E-01	9.729E-01	52.55
PB-210	46.54	199	4.25*	7.608E+00	1.760E+00	1.763E+00	48.15
BI-211	72.87	1114	1.23	8.041E+00	3.217E+01	3.217E+01	15.16
	351.06	913	12.92*	3.519E+00	5.736E+00	5.736E+00	12.41
PB-212	74.82	1114	10.28	8.041E+00	3.849E+00	3.849E+00	18.01
	77.11	1344	17.10	8.016E+00	2.800E+00	2.800E+00	11.35
	238.63	1716	43.60*	4.778E+00	2.351E+00	2.351E+00	12.33
	300.09	143	3.30	4.008E+00	3.087E+00	3.087E+00	45.66
BI-214	609.32	630	45.49*	2.173E+00	1.820E+00	1.820E+00	14.27
	1120.29	119	14.92	1.258E+00	1.804E+00	1.804E+00	35.21
	1764.49	116	15.30	8.614E-01	2.507E+00	2.507E+00	24.35
PB-214	74.82	1114	5.80	8.041E+00	6.822E+00	6.823E+00	17.11
	77.11	1344	9.70	8.016E+00	4.935E+00	4.935E+00	14.03
	242.00	428	7.25	4.735E+00	3.558E+00	3.558E+00	21.27
	295.22	557	18.42	4.063E+00	2.125E+00	2.126E+00	17.37
	351.93	913	35.60*	3.519E+00	2.082E+00	2.082E+00	13.58
RA-224	240.99	428	4.10*	4.735E+00	6.292E+00	6.292E+00	20.46
RA-226	609.32	630	45.49*	2.173E+00	1.820E+00	1.820E+00	14.27
	1120.29	119	14.92	1.258E+00	1.804E+00	1.804E+00	35.21
	1764.49	116	15.30	8.614E-01	2.507E+00	2.507E+00	24.35
AC-228	338.32	377	11.27	3.637E+00	2.625E+00	2.625E+00	46.34
	911.20	368	25.80*	1.511E+00	2.696E+00	2.696E+00	18.73

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	253	15.80	1.430E+00	3.193E+00	3.193E+00	29.77
	338.32	377	11.27	3.637E+00	2.625E+00	2.625E+00	46.34
	911.20	368	25.80*	1.511E+00	2.696E+00	2.696E+00	18.73
TH-228	968.97	253	15.80	1.430E+00	3.193E+00	3.193E+00	29.77
	74.82	1114	10.28	8.041E+00	3.849E+00	3.849E+00	15.20
	77.11	1344	17.10	8.016E+00	2.800E+00	2.800E+00	11.35
TH-229	238.63	1716	43.60*	4.778E+00	2.351E+00	2.351E+00	12.33
	300.09	143	3.30	4.008E+00	3.087E+00	3.087E+00	75.64
	85.43	584	14.70	7.867E+00	1.441E+00	1.441E+00	17.59
TH-232	88.47	323	24.00	7.814E+00	4.923E-01	4.923E-01	28.40
	193.51	-----	4.41*	5.516E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.209E+00	-----	Line Not Found	-----
TH-234	338.32	377	11.27	3.637E+00	2.625E+00	2.625E+00	21.95
	911.20	368	25.80*	1.511E+00	2.696E+00	2.696E+00	18.73
	968.97	253	15.80	1.430E+00	3.193E+00	3.193E+00	29.77
U-235	63.29	174	3.70*	8.061E+00	1.670E+00	1.670E+00	54.79
	92.59	503	4.23	7.756E+00	4.377E+00	4.377E+00	30.94
	89.96	323	3.47	7.814E+00	3.405E+00	3.405E+00	36.58
NP-237	93.35	503	5.60	7.756E+00	3.306E+00	3.306E+00	31.67
	143.76	-----	10.96*	6.557E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.119E+00	-----	Line Not Found	-----
U-238	185.72	234	57.20	5.670E+00	2.056E-01	2.056E-01	39.03
	205.31	-----	5.01	5.304E+00	-----	Line Not Found	-----
	86.48	584	12.40*	7.867E+00	1.708E+00	1.708E+00	27.37
U-238	95.86	-----	2.68	7.688E+00	-----	Line Not Found	-----
	63.29	174	3.70*	8.061E+00	1.670E+00	1.670E+00	54.79
	92.59	503	4.23	7.756E+00	4.377E+00	4.377E+00	23.32

Flag: "*" = Keyline

Total number of lines in spectrum 34
Number of unidentified lines 5
Number of lines tentatively identified by NID 29 85.29%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.026E+01	3.026E+01	0.282E+01	9.32	
CD-109	461.40D	1.04	5.724E+00	5.926E+00	1.042E+00	17.59	
SN-126	2.30E+05Y	1.00	5.724E-01	5.724E-01	1.007E-01	17.59	
CS-135	2.30E+06Y	1.00	6.377E-01	6.377E-01	3.013E-01	47.25	
BA-137M	30.08Y	1.00	9.319E-02	9.332E-02	5.910E-02	63.33	
CS-137	30.08Y	1.00	9.844E-02	9.858E-02	6.243E-02	63.33	
TL-208	1.41E+10Y	1.00	6.956E-01	6.956E-01	1.072E-01	15.41	
PB-210	22.20Y	1.00	1.760E+00	1.763E+00	0.849E+00	48.15	
BI-211	7.04E+08Y	1.00	5.736E+00	5.736E+00	0.712E+00	12.41	
PB-212	1.41E+10Y	1.00	2.351E+00	2.351E+00	0.290E+00	12.33	
BI-214	1600.00Y	1.00	1.820E+00	1.820E+00	0.260E+00	14.27	
PB-214	1600.00Y	1.00	2.082E+00	2.082E+00	0.283E+00	13.58	
RA-224	1.41E+10Y	1.00	6.292E+00	6.292E+00	1.288E+00	20.46	
RA-226	1600.00Y	1.00	1.820E+00	1.820E+00	0.260E+00	14.27	
AC-228	1.41E+10Y	1.00	2.696E+00	2.696E+00	0.505E+00	18.73	
RA-228	1.41E+10Y	1.00	2.696E+00	2.696E+00	0.505E+00	18.73	
TH-228	1.41E+10Y	1.00	2.351E+00	2.351E+00	0.290E+00	12.33	
TH-229	7340.00Y	1.00	4.923E-01	4.923E-01	1.398E-01	28.40	K
TH-232	1.41E+10Y	1.00	2.696E+00	2.696E+00	0.505E+00	18.73	
TH-234	4.47E+09Y	1.00	1.670E+00	1.670E+00	0.915E+00	54.79	
U-235	7.04E+08Y	1.00	2.056E-01	2.056E-01	0.802E-01	39.03	K
NP-237	2.14E+06Y	1.00	1.708E+00	1.708E+00	0.467E+00	27.37	
U-238	4.47E+09Y	1.00	1.670E+00	1.670E+00	0.915E+00	54.79	
Total Activity :			7.612E+01	7.633E+01			

Grand Total Activity : 7.612E+01 7.633E+01

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

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

Unidentified Energy Lines
Sample ID : G248243004

Page : 4
Acquisition date : 19-MAR-2010 10:52:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
7	83.77	203	504	1.42	168.52	165	28	2.81E-02	38.0	7.92E+00	T
0	128.72	141	499	1.09	258.40	254	10	1.96E-02	61.6	6.91E+00	
0	209.12	202	377	1.16	419.19	414	12	2.80E-02	41.1	5.24E+00	
0	327.23	88	228	0.96	655.34	651	11	1.23E-02	69.3	3.73E+00	
0	462.21	61	149	1.15	925.21	919	12	8.46E-03	87.3	2.78E+00	T
0	727.45	90	151	1.83	1455.42	1446	19	1.25E-02	68.8	1.85E+00	T
0	794.49	74	29	1.93	1589.41	1585	10	1.03E-02	37.9	1.71E+00	T
1	963.79	89	50	2.19	1927.74	1919	28	1.23E-02	38.2	1.44E+00	T
0	1376.65	30	21	1.64	2752.65	2748	10	4.23E-03	66.0	1.05E+00	
0	1846.57	14	0	0.72	3691.21	3687	8	1.94E-03	53.5	8.31E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243004.CNF;1
* Acquisition date   : 19-MAR-2010 10:52:55   Detector SN#      :
* Detector ID        : GAM05                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:02.02           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                                *
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248243004             Analyst initials: MXR1
* Batch Number       : 959280                 Sample Quantity  : 1.31470E+02 GRAM
*****
*                               QC DATA                                  *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                   LCS Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.026E+01	2.820E+00	6.381E-01	3.969E-02	47.420
CD-109	5.926E+00	1.042E+00	1.145E+00	8.720E-02	5.175
SN-126	5.724E-01	1.007E-01	1.105E-01	8.413E-03	5.182
CS-135	6.377E-01	3.013E-01	2.980E-01	3.188E-02	2.140
BA-137M	9.332E-02	5.910E-02	8.280E-02	5.445E-03	1.127
CS-137	9.858E-02	6.243E-02	8.747E-02	5.771E-03	1.127
TL-208	6.956E-01	1.072E-01	7.222E-02	5.304E-03	9.632
PB-210	1.763E+00	8.490E-01	9.656E-01	7.448E-02	1.826
BI-211	5.736E+00	7.121E-01	4.028E-01	3.192E-02	14.242
PB-212	2.351E+00	2.900E-01	1.077E-01	1.166E-02	21.823
BI-214	1.820E+00	2.596E-01	1.444E-01	1.219E-02	12.598
PB-214	2.082E+00	2.828E-01	1.465E-01	1.411E-02	14.209
RA-224	6.292E+00	1.288E+00	1.155E+00	1.130E-01	5.449
RA-226	1.820E+00	2.596E-01	1.444E-01	1.219E-02	12.598
AC-228	2.696E+00	5.050E-01	2.652E-01	3.366E-02	10.167
RA-228	2.696E+00	5.050E-01	2.652E-01	3.366E-02	10.167
TH-228	2.351E+00	2.900E-01	1.077E-01	1.166E-02	21.823
TH-229	4.923E-01	1.398E-01	1.078E+00	1.077E-01	0.457

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	2.696E+00	5.050E-01	2.652E-01	3.366E-02	10.167
TH-234	1.670E+00	9.148E-01	1.330E+00	2.414E-01	1.255
U-235	2.056E-01	8.025E-02	3.828E-01	7.302E-02	0.537
NP-237	1.708E+00	4.674E-01	3.286E-01	7.332E-02	5.198
U-238	1.670E+00	9.148E-01	1.330E+00	2.414E-01	1.255

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.740E-02		4.340E-01	7.114E-01	5.095E-02	0.039
NA-22	-8.651E-02		5.882E-02	8.069E-02	4.700E-03	-1.072
NA-24	1.666E+03		2.921E+03	Half-Life	too short	
SC-46	2.416E-02		5.445E-02	9.313E-02	9.354E-03	0.259
V-48	1.336E-01		1.360E-01	2.399E-01	2.197E-02	0.557
CR-51	-4.288E-01		5.638E-01	8.743E-01	7.726E-02	-0.490
MN-54	-7.358E-03		5.103E-02	8.385E-02	7.682E-03	-0.088
CO-56	-9.153E-03		5.221E-02	8.536E-02	7.983E-03	-0.107
CO-57	1.744E-02		2.987E-02	4.939E-02	7.008E-03	0.353
CO-58	-1.887E-02		5.089E-02	8.199E-02	7.217E-03	-0.230
FE-59	-1.750E-03		1.372E-01	2.239E-01	1.812E-02	-0.008
CO-60	2.283E-02		4.950E-02	8.401E-02	4.862E-03	0.272
ZN-65	9.498E-02		1.319E-01	2.005E-01	1.401E-02	0.474
SE-75	1.384E-02		6.154E-02	9.089E-02	8.677E-03	0.152
SR-85	-3.120E-01		7.162E-02	8.566E-02	5.491E-03	-3.642
Y-88	1.912E-02		3.286E-02	6.116E-02	3.499E-03	0.313
Y-91	-7.955E+00		3.015E+01	4.787E+01	2.782E+00	-0.166
NB-94	1.178E-02		4.608E-02	7.836E-02	5.607E-03	0.150
NB-95	6.663E-02		6.047E-02	1.074E-01	8.690E-03	0.620
NB-95M	1.775E+00		2.981E-01	4.248E-01	4.654E-02	4.179
ZR-95	-3.844E-02		1.002E-01	1.625E-01	1.450E-02	-0.237
MO-99	-1.692E-05		5.662E-05	Half-Life	too short	
TC-99M	-2.909E+19		5.934E+19	Half-Life	too short	
RU-103	2.618E-03		5.837E-02	9.537E-02	1.211E-02	0.027
RH-106	-4.803E-03		4.249E-01	6.839E-01	8.231E-02	-0.007
RU-106	-4.803E-03		4.249E-01	6.839E-01	4.508E-02	-0.007
AG-108M	-2.551E-03		4.058E-02	6.632E-02	4.282E-03	-0.038
AG-110M	1.862E-02		5.480E-02	7.844E-02	5.423E-03	0.237
SN-113	4.341E-02		6.162E-02	1.050E-01	6.512E-03	0.413
CD-115	-6.372E-05		8.628E-05	Half-Life	too short	
SN-117M	7.742E-02		1.011E-01	1.670E-01	1.796E-02	0.464
TE-123M	3.408E-02		3.676E-02	6.098E-02	6.552E-03	0.559
SB-124	-1.605E-02		9.178E-02	1.466E-01	9.318E-03	-0.110
SB-125	-2.138E-02		1.209E-01	1.965E-01	1.230E-02	-0.109
TE-125M	-5.589E+00		1.251E+01	1.967E+01	2.556E+00	-0.284
I-126	4.201E-01		4.959E-01	7.452E-01	4.948E-02	0.564
SB-126	-8.238E-02		3.319E-01	4.668E-01	3.462E-02	-0.176
SB-127	5.747E+00		7.378E+00	1.290E+01	1.673E+00	0.445

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-2.195E-01		2.786E-01	4.401E-01	3.340E-02	-0.499
TE-132	-4.162E+00		4.575E+00	7.319E+00	1.339E+00	-0.569
BA-133	2.774E-04		5.803E-02	8.330E-02	1.007E-02	0.003
I-133	-2.586E+00		2.254E+00	Half-Life too short		
CS-134	1.650E-01	+	6.417E-02	1.158E-01	9.972E-03	1.425
I-135	-2.402E+18		1.800E+18	Half-Life too short		
CS-136	-4.378E-02		2.096E-01	3.371E-01	2.889E-02	-0.130
CE-139	6.180E-03		3.803E-02	6.161E-02	6.116E-03	0.100
BA-140	-1.871E-02		5.307E-01	8.593E-01	2.873E-01	-0.022
LA-140	-1.031E-01		1.751E-01	2.681E-01	1.576E-02	-0.385
CE-141	3.941E-02		8.854E-02	1.452E-01	1.776E-02	0.271
CE-143	9.761E-02	+	1.385E-02	Half-Life too short		
CE-144	-2.271E-01		2.843E-01	3.830E-01	7.001E-02	-0.593
PM-144	9.238E-03		4.637E-02	7.866E-02	5.565E-03	0.117
PR-144	7.270E-01		3.487E+00	5.918E+00	4.183E-01	0.123
PM-146	5.168E-02		5.476E-02	9.210E-02	8.025E-03	0.561
ND-147	-1.235E+00		1.310E+00	1.877E+00	2.594E-01	-0.658
PM-149	3.860E-04		6.081E-04	Half-Life too short		
EU-152	6.937E-03		1.552E-01	1.959E-01	1.610E-02	0.035
GD-153	1.123E-01		1.004E-01	1.502E-01	1.392E-02	0.747
EU-154	-2.398E-01		1.673E-01	2.292E-01	2.162E-02	-1.046
EU-155	1.071E-01		1.195E-01	1.996E-01	2.162E-02	0.536
TB-160	1.109E-01		1.954E-01	3.373E-01	3.333E-02	0.329
HO-166M	-2.032E-02		7.854E-02	1.292E-01	9.412E-03	-0.157
TA-182	-9.489E-03		2.696E-01	4.363E-01	2.536E-02	-0.022
IR-192	3.042E-02		4.469E-02	7.656E-02	6.498E-03	0.397
HG-203	-1.159E-03		4.885E-02	8.154E-02	7.734E-03	-0.014
BI-207	2.861E-02		6.770E-02	1.148E-01	9.089E-03	0.249
PB-211	-9.926E-01		1.050E+00	1.452E+00	6.967E-01	-0.684
BI-212	2.087E+00	+	1.457E+00	1.450E+00	1.699E-01	1.439
RN-219	3.819E-01		5.104E-01	8.689E-01	1.171E-01	0.439
RA-223	3.543E-01		8.769E-01	1.297E+00	2.225E-01	0.273
AC-227	-6.992E-02		2.894E-01	4.799E-01	6.136E-02	-0.146
TH-227	-6.992E-02		2.894E-01	4.799E-01	6.843E-02	-0.146
PA-231	-1.615E+00		1.678E+00	2.636E+00	3.936E-01	-0.613
TH-231	3.543E-01		8.769E-01	1.297E+00	2.225E-01	0.273
PA-233	-1.064E-01		7.826E-02	1.207E-01	1.066E-02	-0.882
PA-234	-1.195E-01		3.948E-01	6.332E-01	1.220E-01	-0.189
PA-234M	3.050E+00		5.925E+00	1.004E+01	1.026E+00	0.304
NP-239	-1.933E-01		4.584E-01	7.344E-01	9.657E-02	-0.263
AM-241	9.652E-02		7.993E-02	1.210E-01	1.083E-02	0.798
CM-247	2.228E-02		4.649E-02	7.843E-02	4.614E-03	0.284
CF-249	-2.873E-02		5.218E-02	8.352E-02	4.988E-03	-0.344
CF-251	4.607E-02		1.588E-01	2.579E-01	2.569E-02	0.179
ANH-511	6.369E-02		5.517E-02	1.008E-01	6.452E-03	0.632

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]G248243004          *
* Acquisition date   : 19-MAR-2010 10:52:55 Detector SN#                   *
* Detector ID        : GAM05 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:02.02 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243004 Analyst initials: MXR1                  *
* Batch Number       : 959280 Sample Quantity : 1.3147E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.026E+01	2.763E+00	3.196E-01	1.410E+00
CD-109	5.926E+00	1.021E+00	6.010E-01	5.210E-01
SN-126	5.724E-01	9.866E-02	5.798E-02	5.034E-02
CS-135	6.377E-01	2.953E-01	1.536E-01	1.507E-01
BA-137M	9.332E-02	5.792E-02	4.204E-02	2.955E-02
CS-137	9.858E-02	6.119E-02	4.441E-02	3.122E-02
TL-208	6.956E-01	1.050E-01	3.674E-02	5.359E-02
PB-210	1.763E+00	8.320E-01	5.118E-01	4.245E-01
BI-211	5.736E+00	6.979E-01	2.067E-01	3.560E-01
PB-212	2.351E+00	2.842E-01	5.564E-02	1.450E-01
BI-214	1.820E+00	2.544E-01	7.343E-02	1.298E-01
PB-214	2.082E+00	2.771E-01	7.518E-02	1.414E-01
RA-224	6.292E+00	1.262E+00	5.963E-01	6.438E-01
RA-226	1.820E+00	2.544E-01	7.343E-02	1.298E-01
AC-228	2.696E+00	4.949E-01	1.339E-01	2.525E-01
RA-228	2.696E+00	4.949E-01	1.339E-01	2.525E-01
TH-228	2.351E+00	2.842E-01	5.564E-02	1.450E-01
TH-229	-2.198E-01	6.684E-01	5.586E-01	3.410E-01
TH-232	2.696E+00	4.949E-01	1.339E-01	2.525E-01
TH-234	1.670E+00	8.965E-01	7.016E-01	4.574E-01
U-235	-1.771E-01	2.425E-01	1.993E-01	1.237E-01
NP-237	1.708E+00	4.581E-01	1.725E-01	2.337E-01
U-238	1.670E+00	8.965E-01	7.016E-01	4.574E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.740E-02	4.253E-01	3.632E-01	2.170E-01 NOT IDENT.
NA-22	-8.651E-02	5.765E-02	4.051E-02	2.941E-02 NOT IDENT.
NA-24	1.666E+09	5.725E+09	0.000E+00	2.921E+09 SHORT HLIF
SC-46	2.416E-02	5.336E-02	4.704E-02	2.722E-02 FAIL ABUN

V-48	1.336E-01	1.333E-01	1.210E-01	6.800E-02	NOT IDENT.
CR-51	-4.288E-01	5.525E-01	4.493E-01	2.819E-01	NOT IDENT.
MN-54	-7.358E-03	5.001E-02	4.240E-02	2.552E-02	NOT IDENT.
CO-56	-9.153E-03	5.117E-02	4.316E-02	2.611E-02	NOT IDENT.
CO-57	1.744E-02	2.927E-02	2.579E-02	1.494E-02	NOT IDENT.
CO-58	-1.887E-02	4.987E-02	4.149E-02	2.544E-02	NOT IDENT.
FE-59	-1.750E-03	1.344E-01	1.127E-01	6.859E-02	NOT IDENT.
CO-60	2.283E-02	4.851E-02	4.215E-02	2.475E-02	NOT IDENT.
ZN-65	9.498E-02	1.293E-01	1.009E-01	6.594E-02	NOT IDENT.
SE-75	1.384E-02	6.031E-02	4.686E-02	3.077E-02	NOT IDENT.
SR-85	-3.120E-01	7.019E-02	4.367E-02	3.581E-02	NOT IDENT.
Y-88	1.912E-02	3.221E-02	3.051E-02	1.643E-02	NOT IDENT.
Y-91	-7.955E+00	2.955E+01	2.406E+01	1.508E+01	NOT IDENT.
NB-94	1.178E-02	4.516E-02	3.975E-02	2.304E-02	NOT IDENT.
NB-95	6.663E-02	5.926E-02	5.441E-02	3.023E-02	NOT IDENT.
NB-95M	1.775E+00	2.921E-01	2.194E-01	1.490E-01	NOT IDENT.
ZR-95	-3.844E-02	9.822E-02	8.234E-02	5.011E-02	NOT IDENT.
MO-99	-1.692E+01	1.110E+02	0.000E+00	5.662E+01	SHORT HLIF
TC-99M	-2.909E+25	1.163E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.618E-03	5.720E-02	4.866E-02	2.918E-02	NOT IDENT.
RH-106	-4.803E-03	4.164E-01	3.476E-01	2.125E-01	NOT IDENT.
RU-106	-4.803E-03	4.164E-01	3.476E-01	2.125E-01	NOT IDENT.
AG-108M	-2.551E-03	3.977E-02	3.391E-02	2.029E-02	NOT IDENT.
AG-110M	1.862E-02	5.370E-02	3.983E-02	2.740E-02	NOT IDENT.
SN-113	4.341E-02	6.039E-02	5.377E-02	3.081E-02	NOT IDENT.
CD-115	-6.372E+01	1.691E+02	0.000E+00	8.628E+01	SHORT HLIF
SN-117M	7.742E-02	9.908E-02	8.682E-02	5.055E-02	NOT IDENT.
TE-123M	3.408E-02	3.602E-02	3.170E-02	1.838E-02	NOT IDENT.
SB-124	-1.605E-02	8.994E-02	7.321E-02	4.589E-02	NOT IDENT.
SB-125	-2.138E-02	1.185E-01	1.005E-01	6.046E-02	FAIL ABUN
TE-125M	-5.589E+00	1.226E+01	1.028E+01	6.254E+00	NOT IDENT.
I-126	4.201E-01	4.860E-01	3.783E-01	2.479E-01	NOT IDENT.
SB-126	-8.238E-02	3.252E-01	2.367E-01	1.659E-01	NOT IDENT.
SB-127	5.747E+00	7.231E+00	6.547E+00	3.689E+00	NOT IDENT.
I-131	-2.195E-01	2.730E-01	2.257E-01	1.393E-01	NOT IDENT.
TE-132	-4.162E+00	4.484E+00	3.782E+00	2.288E+00	NOT IDENT.
BA-133	2.774E-04	5.687E-02	4.273E-02	2.901E-02	NOT IDENT.
I-133	-2.586E+06	4.418E+06	0.000E+00	2.254E+06	SHORT HLIF
CS-134	1.650E-01	6.288E-02	5.861E-02	3.208E-02	FAIL ABUN
I-135	-2.402E+24	3.527E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.378E-02	2.054E-01	1.698E-01	1.048E-01	NOT IDENT.
CE-139	6.180E-03	3.727E-02	3.200E-02	1.902E-02	NOT IDENT.
BA-140	-1.871E-02	5.201E-01	4.378E-01	2.653E-01	NOT IDENT.
LA-140	-1.031E-01	1.716E-01	1.341E-01	8.753E-02	NOT IDENT.
CE-141	3.941E-02	8.677E-02	7.561E-02	4.427E-02	NOT IDENT.
CE-143	9.761E+04	2.714E+04	0.000E+00	1.385E+04	SHORT HLIF
CE-144	-2.271E-01	2.786E-01	1.996E-01	1.421E-01	NOT IDENT.
PM-144	9.238E-03	4.544E-02	3.990E-02	2.319E-02	NOT IDENT.
PR-144	7.270E-01	3.417E+00	3.002E+00	1.743E+00	NOT IDENT.
PM-146	5.168E-02	5.367E-02	4.706E-02	2.738E-02	NOT IDENT.
ND-147	-1.235E+00	1.284E+00	9.565E-01	6.549E-01	FAIL ABUN
PM-149	3.860E+02	1.192E+03	0.000E+00	6.081E+02	SHORT HLIF
EU-152	6.937E-03	1.521E-01	1.005E-01	7.762E-02	FAIL ABUN
GD-153	1.123E-01	9.835E-02	7.869E-02	5.018E-02	NOT IDENT.
EU-154	-2.398E-01	1.640E-01	1.151E-01	8.366E-02	NOT IDENT.
EU-155	1.071E-01	1.171E-01	1.045E-01	5.973E-02	FAIL ABUN
TB-160	1.109E-01	1.915E-01	1.704E-01	9.771E-02	FAIL ABUN
HO-166M	-2.032E-02	7.697E-02	6.551E-02	3.927E-02	FAIL ABUN
TA-182	-9.489E-03	2.642E-01	2.192E-01	1.348E-01	FAIL ABUN
IR-192	3.042E-02	4.380E-02	3.935E-02	2.235E-02	FAIL ABUN
HG-203	-1.159E-03	4.787E-02	4.200E-02	2.443E-02	FAIL ABUN
BI-207	2.861E-02	6.634E-02	5.781E-02	3.385E-02	FAIL ABUN
PB-211	-9.926E-01	1.029E+00	7.433E-01	5.248E-01	NOT IDENT.
BI-212	2.087E+00	1.428E+00	7.349E-01	7.285E-01	FAIL ABUN
RN-219	3.819E-01	5.002E-01	4.449E-01	2.552E-01	NOT IDENT.
RA-223	3.543E-01	8.594E-01	6.663E-01	4.385E-01	FAIL ABUN
AC-227	-6.992E-02	2.836E-01	2.475E-01	1.447E-01	FAIL ABUN
TH-227	-6.992E-02	2.836E-01	2.475E-01	1.447E-01	FAIL ABUN
PA-231	-1.615E+00	1.644E+00	1.357E+00	8.388E-01	NOT IDENT.
TH-231	3.543E-01	8.594E-01	6.663E-01	4.385E-01	FAIL ABUN
PA-233	-1.064E-01	7.669E-02	6.203E-02	3.913E-02	FAIL ABUN
PA-234	-1.195E-01	3.869E-01	3.196E-01	1.974E-01	NOT IDENT.
PA-234M	3.050E+00	5.806E+00	5.062E+00	2.962E+00	NOT IDENT.
NP-239	-1.933E-01	4.492E-01	3.836E-01	2.292E-01	NOT IDENT.
AM-241	9.652E-02	7.834E-02	6.388E-02	3.997E-02	NOT IDENT.
CM-247	2.228E-02	4.556E-02	4.015E-02	2.324E-02	NOT IDENT.
CF-249	-2.873E-02	5.114E-02	4.279E-02	2.609E-02	NOT IDENT.
CF-251	4.607E-02	1.556E-01	1.338E-01	7.941E-02	NOT IDENT.

ANH-511	6.369E-02	5.406E-02	5.140E-02	2.758E-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	554.4741
49.72	639.9417
57.36	0.0000
59.54	592.5150
63.29	893.6757
63.29	893.6757
64.28	851.2141
67.75	809.8592
69.67	907.9932
70.83	827.4614
72.81	745.7002
72.87	745.7607
72.87	745.7607
74.82	747.6759
74.82	747.6759
74.82	747.6759
74.97	747.8199
77.11	713.5384
77.11	713.5384
77.11	713.5384
79.69	705.5153
79.80	741.4911
80.12	741.7891
80.19	741.8544
80.57	742.2063
81.00	674.7313
81.07	674.7906
81.07	674.7906
83.79	581.9065
83.79	581.9065
85.43	583.0634
86.48	583.7993
86.55	583.8480
86.79	584.0142
86.94	584.1206
87.57	584.5573
88.03	584.8764
88.47	585.1800
89.96	586.2040
91.11	586.9908
92.59	587.9926
92.59	587.9926
93.35	588.5045
94.67	548.6084
94.87	594.1893
94.87	594.1893
95.86	576.9747
97.43	470.5316
98.44	462.9092
99.53	468.5945
100.11	478.6611
103.18	536.5771
103.37	486.5006
105.31	493.6661
106.12	492.0355
109.28	518.4002
111.00	512.0941
111.76	502.1608
116.30	458.7986
117.23	463.3793
121.12	413.0081
121.78	418.4905
122.06	416.5174
123.07	434.6875
131.20	416.1371
133.52	479.4996
136.00	441.0295

136.47	448.6238
140.51	0.0000
140.51	0.0000
143.76	458.9963
144.24	453.8600
144.24	453.8600
145.44	418.0761
152.43	400.1998
153.25	424.0964
154.21	427.6605
154.21	427.6605
156.02	473.5056
158.56	393.6215
159.00	385.1330
162.66	420.9102
163.33	421.1387
165.86	392.7034
176.60	322.7283
177.52	366.7462
181.07	0.0000
184.41	355.6773
185.72	389.5125
193.51	408.8104
197.04	386.5271
205.31	382.5381
210.85	261.9873
215.65	307.3378
222.11	309.1881
227.38	322.0568
228.16	313.1448
228.18	313.1490
235.69	308.5887
235.96	308.6424
235.96	308.6424
238.63	285.1037
238.63	285.1037
240.99	285.5284
242.00	282.3516
244.70	241.5518
252.40	242.3937
252.80	263.6563
256.23	252.1959
256.23	252.1959
260.90	0.0000
264.66	232.1167
268.22	246.5613
269.46	238.3594
269.46	238.3594
271.23	243.8879
273.65	267.5637
276.40	224.3643
277.37	221.3723
277.60	226.5984
278.00	223.6336
279.20	228.4700
279.54	229.4512
280.46	238.0041
283.69	229.0538
284.31	221.6216
285.41	209.5443
285.90	0.0000
287.50	190.8398
293.27	0.0000
295.22	170.0640
295.96	170.1343
298.57	170.3782
299.98	172.0866
299.98	172.0866
300.09	172.0977
300.09	172.0977
300.13	172.1021
301.36	195.9171
302.85	205.5636
304.50	216.8247
304.50	216.8247
304.85	216.8665
308.46	179.8568
311.90	240.2490

316.51	190.1820
319.41	223.0139
320.08	226.6014
323.87	196.6694
323.87	196.6694
328.76	226.0211
333.37	236.1923
334.37	200.1418
334.37	200.1418
338.28	204.8859
338.28	204.8859
338.32	204.8911
338.32	204.8911
338.32	204.8911
340.48	203.1786
340.55	203.1863
344.28	193.8696
351.06	190.6311
351.93	190.7124
356.01	181.9909
364.49	189.9173
366.42	0.0000
383.85	173.8709
388.16	201.9306
388.63	191.0846
391.69	178.4619
400.66	164.2548
401.81	156.3733
402.40	160.3986
404.85	207.4490
410.95	163.0099
414.70	171.2922
423.72	159.8967
427.09	173.2220
427.87	173.2808
433.94	178.7804
453.88	126.7489
463.37	149.9645
468.07	121.2238
473.00	132.4140
476.78	109.9976
477.60	123.4014
487.02	119.7326
492.35	0.0000
497.08	127.4578
511.00	145.8499
514.00	357.7383
527.90	0.0000
529.87	0.0000
531.02	137.5020
537.26	122.0351
546.56	0.0000
563.25	135.9281
569.33	123.4511
569.50	123.4567
569.70	113.8860
583.19	109.0772
600.60	107.5781
602.73	113.0391
604.72	116.7069
609.32	115.4482
609.32	115.4482
610.33	118.7253
614.28	111.6787
618.01	115.7852
621.93	109.4331
621.93	109.4331
633.25	102.2296
635.95	100.1421
636.99	87.1094
645.85	79.7154
657.76	100.4820
661.66	127.3140
661.66	127.3140
664.57	0.0000
666.33	87.9316
666.50	87.9355
677.62	126.8495

685.70	100.4445
695.00	113.6684
696.49	111.8718
696.51	111.8718
697.00	113.7385
702.65	118.5651
706.68	109.4366
711.68	105.8870
720.70	102.1808
721.93	0.0000
722.78	87.8673
722.91	92.6620
723.31	86.2829
724.19	84.7072
727.33	79.3192
733.00	100.9512
735.93	71.5693
739.50	0.0000
747.24	116.3913
752.31	92.1222
753.82	87.4600
756.73	96.0048
763.94	116.9513
765.81	91.5355
766.42	88.7198
777.92	0.0000
778.90	102.2959
783.70	81.5681
785.37	86.3493
795.86	68.5210
801.95	80.0762
810.29	74.5278
810.76	76.4486
815.77	86.1218
818.51	70.8640
832.01	95.1509
834.85	100.0327
836.80	0.0000
846.77	75.2642
856.80	77.9519
860.56	89.6503
871.09	67.9777
873.19	68.9864
875.33	0.0000
879.36	68.1230
880.51	61.3286
883.24	72.0880
884.68	79.9113
889.28	69.2724
898.04	88.0060
911.20	60.5491
911.20	60.5491
911.20	60.5491
926.50	70.9116
937.49	85.9167
944.13	85.0692
946.00	77.1907
949.00	61.4021
962.29	83.4583
964.08	83.4941
966.15	83.5369
968.97	83.5933
968.97	83.5933
968.97	83.5933
983.53	63.9115
996.26	71.1170
1001.03	60.1660
1004.73	71.2586
1037.84	73.8287
1038.76	0.0000
1048.07	69.9462
1050.41	52.7406
1050.41	52.7406
1063.66	62.0549
1085.87	56.2286
1099.45	72.8027
1112.07	75.7959
1115.54	61.7407

1120.29	81.2284
1120.29	81.2284
1120.55	81.2316
1121.30	84.7768
1131.51	0.0000
1173.23	91.6702
1177.93	79.2471
1189.05	84.6552
1204.77	77.5892
1221.41	82.0625
1231.02	95.9247
1235.36	84.4043
1238.28	76.0078
1260.41	0.0000
1271.85	47.8235
1274.44	78.6822
1274.54	78.6822
1291.59	53.3427
1298.22	0.0000
1312.11	51.4121
1332.49	37.6333
1365.19	34.6198
1368.63	0.0000
1384.29	24.7547
1408.01	35.5176
1457.56	0.0000
1460.82	26.4199
1489.16	21.8104
1505.03	36.1339
1596.21	35.7302
1620.50	30.0561
1678.03	0.0000
1690.97	14.7091
1764.49	15.6226
1764.49	15.6226
1770.23	12.1616
1771.35	13.9014
1791.20	0.0000
1836.06	6.0161

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243004

Total Uranium Activity	4.8855E+00	ug/g
Total Uranium Counting Unc.	2.6696E+00	ug/g
Total Uranium Tpu	1.3620E-06	ug/g
Total Uranium Mda	2.0894E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280                          SAMPLE ID   : G248243004
*  ANALYST       : MXR1                             DETECTOR    : GAM05
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:52:55.51          SAMPLE ALQT  : 131.470 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.220E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.435E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.920E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.406E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:54:39.68

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243005.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:53:34
Sample ID          : G248243005          Sample quantity  : 1.28520E+02 GRAM
Detector name      : GAM07              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.43  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 959280             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	63.57*	106	588	1.11	126.79	123	8	1.47E-02	41.9	
2	1	74.75*	564	541	1.11	149.15	143	17	7.83E-02	8.3	5.08E+00
3	1	77.12*	1011	512	1.10	153.88	143	17	1.40E-01	5.0	
4	3	87.26*	412	489	1.28	174.17	161	31	5.72E-02	10.5	4.78E+00
5	3	90.02	252	451	1.36	179.68	161	31	3.51E-02	16.4	
6	3	92.82*	281	420	1.39	185.28	161	31	3.91E-02	15.5	
7	0	107.77	255	702	6.83	215.18	207	18	3.54E-02	25.3	
8	0	128.69	90	561	1.10	257.01	252	11	1.25E-02	52.0	
9	0	186.22*	225	441	1.34	372.04	368	11	3.12E-02	19.9	
10	0	209.28	150	253	1.04	418.17	415	8	2.08E-02	20.3	
11	4	238.75*	1513	229	1.16	477.09	472	16	2.10E-01	3.1	1.80E+00
12	4	241.82	370	245	1.63	483.24	472	16	5.14E-02	11.9	
13	0	270.35	200	258	1.69	540.27	533	14	2.78E-02	18.5	
14	1	295.34	533	133	1.19	590.26	585	22	7.40E-02	5.6	1.35E+00
15	1	300.30	111	151	1.44	600.17	585	22	1.54E-02	22.6	
16	0	328.33	75	157	1.43	656.21	652	9	1.05E-02	32.1	
17	0	338.70	343	192	1.25	676.96	672	12	4.76E-02	9.8	
18	0	352.06*	878	146	1.20	703.68	699	11	1.22E-01	4.3	
19	0	463.14	109	131	1.17	925.81	920	12	1.51E-02	23.1	
20	0	511.07*	181	146	1.61	1021.64	1014	17	2.52E-02	19.0	
21	0	583.38*	392	90	1.21	1166.23	1161	11	5.45E-02	7.0	
22	0	609.65*	654	116	1.45	1218.77	1211	16	9.08E-02	5.5	
23	0	727.58*	92	88	1.73	1454.61	1448	13	1.28E-02	23.7	
24	0	769.45	35	90	1.22	1538.32	1532	11	4.81E-03	56.4	
25	0	860.80	38	44	0.67	1721.01	1717	8	5.28E-03	34.3	
26	0	911.48	285	59	1.64	1822.35	1817	14	3.96E-02	8.2	
27	0	934.65	26	47	1.02	1868.70	1866	8	3.67E-03	49.8	
28	1	964.99	57	65	1.98	1929.36	1925	21	7.86E-03	26.0	1.71E+00
29	1	969.23*	176	57	1.76	1937.84	1925	21	2.44E-02	12.0	
30	0	1120.37	154	58	1.82	2240.10	2231	18	2.14E-02	14.2	
31	0	1379.17	29	49	0.87	2757.65	2748	20	3.96E-03	61.0	
32	0	1461.20*	1258	23	2.15	2921.70	2912	18	1.75E-01	3.0	
33	0	1588.56	39	3	1.60	3176.41	3170	12	5.44E-03	18.2	
34	0	1764.94	112	9	1.88	3529.14	3520	15	1.56E-02	11.4	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:54:42

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:53:34
Sample ID        : G248243005 Sample quantity : 128.52 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA7 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.43 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	*	3.051E+01	3.189E+00	6.147E-01	5.279E-02	49.639
CD-109	+	88.03	*	4.923E+00	1.130E+00	1.019E+00	9.596E-02	4.833
SN-126	+	64.28		6.646E-01	5.652E-01	6.167E-01	8.944E-02	1.078
	+	86.94		1.977E+00	9.195E-01	4.113E-01	1.707E-01	4.807
	+	87.57	*	4.755E-01	1.092E-01	9.862E-02	9.241E-03	4.822
TL-208		277.37		6.314E-01	4.142E-01	7.049E-01	8.768E-02	0.896
	+	583.19	*	5.444E-01	9.266E-02	6.319E-02	6.037E-03	8.615
	+	860.56		4.982E-01	3.453E-01	4.735E-01	4.629E-02	1.052
BI-211		72.87		4.143E+00	3.067E+00	4.716E+00	3.722E-01	0.878
	+	351.06	*	5.392E+00	6.728E-01	3.378E-01	3.031E-02	15.960
PB-212	+	74.82		2.640E+00	5.525E-01	4.876E-01	6.157E-02	5.413
	+	77.11		2.760E+00	3.577E-01	2.852E-01	2.354E-02	9.677
	+	238.63	*	2.064E+00	2.362E-01	1.006E-01	9.668E-03	20.527
	+	300.09		2.369E+00	1.101E+00	1.305E+00	1.368E-01	1.816
BI-214	+	609.32	*	1.758E+00	2.655E-01	1.157E-01	1.203E-02	15.187
	+	1120.29		2.129E+00	6.459E-01	4.672E-01	5.039E-02	4.557
	+	1764.49		2.178E+00	5.274E-01	3.266E-01	2.686E-02	6.669
PB-214	+	74.82		4.679E+00	9.432E-01	8.643E-01	9.768E-02	5.413
	+	77.11		4.865E+00	7.474E-01	5.027E-01	5.866E-02	9.677
	+	242.00		3.067E+00	7.930E-01	6.118E-01	6.273E-02	5.013
	+	295.22		2.012E+00	3.121E-01	2.304E-01	2.476E-02	8.732
	+	351.93	*	1.957E+00	2.670E-01	1.244E-01	1.310E-02	15.732
RA-224	+	240.99	*	5.424E+00	1.367E+00	1.078E+00	9.117E-02	5.031
RA-226	+	609.32	*	1.758E+00	2.655E-01	1.157E-01	1.203E-02	15.187
	+	1120.29		2.129E+00	6.459E-01	4.672E-01	5.039E-02	4.557
	+	1764.49		2.178E+00	5.274E-01	3.266E-01	2.686E-02	6.669
AC-228	+	338.32		2.346E+00	1.081E+00	3.782E-01	1.577E-01	6.203
	+	911.20	*	1.903E+00	3.852E-01	2.412E-01	2.891E-02	7.892
	+	968.97		2.023E+00	6.952E-01	4.549E-01	1.115E-01	4.448
RA-228	+	338.32		2.346E+00	1.081E+00	3.782E-01	1.577E-01	6.203
	+	911.20	*	1.903E+00	3.852E-01	2.412E-01	2.891E-02	7.892
	+	968.97		2.023E+00	6.952E-01	4.549E-01	1.115E-01	4.448
TH-228	+	74.82		2.640E+00	4.902E-01	4.876E-01	3.967E-02	5.413
	+	77.11		2.760E+00	3.577E-01	2.852E-01	2.354E-02	9.677

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	2.064E+00	2.362E-01	1.006E-01	9.668E-03	20.527
	+	300.09		2.369E+00	1.803E+00	1.305E+00	7.984E-01	1.816
	+	338.32		2.346E+00	5.015E-01	3.782E-01	3.237E-02	6.203
	+	911.20	*	1.903E+00	3.852E-01	2.412E-01	2.891E-02	7.892
TH-234	+	968.97		2.023E+00	6.952E-01	4.549E-01	1.115E-01	4.448
	+	63.29	*	1.724E+00	1.477E+00	1.678E+00	2.985E-01	1.028
	+	92.59		2.769E+00	1.058E+00	8.463E-01	1.887E-01	3.272
U-235	+	89.96		3.063E+00	1.261E+00	1.041E+00	2.587E-01	2.943
	+	93.35		2.091E+00	8.115E-01	6.379E-01	1.485E-01	3.279
		143.76	*	1.337E-01	2.152E-01	3.487E-01	5.844E-02	0.383
NP-237		163.33		5.193E-02	4.801E-01	7.644E-01	1.348E-01	0.068
	+	185.72		1.975E-01	8.007E-02	6.838E-02	5.536E-03	2.889
		205.31		-1.245E-02	5.645E-01	8.380E-01	1.507E-01	-0.015
	+	86.48	*	1.419E+00	4.412E-01	2.959E-01	6.780E-02	4.795
		95.86		-1.699E-01	9.380E-01	1.347E+00	3.249E-01	-0.126
U-238	+	63.29	*	1.724E+00	1.477E+00	1.678E+00	2.985E-01	1.028
	+	92.59		2.769E+00	8.957E-01	8.463E-01	7.743E-02	3.272
ANH-511	+	511.00	*	1.924E-01	7.525E-02	4.403E-02	3.912E-03	4.370

---- 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	*	5.795E-03	3.652E-01	5.862E-01	5.531E-02	0.010
NA-22		1274.54	*	-7.814E-03	4.867E-02	7.920E-02	6.501E-03	-0.099
NA-24		1368.63	*	6.408E+02	4.867E-02	Half-Life too short		
SC-46		889.28	*	4.088E-02	4.470E-02	7.844E-02	7.188E-03	0.521
	+	1120.55		3.842E-01	1.137E-01	1.551E-01	1.310E-02	2.478
V-48		944.13		-1.140E+00	1.314E+00	1.924E+00	1.749E-01	-0.592
		983.53	*	-2.303E-02	1.019E-01	1.600E-01	1.441E-02	-0.144
		1312.11		-4.577E-02	1.329E-01	2.115E-01	1.734E-02	-0.216
CR-51		320.08	*	9.735E-02	4.687E-01	7.796E-01	7.039E-02	0.125
MN-54		834.85	*	2.852E-02	4.520E-02	7.709E-02	7.076E-03	0.370
CO-56		846.77	*	1.661E-02	4.795E-02	8.038E-02	7.380E-03	0.207
		1037.84		-1.947E-01	3.709E-01	5.941E-01	5.507E-02	-0.328
		1238.28		5.770E-02	1.182E-01	2.020E-01	1.707E-02	0.286
		1771.35		-2.146E+00	5.238E-01	3.854E-01	3.165E-02	-5.568
CO-57		122.06	*	1.987E-02	2.667E-02	4.412E-02	3.796E-03	0.450
		136.47		-1.188E-01	2.219E-01	3.463E-01	3.114E-02	-0.343
CO-58		810.76	*	-7.141E-02	4.671E-02	6.471E-02	5.945E-03	-1.104
FE-59		1099.45	*	-1.429E-02	1.137E-01	1.880E-01	1.741E-02	-0.076
		1291.59		-1.487E-02	1.559E-01	2.549E-01	2.401E-02	-0.058
CO-60		1173.23		1.647E-03	4.941E-02	8.241E-02	6.706E-03	0.020
		1332.49	*	2.732E-02	4.187E-02	7.383E-02	6.048E-03	0.370
ZN-65		1115.54	*	-6.854E-02	1.130E-01	1.498E-01	1.271E-02	-0.458
SE-75		121.12		-2.137E-02	1.403E-01	2.242E-01	2.481E-02	-0.095
		136.00		-3.508E-02	4.398E-02	6.779E-02	5.700E-03	-0.517
		264.66	*	2.315E-02	5.244E-02	7.903E-02	6.750E-03	0.293
		279.54		-7.215E-02	1.238E-01	1.991E-01	1.757E-02	-0.362

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		6.837E-02	2.752E-01	4.536E-01	4.946E-02	0.151
SR-85		514.00	*	1.418E-01	4.595E-02	8.265E-02	7.349E-03	1.716
Y-88		898.04		2.596E-03	4.624E-02	7.541E-02	6.934E-03	0.034
		1836.06	*	-2.659E-03	3.622E-02	6.094E-02	4.946E-03	-0.044
Y-91		1204.77	*	-6.556E+00	2.696E+01	4.387E+01	3.582E+00	-0.149
NB-94		702.65	*	2.351E-02	3.609E-02	6.236E-02	5.599E-03	0.377
		871.09		1.877E-02	3.441E-02	5.887E-02	5.402E-03	0.319
NB-95		765.81	*	5.187E-02	6.002E-02	9.257E-02	8.439E-03	0.560
NB-95M		235.69	*	2.775E-02	1.618E-01	2.406E-01	2.340E-02	0.115
ZR-95		724.19		6.382E-02	1.131E-01	1.718E-01	1.672E-02	0.371
		756.73	*	2.827E-02	9.093E-02	1.491E-01	1.485E-02	0.190
MO-99		140.51		-1.506E-04	9.093E-02	Half-Life	too short	
		181.07		-3.204E-05	9.093E-02	Half-Life	too short	
		366.42		-2.058E-04	9.093E-02	Half-Life	too short	
		739.50	*	-4.395E-05	9.093E-02	Half-Life	too short	
		777.92		-3.388E-04	9.093E-02	Half-Life	too short	
TC-99M		140.51	*	-9.126E+19	9.093E-02	Half-Life	too short	
RU-103		497.08	*	-1.987E-02	4.500E-02	6.905E-02	9.741E-03	-0.288
	+	610.33		2.083E+01	4.131E+00	3.973E+00	6.566E-01	5.243
RH-106		621.93	*	-1.011E-01	3.387E-01	5.513E-01	7.423E-02	-0.183
		1050.41		-3.378E-01	2.591E+00	4.292E+00	3.768E-01	-0.079
RU-106		621.93	*	-1.011E-01	3.386E-01	5.513E-01	4.927E-02	-0.183
		1050.41		-3.378E-01	2.591E+00	4.292E+00	3.768E-01	-0.079
AG-108M		433.94	*	2.860E-02	3.112E-02	5.325E-02	4.720E-03	0.537
		614.28		-1.153E-02	4.016E-02	5.635E-02	5.196E-03	-0.205
		722.91		-1.124E-02	4.560E-02	6.330E-02	5.884E-03	-0.178
AG-110M		657.76	*	-4.100E-02	4.050E-02	6.196E-02	5.645E-03	-0.662
		677.62		-1.951E-01	3.451E-01	5.457E-01	4.990E-02	-0.358
		706.68		-1.484E-01	2.308E-01	3.611E-01	3.332E-02	-0.411
		763.94		-4.528E-02	2.178E-01	3.026E-01	2.825E-02	-0.150
		884.68		-2.484E-02	5.469E-02	8.484E-02	7.999E-03	-0.293
		937.49		4.569E-02	1.443E-01	2.095E-01	1.969E-02	0.218
		1384.29		6.067E-02	1.733E-01	2.614E-01	2.223E-02	0.232
		1505.03		-3.499E-01	2.962E-01	3.887E-01	3.249E-02	-0.900
SN-113		391.69	*	9.396E-03	4.991E-02	8.202E-02	7.051E-03	0.115
CD-115		260.90		-5.346E-04	4.991E-02	Half-Life	too short	
		492.35		2.319E-04	4.991E-02	Half-Life	too short	
		527.90	*	-6.172E-05	4.991E-02	Half-Life	too short	
SN-117M		156.02		2.399E+00	3.521E+00	5.756E+00	4.636E-01	0.417
		158.56	*	8.475E-03	8.728E-02	1.392E-01	1.116E-02	0.061
TE-123M		159.00	*	1.003E-02	3.182E-02	5.121E-02	4.131E-03	0.196
SB-124		602.73		-1.667E-02	4.908E-02	6.866E-02	6.152E-03	-0.243
		645.85		1.213E-01	5.752E-01	9.706E-01	9.097E-02	0.125
		722.78		-9.249E-02	5.034E-01	7.041E-01	6.492E-02	-0.131
		1690.97	*	4.112E-02	7.600E-02	1.366E-01	1.186E-02	0.301
SB-125		427.87	*	4.171E-02	1.019E-01	1.688E-01	1.471E-02	0.247
	+	463.37		1.028E+00	4.856E-01	6.243E-01	5.848E-02	1.647
		600.60		-9.869E-02	1.867E-01	2.997E-01	2.870E-02	-0.329
		635.95		6.533E-02	2.802E-01	4.743E-01	4.549E-02	0.138

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28	*		1.944E+00	1.053E+01	1.713E+01	1.807E+00	0.113
I-126	388.63			-1.463E-01	2.732E-01	4.282E-01	3.572E-02	-0.342
	666.33	*		-4.124E-01	3.899E-01	5.951E-01	5.276E-02	-0.693
	753.82			7.266E-01	3.021E+00	5.058E+00	4.601E-01	0.144
SB-126	414.70			2.642E-02	1.238E-01	2.032E-01	1.721E-02	0.130
	666.50			-7.108E-02	1.308E-01	2.081E-01	1.845E-02	-0.342
	695.00			-4.493E-02	1.249E-01	2.006E-01	1.796E-02	-0.224
	697.00			-1.856E-02	4.143E-01	6.823E-01	6.115E-02	-0.027
	720.70	*		-1.631E-01	2.975E-01	3.993E-01	3.604E-02	-0.409
	856.80			1.644E-01	8.806E-01	1.269E+00	1.165E-01	0.130
SB-127	252.40			-7.024E+00	1.831E+01	2.954E+01	1.249E+01	-0.238
	473.00			-6.389E-02	6.960E+00	1.116E+01	1.696E+00	-0.006
	685.70	*		-3.076E+00	5.904E+00	9.346E+00	1.322E+00	-0.329
	783.70			1.085E+01	1.546E+01	2.663E+01	4.015E+00	0.407
I-131	80.19			2.694E-01	1.058E+01	1.225E+01	1.063E+00	0.022
	284.31			5.469E-01	3.007E+00	5.025E+00	4.534E-01	0.109
	364.49	*		1.151E-01	2.352E-01	3.952E-01	3.565E-02	0.291
	636.99			2.244E+00	3.123E+00	5.469E+00	5.171E-01	0.410
TE-132	49.72			1.566E+00	5.697E+01	9.496E+01	1.241E+01	0.016
	111.76			2.980E+01	1.952E+02	2.833E+02	3.825E+01	0.105
	116.30			-7.307E+01	1.573E+02	2.480E+02	3.343E+01	-0.295
	228.16	*		-1.273E-01	4.184E+00	7.001E+00	1.228E+00	-0.018
BA-133	81.00			-6.428E-03	1.112E-01	1.279E-01	1.985E-02	-0.050
	276.40			5.445E-01	3.987E-01	6.507E-01	9.132E-02	0.837
	302.85			6.539E-02	1.553E-01	2.319E-01	3.021E-02	0.282
	356.01	*		1.813E-03	4.923E-02	7.065E-02	9.101E-03	0.026
	383.85			2.321E-02	3.099E-01	5.065E-01	6.207E-02	0.046
I-133	529.87	*		6.050E-01	3.099E-01	Half-Life too short		
	875.33			1.552E+01	3.099E-01	Half-Life too short		
	1298.22			-1.264E+02	3.099E-01	Half-Life too short		
CS-134	563.25			5.068E-01	3.883E-01	7.014E-01	6.343E-02	0.723
	569.33			-9.813E-02	2.122E-01	3.432E-01	3.117E-02	-0.286
	604.72			-1.521E-02	3.920E-02	5.456E-02	4.899E-03	-0.279
	795.86	*		9.085E-02	5.551E-02	1.004E-01	9.252E-03	0.905
	801.95			-3.977E-01	4.555E-01	6.880E-01	6.334E-02	-0.578
	1365.19			-2.987E-01	1.223E+00	1.941E+00	1.680E-01	-0.154
CS-135	268.22	*		2.194E-01	1.859E-01	2.905E-01	2.864E-02	0.755
I-135	546.56			7.240E+17	1.859E-01	Half-Life too short		
	836.80			1.349E+18	1.859E-01	Half-Life too short		
	1038.76			-8.202E+18	1.859E-01	Half-Life too short		
	1131.51			1.605E+18	1.859E-01	Half-Life too short		
	1260.41	*		7.715E+17	1.859E-01	Half-Life too short		
	1457.56			1.697E+20	1.859E-01	Half-Life too short		
	1678.03			1.728E+18	1.859E-01	Half-Life too short		
	1791.20			7.895E+18	1.859E-01	Half-Life too short		
CS-136	153.25			9.973E-02	1.367E+00	2.181E+00	2.146E-01	0.046
	176.60			-2.879E-01	7.670E-01	1.282E+00	1.150E-01	-0.225
	273.65			-9.808E-01	9.163E-01	1.230E+00	1.137E-01	-0.797
	340.55			1.002E+00	2.857E-01	4.842E-01	4.307E-02	2.070

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		7.895E-02	1.154E-01	1.999E-01	1.837E-02	0.395
		1048.07	*	-1.607E-01	1.675E-01	2.545E-01	2.330E-02	-0.631
		1235.36		-4.171E-01	1.008E+00	1.624E+00	1.861E-01	-0.257
BA-137M		661.66	*	3.468E-02	4.155E-02	7.253E-02	6.418E-03	0.478
CS-137		661.66	*	3.664E-02	4.389E-02	7.662E-02	6.793E-03	0.478
CE-139		165.86	*	-1.045E-03	3.384E-02	5.353E-02	4.234E-03	-0.020
BA-140		162.66		-9.962E-01	1.380E+00	2.114E+00	1.814E-01	-0.471
		304.85		-1.018E+00	2.331E+00	3.228E+00	9.442E-01	-0.315
		423.72		-3.647E+00	3.578E+00	5.054E+00	1.661E+00	-0.722
		537.26	*	-1.014E-01	3.975E-01	6.536E-01	2.222E-01	-0.155
LA-140	+	328.76		9.772E-01	6.332E-01	8.865E-01	8.039E-02	1.102
		487.02		3.318E-02	2.344E-01	3.792E-01	3.541E-02	0.087
		815.77		3.708E-01	5.052E-01	8.791E-01	8.903E-02	0.422
		1596.21	*	-7.815E-02	1.525E-01	2.054E-01	1.718E-02	-0.381
CE-141		145.44	*	-3.479E-02	8.017E-02	1.245E-01	1.042E-02	-0.280
CE-143		57.36		-2.964E-03	8.017E-02	Half-Life	too short	
		293.27	*	3.097E-02	8.017E-02	Half-Life	too short	
		664.57		-1.629E-02	8.017E-02	Half-Life	too short	
		721.93		-6.810E-02	8.017E-02	Half-Life	too short	
CE-144		80.12		4.120E-02	2.963E+00	3.427E+00	2.927E-01	0.012
		133.52	*	7.540E-02	2.311E-01	3.352E-01	5.079E-02	0.225
PM-144		476.78		-2.925E-02	6.836E-02	1.058E-01	1.007E-02	-0.276
		618.01		6.175E-03	3.425E-02	5.639E-02	5.176E-03	0.109
		696.49	*	1.573E-04	3.483E-02	5.759E-02	5.164E-03	0.003
PR-144		696.51	*	4.204E-02	2.620E+00	4.336E+00	3.885E-01	0.010
		1489.16		-1.021E+01	1.256E+01	1.752E+01	1.463E+00	-0.583
PM-146		453.88	*	-3.904E-02	4.679E-02	7.045E-02	7.498E-03	-0.554
		633.25		-3.033E-01	1.486E+00	2.426E+00	9.281E-01	-0.125
		735.93		-1.389E-01	1.593E-01	2.345E-01	6.605E-02	-0.592
		747.24		-7.274E-03	1.067E-01	1.745E-01	2.594E-02	-0.042
ND-147	+	91.11		1.627E+00	5.577E-01	7.860E-01	7.784E-02	2.070
		319.41		4.024E+00	5.549E+00	9.487E+00	8.140E-01	0.424
		531.02	*	7.373E-01	9.256E-01	1.632E+00	2.469E-01	0.452
PM-149		285.90	*	-1.136E-03	9.256E-01	Half-Life	too short	
EU-152		121.78		4.190E-02	7.495E-02	1.232E-01	1.217E-02	0.340
		244.70		3.044E-01	3.556E-01	5.506E-01	4.663E-02	0.553
		344.28	*	-6.024E-03	1.125E-01	1.606E-01	1.456E-02	-0.038
		778.90		-8.554E-02	2.600E-01	4.132E-01	3.774E-02	-0.207
	+	964.08		7.023E-01	3.709E-01	6.836E-01	6.186E-02	1.027
		1085.87		-5.640E-02	3.895E-01	6.427E-01	5.544E-02	-0.088
		1112.07		-9.498E-02	4.063E-01	5.684E-01	4.828E-02	-0.167
		1408.01		2.964E-01	2.280E-01	4.203E-01	3.484E-02	0.705
GD-153		69.67		1.520E+00	1.612E+00	2.461E+00	1.885E-01	0.618
		97.43	*	-4.112E-02	9.137E-02	1.285E-01	1.149E-02	-0.320
		103.18		-1.820E-02	1.200E-01	1.719E-01	1.509E-02	-0.106
EU-154		123.07		6.231E-02	5.452E-02	8.730E-02	9.881E-03	0.714
		723.31		8.288E-04	2.021E-01	2.888E-01	2.851E-02	0.003
		873.19		1.758E-01	2.946E-01	5.047E-01	6.209E-02	0.348
		996.26		-4.446E-02	4.044E-01	6.437E-01	1.136E-01	-0.069

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		-1.457E-01	2.364E-01	3.556E-01	4.223E-02	-0.410
		1274.44	*	-4.804E-02	1.399E-01	2.235E-01	2.473E-02	-0.215
		86.55		5.784E-01	1.330E-01	1.820E-01	1.698E-02	3.178
		105.31	*	8.211E-02	1.051E-01	1.749E-01	1.544E-02	0.470
TB-160	+	86.79		1.649E+00	3.786E-01	5.240E-01	4.861E-02	3.147
		197.04		3.825E-01	6.302E-01	1.066E+00	8.732E-02	0.359
		215.65		8.506E-01	8.169E-01	1.426E+00	1.188E-01	0.596
		298.57		1.490E-01	1.278E-01	2.219E-01	1.898E-02	0.671
HO-166M	+	879.36	*	6.379E-02	1.559E-01	2.632E-01	2.414E-02	0.242
		962.29		9.764E-01	7.957E-01	1.245E+00	1.127E-01	0.784
		966.15		5.283E-01	2.790E-01	6.076E-01	5.496E-02	0.869
		1177.93		1.001E-02	4.281E-01	7.133E-01	5.808E-02	0.014
		1271.85		-7.241E-02	8.407E-01	1.378E+00	1.130E-01	-0.053
		80.57		8.943E-03	3.173E-01	3.672E-01	3.154E-02	0.024
		184.41		7.008E-02	4.263E-02	6.856E-02	5.542E-03	1.022
		280.46		-1.026E-01	9.126E-02	1.420E-01	1.206E-02	-0.722
		410.95		1.476E-01	2.710E-01	4.530E-01	3.828E-02	0.326
		711.68	*	1.743E-02	6.166E-02	1.041E-01	9.369E-03	0.168
		752.31		-4.530E-02	2.897E-01	4.700E-01	4.274E-02	-0.096
		810.29		-7.557E-02	6.405E-02	9.262E-02	8.490E-03	-0.816
TA-182	+	67.75		-3.552E-02	1.079E-01	1.565E-01	1.180E-02	-0.227
		100.11		7.686E-02	1.826E-01	3.008E-01	2.663E-02	0.256
		152.43		-2.427E-01	3.896E-01	6.019E-01	4.879E-02	-0.403
		222.11		-2.909E-02	3.603E-01	6.025E-01	5.044E-02	-0.048
IR-192	+	1121.30		1.046E+00	3.095E-01	4.192E-01	3.541E-02	2.495
		1189.05		1.180E-01	3.738E-01	6.362E-01	5.187E-02	0.186
		1221.41	*	4.926E-02	2.334E-01	3.933E-01	3.217E-02	0.125
		1231.02		5.915E-02	5.613E-01	9.377E-01	7.674E-02	0.063
HG-203	+	295.96		1.601E+00	2.261E-01	3.640E-01	3.133E-02	4.400
		308.46		6.547E-02	1.045E-01	1.779E-01	1.533E-02	0.368
		316.51	*	-2.002E-03	3.833E-02	6.290E-02	5.406E-03	-0.032
		468.07		2.627E-02	8.541E-02	1.234E-01	1.155E-02	0.213
BI-207	+	70.83		-7.296E-02	1.414E+00	2.076E+00	3.240E-01	-0.035
		72.87		1.159E+00	8.709E-01	1.320E+00	1.998E-01	0.878
		279.20	*	-8.013E-04	4.675E-02	7.743E-02	6.745E-03	-0.010
		72.81		2.222E-01	1.761E-01	2.702E-01	2.131E-02	0.823
PB-210	+	74.97		7.611E-01	1.411E-01	2.149E-01	1.733E-02	3.542
		569.70		-1.623E-02	3.280E-02	5.294E-02	4.747E-03	-0.307
		1063.66	*	-2.783E-02	5.577E-02	8.917E-02	7.781E-03	-0.312
		1770.23		2.859E-01	4.953E-01	8.174E-01	6.715E-02	0.350
PB-211	+	46.54	*	1.001E+00	1.812E+00	3.080E+00	2.863E-01	0.325
		404.85	*	-2.354E-01	7.556E-01	1.185E+00	5.731E-01	-0.199
		427.09		1.848E+00	1.858E+00	2.860E+00	1.323E+00	0.646
		832.01		-1.326E-01	1.146E+00	1.850E+00	9.609E-01	-0.072
RN-219	+	727.33	*	1.958E+00	9.627E-01	1.248E+00	1.591E-01	1.569
		785.37		2.987E+00	3.338E+00	5.847E+00	5.346E-01	0.511
		1620.50		3.738E+00	2.408E+00	4.783E+00	3.997E-01	0.782
		271.23		1.205E+00	4.619E-01	4.933E-01	5.008E-02	2.443
		401.81	*	-1.699E-02	4.193E-01	6.781E-01	9.997E-02	-0.025

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-7.431E-03	2.519E-01	2.902E-01	2.507E-02	-0.026
		83.79		3.483E-01	1.212E-01	1.932E-01	1.726E-02	1.803
		94.87		7.982E-01	4.719E-01	7.312E-01	6.612E-02	1.092
		144.24		2.535E-01	7.190E-01	1.158E+00	1.073E-01	0.219
		154.21		4.016E-01	4.075E-01	6.731E-01	6.028E-02	0.597
+ 269.46				9.363E-01	3.555E-01	3.828E-01	3.319E-02	2.446
		323.87	*	2.204E-01	7.397E-01	1.090E+00	1.887E-01	0.202
		338.28		9.310E+00	2.140E+00	2.696E+00	3.243E-01	3.453
		79.69		3.561E-01	1.458E+00	1.713E+00	2.941E-01	0.208
		235.96		1.247E-01	1.824E-01	2.780E-01	2.833E-02	0.449
AC-227		256.23	*	4.334E-03	2.637E-01	4.395E-01	5.256E-02	0.010
		299.98		2.605E+00	1.225E+00	1.663E+00	2.106E-01	1.567
		304.50		-6.094E-01	1.831E+00	2.577E+00	4.252E-01	-0.236
		334.37		2.843E-01	2.132E+00	2.889E+00	4.494E-01	0.098
		79.80		2.660E-01	1.917E+00	2.236E+00	4.860E-01	0.119
TH-227		235.96		1.247E-01	1.823E-01	2.780E-01	2.668E-02	0.449
		256.23	*	4.334E-03	2.637E-01	4.395E-01	5.944E-02	0.010
		299.98		2.605E+00	1.225E+00	1.663E+00	2.106E-01	1.567
		304.50		-6.094E-01	1.831E+00	2.577E+00	4.252E-01	-0.236
		334.37		2.843E-01	2.132E+00	2.889E+00	4.494E-01	0.098
TH-229		85.43		6.912E-01	2.081E-01	3.321E-01	3.028E-02	2.081
		88.47		7.331E-01	1.683E-01	2.331E-01	2.189E-02	3.145
		193.51	*	-3.742E-02	5.344E-01	9.005E-01	7.352E-02	-0.042
		210.85		1.560E+00	1.033E+00	1.643E+00	1.364E-01	0.949
		283.69	*	1.387E-01	1.501E+00	2.498E+00	3.626E-01	0.056
PA-231		301.36		1.674E+00	7.843E-01	1.070E+00	1.296E-01	1.564
TH-231		81.07		-7.431E-03	2.519E-01	2.902E-01	2.507E-02	-0.026
		83.79		3.483E-01	1.212E-01	1.932E-01	1.726E-02	1.803
		94.87		7.982E-01	4.719E-01	7.312E-01	6.612E-02	1.092
		144.24		2.535E-01	7.190E-01	1.158E+00	1.073E-01	0.219
		154.21		4.016E-01	4.075E-01	6.731E-01	6.028E-02	0.597
+ 269.46				9.363E-01	3.555E-01	3.828E-01	3.319E-02	2.446
		323.87	*	2.204E-01	7.397E-01	1.090E+00	1.887E-01	0.202
		338.28		9.310E+00	2.140E+00	2.696E+00	3.243E-01	3.453
		300.13		1.179E+00	5.615E-01	7.558E-01	1.118E-01	1.560
		311.90	*	2.698E-02	6.425E-02	1.083E-01	9.553E-03	0.249
PA-233		340.48		3.089E+00	1.076E+00	1.403E+00	3.372E-01	2.203
PA-234		94.67		4.828E-01	1.793E-01	2.768E-01	3.517E-02	1.745
		98.44		3.815E-02	1.024E-01	1.472E-01	8.220E-02	0.259
		111.00		-6.264E-02	2.028E-01	2.867E-01	3.472E-02	-0.218
		131.20		1.910E-02	1.294E-01	1.847E-01	1.556E-02	0.103
		569.50		-1.343E-01	2.904E-01	4.697E-01	4.212E-02	-0.286
+ 733.00				2.766E-01	4.494E-01	6.811E-01	1.523E-01	0.406
		880.51		2.038E-01	2.834E-01	4.918E-01	4.510E-02	0.414
		883.24		-7.295E-03	3.031E-01	4.911E-01	3.305E-01	-0.015
		926.50		6.833E-02	1.796E-01	3.005E-01	7.648E-02	0.227
		946.00	*	-2.056E-01	3.263E-01	4.896E-01	9.295E-02	-0.420
PA-234M		949.00		3.444E-01	4.936E-01	8.470E-01	7.692E-02	0.407
		766.42		1.535E+01	1.701E+01	2.362E+01	1.201E+01	0.650

---- 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	*		2.624E+00	5.123E+00	8.610E+00	8.829E-01	0.305
	99.53			5.761E-02	1.612E-01	2.627E-01	2.331E-02	0.219
	103.37			-6.048E-03	1.071E-01	1.542E-01	1.353E-02	-0.039
	106.12			6.193E-02	8.344E-02	1.387E-01	1.209E-02	0.447
	117.23	*		-3.642E-02	3.878E-01	6.222E-01	5.352E-02	-0.059
	228.18			-7.733E-03	2.269E-01	3.797E-01	3.191E-02	-0.020
	277.60			2.652E-01	1.830E-01	3.220E-01	2.734E-02	0.824
AM-241	59.54	*		2.269E-02	1.248E-01	1.864E-01	1.478E-02	0.122
CM-247	278.00			1.049E+00	7.811E-01	1.369E+00	1.162E-01	0.766
CF-249	287.50			3.803E-01	1.292E+00	2.169E+00	1.848E-01	0.175
	402.40	*		-8.693E-03	3.838E-02	6.127E-02	5.143E-03	-0.142
	252.80			-4.624E-01	9.737E-01	1.584E+00	1.344E-01	-0.292
	333.37			-5.827E-02	2.915E-01	2.932E-01	2.512E-02	-0.199
CF-251	388.16	*		-2.968E-03	4.290E-02	6.942E-02	5.793E-03	-0.043
	177.52	*		-2.581E-02	1.325E-01	2.232E-01	1.790E-02	-0.116
	227.38			-8.409E-02	3.688E-01	6.120E-01	5.141E-02	-0.137
	285.41			-1.951E+00	2.296E+00	3.623E+00	3.084E-01	-0.538

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]G248243005
* Acquisition date   : 19-MAR-2010 10:53:34 Detector SN#      :
* Detector ID        : GAM07 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.43 Half life ratio : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248243005 Analyst initials: MXR1
* Batch Number       : 959280 Sample Quantity : 1.2852E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*
*                               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope      :
* LCS DPM             : 0.000 LCS Isotope      :
* LCSD DPM            : 0.000 LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.051E+01	3.125E+00	6.149E-01	0.000E+00
CD-109	4.923E+00	1.108E+00	1.064E+00	0.000E+00
SN-126	4.755E-01	1.070E-01	1.030E-01	0.000E+00
TL-208	5.444E-01	9.080E-02	6.412E-02	0.000E+00
BI-211	5.392E+00	6.594E-01	3.456E-01	0.000E+00
PB-212	2.064E+00	2.315E-01	1.035E-01	0.000E+00
BI-214	1.758E+00	2.602E-01	1.174E-01	0.000E+00
PB-214	1.957E+00	2.616E-01	1.272E-01	0.000E+00
RA-224	5.424E+00	1.339E+00	1.109E+00	0.000E+00
RA-226	1.758E+00	2.602E-01	1.174E-01	0.000E+00
AC-228	1.903E+00	3.775E-01	2.430E-01	0.000E+00
RA-228	1.903E+00	3.775E-01	2.430E-01	0.000E+00
TH-228	2.064E+00	2.315E-01	1.035E-01	0.000E+00
TH-232	1.903E+00	3.775E-01	2.430E-01	0.000E+00
TH-234	1.724E+00	1.448E+00	1.761E+00	0.000E+00
U-235	1.337E-01	2.109E-01	3.615E-01	0.000E+00
NP-237	1.419E+00	4.324E-01	3.091E-01	0.000E+00
U-238	1.724E+00	1.448E+00	1.761E+00	0.000E+00
ANH-511	1.924E-01	7.375E-02	4.477E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	5.795E-03	3.579E-01	5.968E-01	0.000E+00 NOT IDENT.
NA-22	-7.814E-03	4.770E-02	7.939E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.251E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	4.088E-02	4.380E-02	7.907E-02	0.000E+00 FAIL ABUN
V-48	-2.303E-02	9.983E-02	1.611E-01	0.000E+00 NOT IDENT.
CR-51	9.735E-02	4.593E-01	7.985E-01	0.000E+00 NOT IDENT.
MN-54	2.852E-02	4.429E-02	7.780E-02	0.000E+00 NOT IDENT.
CO-56	1.661E-02	4.699E-02	8.110E-02	0.000E+00 NOT IDENT.

CO-57	1.987E-02	2.614E-02	4.586E-02	0.000E+00	NOT IDENT.
CO-58	-7.141E-02	4.578E-02	6.533E-02	0.000E+00	NOT IDENT.
FE-59	-1.429E-02	1.114E-01	1.889E-01	0.000E+00	NOT IDENT.
CO-60	2.732E-02	4.103E-02	7.396E-02	0.000E+00	NOT IDENT.
ZN-65	-6.854E-02	1.108E-01	1.505E-01	0.000E+00	NOT IDENT.
SE-75	2.315E-02	5.139E-02	8.118E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.503E-02	8.404E-02	0.000E+00	NOT IDENT.
Y-88	-2.659E-03	3.550E-02	6.073E-02	0.000E+00	NOT IDENT.
Y-91	-6.556E+00	2.642E+01	4.401E+01	0.000E+00	NOT IDENT.
NB-94	2.351E-02	3.537E-02	6.310E-02	0.000E+00	NOT IDENT.
NB-95	5.187E-02	5.882E-02	9.354E-02	0.000E+00	NOT IDENT.
NB-95M	2.775E-02	1.585E-01	2.476E-01	0.000E+00	NOT IDENT.
ZR-95	2.827E-02	8.912E-02	1.507E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.173E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.100E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.987E-02	4.410E-02	7.025E-02	0.000E+00	FAIL ABUN
RH-106	-1.011E-01	3.319E-01	5.589E-01	0.000E+00	NOT IDENT.
RU-106	-1.011E-01	3.318E-01	5.589E-01	0.000E+00	NOT IDENT.
AG-108M	2.860E-02	3.050E-02	5.428E-02	0.000E+00	NOT IDENT.
AG-110M	-4.100E-02	3.969E-02	6.276E-02	0.000E+00	NOT IDENT.
SN-113	9.396E-03	4.891E-02	8.375E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.301E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	8.475E-03	8.553E-02	1.441E-01	0.000E+00	NOT IDENT.
TE-123M	1.003E-02	3.119E-02	5.301E-02	0.000E+00	NOT IDENT.
SB-124	4.112E-02	7.448E-02	1.363E-01	0.000E+00	NOT IDENT.
SB-125	4.171E-02	9.983E-02	1.721E-01	0.000E+00	FAIL ABUN
TE-125M	1.944E+00	1.031E+01	1.784E+01	0.000E+00	NOT IDENT.
I-126	-4.124E-01	3.821E-01	6.026E-01	0.000E+00	NOT IDENT.
SB-126	-1.631E-01	2.915E-01	4.039E-01	0.000E+00	NOT IDENT.
SB-127	-3.076E+00	5.786E+00	9.461E+00	0.000E+00	NOT IDENT.
I-131	1.151E-01	2.305E-01	4.040E-01	0.000E+00	NOT IDENT.
TE-132	-1.273E-01	4.100E+00	7.209E+00	0.000E+00	NOT IDENT.
BA-133	1.813E-03	4.825E-02	7.224E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.157E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.085E-02	5.440E-02	1.014E-01	0.000E+00	NOT IDENT.
CS-135	2.194E-01	1.822E-01	2.983E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.847E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.607E-01	1.642E-01	2.559E-01	0.000E+00	NOT IDENT.
BA-137M	3.468E-02	4.071E-02	7.346E-02	0.000E+00	NOT IDENT.
CS-137	3.664E-02	4.301E-02	7.760E-02	0.000E+00	NOT IDENT.
CE-139	-1.045E-03	3.317E-02	5.537E-02	0.000E+00	NOT IDENT.
BA-140	-1.014E-01	3.896E-01	6.641E-01	0.000E+00	NOT IDENT.
LA-140	-7.815E-02	1.495E-01	2.051E-01	0.000E+00	FAIL ABUN
CE-141	-3.479E-02	7.857E-02	1.290E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.169E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	7.540E-02	2.265E-01	3.479E-01	0.000E+00	NOT IDENT.
PM-144	1.573E-04	3.413E-02	5.828E-02	0.000E+00	NOT IDENT.
PR-144	4.204E-02	2.567E+00	4.388E+00	0.000E+00	NOT IDENT.
PM-146	-3.904E-02	4.586E-02	7.177E-02	0.000E+00	NOT IDENT.
ND-147	7.373E-01	9.071E-01	1.658E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.115E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.024E-03	1.102E-01	1.644E-01	0.000E+00	FAIL ABUN
GD-153	-4.112E-02	8.954E-02	1.340E-01	0.000E+00	NOT IDENT.
EU-154	-4.804E-02	1.371E-01	2.240E-01	0.000E+00	NOT IDENT.
EU-155	8.211E-02	1.030E-01	1.821E-01	0.000E+00	FAIL ABUN
TB-160	6.379E-02	1.528E-01	2.654E-01	0.000E+00	FAIL ABUN
HO-166M	1.743E-02	6.043E-02	1.053E-01	0.000E+00	NOT IDENT.
TA-182	4.926E-02	2.288E-01	3.945E-01	0.000E+00	FAIL ABUN
IR-192	-2.002E-03	3.757E-02	6.444E-02	0.000E+00	FAIL ABUN
HG-203	-8.013E-04	4.582E-02	7.948E-02	0.000E+00	NOT IDENT.
BI-207	-2.783E-02	5.466E-02	8.965E-02	0.000E+00	FAIL ABUN
PB-210	1.001E+00	1.776E+00	3.246E+00	0.000E+00	NOT IDENT.
PB-211	-2.354E-01	7.405E-01	1.210E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.435E-01	1.262E+00	0.000E+00	FAIL ABUN
RN-219	-1.699E-02	4.109E-01	6.922E-01	0.000E+00	FAIL ABUN
RA-223	2.204E-01	7.249E-01	1.116E+00	0.000E+00	FAIL ABUN
AC-227	4.334E-03	2.584E-01	4.517E-01	0.000E+00	FAIL ABUN
TH-227	4.334E-03	2.584E-01	4.517E-01	0.000E+00	FAIL ABUN
TH-229	-3.742E-02	5.237E-01	9.294E-01	0.000E+00	FAIL ABUN
PA-231	1.387E-01	1.471E+00	2.563E+00	0.000E+00	FAIL ABUN
TH-231	2.204E-01	7.249E-01	1.116E+00	0.000E+00	FAIL ABUN
PA-233	2.698E-02	6.297E-02	1.110E-01	0.000E+00	FAIL ABUN
PA-234	-2.056E-01	3.197E-01	4.931E-01	0.000E+00	NOT IDENT.
PA-234M	2.624E+00	5.020E+00	8.664E+00	0.000E+00	NOT IDENT.
NP-239	-3.642E-02	3.800E-01	6.470E-01	0.000E+00	NOT IDENT.
AM-241	2.269E-02	1.223E-01	1.958E-01	0.000E+00	NOT IDENT.
CM-247	-8.693E-03	3.762E-02	6.254E-02	0.000E+00	NOT IDENT.
CF-249	-2.968E-03	4.204E-02	7.089E-02	0.000E+00	NOT IDENT.

CF-251	-2.581E-02	1.299E-01	2.307E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:54:40.66

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243005.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:53:34
Sample ID          : G248243005 Sample quantity      : 1.28520E+02 GRAM
Detector name      : GAM07 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.43 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity          : 5.00000
Batch ID           : 959280 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	1258	10.66*	1.129E+00	3.051E+01	3.051E+01	10.45
CD-109	88.03	412	3.70*	6.837E+00	4.755E+00	4.923E+00	22.96
SN-126	64.28	106	9.60	4.835E+00	6.646E-01	6.646E-01	85.05
	86.94	412	8.90	6.837E+00	1.977E+00	1.977E+00	46.51
	87.57	412	37.00*	6.837E+00	4.755E-01	4.755E-01	22.96
TL-208	277.37	-----	6.60	4.401E+00	-----	Line Not Found	-----
	583.19	392	85.00*	2.476E+00	5.444E-01	5.444E-01	17.02
	860.56	38	12.50	1.782E+00	4.982E-01	4.982E-01	69.32
BI-211	72.87	-----	1.23	5.899E+00	-----	Line Not Found	-----
	351.06	878	12.92*	3.680E+00	5.392E+00	5.392E+00	12.48
PB-212	74.82	564	10.28	6.067E+00	2.640E+00	2.640E+00	20.93
	77.11	1011	17.10	6.258E+00	2.760E+00	2.760E+00	12.96
	238.63	1513	43.60*	4.908E+00	2.064E+00	2.064E+00	11.44
	300.09	111	3.30	4.149E+00	2.369E+00	2.369E+00	46.47
BI-214	609.32	654	45.49*	2.388E+00	1.758E+00	1.758E+00	15.11
	1120.29	154	14.92	1.414E+00	2.129E+00	2.129E+00	30.34
	1764.49	112	15.30	9.832E-01	2.178E+00	2.178E+00	24.22
PB-214	74.82	564	5.80	6.067E+00	4.679E+00	4.679E+00	20.16
	77.11	1011	9.70	6.258E+00	4.865E+00	4.865E+00	15.36
	242.00	370	7.25	4.864E+00	3.067E+00	3.067E+00	25.85
	295.22	533	18.42	4.201E+00	2.012E+00	2.012E+00	15.51
	351.93	878	35.60*	3.680E+00	1.957E+00	1.957E+00	13.64
RA-224	240.99	370	4.10*	4.864E+00	5.424E+00	5.424E+00	25.20
RA-226	609.32	654	45.49*	2.388E+00	1.758E+00	1.758E+00	15.11
	1120.29	154	14.92	1.414E+00	2.129E+00	2.129E+00	30.34
	1764.49	112	15.30	9.832E-01	2.178E+00	2.178E+00	24.22
AC-228	338.32	343	11.27	3.790E+00	2.346E+00	2.346E+00	46.08
	911.20	285	25.80*	1.695E+00	1.903E+00	1.903E+00	20.24
	968.97	176	15.80	1.606E+00	2.023E+00	2.023E+00	34.37
RA-228	338.32	343	11.27	3.790E+00	2.346E+00	2.346E+00	46.08
	911.20	285	25.80*	1.695E+00	1.903E+00	1.903E+00	20.24
	968.97	176	15.80	1.606E+00	2.023E+00	2.023E+00	34.37

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	564	10.28	6.067E+00	2.640E+00	2.640E+00	18.57
	77.11	1011	17.10	6.258E+00	2.760E+00	2.760E+00	12.96
	238.63	1513	43.60*	4.908E+00	2.064E+00	2.064E+00	11.44
	300.09	111	3.30	4.149E+00	2.369E+00	2.369E+00	76.13
TH-232	338.32	343	11.27	3.790E+00	2.346E+00	2.346E+00	21.38
	911.20	285	25.80*	1.695E+00	1.903E+00	1.903E+00	20.24
	968.97	176	15.80	1.606E+00	2.023E+00	2.023E+00	34.37
TH-234	63.29	106	3.70*	4.835E+00	1.724E+00	1.724E+00	85.67
	92.59	281	4.23	7.019E+00	2.769E+00	2.769E+00	38.21
U-235	89.96	252	3.47	6.938E+00	3.063E+00	3.063E+00	41.16
	93.35	281	5.60	7.019E+00	2.091E+00	2.091E+00	38.80
	143.76	-----	10.96*	6.691E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.279E+00	-----	Line Not Found	-----
NP-237	185.72	225	57.20	5.809E+00	1.975E-01	1.975E-01	40.54
	205.31	-----	5.01	5.451E+00	-----	Line Not Found	-----
	86.48	412	12.40*	6.837E+00	1.419E+00	1.419E+00	31.09
	95.86	-----	2.68	7.087E+00	-----	Line Not Found	-----
U-238	63.29	106	3.70*	4.835E+00	1.724E+00	1.724E+00	85.67
	92.59	281	4.23	7.019E+00	2.769E+00	2.769E+00	32.35
ANH-511	511.00	181	100.00*	2.755E+00	1.924E-01	1.924E-01	39.12

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248243005

Page : 3
Acquisition date : 19-MAR-2010 10:53:34

Total number of lines in spectrum 34
Number of unidentified lines 7
Number of lines tentatively identified by NID 27 79.41%

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	3.051E+01	3.051E+01	0.319E+01	10.45	
CD-109	461.40D	1.04	4.755E+00	4.923E+00	1.130E+00	22.96	
SN-126	2.30E+05Y	1.00	4.755E-01	4.755E-01	1.092E-01	22.96	
TL-208	1.41E+10Y	1.00	5.444E-01	5.444E-01	0.927E-01	17.02	
BI-211	7.04E+08Y	1.00	5.392E+00	5.392E+00	0.673E+00	12.48	
PB-212	1.41E+10Y	1.00	2.064E+00	2.064E+00	0.236E+00	11.44	
BI-214	1600.00Y	1.00	1.758E+00	1.758E+00	0.266E+00	15.11	
PB-214	1600.00Y	1.00	1.957E+00	1.957E+00	0.267E+00	13.64	
RA-224	1.41E+10Y	1.00	5.424E+00	5.424E+00	1.367E+00	25.20	
RA-226	1600.00Y	1.00	1.758E+00	1.758E+00	0.266E+00	15.11	
AC-228	1.41E+10Y	1.00	1.903E+00	1.903E+00	0.385E+00	20.24	
RA-228	1.41E+10Y	1.00	1.903E+00	1.903E+00	0.385E+00	20.24	
TH-228	1.41E+10Y	1.00	2.064E+00	2.064E+00	0.236E+00	11.44	
TH-232	1.41E+10Y	1.00	1.903E+00	1.903E+00	0.385E+00	20.24	
TH-234	4.47E+09Y	1.00	1.724E+00	1.724E+00	1.477E+00	85.67	
U-235	7.04E+08Y	1.00	1.975E-01	1.975E-01	0.801E-01	40.54	K
NP-237	2.14E+06Y	1.00	1.419E+00	1.419E+00	0.441E+00	31.09	
U-238	4.47E+09Y	1.00	1.724E+00	1.724E+00	1.477E+00	85.67	
ANH-511	1.00E+09Y	1.00	1.924E-01	1.924E-01	0.753E-01	39.12	

Total Activity : 6.767E+01 6.784E+01

Grand Total Activity : 6.767E+01 6.784E+01

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

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

Unidentified Energy Lines
Sample ID : G248243005

Page : 4
Acquisition date : 19-MAR-2010 10:53:34

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	107.77	255	702	6.83	215.18	207	18	3.54E-02	50.5	7.18E+00	
0	128.69	90	561	1.10	257.01	252	11	1.25E-02	****	6.97E+00	
0	209.28	150	253	1.04	418.17	415	8	2.08E-02	40.5	5.38E+00	
0	270.35	200	258	1.69	540.27	533	14	2.78E-02	37.0	4.49E+00	T
0	328.33	75	157	1.43	656.21	652	9	1.05E-02	64.2	3.88E+00	T
0	463.14	109	131	1.17	925.81	920	12	1.51E-02	46.3	2.98E+00	T
0	727.58	92	88	1.73	1454.61	1448	13	1.28E-02	47.5	2.06E+00	T
0	769.45	35	90	1.22	1538.32	1532	11	4.81E-03	****	1.96E+00	
0	934.65	26	47	1.02	1868.70	1866	8	3.67E-03	99.7	1.66E+00	
1	964.99	57	65	1.98	1929.36	1925	21	7.86E-03	52.0	1.61E+00	T
0	1379.17	29	49	0.87	2757.65	2748	20	3.96E-03	****	1.18E+00	
0	1588.56	39	3	1.60	3176.41	3170	12	5.44E-03	36.4	1.06E+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]G248243005.CNF;1  *
* Acquisition date   : 19-MAR-2010 10:53:34   Detector SN#      :          *
* Detector ID        : GAM07                   Sensitivity       : 5.00000    *
* Geometry           : CAN                     Energy tolerance: 1.50000    *
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000    *
* Elapsed real time  : 0 02:00:01.43           Half life ratio  : 8.00000    *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library  : SOLID      *
* Sample ID          : G248243005             Analyst initials: MXR1       *
* Batch Number       : 959280                 Sample Quantity  : 1.28520E+02 GRAM *
*****
*
*                               QC DATA                                *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58.0MS Isotope          :          *
* MSD ID             :                          MSD Isotope      :          *
* LCS ID             : 1032-A                   LCS Isotope      :          *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.051E+01	3.189E+00	6.147E-01	5.279E-02	49.639
CD-109	4.923E+00	1.130E+00	1.019E+00	9.596E-02	4.833
SN-126	4.755E-01	1.092E-01	9.862E-02	9.241E-03	4.822
TL-208	5.444E-01	9.266E-02	6.319E-02	6.037E-03	8.615
BI-211	5.392E+00	6.728E-01	3.378E-01	3.031E-02	15.960
PB-212	2.064E+00	2.362E-01	1.006E-01	9.668E-03	20.527
BI-214	1.758E+00	2.655E-01	1.157E-01	1.203E-02	15.187
PB-214	1.957E+00	2.670E-01	1.244E-01	1.310E-02	15.732
RA-224	5.424E+00	1.367E+00	1.078E+00	9.117E-02	5.031
RA-226	1.758E+00	2.655E-01	1.157E-01	1.203E-02	15.187
AC-228	1.903E+00	3.852E-01	2.412E-01	2.891E-02	7.892
RA-228	1.903E+00	3.852E-01	2.412E-01	2.891E-02	7.892
TH-228	2.064E+00	2.362E-01	1.006E-01	9.668E-03	20.527
TH-232	1.903E+00	3.852E-01	2.412E-01	2.891E-02	7.892
TH-234	1.724E+00	1.477E+00	1.678E+00	2.985E-01	1.028
U-235	1.975E-01	8.007E-02	3.487E-01	5.844E-02	0.566
NP-237	1.419E+00	4.412E-01	2.959E-01	6.780E-02	4.795
U-238	1.724E+00	1.477E+00	1.678E+00	2.985E-01	1.028

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.924E-01	7.525E-02	4.403E-02	3.912E-03	4.370

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.795E-03		3.652E-01	5.862E-01	5.531E-02	0.010
NA-22	-7.814E-03		4.867E-02	7.920E-02	6.501E-03	-0.099
NA-24	6.408E+02		2.169E+03	Half-Life too short		
SC-46	4.088E-02		4.470E-02	7.844E-02	7.188E-03	0.521
V-48	-2.303E-02		1.019E-01	1.600E-01	1.441E-02	-0.144
CR-51	9.735E-02		4.687E-01	7.796E-01	7.039E-02	0.125
MN-54	2.852E-02		4.520E-02	7.709E-02	7.076E-03	0.370
CO-56	1.661E-02		4.795E-02	8.038E-02	7.380E-03	0.207
CO-57	1.987E-02		2.667E-02	4.412E-02	3.796E-03	0.450
CO-58	-7.141E-02		4.671E-02	6.471E-02	5.945E-03	-1.104
FE-59	-1.429E-02		1.137E-01	1.880E-01	1.741E-02	-0.076
CO-60	2.732E-02		4.187E-02	7.383E-02	6.048E-03	0.370
ZN-65	-6.854E-02		1.130E-01	1.498E-01	1.271E-02	-0.458
SE-75	2.315E-02		5.244E-02	7.903E-02	6.750E-03	0.293
SR-85	1.418E-01		4.595E-02	8.265E-02	7.349E-03	1.716
Y-88	-2.659E-03		3.622E-02	6.094E-02	4.946E-03	-0.044
Y-91	-6.556E+00		2.696E+01	4.387E+01	3.582E+00	-0.149
NB-94	2.351E-02		3.609E-02	6.236E-02	5.599E-03	0.377
NB-95	5.187E-02		6.002E-02	9.257E-02	8.439E-03	0.560
NB-95M	2.775E-02		1.618E-01	2.406E-01	2.340E-02	0.115
ZR-95	2.827E-02		9.093E-02	1.491E-01	1.485E-02	0.190
MO-99	-4.395E-05		4.680E-05	Half-Life too short		
TC-99M	-9.126E+19		5.612E+19	Half-Life too short		
RU-103	-1.987E-02		4.500E-02	6.905E-02	9.741E-03	-0.288
RH-106	-1.011E-01		3.387E-01	5.513E-01	7.423E-02	-0.183
RU-106	-1.011E-01		3.386E-01	5.513E-01	4.927E-02	-0.183
AG-108M	2.860E-02		3.112E-02	5.325E-02	4.720E-03	0.537
AG-110M	-4.100E-02		4.050E-02	6.196E-02	5.645E-03	-0.662
SN-113	9.396E-03		4.991E-02	8.202E-02	7.051E-03	0.115
CD-115	-6.172E-05		6.636E-05	Half-Life too short		
SN-117M	8.475E-03		8.728E-02	1.392E-01	1.116E-02	0.061
TE-123M	1.003E-02		3.182E-02	5.121E-02	4.131E-03	0.196
SB-124	4.112E-02		7.600E-02	1.366E-01	1.186E-02	0.301
SB-125	4.171E-02		1.019E-01	1.688E-01	1.471E-02	0.247
TE-125M	1.944E+00		1.053E+01	1.713E+01	1.807E+00	0.113
I-126	-4.124E-01		3.899E-01	5.951E-01	5.276E-02	-0.693
SB-126	-1.631E-01		2.975E-01	3.993E-01	3.604E-02	-0.409
SB-127	-3.076E+00		5.904E+00	9.346E+00	1.322E+00	-0.329
I-131	1.151E-01		2.352E-01	3.952E-01	3.565E-02	0.291
TE-132	-1.273E-01		4.184E+00	7.001E+00	1.228E+00	-0.018
BA-133	1.813E-03		4.923E-02	7.065E-02	9.101E-03	0.026
I-133	6.050E-01		1.611E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	9.085E-02		5.551E-02	1.004E-01	9.252E-03	0.905
CS-135	2.194E-01		1.859E-01	2.905E-01	2.864E-02	0.755
I-135	7.715E+17		1.453E+18	Half-Life	too short	
CS-136	-1.607E-01		1.675E-01	2.545E-01	2.330E-02	-0.631
BA-137M	3.468E-02		4.155E-02	7.253E-02	6.418E-03	0.478
CS-137	3.664E-02		4.389E-02	7.662E-02	6.793E-03	0.478
CE-139	-1.045E-03		3.384E-02	5.353E-02	4.234E-03	-0.020
BA-140	-1.014E-01		3.975E-01	6.536E-01	2.222E-01	-0.155
LA-140	-7.815E-02		1.525E-01	2.054E-01	1.718E-02	-0.381
CE-141	-3.479E-02		8.017E-02	1.245E-01	1.042E-02	-0.280
CE-143	3.097E-02		5.965E-03	Half-Life	too short	
CE-144	7.540E-02		2.311E-01	3.352E-01	5.079E-02	0.225
PM-144	1.573E-04		3.483E-02	5.759E-02	5.164E-03	0.003
PR-144	4.204E-02		2.620E+00	4.336E+00	3.885E-01	0.010
PM-146	-3.904E-02		4.679E-02	7.045E-02	7.498E-03	-0.554
ND-147	7.373E-01		9.256E-01	1.632E+00	2.469E-01	0.452
PM-149	-1.136E-03		5.691E-04	Half-Life	too short	
EU-152	-6.024E-03		1.125E-01	1.606E-01	1.456E-02	-0.038
GD-153	-4.112E-02		9.137E-02	1.285E-01	1.149E-02	-0.320
EU-154	-4.804E-02		1.399E-01	2.235E-01	2.473E-02	-0.215
EU-155	8.211E-02		1.051E-01	1.749E-01	1.544E-02	0.470
TB-160	6.379E-02		1.559E-01	2.632E-01	2.414E-02	0.242
HO-166M	1.743E-02		6.166E-02	1.041E-01	9.369E-03	0.168
TA-182	4.926E-02		2.334E-01	3.933E-01	3.217E-02	0.125
IR-192	-2.002E-03		3.833E-02	6.290E-02	5.406E-03	-0.032
HG-203	-8.013E-04		4.675E-02	7.743E-02	6.745E-03	-0.010
BI-207	-2.783E-02		5.577E-02	8.917E-02	7.781E-03	-0.312
PB-210	1.001E+00		1.812E+00	3.080E+00	2.863E-01	0.325
PB-211	-2.354E-01		7.556E-01	1.185E+00	5.731E-01	-0.199
BI-212	1.958E+00	+	9.627E-01	1.248E+00	1.591E-01	1.569
RN-219	-1.699E-02		4.193E-01	6.781E-01	9.997E-02	-0.025
RA-223	2.204E-01		7.397E-01	1.090E+00	1.887E-01	0.202
AC-227	4.334E-03		2.637E-01	4.395E-01	5.256E-02	0.010
TH-227	4.334E-03		2.637E-01	4.395E-01	5.944E-02	0.010
TH-229	-3.742E-02		5.344E-01	9.005E-01	7.352E-02	-0.042
PA-231	1.387E-01		1.501E+00	2.498E+00	3.626E-01	0.056
TH-231	2.204E-01		7.397E-01	1.090E+00	1.887E-01	0.202
PA-233	2.698E-02		6.425E-02	1.083E-01	9.553E-03	0.249
PA-234	-2.056E-01		3.263E-01	4.896E-01	9.295E-02	-0.420
PA-234M	2.624E+00		5.123E+00	8.610E+00	8.829E-01	0.305
NP-239	-3.642E-02		3.878E-01	6.222E-01	5.352E-02	-0.059
AM-241	2.269E-02		1.248E-01	1.864E-01	1.478E-02	0.122
CM-247	-8.693E-03		3.838E-02	6.127E-02	5.143E-03	-0.142
CF-249	-2.968E-03		4.290E-02	6.942E-02	5.793E-03	-0.043
CF-251	-2.581E-02		1.325E-01	2.232E-01	1.790E-02	-0.116

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248243005            *
* Acquisition date   : 19-MAR-2010 10:53:34 Detector SN#      :              *
* Detector ID        : GAM07 Sensitivity      : 5.000              *
* Geometry           : CAN Energy tolerance: 1.500              *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:01.43 Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243005 Analyst initials: MXR1           *
* Batch Number       : 959280 Sample Quantity : 1.2852E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight  : 0.00000           *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope                   :              *
* LCS DPM             : 0.000 LCS Isotope                   :              *
* LCSD DPM            : 0.000 LCSD Isotope                  :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.051E+01	3.125E+00	3.076E-01	1.594E+00
CD-109	4.923E+00	1.108E+00	5.322E-01	5.651E-01
SN-126	4.755E-01	1.070E-01	5.153E-02	5.459E-02
TL-208	5.444E-01	9.080E-02	3.208E-02	4.633E-02
BI-211	5.392E+00	6.594E-01	1.729E-01	3.364E-01
PB-212	2.064E+00	2.315E-01	5.176E-02	1.181E-01
BI-214	1.758E+00	2.602E-01	5.872E-02	1.328E-01
PA-214	1.957E+00	2.616E-01	6.365E-02	1.335E-01
RA-224	5.424E+00	1.339E+00	5.549E-01	6.833E-01
RA-226	1.758E+00	2.602E-01	5.872E-02	1.328E-01
AC-228	1.903E+00	3.775E-01	1.216E-01	1.926E-01
RA-228	1.903E+00	3.775E-01	1.216E-01	1.926E-01
TH-228	2.064E+00	2.315E-01	5.176E-02	1.181E-01
TH-232	1.903E+00	3.775E-01	1.216E-01	1.926E-01
TH-234	1.724E+00	1.448E+00	8.810E-01	7.386E-01
U-235	1.337E-01	2.109E-01	1.809E-01	1.076E-01
NP-237	1.419E+00	4.324E-01	1.546E-01	2.206E-01
U-238	1.724E+00	1.448E+00	8.810E-01	7.386E-01
ANH-511	1.924E-01	7.375E-02	2.240E-02	3.763E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	5.795E-03	3.579E-01	2.986E-01	1.826E-01 NOT IDENT.
NA-22	-7.814E-03	4.770E-02	3.972E-02	2.434E-02 NOT IDENT.
NA-24	6.408E+08	4.251E+09	0.000E+00	2.169E+09 SHORT HLIF
SC-46	4.088E-02	4.380E-02	3.956E-02	2.235E-02 FAIL ABUN
V-48	-2.303E-02	9.983E-02	8.059E-02	5.093E-02 NOT IDENT.
CR-51	9.735E-02	4.593E-01	3.995E-01	2.343E-01 NOT IDENT.
MN-54	2.852E-02	4.429E-02	3.892E-02	2.260E-02 NOT IDENT.
CO-56	1.661E-02	4.699E-02	4.057E-02	2.397E-02 NOT IDENT.

CO-57	1.987E-02	2.614E-02	2.294E-02	1.334E-02	NOT IDENT.
CO-58	-7.141E-02	4.578E-02	3.269E-02	2.336E-02	NOT IDENT.
FE-59	-1.429E-02	1.114E-01	9.448E-02	5.684E-02	NOT IDENT.
CO-60	2.732E-02	4.103E-02	3.700E-02	2.093E-02	NOT IDENT.
ZN-65	-6.854E-02	1.108E-01	7.527E-02	5.652E-02	NOT IDENT.
SE-75	2.315E-02	5.139E-02	4.062E-02	2.622E-02	NOT IDENT.
SR-85	1.418E-01	4.503E-02	4.204E-02	2.297E-02	NOT IDENT.
Y-88	-2.659E-03	3.550E-02	3.038E-02	1.811E-02	NOT IDENT.
Y-91	-6.556E+00	2.642E+01	2.202E+01	1.348E+01	NOT IDENT.
NB-94	2.351E-02	3.537E-02	3.157E-02	1.804E-02	NOT IDENT.
NB-95	5.187E-02	5.882E-02	4.680E-02	3.001E-02	NOT IDENT.
NB-95M	2.775E-02	1.585E-01	1.239E-01	8.088E-02	NOT IDENT.
ZR-95	2.827E-02	8.912E-02	7.540E-02	4.547E-02	NOT IDENT.
MO-99	-4.395E+01	9.173E+01	0.000E+00	4.680E+01	SHORT HLIF
TC-99M	-9.126E+25	1.100E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.987E-02	4.410E-02	3.514E-02	2.250E-02	FAIL ABUN
RH-106	-1.011E-01	3.319E-01	2.796E-01	1.694E-01	NOT IDENT.
RU-106	-1.011E-01	3.318E-01	2.796E-01	1.693E-01	NOT IDENT.
AG-108M	2.860E-02	3.050E-02	2.716E-02	1.556E-02	NOT IDENT.
AG-110M	-4.100E-02	3.969E-02	3.140E-02	2.025E-02	NOT IDENT.
SN-113	9.396E-03	4.891E-02	4.190E-02	2.495E-02	NOT IDENT.
CD-115	-6.172E+01	1.301E+02	0.000E+00	6.636E+01	SHORT HLIF
SN-117M	8.475E-03	8.553E-02	7.207E-02	4.364E-02	NOT IDENT.
TE-123M	1.003E-02	3.119E-02	2.652E-02	1.591E-02	NOT IDENT.
SB-124	4.112E-02	7.448E-02	6.819E-02	3.800E-02	NOT IDENT.
SB-125	4.171E-02	9.983E-02	8.612E-02	5.093E-02	FAIL ABUN
TE-125M	1.944E+00	1.031E+01	8.923E+00	5.263E+00	NOT IDENT.
I-126	-4.124E-01	3.821E-01	3.015E-01	1.950E-01	NOT IDENT.
SB-126	-1.631E-01	2.915E-01	2.021E-01	1.487E-01	NOT IDENT.
SB-127	-3.076E+00	5.786E+00	4.733E+00	2.952E+00	NOT IDENT.
I-131	1.151E-01	2.305E-01	2.021E-01	1.176E-01	NOT IDENT.
TE-132	-1.273E-01	4.100E+00	3.606E+00	2.092E+00	NOT IDENT.
BA-133	1.813E-03	4.825E-02	3.614E-02	2.462E-02	NOT IDENT.
I-133	6.050E+05	3.157E+06	0.000E+00	1.611E+06	SHORT HLIF
CS-134	9.085E-02	5.440E-02	5.074E-02	2.775E-02	NOT IDENT.
CS-135	2.194E-01	1.822E-01	1.492E-01	9.296E-02	NOT IDENT.
I-135	7.715E+23	2.847E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.607E-01	1.642E-01	1.280E-01	8.377E-02	NOT IDENT.
BA-137M	3.468E-02	4.071E-02	3.675E-02	2.077E-02	NOT IDENT.
CS-137	3.664E-02	4.301E-02	3.882E-02	2.194E-02	NOT IDENT.
CE-139	-1.045E-03	3.317E-02	2.770E-02	1.692E-02	NOT IDENT.
BA-140	-1.014E-01	3.896E-01	3.323E-01	1.988E-01	NOT IDENT.
LA-140	-7.815E-02	1.495E-01	1.026E-01	7.627E-02	FAIL ABUN
CE-141	-3.479E-02	7.857E-02	6.455E-02	4.008E-02	NOT IDENT.
CE-143	3.097E+04	1.169E+04	0.000E+00	5.965E+03	SHORT HLIF
CE-144	7.540E-02	2.265E-01	1.740E-01	1.156E-01	NOT IDENT.
PM-144	1.573E-04	3.413E-02	2.916E-02	1.741E-02	NOT IDENT.
PR-144	4.204E-02	2.567E+00	2.195E+00	1.310E+00	NOT IDENT.
PM-146	-3.904E-02	4.586E-02	3.591E-02	2.340E-02	NOT IDENT.
ND-147	7.373E-01	9.071E-01	8.297E-01	4.628E-01	FAIL ABUN
PM-149	-1.136E+03	1.115E+03	0.000E+00	5.691E+02	SHORT HLIF
EU-152	-6.024E-03	1.102E-01	8.222E-02	5.624E-02	FAIL ABUN
GD-153	-4.112E-02	8.954E-02	6.705E-02	4.568E-02	NOT IDENT.
EU-154	-4.804E-02	1.371E-01	1.121E-01	6.994E-02	NOT IDENT.
EU-155	8.211E-02	1.030E-01	9.112E-02	5.254E-02	FAIL ABUN
TB-160	6.379E-02	1.528E-01	1.328E-01	7.797E-02	FAIL ABUN
HO-166M	1.743E-02	6.043E-02	5.267E-02	3.083E-02	NOT IDENT.
TA-182	4.926E-02	2.288E-01	1.974E-01	1.167E-01	FAIL ABUN
IR-192	-2.002E-03	3.757E-02	3.224E-02	1.917E-02	FAIL ABUN
HG-203	-8.013E-04	4.582E-02	3.976E-02	2.338E-02	NOT IDENT.
BI-207	-2.783E-02	5.466E-02	4.485E-02	2.789E-02	FAIL ABUN
PB-210	1.001E+00	1.776E+00	1.624E+00	9.060E-01	NOT IDENT.
PB-211	-2.354E-01	7.405E-01	6.052E-01	3.778E-01	NOT IDENT.
BI-212	1.958E+00	9.435E-01	6.312E-01	4.814E-01	FAIL ABUN
RN-219	-1.699E-02	4.109E-01	3.463E-01	2.097E-01	FAIL ABUN
RA-223	2.204E-01	7.249E-01	5.585E-01	3.698E-01	FAIL ABUN
AC-227	4.334E-03	2.584E-01	2.260E-01	1.318E-01	FAIL ABUN
TH-227	4.334E-03	2.584E-01	2.260E-01	1.318E-01	FAIL ABUN
TH-229	-3.742E-02	5.237E-01	4.650E-01	2.672E-01	FAIL ABUN
PA-231	1.387E-01	1.471E+00	1.282E+00	7.506E-01	FAIL ABUN
TH-231	2.204E-01	7.249E-01	5.585E-01	3.698E-01	FAIL ABUN
PA-233	2.698E-02	6.297E-02	5.552E-02	3.213E-02	FAIL ABUN
PA-234	-2.056E-01	3.197E-01	2.467E-01	1.631E-01	NOT IDENT.
PA-234M	2.624E+00	5.020E+00	4.334E+00	2.561E+00	NOT IDENT.
NP-239	-3.642E-02	3.800E-01	3.237E-01	1.939E-01	NOT IDENT.
AM-241	2.269E-02	1.223E-01	9.797E-02	6.238E-02	NOT IDENT.
CM-247	-8.693E-03	3.762E-02	3.129E-02	1.919E-02	NOT IDENT.
CF-249	-2.968E-03	4.204E-02	3.547E-02	2.145E-02	NOT IDENT.

CF-251

-2.581E-02

1.299E-01

1.154E-01

6.627E-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	319.1936
49.72	355.1685
57.36	0.0000
59.54	427.6680
63.29	480.9400
63.29	480.9400
64.28	461.8441
67.75	507.0070
69.67	458.3381
70.83	525.3083
72.81	531.9831
72.87	532.0506
72.87	532.0506
74.82	502.4852
74.82	502.4852
74.82	502.4852
74.97	502.6376
77.11	504.7971
77.11	504.7971
77.11	504.7971
79.69	438.7983
79.80	438.8928
80.12	439.1653
80.19	439.2246
80.57	439.5454
81.00	439.9102
81.07	439.9695
81.07	439.9695
83.79	336.2945
83.79	336.2945
85.43	337.3254
86.48	337.9820
86.55	338.0255
86.79	338.1725
86.94	338.2677
87.57	338.6570
88.03	338.9411
88.47	339.2134
89.96	340.1257
91.11	340.8258
92.59	341.7180
92.59	341.7180
93.35	342.1741
94.67	327.3024
94.87	358.7472
94.87	358.7472
95.86	365.6375
97.43	350.8857
98.44	351.4880
99.53	344.2375
100.11	354.0554
103.18	330.4399
103.37	330.5431
105.31	331.5873
106.12	332.0205
109.28	333.6931
111.00	337.8117
111.76	310.8317
116.30	331.9213
117.23	299.9058
121.12	317.9789
121.78	307.3876
122.06	305.3329
123.07	275.2046
131.20	354.6367
133.52	299.2511
136.00	345.8635

136.47	336.0696
140.51	0.0000
140.51	0.0000
143.76	305.6348
144.24	312.5746
144.24	312.5746
145.44	341.2141
152.43	335.1820
153.25	315.0543
154.21	283.5470
154.21	283.5470
156.02	283.0440
158.56	301.1027
159.00	295.5358
162.66	342.8710
163.33	316.6623
165.86	307.2216
176.60	302.5909
177.52	298.5168
181.07	0.0000
184.41	302.9411
185.72	280.8698
193.51	277.8789
197.04	261.8781
205.31	285.1113
210.85	248.8726
215.65	225.7489
222.11	226.2539
227.38	252.3550
228.16	250.6903
228.18	250.6965
235.69	278.7332
235.96	277.3108
235.96	277.3108
238.63	251.2763
238.63	251.2763
240.99	251.8181
242.00	252.0500
244.70	181.8427
252.40	208.0594
252.80	207.1872
256.23	204.9620
256.23	204.9620
260.90	0.0000
264.66	168.2200
268.22	184.0664
269.46	179.4613
269.46	179.4613
271.23	179.7267
273.65	226.5078
276.40	168.5953
277.37	164.4966
277.60	169.0826
278.00	173.0047
279.20	209.9373
279.54	220.6419
280.46	224.6792
283.69	179.6337
284.31	173.8952
285.41	201.2735
285.90	0.0000
287.50	176.2883
293.27	0.0000
295.22	172.4712
295.96	172.5706
298.57	172.9224
299.98	173.1130
299.98	173.1130
300.09	173.1265
300.09	173.1265
300.13	173.1318
301.36	173.2957
302.85	148.2611
304.50	161.0833
304.50	161.0833
304.85	161.1256
308.46	140.5829
311.90	138.9639

316.51	153.3890
319.41	134.7549
320.08	152.7969
323.87	145.8133
323.87	145.8133
328.76	128.6445
333.37	157.3092
334.37	151.3664
334.37	151.3664
338.28	141.6705
338.28	141.6705
338.32	141.6748
338.32	141.6748
338.32	141.6748
340.48	123.2421
340.55	123.2495
344.28	139.8319
351.06	140.4933
351.93	144.0508
356.01	126.2191
364.49	120.5581
366.42	0.0000
383.85	128.3659
388.16	135.0016
388.63	142.3708
391.69	127.9645
400.66	117.0872
401.81	121.3943
402.40	123.5520
404.85	129.0274
410.95	130.5768
414.70	117.0445
423.72	150.8495
427.09	102.9141
427.87	120.1211
433.94	95.7970
453.88	128.4881
463.37	96.3373
468.07	96.5897
473.00	97.9549
476.78	102.5702
477.60	93.7897
487.02	104.2526
492.35	0.0000
497.08	86.9752
511.00	79.7515
514.00	57.0004
527.90	0.0000
529.87	0.0000
531.02	76.2624
537.26	85.6098
546.56	0.0000
563.25	79.3295
569.33	97.1404
569.50	97.1481
569.70	98.0836
583.19	95.9188
600.60	101.3924
602.73	93.9722
604.72	97.1929
609.32	85.7724
609.32	85.7724
610.33	85.8124
614.28	86.5955
618.01	79.9068
621.93	90.0529
621.93	90.0529
633.25	82.8858
635.95	74.3990
636.99	65.8448
645.85	80.4706
657.76	109.7723
661.66	90.6632
661.66	90.6632
664.57	0.0000
666.33	116.9381
666.50	101.4829
677.62	90.3049

685.70	89.6349
695.00	84.1125
696.49	74.3765
696.51	74.3765
697.00	74.3913
702.65	77.5072
706.68	90.4098
711.68	68.9285
720.70	98.8257
721.93	0.0000
722.78	84.0703
722.91	84.0745
723.31	77.4938
724.19	65.9749
727.33	87.1943
733.00	64.5493
735.93	83.5140
739.50	0.0000
747.24	77.8915
752.31	74.0416
753.82	75.0861
756.73	73.1657
763.94	93.8027
765.81	82.1352
766.42	87.1851
777.92	0.0000
778.90	65.6967
783.70	65.8157
785.37	61.8027
795.86	68.1467
801.95	88.6865
810.29	80.7763
810.76	86.9258
815.77	49.1777
818.51	51.2769
832.01	80.3804
834.85	80.4604
836.80	0.0000
846.77	67.3328
856.80	60.6390
860.56	60.3704
871.09	47.0094
873.19	50.1797
875.33	0.0000
879.36	51.3328
880.51	45.0650
883.24	57.6949
884.68	65.0697
889.28	48.3528
898.04	57.9836
911.20	60.3551
911.20	60.3551
911.20	60.3551
926.50	47.8894
937.49	58.7410
944.13	64.2173
946.00	64.2568
949.00	53.5986
962.29	75.3560
964.08	93.3508
966.15	72.2147
968.97	72.2785
968.97	72.2785
968.97	72.2785
983.53	52.0184
996.26	63.1033
1001.03	52.2996
1004.73	66.5400
1037.84	69.7780
1038.76	0.0000
1048.07	64.4657
1050.41	52.5283
1050.41	52.5283
1063.66	62.9116
1085.87	52.1423
1099.45	64.4966
1112.07	72.3654
1115.54	70.8278

1120.29	52.6549
1120.29	52.6549
1120.55	52.6572
1121.30	52.6686
1131.51	0.0000
1173.23	65.8274
1177.93	66.8669
1189.05	70.8986
1204.77	77.9282
1221.41	74.4058
1231.02	77.4967
1235.36	93.1016
1238.28	96.0835
1260.41	0.0000
1271.85	53.8385
1274.44	59.7515
1274.54	55.8334
1291.59	52.1374
1298.22	0.0000
1312.11	55.3688
1332.49	31.7982
1365.19	29.0437
1368.63	0.0000
1384.29	22.4208
1408.01	32.3724
1457.56	0.0000
1460.82	29.6938
1489.16	24.7305
1505.03	33.0898
1596.21	26.7126
1620.50	9.5380
1678.03	0.0000
1690.97	8.6003
1764.49	13.0874
1764.49	13.0874
1770.23	9.8262
1771.35	102.9639
1791.20	0.0000
1836.06	11.3705

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243005

Total Uranium Activity	5.1918E+00	ug/g
Total Uranium Counting Unc.	4.3082E+00	ug/g
Total Uranium Tpu	2.1980E-06	ug/g
Total Uranium Mda	2.6222E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280                      SAMPLE ID : G248243005
*  ANALYST       : MXR1                        DETECTOR  : GAM07
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00    COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:53:34.01    SAMPLE ALQT: 128.520 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.111E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.504E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.763E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.829E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:55:27.78

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243006.CNF;1
Sample date   : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:54:21
Sample ID    : G248243006 Sample quantity : 1.22330E+02 GRAM
Detector name : GAM11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID : 959280 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	63.45*	140	505	1.06	125.77	122	9	1.95E-02	30.8	
2	4	74.82*	515	388	0.96	148.53	143	13	7.16E-02	7.6	1.85E+00
3	4	77.11*	749	313	0.84	153.13	143	13	1.04E-01	5.1	
4	0	86.57	145	560	1.27	172.06	171	7	2.01E-02	28.0	
5	5	89.93	162	182	0.82	178.78	177	15	2.26E-02	13.0	1.53E+00
6	5	92.84*	354	428	1.33	184.61	177	15	4.91E-02	12.0	
7	0	129.09	113	323	1.02	257.15	253	8	1.57E-02	29.3	
8	0	185.91*	257	341	1.13	370.89	366	10	3.57E-02	15.5	
9	0	209.27	103	252	0.82	417.64	414	8	1.44E-02	28.4	
10	7	238.71*	1180	166	0.90	476.56	472	17	1.64E-01	3.4	1.57E+00
11	7	241.67	316	246	1.51	482.48	472	17	4.38E-02	11.5	
12	0	270.42	132	233	1.13	540.02	534	12	1.84E-02	24.7	
13	0	277.75	74	162	0.88	554.69	551	8	1.02E-02	32.1	
14	0	295.32*	425	185	0.92	589.86	585	10	5.91E-02	7.8	
15	0	299.77	111	132	1.47	598.76	595	9	1.55E-02	20.9	
16	0	328.15	82	183	0.94	655.56	650	11	1.14E-02	33.9	
17	0	338.45*	236	159	0.87	676.17	672	9	3.28E-02	12.0	
18	0	352.02*	789	181	1.15	703.34	697	13	1.10E-01	5.0	
19	0	462.85	59	94	1.07	925.14	922	9	8.19E-03	32.2	
20	0	510.95*	95	184	1.49	1021.40	1015	16	1.32E-02	36.9	
21	0	583.31*	364	109	1.48	1166.20	1159	15	5.06E-02	8.3	
22	0	609.57*	521	96	1.35	1218.76	1214	12	7.23E-02	5.9	
23	0	661.88	451	98	1.28	1323.42	1317	13	6.27E-02	6.5	
24	0	728.02*	95	73	1.15	1455.77	1451	12	1.33E-02	20.7	
25	0	768.70	61	64	1.01	1537.19	1532	11	8.51E-03	28.2	
26	0	795.62*	38	42	1.06	1591.04	1588	8	5.27E-03	34.3	
27	0	861.42	69	78	1.93	1722.70	1717	16	9.56E-03	30.9	
28	0	911.71*	219	63	1.43	1823.34	1818	12	3.04E-02	10.3	
29	0	935.34	44	57	1.21	1870.63	1865	13	6.05E-03	39.2	
30	2	965.21*	51	27	1.91	1930.38	1926	19	7.08E-03	24.8	5.59E-01
31	2	969.40	150	33	1.76	1938.77	1926	19	2.08E-02	11.2	
32	0	1120.84	147	44	1.58	2241.76	2234	16	2.04E-02	13.1	
33	0	1409.06	21	20	0.99	2818.39	2812	13	2.85E-03	49.6	
34	0	1461.63*	1030	21	1.93	2923.55	2915	17	1.43E-01	3.3	
35	0	1730.67	18	6	1.44	3461.71	3456	11	2.43E-03	35.3	
36	0	1765.54*	77	3	1.83	3531.47	3524	14	1.08E-02	13.0	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:55:31

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243006.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:54:21
 Sample ID : G248243006 Sample quantity : 122.33 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA11 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 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

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	*	2.421E+01	2.636E+00	4.718E-01	4.080E-02	51.320
CD-109	+	88.03	*	1.842E+00	1.047E+00	1.193E+00	1.131E-01	1.544
SN-126	+	64.28		1.043E+00	6.605E-01	5.418E-01	7.860E-02	1.924
	+	86.94		7.397E-01	5.162E-01	4.617E-01	1.917E-01	1.602
	+	87.57	*	1.779E-01	1.012E-01	1.156E-01	1.091E-02	1.539
BA-137M	+	661.66	*	6.420E-01	1.034E-01	4.915E-02	4.651E-03	13.060
CS-137	+	661.66	*	6.782E-01	1.093E-01	5.193E-02	4.921E-03	13.060
HG-203		70.83		-2.031E-01	1.266E+00	1.823E+00	2.849E-01	-0.111
		72.87		2.868E-01	7.435E-01	1.098E+00	1.666E-01	0.261
	+	279.20	*	8.367E-02	5.522E-02	5.776E-02	9.014E-03	1.449
TL-208	+	277.37		7.344E-01	4.890E-01	5.600E-01	1.000E-01	1.311
	+	583.19	*	4.944E-01	9.755E-02	5.048E-02	5.446E-03	9.795
	+	860.56		8.774E-01	5.493E-01	3.720E-01	3.874E-02	2.358
BI-211		72.87		1.025E+00	2.654E+00	3.925E+00	3.118E-01	0.261
	+	351.06	*	4.778E+00	7.920E-01	2.884E-01	3.805E-02	16.567
PB-212	+	74.82		2.657E+00	5.241E-01	4.302E-01	5.447E-02	6.178
	+	77.11		2.233E+00	2.953E-01	2.488E-01	2.067E-02	8.975
	+	238.63	*	1.595E+00	2.486E-01	8.710E-02	1.223E-02	18.307
	+	300.09		2.342E+00	1.050E+00	1.080E+00	1.738E-01	2.169
BI-214	+	609.32	*	1.367E+00	2.231E-01	1.043E-01	1.184E-02	13.101
	+	1120.29		1.971E+00	5.575E-01	3.994E-01	4.333E-02	4.934
	+	1764.49		1.452E+00	3.973E-01	2.259E-01	1.861E-02	6.428
PB-214	+	74.82		4.710E+00	8.903E-01	7.624E-01	8.646E-02	6.178
	+	77.11		3.936E+00	6.136E-01	4.386E-01	5.135E-02	8.975
	+	242.00		2.587E+00	7.046E-01	5.301E-01	7.761E-02	4.880
	+	295.22		1.586E+00	3.594E-01	1.945E-01	3.192E-02	8.154
	+	351.93	*	1.734E+00	3.030E-01	1.049E-01	1.496E-02	16.530
RA-224	+	240.99	*	4.574E+00	1.217E+00	9.340E-01	1.251E-01	4.897
RA-226	+	609.32	*	1.367E+00	2.231E-01	1.043E-01	1.184E-02	13.101
	+	1120.29		1.971E+00	5.575E-01	3.994E-01	4.333E-02	4.934
	+	1764.49		1.452E+00	3.973E-01	2.259E-01	1.861E-02	6.428
AC-228	+	338.32		1.591E+00	7.830E-01	3.482E-01	1.497E-01	4.568
	+	911.20	*	1.422E+00	3.419E-01	2.135E-01	2.668E-02	6.661
	+	968.97		1.676E+00	5.597E-01	3.577E-01	8.838E-02	4.684

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.591E+00	7.830E-01	3.482E-01	1.497E-01	4.568
	+	911.20	*	1.422E+00	3.419E-01	2.135E-01	2.668E-02	6.661
	+	968.97		1.676E+00	5.597E-01	3.577E-01	8.838E-02	4.684
TH-228	+	74.82		2.657E+00	4.570E-01	4.302E-01	3.523E-02	6.178
	+	77.11		2.233E+00	2.953E-01	2.488E-01	2.067E-02	8.975
	+	238.63	*	1.595E+00	2.486E-01	8.710E-02	1.223E-02	18.307
	+	300.09		2.342E+00	1.760E+00	1.080E+00	6.739E-01	2.169
TH-229	+	85.43		4.479E-01	2.547E-01	2.755E-01	2.529E-02	1.626
	+	88.47		2.996E-01	8.294E-02	1.498E-01	1.415E-02	2.000
		193.51	*	8.634E-02	4.614E-01	7.703E-01	8.454E-02	0.112
		210.85		1.135E+00	8.789E-01	1.385E+00	1.639E-01	0.819
TH-232	+	338.32		1.591E+00	4.375E-01	3.482E-01	4.696E-02	4.568
	+	911.20	*	1.422E+00	3.419E-01	2.135E-01	2.668E-02	6.661
	+	968.97		1.676E+00	5.597E-01	3.577E-01	8.838E-02	4.684
TH-234	+	63.29	*	2.705E+00	1.736E+00	1.453E+00	2.585E-01	1.861
	+	92.59		3.635E+00	1.193E+00	7.717E-01	1.720E-01	4.710
U-235	+	89.96		2.072E+00	7.466E-01	1.149E+00	2.859E-01	1.803
	+	93.35		2.746E+00	9.198E-01	5.809E-01	1.352E-01	4.726
		143.76	*	-1.011E-01	1.843E-01	2.959E-01	5.069E-02	-0.342
		163.33		2.970E-01	3.732E-01	6.396E-01	1.180E-01	0.464
	+	185.72		2.238E-01	7.326E-02	6.005E-02	6.369E-03	3.726
		205.31		-1.259E-01	5.046E-01	7.225E-01	1.424E-01	-0.174
NP-237	+	86.48	*	5.309E-01	3.218E-01	3.464E-01	7.947E-02	1.533
		95.86		-1.796E-01	8.102E-01	1.137E+00	2.741E-01	-0.158
U-238	+	63.29	*	2.705E+00	1.736E+00	1.453E+00	2.585E-01	1.861
	+	92.59		3.635E+00	9.359E-01	7.717E-01	7.056E-02	4.710
ANH-511	+	511.00	*	9.868E-02	7.356E-02	4.017E-02	4.295E-03	2.457

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.588E-01	3.603E-01	5.699E-01	6.449E-02	-0.454
NA-22		1274.54	*	9.820E-03	3.941E-02	6.597E-02	5.418E-03	0.149
NA-24		1368.63	*	2.729E+03	3.941E-02	Half-Life too short		
SC-46		889.28	*	-4.301E-02	3.777E-02	5.551E-02	5.468E-03	-0.775
	+	1120.55		3.557E-01	9.775E-02	1.454E-01	1.240E-02	2.446
V-48		944.13		-3.570E-01	1.062E+00	1.709E+00	1.653E-01	-0.209
		983.53	*	4.388E-02	9.073E-02	1.581E-01	1.499E-02	0.278
		1312.11		-3.799E-02	9.928E-02	1.524E-01	1.257E-02	-0.249
CR-51		320.08	*	-1.423E-01	4.319E-01	6.742E-01	9.781E-02	-0.211
MN-54		834.85	*	4.240E-02	3.850E-02	6.982E-02	6.875E-03	0.607
CO-56		846.77	*	-3.049E-03	3.900E-02	6.523E-02	6.427E-03	-0.047
		1037.84		1.460E-01	3.174E-01	5.488E-01	5.261E-02	0.266
		1238.28		1.289E-01	9.680E-02	1.740E-01	1.465E-02	0.741
		1771.35		1.708E-02	1.981E-01	2.904E-01	2.389E-02	0.059
CO-57		122.06	*	1.984E-02	2.042E-02	3.603E-02	3.048E-03	0.551
		136.47		-8.443E-02	1.803E-01	2.980E-01	2.797E-02	-0.283
CO-58		810.76	*	-2.301E-02	4.013E-02	6.003E-02	5.910E-03	-0.383

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59	1099.45	*		4.455E-02	9.877E-02	1.698E-01	1.596E-02	0.262
	1291.59			-2.681E-02	1.209E-01	1.889E-01	1.783E-02	-0.142
CO-60	1173.23			-1.585E-03	4.325E-02	7.061E-02	5.673E-03	-0.022
	1332.49	*		-2.854E-03	3.566E-02	5.710E-02	4.718E-03	-0.050
ZN-65	1115.54	*		-5.317E-02	9.727E-02	1.272E-01	1.091E-02	-0.418
SE-75	121.12			2.245E-02	1.076E-01	1.845E-01	2.022E-02	0.122
	136.00			-5.566E-03	3.554E-02	5.962E-02	5.250E-03	-0.093
	264.66	*		7.762E-03	4.636E-02	6.795E-02	9.988E-03	0.114
	279.54			1.258E-01	1.150E-01	1.779E-01	2.786E-02	0.707
	400.66			8.004E-03	2.430E-01	4.116E-01	5.255E-02	0.019
SR-85	514.00	*		7.904E-02	4.428E-02	7.391E-02	7.895E-03	1.069
Y-88	898.04			-3.101E-03	3.787E-02	6.297E-02	6.222E-03	-0.049
	1836.06	*		-2.399E-02	3.429E-02	4.780E-02	3.880E-03	-0.502
Y-91	1204.77	*		-4.559E+00	2.080E+01	3.320E+01	2.687E+00	-0.137
NB-94	702.65	*		2.322E-02	3.088E-02	5.324E-02	5.113E-03	0.436
	871.09			5.947E-03	3.475E-02	5.781E-02	5.697E-03	0.103
NB-95	765.81	*		4.551E-02	4.332E-02	6.936E-02	6.771E-03	0.656
NB-95M	235.69	*		7.603E-02	1.330E-01	2.011E-01	2.810E-02	0.378
ZR-95	724.19			4.175E-02	9.324E-02	1.398E-01	1.442E-02	0.299
	756.73	*		2.253E-02	7.669E-02	1.267E-01	1.337E-02	0.178
MO-99	140.51			3.704E-05	7.669E-02	Half-Life	too short	
	181.07			3.197E-05	7.669E-02	Half-Life	too short	
	366.42			-2.454E-05	7.669E-02	Half-Life	too short	
	739.50	*		-1.890E-05	7.669E-02	Half-Life	too short	
	777.92			-2.261E-05	7.669E-02	Half-Life	too short	
TC-99M	140.51	*		2.247E+19	7.669E-02	Half-Life	too short	
RU-103	497.08	*		3.322E-03	4.117E-02	6.894E-02	1.059E-02	0.048
	610.33			1.620E+01	3.366E+00	3.531E+00	6.051E-01	4.588
RH-106	621.93	*		1.942E-01	2.978E-01	5.121E-01	7.239E-02	0.379
	1050.41			-1.591E-02	2.332E+00	3.855E+00	3.499E-01	-0.004
RU-106	621.93	*		1.942E-01	2.972E-01	5.121E-01	5.080E-02	0.379
	1050.41			-1.591E-02	2.332E+00	3.855E+00	3.499E-01	-0.004
AG-108M	433.94	*		3.392E-03	2.636E-02	4.469E-02	4.918E-03	0.076
	614.28			-1.573E-02	3.603E-02	4.882E-02	5.000E-03	-0.322
	722.91			7.370E-03	3.642E-02	5.282E-02	5.235E-03	0.140
AG-110M	657.76	*		1.404E-02	3.741E-02	5.575E-02	5.433E-03	0.252
	677.62			-1.818E-01	2.855E-01	4.331E-01	4.221E-02	-0.420
	706.68			-1.134E-01	2.125E-01	3.268E-01	3.215E-02	-0.347
	763.94			4.675E-02	1.613E-01	2.356E-01	2.348E-02	0.198
	884.68			1.165E-02	4.743E-02	8.138E-02	8.215E-03	0.143
	937.49			1.171E-01	1.127E-01	1.865E-01	1.861E-02	0.628
	1384.29			-6.397E-02	1.631E-01	2.487E-01	2.131E-02	-0.257
	1505.03			-1.550E-01	2.125E-01	3.066E-01	2.580E-02	-0.505
SN-113	391.69	*		9.906E-04	3.999E-02	6.781E-02	7.376E-03	0.015
CD-115	260.90			-7.629E-04	3.999E-02	Half-Life	too short	
	492.35			-3.512E-04	3.999E-02	Half-Life	too short	
	527.90	*		-3.115E-05	3.999E-02	Half-Life	too short	
SN-117M	156.02			-5.101E+00	2.984E+00	4.550E+00	4.259E-01	-1.121
	158.56	*		3.729E-02	7.004E-02	1.183E-01	1.118E-02	0.315

---- 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	*	1.504E-02	2.600E-02	4.399E-02	4.186E-03	0.342
SB-124		602.73		-1.839E-03	3.920E-02	6.299E-02	6.367E-03	-0.029
		645.85		1.889E-01	4.380E-01	7.446E-01	7.521E-02	0.254
		722.78		6.805E-02	3.993E-01	5.767E-01	5.674E-02	0.118
		1690.97	*	-4.858E-02	6.549E-02	8.834E-02	7.696E-03	-0.550
SB-125		427.87	*	3.408E-03	8.251E-02	1.392E-01	1.518E-02	0.024
	+	463.37		5.463E-01	3.571E-01	5.076E-01	5.745E-02	1.076
		600.60		-1.282E-01	1.622E-01	2.467E-01	2.634E-02	-0.520
		635.95		-2.211E-01	2.405E-01	3.546E-01	3.685E-02	-0.624
TE-125M		109.28	*	-5.866E+00	8.711E+00	1.444E+01	1.507E+00	-0.406
I-126		388.63		1.074E-01	2.241E-01	3.905E-01	4.236E-02	0.275
		666.33	*	-1.039E-01	3.723E-01	5.114E-01	4.848E-02	-0.203
		753.82		1.458E+00	2.668E+00	4.506E+00	4.387E-01	0.324
SB-126		414.70		8.648E-02	1.046E-01	1.851E-01	1.988E-02	0.467
		666.50		-4.113E-02	1.300E-01	1.777E-01	1.684E-02	-0.232
		695.00		-5.366E-02	1.151E-01	1.767E-01	1.692E-02	-0.304
		697.00		3.217E-01	3.716E-01	6.423E-01	6.157E-02	0.501
		720.70	*	-1.660E-01	2.033E-01	2.999E-01	2.896E-02	-0.553
		856.80		-2.345E-01	6.786E-01	9.428E-01	9.291E-02	-0.249
SB-127		252.40		-6.943E+00	1.605E+01	2.494E+01	1.090E+01	-0.278
		473.00		1.209E+00	6.578E+00	1.112E+01	1.828E+00	0.109
		685.70	*	-4.152E+00	5.338E+00	7.980E+00	1.161E+00	-0.520
		783.70		2.822E+00	1.455E+01	2.373E+01	3.674E+00	0.119
I-131		80.19		8.413E-01	7.439E+00	1.080E+01	9.431E-01	0.078
		284.31		1.259E+00	2.731E+00	4.519E+00	7.072E-01	0.279
		364.49	*	1.888E-01	2.035E-01	3.437E-01	4.330E-02	0.549
		636.99		-2.339E+00	2.807E+00	4.196E+00	4.304E-01	-0.557
TE-132		49.72		1.887E+01	6.398E+01	1.041E+02	1.360E+01	0.181
		111.76		7.998E+01	1.466E+02	2.550E+02	3.421E+01	0.314
		116.30		1.376E+02	1.259E+02	2.219E+02	2.971E+01	0.620
		228.16	*	1.467E+00	3.439E+00	5.744E+00	1.147E+00	0.255
BA-133		81.00		-4.504E-02	7.441E-02	1.128E-01	1.754E-02	-0.399
	+	276.40		6.798E-01	4.548E-01	5.850E-01	1.109E-01	1.162
		302.85		-1.444E-01	1.466E-01	1.874E-01	3.333E-02	-0.770
		356.01	*	-6.496E-03	4.212E-02	5.837E-02	9.295E-03	-0.111
		383.85		-9.841E-02	2.710E-01	4.485E-01	6.407E-02	-0.219
I-133		529.87	*	1.607E-01	2.710E-01	Half-Life	too short	
		875.33		-2.597E-01	2.710E-01	Half-Life	too short	
		1298.22		6.842E+01	2.710E-01	Half-Life	too short	
CS-134		563.25		8.296E-02	3.429E-01	5.757E-01	6.040E-02	0.144
		569.33		6.777E-02	1.842E-01	3.094E-01	3.242E-02	0.219
		604.72		3.068E-02	3.243E-02	5.157E-02	5.213E-03	0.595
	+	795.86	*	7.498E-02	5.202E-02	8.702E-02	8.584E-03	0.862
		801.95		2.554E-01	3.977E-01	6.555E-01	6.463E-02	0.390
		1365.19		-3.151E-01	9.915E-01	1.511E+00	1.317E-01	-0.209
CS-135		268.22	*	3.747E-02	1.563E-01	2.299E-01	3.607E-02	0.163
I-135		546.56		2.134E+18	1.563E-01	Half-Life	too short	
		836.80		1.025E+19	1.563E-01	Half-Life	too short	
		1038.76		3.873E+18	1.563E-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
	1131.51			5.720E+17	1.563E-01	Half-Life	too short	
	1260.41	*		-3.617E+17	1.563E-01	Half-Life	too short	
	1457.56			3.094E+19	1.563E-01	Half-Life	too short	
	1678.03			3.430E+18	1.563E-01	Half-Life	too short	
	1791.20			-3.186E+18	1.563E-01	Half-Life	too short	
CS-136	153.25			1.885E+00	1.166E+00	2.054E+00	2.223E-01	0.917
	176.60			2.859E-03	6.626E-01	1.103E+00	1.208E-01	0.003
	273.65			-1.873E-01	9.705E-01	1.073E+00	1.674E-01	-0.175
	340.55			2.369E-01	2.387E-01	3.627E-01	4.935E-02	0.653
	818.51			-2.427E-02	1.037E-01	1.613E-01	1.589E-02	-0.150
	1048.07	*		-2.897E-02	1.495E-01	2.423E-01	2.289E-02	-0.120
	1235.36			-9.892E-01	8.891E-01	1.293E+00	1.478E-01	-0.765
CE-139	165.86	*		-2.204E-02	2.643E-02	4.224E-02	4.105E-03	-0.522
BA-140	162.66			-2.776E-02	1.055E+00	1.762E+00	1.784E-01	-0.016
	304.85			4.864E-01	1.955E+00	3.033E+00	9.592E-01	0.160
	423.72			7.161E-01	2.849E+00	4.855E+00	1.628E+00	0.147
	537.26	*		-2.745E-02	3.794E-01	6.239E-01	2.150E-01	-0.044
LA-140	328.76		+	1.045E+00	7.251E-01	7.978E-01	1.133E-01	1.310
	487.02			-1.305E-03	1.886E-01	3.142E-01	3.516E-02	-0.004
	815.77			-1.534E-01	4.337E-01	6.631E-01	7.115E-02	-0.231
	1596.21	*		3.317E-02	1.213E-01	2.105E-01	1.770E-02	0.158
CE-141	145.44	*		8.702E-02	6.417E-02	1.132E-01	1.037E-02	0.769
CE-143	57.36			1.832E-02	6.417E-02	Half-Life	too short	
	293.27	*		1.640E-02	6.417E-02	Half-Life	too short	
	664.57			2.064E-01	6.417E-02	Half-Life	too short	
	721.93			-3.851E-02	6.417E-02	Half-Life	too short	
CE-144	80.12			1.609E-01	2.081E+00	3.014E+00	2.593E-01	0.053
	133.52	*		-8.854E-02	1.831E-01	2.883E-01	4.417E-02	-0.307
PM-144	476.78			3.776E-03	6.558E-02	1.099E-01	1.251E-02	0.034
	618.01			-4.678E-03	3.141E-02	5.075E-02	5.162E-03	-0.092
	696.49	*		1.889E-02	3.223E-02	5.443E-02	5.220E-03	0.347
PR-144	696.51	*		1.411E+00	2.421E+00	4.088E+00	3.918E-01	0.345
	1489.16			-2.702E+00	9.355E+00	1.481E+01	1.245E+00	-0.183
PM-146	453.88	*		1.865E-02	3.755E-02	6.502E-02	8.079E-03	0.287
	633.25			4.734E-01	1.238E+00	2.073E+00	7.976E-01	0.228
	735.93			-5.763E-03	1.408E-01	2.261E-01	6.415E-02	-0.025
	747.24			3.906E-02	9.023E-02	1.512E-01	2.308E-02	0.258
ND-147	91.11		+	1.101E+00	3.072E-01	6.566E-01	6.511E-02	1.676
	319.41			6.687E-01	5.173E+00	8.345E+00	1.190E+00	0.080
	531.02	*		5.489E-02	8.015E-01	1.335E+00	2.160E-01	0.041
PM-149	285.90	*		-7.573E-06	8.015E-01	Half-Life	too short	
EU-152	121.78			4.346E-02	5.745E-02	1.006E-01	9.813E-03	0.432
	244.70			9.368E-02	3.165E-01	4.707E-01	6.397E-02	0.199
	344.28	*		5.544E-02	8.711E-02	1.446E-01	1.959E-02	0.383
	778.90			-8.143E-02	2.383E-01	3.682E-01	3.602E-02	-0.221
	964.08		+	6.139E-01	3.106E-01	5.325E-01	5.103E-02	1.153
	1085.87			1.382E-01	3.538E-01	6.071E-01	5.351E-02	0.228
	1112.07			1.560E-01	3.138E-01	5.275E-01	4.537E-02	0.296
	1408.01		+	2.375E-01	2.364E-01	3.295E-01	2.754E-02	0.721

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		69.67		-2.313E-01	1.532E+00	2.209E+00	1.701E-01	-0.105
		97.43	*	-3.974E-02	8.322E-02	1.143E-01	1.015E-02	-0.348
		103.18		-1.167E-01	8.847E-02	1.422E-01	1.234E-02	-0.820
EU-154		123.07		-8.659E-05	4.133E-02	7.016E-02	7.883E-03	-0.001
		723.31		3.513E-02	1.681E-01	2.440E-01	2.550E-02	0.144
		873.19		3.468E-01	2.666E-01	4.927E-01	6.316E-02	0.704
		996.26		-6.330E-02	3.311E-01	5.394E-01	9.642E-02	-0.117
		1004.73		-7.875E-02	2.137E-01	3.423E-01	4.176E-02	-0.230
		1274.44	*	2.771E-02	1.112E-01	1.862E-01	2.060E-02	0.149
EU-155	+	86.55		2.164E-01	1.231E-01	1.625E-01	1.526E-02	1.332
		105.31	*	1.087E-01	8.915E-02	1.586E-01	1.383E-02	0.685
TB-160	+	86.79		6.171E-01	3.509E-01	4.679E-01	4.369E-02	1.319
		197.04		-3.663E-01	5.225E-01	8.164E-01	9.098E-02	-0.449
		215.65		5.607E-01	6.986E-01	1.191E+00	1.437E-01	0.471
	+	298.57		3.555E-01	1.579E-01	1.969E-01	2.946E-02	1.806
		879.36	*	-8.089E-02	1.379E-01	2.180E-01	2.148E-02	-0.371
		962.29		5.286E-02	5.481E-01	8.222E-01	7.886E-02	0.064
	+	966.15		4.618E-01	2.336E-01	4.428E-01	4.239E-02	1.043
		1177.93		-4.263E-01	3.842E-01	5.556E-01	4.469E-02	-0.767
		1271.85		-2.589E-01	7.165E-01	1.115E+00	9.142E-02	-0.232
		80.57		3.215E-02	2.083E-01	3.287E-01	2.842E-02	0.098
HO-166M		184.41		2.933E-02	3.727E-02	5.923E-02	6.245E-03	0.495
		280.46		6.744E-02	8.339E-02	1.273E-01	1.967E-02	0.530
		410.95		4.717E-02	2.343E-01	4.001E-01	4.293E-02	0.118
		711.68	*	-4.337E-02	5.791E-02	8.665E-02	8.345E-03	-0.501
		752.31		-4.062E-02	2.611E-01	4.136E-01	4.026E-02	-0.098
		810.29		-9.209E-03	5.508E-02	8.646E-02	8.496E-03	-0.107
		67.75		7.105E-02	9.560E-02	1.447E-01	1.095E-02	0.491
TA-182		100.11		7.125E-02	1.443E-01	2.522E-01	2.213E-02	0.283
		152.43		1.522E-01	3.222E-01	5.509E-01	5.090E-02	0.276
		222.11		-3.998E-03	3.209E-01	5.260E-01	6.524E-02	-0.008
	+	1121.30		9.684E-01	2.661E-01	3.988E-01	3.398E-02	2.428
		1189.05		2.021E-02	3.344E-01	5.503E-01	4.438E-02	0.037
		1221.41	*	-1.428E-01	2.014E-01	3.036E-01	2.466E-02	-0.470
		1231.02		2.676E-01	4.815E-01	8.245E-01	6.711E-02	0.325
IR-192	+	295.96		1.262E+00	2.743E-01	3.221E-01	4.856E-02	3.920
		308.46		-8.128E-03	9.382E-02	1.495E-01	2.194E-02	-0.054
		316.51	*	4.213E-03	3.558E-02	5.739E-02	8.250E-03	0.073
BI-207		468.07		-2.979E-02	7.965E-02	1.129E-01	1.275E-02	-0.264
		72.81		4.821E-02	1.525E-01	2.248E-01	1.785E-02	0.214
	+	74.97		7.662E-01	1.315E-01	1.979E-01	1.606E-02	3.872
		569.70		1.671E-02	2.839E-02	4.846E-02	5.029E-03	0.345
		1063.66	*	3.703E-03	4.456E-02	7.432E-02	6.676E-03	0.050
		1770.23		5.785E-02	3.693E-01	5.545E-01	4.563E-02	0.104
PB-210		46.54	*	8.061E-01	2.175E+00	3.565E+00	3.289E-01	0.226
PB-211		404.85	*	-3.147E-01	6.627E-01	1.055E+00	5.147E-01	-0.298
		427.09		-4.646E-01	1.423E+00	2.315E+00	1.081E+00	-0.201
		832.01		-1.178E+00	1.194E+00	1.440E+00	7.501E-01	-0.818
BI-212	+	727.33	*	1.977E+00	8.604E-01	1.152E+00	1.522E-01	1.716

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	785.37		3.457E-01	3.350E+00	5.288E+00	5.179E-01	0.065
		1620.50		7.640E-01	2.083E+00	3.673E+00	3.084E-01	0.208
		271.23		7.890E-01	4.096E-01	4.349E-01	6.972E-02	1.814
		401.81	*	3.010E-01	3.677E-01	6.477E-01	1.047E-01	0.465
RA-223		81.07		-1.006E-01	1.679E-01	2.553E-01	2.221E-02	-0.394
		83.79		8.903E-02	1.166E-01	1.740E-01	1.564E-02	0.512
		94.87		1.771E-01	4.053E-01	5.932E-01	5.345E-02	0.299
		144.24		5.854E-02	6.142E-01	1.018E+00	1.012E-01	0.058
	+	154.21		5.402E-01	3.492E-01	6.155E-01	6.197E-02	0.878
		269.46		6.131E-01	3.166E-01	3.354E-01	5.045E-02	1.828
		323.87	*	1.259E-01	6.658E-01	9.619E-01	1.982E-01	0.131
		338.28		6.313E+00	1.816E+00	2.383E+00	3.793E-01	2.649
AC-227	+	79.69		-4.185E-01	1.039E+00	1.461E+00	2.513E-01	-0.286
		235.96		3.203E-02	1.508E-01	2.231E-01	3.194E-02	0.144
		256.23	*	-6.383E-02	2.385E-01	3.811E-01	6.296E-02	-0.168
		299.98		2.576E+00	1.169E+00	1.577E+00	2.775E-01	1.634
	+	304.50		4.467E-01	1.636E+00	2.391E+00	4.883E-01	0.187
		334.37		-1.242E-01	1.777E+00	2.502E+00	4.715E-01	-0.050
		79.80		-5.137E-01	1.373E+00	1.931E+00	4.201E-01	-0.266
		235.96		3.203E-02	1.508E-01	2.231E-01	3.101E-02	0.144
TH-227	+	256.23	*	-6.383E-02	2.385E-01	3.811E-01	6.741E-02	-0.168
		299.98		2.576E+00	1.169E+00	1.577E+00	2.775E-01	1.634
		304.50		4.467E-01	1.636E+00	2.391E+00	4.883E-01	0.187
		334.37		-1.242E-01	1.777E+00	2.502E+00	4.715E-01	-0.050
PA-231	+	283.69	*	-2.193E-01	1.383E+00	2.207E+00	4.273E-01	-0.099
		301.36		7.498E-01	5.998E-01	9.232E-01	1.585E-01	0.812
TH-231		81.07		-1.006E-01	1.679E-01	2.553E-01	2.221E-02	-0.394
		83.79		8.903E-02	1.166E-01	1.740E-01	1.564E-02	0.512
		94.87		1.771E-01	4.053E-01	5.932E-01	5.345E-02	0.299
		144.24		5.854E-02	6.142E-01	1.018E+00	1.012E-01	0.058
	+	154.21		5.402E-01	3.492E-01	6.155E-01	6.197E-02	0.878
		269.46		6.131E-01	3.166E-01	3.354E-01	5.045E-02	1.828
		323.87	*	1.259E-01	6.658E-01	9.619E-01	1.982E-01	0.131
		338.28		6.313E+00	1.816E+00	2.383E+00	3.793E-01	2.649
PA-233	+	300.13		1.166E+00	5.366E-01	7.074E-01	1.357E-01	1.648
		311.90	*	-9.461E-03	5.669E-02	8.968E-02	1.316E-02	-0.106
PA-234		340.48		7.914E-01	7.053E-01	1.046E+00	2.737E-01	0.756
		94.67		1.606E-01	1.518E-01	2.280E-01	2.892E-02	0.704
		98.44		4.881E-02	8.399E-02	1.262E-01	7.042E-02	0.387
		111.00		-2.657E-02	1.476E-01	2.500E-01	3.004E-02	-0.106
	+	131.20		3.431E-02	9.820E-02	1.524E-01	1.314E-02	0.225
		569.50		1.276E-01	2.500E-01	4.246E-01	4.407E-02	0.301
		733.00		-1.063E-01	4.258E-01	5.794E-01	1.311E-01	-0.184
		880.51		7.399E-02	2.543E-01	4.386E-01	4.322E-02	0.169
	+	883.24		7.503E-03	2.728E-01	4.590E-01	3.093E-01	0.016
		926.50		-2.114E-02	1.700E-01	2.808E-01	7.212E-02	-0.075
		946.00	*	9.774E-02	2.580E-01	4.463E-01	8.599E-02	0.219
		949.00		1.830E-01	3.971E-01	6.921E-01	6.680E-02	0.264
PA-234M		766.42		9.770E+00	1.264E+01	1.806E+01	9.199E+00	0.541

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		3.784E+00	4.465E+00	7.953E+00	8.460E-01	0.476
	99.53			1.080E-01	1.309E-01	2.286E-01	2.011E-02	0.472
	103.37			-9.153E-02	7.915E-02	1.284E-01	1.113E-02	-0.713
	106.12			9.235E-02	7.172E-02	1.277E-01	1.099E-02	0.723
	117.23	*		-1.543E-01	3.177E-01	5.289E-01	4.475E-02	-0.292
	228.18			7.108E-02	1.868E-01	3.119E-01	3.967E-02	0.228
AM-241	+	277.60		3.357E-01	2.214E-01	2.961E-01	4.557E-02	1.134
CM-247	+	59.54	*	1.577E-02	1.186E-01	1.753E-01	1.378E-02	0.090
CF-249	278.00			1.426E+00	9.404E-01	1.277E+00	1.969E-01	1.116
	287.50			2.401E-01	1.145E+00	1.868E+00	2.854E-01	0.129
	402.40	*		3.445E-02	3.457E-02	6.161E-02	6.594E-03	0.559
	252.80			1.271E-01	8.381E-01	1.375E+00	1.929E-01	0.092
CF-251	333.37			-1.129E-01	1.923E-01	2.567E-01	3.517E-02	-0.440
	388.16	*		1.682E-02	3.565E-02	6.209E-02	6.753E-03	0.271
	177.52	*		-7.962E-02	1.129E-01	1.810E-01	1.851E-02	-0.440
	227.38			3.903E-02	3.024E-01	4.987E-01	6.322E-02	0.078
	285.41			6.169E-01	2.056E+00	3.373E+00	5.171E-01	0.183

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]G248243006      *
* Acquisition date   : 19-MAR-2010 10:54:21 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 02:00:01.69 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248243006 Analyst initials: MXR1                  *
* Batch Number      : 959280 Sample Quantity : 1.2233E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 18-NOV-2009 15:33:22 MS Isotope :                  *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.421E+01	2.583E+00	4.710E-01	0.000E+00
CD-109	1.842E+00	1.026E+00	1.234E+00	0.000E+00
SN-126	1.779E-01	9.916E-02	1.196E-01	0.000E+00
BA-137M	6.420E-01	1.014E-01	4.958E-02	0.000E+00
CS-137	6.782E-01	1.071E-01	5.238E-02	0.000E+00
HG-203	8.367E-02	5.412E-02	5.890E-02	0.000E+00
TL-208	4.944E-01	9.560E-02	5.100E-02	0.000E+00
BI-211	4.778E+00	7.762E-01	2.933E-01	0.000E+00
PB-212	1.595E+00	2.437E-01	8.901E-02	0.000E+00
BI-214	1.367E+00	2.187E-01	1.054E-01	0.000E+00
PB-214	1.734E+00	2.969E-01	1.067E-01	0.000E+00
RA-224	4.574E+00	1.193E+00	9.542E-01	0.000E+00
RA-226	1.367E+00	2.187E-01	1.054E-01	0.000E+00
AC-228	1.422E+00	3.351E-01	2.145E-01	0.000E+00
RA-228	1.422E+00	3.351E-01	2.145E-01	0.000E+00
TH-228	1.595E+00	2.437E-01	8.901E-02	0.000E+00
TH-229	8.634E-02	4.522E-01	7.892E-01	0.000E+00
TH-232	1.422E+00	3.351E-01	2.145E-01	0.000E+00
TH-234	2.705E+00	1.702E+00	1.510E+00	0.000E+00
U-235	-1.011E-01	1.806E-01	3.043E-01	0.000E+00
NP-237	5.309E-01	3.154E-01	3.585E-01	0.000E+00
U-238	2.705E+00	1.702E+00	1.510E+00	0.000E+00
ANH-511	9.868E-02	7.208E-02	4.065E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.588E-01	3.531E-01	5.773E-01	0.000E+00 NOT IDENT.
NA-22	9.820E-03	3.862E-02	6.598E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.265E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-4.301E-02	3.701E-02	5.578E-02	0.000E+00 FAIL ABUN

V-48	4.388E-02	8.892E-02	1.586E-01	0.000E+00	NOT IDENT.
CR-51	-1.423E-01	4.232E-01	6.864E-01	0.000E+00	NOT IDENT.
MN-54	4.240E-02	3.773E-02	7.021E-02	0.000E+00	NOT IDENT.
CO-56	-3.049E-03	3.822E-02	6.558E-02	0.000E+00	NOT IDENT.
CO-57	1.984E-02	2.001E-02	3.712E-02	0.000E+00	NOT IDENT.
CO-58	-2.301E-02	3.932E-02	6.039E-02	0.000E+00	NOT IDENT.
FE-59	4.455E-02	9.679E-02	1.702E-01	0.000E+00	NOT IDENT.
CO-60	-2.854E-03	3.494E-02	5.707E-02	0.000E+00	NOT IDENT.
ZN-65	-5.317E-02	9.533E-02	1.274E-01	0.000E+00	NOT IDENT.
SE-75	7.762E-03	4.543E-02	6.934E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.339E-02	7.479E-02	0.000E+00	NOT IDENT.
Y-88	-2.399E-02	3.360E-02	4.757E-02	0.000E+00	NOT IDENT.
Y-91	-4.559E+00	2.039E+01	3.323E+01	0.000E+00	NOT IDENT.
NB-94	2.322E-02	3.027E-02	5.365E-02	0.000E+00	NOT IDENT.
NB-95	4.551E-02	4.246E-02	6.983E-02	0.000E+00	NOT IDENT.
NB-95M	7.603E-02	1.303E-01	2.055E-01	0.000E+00	NOT IDENT.
ZR-95	2.253E-02	7.516E-02	1.276E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.766E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.418E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.322E-03	4.035E-02	6.979E-02	0.000E+00	FAIL ABUN
RH-106	1.942E-01	2.919E-01	5.169E-01	0.000E+00	NOT IDENT.
RU-106	1.942E-01	2.912E-01	5.169E-01	0.000E+00	NOT IDENT.
AG-108M	3.392E-03	2.583E-02	4.533E-02	0.000E+00	NOT IDENT.
AG-110M	1.404E-02	3.666E-02	5.624E-02	0.000E+00	NOT IDENT.
SN-113	9.906E-04	3.919E-02	6.886E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.132E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	3.729E-02	6.864E-02	1.215E-01	0.000E+00	NOT IDENT.
TE-123M	1.504E-02	2.548E-02	4.518E-02	0.000E+00	NOT IDENT.
SB-124	-4.858E-02	6.418E-02	8.802E-02	0.000E+00	NOT IDENT.
SB-125	3.408E-03	8.086E-02	1.412E-01	0.000E+00	FAIL ABUN
TE-125M	-5.866E+00	8.537E+00	1.490E+01	0.000E+00	NOT IDENT.
I-126	-1.039E-01	3.649E-01	5.158E-01	0.000E+00	NOT IDENT.
SB-126	-1.660E-01	1.992E-01	3.022E-01	0.000E+00	NOT IDENT.
SB-127	-4.152E+00	5.231E+00	8.045E+00	0.000E+00	NOT IDENT.
I-131	1.888E-01	1.994E-01	3.493E-01	0.000E+00	NOT IDENT.
TE-132	1.467E+00	3.370E+00	5.872E+00	0.000E+00	NOT IDENT.
BA-133	-6.496E-03	4.128E-02	5.934E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.702E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.498E-02	5.098E-02	8.756E-02	0.000E+00	FAIL ABUN
CS-135	3.747E-02	1.532E-01	2.346E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.617E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.897E-02	1.465E-01	2.429E-01	0.000E+00	NOT IDENT.
CE-139	-2.204E-02	2.590E-02	4.336E-02	0.000E+00	NOT IDENT.
BA-140	-2.745E-02	3.718E-01	6.310E-01	0.000E+00	NOT IDENT.
LA-140	3.317E-02	1.189E-01	2.099E-01	0.000E+00	FAIL ABUN
CE-141	8.702E-02	6.288E-02	1.163E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.196E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.854E-02	1.795E-01	2.967E-01	0.000E+00	NOT IDENT.
PM-144	1.889E-02	3.159E-02	5.486E-02	0.000E+00	NOT IDENT.
PR-144	1.411E+00	2.373E+00	4.120E+00	0.000E+00	NOT IDENT.
PM-146	1.865E-02	3.680E-02	6.591E-02	0.000E+00	NOT IDENT.
ND-147	5.489E-02	7.855E-01	1.350E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.922E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	5.544E-02	8.536E-02	1.470E-01	0.000E+00	FAIL ABUN
GD-153	-3.974E-02	8.155E-02	1.181E-01	0.000E+00	NOT IDENT.
EU-154	2.771E-02	1.090E-01	1.862E-01	0.000E+00	NOT IDENT.
EU-155	1.087E-01	8.737E-02	1.637E-01	0.000E+00	FAIL ABUN
TB-160	-8.089E-02	1.351E-01	2.190E-01	0.000E+00	FAIL ABUN
HO-166M	-4.337E-02	5.675E-02	8.732E-02	0.000E+00	NOT IDENT.
TA-182	-1.428E-01	1.974E-01	3.038E-01	0.000E+00	FAIL ABUN
IR-192	4.213E-03	3.487E-02	5.844E-02	0.000E+00	FAIL ABUN
BI-207	3.703E-03	4.366E-02	7.450E-02	0.000E+00	FAIL ABUN
PB-210	8.061E-01	2.132E+00	3.717E+00	0.000E+00	NOT IDENT.
PB-211	-3.147E-01	6.495E-01	1.070E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.432E-01	1.160E+00	0.000E+00	FAIL ABUN
RN-219	3.010E-01	3.603E-01	6.575E-01	0.000E+00	FAIL ABUN
RA-223	1.259E-01	6.525E-01	9.791E-01	0.000E+00	FAIL ABUN
AC-227	-6.383E-02	2.337E-01	3.891E-01	0.000E+00	FAIL ABUN
TH-227	-6.383E-02	2.338E-01	3.891E-01	0.000E+00	FAIL ABUN
PA-231	-2.193E-01	1.355E+00	2.251E+00	0.000E+00	NOT IDENT.
TH-231	1.259E-01	6.525E-01	9.791E-01	0.000E+00	FAIL ABUN
PA-233	-9.461E-03	5.555E-02	9.133E-02	0.000E+00	FAIL ABUN
PA-234	9.774E-02	2.528E-01	4.481E-01	0.000E+00	NOT IDENT.
PA-234M	3.784E+00	4.376E+00	7.978E+00	0.000E+00	NOT IDENT.
NP-239	-1.543E-01	3.114E-01	5.453E-01	0.000E+00	FAIL ABUN
AM-241	1.577E-02	1.163E-01	1.823E-01	0.000E+00	NOT IDENT.
CM-247	3.445E-02	3.388E-02	6.254E-02	0.000E+00	FAIL ABUN
CF-249	1.682E-02	3.493E-02	6.306E-02	0.000E+00	NOT IDENT.

CF-251	-7.962E-02	1.107E-01	1.856E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:55:29.16

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243006.CNF;1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:54:21
Sample ID        : G248243006 Sample quantity   : 1.22330E+02 GRAM
Detector name    : GAM11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 959280 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	1030	10.66*	1.225E+00	2.421E+01	2.421E+01	10.89
CD-109	88.03	145	3.70*	6.753E+00	1.779E+00	1.842E+00	56.87
SN-126	64.28	140	9.60	4.307E+00	1.043E+00	1.043E+00	63.35
	86.94	145	8.90	6.753E+00	7.397E-01	7.397E-01	69.79
	87.57	145	37.00*	6.753E+00	1.779E-01	1.779E-01	56.87
BA-137M	661.66	451	89.90*	2.403E+00	6.410E-01	6.420E-01	16.11
CS-137	661.66	451	85.10*	2.403E+00	6.772E-01	6.782E-01	16.12
HG-203	70.83	-----	3.69	5.333E+00	-----	Line Not Found	-----
	72.87	-----	6.19	5.576E+00	-----	Line Not Found	-----
	279.20	74	81.56*	4.671E+00	5.943E-02	8.367E-02	66.00
TL-208	277.37	74	6.60	4.671E+00	7.344E-01	7.344E-01	66.59
	583.19	364	85.00*	2.661E+00	4.944E-01	4.944E-01	19.73
	860.56	69	12.50	1.925E+00	8.774E-01	8.774E-01	62.60
BI-211	72.87	-----	1.23	5.576E+00	-----	Line Not Found	-----
	351.06	789	12.92*	3.921E+00	4.778E+00	4.778E+00	16.58
PB-212	74.82	515	10.28	5.790E+00	2.657E+00	2.657E+00	19.72
	77.11	749	17.10	6.023E+00	2.233E+00	2.233E+00	13.23
	238.63	1180	43.60*	5.209E+00	1.595E+00	1.595E+00	15.59
	300.09	111	3.30	4.417E+00	2.342E+00	2.342E+00	44.84
BI-214	609.32	521	45.49*	2.569E+00	1.367E+00	1.367E+00	16.32
	1120.29	147	14.92	1.530E+00	1.971E+00	1.971E+00	28.29
	1764.49	77	15.30	1.070E+00	1.452E+00	1.452E+00	27.36
PB-214	74.82	515	5.80	5.790E+00	4.710E+00	4.710E+00	18.90
	77.11	749	9.70	6.023E+00	3.936E+00	3.936E+00	15.59
	242.00	316	7.25	5.164E+00	2.587E+00	2.587E+00	27.24
	295.22	425	18.42	4.466E+00	1.586E+00	1.586E+00	22.66
	351.93	789	35.60*	3.921E+00	1.734E+00	1.734E+00	17.47
RA-224	240.99	316	4.10*	5.164E+00	4.574E+00	4.574E+00	26.62
RA-226	609.32	521	45.49*	2.569E+00	1.367E+00	1.367E+00	16.32
	1120.29	147	14.92	1.530E+00	1.971E+00	1.971E+00	28.29
	1764.49	77	15.30	1.070E+00	1.452E+00	1.452E+00	27.36
AC-228	338.32	236	11.27	4.037E+00	1.591E+00	1.591E+00	49.22

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	219	25.80*	1.833E+00	1.422E+00	1.422E+00	24.05
	968.97	150	15.80	1.737E+00	1.676E+00	1.676E+00	33.40
	338.32	236	11.27	4.037E+00	1.591E+00	1.591E+00	49.22
	911.20	219	25.80*	1.833E+00	1.422E+00	1.422E+00	24.05
TH-228	968.97	150	15.80	1.737E+00	1.676E+00	1.676E+00	33.40
	74.82	515	10.28	5.790E+00	2.657E+00	2.657E+00	17.20
	77.11	749	17.10	6.023E+00	2.233E+00	2.233E+00	13.23
	238.63	1180	43.60*	5.209E+00	1.595E+00	1.595E+00	15.59
TH-229	300.09	111	3.30	4.417E+00	2.342E+00	2.342E+00	75.15
	85.43	145	14.70	6.753E+00	4.478E-01	4.479E-01	56.87
	88.47	162	24.00	6.933E+00	2.996E-01	2.996E-01	27.68
	193.51	-----	4.41*	6.003E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	5.675E+00	-----	Line Not Found	-----
	338.32	236	11.27	4.037E+00	1.591E+00	1.591E+00	27.50
	911.20	219	25.80*	1.833E+00	1.422E+00	1.422E+00	24.05
	968.97	150	15.80	1.737E+00	1.676E+00	1.676E+00	33.40
TH-234	63.29	140	3.70*	4.307E+00	2.705E+00	2.705E+00	64.19
	92.59	354	4.23	7.062E+00	3.635E+00	3.635E+00	32.81
U-235	89.96	162	3.47	6.933E+00	2.072E+00	2.072E+00	36.03
	93.35	354	5.60	7.062E+00	2.746E+00	2.746E+00	33.50
	143.76	-----	10.96*	7.034E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.630E+00	-----	Line Not Found	-----
	185.72	257	57.20	6.155E+00	2.238E-01	2.238E-01	32.74
	205.31	-----	5.01	5.777E+00	-----	Line Not Found	-----
NP-237	86.48	145	12.40*	6.753E+00	5.309E-01	5.309E-01	60.61
	95.86	-----	2.68	7.169E+00	-----	Line Not Found	-----
U-238	63.29	140	3.70*	4.307E+00	2.705E+00	2.705E+00	64.19
	92.59	354	4.23	7.062E+00	3.635E+00	3.635E+00	25.75
ANH-511	511.00	95	100.00*	2.953E+00	9.868E-02	9.868E-02	74.54

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248243006

Page : 3
Acquisition date : 19-MAR-2010 10:54:21

Total number of lines in spectrum 36
Number of unidentified lines 5
Number of lines tentatively identified by NID 31 86.11%

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	2.421E+01	2.421E+01	0.264E+01	10.89	
CD-109	461.40D	1.04	1.779E+00	1.842E+00	1.047E+00	56.87	
SN-126	2.30E+05Y	1.00	1.779E-01	1.779E-01	1.012E-01	56.87	
BA-137M	30.08Y	1.00	6.410E-01	6.420E-01	1.034E-01	16.11	
CS-137	30.08Y	1.00	6.772E-01	6.782E-01	1.093E-01	16.12	
HG-203	46.59D	1.41	5.943E-02	8.367E-02	5.522E-02	66.00	
TL-208	1.41E+10Y	1.00	4.944E-01	4.944E-01	0.976E-01	19.73	
BI-211	7.04E+08Y	1.00	4.778E+00	4.778E+00	0.792E+00	16.58	
PB-212	1.41E+10Y	1.00	1.595E+00	1.595E+00	0.249E+00	15.59	
BI-214	1600.00Y	1.00	1.367E+00	1.367E+00	0.223E+00	16.32	
PB-214	1600.00Y	1.00	1.734E+00	1.734E+00	0.303E+00	17.47	
RA-224	1.41E+10Y	1.00	4.574E+00	4.574E+00	1.217E+00	26.62	
RA-226	1600.00Y	1.00	1.367E+00	1.367E+00	0.223E+00	16.32	
AC-228	1.41E+10Y	1.00	1.422E+00	1.422E+00	0.342E+00	24.05	
RA-228	1.41E+10Y	1.00	1.422E+00	1.422E+00	0.342E+00	24.05	
TH-228	1.41E+10Y	1.00	1.595E+00	1.595E+00	0.249E+00	15.59	
TH-229	7340.00Y	1.00	2.996E-01	2.996E-01	0.829E-01	27.68	K
TH-232	1.41E+10Y	1.00	1.422E+00	1.422E+00	0.342E+00	24.05	
TH-234	4.47E+09Y	1.00	2.705E+00	2.705E+00	1.736E+00	64.19	
U-235	7.04E+08Y	1.00	2.238E-01	2.238E-01	0.733E-01	32.74	K
NP-237	2.14E+06Y	1.00	5.309E-01	5.309E-01	3.218E-01	60.61	
U-238	4.47E+09Y	1.00	2.705E+00	2.705E+00	1.736E+00	64.19	
ANH-511	1.00E+09Y	1.00	9.868E-02	9.868E-02	7.356E-02	74.54	
Total Activity :			5.588E+01	5.597E+01			

Grand Total Activity : 5.588E+01 5.597E+01

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

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

Unidentified Energy Lines
Sample ID : G248243006

Page : 4
Acquisition date : 19-MAR-2010 10:54:21

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.09	113	323	1.02	257.15	253	8	1.57E-02	58.5	7.28E+00	
0	209.27	103	252	0.82	417.64	414	8	1.44E-02	56.8	5.70E+00	
0	270.42	132	233	1.13	540.02	534	12	1.84E-02	49.4	4.76E+00	T
0	328.15	82	183	0.94	655.56	650	11	1.14E-02	67.9	4.13E+00	T
0	462.85	59	94	1.07	925.14	922	9	8.19E-03	64.4	3.19E+00	T
0	728.02	95	73	1.15	1455.77	1451	12	1.33E-02	41.5	2.22E+00	T
0	768.70	61	64	1.01	1537.19	1532	11	8.51E-03	56.4	2.12E+00	
0	795.62	38	42	1.06	1591.04	1588	8	5.27E-03	68.7	2.06E+00	T
0	935.34	44	57	1.21	1870.63	1865	13	6.05E-03	78.3	1.79E+00	
2	965.21	51	27	1.91	1930.38	1926	19	7.08E-03	49.7	1.74E+00	T
0	1409.06	21	20	0.99	2818.39	2812	13	2.85E-03	99.2	1.26E+00	T
0	1730.67	18	6	1.44	3461.71	3456	11	2.43E-03	70.6	1.08E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC
*                               2040 Savage Road
*                               Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243006.CNF;1
* Acquisition date   : 19-MAR-2010 10:54:21   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 02:00:01.69           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248243006             Analyst initials: MXR1
* Batch Number       : 959280                 Sample Quantity  : 1.22330E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22.2MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope        :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.421E+01	2.636E+00	4.718E-01	4.080E-02	51.320
CD-109	1.842E+00	1.047E+00	1.193E+00	1.131E-01	1.544
SN-126	1.779E-01	1.012E-01	1.156E-01	1.091E-02	1.539
BA-137M	6.420E-01	1.034E-01	4.915E-02	4.651E-03	13.060
CS-137	6.782E-01	1.093E-01	5.193E-02	4.921E-03	13.060
HG-203	8.367E-02	5.522E-02	5.776E-02	9.014E-03	1.449
TL-208	4.944E-01	9.755E-02	5.048E-02	5.446E-03	9.795
BI-211	4.778E+00	7.920E-01	2.884E-01	3.805E-02	16.567
PB-212	1.595E+00	2.486E-01	8.710E-02	1.223E-02	18.307
BI-214	1.367E+00	2.231E-01	1.043E-01	1.184E-02	13.101
PB-214	1.734E+00	3.030E-01	1.049E-01	1.496E-02	16.530
RA-224	4.574E+00	1.217E+00	9.340E-01	1.251E-01	4.897
RA-226	1.367E+00	2.231E-01	1.043E-01	1.184E-02	13.101
AC-228	1.422E+00	3.419E-01	2.135E-01	2.668E-02	6.661
RA-228	1.422E+00	3.419E-01	2.135E-01	2.668E-02	6.661
TH-228	1.595E+00	2.486E-01	8.710E-02	1.223E-02	18.307
TH-229	2.996E-01	8.294E-02	7.703E-01	8.454E-02	0.389
TH-232	1.422E+00	3.419E-01	2.135E-01	2.668E-02	6.661

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	2.705E+00	1.736E+00	1.453E+00	2.585E-01	1.861
U-235	2.238E-01	7.326E-02	2.959E-01	5.069E-02	0.756
NP-237	5.309E-01	3.218E-01	3.464E-01	7.947E-02	1.533
U-238	2.705E+00	1.736E+00	1.453E+00	2.585E-01	1.861
ANH-511	9.868E-02	7.356E-02	4.017E-02	4.295E-03	2.457

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.588E-01		3.603E-01	5.699E-01	6.449E-02	-0.454
NA-22	9.820E-03		3.941E-02	6.597E-02	5.418E-03	0.149
NA-24	2.729E+03		1.666E+03	Half-Life	too short	
SC-46	-4.301E-02		3.777E-02	5.551E-02	5.468E-03	-0.775
V-48	4.388E-02		9.073E-02	1.581E-01	1.499E-02	0.278
CR-51	-1.423E-01		4.319E-01	6.742E-01	9.781E-02	-0.211
MN-54	4.240E-02		3.850E-02	6.982E-02	6.875E-03	0.607
CO-56	-3.049E-03		3.900E-02	6.523E-02	6.427E-03	-0.047
CO-57	1.984E-02		2.042E-02	3.603E-02	3.048E-03	0.551
CO-58	-2.301E-02		4.013E-02	6.003E-02	5.910E-03	-0.383
FE-59	4.455E-02		9.877E-02	1.698E-01	1.596E-02	0.262
CO-60	-2.854E-03		3.566E-02	5.710E-02	4.718E-03	-0.050
ZN-65	-5.317E-02		9.727E-02	1.272E-01	1.091E-02	-0.418
SE-75	7.762E-03		4.636E-02	6.795E-02	9.988E-03	0.114
SR-85	7.904E-02		4.428E-02	7.391E-02	7.895E-03	1.069
Y-88	-2.399E-02		3.429E-02	4.780E-02	3.880E-03	-0.502
Y-91	-4.559E+00		2.080E+01	3.320E+01	2.687E+00	-0.137
NB-94	2.322E-02		3.088E-02	5.324E-02	5.113E-03	0.436
NB-95	4.551E-02		4.332E-02	6.936E-02	6.771E-03	0.656
NB-95M	7.603E-02		1.330E-01	2.011E-01	2.810E-02	0.378
ZR-95	2.253E-02		7.669E-02	1.267E-01	1.337E-02	0.178
MO-99	-1.890E-05		3.962E-05	Half-Life	too short	
TC-99M	2.247E+19		4.295E+19	Half-Life	too short	
RU-103	3.322E-03		4.117E-02	6.894E-02	1.059E-02	0.048
RH-106	1.942E-01		2.978E-01	5.121E-01	7.239E-02	0.379
RU-106	1.942E-01		2.972E-01	5.121E-01	5.080E-02	0.379
AG-108M	3.392E-03		2.636E-02	4.469E-02	4.918E-03	0.076
AG-110M	1.404E-02		3.741E-02	5.575E-02	5.433E-03	0.252
SN-113	9.906E-04		3.999E-02	6.781E-02	7.376E-03	0.015
CD-115	-3.115E-05		5.775E-05	Half-Life	too short	
SN-117M	3.729E-02		7.004E-02	1.183E-01	1.118E-02	0.315
TE-123M	1.504E-02		2.600E-02	4.399E-02	4.186E-03	0.342
SB-124	-4.858E-02		6.549E-02	8.834E-02	7.696E-03	-0.550
SB-125	3.408E-03		8.251E-02	1.392E-01	1.518E-02	0.024
TE-125M	-5.866E+00		8.711E+00	1.444E+01	1.507E+00	-0.406
I-126	-1.039E-01		3.723E-01	5.114E-01	4.848E-02	-0.203
SB-126	-1.660E-01		2.033E-01	2.999E-01	2.896E-02	-0.553
SB-127	-4.152E+00		5.338E+00	7.980E+00	1.161E+00	-0.520

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	1.888E-01		2.035E-01	3.437E-01	4.330E-02	0.549
TE-132	1.467E+00		3.439E+00	5.744E+00	1.147E+00	0.255
BA-133	-6.496E-03		4.212E-02	5.837E-02	9.295E-03	-0.111
I-133	1.607E-01		1.379E+00	Half-Life too short		
CS-134	7.498E-02	+	5.202E-02	8.702E-02	8.584E-03	0.862
CS-135	3.747E-02		1.563E-01	2.299E-01	3.607E-02	0.163
I-135	-3.617E+17		1.335E+18	Half-Life too short		
CS-136	-2.897E-02		1.495E-01	2.423E-01	2.289E-02	-0.120
CE-139	-2.204E-02		2.643E-02	4.224E-02	4.105E-03	-0.522
BA-140	-2.745E-02		3.794E-01	6.239E-01	2.150E-01	-0.044
LA-140	3.317E-02		1.213E-01	2.105E-01	1.770E-02	0.158
CE-141	8.702E-02		6.417E-02	1.132E-01	1.037E-02	0.769
CE-143	1.640E-02		4.181E-03	Half-Life too short		
CE-144	-8.854E-02		1.831E-01	2.883E-01	4.417E-02	-0.307
PM-144	1.889E-02		3.223E-02	5.443E-02	5.220E-03	0.347
PR-144	1.411E+00		2.421E+00	4.088E+00	3.918E-01	0.345
PM-146	1.865E-02		3.755E-02	6.502E-02	8.079E-03	0.287
ND-147	5.489E-02		8.015E-01	1.335E+00	2.160E-01	0.041
PM-149	-7.573E-06		5.062E-04	Half-Life too short		
EU-152	5.544E-02		8.711E-02	1.446E-01	1.959E-02	0.383
GD-153	-3.974E-02		8.322E-02	1.143E-01	1.015E-02	-0.348
EU-154	2.771E-02		1.112E-01	1.862E-01	2.060E-02	0.149
EU-155	1.087E-01		8.915E-02	1.586E-01	1.383E-02	0.685
TB-160	-8.089E-02		1.379E-01	2.180E-01	2.148E-02	-0.371
HO-166M	-4.337E-02		5.791E-02	8.665E-02	8.345E-03	-0.501
TA-182	-1.428E-01		2.014E-01	3.036E-01	2.466E-02	-0.470
IR-192	4.213E-03		3.558E-02	5.739E-02	8.250E-03	0.073
BI-207	3.703E-03		4.456E-02	7.432E-02	6.676E-03	0.050
PB-210	8.061E-01		2.175E+00	3.565E+00	3.289E-01	0.226
PB-211	-3.147E-01		6.627E-01	1.055E+00	5.147E-01	-0.298
BI-212	1.977E+00	+	8.604E-01	1.152E+00	1.522E-01	1.716
RN-219	3.010E-01		3.677E-01	6.477E-01	1.047E-01	0.465
RA-223	1.259E-01		6.658E-01	9.619E-01	1.982E-01	0.131
AC-227	-6.383E-02		2.385E-01	3.811E-01	6.296E-02	-0.168
TH-227	-6.383E-02		2.385E-01	3.811E-01	6.741E-02	-0.168
PA-231	-2.193E-01		1.383E+00	2.207E+00	4.273E-01	-0.099
TH-231	1.259E-01		6.658E-01	9.619E-01	1.982E-01	0.131
PA-233	-9.461E-03		5.669E-02	8.968E-02	1.316E-02	-0.106
PA-234	9.774E-02		2.580E-01	4.463E-01	8.599E-02	0.219
PA-234M	3.784E+00		4.465E+00	7.953E+00	8.460E-01	0.476
NP-239	-1.543E-01		3.177E-01	5.289E-01	4.475E-02	-0.292
AM-241	1.577E-02		1.186E-01	1.753E-01	1.378E-02	0.090
CM-247	3.445E-02		3.457E-02	6.161E-02	6.594E-03	0.559
CF-249	1.682E-02		3.565E-02	6.209E-02	6.753E-03	0.271
CF-251	-7.962E-02		1.129E-01	1.810E-01	1.851E-02	-0.440

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248243006          *
* Acquisition date   : 19-MAR-2010 10:54:21 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 02:00:01.69 Half life ratio : 8.000                *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243006 Analyst initials: MXR1                  *
* Batch Number       : 959280 Sample Quantity : 1.2233E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.421E+01	2.583E+00	2.356E-01	1.318E+00
CD-109	1.842E+00	1.026E+00	6.175E-01	5.237E-01
SN-126	1.779E-01	9.916E-02	5.985E-02	5.059E-02
BA-137M	6.420E-01	1.014E-01	2.480E-02	5.172E-02
CS-137	6.782E-01	1.071E-01	2.620E-02	5.467E-02
HG-203	8.367E-02	5.412E-02	2.947E-02	2.761E-02
TL-208	4.944E-01	9.560E-02	2.551E-02	4.878E-02
BI-211	4.778E+00	7.762E-01	1.467E-01	3.960E-01
PB-212	1.595E+00	2.437E-01	4.453E-02	1.243E-01
BI-214	1.367E+00	2.187E-01	5.271E-02	1.116E-01
PB-214	1.734E+00	2.969E-01	5.336E-02	1.515E-01
RA-224	4.574E+00	1.193E+00	4.774E-01	6.087E-01
RA-226	1.367E+00	2.187E-01	5.271E-02	1.116E-01
AC-228	1.422E+00	3.351E-01	1.073E-01	1.710E-01
RA-228	1.422E+00	3.351E-01	1.073E-01	1.710E-01
TH-228	1.595E+00	2.437E-01	4.453E-02	1.243E-01
TH-229	8.634E-02	4.522E-01	3.948E-01	2.307E-01
TH-232	1.422E+00	3.351E-01	1.073E-01	1.710E-01
TH-234	2.705E+00	1.702E+00	7.552E-01	8.681E-01
U-235	-1.011E-01	1.806E-01	1.522E-01	9.213E-02
NP-237	5.309E-01	3.154E-01	1.793E-01	1.609E-01
U-238	2.705E+00	1.702E+00	7.552E-01	8.681E-01
ANH-511	9.868E-02	7.208E-02	2.034E-02	3.678E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.588E-01	3.531E-01	2.888E-01	1.802E-01 NOT IDENT.
NA-22	9.820E-03	3.862E-02	3.301E-02	1.970E-02 NOT IDENT.
NA-24	2.729E+09	3.265E+09	0.000E+00	1.666E+09 SHORT HLIF
SC-46	-4.301E-02	3.701E-02	2.791E-02	1.888E-02 FAIL ABUN

V-48	4.388E-02	8.892E-02	7.936E-02	4.537E-02	NOT IDENT.
CR-51	-1.423E-01	4.232E-01	3.434E-01	2.159E-01	NOT IDENT.
MN-54	4.240E-02	3.773E-02	3.513E-02	1.925E-02	NOT IDENT.
CO-56	-3.049E-03	3.822E-02	3.281E-02	1.950E-02	NOT IDENT.
CO-57	1.984E-02	2.001E-02	1.857E-02	1.021E-02	NOT IDENT.
CO-58	-2.301E-02	3.932E-02	3.021E-02	2.006E-02	NOT IDENT.
FE-59	4.455E-02	9.679E-02	8.513E-02	4.938E-02	NOT IDENT.
CO-60	-2.854E-03	3.494E-02	2.855E-02	1.783E-02	NOT IDENT.
ZN-65	-5.317E-02	9.533E-02	6.373E-02	4.864E-02	NOT IDENT.
SE-75	7.762E-03	4.543E-02	3.469E-02	2.318E-02	NOT IDENT.
SR-85	7.904E-02	4.339E-02	3.742E-02	2.214E-02	NOT IDENT.
Y-88	-2.399E-02	3.360E-02	2.380E-02	1.714E-02	NOT IDENT.
Y-91	-4.559E+00	2.039E+01	1.662E+01	1.040E+01	NOT IDENT.
NB-94	2.322E-02	3.027E-02	2.684E-02	1.544E-02	NOT IDENT.
NB-95	4.551E-02	4.246E-02	3.494E-02	2.166E-02	NOT IDENT.
NB-95M	7.603E-02	1.303E-01	1.028E-01	6.648E-02	NOT IDENT.
ZR-95	2.253E-02	7.516E-02	6.383E-02	3.834E-02	NOT IDENT.
MO-99	-1.890E+01	7.766E+01	0.000E+00	3.962E+01	SHORT HLIF
TC-99M	2.247E+25	8.418E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.322E-03	4.035E-02	3.492E-02	2.058E-02	FAIL ABUN
RH-106	1.942E-01	2.919E-01	2.586E-01	1.489E-01	NOT IDENT.
RU-106	1.942E-01	2.912E-01	2.586E-01	1.486E-01	NOT IDENT.
AG-108M	3.392E-03	2.583E-02	2.268E-02	1.318E-02	NOT IDENT.
AG-110M	1.404E-02	3.666E-02	2.814E-02	1.871E-02	NOT IDENT.
SN-113	9.906E-04	3.919E-02	3.445E-02	1.999E-02	NOT IDENT.
CD-115	-3.115E+01	1.132E+02	0.000E+00	5.775E+01	SHORT HLIF
SN-117M	3.729E-02	6.864E-02	6.078E-02	3.502E-02	NOT IDENT.
TE-123M	1.504E-02	2.548E-02	2.261E-02	1.300E-02	NOT IDENT.
SB-124	-4.858E-02	6.418E-02	4.404E-02	3.274E-02	NOT IDENT.
SB-125	3.408E-03	8.086E-02	7.065E-02	4.126E-02	FAIL ABUN
TE-125M	-5.866E+00	8.537E+00	7.453E+00	4.356E+00	NOT IDENT.
I-126	-1.039E-01	3.649E-01	2.580E-01	1.862E-01	NOT IDENT.
SB-126	-1.660E-01	1.992E-01	1.512E-01	1.016E-01	NOT IDENT.
SB-127	-4.152E+00	5.231E+00	4.025E+00	2.669E+00	NOT IDENT.
I-131	1.888E-01	1.994E-01	1.748E-01	1.018E-01	NOT IDENT.
TE-132	1.467E+00	3.370E+00	2.938E+00	1.720E+00	NOT IDENT.
BA-133	-6.496E-03	4.128E-02	2.969E-02	2.106E-02	FAIL ABUN
I-133	1.607E+05	2.702E+06	0.000E+00	1.379E+06	SHORT HLIF
CS-134	7.498E-02	5.098E-02	4.381E-02	2.601E-02	FAIL ABUN
CS-135	3.747E-02	1.532E-01	1.174E-01	7.814E-02	NOT IDENT.
I-135	-3.617E+23	2.617E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.897E-02	1.465E-01	1.215E-01	7.473E-02	NOT IDENT.
CE-139	-2.204E-02	2.590E-02	2.169E-02	1.321E-02	NOT IDENT.
BA-140	-2.745E-02	3.718E-01	3.157E-01	1.897E-01	NOT IDENT.
LA-140	3.317E-02	1.189E-01	1.050E-01	6.066E-02	FAIL ABUN
CE-141	8.702E-02	6.288E-02	5.821E-02	3.208E-02	NOT IDENT.
CE-143	1.640E+04	8.196E+03	0.000E+00	4.181E+03	SHORT HLIF
CE-144	-8.854E-02	1.795E-01	1.485E-01	9.157E-02	NOT IDENT.
PM-144	1.889E-02	3.159E-02	2.745E-02	1.612E-02	NOT IDENT.
PR-144	1.411E+00	2.373E+00	2.061E+00	1.211E+00	NOT IDENT.
PM-146	1.865E-02	3.680E-02	3.297E-02	1.878E-02	NOT IDENT.
ND-147	5.489E-02	7.855E-01	6.755E-01	4.008E-01	FAIL ABUN
PM-149	-7.573E+00	9.922E+02	0.000E+00	5.062E+02	SHORT HLIF
EU-152	5.544E-02	8.536E-02	7.356E-02	4.355E-02	FAIL ABUN
GD-153	-3.974E-02	8.155E-02	5.908E-02	4.161E-02	NOT IDENT.
EU-154	2.771E-02	1.090E-01	9.315E-02	5.562E-02	NOT IDENT.
EU-155	1.087E-01	8.737E-02	8.191E-02	4.458E-02	FAIL ABUN
TB-160	-8.089E-02	1.351E-01	1.096E-01	6.894E-02	FAIL ABUN
HO-166M	-4.337E-02	5.675E-02	4.369E-02	2.895E-02	NOT IDENT.
TA-182	-1.428E-01	1.974E-01	1.520E-01	1.007E-01	FAIL ABUN
IR-192	4.213E-03	3.487E-02	2.924E-02	1.779E-02	FAIL ABUN
BI-207	3.703E-03	4.366E-02	3.727E-02	2.228E-02	FAIL ABUN
PB-210	8.061E-01	2.132E+00	1.859E+00	1.088E+00	NOT IDENT.
PB-211	-3.147E-01	6.495E-01	5.355E-01	3.314E-01	NOT IDENT.
BI-212	1.977E+00	8.432E-01	5.806E-01	4.302E-01	FAIL ABUN
RN-219	3.010E-01	3.603E-01	3.290E-01	1.838E-01	FAIL ABUN
RA-223	1.259E-01	6.525E-01	4.898E-01	3.329E-01	FAIL ABUN
AC-227	-6.383E-02	2.337E-01	1.947E-01	1.193E-01	FAIL ABUN
TH-227	-6.383E-02	2.338E-01	1.947E-01	1.193E-01	FAIL ABUN
PA-231	-2.193E-01	1.355E+00	1.126E+00	6.913E-01	NOT IDENT.
TH-231	1.259E-01	6.525E-01	4.898E-01	3.329E-01	FAIL ABUN
PA-233	-9.461E-03	5.555E-02	4.569E-02	2.834E-02	FAIL ABUN
PA-234	9.774E-02	2.528E-01	2.242E-01	1.290E-01	NOT IDENT.
PA-234M	3.784E+00	4.376E+00	3.992E+00	2.233E+00	NOT IDENT.
NP-239	-1.543E-01	3.114E-01	2.728E-01	1.589E-01	FAIL ABUN
AM-241	1.577E-02	1.163E-01	9.119E-02	5.932E-02	NOT IDENT.
CM-247	3.445E-02	3.388E-02	3.129E-02	1.728E-02	FAIL ABUN
CF-249	1.682E-02	3.493E-02	3.155E-02	1.782E-02	NOT IDENT.

CF-251	-7.962E-02	1.107E-01	9.287E-02	5.647E-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	207.7383
49.72	217.7453
57.36	0.0000
59.54	257.2196
63.29	260.4624
63.29	260.4624
64.28	261.2049
67.75	280.4152
69.67	339.5162
70.83	328.0759
72.81	332.9429
72.87	332.9947
72.87	332.9947
74.82	322.0558
74.82	322.0558
74.82	322.0558
74.97	322.1803
77.11	322.3521
77.11	322.3521
77.11	322.3521
79.69	308.4517
79.80	308.5342
80.12	287.9791
80.19	288.0286
80.57	296.7045
81.00	323.4724
81.07	323.5277
81.07	323.5277
83.79	329.2837
83.79	329.2837
85.43	359.7292
86.48	412.5950
86.55	380.1691
86.79	380.3785
86.94	380.5118
87.57	416.8932
88.03	417.3359
88.47	298.6316
89.96	375.7857
91.11	259.3827
92.59	260.2410
92.59	260.2410
93.35	260.6782
94.67	261.4352
94.87	261.5493
94.87	261.5493
95.86	245.5225
97.43	266.3281
98.44	230.2036
99.53	224.8822
100.11	228.5053
103.18	263.6607
103.37	263.7642
105.31	238.5829
106.12	243.2102
109.28	263.5069
111.00	242.1509
111.76	227.0847
116.30	195.3533
117.23	227.7339
121.12	197.9830
121.78	190.3630
122.06	186.9659
123.07	213.5670
131.20	233.0868
133.52	255.6821
136.00	240.8232

136.47	247.2837
140.51	0.0000
140.51	0.0000
143.76	267.5028
144.24	250.4675
144.24	250.4675
145.44	210.9438
152.43	234.4244
153.25	212.6312
154.21	212.9437
154.21	212.9437
156.02	273.6217
158.56	189.3035
159.00	195.9280
162.66	214.7383
163.33	195.3231
165.86	226.0650
176.60	213.3519
177.52	221.2524
181.07	0.0000
184.41	228.1544
185.72	219.8777
193.51	196.8115
197.04	193.7944
205.31	210.6599
210.85	179.2365
215.65	162.2488
222.11	173.5852
227.38	159.4164
228.16	155.4949
228.18	157.5307
235.69	179.8864
235.96	196.8594
235.96	196.8594
238.63	192.3016
238.63	192.3016
240.99	192.8038
242.00	193.0168
244.70	152.1769
252.40	155.5266
252.80	139.9282
256.23	167.6839
256.23	167.6839
260.90	0.0000
264.66	134.7943
268.22	143.2397
269.46	124.2982
269.46	124.2982
271.23	124.5196
273.65	147.2230
276.40	129.9762
277.37	146.6969
277.60	146.7304
278.00	146.7889
279.20	119.0712
279.54	119.1096
280.46	117.6069
283.69	151.9152
284.31	133.6799
285.41	139.2172
285.90	0.0000
287.50	135.1725
293.27	0.0000
295.22	125.8182
295.96	125.9052
298.57	101.6260
299.98	121.4537
299.98	121.4537
300.09	121.4672
300.09	121.4672
300.13	121.4717
301.36	126.5396
302.85	148.1067
304.50	120.3137
304.50	120.3137
304.85	121.3407
308.46	120.1967
311.90	112.8284

316.51	125.5134
319.41	122.4945
320.08	133.7085
323.87	119.0628
323.87	119.0628
328.76	125.7448
333.37	136.9520
334.37	123.5306
334.37	123.5306
338.28	123.3745
338.28	123.3745
338.32	123.3790
338.32	123.3790
338.32	123.3790
340.48	125.8732
340.55	125.8799
344.28	95.5579
351.06	105.2463
351.93	105.3212
356.01	101.6529
364.49	79.7967
366.42	0.0000
383.85	116.2332
388.16	96.2948
388.63	93.6784
391.69	93.8951
400.66	105.2252
401.81	90.1427
402.40	92.8599
404.85	110.9162
410.95	114.1054
414.70	83.7846
423.72	102.4580
427.09	102.7028
427.87	92.7550
433.94	86.7562
453.88	77.7592
463.37	87.5656
468.07	104.6548
473.00	95.6157
476.78	99.6079
477.60	112.8223
487.02	77.5594
492.35	0.0000
497.08	76.1462
511.00	69.1199
514.00	73.8627
527.90	0.0000
529.87	0.0000
531.02	66.0659
537.26	77.0351
546.56	0.0000
563.25	75.2207
569.33	61.5724
569.50	58.5985
569.70	58.6057
583.19	64.0449
600.60	80.8130
602.73	71.8017
604.72	55.0724
609.32	73.0679
609.32	73.0679
610.33	73.1052
614.28	73.2568
618.01	75.4385
621.93	59.2479
621.93	59.2479
633.25	51.3748
635.95	66.8785
636.99	70.0026
645.85	44.4645
657.76	59.9150
661.66	55.2369
661.66	55.2369
664.57	0.0000
666.33	75.2102
666.50	75.2168
677.62	64.0697

685.70	76.9721
695.00	66.7222
696.49	50.8711
696.51	50.8726
697.00	43.4637
702.65	55.2706
706.68	76.6736
711.68	72.5820
720.70	66.4521
721.93	0.0000
722.78	51.4966
722.91	51.4995
723.31	53.2252
724.19	46.3759
727.33	67.0846
733.00	68.9805
735.93	61.5175
739.50	0.0000
747.24	50.9831
752.31	60.8826
753.82	55.4824
756.73	58.8219
763.94	48.9549
765.81	40.2455
766.42	52.5088
777.92	0.0000
778.90	56.0925
783.70	65.0246
785.37	67.2772
795.86	55.3909
801.95	49.5036
810.29	52.3830
810.76	57.9668
815.77	45.7997
818.51	50.3242
832.01	76.4668
834.85	58.5428
836.80	0.0000
846.77	54.2988
856.80	45.4309
860.56	39.4316
871.09	55.8400
873.19	37.4946
875.33	0.0000
879.36	55.0020
880.51	44.9380
883.24	52.3298
884.68	48.6847
889.28	57.9735
898.04	45.2413
911.20	50.1075
911.20	50.1075
911.20	50.1075
926.50	54.1286
937.49	34.3580
944.13	44.1486
946.00	37.5986
949.00	40.4626
962.29	45.7007
964.08	37.8457
966.15	47.3413
968.97	47.3901
968.97	47.3901
968.97	47.3901
983.53	40.0138
996.26	48.8061
1001.03	45.0528
1004.73	59.5070
1037.84	43.6838
1038.76	0.0000
1048.07	46.7555
1050.41	42.8936
1050.41	42.8936
1063.66	37.2077
1085.87	39.4512
1099.45	44.5781
1112.07	49.7314
1115.54	54.7637

1120.29	40.8859
1120.29	40.8859
1120.55	40.8879
1121.30	40.8979
1131.51	0.0000
1173.23	52.7135
1177.93	66.9990
1189.05	61.1133
1204.77	48.0970
1221.41	62.7305
1231.02	53.6275
1235.36	84.6706
1238.28	54.7727
1260.41	0.0000
1271.85	42.7817
1274.44	34.4599
1274.54	34.4599
1291.59	31.4780
1298.22	0.0000
1312.11	32.7135
1332.49	28.6519
1365.19	20.3406
1368.63	0.0000
1384.29	33.3568
1408.01	30.6769
1457.56	0.0000
1460.82	18.6560
1489.16	13.8147
1505.03	18.4920
1596.21	17.9540
1620.50	14.2542
1678.03	0.0000
1690.97	12.5514
1764.49	6.7271
1764.49	6.7271
1770.23	6.7355
1771.35	6.7369
1791.20	0.0000
1836.06	15.9342

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243006

Total Uranium Activity	8.0003E+00	ug/g
Total Uranium Counting Unc.	5.0628E+00	ug/g
Total Uranium Tpu	2.5831E-06	ug/g
Total Uranium Mda	2.2478E+00	ug/g


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*****
*
*               GEL Laboratories LLC                      *
*               2040 SAVAGE ROAD                          *
*               CHARLESTON ,SC 29417                      *
*               GROSS GAMMA REPORT                        *
*
*****
*
*  BATCH ID      : 959280                                SAMPLE ID   : G248243006
*  ANALYST       : MXR1                                  DETECTOR    : GAM11
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00             COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:54:21.60             SAMPLE ALQT  : 122.330 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.674E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.327E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.627E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.758E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:56:22.98

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration   : DKAl00:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243007.CNF;1
Sample date     : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:55:10
Sample ID       : G248243007 Sample quantity : 1.18820E+02 GRAM
Detector name   : GAM06 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.27 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959280 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	74.81	410	384	1.10	149.20	143	16	5.69E-02	9.5	2.13E+00
2	1	77.15*	599	373	1.10	153.87	143	16	8.32E-02	6.9	
3	3	87.29	265	347	1.33	174.13	164	27	3.68E-02	13.7	2.50E+00
4	3	89.89	162	329	1.37	179.34	164	27	2.24E-02	21.7	
5	3	92.80*	362	305	1.35	185.15	164	27	5.03E-02	10.8	
6	1	185.89*	170	261	1.31	371.24	365	13	2.37E-02	19.1	3.29E+00
7	0	209.38	94	283	1.15	418.20	414	9	1.31E-02	33.9	
8	4	238.71*	1140	188	1.15	476.82	470	18	1.58E-01	3.6	1.42E+00
9	4	241.56	321	226	1.85	482.54	470	18	4.45E-02	14.1	
10	0	270.13	134	264	1.60	539.64	533	14	1.87E-02	27.0	
11	0	277.34	51	154	1.40	554.06	549	8	7.10E-03	44.5	
12	0	295.35*	335	179	0.95	590.07	585	10	4.66E-02	9.4	
13	0	300.05	86	149	1.31	599.46	595	9	1.19E-02	27.9	
14	0	338.51*	147	180	1.27	676.36	671	9	2.05E-02	18.8	
15	0	351.98*	585	213	1.23	703.29	696	14	8.13E-02	6.8	
16	0	462.50	63	93	1.10	924.26	920	9	8.75E-03	30.5	
17	0	511.06*	125	143	2.17	1021.35	1013	18	1.74E-02	26.9	
18	0	583.35*	317	136	1.60	1165.91	1159	16	4.41E-02	10.1	
19	0	609.45*	497	88	1.41	1218.10	1213	13	6.91E-02	6.0	
20	0	661.84	316	77	1.36	1322.86	1318	11	4.39E-02	7.8	
21	0	727.99	94	73	1.86	1455.15	1449	16	1.30E-02	22.7	
22	0	755.04	41	41	1.11	1509.25	1503	11	5.67E-03	34.2	
23	0	861.55	43	63	1.37	1722.28	1716	14	5.98E-03	42.8	
24	0	911.27*	217	33	1.74	1821.73	1816	12	3.01E-02	8.9	
25	0	933.56	37	33	0.93	1866.32	1861	11	5.10E-03	34.5	
26	0	969.09*	115	44	1.24	1937.38	1932	12	1.59E-02	15.4	
27	0	1120.20	87	56	1.78	2239.65	2234	12	1.21E-02	20.4	
28	0	1377.75	26	12	1.62	2754.93	2750	9	3.64E-03	31.5	
29	0	1460.71*	858	12	2.04	2920.93	2913	17	1.19E-01	3.6	
30	0	1729.89	29	4	2.21	3459.60	3451	17	4.01E-03	24.7	
31	0	1765.18	70	18	1.77	3530.23	3523	15	9.65E-03	18.0	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:55:10
Sample ID         : G248243007 Sample quantity : 118.82 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA6 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.27 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.724E+01	3.223E+00	6.804E-01	6.414E-02	40.037
CD-109	+	88.03	*	4.516E+00	1.331E+00	1.330E+00	1.479E-01	3.396
SN-126		64.28		-2.821E-01	6.588E-01	1.060E+00	1.641E-01	-0.266
	+	86.94		1.813E+00	9.075E-01	5.405E-01	2.265E-01	3.356
	+	87.57	*	4.362E-01	1.285E-01	1.291E-01	1.430E-02	3.379
BA-137M	+	661.66	*	5.817E-01	1.021E-01	7.984E-02	6.461E-03	7.286
CS-137	+	661.66	*	6.145E-01	1.079E-01	8.435E-02	6.840E-03	7.286
TL-208	+	277.37		6.518E-01	5.860E-01	7.984E-01	1.039E-01	0.816
	+	583.19	*	5.546E-01	1.233E-01	7.143E-02	6.521E-03	7.765
	+	860.56		7.204E-01	6.202E-01	4.875E-01	4.739E-02	1.478
BI-211		72.87		1.697E+00	4.222E+00	6.333E+00	6.087E-01	0.268
	+	351.06	*	4.552E+00	7.504E-01	4.190E-01	3.932E-02	10.864
PB-212	+	74.82		3.052E+00	7.172E-01	6.576E-01	9.060E-02	4.641
	+	77.11		2.537E+00	4.310E-01	3.751E-01	3.730E-02	6.763
	+	238.63	*	1.970E+00	2.475E-01	1.160E-01	1.190E-02	16.990
	+	300.09		2.312E+00	1.314E+00	1.455E+00	1.613E-01	1.589
BI-214	+	609.32	*	1.686E+00	2.622E-01	1.376E-01	1.365E-02	12.253
	+	1120.29		1.559E+00	6.583E-01	6.535E-01	7.058E-02	2.386
	+	1764.49		1.741E+00	6.461E-01	4.559E-01	3.930E-02	3.819
PB-214	+	74.82		5.410E+00	1.234E+00	1.166E+00	1.465E-01	4.641
	+	77.11		4.472E+00	8.447E-01	6.612E-01	8.543E-02	6.763
	+	242.00		3.362E+00	1.018E+00	7.058E-01	7.674E-02	4.764
	+	295.22		1.605E+00	3.529E-01	2.761E-01	3.135E-02	5.815
	+	351.93	*	1.652E+00	2.872E-01	1.524E-01	1.658E-02	10.840
RA-224	+	240.99	*	5.945E+00	1.766E+00	1.244E+00	1.144E-01	4.780
RA-226	+	609.32	*	1.686E+00	2.622E-01	1.376E-01	1.365E-02	12.253
	+	1120.29		1.559E+00	6.583E-01	6.535E-01	7.058E-02	2.386
	+	1764.49		1.741E+00	6.461E-01	4.559E-01	3.930E-02	3.819
AC-228	+	338.32		1.276E+00	7.170E-01	5.002E-01	2.091E-01	2.552
	+	911.20	*	1.853E+00	3.974E-01	2.559E-01	3.090E-02	7.240
	+	968.97		1.697E+00	6.681E-01	6.246E-01	1.533E-01	2.716
RA-228	+	338.32		1.276E+00	7.170E-01	5.002E-01	2.091E-01	2.552
	+	911.20	*	1.853E+00	3.974E-01	2.559E-01	3.090E-02	7.240
	+	968.97		1.697E+00	6.681E-01	6.246E-01	1.533E-01	2.716

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.052E+00	6.538E-01	6.576E-01	6.461E-02	4.641
	+	77.11		2.537E+00	4.310E-01	3.751E-01	3.730E-02	6.763
	+	238.63	*	1.970E+00	2.475E-01	1.160E-01	1.190E-02	16.990
	+	300.09		2.312E+00	1.916E+00	1.455E+00	8.919E-01	1.589
TH-232	+	338.32		1.276E+00	4.927E-01	5.002E-01	4.540E-02	2.552
	+	911.20	*	1.853E+00	3.974E-01	2.559E-01	3.090E-02	7.240
	+	968.97		1.697E+00	6.681E-01	6.246E-01	1.533E-01	2.716
U-235	+	89.96		2.757E+00	1.389E+00	1.344E+00	3.421E-01	2.052
	+	93.35		3.725E+00	1.199E+00	8.096E-01	1.926E-01	4.601
		143.76	*	1.239E-01	2.484E-01	4.037E-01	6.786E-02	0.307
		163.33		2.449E-01	5.391E-01	8.702E-01	1.555E-01	0.281
	+	185.72		1.888E-01	7.406E-02	7.804E-02	6.779E-03	2.419
		205.31		2.686E-01	6.850E-01	1.036E+00	1.895E-01	0.259
NP-237	+	86.48	*	1.302E+00	4.707E-01	3.900E-01	9.223E-02	3.338
		95.86		-1.014E+00	1.157E+00	1.553E+00	3.811E-01	-0.653
ANH-511	+	511.00	*	1.671E-01	9.112E-02	5.769E-02	5.007E-03	2.896

---- 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	*	-3.860E-01	4.388E-01	6.923E-01	6.466E-02	-0.558
NA-22		1274.54	*	1.501E-02	5.222E-02	8.839E-02	7.766E-03	0.170
NA-24		1368.63	*	-2.518E+03	5.222E-02	Half-Life too short		
SC-46		889.28	*	9.556E-03	5.173E-02	8.499E-02	7.854E-03	0.112
	+	1120.55		2.814E-01	1.173E-01	1.800E-01	1.524E-02	1.564
V-48		944.13		-2.703E-01	1.402E+00	2.305E+00	2.121E-01	-0.117
		983.53	*	4.186E-02	1.240E-01	2.140E-01	1.947E-02	0.196
		1312.11		-2.961E-02	1.264E-01	1.996E-01	1.800E-02	-0.148
CR-51		320.08	*	-7.973E-03	5.747E-01	9.413E-01	9.062E-02	-0.008
MN-54		834.85	*	3.999E-02	4.646E-02	8.110E-02	7.309E-03	0.493
CO-56		846.77	*	-4.904E-02	4.789E-02	6.754E-02	6.123E-03	-0.726
		1037.84		-1.210E-01	3.624E-01	5.801E-01	5.418E-02	-0.209
		1238.28		1.251E-01	1.354E-01	2.375E-01	2.088E-02	0.527
		1771.35		5.971E-02	3.052E-01	4.593E-01	3.948E-02	0.130
CO-57		122.06	*	1.315E-03	3.099E-02	4.996E-02	4.207E-03	0.026
		136.47		-1.677E-01	2.556E-01	3.954E-01	3.551E-02	-0.424
CO-58		810.76	*	-6.480E-02	5.155E-02	7.157E-02	6.385E-03	-0.905
FE-59		1099.45	*	7.814E-03	1.214E-01	2.026E-01	1.883E-02	0.039
		1291.59		-9.246E-02	1.731E-01	2.643E-01	2.648E-02	-0.350
CO-60		1173.23		8.100E-02	5.776E-02	1.068E-01	8.663E-03	0.758
		1332.49	*	1.760E-02	4.899E-02	8.363E-02	7.650E-03	0.210
ZN-65		1115.54	*	2.240E-02	1.401E-01	2.037E-01	1.733E-02	0.110
SE-75		121.12		1.185E-01	1.650E-01	2.735E-01	2.995E-02	0.433
		136.00		-3.822E-02	5.048E-02	7.768E-02	6.515E-03	-0.492
		264.66	*	-1.733E-02	6.446E-02	9.199E-02	8.585E-03	-0.188
		279.54		1.295E-01	1.566E-01	2.408E-01	2.316E-02	0.538
		400.66		5.989E-02	3.427E-01	5.599E-01	6.153E-02	0.107
SR-85		514.00	*	8.293E-02	6.057E-02	9.830E-02	8.528E-03	0.844

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-88		898.04		3.482E-02	5.555E-02	9.501E-02	8.849E-03	0.366
		1836.06	*	-1.758E-02	3.849E-02	5.624E-02	4.701E-03	-0.313
Y-91		1204.77	*	-2.666E+01	3.266E+01	4.959E+01	4.125E+00	-0.538
NB-94		702.65	*	5.102E-04	3.971E-02	6.525E-02	5.437E-03	0.008
		871.09		5.435E-03	4.156E-02	6.801E-02	6.235E-03	0.080
NB-95		765.81	*	6.376E-02	5.907E-02	1.043E-01	9.054E-03	0.611
NB-95M		235.69	*	6.554E-02	1.876E-01	2.814E-01	2.916E-02	0.233
ZR-95		724.19		-1.292E-02	1.492E-01	2.091E-01	1.923E-02	-0.062
		756.73	*	1.009E-01	1.107E-01	1.739E-01	1.658E-02	0.580
MO-99		140.51		1.822E-04	1.107E-01	Half-Life	too short	
		181.07		6.416E-05	1.107E-01	Half-Life	too short	
		366.42		-4.553E-04	1.107E-01	Half-Life	too short	
		739.50	*	-6.077E-05	1.107E-01	Half-Life	too short	
		777.92		-5.090E-05	1.107E-01	Half-Life	too short	
TC-99M		140.51	*	1.107E+20	1.107E-01	Half-Life	too short	
RU-103		497.08	*	5.752E-03	5.815E-02	9.845E-02	1.379E-02	0.058
	+	610.33		1.998E+01	4.031E+00	4.493E+00	7.293E-01	4.446
RH-106		621.93	*	2.439E-01	3.738E-01	6.506E-01	8.507E-02	0.375
		1050.41		3.925E-01	3.388E+00	5.699E+00	5.042E-01	0.069
RU-106		621.93	*	2.439E-01	3.730E-01	6.506E-01	5.425E-02	0.375
		1050.41		3.925E-01	3.388E+00	5.699E+00	5.042E-01	0.069
AG-108M		433.94	*	2.155E-02	3.770E-02	6.303E-02	5.601E-03	0.342
		614.28		4.359E-02	4.388E-02	7.042E-02	6.105E-03	0.619
		722.91		3.893E-02	5.141E-02	7.951E-02	6.941E-03	0.490
AG-110M		657.76	*	1.021E-02	5.552E-02	8.095E-02	6.793E-03	0.126
		677.62		-1.005E-01	3.690E-01	5.916E-01	4.998E-02	-0.170
		706.68		-1.403E-02	2.629E-01	4.292E-01	3.696E-02	-0.033
		763.94		-1.931E-01	2.158E-01	3.230E-01	2.875E-02	-0.598
		884.68		1.242E-03	6.270E-02	1.013E-01	9.602E-03	0.012
		937.49		-3.882E-02	1.410E-01	1.953E-01	1.856E-02	-0.199
		1384.29		1.745E-01	1.885E-01	3.319E-01	3.122E-02	0.526
		1505.03		-2.675E-01	3.681E-01	5.199E-01	4.770E-02	-0.515
SN-113		391.69	*	2.074E-02	6.131E-02	1.013E-01	8.840E-03	0.205
CD-115		260.90		2.700E-04	6.131E-02	Half-Life	too short	
		492.35		-2.103E-04	6.131E-02	Half-Life	too short	
		527.90	*	3.688E-05	6.131E-02	Half-Life	too short	
SN-117M		156.02		2.749E+00	4.275E+00	6.981E+00	5.856E-01	0.394
		158.56	*	7.239E-04	1.017E-01	1.614E-01	1.356E-02	0.004
TE-123M		159.00	*	-2.710E-02	3.781E-02	5.778E-02	4.889E-03	-0.469
SB-124		602.73		-1.169E-02	5.416E-02	8.316E-02	7.015E-03	-0.141
		645.85		3.132E-01	6.383E-01	1.098E+00	9.568E-02	0.285
		722.78		4.673E-01	5.684E-01	8.846E-01	7.650E-02	0.528
		1690.97	*	-2.051E-02	1.011E-01	1.612E-01	1.483E-02	-0.127
SB-125		427.87	*	3.154E-02	1.197E-01	1.960E-01	1.715E-02	0.161
	+	463.37		7.486E-01	4.618E-01	7.114E-01	6.624E-02	1.052
		600.60		-5.905E-02	2.310E-01	3.685E-01	3.351E-02	-0.160
		635.95		-7.522E-02	3.304E-01	5.354E-01	4.812E-02	-0.140
TE-125M		109.28	*	2.711E-01	1.282E+01	2.057E+01	2.220E+00	0.013
I-126		388.63		2.291E-01	3.234E-01	5.473E-01	4.651E-02	0.419

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	+	666.33	*	-4.113E-01	4.964E-01	6.355E-01	5.161E-02	-0.647
		753.82		6.266E+00	4.322E+00	6.322E+00	5.446E-01	0.991
		414.70		-9.280E-02	1.541E-01	2.373E-01	2.028E-02	-0.391
		666.50		-1.399E-01	1.740E-01	2.237E-01	1.817E-02	-0.625
		695.00		1.153E-01	1.529E-01	2.659E-01	2.204E-02	0.434
		697.00		1.087E-01	5.200E-01	8.686E-01	7.210E-02	0.125
SB-127	+	720.70	*	3.216E-01	3.137E-01	5.148E-01	4.342E-02	0.625
		856.80		-2.034E-01	1.015E+00	1.371E+00	1.249E-01	-0.148
		252.40		1.068E-01	2.080E+01	3.459E+01	1.468E+01	0.003
		473.00		2.086E+00	8.453E+00	1.375E+01	2.082E+00	0.152
		685.70	*	4.579E+00	6.289E+00	1.096E+01	1.504E+00	0.418
		783.70		1.248E+01	1.694E+01	2.934E+01	4.357E+00	0.426
I-131	+	80.19		-2.840E+00	1.381E+01	1.573E+01	1.626E+00	-0.181
		284.31		-5.873E+00	3.749E+00	5.568E+00	5.449E-01	-1.055
		364.49	*	8.369E-02	2.820E-01	4.673E-01	4.364E-02	0.179
TE-132	+	636.99		-6.599E-01	3.755E+00	6.114E+00	5.404E-01	-0.108
		49.72		1.252E+01	1.511E+02	2.534E+02	3.563E+01	0.049
		111.76		6.882E+01	2.132E+02	3.491E+02	4.758E+01	0.197
		116.30		1.865E+02	1.839E+02	3.075E+02	4.149E+01	0.607
BA-133	+	228.16	*	-9.660E-02	4.933E+00	8.243E+00	1.474E+00	-0.012
		81.00		9.872E-02	1.340E-01	1.640E-01	2.709E-02	0.602
		276.40		6.033E-01	5.439E-01	7.820E-01	1.137E-01	0.772
		302.85		2.784E-02	1.906E-01	2.782E-01	3.759E-02	0.100
		356.01	*	1.257E-02	5.852E-02	8.498E-02	1.117E-02	0.148
I-133	+	383.85		9.686E-02	3.611E-01	5.956E-01	7.378E-02	0.163
		529.87	*	-1.237E-01	3.611E-01	Half-Life	too short	
		875.33		-5.393E+01	3.611E-01	Half-Life	too short	
CS-134	+	1298.22		-2.997E+01	3.611E-01	Half-Life	too short	
		563.25		3.702E-01	4.387E-01	7.753E-01	6.718E-02	0.477
		569.33		2.044E-01	2.522E-01	4.354E-01	3.780E-02	0.469
		604.72		-7.928E-03	4.436E-02	6.255E-02	5.284E-03	-0.127
		795.86	*	8.098E-02	6.482E-02	1.152E-01	1.024E-02	0.703
CS-135	+	801.95		-2.075E-01	5.222E-01	8.160E-01	7.267E-02	-0.254
		1365.19		-4.431E-02	1.437E+00	2.329E+00	2.224E-01	-0.019
		268.22	*	2.582E-01	2.174E-01	3.406E-01	3.597E-02	0.758
I-135	+	546.56		7.872E+18	2.174E-01	Half-Life	too short	
		836.80		-1.091E+18	2.174E-01	Half-Life	too short	
		1038.76		2.212E+16	2.174E-01	Half-Life	too short	
		1131.51		5.954E+18	2.174E-01	Half-Life	too short	
		1260.41	*	1.247E+18	2.174E-01	Half-Life	too short	
		1457.56		2.927E+20	2.174E-01	Half-Life	too short	
		1678.03		-3.242E+17	2.174E-01	Half-Life	too short	
		1791.20		1.572E+18	2.174E-01	Half-Life	too short	
		153.25		-1.119E-01	1.596E+00	2.529E+00	2.547E-01	-0.044
		176.60		-2.878E-02	8.686E-01	1.471E+00	1.394E-01	-0.020
CS-136	+	273.65		2.659E-01	1.469E+00	1.581E+00	1.580E-01	0.168
		340.55		6.184E-01	3.435E-01	5.469E-01	5.130E-02	1.131
		818.51		-9.179E-02	1.311E-01	1.954E-01	1.750E-02	-0.470
		1048.07	*	-2.155E-02	2.033E-01	3.348E-01	3.086E-02	-0.064

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1235.36			9.349E-01	1.202E+00	2.089E+00	2.444E-01	0.448
CE-139	165.86	*		1.321E-03	3.857E-02	6.114E-02	5.171E-03	0.022
BA-140	162.66			3.958E-01	1.561E+00	2.502E+00	2.258E-01	0.158
	304.85			-1.107E+00	3.020E+00	4.202E+00	1.238E+00	-0.263
	423.72			-4.004E-01	3.916E+00	6.250E+00	2.055E+00	-0.064
	537.26	*		-2.703E-01	4.902E-01	7.701E-01	2.612E-01	-0.351
LA-140	328.76			1.008E+00	6.198E-01	1.088E+00	1.046E-01	0.926
	487.02			1.141E-01	2.512E-01	4.362E-01	4.019E-02	0.262
	815.77			1.935E-01	5.761E-01	9.677E-01	9.584E-02	0.200
	1596.21	*		-8.214E-03	1.581E-01	2.618E-01	2.373E-02	-0.031
CE-141	145.44	*		3.676E-02	8.936E-02	1.451E-01	1.234E-02	0.253
CE-143	57.36			3.745E-03	8.936E-02	Half-Life	too short	
	293.27	*		3.502E-02	8.936E-02	Half-Life	too short	
	664.57			3.273E-01	8.936E-02	Half-Life	too short	
	721.93			9.420E-02	8.936E-02	Half-Life	too short	
CE-144	80.12			-7.142E-01	3.872E+00	4.418E+00	4.518E-01	-0.162
	133.52	*		-2.553E-02	2.493E-01	3.974E-01	6.010E-02	-0.064
PM-144	476.78			-3.896E-02	8.076E-02	1.316E-01	1.240E-02	-0.296
	618.01			-1.587E-02	3.973E-02	6.170E-02	5.313E-03	-0.257
	696.49	*		1.324E-02	4.418E-02	7.431E-02	6.171E-03	0.178
PR-144	696.51	*		9.728E-01	3.318E+00	5.578E+00	4.629E-01	0.174
	1489.16			-8.155E-01	1.757E+01	2.818E+01	2.589E+00	-0.029
PM-146	453.88	*		2.721E-02	5.342E-02	8.873E-02	9.420E-03	0.307
	633.25			-5.200E-01	1.799E+00	2.886E+00	1.100E+00	-0.180
	735.93			5.312E-02	2.049E-01	2.991E-01	8.372E-02	0.178
	747.24			-1.409E-01	1.297E-01	1.717E-01	2.501E-02	-0.821
ND-147	91.11	+		1.465E+00	6.582E-01	9.623E-01	1.080E-01	1.522
	319.41			-1.761E+00	6.906E+00	1.114E+01	1.026E+00	-0.158
	531.02	*		4.777E-01	1.116E+00	1.923E+00	2.880E-01	0.248
PM-149	285.90	*		1.158E-05	1.116E+00	Half-Life	too short	
EU-152	121.78			9.901E-03	8.776E-02	1.419E-01	1.382E-02	0.070
	244.70			2.933E-01	4.109E-01	6.323E-01	5.828E-02	0.464
	344.28	*		-4.962E-02	1.270E-01	1.944E-01	1.849E-02	-0.255
	778.90			-2.010E-01	3.093E-01	4.690E-01	4.101E-02	-0.429
	964.08			6.948E-01	4.162E-01	7.072E-01	6.474E-02	0.982
	1085.87			8.610E-02	4.083E-01	6.996E-01	6.066E-02	0.123
	1112.07			-1.597E-01	4.233E-01	6.411E-01	5.462E-02	-0.249
	1408.01			1.171E-01	2.451E-01	4.223E-01	3.885E-02	0.277
GD-153	69.67			8.662E-01	2.425E+00	3.641E+00	3.425E-01	0.238
	97.43	*		7.247E-02	1.052E-01	1.587E-01	1.566E-02	0.457
	103.18			-9.132E-02	1.267E-01	1.981E-01	1.855E-02	-0.461
EU-154	123.07			-1.322E-02	6.267E-02	9.978E-02	1.116E-02	-0.132
	723.31			2.989E-03	2.472E-01	3.508E-01	3.276E-02	0.009
	873.19			-1.007E-01	3.597E-01	5.627E-01	6.924E-02	-0.179
	996.26			-2.968E-02	4.664E-01	7.748E-01	1.371E-01	-0.038
	1004.73			-8.188E-02	2.632E-01	4.259E-01	5.086E-02	-0.192
	1274.44	*		2.848E-02	1.478E-01	2.475E-01	2.846E-02	0.115
EU-155	86.55	+		5.306E-01	1.565E-01	2.158E-01	2.378E-02	2.458
	105.31	*		7.817E-02	1.213E-01	2.019E-01	1.879E-02	0.387

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		1.513E+00	4.458E-01	6.151E-01	6.752E-02	2.460
		197.04		-1.010E-01	7.667E-01	1.261E+00	1.112E-01	-0.080
		215.65		1.476E-01	9.733E-01	1.644E+00	1.480E-01	0.090
	+	298.57		3.509E-01	1.984E-01	2.696E-01	2.504E-02	1.302
		879.36	*	1.479E-02	1.990E-01	3.233E-01	2.975E-02	0.046
		962.29		5.474E-01	8.138E-01	1.309E+00	1.199E-01	0.418
		966.15		9.663E-01	3.735E-01	6.549E-01	5.991E-02	1.476
		1177.93		-2.224E-01	5.026E-01	7.924E-01	6.450E-02	-0.281
		1271.85		-5.891E-01	9.535E-01	1.445E+00	1.266E-01	-0.408
		80.57		-9.768E-02	4.105E-01	4.659E-01	4.785E-02	-0.210
HO-166M	+	184.41		1.500E-01	5.884E-02	7.875E-02	6.829E-03	1.904
		280.46		8.828E-02	1.131E-01	1.736E-01	1.617E-02	0.508
		410.95		3.642E-01	3.404E-01	5.748E-01	4.904E-02	0.634
		711.68	*	-3.755E-03	7.331E-02	1.196E-01	1.003E-02	-0.031
	+	752.31		2.141E-01	3.555E-01	5.438E-01	4.680E-02	0.394
		810.29		-8.187E-02	7.192E-02	1.016E-01	9.044E-03	-0.805
		67.75		8.529E-02	1.480E-01	2.472E-01	2.299E-02	0.345
		100.11		1.991E-02	2.129E-01	3.472E-01	3.338E-02	0.057
TA-182	+	152.43		-1.439E-01	4.474E-01	7.001E-01	5.859E-02	-0.206
		222.11		4.442E-02	4.578E-01	7.701E-01	6.977E-02	0.058
		1121.30		7.663E-01	3.194E-01	4.826E-01	4.085E-02	1.588
		1189.05		-1.405E-01	4.091E-01	6.508E-01	5.346E-02	-0.216
	+	1221.41	*	6.675E-02	2.701E-01	4.539E-01	3.826E-02	0.147
		1231.02		4.993E-02	6.652E-01	1.100E+00	9.342E-02	0.045
		295.96		1.278E+00	2.686E-01	3.891E-01	3.641E-02	3.284
		308.46		-3.216E-02	1.356E-01	2.197E-01	2.044E-02	-0.146
IR-192	+	316.51	*	1.446E-02	4.681E-02	7.816E-02	7.223E-03	0.185
		468.07		1.400E-02	1.083E-01	1.613E-01	1.499E-02	0.087
		70.83		2.252E-01	2.003E+00	2.972E+00	4.914E-01	0.076
		72.87		4.749E-01	1.183E+00	1.772E+00	2.854E-01	0.268
HG-203	+	279.20	*	6.605E-02	6.008E-02	9.378E-02	8.926E-03	0.704
		72.81		7.373E-02	2.426E-01	3.624E-01	3.481E-02	0.203
		74.97		8.801E-01	1.882E-01	2.770E-01	2.705E-02	3.177
		569.70		4.332E-02	3.819E-02	6.727E-02	5.760E-03	0.644
BI-207	+	1063.66	*	4.110E-03	6.598E-02	1.104E-01	9.695E-03	0.037
		1770.23		3.032E-01	5.976E-01	9.714E-01	8.354E-02	0.312
		46.54	*	-1.600E+00	5.747E+00	9.289E+00	8.936E-01	-0.172
		404.85	*	2.968E-01	9.835E-01	1.601E+00	7.745E-01	0.185
PB-210	+	427.09		1.429E+00	2.050E+00	3.285E+00	1.520E+00	0.435
		832.01		-4.849E-01	1.266E+00	1.931E+00	1.002E+00	-0.251
		727.33	*	2.528E+00	1.190E+00	1.403E+00	1.733E-01	1.802
		785.37		6.022E+00	3.789E+00	6.992E+00	6.136E-01	0.861
BI-212	+	1620.50		1.618E+00	3.051E+00	5.481E+00	4.941E-01	0.295
		271.23		1.027E+00	5.657E-01	5.799E-01	6.285E-02	1.771
		401.81	*	2.686E-01	5.378E-01	8.946E-01	1.324E-01	0.300
		81.07		2.095E-01	3.011E-01	3.690E-01	3.809E-02	0.568
RN-219	+	83.79		3.154E-01	1.431E-01	2.444E-01	2.595E-02	1.291
		94.87		8.812E-01	5.670E-01	8.822E-01	8.951E-02	0.999
		144.24		3.053E-01	8.303E-01	1.346E+00	1.261E-01	0.227

---- 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		2.007E-01	4.925E-01	7.967E-01	7.349E-02	0.252
	+	269.46		7.981E-01	4.375E-01	4.429E-01	4.190E-02	1.802
		323.87	*	-5.150E-01	8.296E-01	1.301E+00	2.291E-01	-0.396
	+	338.28		5.065E+00	2.001E+00	2.882E+00	3.574E-01	1.758
		79.69		4.632E-02	1.902E+00	2.210E+00	3.992E-01	0.021
		235.96		3.044E-01	2.179E-01	3.422E-01	3.695E-02	0.890
		256.23	*	6.934E-02	3.185E-01	5.347E-01	6.696E-02	0.130
TH-227	+	299.98		2.543E+00	1.457E+00	2.037E+00	2.682E-01	1.248
		304.50		2.683E-01	2.288E+00	3.330E+00	5.620E-01	0.081
		334.37		-2.531E-01	2.545E+00	3.614E+00	5.733E-01	-0.070
		79.80		-5.143E-02	2.503E+00	2.897E+00	6.503E-01	-0.018
		235.96		3.044E-01	2.176E-01	3.422E-01	3.504E-02	0.890
		256.23	*	6.934E-02	3.185E-01	5.347E-01	7.500E-02	0.130
	+	299.98		2.543E+00	1.457E+00	2.037E+00	2.682E-01	1.248
TH-229		304.50		2.683E-01	2.288E+00	3.330E+00	5.620E-01	0.081
		334.37		-2.531E-01	2.545E+00	3.614E+00	5.733E-01	-0.070
		85.43		6.566E-01	2.444E-01	4.171E-01	4.509E-02	1.574
	+	88.47		6.725E-01	1.982E-01	2.695E-01	2.979E-02	2.495
		193.51	*	-2.670E-01	6.246E-01	1.034E+00	9.074E-02	-0.258
	+	210.85		2.304E+00	1.576E+00	1.981E+00	1.775E-01	1.163
		283.69	*	-2.586E+00	1.833E+00	2.712E+00	4.070E-01	-0.954
PA-231	+	301.36		1.633E+00	9.338E-01	1.278E+00	1.615E-01	1.278
TH-231		81.07		2.095E-01	3.011E-01	3.690E-01	3.809E-02	0.568
		83.79		3.154E-01	1.431E-01	2.444E-01	2.595E-02	1.291
		94.87		8.812E-01	5.670E-01	8.822E-01	8.951E-02	0.999
		144.24		3.053E-01	8.303E-01	1.346E+00	1.261E-01	0.227
		154.21		2.007E-01	4.925E-01	7.967E-01	7.349E-02	0.252
	+	269.46		7.981E-01	4.375E-01	4.429E-01	4.190E-02	1.802
		323.87	*	-5.150E-01	8.296E-01	1.301E+00	2.291E-01	-0.396
PA-233	+	338.28		5.065E+00	2.001E+00	2.882E+00	3.574E-01	1.758
	+	300.13		1.151E+00	6.650E-01	9.198E-01	1.400E-01	1.251
		311.90	*	-7.447E-02	8.477E-02	1.316E-01	1.247E-02	-0.566
		340.48		2.088E+00	1.084E+00	1.580E+00	3.828E-01	1.322
	PA-234	94.67		4.857E-01	2.191E-01	3.398E-01	4.596E-02	1.429
		98.44		1.889E-01	1.499E-01	1.789E-01	1.002E-01	1.056
		111.00		5.069E-02	2.187E-01	3.538E-01	4.341E-02	0.143
PA-234M		131.20		-9.734E-02	1.389E-01	2.156E-01	1.797E-02	-0.451
		569.50		2.887E-01	3.458E-01	5.980E-01	5.121E-02	0.483
		733.00		-1.129E-01	5.485E-01	7.547E-01	1.672E-01	-0.150
		880.51		1.112E-01	3.579E-01	5.954E-01	5.481E-02	0.187
		883.24		-1.330E-01	3.765E-01	5.663E-01	3.811E-01	-0.235
		926.50		-3.126E-02	2.490E-01	3.547E-01	9.042E-02	-0.088
		946.00	*	2.452E-02	3.496E-01	5.907E-01	1.124E-01	0.042
TH-234		949.00		2.334E-01	5.270E-01	9.209E-01	8.463E-02	0.253
	PA-234M	766.42		1.530E+01	1.708E+01	2.607E+01	1.323E+01	0.587
		1001.03	*	-1.878E+00	5.732E+00	9.304E+00	9.614E-01	-0.202
		63.29	*	2.068E+00	1.773E+00	2.952E+00	5.488E-01	0.701
	+	92.59		4.931E+00	1.552E+00	1.668E+00	3.812E-01	2.956
		63.29	*	2.068E+00	1.773E+00	2.952E+00	5.488E-01	0.701
U-238		63.29	*	2.068E+00	1.773E+00	2.952E+00	5.488E-01	0.701

----- 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		4.931E+00	1.184E+00	1.668E+00	1.740E-01	2.956
		99.53		1.424E-01	1.887E-01	3.159E-01	3.053E-02	0.451
		103.37		-7.091E-02	1.130E-01	1.776E-01	1.661E-02	-0.399
		106.12		1.259E-01	9.632E-02	1.639E-01	1.501E-02	0.768
	*	117.23		-2.258E-01	4.735E-01	7.458E-01	6.405E-02	-0.303
AM-241		228.18		-4.875E-02	2.695E-01	4.470E-01	4.071E-02	-0.109
	+	277.60		2.979E-01	2.665E-01	3.740E-01	3.483E-02	0.796
CM-247	+	59.54	*	-8.446E-02	1.981E-01	3.232E-01	3.068E-02	-0.261
CF-249		278.00		1.265E+00	1.132E+00	1.613E+00	1.503E-01	0.784
		287.50		1.814E+00	1.564E+00	2.725E+00	2.537E-01	0.666
	*	402.40		5.770E-05	5.069E-02	8.183E-02	6.955E-03	0.001
		252.80		-1.144E-01	1.156E+00	1.913E+00	1.770E-01	-0.060
CF-251		333.37		-1.032E-01	2.725E-01	3.781E-01	3.446E-02	-0.273
	*	388.16		3.565E-03	5.185E-02	8.430E-02	7.170E-03	0.042
	*	177.52		-3.500E-02	1.507E-01	2.529E-01	2.173E-02	-0.138
		227.38		1.128E-01	4.374E-01	7.400E-01	6.736E-02	0.152
		285.41		-5.021E-01	2.660E+00	4.344E+00	4.045E-01	-0.116

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]G248243007      *
* Acquisition date   : 19-MAR-2010 10:55:10 Detector SN#                   *
* Detector ID        : GAM06 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.27 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248243007 Analyst initials: MXR1                  *
* Batch Number      : 959280 Sample Quantity : 1.1882E+02 GRAM            *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 16-FEB-2010 15:10:04 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.724E+01	3.158E+00	6.785E-01	0.000E+00
CD-109	4.516E+00	1.304E+00	1.368E+00	0.000E+00
SN-126	4.362E-01	1.260E-01	1.328E-01	0.000E+00
BA-137M	5.817E-01	1.000E-01	8.034E-02	0.000E+00
CS-137	6.145E-01	1.057E-01	8.488E-02	0.000E+00
TL-208	5.546E-01	1.209E-01	7.198E-02	0.000E+00
BI-211	4.552E+00	7.353E-01	4.246E-01	0.000E+00
PB-212	1.970E+00	2.425E-01	1.180E-01	0.000E+00
BI-214	1.686E+00	2.570E-01	1.385E-01	0.000E+00
PB-214	1.652E+00	2.814E-01	1.544E-01	0.000E+00
RA-224	5.945E+00	1.731E+00	1.266E+00	0.000E+00
RA-226	1.686E+00	2.570E-01	1.385E-01	0.000E+00
AC-228	1.853E+00	3.894E-01	2.566E-01	0.000E+00
RA-228	1.853E+00	3.894E-01	2.566E-01	0.000E+00
TH-228	1.970E+00	2.425E-01	1.180E-01	0.000E+00
TH-232	1.853E+00	3.894E-01	2.566E-01	0.000E+00
U-235	1.239E-01	2.434E-01	4.132E-01	0.000E+00
NP-237	1.302E+00	4.613E-01	4.014E-01	0.000E+00
ANH-511	1.671E-01	8.929E-02	5.823E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.860E-01	4.300E-01	6.992E-01	0.000E+00 NOT IDENT.
NA-22	1.501E-02	5.117E-02	8.828E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.003E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	9.556E-03	5.070E-02	8.524E-02	0.000E+00 FAIL ABUN
V-48	4.186E-02	1.215E-01	2.144E-01	0.000E+00 NOT IDENT.
CR-51	-7.973E-03	5.632E-01	9.549E-01	0.000E+00 NOT IDENT.
MN-54	3.999E-02	4.553E-02	8.140E-02	0.000E+00 NOT IDENT.
CO-56	-4.904E-02	4.693E-02	6.778E-02	0.000E+00 NOT IDENT.

CO-57	1.315E-03	3.037E-02	5.123E-02	0.000E+00	NOT IDENT.
CO-58	-6.480E-02	5.052E-02	7.185E-02	0.000E+00	NOT IDENT.
FE-59	7.814E-03	1.189E-01	2.027E-01	0.000E+00	NOT IDENT.
CO-60	1.760E-02	4.801E-02	8.349E-02	0.000E+00	NOT IDENT.
ZN-65	2.240E-02	1.373E-01	2.038E-01	0.000E+00	NOT IDENT.
SE-75	-1.733E-02	6.317E-02	9.352E-02	0.000E+00	NOT IDENT.
SR-85	8.293E-02	5.936E-02	9.920E-02	0.000E+00	NOT IDENT.
Y-88	-1.758E-02	3.772E-02	5.593E-02	0.000E+00	NOT IDENT.
Y-91	-2.666E+01	3.200E+01	4.956E+01	0.000E+00	NOT IDENT.
NB-94	5.102E-04	3.892E-02	6.561E-02	0.000E+00	NOT IDENT.
NB-95	6.376E-02	5.789E-02	1.048E-01	0.000E+00	NOT IDENT.
NB-95M	6.554E-02	1.838E-01	2.864E-01	0.000E+00	NOT IDENT.
ZR-95	1.009E-01	1.085E-01	1.748E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.107E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.258E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.752E-03	5.699E-02	9.939E-02	0.000E+00	FAIL ABUN
RH-106	2.439E-01	3.664E-01	6.552E-01	0.000E+00	NOT IDENT.
RU-106	2.439E-01	3.656E-01	6.552E-01	0.000E+00	NOT IDENT.
AG-108M	2.155E-02	3.695E-02	6.373E-02	0.000E+00	NOT IDENT.
AG-110M	1.021E-02	5.441E-02	8.146E-02	0.000E+00	NOT IDENT.
SN-113	2.074E-02	6.009E-02	1.026E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.563E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	7.239E-04	9.964E-02	1.650E-01	0.000E+00	NOT IDENT.
TE-123M	-2.710E-02	3.705E-02	5.907E-02	0.000E+00	NOT IDENT.
SB-124	-2.051E-02	9.907E-02	1.604E-01	0.000E+00	NOT IDENT.
SB-125	3.154E-02	1.173E-01	1.982E-01	0.000E+00	FAIL ABUN
TE-125M	2.711E-01	1.256E+01	2.112E+01	0.000E+00	NOT IDENT.
I-126	-4.113E-01	4.864E-01	6.395E-01	0.000E+00	FAIL ABUN
SB-126	3.216E-01	3.074E-01	5.175E-01	0.000E+00	NOT IDENT.
SB-127	4.579E+00	6.163E+00	1.103E+01	0.000E+00	NOT IDENT.
I-131	8.369E-02	2.763E-01	4.734E-01	0.000E+00	NOT IDENT.
TE-132	-9.660E-02	4.834E+00	8.394E+00	0.000E+00	NOT IDENT.
BA-133	1.257E-02	5.735E-02	8.611E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.700E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.098E-02	6.353E-02	1.157E-01	0.000E+00	NOT IDENT.
CS-135	2.582E-01	2.130E-01	3.462E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.285E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.155E-02	1.992E-01	3.351E-01	0.000E+00	NOT IDENT.
CE-139	1.321E-03	3.779E-02	6.248E-02	0.000E+00	NOT IDENT.
BA-140	-2.703E-01	4.803E-01	7.767E-01	0.000E+00	NOT IDENT.
LA-140	-8.214E-03	1.550E-01	2.608E-01	0.000E+00	NOT IDENT.
CE-141	3.676E-02	8.758E-02	1.485E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.293E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.553E-02	2.443E-01	4.071E-01	0.000E+00	NOT IDENT.
PM-144	1.324E-02	4.330E-02	7.473E-02	0.000E+00	NOT IDENT.
PR-144	9.728E-01	3.252E+00	5.610E+00	0.000E+00	NOT IDENT.
PM-146	2.721E-02	5.235E-02	8.967E-02	0.000E+00	NOT IDENT.
ND-147	4.777E-01	1.093E+00	1.940E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.298E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-4.962E-02	1.244E-01	1.970E-01	0.000E+00	NOT IDENT.
GD-153	7.247E-02	1.031E-01	1.632E-01	0.000E+00	NOT IDENT.
EU-154	2.848E-02	1.448E-01	2.472E-01	0.000E+00	NOT IDENT.
EU-155	7.817E-02	1.189E-01	2.073E-01	0.000E+00	FAIL ABUN
TB-160	1.479E-02	1.950E-01	3.243E-01	0.000E+00	FAIL ABUN
HO-166M	-3.755E-03	7.184E-02	1.203E-01	0.000E+00	FAIL ABUN
TA-182	6.675E-02	2.647E-01	4.536E-01	0.000E+00	FAIL ABUN
IR-192	1.446E-02	4.587E-02	7.930E-02	0.000E+00	FAIL ABUN
HG-203	6.605E-02	5.887E-02	9.528E-02	0.000E+00	NOT IDENT.
BI-207	4.110E-03	6.466E-02	1.105E-01	0.000E+00	FAIL ABUN
PB-210	-1.600E+00	5.632E+00	9.624E+00	0.000E+00	NOT IDENT.
PB-211	2.968E-01	9.639E-01	1.620E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.166E+00	1.410E+00	0.000E+00	FAIL ABUN
RN-219	2.686E-01	5.270E-01	9.053E-01	0.000E+00	FAIL ABUN
RA-223	-5.150E-01	8.131E-01	1.319E+00	0.000E+00	FAIL ABUN
AC-227	6.934E-02	3.121E-01	5.438E-01	0.000E+00	FAIL ABUN
TH-227	6.934E-02	3.121E-01	5.438E-01	0.000E+00	FAIL ABUN
TH-229	-2.670E-01	6.121E-01	1.055E+00	0.000E+00	FAIL ABUN
PA-231	-2.586E+00	1.796E+00	2.755E+00	0.000E+00	FAIL ABUN
TH-231	-5.150E-01	8.131E-01	1.319E+00	0.000E+00	FAIL ABUN
PA-233	-7.447E-02	8.307E-02	1.335E-01	0.000E+00	FAIL ABUN
PA-234	2.452E-02	3.426E-01	5.919E-01	0.000E+00	NOT IDENT.
PA-234M	-1.878E+00	5.617E+00	9.319E+00	0.000E+00	NOT IDENT.
TH-234	2.068E+00	1.737E+00	3.049E+00	0.000E+00	FAIL ABUN
U-238	2.068E+00	1.737E+00	3.049E+00	0.000E+00	FAIL ABUN
NP-239	-2.258E-01	4.640E-01	7.650E-01	0.000E+00	FAIL ABUN
AM-241	-8.446E-02	1.942E-01	3.339E-01	0.000E+00	NOT IDENT.
CM-247	5.770E-05	4.967E-02	8.280E-02	0.000E+00	FAIL ABUN
CF-249	3.565E-03	5.082E-02	8.534E-02	0.000E+00	NOT IDENT.

CF-251	-3.500E-02	1.477E-01	2.583E-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]G248243007.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:55:10
Sample ID          : G248243007 Sample quantity : 1.18820E+02 GRAM
Detector name      : GAM06 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.27 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	858	10.66*	9.338E-01	2.724E+01	2.724E+01	11.83
CD-109	88.03	265	3.70*	5.180E+00	4.362E+00	4.516E+00	29.47
SN-126	64.28	-----	9.60	2.842E+00	-----	Line Not Found	-----
	86.94	265	8.90	5.180E+00	1.813E+00	1.813E+00	50.04
	87.57	265	37.00*	5.180E+00	4.362E-01	4.362E-01	29.47
BA-137M	661.66	316	89.90*	1.912E+00	5.809E-01	5.817E-01	17.54
CS-137	661.66	316	85.10*	1.912E+00	6.137E-01	6.145E-01	17.55
TL-208	277.37	51	6.60	3.754E+00	6.518E-01	6.518E-01	89.91
	583.19	317	85.00*	2.125E+00	5.546E-01	5.546E-01	22.23
	860.56	43	12.50	1.510E+00	7.204E-01	7.204E-01	86.08
BI-211	72.87	-----	1.23	3.914E+00	-----	Line Not Found	-----
	351.06	585	12.92*	3.144E+00	4.552E+00	4.552E+00	16.49
PB-212	74.82	410	10.28	4.127E+00	3.052E+00	3.052E+00	23.50
	77.11	599	17.10	4.366E+00	2.537E+00	2.537E+00	16.99
	238.63	1140	43.60*	4.191E+00	1.970E+00	1.970E+00	12.56
	300.09	86	3.30	3.541E+00	2.312E+00	2.312E+00	56.85
BI-214	609.32	497	45.49*	2.050E+00	1.686E+00	1.686E+00	15.56
	1120.29	87	14.92	1.179E+00	1.559E+00	1.559E+00	42.21
	1764.49	70	15.30	8.243E-01	1.741E+00	1.741E+00	37.11
PB-214	74.82	410	5.80	4.127E+00	5.410E+00	5.410E+00	22.81
	77.11	599	9.70	4.366E+00	4.472E+00	4.472E+00	18.89
	242.00	321	7.25	4.155E+00	3.362E+00	3.362E+00	30.27
	295.22	335	18.42	3.583E+00	1.605E+00	1.605E+00	21.98
	351.93	585	35.60*	3.144E+00	1.652E+00	1.652E+00	17.38
RA-224	240.99	321	4.10*	4.155E+00	5.945E+00	5.945E+00	29.71
RA-226	609.32	497	45.49*	2.050E+00	1.686E+00	1.686E+00	15.56
	1120.29	87	14.92	1.179E+00	1.559E+00	1.559E+00	42.21
	1764.49	70	15.30	8.243E-01	1.741E+00	1.741E+00	37.11
AC-228	338.32	147	11.27	3.237E+00	1.276E+00	1.276E+00	56.18
	911.20	217	25.80*	1.433E+00	1.853E+00	1.853E+00	21.45
	968.97	115	15.80	1.352E+00	1.697E+00	1.697E+00	39.38
RA-228	338.32	147	11.27	3.237E+00	1.276E+00	1.276E+00	56.18

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	217	25.80*	1.433E+00	1.853E+00	1.853E+00	21.45
	968.97	115	15.80	1.352E+00	1.697E+00	1.697E+00	39.38
	74.82	410	10.28	4.127E+00	3.052E+00	3.052E+00	21.42
	77.11	599	17.10	4.366E+00	2.537E+00	2.537E+00	16.99
TH-232	238.63	1140	43.60*	4.191E+00	1.970E+00	1.970E+00	12.56
	300.09	86	3.30	3.541E+00	2.312E+00	2.312E+00	82.87
	338.32	147	11.27	3.237E+00	1.276E+00	1.276E+00	38.60
	911.20	217	25.80*	1.433E+00	1.853E+00	1.853E+00	21.45
U-235	968.97	115	15.80	1.352E+00	1.697E+00	1.697E+00	39.38
	89.96	162	3.47	5.334E+00	2.757E+00	2.757E+00	50.38
	93.35	362	5.60	5.481E+00	3.725E+00	3.725E+00	32.19
	143.76	-----	10.96*	5.718E+00	-----	Line Not Found	-----
NP-237	163.33	-----	5.08	5.383E+00	-----	Line Not Found	-----
	185.72	170	57.20	4.984E+00	1.888E-01	1.888E-01	39.23
	205.31	-----	5.01	4.664E+00	-----	Line Not Found	-----
	86.48	265	12.40*	5.180E+00	1.302E+00	1.302E+00	36.17
ANH-511	95.86	-----	2.68	5.611E+00	-----	Line Not Found	-----
	511.00	125	100.00*	2.365E+00	1.671E-01	1.671E-01	54.53

Flag: "*" = Keyline

Total number of lines in spectrum 31
Number of unidentified lines 3
Number of lines tentatively identified by NID 28 90.32%

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	2.724E+01	2.724E+01	0.322E+01	11.83	
CD-109	461.40D	1.04	4.362E+00	4.516E+00	1.331E+00	29.47	
SN-126	2.30E+05Y	1.00	4.362E-01	4.362E-01	1.285E-01	29.47	
BA-137M	30.08Y	1.00	5.809E-01	5.817E-01	1.021E-01	17.54	
CS-137	30.08Y	1.00	6.137E-01	6.145E-01	1.079E-01	17.55	
TL-208	1.41E+10Y	1.00	5.546E-01	5.546E-01	1.233E-01	22.23	
BI-211	7.04E+08Y	1.00	4.552E+00	4.552E+00	0.750E+00	16.49	
PB-212	1.41E+10Y	1.00	1.970E+00	1.970E+00	0.247E+00	12.56	
BI-214	1600.00Y	1.00	1.686E+00	1.686E+00	0.262E+00	15.56	
PB-214	1600.00Y	1.00	1.652E+00	1.652E+00	0.287E+00	17.38	
RA-224	1.41E+10Y	1.00	5.945E+00	5.945E+00	1.766E+00	29.71	
RA-226	1600.00Y	1.00	1.686E+00	1.686E+00	0.262E+00	15.56	
AC-228	1.41E+10Y	1.00	1.853E+00	1.853E+00	0.397E+00	21.45	
RA-228	1.41E+10Y	1.00	1.853E+00	1.853E+00	0.397E+00	21.45	
TH-228	1.41E+10Y	1.00	1.970E+00	1.970E+00	0.247E+00	12.56	
TH-232	1.41E+10Y	1.00	1.853E+00	1.853E+00	0.397E+00	21.45	
U-235	7.04E+08Y	1.00	1.888E-01	1.888E-01	0.741E-01	39.23	K
NP-237	2.14E+06Y	1.00	1.302E+00	1.302E+00	0.471E+00	36.17	
ANH-511	1.00E+09Y	1.00	1.671E-01	1.671E-01	0.911E-01	54.53	
Total Activity :			6.047E+01	6.062E+01			

Grand Total Activity : 6.047E+01 6.062E+01

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

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

Unidentified Energy Lines
Sample ID : G248243007

Page : 4
Acquisition date : 19-MAR-2010 10:55:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.38	94	283	1.15	418.20	414	9	1.31E-02	67.8	4.60E+00	T
0	270.13	134	264	1.60	539.64	533	14	1.87E-02	54.0	3.83E+00	T
0	462.50	63	93	1.10	924.26	920	9	8.75E-03	61.0	2.56E+00	T
0	727.99	94	73	1.86	1455.15	1449	16	1.30E-02	45.4	1.76E+00	T
0	755.04	41	41	1.11	1509.25	1503	11	5.67E-03	68.4	1.70E+00	T
0	933.56	37	33	0.93	1866.32	1861	11	5.10E-03	69.0	1.40E+00	
0	1377.75	26	12	1.62	2754.93	2750	9	3.64E-03	63.0	9.79E-01	
0	1729.89	29	4	2.21	3459.60	3451	17	4.01E-03	49.5	8.33E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:56:28.42

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*****
*                               GEL Laboratories LLC
*                               2040 Savage Road
*                               Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243007.CNF;1
* Acquisition date   : 19-MAR-2010 10:55:10  Detector SN#      :
* Detector ID        : GAM06                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.27          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248243007            Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity : 1.18820E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 16-FEB-2010 15:10:04.7MS Isotope      :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A               LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.724E+01	3.223E+00	6.804E-01	6.414E-02	40.037
CD-109	4.516E+00	1.331E+00	1.330E+00	1.479E-01	3.396
SN-126	4.362E-01	1.285E-01	1.291E-01	1.430E-02	3.379
BA-137M	5.817E-01	1.021E-01	7.984E-02	6.461E-03	7.286
CS-137	6.145E-01	1.079E-01	8.435E-02	6.840E-03	7.286
TL-208	5.546E-01	1.233E-01	7.143E-02	6.521E-03	7.765
BI-211	4.552E+00	7.504E-01	4.190E-01	3.932E-02	10.864
PB-212	1.970E+00	2.475E-01	1.160E-01	1.190E-02	16.990
BI-214	1.686E+00	2.622E-01	1.376E-01	1.365E-02	12.253
PB-214	1.652E+00	2.872E-01	1.524E-01	1.658E-02	10.840
RA-224	5.945E+00	1.766E+00	1.244E+00	1.144E-01	4.780
RA-226	1.686E+00	2.622E-01	1.376E-01	1.365E-02	12.253
AC-228	1.853E+00	3.974E-01	2.559E-01	3.090E-02	7.240
RA-228	1.853E+00	3.974E-01	2.559E-01	3.090E-02	7.240
TH-228	1.970E+00	2.475E-01	1.160E-01	1.190E-02	16.990
TH-232	1.853E+00	3.974E-01	2.559E-01	3.090E-02	7.240
U-235	1.888E-01	7.406E-02	4.037E-01	6.786E-02	0.468
NP-237	1.302E+00	4.707E-01	3.900E-01	9.223E-02	3.338

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.671E-01	9.112E-02	5.769E-02	5.007E-03	2.896

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.860E-01		4.388E-01	6.923E-01	6.466E-02	-0.558
NA-22	1.501E-02		5.222E-02	8.839E-02	7.766E-03	0.170
NA-24	-2.518E+03		2.552E+03	Half-Life too short		
SC-46	9.556E-03		5.173E-02	8.499E-02	7.854E-03	0.112
V-48	4.186E-02		1.240E-01	2.140E-01	1.947E-02	0.196
CR-51	-7.973E-03		5.747E-01	9.413E-01	9.062E-02	-0.008
MN-54	3.999E-02		4.646E-02	8.110E-02	7.309E-03	0.493
CO-56	-4.904E-02		4.789E-02	6.754E-02	6.123E-03	-0.726
CO-57	1.315E-03		3.099E-02	4.996E-02	4.207E-03	0.026
CO-58	-6.480E-02		5.155E-02	7.157E-02	6.385E-03	-0.905
FE-59	7.814E-03		1.214E-01	2.026E-01	1.883E-02	0.039
CO-60	1.760E-02		4.899E-02	8.363E-02	7.650E-03	0.210
ZN-65	2.240E-02		1.401E-01	2.037E-01	1.733E-02	0.110
SE-75	-1.733E-02		6.446E-02	9.199E-02	8.585E-03	-0.188
SR-85	8.293E-02		6.057E-02	9.830E-02	8.528E-03	0.844
Y-88	-1.758E-02		3.849E-02	5.624E-02	4.701E-03	-0.313
Y-91	-2.666E+01		3.266E+01	4.959E+01	4.125E+00	-0.538
NB-94	5.102E-04		3.971E-02	6.525E-02	5.437E-03	0.008
NB-95	6.376E-02		5.907E-02	1.043E-01	9.054E-03	0.611
NB-95M	6.554E-02		1.876E-01	2.814E-01	2.916E-02	0.233
ZR-95	1.009E-01		1.107E-01	1.739E-01	1.658E-02	0.580
MO-99	-6.077E-05		5.649E-05	Half-Life too short		
TC-99M	1.107E+20		6.416E+19	Half-Life too short		
RU-103	5.752E-03		5.815E-02	9.845E-02	1.379E-02	0.058
RH-106	2.439E-01		3.738E-01	6.506E-01	8.507E-02	0.375
RU-106	2.439E-01		3.730E-01	6.506E-01	5.425E-02	0.375
AG-108M	2.155E-02		3.770E-02	6.303E-02	5.601E-03	0.342
AG-110M	1.021E-02		5.552E-02	8.095E-02	6.793E-03	0.126
SN-113	2.074E-02		6.131E-02	1.013E-01	8.840E-03	0.205
CD-115	3.688E-05		7.973E-05	Half-Life too short		
SN-117M	7.239E-04		1.017E-01	1.614E-01	1.356E-02	0.004
TE-123M	-2.710E-02		3.781E-02	5.778E-02	4.889E-03	-0.469
SB-124	-2.051E-02		1.011E-01	1.612E-01	1.483E-02	-0.127
SB-125	3.154E-02		1.197E-01	1.960E-01	1.715E-02	0.161
TE-125M	2.711E-01		1.282E+01	2.057E+01	2.220E+00	0.013
I-126	-4.113E-01		4.964E-01	6.355E-01	5.161E-02	-0.647
SB-126	3.216E-01		3.137E-01	5.148E-01	4.342E-02	0.625
SB-127	4.579E+00		6.289E+00	1.096E+01	1.504E+00	0.418
I-131	8.369E-02		2.820E-01	4.673E-01	4.364E-02	0.179
TE-132	-9.660E-02		4.933E+00	8.243E+00	1.474E+00	-0.012
BA-133	1.257E-02		5.852E-02	8.498E-02	1.117E-02	0.148
I-133	-1.237E-01		1.888E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	8.098E-02		6.482E-02	1.152E-01	1.024E-02	0.703
CS-135	2.582E-01		2.174E-01	3.406E-01	3.597E-02	0.758
I-135	1.247E+18		1.676E+18	Half-Life too short		
CS-136	-2.155E-02		2.033E-01	3.348E-01	3.086E-02	-0.064
CE-139	1.321E-03		3.857E-02	6.114E-02	5.171E-03	0.022
BA-140	-2.703E-01		4.902E-01	7.701E-01	2.612E-01	-0.351
LA-140	-8.214E-03		1.581E-01	2.618E-01	2.373E-02	-0.031
CE-141	3.676E-02		8.936E-02	1.451E-01	1.234E-02	0.253
CE-143	3.502E-02		6.598E-03	Half-Life too short		
CE-144	-2.553E-02		2.493E-01	3.974E-01	6.010E-02	-0.064
PM-144	1.324E-02		4.418E-02	7.431E-02	6.171E-03	0.178
PR-144	9.728E-01		3.318E+00	5.578E+00	4.629E-01	0.174
PM-146	2.721E-02		5.342E-02	8.873E-02	9.420E-03	0.307
ND-147	4.777E-01		1.116E+00	1.923E+00	2.880E-01	0.248
PM-149	1.158E-05		6.624E-04	Half-Life too short		
EU-152	-4.962E-02		1.270E-01	1.944E-01	1.849E-02	-0.255
GD-153	7.247E-02		1.052E-01	1.587E-01	1.566E-02	0.457
EU-154	2.848E-02		1.478E-01	2.475E-01	2.846E-02	0.115
EU-155	7.817E-02		1.213E-01	2.019E-01	1.879E-02	0.387
TB-160	1.479E-02		1.990E-01	3.233E-01	2.975E-02	0.046
HO-166M	-3.755E-03		7.331E-02	1.196E-01	1.003E-02	-0.031
TA-182	6.675E-02		2.701E-01	4.539E-01	3.826E-02	0.147
IR-192	1.446E-02		4.681E-02	7.816E-02	7.223E-03	0.185
HG-203	6.605E-02		6.008E-02	9.378E-02	8.926E-03	0.704
BI-207	4.110E-03		6.598E-02	1.104E-01	9.695E-03	0.037
PB-210	-1.600E+00		5.747E+00	9.289E+00	8.936E-01	-0.172
PB-211	2.968E-01		9.835E-01	1.601E+00	7.745E-01	0.185
BI-212	2.528E+00	+	1.190E+00	1.403E+00	1.733E-01	1.802
RN-219	2.686E-01		5.378E-01	8.946E-01	1.324E-01	0.300
RA-223	-5.150E-01		8.296E-01	1.301E+00	2.291E-01	-0.396
AC-227	6.934E-02		3.185E-01	5.347E-01	6.696E-02	0.130
TH-227	6.934E-02		3.185E-01	5.347E-01	7.500E-02	0.130
TH-229	-2.670E-01		6.246E-01	1.034E+00	9.074E-02	-0.258
PA-231	-2.586E+00		1.833E+00	2.712E+00	4.070E-01	-0.954
TH-231	-5.150E-01		8.296E-01	1.301E+00	2.291E-01	-0.396
PA-233	-7.447E-02		8.477E-02	1.316E-01	1.247E-02	-0.566
PA-234	2.452E-02		3.496E-01	5.907E-01	1.124E-01	0.042
PA-234M	-1.878E+00		5.732E+00	9.304E+00	9.614E-01	-0.202
TH-234	2.068E+00		1.773E+00	2.952E+00	5.488E-01	0.701
U-238	2.068E+00		1.773E+00	2.952E+00	5.488E-01	0.701
NP-239	-2.258E-01		4.735E-01	7.458E-01	6.405E-02	-0.303
AM-241	-8.446E-02		1.981E-01	3.232E-01	3.068E-02	-0.261
CM-247	5.770E-05		5.069E-02	8.183E-02	6.955E-03	0.001
CF-249	3.565E-03		5.185E-02	8.430E-02	7.170E-03	0.042
CF-251	-3.500E-02		1.507E-01	2.529E-01	2.173E-02	-0.138

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]G248243007          *
* Acquisition date   : 19-MAR-2010 10:55:10 Detector SN# :                *
* Detector ID        : GAM06 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.27 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248243007 Analyst initials: MXR1                  *
* Batch Number      : 959280 Sample Quantity : 1.1882E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 16-FEB-2010 15:10:04 MS Isotope :                  *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.724E+01	3.158E+00	3.395E-01	1.611E+00
CD-109	4.516E+00	1.304E+00	6.845E-01	6.653E-01
SN-126	4.362E-01	1.260E-01	6.646E-02	6.427E-02
BA-137M	5.817E-01	1.000E-01	4.020E-02	5.103E-02
CS-137	6.145E-01	1.057E-01	4.246E-02	5.393E-02
TL-208	5.546E-01	1.209E-01	3.601E-02	6.166E-02
BI-211	4.552E+00	7.353E-01	2.124E-01	3.752E-01
PB-212	1.970E+00	2.425E-01	5.905E-02	1.237E-01
BI-214	1.686E+00	2.570E-01	6.931E-02	1.311E-01
PB-214	1.652E+00	2.814E-01	7.726E-02	1.436E-01
RA-224	5.945E+00	1.731E+00	6.332E-01	8.832E-01
RA-226	1.686E+00	2.570E-01	6.931E-02	1.311E-01
AC-228	1.853E+00	3.894E-01	1.284E-01	1.987E-01
RA-228	1.853E+00	3.894E-01	1.284E-01	1.987E-01
TH-228	1.970E+00	2.425E-01	5.905E-02	1.237E-01
TH-232	1.853E+00	3.894E-01	1.284E-01	1.987E-01
U-235	1.239E-01	2.434E-01	2.067E-01	1.242E-01
NP-237	1.302E+00	4.613E-01	2.008E-01	2.354E-01
ANH-511	1.671E-01	8.929E-02	2.913E-02	4.556E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.860E-01	4.300E-01	3.498E-01	2.194E-01 NOT IDENT.
NA-22	1.501E-02	5.117E-02	4.417E-02	2.611E-02 NOT IDENT.
NA-24	-2.518E+09	5.003E+09	0.000E+00	2.552E+09 SHORT HLIF
SC-46	9.556E-03	5.070E-02	4.264E-02	2.587E-02 FAIL ABUN
V-48	4.186E-02	1.215E-01	1.073E-01	6.201E-02 NOT IDENT.
CR-51	-7.973E-03	5.632E-01	4.777E-01	2.874E-01 NOT IDENT.
MN-54	3.999E-02	4.553E-02	4.072E-02	2.323E-02 NOT IDENT.
CO-56	-4.904E-02	4.693E-02	3.391E-02	2.395E-02 NOT IDENT.

CO-57	1.315E-03	3.037E-02	2.563E-02	1.550E-02	NOT IDENT.
CO-58	-6.480E-02	5.052E-02	3.595E-02	2.577E-02	NOT IDENT.
FE-59	7.814E-03	1.189E-01	1.014E-01	6.068E-02	NOT IDENT.
CO-60	1.760E-02	4.801E-02	4.177E-02	2.449E-02	NOT IDENT.
ZN-65	2.240E-02	1.373E-01	1.019E-01	7.003E-02	NOT IDENT.
SE-75	-1.733E-02	6.317E-02	4.679E-02	3.223E-02	NOT IDENT.
SR-85	8.293E-02	5.936E-02	4.963E-02	3.029E-02	NOT IDENT.
Y-88	-1.758E-02	3.772E-02	2.798E-02	1.925E-02	NOT IDENT.
Y-91	-2.666E+01	3.200E+01	2.479E+01	1.633E+01	NOT IDENT.
NB-94	5.102E-04	3.892E-02	3.283E-02	1.986E-02	NOT IDENT.
NB-95	6.376E-02	5.789E-02	5.244E-02	2.954E-02	NOT IDENT.
NB-95M	6.554E-02	1.838E-01	1.433E-01	9.379E-02	NOT IDENT.
ZR-95	1.009E-01	1.085E-01	8.743E-02	5.536E-02	NOT IDENT.
MO-99	-6.077E+01	1.107E+02	0.000E+00	5.649E+01	SHORT HLIF
TC-99M	1.107E+26	1.258E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.752E-03	5.699E-02	4.972E-02	2.907E-02	FAIL ABUN
RH-106	2.439E-01	3.664E-01	3.278E-01	1.869E-01	NOT IDENT.
RU-106	2.439E-01	3.656E-01	3.278E-01	1.865E-01	NOT IDENT.
AG-108M	2.155E-02	3.695E-02	3.188E-02	1.885E-02	NOT IDENT.
AG-110M	1.021E-02	5.441E-02	4.075E-02	2.776E-02	NOT IDENT.
SN-113	2.074E-02	6.009E-02	5.132E-02	3.066E-02	NOT IDENT.
CD-115	3.688E+01	1.563E+02	0.000E+00	7.973E+01	SHORT HLIF
SN-117M	7.239E-04	9.964E-02	8.255E-02	5.084E-02	NOT IDENT.
TE-123M	-2.710E-02	3.705E-02	2.955E-02	1.891E-02	NOT IDENT.
SB-124	-2.051E-02	9.907E-02	8.027E-02	5.055E-02	NOT IDENT.
SB-125	3.154E-02	1.173E-01	9.916E-02	5.985E-02	FAIL ABUN
TE-125M	2.711E-01	1.256E+01	1.056E+01	6.408E+00	NOT IDENT.
I-126	-4.113E-01	4.864E-01	3.199E-01	2.482E-01	FAIL ABUN
SB-126	3.216E-01	3.074E-01	2.589E-01	1.568E-01	NOT IDENT.
SB-127	4.579E+00	6.163E+00	5.518E+00	3.144E+00	NOT IDENT.
I-131	8.369E-02	2.763E-01	2.368E-01	1.410E-01	NOT IDENT.
TE-132	-9.660E-02	4.834E+00	4.200E+00	2.466E+00	NOT IDENT.
BA-133	1.257E-02	5.735E-02	4.308E-02	2.926E-02	FAIL ABUN
I-133	-1.237E+05	3.700E+06	0.000E+00	1.888E+06	SHORT HLIF
CS-134	8.098E-02	6.353E-02	5.789E-02	3.241E-02	NOT IDENT.
CS-135	2.582E-01	2.130E-01	1.732E-01	1.087E-01	NOT IDENT.
I-135	1.247E+24	3.285E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.155E-02	1.992E-01	1.676E-01	1.016E-01	NOT IDENT.
CE-139	1.321E-03	3.779E-02	3.126E-02	1.928E-02	NOT IDENT.
BA-140	-2.703E-01	4.803E-01	3.886E-01	2.451E-01	NOT IDENT.
LA-140	-8.214E-03	1.550E-01	1.305E-01	7.906E-02	NOT IDENT.
CE-141	3.676E-02	8.758E-02	7.430E-02	4.468E-02	NOT IDENT.
CE-143	3.502E+04	1.293E+04	0.000E+00	6.598E+03	SHORT HLIF
CE-144	-2.553E-02	2.443E-01	2.036E-01	1.247E-01	NOT IDENT.
PM-144	1.324E-02	4.330E-02	3.739E-02	2.209E-02	NOT IDENT.
PR-144	9.728E-01	3.252E+00	2.807E+00	1.659E+00	NOT IDENT.
PM-146	2.721E-02	5.235E-02	4.486E-02	2.671E-02	NOT IDENT.
ND-147	4.777E-01	1.093E+00	9.706E-01	5.578E-01	FAIL ABUN
PM-149	1.158E+01	1.298E+03	0.000E+00	6.624E+02	SHORT HLIF
EU-152	-4.962E-02	1.244E-01	9.858E-02	6.348E-02	NOT IDENT.
GD-153	7.247E-02	1.031E-01	8.162E-02	5.262E-02	NOT IDENT.
EU-154	2.848E-02	1.448E-01	1.237E-01	7.390E-02	NOT IDENT.
EU-155	7.817E-02	1.189E-01	1.037E-01	6.065E-02	FAIL ABUN
TB-160	1.479E-02	1.950E-01	1.622E-01	9.951E-02	FAIL ABUN
HO-166M	-3.755E-03	7.184E-02	6.018E-02	3.666E-02	FAIL ABUN
TA-182	6.675E-02	2.647E-01	2.269E-01	1.351E-01	FAIL ABUN
IR-192	1.446E-02	4.587E-02	3.968E-02	2.340E-02	FAIL ABUN
HG-203	6.605E-02	5.887E-02	4.767E-02	3.004E-02	NOT IDENT.
BI-207	4.110E-03	6.466E-02	5.526E-02	3.299E-02	FAIL ABUN
PB-210	-1.600E+00	5.632E+00	4.815E+00	2.873E+00	NOT IDENT.
PB-211	2.968E-01	9.639E-01	8.105E-01	4.918E-01	NOT IDENT.
BI-212	2.528E+00	1.166E+00	7.054E-01	5.951E-01	FAIL ABUN
RN-219	2.686E-01	5.270E-01	4.529E-01	2.689E-01	FAIL ABUN
RA-223	-5.150E-01	8.131E-01	6.600E-01	4.148E-01	FAIL ABUN
AC-227	6.934E-02	3.121E-01	2.721E-01	1.592E-01	FAIL ABUN
TH-227	6.934E-02	3.121E-01	2.721E-01	1.593E-01	FAIL ABUN
TH-229	-2.670E-01	6.121E-01	5.277E-01	3.123E-01	FAIL ABUN
PA-231	-2.586E+00	1.796E+00	1.378E+00	9.164E-01	FAIL ABUN
TH-231	-5.150E-01	8.131E-01	6.600E-01	4.148E-01	FAIL ABUN
PA-233	-7.447E-02	8.307E-02	6.680E-02	4.239E-02	FAIL ABUN
PA-234	2.452E-02	3.426E-01	2.961E-01	1.748E-01	NOT IDENT.
PA-234M	-1.878E+00	5.617E+00	4.662E+00	2.866E+00	NOT IDENT.
TH-234	2.068E+00	1.737E+00	1.525E+00	8.864E-01	FAIL ABUN
U-238	2.068E+00	1.737E+00	1.525E+00	8.864E-01	FAIL ABUN
NP-239	-2.258E-01	4.640E-01	3.828E-01	2.367E-01	FAIL ABUN
AM-241	-8.446E-02	1.942E-01	1.671E-01	9.906E-02	NOT IDENT.
CM-247	5.770E-05	4.967E-02	4.143E-02	2.534E-02	FAIL ABUN
CF-249	3.565E-03	5.082E-02	4.270E-02	2.593E-02	NOT IDENT.

CF-251	-3.500E-02	1.477E-01	1.292E-01	7.535E-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	301.2211
49.72	282.5467
57.36	0.0000
59.54	321.9260
63.29	322.0763
63.29	322.0763
64.28	393.8521
67.75	350.0836
69.67	372.3514
70.83	373.3473
72.81	404.7980
72.87	404.8540
72.87	404.8540
74.82	360.7756
74.82	360.7756
74.82	360.7756
74.97	360.8953
77.11	362.5910
77.11	362.5910
77.11	362.5910
79.69	332.3750
79.80	332.4522
80.12	335.7032
80.19	335.7523
80.57	332.9944
81.00	269.6672
81.07	269.7066
81.07	269.7066
83.79	283.4232
83.79	283.4232
85.43	284.3726
86.48	284.9757
86.55	285.0168
86.79	285.1531
86.94	285.2397
87.57	285.5987
88.03	285.8598
88.47	286.1095
89.96	286.9496
91.11	287.5939
92.59	288.4155
92.59	288.4155
93.35	288.8356
94.67	273.9929
94.87	274.0963
94.87	274.0963
95.86	301.1325
97.43	240.9857
98.44	224.5038
99.53	261.8167
100.11	273.6260
103.18	274.0891
103.37	274.1817
105.31	253.9612
106.12	236.3080
109.28	277.0276
111.00	263.9489
111.76	269.6380
116.30	235.0279
117.23	276.4167
121.12	245.5610
121.78	265.3982
122.06	265.5161
123.07	276.8410
131.20	347.6619
133.52	281.3162
136.00	283.4613

136.47	280.3213
140.51	0.0000
140.51	0.0000
143.76	272.0432
144.24	274.4777
144.24	274.4777
145.44	256.9128
152.43	271.9213
153.25	272.2228
154.21	273.7183
154.21	273.7183
156.02	261.8065
158.56	258.1055
159.00	283.5058
162.66	256.0349
163.33	241.2502
165.86	248.9852
176.60	236.8034
177.52	243.2372
181.07	0.0000
184.41	229.2675
185.72	229.6218
193.51	245.1839
197.04	249.7780
205.31	251.9080
210.85	190.4392
215.65	219.0267
222.11	223.2935
227.38	210.5335
228.16	216.2946
228.18	222.8244
235.69	228.4583
235.96	225.5127
235.96	225.5127
238.63	208.2076
238.63	208.2076
240.99	208.6898
242.00	208.8955
244.70	151.6333
252.40	164.2078
252.80	174.7765
256.23	181.0880
256.23	181.0880
260.90	0.0000
264.66	168.4045
268.22	153.4476
269.46	166.8087
269.46	166.8087
271.23	167.0738
273.65	171.3298
276.40	177.9914
277.37	181.2698
277.60	181.3066
278.00	178.2447
279.20	145.5623
279.54	145.6054
280.46	136.3219
283.69	185.6114
284.31	195.5384
285.41	157.3657
285.90	0.0000
287.50	141.8840
293.27	0.0000
295.22	153.9236
295.96	130.9969
298.57	131.2830
299.98	135.4189
299.98	135.4189
300.09	133.8381
300.09	133.8381
300.13	133.8422
301.36	159.4995
302.85	142.1284
304.50	148.7183
304.50	148.7183
304.85	166.3568
308.46	162.4351
311.90	171.9393

316.51	135.2350
319.41	145.6611
320.08	145.7380
323.87	161.4019
323.87	161.4019
328.76	141.6385
333.37	166.8880
334.37	157.1930
334.37	157.1930
338.28	154.3771
338.28	154.3771
338.32	154.3817
338.32	154.3817
338.32	154.3817
340.48	143.1188
340.55	148.0605
344.28	139.0488
351.06	134.7191
351.93	134.8044
356.01	116.4878
364.49	109.8786
366.42	0.0000
383.85	105.0183
388.16	120.2246
388.63	105.3627
391.69	117.3148
400.66	113.7313
401.81	114.8924
402.40	129.9768
404.85	125.8835
410.95	106.9459
414.70	124.5336
423.72	113.2771
427.09	92.7820
427.87	104.8403
433.94	92.0865
453.88	87.6756
463.37	128.5822
468.07	110.4369
473.00	86.4358
476.78	100.8027
477.60	106.2533
487.02	78.7662
492.35	0.0000
497.08	93.7876
511.00	86.2604
514.00	93.4491
527.90	0.0000
529.87	0.0000
531.02	74.2168
537.26	82.8400
546.56	0.0000
563.25	67.9307
569.33	69.0880
569.50	69.0951
569.70	61.5278
583.19	77.1952
600.60	81.7046
602.73	82.9925
604.72	75.4475
609.32	76.2574
609.32	76.2574
610.33	76.2940
614.28	51.6042
618.01	73.2369
621.93	57.2960
621.93	57.2960
633.25	76.1509
635.95	69.4035
636.99	69.4365
645.85	57.9370
657.76	82.2774
661.66	87.0375
661.66	87.0375
664.57	0.0000
666.33	85.8986
666.50	85.9071
677.62	61.7608

685.70	49.9841
695.00	64.2391
696.49	70.3068
696.51	70.3076
697.00	69.3184
702.65	64.4516
706.68	66.5801
711.68	63.6891
720.70	57.9883
721.93	0.0000
722.78	55.8634
722.91	55.8661
723.31	71.1143
724.19	77.9151
727.33	65.1281
733.00	68.0013
735.93	56.1696
739.50	0.0000
747.24	71.8218
752.31	44.5531
753.82	51.4380
756.73	49.7824
763.94	83.6717
765.81	59.9584
766.42	62.0405
777.92	0.0000
778.90	60.2713
783.70	46.8501
785.37	39.5883
795.86	60.6720
801.95	67.1063
810.29	63.1143
810.76	64.1781
815.77	42.1641
818.51	52.7600
832.01	60.4540
834.85	47.7773
836.80	0.0000
846.77	52.2551
856.80	51.7341
860.56	39.3003
871.09	45.1890
873.19	53.8367
875.33	0.0000
879.36	53.9563
880.51	47.5009
883.24	54.0308
884.68	47.5718
889.28	45.4843
898.04	44.5385
911.20	41.4697
911.20	41.4697
911.20	41.4697
926.50	50.1529
937.49	40.9025
944.13	43.2287
946.00	43.2555
949.00	41.4569
962.29	59.6866
964.08	47.6189
966.15	57.1816
968.97	82.5394
968.97	82.5394
968.97	82.5394
983.53	44.7295
996.26	54.2723
1001.03	49.6702
1004.73	51.6050
1037.84	38.8746
1038.76	0.0000
1048.07	48.5118
1050.41	50.4509
1050.41	50.4509
1063.66	46.8327
1085.87	28.8672
1099.45	41.5443
1112.07	58.1860
1115.54	56.5829

1120.29	61.2440
1120.29	61.2440
1120.55	63.3324
1121.30	55.0107
1131.51	0.0000
1173.23	37.5083
1177.93	58.3134
1189.05	55.5215
1204.77	72.6911
1221.41	57.0209
1231.02	63.1871
1235.36	64.2656
1238.28	66.3250
1260.41	0.0000
1271.85	44.6159
1274.44	34.4994
1274.54	33.4847
1291.59	40.7699
1298.22	0.0000
1312.11	28.6904
1332.49	26.7808
1365.19	21.8092
1368.63	0.0000
1384.29	13.9128
1408.01	26.2370
1457.56	0.0000
1460.82	21.2565
1489.16	22.4672
1505.03	26.8443
1596.21	18.7863
1620.50	16.0525
1678.03	0.0000
1690.97	13.4180
1764.49	15.3232
1764.49	15.3232
1770.23	8.5226
1771.35	8.5248
1791.20	0.0000
1836.06	10.8538

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243007

Total Uranium Activity	6.2109E+00	ug/g
Total Uranium Counting Unc.	5.1700E+00	ug/g
Total Uranium Tpu	2.6377E-06	ug/g
Total Uranium Mda	4.5388E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280                          SAMPLE ID   : G248243007
*  ANALYST       : MXR1                             DETECTOR    : GAM06
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:55:10.08          SAMPLE ALQT  : 118.820 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.051E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.435E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.091E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.981E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:57:11.31

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243008.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:55:51
Sample ID          : G248243008          Sample quantity  : 1.06760E+02 GRAM
Detector name      : GAM15              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.09  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 959280             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	75.04*	264	323	1.46	149.01	144	15	3.67E-02	14.9	2.17E+00
2	1	77.40*	371	288	1.46	153.73	144	15	5.15E-02	10.8	
3	2	87.57	93	395	1.27	174.07	168	24	1.29E-02	36.1	2.22E+00
4	2	90.06	82	340	1.30	179.04	168	24	1.14E-02	40.8	
5	2	93.00*	215	307	1.53	184.91	168	24	2.98E-02	18.4	
6	0	186.13*	193	270	1.16	371.17	366	12	2.68E-02	19.5	
7	0	209.31*	75	172	1.20	417.52	414	7	1.04E-02	32.2	
8	2	238.77*	755	194	1.32	476.44	469	20	1.05E-01	5.1	8.52E-01
9	2	241.77	196	224	1.85	482.44	469	20	2.72E-02	19.9	
10	0	269.73	112	166	1.80	538.36	532	12	1.55E-02	25.0	
11	0	295.01*	344	188	1.51	588.92	580	15	4.78E-02	10.4	
12	0	338.61	149	211	1.42	676.11	669	13	2.08E-02	21.6	
13	0	351.98*	505	165	1.24	702.86	696	14	7.01E-02	7.2	
14	0	510.93*	89	115	2.22	1020.76	1012	19	1.24E-02	35.0	
15	0	583.26*	248	134	1.76	1165.43	1158	17	3.45E-02	12.7	
16	0	609.24*	399	70	1.60	1217.40	1208	17	5.54E-02	7.1	
17	0	661.65	232	75	1.48	1322.22	1314	14	3.22E-02	10.2	
18	0	727.59*	47	66	1.19	1454.11	1447	12	6.48E-03	39.3	
19	0	911.20*	175	44	1.68	1821.38	1813	17	2.44E-02	11.9	
20	0	969.28*	77	63	1.58	1937.57	1929	13	1.06E-02	24.5	
21	0	1120.36*	70	72	2.09	2239.78	2232	17	9.77E-03	30.8	
22	0	1460.30	749	10	2.04	2919.86	2910	20	1.04E-01	3.8	
23	0	1764.40*	68	20	1.62	3528.28	3520	16	9.48E-03	19.8	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:57:14

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243008.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:55:51
 Sample ID : G248243008 Sample quantity : 106.76 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA15 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.09 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

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	*	2.557E+01	3.176E+00	6.920E-01	6.800E-02	36.954
CD-109	+	88.03	*	2.043E+00	1.496E+00	1.789E+00	2.221E-01	1.142
SN-126		64.28		1.441E+00	1.020E+00	1.674E+00	2.834E-01	0.861
	+	86.94		8.205E-01	6.864E-01	7.318E-01	3.094E-01	1.121
	+	87.57	*	1.974E-01	1.445E-01	1.741E-01	2.155E-02	1.133
BA-137M	+	661.66	*	4.588E-01	1.012E-01	8.241E-02	6.775E-03	5.567
CS-137	+	661.66	*	4.847E-01	1.069E-01	8.705E-02	7.172E-03	5.567
TL-208		277.37		7.111E-01	5.500E-01	9.603E-01	1.358E-01	0.740
	+	583.19	*	4.687E-01	1.269E-01	7.617E-02	6.966E-03	6.153
		860.56		5.544E-01	4.152E-01	7.548E-01	7.379E-02	0.734
BI-211		72.87		1.172E+01	6.036E+00	9.341E+00	1.070E+00	1.255
	+	351.06	*	4.373E+00	7.665E-01	4.687E-01	4.668E-02	9.330
PB-212	+	74.82		2.780E+00	9.274E-01	9.024E-01	1.359E-01	3.081
	+	77.11		2.166E+00	5.325E-01	5.033E-01	5.834E-02	4.304
	+	238.63	*	1.480E+00	2.320E-01	1.332E-01	1.592E-02	11.110
		300.09		1.288E+00	1.239E+00	1.902E+00	2.316E-01	0.677
BI-214	+	609.32	*	1.457E+00	2.528E-01	1.531E-01	1.525E-02	9.516
	+	1120.29		1.352E+00	8.460E-01	6.623E-01	7.172E-02	2.041
	+	1764.49		1.834E+00	7.431E-01	3.746E-01	3.284E-02	4.895
PB-214	+	74.82		4.927E+00	1.620E+00	1.599E+00	2.235E-01	3.081
	+	77.11		3.819E+00	9.902E-01	8.873E-01	1.262E-01	4.304
	+	242.00		2.325E+00	9.706E-01	8.098E-01	1.009E-01	2.871
	+	295.22		1.852E+00	4.494E-01	3.360E-01	4.187E-02	5.513
	+	351.93	*	1.587E+00	2.916E-01	1.704E-01	1.937E-02	9.312
RA-224	+	240.99	*	4.111E+00	1.700E+00	1.427E+00	1.574E-01	2.880
RA-226	+	609.32	*	1.457E+00	2.528E-01	1.531E-01	1.525E-02	9.516
	+	1120.29		1.352E+00	8.460E-01	6.623E-01	7.172E-02	2.041
	+	1764.49		1.834E+00	7.431E-01	3.746E-01	3.284E-02	4.895
AC-228	+	338.32		1.446E+00	8.718E-01	5.107E-01	2.144E-01	2.831
	+	911.20	*	1.600E+00	4.285E-01	2.858E-01	3.462E-02	5.598
	+	968.97		1.210E+00	6.642E-01	4.080E-01	1.002E-01	2.966
RA-228	+	338.32		1.446E+00	8.718E-01	5.107E-01	2.144E-01	2.831
	+	911.20	*	1.600E+00	4.285E-01	2.858E-01	3.462E-02	5.598
	+	968.97		1.210E+00	6.642E-01	4.080E-01	1.002E-01	2.966

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.780E+00	8.877E-01	9.024E-01	1.043E-01	3.081
	+	77.11		2.166E+00	5.325E-01	5.033E-01	5.834E-02	4.304
	+	238.63	*	1.480E+00	2.320E-01	1.332E-01	1.592E-02	11.110
		300.09		1.288E+00	1.463E+00	1.902E+00	1.170E+00	0.677
TH-232	+	338.32		1.446E+00	6.418E-01	5.107E-01	5.035E-02	2.831
	+	911.20	*	1.600E+00	4.285E-01	2.858E-01	3.462E-02	5.598
	+	968.97		1.210E+00	6.642E-01	4.080E-01	1.002E-01	2.966
U-235	+	89.96		1.786E+00	1.528E+00	1.789E+00	4.653E-01	0.998
	+	93.35		2.785E+00	1.230E+00	1.060E+00	2.579E-01	2.627
		143.76	*	1.602E-01	2.790E-01	4.532E-01	8.065E-02	0.354
		163.33		2.182E-01	6.158E-01	1.005E+00	1.909E-01	0.217
	+	185.72		2.445E-01	9.880E-02	9.375E-02	1.015E-02	2.608
		205.31		1.233E-01	8.146E-01	1.144E+00	2.215E-01	0.108
NP-237	+	86.48	*	5.889E-01	4.486E-01	5.295E-01	1.286E-01	1.112
		95.86		-9.993E-01	1.498E+00	2.033E+00	5.090E-01	-0.492
ANH-511	+	511.00	*	1.300E-01	9.170E-02	5.829E-02	5.036E-03	2.230

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.426E-01	5.076E-01	7.974E-01	7.412E-02	-0.304
NA-22		1274.54	*	-2.053E-02	6.218E-02	9.659E-02	8.775E-03	-0.213
NA-24		1368.63	*	-1.661E+03	6.218E-02	Half-Life too short		
SC-46		889.28	*	-3.776E-02	5.524E-02	7.487E-02	6.958E-03	-0.504
	+	1120.55		2.440E-01	1.518E-01	1.900E-01	1.616E-02	1.284
V-48		944.13		-1.356E+00	1.571E+00	2.327E+00	2.152E-01	-0.583
		983.53	*	6.673E-02	1.321E-01	2.278E-01	2.083E-02	0.293
		1312.11		3.189E-02	1.469E-01	2.437E-01	2.296E-02	0.131
CR-51		320.08	*	7.861E-02	6.205E-01	1.038E+00	1.101E-01	0.076
MN-54		834.85	*	3.811E-02	5.162E-02	9.062E-02	8.224E-03	0.421
CO-56		846.77	*	3.348E-02	5.052E-02	8.911E-02	8.132E-03	0.376
		1037.84		-8.506E-02	4.200E-01	6.716E-01	6.297E-02	-0.127
		1238.28		8.327E-02	1.314E-01	2.247E-01	2.019E-02	0.371
		1771.35		-3.272E-02	2.796E-01	3.727E-01	3.256E-02	-0.088
CO-57		122.06	*	-9.891E-03	3.530E-02	5.660E-02	5.701E-03	-0.175
		136.47		-6.854E-02	2.978E-01	4.771E-01	5.069E-02	-0.144
CO-58		810.76	*	-3.247E-02	5.506E-02	8.278E-02	7.442E-03	-0.392
FE-59		1099.45	*	-6.348E-02	1.287E-01	1.975E-01	1.842E-02	-0.321
		1291.59		5.945E-02	1.698E-01	2.868E-01	2.963E-02	0.207
CO-60		1173.23		-2.703E-02	6.072E-02	9.388E-02	7.642E-03	-0.288
		1332.49	*	3.295E-02	5.038E-02	8.844E-02	8.502E-03	0.373
ZN-65		1115.54	*	-4.688E-02	1.569E-01	2.098E-01	1.793E-02	-0.223
SE-75		121.12		-1.466E-01	1.925E-01	3.005E-01	3.680E-02	-0.488
		136.00		-3.164E-02	5.835E-02	9.203E-02	9.317E-03	-0.344
		264.66	*	-2.225E-02	7.589E-02	1.082E-01	1.186E-02	-0.206
		279.54		2.289E-01	1.630E-01	2.876E-01	3.184E-02	0.796
		400.66		-7.009E-02	3.570E-01	5.789E-01	6.342E-02	-0.121
SR-85		514.00	*	1.229E-01	6.802E-02	1.103E-01	9.531E-03	1.114

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-88		898.04		7.621E-04	5.748E-02	9.500E-02	8.896E-03	0.008
		1836.06	*	2.474E-02	4.519E-02	8.243E-02	6.942E-03	0.300
Y-91		1204.77	*	-1.431E+01	3.160E+01	4.875E+01	4.109E+00	-0.293
NB-94		702.65	*	-5.252E-03	4.468E-02	7.405E-02	6.252E-03	-0.071
		871.09		-1.666E-02	4.450E-02	7.076E-02	6.526E-03	-0.235
NB-95		765.81	*	5.805E-02	6.686E-02	1.179E-01	1.033E-02	0.492
NB-95M		235.69	*	4.755E-01	2.335E-01	3.699E-01	4.457E-02	1.285
ZR-95		724.19		1.034E-01	1.465E-01	2.279E-01	2.116E-02	0.454
		756.73	*	5.652E-02	1.077E-01	1.841E-01	1.769E-02	0.307
MO-99		140.51		-1.722E-04	1.077E-01	Half-Life	too short	
		181.07		1.409E-04	1.077E-01	Half-Life	too short	
		366.42		9.738E-05	1.077E-01	Half-Life	too short	
		739.50	*	-6.487E-05	1.077E-01	Half-Life	too short	
		777.92		-2.614E-04	1.077E-01	Half-Life	too short	
TC-99M		140.51	*	-1.047E+20	1.077E-01	Half-Life	too short	
RU-103		497.08	*	2.479E-02	6.099E-02	1.023E-01	1.430E-02	0.242
	+	610.33		1.727E+01	3.729E+00	4.189E+00	6.810E-01	4.123
RH-106		621.93	*	3.273E-01	4.274E-01	7.303E-01	9.579E-02	0.448
		1050.41		-1.093E+00	3.238E+00	5.087E+00	4.520E-01	-0.215
RU-106		621.93	*	3.273E-01	4.261E-01	7.303E-01	6.137E-02	0.448
		1050.41		-1.093E+00	3.238E+00	5.087E+00	4.520E-01	-0.215
AG-108M		433.94	*	1.514E-02	3.864E-02	6.509E-02	5.753E-03	0.233
		614.28		5.785E-02	4.481E-02	7.289E-02	6.358E-03	0.794
		722.91		-4.721E-03	5.546E-02	7.904E-02	6.977E-03	-0.060
AG-110M		657.76	*	-1.877E-02	5.835E-02	8.154E-02	6.939E-03	-0.230
		677.62		1.151E-01	4.121E-01	7.062E-01	6.049E-02	0.163
		706.68		-1.177E-01	2.802E-01	4.519E-01	3.939E-02	-0.260
		763.94		-3.004E-01	2.366E-01	3.513E-01	3.157E-02	-0.855
		884.68		4.152E-03	5.962E-02	9.926E-02	9.462E-03	0.042
		937.49		-1.357E-01	1.379E-01	2.002E-01	1.912E-02	-0.678
		1384.29		5.519E-02	2.273E-01	3.909E-01	3.847E-02	0.141
		1505.03		-1.312E-01	3.966E-01	6.273E-01	5.995E-02	-0.209
SN-113		391.69	*	4.099E-02	6.160E-02	1.058E-01	9.185E-03	0.388
CD-115		260.90		-1.406E-04	6.160E-02	Half-Life	too short	
		492.35		-5.864E-04	6.160E-02	Half-Life	too short	
		527.90	*	1.506E-06	6.160E-02	Half-Life	too short	
SN-117M		156.02		2.190E+00	4.740E+00	7.794E+00	8.124E-01	0.281
		158.56	*	-1.993E-01	1.177E-01	1.712E-01	1.795E-02	-1.165
TE-123M		159.00	*	-4.671E-02	4.165E-02	6.297E-02	6.636E-03	-0.742
SB-124		602.73		3.001E-02	6.749E-02	9.841E-02	8.341E-03	0.305
		645.85		9.488E-02	7.834E-01	1.270E+00	1.120E-01	0.075
		722.78		-6.394E-02	6.088E-01	8.654E-01	7.570E-02	-0.074
		1690.97	*	-1.182E-02	1.045E-01	1.682E-01	1.584E-02	-0.070
SB-125		427.87	*	-3.384E-03	1.213E-01	1.984E-01	1.727E-02	-0.017
		463.37		7.837E-01	4.317E-01	7.712E-01	7.145E-02	1.016
		600.60		3.050E-01	2.698E-01	4.227E-01	3.859E-02	0.721
		635.95		-1.505E-01	3.798E-01	5.879E-01	5.330E-02	-0.256
TE-125M		109.28	*	-4.673E+00	1.471E+01	2.362E+01	2.811E+00	-0.198
I-126		388.63		-1.586E-01	3.493E-01	5.572E-01	4.742E-02	-0.285

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	666.33	*		2.282E-02	5.110E-01	7.436E-01	6.132E-02	0.031
	753.82			1.952E-01	3.655E+00	6.119E+00	5.325E-01	0.032
	414.70			1.111E-01	1.769E-01	3.011E-01	2.560E-02	0.369
	666.50			5.795E-03	1.787E-01	2.597E-01	2.142E-02	0.022
	695.00			1.798E-01	1.641E-01	2.958E-01	2.485E-02	0.608
	697.00			2.096E-01	5.603E-01	9.640E-01	8.110E-02	0.217
SB-127	720.70	*		-9.752E-02	3.256E-01	4.507E-01	3.847E-02	-0.216
	856.80			-1.059E+00	1.038E+00	1.552E+00	1.422E-01	-0.682
	252.40			5.857E+00	2.404E+01	4.055E+01	1.738E+01	0.144
	473.00			6.511E+00	9.212E+00	1.572E+01	2.377E+00	0.414
	685.70	*		1.797E+00	6.737E+00	1.153E+01	1.590E+00	0.156
	783.70			2.156E+01	1.927E+01	3.454E+01	5.146E+00	0.624
I-131	80.19			-7.346E+00	1.512E+01	2.118E+01	2.510E+00	-0.347
	284.31			-3.442E+00	4.091E+00	6.481E+00	7.240E-01	-0.531
	364.49	*		2.137E-02	3.135E-01	5.198E-01	5.051E-02	0.041
TE-132	636.99			1.162E+00	4.302E+00	7.073E+00	6.309E-01	0.164
	49.72			8.541E+01	3.217E+02	5.406E+02	9.247E+01	0.158
	111.76			-4.821E+01	2.437E+02	3.933E+02	5.722E+01	-0.123
	116.30			1.534E+02	2.174E+02	3.629E+02	5.257E+01	0.423
BA-133	228.16	*		1.344E+00	5.653E+00	9.597E+00	1.817E+00	0.140
	81.00			-1.782E-01	1.912E-01	2.121E-01	3.710E-02	-0.840
	276.40			4.102E-01	5.268E-01	8.625E-01	1.343E-01	0.476
	302.85			-1.089E-01	1.951E-01	3.137E-01	4.513E-02	-0.347
I-133	356.01	*		6.216E-03	6.046E-02	8.751E-02	1.182E-02	0.071
	383.85			1.983E-02	4.159E-01	6.872E-01	8.556E-02	0.029
	529.87	*		1.505E+00	4.159E-01	Half-Life	too short	
	875.33			4.367E+01	4.159E-01	Half-Life	too short	
CS-134	1298.22			4.669E+01	4.159E-01	Half-Life	too short	
	563.25			2.385E-01	4.983E-01	8.361E-01	7.243E-02	0.285
	569.33			-1.530E-01	2.888E-01	4.367E-01	3.793E-02	-0.350
	604.72			2.171E-02	5.526E-02	7.999E-02	6.791E-03	0.271
CS-135	795.86	*		4.759E-02	5.974E-02	1.058E-01	9.483E-03	0.450
	801.95			-3.639E-01	5.686E-01	8.673E-01	7.786E-02	-0.420
	1365.19			-1.063E+00	1.501E+00	2.231E+00	2.228E-01	-0.477
	268.22	*		2.389E-01	2.563E-01	3.942E-01	4.729E-02	0.606
I-135	546.56			-4.928E+18	2.563E-01	Half-Life	too short	
	836.80			1.614E+19	2.563E-01	Half-Life	too short	
	1038.76			2.440E+18	2.563E-01	Half-Life	too short	
	1131.51			-5.849E+17	2.563E-01	Half-Life	too short	
CS-136	1260.41	*		-6.393E+17	2.563E-01	Half-Life	too short	
	1457.56			3.903E+20	2.563E-01	Half-Life	too short	
	1678.03			3.560E+18	2.563E-01	Half-Life	too short	
	1791.20			9.141E+18	2.563E-01	Half-Life	too short	
	153.25			1.846E+00	1.828E+00	3.060E+00	3.602E-01	0.603
	176.60			-8.233E-01	1.070E+00	1.645E+00	1.889E-01	-0.500
	273.65			-1.931E+00	1.271E+00	1.607E+00	1.841E-01	-1.202
	340.55			1.188E+00	3.819E-01	6.399E-01	6.467E-02	1.856
	818.51			3.884E-02	1.380E-01	2.354E-01	2.123E-02	0.165
	1048.07	*		4.279E-02	2.071E-01	3.464E-01	3.207E-02	0.124

Sample ID : G248243008

Acquisition date : 19-MAR-2010 10:55:51

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1235.36			1.061E+00	1.178E+00	2.054E+00	2.432E-01	0.516
CE-139	165.86	*		-6.153E-04	4.482E-02	7.206E-02	7.692E-03	-0.009
BA-140	162.66			7.547E-01	1.722E+00	2.826E+00	3.128E-01	0.267
	304.85			-1.899E+00	2.893E+00	4.539E+00	1.356E+00	-0.418
	423.72			3.499E+00	4.088E+00	6.837E+00	2.247E+00	0.512
	537.26	*		2.407E-01	5.795E-01	9.605E-01	3.257E-01	0.251
LA-140	328.76			6.522E-01	6.839E-01	1.183E+00	1.241E-01	0.551
	487.02			-1.242E-01	3.015E-01	4.756E-01	4.361E-02	-0.261
	815.77			-5.503E-01	6.147E-01	9.201E-01	9.169E-02	-0.598
	1596.21	*		-1.742E-01	1.660E-01	2.200E-01	2.062E-02	-0.792
CE-141	145.44	*		3.081E-02	1.036E-01	1.670E-01	1.726E-02	0.185
CE-143	57.36			-2.433E-02	1.036E-01	Half-Life	too short	
	293.27	*		4.965E-02	1.036E-01	Half-Life	too short	
	664.57			2.226E-01	1.036E-01	Half-Life	too short	
	721.93			-5.186E-02	1.036E-01	Half-Life	too short	
CE-144	80.12			-1.627E+00	4.251E+00	5.995E+00	7.047E-01	-0.271
	133.52	*		-9.704E-02	2.876E-01	4.584E-01	7.397E-02	-0.212
PM-144	476.78			-5.150E-02	9.162E-02	1.428E-01	1.339E-02	-0.361
	618.01			-2.044E-02	4.332E-02	6.444E-02	5.587E-03	-0.317
	696.49	*		5.242E-02	4.738E-02	8.541E-02	7.189E-03	0.614
PR-144	696.51	*		4.071E+00	3.551E+00	6.418E+00	5.397E-01	0.634
	1489.16			-7.179E+00	1.917E+01	3.015E+01	2.887E+00	-0.238
PM-146	453.88	*		7.797E-03	6.044E-02	9.966E-02	1.054E-02	0.078
	633.25			-3.856E-01	1.870E+00	2.937E+00	1.120E+00	-0.131
	735.93			-1.254E-01	1.884E-01	2.898E-01	8.122E-02	-0.433
	747.24			-1.601E-01	1.295E-01	1.879E-01	2.745E-02	-0.852
ND-147	91.11	+		9.485E-01	7.823E-01	1.254E+00	1.553E-01	0.757
	319.41			-4.039E+00	7.610E+00	1.222E+01	1.252E+00	-0.330
	531.02	*		-2.535E-01	1.289E+00	2.057E+00	3.077E-01	-0.123
PM-149	285.90	*		-4.764E-05	1.289E+00	Half-Life	too short	
EU-152	121.78			-5.091E-02	1.015E-01	1.609E-01	1.799E-02	-0.316
	244.70			6.852E-01	5.058E-01	7.976E-01	8.792E-02	0.859
	344.28	*		-6.343E-02	1.819E-01	2.191E-01	2.230E-02	-0.290
	778.90			-8.254E-02	3.396E-01	5.526E-01	4.876E-02	-0.149
	964.08			2.039E-01	4.060E-01	6.122E-01	5.631E-02	0.333
	1085.87			2.904E-01	5.237E-01	9.032E-01	7.865E-02	0.322
	1112.07			4.304E-02	4.879E-01	7.183E-01	6.147E-02	0.060
	1408.01			-4.548E-02	2.552E-01	4.163E-01	4.011E-02	-0.109
GD-153	69.67			4.556E-01	3.455E+00	5.039E+00	5.752E-01	0.090
	97.43	*		-1.929E-02	1.371E-01	1.937E-01	2.137E-02	-0.100
	103.18			-2.364E-01	1.630E-01	2.460E-01	2.600E-02	-0.961
EU-154	123.07			-5.925E-03	7.027E-02	1.137E-01	1.419E-02	-0.052
	723.31			4.702E-02	2.448E-01	3.609E-01	3.403E-02	0.130
	873.19			-5.705E-02	3.605E-01	5.863E-01	7.239E-02	-0.097
	996.26			-1.993E-01	4.520E-01	7.027E-01	1.245E-01	-0.284
	1004.73			-5.600E-02	2.482E-01	3.958E-01	4.740E-02	-0.141
	1274.44	*		-1.221E-02	1.715E-01	2.748E-01	3.222E-02	-0.044
EU-155	86.55	+		2.400E-01	1.758E-01	2.634E-01	3.249E-02	0.911
	105.31	*		5.136E-02	1.478E-01	2.446E-01	2.577E-02	0.210

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		6.845E-01	5.012E-01	7.497E-01	9.218E-02	0.913
		197.04		1.862E-01	8.762E-01	1.415E+00	1.543E-01	0.132
		215.65		-1.007E-01	1.130E+00	1.897E+00	2.086E-01	-0.053
		298.57		1.996E-01	1.886E-01	2.927E-01	3.097E-02	0.682
		879.36	*	3.429E-02	1.916E-01	3.224E-01	2.984E-02	0.106
		962.29		-8.186E-02	8.500E-01	1.157E+00	1.065E-01	-0.071
		966.15		1.036E+00	3.764E-01	6.673E-01	6.133E-02	1.552
		1177.93		-5.094E-02	4.775E-01	7.659E-01	6.267E-02	-0.067
		1271.85		-6.328E-01	1.085E+00	1.630E+00	1.475E-01	-0.388
HO-166M		80.57		-4.280E-01	4.872E-01	6.132E-01	7.224E-02	-0.698
		184.41		5.918E-02	6.268E-02	9.500E-02	1.027E-02	0.623
		280.46		1.743E-02	1.194E-01	2.007E-01	2.168E-02	0.087
		410.95		1.721E-01	3.694E-01	6.230E-01	5.288E-02	0.276
		711.68	*	-9.825E-03	7.693E-02	1.272E-01	1.080E-02	-0.077
		752.31		7.100E-02	3.501E-01	5.939E-01	5.164E-02	0.120
		810.29		-3.688E-02	7.825E-02	1.196E-01	1.072E-02	-0.308
TA-182		67.75		-2.858E-01	2.197E-01	3.360E-01	3.835E-02	-0.851
		100.11		2.558E-01	2.724E-01	4.428E-01	4.780E-02	0.578
		152.43		2.570E-01	5.107E-01	8.417E-01	8.704E-02	0.305
		222.11		1.313E-01	5.100E-01	8.679E-01	9.565E-02	0.151
	+	1121.30		6.643E-01	4.133E-01	5.073E-01	4.312E-02	1.309
		1189.05		-3.788E-02	4.436E-01	7.137E-01	5.913E-02	-0.053
		1221.41	*	1.149E-02	2.805E-01	4.563E-01	3.916E-02	0.025
		1231.02		-4.420E-01	6.892E-01	1.043E+00	9.042E-02	-0.424
IR-192	+	295.96		1.474E+00	3.449E-01	4.222E-01	4.503E-02	3.492
		308.46		-9.854E-02	1.389E-01	2.205E-01	2.308E-02	-0.447
		316.51	*	-2.373E-02	5.124E-02	8.267E-02	8.524E-03	-0.287
		468.07		-1.057E-01	1.057E-01	1.595E-01	1.475E-02	-0.663
HG-203		70.83		2.669E+00	2.817E+00	4.228E+00	7.494E-01	0.631
		72.87		3.280E+00	1.741E+00	2.613E+00	4.513E-01	1.255
		279.20	*	8.809E-02	6.225E-02	1.098E-01	1.207E-02	0.802
BI-207		72.81		6.201E-01	3.451E-01	5.326E-01	6.100E-02	1.164
	+	74.97		8.015E-01	2.558E-01	3.692E-01	4.249E-02	2.171
		569.70		-1.592E-02	4.351E-02	6.666E-02	5.710E-03	-0.239
		1063.66	*	2.336E-02	6.839E-02	1.158E-01	1.022E-02	0.202
		1770.23		2.579E-01	5.199E-01	8.621E-01	7.536E-02	0.299
PB-210		46.54	*	-8.428E+00	1.406E+01	2.250E+01	2.770E+00	-0.375
PB-211		404.85	*	-2.588E-01	1.028E+00	1.650E+00	7.980E-01	-0.157
		427.09		-1.207E-01	2.046E+00	3.338E+00	1.544E+00	-0.036
		832.01		-5.388E-01	1.368E+00	2.139E+00	1.111E+00	-0.252
BI-212	+	727.33	*	1.345E+00	1.069E+00	1.441E+00	1.790E-01	0.934
		785.37		4.247E+00	4.228E+00	7.578E+00	6.710E-01	0.560
		1620.50		1.864E+00	2.935E+00	5.365E+00	4.994E-01	0.347
RN-219		271.23		5.427E-01	3.697E-01	5.842E-01	7.139E-02	0.929
		401.81	*	-2.399E-01	5.566E-01	8.862E-01	1.310E-01	-0.271
RA-223		81.07		-3.985E-01	4.291E-01	4.799E-01	5.670E-02	-0.830
		83.79		-2.460E-02	2.261E-01	3.011E-01	3.620E-02	-0.082
		94.87		1.834E+00	7.720E-01	1.202E+00	1.360E-01	1.526
		144.24		4.711E-01	9.393E-01	1.526E+00	1.686E-01	0.309

----- 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		7.567E-01	5.489E-01	9.290E-01	1.029E-01	0.815
	+	269.46		7.495E-01	3.835E-01	4.809E-01	5.306E-02	1.559
		323.87	*	-1.653E-02	9.659E-01	1.601E+00	2.906E-01	-0.010
	+	338.28		5.736E+00	2.593E+00	3.139E+00	4.076E-01	1.828
		79.69		2.741E+00	2.126E+00	3.184E+00	6.043E-01	0.861
		235.96		8.637E-01	2.841E-01	4.503E-01	5.595E-02	1.918
		256.23	*	-1.162E-01	3.506E-01	5.768E-01	7.982E-02	-0.202
TH-227		299.98		1.380E+00	1.364E+00	2.086E+00	2.939E-01	0.661
		304.50		-1.701E+00	2.268E+00	3.580E+00	6.294E-01	-0.475
		334.37		-1.605E+00	2.831E+00	3.863E+00	6.319E-01	-0.415
		79.80		2.262E-01	2.796E+00	4.050E+00	9.391E-01	0.056
		235.96		8.637E-01	2.826E-01	4.503E-01	5.378E-02	1.918
		256.23	*	-1.162E-01	3.507E-01	5.768E-01	8.774E-02	-0.202
		299.98		1.380E+00	1.364E+00	2.086E+00	2.939E-01	0.661
TH-229		304.50		-1.701E+00	2.268E+00	3.580E+00	6.294E-01	-0.475
		334.37		-1.605E+00	2.831E+00	3.863E+00	6.319E-01	-0.415
		85.43		3.715E-01	3.552E-01	5.336E-01	6.492E-02	0.696
	+	88.47		3.043E-01	2.228E-01	3.442E-01	4.242E-02	0.884
		193.51	*	-5.156E-01	7.907E-01	1.173E+00	1.276E-01	-0.440
		210.85		1.650E+00	1.469E+00	2.262E+00	2.484E-01	0.729
		283.69	*	-1.446E+00	2.015E+00	3.207E+00	5.115E-01	-0.451
TH-231		301.36		6.560E-01	8.581E-01	1.342E+00	1.823E-01	0.489
		81.07		-3.985E-01	4.291E-01	4.799E-01	5.670E-02	-0.830
		83.79		-2.460E-02	2.261E-01	3.011E-01	3.620E-02	-0.082
		94.87		1.834E+00	7.720E-01	1.202E+00	1.360E-01	1.526
		144.24		4.711E-01	9.393E-01	1.526E+00	1.686E-01	0.309
		154.21		7.567E-01	5.489E-01	9.290E-01	1.029E-01	0.815
	+	269.46		7.495E-01	3.835E-01	4.809E-01	5.306E-02	1.559
PA-233		323.87	*	-1.653E-02	9.659E-01	1.601E+00	2.906E-01	-0.010
	+	338.28		5.736E+00	2.593E+00	3.139E+00	4.076E-01	1.828
		300.13		6.472E-01	6.211E-01	9.480E-01	1.520E-01	0.683
		311.90	*	-6.689E-03	8.717E-02	1.442E-01	1.526E-02	-0.046
		340.48		3.561E+00	1.353E+00	1.837E+00	4.505E-01	1.938
		94.67		9.396E-01	3.011E-01	4.536E-01	6.545E-02	2.072
		98.44		1.604E-01	1.678E-01	2.155E-01	1.211E-01	0.744
PA-234		111.00		5.397E-02	2.461E-01	4.049E-01	5.376E-02	0.133
		131.20		3.831E-02	1.499E-01	2.456E-01	2.465E-02	0.156
		569.50		-1.394E-01	3.886E-01	5.959E-01	5.105E-02	-0.234
		733.00		7.785E-01	5.340E-01	8.699E-01	1.930E-01	0.895
		880.51		-3.157E-02	3.634E-01	5.953E-01	5.512E-02	-0.053
		883.24		-2.073E-01	3.801E-01	5.468E-01	3.680E-01	-0.379
		926.50		-2.085E-01	2.251E-01	3.123E-01	7.968E-02	-0.668
PA-234M		946.00	*	-1.204E-01	4.137E-01	6.602E-01	1.258E-01	-0.182
		949.00		4.910E-01	6.355E-01	1.117E+00	1.031E-01	0.440
		766.42		2.125E+01	1.979E+01	3.007E+01	1.526E+01	0.707
		1001.03	*	2.809E-01	5.840E+00	9.443E+00	9.792E-01	0.030
		63.29	*	9.645E-02	2.746E+00	4.402E+00	8.728E-01	0.022
	+	92.59		3.688E+00	1.609E+00	1.950E+00	4.568E-01	1.891
		63.29	*	9.645E-02	2.746E+00	4.402E+00	8.728E-01	0.022
U-238								

---- 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		3.688E+00	1.424E+00	1.950E+00	2.267E-01	1.891
		99.53		2.402E-01	2.485E-01	3.900E-01	4.228E-02	0.616
		103.37		-9.649E-02	1.386E-01	2.186E-01	2.309E-02	-0.441
		106.12		7.005E-02	1.142E-01	1.911E-01	1.989E-02	0.367
		117.23	*	1.242E-01	5.554E-01	9.125E-01	9.209E-02	0.136
		228.18		7.051E-02	3.062E-01	5.201E-01	5.737E-02	0.136
		277.60		3.981E-01	2.499E-01	4.430E-01	4.797E-02	0.899
AM-241		59.54	*	-2.468E-01	3.386E-01	5.415E-01	6.356E-02	-0.456
CM-247		278.00		1.657E+00	1.065E+00	1.886E+00	2.042E-01	0.878
		287.50		2.044E+00	1.926E+00	3.000E+00	3.217E-01	0.681
CF-249		402.40	*	-1.777E-02	5.196E-02	8.343E-02	7.055E-03	-0.213
		252.80		5.147E-01	1.290E+00	2.203E+00	2.423E-01	0.234
		333.37		-2.232E-01	3.144E-01	4.259E-01	4.244E-02	-0.524
		388.16	*	-4.653E-02	5.521E-02	8.549E-02	7.288E-03	-0.544
CF-251		177.52	*	-2.270E-01	1.897E-01	2.842E-01	3.058E-02	-0.799
		227.38		-4.687E-01	5.083E-01	8.153E-01	8.993E-02	-0.575
		285.41		-1.271E-01	3.009E+00	5.007E+00	5.381E-01	-0.025

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]G248243008
* Acquisition date   : 19-MAR-2010 10:55:51 Detector SN#      :
* Detector ID        : GAM15 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.09 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248243008 Analyst initials: MXR1
* Batch Number       : 959280 Sample Quantity : 1.0676E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope      :
* LCS DPM            : 0.000 LCS Isotope      :
* LCSD DPM           : 0.000 LCSD Isotope     :
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.557E+01	3.112E+00	6.874E-01	0.000E+00
CD-109	2.043E+00	1.466E+00	1.806E+00	0.000E+00
SN-126	1.974E-01	1.416E-01	1.758E-01	0.000E+00
BA-137M	4.588E-01	9.916E-02	8.224E-02	0.000E+00
CS-137	4.847E-01	1.048E-01	8.688E-02	0.000E+00
TL-208	4.687E-01	1.244E-01	7.607E-02	0.000E+00
BI-211	4.373E+00	7.512E-01	4.695E-01	0.000E+00
PB-212	1.480E+00	2.273E-01	1.337E-01	0.000E+00
BI-214	1.457E+00	2.477E-01	1.529E-01	0.000E+00
PB-214	1.587E+00	2.858E-01	1.707E-01	0.000E+00
RA-224	4.111E+00	1.666E+00	1.433E+00	0.000E+00
RA-226	1.457E+00	2.477E-01	1.529E-01	0.000E+00
AC-228	1.600E+00	4.199E-01	2.847E-01	0.000E+00
RA-228	1.600E+00	4.199E-01	2.847E-01	0.000E+00
TH-228	1.480E+00	2.273E-01	1.337E-01	0.000E+00
TH-232	1.600E+00	4.199E-01	2.847E-01	0.000E+00
U-235	1.602E-01	2.735E-01	4.563E-01	0.000E+00
NP-237	5.889E-01	4.396E-01	5.347E-01	0.000E+00
ANH-511	1.300E-01	8.986E-02	5.826E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.426E-01	4.974E-01	7.973E-01	0.000E+00 NOT IDENT.
NA-22	-2.053E-02	6.093E-02	9.603E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.699E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.776E-02	5.414E-02	7.460E-02	0.000E+00 FAIL ABUN
V-48	6.673E-02	1.294E-01	2.268E-01	0.000E+00 NOT IDENT.
CR-51	7.861E-02	6.081E-01	1.040E+00	0.000E+00 NOT IDENT.
MN-54	3.811E-02	5.058E-02	9.032E-02	0.000E+00 NOT IDENT.
CO-56	3.348E-02	4.951E-02	8.881E-02	0.000E+00 NOT IDENT.

CO-57	-9.891E-03	3.459E-02	5.703E-02	0.000E+00	NOT IDENT.
CO-58	-3.247E-02	5.396E-02	8.252E-02	0.000E+00	NOT IDENT.
FE-59	-6.348E-02	1.261E-01	1.965E-01	0.000E+00	NOT IDENT.
CO-60	3.295E-02	4.938E-02	8.791E-02	0.000E+00	NOT IDENT.
ZN-65	-4.688E-02	1.538E-01	2.088E-01	0.000E+00	NOT IDENT.
SE-75	-2.225E-02	7.437E-02	1.085E-01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	6.666E-02	1.103E-01	0.000E+00	NOT IDENT.
Y-88	2.474E-02	4.428E-02	8.178E-02	0.000E+00	NOT IDENT.
Y-91	-1.431E+01	3.097E+01	4.848E+01	0.000E+00	NOT IDENT.
NB-94	-5.252E-03	4.379E-02	7.388E-02	0.000E+00	NOT IDENT.
NB-95	5.805E-02	6.552E-02	1.176E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.288E-01	3.714E-01	0.000E+00	NOT IDENT.
ZR-95	5.652E-02	1.055E-01	1.836E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.134E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.390E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.479E-02	5.977E-02	1.023E-01	0.000E+00	FAIL ABUN
RH-106	3.273E-01	4.189E-01	7.291E-01	0.000E+00	NOT IDENT.
RU-106	3.273E-01	4.176E-01	7.291E-01	0.000E+00	NOT IDENT.
AG-108M	1.514E-02	3.787E-02	6.512E-02	0.000E+00	NOT IDENT.
AG-110M	-1.877E-02	5.718E-02	8.138E-02	0.000E+00	NOT IDENT.
SN-113	4.099E-02	6.036E-02	1.059E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.734E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.993E-01	1.154E-01	1.722E-01	0.000E+00	NOT IDENT.
TE-123M	-4.671E-02	4.081E-02	6.336E-02	0.000E+00	NOT IDENT.
SB-124	-1.182E-02	1.024E-01	1.670E-01	0.000E+00	NOT IDENT.
SB-125	-3.384E-03	1.189E-01	1.985E-01	0.000E+00	NOT IDENT.
TE-125M	-4.673E+00	1.441E+01	2.382E+01	0.000E+00	NOT IDENT.
I-126	2.282E-02	5.008E-01	7.421E-01	0.000E+00	NOT IDENT.
SB-126	-9.752E-02	3.191E-01	4.496E-01	0.000E+00	NOT IDENT.
SB-127	1.797E+00	6.602E+00	1.151E+01	0.000E+00	NOT IDENT.
I-131	2.137E-02	3.072E-01	5.206E-01	0.000E+00	NOT IDENT.
TE-132	1.344E+00	5.540E+00	9.637E+00	0.000E+00	NOT IDENT.
BA-133	6.216E-03	5.925E-02	8.765E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.211E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.759E-02	5.854E-02	1.055E-01	0.000E+00	NOT IDENT.
CS-135	2.389E-01	2.512E-01	3.954E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.723E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.279E-02	2.030E-01	3.448E-01	0.000E+00	NOT IDENT.
CE-139	-6.153E-04	4.392E-02	7.249E-02	0.000E+00	NOT IDENT.
BA-140	2.407E-01	5.679E-01	9.597E-01	0.000E+00	NOT IDENT.
LA-140	-1.742E-01	1.627E-01	2.184E-01	0.000E+00	NOT IDENT.
CE-141	3.081E-02	1.015E-01	1.681E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.687E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.704E-02	2.819E-01	4.617E-01	0.000E+00	NOT IDENT.
PM-144	5.242E-02	4.643E-02	8.522E-02	0.000E+00	NOT IDENT.
PR-144	4.071E+00	3.480E+00	6.403E+00	0.000E+00	NOT IDENT.
PM-146	7.797E-03	5.923E-02	9.968E-02	0.000E+00	NOT IDENT.
ND-147	-2.535E-01	1.264E+00	2.056E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.502E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.343E-02	1.783E-01	2.195E-01	0.000E+00	NOT IDENT.
GD-153	-1.929E-02	1.344E-01	1.954E-01	0.000E+00	NOT IDENT.
EU-154	-1.221E-02	1.680E-01	2.732E-01	0.000E+00	NOT IDENT.
EU-155	5.136E-02	1.448E-01	2.467E-01	0.000E+00	FAIL ABUN
TB-160	3.429E-02	1.878E-01	3.212E-01	0.000E+00	FAIL ABUN
HO-166M	-9.825E-03	7.539E-02	1.269E-01	0.000E+00	NOT IDENT.
TA-182	1.149E-02	2.748E-01	4.538E-01	0.000E+00	FAIL ABUN
IR-192	-2.373E-02	5.022E-02	8.286E-02	0.000E+00	FAIL ABUN
HG-203	8.809E-02	6.101E-02	1.101E-01	0.000E+00	NOT IDENT.
BI-207	2.336E-02	6.703E-02	1.153E-01	0.000E+00	FAIL ABUN
PB-210	-8.428E+00	1.378E+01	2.279E+01	0.000E+00	NOT IDENT.
PB-211	-2.588E-01	1.008E+00	1.651E+00	0.000E+00	NOT IDENT.
BI-212	1.345E+00	1.048E+00	1.437E+00	0.000E+00	FAIL ABUN
RN-219	-2.399E-01	5.454E-01	8.870E-01	0.000E+00	NOT IDENT.
RA-223	-1.653E-02	9.466E-01	1.605E+00	0.000E+00	FAIL ABUN
AC-227	-1.162E-01	3.436E-01	5.788E-01	0.000E+00	NOT IDENT.
TH-227	-1.162E-01	3.437E-01	5.788E-01	0.000E+00	NOT IDENT.
TH-229	-5.156E-01	7.749E-01	1.179E+00	0.000E+00	FAIL ABUN
PA-231	-1.446E+00	1.974E+00	3.216E+00	0.000E+00	NOT IDENT.
TH-231	-1.653E-02	9.466E-01	1.605E+00	0.000E+00	FAIL ABUN
PA-233	-6.689E-03	8.542E-02	1.445E-01	0.000E+00	NOT IDENT.
PA-234	-1.204E-01	4.054E-01	6.575E-01	0.000E+00	NOT IDENT.
PA-234M	2.809E-01	5.723E+00	9.402E+00	0.000E+00	NOT IDENT.
TH-234	9.645E-02	2.691E+00	4.452E+00	0.000E+00	FAIL ABUN
U-238	9.645E-02	2.691E+00	4.452E+00	0.000E+00	FAIL ABUN
NP-239	1.242E-01	5.443E-01	9.197E-01	0.000E+00	NOT IDENT.
AM-241	-2.468E-01	3.318E-01	5.479E-01	0.000E+00	NOT IDENT.
CM-247	-1.777E-02	5.092E-02	8.350E-02	0.000E+00	NOT IDENT.
CF-249	-4.653E-02	5.411E-02	8.559E-02	0.000E+00	NOT IDENT.

CF-251	-2.270E-01	1.859E-01	2.857E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:57:12.62

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243008.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:55:51
Sample ID          : G248243008           Sample quantity  : 1.06760E+02 GRAM
Detector name      : GAM15                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time: 0 02:00:01.09 0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity       : 5.00000
Batch ID           : 959280                 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	749	10.66*	9.664E-01	2.557E+01	2.557E+01	12.42
CD-109	88.03	93	3.70*	4.465E+00	1.974E+00	2.043E+00	73.23
SN-126	64.28	-----	9.60	1.941E+00	-----	Line Not Found	-----
	86.94	93	8.90	4.465E+00	8.205E-01	8.205E-01	83.66
	87.57	93	37.00*	4.465E+00	1.974E-01	1.974E-01	73.23
BA-137M	661.66	232	89.90*	1.982E+00	4.581E-01	4.588E-01	22.06
CS-137	661.66	232	85.10*	1.982E+00	4.839E-01	4.847E-01	22.06
TL-208	277.37	-----	6.60	3.705E+00	-----	Line Not Found	-----
	583.19	248	85.00*	2.190E+00	4.687E-01	4.687E-01	27.09
	860.56	-----	12.50	1.576E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	505	12.92*	3.141E+00	4.373E+00	4.373E+00	17.53
PB-212	74.82	264	10.28	3.254E+00	2.780E+00	2.780E+00	33.36
	77.11	371	17.10	3.517E+00	2.166E+00	2.166E+00	24.58
	238.63	755	43.60*	4.114E+00	1.480E+00	1.480E+00	15.67
	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
BI-214	609.32	399	45.49*	2.117E+00	1.457E+00	1.457E+00	17.35
	1120.29	70	14.92	1.226E+00	1.352E+00	1.352E+00	62.58
	1764.49	68	15.30	8.554E-01	1.834E+00	1.834E+00	40.52
PB-214	74.82	264	5.80	3.254E+00	4.927E+00	4.927E+00	32.88
	77.11	371	9.70	3.517E+00	3.819E+00	3.819E+00	25.93
	242.00	196	7.25	4.078E+00	2.325E+00	2.325E+00	41.75
	295.22	344	18.42	3.549E+00	1.852E+00	1.852E+00	24.27
	351.93	505	35.60*	3.141E+00	1.587E+00	1.587E+00	18.38
RA-224	240.99	196	4.10*	4.078E+00	4.111E+00	4.111E+00	41.34
RA-226	609.32	399	45.49*	2.117E+00	1.457E+00	1.457E+00	17.35
	1120.29	70	14.92	1.226E+00	1.352E+00	1.352E+00	62.58
	1764.49	68	15.30	8.554E-01	1.834E+00	1.834E+00	40.52
AC-228	338.32	149	11.27	3.226E+00	1.446E+00	1.446E+00	60.31
	911.20	175	25.80*	1.494E+00	1.600E+00	1.600E+00	26.78
	968.97	77	15.80	1.409E+00	1.210E+00	1.210E+00	54.89
RA-228	338.32	149	11.27	3.226E+00	1.446E+00	1.446E+00	60.31

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	175	25.80*	1.494E+00	1.600E+00	1.600E+00	26.78
	968.97	77	15.80	1.409E+00	1.210E+00	1.210E+00	54.89
TH-228	74.82	264	10.28	3.254E+00	2.780E+00	2.780E+00	31.94
	77.11	371	17.10	3.517E+00	2.166E+00	2.166E+00	24.58
	238.63	755	43.60*	4.114E+00	1.480E+00	1.480E+00	15.67
	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
TH-232	338.32	149	11.27	3.226E+00	1.446E+00	1.446E+00	44.40
	911.20	175	25.80*	1.494E+00	1.600E+00	1.600E+00	26.78
	968.97	77	15.80	1.409E+00	1.210E+00	1.210E+00	54.89
U-235	89.96	82	3.47	4.649E+00	1.786E+00	1.786E+00	85.56
	93.35	215	5.60	4.841E+00	2.785E+00	2.785E+00	44.16
	143.76	-----	10.96*	5.506E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.224E+00	-----	Line Not Found	-----
	185.72	193	57.20	4.855E+00	2.445E-01	2.445E-01	40.41
	205.31	-----	5.01	4.560E+00	-----	Line Not Found	-----
NP-237	86.48	93	12.40*	4.465E+00	5.889E-01	5.889E-01	76.17
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
ANH-511	511.00	89	100.00*	2.419E+00	1.300E-01	1.300E-01	70.53

Flag: "*" = Keyline

Total number of lines in spectrum 23
Number of unidentified lines 1
Number of lines tentatively identified by NID 22 95.65%

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	2.557E+01	2.557E+01	0.318E+01	12.42	
CD-109	461.40D	1.04	1.974E+00	2.043E+00	1.496E+00	73.23	
SN-126	2.30E+05Y	1.00	1.974E-01	1.974E-01	1.445E-01	73.23	
BA-137M	30.08Y	1.00	4.581E-01	4.588E-01	1.012E-01	22.06	
CS-137	30.08Y	1.00	4.839E-01	4.847E-01	1.069E-01	22.06	
TL-208	1.41E+10Y	1.00	4.687E-01	4.687E-01	1.269E-01	27.09	
BI-211	7.04E+08Y	1.00	4.373E+00	4.373E+00	0.766E+00	17.53	
PB-212	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.232E+00	15.67	
BI-214	1600.00Y	1.00	1.457E+00	1.457E+00	0.253E+00	17.35	
PB-214	1600.00Y	1.00	1.587E+00	1.587E+00	0.292E+00	18.38	
RA-224	1.41E+10Y	1.00	4.111E+00	4.111E+00	1.700E+00	41.34	
RA-226	1600.00Y	1.00	1.457E+00	1.457E+00	0.253E+00	17.35	
AC-228	1.41E+10Y	1.00	1.600E+00	1.600E+00	0.428E+00	26.78	
RA-228	1.41E+10Y	1.00	1.600E+00	1.600E+00	0.428E+00	26.78	
TH-228	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.232E+00	15.67	
TH-232	1.41E+10Y	1.00	1.600E+00	1.600E+00	0.428E+00	26.78	
U-235	7.04E+08Y	1.00	2.445E-01	2.445E-01	0.988E-01	40.41	K
NP-237	2.14E+06Y	1.00	5.889E-01	5.889E-01	4.486E-01	76.17	
ANH-511	1.00E+09Y	1.00	1.300E-01	1.300E-01	0.917E-01	70.53	

Total Activity : 5.086E+01 5.093E+01

Grand Total Activity : 5.086E+01 5.093E+01

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

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

Unidentified Energy Lines
Sample ID : G248243008

Page : 4
Acquisition date : 19-MAR-2010 10:55:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.31	75	172	1.20	417.52	414	7	1.04E-02	64.5	4.50E+00	
0	269.73	112	166	1.80	538.36	532	12	1.55E-02	50.0	3.78E+00	T
0	727.59	47	66	1.19	1454.11	1447	12	6.48E-03	78.5	1.83E+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]G248243008.CNF;1
* Acquisition date   : 19-MAR-2010 10:55:51  Detector SN#      :
* Detector ID        : GAM15                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.09          Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248243008            Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity : 1.06760E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32.11MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.557E+01	3.176E+00	6.920E-01	6.800E-02	36.954
CD-109	2.043E+00	1.496E+00	1.789E+00	2.221E-01	1.142
SN-126	1.974E-01	1.445E-01	1.741E-01	2.155E-02	1.133
BA-137M	4.588E-01	1.012E-01	8.241E-02	6.775E-03	5.567
CS-137	4.847E-01	1.069E-01	8.705E-02	7.172E-03	5.567
TL-208	4.687E-01	1.269E-01	7.617E-02	6.966E-03	6.153
BI-211	4.373E+00	7.665E-01	4.687E-01	4.668E-02	9.330
PB-212	1.480E+00	2.320E-01	1.332E-01	1.592E-02	11.110
BI-214	1.457E+00	2.528E-01	1.531E-01	1.525E-02	9.516
PB-214	1.587E+00	2.916E-01	1.704E-01	1.937E-02	9.312
RA-224	4.111E+00	1.700E+00	1.427E+00	1.574E-01	2.880
RA-226	1.457E+00	2.528E-01	1.531E-01	1.525E-02	9.516
AC-228	1.600E+00	4.285E-01	2.858E-01	3.462E-02	5.598
RA-228	1.600E+00	4.285E-01	2.858E-01	3.462E-02	5.598
TH-228	1.480E+00	2.320E-01	1.332E-01	1.592E-02	11.110
TH-232	1.600E+00	4.285E-01	2.858E-01	3.462E-02	5.598
U-235	2.445E-01	9.880E-02	4.532E-01	8.065E-02	0.539
NP-237	5.889E-01	4.486E-01	5.295E-01	1.286E-01	1.112

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.300E-01	9.170E-02	5.829E-02	5.036E-03	2.230

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.426E-01		5.076E-01	7.974E-01	7.412E-02	-0.304
NA-22	-2.053E-02		6.218E-02	9.659E-02	8.775E-03	-0.213
NA-24	-1.661E+03		2.397E+03	Half-Life too short		
SC-46	-3.776E-02		5.524E-02	7.487E-02	6.958E-03	-0.504
V-48	6.673E-02		1.321E-01	2.278E-01	2.083E-02	0.293
CR-51	7.861E-02		6.205E-01	1.038E+00	1.101E-01	0.076
MN-54	3.811E-02		5.162E-02	9.062E-02	8.224E-03	0.421
CO-56	3.348E-02		5.052E-02	8.911E-02	8.132E-03	0.376
CO-57	-9.891E-03		3.530E-02	5.660E-02	5.701E-03	-0.175
CO-58	-3.247E-02		5.506E-02	8.278E-02	7.442E-03	-0.392
FE-59	-6.348E-02		1.287E-01	1.975E-01	1.842E-02	-0.321
CO-60	3.295E-02		5.038E-02	8.844E-02	8.502E-03	0.373
ZN-65	-4.688E-02		1.569E-01	2.098E-01	1.793E-02	-0.223
SE-75	-2.225E-02		7.589E-02	1.082E-01	1.186E-02	-0.206
SR-85	1.229E-01		6.802E-02	1.103E-01	9.531E-03	1.114
Y-88	2.474E-02		4.519E-02	8.243E-02	6.942E-03	0.300
Y-91	-1.431E+01		3.160E+01	4.875E+01	4.109E+00	-0.293
NB-94	-5.252E-03		4.468E-02	7.405E-02	6.252E-03	-0.071
NB-95	5.805E-02		6.686E-02	1.179E-01	1.033E-02	0.492
NB-95M	4.755E-01		2.335E-01	3.699E-01	4.457E-02	1.285
ZR-95	5.652E-02		1.077E-01	1.841E-01	1.769E-02	0.307
MO-99	-6.487E-05		5.787E-05	Half-Life too short		
TC-99M	-1.047E+20		7.092E+19	Half-Life too short		
RU-103	2.479E-02		6.099E-02	1.023E-01	1.430E-02	0.242
RH-106	3.273E-01		4.274E-01	7.303E-01	9.579E-02	0.448
RU-106	3.273E-01		4.261E-01	7.303E-01	6.137E-02	0.448
AG-108M	1.514E-02		3.864E-02	6.509E-02	5.753E-03	0.233
AG-110M	-1.877E-02		5.835E-02	8.154E-02	6.939E-03	-0.230
SN-113	4.099E-02		6.160E-02	1.058E-01	9.185E-03	0.388
CD-115	1.506E-06		8.849E-05	Half-Life too short		
SN-117M	-1.993E-01		1.177E-01	1.712E-01	1.795E-02	-1.165
TE-123M	-4.671E-02		4.165E-02	6.297E-02	6.636E-03	-0.742
SB-124	-1.182E-02		1.045E-01	1.682E-01	1.584E-02	-0.070
SB-125	-3.384E-03		1.213E-01	1.984E-01	1.727E-02	-0.017
TE-125M	-4.673E+00		1.471E+01	2.362E+01	2.811E+00	-0.198
I-126	2.282E-02		5.110E-01	7.436E-01	6.132E-02	0.031
SB-126	-9.752E-02		3.256E-01	4.507E-01	3.847E-02	-0.216
SB-127	1.797E+00		6.737E+00	1.153E+01	1.590E+00	0.156
I-131	2.137E-02		3.135E-01	5.198E-01	5.051E-02	0.041
TE-132	1.344E+00		5.653E+00	9.597E+00	1.817E+00	0.140
BA-133	6.216E-03		6.046E-02	8.751E-02	1.182E-02	0.071
I-133	1.505E+00		2.148E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	4.759E-02		5.974E-02	1.058E-01	9.483E-03	0.450
CS-135	2.389E-01		2.563E-01	3.942E-01	4.729E-02	0.606
I-135	-6.393E+17		1.900E+18	Half-Life	too short	
CS-136	4.279E-02		2.071E-01	3.464E-01	3.207E-02	0.124
CE-139	-6.153E-04		4.482E-02	7.206E-02	7.692E-03	-0.009
BA-140	2.407E-01		5.795E-01	9.605E-01	3.257E-01	0.251
LA-140	-1.742E-01		1.660E-01	2.200E-01	2.062E-02	-0.792
CE-141	3.081E-02		1.036E-01	1.670E-01	1.726E-02	0.185
CE-143	4.965E-02		8.609E-03	Half-Life	too short	
CE-144	-9.704E-02		2.876E-01	4.584E-01	7.397E-02	-0.212
PM-144	5.242E-02		4.738E-02	8.541E-02	7.189E-03	0.614
PR-144	4.071E+00		3.551E+00	6.418E+00	5.397E-01	0.634
PM-146	7.797E-03		6.044E-02	9.966E-02	1.054E-02	0.078
ND-147	-2.535E-01		1.289E+00	2.057E+00	3.077E-01	-0.123
PM-149	-4.764E-05		7.661E-04	Half-Life	too short	
EU-152	-6.343E-02		1.819E-01	2.191E-01	2.230E-02	-0.290
GD-153	-1.929E-02		1.371E-01	1.937E-01	2.137E-02	-0.100
EU-154	-1.221E-02		1.715E-01	2.748E-01	3.222E-02	-0.044
EU-155	5.136E-02		1.478E-01	2.446E-01	2.577E-02	0.210
TB-160	3.429E-02		1.916E-01	3.224E-01	2.984E-02	0.106
HO-166M	-9.825E-03		7.693E-02	1.272E-01	1.080E-02	-0.077
TA-182	1.149E-02		2.805E-01	4.563E-01	3.916E-02	0.025
IR-192	-2.373E-02		5.124E-02	8.267E-02	8.524E-03	-0.287
HG-203	8.809E-02		6.225E-02	1.098E-01	1.207E-02	0.802
BI-207	2.336E-02		6.839E-02	1.158E-01	1.022E-02	0.202
PB-210	-8.428E+00		1.406E+01	2.250E+01	2.770E+00	-0.375
PB-211	-2.588E-01		1.028E+00	1.650E+00	7.980E-01	-0.157
BI-212	1.345E+00	+	1.069E+00	1.441E+00	1.790E-01	0.934
RN-219	-2.399E-01		5.566E-01	8.862E-01	1.310E-01	-0.271
RA-223	-1.653E-02		9.659E-01	1.601E+00	2.906E-01	-0.010
AC-227	-1.162E-01		3.506E-01	5.768E-01	7.982E-02	-0.202
TH-227	-1.162E-01		3.507E-01	5.768E-01	8.774E-02	-0.202
TH-229	-5.156E-01		7.907E-01	1.173E+00	1.276E-01	-0.440
PA-231	-1.446E+00		2.015E+00	3.207E+00	5.115E-01	-0.451
TH-231	-1.653E-02		9.659E-01	1.601E+00	2.906E-01	-0.010
PA-233	-6.689E-03		8.717E-02	1.442E-01	1.526E-02	-0.046
PA-234	-1.204E-01		4.137E-01	6.602E-01	1.258E-01	-0.182
PA-234M	2.809E-01		5.840E+00	9.443E+00	9.792E-01	0.030
TH-234	9.645E-02		2.746E+00	4.402E+00	8.728E-01	0.022
U-238	9.645E-02		2.746E+00	4.402E+00	8.728E-01	0.022
NP-239	1.242E-01		5.554E-01	9.125E-01	9.209E-02	0.136
AM-241	-2.468E-01		3.386E-01	5.415E-01	6.356E-02	-0.456
CM-247	-1.777E-02		5.196E-02	8.343E-02	7.055E-03	-0.213
CF-249	-4.653E-02		5.521E-02	8.549E-02	7.288E-03	-0.544
CF-251	-2.270E-01		1.897E-01	2.842E-01	3.058E-02	-0.799

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29414  *
*                                     *
*****
*                                     *
*               DETECTOR DATA        *
*                                     *
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248243008 *
* Acquisition date   : 19-MAR-2010 10:55:51 Detector SN#      : *
* Detector ID        : GAM15          Sensitivity              : 5.000 *
* Geometry           : CAN            Energy tolerance         : 1.500 *
* Elapsed live time  : 0 02:00:00.00 Abundance limit          : 75.000 *
* Elapsed real time  : 0 02:00:01.09 Half life ratio          : 8.000 *
*****
*                                     *
*               SAMPLE DATA          *
*                                     *
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID *
* Sample ID          : G248243008    Analyst initials: MXR1  *
* Batch Number       : 959280        Sample Quantity : 1.0676E+02 GRAM *
* Recovery           : 1.00000       Carrier Weight  : 0.00000 *
*****
*                                     *
*               QC DATA              *
*                                     *
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 MS Isotope        : *
* MSD DPM             : 0.000         MSD Isotope            : *
* LCS DPM             : 0.000         LCS Isotope            : *
* LCSD DPM            : 0.000         LCSD Isotope           : *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.557E+01	3.112E+00	3.439E-01	1.588E+00
CD-109	2.043E+00	1.466E+00	9.036E-01	7.480E-01
SN-126	1.974E-01	1.416E-01	8.796E-02	7.226E-02
BA-137M	4.588E-01	9.916E-02	4.115E-02	5.059E-02
CS-137	4.847E-01	1.048E-01	4.347E-02	5.346E-02
TL-208	4.687E-01	1.244E-01	3.806E-02	6.347E-02
BI-211	4.373E+00	7.512E-01	2.349E-01	3.832E-01
PB-212	1.480E+00	2.273E-01	6.690E-02	1.160E-01
BI-214	1.457E+00	2.477E-01	7.649E-02	1.264E-01
PB-214	1.587E+00	2.858E-01	8.540E-02	1.458E-01
RA-224	4.111E+00	1.666E+00	7.168E-01	8.499E-01
RA-226	1.457E+00	2.477E-01	7.649E-02	1.264E-01
AC-228	1.600E+00	4.199E-01	1.424E-01	2.142E-01
RA-228	1.600E+00	4.199E-01	1.424E-01	2.142E-01
TH-228	1.480E+00	2.273E-01	6.690E-02	1.160E-01
TH-232	1.600E+00	4.199E-01	1.424E-01	2.142E-01
U-235	1.602E-01	2.735E-01	2.283E-01	1.395E-01
NP-237	5.889E-01	4.396E-01	2.675E-01	2.243E-01
ANH-511	1.300E-01	8.986E-02	2.915E-02	4.585E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.426E-01	4.974E-01	3.989E-01	2.538E-01 NOT IDENT.
NA-22	-2.053E-02	6.093E-02	4.805E-02	3.109E-02 NOT IDENT.
NA-24	-1.661E+09	4.699E+09	0.000E+00	2.397E+09 SHORT HLIF
SC-46	-3.776E-02	5.414E-02	3.732E-02	2.762E-02 FAIL ABUN
V-48	6.673E-02	1.294E-01	1.135E-01	6.604E-02 NOT IDENT.
CR-51	7.861E-02	6.081E-01	5.202E-01	3.103E-01 NOT IDENT.
MN-54	3.811E-02	5.058E-02	4.519E-02	2.581E-02 NOT IDENT.
CO-56	3.348E-02	4.951E-02	4.443E-02	2.526E-02 NOT IDENT.

CO-57	-9.891E-03	3.459E-02	2.853E-02	1.765E-02	NOT IDENT.
CO-58	-3.247E-02	5.396E-02	4.128E-02	2.753E-02	NOT IDENT.
FE-59	-6.348E-02	1.261E-01	9.830E-02	6.434E-02	NOT IDENT.
CO-60	3.295E-02	4.938E-02	4.398E-02	2.519E-02	NOT IDENT.
ZN-65	-4.688E-02	1.538E-01	1.045E-01	7.846E-02	NOT IDENT.
SE-75	-2.225E-02	7.437E-02	5.429E-02	3.795E-02	NOT IDENT.
SR-85	1.229E-01	6.666E-02	5.516E-02	3.401E-02	NOT IDENT.
Y-88	2.474E-02	4.428E-02	4.091E-02	2.259E-02	NOT IDENT.
Y-91	-1.431E+01	3.097E+01	2.425E+01	1.580E+01	NOT IDENT.
NB-94	-5.252E-03	4.379E-02	3.696E-02	2.234E-02	NOT IDENT.
NB-95	5.805E-02	6.552E-02	5.883E-02	3.343E-02	NOT IDENT.
NB-95M	4.755E-01	2.288E-01	1.858E-01	1.167E-01	NOT IDENT.
ZR-95	5.652E-02	1.055E-01	9.186E-02	5.384E-02	NOT IDENT.
MO-99	-6.487E+01	1.134E+02	0.000E+00	5.787E+01	SHORT HLIF
TC-99M	-1.047E+26	1.390E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.479E-02	5.977E-02	5.116E-02	3.050E-02	FAIL ABUN
RH-106	3.273E-01	4.189E-01	3.648E-01	2.137E-01	NOT IDENT.
RU-106	3.273E-01	4.176E-01	3.648E-01	2.131E-01	NOT IDENT.
AG-108M	1.514E-02	3.787E-02	3.258E-02	1.932E-02	NOT IDENT.
AG-110M	-1.877E-02	5.718E-02	4.071E-02	2.917E-02	NOT IDENT.
SN-113	4.099E-02	6.036E-02	5.296E-02	3.080E-02	NOT IDENT.
CD-115	1.506E+00	1.734E+02	0.000E+00	8.849E+01	SHORT HLIF
SN-117M	-1.993E-01	1.154E-01	8.617E-02	5.887E-02	NOT IDENT.
TE-123M	-4.671E-02	4.081E-02	3.170E-02	2.082E-02	NOT IDENT.
SB-124	-1.182E-02	1.024E-01	8.354E-02	5.225E-02	NOT IDENT.
SB-125	-3.384E-03	1.189E-01	9.930E-02	6.064E-02	NOT IDENT.
TE-125M	-4.673E+00	1.441E+01	1.192E+01	7.353E+00	NOT IDENT.
I-126	2.282E-02	5.008E-01	3.713E-01	2.555E-01	NOT IDENT.
SB-126	-9.752E-02	3.191E-01	2.249E-01	1.628E-01	NOT IDENT.
SB-127	1.797E+00	6.602E+00	5.757E+00	3.368E+00	NOT IDENT.
I-131	2.137E-02	3.072E-01	2.605E-01	1.568E-01	NOT IDENT.
TE-132	1.344E+00	5.540E+00	4.821E+00	2.826E+00	NOT IDENT.
BA-133	6.216E-03	5.925E-02	4.385E-02	3.023E-02	NOT IDENT.
I-133	1.505E+06	4.211E+06	0.000E+00	2.148E+06	SHORT HLIF
CS-134	4.759E-02	5.854E-02	5.277E-02	2.987E-02	NOT IDENT.
CS-135	2.389E-01	2.512E-01	1.978E-01	1.281E-01	NOT IDENT.
I-135	-6.393E+23	3.723E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.279E-02	2.030E-01	1.725E-01	1.036E-01	NOT IDENT.
CE-139	-6.153E-04	4.392E-02	3.626E-02	2.241E-02	NOT IDENT.
BA-140	2.407E-01	5.679E-01	4.801E-01	2.897E-01	NOT IDENT.
LA-140	-1.742E-01	1.627E-01	1.093E-01	8.299E-02	NOT IDENT.
CE-141	3.081E-02	1.015E-01	8.409E-02	5.180E-02	NOT IDENT.
CE-143	4.965E+04	1.687E+04	0.000E+00	8.609E+03	SHORT HLIF
CE-144	-9.704E-02	2.819E-01	2.310E-01	1.438E-01	NOT IDENT.
PM-144	5.242E-02	4.643E-02	4.263E-02	2.369E-02	NOT IDENT.
PR-144	4.071E+00	3.480E+00	3.203E+00	1.775E+00	NOT IDENT.
PM-146	7.797E-03	5.923E-02	4.987E-02	3.022E-02	NOT IDENT.
ND-147	-2.535E-01	1.264E+00	1.029E+00	6.447E-01	FAIL ABUN
PM-149	-4.764E+01	1.502E+03	0.000E+00	7.661E+02	SHORT HLIF
EU-152	-6.343E-02	1.783E-01	1.098E-01	9.096E-02	NOT IDENT.
GD-153	-1.929E-02	1.344E-01	9.776E-02	6.855E-02	NOT IDENT.
EU-154	-1.221E-02	1.680E-01	1.367E-01	8.573E-02	NOT IDENT.
EU-155	5.136E-02	1.448E-01	1.234E-01	7.388E-02	FAIL ABUN
TB-160	3.429E-02	1.878E-01	1.607E-01	9.581E-02	FAIL ABUN
HO-166M	-9.825E-03	7.539E-02	6.349E-02	3.847E-02	NOT IDENT.
TA-182	1.149E-02	2.748E-01	2.270E-01	1.402E-01	FAIL ABUN
IR-192	-2.373E-02	5.022E-02	4.145E-02	2.562E-02	FAIL ABUN
HG-203	8.809E-02	6.101E-02	5.509E-02	3.113E-02	NOT IDENT.
BI-207	2.336E-02	6.703E-02	5.768E-02	3.420E-02	FAIL ABUN
PB-210	-8.428E+00	1.378E+01	1.140E+01	7.029E+00	NOT IDENT.
PB-211	-2.588E-01	1.008E+00	8.261E-01	5.142E-01	NOT IDENT.
BI-212	1.345E+00	1.048E+00	7.189E-01	5.345E-01	FAIL ABUN
RN-219	-2.399E-01	5.454E-01	4.438E-01	2.783E-01	NOT IDENT.
RA-223	-1.653E-02	9.466E-01	8.028E-01	4.829E-01	FAIL ABUN
AC-227	-1.162E-01	3.436E-01	2.896E-01	1.753E-01	NOT IDENT.
TH-227	-1.162E-01	3.437E-01	2.896E-01	1.754E-01	NOT IDENT.
TH-229	-5.156E-01	7.749E-01	5.898E-01	3.953E-01	FAIL ABUN
PA-231	-1.446E+00	1.974E+00	1.609E+00	1.007E+00	NOT IDENT.
TH-231	-1.653E-02	9.466E-01	8.028E-01	4.829E-01	FAIL ABUN
PA-233	-6.689E-03	8.542E-02	7.231E-02	4.358E-02	NOT IDENT.
PA-234	-1.204E-01	4.054E-01	3.290E-01	2.069E-01	NOT IDENT.
PA-234M	2.809E-01	5.723E+00	4.704E+00	2.920E+00	NOT IDENT.
TH-234	9.645E-02	2.691E+00	2.227E+00	1.373E+00	FAIL ABUN
U-238	9.645E-02	2.691E+00	2.227E+00	1.373E+00	FAIL ABUN
NP-239	1.242E-01	5.443E-01	4.601E-01	2.777E-01	NOT IDENT.
AM-241	-2.468E-01	3.318E-01	2.741E-01	1.693E-01	NOT IDENT.
CM-247	-1.777E-02	5.092E-02	4.178E-02	2.598E-02	NOT IDENT.
CF-249	-4.653E-02	5.411E-02	4.282E-02	2.761E-02	NOT IDENT.

CF-251

-2.270E-01

1.859E-01

1.430E-01

9.487E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	246.3708
49.72	221.8919
57.36	0.0000
59.54	300.1907
63.29	302.8423
63.29	302.8423
64.28	264.1449
67.75	362.7825
69.67	324.9127
70.83	293.8332
72.81	321.5488
72.87	321.5742
72.87	321.5742
74.82	335.5115
74.82	335.5115
74.82	335.5115
74.97	335.5786
77.11	336.5172
77.11	336.5172
77.11	336.5172
79.69	295.6782
79.80	343.6746
80.12	343.8137
80.19	343.8438
80.57	354.0095
81.00	360.2046
81.07	360.2362
81.07	360.2362
83.79	363.4666
83.79	363.4666
85.43	357.3558
86.48	309.2567
86.55	309.2837
86.79	309.3715
86.94	309.4289
87.57	309.6631
88.03	309.8341
88.47	309.9969
89.96	310.5450
91.11	310.9654
92.59	311.5018
92.59	311.5018
93.35	311.7758
94.67	255.4958
94.87	281.5980
94.87	281.5980
95.86	316.1369
97.43	267.7242
98.44	228.8040
99.53	242.7175
100.11	245.6021
103.18	320.3587
103.37	282.4262
105.31	267.5805
106.12	248.2412
109.28	278.0107
111.00	250.5549
111.76	262.1503
116.30	246.7126
117.23	260.4895
121.12	278.2333
121.78	274.2273
122.06	260.6928
123.07	254.6613
131.20	284.1070
133.52	287.8960
136.00	283.2495

136.47	280.1878
140.51	0.0000
140.51	0.0000
143.76	237.1605
144.24	242.6042
144.24	242.6042
145.44	245.0002
152.43	256.1743
153.25	248.8125
154.21	236.0793
154.21	236.0793
156.02	254.7940
158.56	300.7771
159.00	275.9919
162.66	239.9163
163.33	249.8235
165.86	265.5738
176.60	260.1590
177.52	281.2148
181.07	0.0000
184.41	279.1674
185.72	254.2403
193.51	255.3949
197.04	244.1093
205.31	247.5746
210.85	234.1270
215.65	235.8048
222.11	213.2441
227.38	246.7747
228.16	216.8365
228.18	216.8394
235.69	221.2598
235.96	221.2982
235.96	221.2982
238.63	213.7274
238.63	213.7274
240.99	214.0488
242.00	214.1868
244.70	164.2138
252.40	167.4703
252.80	162.8838
256.23	184.5578
256.23	184.5578
260.90	0.0000
264.66	169.3412
268.22	172.8142
269.46	168.2666
269.46	168.2666
271.23	148.1669
273.65	215.5380
276.40	164.2590
277.37	156.8377
277.60	149.3459
278.00	151.2579
279.20	152.3041
279.54	148.5725
280.46	170.2907
283.69	173.4321
284.31	177.2666
285.41	159.4504
285.90	0.0000
287.50	133.8207
293.27	0.0000
295.22	180.2542
295.96	196.1466
298.57	144.1555
299.98	128.4131
299.98	128.4131
300.09	128.4214
300.09	128.4214
300.13	128.4247
301.36	138.7096
302.85	168.6297
304.50	166.8738
304.50	166.8738
304.85	163.0908
308.46	146.2091
311.90	136.9061

316.51	144.9209
319.41	148.9888
320.08	136.5398
323.87	169.5697
323.87	169.5697
328.76	156.4787
333.37	183.9604
334.37	163.0668
334.37	163.0668
338.28	129.0954
338.28	129.0954
338.32	129.0986
338.32	129.0986
338.32	129.0986
340.48	113.3683
340.55	113.3719
344.28	143.6036
351.06	135.7863
351.93	135.8440
356.01	102.8223
364.49	117.0142
366.42	0.0000
383.85	121.0707
388.16	128.2741
388.63	121.3388
391.69	94.6185
400.66	110.0081
401.81	118.0691
402.40	121.1034
404.85	126.2476
410.95	129.6063
414.70	119.7583
423.72	83.8602
427.09	99.1604
427.87	96.1573
433.94	85.2458
453.88	103.3647
463.37	101.7155
468.07	123.5273
473.00	82.5166
476.78	102.2702
477.60	105.4029
487.02	101.6511
492.35	0.0000
497.08	77.0604
511.00	74.3355
514.00	85.6010
527.90	0.0000
529.87	0.0000
531.02	87.5593
537.26	80.3604
546.56	0.0000
563.25	75.7859
569.33	90.9268
569.50	85.5840
569.70	84.5200
583.19	75.2466
600.60	61.2819
602.73	79.3633
604.72	86.6367
609.32	81.3483
609.32	81.3483
610.33	63.2937
614.28	39.8374
618.01	71.3141
621.93	59.9092
621.93	59.9092
633.25	66.6949
635.95	76.6018
636.99	68.9662
645.85	76.8513
657.76	86.5935
661.66	80.3954
661.66	80.3954
664.57	0.0000
666.33	72.6210
666.50	72.6258
677.62	62.8466

685.70	57.4464
695.00	62.2577
696.49	62.2863
696.51	61.3567
697.00	70.6640
702.65	75.4431
706.68	72.7394
711.68	64.4432
720.70	64.2188
721.93	0.0000
722.78	67.4707
722.91	67.4736
723.31	61.0555
724.19	59.4643
727.33	73.9976
733.00	37.0614
735.93	65.8543
739.50	0.0000
747.24	75.5127
752.31	56.7188
753.82	63.3632
756.73	53.0059
763.94	95.7992
765.81	74.0232
766.42	72.1375
777.92	0.0000
778.90	61.9161
783.70	50.5544
785.37	53.4411
795.86	50.7280
801.95	65.1957
810.29	55.7367
810.76	54.7827
815.77	55.8205
818.51	44.3051
832.01	64.7686
834.85	56.1108
836.80	0.0000
846.77	37.8511
856.80	75.9053
860.56	51.6273
871.09	52.7476
873.19	48.8668
875.33	0.0000
879.36	45.0304
880.51	48.9604
883.24	48.9950
884.68	39.2106
889.28	46.1279
898.04	50.1658
911.20	45.4001
911.20	45.4001
911.20	45.4001
926.50	48.5474
937.49	50.6680
944.13	51.7461
946.00	54.7561
949.00	47.8232
962.29	53.1191
964.08	48.0000
966.15	44.5932
968.97	30.8936
968.97	30.8936
968.97	30.8936
983.53	41.1927
996.26	46.3566
1001.03	37.3290
1004.73	38.3711
1037.84	42.7383
1038.76	0.0000
1048.07	39.7792
1050.41	42.8630
1050.41	42.8630
1063.66	39.9204
1085.87	40.1204
1099.45	44.3682
1112.07	52.7701
1115.54	63.9040

1120.29	54.9366
1120.29	54.9366
1120.55	54.9409
1121.30	54.9495
1131.51	0.0000
1173.23	53.4653
1177.93	41.9759
1189.05	52.5920
1204.77	54.8734
1221.41	54.0028
1231.02	64.7182
1235.36	49.9088
1238.28	55.2500
1260.41	0.0000
1271.85	48.1348
1274.44	41.7374
1274.54	46.0199
1291.59	26.8453
1298.22	0.0000
1312.11	29.1094
1332.49	21.6471
1365.19	26.1377
1368.63	0.0000
1384.29	28.1041
1408.01	31.0503
1457.56	0.0000
1460.82	18.9990
1489.16	26.7324
1505.03	25.8493
1596.21	23.3371
1620.50	11.7154
1678.03	0.0000
1690.97	11.8497
1764.49	8.9906
1764.49	8.9906
1770.23	5.2491
1771.35	7.0000
1791.20	0.0000
1836.06	8.0790

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243008

Total Uranium Activity	3.6108E-01	ug/g
Total Uranium Counting Unc.	8.0069E+00	ug/g
Total Uranium Tpu	4.0852E-06	ug/g
Total Uranium Mda	6.6277E+00	ug/g

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*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280                          SAMPLE ID   : G248243008
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:55:51.16          SAMPLE ALQT  : 106.760 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.637E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.340E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 2.999E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.452E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:58:01.92

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243009.CNF;1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:56:45
Sample ID        : G248243009 Sample quantity : 1.06820E+02 GRAM
Detector name    : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.16 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959280 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	63.19*	126	617	0.88	126.63	122	9	1.75E-02	37.7	
2	0	76.25*	1482	1229	3.11	152.72	143	17	2.06E-01	6.0	
3	4	87.25	380	497	1.30	174.70	165	30	5.28E-02	11.3	3.87E+00
4	4	90.00	203	406	1.15	180.19	165	30	2.83E-02	18.2	
5	4	92.63*	305	485	1.46	185.45	165	30	4.24E-02	16.2	
6	0	129.21	110	421	1.08	258.54	255	8	1.53E-02	33.7	
7	0	185.89*	252	477	1.52	371.80	367	11	3.50E-02	18.9	
8	0	209.29	223	462	1.50	418.56	414	11	3.10E-02	19.8	
9	3	238.70*	1757	303	1.16	477.32	472	19	2.44E-01	3.0	1.14E+00
10	3	241.78	395	418	1.89	483.48	472	19	5.49E-02	13.6	
11	0	270.05*	135	333	1.03	539.96	535	11	1.87E-02	28.0	
12	7	295.30*	633	200	1.50	590.43	585	23	8.80E-02	5.7	4.23E+00
13	7	299.85	236	347	2.96	599.51	585	23	3.28E-02	19.4	
14	0	328.22	61	261	1.33	656.21	651	9	8.46E-03	49.6	
15	0	338.30*	352	354	1.21	676.35	670	13	4.89E-02	12.4	
16	0	351.98*	1003	372	1.36	703.69	698	14	1.39E-01	5.2	
17	0	463.11*	55	192	1.01	925.79	922	9	7.58E-03	49.8	
18	0	510.88*	141	250	2.24	1021.27	1012	16	1.95E-02	30.2	
19	0	583.11*	563	233	1.83	1165.64	1158	18	7.81E-02	7.8	
20	0	609.28*	737	198	1.66	1217.95	1210	17	1.02E-01	5.8	
21	0	661.79	506	212	1.64	1322.91	1317	15	7.02E-02	7.7	
22	0	727.55	120	115	1.68	1454.37	1448	11	1.67E-02	19.6	
23	0	767.76	76	205	1.58	1534.74	1528	19	1.06E-02	46.4	
24	0	795.99	70	131	1.27	1591.17	1581	16	9.68E-03	38.7	
25	0	861.13	70	119	1.49	1721.42	1713	14	9.77E-03	35.0	
26	0	911.41*	426	132	1.99	1821.94	1813	20	5.92E-02	8.5	
27	3	964.85	75	97	2.09	1928.78	1924	21	1.04E-02	27.4	6.75E-01
28	3	969.05*	237	93	2.16	1937.18	1924	21	3.30E-02	11.5	
29	0	1120.47*	205	93	2.38	2239.97	2231	21	2.85E-02	14.0	
30	0	1238.59	95	70	2.62	2476.18	2470	12	1.32E-02	20.5	
31	0	1460.86*	1866	64	2.47	2920.75	2910	24	2.59E-01	2.6	
32	0	1620.58	37	13	5.17	3240.26	3231	17	5.17E-03	27.4	
33	0	1730.10	59	17	0.92	3459.37	3450	17	8.19E-03	20.6	
34	0	1764.74*	131	28	3.49	3528.68	3516	20	1.81E-02	14.0	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:58:06

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243009.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:56:45
Sample ID         : G248243009 Sample quantity : 106.82 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.16 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	*	3.223E+01	3.400E+00	5.403E-01	4.949E-02	59.662
CD-109	+	88.03	*	4.992E+00	1.218E+00	1.235E+00	1.172E-01	4.043
SN-126	+	64.28		1.067E+00	8.197E-01	7.790E-01	1.131E-01	1.369
	+	86.94		2.005E+00	9.471E-01	5.007E-01	2.079E-01	4.004
	+	87.57	*	4.822E-01	1.177E-01	1.198E-01	1.131E-02	4.027
BA-137M	+	661.66	*	5.514E-01	1.027E-01	6.371E-02	6.718E-03	8.655
CS-137	+	661.66	*	5.825E-01	1.085E-01	6.730E-02	7.106E-03	8.655
TL-208		277.37		5.961E-01	4.517E-01	7.457E-01	1.240E-01	0.799
	+	583.19	*	5.916E-01	1.119E-01	5.926E-02	6.420E-03	9.984
	+	860.56		6.768E-01	4.801E-01	4.321E-01	5.034E-02	1.566
BI-211		72.87		8.690E+00	3.274E+00	5.673E+00	4.540E-01	1.532
	+	351.06	*	5.050E+00	7.903E-01	3.743E-01	4.368E-02	13.492
BI-212	+	727.33	*	1.892E+00	7.877E-01	7.776E-01	1.093E-01	2.434
		785.37		5.001E+00	3.608E+00	6.018E+00	6.615E-01	0.831
	+	1620.50		4.977E+00	2.762E+00	3.641E+00	3.174E-01	1.367
PB-212	+	74.82		7.975E+00	1.401E+00	5.514E-01	7.003E-02	14.463
	+	77.11		4.795E+00	7.012E-01	3.176E-01	2.656E-02	15.096
	+	238.63	*	2.111E+00	3.067E-01	1.025E-01	1.358E-02	20.587
	+	300.09		4.254E+00	1.765E+00	1.361E+00	1.995E-01	3.127
BI-214	+	609.32	*	1.493E+00	2.462E-01	1.235E-01	1.441E-02	12.093
	+	1120.29		2.062E+00	6.211E-01	4.823E-01	5.352E-02	4.276
	+	1764.49		1.747E+00	5.109E-01	2.625E-01	2.187E-02	6.655
PB-214	+	74.82		1.414E+01	2.352E+00	9.774E-01	1.112E-01	14.463
	+	77.11		8.453E+00	1.419E+00	5.599E-01	6.577E-02	15.096
	+	242.00		2.875E+00	8.757E-01	6.227E-01	8.612E-02	4.617
	+	295.22		2.025E+00	3.818E-01	2.409E-01	3.614E-02	8.404
	+	351.93	*	1.833E+00	3.041E-01	1.307E-01	1.683E-02	14.022
RA-224	+	240.99	*	5.084E+00	1.520E+00	1.098E+00	1.375E-01	4.630
RA-226	+	609.32	*	1.493E+00	2.462E-01	1.235E-01	1.441E-02	12.093
	+	1120.29		2.062E+00	6.211E-01	4.823E-01	5.352E-02	4.276
	+	1764.49		1.747E+00	5.109E-01	2.625E-01	2.187E-02	6.655
AC-228	+	338.32		1.987E+00	9.783E-01	4.239E-01	1.802E-01	4.687
	+	911.20	*	2.083E+00	4.514E-01	2.372E-01	3.213E-02	8.779
	+	968.97		1.992E+00	6.785E-01	4.272E-01	1.074E-01	4.663

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.987E+00	9.783E-01	4.239E-01	1.802E-01	4.687
	+	911.20	*	2.083E+00	4.514E-01	2.372E-01	3.213E-02	8.779
	+	968.97		1.992E+00	6.785E-01	4.272E-01	1.074E-01	4.663
TH-228	+	74.82		7.975E+00	1.170E+00	5.514E-01	4.547E-02	14.463
	+	77.11		4.795E+00	7.012E-01	3.176E-01	2.656E-02	15.096
	+	238.63	*	2.111E+00	3.067E-01	1.025E-01	1.358E-02	20.587
	+	300.09		4.254E+00	3.114E+00	1.361E+00	8.444E-01	3.127
TH-232	+	338.32		1.987E+00	5.474E-01	4.239E-01	5.041E-02	4.687
	+	911.20	*	2.083E+00	4.514E-01	2.372E-01	3.213E-02	8.779
	+	968.97		1.992E+00	6.785E-01	4.272E-01	1.074E-01	4.663
TH-234	+	63.29	*	2.767E+00	2.146E+00	2.052E+00	3.651E-01	1.349
	+	92.59		3.228E+00	1.267E+00	1.009E+00	2.247E-01	3.200
U-235	+	89.96		2.681E+00	1.182E+00	1.252E+00	3.113E-01	2.141
	+	93.35		2.438E+00	9.713E-01	7.585E-01	1.764E-01	3.214
		143.76	*	9.125E-02	2.258E-01	3.761E-01	6.428E-02	0.243
		163.33		-9.761E-02	4.979E-01	8.074E-01	1.493E-01	-0.121
	+	185.72		2.032E-01	7.962E-02	7.184E-02	7.523E-03	2.829
		205.31		-2.265E-02	6.293E-01	9.036E-01	1.761E-01	-0.025
NP-237	+	86.48	*	1.439E+00	4.630E-01	3.610E-01	8.282E-02	3.986
		95.86		2.301E-01	1.033E+00	1.500E+00	3.614E-01	0.153
U-238	+	63.29	*	2.767E+00	2.146E+00	2.052E+00	3.651E-01	1.349
	+	92.59		3.228E+00	1.084E+00	1.009E+00	9.176E-02	3.200
ANH-511	+	511.00	*	1.150E-01	7.046E-02	5.223E-02	5.233E-03	2.201

---- 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	*	-1.760E-01	4.011E-01	6.226E-01	6.497E-02	-0.283
NA-22		1274.54	*	2.657E-02	4.511E-02	7.772E-02	6.698E-03	0.342
NA-24		1368.63	*	1.424E+03	4.511E-02	Half-Life too short		
SC-46		889.28	*	-2.165E-02	4.290E-02	6.858E-02	7.677E-03	-0.316
	+	1120.55		3.722E-01	1.093E-01	1.399E-01	1.236E-02	2.661
V-48		944.13		-1.278E+00	1.271E+00	1.930E+00	2.093E-01	-0.662
		983.53	*	4.179E-02	1.038E-01	1.752E-01	1.837E-02	0.239
		1312.11		-7.680E-02	1.092E-01	1.687E-01	1.486E-02	-0.455
CR-51		320.08	*	-6.334E-02	4.951E-01	8.238E-01	1.066E-01	-0.077
MN-54		834.85	*	2.756E-02	4.143E-02	7.149E-02	7.942E-03	0.385
CO-56		846.77	*	-4.103E-02	4.250E-02	6.579E-02	7.324E-03	-0.624
		1037.84		-2.862E-02	3.330E-01	5.405E-01	5.569E-02	-0.053
	+	1238.28		2.844E-01	1.192E-01	1.911E-01	1.656E-02	1.488
		1771.35		-9.528E-02	2.699E-01	3.462E-01	2.877E-02	-0.275
CO-57		122.06	*	2.126E-02	2.864E-02	4.667E-02	3.849E-03	0.456
		136.47		-8.738E-02	2.286E-01	3.815E-01	3.536E-02	-0.229
CO-58		810.76	*	-2.141E-03	4.078E-02	6.799E-02	7.529E-03	-0.031
FE-59		1099.45	*	-1.180E-01	1.171E-01	1.759E-01	1.724E-02	-0.670
		1291.59		-2.484E-03	1.410E-01	2.327E-01	2.294E-02	-0.011
CO-60		1173.23		-3.390E-02	4.820E-02	7.674E-02	6.172E-03	-0.442
		1332.49	*	-8.704E-03	3.857E-02	6.225E-02	5.551E-03	-0.140

----- 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	*		9.342E-02	1.155E-01	1.712E-01	1.527E-02	0.546
SE-75	121.12			-5.322E-02	1.553E-01	2.427E-01	2.620E-02	-0.219
	136.00			-7.062E-03	4.481E-02	7.538E-02	6.542E-03	-0.094
	264.66	*		-9.218E-04	5.726E-02	8.023E-02	1.080E-02	-0.011
	279.54			-6.901E-02	1.328E-01	2.069E-01	2.937E-02	-0.334
	400.66			5.316E-02	2.851E-01	4.722E-01	5.514E-02	0.113
SR-85	514.00	*		1.686E-01	5.771E-02	9.160E-02	9.191E-03	1.841
Y-88	898.04			3.832E-03	4.789E-02	7.976E-02	8.961E-03	0.048
	1836.06	*		1.003E-02	3.723E-02	6.324E-02	5.113E-03	0.159
Y-91	1204.77	*		6.115E+00	2.459E+01	4.155E+01	3.416E+00	0.147
NB-94	702.65	*		3.875E-03	3.517E-02	5.779E-02	6.193E-03	0.067
	871.09			-1.962E-03	3.492E-02	5.782E-02	6.459E-03	-0.034
NB-95	765.81	*		1.035E-01	5.931E-02	9.234E-02	1.010E-02	1.121
NB-95M	235.69	*		3.317E-01	1.772E-01	2.674E-01	3.538E-02	1.241
ZR-95	724.19			1.415E-01	1.303E-01	1.961E-01	2.232E-02	0.722
	756.73	*		-1.055E-02	8.409E-02	1.352E-01	1.572E-02	-0.078
MO-99	140.51			-1.773E-04	8.409E-02	Half-Life	too short	
	181.07			1.942E-05	8.409E-02	Half-Life	too short	
	366.42			-6.116E-07	8.409E-02	Half-Life	too short	
	739.50	*		3.454E-05	8.409E-02	Half-Life	too short	
	777.92			-2.471E-04	8.409E-02	Half-Life	too short	
TC-99M	140.51	*		-1.080E+20	8.409E-02	Half-Life	too short	
RU-103	497.08	*		2.336E-02	4.957E-02	8.175E-02	1.212E-02	0.286
	610.33	+		1.770E+01	3.700E+00	3.347E+00	5.810E-01	5.288
RH-106	621.93	*		1.390E-01	3.360E-01	5.669E-01	8.226E-02	0.245
	1050.41			1.429E+00	2.780E+00	4.693E+00	4.581E-01	0.305
RU-106	621.93	*		1.390E-01	3.357E-01	5.669E-01	5.922E-02	0.245
	1050.41			1.429E+00	2.780E+00	4.693E+00	4.581E-01	0.305
AG-108M	433.94	*		-1.981E-02	3.268E-02	5.147E-02	5.066E-03	-0.385
	614.28			4.260E-03	4.218E-02	6.044E-02	6.442E-03	0.070
	722.91			2.773E-02	4.362E-02	6.420E-02	7.071E-03	0.432
AG-110M	657.76	*		8.462E-02	4.838E-02	7.591E-02	8.158E-03	1.115
	677.62			-7.565E-02	3.296E-01	5.321E-01	5.755E-02	-0.142
	706.68			-1.991E-01	2.258E-01	3.460E-01	3.783E-02	-0.575
	763.94			2.062E-01	1.990E-01	2.995E-01	3.329E-02	0.688
	884.68			-4.357E-02	5.798E-02	8.317E-02	9.484E-03	-0.524
	937.49			1.414E-01	1.227E-01	2.154E-01	2.402E-02	0.656
	1384.29			-2.008E-01	1.936E-01	2.890E-01	2.648E-02	-0.695
	1505.03			-2.406E-01	3.340E-01	5.051E-01	4.491E-02	-0.476
SN-113	391.69	*		4.917E-03	5.249E-02	8.671E-02	8.280E-03	0.057
CD-115	260.90			1.209E-04	5.249E-02	Half-Life	too short	
	492.35			2.354E-04	5.249E-02	Half-Life	too short	
	527.90	*		7.718E-05	5.249E-02	Half-Life	too short	
SN-117M	156.02			-3.072E-01	3.605E+00	6.021E+00	5.645E-01	-0.051
	158.56	*		-1.016E-01	8.838E-02	1.410E-01	1.337E-02	-0.721
TE-123M	159.00	*		-3.583E-02	3.215E-02	5.138E-02	4.906E-03	-0.697
SB-124	602.73			-1.260E-02	5.405E-02	7.559E-02	7.853E-03	-0.167
	645.85			-1.213E-01	5.606E-01	9.101E-01	9.938E-02	-0.133
	722.78			2.818E-01	4.781E-01	7.013E-01	7.680E-02	0.402

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	1690.97	*		1.897E-02	8.312E-02	1.416E-01	1.263E-02	0.134
	427.87	*		1.021E-01	1.022E-01	1.743E-01	1.690E-02	0.586
	463.37		+	4.030E-01	4.032E-01	5.933E-01	6.138E-02	0.679
	600.60			6.543E-03	2.318E-01	3.322E-01	3.627E-02	0.020
TE-125M	635.95			1.909E-01	2.925E-01	4.986E-01	5.518E-02	0.383
	109.28	*		5.261E-01	1.156E+01	1.851E+01	1.908E+00	0.028
	388.63			7.900E-02	2.885E-01	4.806E-01	4.550E-02	0.164
	666.33	*		5.523E-01	3.964E-01	6.183E-01	6.533E-02	0.893
I-126	753.82			1.960E+00	2.847E+00	4.809E+00	5.241E-01	0.407
	414.70			-9.814E-02	1.372E-01	2.164E-01	2.048E-02	-0.454
	666.50			1.691E-01	1.372E-01	2.121E-01	2.241E-02	0.797
	695.00			-6.755E-03	1.295E-01	2.109E-01	2.254E-02	-0.032
SB-126	697.00			1.500E-01	4.502E-01	7.491E-01	8.010E-02	0.200
	720.70	*		1.419E-01	2.592E-01	3.727E-01	4.020E-02	0.381
	856.80			-3.758E-02	8.697E-01	1.234E+00	1.376E-01	-0.030
	252.40			-1.480E+01	2.060E+01	3.052E+01	1.325E+01	-0.485
SB-127	473.00			9.206E-01	7.617E+00	1.239E+01	1.962E+00	0.074
	685.70	*		2.698E+00	5.854E+00	9.816E+00	1.501E+00	0.275
	783.70			3.149E+01	1.620E+01	2.792E+01	4.541E+00	1.128
	80.19			-3.807E-01	1.172E+01	1.344E+01	1.180E+00	-0.028
I-131	284.31			2.371E+00	3.339E+00	5.478E+00	7.765E-01	0.433
	364.49	*		1.128E-01	2.419E-01	4.087E-01	4.551E-02	0.276
	636.99			2.277E+00	3.216E+00	5.502E+00	6.026E-01	0.414
	49.72			-7.234E+01	9.430E+01	1.530E+02	2.006E+01	-0.473
TE-132	111.76			3.602E+01	2.019E+02	3.242E+02	4.315E+01	0.111
	116.30			8.676E+01	1.764E+02	2.855E+02	3.788E+01	0.304
	228.16	*		3.881E+00	4.659E+00	7.718E+00	1.508E+00	0.503
	81.00			3.094E-04	1.230E-01	1.413E-01	2.202E-02	0.002
BA-133	276.40			4.576E-01	4.536E-01	6.938E-01	1.237E-01	0.660
	302.85			1.021E-01	1.720E-01	2.591E-01	4.275E-02	0.394
	356.01	*		2.028E-02	4.953E-02	7.315E-02	1.077E-02	0.277
	383.85			5.375E-02	3.223E-01	5.351E-01	7.071E-02	0.100
I-133	529.87	*		3.008E+00	3.223E-01	Half-Life	too short	
	875.33			-7.204E+00	3.223E-01	Half-Life	too short	
	1298.22			1.103E+02	3.223E-01	Half-Life	too short	
	563.25			5.292E-01	3.834E-01	6.777E-01	6.991E-02	0.781
CS-134	569.33			-2.222E-02	2.205E-01	3.505E-01	3.634E-02	-0.063
	604.72			1.593E-02	4.104E-02	6.013E-02	6.260E-03	0.265
	795.86	*	+	1.045E-01	8.176E-02	9.349E-02	1.035E-02	1.118
	801.95			-2.786E-01	5.163E-01	6.816E-01	7.548E-02	-0.409
CS-135	1365.19			-2.974E-01	1.327E+00	2.137E+00	1.991E-01	-0.139
	268.22	*		2.128E-01	2.022E-01	2.976E-01	4.304E-02	0.715
	546.56			-3.962E+18	2.022E-01	Half-Life	too short	
	836.80			1.211E+19	2.022E-01	Half-Life	too short	
I-135	1038.76			-5.613E+18	2.022E-01	Half-Life	too short	
	1131.51			-7.134E+17	2.022E-01	Half-Life	too short	
	1260.41	*		-7.450E+16	2.022E-01	Half-Life	too short	
	1457.56			5.277E+20	2.022E-01	Half-Life	too short	
	1678.03			-1.918E+18	2.022E-01	Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1791.20			1.440E+18	2.022E-01	Half-Life	too short	
	153.25			7.822E-01	1.419E+00	2.419E+00	2.616E-01	0.323
	176.60			-2.549E-01	8.512E-01	1.398E+00	1.528E-01	-0.182
	273.65			-7.680E-01	1.065E+00	1.418E+00	2.022E-01	-0.542
	340.55			1.250E+00	3.339E-01	5.195E-01	6.258E-02	2.406
	818.51			1.273E-01	1.111E-01	1.977E-01	2.192E-02	0.644
CE-139	1048.07	*		8.378E-02	1.744E-01	2.938E-01	2.973E-02	0.285
	1235.36			1.970E+00	1.084E+00	1.724E+00	2.001E-01	1.143
	165.86	*		-3.661E-03	3.432E-02	5.703E-02	5.594E-03	-0.064
	162.66			3.199E-01	1.418E+00	2.334E+00	2.377E-01	0.137
	304.85			1.482E-02	2.462E+00	3.602E+00	1.114E+00	0.004
	423.72			-3.653E+00	3.561E+00	5.168E+00	1.713E+00	-0.707
BA-140	537.26	*		-3.090E-01	4.383E-01	6.836E-01	2.347E-01	-0.452
	328.76			6.550E-01	6.553E-01	9.124E-01	1.153E-01	0.718
	487.02			-8.384E-02	2.296E-01	3.622E-01	3.755E-02	-0.231
	815.77			-4.797E-01	4.932E-01	7.646E-01	9.077E-02	-0.627
	1596.21	*		-1.152E-01	1.596E-01	2.494E-01	2.187E-02	-0.462
	145.44	*		7.621E-02	8.029E-02	1.387E-01	1.263E-02	0.549
CE-143	57.36			-2.151E-03	8.029E-02	Half-Life	too short	
	293.27	*		4.503E-02	8.029E-02	Half-Life	too short	
	664.57			7.194E-01	8.029E-02	Half-Life	too short	
	721.93			2.495E-02	8.029E-02	Half-Life	too short	
	80.12			4.220E-02	3.285E+00	3.783E+00	3.270E-01	0.011
	133.52	*		4.675E-02	2.416E-01	3.644E-01	5.554E-02	0.128
PM-144	476.78			1.289E-02	7.343E-02	1.181E-01	1.241E-02	0.109
	618.01			1.486E-03	3.690E-02	5.665E-02	6.026E-03	0.026
	696.49	*		1.535E-02	3.760E-02	6.282E-02	6.720E-03	0.244
	696.51	*		1.157E+00	2.826E+00	4.722E+00	5.048E-01	0.245
	1489.16			-1.046E+01	1.361E+01	2.020E+01	1.799E+00	-0.518
	453.88	*		3.788E-02	4.676E-02	7.878E-02	9.058E-03	0.481
PM-146	633.25			5.181E-01	1.514E+00	2.524E+00	9.756E-01	0.205
	735.93			-1.856E-02	1.513E-01	2.438E-01	7.018E-02	-0.076
	747.24			-1.491E-02	9.766E-02	1.568E-01	2.512E-02	-0.095
	91.11			1.424E+00	5.379E-01	8.924E-01	8.823E-02	1.596
	319.41			1.815E+00	5.990E+00	1.014E+01	1.284E+00	0.179
	531.02	*		9.134E-01	9.878E-01	1.714E+00	2.718E-01	0.533
ND-147	285.90	*		-2.500E-04	9.878E-01	Half-Life	too short	
	121.78			4.886E-02	8.069E-02	1.309E-01	1.253E-02	0.373
	244.70			3.973E-01	4.197E-01	6.204E-01	7.855E-02	0.640
	344.28	*		-8.112E-02	1.315E-01	1.708E-01	2.053E-02	-0.475
	778.90			-1.556E-01	2.838E-01	4.168E-01	4.574E-02	-0.373
	964.08			6.763E-01	3.782E-01	6.089E-01	6.497E-02	1.111
EU-152	1085.87			-4.274E-01	4.318E-01	6.492E-01	6.048E-02	-0.658
	1112.07			1.876E-01	3.883E-01	5.610E-01	5.027E-02	0.334
	1408.01			1.385E-01	1.909E-01	3.321E-01	2.970E-02	0.417
	69.67			6.339E-01	1.980E+00	2.956E+00	2.295E-01	0.214
	97.43	*		-9.851E-02	1.041E-01	1.416E-01	1.245E-02	-0.696
	103.18			-5.347E-02	1.236E-01	1.949E-01	1.665E-02	-0.274
GD-153	123.07			-5.942E-03	5.924E-02	9.348E-02	1.036E-02	-0.064

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		723.31		1.579E-01	2.014E-01	2.994E-01	3.444E-02	0.527
		873.19		-7.758E-02	2.906E-01	4.739E-01	6.567E-02	-0.164
		996.26		-2.017E-01	3.621E-01	5.664E-01	1.042E-01	-0.356
		1004.73		-3.991E-02	2.289E-01	3.690E-01	4.763E-02	-0.108
		1274.44	*	7.308E-02	1.273E-01	2.189E-01	2.489E-02	0.334
EU-155	+	86.55		5.865E-01	1.433E-01	2.006E-01	1.887E-02	2.923
		105.31	*	8.683E-02	1.138E-01	1.874E-01	1.608E-02	0.463
TB-160	+	86.79		1.672E+00	4.082E-01	5.702E-01	5.333E-02	2.933
		197.04		-9.157E-01	7.240E-01	1.101E+00	1.197E-01	-0.832
		215.65		-2.523E-01	1.006E+00	1.503E+00	1.737E-01	-0.168
	+	298.57		6.459E-01	2.651E-01	2.557E-01	3.428E-02	2.526
		879.36	*	1.088E-01	1.592E-01	2.751E-01	3.076E-02	0.395
		962.29		1.868E+00	7.035E-01	1.169E+00	1.249E-01	1.598
	+	966.15		5.088E-01	2.845E-01	6.260E-01	6.668E-02	0.813
		1177.93		2.005E-01	3.964E-01	6.818E-01	5.501E-02	0.294
		1271.85		-8.907E-02	8.097E-01	1.263E+00	1.085E-01	-0.071
HO-166M		80.57		-3.070E-02	3.500E-01	3.998E-01	3.474E-02	-0.077
	+	184.41		1.615E-01	6.325E-02	7.257E-02	7.566E-03	2.225
		280.46		-1.385E-01	1.015E-01	1.494E-01	2.086E-02	-0.927
		410.95		4.627E-01	2.852E-01	4.951E-01	4.674E-02	0.934
		711.68	*	3.823E-02	6.022E-02	1.020E-01	1.096E-02	0.375
		752.31		-1.282E-01	2.838E-01	4.457E-01	4.855E-02	-0.288
		810.29		-1.130E-02	5.783E-02	9.552E-02	1.056E-02	-0.118
TA-182		67.75		-2.848E-02	1.221E-01	1.904E-01	1.452E-02	-0.150
		100.11		1.135E-01	2.072E-01	3.243E-01	2.810E-02	0.350
		152.43		1.729E-01	3.995E-01	6.791E-01	6.265E-02	0.255
		222.11		1.801E-02	4.250E-01	6.941E-01	8.191E-02	0.026
	+	1121.30		1.013E+00	2.975E-01	3.765E-01	3.324E-02	2.692
		1189.05		2.218E-02	3.151E-01	5.276E-01	4.291E-02	0.042
		1221.41	*	7.868E-02	2.106E-01	3.578E-01	2.976E-02	0.220
		1231.02		-2.362E-02	5.835E-01	8.214E-01	6.875E-02	-0.029
IR-192	+	295.96		1.611E+00	2.857E-01	3.451E-01	4.669E-02	4.670
		308.46		4.615E-02	1.152E-01	1.915E-01	2.507E-02	0.241
		316.51	*	-2.034E-02	4.042E-02	6.609E-02	8.447E-03	-0.308
		468.07		-8.120E-03	9.414E-02	1.306E-01	1.352E-02	-0.062
HG-203		70.83		2.347E-01	1.673E+00	2.477E+00	3.878E-01	0.095
		72.87		2.431E+00	9.685E-01	1.587E+00	2.413E-01	1.532
		279.20	*	-1.267E-02	5.051E-02	7.986E-02	1.129E-02	-0.159
BI-207		72.81		4.521E-01	1.865E-01	3.224E-01	2.579E-02	1.402
	+	74.97		2.300E+00	3.363E-01	2.444E-01	1.998E-02	9.411
		569.70		5.681E-03	3.405E-02	5.492E-02	5.641E-03	0.103
		1063.66	*	8.192E-02	5.813E-02	1.027E-01	9.859E-03	0.798
PB-210		1770.23		6.590E-01	5.741E-01	9.525E-01	7.918E-02	0.692
		46.54	*	7.502E-01	3.344E+00	5.531E+00	5.094E-01	0.136
PB-211		404.85	*	-7.109E-01	8.868E-01	1.285E+00	6.236E-01	-0.553
		427.09		1.210E+00	1.765E+00	2.830E+00	1.315E+00	0.428
		832.01		-3.938E-01	1.054E+00	1.684E+00	8.814E-01	-0.234
RN-219	+	271.23		6.980E-01	4.043E-01	4.895E-01	7.232E-02	1.426
		401.81	*	1.842E-01	4.417E-01	7.380E-01	1.131E-01	0.250

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

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RA-223		81.07		7.314E-03	2.783E-01	3.205E-01	2.800E-02	0.023
		83.79		2.924E-01	1.294E-01	2.193E-01	1.979E-02	1.333
		94.87		1.037E+00	5.010E-01	8.494E-01	7.595E-02	1.221
		144.24		5.773E-01	7.547E-01	1.270E+00	1.255E-01	0.454
		154.21		3.640E-01	4.233E-01	7.268E-01	7.317E-02	0.501
	+	269.46		5.423E-01	3.128E-01	3.722E-01	5.111E-02	1.457
		323.87	*	-1.288E-01	8.237E-01	1.186E+00	2.317E-01	-0.109
	+	338.28		7.883E+00	2.272E+00	2.622E+00	3.825E-01	3.007
		79.69		5.082E-01	1.624E+00	1.910E+00	3.289E-01	0.266
		235.96		7.117E-01	2.310E-01	3.425E-01	4.654E-02	2.078
AC-227		256.23	*	-4.568E-02	2.833E-01	4.531E-01	7.059E-02	-0.101
	+	299.98		4.680E+00	1.970E+00	1.805E+00	2.941E-01	2.593
		304.50		-1.038E+00	2.004E+00	2.827E+00	5.461E-01	-0.367
		334.37		5.880E-01	2.284E+00	3.175E+00	5.626E-01	0.185
		79.80		5.053E-01	2.136E+00	2.498E+00	5.440E-01	0.202
		235.96		7.117E-01	2.297E-01	3.425E-01	4.503E-02	2.078
TH-227		256.23	*	-4.568E-02	2.833E-01	4.531E-01	7.617E-02	-0.101
	+	299.98		4.680E+00	1.970E+00	1.805E+00	2.941E-01	2.593
		304.50		-1.038E+00	2.004E+00	2.827E+00	5.461E-01	-0.367
		334.37		5.880E-01	2.284E+00	3.175E+00	5.626E-01	0.185
		85.43		7.180E-01	2.263E-01	3.842E-01	3.534E-02	1.869
	+	88.47		7.434E-01	1.814E-01	2.501E-01	2.362E-02	2.973
TH-229		193.51	*	5.294E-03	5.960E-01	9.829E-01	1.056E-01	0.005
		210.85		2.847E+00	1.197E+00	1.845E+00	2.099E-01	1.544
		283.69	*	6.480E-01	1.642E+00	2.664E+00	4.846E-01	0.243
PA-231		301.36		1.266E+00	6.587E-01	1.131E+00	1.790E-01	1.119
TH-231		81.07		7.314E-03	2.783E-01	3.205E-01	2.800E-02	0.023
		83.79		2.924E-01	1.294E-01	2.193E-01	1.979E-02	1.333
		94.87		1.037E+00	5.010E-01	8.494E-01	7.595E-02	1.221
		144.24		5.773E-01	7.547E-01	1.270E+00	1.255E-01	0.454
		154.21		3.640E-01	4.233E-01	7.268E-01	7.317E-02	0.501
	+	269.46		5.423E-01	3.128E-01	3.722E-01	5.111E-02	1.457
PA-233		323.87	*	-1.288E-01	8.237E-01	1.186E+00	2.317E-01	-0.109
	+	338.28		7.883E+00	2.272E+00	2.622E+00	3.825E-01	3.007
	+	300.13		2.118E+00	9.059E-01	8.161E-01	1.469E-01	2.595
		311.90	*	-1.405E-03	6.975E-02	1.168E-01	1.531E-02	-0.012
PA-234		340.48		3.606E+00	1.252E+00	1.487E+00	3.774E-01	2.425
		94.67		5.041E-01	1.934E-01	3.205E-01	4.050E-02	1.573
		98.44		4.719E-03	1.073E-01	1.543E-01	8.610E-02	0.031
		111.00		1.097E-01	1.988E-01	3.235E-01	3.847E-02	0.339
		131.20		4.598E-02	1.237E-01	1.883E-01	1.595E-02	0.244
		569.50		3.419E-02	3.004E-01	4.830E-01	4.961E-02	0.071
PA-234M		733.00		-7.582E-02	4.396E-01	6.007E-01	1.390E-01	-0.126
		880.51		2.781E-01	2.896E-01	5.079E-01	5.680E-02	0.548
		883.24		-7.475E-02	3.386E-01	5.043E-01	3.409E-01	-0.148
		926.50		-1.086E-01	1.821E-01	2.846E-01	7.451E-02	-0.382
		946.00	*	-1.020E-01	3.078E-01	4.945E-01	9.830E-02	-0.206
		949.00		2.501E-01	4.490E-01	7.674E-01	8.291E-02	0.326
	+	766.42		2.612E+01	2.769E+01	2.315E+01	1.185E+01	1.129

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

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NP-239	1001.03	*		8.394E-01	5.014E+00	8.169E+00	9.362E-01	0.103
	99.53			1.189E-01	1.946E-01	2.870E-01	2.495E-02	0.414
	103.37			4.173E-03	1.084E-01	1.742E-01	1.487E-02	0.024
	106.12			1.952E-03	9.126E-02	1.463E-01	1.237E-02	0.013
	117.23	*		2.033E-01	4.383E-01	7.094E-01	5.862E-02	0.287
	228.18			2.095E-01	2.505E-01	4.184E-01	5.034E-02	0.501
	277.60			2.567E-01	2.052E-01	3.407E-01	4.749E-02	0.754
AM-241	59.54	*		5.720E-02	1.602E-01	2.428E-01	1.898E-02	0.236
CM-247	278.00			1.137E+00	8.737E-01	1.452E+00	2.026E-01	0.783
	287.50			1.710E-01	1.454E+00	2.331E+00	3.207E-01	0.073
CF-249	402.40	*		2.476E-02	3.994E-02	6.741E-02	6.323E-03	0.367
	252.80			-5.875E-01	1.046E+00	1.641E+00	2.129E-01	-0.358
	333.37			-1.132E-01	2.964E-01	3.259E-01	3.944E-02	-0.347
CF-251	388.16	*		1.557E-02	4.527E-02	7.565E-02	7.182E-03	0.206
	177.52	*		-7.144E-04	1.466E-01	2.432E-01	2.478E-02	-0.003
	227.38			1.684E-01	4.072E-01	6.724E-01	8.069E-02	0.250
	285.41			1.134E+00	2.483E+00	4.039E+00	5.582E-01	0.281

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243009      *
* Acquisition date   : 19-MAR-2010 10:56:45 Detector SN#      :              *
* Detector ID        : GAM22                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000       *
* Elapsed real time  : 0 02:00:02.16           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243009           Analyst initials: MXR1          *
* Batch Number       : 959280              Sample Quantity : 1.0682E+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	3.223E+01	3.332E+00	5.367E-01	0.000E+00
CD-109	4.992E+00	1.194E+00	1.247E+00	0.000E+00
SN-126	4.822E-01	1.153E-01	1.209E-01	0.000E+00
BA-137M	5.514E-01	1.006E-01	6.359E-02	0.000E+00
CS-137	5.825E-01	1.064E-01	6.717E-02	0.000E+00
TL-208	5.916E-01	1.097E-01	5.919E-02	0.000E+00
BI-211	5.050E+00	7.745E-01	3.749E-01	0.000E+00
BI-212	1.892E+00	7.719E-01	7.757E-01	0.000E+00
PB-212	2.111E+00	3.005E-01	1.029E-01	0.000E+00
BI-214	1.493E+00	2.413E-01	1.233E-01	0.000E+00
PB-214	1.833E+00	2.980E-01	1.309E-01	0.000E+00
RA-224	5.084E+00	1.490E+00	1.102E+00	0.000E+00
RA-226	1.493E+00	2.413E-01	1.233E-01	0.000E+00
AC-228	2.083E+00	4.424E-01	2.363E-01	0.000E+00
RA-228	2.083E+00	4.424E-01	2.363E-01	0.000E+00
TH-228	2.111E+00	3.005E-01	1.029E-01	0.000E+00
TH-232	2.083E+00	4.424E-01	2.363E-01	0.000E+00
TH-234	2.767E+00	2.103E+00	2.075E+00	0.000E+00
U-235	9.125E-02	2.213E-01	3.787E-01	0.000E+00
NP-237	1.439E+00	4.537E-01	3.645E-01	0.000E+00
U-238	2.767E+00	2.103E+00	2.075E+00	0.000E+00
ANH-511	1.150E-01	6.905E-02	5.220E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.760E-01	3.930E-01	6.226E-01	0.000E+00 NOT IDENT.
NA-22	2.657E-02	4.421E-02	7.727E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.565E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.165E-02	4.204E-02	6.833E-02	0.000E+00 FAIL ABUN
V-48	4.179E-02	1.018E-01	1.744E-01	0.000E+00 NOT IDENT.

CR-51	-6.334E-02	4.852E-01	8.256E-01	0.000E+00	NOT IDENT.
MN-54	2.756E-02	4.060E-02	7.125E-02	0.000E+00	NOT IDENT.
CO-56	-4.103E-02	4.165E-02	6.557E-02	0.000E+00	FAIL ABUN
CO-57	2.126E-02	2.807E-02	4.704E-02	0.000E+00	NOT IDENT.
CO-58	-2.141E-03	3.996E-02	6.778E-02	0.000E+00	NOT IDENT.
FE-59	-1.180E-01	1.148E-01	1.751E-01	0.000E+00	NOT IDENT.
CO-60	-8.704E-03	3.780E-02	6.187E-02	0.000E+00	NOT IDENT.
ZN-65	9.342E-02	1.132E-01	1.704E-01	0.000E+00	NOT IDENT.
SE-75	-9.218E-04	5.612E-02	8.050E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.656E-02	9.155E-02	0.000E+00	NOT IDENT.
Y-88	1.003E-02	3.648E-02	6.274E-02	0.000E+00	NOT IDENT.
Y-91	6.115E+00	2.410E+01	4.132E+01	0.000E+00	NOT IDENT.
NB-94	3.875E-03	3.447E-02	5.766E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.813E-02	9.209E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.737E-01	2.685E-01	0.000E+00	NOT IDENT.
ZR-95	-1.055E-02	8.241E-02	1.348E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.834E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.157E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.336E-02	4.858E-02	8.173E-02	0.000E+00	FAIL ABUN
RH-106	1.390E-01	3.293E-01	5.660E-01	0.000E+00	NOT IDENT.
RU-106	1.390E-01	3.290E-01	5.660E-01	0.000E+00	NOT IDENT.
AG-108M	-1.981E-02	3.202E-02	5.150E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	4.741E-02	7.576E-02	0.000E+00	NOT IDENT.
SN-113	4.917E-03	5.144E-02	8.680E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.373E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.016E-01	8.661E-02	1.419E-01	0.000E+00	NOT IDENT.
TE-123M	-3.583E-02	3.151E-02	5.170E-02	0.000E+00	NOT IDENT.
SB-124	1.897E-02	8.146E-02	1.406E-01	0.000E+00	NOT IDENT.
SB-125	1.021E-01	1.002E-01	1.744E-01	0.000E+00	FAIL ABUN
TE-125M	5.261E-01	1.133E+01	1.866E+01	0.000E+00	NOT IDENT.
I-126	5.523E-01	3.885E-01	6.171E-01	0.000E+00	NOT IDENT.
SB-126	1.419E-01	2.540E-01	3.718E-01	0.000E+00	NOT IDENT.
SB-127	2.698E+00	5.737E+00	9.795E+00	0.000E+00	NOT IDENT.
I-131	1.128E-01	2.371E-01	4.093E-01	0.000E+00	NOT IDENT.
TE-132	3.881E+00	4.566E+00	7.751E+00	0.000E+00	NOT IDENT.
BA-133	2.028E-02	4.854E-02	7.327E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.353E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.012E-02	9.321E-02	0.000E+00	FAIL ABUN
CS-135	2.128E-01	1.982E-01	2.986E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.763E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.378E-02	1.709E-01	2.924E-01	0.000E+00	NOT IDENT.
CE-139	-3.661E-03	3.364E-02	5.738E-02	0.000E+00	NOT IDENT.
BA-140	-3.090E-01	4.295E-01	6.831E-01	0.000E+00	NOT IDENT.
LA-140	-1.152E-01	1.564E-01	2.477E-01	0.000E+00	FAIL ABUN
CE-141	7.621E-02	7.868E-02	1.397E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.504E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.675E-02	2.368E-01	3.671E-01	0.000E+00	NOT IDENT.
PM-144	1.535E-02	3.685E-02	6.268E-02	0.000E+00	NOT IDENT.
PR-144	1.157E+00	2.769E+00	4.711E+00	0.000E+00	NOT IDENT.
PM-146	3.788E-02	4.583E-02	7.880E-02	0.000E+00	NOT IDENT.
ND-147	9.134E-01	9.680E-01	1.713E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.236E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-8.112E-02	1.289E-01	1.712E-01	0.000E+00	FAIL ABUN
GD-153	-9.851E-02	1.020E-01	1.429E-01	0.000E+00	NOT IDENT.
EU-154	7.308E-02	1.247E-01	2.176E-01	0.000E+00	NOT IDENT.
EU-155	8.683E-02	1.116E-01	1.890E-01	0.000E+00	FAIL ABUN
TE-160	1.088E-01	1.561E-01	2.741E-01	0.000E+00	FAIL ABUN
HO-166M	3.823E-02	5.901E-02	1.017E-01	0.000E+00	FAIL ABUN
TA-182	7.868E-02	2.063E-01	3.559E-01	0.000E+00	FAIL ABUN
IR-192	-2.034E-02	3.961E-02	6.625E-02	0.000E+00	FAIL ABUN
HG-203	-1.267E-02	4.950E-02	8.011E-02	0.000E+00	NOT IDENT.
BI-207	8.192E-02	5.697E-02	1.022E-01	0.000E+00	FAIL ABUN
PB-210	7.502E-01	3.277E+00	5.604E+00	0.000E+00	NOT IDENT.
PB-211	-7.109E-01	8.690E-01	1.286E+00	0.000E+00	NOT IDENT.
RN-219	1.842E-01	4.328E-01	7.387E-01	0.000E+00	FAIL ABUN
RA-223	-1.288E-01	8.072E-01	1.188E+00	0.000E+00	FAIL ABUN
AC-227	-4.568E-02	2.776E-01	4.547E-01	0.000E+00	FAIL ABUN
TH-227	-4.568E-02	2.776E-01	4.547E-01	0.000E+00	FAIL ABUN
TH-229	5.294E-03	5.841E-01	9.880E-01	0.000E+00	FAIL ABUN
PA-231	6.480E-01	1.609E+00	2.672E+00	0.000E+00	NOT IDENT.
TH-231	-1.288E-01	8.072E-01	1.188E+00	0.000E+00	FAIL ABUN
PA-233	-1.405E-03	6.835E-02	1.171E-01	0.000E+00	FAIL ABUN
PA-234	-1.020E-01	3.016E-01	4.925E-01	0.000E+00	NOT IDENT.
PA-234M	8.394E-01	4.913E+00	8.134E+00	0.000E+00	FAIL ABUN
NP-239	2.033E-01	4.295E-01	7.151E-01	0.000E+00	NOT IDENT.
AM-241	5.720E-02	1.570E-01	2.457E-01	0.000E+00	NOT IDENT.
CM-247	2.476E-02	3.914E-02	6.747E-02	0.000E+00	NOT IDENT.
CF-249	1.557E-02	4.437E-02	7.574E-02	0.000E+00	NOT IDENT.

CF-251	-7.144E-04	1.436E-01	2.445E-01	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKAl00:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243009.CNF;1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:56:45
Sample ID        : G248243009 Sample quantity   : 1.06820E+02 GRAM
Detector name    : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.16 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 959280 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	1866	10.66*	1.909E+00	3.223E+01	3.223E+01	10.55
CD-109	88.03	380	3.70*	7.482E+00	4.822E+00	4.992E+00	24.41
SN-126	64.28	126	9.60	4.315E+00	1.067E+00	1.067E+00	76.86
	86.94	380	8.90	7.482E+00	2.005E+00	2.005E+00	47.24
	87.57	380	37.00*	7.482E+00	4.822E-01	4.822E-01	24.41
BA-137M	661.66	506	89.90*	3.589E+00	5.506E-01	5.514E-01	18.62
CS-137	661.66	506	85.10*	3.589E+00	5.817E-01	5.825E-01	18.63
TL-208	277.37	-----	6.60	6.182E+00	-----	Line Not Found	-----
	583.19	563	85.00*	3.931E+00	5.916E-01	5.916E-01	18.92
	860.56	70	12.50	2.921E+00	6.768E-01	6.768E-01	70.94
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	1003	12.92*	5.401E+00	5.050E+00	5.050E+00	15.65
BI-212	727.33	120	6.67*	3.341E+00	1.892E+00	1.892E+00	41.62
	785.37	-----	1.10	3.147E+00	-----	Line Not Found	-----
	1620.50	37	1.47	1.789E+00	4.977E+00	4.977E+00	55.49
PB-212	74.82	1482	10.28	6.353E+00	7.975E+00	7.975E+00	17.56
	77.11	1482	17.10	6.353E+00	4.795E+00	4.795E+00	14.62
	238.63	1757	43.60*	6.709E+00	2.111E+00	2.111E+00	14.53
	300.09	236	3.30	5.918E+00	4.254E+00	4.254E+00	41.49
BI-214	609.32	737	45.49*	3.811E+00	1.493E+00	1.493E+00	16.49
	1120.29	205	14.92	2.345E+00	2.062E+00	2.062E+00	30.12
	1764.49	131	15.30	1.716E+00	1.747E+00	1.747E+00	29.25
PB-214	74.82	1482	5.80	6.353E+00	1.414E+01	1.414E+01	16.64
	77.11	1482	9.70	6.353E+00	8.452E+00	8.453E+00	16.79
	242.00	395	7.25	6.663E+00	2.875E+00	2.875E+00	30.46
	295.22	633	18.42	5.969E+00	2.024E+00	2.025E+00	18.86
	351.93	1003	35.60*	5.401E+00	1.833E+00	1.833E+00	16.59
RA-224	240.99	395	4.10*	6.663E+00	5.084E+00	5.084E+00	29.90
RA-226	609.32	737	45.49*	3.811E+00	1.493E+00	1.493E+00	16.49
	1120.29	205	14.92	2.345E+00	2.062E+00	2.062E+00	30.12
	1764.49	131	15.30	1.716E+00	1.747E+00	1.747E+00	29.25
AC-228	338.32	352	11.27	5.526E+00	1.987E+00	1.987E+00	49.25

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	426	25.80*	2.788E+00	2.083E+00	2.083E+00	21.67
	968.97	237	15.80	2.649E+00	1.992E+00	1.992E+00	34.06
	338.32	352	11.27	5.526E+00	1.987E+00	1.987E+00	49.25
	911.20	426	25.80*	2.788E+00	2.083E+00	2.083E+00	21.67
TH-228	968.97	237	15.80	2.649E+00	1.992E+00	1.992E+00	34.06
	74.82	1482	10.28	6.353E+00	7.975E+00	7.975E+00	14.67
	77.11	1482	17.10	6.353E+00	4.795E+00	4.795E+00	14.62
	238.63	1757	43.60*	6.709E+00	2.111E+00	2.111E+00	14.53
TH-232	300.09	236	3.30	5.918E+00	4.254E+00	4.254E+00	73.20
	338.32	352	11.27	5.526E+00	1.987E+00	1.987E+00	27.56
	911.20	426	25.80*	2.788E+00	2.083E+00	2.083E+00	21.67
	968.97	237	15.80	2.649E+00	1.992E+00	1.992E+00	34.06
TH-234	63.29	126	3.70*	4.315E+00	2.767E+00	2.767E+00	77.55
	92.59	305	4.23	7.856E+00	3.228E+00	3.228E+00	39.26
U-235	89.96	203	3.47	7.686E+00	2.681E+00	2.681E+00	44.10
	93.35	305	5.60	7.856E+00	2.438E+00	2.438E+00	39.84
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
NP-237	185.72	252	57.20	7.607E+00	2.032E-01	2.032E-01	39.17
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
	86.48	380	12.40*	7.482E+00	1.439E+00	1.439E+00	32.18
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	126	3.70*	4.315E+00	2.767E+00	2.767E+00	77.55
	92.59	305	4.23	7.856E+00	3.228E+00	3.228E+00	33.58
ANH-511	511.00	141	100.00*	4.298E+00	1.150E-01	1.150E-01	61.28

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248243009

Page : 3
Acquisition date : 19-MAR-2010 10:56:45

Total number of lines in spectrum 34
Number of unidentified lines 3
Number of lines tentatively identified by NID 31 91.18%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.223E+01	3.223E+01	0.340E+01	10.55	
CD-109	461.40D	1.04	4.822E+00	4.992E+00	1.218E+00	24.41	
SN-126	2.30E+05Y	1.00	4.822E-01	4.822E-01	1.177E-01	24.41	
BA-137M	30.08Y	1.00	5.506E-01	5.514E-01	1.027E-01	18.62	
CS-137	30.08Y	1.00	5.817E-01	5.825E-01	1.085E-01	18.63	
TL-208	1.41E+10Y	1.00	5.916E-01	5.916E-01	1.119E-01	18.92	
BI-211	7.04E+08Y	1.00	5.050E+00	5.050E+00	0.790E+00	15.65	
BI-212	1.41E+10Y	1.00	1.892E+00	1.892E+00	0.788E+00	41.62	
PB-212	1.41E+10Y	1.00	2.111E+00	2.111E+00	0.307E+00	14.53	
BI-214	1600.00Y	1.00	1.493E+00	1.493E+00	0.246E+00	16.49	
PB-214	1600.00Y	1.00	1.833E+00	1.833E+00	0.304E+00	16.59	
RA-224	1.41E+10Y	1.00	5.084E+00	5.084E+00	1.520E+00	29.90	
RA-226	1600.00Y	1.00	1.493E+00	1.493E+00	0.246E+00	16.49	
AC-228	1.41E+10Y	1.00	2.083E+00	2.083E+00	0.451E+00	21.67	
RA-228	1.41E+10Y	1.00	2.083E+00	2.083E+00	0.451E+00	21.67	
TH-228	1.41E+10Y	1.00	2.111E+00	2.111E+00	0.307E+00	14.53	
TH-232	1.41E+10Y	1.00	2.083E+00	2.083E+00	0.451E+00	21.67	
TH-234	4.47E+09Y	1.00	2.767E+00	2.767E+00	2.146E+00	77.55	
U-235	7.04E+08Y	1.00	2.032E-01	2.032E-01	0.796E-01	39.17	K
NP-237	2.14E+06Y	1.00	1.439E+00	1.439E+00	0.463E+00	32.18	
U-238	4.47E+09Y	1.00	2.767E+00	2.767E+00	2.146E+00	77.55	
ANH-511	1.00E+09Y	1.00	1.150E-01	1.150E-01	0.705E-01	61.28	
Total Activity :			7.387E+01	7.404E+01			

Grand Total Activity : 7.387E+01 7.404E+01

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

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

Unidentified Energy Lines
Sample ID : G248243009

Page : 4
Acquisition date : 19-MAR-2010 10:56:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.21	110	421	1.08	258.54	255	8	1.53E-02	67.3	8.53E+00	
0	209.29	223	462	1.50	418.56	414	11	3.10E-02	39.6	7.18E+00	
0	270.05	135	333	1.03	539.96	535	11	1.87E-02	56.0	6.27E+00	T
0	328.22	61	261	1.33	656.21	651	9	8.46E-03	99.2	5.62E+00	T
0	463.11	55	192	1.01	925.79	922	9	7.58E-03	99.5	4.58E+00	T
0	767.76	76	205	1.58	1534.74	1528	19	1.06E-02	92.8	3.20E+00	T
0	795.99	70	131	1.27	1591.17	1581	16	9.68E-03	77.5	3.11E+00	T
3	964.85	75	97	2.09	1928.78	1924	21	1.04E-02	54.9	2.66E+00	T
0	1238.59	95	70	2.62	2476.18	2470	12	1.32E-02	41.0	2.16E+00	T
0	1730.10	59	17	0.92	3459.37	3450	17	8.19E-03	41.3	1.73E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243009.CNF;1
* Acquisition date   : 19-MAR-2010 10:56:45  Detector SN#      :
* Detector ID        : GAM22                Sensitivity       : 5.00000
* Geometry           : CAN                  Energy tolerance   : 1.50000
* Elapsed live time  : 0 02:00:00.00        Abundance limit    : 75.00000
* Elapsed real time  : 0 02:00:02.16        Half life ratio    : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G248243009           Analyst initials: MXR1
* Batch Number       : 959280              Sample Quantity  : 1.06820E+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	3.223E+01	3.400E+00	5.403E-01	4.949E-02	59.662
CD-109	4.992E+00	1.218E+00	1.235E+00	1.172E-01	4.043
SN-126	4.822E-01	1.177E-01	1.198E-01	1.131E-02	4.027
BA-137M	5.514E-01	1.027E-01	6.371E-02	6.718E-03	8.655
CS-137	5.825E-01	1.085E-01	6.730E-02	7.106E-03	8.655
TL-208	5.916E-01	1.119E-01	5.926E-02	6.420E-03	9.984
BI-211	5.050E+00	7.903E-01	3.743E-01	4.368E-02	13.492
BI-212	1.892E+00	7.877E-01	7.776E-01	1.093E-01	2.434
PB-212	2.111E+00	3.067E-01	1.025E-01	1.358E-02	20.587
BI-214	1.493E+00	2.462E-01	1.235E-01	1.441E-02	12.093
PB-214	1.833E+00	3.041E-01	1.307E-01	1.683E-02	14.022
RA-224	5.084E+00	1.520E+00	1.098E+00	1.375E-01	4.630
RA-226	1.493E+00	2.462E-01	1.235E-01	1.441E-02	12.093
AC-228	2.083E+00	4.514E-01	2.372E-01	3.213E-02	8.779
RA-228	2.083E+00	4.514E-01	2.372E-01	3.213E-02	8.779
TH-228	2.111E+00	3.067E-01	1.025E-01	1.358E-02	20.587
TH-232	2.083E+00	4.514E-01	2.372E-01	3.213E-02	8.779
TH-234	2.767E+00	2.146E+00	2.052E+00	3.651E-01	1.349

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.032E-01	7.962E-02	3.761E-01	6.428E-02	0.540
NP-237	1.439E+00	4.630E-01	3.610E-01	8.282E-02	3.986
U-238	2.767E+00	2.146E+00	2.052E+00	3.651E-01	1.349
ANH-511	1.150E-01	7.046E-02	5.223E-02	5.233E-03	2.201

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.760E-01		4.011E-01	6.226E-01	6.497E-02	-0.283
NA-22	2.657E-02		4.511E-02	7.772E-02	6.698E-03	0.342
NA-24	1.424E+03		2.329E+03	Half-Life too short		
SC-46	-2.165E-02		4.290E-02	6.858E-02	7.677E-03	-0.316
V-48	4.179E-02		1.038E-01	1.752E-01	1.837E-02	0.239
CR-51	-6.334E-02		4.951E-01	8.238E-01	1.066E-01	-0.077
MN-54	2.756E-02		4.143E-02	7.149E-02	7.942E-03	0.385
CO-56	-4.103E-02		4.250E-02	6.579E-02	7.324E-03	-0.624
CO-57	2.126E-02		2.864E-02	4.667E-02	3.849E-03	0.456
CO-58	-2.141E-03		4.078E-02	6.799E-02	7.529E-03	-0.031
FE-59	-1.180E-01		1.171E-01	1.759E-01	1.724E-02	-0.670
CO-60	-8.704E-03		3.857E-02	6.225E-02	5.551E-03	-0.140
ZN-65	9.342E-02		1.155E-01	1.712E-01	1.527E-02	0.546
SE-75	-9.218E-04		5.726E-02	8.023E-02	1.080E-02	-0.011
SR-85	1.686E-01		5.771E-02	9.160E-02	9.191E-03	1.841
Y-88	1.003E-02		3.723E-02	6.324E-02	5.113E-03	0.159
Y-91	6.115E+00		2.459E+01	4.155E+01	3.416E+00	0.147
NB-94	3.875E-03		3.517E-02	5.779E-02	6.193E-03	0.067
NB-95	1.035E-01		5.931E-02	9.234E-02	1.010E-02	1.121
NB-95M	3.317E-01		1.772E-01	2.674E-01	3.538E-02	1.241
ZR-95	-1.055E-02		8.409E-02	1.352E-01	1.572E-02	-0.078
MO-99	3.454E-05		4.507E-05	Half-Life too short		
TC-99M	-1.080E+20		5.901E+19	Half-Life too short		
RU-103	2.336E-02		4.957E-02	8.175E-02	1.212E-02	0.286
RH-106	1.390E-01		3.360E-01	5.669E-01	8.226E-02	0.245
RU-106	1.390E-01		3.357E-01	5.669E-01	5.922E-02	0.245
AG-108M	-1.981E-02		3.268E-02	5.147E-02	5.066E-03	-0.385
AG-110M	8.462E-02		4.838E-02	7.591E-02	8.158E-03	1.115
SN-113	4.917E-03		5.249E-02	8.671E-02	8.280E-03	0.057
CD-115	7.718E-05		7.006E-05	Half-Life too short		
SN-117M	-1.016E-01		8.838E-02	1.410E-01	1.337E-02	-0.721
TE-123M	-3.583E-02		3.215E-02	5.138E-02	4.906E-03	-0.697
SB-124	1.897E-02		8.312E-02	1.416E-01	1.263E-02	0.134
SB-125	1.021E-01		1.022E-01	1.743E-01	1.690E-02	0.586
TE-125M	5.261E-01		1.156E+01	1.851E+01	1.908E+00	0.028
I-126	5.523E-01		3.964E-01	6.183E-01	6.533E-02	0.893
SB-126	1.419E-01		2.592E-01	3.727E-01	4.020E-02	0.381
SB-127	2.698E+00		5.854E+00	9.816E+00	1.501E+00	0.275
I-131	1.128E-01		2.419E-01	4.087E-01	4.551E-02	0.276

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	3.881E+00		4.659E+00	7.718E+00	1.508E+00	0.503
BA-133	2.028E-02		4.953E-02	7.315E-02	1.077E-02	0.277
I-133	3.008E+00		1.711E+00	Half-Life too short		
CS-134	1.045E-01	+	8.176E-02	9.349E-02	1.035E-02	1.118
CS-135	2.128E-01		2.022E-01	2.976E-01	4.304E-02	0.715
I-135	-7.450E+16		1.410E+18	Half-Life too short		
CS-136	8.378E-02		1.744E-01	2.938E-01	2.973E-02	0.285
CE-139	-3.661E-03		3.432E-02	5.703E-02	5.594E-03	-0.064
BA-140	-3.090E-01		4.383E-01	6.836E-01	2.347E-01	-0.452
LA-140	-1.152E-01		1.596E-01	2.494E-01	2.187E-02	-0.462
CE-141	7.621E-02		8.029E-02	1.387E-01	1.263E-02	0.549
CE-143	4.503E-02		7.675E-03	Half-Life too short		
CE-144	4.675E-02		2.416E-01	3.644E-01	5.554E-02	0.128
PM-144	1.535E-02		3.760E-02	6.282E-02	6.720E-03	0.244
PR-144	1.157E+00		2.826E+00	4.722E+00	5.048E-01	0.245
PM-146	3.788E-02		4.676E-02	7.878E-02	9.058E-03	0.481
ND-147	9.134E-01		9.878E-01	1.714E+00	2.718E-01	0.533
PM-149	-2.500E-04		6.307E-04	Half-Life too short		
EU-152	-8.112E-02		1.315E-01	1.708E-01	2.053E-02	-0.475
GD-153	-9.851E-02		1.041E-01	1.416E-01	1.245E-02	-0.696
EU-154	7.308E-02		1.273E-01	2.189E-01	2.489E-02	0.334
EU-155	8.683E-02		1.138E-01	1.874E-01	1.608E-02	0.463
TB-160	1.088E-01		1.592E-01	2.751E-01	3.076E-02	0.395
HO-166M	3.823E-02		6.022E-02	1.020E-01	1.096E-02	0.375
TA-182	7.868E-02		2.106E-01	3.578E-01	2.976E-02	0.220
IR-192	-2.034E-02		4.042E-02	6.609E-02	8.447E-03	-0.308
HG-203	-1.267E-02		5.051E-02	7.986E-02	1.129E-02	-0.159
BI-207	8.192E-02		5.813E-02	1.027E-01	9.859E-03	0.798
PB-210	7.502E-01		3.344E+00	5.531E+00	5.094E-01	0.136
PB-211	-7.109E-01		8.868E-01	1.285E+00	6.236E-01	-0.553
RN-219	1.842E-01		4.417E-01	7.380E-01	1.131E-01	0.250
RA-223	-1.288E-01		8.237E-01	1.186E+00	2.317E-01	-0.109
AC-227	-4.568E-02		2.833E-01	4.531E-01	7.059E-02	-0.101
TH-227	-4.568E-02		2.833E-01	4.531E-01	7.617E-02	-0.101
TH-229	5.294E-03		5.960E-01	9.829E-01	1.056E-01	0.005
PA-231	6.480E-01		1.642E+00	2.664E+00	4.846E-01	0.243
TH-231	-1.288E-01		8.237E-01	1.186E+00	2.317E-01	-0.109
PA-233	-1.405E-03		6.975E-02	1.168E-01	1.531E-02	-0.012
PA-234	-1.020E-01		3.078E-01	4.945E-01	9.830E-02	-0.206
PA-234M	8.394E-01		5.014E+00	8.169E+00	9.362E-01	0.103
NP-239	2.033E-01		4.383E-01	7.094E-01	5.862E-02	0.287
AM-241	5.720E-02		1.602E-01	2.428E-01	1.898E-02	0.236
CM-247	2.476E-02		3.994E-02	6.741E-02	6.323E-03	0.367
CF-249	1.557E-02		4.527E-02	7.565E-02	7.182E-03	0.206
CF-251	-7.144E-04		1.466E-01	2.432E-01	2.478E-02	-0.003

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248243009          *
* Acquisition date   : 19-MAR-2010 10:56:45 Detector SN#      :             *
* Detector ID        : GAM22                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:02.16                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243009                               Analyst initials: MXR1         *
* Batch Number       : 959280                                   Sample Quantity : 1.0682E+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	3.223E+01	3.332E+00	2.685E-01	1.700E+00
CD-109	4.992E+00	1.194E+00	6.237E-01	6.091E-01
SN-126	4.822E-01	1.153E-01	6.050E-02	5.885E-02
BA-137M	5.514E-01	1.006E-01	3.181E-02	5.134E-02
CS-137	5.825E-01	1.064E-01	3.361E-02	5.426E-02
TL-208	5.916E-01	1.097E-01	2.961E-02	5.597E-02
BI-211	5.050E+00	7.745E-01	1.876E-01	3.952E-01
BI-212	1.892E+00	7.719E-01	3.881E-01	3.938E-01
PB-212	2.111E+00	3.005E-01	5.151E-02	1.533E-01
BI-214	1.493E+00	2.413E-01	6.169E-02	1.231E-01
PB-214	1.833E+00	2.980E-01	6.551E-02	1.521E-01
RA-224	5.084E+00	1.490E+00	5.514E-01	7.601E-01
RA-226	1.493E+00	2.413E-01	6.169E-02	1.231E-01
AC-228	2.083E+00	4.424E-01	1.182E-01	2.257E-01
RA-228	2.083E+00	4.424E-01	1.182E-01	2.257E-01
TH-228	2.111E+00	3.005E-01	5.151E-02	1.533E-01
TH-232	2.083E+00	4.424E-01	1.182E-01	2.257E-01
TH-234	2.767E+00	2.103E+00	1.038E+00	1.073E+00
U-235	9.125E-02	2.213E-01	1.895E-01	1.129E-01
NP-237	1.439E+00	4.537E-01	1.824E-01	2.315E-01
U-238	2.767E+00	2.103E+00	1.038E+00	1.073E+00
ANH-511	1.150E-01	6.905E-02	2.612E-02	3.523E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.760E-01	3.930E-01	3.115E-01	2.005E-01 NOT IDENT.
NA-22	2.657E-02	4.421E-02	3.866E-02	2.256E-02 NOT IDENT.
NA-24	1.424E+09	4.565E+09	0.000E+00	2.329E+09 SHORT HLIF
SC-46	-2.165E-02	4.204E-02	3.418E-02	2.145E-02 FAIL ABUN
V-48	4.179E-02	1.018E-01	8.727E-02	5.192E-02 NOT IDENT.

CR-51	-6.334E-02	4.852E-01	4.131E-01	2.475E-01	NOT IDENT.
MN-54	2.756E-02	4.060E-02	3.565E-02	2.072E-02	NOT IDENT.
CO-56	-4.103E-02	4.165E-02	3.280E-02	2.125E-02	FAIL ABUN
CO-57	2.126E-02	2.807E-02	2.353E-02	1.432E-02	NOT IDENT.
CO-58	-2.141E-03	3.996E-02	3.391E-02	2.039E-02	NOT IDENT.
FE-59	-1.180E-01	1.148E-01	8.759E-02	5.855E-02	NOT IDENT.
CO-60	-8.704E-03	3.780E-02	3.095E-02	1.928E-02	NOT IDENT.
ZN-65	9.342E-02	1.132E-01	8.524E-02	5.773E-02	NOT IDENT.
SE-75	-9.218E-04	5.612E-02	4.027E-02	2.863E-02	NOT IDENT.
SR-85	1.686E-01	5.656E-02	4.580E-02	2.886E-02	NOT IDENT.
Y-88	1.003E-02	3.648E-02	3.139E-02	1.861E-02	NOT IDENT.
Y-91	6.115E+00	2.410E+01	2.067E+01	1.230E+01	NOT IDENT.
NB-94	3.875E-03	3.447E-02	2.885E-02	1.759E-02	NOT IDENT.
NB-95	1.035E-01	5.813E-02	4.607E-02	2.966E-02	NOT IDENT.
NB-95M	3.317E-01	1.737E-01	1.343E-01	8.862E-02	NOT IDENT.
ZR-95	-1.055E-02	8.241E-02	6.744E-02	4.204E-02	NOT IDENT.
MO-99	3.454E+01	8.834E+01	0.000E+00	4.507E+01	SHORT HLIF
TC-99M	-1.080E+26	1.157E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.336E-02	4.858E-02	4.089E-02	2.478E-02	FAIL ABUN
RH-106	1.390E-01	3.293E-01	2.832E-01	1.680E-01	NOT IDENT.
RU-106	1.390E-01	3.290E-01	2.832E-01	1.679E-01	NOT IDENT.
AG-108M	-1.981E-02	3.202E-02	2.576E-02	1.634E-02	NOT IDENT.
AG-110M	8.462E-02	4.741E-02	3.790E-02	2.419E-02	NOT IDENT.
SN-113	4.917E-03	5.144E-02	4.343E-02	2.624E-02	NOT IDENT.
CD-115	7.718E+01	1.373E+02	0.000E+00	7.006E+01	SHORT HLIF
SN-117M	-1.016E-01	8.661E-02	7.100E-02	4.419E-02	NOT IDENT.
TE-123M	-3.583E-02	3.151E-02	2.587E-02	1.608E-02	NOT IDENT.
SB-124	1.897E-02	8.146E-02	7.032E-02	4.156E-02	NOT IDENT.
SB-125	1.021E-01	1.002E-01	8.724E-02	5.112E-02	FAIL ABUN
TE-125M	5.261E-01	1.133E+01	9.338E+00	5.780E+00	NOT IDENT.
I-126	5.523E-01	3.885E-01	3.087E-01	1.982E-01	NOT IDENT.
SB-126	1.419E-01	2.540E-01	1.860E-01	1.296E-01	NOT IDENT.
SB-127	2.698E+00	5.737E+00	4.900E+00	2.927E+00	NOT IDENT.
I-131	1.128E-01	2.371E-01	2.048E-01	1.210E-01	NOT IDENT.
TE-132	3.881E+00	4.566E+00	3.878E+00	2.329E+00	NOT IDENT.
BA-133	2.028E-02	4.854E-02	3.666E-02	2.477E-02	NOT IDENT.
I-133	3.008E+06	3.353E+06	0.000E+00	1.711E+06	SHORT HLIF
CS-134	1.045E-01	8.012E-02	4.663E-02	4.088E-02	FAIL ABUN
CS-135	2.128E-01	1.982E-01	1.494E-01	1.011E-01	NOT IDENT.
I-135	-7.450E+22	2.763E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.378E-02	1.709E-01	1.463E-01	8.721E-02	NOT IDENT.
CE-139	-3.661E-03	3.364E-02	2.871E-02	1.716E-02	NOT IDENT.
BA-140	-3.090E-01	4.295E-01	3.418E-01	2.191E-01	NOT IDENT.
LA-140	-1.152E-01	1.564E-01	1.239E-01	7.979E-02	FAIL ABUN
CE-141	7.621E-02	7.868E-02	6.988E-02	4.014E-02	NOT IDENT.
CE-143	4.503E+04	1.504E+04	0.000E+00	7.675E+03	SHORT HLIF
CE-144	4.675E-02	2.368E-01	1.836E-01	1.208E-01	NOT IDENT.
PM-144	1.535E-02	3.685E-02	3.136E-02	1.880E-02	NOT IDENT.
PR-144	1.157E+00	2.769E+00	2.357E+00	1.413E+00	NOT IDENT.
PM-146	3.788E-02	4.583E-02	3.942E-02	2.338E-02	NOT IDENT.
ND-147	9.134E-01	9.680E-01	8.570E-01	4.939E-01	FAIL ABUN
PM-149	-2.500E+02	1.236E+03	0.000E+00	6.307E+02	SHORT HLIF
EU-152	-8.112E-02	1.289E-01	8.563E-02	6.577E-02	FAIL ABUN
GD-153	-9.851E-02	1.020E-01	7.150E-02	5.203E-02	NOT IDENT.
EU-154	7.308E-02	1.247E-01	1.089E-01	6.363E-02	NOT IDENT.
EU-155	8.683E-02	1.116E-01	9.456E-02	5.692E-02	FAIL ABUN
TB-160	1.088E-01	1.561E-01	1.371E-01	7.962E-02	FAIL ABUN
HO-166M	3.823E-02	5.901E-02	5.089E-02	3.011E-02	FAIL ABUN
TA-182	7.868E-02	2.063E-01	1.780E-01	1.053E-01	FAIL ABUN
IR-192	-2.034E-02	3.961E-02	3.314E-02	2.021E-02	FAIL ABUN
HG-203	-1.267E-02	4.950E-02	4.008E-02	2.525E-02	NOT IDENT.
BI-207	8.192E-02	5.697E-02	5.114E-02	2.906E-02	FAIL ABUN
PB-210	7.502E-01	3.277E+00	2.804E+00	1.672E+00	NOT IDENT.
PB-211	-7.109E-01	8.690E-01	6.433E-01	4.434E-01	NOT IDENT.
RN-219	1.842E-01	4.328E-01	3.695E-01	2.208E-01	FAIL ABUN
RA-223	-1.288E-01	8.072E-01	5.945E-01	4.118E-01	FAIL ABUN
AC-227	-4.568E-02	2.776E-01	2.275E-01	1.416E-01	FAIL ABUN
TH-227	-4.568E-02	2.776E-01	2.275E-01	1.416E-01	FAIL ABUN
TH-229	5.294E-03	5.841E-01	4.943E-01	2.980E-01	FAIL ABUN
PA-231	6.480E-01	1.609E+00	1.337E+00	8.211E-01	NOT IDENT.
TH-231	-1.288E-01	8.072E-01	5.945E-01	4.118E-01	FAIL ABUN
PA-233	-1.405E-03	6.835E-02	5.859E-02	3.487E-02	FAIL ABUN
PA-234	-1.020E-01	3.016E-01	2.464E-01	1.539E-01	NOT IDENT.
PA-234M	8.394E-01	4.913E+00	4.069E+00	2.507E+00	FAIL ABUN
NP-239	2.033E-01	4.295E-01	3.578E-01	2.192E-01	NOT IDENT.
AM-241	5.720E-02	1.570E-01	1.229E-01	8.011E-02	NOT IDENT.
CM-247	2.476E-02	3.914E-02	3.376E-02	1.997E-02	NOT IDENT.
CF-249	1.557E-02	4.437E-02	3.789E-02	2.264E-02	NOT IDENT.

CF-251

-7.144E-04

1.436E-01

1.223E-01

7.328E-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	319.7844
49.72	346.5423
57.36	0.0000
59.54	355.5369
63.29	405.3632
63.29	405.3632
64.28	426.3487
67.75	469.6880
69.67	470.5428
70.83	484.4229
72.81	454.6313
72.87	454.7258
72.87	454.7258
74.82	457.7372
74.82	457.7372
74.82	457.7372
74.97	457.9676
77.11	461.2233
77.11	461.2233
77.11	461.2233
79.69	409.6504
79.80	409.7945
80.12	410.2126
80.19	410.3039
80.57	410.7990
81.00	411.3592
81.07	411.4505
81.07	411.4505
83.79	409.7533
83.79	409.7533
85.43	411.8114
86.48	413.1180
86.55	413.2042
86.79	413.5008
86.94	413.6891
87.57	414.4667
88.03	415.0338
88.47	415.5749
89.96	417.3955
91.11	418.7913
92.59	420.5728
92.59	420.5728
93.35	421.4827
94.67	423.0558
94.87	423.2923
94.87	423.2923
95.86	376.5220
97.43	425.2243
98.44	379.2027
99.53	367.2661
100.11	367.5125
103.18	408.7595
103.37	385.8772
105.31	360.2070
106.12	389.7480
109.28	381.7267
111.00	362.0706
111.76	395.3215
116.30	374.7261
117.23	355.0720
121.12	385.8938
121.78	349.6755
122.06	347.5992
123.07	396.8611
131.20	377.8139
133.52	382.5483
136.00	405.9406

136.47	417.0374
140.51	0.0000
140.51	0.0000
143.76	393.5185
144.24	378.5063
144.24	378.5063
145.44	384.8711
152.43	400.3286
153.25	401.8843
154.21	383.2335
154.21	383.2335
156.02	391.0467
158.56	414.3424
159.00	411.8863
162.66	394.0480
163.33	405.8042
165.86	400.1267
176.60	409.7007
177.52	399.7516
181.07	0.0000
184.41	371.0935
185.72	366.2367
193.51	391.6675
197.04	419.7270
205.31	406.1931
210.85	349.4564
215.65	390.1370
222.11	369.7010
227.38	348.5358
228.16	338.5012
228.18	338.5111
235.69	333.4023
235.96	373.9529
235.96	373.9529
238.63	337.0562
238.63	337.0562
240.99	338.1246
242.00	338.5797
244.70	306.7734
252.40	307.7132
252.80	293.8762
256.23	297.3289
256.23	297.3289
260.90	0.0000
264.66	258.7471
268.22	275.6852
269.46	254.9996
269.46	254.9996
271.23	333.0940
273.65	364.1161
276.40	294.0870
277.37	277.4124
277.60	280.8147
278.00	279.8394
279.20	316.9373
279.54	317.0634
280.46	343.0222
283.69	267.1865
284.31	260.6673
285.41	266.6024
285.90	0.0000
287.50	293.0754
293.27	0.0000
295.22	262.8160
295.96	263.0355
298.57	263.8073
299.98	264.2214
299.98	264.2214
300.09	264.2568
300.09	264.2568
300.13	264.2675
301.36	264.6285
302.85	258.9706
304.50	277.7581
304.50	277.7581
304.85	251.9110
308.46	248.3097
311.90	254.7744

316.51	261.6004
319.41	248.4515
320.08	262.5919
323.87	277.3536
323.87	277.3536
328.76	292.8609
333.37	289.5290
334.37	262.7290
334.37	262.7290
338.28	260.9244
338.28	260.9244
338.32	260.9378
338.32	260.9378
338.32	260.9378
340.48	245.6532
340.55	237.7472
344.28	263.4500
351.06	256.2467
351.93	236.5888
356.01	201.1566
364.49	200.5206
366.42	0.0000
383.85	217.0297
388.16	227.8231
388.63	229.9087
391.69	227.5435
400.66	203.1959
401.81	204.4075
402.40	194.4371
404.85	256.4370
410.95	207.0406
414.70	252.5016
423.72	235.9550
427.09	186.2077
427.87	185.2976
433.94	208.9832
453.88	175.5518
463.37	184.2654
468.07	200.1662
473.00	193.0947
476.78	173.3194
477.60	187.3431
487.02	177.8826
492.35	0.0000
497.08	158.5629
511.00	188.6751
514.00	170.3874
527.90	0.0000
529.87	0.0000
531.02	148.3170
537.26	173.1527
546.56	0.0000
563.25	136.3916
569.33	146.4397
569.50	140.7493
569.70	141.7186
583.19	146.7838
600.60	171.9865
602.73	188.1179
604.72	165.0150
609.32	171.6064
609.32	171.6064
610.33	171.7139
614.28	154.2425
618.01	148.9880
621.93	139.5126
621.93	139.5126
633.25	137.4842
635.95	134.7327
636.99	125.8915
645.85	141.4886
657.76	142.7460
661.66	157.8592
661.66	157.8592
664.57	0.0000
666.33	114.0613
666.50	114.0728
677.62	136.9583

685.70	135.5300
695.00	151.5832
696.49	145.5564
696.51	145.5592
697.00	147.6475
702.65	142.9563
706.68	152.5407
711.68	111.6101
720.70	106.8038
721.93	0.0000
722.78	119.3952
722.91	119.4022
723.31	121.2104
724.19	146.2312
727.33	112.5330
733.00	121.8223
735.93	125.5957
739.50	0.0000
747.24	116.8513
752.31	129.8192
753.82	111.9608
756.73	133.2828
763.94	116.4754
765.81	125.6930
766.42	136.6621
777.92	0.0000
778.90	127.0589
783.70	99.6980
785.37	113.2979
795.86	127.5557
801.95	126.0746
810.29	109.8245
810.76	104.2637
815.77	118.5066
818.51	86.8923
832.01	130.6906
834.85	132.7457
836.80	0.0000
846.77	122.1140
856.80	116.4908
860.56	93.3499
871.09	106.2324
873.19	111.1208
875.33	0.0000
879.36	101.8187
880.51	91.2990
883.24	110.6522
884.68	113.6108
889.28	111.9097
898.04	121.0523
911.20	109.0781
911.20	109.0781
911.20	109.0781
926.50	110.7693
937.49	97.4928
944.13	114.5496
946.00	105.7442
949.00	91.0326
962.29	87.0529
964.08	108.0232
966.15	119.5731
968.97	119.7091
968.97	119.7091
968.97	119.7091
983.53	95.3264
996.26	103.8765
1001.03	95.9890
1004.73	100.1757
1037.84	93.2661
1038.76	0.0000
1048.07	98.7723
1050.41	97.8296
1050.41	97.8296
1063.66	88.9994
1085.87	125.2065
1099.45	134.2143
1112.07	105.0694
1115.54	107.0437

1120.29	106.6960
1120.29	106.6960
1120.55	106.7066
1121.30	106.7348
1131.51	0.0000
1173.23	131.8140
1177.93	102.7929
1189.05	101.2856
1204.77	116.0951
1221.41	114.8218
1231.02	119.4466
1235.36	112.7822
1238.28	126.0387
1260.41	0.0000
1271.85	85.5830
1274.44	81.7595
1274.54	81.7621
1291.59	81.2244
1298.22	0.0000
1312.11	75.8321
1332.49	64.4148
1365.19	65.0516
1368.63	0.0000
1384.29	93.5988
1408.01	53.7117
1457.56	0.0000
1460.82	45.2649
1489.16	52.8786
1505.03	70.8119
1596.21	69.2237
1620.50	34.3506
1678.03	0.0000
1690.97	27.1903
1764.49	17.7905
1764.49	17.7905
1770.23	24.9402
1771.35	26.7290
1791.20	0.0000
1836.06	27.1311

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243009

Total Uranium Activity	8.2750E+00	ug/g
Total Uranium Counting Unc.	6.2575E+00	ug/g
Total Uranium Tpu	3.1926E-06	ug/g
Total Uranium Mda	3.0901E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280                      SAMPLE ID   : G248243009
*  ANALYST       : MXR1                        DETECTOR    : GAM22
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:56:45.15    SAMPLE ALQT  : 106.820 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.175E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.559E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.149E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.531E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:58:55.27

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243010.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:57:29
Sample ID          : G248243010 Sample quantity : 1.02030E+02 GRAM
Detector name      : GAM25 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 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	46.60*	284	413	0.80	92.76	89	8	3.94E-02	14.4	
2	0	63.35*	161	561	0.79	126.25	122	8	2.24E-02	27.7	
3	2	74.87*	746	367	0.85	149.29	143	15	1.04E-01	5.4	1.47E+00
4	2	77.08*	1164	366	0.89	153.72	143	15	1.62E-01	3.9	
5	5	87.24*	451	362	1.13	174.03	164	29	6.26E-02	8.4	1.43E+00
6	5	89.86	275	297	1.01	179.27	164	29	3.82E-02	11.8	
7	5	92.71*	413	325	1.13	184.97	164	29	5.73E-02	9.7	
8	0	128.98	63	274	1.01	257.51	254	7	8.80E-03	45.1	
9	0	143.66*	52	218	0.75	286.86	284	6	7.27E-03	48.4	
10	0	185.96*	250	323	1.25	371.46	367	11	3.47E-02	16.0	
11	0	209.17	125	242	0.72	417.87	413	9	1.74E-02	24.2	
12	4	238.63*	1257	167	0.96	476.80	472	18	1.75E-01	3.3	2.03E+00
13	4	241.65*	324	238	1.59	482.83	472	18	4.50E-02	11.9	
14	0	270.67	80	227	1.73	540.86	535	11	1.11E-02	38.1	
15	0	295.19*	421	134	1.00	589.90	586	9	5.84E-02	7.0	
16	0	300.39	37	155	0.77	600.31	596	8	5.11E-03	61.0	
17	0	328.26	91	153	1.24	656.03	652	10	1.27E-02	27.5	
18	0	338.30	251	165	0.87	676.11	671	10	3.49E-02	11.5	
19	0	351.93*	686	165	1.22	703.38	698	11	9.53E-02	5.3	
20	0	463.27	83	128	1.27	926.04	921	13	1.15E-02	30.0	
21	0	510.85*	135	128	1.70	1021.20	1014	16	1.87E-02	23.4	
22	0	583.36*	288	119	1.29	1166.21	1161	11	4.00E-02	9.7	
23	0	609.30*	429	65	1.34	1218.10	1213	10	5.95E-02	6.1	
24	0	661.68*	386	83	1.51	1322.86	1318	11	5.36E-02	7.2	
25	0	727.21	85	52	1.25	1453.91	1449	9	1.19E-02	18.6	
26	0	862.17	99	56	2.85	1723.83	1713	23	1.37E-02	22.3	
27	0	911.19*	253	59	1.63	1821.86	1813	18	3.51E-02	9.6	
28	1	964.80	63	40	1.97	1929.08	1922	27	8.71E-03	21.6	2.98E+00
29	1	969.08*	145	32	1.92	1937.64	1922	27	2.02E-02	11.6	
30	0	1120.31*	147	50	1.78	2240.12	2232	18	2.04E-02	14.1	
31	0	1239.15*	84	53	4.14	2477.80	2469	22	1.16E-02	25.3	
32	0	1460.70	906	17	2.14	2920.93	2912	16	1.26E-01	3.5	
33	0	1764.30*	77	4	1.81	3528.19	3522	14	1.07E-02	13.2	
34	0	1847.04	18	3	0.71	3693.68	3686	14	2.44E-03	32.8	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:58:58

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243010.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:57:29
Sample ID : G248243010 Sample quantity : 102.03 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.821E+01	3.099E+00	5.155E-01	4.390E-02	54.734
CD-109	+	88.03	*	4.935E+00	9.873E-01	8.493E-01	9.126E-02	5.811
SN-126	+	64.28		6.313E-01	3.638E-01	3.437E-01	5.476E-02	1.837
	+	86.94		1.982E+00	8.944E-01	3.394E-01	1.420E-01	5.839
	+	87.57	*	4.767E-01	9.537E-02	8.187E-02	8.779E-03	5.823
BA-137M	+	661.66	*	7.092E-01	1.283E-01	7.956E-02	8.813E-03	8.914
CS-137	+	661.66	*	7.492E-01	1.356E-01	8.405E-02	9.321E-03	8.914
TL-208		277.37		6.935E-01	4.547E-01	7.676E-01	1.103E-01	0.903
	+	583.19	*	4.994E-01	1.120E-01	7.014E-02	7.901E-03	7.120
		860.56		8.373E-01	4.071E-01	7.577E-01	7.917E-02	1.105
PB-210	+	46.54	*	2.678E+00	8.206E-01	6.719E-01	6.881E-02	3.986
BI-211		72.87		1.601E+00	1.737E+00	2.828E+00	2.854E-01	0.566
	+	351.06	*	5.028E+00	7.525E-01	3.728E-01	3.929E-02	13.487
PB-212	+	74.82		2.754E+00	4.877E-01	3.170E-01	4.459E-02	8.688
	+	77.11		2.594E+00	3.339E-01	1.921E-01	1.969E-02	13.503
	+	238.63	*	1.986E+00	2.625E-01	9.421E-02	1.076E-02	21.080
	+	300.09		9.247E-01	1.134E+00	1.302E+00	1.634E-01	0.710
BI-214	+	609.32	*	1.444E+00	2.482E-01	1.305E-01	1.580E-02	11.069
	+	1120.29		2.592E+00	7.859E-01	5.710E-01	6.225E-02	4.540
	+	1764.49		1.969E+00	5.442E-01	3.896E-01	3.210E-02	5.054
PB-214	+	74.82		4.881E+00	8.196E-01	5.619E-01	7.242E-02	8.688
	+	77.11		4.573E+00	6.991E-01	3.387E-01	4.455E-02	13.503
	+	242.00		3.107E+00	8.277E-01	5.741E-01	6.898E-02	5.412
	+	295.22		1.867E+00	3.557E-01	2.613E-01	3.349E-02	7.144
	+	351.93	*	1.825E+00	2.911E-01	1.357E-01	1.611E-02	13.453
RA-224	+	240.99	*	5.494E+00	1.429E+00	1.011E+00	1.063E-01	5.433
RA-226	+	609.32	*	1.444E+00	2.482E-01	1.305E-01	1.580E-02	11.069
	+	1120.29		2.592E+00	7.859E-01	5.710E-01	6.225E-02	4.540
	+	1764.49		1.969E+00	5.442E-01	3.896E-01	3.210E-02	5.054
AC-228	+	338.32		2.039E+00	9.781E-01	4.003E-01	1.686E-01	5.094
	+	911.20	*	2.147E+00	4.898E-01	2.627E-01	3.212E-02	8.171
	+	968.97		2.132E+00	7.217E-01	4.692E-01	1.155E-01	4.544
RA-228	+	338.32		2.039E+00	9.781E-01	4.003E-01	1.686E-01	5.094
	+	911.20	*	2.147E+00	4.898E-01	2.627E-01	3.212E-02	8.171

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		2.132E+00	7.217E-01	4.692E-01	1.155E-01	4.544
	+	74.82		2.754E+00	4.089E-01	3.170E-01	3.242E-02	8.688
	+	77.11		2.594E+00	3.339E-01	1.921E-01	1.969E-02	13.503
	+	238.63	*	1.986E+00	2.625E-01	9.421E-02	1.076E-02	21.080
TH-232	+	300.09		9.247E-01	1.263E+00	1.302E+00	8.021E-01	0.710
	+	338.32		2.039E+00	5.137E-01	4.003E-01	4.173E-02	5.094
	+	911.20	*	2.147E+00	4.898E-01	2.627E-01	3.212E-02	8.171
	+	968.97		2.132E+00	7.217E-01	4.692E-01	1.155E-01	4.544
TH-234	+	63.29	*	1.638E+00	9.588E-01	8.765E-01	1.664E-01	1.869
	+	92.59		3.884E+00	1.172E+00	7.501E-01	1.734E-01	5.178
U-235	+	89.96		3.124E+00	1.083E+00	8.825E-01	2.249E-01	3.540
	+	93.35		2.934E+00	9.072E-01	5.686E-01	1.370E-01	5.160
	+	143.76	*	2.321E-01	2.285E-01	3.021E-01	5.550E-02	0.768
	+	163.33		3.230E-01	4.326E-01	7.335E-01	1.338E-01	0.440
NP-237	+	185.72		2.506E-01	8.333E-02	6.600E-02	6.180E-03	3.797
	+	205.31		-1.844E-01	5.462E-01	7.717E-01	1.446E-01	-0.239
	+	86.48	*	1.423E+00	4.123E-01	2.431E-01	5.719E-02	5.851
	+	95.86		-1.261E-01	6.994E-01	1.069E+00	2.674E-01	-0.118
U-238	+	63.29	*	1.638E+00	9.588E-01	8.765E-01	1.664E-01	1.869
	+	92.59		3.884E+00	8.657E-01	7.501E-01	8.242E-02	5.178
ANH-511	+	511.00	*	1.762E-01	8.457E-02	5.720E-02	5.888E-03	3.081

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.515E-01	4.609E-01	7.196E-01	7.617E-02	-0.350
NA-22		1274.54	*	-2.750E-02	5.528E-02	8.576E-02	7.032E-03	-0.321
NA-24		1368.63	*	6.462E+01	5.528E-02	Half-Life too short		
SC-46		889.28	*	-4.178E-02	4.834E-02	7.033E-02	6.735E-03	-0.594
V-48	+	1120.55		4.679E-01	1.383E-01	1.942E-01	1.670E-02	2.409
		944.13		7.319E-01	1.611E+00	2.722E+00	2.554E-01	0.269
		983.53	*	-1.640E-02	1.208E-01	1.916E-01	1.775E-02	-0.086
CR-51		1312.11		6.893E-02	1.350E-01	2.349E-01	1.914E-02	0.293
		320.08	*	-2.058E-01	4.912E-01	8.066E-01	8.952E-02	-0.255
MN-54		834.85	*	-1.375E-02	5.006E-02	7.993E-02	8.111E-03	-0.172
CO-56		846.77	*	-1.955E-02	5.055E-02	7.923E-02	7.950E-03	-0.247
		1037.84		-3.070E-01	3.902E-01	5.982E-01	5.672E-02	-0.513
	+	1238.28		4.415E-01	2.270E-01	2.452E-01	2.079E-02	1.801
CO-57		1771.35		-7.346E-02	3.425E-01	4.499E-01	3.704E-02	-0.163
		122.06	*	-9.511E-04	2.241E-02	3.774E-02	4.867E-03	-0.025
		136.47		2.560E-02	1.901E-01	3.202E-01	3.924E-02	0.080
CO-58		810.76	*	-3.479E-03	4.865E-02	7.927E-02	8.225E-03	-0.044
FE-59		1099.45	*	-7.021E-02	1.271E-01	2.000E-01	1.884E-02	-0.351
CO-60		1291.59		2.009E-01	1.648E-01	3.062E-01	2.877E-02	0.656
		1173.23		1.540E-02	5.662E-02	9.621E-02	7.919E-03	0.160
		1332.49	*	3.666E-02	5.079E-02	9.013E-02	7.320E-03	0.407
ZN-65		1115.54	*	1.250E-02	1.304E-01	1.895E-01	1.637E-02	0.066
SE-75		121.12		-6.833E-02	1.203E-01	1.972E-01	2.878E-02	-0.347

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		6.978E-03	3.751E-02	6.335E-02	7.516E-03	0.110
		264.66	*	-1.717E-02	5.431E-02	8.026E-02	8.797E-03	-0.214
		279.54		-6.639E-02	1.350E-01	2.071E-01	2.363E-02	-0.321
		400.66		-1.839E-01	3.074E-01	4.867E-01	5.617E-02	-0.378
SR-85		514.00	*	2.835E-02	5.250E-02	7.858E-02	8.107E-03	0.361
Y-88		898.04		-3.227E-02	5.526E-02	8.416E-02	8.005E-03	-0.383
		1836.06	*	1.654E-02	3.883E-02	6.933E-02	5.666E-03	0.239
Y-91		1204.77	*	-2.495E+00	3.155E+01	5.179E+01	4.262E+00	-0.048
NB-94		702.65	*	-9.202E-03	4.289E-02	7.012E-02	7.700E-03	-0.131
		871.09		3.514E-02	4.810E-02	7.471E-02	7.308E-03	0.470
NB-95		765.81	*	3.634E-02	6.512E-02	1.116E-01	1.192E-02	0.326
NB-95M		235.69	*	-1.875E-04	1.573E-01	2.252E-01	2.585E-02	-0.001
ZR-95		724.19		6.396E-02	1.439E-01	2.174E-01	2.496E-02	0.294
		756.73	*	4.770E-02	1.035E-01	1.773E-01	2.034E-02	0.269
MO-99		140.51		5.169E-05	1.035E-01	Half-Life	too short	
		181.07		5.818E-05	1.035E-01	Half-Life	too short	
		366.42		3.215E-04	1.035E-01	Half-Life	too short	
		739.50	*	-8.882E-05	1.035E-01	Half-Life	too short	
		777.92		-1.691E-04	1.035E-01	Half-Life	too short	
TC-99M		140.51	*	3.154E+19	1.035E-01	Half-Life	too short	
RU-103		497.08	*	-1.332E-02	5.406E-02	8.591E-02	1.287E-02	-0.155
	+	610.33		1.712E+01	3.673E+00	4.132E+00	7.296E-01	4.143
RH-106		621.93	*	-8.069E-02	3.928E-01	6.498E-01	9.668E-02	-0.124
		1050.41		-1.294E+00	3.197E+00	5.138E+00	4.620E-01	-0.252
RU-106		621.93	*	-8.069E-02	3.927E-01	6.498E-01	7.116E-02	-0.124
		1050.41		-1.294E+00	3.197E+00	5.138E+00	4.620E-01	-0.252
AG-108M		433.94	*	-1.784E-02	3.410E-02	5.375E-02	5.281E-03	-0.332
		614.28		-3.017E-02	4.577E-02	6.170E-02	6.876E-03	-0.489
		722.91		-6.204E-03	5.471E-02	7.775E-02	8.649E-03	-0.080
AG-110M		657.76	*	8.994E-03	5.332E-02	7.901E-02	8.903E-03	0.114
		677.62		-9.102E-03	4.077E-01	6.793E-01	7.638E-02	-0.013
		706.68		-3.268E-02	2.765E-01	4.554E-01	5.084E-02	-0.072
		763.94		-2.834E-01	2.331E-01	3.443E-01	3.748E-02	-0.823
		884.68		2.362E-02	6.164E-02	1.042E-01	1.030E-02	0.227
		937.49		-6.498E-02	1.580E-01	2.454E-01	2.376E-02	-0.265
		1384.29		-3.530E-02	2.109E-01	3.360E-01	2.833E-02	-0.105
		1505.03		-2.955E-01	3.816E-01	5.391E-01	4.470E-02	-0.548
SN-113		391.69	*	4.058E-03	5.411E-02	9.014E-02	8.419E-03	0.045
CD-115		260.90		-4.970E-05	5.411E-02	Half-Life	too short	
		492.35		4.570E-04	5.411E-02	Half-Life	too short	
		527.90	*	1.685E-05	5.411E-02	Half-Life	too short	
SN-117M		156.02		2.440E-01	3.194E+00	5.318E+00	5.303E-01	0.046
		158.56	*	-7.087E-03	7.357E-02	1.213E-01	1.178E-02	-0.058
TE-123M		159.00	*	1.177E-02	2.692E-02	4.555E-02	4.423E-03	0.258
SB-124		602.73		-2.157E-02	5.337E-02	8.202E-02	8.915E-03	-0.263
		645.85		3.077E-01	6.341E-01	1.103E+00	1.260E-01	0.279
		722.78		-8.507E-02	6.003E-01	8.501E-01	9.404E-02	-0.100
		1690.97	*	7.380E-02	1.092E-01	2.020E-01	1.751E-02	0.365
SB-125		427.87	*	1.593E-02	1.007E-01	1.676E-01	1.618E-02	0.095

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		9.608E-01	5.859E-01	6.722E-01	7.022E-02	1.429
		600.60		-6.709E-03	2.176E-01	3.663E-01	4.165E-02	-0.018
		635.95		-5.368E-03	3.201E-01	5.366E-01	6.202E-02	-0.010
TE-125M		109.28	*	4.103E+00	8.722E+00	1.508E+01	2.023E+00	0.272
I-126		388.63		1.241E-02	2.891E-01	4.809E-01	4.415E-02	0.026
		666.33	*	1.211E-01	4.574E-01	6.851E-01	7.584E-02	0.177
		753.82		2.148E+00	3.504E+00	6.076E+00	6.533E-01	0.354
SB-126		414.70		-6.254E-02	1.369E-01	2.184E-01	2.044E-02	-0.286
		666.50		3.451E-02	1.595E-01	2.377E-01	2.631E-02	0.145
		695.00		6.464E-02	1.538E-01	2.641E-01	2.906E-02	0.245
		697.00		1.874E-01	5.400E-01	9.217E-01	1.014E-01	0.203
		720.70	*	3.068E-02	3.218E-01	4.902E-01	5.350E-02	0.063
		856.80		7.720E-02	9.676E-01	1.382E+00	1.373E-01	0.056
SB-127		252.40		9.666E+00	1.983E+01	3.194E+01	1.366E+01	0.303
		473.00		6.986E+00	8.278E+00	1.421E+01	2.262E+00	0.492
		685.70	*	-4.123E+00	6.304E+00	9.834E+00	1.530E+00	-0.419
		783.70		2.567E+01	1.847E+01	3.316E+01	5.299E+00	0.774
I-131		80.19		4.124E+00	6.967E+00	9.122E+00	9.560E-01	0.452
		284.31		-3.109E+00	3.462E+00	5.097E+00	5.875E-01	-0.610
		364.49	*	1.911E-01	2.678E-01	4.645E-01	4.794E-02	0.411
		636.99		1.749E+00	3.561E+00	6.207E+00	7.108E-01	0.282
TE-132		49.72		1.229E+00	1.792E+01	2.678E+01	3.772E+00	0.046
		111.76		3.051E+01	1.544E+02	2.585E+02	4.134E+01	0.118
		116.30		6.246E+01	1.318E+02	2.269E+02	3.683E+01	0.275
		228.16	*	-1.500E+00	4.515E+00	7.136E+00	1.320E+00	-0.210
BA-133		81.00		-4.176E-02	7.791E-02	9.373E-02	1.554E-02	-0.446
		276.40		4.743E-01	4.156E-01	6.930E-01	1.092E-01	0.684
		302.85		-1.131E-01	1.641E-01	2.301E-01	3.386E-02	-0.491
		356.01	*	5.936E-04	5.153E-02	7.589E-02	1.058E-02	0.008
		383.85		-1.188E-01	3.309E-01	5.355E-01	6.921E-02	-0.222
I-133		529.87	*	-4.403E+00	3.309E-01	Half-Life	too short	
		875.33		-6.261E+01	3.309E-01	Half-Life	too short	
		1298.22		-1.497E+02	3.309E-01	Half-Life	too short	
CS-134		563.25		-2.897E-03	4.601E-01	7.380E-01	7.916E-02	-0.004
		569.33		6.411E-02	2.628E-01	4.293E-01	4.632E-02	0.149
		604.72		-1.568E-02	4.346E-02	6.122E-02	6.670E-03	-0.256
		795.86	*	7.639E-02	6.107E-02	1.097E-01	1.155E-02	0.696
		801.95		-2.875E-01	4.801E-01	7.505E-01	7.857E-02	-0.383
		1365.19		-4.011E-01	1.439E+00	2.248E+00	1.930E-01	-0.178
CS-135		268.22	*	1.160E-01	1.901E-01	2.816E-01	3.399E-02	0.412
I-135		546.56		7.680E+18	1.901E-01	Half-Life	too short	
		836.80		1.130E+19	1.901E-01	Half-Life	too short	
		1038.76		-1.008E+19	1.901E-01	Half-Life	too short	
		1131.51		-2.778E+17	1.901E-01	Half-Life	too short	
		1260.41	*	4.132E+17	1.901E-01	Half-Life	too short	
		1457.56		3.101E+20	1.901E-01	Half-Life	too short	
		1678.03		4.924E+17	1.901E-01	Half-Life	too short	
		1791.20		-2.378E+18	1.901E-01	Half-Life	too short	
CS-136		153.25		-2.067E-01	1.260E+00	2.028E+00	2.368E-01	-0.102

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	176.60			-3.961E-02	7.502E-01	1.230E+00	1.231E-01	-0.032
	273.65			-4.683E-01	9.305E-01	1.252E+00	1.460E-01	-0.374
	340.55			4.151E-01	2.687E-01	4.388E-01	4.678E-02	0.946
	818.51			5.996E-02	1.373E-01	2.345E-01	2.417E-02	0.256
	1048.07	*		1.599E-02	2.098E-01	3.539E-01	3.312E-02	0.045
	1235.36			1.017E+00	1.316E+00	2.028E+00	2.329E-01	0.501
CE-139	165.86	*		-3.274E-02	3.041E-02	4.733E-02	4.220E-03	-0.692
BA-140	162.66			8.494E-01	1.175E+00	2.007E+00	1.970E-01	0.423
	304.85			-7.954E-01	2.260E+00	3.443E+00	1.034E+00	-0.231
	423.72			1.110E+00	3.374E+00	5.655E+00	1.873E+00	0.196
	537.26	*		-1.606E-01	4.894E-01	7.609E-01	2.620E-01	-0.211
LA-140	328.76	+		1.403E+00	7.869E-01	1.005E+00	1.105E-01	1.396
	487.02			-1.409E-01	2.720E-01	4.245E-01	4.479E-02	-0.332
	815.77			1.668E-01	5.616E-01	9.497E-01	1.061E-01	0.176
	1596.21	*		-5.228E-02	1.653E-01	2.626E-01	2.184E-02	-0.199
CE-141	145.44	*		-6.500E-02	7.994E-02	1.124E-01	1.250E-02	-0.578
CE-143	57.36			-8.440E-04	7.994E-02	Half-Life	too short	
	293.27	*		2.391E-02	7.994E-02	Half-Life	too short	
	664.57			3.157E-01	7.994E-02	Half-Life	too short	
	721.93			-4.937E-02	7.994E-02	Half-Life	too short	
CE-144	80.12			-4.746E-01	2.059E+00	2.547E+00	2.641E-01	-0.186
	133.52	*		-6.421E-02	1.844E-01	3.039E-01	5.297E-02	-0.211
PM-144	476.78			2.374E-02	8.363E-02	1.390E-01	1.481E-02	0.171
	618.01			2.289E-02	3.734E-02	6.572E-02	7.313E-03	0.348
	696.49	*		2.446E-02	4.460E-02	7.719E-02	8.496E-03	0.317
PR-144	696.51	*		1.832E+00	3.351E+00	5.800E+00	6.380E-01	0.316
	1489.16			6.215E+00	1.569E+01	2.706E+01	2.241E+00	0.230
PM-146	453.88	*		1.003E-02	5.159E-02	8.560E-02	9.892E-03	0.117
	633.25			-3.735E-01	1.611E+00	2.640E+00	1.024E+00	-0.142
	735.93			1.173E-01	1.994E-01	3.408E-01	9.810E-02	0.344
	747.24			-3.474E-02	1.170E-01	1.881E-01	3.002E-02	-0.185
ND-147	91.11	+		1.660E+00	4.338E-01	6.298E-01	7.232E-02	2.635
	319.41			-5.063E-01	5.830E+00	9.774E+00	1.050E+00	-0.052
	531.02	*		4.151E-02	1.077E+00	1.744E+00	2.803E-01	0.024
PM-149	285.90	*		6.835E-05	1.077E+00	Half-Life	too short	
EU-152	121.78			1.700E-02	6.238E-02	1.065E-01	1.465E-02	0.160
	244.70			-8.934E-02	3.601E-01	5.026E-01	5.316E-02	-0.178
	344.28	*		-1.482E-02	1.024E-01	1.642E-01	1.763E-02	-0.090
	778.90			-4.823E-02	3.302E-01	5.369E-01	5.690E-02	-0.090
	964.08	+		9.908E-01	4.384E-01	6.117E-01	5.706E-02	1.620
	1085.87			6.679E-02	4.564E-01	7.734E-01	6.810E-02	0.086
	1112.07			3.243E-01	4.026E-01	6.625E-01	5.731E-02	0.489
	1408.01			1.034E-01	2.284E-01	3.943E-01	3.240E-02	0.262
GD-153	69.67			-4.737E-01	1.023E+00	1.451E+00	1.450E-01	-0.327
	97.43	*		-7.195E-02	7.452E-02	1.072E-01	1.207E-02	-0.671
	103.18			-6.684E-02	9.361E-02	1.546E-01	1.795E-02	-0.432
EU-154	123.07			1.845E-02	4.483E-02	7.682E-02	1.137E-02	0.240
	723.31			-6.788E-02	2.510E-01	3.500E-01	4.062E-02	-0.194
	873.19			2.725E-01	3.638E-01	6.328E-01	8.065E-02	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	+	996.26		-3.222E-01	4.292E-01	6.212E-01	1.104E-01	-0.519
		1004.73		6.723E-02	2.606E-01	4.306E-01	5.195E-02	0.156
		1274.44	*	8.476E-03	1.466E-01	2.426E-01	2.682E-02	0.035
		86.55		5.799E-01	1.162E-01	1.521E-01	1.634E-02	3.813
		105.31	*	1.060E-01	8.963E-02	1.580E-01	1.867E-02	0.671
TB-160	+	86.79		1.653E+00	3.308E-01	4.466E-01	4.771E-02	3.703
		197.04		-2.626E-01	6.337E-01	1.011E+00	9.721E-02	-0.260
		215.65		6.242E-01	8.679E-01	1.428E+00	1.430E-01	0.437
		298.57		3.457E-02	1.981E-01	2.214E-01	2.436E-02	0.156
		879.36	*	4.809E-02	1.921E-01	3.205E-01	3.106E-02	0.150
HO-166M	+	962.29		5.876E-02	8.110E-01	1.140E+00	1.064E-01	0.052
		966.15		7.454E-01	3.298E-01	6.411E-01	5.976E-02	1.163
		1177.93		4.068E-02	5.259E-01	8.772E-01	7.220E-02	0.046
		1271.85		7.229E-01	8.515E-01	1.536E+00	1.259E-01	0.471
		80.57		1.700E-01	2.017E-01	2.686E-01	2.791E-02	0.633
TA-182	+	184.41		3.747E-02	4.338E-02	6.925E-02	6.464E-03	0.541
		280.46		-9.101E-02	9.980E-02	1.481E-01	1.651E-02	-0.615
		410.95		3.043E-01	3.080E-01	5.366E-01	4.999E-02	0.567
		711.68	*	-4.245E-03	7.734E-02	1.279E-01	1.401E-02	-0.033
		752.31		-1.694E-01	3.467E-01	5.475E-01	5.892E-02	-0.309
IR-192	+	810.29		-1.412E-02	6.907E-02	1.110E-01	1.150E-02	-0.127
		67.75		-5.960E-03	5.916E-02	9.295E-02	9.248E-03	-0.064
		100.11		7.709E-02	1.432E-01	2.494E-01	2.848E-02	0.309
		152.43		-3.540E-01	3.605E-01	5.544E-01	5.729E-02	-0.638
		222.11		2.164E-01	3.971E-01	6.592E-01	6.685E-02	0.328
HG-203	+	1121.30		1.274E+00	3.766E-01	5.251E-01	4.512E-02	2.426
		1189.05		-1.280E-01	4.210E-01	6.772E-01	5.574E-02	-0.189
		1221.41	*	-6.818E-02	2.552E-01	4.105E-01	3.376E-02	-0.166
		1231.02		4.622E-01	7.416E-01	1.132E+00	9.309E-02	0.408
		295.96		1.486E+00	2.665E-01	3.726E-01	4.128E-02	3.987
BI-207	+	308.46		7.764E-03	1.106E-01	1.877E-01	2.051E-02	0.041
		316.51	*	8.139E-03	4.115E-02	7.017E-02	7.580E-03	0.116
		468.07		-3.840E-02	9.683E-02	1.323E-01	1.385E-02	-0.290
		70.83		-9.398E-02	8.673E-01	1.252E+00	2.111E-01	-0.075
		72.87		4.480E-01	4.895E-01	7.911E-01	1.297E-01	0.566
PB-211	+	279.20	*	2.034E-03	5.014E-02	7.967E-02	9.027E-03	0.026
		72.81		7.338E-02	9.914E-02	1.605E-01	1.620E-02	0.457
		74.97		7.941E-01	1.175E-01	1.661E-01	1.688E-02	4.782
		569.70		1.207E-02	4.070E-02	6.674E-02	7.139E-03	0.181
		1063.66	*	-1.277E-03	6.321E-02	1.056E-01	9.421E-03	-0.012
RN-219	+	1770.23		-6.724E-02	5.906E-01	8.015E-01	6.599E-02	-0.084
		404.85	*	2.956E-01	8.638E-01	1.440E+00	6.983E-01	0.205
		427.09		-3.642E-01	1.702E+00	2.741E+00	1.273E+00	-0.133
		832.01		-1.121E+00	1.426E+00	1.957E+00	1.021E+00	-0.572
		727.33	*	2.299E+00	9.159E-01	1.502E+00	2.121E-01	1.530
RN-219	+	785.37		1.797E+00	3.976E+00	6.793E+00	7.168E-01	0.265
		1620.50		4.981E+00	3.438E+00	6.731E+00	5.594E-01	0.740
		271.23		5.651E-01	4.366E-01	4.864E-01	6.010E-02	1.162
		401.81	*	-1.389E-01	2.656E-01	7.537E-01	1.147E-01	-0.184

---- 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		-9.713E-02	1.760E-01	2.119E-01	2.207E-02	-0.458
		83.79		2.672E-01	9.517E-02	1.572E-01	1.656E-02	1.700
		94.87		-3.920E-02	3.273E-01	5.584E-01	6.206E-02	-0.070
	+	144.24		7.779E-01	7.581E-01	1.129E+00	1.344E-01	0.689
		154.21		2.669E-01	3.829E-01	6.390E-01	6.943E-02	0.418
	+	269.46		4.391E-01	3.385E-01	3.681E-01	4.101E-02	1.193
AC-227		323.87	*	3.824E-01	7.808E-01	1.201E+00	2.214E-01	0.318
	+	338.28		8.092E+00	2.150E+00	2.892E+00	3.880E-01	2.798
		79.69		-4.440E-01	8.735E-01	1.217E+00	2.211E-01	-0.365
		235.96		4.731E-02	1.762E-01	2.570E-01	3.053E-02	0.184
		256.23	*	-1.491E-01	2.833E-01	4.365E-01	5.972E-02	-0.342
	+	299.98		1.017E+00	1.249E+00	1.690E+00	2.437E-01	0.602
TH-227		304.50		-5.977E-02	1.824E+00	2.718E+00	4.851E-01	-0.022
		334.37		-7.706E-01	2.304E+00	3.076E+00	5.136E-01	-0.251
		79.80		-4.640E-01	1.321E+00	1.615E+00	3.638E-01	-0.287
		235.96		4.731E-02	1.762E-01	2.570E-01	2.923E-02	0.184
		256.23	*	-1.491E-01	2.835E-01	4.365E-01	6.577E-02	-0.342
	+	299.98		1.017E+00	1.249E+00	1.690E+00	2.437E-01	0.602
TH-229		304.50		-5.977E-02	1.824E+00	2.718E+00	4.851E-01	-0.022
		334.37		-7.706E-01	2.304E+00	3.076E+00	5.136E-01	-0.251
		85.43		3.919E-01	1.541E-01	2.547E-01	2.704E-02	1.539
	+	88.47		7.350E-01	1.470E-01	1.829E-01	1.969E-02	4.019
		193.51	*	-2.297E-01	5.416E-01	8.645E-01	8.245E-02	-0.266
		210.85		7.569E-01	1.020E+00	1.547E+00	1.533E-01	0.489
PA-231		283.69	*	-9.359E-01	1.700E+00	2.569E+00	4.161E-01	-0.364
	+	301.36		6.534E-01	8.021E-01	1.106E+00	1.539E-01	0.591
TH-231		81.07		-9.713E-02	1.760E-01	2.119E-01	2.207E-02	-0.458
		83.79		2.672E-01	9.517E-02	1.572E-01	1.656E-02	1.700
		94.87		-3.920E-02	3.273E-01	5.584E-01	6.206E-02	-0.070
	+	144.24		7.779E-01	7.581E-01	1.129E+00	1.344E-01	0.689
		154.21		2.669E-01	3.829E-01	6.390E-01	6.943E-02	0.418
	+	269.46		4.391E-01	3.385E-01	3.681E-01	4.101E-02	1.193
PA-233		323.87	*	3.824E-01	7.808E-01	1.201E+00	2.214E-01	0.318
	+	338.28		8.092E+00	2.150E+00	2.892E+00	3.880E-01	2.798
	+	300.13		4.602E-01	5.664E-01	7.652E-01	1.249E-01	0.601
		311.90	*	-3.570E-02	7.114E-02	1.165E-01	1.287E-02	-0.306
		340.48		1.351E+00	8.285E-01	1.271E+00	3.146E-01	1.063
		94.67		6.857E-02	1.224E-01	2.132E-01	3.036E-02	0.322
PA-234		98.44		3.820E-02	7.990E-02	1.204E-01	6.774E-02	0.317
		111.00		5.588E-02	1.515E-01	2.608E-01	3.856E-02	0.214
		131.20		4.562E-02	1.021E-01	1.580E-01	1.929E-02	0.289
		569.50		9.664E-02	3.603E-01	5.896E-01	6.307E-02	0.164
		733.00		5.584E-02	5.293E-01	8.356E-01	1.935E-01	0.067
		880.51		-8.779E-03	3.638E-01	5.910E-01	5.719E-02	-0.015
		883.24		3.040E-02	3.585E-01	5.878E-01	3.959E-01	0.052
		926.50		-8.682E-02	2.203E-01	3.398E-01	8.687E-02	-0.255
		946.00	*	1.861E-01	4.042E-01	6.805E-01	1.301E-01	0.273
		949.00		1.660E-02	5.990E-01	9.709E-01	9.097E-02	0.017
		766.42		2.484E+01	2.028E+01	2.894E+01	1.480E+01	0.858
PA-234M		766.42		2.484E+01	2.028E+01	2.894E+01	1.480E+01	0.858

---- 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	*		1.977E+00	5.942E+00	9.610E+00	1.007E+00	0.206
	99.53			8.430E-02	1.287E-01	2.210E-01	2.516E-02	0.382
	103.37			1.645E-02	8.086E-02	1.389E-01	1.615E-02	0.118
	106.12			5.241E-02	7.050E-02	1.230E-01	1.451E-02	0.426
	117.23	*		-3.241E-01	3.430E-01	5.519E-01	6.923E-02	-0.587
	228.18			-7.891E-02	2.446E-01	3.873E-01	3.975E-02	-0.204
AM-241	277.60			3.246E-01	2.065E-01	3.523E-01	3.924E-02	0.921
	59.54	*		2.277E-02	5.750E-02	8.557E-02	8.891E-03	0.266
	278.00			1.253E+00	8.811E-01	1.495E+00	1.666E-01	0.838
CM-247	287.50			1.208E+00	1.474E+00	2.439E+00	2.708E-01	0.496
	402.40	*		-2.793E-02	4.407E-02	6.968E-02	6.422E-03	-0.401
	252.80			5.692E-01	1.044E+00	1.722E+00	1.846E-01	0.331
CF-249	333.37			2.759E-01	2.754E-01	3.406E-01	3.581E-02	0.810
	388.16	*		1.364E-02	4.560E-02	7.710E-02	7.090E-03	0.177
	177.52	*		5.652E-02	1.253E-01	2.105E-01	1.932E-02	0.269
CF-251	227.38			1.033E-01	3.977E-01	6.499E-01	6.659E-02	0.159
	285.41			-1.101E+00	2.588E+00	3.978E+00	4.423E-01	-0.277

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]G248243010      *
* Acquisition date   : 19-MAR-2010 10:57:29 Detector SN#                   *
* Detector ID        : GAM25 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.81 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248243010 Analyst initials: MXR1                  *
* Batch Number      : 959280 Sample Quantity : 1.0203E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 7-OCT-2009 09:38:43 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.821E+01	3.037E+00	5.113E-01	0.000E+00
CD-109	4.935E+00	9.675E-01	8.509E-01	0.000E+00
SN-126	4.767E-01	9.347E-02	8.203E-02	0.000E+00
BA-137M	7.092E-01	1.257E-01	7.914E-02	0.000E+00
CS-137	7.492E-01	1.329E-01	8.361E-02	0.000E+00
TL-208	4.994E-01	1.097E-01	6.981E-02	0.000E+00
PB-210	2.678E+00	8.042E-01	6.747E-01	0.000E+00
BI-211	5.028E+00	7.374E-01	3.717E-01	0.000E+00
PB-212	1.986E+00	2.572E-01	9.406E-02	0.000E+00
BI-214	1.444E+00	2.433E-01	1.298E-01	0.000E+00
PB-214	1.825E+00	2.852E-01	1.352E-01	0.000E+00
RA-224	5.494E+00	1.400E+00	1.009E+00	0.000E+00
RA-226	1.444E+00	2.433E-01	1.298E-01	0.000E+00
AC-228	2.147E+00	4.800E-01	2.611E-01	0.000E+00
RA-228	2.147E+00	4.800E-01	2.611E-01	0.000E+00
TH-228	1.986E+00	2.572E-01	9.406E-02	0.000E+00
TH-232	2.147E+00	4.800E-01	2.611E-01	0.000E+00
TH-234	1.638E+00	9.397E-01	8.792E-01	0.000E+00
U-235	2.321E-01	2.239E-01	3.022E-01	0.000E+00
NP-237	1.423E+00	4.040E-01	2.436E-01	0.000E+00
U-238	1.638E+00	9.397E-01	8.792E-01	0.000E+00
ANH-511	1.762E-01	8.288E-02	5.695E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.515E-01	4.516E-01	7.167E-01	0.000E+00 NOT IDENT.
NA-22	-2.750E-02	5.417E-02	8.511E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.508E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-4.178E-02	4.737E-02	6.988E-02	0.000E+00 FAIL ABUN
V-48	-1.640E-02	1.184E-01	1.903E-01	0.000E+00 NOT IDENT.

CR-51	-2.058E-01	4.814E-01	8.044E-01	0.000E+00	NOT IDENT.
MN-54	-1.375E-02	4.906E-02	7.945E-02	0.000E+00	NOT IDENT.
CO-56	-1.955E-02	4.954E-02	7.875E-02	0.000E+00	FAIL ABUN
CO-57	-9.511E-04	2.196E-02	3.777E-02	0.000E+00	NOT IDENT.
CO-58	-3.479E-03	4.768E-02	7.880E-02	0.000E+00	NOT IDENT.
FE-59	-7.021E-02	1.246E-01	1.986E-01	0.000E+00	NOT IDENT.
CO-60	3.666E-02	4.978E-02	8.943E-02	0.000E+00	NOT IDENT.
ZN-65	1.250E-02	1.278E-01	1.882E-01	0.000E+00	NOT IDENT.
SE-75	-1.717E-02	5.322E-02	8.010E-02	0.000E+00	NOT IDENT.
SR-85	2.835E-02	5.145E-02	7.824E-02	0.000E+00	NOT IDENT.
Y-88	1.654E-02	3.805E-02	6.871E-02	0.000E+00	NOT IDENT.
Y-91	-2.495E+00	3.092E+01	5.141E+01	0.000E+00	NOT IDENT.
NB-94	-9.202E-03	4.203E-02	6.974E-02	0.000E+00	NOT IDENT.
NB-95	3.634E-02	6.382E-02	1.109E-01	0.000E+00	NOT IDENT.
NB-95M	-1.875E-04	1.541E-01	2.248E-01	0.000E+00	NOT IDENT.
ZR-95	4.770E-02	1.015E-01	1.763E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.143E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.004E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.332E-02	5.298E-02	8.555E-02	0.000E+00	FAIL ABUN
RH-106	-8.069E-02	3.850E-01	6.466E-01	0.000E+00	NOT IDENT.
RU-106	-8.069E-02	3.849E-01	6.466E-01	0.000E+00	NOT IDENT.
AG-108M	-1.784E-02	3.342E-02	5.355E-02	0.000E+00	NOT IDENT.
AG-110M	8.994E-03	5.226E-02	7.860E-02	0.000E+00	NOT IDENT.
SN-113	4.058E-03	5.303E-02	8.984E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.606E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-7.087E-03	7.210E-02	1.213E-01	0.000E+00	NOT IDENT.
TE-123M	1.177E-02	2.639E-02	4.554E-02	0.000E+00	NOT IDENT.
SB-124	7.380E-02	1.070E-01	2.003E-01	0.000E+00	NOT IDENT.
SB-125	1.593E-02	9.865E-02	1.669E-01	0.000E+00	FAIL ABUN
TE-125M	4.103E+00	8.548E+00	1.509E+01	0.000E+00	NOT IDENT.
I-126	1.211E-01	4.483E-01	6.815E-01	0.000E+00	NOT IDENT.
SB-126	3.068E-02	3.154E-01	4.875E-01	0.000E+00	NOT IDENT.
SB-127	-4.123E+00	6.178E+00	9.781E+00	0.000E+00	NOT IDENT.
I-131	1.911E-01	2.624E-01	4.631E-01	0.000E+00	NOT IDENT.
TE-132	-1.500E+00	4.425E+00	7.125E+00	0.000E+00	NOT IDENT.
BA-133	5.936E-04	5.050E-02	7.566E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.988E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.639E-02	5.985E-02	1.091E-01	0.000E+00	NOT IDENT.
CS-135	1.160E-01	1.863E-01	2.811E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.883E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.599E-02	2.056E-01	3.514E-01	0.000E+00	NOT IDENT.
CE-139	-3.274E-02	2.981E-02	4.731E-02	0.000E+00	NOT IDENT.
BA-140	-1.606E-01	4.796E-01	7.575E-01	0.000E+00	NOT IDENT.
LA-140	-5.228E-02	1.620E-01	2.604E-01	0.000E+00	FAIL ABUN
CE-141	-6.500E-02	7.834E-02	1.124E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.053E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.421E-02	1.807E-01	3.040E-01	0.000E+00	NOT IDENT.
PM-144	2.446E-02	4.370E-02	7.678E-02	0.000E+00	NOT IDENT.
PR-144	1.832E+00	3.284E+00	5.768E+00	0.000E+00	NOT IDENT.
PM-146	1.003E-02	5.056E-02	8.527E-02	0.000E+00	NOT IDENT.
ND-147	4.151E-02	1.055E+00	1.736E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.240E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.482E-02	1.004E-01	1.638E-01	0.000E+00	FAIL ABUN
GD-153	-7.195E-02	7.303E-02	1.073E-01	0.000E+00	NOT IDENT.
EU-154	8.476E-03	1.436E-01	2.407E-01	0.000E+00	NOT IDENT.
EU-155	1.060E-01	8.784E-02	1.582E-01	0.000E+00	FAIL ABUN
TB-160	4.809E-02	1.882E-01	3.185E-01	0.000E+00	FAIL ABUN
HO-166M	-4.245E-03	7.580E-02	1.272E-01	0.000E+00	NOT IDENT.
TA-182	-6.818E-02	2.501E-01	4.075E-01	0.000E+00	FAIL ABUN
IR-192	8.139E-03	4.033E-02	6.999E-02	0.000E+00	FAIL ABUN
HG-203	2.034E-03	4.914E-02	7.949E-02	0.000E+00	NOT IDENT.
BI-207	-1.277E-03	6.195E-02	1.048E-01	0.000E+00	FAIL ABUN
PB-211	2.956E-01	8.466E-01	1.435E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.976E-01	1.494E+00	0.000E+00	FAIL ABUN
RN-219	-1.389E-01	4.563E-01	7.511E-01	0.000E+00	FAIL ABUN
RA-223	3.824E-01	7.652E-01	1.197E+00	0.000E+00	FAIL ABUN
AC-227	-1.491E-01	2.777E-01	4.356E-01	0.000E+00	FAIL ABUN
TH-227	-1.491E-01	2.778E-01	4.356E-01	0.000E+00	FAIL ABUN
TH-229	-2.297E-01	5.308E-01	8.638E-01	0.000E+00	FAIL ABUN
PA-231	-9.359E-01	1.666E+00	2.564E+00	0.000E+00	FAIL ABUN
TH-231	3.824E-01	7.652E-01	1.197E+00	0.000E+00	FAIL ABUN
PA-233	-3.570E-02	6.971E-02	1.162E-01	0.000E+00	FAIL ABUN
PA-234	1.861E-01	3.961E-01	6.761E-01	0.000E+00	NOT IDENT.
PA-234M	1.977E+00	5.823E+00	9.545E+00	0.000E+00	NOT IDENT.
NP-239	-3.241E-01	3.362E-01	5.524E-01	0.000E+00	NOT IDENT.
AM-241	2.277E-02	5.635E-02	8.585E-02	0.000E+00	NOT IDENT.
CM-247	-2.793E-02	4.319E-02	6.944E-02	0.000E+00	NOT IDENT.
CF-249	1.364E-02	4.469E-02	7.684E-02	0.000E+00	NOT IDENT.

CF-251	5.652E-02	1.228E-01	2.103E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:58:56.24

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248243010.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:57:29
Sample ID          : G248243010 Sample quantity : 1.02030E+02 GRAM
Detector name      : GAM25 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 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	906	10.66*	1.108E+00	2.821E+01	2.821E+01	10.98
CD-109	88.03	451	3.70*	9.404E+00	4.767E+00	4.935E+00	20.01
SN-126	64.28	161	9.60	9.779E+00	6.313E-01	6.313E-01	57.62
	86.94	451	8.90	9.404E+00	1.982E+00	1.982E+00	45.13
	87.57	451	37.00*	9.404E+00	4.767E-01	4.767E-01	20.01
BA-137M	661.66	386	89.90*	2.231E+00	7.082E-01	7.092E-01	18.09
CS-137	661.66	386	85.10*	2.231E+00	7.481E-01	7.492E-01	18.10
TL-208	277.37	-----	6.60	4.738E+00	-----	Line Not Found	-----
	583.19	288	85.00*	2.496E+00	4.994E-01	4.994E-01	22.42
	860.56	-----	12.50	1.765E+00	-----	Line Not Found	-----
PB-210	46.54	284	4.25*	9.195E+00	2.673E+00	2.678E+00	30.64
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	686	12.92*	3.886E+00	5.028E+00	5.028E+00	14.96
PB-212	74.82	746	10.28	9.693E+00	2.754E+00	2.754E+00	17.71
	77.11	1164	17.10	9.652E+00	2.594E+00	2.594E+00	12.87
	238.63	1257	43.60*	5.339E+00	1.986E+00	1.986E+00	13.22
	300.09	37	3.30	4.438E+00	9.247E-01	9.247E-01	122.61
BI-214	609.32	429	45.49*	2.401E+00	1.444E+00	1.444E+00	17.19
	1120.29	147	14.92	1.398E+00	2.592E+00	2.592E+00	30.32
	1764.49	77	15.30	9.413E-01	1.969E+00	1.969E+00	27.64
PB-214	74.82	746	5.80	9.693E+00	4.881E+00	4.881E+00	16.79
	77.11	1164	9.70	9.652E+00	4.573E+00	4.573E+00	15.29
	242.00	324	7.25	5.287E+00	3.107E+00	3.107E+00	26.64
	295.22	421	18.42	4.503E+00	1.867E+00	1.867E+00	19.05
	351.93	686	35.60*	3.886E+00	1.825E+00	1.825E+00	15.95
RA-224	240.99	324	4.10*	5.287E+00	5.494E+00	5.494E+00	26.00
RA-226	609.32	429	45.49*	2.401E+00	1.444E+00	1.444E+00	17.19
	1120.29	147	14.92	1.398E+00	2.592E+00	2.592E+00	30.32
	1764.49	77	15.30	9.413E-01	1.969E+00	1.969E+00	27.64
AC-228	338.32	251	11.27	4.018E+00	2.039E+00	2.039E+00	47.97
	911.20	253	25.80*	1.678E+00	2.147E+00	2.147E+00	22.81
	968.97	145	15.80	1.589E+00	2.132E+00	2.132E+00	33.85

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	251	11.27	4.018E+00	2.039E+00	2.039E+00	47.97
	911.20	253	25.80*	1.678E+00	2.147E+00	2.147E+00	22.81
	968.97	145	15.80	1.589E+00	2.132E+00	2.132E+00	33.85
TH-228	74.82	746	10.28	9.693E+00	2.754E+00	2.754E+00	14.85
	77.11	1164	17.10	9.652E+00	2.594E+00	2.594E+00	12.87
	238.63	1257	43.60*	5.339E+00	1.986E+00	1.986E+00	13.22
	300.09	37	3.30	4.438E+00	9.247E-01	9.247E-01	136.64
TH-232	338.32	251	11.27	4.018E+00	2.039E+00	2.039E+00	25.19
	911.20	253	25.80*	1.678E+00	2.147E+00	2.147E+00	22.81
	968.97	145	15.80	1.589E+00	2.132E+00	2.132E+00	33.85
TH-234	63.29	161	3.70*	9.779E+00	1.638E+00	1.638E+00	58.54
	92.59	413	4.23	9.242E+00	3.884E+00	3.884E+00	30.17
U-235	89.96	275	3.47	9.328E+00	3.124E+00	3.124E+00	34.67
	93.35	413	5.60	9.242E+00	2.934E+00	2.934E+00	30.92
	143.76	52	10.96*	7.571E+00	2.321E-01	2.321E-01	98.45
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
	185.72	250	57.20	6.416E+00	2.506E-01	2.506E-01	33.25
	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
NP-237	86.48	451	12.40*	9.404E+00	1.423E+00	1.423E+00	28.98
	95.86	-----	2.68	9.143E+00	-----	Line Not Found	-----
U-238	63.29	161	3.70*	9.779E+00	1.638E+00	1.638E+00	58.54
	92.59	413	4.23	9.242E+00	3.884E+00	3.884E+00	22.29
ANH-511	511.00	135	100.00*	2.808E+00	1.762E-01	1.762E-01	47.99

Flag: "*" = Keyline

Total number of lines in spectrum 34
Number of unidentified lines 4
Number of lines tentatively identified by NID 30 88.24%

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	2.821E+01	2.821E+01	0.310E+01	10.98	
CD-109	461.40D	1.04	4.767E+00	4.935E+00	0.987E+00	20.01	
SN-126	2.30E+05Y	1.00	4.767E-01	4.767E-01	0.954E-01	20.01	
BA-137M	30.08Y	1.00	7.082E-01	7.092E-01	1.283E-01	18.09	
CS-137	30.08Y	1.00	7.481E-01	7.492E-01	1.356E-01	18.10	
TL-208	1.41E+10Y	1.00	4.994E-01	4.994E-01	1.120E-01	22.42	
PB-210	22.20Y	1.00	2.673E+00	2.678E+00	0.821E+00	30.64	
BI-211	7.04E+08Y	1.00	5.028E+00	5.028E+00	0.752E+00	14.96	
PB-212	1.41E+10Y	1.00	1.986E+00	1.986E+00	0.262E+00	13.22	
BI-214	1600.00Y	1.00	1.444E+00	1.444E+00	0.248E+00	17.19	
PB-214	1600.00Y	1.00	1.825E+00	1.825E+00	0.291E+00	15.95	
RA-224	1.41E+10Y	1.00	5.494E+00	5.494E+00	1.429E+00	26.00	
RA-226	1600.00Y	1.00	1.444E+00	1.444E+00	0.248E+00	17.19	
AC-228	1.41E+10Y	1.00	2.147E+00	2.147E+00	0.490E+00	22.81	
RA-228	1.41E+10Y	1.00	2.147E+00	2.147E+00	0.490E+00	22.81	
TH-228	1.41E+10Y	1.00	1.986E+00	1.986E+00	0.262E+00	13.22	
TH-232	1.41E+10Y	1.00	2.147E+00	2.147E+00	0.490E+00	22.81	
TH-234	4.47E+09Y	1.00	1.638E+00	1.638E+00	0.959E+00	58.54	
U-235	7.04E+08Y	1.00	2.321E-01	2.321E-01	2.285E-01	98.45	
NP-237	2.14E+06Y	1.00	1.423E+00	1.423E+00	0.412E+00	28.98	
U-238	4.47E+09Y	1.00	1.638E+00	1.638E+00	0.959E+00	58.54	
ANH-511	1.00E+09Y	1.00	1.762E-01	1.762E-01	0.846E-01	47.99	

Total Activity : 6.884E+01 6.902E+01

Grand Total Activity : 6.884E+01 6.902E+01

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

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

Unidentified Energy Lines
Sample ID : G248243010

Page : 4
Acquisition date : 19-MAR-2010 10:57:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.98	63	274	1.01	257.51	254	7	8.80E-03	90.3	8.04E+00	
0	209.17	125	242	0.72	417.87	413	9	1.74E-02	48.3	5.90E+00	
0	270.67	80	227	1.73	540.86	535	11	1.11E-02	76.3	4.83E+00	T
0	328.26	91	153	1.24	656.03	652	10	1.27E-02	55.0	4.12E+00	T
0	463.27	83	128	1.27	926.04	921	13	1.15E-02	60.1	3.06E+00	T
0	727.21	85	52	1.25	1453.91	1449	9	1.19E-02	37.3	2.05E+00	T
0	862.17	99	56	2.85	1723.83	1713	23	1.37E-02	44.7	1.76E+00	
1	964.80	63	40	1.97	1929.08	1922	27	8.71E-03	43.3	1.59E+00	T
0	1239.15	84	53	4.14	2477.80	2469	22	1.16E-02	50.7	1.28E+00	T
0	1847.04	18	3	0.71	3693.68	3686	14	2.44E-03	65.5	9.05E-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]G248243010.CNF;1
* Acquisition date   : 19-MAR-2010 10:57:29   Detector SN#      :
* Detector ID        : GAM25                   Sensitivity         : 5.00000
* Geometry           : CAN                     Energy tolerance    : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:01.81           Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library     : SOLID
* Sample ID          : G248243010             Analyst initials    : MXR1
* Batch Number       : 959280                 Sample Quantity     : 1.02030E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43.34MS Isotope      :
* MSD ID             :                          MSD Isotope    :
* LCS ID             : 1032-A                   LCS Isotope         :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.821E+01	3.099E+00	5.155E-01	4.390E-02	54.734
CD-109	4.935E+00	9.873E-01	8.493E-01	9.126E-02	5.811
SN-126	4.767E-01	9.537E-02	8.187E-02	8.779E-03	5.823
BA-137M	7.092E-01	1.283E-01	7.956E-02	8.813E-03	8.914
CS-137	7.492E-01	1.356E-01	8.405E-02	9.321E-03	8.914
TL-208	4.994E-01	1.120E-01	7.014E-02	7.901E-03	7.120
PB-210	2.678E+00	8.206E-01	6.719E-01	6.881E-02	3.986
BI-211	5.028E+00	7.525E-01	3.728E-01	3.929E-02	13.487
PB-212	1.986E+00	2.625E-01	9.421E-02	1.076E-02	21.080
BI-214	1.444E+00	2.482E-01	1.305E-01	1.580E-02	11.069
PB-214	1.825E+00	2.911E-01	1.357E-01	1.611E-02	13.453
RA-224	5.494E+00	1.429E+00	1.011E+00	1.063E-01	5.433
RA-226	1.444E+00	2.482E-01	1.305E-01	1.580E-02	11.069
AC-228	2.147E+00	4.898E-01	2.627E-01	3.212E-02	8.171
RA-228	2.147E+00	4.898E-01	2.627E-01	3.212E-02	8.171
TH-228	1.986E+00	2.625E-01	9.421E-02	1.076E-02	21.080
TH-232	2.147E+00	4.898E-01	2.627E-01	3.212E-02	8.171
TH-234	1.638E+00	9.588E-01	8.765E-01	1.664E-01	1.869

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.321E-01	2.285E-01	3.021E-01	5.550E-02	0.768
NP-237	1.423E+00	4.123E-01	2.431E-01	5.719E-02	5.851
U-238	1.638E+00	9.588E-01	8.765E-01	1.664E-01	1.869
ANH-511	1.762E-01	8.457E-02	5.720E-02	5.888E-03	3.081

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.515E-01		4.609E-01	7.196E-01	7.617E-02	-0.350
NA-22	-2.750E-02		5.528E-02	8.576E-02	7.032E-03	-0.321
NA-24	6.462E+01		2.300E+03	Half-Life	too short	
SC-46	-4.178E-02		4.834E-02	7.033E-02	6.735E-03	-0.594
V-48	-1.640E-02		1.208E-01	1.916E-01	1.775E-02	-0.086
CR-51	-2.058E-01		4.912E-01	8.066E-01	8.952E-02	-0.255
MN-54	-1.375E-02		5.006E-02	7.993E-02	8.111E-03	-0.172
CO-56	-1.955E-02		5.055E-02	7.923E-02	7.950E-03	-0.247
CO-57	-9.511E-04		2.241E-02	3.774E-02	4.867E-03	-0.025
CO-58	-3.479E-03		4.865E-02	7.927E-02	8.225E-03	-0.044
FE-59	-7.021E-02		1.271E-01	2.000E-01	1.884E-02	-0.351
CO-60	3.666E-02		5.079E-02	9.013E-02	7.320E-03	0.407
ZN-65	1.250E-02		1.304E-01	1.895E-01	1.637E-02	0.066
SE-75	-1.717E-02		5.431E-02	8.026E-02	8.797E-03	-0.214
SR-85	2.835E-02		5.250E-02	7.858E-02	8.107E-03	0.361
Y-88	1.654E-02		3.883E-02	6.933E-02	5.666E-03	0.239
Y-91	-2.495E+00		3.155E+01	5.179E+01	4.262E+00	-0.048
NB-94	-9.202E-03		4.289E-02	7.012E-02	7.700E-03	-0.131
NB-95	3.634E-02		6.512E-02	1.116E-01	1.192E-02	0.326
NB-95M	-1.875E-04		1.573E-01	2.252E-01	2.585E-02	-0.001
ZR-95	4.770E-02		1.035E-01	1.773E-01	2.034E-02	0.269
MO-99	-8.882E-05		5.833E-05	Half-Life	too short	
TC-99M	3.154E+19		5.121E+19	Half-Life	too short	
RU-103	-1.332E-02		5.406E-02	8.591E-02	1.287E-02	-0.155
RH-106	-8.069E-02		3.928E-01	6.498E-01	9.668E-02	-0.124
RU-106	-8.069E-02		3.927E-01	6.498E-01	7.116E-02	-0.124
AG-108M	-1.784E-02		3.410E-02	5.375E-02	5.281E-03	-0.332
AG-110M	8.994E-03		5.332E-02	7.901E-02	8.903E-03	0.114
SN-113	4.058E-03		5.411E-02	9.014E-02	8.419E-03	0.045
CD-115	1.685E-05		8.195E-05	Half-Life	too short	
SN-117M	-7.087E-03		7.357E-02	1.213E-01	1.178E-02	-0.058
TE-123M	1.177E-02		2.692E-02	4.555E-02	4.423E-03	0.258
SB-124	7.380E-02		1.092E-01	2.020E-01	1.751E-02	0.365
SB-125	1.593E-02		1.007E-01	1.676E-01	1.618E-02	0.095
TE-125M	4.103E+00		8.722E+00	1.508E+01	2.023E+00	0.272
I-126	1.211E-01		4.574E-01	6.851E-01	7.584E-02	0.177
SB-126	3.068E-02		3.218E-01	4.902E-01	5.350E-02	0.063
SB-127	-4.123E+00		6.304E+00	9.834E+00	1.530E+00	-0.419
I-131	1.911E-01		2.678E-01	4.645E-01	4.794E-02	0.411

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	-1.500E+00		4.515E+00	7.136E+00	1.320E+00	-0.210
BA-133	5.936E-04		5.153E-02	7.589E-02	1.058E-02	0.008
I-133	-4.403E+00		2.035E+00	Half-Life too short		
CS-134	7.639E-02		6.107E-02	1.097E-01	1.155E-02	0.696
CS-135	1.160E-01		1.901E-01	2.816E-01	3.399E-02	0.412
I-135	4.132E+17		1.471E+18	Half-Life too short		
CS-136	1.599E-02		2.098E-01	3.539E-01	3.312E-02	0.045
CE-139	-3.274E-02		3.041E-02	4.733E-02	4.220E-03	-0.692
BA-140	-1.606E-01		4.894E-01	7.609E-01	2.620E-01	-0.211
LA-140	-5.228E-02		1.653E-01	2.626E-01	2.184E-02	-0.199
CE-141	-6.500E-02		7.994E-02	1.124E-01	1.250E-02	-0.578
CE-143	2.391E-02		5.373E-03	Half-Life too short		
CE-144	-6.421E-02		1.844E-01	3.039E-01	5.297E-02	-0.211
PM-144	2.446E-02		4.460E-02	7.719E-02	8.496E-03	0.317
PR-144	1.832E+00		3.351E+00	5.800E+00	6.380E-01	0.316
PM-146	1.003E-02		5.159E-02	8.560E-02	9.892E-03	0.117
ND-147	4.151E-02		1.077E+00	1.744E+00	2.803E-01	0.024
PM-149	6.835E-05		6.325E-04	Half-Life too short		
EU-152	-1.482E-02		1.024E-01	1.642E-01	1.763E-02	-0.090
GD-153	-7.195E-02		7.452E-02	1.072E-01	1.207E-02	-0.671
EU-154	8.476E-03		1.466E-01	2.426E-01	2.682E-02	0.035
EU-155	1.060E-01		8.963E-02	1.580E-01	1.867E-02	0.671
TB-160	4.809E-02		1.921E-01	3.205E-01	3.106E-02	0.150
HO-166M	-4.245E-03		7.734E-02	1.279E-01	1.401E-02	-0.033
TA-182	-6.818E-02		2.552E-01	4.105E-01	3.376E-02	-0.166
IR-192	8.139E-03		4.115E-02	7.017E-02	7.580E-03	0.116
HG-203	2.034E-03		5.014E-02	7.967E-02	9.027E-03	0.026
BI-207	-1.277E-03		6.321E-02	1.056E-01	9.421E-03	-0.012
PB-211	2.956E-01		8.638E-01	1.440E+00	6.983E-01	0.205
BI-212	2.299E+00	+	9.159E-01	1.502E+00	2.121E-01	1.530
RN-219	-1.389E-01		4.656E-01	7.537E-01	1.147E-01	-0.184
RA-223	3.824E-01		7.808E-01	1.201E+00	2.214E-01	0.318
AC-227	-1.491E-01		2.833E-01	4.365E-01	5.972E-02	-0.342
TH-227	-1.491E-01		2.835E-01	4.365E-01	6.577E-02	-0.342
TH-229	-2.297E-01		5.416E-01	8.645E-01	8.245E-02	-0.266
PA-231	-9.359E-01		1.700E+00	2.569E+00	4.161E-01	-0.364
TH-231	3.824E-01		7.808E-01	1.201E+00	2.214E-01	0.318
PA-233	-3.570E-02		7.114E-02	1.165E-01	1.287E-02	-0.306
PA-234	1.861E-01		4.042E-01	6.805E-01	1.301E-01	0.273
PA-234M	1.977E+00		5.942E+00	9.610E+00	1.007E+00	0.206
NP-239	-3.241E-01		3.430E-01	5.519E-01	6.923E-02	-0.587
AM-241	2.277E-02		5.750E-02	8.557E-02	8.891E-03	0.266
CM-247	-2.793E-02		4.407E-02	6.968E-02	6.422E-03	-0.401
CF-249	1.364E-02		4.560E-02	7.710E-02	7.090E-03	0.177
CF-251	5.652E-02		1.253E-01	2.105E-01	1.932E-02	0.269

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]G248243010          *
* Acquisition date   : 19-MAR-2010 10:57:29 Detector SN#      :             *
* Detector ID        : GAM25                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.81             Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248243010             Analyst initials: MXR1          *
* Batch Number       : 959280                 Sample Quantity : 1.0203E+02 GRAM   *
* Recovery           : 1.00000                Carrier Weight  : 0.00000        *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43 MS Isotope         :             *
* MSD DPM             : 0.000                  MSD Isotope     :             *
* LCS DPM             : 0.000                  LCS Isotope     :             *
* LCSD DPM            : 0.000                  LCSD Isotope    :             *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.821E+01	3.037E+00	2.558E-01	1.549E+00
CD-109	4.935E+00	9.675E-01	4.257E-01	4.936E-01
SN-126	4.767E-01	9.347E-02	4.104E-02	4.769E-02
BA-137M	7.092E-01	1.257E-01	3.960E-02	6.415E-02
CS-137	7.492E-01	1.329E-01	4.183E-02	6.780E-02
TL-208	4.994E-01	1.097E-01	3.492E-02	5.599E-02
PB-210	2.678E+00	8.042E-01	3.375E-01	4.103E-01
BI-211	5.028E+00	7.374E-01	1.860E-01	3.762E-01
PB-212	1.986E+00	2.572E-01	4.706E-02	1.312E-01
BI-214	1.444E+00	2.433E-01	6.495E-02	1.241E-01
PB-214	1.825E+00	2.852E-01	6.766E-02	1.455E-01
RA-224	5.494E+00	1.400E+00	5.050E-01	7.143E-01
RA-226	1.444E+00	2.433E-01	6.495E-02	1.241E-01
AC-228	2.147E+00	4.800E-01	1.306E-01	2.449E-01
RA-228	2.147E+00	4.800E-01	1.306E-01	2.449E-01
TH-228	1.986E+00	2.572E-01	4.706E-02	1.312E-01
TH-232	2.147E+00	4.800E-01	1.306E-01	2.449E-01
TH-234	1.638E+00	9.397E-01	4.398E-01	4.794E-01
U-235	2.321E-01	2.239E-01	1.512E-01	1.142E-01
NP-237	1.423E+00	4.040E-01	1.219E-01	2.061E-01
U-238	1.638E+00	9.397E-01	4.398E-01	4.794E-01
ANH-511	1.762E-01	8.288E-02	2.849E-02	4.229E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.515E-01	4.516E-01	3.585E-01	2.304E-01 NOT IDENT.
NA-22	-2.750E-02	5.417E-02	4.258E-02	2.764E-02 NOT IDENT.
NA-24	6.462E+07	4.508E+09	0.000E+00	2.300E+09 SHORT HLIF
SC-46	-4.178E-02	4.737E-02	3.496E-02	2.417E-02 FAIL ABUN
V-48	-1.640E-02	1.184E-01	9.520E-02	6.041E-02 NOT IDENT.

CR-51	-2.058E-01	4.814E-01	4.024E-01	2.456E-01	NOT IDENT.
MN-54	-1.375E-02	4.906E-02	3.975E-02	2.503E-02	NOT IDENT.
CO-56	-1.955E-02	4.954E-02	3.940E-02	2.528E-02	FAIL ABUN
CO-57	-9.511E-04	2.196E-02	1.890E-02	1.121E-02	NOT IDENT.
CO-58	-3.479E-03	4.768E-02	3.942E-02	2.433E-02	NOT IDENT.
FE-59	-7.021E-02	1.246E-01	9.936E-02	6.357E-02	NOT IDENT.
CO-60	3.666E-02	4.978E-02	4.474E-02	2.540E-02	NOT IDENT.
ZN-65	1.250E-02	1.278E-01	9.415E-02	6.520E-02	NOT IDENT.
SE-75	-1.717E-02	5.322E-02	4.008E-02	2.716E-02	NOT IDENT.
SR-85	2.835E-02	5.145E-02	3.914E-02	2.625E-02	NOT IDENT.
Y-88	1.654E-02	3.805E-02	3.438E-02	1.941E-02	NOT IDENT.
Y-91	-2.495E+00	3.092E+01	2.572E+01	1.577E+01	NOT IDENT.
NB-94	-9.202E-03	4.203E-02	3.489E-02	2.144E-02	NOT IDENT.
NB-95	3.634E-02	6.382E-02	5.550E-02	3.256E-02	NOT IDENT.
NB-95M	-1.875E-04	1.541E-01	1.125E-01	7.865E-02	NOT IDENT.
ZR-95	4.770E-02	1.015E-01	8.818E-02	5.177E-02	NOT IDENT.
MO-99	-8.882E+01	1.143E+02	0.000E+00	5.833E+01	SHORT HLIF
TC-99M	3.154E+25	1.004E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.332E-02	5.298E-02	4.280E-02	2.703E-02	FAIL ABUN
RH-106	-8.069E-02	3.850E-01	3.235E-01	1.964E-01	NOT IDENT.
RU-106	-8.069E-02	3.849E-01	3.235E-01	1.964E-01	NOT IDENT.
AG-108M	-1.784E-02	3.342E-02	2.679E-02	1.705E-02	NOT IDENT.
AG-110M	8.994E-03	5.226E-02	3.932E-02	2.666E-02	NOT IDENT.
SN-113	4.058E-03	5.303E-02	4.495E-02	2.706E-02	NOT IDENT.
CD-115	1.685E+01	1.606E+02	0.000E+00	8.195E+01	SHORT HLIF
SN-117M	-7.087E-03	7.210E-02	6.069E-02	3.679E-02	NOT IDENT.
TE-123M	1.177E-02	2.639E-02	2.279E-02	1.346E-02	NOT IDENT.
SB-124	7.380E-02	1.070E-01	1.002E-01	5.459E-02	NOT IDENT.
SB-125	1.593E-02	9.865E-02	8.352E-02	5.033E-02	FAIL ABUN
TE-125M	4.103E+00	8.548E+00	7.551E+00	4.361E+00	NOT IDENT.
I-126	1.211E-01	4.483E-01	3.409E-01	2.287E-01	NOT IDENT.
SB-126	3.068E-02	3.154E-01	2.439E-01	1.609E-01	NOT IDENT.
SB-127	-4.123E+00	6.178E+00	4.893E+00	3.152E+00	NOT IDENT.
I-131	1.911E-01	2.624E-01	2.317E-01	1.339E-01	NOT IDENT.
TE-132	-1.500E+00	4.425E+00	3.565E+00	2.258E+00	NOT IDENT.
BA-133	5.936E-04	5.050E-02	3.785E-02	2.577E-02	NOT IDENT.
I-133	-4.403E+06	3.988E+06	0.000E+00	2.035E+06	SHORT HLIF
CS-134	7.639E-02	5.985E-02	5.458E-02	3.054E-02	NOT IDENT.
CS-135	1.160E-01	1.863E-01	1.406E-01	9.507E-02	NOT IDENT.
I-135	4.132E+23	2.883E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.599E-02	2.056E-01	1.758E-01	1.049E-01	NOT IDENT.
CE-139	-3.274E-02	2.981E-02	2.367E-02	1.521E-02	NOT IDENT.
BA-140	-1.606E-01	4.796E-01	3.790E-01	2.447E-01	NOT IDENT.
LA-140	-5.228E-02	1.620E-01	1.303E-01	8.265E-02	FAIL ABUN
CE-141	-6.500E-02	7.834E-02	5.624E-02	3.997E-02	NOT IDENT.
CE-143	2.391E+04	1.053E+04	0.000E+00	5.373E+03	SHORT HLIF
CE-144	-6.421E-02	1.807E-01	1.521E-01	9.220E-02	NOT IDENT.
PM-144	2.446E-02	4.370E-02	3.841E-02	2.230E-02	NOT IDENT.
PR-144	1.832E+00	3.284E+00	2.886E+00	1.675E+00	NOT IDENT.
PM-146	1.003E-02	5.056E-02	4.266E-02	2.580E-02	NOT IDENT.
ND-147	4.151E-02	1.055E+00	8.685E-01	5.385E-01	FAIL ABUN
PM-149	6.835E+01	1.240E+03	0.000E+00	6.325E+02	SHORT HLIF
EU-152	-1.482E-02	1.004E-01	8.193E-02	5.122E-02	FAIL ABUN
GD-153	-7.195E-02	7.303E-02	5.370E-02	3.726E-02	NOT IDENT.
EU-154	8.476E-03	1.436E-01	1.204E-01	7.328E-02	NOT IDENT.
EU-155	1.060E-01	8.784E-02	7.914E-02	4.481E-02	FAIL ABUN
TB-160	4.809E-02	1.882E-01	1.593E-01	9.603E-02	FAIL ABUN
HO-166M	-4.245E-03	7.580E-02	6.365E-02	3.867E-02	NOT IDENT.
TA-182	-6.818E-02	2.501E-01	2.039E-01	1.276E-01	FAIL ABUN
IR-192	8.139E-03	4.033E-02	3.502E-02	2.058E-02	FAIL ABUN
HG-203	2.034E-03	4.914E-02	3.977E-02	2.507E-02	NOT IDENT.
BI-207	-1.277E-03	6.195E-02	5.244E-02	3.161E-02	FAIL ABUN
PB-211	2.956E-01	8.466E-01	7.177E-01	4.319E-01	NOT IDENT.
BI-212	2.299E+00	8.976E-01	7.474E-01	4.580E-01	FAIL ABUN
RN-219	-1.389E-01	4.563E-01	3.758E-01	2.328E-01	FAIL ABUN
RA-223	3.824E-01	7.652E-01	5.991E-01	3.904E-01	FAIL ABUN
AC-227	-1.491E-01	2.777E-01	2.179E-01	1.417E-01	FAIL ABUN
TH-227	-1.491E-01	2.778E-01	2.179E-01	1.417E-01	FAIL ABUN
TH-229	-2.297E-01	5.308E-01	4.321E-01	2.708E-01	FAIL ABUN
PA-231	-9.359E-01	1.666E+00	1.283E+00	8.501E-01	FAIL ABUN
TH-231	3.824E-01	7.652E-01	5.991E-01	3.904E-01	FAIL ABUN
PA-233	-3.570E-02	6.971E-02	5.814E-02	3.557E-02	FAIL ABUN
PA-234	1.861E-01	3.961E-01	3.383E-01	2.021E-01	NOT IDENT.
PA-234M	1.977E+00	5.823E+00	4.776E+00	2.971E+00	NOT IDENT.
NP-239	-3.241E-01	3.362E-01	2.764E-01	1.715E-01	NOT IDENT.
AM-241	2.277E-02	5.635E-02	4.295E-02	2.875E-02	NOT IDENT.
CM-247	-2.793E-02	4.319E-02	3.474E-02	2.204E-02	NOT IDENT.
CF-249	1.364E-02	4.469E-02	3.844E-02	2.280E-02	NOT IDENT.

CF-251

5.652E-02

1.228E-01

1.052E-01

6.264E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	234.4247
49.72	226.2720
57.36	0.0000
59.54	276.1114
63.29	343.5859
63.29	343.5859
64.28	355.9090
67.75	353.7779
69.67	379.8923
70.83	356.3868
72.81	338.7017
72.87	338.7696
72.87	338.7696
74.82	340.9504
74.82	340.9504
74.82	340.9504
74.97	341.1169
77.11	343.4773
77.11	343.4773
77.11	343.4773
79.69	355.5280
79.80	352.4308
80.12	352.7806
80.19	299.6862
80.57	271.0022
81.00	353.7386
81.07	353.8143
81.07	353.8143
83.79	273.6665
83.79	273.6665
85.43	275.0046
86.48	275.8540
86.55	275.9104
86.79	276.1018
86.94	276.2249
87.57	276.7307
88.03	277.0981
88.47	277.4502
89.96	278.6328
91.11	279.5403
92.59	294.0638
92.59	294.0638
93.35	294.6833
94.67	295.7539
94.87	295.9150
94.87	295.9150
95.86	242.7642
97.43	278.0741
98.44	229.1693
99.53	228.1274
100.11	236.1477
103.18	284.4329
103.37	248.4623
105.31	237.5926
106.12	244.1367
109.28	225.9848
111.00	226.0571
111.76	223.8383
116.30	208.5128
117.23	243.6438
121.12	230.5716
121.78	205.7573
122.06	218.4736
123.07	206.3525
131.20	204.9955
133.52	230.4255
136.00	210.3094

136.47	210.5149
140.51	0.0000
140.51	0.0000
143.76	214.5757
144.24	227.4970
144.24	227.4970
145.44	239.3660
152.43	238.3008
153.25	217.5809
154.21	200.6892
154.21	200.6892
156.02	211.0023
158.56	186.8254
159.00	177.2868
162.66	186.2689
163.33	201.1383
165.86	230.4890
176.60	204.8207
177.52	181.1215
181.07	0.0000
184.41	230.7600
185.72	200.8218
193.51	210.5116
197.04	221.9921
205.31	197.6075
210.85	186.5789
215.65	170.8938
222.11	178.8917
227.38	194.2291
228.16	207.3984
228.18	207.4043
235.69	188.2402
235.96	188.3069
235.96	188.3069
238.63	164.3265
238.63	164.3265
240.99	164.8361
242.00	165.0543
244.70	145.7567
252.40	148.3113
252.80	145.0400
256.23	169.1938
256.23	169.1938
260.90	0.0000
264.66	153.5183
268.22	139.8539
269.46	136.6455
269.46	136.6455
271.23	136.9336
273.65	154.4925
276.40	144.6595
277.37	137.9272
277.60	137.9639
278.00	142.6283
279.20	160.1051
279.54	173.9947
280.46	176.4891
283.69	153.9896
284.31	161.0496
285.41	163.5734
285.90	0.0000
287.50	141.8667
293.27	0.0000
295.22	160.4572
295.96	144.3909
298.57	148.3381
299.98	124.5127
299.98	124.5127
300.09	124.5277
300.09	124.5277
300.13	124.5342
301.36	104.8628
302.85	141.9360
304.50	119.4375
304.50	119.4375
304.85	129.2024
308.46	127.6234
311.90	143.3179

316.51	128.7122
319.41	123.6859
320.08	135.5164
323.87	118.9961
323.87	118.9961
328.76	139.4617
333.37	95.2386
334.37	139.3341
334.37	139.3341
338.28	112.2696
338.28	112.2696
338.32	112.2733
338.32	112.2733
338.32	112.2733
340.48	109.1934
340.55	109.2006
344.28	105.7914
351.06	120.1974
351.93	120.2978
356.01	110.8428
364.49	109.4633
366.42	0.0000
383.85	111.4086
388.16	104.1207
388.63	107.0587
391.69	109.2808
400.66	115.9803
401.81	110.2412
402.40	122.0093
404.85	109.5493
410.95	111.0999
414.70	110.4619
423.72	88.4351
427.09	91.6673
427.87	84.7458
433.94	99.1888
453.88	95.6696
463.37	78.9386
468.07	93.8287
473.00	81.5772
476.78	95.2695
477.60	109.8333
487.02	104.3335
492.35	0.0000
497.08	83.0238
511.00	88.0893
514.00	76.5747
527.90	0.0000
529.87	0.0000
531.02	71.0153
537.26	77.7986
546.56	0.0000
563.25	82.4318
569.33	86.0623
569.50	86.0718
569.70	86.0814
583.19	75.6844
600.60	83.7000
602.73	86.7378
604.72	78.1947
609.32	69.3650
609.32	69.3650
610.33	57.3355
614.28	77.1329
618.01	59.1141
621.93	77.4816
621.93	77.4816
633.25	63.3146
635.95	65.2521
636.99	57.0155
645.85	59.1547
657.76	79.0961
661.66	86.7289
661.66	86.7289
664.57	0.0000
666.33	65.4490
666.50	65.4558
677.62	74.3248

685.70	67.0929
695.00	71.2280
696.49	70.3343
696.51	70.3361
697.00	75.1079
702.65	80.1015
706.68	76.4492
711.68	72.8179
720.70	74.2613
721.93	0.0000
722.78	75.4895
722.91	75.4953
723.31	78.7238
724.19	69.1156
727.33	66.6517
733.00	73.8690
735.93	66.9448
739.50	0.0000
747.24	61.4742
752.31	70.4338
753.82	58.7402
756.73	64.7077
763.94	102.3268
765.81	83.7092
766.42	69.9426
777.92	0.0000
778.90	64.4240
783.70	47.6848
785.37	59.6543
795.86	53.9578
801.95	51.1083
810.29	51.3088
810.76	48.3012
815.77	41.3533
818.51	47.4659
832.01	73.1672
834.85	71.2271
836.80	0.0000
846.77	53.1972
856.80	46.2437
860.56	45.2912
871.09	41.3652
873.19	45.5437
875.33	0.0000
879.36	49.8188
880.51	53.9970
883.24	48.8623
884.68	43.6919
889.28	50.0332
898.04	57.5459
911.20	44.1902
911.20	44.1902
911.20	44.1902
926.50	51.8866
937.49	65.9507
944.13	46.9315
946.00	50.1693
949.00	55.5750
962.29	57.3073
964.08	47.3118
966.15	47.3516
968.97	47.4047
968.97	47.4047
968.97	47.4047
983.53	44.4283
996.26	49.0067
1001.03	36.0051
1004.73	42.6125
1037.84	50.7143
1038.76	0.0000
1048.07	51.8346
1050.41	51.8802
1050.41	51.8802
1063.66	45.6185
1085.87	41.2966
1099.45	49.9851
1112.07	38.3676
1115.54	52.0335

1120.29	48.4558
1120.29	48.4558
1120.55	48.4600
1121.30	48.4724
1131.51	0.0000
1173.23	50.3136
1177.93	61.0518
1189.05	61.2799
1204.77	63.5559
1221.41	58.9868
1231.02	55.7888
1235.36	60.9459
1238.28	57.3321
1260.41	0.0000
1271.85	25.9757
1274.44	36.9955
1274.54	46.9943
1291.59	24.1250
1298.22	0.0000
1312.11	28.3236
1332.49	27.4812
1365.19	24.6660
1368.63	0.0000
1384.29	31.0046
1408.01	23.9331
1457.56	0.0000
1460.82	12.6738
1489.16	15.9656
1505.03	29.9312
1596.21	22.5218
1620.50	14.1629
1678.03	0.0000
1690.97	10.5684
1764.49	10.7548
1764.49	10.7548
1770.23	10.2795
1771.35	11.9958
1791.20	0.0000
1836.06	6.4216

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248243010

Total Uranium Activity	4.9801E+00	ug/g
Total Uranium Counting Unc.	2.7974E+00	ug/g
Total Uranium Tpu	1.4273E-06	ug/g
Total Uranium Mda	1.3104E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280                          SAMPLE ID   : G248243010
*  ANALYST       : MXR1                             DETECTOR    : GAM25
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:57:29.83          SAMPLE ALQT  : 102.030 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.151E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.461E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.864E+00
GROSS GAMMA DLC       (pCi/GRAM ) : 1.871E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:59:48.75

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248001.CNF;1
Sample date     : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:10
Sample ID       : G248248001 Sample quantity   : 1.52090E+02 GRAM
Detector name   : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.38 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 959280 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	74.73*	387	581	1.30	150.17	143	17	5.38E-02	12.4	1.78E+00
2	2	77.14*	704	523	1.13	155.00	143	17	9.78E-02	6.7	
3	0	87.13*	209	517	1.03	174.97	172	7	2.90E-02	19.5	
4	3	90.15	130	214	0.84	180.99	179	15	1.81E-02	16.5	1.14E+00
5	3	92.97*	274	569	1.47	186.64	179	15	3.81E-02	17.9	
6	0	186.56*	208	423	1.02	373.72	369	11	2.89E-02	21.3	
7	0	209.79	156	384	1.24	420.14	415	10	2.17E-02	24.8	
8	4	239.03*	1490	224	1.23	478.60	474	16	2.07E-01	3.1	1.06E+00
9	4	242.08	401	290	1.82	484.68	474	16	5.57E-02	12.3	
10	0	270.15	137	290	1.45	540.81	536	13	1.91E-02	26.9	
11	0	278.91	249	382	6.27	558.30	548	22	3.46E-02	21.0	
12	0	295.61	359	260	1.18	591.68	587	9	4.98E-02	9.4	
13	0	300.52	110	146	0.77	601.51	598	8	1.53E-02	21.3	
14	0	328.60	60	174	1.02	657.64	654	8	8.37E-03	40.2	
15	0	338.74	330	194	1.33	677.90	673	10	4.58E-02	9.6	
16	0	352.25*	757	214	1.31	704.90	700	12	1.05E-01	5.4	
17	0	409.87	46	109	0.87	820.07	817	8	6.41E-03	42.2	
18	0	463.90*	120	148	1.96	928.06	921	16	1.67E-02	24.5	
19	0	511.41*	145	164	2.05	1023.04	1015	19	2.01E-02	24.9	
20	0	583.55*	424	128	1.50	1167.22	1160	16	5.89E-02	7.8	
21	0	609.69*	562	104	1.40	1219.48	1212	15	7.80E-02	5.9	
22	0	727.72	87	65	2.02	1455.38	1451	10	1.21E-02	20.4	
23	0	795.60	68	50	0.76	1591.05	1586	11	9.44E-03	23.5	
24	0	860.82	90	39	1.34	1721.39	1715	12	1.25E-02	17.4	
25	0	911.66*	282	64	1.61	1823.01	1817	13	3.92E-02	8.5	
26	5	965.28	38	65	2.02	1930.17	1926	20	5.25E-03	37.7	2.55E+00
27	5	969.46*	196	64	1.94	1938.52	1926	20	2.73E-02	11.3	
28	0	1120.95*	90	102	1.84	2241.30	2235	16	1.25E-02	27.0	
29	0	1461.31*	1232	38	2.03	2921.50	2913	19	1.71E-01	3.1	
30	0	1588.97*	24	15	1.76	3176.63	3171	10	3.33E-03	37.8	
31	0	1765.01*	80	10	1.71	3528.41	3520	15	1.11E-02	15.0	
32	0	1848.39	13	2	1.32	3695.03	3691	9	1.74E-03	35.7	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:59:52

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:10
Sample ID         : G248248001 Sample quantity : 152.09 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA1 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.38 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	*	3.018E+01	3.274E+00	5.157E-01	4.585E-02	58.528
CD-109	+	88.03	*	2.786E+00	1.120E+00	1.350E+00	1.277E-01	2.064
SN-126		64.28		-1.883E-01	5.640E-01	8.885E-01	1.307E-01	-0.212
	+	86.94		1.119E+00	6.380E-01	5.988E-01	2.486E-01	1.869
	+	87.57	*	2.691E-01	1.082E-01	1.310E-01	1.234E-02	2.054
HG-203		70.83		1.620E+00	1.765E+00	2.622E+00	4.137E-01	0.618
		72.87		2.175E+00	1.018E+00	1.661E+00	2.543E-01	1.309
	+	279.20	*	2.747E-01	1.183E-01	6.633E-02	6.204E-03	4.141
TL-208		277.37		1.020E+00	4.652E-01	7.399E-01	9.542E-02	1.379
	+	583.19	*	5.750E-01	1.036E-01	5.675E-02	5.147E-03	10.133
	+	860.56		1.169E+00	4.222E-01	4.898E-01	4.693E-02	2.386
BI-211		72.87		7.776E+00	3.498E+00	5.938E+00	4.870E-01	1.309
	+	351.06	*	4.485E+00	6.298E-01	3.512E-01	3.195E-02	12.768
PB-212	+	74.82		2.245E+00	6.255E-01	5.883E-01	7.533E-02	3.817
	+	77.11		2.319E+00	3.678E-01	3.358E-01	2.850E-02	6.906
	+	238.63	*	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
	+	300.09		2.260E+00	9.934E-01	1.335E+00	1.458E-01	1.693
BI-214	+	609.32	*	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
	+	1120.29		1.246E+00	6.872E-01	4.801E-01	5.161E-02	2.596
	+	1764.49		1.561E+00	4.862E-01	3.199E-01	2.682E-02	4.880
PB-214	+	74.82		3.980E+00	1.086E+00	1.043E+00	1.199E-01	3.817
	+	77.11		4.088E+00	7.308E-01	5.920E-01	7.005E-02	6.906
	+	242.00		3.170E+00	8.524E-01	5.936E-01	6.399E-02	5.340
	+	295.22		1.300E+00	2.837E-01	2.230E-01	2.497E-02	5.830
	+	351.93	*	1.628E+00	2.456E-01	1.239E-01	1.317E-02	13.135
RA-224	+	240.99	*	5.605E+00	1.472E+00	1.046E+00	9.506E-02	5.359
RA-226	+	609.32	*	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
	+	1120.29		1.246E+00	6.872E-01	4.801E-01	5.161E-02	2.596
	+	1764.49		1.561E+00	4.862E-01	3.199E-01	2.682E-02	4.880
AC-228	+	338.32		2.172E+00	9.990E-01	4.119E-01	1.720E-01	5.273
	+	911.20	*	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
	+	968.97		2.248E+00	7.487E-01	4.322E-01	1.058E-01	5.202
RA-228	+	338.32		2.172E+00	9.990E-01	4.119E-01	1.720E-01	5.273
	+	911.20	*	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		2.248E+00	7.487E-01	4.322E-01	1.058E-01	5.202
	+	74.82		2.245E+00	5.867E-01	5.883E-01	4.946E-02	3.817
	+	77.11		2.319E+00	3.678E-01	3.358E-01	2.850E-02	6.906
	+	238.63	*	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
TH-232	+	300.09		2.260E+00	1.687E+00	1.335E+00	8.182E-01	1.693
	+	338.32		2.172E+00	4.603E-01	4.119E-01	3.626E-02	5.273
	+	911.20	*	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
	+	968.97		2.248E+00	7.487E-01	4.322E-01	1.058E-01	5.202
U-235	+	89.96		1.727E+00	7.129E-01	1.362E+00	3.387E-01	1.267
	+	93.35		2.196E+00	9.372E-01	7.436E-01	1.730E-01	2.953
		143.76	*	4.101E-02	2.140E-01	3.602E-01	6.093E-02	0.114
		163.33		-2.137E-01	4.510E-01	7.451E-01	1.334E-01	-0.287
NP-237	+	185.72		1.741E-01	7.567E-02	6.726E-02	5.845E-03	2.589
		205.31		2.553E-01	5.740E-01	8.618E-01	1.574E-01	0.296
	+	86.48	*	8.031E-01	3.641E-01	4.177E-01	9.582E-02	1.923
		95.86		2.016E-01	1.030E+00	1.480E+00	3.567E-01	0.136
ANH-511	+	511.00	*	1.492E-01	7.537E-02	4.677E-02	3.964E-03	3.190

---- 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	*	-3.838E-02	3.775E-01	6.008E-01	5.464E-02	-0.064
NA-22		1274.54	*	-1.315E-02	4.600E-02	7.475E-02	6.277E-03	-0.176
NA-24		1368.63	*	2.008E+03	4.600E-02	Half-Life too short		
SC-46		889.28	*	-2.115E-02	4.728E-02	7.413E-02	6.701E-03	-0.285
V-48	+	1120.55		2.249E-01	1.231E-01	1.512E-01	1.270E-02	1.488
		944.13		5.109E-01	1.303E+00	2.199E+00	1.981E-01	0.232
		983.53	*	1.092E-02	1.103E-01	1.808E-01	1.614E-02	0.060
		1312.11		-8.331E-02	1.164E-01	1.780E-01	1.509E-02	-0.468
CR-51		320.08	*	-2.525E-01	4.838E-01	7.551E-01	7.097E-02	-0.334
MN-54		834.85	*	3.129E-02	4.186E-02	7.255E-02	6.458E-03	0.431
CO-56		846.77	*	1.290E-02	4.456E-02	7.491E-02	6.693E-03	0.172
		1037.84		-1.504E-01	3.745E-01	5.818E-01	5.359E-02	-0.259
		1238.28		2.179E-01	1.099E-01	2.057E-01	1.759E-02	1.060
		1771.35		1.610E-01	2.452E-01	4.121E-01	3.450E-02	0.391
		122.06	*	1.927E-04	2.749E-02	4.361E-02	3.839E-03	0.004
CO-57		136.47		2.586E-02	2.103E-01	3.586E-01	3.309E-02	0.072
CO-58		810.76	*	-5.357E-02	4.471E-02	6.500E-02	5.751E-03	-0.824
FE-59		1099.45	*	-6.527E-02	1.131E-01	1.712E-01	1.578E-02	-0.381
CO-60		1291.59		-6.968E-02	1.538E-01	2.450E-01	2.356E-02	-0.284
		1173.23		-4.751E-03	4.689E-02	7.803E-02	6.316E-03	-0.061
		1332.49	*	-6.326E-04	3.505E-02	5.820E-02	4.961E-03	-0.011
		1115.54	*	-1.006E-01	1.154E-01	1.393E-01	1.175E-02	-0.722
ZN-65		121.12		7.292E-02	1.471E-01	2.379E-01	2.667E-02	0.307
SE-75		136.00		5.928E-03	4.128E-02	7.043E-02	6.097E-03	0.084
		264.66	*	3.132E-02	5.470E-02	8.235E-02	7.565E-03	0.380
	+	279.54		7.273E-01	3.134E-01	2.095E-01	1.981E-02	3.472
		400.66		1.626E-01	2.800E-01	4.629E-01	4.948E-02	0.351

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SR-85		514.00	*	1.226E-01	4.821E-02	8.709E-02	7.384E-03	1.408
Y-88		898.04		1.190E-02	4.459E-02	7.466E-02	6.793E-03	0.159
		1836.06	*	1.996E-02	4.006E-02	7.087E-02	5.829E-03	0.282
Y-91		1204.77	*	-3.019E+01	2.656E+01	4.017E+01	3.291E+00	-0.752
NB-94		702.65	*	3.354E-02	3.549E-02	6.267E-02	5.261E-03	0.535
		871.09		-4.777E-03	3.632E-02	5.871E-02	5.283E-03	-0.081
NB-95		765.81	*	-8.050E-03	5.160E-02	8.419E-02	7.295E-03	-0.096
NB-95M		235.69	*	-4.882E-02	1.570E-01	2.252E-01	2.313E-02	-0.217
ZR-95		724.19		-6.797E-02	1.208E-01	1.624E-01	1.499E-02	-0.418
		756.73	*	2.182E-02	8.674E-02	1.460E-01	1.391E-02	0.149
MO-99		140.51		-2.852E-04	8.674E-02	Half-Life	too short	
		181.07		-1.119E-04	8.674E-02	Half-Life	too short	
		366.42		-6.900E-04	8.674E-02	Half-Life	too short	
		739.50	*	-5.847E-05	8.674E-02	Half-Life	too short	
		777.92		-2.195E-04	8.674E-02	Half-Life	too short	
TC-99M		140.51	*	-1.742E+20	8.674E-02	Half-Life	too short	
RU-103		497.08	*	-1.109E-02	4.895E-02	7.692E-02	1.067E-02	-0.144
	+	610.33		1.750E+01	3.519E+00	3.665E+00	5.947E-01	4.775
RH-106		621.93	*	1.786E-01	3.269E-01	5.663E-01	7.409E-02	0.315
		1050.41		1.659E+00	2.821E+00	4.812E+00	4.196E-01	0.345
RU-106		621.93	*	1.786E-01	3.264E-01	5.663E-01	4.730E-02	0.315
		1050.41		1.659E+00	2.821E+00	4.812E+00	4.196E-01	0.345
AG-108M		433.94	*	-7.750E-03	3.043E-02	4.816E-02	4.122E-03	-0.161
		614.28		-8.173E-03	3.760E-02	5.334E-02	4.623E-03	-0.153
		722.91		-2.316E-02	4.555E-02	6.167E-02	5.407E-03	-0.376
AG-110M		657.76	*	-8.477E-03	3.698E-02	6.053E-02	5.132E-03	-0.140
		677.62		-7.730E-02	3.484E-01	5.697E-01	4.860E-02	-0.136
		706.68		-7.506E-02	2.351E-01	3.806E-01	3.299E-02	-0.197
		763.94		-2.867E-01	1.883E-01	2.714E-01	2.414E-02	-1.056
		884.68		-1.336E-02	5.216E-02	8.316E-02	7.728E-03	-0.161
		937.49		-2.480E-02	1.250E-01	2.000E-01	1.863E-02	-0.124
		1384.29		2.951E-02	1.621E-01	2.751E-01	2.427E-02	0.107
		1505.03		-9.568E-02	2.791E-01	4.364E-01	3.778E-02	-0.219
SN-113		391.69	*	-3.892E-02	5.047E-02	7.767E-02	6.469E-03	-0.501
CD-115		260.90		-1.170E-03	5.047E-02	Half-Life	too short	
		492.35		2.507E-04	5.047E-02	Half-Life	too short	
		527.90	*	5.760E-05	5.047E-02	Half-Life	too short	
SN-117M		156.02		-8.676E-01	3.520E+00	5.895E+00	5.020E-01	-0.147
		158.56	*	4.130E-02	8.518E-02	1.461E-01	1.244E-02	0.283
TE-123M		159.00	*	1.377E-02	3.117E-02	5.337E-02	4.572E-03	0.258
SB-124		602.73		1.984E-02	4.907E-02	7.425E-02	6.244E-03	0.267
		645.85		3.669E-01	5.558E-01	9.699E-01	8.514E-02	0.378
		722.78		-3.159E-01	5.111E-01	6.834E-01	5.937E-02	-0.462
		1690.97	*	-3.668E-02	7.157E-02	1.024E-01	9.100E-03	-0.358
SB-125		427.87	*	9.976E-02	1.036E-01	1.765E-01	1.484E-02	0.565
	+	463.37		1.104E+00	5.508E-01	5.793E-01	5.238E-02	1.906
		600.60		3.607E-02	1.842E-01	3.125E-01	2.833E-02	0.115
		635.95		-6.063E-02	2.798E-01	4.591E-01	4.144E-02	-0.132
TE-125M		109.28	*	-4.402E-01	1.173E+01	1.865E+01	1.966E+00	-0.024

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-126	388.63			2.895E-01	2.641E-01	4.558E-01	3.692E-02	0.635
	666.33	*		-1.887E-01	3.663E-01	5.866E-01	4.819E-02	-0.322
	753.82			4.681E+00	3.035E+00	5.536E+00	4.771E-01	0.846
SB-126	414.70			8.773E-02	1.351E-01	2.022E-01	1.653E-02	0.434
	666.50			-9.127E-02	1.284E-01	2.024E-01	1.663E-02	-0.451
	695.00			-1.866E-02	1.259E-01	2.067E-01	1.728E-02	-0.090
	697.00			-1.912E-02	4.224E-01	6.986E-01	5.846E-02	-0.027
	720.70	*		1.426E-01	2.373E-01	4.013E-01	3.402E-02	0.355
	856.80			-2.916E-02	8.509E-01	1.201E+00	1.076E-01	-0.024
SB-127	252.40			3.348E+00	1.826E+01	3.042E+01	1.290E+01	0.110
	473.00			-3.175E+00	6.435E+00	9.877E+00	1.481E+00	-0.321
	685.70	*		-7.373E+00	5.819E+00	8.542E+00	1.176E+00	-0.863
	783.70			1.728E+01	1.521E+01	2.694E+01	3.996E+00	0.642
I-131	80.19			3.188E-04	1.040E+01	1.490E+01	1.319E+00	0.000
	284.31			-1.240E+00	3.448E+00	4.854E+00	4.669E-01	-0.255
	364.49	*		-1.069E-01	2.404E-01	3.803E-01	3.432E-02	-0.281
	636.99			-1.030E+00	3.065E+00	4.976E+00	4.420E-01	-0.207
TE-132	49.72			-5.923E+01	1.206E+02	1.925E+02	2.580E+01	-0.308
	111.76			-6.397E-01	2.001E+02	3.183E+02	4.304E+01	-0.002
	116.30			6.971E+01	1.716E+02	2.767E+02	3.747E+01	0.252
	228.16	*		-3.119E-01	4.266E+00	7.077E+00	1.263E+00	-0.044
BA-133	81.00			-1.457E-01	1.165E-01	1.543E-01	2.410E-02	-0.944
	276.40			9.744E-01	4.365E-01	6.875E-01	9.927E-02	1.417
	302.85			3.863E-02	1.686E-01	2.467E-01	3.298E-02	0.157
	356.01	*		-7.267E-03	5.179E-02	7.303E-02	9.450E-03	-0.100
	383.85			-8.916E-02	2.968E-01	4.720E-01	5.723E-02	-0.189
I-133	529.87	*		-2.380E+00	2.968E-01	Half-Life	too short	
	875.33			-1.344E+01	2.968E-01	Half-Life	too short	
	1298.22			-2.071E+01	2.968E-01	Half-Life	too short	
CS-134	563.25			-4.445E-01	3.671E-01	5.600E-01	4.795E-02	-0.794
	569.33			-1.137E-01	2.053E-01	3.313E-01	2.847E-02	-0.343
	604.72			1.298E-02	3.784E-02	5.697E-02	4.800E-03	0.228
	795.86	*		1.363E-01	6.506E-02	9.938E-02	8.782E-03	1.371
	801.95			-1.566E-01	5.120E-01	7.515E-01	6.647E-02	-0.208
CS-135	1365.19			7.357E-02	1.153E+00	1.933E+00	1.734E-01	0.038
	268.22	*		4.924E-02	1.866E-01	2.752E-01	2.870E-02	0.179
I-135	546.56			-3.847E+18	1.866E-01	Half-Life	too short	
	836.80			5.061E+18	1.866E-01	Half-Life	too short	
	1038.76			-3.179E+17	1.866E-01	Half-Life	too short	
	1131.51			1.999E+17	1.866E-01	Half-Life	too short	
	1260.41	*		-2.459E+18	1.866E-01	Half-Life	too short	
	1457.56			1.241E+20	1.866E-01	Half-Life	too short	
	1678.03			-5.401E+17	1.866E-01	Half-Life	too short	
	1791.20			-1.322E+18	1.866E-01	Half-Life	too short	
CS-136	153.25			7.965E-01	1.320E+00	2.273E+00	2.316E-01	0.350
	176.60			-3.746E-01	7.786E-01	1.285E+00	1.221E-01	-0.292
	273.65			1.039E+00	1.049E+00	1.239E+00	1.221E-01	0.838
	340.55			1.182E+00	3.295E-01	5.409E-01	4.928E-02	2.185
	818.51			4.379E-02	1.185E-01	2.008E-01	1.781E-02	0.218

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1048.07	*		-7.208E-02	1.768E-01	2.739E-01	2.492E-02	-0.263
	1235.36			-2.453E-01	9.948E-01	1.634E+00	1.884E-01	-0.150
BA-137M	661.66	*		3.577E-03	3.897E-02	6.530E-02	5.349E-03	0.055
CS-137	661.66	*		3.778E-03	4.117E-02	6.898E-02	5.662E-03	0.055
CE-139	165.86	*		1.847E-02	3.190E-02	5.480E-02	4.667E-03	0.337
BA-140	162.66			-1.037E+00	1.276E+00	2.085E+00	1.897E-01	-0.498
	304.85			2.313E+00	2.482E+00	3.678E+00	1.081E+00	0.629
	423.72			1.644E+00	3.404E+00	5.591E+00	1.833E+00	0.294
	537.26	*		-1.413E-01	4.221E-01	6.904E-01	2.339E-01	-0.205
LA-140	328.76	+		7.509E-01	6.074E-01	8.932E-01	8.371E-02	0.841
	487.02			-1.594E-01	2.257E-01	3.413E-01	3.065E-02	-0.467
	815.77			3.477E-01	5.276E-01	9.144E-01	8.988E-02	0.380
	1596.21	*		-2.635E-02	1.491E-01	2.265E-01	1.955E-02	-0.116
CE-141	145.44	*		8.676E-02	7.996E-02	1.378E-01	1.199E-02	0.630
CE-143	57.36			-1.144E-02	7.996E-02	Half-Life	too short	
	293.27	*		1.384E-02	7.996E-02	Half-Life	too short	
	664.57			6.315E-02	7.996E-02	Half-Life	too short	
	721.93			3.963E-02	7.996E-02	Half-Life	too short	
CE-144	80.12			-5.730E-03	2.912E+00	4.175E+00	3.641E-01	-0.001
	133.52	*		1.433E-01	2.156E-01	3.485E-01	5.327E-02	0.411
PM-144	476.78			1.535E-02	6.855E-02	1.117E-01	1.026E-02	0.137
	618.01			-1.734E-02	3.332E-02	5.188E-02	4.471E-03	-0.334
	696.49	*		-3.085E-03	3.545E-02	5.845E-02	4.893E-03	-0.053
PR-144	696.51	*		-2.318E-01	2.664E+00	4.392E+00	3.674E-01	-0.053
	1489.16			1.338E+00	1.208E+01	2.030E+01	1.757E+00	0.066
PM-146	453.88	*		2.904E-03	4.488E-02	7.251E-02	7.519E-03	0.040
	633.25			-1.085E-01	1.442E+00	2.393E+00	9.123E-01	-0.045
	735.93			9.840E-02	1.572E-01	2.686E-01	7.523E-02	0.366
	747.24			5.491E-02	1.021E-01	1.755E-01	2.557E-02	0.313
ND-147	91.11	+		9.172E-01	3.159E-01	8.756E-01	8.661E-02	1.048
	319.41			4.550E+00	5.751E+00	9.635E+00	8.646E-01	0.472
	531.02	*		-3.482E-01	9.563E-01	1.571E+00	2.337E-01	-0.222
PM-149	285.90	*		-1.062E-03	9.563E-01	Half-Life	too short	
EU-152	121.78			2.930E-03	7.770E-02	1.234E-01	1.241E-02	0.024
	244.70			4.630E-01	3.822E-01	5.942E-01	5.409E-02	0.779
	344.28	*		8.936E-04	1.143E-01	1.727E-01	1.596E-02	0.005
	778.90			-1.633E-01	2.512E-01	3.883E-01	3.384E-02	-0.421
	964.08	+		4.665E-01	3.542E-01	6.353E-01	5.699E-02	0.734
	1085.87			-2.071E-01	4.841E-01	7.502E-01	6.431E-02	-0.276
	1112.07			1.871E-01	3.223E-01	5.480E-01	4.628E-02	0.341
	1408.01			-6.603E-02	1.943E-01	3.086E-01	2.658E-02	-0.214
GD-153	69.67			-8.305E-01	2.140E+00	3.027E+00	2.428E-01	-0.274
	97.43	*		-4.041E-02	1.029E-01	1.433E-01	1.272E-02	-0.282
	103.18			-5.879E-02	1.214E-01	1.898E-01	1.655E-02	-0.310
EU-154	123.07			-1.862E-02	5.526E-02	8.629E-02	9.898E-03	-0.216
	723.31			-9.504E-02	2.035E-01	2.767E-01	2.594E-02	-0.343
	873.19			4.456E-02	2.895E-01	4.806E-01	5.852E-02	0.093
	996.26			-2.270E-01	3.854E-01	5.849E-01	1.030E-01	-0.388
	1004.73			-1.826E-01	2.325E-01	3.459E-01	4.090E-02	-0.528

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1274.44	*	-3.425E-02	1.301E-01	2.119E-01	2.374E-02	-0.162
		86.55		3.274E-01	1.316E-01	1.932E-01	1.815E-02	1.695
		105.31	*	1.291E-01	1.128E-01	1.871E-01	1.645E-02	0.690
TB-160	+	86.79		9.335E-01	3.752E-01	5.536E-01	5.169E-02	1.686
		197.04		-1.201E-02	6.340E-01	1.061E+00	9.326E-02	-0.011
		215.65		6.971E-01	8.728E-01	1.453E+00	1.299E-01	0.480
HO-166M		298.57		1.132E-01	2.014E-01	2.231E-01	2.028E-02	0.507
		879.36	*	6.058E-02	1.556E-01	2.637E-01	2.378E-02	0.230
		962.29		5.588E-01	6.968E-01	1.078E+00	9.671E-02	0.519
		966.15	+	3.509E-01	2.664E-01	5.422E-01	4.861E-02	0.647
		1177.93		1.336E-01	4.286E-01	7.369E-01	5.975E-02	0.181
		1271.85		2.596E-01	7.683E-01	1.325E+00	1.111E-01	0.196
		80.57		-1.479E-01	3.162E-01	4.430E-01	3.880E-02	-0.334
		184.41		9.682E-02	3.959E-02	6.403E-02	5.556E-03	1.512
		280.46		7.558E-02	9.461E-02	1.443E-01	1.320E-02	0.524
		410.95	+	3.553E-01	3.014E-01	4.625E-01	3.772E-02	0.768
TA-182		711.68	*	-2.904E-02	6.580E-02	1.054E-01	8.889E-03	-0.276
		752.31		-1.145E-02	3.005E-01	4.950E-01	4.263E-02	-0.023
		810.29		-7.813E-02	6.349E-02	9.217E-02	8.133E-03	-0.848
		67.75		2.329E-03	1.251E-01	2.025E-01	1.604E-02	0.012
		100.11		1.314E-01	1.980E-01	3.195E-01	2.809E-02	0.411
		152.43		3.891E-02	3.738E-01	6.343E-01	5.404E-02	0.061
		222.11		-6.889E-03	3.854E-01	6.416E-01	5.765E-02	-0.011
		1121.30	+	6.124E-01	3.352E-01	4.210E-01	3.536E-02	1.454
		1189.05		-1.441E-01	3.495E-01	5.658E-01	4.608E-02	-0.255
		1221.41	*	1.538E-01	2.326E-01	4.080E-01	3.363E-02	0.377
IR-192	+	1231.02		-6.390E-02	5.409E-01	8.967E-01	7.416E-02	-0.071
		295.96		1.035E+00	2.158E-01	3.288E-01	3.013E-02	3.147
		308.46		-6.953E-02	1.089E-01	1.723E-01	1.565E-02	-0.404
		316.51	*	4.687E-03	3.906E-02	6.445E-02	5.807E-03	0.073
BI-207		468.07		5.956E-02	7.608E-02	1.155E-01	1.044E-02	0.516
		72.81		3.915E-01	1.992E-01	3.370E-01	2.763E-02	1.162
		74.97	+	6.475E-01	1.690E-01	2.454E-01	2.045E-02	2.639
		569.70		-8.905E-03	3.108E-02	5.114E-02	4.332E-03	-0.174
PB-210		1063.66	*	8.209E-03	6.134E-02	1.003E-01	8.692E-03	0.082
		1770.23		1.825E-01	5.068E-01	7.814E-01	6.543E-02	0.234
		46.54	*	1.073E+00	4.277E+00	6.956E+00	6.515E-01	0.154
PB-211		404.85	*	-3.233E-01	8.171E-01	1.160E+00	5.603E-01	-0.279
		427.09		-5.792E-01	1.817E+00	2.843E+00	1.313E+00	-0.204
		832.01		-3.297E-01	1.070E+00	1.688E+00	8.762E-01	-0.195
BI-212	+	727.33	*	1.819E+00	7.749E-01	1.180E+00	1.461E-01	1.541
		785.37		3.689E+00	3.290E+00	5.873E+00	5.133E-01	0.628
		1620.50		9.310E-01	2.700E+00	4.644E+00	3.997E-01	0.200
RN-219	+	271.23		7.917E-01	4.347E-01	4.600E-01	4.924E-02	1.721
		401.81	*	1.025E-01	4.132E-01	6.796E-01	9.909E-02	0.151
RA-223		81.07		-2.571E-01	2.558E-01	3.483E-01	3.065E-02	-0.738
		83.79		1.069E-01	1.458E-01	2.144E-01	1.939E-02	0.499
		94.87		1.130E+00	5.323E-01	8.198E-01	7.372E-02	1.378
		144.24		6.693E-01	7.153E-01	1.228E+00	1.174E-01	0.545

----- 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		2.491E-01	3.986E-01	6.868E-01	6.422E-02	0.363
	+	269.46		6.151E-01	3.362E-01	3.618E-01	3.369E-02	1.700
		323.87	*	-4.540E-01	7.894E-01	1.077E+00	1.885E-01	-0.421
	+	338.28		8.620E+00	1.967E+00	2.695E+00	3.289E-01	3.198
		79.69		5.831E-01	1.440E+00	2.097E+00	3.622E-01	0.278
		235.96		-2.290E-02	1.742E-01	2.526E-01	2.707E-02	-0.091
		256.23	*	-6.451E-02	2.700E-01	4.420E-01	5.492E-02	-0.146
TH-227	+	299.98		2.486E+00	1.107E+00	1.683E+00	2.192E-01	1.477
		304.50		1.337E+00	1.911E+00	2.872E+00	4.815E-01	0.466
		334.37		1.421E-01	2.188E+00	2.932E+00	4.606E-01	0.048
		79.80		4.098E-01	1.897E+00	2.744E+00	5.983E-01	0.149
		235.96		-2.290E-02	1.742E-01	2.526E-01	2.565E-02	-0.091
		256.23	*	-6.451E-02	2.700E-01	4.420E-01	6.160E-02	-0.146
	+	299.98		2.486E+00	1.107E+00	1.683E+00	2.192E-01	1.477
TH-229		304.50		1.337E+00	1.911E+00	2.872E+00	4.815E-01	0.466
		334.37		1.421E-01	2.188E+00	2.932E+00	4.606E-01	0.048
		85.43		5.535E-01	2.523E-01	3.857E-01	3.549E-02	1.435
	+	88.47		4.149E-01	1.668E-01	2.415E-01	2.276E-02	1.718
		193.51	*	-1.103E-01	5.445E-01	9.051E-01	7.929E-02	-0.122
	+	210.85		2.885E+00	1.456E+00	1.768E+00	1.574E-01	1.632
		283.69	*	3.480E-01	1.667E+00	2.446E+00	3.644E-01	0.142
PA-231	+	301.36		1.597E+00	7.086E-01	1.060E+00	1.323E-01	1.507
		81.07		-2.571E-01	2.558E-01	3.483E-01	3.065E-02	-0.738
		83.79		1.069E-01	1.458E-01	2.144E-01	1.939E-02	0.499
		94.87		1.130E+00	5.323E-01	8.198E-01	7.372E-02	1.378
		144.24		6.693E-01	7.153E-01	1.228E+00	1.174E-01	0.545
		154.21		2.491E-01	3.986E-01	6.868E-01	6.422E-02	0.363
	+	269.46		6.151E-01	3.362E-01	3.618E-01	3.369E-02	1.700
PA-233		323.87	*	-4.540E-01	7.894E-01	1.077E+00	1.885E-01	-0.421
	+	338.28		8.620E+00	1.967E+00	2.695E+00	3.289E-01	3.198
	+	300.13		1.125E+00	5.082E-01	7.601E-01	1.148E-01	1.480
		311.90	*	1.074E-02	6.526E-02	1.080E-01	1.000E-02	0.099
		340.48		3.465E+00	1.221E+00	1.549E+00	3.736E-01	2.237
		94.67		4.477E-01	2.056E-01	3.102E-01	3.931E-02	1.443
		98.44		1.720E-02	1.102E-01	1.561E-01	8.715E-02	0.110
PA-234		111.00		1.100E-01	2.004E-01	3.252E-01	3.941E-02	0.338
		131.20		-9.078E-02	1.170E-01	1.788E-01	1.546E-02	-0.508
		569.50		-7.492E-02	2.760E-01	4.547E-01	3.852E-02	-0.165
		733.00		1.248E-01	4.561E-01	6.736E-01	1.493E-01	0.185
		880.51		-9.847E-02	2.947E-01	4.664E-01	4.207E-02	-0.211
		883.24		-2.906E-02	2.928E-01	4.732E-01	3.183E-01	-0.061
		926.50		1.565E-01	1.997E-01	3.414E-01	8.678E-02	0.458
PA-234M		946.00	*	-6.687E-02	3.324E-01	5.307E-01	1.005E-01	-0.126
		949.00		-1.816E-01	5.075E-01	7.987E-01	7.187E-02	-0.227
		766.42		1.195E+01	1.344E+01	2.123E+01	1.077E+01	0.563
		1001.03	*	6.883E+00	5.243E+00	9.384E+00	9.566E-01	0.733
		63.29	*	1.363E+00	1.508E+00	2.448E+00	4.397E-01	0.557
	+	92.59		2.907E+00	1.225E+00	1.401E+00	3.121E-01	2.075
		63.29	*	1.363E+00	1.508E+00	2.448E+00	4.397E-01	0.557
U-238		63.29	*	1.363E+00	1.508E+00	2.448E+00	4.397E-01	0.557

---- 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		2.907E+00	1.073E+00	1.401E+00	1.277E-01	2.075
		99.53		3.736E-02	1.835E-01	2.783E-01	2.452E-02	0.134
		103.37		-3.598E-02	1.070E-01	1.684E-01	1.468E-02	-0.214
		106.12		2.922E-02	9.093E-02	1.467E-01	1.274E-02	0.199
		117.23	*	-7.563E-03	4.350E-01	6.905E-01	6.016E-02	-0.011
		228.18		-1.907E-02	2.312E-01	3.834E-01	3.459E-02	-0.050
AM-241	+	277.60		1.102E+00	4.741E-01	3.375E-01	3.087E-02	3.265
		59.54	*	-6.477E-02	1.678E-01	2.684E-01	2.212E-02	-0.241
CM-247	+	278.00		4.680E+00	2.014E+00	1.424E+00	1.303E-01	3.285
		287.50		1.807E+00	1.375E+00	2.250E+00	2.054E-01	0.803
CF-249		402.40	*	-1.208E-02	3.835E-02	6.078E-02	4.928E-03	-0.199
		252.80		1.689E-01	9.772E-01	1.632E+00	1.489E-01	0.104
		333.37		9.644E-02	2.857E-01	3.084E-01	2.730E-02	0.313
CF-251		388.16	*	5.780E-02	4.135E-02	7.242E-02	5.872E-03	0.798
		177.52	*	4.123E-02	1.323E-01	2.249E-01	1.937E-02	0.183
		227.38		-6.618E-02	3.799E-01	6.278E-01	5.662E-02	-0.105
		285.41		-2.492E+00	2.659E+00	3.573E+00	3.263E-01	-0.698

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]G248248001      *
* Acquisition date   : 19-MAR-2010 10:58:10 Detector SN#      :              *
* Detector ID        : GAM01                      Sensitivity    : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.38             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248001             Analyst initials: MXR1          *
* Batch Number       : 959280                 Sample Quantity : 1.5209E+02 GRAM   *
* Recovery           : 1.00000                Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope       :
* MSD DPM             : 0.000                      MSD Isotope  :
* LCS DPM             : 0.000                      LCS Isotope   :
* LCSD DPM            : 0.000                      LCSD Isotope  :
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.018E+01	3.208E+00	5.196E-01	0.000E+00
CD-109	2.786E+00	1.097E+00	1.458E+00	0.000E+00
SN-126	2.691E-01	1.060E-01	1.416E-01	0.000E+00
HG-203	2.747E-01	1.159E-01	6.973E-02	0.000E+00
TL-208	5.750E-01	1.016E-01	5.856E-02	0.000E+00
BI-211	4.485E+00	6.172E-01	3.672E-01	0.000E+00
PB-212	1.941E+00	2.269E-01	1.030E-01	0.000E+00
BI-214	1.477E+00	2.238E-01	1.191E-01	0.000E+00
PB-214	1.628E+00	2.407E-01	1.295E-01	0.000E+00
RA-224	5.605E+00	1.442E+00	1.104E+00	0.000E+00
RA-226	1.477E+00	2.238E-01	1.191E-01	0.000E+00
AC-228	1.871E+00	3.806E-01	2.386E-01	0.000E+00
RA-228	1.871E+00	3.806E-01	2.386E-01	0.000E+00
TH-228	1.941E+00	2.269E-01	1.030E-01	0.000E+00
TH-232	1.871E+00	3.806E-01	2.386E-01	0.000E+00
U-235	4.101E-02	2.097E-01	3.848E-01	0.000E+00
NP-237	8.031E-01	3.568E-01	4.516E-01	0.000E+00
ANH-511	1.492E-01	7.386E-02	4.843E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.838E-02	3.699E-01	6.232E-01	0.000E+00 NOT IDENT.
NA-22	-1.315E-02	4.508E-02	7.558E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.868E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.115E-02	4.633E-02	7.567E-02	0.000E+00 FAIL ABUN
V-48	1.092E-02	1.081E-01	1.841E-01	0.000E+00 NOT IDENT.
CR-51	-2.525E-01	4.741E-01	7.911E-01	0.000E+00 NOT IDENT.
MN-54	3.129E-02	4.102E-02	7.418E-02	0.000E+00 NOT IDENT.
CO-56	1.290E-02	4.367E-02	7.656E-02	0.000E+00 NOT IDENT.
CO-57	1.927E-04	2.694E-02	4.676E-02	0.000E+00 NOT IDENT.

CO-58	-5.357E-02	4.382E-02	6.652E-02	0.000E+00	NOT IDENT.
FE-59	-6.527E-02	1.108E-01	1.738E-01	0.000E+00	NOT IDENT.
CO-60	-6.326E-04	3.435E-02	5.878E-02	0.000E+00	NOT IDENT.
ZN-65	-1.006E-01	1.131E-01	1.413E-01	0.000E+00	NOT IDENT.
SE-75	3.132E-02	5.361E-02	8.668E-02	0.000E+00	FAIL ABUN
SR-85	0.000E+00	4.724E-02	9.016E-02	0.000E+00	NOT IDENT.
Y-88	1.996E-02	3.926E-02	7.097E-02	0.000E+00	NOT IDENT.
Y-91	-3.019E+01	2.603E+01	4.068E+01	0.000E+00	NOT IDENT.
NB-94	3.354E-02	3.478E-02	6.437E-02	0.000E+00	NOT IDENT.
NB-95	-8.050E-03	5.057E-02	8.627E-02	0.000E+00	NOT IDENT.
NB-95M	-4.882E-02	1.538E-01	2.377E-01	0.000E+00	NOT IDENT.
ZR-95	2.182E-02	8.500E-02	1.496E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.334E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.227E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.109E-02	4.797E-02	7.970E-02	0.000E+00	FAIL ABUN
RH-106	1.786E-01	3.204E-01	5.834E-01	0.000E+00	NOT IDENT.
RU-106	1.786E-01	3.199E-01	5.834E-01	0.000E+00	NOT IDENT.
AG-108M	-7.750E-03	2.982E-02	5.008E-02	0.000E+00	NOT IDENT.
AG-110M	-8.477E-03	3.624E-02	6.227E-02	0.000E+00	NOT IDENT.
SN-113	-3.892E-02	4.946E-02	8.096E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.293E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	4.130E-02	8.347E-02	1.557E-01	0.000E+00	NOT IDENT.
TE-123M	1.377E-02	3.054E-02	5.688E-02	0.000E+00	NOT IDENT.
SB-124	-3.668E-02	7.014E-02	1.028E-01	0.000E+00	NOT IDENT.
SB-125	9.976E-02	1.015E-01	1.836E-01	0.000E+00	FAIL ABUN
TE-125M	-4.402E-01	1.150E+01	2.006E+01	0.000E+00	NOT IDENT.
I-126	-1.887E-01	3.589E-01	6.033E-01	0.000E+00	NOT IDENT.
SB-126	1.426E-01	2.325E-01	4.119E-01	0.000E+00	NOT IDENT.
SB-127	-7.373E+00	5.702E+00	8.779E+00	0.000E+00	NOT IDENT.
I-131	-1.069E-01	2.356E-01	3.971E-01	0.000E+00	NOT IDENT.
TE-132	-3.119E-01	4.181E+00	7.477E+00	0.000E+00	NOT IDENT.
BA-133	-7.267E-03	5.075E-02	7.631E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.197E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.376E-02	1.017E-01	0.000E+00	FAIL ABUN
CS-135	4.924E-02	1.829E-01	2.896E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.854E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.208E-02	1.733E-01	2.784E-01	0.000E+00	NOT IDENT.
BA-137M	3.577E-03	3.819E-02	6.717E-02	0.000E+00	NOT IDENT.
CS-137	3.778E-03	4.035E-02	7.096E-02	0.000E+00	NOT IDENT.
CE-139	1.847E-02	3.126E-02	5.834E-02	0.000E+00	NOT IDENT.
BA-140	-1.413E-01	4.136E-01	7.140E-01	0.000E+00	NOT IDENT.
LA-140	-2.635E-02	1.461E-01	2.277E-01	0.000E+00	FAIL ABUN
CE-141	8.676E-02	7.836E-02	1.472E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.527E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.433E-01	2.113E-01	3.729E-01	0.000E+00	NOT IDENT.
PM-144	-3.085E-03	3.474E-02	6.004E-02	0.000E+00	NOT IDENT.
PR-144	-2.318E-01	2.611E+00	4.512E+00	0.000E+00	NOT IDENT.
PM-146	2.904E-03	4.398E-02	7.531E-02	0.000E+00	NOT IDENT.
ND-147	-3.482E-01	9.372E-01	1.625E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.282E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	8.936E-04	1.120E-01	1.806E-01	0.000E+00	FAIL ABUN
GD-153	-4.041E-02	1.008E-01	1.544E-01	0.000E+00	NOT IDENT.
EU-154	-3.425E-02	1.275E-01	2.143E-01	0.000E+00	NOT IDENT.
EU-155	1.291E-01	1.106E-01	2.013E-01	0.000E+00	FAIL ABUN
TB-160	6.058E-02	1.525E-01	2.692E-01	0.000E+00	FAIL ABUN
HO-166M	-2.904E-02	6.449E-02	1.082E-01	0.000E+00	FAIL ABUN
TA-182	1.538E-01	2.280E-01	4.130E-01	0.000E+00	FAIL ABUN
IR-192	4.687E-03	3.828E-02	6.754E-02	0.000E+00	FAIL ABUN
BI-207	8.209E-03	6.011E-02	1.019E-01	0.000E+00	FAIL ABUN
PB-210	1.073E+00	4.192E+00	7.628E+00	0.000E+00	NOT IDENT.
PB-211	-3.233E-01	8.007E-01	1.208E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.594E-01	1.211E+00	0.000E+00	FAIL ABUN
RN-219	1.025E-01	4.049E-01	7.079E-01	0.000E+00	FAIL ABUN
RA-223	-4.540E-01	7.736E-01	1.128E+00	0.000E+00	FAIL ABUN
AC-227	-6.451E-02	2.646E-01	4.656E-01	0.000E+00	FAIL ABUN
TH-227	-6.451E-02	2.646E-01	4.656E-01	0.000E+00	FAIL ABUN
TH-229	-1.103E-01	5.336E-01	9.600E-01	0.000E+00	FAIL ABUN
PA-231	3.480E-01	1.634E+00	2.570E+00	0.000E+00	FAIL ABUN
TH-231	-4.540E-01	7.736E-01	1.128E+00	0.000E+00	FAIL ABUN
PA-233	1.074E-02	6.395E-02	1.132E-01	0.000E+00	FAIL ABUN
PA-234	-6.687E-02	3.258E-01	5.408E-01	0.000E+00	NOT IDENT.
PA-234M	6.883E+00	5.138E+00	9.550E+00	0.000E+00	NOT IDENT.
TH-234	1.363E+00	1.477E+00	2.666E+00	0.000E+00	FAIL ABUN
U-238	1.363E+00	1.477E+00	2.666E+00	0.000E+00	FAIL ABUN
NP-239	-7.563E-03	4.263E-01	7.412E-01	0.000E+00	FAIL ABUN
AM-241	-6.477E-02	1.645E-01	2.927E-01	0.000E+00	NOT IDENT.
CM-247	-1.208E-02	3.758E-02	6.331E-02	0.000E+00	FAIL ABUN
CF-249	5.780E-02	4.052E-02	7.551E-02	0.000E+00	NOT IDENT.

CF-251	4.123E-02	1.296E-01	2.390E-01	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:59:49.74

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248001.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:10
Sample ID          : G248248001 Sample quantity   : 1.52090E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.38 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity       : 5.00000
Batch ID           : 959280 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	1232	10.66*	9.454E-01	3.018E+01	3.018E+01	10.85
CD-109	88.03	209	3.70*	5.183E+00	2.691E+00	2.786E+00	40.19
SN-126	64.28	-----	9.60	2.906E+00	-----	Line Not Found	-----
	86.94	209	8.90	5.183E+00	1.119E+00	1.119E+00	57.02
	87.57	209	37.00*	5.183E+00	2.691E-01	2.691E-01	40.19
HG-203	70.83	-----	3.69	3.714E+00	-----	Line Not Found	-----
	72.87	-----	6.19	3.944E+00	-----	Line Not Found	-----
	279.20	249	81.56*	3.868E+00	1.951E-01	2.747E-01	43.07
TL-208	277.37	-----	6.60	3.885E+00	-----	Line Not Found	-----
	583.19	424	85.00*	2.142E+00	5.750E-01	5.750E-01	18.02
	860.56	90	12.50	1.522E+00	1.169E+00	1.169E+00	36.12
BI-211	72.87	-----	1.23	3.944E+00	-----	Line Not Found	-----
	351.06	757	12.92*	3.226E+00	4.485E+00	4.485E+00	14.04
PB-212	74.82	387	10.28	4.142E+00	2.245E+00	2.245E+00	27.86
	77.11	704	17.10	4.384E+00	2.319E+00	2.319E+00	15.86
	238.63	1490	43.60*	4.345E+00	1.941E+00	1.941E+00	11.93
	300.09	110	3.30	3.652E+00	2.260E+00	2.260E+00	43.96
BI-214	609.32	562	45.49*	2.064E+00	1.477E+00	1.477E+00	15.47
	1120.29	90	14.92	1.193E+00	1.246E+00	1.246E+00	55.14
	1764.49	80	15.30	8.255E-01	1.561E+00	1.561E+00	31.15
PB-214	74.82	387	5.80	4.142E+00	3.980E+00	3.980E+00	27.28
	77.11	704	9.70	4.384E+00	4.088E+00	4.088E+00	17.87
	242.00	401	7.25	4.305E+00	3.170E+00	3.170E+00	26.89
	295.22	359	18.42	3.699E+00	1.300E+00	1.300E+00	21.82
	351.93	757	35.60*	3.226E+00	1.628E+00	1.628E+00	15.09
RA-224	240.99	401	4.10*	4.305E+00	5.605E+00	5.605E+00	26.26
RA-226	609.32	562	45.49*	2.064E+00	1.477E+00	1.477E+00	15.47
	1120.29	90	14.92	1.193E+00	1.246E+00	1.246E+00	55.14
	1764.49	80	15.30	8.255E-01	1.561E+00	1.561E+00	31.15
AC-228	338.32	330	11.27	3.326E+00	2.172E+00	2.172E+00	45.99
	911.20	282	25.80*	1.444E+00	1.871E+00	1.871E+00	20.76
	968.97	196	15.80	1.364E+00	2.248E+00	2.248E+00	33.30

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	330	11.27	3.326E+00	2.172E+00	2.172E+00	45.99
	911.20	282	25.80*	1.444E+00	1.871E+00	1.871E+00	20.76
	968.97	196	15.80	1.364E+00	2.248E+00	2.248E+00	33.30
TH-228	74.82	387	10.28	4.142E+00	2.245E+00	2.245E+00	26.13
	77.11	704	17.10	4.384E+00	2.319E+00	2.319E+00	15.86
	238.63	1490	43.60*	4.345E+00	1.941E+00	1.941E+00	11.93
	300.09	110	3.30	3.652E+00	2.260E+00	2.260E+00	74.62
TH-232	338.32	330	11.27	3.326E+00	2.172E+00	2.172E+00	21.19
	911.20	282	25.80*	1.444E+00	1.871E+00	1.871E+00	20.76
	968.97	196	15.80	1.364E+00	2.248E+00	2.248E+00	33.30
U-235	89.96	130	3.47	5.363E+00	1.727E+00	1.727E+00	41.29
	93.35	274	5.60	5.509E+00	2.196E+00	2.196E+00	42.68
	143.76	-----	10.96*	5.865E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.555E+00	-----	Line Not Found	-----
	185.72	208	57.20	5.152E+00	1.741E-01	1.741E-01	43.46
	205.31	-----	5.01	4.840E+00	-----	Line Not Found	-----
NP-237	86.48	209	12.40*	5.183E+00	8.031E-01	8.031E-01	45.33
	95.86	-----	2.68	5.636E+00	-----	Line Not Found	-----
ANH-511	511.00	145	100.00*	2.391E+00	1.492E-01	1.492E-01	50.51

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248248001

Page : 3
Acquisition date : 19-MAR-2010 10:58:10

Total number of lines in spectrum 32
Number of unidentified lines 2
Number of lines tentatively identified by NID 30 93.75%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.018E+01	3.018E+01	0.327E+01	10.85	
CD-109	461.40D	1.04	2.691E+00	2.786E+00	1.120E+00	40.19	
SN-126	2.30E+05Y	1.00	2.691E-01	2.691E-01	1.082E-01	40.19	
HG-203	46.59D	1.41	1.951E-01	2.747E-01	1.183E-01	43.07	
TL-208	1.41E+10Y	1.00	5.750E-01	5.750E-01	1.036E-01	18.02	
BI-211	7.04E+08Y	1.00	4.485E+00	4.485E+00	0.630E+00	14.04	
PB-212	1.41E+10Y	1.00	1.941E+00	1.941E+00	0.232E+00	11.93	
BI-214	1600.00Y	1.00	1.477E+00	1.477E+00	0.228E+00	15.47	
PB-214	1600.00Y	1.00	1.628E+00	1.628E+00	0.246E+00	15.09	
RA-224	1.41E+10Y	1.00	5.605E+00	5.605E+00	1.472E+00	26.26	
RA-226	1600.00Y	1.00	1.477E+00	1.477E+00	0.228E+00	15.47	
AC-228	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.388E+00	20.76	
RA-228	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.388E+00	20.76	
TH-228	1.41E+10Y	1.00	1.941E+00	1.941E+00	0.232E+00	11.93	
TH-232	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.388E+00	20.76	
U-235	7.04E+08Y	1.00	1.741E-01	1.741E-01	0.757E-01	43.46	K
NP-237	2.14E+06Y	1.00	8.031E-01	8.031E-01	3.641E-01	45.33	
ANH-511	1.00E+09Y	1.00	1.492E-01	1.492E-01	0.754E-01	50.51	
Total Activity :			5.920E+01	5.938E+01			

Grand Total Activity : 5.920E+01 5.938E+01

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

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

Unidentified Energy Lines
Sample ID : G248248001

Page : 4
Acquisition date : 19-MAR-2010 10:58:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.79	156	384	1.24	420.14	415	10	2.17E-02	49.7	4.77E+00	T
0	270.15	137	290	1.45	540.81	536	13	1.91E-02	53.9	3.96E+00	T
0	328.60	60	174	1.02	657.64	654	8	8.37E-03	80.3	3.41E+00	T
0	409.87	46	109	0.87	820.07	817	8	6.41E-03	84.4	2.86E+00	T
0	463.90	120	148	1.96	928.06	921	16	1.67E-02	49.0	2.59E+00	T
0	727.72	87	65	2.02	1455.38	1451	10	1.21E-02	40.8	1.77E+00	T
0	795.60	68	50	0.76	1591.05	1586	11	9.44E-03	46.9	1.63E+00	T
5	965.28	38	65	2.02	1930.17	1926	20	5.25E-03	75.4	1.37E+00	T
0	1588.97	24	15	1.76	3176.63	3171	10	3.33E-03	75.6	8.86E-01	
0	1848.39	13	2	1.32	3695.03	3691	9	1.74E-03	71.5	8.04E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248001.CNF;1
* Acquisition date   : 19-MAR-2010 10:58:10  Detector SN#      :
* Detector ID        : GAM01                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:01.38          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G248248001            Analyst initials : MXR1
* Batch Number       : 959280                Sample Quantity  : 1.52090E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS Isotope       :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A              LCS Isotope       :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.018E+01	3.274E+00	5.157E-01	4.585E-02	58.528
CD-109	2.786E+00	1.120E+00	1.350E+00	1.277E-01	2.064
SN-126	2.691E-01	1.082E-01	1.310E-01	1.234E-02	2.054
HG-203	2.747E-01	1.183E-01	6.633E-02	6.204E-03	4.141
TL-208	5.750E-01	1.036E-01	5.675E-02	5.147E-03	10.133
BI-211	4.485E+00	6.298E-01	3.512E-01	3.195E-02	12.768
PB-212	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
BI-214	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
PB-214	1.628E+00	2.456E-01	1.239E-01	1.317E-02	13.135
RA-224	5.605E+00	1.472E+00	1.046E+00	9.506E-02	5.359
RA-226	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
AC-228	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
RA-228	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
TH-228	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
TH-232	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
U-235	1.741E-01	7.567E-02	3.602E-01	6.093E-02	0.483
NP-237	8.031E-01	3.641E-01	4.177E-01	9.582E-02	1.923
ANH-511	1.492E-01	7.537E-02	4.677E-02	3.964E-03	3.190

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.838E-02		3.775E-01	6.008E-01	5.464E-02	-0.064
NA-22	-1.315E-02		4.600E-02	7.475E-02	6.277E-03	-0.176
NA-24	2.008E+03		1.973E+03	Half-Life	too short	
SC-46	-2.115E-02		4.728E-02	7.413E-02	6.701E-03	-0.285
V-48	1.092E-02		1.103E-01	1.808E-01	1.614E-02	0.060
CR-51	-2.525E-01		4.838E-01	7.551E-01	7.097E-02	-0.334
MN-54	3.129E-02		4.186E-02	7.255E-02	6.458E-03	0.431
CO-56	1.290E-02		4.456E-02	7.491E-02	6.693E-03	0.172
CO-57	1.927E-04		2.749E-02	4.361E-02	3.839E-03	0.004
CO-58	-5.357E-02		4.471E-02	6.500E-02	5.751E-03	-0.824
FE-59	-6.527E-02		1.131E-01	1.712E-01	1.578E-02	-0.381
CO-60	-6.326E-04		3.505E-02	5.820E-02	4.961E-03	-0.011
ZN-65	-1.006E-01		1.154E-01	1.393E-01	1.175E-02	-0.722
SE-75	3.132E-02		5.470E-02	8.235E-02	7.565E-03	0.380
SR-85	1.226E-01		4.821E-02	8.709E-02	7.384E-03	1.408
Y-88	1.996E-02		4.006E-02	7.087E-02	5.829E-03	0.282
Y-91	-3.019E+01		2.656E+01	4.017E+01	3.291E+00	-0.752
NB-94	3.354E-02		3.549E-02	6.267E-02	5.261E-03	0.535
NB-95	-8.050E-03		5.160E-02	8.419E-02	7.295E-03	-0.096
NB-95M	-4.882E-02		1.570E-01	2.252E-01	2.313E-02	-0.217
ZR-95	2.182E-02		8.674E-02	1.460E-01	1.391E-02	0.149
MO-99	-5.847E-05		4.762E-05	Half-Life	too short	
TC-99M	-1.742E+20		6.262E+19	Half-Life	too short	
RU-103	-1.109E-02		4.895E-02	7.692E-02	1.067E-02	-0.144
RH-106	1.786E-01		3.269E-01	5.663E-01	7.409E-02	0.315
RU-106	1.786E-01		3.264E-01	5.663E-01	4.730E-02	0.315
AG-108M	-7.750E-03		3.043E-02	4.816E-02	4.122E-03	-0.161
AG-110M	-8.477E-03		3.698E-02	6.053E-02	5.132E-03	-0.140
SN-113	-3.892E-02		5.047E-02	7.767E-02	6.469E-03	-0.501
CD-115	5.760E-05		6.596E-05	Half-Life	too short	
SN-117M	4.130E-02		8.518E-02	1.461E-01	1.244E-02	0.283
TE-123M	1.377E-02		3.117E-02	5.337E-02	4.572E-03	0.258
SB-124	-3.668E-02		7.157E-02	1.024E-01	9.100E-03	-0.358
SB-125	9.976E-02		1.036E-01	1.765E-01	1.484E-02	0.565
TE-125M	-4.402E-01		1.173E+01	1.865E+01	1.966E+00	-0.024
I-126	-1.887E-01		3.663E-01	5.866E-01	4.819E-02	-0.322
SB-126	1.426E-01		2.373E-01	4.013E-01	3.402E-02	0.355
SB-127	-7.373E+00		5.819E+00	8.542E+00	1.176E+00	-0.863
I-131	-1.069E-01		2.404E-01	3.803E-01	3.432E-02	-0.281
TE-132	-3.119E-01		4.266E+00	7.077E+00	1.263E+00	-0.044
BA-133	-7.267E-03		5.179E-02	7.303E-02	9.450E-03	-0.100
I-133	-2.380E+00		1.631E+00	Half-Life	too short	
CS-134	1.363E-01	+	6.506E-02	9.938E-02	8.782E-03	1.371
CS-135	4.924E-02		1.866E-01	2.752E-01	2.870E-02	0.179
I-135	-2.459E+18		1.456E+18	Half-Life	too short	
CS-136	-7.208E-02		1.768E-01	2.739E-01	2.492E-02	-0.263
BA-137M	3.577E-03		3.897E-02	6.530E-02	5.349E-03	0.055
CS-137	3.778E-03		4.117E-02	6.898E-02	5.662E-03	0.055

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-139	1.847E-02		3.190E-02	5.480E-02	4.667E-03	0.337
BA-140	-1.413E-01		4.221E-01	6.904E-01	2.339E-01	-0.205
LA-140	-2.635E-02		1.491E-01	2.265E-01	1.955E-02	-0.116
CE-141	8.676E-02		7.996E-02	1.378E-01	1.199E-02	0.630
CE-143	1.384E-02		4.350E-03	Half-Life	too short	
CE-144	1.433E-01		2.156E-01	3.485E-01	5.327E-02	0.411
PM-144	-3.085E-03		3.545E-02	5.845E-02	4.893E-03	-0.053
PR-144	-2.318E-01		2.664E+00	4.392E+00	3.674E-01	-0.053
PM-146	2.904E-03		4.488E-02	7.251E-02	7.519E-03	0.040
ND-147	-3.482E-01		9.563E-01	1.571E+00	2.337E-01	-0.222
PM-149	-1.062E-03		6.543E-04	Half-Life	too short	
EU-152	8.936E-04		1.143E-01	1.727E-01	1.596E-02	0.005
GD-153	-4.041E-02		1.029E-01	1.433E-01	1.272E-02	-0.282
EU-154	-3.425E-02		1.301E-01	2.119E-01	2.374E-02	-0.162
EU-155	1.291E-01		1.128E-01	1.871E-01	1.645E-02	0.690
TB-160	6.058E-02		1.556E-01	2.637E-01	2.378E-02	0.230
HO-166M	-2.904E-02		6.580E-02	1.054E-01	8.889E-03	-0.276
TA-182	1.538E-01		2.326E-01	4.080E-01	3.363E-02	0.377
IR-192	4.687E-03		3.906E-02	6.445E-02	5.807E-03	0.073
BI-207	8.209E-03		6.134E-02	1.003E-01	8.692E-03	0.082
PB-210	1.073E+00		4.277E+00	6.956E+00	6.515E-01	0.154
PB-211	-3.233E-01		8.171E-01	1.160E+00	5.603E-01	-0.279
BI-212	1.819E+00	+	7.749E-01	1.180E+00	1.461E-01	1.541
RN-219	1.025E-01		4.132E-01	6.796E-01	9.909E-02	0.151
RA-223	-4.540E-01		7.894E-01	1.077E+00	1.885E-01	-0.421
AC-227	-6.451E-02		2.700E-01	4.420E-01	5.492E-02	-0.146
TH-227	-6.451E-02		2.700E-01	4.420E-01	6.160E-02	-0.146
TH-229	-1.103E-01		5.445E-01	9.051E-01	7.929E-02	-0.122
PA-231	3.480E-01		1.667E+00	2.446E+00	3.644E-01	0.142
TH-231	-4.540E-01		7.894E-01	1.077E+00	1.885E-01	-0.421
PA-233	1.074E-02		6.526E-02	1.080E-01	1.000E-02	0.099
PA-234	-6.687E-02		3.324E-01	5.307E-01	1.005E-01	-0.126
PA-234M	6.883E+00		5.243E+00	9.384E+00	9.566E-01	0.733
TH-234	1.363E+00		1.508E+00	2.448E+00	4.397E-01	0.557
U-238	1.363E+00		1.508E+00	2.448E+00	4.397E-01	0.557
NP-239	-7.563E-03		4.350E-01	6.905E-01	6.016E-02	-0.011
AM-241	-6.477E-02		1.678E-01	2.684E-01	2.212E-02	-0.241
CM-247	-1.208E-02		3.835E-02	6.078E-02	4.928E-03	-0.199
CF-249	5.780E-02		4.135E-02	7.242E-02	5.872E-03	0.798
CF-251	4.123E-02		1.323E-01	2.249E-01	1.937E-02	0.183

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]G248248001          *
* Acquisition date   : 19-MAR-2010 10:58:10 Detector SN#      :             *
* Detector ID        : GAM01                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit: 75.000       *
* Elapsed real time  : 0 02:00:01.38             Half life ratio : 8.000       *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248001             Analyst initials: MXR1          *
* Batch Number       : 959280                  Sample Quantity : 1.5209E+02 GRAM *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000       *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope       :             *
* MSD DPM             : 0.000                      MSD Isotope   :             *
* LCS DPM             : 0.000                      LCS Isotope   :             *
* LCSD DPM            : 0.000                      LCSD Isotope  :             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.018E+01	3.208E+00	2.599E-01	1.637E+00
CD-109	2.786E+00	1.097E+00	7.296E-01	5.599E-01
SN-126	2.691E-01	1.060E-01	7.086E-02	5.409E-02
HG-203	2.747E-01	1.159E-01	3.489E-02	5.915E-02
TL-208	5.750E-01	1.016E-01	2.930E-02	5.182E-02
BI-211	4.485E+00	6.172E-01	1.837E-01	3.149E-01
PB-212	1.941E+00	2.269E-01	5.151E-02	1.158E-01
BI-214	1.477E+00	2.238E-01	5.959E-02	1.142E-01
PB-214	1.628E+00	2.407E-01	6.479E-02	1.228E-01
RA-224	5.605E+00	1.442E+00	5.521E-01	7.360E-01
RA-226	1.477E+00	2.238E-01	5.959E-02	1.142E-01
AC-228	1.871E+00	3.806E-01	1.194E-01	1.942E-01
RA-228	1.871E+00	3.806E-01	1.194E-01	1.942E-01
TH-228	1.941E+00	2.269E-01	5.151E-02	1.158E-01
TH-232	1.871E+00	3.806E-01	1.194E-01	1.942E-01
U-235	4.101E-02	2.097E-01	1.925E-01	1.070E-01
NP-237	8.031E-01	3.568E-01	2.259E-01	1.820E-01
ANH-511	1.492E-01	7.386E-02	2.423E-02	3.768E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.838E-02	3.699E-01	3.118E-01	1.887E-01 NOT IDENT.
NA-22	-1.315E-02	4.508E-02	3.781E-02	2.300E-02 NOT IDENT.
NA-24	2.008E+09	3.868E+09	0.000E+00	1.973E+09 SHORT HLIF
SC-46	-2.115E-02	4.633E-02	3.786E-02	2.364E-02 FAIL ABUN
V-48	1.092E-02	1.081E-01	9.208E-02	5.516E-02 NOT IDENT.
CR-51	-2.525E-01	4.741E-01	3.958E-01	2.419E-01 NOT IDENT.
MN-54	3.129E-02	4.102E-02	3.711E-02	2.093E-02 NOT IDENT.
CO-56	1.290E-02	4.367E-02	3.830E-02	2.228E-02 NOT IDENT.
CO-57	1.927E-04	2.694E-02	2.340E-02	1.374E-02 NOT IDENT.

CO-58	-5.357E-02	4.382E-02	3.328E-02	2.236E-02	NOT IDENT.
FE-59	-6.527E-02	1.108E-01	8.697E-02	5.654E-02	NOT IDENT.
CO-60	-6.326E-04	3.435E-02	2.941E-02	1.753E-02	NOT IDENT.
ZN-65	-1.006E-01	1.131E-01	7.071E-02	5.772E-02	NOT IDENT.
SE-75	3.132E-02	5.361E-02	4.337E-02	2.735E-02	FAIL ABUN
SR-85	1.226E-01	4.724E-02	4.511E-02	2.410E-02	NOT IDENT.
Y-88	1.996E-02	3.926E-02	3.550E-02	2.003E-02	NOT IDENT.
Y-91	-3.019E+01	2.603E+01	2.035E+01	1.328E+01	NOT IDENT.
NB-94	3.354E-02	3.478E-02	3.220E-02	1.775E-02	NOT IDENT.
NB-95	-8.050E-03	5.057E-02	4.316E-02	2.580E-02	NOT IDENT.
NB-95M	-4.882E-02	1.538E-01	1.189E-01	7.848E-02	NOT IDENT.
ZR-95	2.182E-02	8.500E-02	7.486E-02	4.337E-02	NOT IDENT.
MO-99	-5.847E+01	9.334E+01	0.000E+00	4.762E+01	SHORT HLIF
TC-99M	-1.742E+26	1.227E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.109E-02	4.797E-02	3.988E-02	2.447E-02	FAIL ABUN
RH-106	1.786E-01	3.204E-01	2.919E-01	1.634E-01	NOT IDENT.
RU-106	1.786E-01	3.199E-01	2.919E-01	1.632E-01	NOT IDENT.
AG-108M	-7.750E-03	2.982E-02	2.505E-02	1.522E-02	NOT IDENT.
AG-110M	-8.477E-03	3.624E-02	3.115E-02	1.849E-02	NOT IDENT.
SN-113	-3.892E-02	4.946E-02	4.051E-02	2.523E-02	NOT IDENT.
CD-115	5.760E+01	1.293E+02	0.000E+00	6.596E+01	SHORT HLIF
SN-117M	4.130E-02	8.347E-02	7.789E-02	4.259E-02	NOT IDENT.
TE-123M	1.377E-02	3.054E-02	2.846E-02	1.558E-02	NOT IDENT.
SB-124	-3.668E-02	7.014E-02	5.142E-02	3.579E-02	NOT IDENT.
SB-125	9.976E-02	1.015E-01	9.184E-02	5.178E-02	FAIL ABUN
TE-125M	-4.402E-01	1.150E+01	1.003E+01	5.865E+00	NOT IDENT.
I-126	-1.887E-01	3.589E-01	3.018E-01	1.831E-01	NOT IDENT.
SB-126	1.426E-01	2.325E-01	2.061E-01	1.186E-01	NOT IDENT.
SB-127	-7.373E+00	5.702E+00	4.392E+00	2.909E+00	NOT IDENT.
I-131	-1.069E-01	2.356E-01	1.987E-01	1.202E-01	NOT IDENT.
TE-132	-3.119E-01	4.181E+00	3.741E+00	2.133E+00	NOT IDENT.
BA-133	-7.267E-03	5.075E-02	3.818E-02	2.589E-02	NOT IDENT.
I-133	-2.380E+06	3.197E+06	0.000E+00	1.631E+06	SHORT HLIF
CS-134	1.363E-01	6.376E-02	5.090E-02	3.253E-02	FAIL ABUN
CS-135	4.924E-02	1.829E-01	1.449E-01	9.329E-02	NOT IDENT.
I-135	-2.459E+24	2.854E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.208E-02	1.733E-01	1.393E-01	8.842E-02	NOT IDENT.
BA-137M	3.577E-03	3.819E-02	3.361E-02	1.949E-02	NOT IDENT.
CS-137	3.778E-03	4.035E-02	3.550E-02	2.059E-02	NOT IDENT.
CE-139	1.847E-02	3.126E-02	2.919E-02	1.595E-02	NOT IDENT.
BA-140	-1.413E-01	4.136E-01	3.572E-01	2.110E-01	NOT IDENT.
LA-140	-2.635E-02	1.461E-01	1.139E-01	7.453E-02	FAIL ABUN
CE-141	8.676E-02	7.836E-02	7.364E-02	3.998E-02	NOT IDENT.
CE-143	1.384E+04	8.527E+03	0.000E+00	4.350E+03	SHORT HLIF
CE-144	1.433E-01	2.113E-01	1.866E-01	1.078E-01	NOT IDENT.
PM-144	-3.085E-03	3.474E-02	3.004E-02	1.772E-02	NOT IDENT.
PR-144	-2.318E-01	2.611E+00	2.257E+00	1.332E+00	NOT IDENT.
PM-146	2.904E-03	4.398E-02	3.768E-02	2.244E-02	NOT IDENT.
ND-147	-3.482E-01	9.372E-01	8.128E-01	4.782E-01	FAIL ABUN
PM-149	-1.062E+03	1.282E+03	0.000E+00	6.543E+02	SHORT HLIF
EU-152	8.936E-04	1.120E-01	9.036E-02	5.717E-02	FAIL ABUN
GD-153	-4.041E-02	1.008E-01	7.727E-02	5.144E-02	NOT IDENT.
EU-154	-3.425E-02	1.275E-01	1.072E-01	6.507E-02	NOT IDENT.
EU-155	1.291E-01	1.106E-01	1.007E-01	5.642E-02	FAIL ABUN
TB-160	6.058E-02	1.525E-01	1.347E-01	7.782E-02	FAIL ABUN
HO-166M	-2.904E-02	6.449E-02	5.412E-02	3.290E-02	FAIL ABUN
TA-182	1.538E-01	2.280E-01	2.066E-01	1.163E-01	FAIL ABUN
IR-192	4.687E-03	3.828E-02	3.379E-02	1.953E-02	FAIL ABUN
BI-207	8.209E-03	6.011E-02	5.097E-02	3.067E-02	FAIL ABUN
PB-210	1.073E+00	4.192E+00	3.816E+00	2.139E+00	NOT IDENT.
PB-211	-3.233E-01	8.007E-01	6.044E-01	4.085E-01	NOT IDENT.
BI-212	1.819E+00	7.594E-01	6.060E-01	3.875E-01	FAIL ABUN
RN-219	1.025E-01	4.049E-01	3.542E-01	2.066E-01	FAIL ABUN
RA-223	-4.540E-01	7.736E-01	5.645E-01	3.947E-01	FAIL ABUN
AC-227	-6.451E-02	2.646E-01	2.329E-01	1.350E-01	FAIL ABUN
TH-227	-6.451E-02	2.646E-01	2.329E-01	1.350E-01	FAIL ABUN
TH-229	-1.103E-01	5.336E-01	4.803E-01	2.722E-01	FAIL ABUN
PA-231	3.480E-01	1.634E+00	1.286E+00	8.336E-01	FAIL ABUN
TH-231	-4.540E-01	7.736E-01	5.645E-01	3.947E-01	FAIL ABUN
PA-233	1.074E-02	6.395E-02	5.665E-02	3.263E-02	FAIL ABUN
PA-234	-6.687E-02	3.258E-01	2.706E-01	1.662E-01	NOT IDENT.
PA-234M	6.883E+00	5.138E+00	4.778E+00	2.621E+00	NOT IDENT.
TH-234	1.363E+00	1.477E+00	1.334E+00	7.538E-01	FAIL ABUN
U-238	1.363E+00	1.477E+00	1.334E+00	7.538E-01	FAIL ABUN
NP-239	-7.563E-03	4.263E-01	3.708E-01	2.175E-01	FAIL ABUN
AM-241	-6.477E-02	1.645E-01	1.464E-01	8.392E-02	NOT IDENT.
CM-247	-1.208E-02	3.758E-02	3.168E-02	1.917E-02	FAIL ABUN
CF-249	5.780E-02	4.052E-02	3.778E-02	2.067E-02	NOT IDENT.

CF-251

4.123E-02

1.296E-01

1.196E-01

6.613E-02 NOT IDENT.

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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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ENERGY	MDA COUNTS
46.54	327.5887
49.72	354.4937
57.36	0.0000
59.54	387.5262
63.29	386.9697
63.29	386.9697
64.28	451.1901
67.75	446.4257
69.67	484.2087
70.83	430.5171
72.81	477.0344
72.87	477.0796
72.87	477.0796
74.82	478.5723
74.82	478.5723
74.82	478.5723
74.97	478.6852
77.11	480.2999
77.11	480.2999
77.11	480.2999
79.69	467.5552
79.80	474.1516
80.12	474.3825
80.19	474.4336
80.57	504.0699
81.00	561.5300
81.07	538.7350
81.07	538.7350
83.79	458.9713
83.79	458.9713
85.43	450.2232
86.48	538.1334
86.55	562.8733
86.79	576.2402
86.94	576.3657
87.57	484.5891
88.03	484.9098
88.47	485.2148
89.96	486.2466
91.11	400.8937
92.59	401.7227
92.59	401.7227
93.35	402.1474
94.67	402.8785
94.87	371.3496
94.87	371.3496
95.86	366.8491
97.43	397.7083
98.44	371.4764
99.53	360.6216
100.11	342.1162
103.18	395.1317
103.37	385.1248
105.31	342.1902
106.12	379.7301
109.28	398.2183
111.00	371.8645
111.76	397.1786
116.30	361.7281
117.23	367.8430
121.12	330.5229
121.78	344.5610
122.06	344.6732
123.07	356.5817
131.20	409.8152
133.52	327.0644
136.00	341.3750

136.47	345.0536
140.51	0.0000
140.51	0.0000
143.76	375.1110
144.24	347.0413
144.24	347.0413
145.44	348.3602
152.43	359.7724
153.25	344.9199
154.21	346.1457
154.21	346.1457
156.02	376.2636
158.56	343.1636
159.00	346.8981
162.66	366.1299
163.33	360.0677
165.86	322.1422
176.60	339.0691
177.52	308.3394
181.07	0.0000
184.41	287.8654
185.72	299.9637
193.51	316.4502
197.04	327.6168
205.31	306.5416
210.85	265.8803
215.65	271.4370
222.11	279.4659
227.38	289.1794
228.16	283.6425
228.18	283.6470
235.69	294.0867
235.96	292.6156
235.96	292.6156
238.63	260.0067
238.63	260.0067
240.99	260.4658
242.00	260.6622
244.70	220.5119
252.40	216.1316
252.80	212.3167
256.23	238.1073
256.23	238.1073
260.90	0.0000
264.66	195.5353
268.22	221.1111
269.46	178.9238
269.46	178.9238
271.23	190.1407
273.65	141.6621
276.40	167.1570
277.37	167.2683
277.60	167.2942
278.00	167.3382
279.20	167.4753
279.54	167.5142
280.46	167.6177
283.69	182.2424
284.31	199.7543
285.41	222.1133
285.90	0.0000
287.50	164.1678
293.27	0.0000
295.22	175.6428
295.96	203.6825
298.57	204.0280
299.98	148.1536
299.98	148.1536
300.09	197.0192
300.09	197.0192
300.13	197.0222
301.36	195.5753
302.85	192.5508
304.50	168.6588
304.50	168.6588
304.85	160.6641
308.46	189.2106
311.90	159.3597

316.51	167.9099
319.41	144.9027
320.08	178.4143
323.87	191.8335
323.87	191.8335
328.76	194.6430
333.37	155.3282
334.37	171.7786
334.37	171.7786
338.28	181.4023
338.28	181.4023
338.32	181.4050
338.32	181.4050
338.32	181.4050
340.48	188.8207
340.55	185.5424
344.28	171.4122
351.06	163.5506
351.93	153.9223
356.01	164.0123
364.49	150.8588
366.42	0.0000
383.85	131.4411
388.16	108.5574
388.63	114.9110
391.69	155.2230
400.66	112.4616
401.81	121.0206
402.40	132.7400
404.85	136.0996
410.95	133.1142
414.70	107.7229
423.72	133.1237
427.09	157.0075
427.87	122.6418
433.94	115.4590
453.88	113.3152
463.37	101.7883
468.07	75.4673
473.00	94.5520
476.78	100.2241
477.60	107.9741
487.02	113.9749
492.35	0.0000
497.08	105.6008
511.00	95.0705
514.00	95.1950
527.90	0.0000
529.87	0.0000
531.02	104.6974
537.26	102.2628
546.56	0.0000
563.25	109.7783
569.33	105.4653
569.50	98.1365
569.70	98.1443
583.19	81.1551
600.60	93.7875
602.73	89.8368
604.72	86.8073
609.32	89.4469
609.32	89.4469
610.33	89.4820
614.28	79.3492
618.01	88.2926
621.93	76.7729
621.93	76.7729
633.25	80.8623
635.95	83.7678
636.99	80.0341
645.85	72.7421
657.76	87.2944
661.66	94.0693
661.66	94.0693
664.57	0.0000
666.33	101.8433
666.50	104.7041
677.62	91.7438

685.70	98.7176
695.00	86.5415
696.49	81.7751
696.51	81.7772
697.00	80.8274
702.65	74.2384
706.68	93.6514
711.68	91.8805
720.70	70.0658
721.93	0.0000
722.78	95.4669
722.91	90.6149
723.31	87.3918
724.19	92.2748
727.33	77.7871
733.00	74.6901
735.93	68.2620
739.50	0.0000
747.24	66.5623
752.31	81.3830
753.82	60.8224
756.73	78.5547
763.94	114.1733
765.81	97.5015
766.42	73.8794
777.92	0.0000
778.90	67.2546
783.70	59.4346
785.37	59.4668
795.86	62.9792
801.95	81.1304
810.29	82.9129
810.76	79.9277
815.77	57.0376
818.51	60.0908
832.01	73.4153
834.85	69.4515
836.80	0.0000
846.77	60.6123
856.80	60.7954
860.56	65.9363
871.09	62.0723
873.19	54.9835
875.33	0.0000
879.36	53.0436
880.51	62.2450
883.24	56.1682
884.68	59.2560
889.28	72.6346
898.04	53.3330
911.20	57.6529
911.20	57.6529
911.20	57.6529
926.50	54.8025
937.49	66.3812
944.13	51.9568
946.00	64.4597
949.00	70.7575
962.29	57.4398
964.08	62.6924
966.15	65.8639
968.97	65.9147
968.97	65.9147
968.97	65.9147
983.53	58.8232
996.26	63.2402
1001.03	42.2139
1004.73	67.6094
1037.84	65.0001
1038.76	0.0000
1048.07	60.8993
1050.41	50.2450
1050.41	50.2450
1063.66	63.2867
1085.87	77.6672
1099.45	63.8600
1112.07	48.8584
1115.54	70.6335

1120.29	55.4824
1120.29	55.4824
1120.55	55.4874
1121.30	55.4974
1131.51	0.0000
1173.23	61.5175
1177.93	64.3433
1189.05	70.9624
1204.77	86.9431
1221.41	68.7065
1231.02	75.3706
1235.36	92.2123
1238.28	60.5831
1260.41	0.0000
1271.85	41.3180
1274.44	49.7996
1274.54	49.7996
1291.59	54.7030
1298.22	0.0000
1312.11	46.4200
1332.49	26.6419
1365.19	23.9522
1368.63	0.0000
1384.29	27.8955
1408.01	35.7655
1457.56	0.0000
1460.82	20.5164
1489.16	17.6836
1505.03	24.6368
1596.21	25.2656
1620.50	22.1558
1678.03	0.0000
1690.97	12.2388
1764.49	12.3960
1764.49	12.3960
1770.23	10.6356
1771.35	7.0918
1791.20	0.0000
1836.06	12.5459

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248001

Total Uranium Activity	4.0734E+00	ug/g
Total Uranium Counting Unc.	4.3964E+00	ug/g
Total Uranium Tpu	2.2431E-06	ug/g
Total Uranium Mda	3.9685E+00	ug/g

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*****
*
*               GEL Laboratories LLC                      *
*               2040 SAVAGE ROAD                          *
*               CHARLESTON ,SC 29417                      *
*               GROSS GAMMA REPORT                        *
*
*****
*
*  BATCH ID      : 959280                                SAMPLE ID   : G248248001
*  ANALYST       : MXR1                                  DETECTOR    : GAM01
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00             COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 19-MAR-2010 10:58:10.97             SAMPLE ALQT: 152.090 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.008E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.326E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.929E+00
GROSS GAMMA DLC       (pCi/GRAM ) : 1.914E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:16:51.23

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:16:19
Sample ID          : G1202057355      Sample quantity   : 1.52090E+02 GRAM
Detector name      : GAM02             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:02.92  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 959280             Detector SN#      :
Matrix Spike ID    :                    LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	1459.54*	14	0	0.90	2920.08	2914	12	1.97E-03	41.4	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 13:16:54

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-MAR-2010 00:00:00   Acquisition date : 19-MAR-2010 11:16:19
Sample ID        : G1202057355           Sample quantity  : 152.09 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA2                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:02.92   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	*	3.192E-01	2.660E-01	2.810E-01	2.671E-02	1.136

---- 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	*	8.070E-02	1.847E-01	3.136E-01	3.325E-02	0.257
NA-22		1274.54	*	-3.606E-02	2.278E-02	2.310E-02	2.048E-03	-1.561
NA-24		1368.63	*	1.254E-01	2.278E-02	Half-Life too short		
SC-46		889.28	*	-2.225E-02	2.244E-02	2.971E-02	3.020E-03	-0.749
		1120.55		-2.048E-04	2.628E-02	4.450E-02	3.845E-03	-0.005
V-48		944.13		-1.406E-01	4.693E-01	7.153E-01	7.159E-02	-0.197
		983.53	*	1.578E-02	4.086E-02	6.980E-02	6.826E-03	0.226
		1312.11		1.029E-02	3.999E-02	6.906E-02	6.323E-03	0.149
CR-51		320.08	*	-5.122E-02	1.931E-01	3.125E-01	3.811E-02	-0.164
MN-54		834.85	*	-4.559E-03	2.112E-02	3.334E-02	3.275E-03	-0.137
CO-56		846.77	*	-8.878E-03	1.984E-02	2.964E-02	2.935E-03	-0.300
		1037.84		-1.177E-01	1.546E-01	2.219E-01	2.176E-02	-0.530
		1238.28		-2.717E-03	3.668E-02	5.962E-02	5.259E-03	-0.046
		1771.35		-1.112E-01	1.776E-01	2.661E-01	2.247E-02	-0.418
CO-57		122.06	*	1.935E-03	1.209E-02	2.015E-02	1.685E-03	0.096
		136.47		2.097E-04	1.030E-01	1.685E-01	1.589E-02	0.001
CO-58		810.76	*	-1.013E-02	2.006E-02	2.987E-02	2.893E-03	-0.339
FE-59		1099.45	*	-1.041E-03	4.192E-02	6.954E-02	6.629E-03	-0.015
		1291.59		9.931E-03	4.637E-02	8.047E-02	8.140E-03	0.123
CO-60		1173.23		7.225E-03	2.130E-02	3.740E-02	3.012E-03	0.193
		1332.49	*	-3.583E-03	1.940E-02	3.038E-02	2.830E-03	-0.118
ZN-65		1115.54	*	-2.343E-02	4.226E-02	6.303E-02	5.483E-03	-0.372
SE-75		121.12		-1.725E-02	6.473E-02	1.044E-01	1.136E-02	-0.165
		136.00		-2.324E-03	2.014E-02	3.267E-02	2.892E-03	-0.071
		264.66	*	-9.740E-03	2.576E-02	4.205E-02	5.141E-03	-0.232
		279.54		5.726E-02	6.389E-02	1.138E-01	1.438E-02	0.503
		400.66		-1.780E-02	1.461E-01	2.359E-01	2.881E-02	-0.075
SR-85		514.00	*	-6.348E-02	3.188E-02	4.074E-02	4.033E-03	-1.558

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-88	898.04			-1.332E-02	2.446E-02	3.601E-02	3.693E-03	-0.370
	1836.06	*		-2.350E-03	2.047E-02	3.265E-02	2.663E-03	-0.072
Y-91	1204.77	*		8.418E+00	8.068E+00	1.613E+01	1.339E+00	0.522
NB-94	702.65	*		2.852E-03	1.945E-02	3.277E-02	2.922E-03	0.087
	871.09			3.166E-03	1.878E-02	3.137E-02	3.154E-03	0.101
NB-95	765.81	*		-1.010E-02	2.627E-02	3.744E-02	3.505E-03	-0.270
NB-95M	235.69	*		6.661E-04	6.851E-02	1.163E-01	1.473E-02	0.006
ZR-95	724.19			-1.097E-02	4.668E-02	7.528E-02	7.351E-03	-0.146
	756.73	*		8.867E-03	3.302E-02	5.676E-02	5.757E-03	0.156
MO-99	140.51			-8.781E+00	1.140E+01	1.666E+01	3.978E+00	-0.527
	181.07			8.835E+00	8.350E+00	1.421E+01	2.809E+00	0.622
	366.42			7.395E+00	5.153E+01	8.602E+01	9.279E+00	0.086
	739.50	*		-4.198E-01	5.205E+00	8.465E+00	1.360E+00	-0.050
	777.92			-6.330E+00	1.399E+01	2.098E+01	1.982E+00	-0.302
TC-99M	140.51	*		-2.975E+09	1.399E+01	Half-Life too short		
RU-103	497.08	*		-1.272E-02	2.482E-02	3.731E-02	5.535E-03	-0.341
	610.33			2.931E-01	4.911E-01	8.260E-01	1.376E-01	0.355
RH-106	621.93	*		2.535E-02	1.764E-01	2.999E-01	4.067E-02	0.085
	1050.41			-1.963E-01	1.229E+00	1.997E+00	1.856E-01	-0.098
RU-106	621.93	*		2.535E-02	1.763E-01	2.999E-01	2.723E-02	0.085
	1050.41			-1.963E-01	1.229E+00	1.997E+00	1.856E-01	-0.098
AG-108M	433.94	*		1.047E-02	1.696E-02	2.945E-02	3.038E-03	0.356
	614.28			-1.290E-02	1.967E-02	3.018E-02	2.845E-03	-0.427
	722.91			-2.646E-02	2.075E-02	2.790E-02	2.602E-03	-0.949
CD-109	88.03	*		1.016E-01	3.611E-01	6.158E-01	6.183E-02	0.165
AG-110M	657.76	*		4.864E-03	1.925E-02	3.305E-02	2.949E-03	0.147
	677.62			1.564E-02	1.424E-01	2.406E-01	2.160E-02	0.065
	706.68			-4.650E-02	1.047E-01	1.610E-01	1.479E-02	-0.289
	763.94			6.271E-02	9.718E-02	1.588E-01	1.520E-02	0.395
	884.68			1.187E-02	2.851E-02	4.925E-02	5.109E-03	0.241
	937.49			-2.437E-02	6.528E-02	9.875E-02	1.018E-02	-0.247
	1384.29			2.023E-02	1.039E-01	1.757E-01	1.676E-02	0.115
	1505.03			-6.791E-02	1.610E-01	2.316E-01	2.137E-02	-0.293
SN-113	391.69	*		-1.603E-03	2.401E-02	3.905E-02	3.996E-03	-0.041
CD-115	260.90			-3.804E+01	6.584E+01	1.057E+02	1.283E+01	-0.360
	492.35			6.018E+00	1.818E+01	3.047E+01	3.042E+00	0.198
	527.90	*		4.405E-01	5.597E+00	8.406E+00	8.263E-01	0.052
SN-117M	156.02			-9.480E-01	1.141E+00	1.721E+00	1.672E-01	-0.551
	158.56	*		2.020E-02	2.770E-02	4.732E-02	4.661E-03	0.427
TE-123M	159.00	*		1.601E-02	1.463E-02	2.558E-02	2.538E-03	0.626
SB-124	602.73			1.995E-02	2.275E-02	4.148E-02	3.847E-03	0.481
	645.85			3.089E-02	2.420E-01	4.107E-01	3.818E-02	0.075
	722.78			-1.983E-01	1.962E-01	2.762E-01	2.554E-02	-0.718
	1690.97	*		1.992E-03	4.485E-02	7.561E-02	6.892E-03	0.026
SB-125	427.87	*		-4.253E-03	5.528E-02	8.924E-02	9.110E-03	-0.048
	463.37			6.060E-02	1.704E-01	2.860E-01	3.036E-02	0.212
	600.60			7.903E-02	1.062E-01	1.914E-01	1.893E-02	0.413
	635.95			-7.945E-02	1.602E-01	2.504E-01	2.404E-02	-0.317
TE-125M	109.28	*		-3.507E+00	5.160E+00	8.129E+00	8.459E-01	-0.431

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-126	388.63			-2.011E-02	9.263E-02	1.483E-01	1.499E-02	-0.136
	666.33	*		7.040E-02	1.225E-01	2.174E-01	1.880E-02	0.324
	753.82			3.662E-01	8.040E-01	1.422E+00	1.320E-01	0.257
SB-126	414.70			1.185E-02	3.994E-02	6.736E-02	6.773E-03	0.176
	666.50			3.878E-02	4.064E-02	7.515E-02	6.501E-03	0.516
	695.00			-5.460E-03	4.671E-02	7.630E-02	6.761E-03	-0.072
	697.00			4.709E-02	1.817E-01	2.750E-01	2.440E-02	0.171
	720.70	*		-7.087E-02	8.176E-02	1.149E-01	1.039E-02	-0.617
	856.80			6.057E-02	2.582E-01	4.350E-01	4.335E-02	0.139
SN-126	84.28			-8.583E-01	3.323E-01	4.454E-01	6.607E-02	-1.927
	86.94			-5.773E-02	1.516E-01	2.445E-01	1.018E-01	-0.236
	87.57	*		-8.770E-03	3.563E-02	5.870E-02	5.867E-03	-0.149
SB-127	252.40			1.656E+00	2.272E+00	3.860E+00	1.633E+00	0.429
	473.00			1.089E-01	8.670E-01	1.421E+00	1.934E-01	0.077
	685.70	*		-1.619E-01	6.289E-01	1.004E+00	1.136E-01	-0.161
	783.70			1.013E+00	1.378E+00	2.536E+00	3.248E-01	0.400
I-131	80.19			7.799E-01	1.882E+00	3.253E+00	3.014E-01	0.240
	284.31			-2.061E-01	7.787E-01	1.275E+00	1.615E-01	-0.162
	364.49	*		-6.872E-03	6.509E-02	1.061E-01	1.190E-02	-0.065
	636.99			4.159E-02	8.705E-01	1.461E+00	1.371E-01	0.028
TE-132	49.72			5.101E-01	1.286E+01	2.001E+01	2.192E+00	0.025
	111.76			6.412E+00	1.638E+01	2.640E+01	2.826E+00	0.243
	116.30			9.482E+00	1.283E+01	2.221E+01	2.365E+00	0.427
	228.16	*		1.217E-01	3.455E-01	5.636E-01	9.853E-02	0.216
BA-133	81.00			-2.213E-03	4.115E-02	6.895E-02	1.097E-02	-0.032
	276.40			-1.798E-01	1.926E-01	2.934E-01	4.890E-02	-0.613
	302.85			4.249E-02	7.667E-02	1.337E-01	2.087E-02	0.318
	356.01	*		4.683E-03	2.350E-02	3.954E-02	5.812E-03	0.118
	383.85			-1.972E-02	1.696E-01	2.749E-01	3.743E-02	-0.072
I-133	529.87	*		-5.583E-04	1.696E-01	Half-Life	too short	
	875.33			-2.395E-02	1.696E-01	Half-Life	too short	
	1298.22			3.446E-02	1.696E-01	Half-Life	too short	
CS-134	563.25			3.450E-02	1.968E-01	3.382E-01	3.274E-02	0.102
	569.33			-4.438E-02	1.138E-01	1.828E-01	1.767E-02	-0.243
	604.72			-3.184E-02	2.141E-02	2.967E-02	2.752E-03	-1.073
	795.86	*		2.941E-03	2.564E-02	4.269E-02	4.108E-03	0.069
	801.95			5.993E-02	2.675E-01	4.335E-01	4.184E-02	0.138
	1365.19			-3.537E-02	7.524E-01	1.218E+00	1.180E-01	-0.029
CS-135	268.22	*		5.771E-03	8.820E-02	1.492E-01	1.974E-02	0.039
I-135	546.56			-8.129E+08	8.820E-02	Half-Life	too short	
	836.80			-8.007E+08	8.820E-02	Half-Life	too short	
	1038.76			-1.248E+09	8.820E-02	Half-Life	too short	
	1131.51			6.391E+07	8.820E-02	Half-Life	too short	
	1260.41	*		4.400E+08	8.820E-02	Half-Life	too short	
	1457.56			4.247E+09	8.820E-02	Half-Life	too short	
	1678.03			-3.597E+08	8.820E-02	Half-Life	too short	
	1791.20			2.760E+08	8.820E-02	Half-Life	too short	
CS-136	153.25			1.623E-01	4.312E-01	7.198E-01	7.974E-02	0.226
	176.60			-7.336E-02	2.692E-01	4.239E-01	4.756E-02	-0.173

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		273.65		9.366E-02	2.460E-01	4.266E-01	5.480E-02	0.220
		340.55		-7.425E-02	7.386E-02	1.089E-01	1.273E-02	-0.682
		818.51		1.005E-02	3.720E-02	6.349E-02	6.174E-03	0.158
		1048.07	*	-3.399E-02	5.006E-02	7.269E-02	7.013E-03	-0.468
		1235.36		5.832E-04	2.341E-01	3.862E-01	4.523E-02	0.002
BA-137M		661.66	*	-2.181E-02	2.108E-02	2.552E-02	2.199E-03	-0.854
CS-137		661.66	*	-2.304E-02	2.227E-02	2.696E-02	2.328E-03	-0.854
CE-139		165.86	*	3.157E-03	1.643E-02	2.694E-02	2.763E-03	0.117
BA-140		162.66		-4.288E-01	4.819E-01	6.709E-01	7.096E-02	-0.639
		304.85		3.961E-01	7.588E-01	1.305E+00	3.979E-01	0.303
		423.72		-1.241E-01	1.139E+00	1.832E+00	6.101E-01	-0.068
		537.26	*	-2.492E-02	1.533E-01	2.393E-01	8.190E-02	-0.104
LA-140		328.76		1.589E-02	1.492E-01	2.503E-01	3.020E-02	0.063
		487.02		-1.965E-02	7.948E-02	1.241E-01	1.298E-02	-0.158
		815.77		4.905E-02	1.635E-01	2.804E-01	2.974E-02	0.175
		1596.21	*	-1.524E-02	4.913E-02	7.626E-02	6.898E-03	-0.200
CE-141		145.44	*	-2.111E-02	3.511E-02	5.472E-02	5.112E-03	-0.386
CE-143		57.36		5.170E-04	3.511E-02	Half-Life	too short	
		293.27	*	2.069E-05	3.511E-02	Half-Life	too short	
		664.57		2.305E-05	3.511E-02	Half-Life	too short	
		721.93		-2.923E-04	3.511E-02	Half-Life	too short	
CE-144		80.12		4.566E-01	1.076E+00	1.860E+00	1.714E-01	0.245
		133.52	*	1.949E-02	1.035E-01	1.718E-01	2.634E-02	0.113
PM-144		476.78		1.358E-02	3.763E-02	6.336E-02	6.763E-03	0.214
		618.01		5.366E-03	1.896E-02	3.272E-02	3.059E-03	0.164
		696.49	*	-1.155E-03	2.090E-02	3.439E-02	3.052E-03	-0.034
PR-144		696.51	*	-7.101E-02	1.566E+00	2.579E+00	2.288E-01	-0.028
		1489.16		-2.422E+00	8.317E+00	1.254E+01	1.160E+00	-0.193
PM-146		453.88	*	-5.079E-03	2.412E-02	3.807E-02	4.492E-03	-0.133
		633.25		9.204E-02	8.222E-01	1.390E+00	5.319E-01	0.066
		735.93		-3.251E-02	7.568E-02	1.153E-01	3.252E-02	-0.282
		747.24		2.350E-02	4.415E-02	7.900E-02	1.181E-02	0.297
ND-147		91.11		-5.065E-01	1.885E-01	2.987E-01	3.077E-02	-1.696
		319.41		-8.647E-01	1.747E+00	2.758E+00	3.276E-01	-0.314
		531.02	*	-9.522E-02	3.149E-01	4.823E-01	7.557E-02	-0.197
PM-149		285.90	*	-1.758E+01	4.214E+01	6.789E+01	1.213E+01	-0.259
EU-152		121.78		5.584E-03	3.484E-02	5.809E-02	5.618E-03	0.096
		244.70		-1.011E-01	1.721E-01	2.772E-01	3.289E-02	-0.365
		344.28	*	-3.394E-03	5.739E-02	9.443E-02	1.110E-02	-0.036
		778.90		-1.870E-02	1.132E-01	1.798E-01	1.700E-02	-0.104
		964.08		-1.702E-02	1.498E-01	2.367E-01	2.343E-02	-0.072
		1085.87		-7.093E-02	2.010E-01	3.144E-01	2.824E-02	-0.226
		1112.07		-3.118E-02	1.398E-01	2.227E-01	1.943E-02	-0.140
		1408.01		-2.899E-02	1.005E-01	1.526E-01	1.422E-02	-0.190
GD-153		69.67		-1.008E-01	7.308E-01	1.225E+00	1.026E-01	-0.082
		97.43	*	-5.237E-02	4.748E-02	6.643E-02	6.037E-03	-0.788
		103.18		1.689E-02	5.307E-02	9.018E-02	7.894E-03	0.187
EU-154		123.07		-7.494E-03	2.532E-02	4.069E-02	4.544E-03	-0.184
		723.31		-1.092E-01	9.203E-02	1.254E-01	1.241E-02	-0.871

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		873.19		-1.850E-01	1.692E-01	2.203E-01	2.860E-02	-0.840
		996.26		-6.658E-02	2.051E-01	3.095E-01	5.579E-02	-0.215
		1004.73		-3.619E-02	1.168E-01	1.865E-01	2.315E-02	-0.194
		1274.44	*	-1.034E-01	6.479E-02	6.423E-02	7.424E-03	-1.610
		86.55		3.877E-03	4.338E-02	7.316E-02	7.283E-03	0.053
		105.31	*	-1.885E-02	5.425E-02	8.782E-02	7.697E-03	-0.215
		86.79		-3.202E-02	1.163E-01	1.913E-01	1.895E-02	-0.167
		197.04		8.498E-02	3.542E-01	5.367E-01	5.859E-02	0.158
		215.65		1.815E-02	4.074E-01	6.497E-01	7.349E-02	0.028
		298.57		-2.989E-02	5.929E-02	9.441E-02	1.151E-02	-0.317
TB-160		879.36	*	3.394E-02	8.945E-02	1.529E-01	1.545E-02	0.222
		962.29		-1.263E-02	2.673E-01	4.270E-01	4.231E-02	-0.030
		966.15		6.540E-02	1.027E-01	1.817E-01	1.796E-02	0.360
		1177.93		4.426E-02	1.671E-01	2.900E-01	2.346E-02	0.153
		1271.85		7.366E-02	3.289E-01	5.661E-01	5.003E-02	0.130
		80.57		2.116E-02	1.165E-01	1.984E-01	1.836E-02	0.107
		184.41		-1.623E-02	2.675E-02	4.556E-02	4.850E-03	-0.356
		280.46		3.231E-02	4.988E-02	8.759E-02	1.085E-02	0.369
		410.95		4.251E-02	1.273E-01	2.160E-01	2.170E-02	0.197
		711.68	*	-1.291E-02	2.853E-02	4.357E-02	3.913E-03	-0.296
HO-166M		752.31		9.965E-03	1.256E-01	2.095E-01	1.942E-02	0.048
		810.29		-1.067E-02	3.115E-02	4.797E-02	4.636E-03	-0.222
		67.75		-1.507E-02	4.935E-02	8.177E-02	6.740E-03	-0.184
		100.11		9.199E-03	8.639E-02	1.448E-01	1.291E-02	0.064
		152.43		-3.557E-02	1.859E-01	2.978E-01	2.838E-02	-0.119
		222.11		1.903E-02	1.992E-01	3.184E-01	3.643E-02	0.060
		1121.30		3.061E-02	6.854E-02	1.221E-01	1.054E-02	0.251
		1189.05		3.171E-02	1.365E-01	2.357E-01	1.928E-02	0.135
		1221.41	*	-4.892E-02	8.383E-02	1.214E-01	1.024E-02	-0.403
		1231.02		-1.553E-02	2.115E-01	3.442E-01	2.929E-02	-0.045
IR-192		295.96		-6.335E-04	5.644E-02	9.428E-02	1.157E-02	-0.007
		308.46		-4.783E-02	5.264E-02	7.947E-02	9.606E-03	-0.602
		316.51	*	-4.889E-03	1.998E-02	3.249E-02	3.880E-03	-0.150
		468.07		5.120E-03	4.354E-02	7.125E-02	7.545E-03	0.072
HG-203		70.83		-3.634E-01	5.750E-01	9.231E-01	1.475E-01	-0.394
		72.87		2.004E-01	3.327E-01	5.828E-01	9.050E-02	0.344
BI-207		279.20	*	3.555E-02	2.224E-02	4.106E-02	5.155E-03	0.866
		72.81		4.393E-02	7.727E-02	1.355E-01	1.166E-02	0.324
		74.97		3.187E-02	4.506E-02	7.945E-02	6.966E-03	0.401
		569.70		1.672E-03	1.733E-02	2.948E-02	2.817E-03	0.057
TL-208		1063.66	*	1.907E-02	2.731E-02	5.058E-02	4.644E-03	0.377
		1770.23		-2.059E-01	3.871E-01	5.965E-01	5.041E-02	-0.345
		277.37		4.332E-02	2.029E-01	3.467E-01	5.323E-02	0.125
		583.19	*	9.264E-03	2.160E-02	3.781E-02	3.783E-03	0.245
PB-210		860.56		-9.968E-02	1.689E-01	2.352E-01	2.479E-02	-0.424
		46.54	*	2.604E+00	3.161E+00	5.229E+00	4.974E-01	0.498
BI-211		72.87		8.126E-01	1.345E+00	2.363E+00	2.034E-01	0.344
		351.06	*	-5.327E-02	1.354E-01	2.058E-01	2.375E-02	-0.259
PB-211		404.85	*	-6.249E-02	3.923E-01	6.278E-01	3.055E-01	-0.100

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-212		427.09		-2.504E-01	9.661E-01	1.518E+00	7.069E-01	-0.165
		832.01		1.870E-01	5.310E-01	8.999E-01	4.686E-01	0.208
		727.33	*	-1.317E-01	3.209E-01	4.545E-01	5.814E-02	-0.290
		785.37		2.036E-01	1.465E+00	2.459E+00	2.335E-01	0.083
PB-212		1620.50		-8.550E-02	1.483E+00	2.446E+00	2.196E-01	-0.035
		74.82		1.181E-01	1.579E-01	2.784E-01	3.644E-02	0.424
		77.11		-9.431E-02	8.959E-02	1.392E-01	1.245E-02	-0.677
		238.63	*	-2.331E-03	3.775E-02	6.371E-02	8.041E-03	-0.037
BI-214		300.09		7.811E-02	4.117E-01	6.993E-01	9.511E-02	0.112
		609.32	*	4.218E-02	4.761E-02	8.226E-02	8.730E-03	0.513
		1120.29		4.099E-02	1.554E-01	2.736E-01	2.993E-02	0.150
		1764.49		-3.542E-03	1.958E-01	3.726E-01	3.158E-02	-0.010
PB-214		74.82		2.093E-01	2.797E-01	4.935E-01	5.830E-02	0.424
		77.11		-1.663E-01	1.585E-01	2.454E-01	2.986E-02	-0.677
		242.00		-1.798E-01	1.976E-01	3.104E-01	4.086E-02	-0.579
		295.22		1.382E-02	7.624E-02	1.294E-01	1.794E-02	0.107
RN-219		351.93	*	2.186E-03	4.724E-02	7.463E-02	9.530E-03	0.029
		271.23		2.865E-02	1.287E-01	2.202E-01	2.970E-02	0.130
		401.81	*	5.425E-03	2.296E-01	3.766E-01	5.924E-02	0.014
		81.07		-2.818E-02	9.508E-02	1.567E-01	1.457E-02	-0.180
RA-223		83.79		-4.113E-02	6.028E-02	8.763E-02	8.391E-03	-0.469
		94.87		-1.541E+00	3.284E-01	3.471E-01	3.223E-02	-4.441
		144.24		-1.461E-01	4.127E-01	6.343E-01	6.402E-02	-0.230
		154.21		1.928E-01	1.963E-01	3.411E-01	3.536E-02	0.565
RA-224		269.46		7.753E-03	1.014E-01	1.716E-01	2.126E-02	0.045
		323.87	*	9.666E-02	3.266E-01	5.579E-01	1.066E-01	0.173
		338.28		-1.008E-01	5.116E-01	8.312E-01	1.186E-01	-0.121
		240.99	*	-3.355E-02	3.587E-01	6.040E-01	7.128E-02	-0.056
RA-226		609.32	*	4.218E-02	4.761E-02	8.226E-02	8.730E-03	0.513
		1120.29		4.099E-02	1.554E-01	2.736E-01	2.993E-02	0.150
		1764.49		-3.542E-03	1.958E-01	3.726E-01	3.158E-02	-0.010
		79.69		-1.280E-02	5.498E-01	9.240E-01	1.619E-01	-0.014
AC-227		235.96		6.109E-03	8.346E-02	1.423E-01	1.854E-02	0.043
		256.23	*	6.358E-02	1.530E-01	2.502E-01	3.681E-02	0.254
		299.98		1.002E-01	4.543E-01	7.734E-01	1.187E-01	0.130
		304.50		4.482E-01	9.275E-01	1.605E+00	2.984E-01	0.279
TH-227		334.37		-7.443E-01	9.885E-01	1.509E+00	2.625E-01	-0.493
		79.80		1.720E-01	7.151E-01	1.221E+00	2.688E-01	0.141
		235.96		6.109E-03	8.346E-02	1.423E-01	1.789E-02	0.043
		256.23	*	6.358E-02	1.530E-01	2.502E-01	4.006E-02	0.254
AC-228		299.98		1.002E-01	4.543E-01	7.734E-01	1.187E-01	0.130
		304.50		4.482E-01	9.275E-01	1.605E+00	2.984E-01	0.279
		334.37		-7.443E-01	9.885E-01	1.509E+00	2.625E-01	-0.493
		338.32		-2.541E-02	1.293E-01	2.095E-01	8.882E-02	-0.121
RA-228		911.20	*	-5.919E-02	8.306E-02	1.338E-01	1.711E-02	-0.442
		968.97		-6.826E-02	1.517E-01	2.342E-01	5.815E-02	-0.291
		338.32		-2.541E-02	1.293E-01	2.095E-01	8.882E-02	-0.121
		911.20	*	-5.919E-02	8.306E-02	1.338E-01	1.711E-02	-0.442
		968.97		-6.826E-02	1.517E-01	2.342E-01	5.815E-02	-0.291

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TH-228		74.82		1.181E-01	1.575E-01	2.784E-01	2.459E-02	0.424
		77.11		-9.431E-02	8.959E-02	1.392E-01	1.245E-02	-0.677
		238.63	*	-2.331E-03	3.775E-02	6.371E-02	8.041E-03	-0.037
		300.09		7.811E-02	4.144E-01	6.993E-01	4.323E-01	0.112
TH-229		85.43		-2.437E-02	8.603E-02	1.413E-01	1.378E-02	-0.172
		88.47		8.379E-03	5.612E-02	9.485E-02	9.467E-03	0.088
		193.51	*	-1.848E-01	3.051E-01	4.632E-01	5.022E-02	-0.399
		210.85		7.427E-02	4.436E-01	7.165E-01	8.033E-02	0.104
PA-231		283.69	*	-1.990E-01	8.188E-01	1.344E+00	2.293E-01	-0.148
		301.36		-1.216E-01	3.072E-01	4.943E-01	7.352E-02	-0.246
TH-231		81.07		-2.818E-02	9.508E-02	1.567E-01	1.457E-02	-0.180
		83.79		-4.113E-02	6.028E-02	8.763E-02	8.391E-03	-0.469
		94.87		-1.541E+00	3.284E-01	3.471E-01	3.223E-02	-4.441
		144.24		-1.461E-01	4.127E-01	6.343E-01	6.402E-02	-0.230
		154.21		1.928E-01	1.963E-01	3.411E-01	3.536E-02	0.565
		269.46		7.753E-03	1.014E-01	1.716E-01	2.126E-02	0.045
		323.87	*	9.666E-02	3.266E-01	5.579E-01	1.066E-01	0.173
		338.28		-1.008E-01	5.116E-01	8.312E-01	1.186E-01	-0.121
TH-232		338.32		-2.541E-02	1.289E-01	2.095E-01	2.408E-02	-0.121
		911.20	*	-5.919E-02	8.306E-02	1.338E-01	1.711E-02	-0.442
		968.97		-6.826E-02	1.517E-01	2.342E-01	5.815E-02	-0.291
PA-233		300.13		3.652E-02	2.048E-01	3.474E-01	5.955E-02	0.105
		311.90	*	1.018E-02	3.783E-02	6.446E-02	7.852E-03	0.158
		340.48		-3.233E-01	3.344E-01	4.824E-01	1.217E-01	-0.670
PA-234		94.67		-5.270E-01	1.270E-01	1.299E-01	1.674E-02	-4.058
		98.44		1.364E-02	5.122E-02	7.899E-02	4.412E-02	0.173
		111.00		-3.580E-04	1.032E-01	1.619E-01	1.941E-02	-0.002
		131.20		2.672E-02	5.259E-02	8.938E-02	7.700E-03	0.299
		569.50		-4.814E-02	1.585E-01	2.574E-01	2.461E-02	-0.187
		733.00		6.418E-02	1.911E-01	3.300E-01	7.393E-02	0.194
		880.51		9.638E-02	1.817E-01	3.164E-01	3.200E-02	0.305
		883.24		1.709E-02	1.746E-01	2.870E-01	1.935E-01	0.060
		926.50		-1.016E-01	9.935E-02	1.223E-01	3.157E-02	-0.831
		946.00	*	3.283E-02	1.524E-01	2.557E-01	4.969E-02	0.128
		949.00		6.735E-02	2.203E-01	3.757E-01	3.751E-02	0.179
PA-234M		766.42		-3.905E+00	7.237E+00	9.620E+00	4.894E+00	-0.406
		1001.03	*	3.121E-01	2.700E+00	4.745E+00	5.163E-01	0.066
TH-234		63.29	*	-9.435E-01	9.027E-01	1.445E+00	2.606E-01	-0.653
		92.59		2.408E-01	4.869E-01	8.984E-01	2.016E-01	0.268
U-235		89.96		-2.543E+00	8.279E-01	6.601E-01	1.653E-01	-3.853
		93.35		-1.761E-01	3.484E-01	6.255E-01	1.464E-01	-0.282
		143.76	*	-6.642E-02	1.258E-01	1.907E-01	3.282E-02	-0.348
		163.33		-9.232E-02	2.644E-01	3.856E-01	7.217E-02	-0.239
		185.72		5.131E-03	3.437E-02	6.052E-02	6.459E-03	0.085
		205.31		1.896E-01	2.925E-01	4.670E-01	9.080E-02	0.406
NP-237		86.48	*	9.235E-04	1.072E-01	1.799E-01	4.169E-02	0.005
		95.86		-1.343E+00	5.869E-01	6.626E-01	1.604E-01	-2.026
U-238		63.29	*	-9.435E-01	9.027E-01	1.445E+00	2.606E-01	-0.653
		92.59		2.408E-01	4.844E-01	8.984E-01	8.535E-02	0.268

Sample ID : G1202057355

Acquisition date : 19-MAR-2010 11:16:19

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	99.53			8.881E-03	9.142E-02	1.408E-01	1.260E-02	0.063
	103.37			1.675E-02	4.846E-02	8.247E-02	7.212E-03	0.203
	106.12			-2.221E-02	4.354E-02	6.960E-02	6.008E-03	-0.319
	117.23	*		7.391E-02	2.108E-01	3.561E-01	2.985E-02	0.208
	228.18			4.089E-02	1.176E-01	1.919E-01	2.219E-02	0.213
	277.60			3.724E-02	9.514E-02	1.647E-01	2.039E-02	0.226
AM-241	59.54	*		-8.676E-02	9.277E-02	1.483E-01	1.215E-02	-0.585
CM-247	278.00			3.964E-01	4.083E-01	7.335E-01	9.085E-02	0.540
	287.50			6.502E-01	6.750E-01	1.215E+00	1.497E-01	0.535
	402.40	*		-1.072E-02	2.115E-02	3.258E-02	3.268E-03	-0.329
CF-249	252.80			3.025E-01	5.382E-01	9.458E-01	1.136E-01	0.320
	333.37			-3.459E-02	1.012E-01	1.623E-01	1.883E-02	-0.213
	388.16	*		-3.824E-03	2.330E-02	3.755E-02	3.800E-03	-0.102
CF-251	177.52	*		-4.751E-02	7.262E-02	1.104E-01	1.159E-02	-0.430
	227.38			1.137E-01	1.945E-01	3.236E-01	3.736E-02	0.351
	285.41			-1.163E+00	1.258E+00	1.927E+00	2.379E-01	-0.604
ANH-511	511.00	*		-5.870E-02	3.237E-02	5.448E-02	5.401E-03	-1.077

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355      *
* Acquisition date   : 19-MAR-2010 11:16:19 Detector SN#                   *
* Detector ID        : GAM02 Sensitivity      : 5.000                       *
* Geometry           : CAN Energy tolerance: 1.500                         *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000              *
* Elapsed real time  : 0 02:00:02.92 Half life ratio : 8.000               *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 5-MAR-2010 00:00:00 Nuclide Library : SOLID           *
* Sample ID         : G1202057355 Analyst initials: MXR1                   *
* Batch Number      : 959280 Sample Quantity : 1.5209E+02 GRAM             *
* Recovery          : 1.00000 Carrier Weight : 0.00000                    *
*****
*
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                                *
* CALIB. DATE/TIME : 29-OCT-2009 10:28:07 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	3.192E-01	2.607E-01	2.831E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	8.070E-02	1.810E-01	3.253E-01	0.000E+00 NOT IDENT.
NA-22	-3.606E-02	2.232E-02	2.336E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.960E+05	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.225E-02	2.199E-02	3.032E-02	0.000E+00 NOT IDENT.
V-48	1.578E-02	4.004E-02	7.106E-02	0.000E+00 NOT IDENT.
CR-51	-5.122E-02	1.893E-01	3.274E-01	0.000E+00 NOT IDENT.
MN-54	-4.559E-03	2.070E-02	3.409E-02	0.000E+00 NOT IDENT.
CO-56	-8.878E-03	1.944E-02	3.030E-02	0.000E+00 NOT IDENT.
CO-57	1.935E-03	1.185E-02	2.161E-02	0.000E+00 NOT IDENT.
CO-58	-1.013E-02	1.966E-02	3.056E-02	0.000E+00 NOT IDENT.
FE-59	-1.041E-03	4.108E-02	7.059E-02	0.000E+00 NOT IDENT.
CO-60	-3.583E-03	1.902E-02	3.068E-02	0.000E+00 NOT IDENT.
ZN-65	-2.343E-02	4.142E-02	6.396E-02	0.000E+00 NOT IDENT.
SE-75	-9.740E-03	2.524E-02	4.427E-02	0.000E+00 NOT IDENT.
SR-85	-6.348E-02	3.124E-02	4.218E-02	0.000E+00 NOT IDENT.
Y-88	-2.350E-03	2.006E-02	3.269E-02	0.000E+00 NOT IDENT.
Y-91	8.418E+00	7.907E+00	1.633E+01	0.000E+00 NOT IDENT.
NB-94	2.852E-03	1.906E-02	3.366E-02	0.000E+00 NOT IDENT.
NB-95	-1.010E-02	2.574E-02	3.836E-02	0.000E+00 NOT IDENT.
NB-95M	6.661E-04	6.714E-02	1.228E-01	0.000E+00 NOT IDENT.
ZR-95	8.867E-03	3.236E-02	5.819E-02	0.000E+00 NOT IDENT.
MO-99	-4.198E-01	5.100E+00	8.683E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	3.811E+15	0.000E+00	0.000E+00 SHORT HLIF
RU-103	-1.272E-02	2.433E-02	3.866E-02	0.000E+00 NOT IDENT.
RH-106	2.535E-02	1.728E-01	3.090E-01	0.000E+00 NOT IDENT.
RU-106	2.535E-02	1.728E-01	3.090E-01	0.000E+00 NOT IDENT.

AG-108M	1.047E-02	1.662E-02	3.063E-02	0.000E+00	NOT IDENT.
CD-109	1.016E-01	3.539E-01	6.654E-01	0.000E+00	NOT IDENT.
AG-110M	4.864E-03	1.887E-02	3.401E-02	0.000E+00	NOT IDENT.
SN-113	-1.603E-03	2.353E-02	4.071E-02	0.000E+00	NOT IDENT.
CD-115	4.405E-01	5.485E+00	8.697E+00	0.000E+00	NOT IDENT.
SN-117M	2.020E-02	2.715E-02	5.043E-02	0.000E+00	NOT IDENT.
TE-123M	1.601E-02	1.434E-02	2.726E-02	0.000E+00	NOT IDENT.
SB-124	1.992E-03	4.396E-02	7.587E-02	0.000E+00	NOT IDENT.
SB-125	-4.253E-03	5.417E-02	9.282E-02	0.000E+00	NOT IDENT.
TE-125M	-3.507E+00	5.057E+00	8.740E+00	0.000E+00	NOT IDENT.
I-126	7.040E-02	1.201E-01	2.236E-01	0.000E+00	NOT IDENT.
SB-126	-7.087E-02	8.013E-02	1.179E-01	0.000E+00	NOT IDENT.
SN-126	-8.770E-03	3.492E-02	6.345E-02	0.000E+00	NOT IDENT.
SB-127	-1.619E-01	6.163E-01	1.032E+00	0.000E+00	NOT IDENT.
I-131	-6.872E-03	6.379E-02	1.108E-01	0.000E+00	NOT IDENT.
TE-132	1.217E-01	3.385E-01	5.954E-01	0.000E+00	NOT IDENT.
BA-133	4.683E-03	2.303E-02	4.132E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.008E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.941E-03	2.513E-02	4.370E-02	0.000E+00	NOT IDENT.
CS-135	5.771E-03	8.643E-02	1.570E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.683E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.399E-02	4.905E-02	7.389E-02	0.000E+00	NOT IDENT.
BA-137M	-2.181E-02	2.066E-02	2.625E-02	0.000E+00	NOT IDENT.
CS-137	-2.304E-02	2.182E-02	2.774E-02	0.000E+00	NOT IDENT.
CE-139	3.157E-03	1.610E-02	2.868E-02	0.000E+00	NOT IDENT.
BA-140	-2.492E-02	1.502E-01	2.475E-01	0.000E+00	NOT IDENT.
LA-140	-1.524E-02	4.815E-02	7.665E-02	0.000E+00	NOT IDENT.
CE-141	-2.111E-02	3.441E-02	5.844E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.782E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.949E-02	1.015E-01	1.839E-01	0.000E+00	NOT IDENT.
PM-144	-1.155E-03	2.049E-02	3.533E-02	0.000E+00	NOT IDENT.
PR-144	-7.101E-02	1.534E+00	2.650E+00	0.000E+00	NOT IDENT.
PM-146	-5.079E-03	2.364E-02	3.954E-02	0.000E+00	NOT IDENT.
ND-147	-9.522E-02	3.086E-01	4.989E-01	0.000E+00	NOT IDENT.
PM-149	-1.758E+01	4.130E+01	7.132E+01	0.000E+00	NOT IDENT.
EU-152	-3.394E-03	5.624E-02	9.876E-02	0.000E+00	NOT IDENT.
GD-153	-5.237E-02	4.653E-02	7.162E-02	0.000E+00	NOT IDENT.
EU-154	-1.034E-01	6.350E-02	6.494E-02	0.000E+00	NOT IDENT.
EU-155	-1.885E-02	5.316E-02	9.450E-02	0.000E+00	NOT IDENT.
TB-160	3.394E-02	8.766E-02	1.561E-01	0.000E+00	NOT IDENT.
HO-166M	-1.291E-02	2.796E-02	4.473E-02	0.000E+00	NOT IDENT.
TA-182	-4.892E-02	8.216E-02	1.229E-01	0.000E+00	NOT IDENT.
IR-192	-4.889E-03	1.958E-02	3.405E-02	0.000E+00	NOT IDENT.
HG-203	3.555E-02	2.180E-02	4.316E-02	0.000E+00	NOT IDENT.
BI-207	1.907E-02	2.676E-02	5.140E-02	0.000E+00	NOT IDENT.
TL-208	9.264E-03	2.117E-02	3.902E-02	0.000E+00	NOT IDENT.
PB-210	2.604E+00	3.098E+00	5.734E+00	0.000E+00	NOT IDENT.
BI-211	-5.327E-02	1.327E-01	2.151E-01	0.000E+00	NOT IDENT.
PB-211	-6.249E-02	3.844E-01	6.539E-01	0.000E+00	NOT IDENT.
BI-212	-1.317E-01	3.145E-01	4.664E-01	0.000E+00	NOT IDENT.
PB-212	-2.331E-03	3.699E-02	6.723E-02	0.000E+00	NOT IDENT.
BI-214	4.218E-02	4.666E-02	8.479E-02	0.000E+00	NOT IDENT.
PB-214	2.186E-03	4.630E-02	7.800E-02	0.000E+00	NOT IDENT.
RN-219	5.425E-03	2.250E-01	3.923E-01	0.000E+00	NOT IDENT.
RA-223	9.666E-02	3.200E-01	5.844E-01	0.000E+00	NOT IDENT.
RA-224	-3.355E-02	3.515E-01	6.372E-01	0.000E+00	NOT IDENT.
RA-226	4.218E-02	4.666E-02	8.479E-02	0.000E+00	NOT IDENT.
AC-227	6.358E-02	1.499E-01	2.636E-01	0.000E+00	NOT IDENT.
TH-227	6.358E-02	1.500E-01	2.636E-01	0.000E+00	NOT IDENT.
AC-228	-5.919E-02	8.140E-02	1.365E-01	0.000E+00	NOT IDENT.
RA-228	-5.919E-02	8.140E-02	1.365E-01	0.000E+00	NOT IDENT.
TH-228	-2.331E-03	3.699E-02	6.723E-02	0.000E+00	NOT IDENT.
TH-229	-1.848E-01	2.990E-01	4.913E-01	0.000E+00	NOT IDENT.
PA-231	-1.990E-01	8.024E-01	1.412E+00	0.000E+00	NOT IDENT.
TH-231	9.666E-02	3.200E-01	5.844E-01	0.000E+00	NOT IDENT.
TH-232	-5.919E-02	8.140E-02	1.365E-01	0.000E+00	NOT IDENT.
PA-233	1.018E-02	3.707E-02	6.757E-02	0.000E+00	NOT IDENT.
PA-234	3.283E-02	1.494E-01	2.606E-01	0.000E+00	NOT IDENT.
PA-234M	3.121E-01	2.646E+00	4.828E+00	0.000E+00	NOT IDENT.
TH-234	-9.435E-01	8.847E-01	1.573E+00	0.000E+00	NOT IDENT.
U-235	-6.642E-02	1.233E-01	2.037E-01	0.000E+00	NOT IDENT.
NP-237	9.235E-04	1.051E-01	1.945E-01	0.000E+00	NOT IDENT.
U-238	-9.435E-01	8.847E-01	1.573E+00	0.000E+00	NOT IDENT.
NP-239	7.391E-02	2.066E-01	3.823E-01	0.000E+00	NOT IDENT.
AM-241	-8.676E-02	9.092E-02	1.617E-01	0.000E+00	NOT IDENT.
CM-247	-1.072E-02	2.073E-02	3.394E-02	0.000E+00	NOT IDENT.
CF-249	-3.824E-03	2.283E-02	3.915E-02	0.000E+00	NOT IDENT.
CF-251	-4.751E-02	7.116E-02	1.174E-01	0.000E+00	NOT IDENT.

ANH-511	-5.870E-02	3.172E-02	5.642E-02	0.000E+00 NOT IDENT.
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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:16:52.23

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:16:19
Sample ID          : G1202057355      Sample quantity   : 1.52090E+02 GRAM
Detector name      : GAM02            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:02.92  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 959280           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	14	10.66*	1.028E+00	3.192E-01	3.192E-01	83.32

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202057355

Page : 2
Acquisition date : 19-MAR-2010 11:16:19

Total number of lines in spectrum 1
Number of unidentified lines 0
Number of lines tentatively identified by NID 1 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.192E-01	3.192E-01	2.660E-01	83.32	
Total Activity :			3.192E-01	3.192E-01			

Grand Total Activity : 3.192E-01 3.192E-01

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

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

Unidentified Energy Lines
Sample ID : G1202057355

Page : 3
Acquisition date : 19-MAR-2010 11:16:19

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*                               *                                               *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1  *
* Acquisition date   : 19-MAR-2010 11:16:19   Detector SN#      :             *
* Detector ID        : GAM02                   Sensitivity       : 5.00000      *
* Geometry           : CAN                     Energy tolerance  : 1.50000      *
* Elapsed live time  : 0 02:00:00.00           Abundance limit    : 75.00000      *
* Elapsed real time  : 0 02:00:02.92           Half life ratio   : 8.00000      *
*****
*                               SAMPLE DATA                               *
*                               *                                               *
* Sample date        : 5-MAR-2010 00:00:00.   Nuclide Library   : SOLID         *
* Sample ID          : G1202057355           Analyst initials : MXR1          *
* Batch Number       : 959280                Sample Quantity  : 1.52090E+02 GRAM *
*****
*                               QC DATA                               *
*                               *                                               *
* CALIB. DATE/TIME   : 29-OCT-2009 10:28:07.3MS 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	3.192E-01	2.660E-01	2.810E-01	2.671E-02	1.136

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.070E-02		1.847E-01	3.136E-01	3.325E-02	0.257
NA-22	-3.606E-02		2.278E-02	2.310E-02	2.048E-03	-1.561
NA-24	1.254E-01		9.998E-02	Half-Life too short		
SC-46	-2.225E-02		2.244E-02	2.971E-02	3.020E-03	-0.749
V-48	1.578E-02		4.086E-02	6.980E-02	6.826E-03	0.226
CR-51	-5.122E-02		1.931E-01	3.125E-01	3.811E-02	-0.164
MN-54	-4.559E-03		2.112E-02	3.334E-02	3.275E-03	-0.137
CO-56	-8.878E-03		1.984E-02	2.964E-02	2.935E-03	-0.300
CO-57	1.935E-03		1.209E-02	2.015E-02	1.685E-03	0.096
CO-58	-1.013E-02		2.006E-02	2.987E-02	2.893E-03	-0.339
FE-59	-1.041E-03		4.192E-02	6.954E-02	6.629E-03	-0.015

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	-3.583E-03		1.940E-02	3.038E-02	2.830E-03	-0.118
ZN-65	-2.343E-02		4.226E-02	6.303E-02	5.483E-03	-0.372
SE-75	-9.740E-03		2.576E-02	4.205E-02	5.141E-03	-0.232
SR-85	-6.348E-02		3.188E-02	4.074E-02	4.033E-03	-1.558
Y-88	-2.350E-03		2.047E-02	3.265E-02	2.663E-03	-0.072
Y-91	8.418E+00		8.068E+00	1.613E+01	1.339E+00	0.522
NB-94	2.852E-03		1.945E-02	3.277E-02	2.922E-03	0.087
NB-95	-1.010E-02		2.627E-02	3.744E-02	3.505E-03	-0.270
NB-95M	6.661E-04		6.851E-02	1.163E-01	1.473E-02	0.006
ZR-95	8.867E-03		3.302E-02	5.676E-02	5.757E-03	0.156
MO-99	-4.198E-01		5.205E+00	8.465E+00	1.360E+00	-0.050
TC-99M	-2.975E+09		1.944E+09	Half-Life	too short	
RU-103	-1.272E-02		2.482E-02	3.731E-02	5.535E-03	-0.341
RH-106	2.535E-02		1.764E-01	2.999E-01	4.067E-02	0.085
RU-106	2.535E-02		1.763E-01	2.999E-01	2.723E-02	0.085
AG-108M	1.047E-02		1.696E-02	2.945E-02	3.038E-03	0.356
CD-109	1.016E-01		3.611E-01	6.158E-01	6.183E-02	0.165
AG-110M	4.864E-03		1.925E-02	3.305E-02	2.949E-03	0.147
SN-113	-1.603E-03		2.401E-02	3.905E-02	3.996E-03	-0.041
CD-115	4.405E-01		5.597E+00	8.406E+00	8.263E-01	0.052
SN-117M	2.020E-02		2.770E-02	4.732E-02	4.661E-03	0.427
TE-123M	1.601E-02		1.463E-02	2.558E-02	2.538E-03	0.626
SB-124	1.992E-03		4.485E-02	7.561E-02	6.892E-03	0.026
SB-125	-4.253E-03		5.528E-02	8.924E-02	9.110E-03	-0.048
TE-125M	-3.507E+00		5.160E+00	8.129E+00	8.459E-01	-0.431
I-126	7.040E-02		1.225E-01	2.174E-01	1.880E-02	0.324
SB-126	-7.087E-02		8.176E-02	1.149E-01	1.039E-02	-0.617
SN-126	-8.770E-03		3.563E-02	5.870E-02	5.867E-03	-0.149
SB-127	-1.619E-01		6.289E-01	1.004E+00	1.136E-01	-0.161
I-131	-6.872E-03		6.509E-02	1.061E-01	1.190E-02	-0.065
TE-132	1.217E-01		3.455E-01	5.636E-01	9.853E-02	0.216
BA-133	4.683E-03		2.350E-02	3.954E-02	5.812E-03	0.118
I-133	-5.583E-04		1.024E-03	Half-Life	too short	
CS-134	2.941E-03		2.564E-02	4.269E-02	4.108E-03	0.069
CS-135	5.771E-03		8.820E-02	1.492E-01	1.974E-02	0.039
I-135	4.400E+08		2.900E+08	Half-Life	too short	
CS-136	-3.399E-02		5.006E-02	7.269E-02	7.013E-03	-0.468
BA-137M	-2.181E-02		2.108E-02	2.552E-02	2.199E-03	-0.854
CS-137	-2.304E-02		2.227E-02	2.696E-02	2.328E-03	-0.854
CE-139	3.157E-03		1.643E-02	2.694E-02	2.763E-03	0.117
BA-140	-2.492E-02		1.533E-01	2.393E-01	8.190E-02	-0.104
LA-140	-1.524E-02		4.913E-02	7.626E-02	6.898E-03	-0.200
CE-141	-2.111E-02		3.511E-02	5.472E-02	5.112E-03	-0.386
CE-143	2.069E-05		2.440E-05	Half-Life	too short	
CE-144	1.949E-02		1.035E-01	1.718E-01	2.634E-02	0.113
PM-144	-1.155E-03		2.090E-02	3.439E-02	3.052E-03	-0.034
PR-144	-7.101E-02		1.566E+00	2.579E+00	2.288E-01	-0.028
PM-146	-5.079E-03		2.412E-02	3.807E-02	4.492E-03	-0.133

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-9.522E-02		3.149E-01	4.823E-01	7.557E-02	-0.197
PM-149	-1.758E+01		4.214E+01	6.789E+01	1.213E+01	-0.259
EU-152	-3.394E-03		5.739E-02	9.443E-02	1.110E-02	-0.036
GD-153	-5.237E-02		4.748E-02	6.643E-02	6.037E-03	-0.788
EU-154	-1.034E-01		6.479E-02	6.423E-02	7.424E-03	-1.610
EU-155	-1.885E-02		5.425E-02	8.782E-02	7.697E-03	-0.215
TB-160	3.394E-02		8.945E-02	1.529E-01	1.545E-02	0.222
HO-166M	-1.291E-02		2.853E-02	4.357E-02	3.913E-03	-0.296
TA-182	-4.892E-02		8.383E-02	1.214E-01	1.024E-02	-0.403
IR-192	-4.889E-03		1.998E-02	3.249E-02	3.880E-03	-0.150
HG-203	3.555E-02		2.224E-02	4.106E-02	5.155E-03	0.866
BI-207	1.907E-02		2.731E-02	5.058E-02	4.644E-03	0.377
TL-208	9.264E-03		2.160E-02	3.781E-02	3.783E-03	0.245
PB-210	2.604E+00		3.161E+00	5.229E+00	4.974E-01	0.498
BI-211	-5.327E-02		1.354E-01	2.058E-01	2.375E-02	-0.259
PB-211	-6.249E-02		3.923E-01	6.278E-01	3.055E-01	-0.100
BI-212	-1.317E-01		3.209E-01	4.545E-01	5.814E-02	-0.290
PB-212	-2.331E-03		3.775E-02	6.371E-02	8.041E-03	-0.037
BI-214	4.218E-02		4.761E-02	8.226E-02	8.730E-03	0.513
PB-214	2.186E-03		4.724E-02	7.463E-02	9.530E-03	0.029
RN-219	5.425E-03		2.296E-01	3.766E-01	5.924E-02	0.014
RA-223	9.666E-02		3.266E-01	5.579E-01	1.066E-01	0.173
RA-224	-3.355E-02		3.587E-01	6.040E-01	7.128E-02	-0.056
RA-226	4.218E-02		4.761E-02	8.226E-02	8.730E-03	0.513
AC-227	6.358E-02		1.530E-01	2.502E-01	3.681E-02	0.254
TH-227	6.358E-02		1.530E-01	2.502E-01	4.006E-02	0.254
AC-228	-5.919E-02		8.306E-02	1.338E-01	1.711E-02	-0.442
RA-228	-5.919E-02		8.306E-02	1.338E-01	1.711E-02	-0.442
TH-228	-2.331E-03		3.775E-02	6.371E-02	8.041E-03	-0.037
TH-229	-1.848E-01		3.051E-01	4.632E-01	5.022E-02	-0.399
PA-231	-1.990E-01		8.188E-01	1.344E+00	2.293E-01	-0.148
TH-231	9.666E-02		3.266E-01	5.579E-01	1.066E-01	0.173
TH-232	-5.919E-02		8.306E-02	1.338E-01	1.711E-02	-0.442
PA-233	1.018E-02		3.783E-02	6.446E-02	7.852E-03	0.158
PA-234	3.283E-02		1.524E-01	2.557E-01	4.969E-02	0.128
PA-234M	3.121E-01		2.700E+00	4.745E+00	5.163E-01	0.066
TH-234	-9.435E-01		9.027E-01	1.445E+00	2.606E-01	-0.653
U-235	-6.642E-02		1.258E-01	1.907E-01	3.282E-02	-0.348
NP-237	9.235E-04		1.072E-01	1.799E-01	4.169E-02	0.005
U-238	-9.435E-01		9.027E-01	1.445E+00	2.606E-01	-0.653
NP-239	7.391E-02		2.108E-01	3.561E-01	2.985E-02	0.208
AM-241	-8.676E-02		9.277E-02	1.483E-01	1.215E-02	-0.585
CM-247	-1.072E-02		2.115E-02	3.258E-02	3.268E-03	-0.329
CF-249	-3.824E-03		2.330E-02	3.755E-02	3.800E-03	-0.102
CF-251	-4.751E-02		7.262E-02	1.104E-01	1.159E-02	-0.430
ANH-511	-5.870E-02		3.237E-02	5.448E-02	5.401E-03	-1.077

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]G1202057355      *
* Acquisition date   : 19-MAR-2010 11:16:19 Detector SN#                *
* Detector ID        : GAM02                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance : 1.500      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:02.92 Half life ratio : 8.000      *
* *****
*                               SAMPLE DATA                               *
*                               *                                           *
* Sample date       : 5-MAR-2010 00:00:00 Nuclide Library : SOLID      *
* Sample ID         : G1202057355 Analyst initials: MXR1              *
* Batch Number      : 959280 Sample Quantity : 1.5209E+02 GRAM      *
* Recovery          : 1.00000 Carrier Weight : 0.00000              *
* *****
*                               QC DATA                                   *
*                               *                                           *
* CALIB. DATE/TIME  : 29-OCT-2009 10:28:07 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	3.192E-01	2.607E-01	1.416E-01	1.330E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	8.070E-02	1.810E-01	1.627E-01	9.236E-02	NOT IDENT.
NA-22	-3.606E-02	2.232E-02	1.169E-02	1.139E-02	NOT IDENT.
NA-24	1.254E+05	1.960E+05	0.000E+00	9.998E+04	SHORT HLIF
SC-46	-2.225E-02	2.199E-02	1.517E-02	1.122E-02	NOT IDENT.
V-48	1.578E-02	4.004E-02	3.555E-02	2.043E-02	NOT IDENT.
CR-51	-5.122E-02	1.893E-01	1.638E-01	9.657E-02	NOT IDENT.
MN-54	-4.559E-03	2.070E-02	1.705E-02	1.056E-02	NOT IDENT.
CO-56	-8.878E-03	1.944E-02	1.516E-02	9.920E-03	NOT IDENT.
CO-57	1.935E-03	1.185E-02	1.081E-02	6.045E-03	NOT IDENT.
CO-58	-1.013E-02	1.966E-02	1.529E-02	1.003E-02	NOT IDENT.
FE-59	-1.041E-03	4.108E-02	3.532E-02	2.096E-02	NOT IDENT.
CO-60	-3.583E-03	1.902E-02	1.535E-02	9.702E-03	NOT IDENT.
ZN-65	-2.343E-02	4.142E-02	3.200E-02	2.113E-02	NOT IDENT.
SE-75	-9.740E-03	2.524E-02	2.215E-02	1.288E-02	NOT IDENT.
SR-85	-6.348E-02	3.124E-02	2.110E-02	1.594E-02	NOT IDENT.
Y-88	-2.350E-03	2.006E-02	1.635E-02	1.024E-02	NOT IDENT.
Y-91	8.418E+00	7.907E+00	8.171E+00	4.034E+00	NOT IDENT.
NB-94	2.852E-03	1.906E-02	1.684E-02	9.723E-03	NOT IDENT.
NB-95	-1.010E-02	2.574E-02	1.919E-02	1.313E-02	NOT IDENT.
NB-95M	6.661E-04	6.714E-02	6.144E-02	3.425E-02	NOT IDENT.
ZR-95	8.867E-03	3.236E-02	2.911E-02	1.651E-02	NOT IDENT.
MO-99	-4.198E-01	5.100E+00	4.344E+00	2.602E+00	NOT IDENT.
TC-99M	-2.975E+15	3.811E+15	0.000E+00	1.944E+15	SHORT HLIF
RU-103	-1.272E-02	2.433E-02	1.934E-02	1.241E-02	NOT IDENT.
RH-106	2.535E-02	1.728E-01	1.546E-01	8.818E-02	NOT IDENT.
RU-106	2.535E-02	1.728E-01	1.546E-01	8.817E-02	NOT IDENT.

AG-108M	1.047E-02	1.662E-02	1.532E-02	8.480E-03	NOT IDENT.
CD-109	1.016E-01	3.539E-01	3.329E-01	1.806E-01	NOT IDENT.
AG-110M	4.864E-03	1.887E-02	1.701E-02	9.625E-03	NOT IDENT.
SN-113	-1.603E-03	2.353E-02	2.037E-02	1.201E-02	NOT IDENT.
CD-115	4.405E-01	5.485E+00	4.351E+00	2.799E+00	NOT IDENT.
SN-117M	2.020E-02	2.715E-02	2.523E-02	1.385E-02	NOT IDENT.
TE-123M	1.601E-02	1.434E-02	1.364E-02	7.315E-03	NOT IDENT.
SB-124	1.992E-03	4.396E-02	3.796E-02	2.243E-02	NOT IDENT.
SB-125	-4.253E-03	5.417E-02	4.644E-02	2.764E-02	NOT IDENT.
TE-125M	-3.507E+00	5.057E+00	4.373E+00	2.580E+00	NOT IDENT.
I-126	7.040E-02	1.201E-01	1.119E-01	6.125E-02	NOT IDENT.
SB-126	-7.087E-02	8.013E-02	5.899E-02	4.088E-02	NOT IDENT.
SN-126	-8.770E-03	3.492E-02	3.174E-02	1.781E-02	NOT IDENT.
SB-127	-1.619E-01	6.163E-01	5.163E-01	3.144E-01	NOT IDENT.
I-131	-6.872E-03	6.379E-02	5.545E-02	3.255E-02	NOT IDENT.
TE-132	1.217E-01	3.385E-01	2.979E-01	1.727E-01	NOT IDENT.
BA-133	4.683E-03	2.303E-02	2.067E-02	1.175E-02	NOT IDENT.
I-133	-5.583E+02	2.008E+03	0.000E+00	1.024E+03	SHORT HLIF
CS-134	2.941E-03	2.513E-02	2.186E-02	1.282E-02	NOT IDENT.
CS-135	5.771E-03	8.643E-02	7.854E-02	4.410E-02	NOT IDENT.
I-135	4.400E+14	5.683E+14	0.000E+00	2.900E+14	SHORT HLIF
CS-136	-3.399E-02	4.905E-02	3.697E-02	2.503E-02	NOT IDENT.
BA-137M	-2.181E-02	2.066E-02	1.314E-02	1.054E-02	NOT IDENT.
CS-137	-2.304E-02	2.182E-02	1.388E-02	1.113E-02	NOT IDENT.
CE-139	3.157E-03	1.610E-02	1.435E-02	8.214E-03	NOT IDENT.
BA-140	-2.492E-02	1.502E-01	1.238E-01	7.664E-02	NOT IDENT.
LA-140	-1.524E-02	4.815E-02	3.835E-02	2.457E-02	NOT IDENT.
CE-141	-2.111E-02	3.441E-02	2.924E-02	1.756E-02	NOT IDENT.
CE-143	2.069E+01	4.782E+01	0.000E+00	2.440E+01	SHORT HLIF
CE-144	1.949E-02	1.015E-01	9.200E-02	5.177E-02	NOT IDENT.
PM-144	-1.155E-03	2.049E-02	1.768E-02	1.045E-02	NOT IDENT.
PR-144	-7.101E-02	1.534E+00	1.326E+00	7.829E-01	NOT IDENT.
PM-146	-5.079E-03	2.364E-02	1.978E-02	1.206E-02	NOT IDENT.
ND-147	-9.522E-02	3.086E-01	2.496E-01	1.575E-01	NOT IDENT.
PM-149	-1.758E+01	4.130E+01	3.568E+01	2.107E+01	NOT IDENT.
EU-152	-3.394E-03	5.624E-02	4.941E-02	2.870E-02	NOT IDENT.
GD-153	-5.237E-02	4.653E-02	3.583E-02	2.374E-02	NOT IDENT.
EU-154	-1.034E-01	6.350E-02	3.249E-02	3.240E-02	NOT IDENT.
EU-155	-1.885E-02	5.316E-02	4.728E-02	2.712E-02	NOT IDENT.
TB-160	3.394E-02	8.766E-02	7.810E-02	4.473E-02	NOT IDENT.
HO-166M	-1.291E-02	2.796E-02	2.238E-02	1.427E-02	NOT IDENT.
TA-182	-4.892E-02	8.216E-02	6.151E-02	4.192E-02	NOT IDENT.
IR-192	-4.889E-03	1.958E-02	1.704E-02	9.988E-03	NOT IDENT.
HG-203	3.555E-02	2.180E-02	2.159E-02	1.112E-02	NOT IDENT.
BI-207	1.907E-02	2.676E-02	2.571E-02	1.365E-02	NOT IDENT.
TL-208	9.264E-03	2.117E-02	1.952E-02	1.080E-02	NOT IDENT.
PB-210	2.604E+00	3.098E+00	2.869E+00	1.581E+00	NOT IDENT.
BI-211	-5.327E-02	1.327E-01	1.076E-01	6.769E-02	NOT IDENT.
PB-211	-6.249E-02	3.844E-01	3.271E-01	1.961E-01	NOT IDENT.
BI-212	-1.317E-01	3.145E-01	2.333E-01	1.604E-01	NOT IDENT.
PB-212	-2.331E-03	3.699E-02	3.363E-02	1.887E-02	NOT IDENT.
BI-214	4.218E-02	4.666E-02	4.242E-02	2.381E-02	NOT IDENT.
PB-214	2.186E-03	4.630E-02	3.902E-02	2.362E-02	NOT IDENT.
RN-219	5.425E-03	2.250E-01	1.963E-01	1.148E-01	NOT IDENT.
RA-223	9.666E-02	3.200E-01	2.924E-01	1.633E-01	NOT IDENT.
RA-224	-3.355E-02	3.515E-01	3.188E-01	1.793E-01	NOT IDENT.
RA-226	4.218E-02	4.666E-02	4.242E-02	2.381E-02	NOT IDENT.
AC-227	6.358E-02	1.499E-01	1.319E-01	7.649E-02	NOT IDENT.
TH-227	6.358E-02	1.500E-01	1.319E-01	7.651E-02	NOT IDENT.
AC-228	-5.919E-02	8.140E-02	6.830E-02	4.153E-02	NOT IDENT.
RA-228	-5.919E-02	8.140E-02	6.830E-02	4.153E-02	NOT IDENT.
TH-228	-2.331E-03	3.699E-02	3.363E-02	1.887E-02	NOT IDENT.
TH-229	-1.848E-01	2.990E-01	2.458E-01	1.526E-01	NOT IDENT.
PA-231	-1.990E-01	8.024E-01	7.064E-01	4.094E-01	NOT IDENT.
TH-231	9.666E-02	3.200E-01	2.924E-01	1.633E-01	NOT IDENT.
TH-232	-5.919E-02	8.140E-02	6.830E-02	4.153E-02	NOT IDENT.
PA-233	1.018E-02	3.707E-02	3.381E-02	1.891E-02	NOT IDENT.
PA-234	3.283E-02	1.494E-01	1.304E-01	7.622E-02	NOT IDENT.
PA-234M	3.121E-01	2.646E+00	2.416E+00	1.350E+00	NOT IDENT.
TH-234	-9.435E-01	8.847E-01	7.870E-01	4.514E-01	NOT IDENT.
U-235	-6.642E-02	1.233E-01	1.019E-01	6.289E-02	NOT IDENT.
NP-237	9.235E-04	1.051E-01	9.730E-02	5.362E-02	NOT IDENT.
U-238	-9.435E-01	8.847E-01	7.870E-01	4.514E-01	NOT IDENT.
NP-239	7.391E-02	2.066E-01	1.913E-01	1.054E-01	NOT IDENT.
AM-241	-8.676E-02	9.092E-02	8.088E-02	4.639E-02	NOT IDENT.
CM-247	-1.072E-02	2.073E-02	1.698E-02	1.057E-02	NOT IDENT.
CF-249	-3.824E-03	2.283E-02	1.959E-02	1.165E-02	NOT IDENT.
CF-251	-4.751E-02	7.116E-02	5.871E-02	3.631E-02	NOT IDENT.

ANH-511

-5.870E-02

3.172E-02

2.822E-02

1.618E-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	87.6060
49.72	88.5981
57.36	0.0000
59.54	116.8152
63.29	85.9972
63.29	85.9972
64.28	98.4432
67.75	80.9469
69.67	76.0732
70.83	89.6254
72.81	79.3992
72.87	79.4118
72.87	79.4118
74.82	83.4099
74.82	83.4099
74.82	83.4099
74.97	83.4426
77.11	109.1688
77.11	109.1688
77.11	109.1688
79.69	96.2631
79.80	89.9307
80.12	86.3663
80.19	86.3817
80.57	89.1938
81.00	94.7557
81.07	102.0623
81.07	102.0623
83.79	95.4053
83.79	95.4053
85.43	93.0195
86.48	101.5612
86.55	99.7311
86.79	109.0267
86.94	109.0657
87.57	106.4508
88.03	98.2255
88.47	107.6024
89.96	311.8227
91.11	161.4554
92.59	99.2591
92.59	99.2591
93.35	97.5529
94.67	293.5220
94.87	299.2993
94.87	299.2993
95.86	163.1827
97.43	101.2755
98.44	75.8858
99.53	78.9164
100.11	90.4382
103.18	83.3604
103.37	83.3936
105.31	104.9024
106.12	108.9331
109.28	117.3941
111.00	98.3261
111.76	94.5741
116.30	83.6088
117.23	93.6113
121.12	87.3510
121.78	77.5196
122.06	77.5596
123.07	87.6665
131.20	82.8909
133.52	92.3617
136.00	90.7184

136.47	85.6902
140.51	121.1977
140.51	0.0000
143.76	103.2644
144.24	95.0771
144.24	95.0771
145.44	121.1514
152.43	99.4763
153.25	87.0232
154.21	72.4527
154.21	72.4527
156.02	100.0349
158.56	77.1689
159.00	69.8162
162.66	101.0496
163.33	89.4388
165.86	91.9130
176.60	95.5186
177.52	99.9895
181.07	75.3642
184.41	111.9205
185.72	104.4252
193.51	101.0744
197.04	82.5725
205.31	73.3002
210.85	68.1299
215.65	75.3840
222.11	77.1205
227.38	63.7006
228.16	64.9175
228.18	64.9192
235.69	92.9586
235.96	92.9870
235.96	92.9870
238.63	87.1084
238.63	87.1084
240.99	93.5134
242.00	98.0345
244.70	77.9534
252.40	62.5291
252.80	64.3436
256.23	61.8885
256.23	61.8885
260.90	80.2217
264.66	76.0109
268.22	70.8410
269.46	70.0221
269.46	70.0221
271.23	65.5928
273.65	52.0555
276.40	74.1775
277.37	58.6670
277.60	59.5966
278.00	53.1997
279.20	49.5901
279.54	60.6313
280.46	63.4441
283.69	66.4146
284.31	63.6852
285.41	75.7652
285.90	66.5574
287.50	47.2187
293.27	0.0000
295.22	58.7635
295.96	61.6051
298.57	64.5643
299.98	53.4062
299.98	53.4062
300.09	53.4123
300.09	53.4123
300.13	53.4140
301.36	65.6720
302.85	51.6708
304.50	55.5142
304.50	55.5142
304.85	56.4734
308.46	62.3282
311.90	56.8405

316.51	59.9325
319.41	55.3193
320.08	50.5803
323.87	42.1335
323.87	42.1335
328.76	48.0850
333.37	58.8992
334.37	65.7152
334.37	65.7152
338.28	54.3004
338.28	54.3004
338.32	54.3021
338.32	54.3021
338.32	54.3021
340.48	61.2024
340.55	61.2062
344.28	56.5265
351.06	56.8477
351.93	46.1000
356.01	46.2549
364.49	51.5303
366.42	52.6021
383.85	47.2919
388.16	48.4592
388.63	47.4665
391.69	40.4913
400.66	45.8617
401.81	42.8415
402.40	47.9624
404.85	41.9159
410.95	33.8890
414.70	36.0414
423.72	46.6411
427.09	50.9088
427.87	45.7396
433.94	33.4077
453.88	39.1612
463.37	43.6720
468.07	47.0132
473.00	37.5183
476.78	33.3126
477.60	32.2549
487.02	38.9416
492.35	31.4758
497.08	44.6335
511.00	49.4131
514.00	107.8088
527.90	19.9688
529.87	0.0000
531.02	34.4550
537.26	34.5817
546.56	0.0000
563.25	29.8966
569.33	38.1804
569.50	38.1845
569.70	32.7331
583.19	22.9028
600.60	30.5194
602.73	29.6289
604.72	58.3934
609.32	24.1579
609.32	24.1579
610.33	27.8899
614.28	37.2637
618.01	30.8034
621.93	28.0605
621.93	28.0605
633.25	29.1669
635.95	34.8600
636.99	30.1656
645.85	20.8329
657.76	25.7212
661.66	30.5430
661.66	30.5430
664.57	0.0000
666.33	25.8306
666.50	21.0488
677.62	17.3162

685.70	26.0758
695.00	35.8934
696.49	33.9772
696.51	33.9772
697.00	29.1306
702.65	29.2083
706.68	24.3866
711.68	21.5107
720.70	23.5646
721.93	0.0000
722.78	28.5016
722.91	33.4173
723.31	31.4578
724.19	22.6193
727.33	26.5913
733.00	18.7611
735.93	23.7299
739.50	19.8071
747.24	12.9197
752.31	15.9371
753.82	13.9545
756.73	14.9703
763.94	14.0171
765.81	26.0533
766.42	27.0626
777.92	18.1327
778.90	15.1168
783.70	11.1088
785.37	16.1699
795.86	23.3487
801.95	20.3560
810.29	21.4486
810.76	21.4527
815.77	16.3793
818.51	16.3980
832.01	17.5205
834.85	25.7953
836.80	0.0000
846.77	19.6995
856.80	20.8203
860.56	23.9793
871.09	17.7981
873.19	29.3385
875.33	0.0000
879.36	23.1075
880.51	22.0674
883.24	22.0910
884.68	17.8932
889.28	26.3605
898.04	25.3916
911.20	13.8233
911.20	13.8233
911.20	13.8233
926.50	18.1812
937.49	23.6253
944.13	19.3772
946.00	14.0042
949.00	12.9413
962.29	19.5064
964.08	21.6875
966.15	16.2781
968.97	20.6398
968.97	20.6398
968.97	20.6398
983.53	17.4719
996.26	20.8416
1001.03	10.9875
1004.73	21.0866
1037.84	19.4739
1038.76	0.0000
1048.07	17.6811
1050.41	14.9010
1050.41	14.9010
1063.66	12.1605
1085.87	17.9045
1099.45	13.2509
1112.07	14.2554
1115.54	18.0769

1120.29	9.5284
1120.29	9.5284
1120.55	11.4351
1121.30	14.2975
1131.51	0.0000
1173.23	12.5938
1177.93	12.6117
1189.05	11.6812
1204.77	4.8901
1221.41	15.7266
1231.02	14.7852
1235.36	13.8171
1238.28	13.8291
1260.41	0.0000
1271.85	9.9740
1274.44	21.9588
1274.54	21.9597
1291.59	6.0181
1298.22	0.0000
1312.11	10.0879
1332.49	10.1449
1365.19	12.2822
1368.63	0.0000
1384.29	13.3740
1408.01	11.3872
1457.56	0.0000
1460.82	7.1959
1489.16	11.6257
1505.03	10.6104
1596.21	10.2262
1620.50	9.3492
1678.03	0.0000
1690.97	5.6999
1764.49	6.7578
1764.49	6.7578
1770.23	12.5656
1771.35	10.6351
1791.20	0.0000
1836.06	5.8805

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057355

Total Uranium Activity	-2.8378E+00	ug/g
Total Uranium Counting Unc.	2.6325E+00	ug/g
Total Uranium Tpu	1.3431E-06	ug/g
Total Uranium Mda	2.3418E+00	ug/g

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 959280                SAMPLE ID   : G1202057355                *
*  ANALYST       : MXR1                  DETECTOR    : GAM02                    *
*  SAMPLE DATE   : 5-MAR-2010 00:00:00.00  COUNT TIME : 0 02:00:00.00            *
*  ANALYSIS DATE: 19-MAR-2010 11:16:19.02  SAMPLE ALQT: 152.090 GRAM            *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 3.403E-02
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.409E-02
GROSS GAMMA MDA     (pCi/GRAM ) : 1.109E-01
GROSS GAMMA DLC     (pCi/GRAM ) : 5.225E-02

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 15:09:48.33

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057356.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 13:09:18
Sample ID          : G1202057356 Sample quantity : 1.52090E+02 GRAM
Detector name      : GAM14 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.82 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 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	63.86*	196	836	3.12	127.27	122	11	2.72E-02	29.8	
2	2	74.93	677	643	1.24	149.39	142	18	9.40E-02	7.4	1.09E+00
3	2	77.17*	1002	581	1.25	153.87	142	18	1.39E-01	5.5	
4	0	87.09	223	720	1.41	173.68	171	7	3.10E-02	20.9	
5	2	89.95	163	482	1.15	179.39	177	14	2.27E-02	20.6	3.54E+00
6	2	93.05*	398	768	1.72	185.60	177	14	5.53E-02	14.8	
7	0	185.91*	320	500	1.43	371.13	365	12	4.45E-02	15.4	
8	0	209.43	118	453	1.26	418.13	413	10	1.64E-02	35.1	
9	3	238.58*	1781	296	1.33	476.39	471	19	2.47E-01	2.9	2.94E-01
10	3	241.55	463	347	2.06	482.32	471	19	6.42E-02	12.8	
11	0	270.53	163	384	1.20	540.23	534	13	2.26E-02	26.1	
12	2	295.16	536	199	1.35	589.46	585	19	7.45E-02	6.2	3.21E-01
13	2	299.98	125	230	1.92	599.09	585	19	1.74E-02	24.8	
14	0	327.75	169	210	1.46	654.59	649	12	2.34E-02	18.8	
15	0	338.49	389	268	1.61	676.06	670	15	5.40E-02	10.6	
16	0	351.83*	977	221	1.63	702.71	696	13	1.36E-01	4.5	
17	0	462.69	99	157	1.59	924.30	919	12	1.37E-02	27.2	
18	0	511.24*	123	189	1.97	1021.34	1015	16	1.70E-02	29.8	
19	0	569.39*	264	247	2.24	1137.59	1127	22	3.66E-02	16.6	
20	0	583.18*	533	185	1.46	1165.15	1158	15	7.40E-02	7.1	
21	0	609.43*	717	131	1.49	1217.63	1210	15	9.96E-02	5.1	
22	0	727.42*	133	124	1.77	1453.54	1446	16	1.84E-02	20.9	
23	0	769.65	123	159	2.04	1537.97	1527	22	1.70E-02	27.7	
24	0	795.02	89	54	1.57	1588.71	1582	13	1.23E-02	20.2	
25	0	860.98	94	55	1.37	1720.60	1714	13	1.31E-02	19.2	
26	0	911.65*	392	66	1.94	1821.95	1814	15	5.44E-02	6.9	
27	2	965.30	85	43	2.29	1929.24	1924	21	1.18E-02	18.0	1.18E+00
28	2	969.55	226	46	2.02	1937.74	1924	21	3.15E-02	9.2	
29	0	1120.72*	182	85	1.92	2240.12	2232	17	2.52E-02	14.0	
30	0	1461.58*	1755	29	2.05	2922.15	2914	17	2.44E-01	2.5	
31	0	1564.47	21	4	4.49	3128.07	3120	15	2.96E-03	29.3	
32	0	1589.68	31	27	1.73	3178.53	3173	12	4.25E-03	38.5	
33	0	1631.45	18	6	1.85	3262.14	3257	9	2.47E-03	35.3	
34	0	1730.37	29	10	1.83	3460.14	3456	8	4.01E-03	26.6	
35	0	1765.27*	114	3	1.73	3530.02	3524	12	1.59E-02	10.1	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 15:09:52

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057356.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 13:09:18
 Sample ID : G1202057356 Sample quantity : 152.09 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA14 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.82 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	*	3.356E+01	2.959E+00	4.673E-01	3.394E-02	71.807
CD-109	+	88.03	*	2.191E+00	9.372E-01	1.410E+00	1.233E-01	1.553
SN-126	+	64.28		1.070E+00	6.550E-01	6.593E-01	9.395E-02	1.623
	+	86.94		8.797E-01	5.179E-01	5.532E-01	2.288E-01	1.590
	+	87.57	*	2.116E-01	9.052E-02	1.348E-01	1.173E-02	1.570
TL-208		277.37		5.596E-01	4.023E-01	6.451E-01	6.967E-02	0.867
	+	583.19	*	5.606E-01	8.835E-02	5.406E-02	3.689E-03	10.371
	+	860.56		9.576E-01	3.792E-01	4.090E-01	3.847E-02	2.342
BI-211		72.87		1.253E+01	3.565E+00	5.457E+00	4.022E-01	2.296
	+	351.06	*	4.466E+00	4.930E-01	2.875E-01	1.822E-02	15.534
PB-212	+	74.82		2.667E+00	5.116E-01	5.080E-01	6.245E-02	5.249
	+	77.11		2.291E+00	3.077E-01	2.949E-01	2.271E-02	7.770
	+	238.63	*	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
	+	300.09		1.980E+00	9.972E-01	1.163E+00	9.784E-02	1.702
BI-214	+	609.32	*	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
	+	1120.29		1.973E+00	5.805E-01	4.450E-01	4.149E-02	4.434
	+	1764.49		1.744E+00	3.675E-01	1.791E-01	1.074E-02	9.734
PB-214	+	74.82		4.726E+00	8.668E-01	9.004E-01	9.838E-02	5.249
	+	77.11		4.040E+00	6.366E-01	5.199E-01	5.866E-02	7.770
	+	242.00		2.853E+00	7.644E-01	5.154E-01	4.207E-02	5.535
	+	295.22		1.504E+00	2.291E-01	2.124E-01	1.857E-02	7.083
	+	351.93	*	1.621E+00	2.000E-01	1.046E-01	8.782E-03	15.502
RA-224	+	240.99	*	5.044E+00	1.320E+00	9.085E-01	5.222E-02	5.552
RA-226	+	609.32	*	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
	+	1120.29		1.973E+00	5.805E-01	4.450E-01	4.149E-02	4.434
	+	1764.49		1.744E+00	3.675E-01	1.791E-01	1.074E-02	9.734
AC-228	+	338.32		1.977E+00	9.163E-01	3.303E-01	1.362E-01	5.984
	+	911.20	*	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
	+	968.97		2.032E+00	6.198E-01	3.441E-01	8.388E-02	5.906
RA-228	+	338.32		1.977E+00	9.163E-01	3.303E-01	1.362E-01	5.984
	+	911.20	*	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
	+	968.97		2.032E+00	6.198E-01	3.441E-01	8.388E-02	5.906
TH-228	+	74.82		2.667E+00	4.421E-01	5.080E-01	3.864E-02	5.249
	+	77.11		2.291E+00	3.077E-01	2.949E-01	2.271E-02	7.770

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
	+	300.09		1.980E+00	1.556E+00	1.163E+00	7.083E-01	1.702
TH-232	+	338.32		1.977E+00	4.343E-01	3.303E-01	1.898E-02	5.984
	+	911.20	*	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
	+	968.97		2.032E+00	6.198E-01	3.441E-01	8.388E-02	5.906
TH-234	+	63.29	*	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574
	+	92.59		3.171E+00	1.167E+00	8.993E-01	1.977E-01	3.527
U-235	+	89.96		1.617E+00	7.760E-01	1.657E+00	4.075E-01	0.976
	+	93.35		2.396E+00	8.964E-01	6.767E-01	1.555E-01	3.540
		143.76	*	4.748E-03	2.087E-01	3.327E-01	5.281E-02	0.014
		163.33		2.796E-01	4.346E-01	7.067E-01	1.178E-01	0.396
	+	185.72		2.115E-01	6.602E-02	6.163E-02	3.376E-03	3.432
		205.31		-1.784E-01	5.173E-01	7.439E-01	1.259E-01	-0.240
NP-237	+	86.48	*	6.314E-01	3.008E-01	3.818E-01	8.651E-02	1.654
		95.86		3.372E-01	9.981E-01	1.427E+00	3.397E-01	0.236
U-238	+	63.29	*	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574
	+	92.59		3.171E+00	9.729E-01	8.993E-01	7.509E-02	3.527
ANH-511	+	511.00	*	9.806E-02	5.870E-02	4.445E-02	2.612E-03	2.206

---- 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	*	8.737E-03	3.282E-01	5.388E-01	3.630E-02	0.016
NA-22		1274.54	*	2.817E-02	4.198E-02	7.299E-02	4.768E-03	0.386
NA-24		1368.63	*	6.691E+02	4.198E-02	Half-Life too short		
SC-46		889.28	*	2.590E-02	3.950E-02	6.913E-02	6.388E-03	0.375
	+	1120.55		3.564E-01	1.021E-01	1.418E-01	9.181E-03	2.513
V-48		944.13		-5.514E-01	1.178E+00	1.892E+00	1.691E-01	-0.291
		983.53	*	-7.220E-02	8.402E-02	1.285E-01	1.091E-02	-0.562
		1312.11		-3.587E-02	1.031E-01	1.634E-01	1.129E-02	-0.220
CR-51		320.08	*	-6.784E-02	4.257E-01	6.832E-01	4.408E-02	-0.099
MN-54		834.85	*	2.466E-02	3.709E-02	6.474E-02	5.430E-03	0.381
CO-56		846.77	*	-2.261E-02	3.934E-02	6.308E-02	5.407E-03	-0.358
		1037.84		1.152E-01	3.165E-01	5.408E-01	4.475E-02	0.213
		1238.28		1.587E-01	9.241E-02	1.687E-01	1.096E-02	0.940
		1771.35		-1.404E+00	3.862E-01	2.839E-01	1.694E-02	-4.947
CO-57		122.06	*	3.790E-03	2.495E-02	4.038E-02	2.873E-03	0.094
		136.47		-3.230E-01	2.141E-01	3.237E-01	2.372E-02	-0.998
CO-58		810.76	*	-3.168E-02	4.174E-02	6.265E-02	5.041E-03	-0.506
FE-59		1099.45	*	-5.790E-02	9.300E-02	1.457E-01	1.121E-02	-0.397
		1291.59		-9.458E-02	1.362E-01	2.092E-01	1.703E-02	-0.452
CO-60		1173.23		9.188E-03	4.602E-02	7.713E-02	4.248E-03	0.119
		1332.49	*	-1.245E-03	3.449E-02	5.640E-02	4.020E-03	-0.022
ZN-65		1115.54	*	-3.279E-02	1.042E-01	1.433E-01	9.417E-03	-0.229
SE-75		121.12		-3.647E-02	1.350E-01	2.152E-01	2.145E-02	-0.169
		136.00		-3.797E-02	4.154E-02	6.447E-02	4.260E-03	-0.589
		264.66	*	-4.595E-03	4.926E-02	7.115E-02	4.178E-03	-0.065
		279.54		1.881E-02	1.125E-01	1.888E-01	1.190E-02	0.100

Sample ID : G1202057356

Acquisition date : 19-MAR-2010 13:09:18

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		-1.015E-01	2.488E-01	4.013E-01	3.560E-02	-0.253
SR-85		514.00	*	1.075E-01	4.182E-02	7.060E-02	4.153E-03	1.523
Y-88		898.04		2.491E-02	4.000E-02	6.989E-02	6.584E-03	0.356
		1836.06	*	-1.486E-02	3.403E-02	5.050E-02	2.868E-03	-0.294
Y-91		1204.77	*	-1.892E+01	2.484E+01	3.872E+01	2.252E+00	-0.489
NB-94		702.65	*	-3.840E-03	3.207E-02	5.133E-02	3.329E-03	-0.075
		871.09		1.956E-02	3.364E-02	5.854E-02	5.240E-03	0.334
NB-95		765.81	*	6.916E-02	4.820E-02	7.633E-02	5.621E-03	0.906
NB-95M		235.69	*	7.263E-01	1.686E-01	2.754E-01	2.065E-02	2.638
ZR-95		724.19		5.707E-04	1.180E-01	1.641E-01	1.261E-02	0.003
		756.73	*	-2.529E-02	7.260E-02	1.135E-01	9.408E-03	-0.223
MO-99		140.51		-5.476E-05	7.260E-02	Half-Life	too short	
		181.07		-7.846E-05	7.260E-02	Half-Life	too short	
		366.42		2.873E-04	7.260E-02	Half-Life	too short	
		739.50	*	3.430E-05	7.260E-02	Half-Life	too short	
		777.92		-3.980E-04	7.260E-02	Half-Life	too short	
TC-99M		140.51	*	-4.204E+19	7.260E-02	Half-Life	too short	
RU-103		497.08	*	5.499E-03	4.266E-02	7.037E-02	8.758E-03	0.078
	+	610.33		1.740E+01	3.184E+00	3.198E+00	4.836E-01	5.442
RH-106		621.93	*	7.593E-02	2.905E-01	4.801E-01	5.622E-02	0.158
		1050.41		-8.575E-01	2.371E+00	3.817E+00	2.900E-01	-0.225
RU-106		621.93	*	7.593E-02	2.904E-01	4.801E-01	2.870E-02	0.158
		1050.41		-8.575E-01	2.371E+00	3.817E+00	2.900E-01	-0.225
AG-108M		433.94	*	-1.316E-02	2.519E-02	4.006E-02	2.424E-03	-0.329
		614.28		1.201E-02	3.438E-02	4.994E-02	3.187E-03	0.241
		722.91		8.488E-03	4.087E-02	5.803E-02	4.126E-03	0.146
AG-110M		657.76	*	-1.599E-02	3.237E-02	5.043E-02	3.186E-03	-0.317
		677.62		-7.282E-02	3.091E-01	4.913E-01	3.191E-02	-0.148
		706.68		9.551E-02	2.101E-01	3.497E-01	2.400E-02	0.273
		763.94		1.623E-01	1.611E-01	2.484E-01	1.891E-02	0.653
		884.68		-1.935E-02	4.733E-02	7.667E-02	7.229E-03	-0.252
		937.49		-3.920E-03	1.131E-01	1.883E-01	1.752E-02	-0.021
		1384.29		-2.226E-01	1.676E-01	2.334E-01	1.717E-02	-0.953
		1505.03		-2.300E-01	2.733E-01	3.961E-01	2.722E-02	-0.581
SN-113		391.69	*	3.377E-03	4.190E-02	6.944E-02	4.063E-03	0.049
CD-115		260.90		-3.290E-04	4.190E-02	Half-Life	too short	
		492.35		3.793E-04	4.190E-02	Half-Life	too short	
		527.90	*	-3.107E-05	4.190E-02	Half-Life	too short	
SN-117M		156.02		6.928E-01	3.430E+00	5.528E+00	3.182E-01	0.125
		158.56	*	-3.526E-02	8.381E-02	1.321E-01	7.472E-03	-0.267
TE-123M		159.00	*	-6.229E-03	3.011E-02	4.782E-02	2.735E-03	-0.130
SB-124		602.73		-2.568E-02	4.555E-02	6.039E-02	3.614E-03	-0.425
		645.85		1.367E-01	5.073E-01	8.375E-01	5.578E-02	0.163
		722.78		9.680E-02	4.500E-01	6.394E-01	4.482E-02	0.151
		1690.97	*	-3.762E-03	7.033E-02	1.129E-01	7.663E-03	-0.033
SB-125		427.87	*	-6.543E-02	7.920E-02	1.236E-01	7.235E-03	-0.529
	+	463.37		6.991E-01	3.838E-01	4.920E-01	3.285E-02	1.421
		600.60		-3.623E-02	1.668E-01	2.594E-01	1.782E-02	-0.140
		635.95		-1.006E-01	2.466E-01	3.873E-01	2.690E-02	-0.260

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

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TE-125M	109.28	*		-8.586E+00	1.081E+01	1.696E+01	1.625E+00	-0.506
I-126	388.63			1.850E-02	2.392E-01	3.965E-01	2.166E-02	0.047
	666.33	*		3.029E-01	3.209E-01	5.517E-01	3.314E-02	0.549
	753.82			1.616E+00	2.574E+00	4.340E+00	3.122E-01	0.372
SB-126	414.70			-2.626E-02	1.155E-01	1.880E-01	1.043E-02	-0.140
	666.50			1.036E-01	1.122E-01	1.927E-01	1.158E-02	0.538
	695.00			2.820E-02	1.189E-01	1.951E-01	1.246E-02	0.145
	697.00			1.692E-02	4.099E-01	6.640E-01	4.256E-02	0.025
	720.70	*		1.221E-01	2.468E-01	3.606E-01	2.427E-02	0.339
	856.80			-1.563E-01	7.560E-01	1.068E+00	9.319E-02	-0.146
SB-127	252.40			-7.770E+00	1.656E+01	2.664E+01	1.114E+01	-0.292
	473.00			-1.094E+00	6.081E+00	9.856E+00	1.353E+00	-0.111
	685.70	*		-4.299E+00	5.467E+00	8.288E+00	1.050E+00	-0.519
	783.70			2.234E+01	1.456E+01	2.541E+01	3.618E+00	0.879
I-131	80.19			-3.459E+00	9.481E+00	1.327E+01	1.076E+00	-0.261
	284.31			2.087E-01	2.779E+00	4.646E+00	3.049E-01	0.045
	364.49	*		3.816E-02	2.063E-01	3.445E-01	2.209E-02	0.111
	636.99			-3.690E-02	2.737E+00	4.433E+00	2.996E-01	-0.008
TE-132	49.72			-1.160E+02	6.991E+01	1.060E+02	1.298E+01	-1.094
	111.76			-2.119E+01	1.849E+02	2.970E+02	3.793E+01	-0.071
	116.30			2.656E+01	1.586E+02	2.569E+02	3.260E+01	0.103
	228.16	*		2.936E+00	3.873E+00	6.613E+00	1.087E+00	0.444
BA-133	81.00			-2.060E-01	1.072E-01	1.345E-01	2.045E-02	-1.532
	276.40			5.007E-01	3.916E-01	5.997E-01	7.558E-02	0.835
	302.85			2.083E-01	1.432E-01	2.227E-01	2.543E-02	0.935
	356.01	*		4.297E-03	4.037E-02	5.846E-02	6.552E-03	0.073
	383.85			1.441E-02	2.846E-01	4.712E-01	4.948E-02	0.031
I-133	529.87	*		1.225E+00	2.846E-01	Half-Life	too short	
	875.33			-8.861E+01	2.846E-01	Half-Life	too short	
	1298.22			3.900E+01	2.846E-01	Half-Life	too short	
CS-134	563.25			5.096E-02	4.026E-01	5.733E-01	3.485E-02	0.089
+	569.33			1.537E+00	5.176E-01	5.206E-01	3.194E-02	2.952
	604.72			3.441E-02	3.270E-02	5.053E-02	3.038E-03	0.681
+	795.86	*		1.393E-01	5.736E-02	8.040E-02	6.328E-03	1.732
	801.95			8.636E-02	4.144E-01	6.143E-01	4.881E-02	0.141
	1365.19			6.856E-01	1.071E+00	1.888E+00	1.431E-01	0.363
CS-135	268.22	*		2.936E-01	1.756E-01	2.748E-01	2.108E-02	1.068
I-135	546.56			-5.539E+18	1.756E-01	Half-Life	too short	
	836.80			8.869E+18	1.756E-01	Half-Life	too short	
	1038.76			-8.571E+17	1.756E-01	Half-Life	too short	
	1131.51			-2.068E+17	1.756E-01	Half-Life	too short	
	1260.41	*		-3.614E+18	1.756E-01	Half-Life	too short	
	1457.56			1.385E+20	1.756E-01	Half-Life	too short	
	1678.03			1.394E+18	1.756E-01	Half-Life	too short	
	1791.20			8.259E+17	1.756E-01	Half-Life	too short	
CS-136	153.25			8.763E-01	1.294E+00	2.117E+00	1.715E-01	0.414
	176.60			6.257E-02	7.304E-01	1.169E+00	7.907E-02	0.054
	273.65			-6.586E-01	8.738E-01	1.214E+00	8.340E-02	-0.543
	340.55			1.141E+00	2.478E-01	4.322E-01	2.693E-02	2.639

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		818.51		3.730E-02	1.079E-01	1.854E-01	1.513E-02	0.201
		1048.07	*	-1.731E-02	1.427E-01	2.345E-01	1.888E-02	-0.074
		1235.36		-7.917E-01	8.721E-01	1.340E+00	1.352E-01	-0.591
BA-137M		661.66	*	8.538E-04	3.353E-02	5.438E-02	3.233E-03	0.016
CS-137		661.66	*	9.019E-04	3.543E-02	5.745E-02	3.430E-03	0.016
CE-139		165.86	*	5.512E-03	3.111E-02	5.003E-02	2.686E-03	0.110
BA-140		162.66		3.735E-03	1.264E+00	2.021E+00	1.287E-01	0.002
		304.85		1.211E+00	2.091E+00	3.094E+00	8.840E-01	0.391
		423.72		2.266E+00	2.672E+00	4.445E+00	1.433E+00	0.510
		537.26	*	-1.785E-01	3.760E-01	5.750E-01	1.917E-01	-0.310
LA-140	+	328.76		1.630E+00	6.232E-01	8.132E-01	5.277E-02	2.004
		487.02		-1.452E-01	1.910E-01	2.972E-01	1.955E-02	-0.489
		815.77		4.229E-01	4.899E-01	8.673E-01	7.950E-02	0.488
		1596.21	*	1.081E-02	1.202E-01	1.709E-01	1.133E-02	0.063
CE-141		145.44	*	6.260E-02	7.505E-02	1.235E-01	7.881E-03	0.507
CE-143		57.36		2.362E-02	7.505E-02	Half-Life	too short	
		293.27	*	5.306E-02	7.505E-02	Half-Life	too short	
		664.57		4.585E-02	7.505E-02	Half-Life	too short	
		721.93		5.315E-02	7.505E-02	Half-Life	too short	
CE-144		80.12		-7.531E-01	2.639E+00	3.706E+00	2.950E-01	-0.203
		133.52	*	-1.568E-01	2.087E-01	3.249E-01	4.632E-02	-0.483
PM-144		476.78		1.590E-02	6.084E-02	1.013E-01	6.936E-03	0.157
		618.01		-8.111E-03	3.063E-02	4.774E-02	3.021E-03	-0.170
		696.49	*	3.174E-03	3.457E-02	5.619E-02	3.603E-03	0.056
PR-144		696.51	*	2.550E-01	2.599E+00	4.226E+00	2.706E-01	0.060
		1489.16		-7.624E+00	1.279E+01	1.923E+01	1.328E+00	-0.396
PM-146		453.88	*	6.376E-03	3.954E-02	6.551E-02	5.499E-03	0.097
		633.25		-5.931E-01	1.279E+00	1.969E+00	7.419E-01	-0.301
		735.93		-1.087E-01	1.460E-01	2.006E-01	5.528E-02	-0.542
		747.24		-1.577E-02	9.163E-02	1.455E-01	2.000E-02	-0.108
ND-147	+	91.11		8.640E-01	3.649E-01	8.290E-01	7.626E-02	1.042
		319.41		-6.522E-01	5.068E+00	8.368E+00	4.860E-01	-0.078
		531.02	*	2.287E-01	8.169E-01	1.358E+00	1.843E-01	0.168
PM-149		285.90	*	-1.664E-04	8.169E-01	Half-Life	too short	
EU-152		121.78		6.384E-03	7.071E-02	1.142E-01	9.847E-03	0.056
		244.70		3.907E-01	3.306E-01	5.110E-01	2.944E-02	0.764
		344.28	*	2.775E-02	1.066E-01	1.375E-01	8.887E-03	0.202
		778.90		-1.758E-01	2.781E-01	3.771E-01	2.848E-02	-0.466
	+	964.08		8.241E-01	3.056E-01	5.372E-01	4.684E-02	1.534
		1085.87		1.545E-01	3.664E-01	6.279E-01	4.429E-02	0.246
		1112.07		1.823E-01	3.257E-01	5.107E-01	3.381E-02	0.357
		1408.01		2.478E-01	1.930E-01	3.529E-01	2.487E-02	0.702
GD-153		69.67		1.661E+00	2.128E+00	2.642E+00	1.890E-01	0.628
		97.43	*	6.007E-02	9.117E-02	1.325E-01	1.063E-02	0.453
		103.18		-6.312E-02	1.097E-01	1.737E-01	1.340E-02	-0.363
EU-154		123.07		-2.514E-03	5.012E-02	8.053E-02	8.229E-03	-0.031
		723.31		-2.121E-02	1.930E-01	2.653E-01	2.083E-02	-0.080
		873.19		-1.698E-02	2.662E-01	4.437E-01	5.396E-02	-0.038
		996.26		-6.826E-02	3.172E-01	5.181E-01	8.979E-02	-0.132

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

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EU-155	+	1004.73		1.110E-01	2.012E-01	3.484E-01	3.953E-02	0.319
		1274.44	*	7.845E-02	1.185E-01	2.057E-01	2.033E-02	0.381
		86.55		2.574E-01	1.102E-01	1.800E-01	1.562E-02	1.430
		105.31	*	7.636E-02	1.035E-01	1.707E-01	1.321E-02	0.447
TB-160	+	86.79		7.346E-01	3.142E-01	5.094E-01	4.390E-02	1.442
		197.04		-1.011E-02	5.642E-01	9.404E-01	5.212E-02	-0.011
		215.65		6.109E-01	7.967E-01	1.302E+00	7.342E-02	0.469
		298.57		3.009E-01	1.504E-01	2.067E-01	1.205E-02	1.456
HO-166M	+	879.36	*	3.688E-02	1.364E-01	2.330E-01	2.116E-02	0.158
		962.29		1.230E+00	5.431E-01	9.519E-01	8.318E-02	1.292
		966.15		6.205E-01	2.301E-01	4.837E-01	4.205E-02	1.283
		1177.93		1.321E-01	4.067E-01	6.870E-01	3.816E-02	0.192
TA-182	+	1271.85		-9.329E-02	7.658E-01	1.247E+00	8.099E-02	-0.075
		80.57		-5.111E-01	2.918E-01	3.828E-01	3.063E-02	-1.335
		184.41		1.681E-01	5.245E-02	6.401E-02	3.501E-03	2.626
		280.46		-3.590E-02	8.185E-02	1.341E-01	7.818E-03	-0.268
IR-192	+	410.95		3.310E-01	2.419E-01	4.233E-01	2.342E-02	0.782
		711.68	*	-5.187E-02	5.912E-02	8.902E-02	5.882E-03	-0.583
		752.31		-6.546E-02	2.557E-01	4.032E-01	2.891E-02	-0.162
		810.29		-3.420E-02	5.849E-02	8.928E-02	7.157E-03	-0.383
HG-203	+	67.75		-7.958E-02	1.453E-01	1.687E-01	1.186E-02	-0.472
		100.11		1.387E-01	1.753E-01	2.900E-01	2.282E-02	0.478
		152.43		2.320E-02	3.636E-01	5.836E-01	3.441E-02	0.040
		222.11		-2.314E-03	3.372E-01	5.657E-01	3.208E-02	-0.004
BI-207	+	1121.30		9.701E-01	2.779E-01	3.830E-01	2.475E-02	2.533
		1189.05		2.740E-02	3.014E-01	5.013E-01	2.838E-02	0.055
		1221.41	*	-1.049E-01	2.015E-01	3.192E-01	1.909E-02	-0.329
		1231.02		1.585E-02	4.858E-01	8.028E-01	4.879E-02	0.020
PB-210	+	295.96		1.198E+00	1.655E-01	2.882E-01	1.708E-02	4.158
		308.46		-7.340E-03	9.208E-02	1.525E-01	8.982E-03	-0.048
		316.51	*	1.170E-02	3.425E-02	5.778E-02	3.373E-03	0.203
		468.07		-7.979E-03	7.335E-02	1.031E-01	6.868E-03	-0.077
RN-219	+	70.83		7.110E-01	1.564E+00	2.257E+00	3.466E-01	0.315
		72.87		3.511E+00	1.097E+00	1.529E+00	2.275E-01	2.296
		279.20	*	2.242E-02	4.260E-02	7.241E-02	4.455E-03	0.310
		72.81		6.712E-01	2.035E-01	3.110E-01	2.290E-02	2.158
PB-211	+	74.97		7.689E-01	1.271E-01	2.271E-01	1.710E-02	3.385
		569.70		2.369E-01	7.971E-02	7.981E-02	4.761E-03	2.968
		1063.66	*	2.527E-02	4.819E-02	8.333E-02	6.166E-03	0.303
		1770.23		-2.904E-02	4.333E-01	5.874E-01	3.508E-02	-0.049
BI-212	+	46.54	*	3.552E-01	2.094E+00	3.432E+00	2.513E-01	0.103
		404.85	*	-1.124E+00	8.834E-01	1.059E+00	5.075E-01	-1.062
		427.09		-9.205E-01	1.396E+00	2.099E+00	9.613E-01	-0.439
		832.01		-1.080E+00	1.137E+00	1.540E+00	7.977E-01	-0.701
RN-219	+	727.33	*	2.163E+00	9.350E-01	1.113E+00	1.257E-01	1.943
		785.37		1.002E+00	3.198E+00	5.252E+00	4.017E-01	0.191
		1620.50		3.022E+00	2.263E+00	4.294E+00	2.813E-01	0.704
		271.23		7.303E-01	3.856E-01	4.316E-01	3.473E-02	1.692
		401.81	*	-3.439E-02	3.810E-01	6.169E-01	8.209E-02	-0.056

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-4.640E-01	2.348E-01	3.044E-01	2.450E-02	-1.524
		83.79		1.955E-01	1.416E-01	1.965E-01	1.633E-02	0.995
		94.87		1.761E+00	5.191E-01	7.988E-01	6.538E-02	2.205
		144.24		4.388E-01	6.989E-01	1.135E+00	8.560E-02	0.387
		154.21		2.711E-01	3.899E-01	6.382E-01	4.460E-02	0.425
	+	269.46		5.674E-01	2.981E-01	3.353E-01	2.035E-02	1.692
		323.87	*	-2.306E-01	6.695E-01	9.413E-01	1.517E-01	-0.245
	+	338.28		7.844E+00	1.847E+00	2.199E+00	2.248E-01	3.567
		79.69		2.316E+00	1.385E+00	2.003E+00	3.384E-01	1.157
		235.96		1.442E+00	2.257E-01	3.562E-01	2.882E-02	4.049
AC-227		256.23	*	9.539E-02	2.350E-01	3.986E-01	4.074E-02	0.239
	+	299.98		2.178E+00	1.108E+00	1.509E+00	1.661E-01	1.443
		304.50		1.302E+00	1.601E+00	2.419E+00	3.691E-01	0.538
		334.37		6.612E-01	2.247E+00	2.620E+00	3.722E-01	0.252
		79.80		2.250E+00	1.801E+00	2.577E+00	5.545E-01	0.873
TH-227		235.96		1.442E+00	2.202E-01	3.562E-01	2.611E-02	4.049
		256.23	*	9.539E-02	2.350E-01	3.986E-01	4.790E-02	0.239
	+	299.98		2.178E+00	1.108E+00	1.509E+00	1.661E-01	1.443
		304.50		1.302E+00	1.601E+00	2.419E+00	3.691E-01	0.538
		334.37		6.612E-01	2.247E+00	2.620E+00	3.722E-01	0.252
TH-229		85.43		7.326E-01	2.429E-01	3.672E-01	3.113E-02	1.995
	+	88.47		3.262E-01	1.396E-01	2.333E-01	2.030E-02	1.398
		193.51	*	-1.773E-01	4.882E-01	8.120E-01	4.484E-02	-0.218
PA-231	+	210.85		1.710E+00	1.206E+00	1.551E+00	8.712E-02	1.103
		283.69	*	-3.375E-01	1.396E+00	2.282E+00	2.996E-01	-0.148
	+	301.36		1.399E+00	7.098E-01	9.690E-01	1.004E-01	1.444
TH-231		81.07		-4.640E-01	2.348E-01	3.044E-01	2.450E-02	-1.524
		83.79		1.955E-01	1.416E-01	1.965E-01	1.633E-02	0.995
		94.87		1.761E+00	5.191E-01	7.988E-01	6.538E-02	2.205
		144.24		4.388E-01	6.989E-01	1.135E+00	8.560E-02	0.387
		154.21		2.711E-01	3.899E-01	6.382E-01	4.460E-02	0.425
PA-233	+	269.46		5.674E-01	2.981E-01	3.353E-01	2.035E-02	1.692
		323.87	*	-2.306E-01	6.695E-01	9.413E-01	1.517E-01	-0.245
	+	338.28		7.844E+00	1.847E+00	2.199E+00	2.248E-01	3.567
	+	300.13		9.857E-01	5.069E-01	6.829E-01	9.152E-02	1.443
		311.90	*	5.909E-03	5.857E-02	9.781E-02	6.041E-03	0.060
PA-234		340.48		3.381E+00	1.034E+00	1.234E+00	2.863E-01	2.739
		94.67		7.816E-01	2.071E-01	3.009E-01	3.645E-02	2.598
		98.44		1.042E-01	1.118E-01	1.417E-01	7.894E-02	0.735
		111.00		3.221E-02	1.834E-01	2.974E-01	3.347E-02	0.108
		131.20		9.224E-02	1.082E-01	1.784E-01	1.198E-02	0.517
	+	569.50		2.102E+00	7.075E-01	7.104E-01	4.238E-02	2.960
		733.00		-2.615E-01	3.912E-01	4.938E-01	1.066E-01	-0.530
		880.51		1.037E-01	2.531E-01	4.367E-01	3.974E-02	0.237
		883.24		-2.332E-02	2.663E-01	4.419E-01	2.974E-01	-0.053
		926.50		-1.509E-01	1.723E-01	2.609E-01	6.639E-02	-0.578
PA-234M		946.00	*	9.404E-02	2.959E-01	5.042E-01	9.531E-02	0.187
		949.00		2.311E-01	4.482E-01	7.741E-01	6.878E-02	0.299
		766.42		1.579E+01	1.488E+01	1.953E+01	9.871E+00	0.809

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		6.729E-01	4.299E+00	7.280E+00	7.037E-01	0.092
	99.53			1.547E-01	1.594E-01	2.564E-01	2.026E-02	0.603
	103.37			-3.156E-02	9.815E-02	1.569E-01	1.209E-02	-0.201
	106.12			3.587E-02	8.257E-02	1.351E-01	1.025E-02	0.266
	117.23	*		-4.995E-02	3.963E-01	6.358E-01	4.591E-02	-0.079
	228.18			1.573E-01	2.045E-01	3.517E-01	2.004E-02	0.447
AM-241	277.60			2.043E-01	1.782E-01	2.944E-01	1.716E-02	0.694
	59.54	*		1.130E-01	1.351E-01	1.992E-01	1.479E-02	0.567
CM-247	278.00			9.040E-01	7.623E-01	1.260E+00	7.347E-02	0.717
	287.50			-6.421E-01	1.171E+00	1.905E+00	1.112E-01	-0.337
CF-249	402.40	*		8.578E-03	3.484E-02	5.741E-02	3.153E-03	0.149
	252.80			-6.010E-01	8.753E-01	1.422E+00	8.228E-02	-0.422
	333.37			2.570E-01	2.551E-01	2.795E-01	1.611E-02	0.919
CF-251	388.16	*		1.992E-02	3.731E-02	6.322E-02	3.456E-03	0.315
	177.52	*		5.057E-02	1.240E-01	2.008E-01	1.090E-02	0.252
	227.38			1.630E-01	3.321E-01	5.662E-01	3.225E-02	0.288
	285.41			-7.306E-01	2.037E+00	3.344E+00	1.951E-01	-0.219

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057356
* Acquisition date   : 19-MAR-2010 13:09:18 Detector SN#      :
* Detector ID        : GAM14                      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 02:00:01.82             Half life ratio : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202057356             Analyst initials: MXR1
* Batch Number       : 959280                  Sample Quantity : 1.5209E+02 GRAM
* Recovery           : 1.00000                 Carrier Weight  : 0.00000
*****
*
*                               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 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	3.356E+01	2.900E+00	4.708E-01	0.000E+00
CD-109	2.191E+00	9.184E-01	1.524E+00	0.000E+00
SN-126	2.116E-01	8.871E-02	1.456E-01	0.000E+00
TL-208	5.606E-01	8.658E-02	5.579E-02	0.000E+00
BI-211	4.466E+00	4.831E-01	3.005E-01	0.000E+00
PB-212	1.811E+00	1.669E-01	8.949E-02	0.000E+00
BI-214	1.466E+00	1.871E-01	1.113E-01	0.000E+00
PB-214	1.621E+00	1.960E-01	1.093E-01	0.000E+00
RA-224	5.044E+00	1.293E+00	9.584E-01	0.000E+00
RA-226	1.466E+00	1.871E-01	1.113E-01	0.000E+00
AC-228	2.034E+00	3.650E-01	2.155E-01	0.000E+00
RA-228	2.034E+00	3.650E-01	2.155E-01	0.000E+00
TH-228	1.811E+00	1.669E-01	8.949E-02	0.000E+00
TH-232	2.034E+00	3.650E-01	2.155E-01	0.000E+00
TH-234	2.776E+00	1.689E+00	1.921E+00	0.000E+00
U-235	4.748E-03	2.045E-01	3.554E-01	0.000E+00
NP-237	6.314E-01	2.948E-01	4.128E-01	0.000E+00
U-238	2.776E+00	1.689E+00	1.921E+00	0.000E+00
ANH-511	9.806E-02	5.753E-02	4.603E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	8.737E-03	3.216E-01	5.588E-01	0.000E+00 NOT IDENT.
NA-22	2.817E-02	4.114E-02	7.380E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.053E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	2.590E-02	3.871E-02	7.057E-02	0.000E+00 FAIL ABUN
V-48	-7.220E-02	8.234E-02	1.308E-01	0.000E+00 NOT IDENT.
CR-51	-6.784E-02	4.172E-01	7.157E-01	0.000E+00 NOT IDENT.
MN-54	2.466E-02	3.635E-02	6.619E-02	0.000E+00 NOT IDENT.
CO-56	-2.261E-02	3.856E-02	6.448E-02	0.000E+00 NOT IDENT.

CO-57	3.790E-03	2.445E-02	4.330E-02	0.000E+00	NOT IDENT.
CO-58	-3.168E-02	4.090E-02	6.411E-02	0.000E+00	NOT IDENT.
FE-59	-5.790E-02	9.114E-02	1.479E-01	0.000E+00	NOT IDENT.
CO-60	-1.245E-03	3.380E-02	5.697E-02	0.000E+00	NOT IDENT.
ZN-65	-3.279E-02	1.021E-01	1.454E-01	0.000E+00	NOT IDENT.
SE-75	-4.595E-03	4.828E-02	7.489E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.098E-02	7.309E-02	0.000E+00	NOT IDENT.
Y-88	-1.486E-02	3.335E-02	5.057E-02	0.000E+00	NOT IDENT.
Y-91	-1.892E+01	2.434E+01	3.921E+01	0.000E+00	NOT IDENT.
NB-94	-3.840E-03	3.142E-02	5.272E-02	0.000E+00	NOT IDENT.
NB-95	6.916E-02	4.724E-02	7.822E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.653E-01	2.907E-01	0.000E+00	NOT IDENT.
ZR-95	-2.529E-02	7.114E-02	1.163E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.979E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.259E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.499E-03	4.181E-02	7.291E-02	0.000E+00	FAIL ABUN
RH-106	7.593E-02	2.847E-01	4.946E-01	0.000E+00	NOT IDENT.
RU-106	7.593E-02	2.846E-01	4.946E-01	0.000E+00	NOT IDENT.
AG-108M	-1.316E-02	2.468E-02	4.165E-02	0.000E+00	NOT IDENT.
AG-110M	-1.599E-02	3.172E-02	5.189E-02	0.000E+00	NOT IDENT.
SN-113	3.377E-03	4.106E-02	7.239E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.196E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-3.526E-02	8.214E-02	1.408E-01	0.000E+00	NOT IDENT.
TE-123M	-6.229E-03	2.951E-02	5.096E-02	0.000E+00	NOT IDENT.
SB-124	-3.762E-03	6.893E-02	1.133E-01	0.000E+00	NOT IDENT.
SB-125	-6.543E-02	7.761E-02	1.286E-01	0.000E+00	FAIL ABUN
TE-125M	-8.586E+00	1.060E+01	1.823E+01	0.000E+00	NOT IDENT.
I-126	3.029E-01	3.145E-01	5.674E-01	0.000E+00	NOT IDENT.
SB-126	1.221E-01	2.418E-01	3.701E-01	0.000E+00	NOT IDENT.
SB-127	-4.299E+00	5.357E+00	8.518E+00	0.000E+00	NOT IDENT.
I-131	3.816E-02	2.021E-01	3.597E-01	0.000E+00	NOT IDENT.
TE-132	2.936E+00	3.796E+00	6.987E+00	0.000E+00	NOT IDENT.
BA-133	4.297E-03	3.957E-02	6.108E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.964E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.621E-02	8.231E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.721E-01	2.892E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.563E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.731E-02	1.398E-01	2.384E-01	0.000E+00	NOT IDENT.
BA-137M	8.538E-04	3.286E-02	5.594E-02	0.000E+00	NOT IDENT.
CS-137	9.019E-04	3.472E-02	5.909E-02	0.000E+00	NOT IDENT.
CE-139	5.512E-03	3.049E-02	5.327E-02	0.000E+00	NOT IDENT.
BA-140	-1.785E-01	3.685E-01	5.946E-01	0.000E+00	NOT IDENT.
LA-140	1.081E-02	1.178E-01	1.718E-01	0.000E+00	FAIL ABUN
CE-141	6.260E-02	7.355E-02	1.319E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.532E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.568E-01	2.045E-01	3.477E-01	0.000E+00	NOT IDENT.
PM-144	3.174E-03	3.388E-02	5.772E-02	0.000E+00	NOT IDENT.
PR-144	2.550E-01	2.547E+00	4.342E+00	0.000E+00	NOT IDENT.
FM-146	6.376E-03	3.875E-02	6.804E-02	0.000E+00	NOT IDENT.
ND-147	2.287E-01	8.005E-01	1.405E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.016E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	2.775E-02	1.045E-01	1.438E-01	0.000E+00	FAIL ABUN
GD-153	6.007E-02	8.934E-02	1.428E-01	0.000E+00	NOT IDENT.
EU-154	7.845E-02	1.162E-01	2.080E-01	0.000E+00	NOT IDENT.
EU-155	7.636E-02	1.014E-01	1.837E-01	0.000E+00	FAIL ABUN
TB-160	3.688E-02	1.337E-01	2.379E-01	0.000E+00	FAIL ABUN
HO-166M	-5.187E-02	5.794E-02	9.140E-02	0.000E+00	FAIL ABUN
TA-182	-1.049E-01	1.974E-01	3.231E-01	0.000E+00	FAIL ABUN
IR-192	1.170E-02	3.356E-02	6.055E-02	0.000E+00	FAIL ABUN
HG-203	2.242E-02	4.175E-02	7.612E-02	0.000E+00	NOT IDENT.
BI-207	2.527E-02	4.722E-02	8.466E-02	0.000E+00	FAIL ABUN
PB-210	3.552E-01	2.052E+00	3.764E+00	0.000E+00	NOT IDENT.
PB-211	-1.124E+00	8.657E-01	1.103E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.163E-01	1.142E+00	0.000E+00	FAIL ABUN
RN-219	-3.439E-02	3.734E-01	6.427E-01	0.000E+00	FAIL ABUN
RA-223	-2.306E-01	6.561E-01	9.859E-01	0.000E+00	FAIL ABUN
AC-227	9.539E-02	2.303E-01	4.199E-01	0.000E+00	FAIL ABUN
TH-227	9.539E-02	2.303E-01	4.199E-01	0.000E+00	FAIL ABUN
TH-229	-1.773E-01	4.784E-01	8.612E-01	0.000E+00	FAIL ABUN
PA-231	-3.375E-01	1.368E+00	2.397E+00	0.000E+00	FAIL ABUN
TH-231	-2.306E-01	6.561E-01	9.859E-01	0.000E+00	FAIL ABUN
PA-233	5.909E-03	5.740E-02	1.025E-01	0.000E+00	FAIL ABUN
PA-234	9.404E-02	2.900E-01	5.139E-01	0.000E+00	FAIL ABUN
PA-234M	6.729E-01	4.213E+00	7.408E+00	0.000E+00	NOT IDENT.
NP-239	-4.995E-02	3.884E-01	6.825E-01	0.000E+00	NOT IDENT.
AM-241	1.130E-01	1.324E-01	2.172E-01	0.000E+00	NOT IDENT.
CM-247	8.578E-03	3.414E-02	5.980E-02	0.000E+00	NOT IDENT.
CF-249	1.992E-02	3.656E-02	6.592E-02	0.000E+00	NOT IDENT.

CF-251	5.057E-02	1.215E-01	2.135E-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]G1202057356.CNF;1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 13:09:18
Sample ID        : G1202057356 Sample quantity   : 1.52090E+02 GRAM
Detector name    : GAM14 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.82 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity        : 5.00000
Batch ID        : 959280 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	1755	10.66*	1.211E+00	3.356E+01	3.356E+01	8.82
CD-109	88.03	223	3.70*	7.042E+00	2.116E+00	2.191E+00	42.78
SN-126	64.28	196	9.60	4.712E+00	1.070E+00	1.070E+00	61.22
	86.94	223	8.90	7.042E+00	8.797E-01	8.797E-01	58.87
	87.57	223	37.00*	7.042E+00	2.116E-01	2.116E-01	42.78
TL-208	277.37	-----	6.60	5.001E+00	-----	Line Not Found	-----
	583.19	533	85.00*	2.758E+00	5.606E-01	5.606E-01	15.76
	860.56	94	12.50	1.943E+00	9.576E-01	9.576E-01	39.60
BI-211	72.87	-----	1.23	5.875E+00	-----	Line Not Found	-----
	351.06	977	12.92*	4.178E+00	4.466E+00	4.466E+00	11.04
PB-212	74.82	677	10.28	6.093E+00	2.667E+00	2.667E+00	19.19
	77.11	1002	17.10	6.311E+00	2.291E+00	2.291E+00	13.43
	238.63	1781	43.60*	5.568E+00	1.811E+00	1.811E+00	9.41
	300.09	125	3.30	4.719E+00	1.980E+00	1.980E+00	50.36
BI-214	609.32	717	45.49*	2.654E+00	1.466E+00	1.466E+00	13.02
	1120.29	182	14.92	1.523E+00	1.973E+00	1.973E+00	29.42
	1764.49	114	15.30	1.059E+00	1.744E+00	1.744E+00	21.08
PB-214	74.82	677	5.80	6.093E+00	4.726E+00	4.726E+00	18.34
	77.11	1002	9.70	6.311E+00	4.039E+00	4.040E+00	15.76
	242.00	463	7.25	5.521E+00	2.852E+00	2.853E+00	26.80
	295.22	536	18.42	4.777E+00	1.504E+00	1.504E+00	15.23
	351.93	977	35.60*	4.178E+00	1.621E+00	1.621E+00	12.34
RA-224	240.99	463	4.10*	5.521E+00	5.044E+00	5.044E+00	26.16
RA-226	609.32	717	45.49*	2.654E+00	1.466E+00	1.466E+00	13.02
	1120.29	182	14.92	1.523E+00	1.973E+00	1.973E+00	29.42
	1764.49	114	15.30	1.059E+00	1.744E+00	1.744E+00	21.08
AC-228	338.32	389	11.27	4.305E+00	1.977E+00	1.977E+00	46.35
	911.20	392	25.80*	1.843E+00	2.034E+00	2.034E+00	18.31
	968.97	226	15.80	1.741E+00	2.032E+00	2.032E+00	30.50
RA-228	338.32	389	11.27	4.305E+00	1.977E+00	1.977E+00	46.35
	911.20	392	25.80*	1.843E+00	2.034E+00	2.034E+00	18.31
	968.97	226	15.80	1.741E+00	2.032E+00	2.032E+00	30.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	677	10.28	6.093E+00	2.667E+00	2.667E+00	16.58
	77.11	1002	17.10	6.311E+00	2.291E+00	2.291E+00	13.43
	238.63	1781	43.60*	5.568E+00	1.811E+00	1.811E+00	9.41
	300.09	125	3.30	4.719E+00	1.980E+00	1.980E+00	78.56
TH-232	338.32	389	11.27	4.305E+00	1.977E+00	1.977E+00	21.97
	911.20	392	25.80*	1.843E+00	2.034E+00	2.034E+00	18.31
	968.97	226	15.80	1.741E+00	2.032E+00	2.032E+00	30.50
TH-234	63.29	196	3.70*	4.712E+00	2.776E+00	2.776E+00	62.08
	92.59	398	4.23	7.325E+00	3.171E+00	3.171E+00	36.80
U-235	89.96	163	3.47	7.190E+00	1.617E+00	1.617E+00	47.98
	93.35	398	5.60	7.325E+00	2.396E+00	2.396E+00	37.42
	143.76	-----	10.96*	7.372E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.992E+00	-----	Line Not Found	-----
	185.72	320	57.20	6.530E+00	2.115E-01	2.115E-01	31.21
NP-237	205.31	-----	5.01	6.150E+00	-----	Line Not Found	-----
	86.48	223	12.40*	7.042E+00	6.314E-01	6.314E-01	47.64
	95.86	-----	2.68	7.425E+00	-----	Line Not Found	-----
U-238	63.29	196	3.70*	4.712E+00	2.776E+00	2.776E+00	62.08
	92.59	398	4.23	7.325E+00	3.171E+00	3.171E+00	30.68
ANH-511	511.00	123	100.00*	3.087E+00	9.806E-02	9.806E-02	59.86

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202057356

Page : 3
Acquisition date : 19-MAR-2010 13:09:18

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	3.356E+01	3.356E+01	0.296E+01	8.82	
CD-109	461.40D	1.04	2.116E+00	2.191E+00	0.937E+00	42.78	
SN-126	2.30E+05Y	1.00	2.116E-01	2.116E-01	0.905E-01	42.78	
TL-208	1.41E+10Y	1.00	5.606E-01	5.606E-01	0.883E-01	15.76	
BI-211	7.04E+08Y	1.00	4.466E+00	4.466E+00	0.493E+00	11.04	
PB-212	1.41E+10Y	1.00	1.811E+00	1.811E+00	0.170E+00	9.41	
BI-214	1600.00Y	1.00	1.466E+00	1.466E+00	0.191E+00	13.02	
PB-214	1600.00Y	1.00	1.621E+00	1.621E+00	0.200E+00	12.34	
RA-224	1.41E+10Y	1.00	5.044E+00	5.044E+00	1.320E+00	26.16	
RA-226	1600.00Y	1.00	1.466E+00	1.466E+00	0.191E+00	13.02	
AC-228	1.41E+10Y	1.00	2.034E+00	2.034E+00	0.372E+00	18.31	
RA-228	1.41E+10Y	1.00	2.034E+00	2.034E+00	0.372E+00	18.31	
TH-228	1.41E+10Y	1.00	1.811E+00	1.811E+00	0.170E+00	9.41	
TH-232	1.41E+10Y	1.00	2.034E+00	2.034E+00	0.372E+00	18.31	
TH-234	4.47E+09Y	1.00	2.776E+00	2.776E+00	1.723E+00	62.08	
U-235	7.04E+08Y	1.00	2.115E-01	2.115E-01	0.660E-01	31.21	K
NP-237	2.14E+06Y	1.00	6.314E-01	6.314E-01	3.008E-01	47.64	
U-238	4.47E+09Y	1.00	2.776E+00	2.776E+00	1.723E+00	62.08	
ANH-511	1.00E+09Y	1.00	9.806E-02	9.806E-02	5.870E-02	59.86	

Total Activity : 6.673E+01 6.680E+01

Grand Total Activity : 6.673E+01 6.680E+01

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

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

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.43	118	453	1.26	418.13	413	10	1.64E-02	70.3	6.07E+00	T
0	270.53	163	384	1.20	540.23	534	13	2.26E-02	52.2	5.09E+00	T
0	327.75	169	210	1.46	654.59	649	12	2.34E-02	37.7	4.41E+00	T
0	462.69	99	157	1.59	924.30	919	12	1.37E-02	54.5	3.35E+00	T
0	569.39	264	247	2.24	1137.59	1127	22	3.66E-02	33.1	2.82E+00	T
0	727.42	133	124	1.77	1453.54	1446	16	1.84E-02	41.7	2.27E+00	T
0	769.65	123	159	2.04	1537.97	1527	22	1.70E-02	55.5	2.15E+00	
0	795.02	89	54	1.57	1588.71	1582	13	1.23E-02	40.4	2.09E+00	T
2	965.30	85	43	2.29	1929.24	1924	21	1.18E-02	36.1	1.75E+00	T
0	1564.47	21	4	4.49	3128.07	3120	15	2.96E-03	58.6	1.15E+00	
0	1589.68	31	27	1.73	3178.53	3173	12	4.25E-03	77.0	1.14E+00	
0	1631.45	18	6	1.85	3262.14	3257	9	2.47E-03	70.5	1.11E+00	
0	1730.37	29	10	1.83	3460.14	3456	8	4.01E-03	53.2	1.07E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057356.CNF;1 *
* Acquisition date   : 19-MAR-2010 13:09:18   Detector SN#      :          *
* Detector ID        : GAM14                   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 02:00:01.82          Half life ratio     : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library   : SOLID        *
* Sample ID          : G1202057356           Analyst initials  : MXR1          *
* Batch Number       : 959280                Sample Quantity   : 1.52090E+02 GRAM *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06.61MS Isotope      :          *
* MSD ID             :                        MSD Isotope     :          *
* LCS ID             : 1032-A                 LCS Isotope     :          *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.356E+01	2.959E+00	4.673E-01	3.394E-02	71.807
CD-109	2.191E+00	9.372E-01	1.410E+00	1.233E-01	1.553
SN-126	2.116E-01	9.052E-02	1.348E-01	1.173E-02	1.570
TL-208	5.606E-01	8.835E-02	5.406E-02	3.689E-03	10.371
BI-211	4.466E+00	4.930E-01	2.875E-01	1.822E-02	15.534
PB-212	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
BI-214	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
PB-214	1.621E+00	2.000E-01	1.046E-01	8.782E-03	15.502
RA-224	5.044E+00	1.320E+00	9.085E-01	5.222E-02	5.552
RA-226	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
AC-228	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
RA-228	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
TH-228	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
TH-232	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
TH-234	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574
U-235	2.115E-01	6.602E-02	3.327E-01	5.281E-02	0.636
NP-237	6.314E-01	3.008E-01	3.818E-01	8.651E-02	1.654
U-238	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	9.806E-02	5.870E-02	4.445E-02	2.612E-03	2.206

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.737E-03		3.282E-01	5.388E-01	3.630E-02	0.016
NA-22	2.817E-02		4.198E-02	7.299E-02	4.768E-03	0.386
NA-24	6.691E+02		2.068E+03	Half-Life too short		
SC-46	2.590E-02		3.950E-02	6.913E-02	6.388E-03	0.375
V-48	-7.220E-02		8.402E-02	1.285E-01	1.091E-02	-0.562
CR-51	-6.784E-02		4.257E-01	6.832E-01	4.408E-02	-0.099
MN-54	2.466E-02		3.709E-02	6.474E-02	5.430E-03	0.381
CO-56	-2.261E-02		3.934E-02	6.308E-02	5.407E-03	-0.358
CO-57	3.790E-03		2.495E-02	4.038E-02	2.873E-03	0.094
CO-58	-3.168E-02		4.174E-02	6.265E-02	5.041E-03	-0.506
FE-59	-5.790E-02		9.300E-02	1.457E-01	1.121E-02	-0.397
CO-60	-1.245E-03		3.449E-02	5.640E-02	4.020E-03	-0.022
ZN-65	-3.279E-02		1.042E-01	1.433E-01	9.417E-03	-0.229
SE-75	-4.595E-03		4.926E-02	7.115E-02	4.178E-03	-0.065
SR-85	1.075E-01		4.182E-02	7.060E-02	4.153E-03	1.523
Y-88	-1.486E-02		3.403E-02	5.050E-02	2.868E-03	-0.294
Y-91	-1.892E+01		2.484E+01	3.872E+01	2.252E+00	-0.489
NB-94	-3.840E-03		3.207E-02	5.133E-02	3.329E-03	-0.075
NB-95	6.916E-02		4.820E-02	7.633E-02	5.621E-03	0.906
NB-95M	7.263E-01		1.686E-01	2.754E-01	2.065E-02	2.638
ZR-95	-2.529E-02		7.260E-02	1.135E-01	9.408E-03	-0.223
MO-99	3.430E-05		4.071E-05	Half-Life too short		
TC-99M	-4.204E+19		6.425E+19	Half-Life too short		
RU-103	5.499E-03		4.266E-02	7.037E-02	8.758E-03	0.078
RH-106	7.593E-02		2.905E-01	4.801E-01	5.622E-02	0.158
RU-106	7.593E-02		2.904E-01	4.801E-01	2.870E-02	0.158
AG-108M	-1.316E-02		2.519E-02	4.006E-02	2.424E-03	-0.329
AG-110M	-1.599E-02		3.237E-02	5.043E-02	3.186E-03	-0.317
SN-113	3.377E-03		4.190E-02	6.944E-02	4.063E-03	0.049
CD-115	-3.107E-05		6.104E-05	Half-Life too short		
SN-117M	-3.526E-02		8.381E-02	1.321E-01	7.472E-03	-0.267
TE-123M	-6.229E-03		3.011E-02	4.782E-02	2.735E-03	-0.130
SB-124	-3.762E-03		7.033E-02	1.129E-01	7.663E-03	-0.033
SB-125	-6.543E-02		7.920E-02	1.236E-01	7.235E-03	-0.529
TE-125M	-8.586E+00		1.081E+01	1.696E+01	1.625E+00	-0.506
I-126	3.029E-01		3.209E-01	5.517E-01	3.314E-02	0.549
SB-126	1.221E-01		2.468E-01	3.606E-01	2.427E-02	0.339
SB-127	-4.299E+00		5.467E+00	8.288E+00	1.050E+00	-0.519
I-131	3.816E-02		2.063E-01	3.445E-01	2.209E-02	0.111
TE-132	2.936E+00		3.873E+00	6.613E+00	1.087E+00	0.444
BA-133	4.297E-03		4.037E-02	5.846E-02	6.552E-03	0.073
I-133	1.225E+00		1.512E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.393E-01	+	5.736E-02	8.040E-02	6.328E-03	1.732
CS-135	2.936E-01		1.756E-01	2.748E-01	2.108E-02	1.068
I-135	-3.614E+18		1.818E+18	Half-Life too short		
CS-136	-1.731E-02		1.427E-01	2.345E-01	1.888E-02	-0.074
BA-137M	8.538E-04		3.353E-02	5.438E-02	3.233E-03	0.016
CS-137	9.019E-04		3.543E-02	5.745E-02	3.430E-03	0.016
CE-139	5.512E-03		3.111E-02	5.003E-02	2.686E-03	0.110
BA-140	-1.785E-01		3.760E-01	5.750E-01	1.917E-01	-0.310
LA-140	1.081E-02		1.202E-01	1.709E-01	1.133E-02	0.063
CE-141	6.260E-02		7.505E-02	1.235E-01	7.881E-03	0.507
CE-143	5.306E-02		7.815E-03	Half-Life too short		
CE-144	-1.568E-01		2.087E-01	3.249E-01	4.632E-02	-0.483
PM-144	3.174E-03		3.457E-02	5.619E-02	3.603E-03	0.056
PR-144	2.550E-01		2.599E+00	4.226E+00	2.706E-01	0.060
PM-146	6.376E-03		3.954E-02	6.551E-02	5.499E-03	0.097
ND-147	2.287E-01		8.169E-01	1.358E+00	1.843E-01	0.168
PM-149	-1.664E-04		5.182E-04	Half-Life too short		
EU-152	2.775E-02		1.066E-01	1.375E-01	8.887E-03	0.202
GD-153	6.007E-02		9.117E-02	1.325E-01	1.063E-02	0.453
EU-154	7.845E-02		1.185E-01	2.057E-01	2.033E-02	0.381
EU-155	7.636E-02		1.035E-01	1.707E-01	1.321E-02	0.447
TB-160	3.688E-02		1.364E-01	2.330E-01	2.116E-02	0.158
HO-166M	-5.187E-02		5.912E-02	8.902E-02	5.882E-03	-0.583
TA-182	-1.049E-01		2.015E-01	3.192E-01	1.909E-02	-0.329
IR-192	1.170E-02		3.425E-02	5.778E-02	3.373E-03	0.203
HG-203	2.242E-02		4.260E-02	7.241E-02	4.455E-03	0.310
BI-207	2.527E-02		4.819E-02	8.333E-02	6.166E-03	0.303
PB-210	3.552E-01		2.094E+00	3.432E+00	2.513E-01	0.103
PB-211	-1.124E+00		8.834E-01	1.059E+00	5.075E-01	-1.062
BI-212	2.163E+00	+	9.350E-01	1.113E+00	1.257E-01	1.943
RN-219	-3.439E-02		3.810E-01	6.169E-01	8.209E-02	-0.056
RA-223	-2.306E-01		6.695E-01	9.413E-01	1.517E-01	-0.245
AC-227	9.539E-02		2.350E-01	3.986E-01	4.074E-02	0.239
TH-227	9.539E-02		2.350E-01	3.986E-01	4.790E-02	0.239
TH-229	-1.773E-01		4.882E-01	8.120E-01	4.484E-02	-0.218
PA-231	-3.375E-01		1.396E+00	2.282E+00	2.996E-01	-0.148
TH-231	-2.306E-01		6.695E-01	9.413E-01	1.517E-01	-0.245
PA-233	5.909E-03		5.857E-02	9.781E-02	6.041E-03	0.060
PA-234	9.404E-02		2.959E-01	5.042E-01	9.531E-02	0.187
PA-234M	6.729E-01		4.299E+00	7.280E+00	7.037E-01	0.092
NP-239	-4.995E-02		3.963E-01	6.358E-01	4.591E-02	-0.079
AM-241	1.130E-01		1.351E-01	1.992E-01	1.479E-02	0.567
CM-247	8.578E-03		3.484E-02	5.741E-02	3.153E-03	0.149
CF-249	1.992E-02		3.731E-02	6.322E-02	3.456E-03	0.315
CF-251	5.057E-02		1.240E-01	2.008E-01	1.090E-02	0.252

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202057356
* Acquisition date   : 19-MAR-2010 13:09:18 Detector SN#      :
* Detector ID        : GAM14                      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 02:00:01.82             Half life ratio : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202057356             Analyst initials: MXR1
* Batch Number       : 959280                  Sample Quantity : 1.5209E+02 GRAM
* Recovery           : 1.00000                 Carrier Weight  : 0.00000
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME  : 6-MAR-2009 11:43:06 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	3.356E+01	2.900E+00	2.356E-01	1.479E+00
CD-109	2.191E+00	9.184E-01	7.625E-01	4.686E-01
SN-126	2.116E-01	8.871E-02	7.286E-02	4.526E-02
TL-208	5.606E-01	8.658E-02	2.791E-02	4.417E-02
BI-211	4.466E+00	4.831E-01	1.503E-01	2.465E-01
PB-212	1.811E+00	1.669E-01	4.477E-02	8.517E-02
BI-214	1.466E+00	1.871E-01	5.568E-02	9.546E-02
PB-214	1.621E+00	1.960E-01	5.467E-02	1.000E-01
RA-224	5.044E+00	1.293E+00	4.795E-01	6.599E-01
RA-226	1.466E+00	1.871E-01	5.568E-02	9.546E-02
AC-228	2.034E+00	3.650E-01	1.078E-01	1.862E-01
RA-228	2.034E+00	3.650E-01	1.078E-01	1.862E-01
TH-228	1.811E+00	1.669E-01	4.477E-02	8.517E-02
TH-232	2.034E+00	3.650E-01	1.078E-01	1.862E-01
TH-234	2.776E+00	1.689E+00	9.609E-01	8.617E-01
U-235	4.748E-03	2.045E-01	1.778E-01	1.043E-01
NP-237	6.314E-01	2.948E-01	2.065E-01	1.504E-01
U-238	2.776E+00	1.689E+00	9.609E-01	8.617E-01
ANH-511	9.806E-02	5.753E-02	2.303E-02	2.935E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	8.737E-03	3.216E-01	2.796E-01	1.641E-01 NOT IDENT.
NA-22	2.817E-02	4.114E-02	3.692E-02	2.099E-02 NOT IDENT.
NA-24	6.691E+08	4.053E+09	0.000E+00	2.068E+09 SHORT HLIF
SC-46	2.590E-02	3.871E-02	3.530E-02	1.975E-02 FAIL ABUN
V-48	-7.220E-02	8.234E-02	6.545E-02	4.201E-02 NOT IDENT.
CR-51	-6.784E-02	4.172E-01	3.581E-01	2.129E-01 NOT IDENT.
MN-54	2.466E-02	3.635E-02	3.312E-02	1.854E-02 NOT IDENT.
CO-56	-2.261E-02	3.856E-02	3.226E-02	1.967E-02 NOT IDENT.

CO-57	3.790E-03	2.445E-02	2.166E-02	1.248E-02	NOT IDENT.
CO-58	-3.168E-02	4.090E-02	3.207E-02	2.087E-02	NOT IDENT.
FE-59	-5.790E-02	9.114E-02	7.398E-02	4.650E-02	NOT IDENT.
CO-60	-1.245E-03	3.380E-02	2.850E-02	1.724E-02	NOT IDENT.
ZN-65	-3.279E-02	1.021E-01	7.273E-02	5.211E-02	NOT IDENT.
SE-75	-4.595E-03	4.828E-02	3.747E-02	2.463E-02	NOT IDENT.
SR-85	1.075E-01	4.098E-02	3.657E-02	2.091E-02	NOT IDENT.
Y-88	-1.486E-02	3.335E-02	2.530E-02	1.702E-02	NOT IDENT.
Y-91	-1.892E+01	2.434E+01	1.962E+01	1.242E+01	NOT IDENT.
NB-94	-3.840E-03	3.142E-02	2.638E-02	1.603E-02	NOT IDENT.
NB-95	6.916E-02	4.724E-02	3.913E-02	2.410E-02	NOT IDENT.
NB-95M	7.263E-01	1.653E-01	1.454E-01	8.431E-02	NOT IDENT.
ZR-95	-2.529E-02	7.114E-02	5.821E-02	3.630E-02	NOT IDENT.
MO-99	3.430E+01	7.979E+01	0.000E+00	4.071E+01	SHORT HLIF
TC-99M	-4.204E+25	1.259E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.499E-03	4.181E-02	3.648E-02	2.133E-02	FAIL ABUN
RH-106	7.593E-02	2.847E-01	2.474E-01	1.453E-01	NOT IDENT.
RU-106	7.593E-02	2.846E-01	2.474E-01	1.452E-01	NOT IDENT.
AG-108M	-1.316E-02	2.468E-02	2.084E-02	1.259E-02	NOT IDENT.
AG-110M	-1.599E-02	3.172E-02	2.596E-02	1.618E-02	NOT IDENT.
SN-113	3.377E-03	4.106E-02	3.621E-02	2.095E-02	NOT IDENT.
CD-115	-3.107E+01	1.196E+02	0.000E+00	6.104E+01	SHORT HLIF
SN-117M	-3.526E-02	8.214E-02	7.043E-02	4.191E-02	NOT IDENT.
TE-123M	-6.229E-03	2.951E-02	2.550E-02	1.506E-02	NOT IDENT.
SB-124	-3.762E-03	6.893E-02	5.669E-02	3.517E-02	NOT IDENT.
SB-125	-6.543E-02	7.761E-02	6.433E-02	3.960E-02	FAIL ABUN
TE-125M	-8.586E+00	1.060E+01	9.122E+00	5.407E+00	NOT IDENT.
I-126	3.029E-01	3.145E-01	2.839E-01	1.604E-01	NOT IDENT.
SB-126	1.221E-01	2.418E-01	1.852E-01	1.234E-01	NOT IDENT.
SB-127	-4.299E+00	5.357E+00	4.261E+00	2.733E+00	NOT IDENT.
I-131	3.816E-02	2.021E-01	1.800E-01	1.031E-01	NOT IDENT.
TE-132	2.936E+00	3.796E+00	3.495E+00	1.937E+00	NOT IDENT.
BA-133	4.297E-03	3.957E-02	3.056E-02	2.019E-02	NOT IDENT.
I-133	1.225E+06	2.964E+06	0.000E+00	1.512E+06	SHORT HLIF
CS-134	1.393E-01	5.621E-02	4.118E-02	2.868E-02	FAIL ABUN
CS-135	2.936E-01	1.721E-01	1.447E-01	8.778E-02	NOT IDENT.
I-135	-3.614E+24	3.563E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.731E-02	1.398E-01	1.192E-01	7.135E-02	NOT IDENT.
BA-137M	8.538E-04	3.286E-02	2.799E-02	1.677E-02	NOT IDENT.
CS-137	9.019E-04	3.472E-02	2.956E-02	1.771E-02	NOT IDENT.
CE-139	5.512E-03	3.049E-02	2.665E-02	1.556E-02	NOT IDENT.
BA-140	-1.785E-01	3.685E-01	2.975E-01	1.880E-01	NOT IDENT.
LA-140	1.081E-02	1.178E-01	8.594E-02	6.009E-02	FAIL ABUN
CE-141	6.260E-02	7.355E-02	6.597E-02	3.752E-02	NOT IDENT.
CE-143	5.306E+04	1.532E+04	0.000E+00	7.815E+03	SHORT HLIF
CE-144	-1.568E-01	2.045E-01	1.739E-01	1.043E-01	NOT IDENT.
PM-144	3.174E-03	3.388E-02	2.888E-02	1.729E-02	NOT IDENT.
PR-144	2.550E-01	2.547E+00	2.172E+00	1.300E+00	NOT IDENT.
PM-146	6.376E-03	3.875E-02	3.404E-02	1.977E-02	NOT IDENT.
ND-147	2.287E-01	8.005E-01	7.028E-01	4.084E-01	FAIL ABUN
PM-149	-1.664E+02	1.016E+03	0.000E+00	5.182E+02	SHORT HLIF
EU-152	2.775E-02	1.045E-01	7.193E-02	5.332E-02	FAIL ABUN
GD-153	6.007E-02	8.934E-02	7.146E-02	4.558E-02	NOT IDENT.
EU-154	7.845E-02	1.162E-01	1.040E-01	5.926E-02	NOT IDENT.
EU-155	7.636E-02	1.014E-01	9.192E-02	5.173E-02	FAIL ABUN
TB-160	3.688E-02	1.337E-01	1.190E-01	6.820E-02	FAIL ABUN
HO-166M	-5.187E-02	5.794E-02	4.573E-02	2.956E-02	FAIL ABUN
TA-182	-1.049E-01	1.974E-01	1.616E-01	1.007E-01	FAIL ABUN
IR-192	1.170E-02	3.356E-02	3.029E-02	1.712E-02	FAIL ABUN
HG-203	2.242E-02	4.175E-02	3.808E-02	2.130E-02	NOT IDENT.
BI-207	2.527E-02	4.722E-02	4.236E-02	2.409E-02	FAIL ABUN
PB-210	3.552E-01	2.052E+00	1.883E+00	1.047E+00	NOT IDENT.
PB-211	-1.124E+00	8.657E-01	5.517E-01	4.417E-01	NOT IDENT.
BI-212	2.163E+00	9.163E-01	5.715E-01	4.675E-01	FAIL ABUN
RN-219	-3.439E-02	3.734E-01	3.215E-01	1.905E-01	FAIL ABUN
RA-223	-2.306E-01	6.561E-01	4.932E-01	3.348E-01	FAIL ABUN
AC-227	9.539E-02	2.303E-01	2.101E-01	1.175E-01	FAIL ABUN
TH-227	9.539E-02	2.303E-01	2.101E-01	1.175E-01	FAIL ABUN
TH-229	-1.773E-01	4.784E-01	4.309E-01	2.441E-01	FAIL ABUN
PA-231	-3.375E-01	1.368E+00	1.199E+00	6.979E-01	FAIL ABUN
TH-231	-2.306E-01	6.561E-01	4.932E-01	3.348E-01	FAIL ABUN
PA-233	5.909E-03	5.740E-02	5.130E-02	2.929E-02	FAIL ABUN
PA-234	9.404E-02	2.900E-01	2.571E-01	1.479E-01	FAIL ABUN
PA-234M	6.729E-01	4.213E+00	3.706E+00	2.149E+00	NOT IDENT.
NP-239	-4.995E-02	3.884E-01	3.415E-01	1.982E-01	NOT IDENT.
AM-241	1.130E-01	1.324E-01	1.086E-01	6.753E-02	NOT IDENT.
CM-247	8.578E-03	3.414E-02	2.992E-02	1.742E-02	NOT IDENT.
CF-249	1.992E-02	3.656E-02	3.298E-02	1.865E-02	NOT IDENT.

CF-251

5.057E-02

1.215E-01

1.068E-01

6.199E-02 NOT IDENT.

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*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD      *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUN REPORT *
*                                     *
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ENERGY	MDA COUNTS
46.54	493.8352
49.72	599.7098
57.36	0.0000
59.54	567.4163
63.29	692.3307
63.29	692.3307
64.28	693.0172
67.75	817.6870
69.67	738.6652
70.83	800.6338
72.81	813.8167
72.87	813.8613
72.87	813.8613
74.82	765.9355
74.82	765.9355
74.82	765.9355
74.97	766.0416
77.11	767.5272
77.11	767.5272
77.11	767.5272
79.69	743.2285
79.80	743.3013
80.12	768.7413
80.19	768.7887
80.57	858.2344
81.00	885.4932
81.07	885.5478
81.07	885.5478
83.79	702.4269
83.79	702.4269
85.43	763.8232
86.48	835.5396
86.55	835.5879
86.79	861.1309
86.94	910.3115
87.57	942.9564
88.03	970.4138
88.47	804.7400
89.96	1297.6519
91.11	585.7672
92.59	586.4727
92.59	586.4727
93.35	586.8327
94.67	556.8041
94.87	556.8939
94.87	556.8939
95.86	584.6031
97.43	498.2963
98.44	473.0725
99.53	488.3702
100.11	493.7812
103.18	553.8663
103.37	553.9471
105.31	513.9825
106.12	530.4003
109.28	590.8372
111.00	539.8578
111.76	549.8593
116.30	504.0595
117.23	509.8038
121.12	485.1429
121.78	469.0772
122.06	463.7377
123.07	473.8413
131.20	517.9674
133.52	550.4978
136.00	520.6909

136.47	551.5532
140.51	0.0000
140.51	0.0000
143.76	536.4907
144.24	513.5095
144.24	513.5095
145.44	488.5296
152.43	483.9834
153.25	467.6025
154.21	472.3077
154.21	472.3077
156.02	487.2501
158.56	499.0994
159.00	482.5515
162.66	478.0166
163.33	438.0742
165.86	453.2281
176.60	406.5678
177.52	387.6723
181.07	0.0000
184.41	392.5169
185.72	402.7257
193.51	416.1845
197.04	396.9675
205.31	421.1553
210.85	413.1796
215.65	359.9099
222.11	352.3044
227.38	346.7397
228.16	343.1782
228.18	343.1827
235.69	357.9735
235.96	354.9319
235.96	354.9319
238.63	321.6888
238.63	321.6888
240.99	322.0403
242.00	322.1886
244.70	275.7946
252.40	295.7209
252.80	306.9716
256.23	285.9458
256.23	285.9458
260.90	0.0000
264.66	278.2517
268.22	288.0728
269.46	291.3591
269.46	291.3591
271.23	296.2815
273.65	353.0823
276.40	276.5111
277.37	269.4371
277.60	282.9382
278.00	285.3441
279.20	303.8914
279.54	311.4858
280.46	310.6584
283.69	277.0409
284.31	271.4378
285.41	276.2915
285.90	0.0000
287.50	286.9475
293.27	0.0000
295.22	265.0534
295.96	265.1317
298.57	265.4144
299.98	249.0656
299.98	249.0656
300.09	249.0752
300.09	249.0752
300.13	249.0784
301.36	217.4574
302.85	203.2917
304.50	197.0700
304.50	197.0700
304.85	208.2229
308.46	218.7073
311.90	221.8727

316.51	216.5236
319.41	227.3169
320.08	228.1210
323.87	228.9885
323.87	228.9885
328.76	239.0421
333.37	173.5664
334.37	215.4327
334.37	215.4327
338.28	195.1376
338.28	195.1376
338.32	195.1426
338.32	195.1426
338.32	195.1426
340.48	159.5255
340.55	159.5295
344.28	169.4330
351.06	183.4421
351.93	183.4998
356.01	165.2955
364.49	176.5280
366.42	0.0000
383.85	201.2914
388.16	177.0051
388.63	186.8689
391.69	169.3419
400.66	190.5922
401.81	175.8467
402.40	167.9767
404.85	234.3731
410.95	177.3721
414.70	196.4410
423.72	127.3656
427.09	156.3925
427.87	155.4344
433.94	141.7608
453.88	151.6912
463.37	129.2968
468.07	136.2079
473.00	136.4106
476.78	137.5771
477.60	139.6357
487.02	141.0412
492.35	0.0000
497.08	133.3171
511.00	143.0514
514.00	100.5630
527.90	0.0000
529.87	0.0000
531.02	107.8967
537.26	115.2922
546.56	0.0000
563.25	129.5898
569.33	126.6852
569.50	126.6912
569.70	126.6971
583.19	121.9417
600.60	119.8202
602.73	132.6877
604.72	90.8328
609.32	129.0659
609.32	129.0659
610.33	118.9530
614.28	94.5571
618.01	110.4218
621.93	100.0028
621.93	100.0028
633.25	101.3438
635.95	103.5245
636.99	92.9844
645.85	101.6602
657.76	107.2657
661.66	109.4953
661.66	109.4953
664.57	0.0000
666.33	97.9117
666.50	97.9162
677.62	112.0496

685.70	122.9568
695.00	112.5110
696.49	117.9089
696.51	117.9089
697.00	115.7783
702.65	112.7109
706.68	104.2205
711.68	120.4766
720.70	95.2150
721.93	0.0000
722.78	102.4497
722.91	102.4543
723.31	115.0469
724.19	125.8582
727.33	90.6814
733.00	93.6808
735.93	98.6997
739.50	0.0000
747.24	94.3428
752.31	94.4490
753.82	82.5350
756.73	93.4557
763.94	68.9338
765.81	78.0355
766.42	94.3812
777.92	0.0000
778.90	101.3993
783.70	77.6112
785.37	103.8831
795.86	80.3730
801.95	83.0898
810.29	98.9429
810.76	100.0511
815.77	81.6304
818.51	85.3484
832.01	120.5604
834.85	95.7692
836.80	0.0000
846.77	92.3116
856.80	82.4579
860.56	74.9833
871.09	80.7094
873.19	82.5991
875.33	0.0000
879.36	71.5515
880.51	68.7788
883.24	79.0459
884.68	84.6497
889.28	71.6925
898.04	69.0197
911.20	76.6781
911.20	76.6781
911.20	76.6781
926.50	91.9129
937.49	90.2285
944.13	83.7544
946.00	80.0195
949.00	81.9484
962.29	46.9460
964.08	76.1094
966.15	68.0391
968.97	68.0757
968.97	68.0757
968.97	68.0757
983.53	68.2603
996.26	69.3717
1001.03	68.4814
1004.73	69.4801
1037.84	69.8960
1038.76	0.0000
1048.07	64.2683
1050.41	72.9323
1050.41	72.9323
1063.66	62.5218
1085.87	66.6276
1099.45	74.5280
1112.07	71.2928
1115.54	91.5081

1120.29	77.7051
1120.29	77.7051
1120.55	77.7116
1121.30	77.7214
1131.51	0.0000
1173.23	89.1745
1177.93	92.1870
1189.05	76.6353
1204.77	112.2883
1221.41	98.7630
1231.02	93.9679
1235.36	119.7691
1238.28	75.2609
1260.41	0.0000
1271.85	71.6777
1274.44	56.7681
1274.54	56.7681
1291.59	69.8975
1298.22	0.0000
1312.11	53.0884
1332.49	41.1952
1365.19	28.2712
1368.63	0.0000
1384.29	62.7770
1408.01	38.6092
1457.56	0.0000
1460.82	27.6405
1489.16	31.8615
1505.03	41.2028
1596.21	19.6643
1620.50	17.7844
1678.03	0.0000
1690.97	15.8356
1764.49	6.3928
1764.49	6.3928
1770.23	14.6222
1771.35	86.3756
1791.20	0.0000
1836.06	20.4210

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057356

Total Uranium Activity	8.2604E+00	ug/g
Total Uranium Counting Unc.	5.0254E+00	ug/g
Total Uranium Tpu	2.5640E-06	ug/g
Total Uranium Mda	2.8598E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280                      SAMPLE ID   : G1202057356
*  ANALYST       : MXR1                        DETECTOR    : GAM14
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 13:09:18.29    SAMPLE ALQT  : 152.090 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.090E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.329E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.646E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.277E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:18:25.67

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057357.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:17:59
Sample ID          : G1202057357      Sample quantity   : 1.51730E+02 GRAM
Detector name      : GAM04            Detector geometry: CAN
Elapsed live time   : 0 01:00:00.00    Elapsed real time: 0 01:00:01.37  0.0%
Energy tolerance    : 1.50000 keV      Analyst Initials : MXR1
Abundance limit     : 75.00000          Sensitivity      : 5.00000
Batch ID           : 959280            Detector SN#      :
Matrix Spike ID     :                  LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.55	1584	469	0.98	119.14	115	9	4.40E-01	3.6	
2	1	74.90	131	248	0.88	149.85	146	14	3.64E-02	19.7	1.79E+00
3	1	77.07*	193	284	1.00	154.18	146	14	5.37E-02	15.9	
4	3	88.03	1216	257	1.07	176.09	172	11	3.38E-01	3.5	9.19E-01
5	3	90.01	74	222	0.94	180.05	172	11	2.07E-02	43.6	
6	0	122.48	178	418	1.45	245.00	239	12	4.94E-02	24.2	
7	0	186.06*	93	318	0.85	372.17	367	10	2.59E-02	37.7	
8	5	238.77*	542	166	1.09	477.62	472	26	1.51E-01	5.9	1.31E+00
9	5	241.78	163	246	1.87	483.63	472	26	4.52E-02	23.2	
10	0	295.27*	218	230	1.21	590.61	584	12	6.04E-02	15.6	
11	0	338.50	149	177	1.14	677.09	672	11	4.14E-02	19.1	
12	0	352.18*	282	127	1.24	704.45	701	9	7.83E-02	9.4	
13	0	583.53*	161	114	1.29	1167.15	1161	12	4.47E-02	15.5	
14	0	609.85*	159	115	1.44	1219.79	1214	11	4.42E-02	15.5	
15	0	662.17*	2178	126	1.46	1324.43	1317	14	6.05E-01	2.4	
16	0	728.05	58	44	1.65	1456.18	1452	8	1.61E-02	23.8	
17	0	911.92*	151	121	1.61	1823.90	1817	13	4.19E-02	17.3	
18	0	970.91*	74	167	1.44	1941.87	1934	16	2.07E-02	41.1	
19	0	1121.58*	78	55	1.80	2243.17	2236	16	2.16E-02	25.0	
20	0	1174.19	1678	45	1.91	2348.38	2342	13	4.66E-01	2.6	
21	0	1333.62	1509	20	2.00	2667.17	2657	20	4.19E-01	2.7	
22	0	1380.10	17	16	1.14	2760.13	2752	13	4.84E-03	53.2	
23	0	1766.29	28	3	1.47	3532.30	3525	13	7.80E-03	23.0	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:18:28

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057357.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 19-MAR-2010 11:17:59
 Sample ID : G1202057357 Sample quantity : 151.73 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA4 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.37 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	+	122.06	*	1.643E-01	8.044E-02	6.007E-02	4.170E-03	2.735
		136.47		1.238E-01	3.093E-01	5.152E-01	3.826E-02	0.240
CO-60	+	1173.23		6.434E+00	5.067E-01	1.335E-01	7.939E-03	48.198
	+	1332.49	*	6.481E+00	5.634E-01	7.513E-02	5.148E-03	86.265
CD-109	+	88.03	*	3.268E+01	4.560E+00	2.207E+00	2.652E-01	14.806
SN-126		64.28		2.669E-01	1.055E+00	1.714E+00	2.953E-01	0.156
	+	86.94		1.329E+01	5.688E+00	9.811E-01	4.138E-01	13.549
	+	87.57	*	3.197E+00	4.462E-01	2.176E-01	2.610E-02	14.694
BA-137M	+	661.66	*	5.438E+00	3.731E-01	1.116E-01	5.445E-03	48.715
CS-137	+	661.66	*	5.745E+00	3.954E-01	1.179E-01	5.786E-03	48.715
TL-208		277.37		1.026E-01	6.077E-01	1.034E+00	1.165E-01	0.099
	+	583.19	*	3.821E-01	1.212E-01	9.986E-02	6.267E-03	3.826
		860.56		1.920E-01	6.290E-01	1.060E+00	8.842E-02	0.181
BI-211		72.87		1.018E+00	6.024E+00	9.178E+00	1.052E+00	0.111
	+	351.06	*	2.977E+00	5.936E-01	5.578E-01	3.769E-02	5.338
PB-212	+	74.82		1.730E+00	7.285E-01	1.044E+00	1.568E-01	1.657
	+	77.11		1.426E+00	4.819E-01	5.828E-01	6.686E-02	2.447
	+	238.63	*	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403
		300.09		2.373E+00	1.580E+00	2.549E+00	2.278E-01	0.931
BI-214	+	609.32	*	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
	+	1120.29		1.905E+00	9.689E-01	9.830E-01	9.214E-02	1.937
		1764.49		8.369E-01	3.729E-01	8.115E-01	4.947E-02	1.031
PB-214	+	74.82		3.066E+00	1.280E+00	1.850E+00	2.577E-01	1.657
	+	77.11		2.514E+00	8.745E-01	1.027E+00	1.452E-01	2.447
	+	242.00		2.323E+00	1.095E+00	9.239E-01	8.161E-02	2.514
	+	295.22		1.415E+00	4.596E-01	4.071E-01	3.772E-02	3.475
	+	351.93	*	1.081E+00	2.235E-01	2.099E-01	1.830E-02	5.148
RA-224	+	240.99	*	4.108E+00	1.922E+00	1.628E+00	1.085E-01	2.523
RA-226	+	609.32	*	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
	+	1120.29		1.905E+00	9.689E-01	9.830E-01	9.214E-02	1.937
		1764.49		8.369E-01	3.729E-01	8.115E-01	4.947E-02	1.031
TH-228	+	74.82		1.730E+00	7.091E-01	1.044E+00	1.201E-01	1.657
	+	77.11		1.426E+00	4.819E-01	5.828E-01	6.686E-02	2.447
	+	238.63	*	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-241	+	300.09	*	2.373E+00	2.132E+00	2.549E+00	1.554E+00	0.931
		59.54	*	1.390E+01	2.014E+00	7.146E-01	9.021E-02	19.454

---- 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	*	-1.599E-01	6.912E-01	1.105E+00	7.316E-02	-0.145
NA-22		1274.54	*	-3.259E-02	5.059E-02	7.579E-02	4.956E-03	-0.430
NA-24		1368.63	*	-3.504E-01	5.059E-02	Half-Life too short		
K-40		1460.82	*	7.819E-01	6.066E-01	1.166E+00	8.287E-02	0.671
SC-46		889.28	*	-6.996E-03	9.423E-02	1.544E-01	1.248E-02	-0.045
	+	1120.55		3.204E-01	1.616E-01	2.030E-01	1.330E-02	1.578
V-48		944.13		1.124E+00	2.295E+00	3.877E+00	3.099E-01	0.290
		983.53	*	-1.866E-01	1.669E-01	2.478E-01	1.920E-02	-0.753
		1312.11		1.682E-02	8.172E-02	1.415E-01	9.535E-03	0.119
CR-51		320.08	*	-2.610E-01	6.214E-01	1.015E+00	7.140E-02	-0.257
MN-54		834.85	*	4.556E-02	8.117E-02	1.393E-01	1.008E-02	0.327
CO-56		846.77	*	-5.801E-02	8.494E-02	1.330E-01	9.867E-03	-0.436
		1037.84		1.158E-01	7.284E-01	1.200E+00	9.434E-02	0.097
		1238.28		1.235E-01	1.079E-01	2.032E-01	1.353E-02	0.608
		1771.35		1.224E-01	3.682E-01	5.726E-01	3.477E-02	0.214
CO-58		810.76	*	6.259E-02	8.033E-02	1.406E-01	9.706E-03	0.445
FE-59		1099.45	*	-6.458E-02	2.082E-01	3.284E-01	2.509E-02	-0.197
		1291.59		-1.010E-02	1.396E-01	2.305E-01	1.863E-02	-0.044
ZN-65		1115.54	*	-1.642E-02	2.246E-01	3.104E-01	2.053E-02	-0.053
SE-75	+	121.12		8.569E-01	4.238E-01	4.163E-01	4.116E-02	2.059
		136.00		7.402E-02	5.851E-02	1.012E-01	6.783E-03	0.732
		264.66	*	-1.172E-02	7.657E-02	1.285E-01	8.647E-03	-0.091
		279.54		-1.254E-02	1.728E-01	2.905E-01	2.053E-02	-0.043
		400.66		3.494E-01	4.952E-01	8.476E-01	7.603E-02	0.412
SR-85		514.00	*	-8.623E-02	8.238E-02	1.252E-01	6.993E-03	-0.689
Y-88		898.04		-5.672E-02	1.039E-01	1.644E-01	1.360E-02	-0.345
		1836.06	*	3.379E-02	4.451E-02	8.598E-02	5.017E-03	0.393
Y-91		1204.77	*	-3.340E+01	2.907E+01	3.867E+01	2.370E+00	-0.864
NB-94		702.65	*	-1.210E-02	6.345E-02	1.049E-01	5.653E-03	-0.115
		871.09		3.455E-02	7.977E-02	1.355E-01	1.057E-02	0.255
NB-95		765.81	*	-7.108E-02	8.141E-02	1.269E-01	7.907E-03	-0.560
NB-95M		235.69	*	-1.176E-02	2.265E-01	3.177E-01	2.614E-02	-0.037
ZR-95		724.19		-2.912E-02	1.959E-01	2.806E-01	1.886E-02	-0.104
		756.73	*	8.264E-03	1.379E-01	2.309E-01	1.691E-02	0.036
MO-99		140.51		4.405E+01	2.980E+01	4.903E+01	1.131E+01	0.898
		181.07		1.197E+01	2.636E+01	3.884E+01	6.947E+00	0.308
		366.42		1.107E+02	1.586E+02	2.730E+02	1.632E+01	0.405
		739.50	*	2.989E+00	1.950E+01	3.294E+01	4.756E+00	0.091
		777.92		-1.039E+01	5.898E+01	9.679E+01	6.198E+00	-0.107
TC-99M		140.51	*	1.423E+10	5.898E+01	Half-Life too short		
RU-103		497.08	*	-4.957E-02	7.666E-02	1.186E-01	1.463E-02	-0.418
	+	610.33		7.465E+00	2.564E+00	3.521E+00	5.222E-01	2.120

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-106	621.93	*	-1.933E-01	5.543E-01	8.578E-01	9.697E-02	-0.225	
	1050.41		6.472E+00	5.646E+00	9.987E+00	7.220E-01	0.648	
RU-106	621.93	*	-1.933E-01	5.539E-01	8.578E-01	4.406E-02	-0.225	
	1050.41		6.472E+00	5.646E+00	9.987E+00	7.220E-01	0.648	
AG-108M	433.94	*	5.350E-03	5.969E-02	9.848E-02	5.994E-03	0.054	
	614.28		4.183E-02	6.799E-02	1.017E-01	5.736E-03	0.411	
	722.91		6.129E-03	8.267E-02	1.212E-01	7.349E-03	0.051	
AG-110M	657.76	*	2.568E-02	7.411E-02	1.124E-01	6.009E-03	0.228	
	677.62		2.044E-01	5.822E-01	1.002E+00	5.495E-02	0.204	
	706.68		-7.999E-02	4.140E-01	6.845E-01	3.986E-02	-0.117	
	763.94		-5.575E-02	3.156E-01	5.192E-01	3.391E-02	-0.107	
	884.68		-2.710E-02	1.153E-01	1.867E-01	1.552E-02	-0.145	
	937.49		-1.526E-02	2.962E-01	4.841E-01	4.050E-02	-0.032	
	1384.29		2.256E-02	2.071E-01	3.056E-01	2.181E-02	0.074	
	1505.03		-4.908E-01	4.293E-01	5.560E-01	3.752E-02	-0.883	
SN-113	391.69	*	3.235E-02	8.121E-02	1.373E-01	8.274E-03	0.236	
CD-115	260.90		8.401E+01	1.957E+02	3.379E+02	2.256E+01	0.249	
	492.35		-5.886E+01	6.537E+01	9.994E+01	5.626E+00	-0.589	
	527.90	*	-1.271E+01	1.817E+01	2.788E+01	1.547E+00	-0.456	
SN-117M	156.02		-6.823E-01	3.250E+00	5.219E+00	3.347E-01	-0.131	
	158.56	*	1.725E-02	7.992E-02	1.310E-01	8.382E-03	0.132	
TE-123M	159.00	*	-9.396E-03	4.299E-02	6.892E-02	4.455E-03	-0.136	
SB-124	602.73		-4.335E-03	7.534E-02	1.159E-01	6.081E-03	-0.037	
	645.85		6.537E-03	8.687E-01	1.466E+00	8.503E-02	0.004	
	722.78		-3.840E-02	8.380E-01	1.214E+00	7.218E-02	-0.032	
	1690.97	*	-6.401E-02	1.388E-01	2.063E-01	1.407E-02	-0.310	
SB-125	427.87	*	-6.286E-02	1.804E-01	2.901E-01	1.715E-02	-0.217	
	463.37		5.832E-01	5.985E-01	1.027E+00	6.790E-02	0.568	
	600.60		1.039E-01	3.464E-01	5.675E-01	3.545E-02	0.183	
	635.95		1.405E-01	5.111E-01	8.346E-01	5.149E-02	0.168	
TE-125M	109.28	*	4.880E+00	1.462E+01	2.446E+01	2.466E+00	0.199	
I-126	388.63		-5.455E-02	2.984E-01	4.880E-01	2.768E-02	-0.112	
	666.33	*	-6.647E-02	4.427E-01	6.388E-01	3.151E-02	-0.104	
	753.82		8.109E-01	3.258E+00	5.534E+00	3.357E-01	0.147	
SB-126	414.70		-1.032E-01	1.445E-01	2.278E-01	1.289E-02	-0.453	
	666.50		-6.949E-02	1.525E-01	2.129E-01	1.051E-02	-0.326	
	695.00		3.891E-02	1.330E-01	2.279E-01	1.205E-02	0.171	
	697.00		-1.566E-01	4.706E-01	7.718E-01	4.102E-02	-0.203	
	720.70	*	6.882E-02	2.753E-01	4.683E-01	2.632E-02	0.147	
	856.80		2.833E-01	9.590E-01	1.618E+00	1.225E-01	0.175	
SB-127	252.40		-3.504E+00	6.816E+00	1.065E+01	4.377E+00	-0.329	
	473.00		1.966E+00	3.100E+00	5.234E+00	5.646E-01	0.376	
	685.70	*	2.266E+00	2.097E+00	3.780E+00	3.326E-01	0.599	
	783.70		4.408E+00	6.161E+00	1.073E+01	1.156E+00	0.411	
I-131	80.19		-4.174E+00	8.216E+00	1.200E+01	1.391E+00	-0.348	
	284.31		6.176E-02	2.387E+00	4.028E+00	2.896E-01	0.015	
	364.49	*	-1.964E-02	2.081E-01	3.436E-01	2.284E-02	-0.057	
	636.99		1.114E+00	2.894E+00	4.761E+00	2.781E-01	0.234	
TE-132	49.72		2.519E+01	6.459E+01	1.115E+02	1.556E+01	0.226	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133		111.76		1.340E+01	4.272E+01	7.152E+01	7.315E+00	0.187
		116.30		9.244E+00	3.761E+01	5.990E+01	5.926E+00	0.154
		228.16	*	3.117E-01	1.115E+00	1.797E+00	2.640E-01	0.173
		81.00		-1.375E-01	1.857E-01	2.661E-01	4.615E-02	-0.517
		276.40		-1.265E-01	5.736E-01	9.572E-01	1.245E-01	-0.132
		302.85		-2.684E-01	2.543E-01	4.012E-01	4.736E-02	-0.669
I-133		356.01	*	-5.986E-03	8.217E-02	1.194E-01	1.365E-02	-0.050
		383.85		9.683E-02	5.419E-01	9.059E-01	9.632E-02	0.107
		529.87	*	5.354E-03	5.419E-01	Half-Life	too short	
CS-134		875.33		3.139E-02	5.419E-01	Half-Life	too short	
		1298.22		9.388E-02	5.419E-01	Half-Life	too short	
		563.25		-1.671E-01	6.965E-01	1.102E+00	6.125E-02	-0.152
		569.33		-1.973E-01	3.811E-01	5.892E-01	3.293E-02	-0.335
		604.72		-3.910E-02	7.472E-02	9.864E-02	5.198E-03	-0.396
CS-135		795.86	*	-7.031E-03	9.585E-02	1.584E-01	1.067E-02	-0.044
		801.95		5.361E-01	8.097E-01	1.407E+00	9.579E-02	0.381
		1365.19		1.408E+00	1.557E+00	2.976E+00	2.187E-01	0.473
		268.22	*	-2.990E-01	2.668E-01	4.249E-01	3.542E-02	-0.704
		546.56		-3.572E+09	2.668E-01	Half-Life	too short	
I-135		836.80		5.728E+09	2.668E-01	Half-Life	too short	
		1038.76		2.811E+09	2.668E-01	Half-Life	too short	
		1131.51		7.972E+06	2.668E-01	Half-Life	too short	
		1260.41	*	-3.722E+08	2.668E-01	Half-Life	too short	
		1457.56		-4.705E+09	2.668E-01	Half-Life	too short	
		1678.03		2.378E+09	2.668E-01	Half-Life	too short	
		1791.20		5.173E+09	2.668E-01	Half-Life	too short	
		153.25		1.965E-01	1.226E+00	2.009E+00	1.710E-01	0.098
		176.60		-4.745E-01	7.850E-01	1.226E+00	9.261E-02	-0.387
		273.65		-6.248E-01	8.372E-01	1.362E+00	1.032E-01	-0.459
CS-136		340.55		4.962E-01	2.701E-01	4.454E-01	2.987E-02	1.114
		818.51		-1.398E-01	1.437E-01	2.187E-01	1.531E-02	-0.639
		1048.07	*	1.238E-01	2.317E-01	3.926E-01	3.014E-02	0.315
		1235.36		-4.124E-01	6.708E-01	1.038E+00	1.058E-01	-0.397
		165.86	*	1.646E-02	4.463E-02	7.358E-02	4.675E-03	0.224
CE-139		162.66		-5.380E-01	1.180E+00	1.860E+00	1.328E-01	-0.289
BA-140		304.85		-6.613E-01	2.222E+00	3.658E+00	1.051E+00	-0.181
LA-140		423.72		4.034E+00	4.003E+00	6.597E+00	2.127E+00	0.612
		537.26	*	3.082E-02	4.783E-01	7.795E-01	2.593E-01	0.040
		328.76		2.591E-01	5.294E-01	9.064E-01	6.366E-02	0.286
		487.02		-2.030E-01	2.852E-01	4.431E-01	2.846E-02	-0.458
		815.77		-7.249E-02	5.908E-01	9.692E-01	7.919E-02	-0.075
CE-141		1596.21	*	-6.422E-03	1.461E-01	2.383E-01	1.570E-02	-0.027
CE-143		145.44	*	-9.007E-03	9.501E-02	1.535E-01	1.031E-02	-0.059
CE-144		57.36		3.808E-03	9.501E-02	Half-Life	too short	
		293.27	*	1.936E-04	9.501E-02	Half-Life	too short	
		664.57		5.449E-02	9.501E-02	Half-Life	too short	
		721.93		7.403E-04	9.501E-02	Half-Life	too short	
CE-144		80.12		-2.315E+00	4.703E+00	6.876E+00	7.944E-01	-0.337
		133.52	*	-3.029E-01	2.994E-01	4.599E-01	6.565E-02	-0.659

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-144		476.78		-1.641E-02	1.375E-01	2.213E-01	1.490E-02	-0.074
		618.01		-1.196E-02	5.638E-02	8.849E-02	4.914E-03	-0.135
		696.49	*	1.703E-02	6.106E-02	1.047E-01	5.562E-03	0.163
PR-144		696.51	*	7.939E-01	4.606E+00	7.838E+00	4.161E-01	0.101
		1489.16		-6.388E+00	1.810E+01	2.785E+01	1.885E+00	-0.229
PM-146		453.88	*	4.935E-02	8.821E-02	1.489E-01	1.246E-02	0.331
		633.25		-5.146E-01	2.733E+00	4.285E+00	1.609E+00	-0.120
		735.93		-1.940E-02	2.714E-01	4.509E-01	1.231E-01	-0.043
		747.24		2.329E-01	1.959E-01	3.496E-01	4.614E-02	0.666
ND-147	+	91.11		6.274E-01	5.520E-01	6.624E-01	7.770E-02	0.947
		319.41		4.022E-02	5.456E+00	9.136E+00	5.891E-01	0.004
		531.02	*	3.552E-01	1.017E+00	1.686E+00	2.261E-01	0.211
PM-149		285.90	*	-7.024E-02	1.324E+02	2.230E+02	3.241E+01	0.000
EU-152	+	121.78		4.737E-01	2.331E-01	2.422E-01	2.058E-02	1.956
		244.70		-3.295E-02	5.613E-01	8.847E-01	5.902E-02	-0.037
		344.28	*	-4.939E-02	1.822E-01	2.762E-01	1.910E-02	-0.179
		778.90		-2.102E-01	5.049E-01	8.127E-01	5.215E-02	-0.259
		964.08		-3.262E-01	7.894E-01	1.073E+00	8.448E-02	-0.304
		1085.87		-2.982E-01	9.037E-01	1.424E+00	9.831E-02	-0.209
		1112.07		4.017E-01	6.816E-01	1.154E+00	7.661E-02	0.348
		1408.01		1.186E-01	2.105E-01	3.856E-01	2.637E-02	0.308
GD-153		69.67		-7.412E-01	3.220E+00	5.369E+00	6.200E-01	-0.138
		97.43	*	2.385E-02	1.252E-01	2.097E-01	2.058E-02	0.114
		103.18		5.059E-02	1.630E-01	2.740E-01	2.438E-02	0.185
EU-154	+	123.07		3.349E-01	1.658E-01	1.679E-01	1.697E-02	1.995
		723.31		3.782E-02	3.722E-01	5.471E-01	3.783E-02	0.069
		873.19		2.529E-01	6.684E-01	1.130E+00	1.281E-01	0.224
		996.26		-3.808E-01	7.602E-01	1.182E+00	2.012E-01	-0.322
		1004.73		1.007E-01	4.878E-01	8.080E-01	8.807E-02	0.125
		1274.44	*	-7.496E-02	1.428E-01	2.186E-01	2.162E-02	-0.343
EU-155	+	86.55		3.876E+00	5.430E-01	4.339E-01	5.198E-02	8.932
		105.31	*	-7.748E-02	1.603E-01	2.589E-01	2.256E-02	-0.299
TB-160	+	86.79		1.022E+01	1.426E+00	1.305E+00	1.558E-01	7.830
		197.04		-2.715E-01	9.309E-01	1.471E+00	9.571E-02	-0.185
		215.65		-5.428E-01	1.285E+00	2.002E+00	1.320E-01	-0.271
		298.57		1.311E-01	2.166E-01	3.339E-01	2.195E-02	0.393
		879.36	*	-5.230E-02	3.139E-01	5.109E-01	4.051E-02	-0.102
		962.29		-1.131E+00	1.415E+00	2.048E+00	1.615E-01	-0.552
		966.15		1.047E-01	5.133E-01	7.409E-01	5.824E-02	0.141
		1177.93		4.432E+00	1.014E+00	1.929E+00	1.153E-01	2.297
		1271.85		5.416E-01	7.963E-01	1.467E+00	9.552E-02	0.369
HO-166M		80.57		-4.041E-01	5.165E-01	7.410E-01	8.574E-02	-0.545
		184.41		2.565E-02	6.183E-02	9.085E-02	5.852E-03	0.282
		280.46		-1.453E-01	1.364E-01	2.163E-01	1.437E-02	-0.672
		410.95		9.182E-02	4.889E-01	8.136E-01	4.601E-02	0.113
		711.68	*	4.100E-02	1.228E-01	2.101E-01	1.157E-02	0.195
		752.31		-5.747E-01	5.305E-01	8.089E-01	4.890E-02	-0.710
		810.29		7.107E-02	1.233E-01	2.129E-01	1.462E-02	0.334
TA-182		67.75		-1.080E-01	2.135E-01	3.516E-01	4.090E-02	-0.307

Sample ID : G1202057357

Acquisition date : 19-MAR-2010 11:17:59

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		100.11		-1.489E-02	2.642E-01	4.371E-01	4.091E-02	-0.034
		152.43		-1.940E-02	5.163E-01	8.380E-01	5.398E-02	-0.023
		222.11		2.367E-01	6.398E-01	1.036E+00	6.859E-02	0.228
	+	1121.30		8.889E-01	4.483E-01	5.599E-01	3.663E-02	1.588
		1189.05		1.403E-01	5.343E-01	8.826E-01	5.329E-02	0.159
		1221.41	*	1.003E-01	2.266E-01	4.014E-01	2.498E-02	0.250
		1231.02		3.359E-01	5.345E-01	9.671E-01	6.072E-02	0.347
IR-192	+	295.96		1.040E+00	3.311E-01	4.038E-01	2.693E-02	2.574
		308.46		-1.033E-01	1.700E-01	2.759E-01	1.815E-02	-0.374
		316.51	*	4.047E-03	6.183E-02	1.039E-01	6.746E-03	0.039
		468.07		5.875E-02	1.425E-01	2.381E-01	1.566E-02	0.247
HG-203		70.83		2.133E+00	2.650E+00	4.142E+00	7.363E-01	0.515
		72.87		2.509E-01	1.485E+00	2.263E+00	3.909E-01	0.111
		279.20	*	3.339E-02	5.999E-02	1.040E-01	7.212E-03	0.321
BI-207		72.81		5.881E-02	3.473E-01	5.292E-01	6.068E-02	0.111
	+	74.97		4.985E-01	2.043E-01	3.552E-01	4.068E-02	1.403
		569.70		-1.163E-02	5.829E-02	9.241E-02	4.991E-03	-0.126
		1063.66	*	2.959E-03	1.278E-01	2.078E-01	1.478E-02	0.014
		1770.23		3.569E-01	7.520E-01	1.213E+00	7.369E-02	0.294
PB-210		46.54	*	3.101E-01	1.558E+01	2.659E+01	2.321E+00	0.012
PB-211		404.85	*	-1.912E+00	1.653E+00	2.078E+00	9.965E-01	-0.920
		427.09		-1.615E+00	3.199E+00	4.958E+00	2.271E+00	-0.326
		832.01		-1.818E+00	2.339E+00	3.325E+00	1.717E+00	-0.547
BI-212	+	727.33	*	2.118E+00	1.032E+00	1.799E+00	1.917E-01	1.177
		785.37		2.377E+00	6.200E+00	1.059E+01	6.891E-01	0.225
		1620.50		4.599E-01	3.419E+00	5.756E+00	3.758E-01	0.080
RN-219		271.23		5.111E-01	4.087E-01	7.250E-01	6.291E-02	0.705
		401.81	*	-3.078E-01	7.841E-01	1.262E+00	1.688E-01	-0.244
RA-223		81.07		-2.850E-01	4.191E-01	6.058E-01	7.022E-02	-0.470
		83.79		2.356E-01	2.403E-01	3.750E-01	4.399E-02	0.628
		94.87		-5.078E-01	6.722E-01	1.076E+00	1.110E-01	-0.472
		144.24		-1.198E+00	1.060E+00	1.621E+00	1.264E-01	-0.739
		154.21		3.608E-02	5.712E-01	9.313E-01	6.982E-02	0.039
		269.46		4.034E-01	3.134E-01	5.582E-01	3.845E-02	0.723
		323.87	*	-1.241E+00	1.142E+00	1.766E+00	2.886E-01	-0.703
	+	338.28		6.952E+00	2.756E+00	3.528E+00	3.716E-01	1.970
AC-227		79.69		-1.164E+00	2.398E+00	3.500E+00	6.602E-01	-0.333
		235.96		-1.266E-01	2.793E-01	3.799E-01	3.333E-02	-0.333
		256.23	*	2.550E-01	4.361E-01	7.575E-01	8.142E-02	0.337
		299.98		2.978E+00	1.725E+00	2.796E+00	3.191E-01	1.065
		304.50		-2.215E+00	2.909E+00	4.660E+00	7.245E-01	-0.475
		334.37		-6.155E-01	3.313E+00	4.796E+00	6.927E-01	-0.128
TH-227		79.80		-1.686E+00	3.162E+00	4.585E+00	1.059E+00	-0.368
		235.96		-1.266E-01	2.793E-01	3.799E-01	3.068E-02	-0.333
		256.23	*	2.550E-01	4.364E-01	7.575E-01	9.443E-02	0.337
		299.98		2.978E+00	1.725E+00	2.796E+00	3.191E-01	1.065
		304.50		-2.215E+00	2.909E+00	4.660E+00	7.245E-01	-0.475
		334.37		-6.155E-01	3.313E+00	4.796E+00	6.927E-01	-0.128
AC-228	+	338.32		1.752E+00	9.857E-01	8.899E-01	3.675E-01	1.969

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	911.20	*	1.752E+00	6.362E-01	8.372E-01	9.428E-02	2.092
		968.97		1.355E+00	8.583E-01	1.283E+00	3.091E-01	1.057
	+	338.32		1.752E+00	9.857E-01	8.899E-01	3.675E-01	1.969
	+	911.20	*	1.752E+00	6.362E-01	8.372E-01	9.428E-02	2.092
TH-229		968.97		1.355E+00	8.583E-01	1.283E+00	3.091E-01	1.057
		85.43		1.030E-01	3.890E-01	5.904E-01	6.987E-02	0.174
	+	88.47		4.929E+00	6.879E-01	7.092E-01	8.430E-02	6.951
		193.51	*	2.173E-01	8.675E-01	1.409E+00	9.143E-02	0.154
PA-231		210.85		1.448E-01	1.493E+00	2.388E+00	1.570E-01	0.061
		283.69	*	9.506E-02	2.437E+00	4.116E+00	5.559E-01	0.023
		301.36		1.631E+00	1.024E+00	1.777E+00	1.917E-01	0.918
	TH-231	81.07		-2.850E-01	4.191E-01	6.058E-01	7.022E-02	-0.470
TH-232		83.79		2.356E-01	2.403E-01	3.750E-01	4.399E-02	0.628
		94.87		-5.078E-01	6.722E-01	1.076E+00	1.110E-01	-0.472
		144.24		-1.198E+00	1.060E+00	1.621E+00	1.264E-01	-0.739
		154.21		3.608E-02	5.712E-01	9.313E-01	6.982E-02	0.039
		269.46		4.034E-01	3.134E-01	5.582E-01	3.845E-02	0.723
		323.87	*	-1.241E+00	1.142E+00	1.766E+00	2.886E-01	-0.703
	+	338.28		6.952E+00	2.756E+00	3.528E+00	3.716E-01	1.970
	+	338.32		1.752E+00	6.785E-01	8.899E-01	5.594E-02	1.969
	+	911.20	*	1.752E+00	6.362E-01	8.372E-01	9.428E-02	2.092
		968.97		1.355E+00	8.583E-01	1.283E+00	3.091E-01	1.057
	PA-233	300.13		1.187E+00	7.965E-01	1.270E+00	1.744E-01	0.935
		311.90	*	1.334E-01	1.169E-01	2.066E-01	1.409E-02	0.646
PA-234		340.48		2.410E+00	1.321E+00	2.004E+00	4.675E-01	1.203
		94.67		-1.285E-01	2.466E-01	3.995E-01	5.459E-02	-0.322
		98.44		6.349E-02	1.413E-01	2.320E-01	1.298E-01	0.274
		111.00		-9.605E-02	2.809E-01	4.550E-01	5.285E-02	-0.211
		131.20		7.717E-02	1.530E-01	2.566E-01	1.721E-02	0.301
		569.50		-3.096E-01	5.287E-01	8.130E-01	4.392E-02	-0.381
		733.00		1.396E-01	7.739E-01	1.146E+00	2.437E-01	0.122
		880.51		-5.097E-02	6.412E-01	1.050E+00	8.348E-02	-0.049
		883.24		1.507E-01	6.684E-01	1.106E+00	7.429E-01	0.136
		926.50		-2.252E-01	4.516E-01	7.100E-01	1.782E-01	-0.317
		946.00	*	-1.995E-01	8.206E-01	1.322E+00	2.444E-01	-0.151
		949.00		7.955E-01	1.136E+00	1.945E+00	1.549E-01	0.409
PA-234M		766.42		-1.407E+00	2.126E+01	3.520E+01	1.774E+01	-0.040
TH-234		1001.03	*	1.405E+00	9.887E+00	1.631E+01	1.487E+00	0.086
		63.29	*	-5.930E-01	3.035E+00	4.556E+00	9.169E-01	-0.130
		92.59		1.235E+00	1.084E+00	1.687E+00	3.885E-01	0.732
	U-235	89.96		2.021E+00	1.837E+00	2.712E+00	6.983E-01	0.745
U-235		93.35		6.712E-01	8.026E-01	1.247E+00	2.983E-01	0.538
		143.76	*	-3.401E-01	3.180E-01	4.823E-01	7.711E-02	-0.705
		163.33		-1.505E-01	6.492E-01	1.035E+00	1.758E-01	-0.145
	+	185.72		1.414E-01	1.070E-01	1.252E-01	8.070E-03	1.130
		205.31		4.231E-01	8.064E-01	1.318E+00	2.275E-01	0.321
	NP-237	86.48	*	3.016E+00	9.248E-01	1.020E+00	2.459E-01	2.957
U-238		95.86		-1.688E+00	1.449E+00	2.178E+00	5.351E-01	-0.775
		63.29	*	-5.930E-01	3.035E+00	4.556E+00	9.169E-01	-0.130

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	92.59			1.235E+00	1.054E+00	1.687E+00	1.824E-01	0.732
	99.53			1.210E-01	2.422E-01	4.109E-01	3.884E-02	0.295
	103.37			6.824E-02	1.489E-01	2.518E-01	2.234E-02	0.271
	106.12			-8.313E-02	1.284E-01	2.056E-01	1.749E-02	-0.404
	117.23	*		-5.674E-01	6.565E-01	9.081E-01	6.664E-02	-0.625
CM-247	228.18			1.045E-01	3.814E-01	6.146E-01	4.079E-02	0.170
	277.60			6.995E-02	2.777E-01	4.747E-01	3.158E-02	0.147
	278.00			3.791E-01	1.189E+00	2.039E+00	1.356E-01	0.186
	287.50			1.807E+00	2.216E+00	3.871E+00	2.563E-01	0.467
	402.40	*		-3.534E-02	7.077E-02	1.132E-01	6.390E-03	-0.312
CF-249	252.80			1.362E-01	1.602E+00	2.729E+00	1.822E-01	0.050
	333.37			1.780E-01	3.541E-01	5.397E-01	3.417E-02	0.330
CF-251	388.16	*		-3.337E-02	7.431E-02	1.196E-01	6.789E-03	-0.279
	177.52	*		-1.993E-02	2.064E-01	3.310E-01	2.120E-02	-0.060
	227.38			4.866E-01	5.980E-01	9.908E-01	6.574E-02	0.491
ANH-511	285.41			1.118E-01	3.831E+00	6.465E+00	4.286E-01	0.017
	511.00	*		3.077E-02	6.969E-02	1.244E-01	6.956E-03	0.247

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]G1202057357        *
* Acquisition date   : 19-MAR-2010 11:17:59 Detector SN#      :                *
* Detector ID        : GAM04                      Sensitivity   : 5.000          *
* Geometry           : CAN                        Energy tolerance: 1.500          *
* Elapsed live time  : 0 01:00:00.00             Abundance limit : 75.000          *
* Elapsed real time  : 0 01:00:01.37             Half life ratio : 8.000          *
*****
*                               SAMPLE DATA                               *
*                               *                                              *
* Sample date       : 5-MAR-2010 00:00:00 Nuclide Library : SOLID              *
* Sample ID         : G1202057357             Analyst initials: MXR1            *
* Batch Number      : 959280                  Sample Quantity : 1.5173E+02 GRAM    *
* Recovery          : 1.00000                 Carrier Weight  : 0.00000          *
*****
*                               QC DATA                               *
*                               *                                              *
* Standard Weight   : 0.00000                 *
* CALIB. DATE/TIME  : 5-MAY-2009 14:25:41 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	1.643E-01	7.884E-02	6.439E-02	0.000E+00
CO-60	6.481E+00	5.522E-01	7.587E-02	0.000E+00
CD-109	3.268E+01	4.469E+00	2.384E+00	0.000E+00
SN-126	3.197E+00	4.373E-01	2.351E-01	0.000E+00
BA-137M	5.438E+00	3.657E-01	1.148E-01	0.000E+00
CS-137	5.745E+00	3.875E-01	1.213E-01	0.000E+00
TL-208	3.821E-01	1.187E-01	1.030E-01	0.000E+00
BI-211	2.977E+00	5.818E-01	5.828E-01	0.000E+00
PB-212	1.276E+00	1.788E-01	1.602E-01	0.000E+00
BI-214	7.318E-01	2.285E-01	2.211E-01	0.000E+00
PB-214	1.081E+00	2.191E-01	2.193E-01	0.000E+00
RA-224	4.108E+00	1.884E+00	1.717E+00	0.000E+00
RA-226	7.318E-01	2.285E-01	2.211E-01	0.000E+00
TH-228	1.276E+00	1.788E-01	1.602E-01	0.000E+00
AM-241	1.390E+01	1.973E+00	7.788E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.599E-01	6.774E-01	1.146E+00	0.000E+00 NOT IDENT.
NA-22	-3.259E-02	4.958E-02	7.663E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.936E+05	0.000E+00	0.000E+00 SHORT HLIF
K-40	7.819E-01	5.945E-01	1.175E+00	0.000E+00 NOT IDENT.
SC-46	-6.996E-03	9.234E-02	1.575E-01	0.000E+00 FAIL ABUN
V-48	-1.866E-01	1.635E-01	2.523E-01	0.000E+00 NOT IDENT.
CR-51	-2.610E-01	6.090E-01	1.063E+00	0.000E+00 NOT IDENT.
MN-54	4.556E-02	7.955E-02	1.424E-01	0.000E+00 NOT IDENT.
CO-56	-5.801E-02	8.324E-02	1.359E-01	0.000E+00 NOT IDENT.
CO-58	6.259E-02	7.873E-02	1.438E-01	0.000E+00 NOT IDENT.
FE-59	-6.458E-02	2.041E-01	3.333E-01	0.000E+00 NOT IDENT.
ZN-65	-1.642E-02	2.201E-01	3.149E-01	0.000E+00 NOT IDENT.

SE-75	-1.172E-02	7.504E-02	1.352E-01	0.000E+00	FAIL ABUN
SR-85	-8.623E-02	8.073E-02	1.296E-01	0.000E+00	NOT IDENT.
Y-88	3.379E-02	4.362E-02	8.609E-02	0.000E+00	NOT IDENT.
Y-91	-3.340E+01	2.849E+01	3.916E+01	0.000E+00	NOT IDENT.
NB-94	-1.210E-02	6.218E-02	1.077E-01	0.000E+00	NOT IDENT.
NB-95	-7.108E-02	7.978E-02	1.300E-01	0.000E+00	NOT IDENT.
NB-95M	-1.176E-02	2.219E-01	3.352E-01	0.000E+00	NOT IDENT.
ZR-95	8.264E-03	1.351E-01	2.366E-01	0.000E+00	NOT IDENT.
MO-99	2.989E+00	1.911E+01	3.378E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.656E+15	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.957E-02	7.513E-02	1.228E-01	0.000E+00	FAIL ABUN
RH-106	-1.933E-01	5.432E-01	8.836E-01	0.000E+00	NOT IDENT.
RU-106	-1.933E-01	5.429E-01	8.836E-01	0.000E+00	NOT IDENT.
AG-108M	5.350E-03	5.849E-02	1.024E-01	0.000E+00	NOT IDENT.
AG-110M	2.568E-02	7.263E-02	1.157E-01	0.000E+00	NOT IDENT.
SN-113	3.235E-02	7.958E-02	1.431E-01	0.000E+00	NOT IDENT.
CD-115	-1.271E+01	1.781E+01	2.884E+01	0.000E+00	NOT IDENT.
SN-117M	1.725E-02	7.832E-02	1.396E-01	0.000E+00	NOT IDENT.
TE-123M	-9.396E-03	4.213E-02	7.342E-02	0.000E+00	NOT IDENT.
SB-124	-6.401E-02	1.361E-01	2.070E-01	0.000E+00	NOT IDENT.
SB-125	-6.286E-02	1.768E-01	3.017E-01	0.000E+00	NOT IDENT.
TE-125M	4.880E+00	1.433E+01	2.629E+01	0.000E+00	NOT IDENT.
I-126	-6.647E-02	4.338E-01	6.569E-01	0.000E+00	NOT IDENT.
SB-126	6.882E-02	2.697E-01	4.805E-01	0.000E+00	NOT IDENT.
SB-127	2.266E+00	2.056E+00	3.884E+00	0.000E+00	NOT IDENT.
I-131	-1.964E-02	2.039E-01	3.587E-01	0.000E+00	NOT IDENT.
TE-132	3.117E-01	1.093E+00	1.897E+00	0.000E+00	NOT IDENT.
BA-133	-5.986E-03	8.053E-02	1.247E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.435E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-7.031E-03	9.394E-02	1.621E-01	0.000E+00	NOT IDENT.
CS-135	-2.990E-01	2.615E-01	4.470E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.394E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.238E-01	2.271E-01	3.990E-01	0.000E+00	NOT IDENT.
CE-139	1.646E-02	4.374E-02	7.830E-02	0.000E+00	NOT IDENT.
BA-140	3.082E-02	4.687E-01	8.059E-01	0.000E+00	NOT IDENT.
LA-140	-6.422E-03	1.432E-01	2.395E-01	0.000E+00	NOT IDENT.
CE-141	-9.007E-03	9.311E-02	1.639E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.842E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.029E-01	2.934E-01	4.919E-01	0.000E+00	NOT IDENT.
PM-144	1.703E-02	5.984E-02	1.075E-01	0.000E+00	NOT IDENT.
PR-144	7.939E-01	4.514E+00	8.050E+00	0.000E+00	NOT IDENT.
PM-146	4.935E-02	8.644E-02	1.546E-01	0.000E+00	NOT IDENT.
ND-147	3.552E-01	9.965E-01	1.743E+00	0.000E+00	FAIL ABUN
PM-149	-7.024E-02	1.297E+02	2.343E+02	0.000E+00	NOT IDENT.
EU-152	-4.939E-02	1.786E-01	2.888E-01	0.000E+00	FAIL ABUN
GD-153	2.385E-02	1.227E-01	2.260E-01	0.000E+00	NOT IDENT.
EU-154	-7.496E-02	1.400E-01	2.210E-01	0.000E+00	FAIL ABUN
EU-155	-7.748E-02	1.571E-01	2.785E-01	0.000E+00	FAIL ABUN
TB-160	-5.230E-02	3.076E-01	5.216E-01	0.000E+00	FAIL ABUN
HO-166M	4.100E-02	1.204E-01	2.157E-01	0.000E+00	NOT IDENT.
TA-182	1.003E-01	2.220E-01	4.063E-01	0.000E+00	FAIL ABUN
IR-192	4.047E-03	6.060E-02	1.089E-01	0.000E+00	FAIL ABUN
HG-203	3.339E-02	5.879E-02	1.093E-01	0.000E+00	NOT IDENT.
BI-207	2.959E-03	1.252E-01	2.111E-01	0.000E+00	FAIL ABUN
PB-210	3.101E-01	1.527E+01	2.915E+01	0.000E+00	NOT IDENT.
PB-211	-1.912E+00	1.620E+00	2.164E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.011E+00	1.846E+00	0.000E+00	FAIL ABUN
RN-219	-3.078E-01	7.685E-01	1.315E+00	0.000E+00	NOT IDENT.
RA-223	-1.241E+00	1.119E+00	1.849E+00	0.000E+00	FAIL ABUN
AC-227	2.550E-01	4.274E-01	7.977E-01	0.000E+00	NOT IDENT.
TH-227	2.550E-01	4.276E-01	7.977E-01	0.000E+00	NOT IDENT.
AC-228	0.000E+00	6.235E-01	8.539E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	6.235E-01	8.539E-01	0.000E+00	FAIL ABUN
TH-229	2.173E-01	8.501E-01	1.494E+00	0.000E+00	FAIL ABUN
PA-231	9.506E-02	2.388E+00	4.323E+00	0.000E+00	NOT IDENT.
TH-231	-1.241E+00	1.119E+00	1.849E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	6.235E-01	8.539E-01	0.000E+00	FAIL ABUN
PA-233	1.334E-01	1.146E-01	2.165E-01	0.000E+00	NOT IDENT.
PA-234	-1.995E-01	8.042E-01	1.347E+00	0.000E+00	NOT IDENT.
PA-234M	1.405E+00	9.689E+00	1.660E+01	0.000E+00	NOT IDENT.
TH-234	-5.930E-01	2.975E+00	4.958E+00	0.000E+00	NOT IDENT.
U-235	-3.401E-01	3.116E-01	5.150E-01	0.000E+00	FAIL ABUN
NP-237	0.000E+00	9.063E-01	1.102E+00	0.000E+00	NOT IDENT.
U-238	-5.930E-01	2.975E+00	4.958E+00	0.000E+00	NOT IDENT.
NP-239	-5.674E-01	6.434E-01	9.744E-01	0.000E+00	NOT IDENT.
CM-247	-3.534E-02	6.935E-02	1.179E-01	0.000E+00	NOT IDENT.
CF-249	-3.337E-02	7.282E-02	1.246E-01	0.000E+00	NOT IDENT.
CF-251	-1.993E-02	2.023E-01	3.517E-01	0.000E+00	NOT IDENT.

ANH-511	3.077E-02	6.829E-02	1.288E-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]G1202057357.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:17:59
Sample ID          : G1202057357      Sample quantity   : 1.51730E+02 GRAM
Detector name      : GAM04             Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:01.37  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 959280           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	178	85.60*	6.490E+00	1.583E-01	1.643E-01	48.96
	136.47	-----	10.68	6.470E+00	-----	Line Not Found	-----
CO-60	1173.23	1678	99.85	1.299E+00	6.400E+00	6.434E+00	7.88
	1332.49	1509	99.98*	1.158E+00	6.447E+00	6.481E+00	8.69
CD-109	88.03	1216	3.70*	5.087E+00	3.197E+01	3.268E+01	13.96
SN-126	64.28	-----	9.60	2.203E+00	-----	Line Not Found	-----
	86.94	1216	8.90	5.087E+00	1.329E+01	1.329E+01	42.79
	87.57	1216	37.00*	5.087E+00	3.197E+00	3.197E+00	13.96
BA-137M	661.66	2178	89.90*	2.207E+00	5.433E+00	5.438E+00	6.86
CS-137	661.66	2178	85.10*	2.207E+00	5.740E+00	5.745E+00	6.88
TL-208	277.37	-----	6.60	4.326E+00	-----	Line Not Found	-----
	583.19	161	85.00*	2.454E+00	3.821E-01	3.821E-01	31.71
	860.56	-----	12.50	1.744E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.384E+00	-----	Line Not Found	-----
	351.06	282	12.92*	3.624E+00	2.977E+00	2.977E+00	19.94
PB-212	74.82	131	10.28	3.650E+00	1.730E+00	1.730E+00	42.12
	77.11	193	17.10	3.923E+00	1.426E+00	1.426E+00	33.79
	238.63	542	43.60*	4.823E+00	1.276E+00	1.276E+00	14.30
	300.09	-----	3.30	4.082E+00	-----	Line Not Found	-----
BI-214	609.32	159	45.49*	2.366E+00	7.318E-01	7.318E-01	31.86
	1120.29	78	14.92	1.356E+00	1.905E+00	1.905E+00	50.87
	1764.49	-----	15.30	9.529E-01	-----	Line Not Found	-----
PB-214	74.82	131	5.80	3.650E+00	3.066E+00	3.066E+00	41.74
	77.11	193	9.70	3.923E+00	2.514E+00	2.514E+00	34.78
	242.00	163	7.25	4.781E+00	2.323E+00	2.323E+00	47.15
	295.22	218	18.42	4.131E+00	1.415E+00	1.415E+00	32.49
	351.93	282	35.60*	3.624E+00	1.081E+00	1.081E+00	20.69
RA-224	240.99	163	4.10*	4.781E+00	4.108E+00	4.108E+00	46.79
RA-226	609.32	159	45.49*	2.366E+00	7.318E-01	7.318E-01	31.86
	1120.29	78	14.92	1.356E+00	1.905E+00	1.905E+00	50.87
	1764.49	-----	15.30	9.529E-01	-----	Line Not Found	-----
TH-228	74.82	131	10.28	3.650E+00	1.730E+00	1.730E+00	41.00

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	193	17.10	3.923E+00	1.426E+00	1.426E+00	33.79
	238.63	542	43.60*	4.823E+00	1.276E+00	1.276E+00	14.30
	300.09	-----	3.30	4.082E+00	-----	Line Not Found	-----
AM-241	59.54	1584	35.90*	1.571E+00	1.390E+01	1.390E+01	14.49

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202057357

Page : 3
Acquisition date : 19-MAR-2010 11:17:59

Total number of lines in spectrum 23
Number of unidentified lines 3
Number of lines tentatively identified by NID 20 86.96%

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	1.04	1.583E-01	1.643E-01	0.804E-01	48.96	
CO-60	5.27Y	1.01	6.447E+00	6.481E+00	0.563E+00	8.69	
CD-109	461.40D	1.02	3.197E+01	3.268E+01	0.456E+01	13.96	
SN-126	2.30E+05Y	1.00	3.197E+00	3.197E+00	0.446E+00	13.96	
BA-137M	30.08Y	1.00	5.433E+00	5.438E+00	0.373E+00	6.86	
CS-137	30.08Y	1.00	5.740E+00	5.745E+00	0.395E+00	6.88	
TL-208	1.41E+10Y	1.00	3.821E-01	3.821E-01	1.212E-01	31.71	
BI-211	7.04E+08Y	1.00	2.977E+00	2.977E+00	0.594E+00	19.94	
PB-212	1.41E+10Y	1.00	1.276E+00	1.276E+00	0.182E+00	14.30	
BI-214	1600.00Y	1.00	7.318E-01	7.318E-01	2.332E-01	31.86	
PB-214	1600.00Y	1.00	1.081E+00	1.081E+00	0.224E+00	20.69	
RA-224	1.41E+10Y	1.00	4.108E+00	4.108E+00	1.922E+00	46.79	
RA-226	1600.00Y	1.00	7.318E-01	7.318E-01	2.332E-01	31.86	
TH-228	1.41E+10Y	1.00	1.276E+00	1.276E+00	0.182E+00	14.30	
AM-241	432.60Y	1.00	1.390E+01	1.390E+01	0.201E+01	14.49	

Total Activity : 7.941E+01 8.017E+01

Grand Total Activity : 7.941E+01 8.017E+01

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

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

Unidentified Energy Lines
Sample ID : G1202057357

Page : 4
Acquisition date : 19-MAR-2010 11:17:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	90.01	74	222	0.94	180.05	172	11	2.07E-02	87.2	5.25E+00	T
0	186.06	93	318	0.85	372.17	367	10	2.59E-02	75.4	5.69E+00	T
0	338.50	149	177	1.14	677.09	672	11	4.14E-02	38.2	3.73E+00	T
0	728.05	58	44	1.65	1456.18	1452	8	1.61E-02	47.5	2.03E+00	T
0	911.92	151	121	1.61	1823.90	1817	13	4.19E-02	34.5	1.65E+00	T
0	970.91	74	167	1.44	1941.87	1934	16	2.07E-02	82.2	1.56E+00	
0	1380.10	17	16	1.14	2760.13	2752	13	4.84E-03	****	1.12E+00	
0	1766.29	28	3	1.47	3532.30	3525	13	7.80E-03	45.9	9.52E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057357.CNF;1
* Acquisition date   : 19-MAR-2010 11:17:59   Detector SN#      :
* Detector ID        : GAM04                  Sensitivity         : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 01:00:00.00          Abundance limit    : 75.00000
* Elapsed real time  : 0 01:00:01.37          Half life ratio    : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-MAR-2010 00:00:00.   Nuclide Library   : SOLID
* Sample ID          : G1202057357           Analyst initials  : MXR1
* Batch Number       : 959280                Sample Quantity   : 1.51730E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS 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	1.643E-01	8.044E-02	6.007E-02	4.170E-03	2.735
CO-60	6.481E+00	5.634E-01	7.513E-02	5.148E-03	86.265
CD-109	3.268E+01	4.560E+00	2.207E+00	2.652E-01	14.806
SN-126	3.197E+00	4.462E-01	2.176E-01	2.610E-02	14.694
BA-137M	5.438E+00	3.731E-01	1.116E-01	5.445E-03	48.715
CS-137	5.745E+00	3.954E-01	1.179E-01	5.786E-03	48.715
TL-208	3.821E-01	1.212E-01	9.986E-02	6.267E-03	3.826
BI-211	2.977E+00	5.936E-01	5.578E-01	3.769E-02	5.338
PB-212	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403
BI-214	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
PB-214	1.081E+00	2.235E-01	2.099E-01	1.830E-02	5.148
RA-224	4.108E+00	1.922E+00	1.628E+00	1.085E-01	2.523
RA-226	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
TH-228	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403
AM-241	1.390E+01	2.014E+00	7.146E-01	9.021E-02	19.454

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.599E-01		6.912E-01	1.105E+00	7.316E-02	-0.145

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-3.259E-02		5.059E-02	7.579E-02	4.956E-03	-0.430
NA-24	-3.504E-01		2.519E-01	Half-Life too short		
K-40	7.819E-01		6.066E-01	1.166E+00	8.287E-02	0.671
SC-46	-6.996E-03		9.423E-02	1.544E-01	1.248E-02	-0.045
V-48	-1.866E-01		1.669E-01	2.478E-01	1.920E-02	-0.753
CR-51	-2.610E-01		6.214E-01	1.015E+00	7.140E-02	-0.257
MN-54	4.556E-02		8.117E-02	1.393E-01	1.008E-02	0.327
CO-56	-5.801E-02		8.494E-02	1.330E-01	9.867E-03	-0.436
CO-58	6.259E-02		8.033E-02	1.406E-01	9.706E-03	0.445
FE-59	-6.458E-02		2.082E-01	3.284E-01	2.509E-02	-0.197
ZN-65	-1.642E-02		2.246E-01	3.104E-01	2.053E-02	-0.053
SE-75	-1.172E-02		7.657E-02	1.285E-01	8.647E-03	-0.091
SR-85	-8.623E-02		8.238E-02	1.252E-01	6.993E-03	-0.689
Y-88	3.379E-02		4.451E-02	8.598E-02	5.017E-03	0.393
Y-91	-3.340E+01		2.907E+01	3.867E+01	2.370E+00	-0.864
NB-94	-1.210E-02		6.345E-02	1.049E-01	5.653E-03	-0.115
NB-95	-7.108E-02		8.141E-02	1.269E-01	7.907E-03	-0.560
NB-95M	-1.176E-02		2.265E-01	3.177E-01	2.614E-02	-0.037
ZR-95	8.264E-03		1.379E-01	2.309E-01	1.691E-02	0.036
MO-99	2.989E+00		1.950E+01	3.294E+01	4.756E+00	0.091
TC-99M	1.423E+10		4.927E+09	Half-Life too short		
RU-103	-4.957E-02		7.666E-02	1.186E-01	1.463E-02	-0.418
RH-106	-1.933E-01		5.543E-01	8.578E-01	9.697E-02	-0.225
RU-106	-1.933E-01		5.539E-01	8.578E-01	4.406E-02	-0.225
AG-108M	5.350E-03		5.969E-02	9.848E-02	5.994E-03	0.054
AG-110M	2.568E-02		7.411E-02	1.124E-01	6.009E-03	0.228
SN-113	3.235E-02		8.121E-02	1.373E-01	8.274E-03	0.236
CD-115	-1.271E+01		1.817E+01	2.788E+01	1.547E+00	-0.456
SN-117M	1.725E-02		7.992E-02	1.310E-01	8.382E-03	0.132
TE-123M	-9.396E-03		4.299E-02	6.892E-02	4.455E-03	-0.136
SB-124	-6.401E-02		1.388E-01	2.063E-01	1.407E-02	-0.310
SB-125	-6.286E-02		1.804E-01	2.901E-01	1.715E-02	-0.217
TE-125M	4.880E+00		1.462E+01	2.446E+01	2.466E+00	0.199
I-126	-6.647E-02		4.427E-01	6.388E-01	3.151E-02	-0.104
SB-126	6.882E-02		2.753E-01	4.683E-01	2.632E-02	0.147
SB-127	2.266E+00		2.097E+00	3.780E+00	3.326E-01	0.599
I-131	-1.964E-02		2.081E-01	3.436E-01	2.284E-02	-0.057
TE-132	3.117E-01		1.115E+00	1.797E+00	2.640E-01	0.173
BA-133	-5.986E-03		8.217E-02	1.194E-01	1.365E-02	-0.050
I-133	5.354E-03		3.283E-03	Half-Life too short		
CS-134	-7.031E-03		9.585E-02	1.584E-01	1.067E-02	-0.044
CS-135	-2.990E-01		2.668E-01	4.249E-01	3.542E-02	-0.704
I-135	-3.722E+08		7.111E+08	Half-Life too short		
CS-136	1.238E-01		2.317E-01	3.926E-01	3.014E-02	0.315
CE-139	1.646E-02		4.463E-02	7.358E-02	4.675E-03	0.224
BA-140	3.082E-02		4.783E-01	7.795E-01	2.593E-01	0.040
LA-140	-6.422E-03		1.461E-01	2.383E-01	1.570E-02	-0.027
CE-141	-9.007E-03		9.501E-02	1.535E-01	1.031E-02	-0.059

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-143	1.936E-04		9.399E-05	Half-Life too short		
CE-144	-3.029E-01		2.994E-01	4.599E-01	6.565E-02	-0.659
PM-144	1.703E-02		6.106E-02	1.047E-01	5.562E-03	0.163
PR-144	7.939E-01		4.606E+00	7.838E+00	4.161E-01	0.101
PM-146	4.935E-02		8.821E-02	1.489E-01	1.246E-02	0.331
ND-147	3.552E-01		1.017E+00	1.686E+00	2.261E-01	0.211
PM-149	-7.024E-02		1.324E+02	2.230E+02	3.241E+01	0.000
EU-152	-4.939E-02		1.822E-01	2.762E-01	1.910E-02	-0.179
GD-153	2.385E-02		1.252E-01	2.097E-01	2.058E-02	0.114
EU-154	-7.496E-02		1.428E-01	2.186E-01	2.162E-02	-0.343
EU-155	-7.748E-02		1.603E-01	2.589E-01	2.256E-02	-0.299
TB-160	-5.230E-02		3.139E-01	5.109E-01	4.051E-02	-0.102
HO-166M	4.100E-02		1.228E-01	2.101E-01	1.157E-02	0.195
TA-182	1.003E-01		2.266E-01	4.014E-01	2.498E-02	0.250
IR-192	4.047E-03		6.183E-02	1.039E-01	6.746E-03	0.039
HG-203	3.339E-02		5.999E-02	1.040E-01	7.212E-03	0.321
BI-207	2.959E-03		1.278E-01	2.078E-01	1.478E-02	0.014
PB-210	3.101E-01		1.558E+01	2.659E+01	2.321E+00	0.012
PB-211	-1.912E+00		1.653E+00	2.078E+00	9.965E-01	-0.920
BI-212	2.118E+00	+	1.032E+00	1.799E+00	1.917E-01	1.177
RN-219	-3.078E-01		7.841E-01	1.262E+00	1.688E-01	-0.244
RA-223	-1.241E+00		1.142E+00	1.766E+00	2.886E-01	-0.703
AC-227	2.550E-01		4.361E-01	7.575E-01	8.142E-02	0.337
TH-227	2.550E-01		4.364E-01	7.575E-01	9.443E-02	0.337
AC-228	1.752E+00	+	6.362E-01	8.372E-01	9.428E-02	2.092
RA-228	1.752E+00	+	6.362E-01	8.372E-01	9.428E-02	2.092
TH-229	2.173E-01		8.675E-01	1.409E+00	9.143E-02	0.154
PA-231	9.506E-02		2.437E+00	4.116E+00	5.559E-01	0.023
TH-231	-1.241E+00		1.142E+00	1.766E+00	2.886E-01	-0.703
TH-232	1.752E+00	+	6.362E-01	8.372E-01	9.428E-02	2.092
PA-233	1.334E-01		1.169E-01	2.066E-01	1.409E-02	0.646
PA-234	-1.995E-01		8.206E-01	1.322E+00	2.444E-01	-0.151
PA-234M	1.405E+00		9.887E+00	1.631E+01	1.487E+00	0.086
TH-234	-5.930E-01		3.035E+00	4.556E+00	9.169E-01	-0.130
U-235	-3.401E-01		3.180E-01	4.823E-01	7.711E-02	-0.705
NP-237	3.016E+00		9.248E-01	1.020E+00	2.459E-01	2.957
U-238	-5.930E-01		3.035E+00	4.556E+00	9.169E-01	-0.130
NP-239	-5.674E-01		6.565E-01	9.081E-01	6.664E-02	-0.625
CM-247	-3.534E-02		7.077E-02	1.132E-01	6.390E-03	-0.312
CF-249	-3.337E-02		7.431E-02	1.196E-01	6.789E-03	-0.279
CF-251	-1.993E-02		2.064E-01	3.310E-01	2.120E-02	-0.060
ANH-511	3.077E-02		6.969E-02	1.244E-01	6.956E-03	0.247

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202057357
* Acquisition date   : 19-MAR-2010 11:17:59 Detector SN#      :
* Detector ID        : GAM04 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.37 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 5-MAR-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202057357 Analyst initials: MXR1
* Batch Number       : 959280 Sample Quantity : 1.5173E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME  : 5-MAY-2009 14:25:41 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	1.643E-01	7.884E-02	3.221E-02	4.022E-02
CO-60	6.481E+00	5.522E-01	3.796E-02	2.817E-01
CD-109	3.268E+01	4.469E+00	1.193E+00	2.280E+00
SN-126	3.197E+00	4.373E-01	1.176E-01	2.231E-01
BA-137M	5.438E+00	3.657E-01	5.744E-02	1.866E-01
CS-137	5.745E+00	3.875E-01	6.068E-02	1.977E-01
TL-208	3.821E-01	1.187E-01	5.155E-02	6.058E-02
BI-211	2.977E+00	5.818E-01	2.916E-01	2.968E-01
PB-212	1.276E+00	1.788E-01	8.014E-02	9.120E-02
BI-214	7.318E-01	2.285E-01	1.106E-01	1.166E-01
PB-214	1.081E+00	2.191E-01	1.097E-01	1.118E-01
RA-224	4.108E+00	1.884E+00	8.590E-01	9.610E-01
RA-226	7.318E-01	2.285E-01	1.106E-01	1.166E-01
TH-228	1.276E+00	1.788E-01	8.014E-02	9.120E-02
AM-241	1.390E+01	1.973E+00	3.896E-01	1.007E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-1.599E-01	6.774E-01	5.733E-01	3.456E-01	NOT IDENT.
NA-22	-3.259E-02	4.958E-02	3.834E-02	2.530E-02	NOT IDENT.
NA-24	-3.504E+05	4.936E+05	0.000E+00	2.519E+05	SHORT HLIF
K-40	7.819E-01	5.945E-01	5.876E-01	3.033E-01	NOT IDENT.
SC-46	-6.996E-03	9.234E-02	7.882E-02	4.711E-02	FAIL ABUN
V-48	-1.866E-01	1.635E-01	1.262E-01	8.344E-02	NOT IDENT.
CR-51	-2.610E-01	6.090E-01	5.319E-01	3.107E-01	NOT IDENT.
MN-54	4.556E-02	7.955E-02	7.123E-02	4.059E-02	NOT IDENT.
CO-56	-5.801E-02	8.324E-02	6.799E-02	4.247E-02	NOT IDENT.
CO-58	6.259E-02	7.873E-02	7.196E-02	4.017E-02	NOT IDENT.
FE-59	-6.458E-02	2.041E-01	1.667E-01	1.041E-01	NOT IDENT.
ZN-65	-1.642E-02	2.201E-01	1.575E-01	1.123E-01	NOT IDENT.

SE-75	-1.172E-02	7.504E-02	6.766E-02	3.829E-02	FAIL ABUN
SR-85	-8.623E-02	8.073E-02	6.483E-02	4.119E-02	NOT IDENT.
Y-88	3.379E-02	4.362E-02	4.307E-02	2.225E-02	NOT IDENT.
Y-91	-3.340E+01	2.849E+01	1.959E+01	1.453E+01	NOT IDENT.
NB-94	-1.210E-02	6.218E-02	5.390E-02	3.172E-02	NOT IDENT.
NB-95	-7.108E-02	7.978E-02	6.503E-02	4.071E-02	NOT IDENT.
NB-95M	-1.176E-02	2.219E-01	1.677E-01	1.132E-01	NOT IDENT.
ZR-95	8.264E-03	1.351E-01	1.184E-01	6.894E-02	NOT IDENT.
MO-99	2.989E+00	1.911E+01	1.690E+01	9.752E+00	NOT IDENT.
TC-99M	1.423E+16	9.656E+15	0.000E+00	4.927E+15	SHORT HLIF
RU-103	-4.957E-02	7.513E-02	6.144E-02	3.833E-02	FAIL ABUN
RH-106	-1.933E-01	5.432E-01	4.420E-01	2.771E-01	NOT IDENT.
RU-106	-1.933E-01	5.429E-01	4.420E-01	2.770E-01	NOT IDENT.
AG-108M	5.350E-03	5.849E-02	5.121E-02	2.984E-02	NOT IDENT.
AG-110M	2.568E-02	7.263E-02	5.786E-02	3.705E-02	NOT IDENT.
SN-113	3.235E-02	7.958E-02	7.159E-02	4.060E-02	NOT IDENT.
CD-115	-1.271E+01	1.781E+01	1.443E+01	9.087E+00	NOT IDENT.
SN-117M	1.725E-02	7.832E-02	6.984E-02	3.996E-02	NOT IDENT.
TE-123M	-9.396E-03	4.213E-02	3.673E-02	2.149E-02	NOT IDENT.
SB-124	-6.401E-02	1.361E-01	1.036E-01	6.942E-02	NOT IDENT.
SB-125	-6.286E-02	1.768E-01	1.509E-01	9.021E-02	NOT IDENT.
TE-125M	4.880E+00	1.433E+01	1.315E+01	7.311E+00	NOT IDENT.
I-126	-6.647E-02	4.338E-01	3.286E-01	2.213E-01	NOT IDENT.
SB-126	6.882E-02	2.697E-01	2.404E-01	1.376E-01	NOT IDENT.
SB-127	2.266E+00	2.056E+00	1.943E+00	1.049E+00	NOT IDENT.
I-131	-1.964E-02	2.039E-01	1.795E-01	1.040E-01	NOT IDENT.
TE-132	3.117E-01	1.093E+00	9.492E-01	5.577E-01	NOT IDENT.
BA-133	-5.986E-03	8.053E-02	6.241E-02	4.109E-02	NOT IDENT.
I-133	5.354E+03	6.435E+03	0.000E+00	3.283E+03	SHORT HLIF
CS-134	-7.031E-03	9.394E-02	8.110E-02	4.793E-02	NOT IDENT.
CS-135	-2.990E-01	2.615E-01	2.236E-01	1.334E-01	NOT IDENT.
I-135	-3.722E+14	1.394E+15	0.000E+00	7.111E+14	SHORT HLIF
CS-136	1.238E-01	2.271E-01	1.996E-01	1.159E-01	NOT IDENT.
CE-139	1.646E-02	4.374E-02	3.917E-02	2.232E-02	NOT IDENT.
BA-140	3.082E-02	4.687E-01	4.032E-01	2.391E-01	NOT IDENT.
LA-140	-6.422E-03	1.432E-01	1.198E-01	7.306E-02	NOT IDENT.
CE-141	-9.007E-03	9.311E-02	8.198E-02	4.750E-02	NOT IDENT.
CE-143	1.936E+02	1.842E+02	0.000E+00	9.399E+01	SHORT HLIF
CE-144	-3.029E-01	2.934E-01	2.461E-01	1.497E-01	NOT IDENT.
PM-144	1.703E-02	5.984E-02	5.380E-02	3.053E-02	NOT IDENT.
PR-144	7.939E-01	4.514E+00	4.027E+00	2.303E+00	NOT IDENT.
PM-146	4.935E-02	8.644E-02	7.733E-02	4.410E-02	NOT IDENT.
ND-147	3.552E-01	9.965E-01	8.722E-01	5.084E-01	FAIL ABUN
PM-149	-7.024E-02	1.297E+02	1.172E+02	6.619E+01	NOT IDENT.
EU-152	-4.939E-02	1.786E-01	1.445E-01	9.112E-02	FAIL ABUN
GD-153	2.385E-02	1.227E-01	1.130E-01	6.258E-02	NOT IDENT.
EU-154	-7.496E-02	1.400E-01	1.106E-01	7.142E-02	FAIL ABUN
EU-155	-7.748E-02	1.571E-01	1.393E-01	8.013E-02	FAIL ABUN
TB-160	-5.230E-02	3.076E-01	2.610E-01	1.570E-01	FAIL ABUN
HO-166M	4.100E-02	1.204E-01	1.079E-01	6.140E-02	NOT IDENT.
TA-182	1.003E-01	2.220E-01	2.033E-01	1.133E-01	FAIL ABUN
IR-192	4.047E-03	6.060E-02	5.446E-02	3.092E-02	FAIL ABUN
HG-203	3.339E-02	5.879E-02	5.470E-02	2.999E-02	NOT IDENT.
BI-207	2.959E-03	1.252E-01	1.056E-01	6.390E-02	FAIL ABUN
PB-210	3.101E-01	1.527E+01	1.458E+01	7.791E+00	NOT IDENT.
PB-211	-1.912E+00	1.620E+00	1.083E+00	8.264E-01	NOT IDENT.
BI-212	2.118E+00	1.011E+00	9.236E-01	5.159E-01	FAIL ABUN
RN-219	-3.078E-01	7.685E-01	6.577E-01	3.921E-01	NOT IDENT.
RA-223	-1.241E+00	1.119E+00	9.249E-01	5.711E-01	FAIL ABUN
AC-227	2.550E-01	4.274E-01	3.991E-01	2.180E-01	NOT IDENT.
TH-227	2.550E-01	4.276E-01	3.991E-01	2.182E-01	NOT IDENT.
AC-228	1.752E+00	6.235E-01	4.272E-01	3.181E-01	FAIL ABUN
RA-228	1.752E+00	6.235E-01	4.272E-01	3.181E-01	FAIL ABUN
TH-229	2.173E-01	8.501E-01	7.474E-01	4.337E-01	FAIL ABUN
PA-231	9.506E-02	2.388E+00	2.163E+00	1.218E+00	NOT IDENT.
TH-231	-1.241E+00	1.119E+00	9.249E-01	5.711E-01	FAIL ABUN
TH-232	1.752E+00	6.235E-01	4.272E-01	3.181E-01	FAIL ABUN
PA-233	1.334E-01	1.146E-01	1.083E-01	5.847E-02	NOT IDENT.
PA-234	-1.995E-01	8.042E-01	6.741E-01	4.103E-01	NOT IDENT.
PA-234M	1.405E+00	9.689E+00	8.303E+00	4.943E+00	NOT IDENT.
TH-234	-5.930E-01	2.975E+00	2.480E+00	1.518E+00	NOT IDENT.
U-235	-3.401E-01	3.116E-01	2.576E-01	1.590E-01	FAIL ABUN
NP-237	3.016E+00	9.063E-01	5.513E-01	4.624E-01	NOT IDENT.
U-238	-5.930E-01	2.975E+00	2.480E+00	1.518E+00	NOT IDENT.
NP-239	-5.674E-01	6.434E-01	4.875E-01	3.283E-01	NOT IDENT.
CM-247	-3.534E-02	6.935E-02	5.899E-02	3.538E-02	NOT IDENT.
CF-249	-3.337E-02	7.282E-02	6.234E-02	3.715E-02	NOT IDENT.
CF-251	-1.993E-02	2.023E-01	1.759E-01	1.032E-01	NOT IDENT.

ANH-511	3.077E-02	6.829E-02	6.442E-02	3.484E-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	240.7072
49.72	264.5019
57.36	0.0000
59.54	306.1298
63.29	225.0656
63.29	225.0656
64.28	223.4616
67.75	261.7918
69.67	265.6862
70.83	237.2972
72.81	267.1297
72.87	267.1654
72.87	267.1654
74.82	288.0457
74.82	288.0457
74.82	288.0457
74.97	288.1400
77.11	289.4847
77.11	289.4847
77.11	289.4847
79.69	315.6476
79.80	315.7204
80.12	308.9737
80.19	309.0186
80.57	321.8036
81.00	338.8247
81.07	338.8730
81.07	338.8730
83.79	295.9026
83.79	295.9026
85.43	319.3989
86.48	365.1929
86.55	365.2443
86.79	358.3618
86.94	358.4704
87.57	311.8176
88.03	312.1004
88.47	312.3715
89.96	282.5219
91.11	266.0761
92.59	209.7558
92.59	209.7558
93.35	218.6325
94.67	255.9460
94.87	256.0427
94.87	256.0427
95.86	259.3872
97.43	206.3861
98.44	203.8837
99.53	196.5801
100.11	213.1855
103.18	200.7797
103.37	198.9066
105.31	230.7413
106.12	237.8916
109.28	210.7592
111.00	228.0883
111.76	207.7063
116.30	191.6179
117.23	217.5352
121.12	194.9078
121.78	195.1111
122.06	195.1974
123.07	195.5078
131.20	197.9616
133.52	235.3214
136.00	180.9702

136.47	205.6496
140.51	185.2423
140.51	0.0000
143.76	259.5025
144.24	262.7824
144.24	262.7824
145.44	226.9532
152.43	209.2611
153.25	205.3031
154.21	202.4199
154.21	202.4199
156.02	211.3215
158.56	202.5371
159.00	213.2092
162.66	209.9843
163.33	199.5511
165.86	192.7433
176.60	238.5039
177.52	216.0807
181.07	206.6986
184.41	243.4687
185.72	236.7522
193.51	214.6738
197.04	225.4803
205.31	213.0545
210.85	226.6788
215.65	230.0914
222.11	229.3747
227.38	180.3811
228.16	207.9455
228.18	207.9492
235.69	205.4864
235.96	219.3587
235.96	219.3587
238.63	192.8033
238.63	192.8033
240.99	193.2466
242.00	193.4369
244.70	193.9415
252.40	200.5441
252.80	185.1965
256.23	183.1489
256.23	183.1489
260.90	184.8235
264.66	186.3455
268.22	214.5413
269.46	172.0025
269.46	172.0025
271.23	174.9513
273.65	207.5313
276.40	173.9594
277.37	158.8506
277.60	157.0877
278.00	158.0391
279.20	144.7221
279.54	158.2512
280.46	177.2778
283.69	166.0425
284.31	168.8382
285.41	179.8427
285.90	183.5351
287.50	170.2057
293.27	0.0000
295.22	181.3428
295.96	199.8742
298.57	171.0639
299.98	147.8432
299.98	147.8432
300.09	158.1056
300.09	158.1056
300.13	158.1108
301.36	152.8259
302.85	207.2506
304.50	191.0010
304.50	191.0010
304.85	167.1731
308.46	175.9557
311.90	146.8838

316.51	161.3329
319.41	145.9034
320.08	154.3484
323.87	178.1211
323.87	178.1211
328.76	170.3723
333.37	147.3039
334.37	153.4333
334.37	153.4333
338.28	140.4969
338.28	140.4969
338.32	140.5014
338.32	140.5014
338.32	140.5014
340.48	126.9413
340.55	126.9475
344.28	147.7615
351.06	129.4652
351.93	138.6906
356.01	136.0466
364.49	154.7576
366.42	140.5330
383.85	136.4069
388.16	148.5349
388.63	142.7162
391.69	128.3195
400.66	138.9453
401.81	154.8320
402.40	151.9321
404.85	171.9397
410.95	156.7536
414.70	162.1096
423.72	131.0380
427.09	159.3882
427.87	147.4307
433.94	140.9464
453.88	137.5832
463.37	152.7150
468.07	144.9179
473.00	135.0298
476.78	142.5568
477.60	149.8609
487.02	151.7120
492.35	145.9195
497.08	122.2719
511.00	131.6471
514.00	186.7189
527.90	115.8524
529.87	0.0000
531.02	93.6880
537.26	92.9313
546.56	0.0000
563.25	106.1019
569.33	109.6889
569.50	111.8704
569.70	102.1039
583.19	82.0175
600.60	99.2642
602.73	100.9431
604.72	114.9338
609.32	100.7893
609.32	100.7893
610.33	93.9689
614.28	69.2764
618.01	78.9650
621.93	79.1101
621.93	79.1101
633.25	88.4917
635.95	78.5086
636.99	83.0332
645.85	81.1187
657.76	86.0891
661.66	92.5944
661.66	92.5944
664.57	0.0000
666.33	89.4531
666.50	94.0091
677.62	82.2832

685.70	64.2253
695.00	78.3013
696.49	76.5085
696.51	79.2750
697.00	88.5117
702.65	96.1187
706.68	99.9870
711.68	95.5617
720.70	92.1986
721.93	0.0000
722.78	97.8735
722.91	93.2178
723.31	91.6785
724.19	93.2666
727.33	91.5209
733.00	73.3266
735.93	79.6626
739.50	76.9651
747.24	72.4996
752.31	98.1246
753.82	75.5254
756.73	82.2316
763.94	95.7404
765.81	107.1955
766.42	90.1410
777.92	82.9282
778.90	86.7744
783.70	78.3384
785.37	82.2144
795.86	97.9085
801.95	77.9328
810.29	79.1472
810.76	74.3343
815.77	69.6410
818.51	89.0778
832.01	107.0459
834.85	94.4945
836.80	0.0000
846.77	98.8276
856.80	84.4589
860.56	92.4417
871.09	90.8186
873.19	94.8398
875.33	0.0000
879.36	93.0683
880.51	93.1073
883.24	90.2224
884.68	99.1968
889.28	103.3322
898.04	120.5953
911.20	114.1392
911.20	114.1392
911.20	114.1392
926.50	117.7627
937.49	125.2745
944.13	112.3929
946.00	128.6743
949.00	99.3925
962.29	147.7117
964.08	129.1128
966.15	105.3995
968.97	117.4089
968.97	117.4089
968.97	117.4089
983.53	108.7380
996.26	79.3160
1001.03	77.3730
1004.73	83.6618
1037.84	84.5398
1038.76	0.0000
1048.07	71.1975
1050.41	61.8204
1050.41	61.8204
1063.66	91.5284
1085.87	86.8487
1099.45	87.2011
1112.07	72.5854
1115.54	81.9188

1120.29	74.8979
1120.29	74.8979
1120.55	67.4143
1121.30	67.4297
1131.51	0.0000
1173.23	56.1295
1177.93	39.8857
1189.05	48.0111
1204.77	40.5500
1221.41	22.9360
1231.02	21.1563
1235.36	36.8359
1238.28	23.0408
1260.41	0.0000
1271.85	13.9484
1274.44	22.3330
1274.54	23.2635
1291.59	17.7592
1298.22	0.0000
1312.11	12.2155
1332.49	14.1684
1365.19	9.5231
1368.63	0.0000
1384.29	11.4819
1408.01	9.6236
1457.56	0.0000
1460.82	15.5924
1489.16	15.6953
1505.03	24.6134
1596.21	21.0991
1620.50	12.1201
1678.03	0.0000
1690.97	17.4268
1764.49	1.7838
1764.49	1.7838
1770.23	7.1434
1771.35	7.1448
1791.20	0.0000
1836.06	4.2210

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057357

Total Uranium Activity	-1.9214E+00	ug/g
Total Uranium Counting Unc.	8.8507E+00	ug/g
Total Uranium Tpu	4.5157E-06	ug/g
Total Uranium Mda	7.3804E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280                      SAMPLE ID   : G1202057357
*  ANALYST       : MXR1                        DETECTOR    : GAM04
*  SAMPLE DATE   : 5-MAR-2010 00:00:00.00    COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 11:17:59.76    SAMPLE ALQT  : 151.730 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.816E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.927E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.080E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.972E+00

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Radiochemistry Batch Checklist, Rev10

Batch# 964056 Product: H3 Date: 3/23/10
4/3/23/10

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 stated.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-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

3/15 - 3/25

Tritium Que Sheet

11-MAR-10

Batch #: 964056 Analyst: KKK2 First Client Due Date 25-MAR-10 Internal Due Date: 15-MAR-10
 Spike Isotope: Hydrogen-3 Spike Code: _____ Expiration Date: _____ Vol: _____
 LCS Isotope: Hydrogen-3 LCS Code: 0134-K Expiration Date: 3/27/10 Vol: 0.1
 Prep Date: 3/15/10 Initials: yyz Pipet ID: 2970968 Witness: DJM 3-15-10

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 Disg (mL)
248243001-1	RE36-10-7458	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-2	1		376.52	323.05	53.47
248243002-1	RE36-10-7453	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-3	2		272.48	150.68	121.80
248243003-1	RE36-10-7454	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-4	3		436.65	400.84	35.81
248243004-1	RE36-10-7460	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-5	4		515.45	466.48	48.97
248243005-1	RE36-10-7456	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-6	5		498.95	461.53	37.42
248243006-1	RE36-10-7455	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-7	6		342.05	258.59	83.46
248243007-1	RE36-10-7459	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-8	7		405.47	329.24	76.23
248243008-1	RE36-10-7457	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-9	8		341.93	277.65	64.28
248243009-1	RE36-10-7520	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-10	9		298.20	172.36	125.84
248243010-1	RE36-10-7519	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-11	10		417.46	329.79	87.67
248248001-1	RE36-10-8464	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-12	11		403.80	365.44	38.36
248248002-1	RE36-10-8475	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-13	12		525.29	479.06	46.23
248248003-1	RE36-10-8471	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	85.40	21-14	13		120.39	106.55	13.84
248248004-1	RE36-10-8485	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-15	14		457.82	350.23	107.59
248248005-1	RE36-10-8477	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-16	15		443.12	386.40	56.72
248248006-1	RE36-10-8479	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-17	16		361.42	324.56	36.86
248248007-1	RE36-10-8484	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-18	17		476.06	398.94	77.12
248248008-1	RE36-10-8481	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-19	18		434.34	385.69	48.65
248660002-1	WST36-10-8929	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	21-20	19		506.20	436.34	69.86
1202068216-1	MB for batch 964056	MB		25 pCi/mL SOIL	QC ACCOUNT		24-FEB-10	10	21-21	20		20.00	0.00	20.00
1202068217-1	RE36-10-8481(248248008DUP)	DUP		25 pCi/mL SOIL	QC ACCOUNT		24-FEB-10	10	21-22	21		434.34	385.69	48.65
1202068218-1	LCS for batch 964056	LCS		25 pCi/mL SOIL	QC ACCOUNT		24-FEB-10	10	21-23	22		20.00	0.00	20.00

Bkg Rack #: 21-1, 8-1
 3/23/10

Bkg prepared with dead water? Yes/No

Comments:

Instrument Used (circle as appropriate): LS6000 (Red) 7065155 LS6500 (Blue) 7067083, LS6500 (Gold) 7070506, LS6500 (Green) 7067404, Wallac (Yellow) 4140427, LS6000 (Brown) 7060655, Wallac (Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG606095168

Calibration Used: Ecosint Ultra (10 mL sample/13 mL Ecosint Ultra)
 Data Reviewed By: yyz 3/23/10

GEL Laboratories LLC, Radiochemistry Division

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Prep Logbook

The Determination of Tritium

Batch ID: 964056 Verified by: _____ Lab SOP: GL-RAD-A-002 REV# 18
 Analyst: Kelly Gainey Instrument: No instrument-manual method
 Method: GL-RAD-A-002

Sample ID	Run Date	Vacuum Flask Rig # (g)	Aliquot Collected in In vial (mL)	Amount of Prepped Moisture Aliquot in scintillation vial (mL)
248243001	15-MAR-2010 09:44:10	1	376.52	53.47
248243002	15-MAR-2010 09:44:10	2	272.48	121.8
248243003	15-MAR-2010 09:44:10	3	436.65	35.81
248243004	15-MAR-2010 09:44:10	4	515.45	48.97
248243005	15-MAR-2010 09:44:10	5	498.95	37.42
248243006	15-MAR-2010 09:44:10	6	342.05	83.46
248243007	15-MAR-2010 09:44:10	7	405.47	76.23
248243008	15-MAR-2010 09:44:10	8	341.93	64.28
248243009	15-MAR-2010 09:44:10	9	298.2	125.84
248243010	15-MAR-2010 09:44:10	10	417.46	87.67
248248001	15-MAR-2010 09:44:10	11	403.8	38.36
248248002	15-MAR-2010 09:44:10	12	525.29	46.23
248248003	15-MAR-2010 09:44:10	13	120.39	13.84
248248004	15-MAR-2010 09:44:10	14	457.82	107.59
248248005	15-MAR-2010 09:44:10	15	443.12	56.72
248248006	15-MAR-2010 09:44:10	16	361.42	36.86
248248007	15-MAR-2010 09:44:10	17	476.06	77.12
248248008	15-MAR-2010 09:44:10	18	434.34	48.65
248660002	15-MAR-2010 09:44:10	19	506.2	69.86
1202068216 MB	15-MAR-2010 09:44:10	20	20	20
1202068217 DUP (248248008)	15-MAR-2010 09:44:10	18	434.34	48.65
1202068218 LCS	15-MAR-2010 09:44:10	21	20	20

Comments:

Type	Sample ID	Description	Serial Number	Spike Amt	Units
LCS	1202068218	4 Bottles: stock, LSC, Rad II, and Bioassay	0134-K	.1	mL
REGNT All		Brown Colerant for Calibrations	1158135	10	uL
REGNT All		ecocent ultra scintillation solution	1265065.2	13	mL

DATE	3/16/2010	INITIALS	KXK2	BATCH NUMBER	964056	
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
248243001	376.52	0.142	53.47	323.05	10	
248243002	272.48	0.447	121.80	150.68	10	
248243003	436.65	0.082	35.81	400.84	10	
248243004	515.45	0.095	48.97	466.48	10	
248243005	498.95	0.075	37.42	461.53	10	
248243006	342.05	0.244	83.46	258.59	10	
248243007	405.47	0.188	76.23	329.24	10	
248243008	341.93	0.188	64.28	277.65	10	
248243009	298.20	0.422	125.84	172.36	10	
248243010	417.46	0.210	87.67	329.79	10	
248248001	403.80	0.095	38.36	365.44	10	
248248002	525.29	0.088	46.23	479.06	10	
248248003	120.39	0.115	13.84	106.55	10 8.5	
248248004	457.82	0.235	107.59	350.23	10 10 13.10	
248248005	443.12	0.128	56.72	386.40	10	
248248006	361.42	0.102	36.86	324.56	10	
248248007	476.06	0.162	77.12	398.94	10	
248248008	434.34	0.112	48.65	385.69	10	
248660002	506.20	0.138	69.86	436.34	10	
MB	20.00	1.000	20.00	0.00	10	
DUP		0.112	0.00	0.00	10	
MS	20.00	1.000	20.00	0.00	10	

Tritium Solid

Filename : H3VAC.XLS
File type : Excel
Version # : 1.2.6

Spike S/N :
Spike Exp Date :
Spike Activity (dpm/ml):
Spike Volume Added:

LCS S/N : 0134-K
LCS Exp Date : 3/11/2011
LCS Activity (dpm/ml): 2456.07
LCS Volume Added: 0.10

Batch : 964056
Analyst : KXX2
Prep Date : 3/15/2010

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry: 10mL DW/13mL
Eoscient Ultra

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 : +/- 0.025729 ml

Sample Characteristics

Pos.	Sample ID	Wet Sample Weight (g)	Total Moisture L	Sample Aliquot in Vial L	Sample Aliquot Stdev. L	Dry Sample Weight (g)	% Moisture of Sample	Rig number	Sample Date/Time
1	248243001.1	376.52	0.0535	0.0100	2.5729E-05	323.05	14.20%	1	2/24/2010 12:00
2	248243002.1	272.48	0.1218	0.0100	2.5729E-05	150.88	44.70%	2	2/24/2010 12:00
3	248243003.1	436.65	0.0358	0.0100	2.5729E-05	400.84	8.20%	3	2/24/2010 12:00
4	248243004.1	515.45	0.0480	0.0100	2.5729E-05	466.48	9.50%	4	2/24/2010 12:00
5	248243005.1	488.95	0.0374	0.0100	2.5729E-05	461.53	7.50%	5	2/24/2010 12:00
6	248243006.1	342.05	0.0835	0.0100	2.5729E-05	258.59	24.40%	6	2/24/2010 12:00
7	248243007.1	405.47	0.0782	0.0100	2.5729E-05	329.24	18.80%	7	2/24/2010 12:00
8	248243008.1	341.93	0.0643	0.0100	2.5729E-05	277.85	18.80%	8	2/24/2010 12:00
9	248243009.1	298.20	0.1258	0.0100	2.5729E-05	172.36	42.20%	9	2/24/2010 12:00
10	248243010.1	417.46	0.0877	0.0100	2.5729E-05	328.79	21.00%	10	2/24/2010 12:00
11	248248001.1	403.80	0.0384	0.0100	2.5729E-05	365.44	9.50%	11	2/24/2010 12:00
12	248248002.1	525.29	0.0462	0.0100	2.5729E-05	479.06	8.80%	12	2/24/2010 12:00
13	248248003.1	120.39	0.0138	0.0085	2.5729E-05	106.55	11.50%	13	2/24/2010 12:00
14	248248004.1	457.82	0.1076	0.0100	2.5729E-05	350.23	23.50%	14	2/24/2010 12:00
15	248248005.1	443.12	0.0567	0.0100	2.5729E-05	386.40	12.80%	15	2/24/2010 12:00
16	248248006.1	361.42	0.0369	0.0100	2.5729E-05	324.56	10.20%	16	2/24/2010 12:00
17	248248007.1	476.06	0.0771	0.0100	2.5729E-05	398.94	16.20%	17	2/24/2010 12:00
18	248248008.1	434.34	0.0487	0.0100	2.5729E-05	385.89	11.20%	18	2/24/2010 12:00
19	248660002.1	506.20	0.0699	0.0100	2.5729E-05	436.34	13.80%	19	2/26/2010 12:00
20	1202068216.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	20	3/15/2010 0:00
21	1202068217.1	434.34	0.0487	0.0100	2.5729E-05	385.89	11.20%	18	2/24/2010 12:00
22	1202068218.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	21	3/15/2010 0:00

Count raw Data			Background				Calibration Data			Detector			Backgrounds		
Pos.	Rack	Position #	Counting Time (min.)	Quench#	Gross cpm	cpm	Count Time (min.)	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Count Start Date/Time
1	21-2	50	126.7	6.02	6.08	90	3/19/2010 11:05	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2727	0.00792	21-1	3/19/2010 8:32
2	21-3	50	125.3	5.84	6.08	90	3/19/2010 11:57	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2752	0.00792	21-1	3/19/2010 8:32
3	21-4	50	124.6	6.5	6.08	90	3/19/2010 12:49	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2765	0.00792	21-1	3/19/2010 8:32
4	21-5	50	125	6.38	6.08	90	3/19/2010 13:41	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2757	0.00792	21-1	3/19/2010 8:32
5	21-6	50	125.3	6.92	6.08	90	3/19/2010 14:33	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2752	0.00792	21-1	3/19/2010 8:32
6	21-7	50	125	6.78	6.08	90	3/19/2010 15:25	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2757	0.00792	21-1	3/19/2010 8:32
7	21-8	50	125.1	7.26	6.08	90	3/19/2010 16:18	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2756	0.00792	21-1	3/19/2010 8:32
8	21-9	50	126.1	6.54	6.08	90	3/19/2010 17:10	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2738	0.00792	21-1	3/19/2010 8:32
9	21-10	50	125.9	6.52	6.08	90	3/19/2010 18:02	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2741	0.00792	21-1	3/19/2010 8:32
10	21-11	50	125.2	6.22	6.08	90	3/19/2010 18:54	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2754	0.00792	21-1	3/19/2010 8:32
11	21-12	50	125.7	6.32	6.08	90	3/19/2010 19:46	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2745	0.00792	21-1	3/19/2010 8:32
12	19-1	50	125.6	5.54	6.08	90	3/19/2010 20:38	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2747	0.00792	21-1	3/19/2010 8:32
13	8-2	90	115.2	3.07	2.76	90	3/22/2010 16:24	0.996	LSCRED	8/21/2009	8/31/2010	0.2076	0.00792	8-1	3/22/2010 14:51
14	19-3	50	125.8	7.04	6.08	90	3/19/2010 22:23	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2743	0.00792	21-1	3/19/2010 8:32
15	19-4	50	124.7	6.68	6.08	90	3/19/2010 23:15	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2783	0.00792	21-1	3/19/2010 8:32
16	19-5	50	125.2	6.5	6.08	90	3/20/2010 0:07	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2754	0.00792	21-1	3/19/2010 8:32
17	19-6	50	124.6	5.94	6.08	90	3/20/2010 0:59	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2765	0.00792	21-1	3/19/2010 8:32
18	19-7	50	125.6	5.96	6.08	90	3/20/2010 1:51	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2747	0.00792	21-1	3/19/2010 8:32
19	19-8	50	125.7	5.84	6.08	90	3/20/2010 2:43	0.997	LSCSILVER	8/21/2009	8/31/2010	0.2745	0.00792	21-1	3/19/2010 8:32
20	19-9	50	124	5.98	6.08	90	3/20/2010 3:35	0.999	LSCSILVER	8/21/2009	8/31/2010	0.2775	0.00792	21-1	3/19/2010 8:32
21	19-10	50	125.9	6.5	6.08	90	3/20/2010 4:27	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2741	0.00792	21-1	3/19/2010 8:32
22	80-1	15	125.1	43	6.08	90	3/19/2010 10:47	0.999	LSCSILVER	8/21/2009	8/31/2010	0.2756	0.00792	21-1	3/19/2010 8:32

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 1202068217.†

Results				1 SIGMA				1 SIGMA				1 SIGMA				1 SIGMA			
Pos.	Decision Level	Critical Level	Required MDC	MDC	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	Counting Uncertainty	Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Normal pC/L	Recovery			
	pC/L	pC/L	pC/L	pC/L	pC/L	pC/L	CPM	CPM	pC/L	pC/L									
1	167.9991	118.8088	250	247.1646	-9.9470	7.226	-0.060	0.434	71.8735	71.8739	SAMPLE								
2	166.4522	117.5167	250	244.8887	-72.2731	0.965	-0.440	0.425	68.7572	69.7575	SAMPLE								
3	165.6976	116.9839	250	243.7786	68.6752	1.058	0.420	0.444	72.6767	72.8340	SAMPLE								
4	166.1287	117.2883	250	244.4129	49.1814	1.473	0.300	0.442	72.4219	72.5028	SAMPLE								
5	166.4550	117.5186	250	244.8928	137.9782	0.540	0.940	0.454	74.5449	75.1618	SAMPLE								
6	166.1306	117.2886	250	244.4156	114.7578	0.644	0.700	0.451	73.8922	74.3232	SAMPLE								
7	166.2397	117.3667	250	244.5762	193.5759	0.391	1.180	0.461	75.6676	76.8593	SAMPLE								
8	167.3362	118.1408	250	246.1894	75.9595	0.968	0.460	0.445	73.5439	73.7339	SAMPLE								
9	167.1160	117.9853	250	245.8854	72.9813	1.011	0.440	0.445	73.3730	73.5468	SAMPLE								
10	166.3509	117.4452	250	244.7398	22.9820	3.129	0.140	0.438	71.9217	71.9395	SAMPLE								
11	166.8978	117.8313	250	245.5443	39.5272	1.835	0.240	0.440	72.5331	72.5853	SAMPLE								
12	166.7880	117.7545	250	245.3943	98.8783	0.782	-0.540	0.422	69.5097	69.5101	SAMPLE								
13	147.8618	104.3917	250	217.3249	79.4353	0.821	0.310	0.255	65.2176	65.4521	SAMPLE								
14	167.0105	117.9708	250	245.7102	158.2157	0.476	0.960	0.456	75.2282	76.0310	SAMPLE								
15	165.8159	117.0874	250	243.9526	98.1775	0.748	0.600	0.449	73.3883	73.7061	SAMPLE								
16	166.3565	117.4481	250	244.7480	88.9463	1.058	0.420	0.444	72.9657	73.1236	SAMPLE								
17	165.7105	116.9931	250	243.7976	-22.8935	3.064	-0.140	0.432	70.5921	70.5924	SAMPLE								
18	166.7946	117.7584	250	245.3925	-19.7514	3.601	-0.120	0.432	71.1301	71.1304	SAMPLE								
19	166.8538	117.8002	250	245.4796	-23.0515	3.064	-0.140	0.432	71.0791	71.0795	SAMPLE								
20	164.8056	116.2130	250	242.1721	-16.2435	4.326	-0.100	0.433	70.2717	70.2721	SAMPLE								
21	167.1272	117.9932	250	245.8819	89.2677	1.058	0.420	0.444	73.3038	73.4624	SAMPLE								
22	262.0903	185.0380	250	402.7909	6039.1691	0.047	36.920	1.713	280.1960	505.3961	MB		0.0%	0.3078	5531.6783	108.2%			
											248248008.1	DUP							
											LCS								

PAGE: 1

ID: TRITIUM

22 MAR 2010 14:46

USER: 2

COMMENT: RED

PRESET TIME : 90.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : EDIT

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

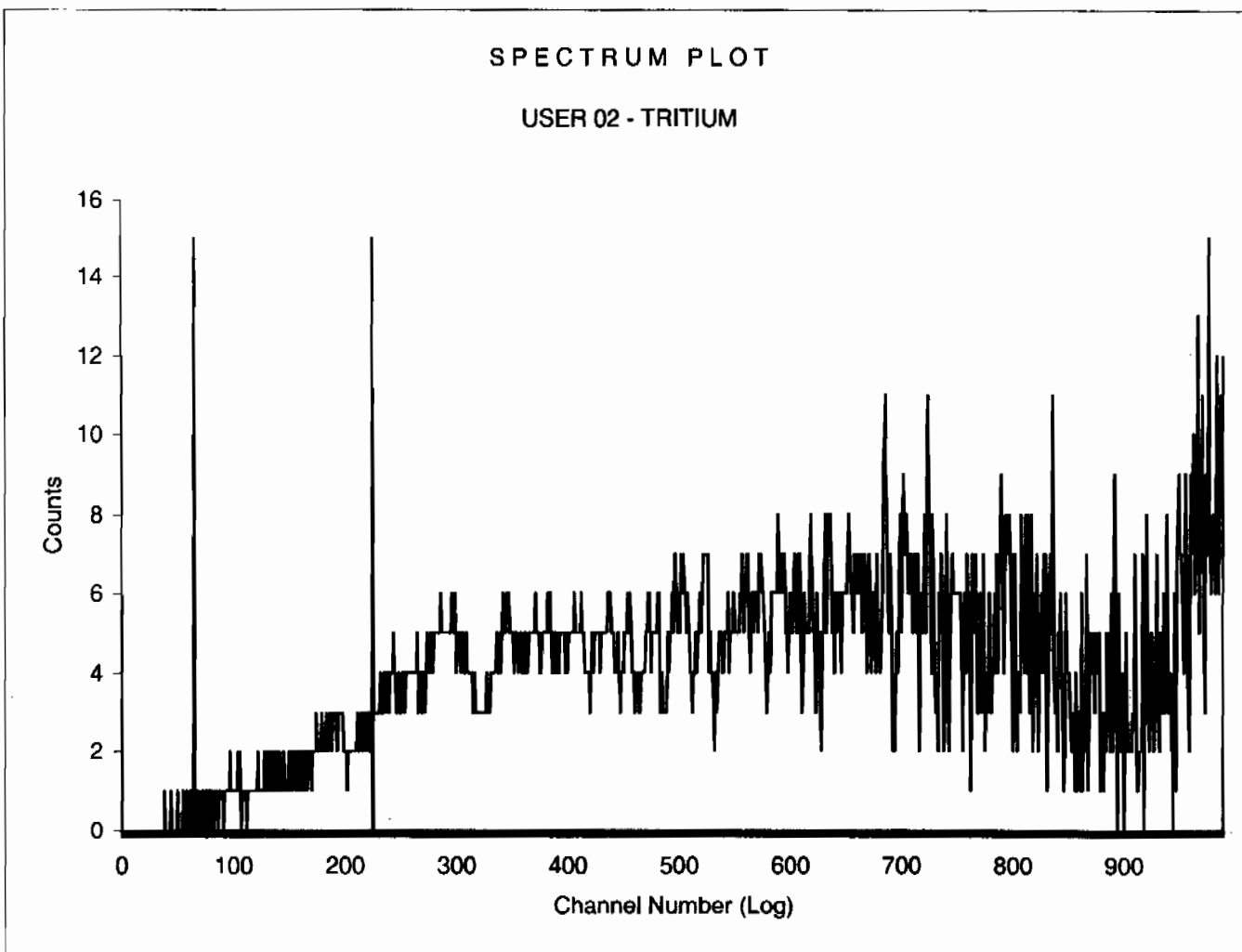
CHAN: 65.0 - 225.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 990.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

ALPHA-BETA DISCRIMINATION: NO

SAM NO	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	8-1	90.00	114.7	2.76	14.41	44.76	3.18	1.64	92.78
2	8-2	90.00	115.2	3.07	13.34	42.37	3.27	1.56	186.05

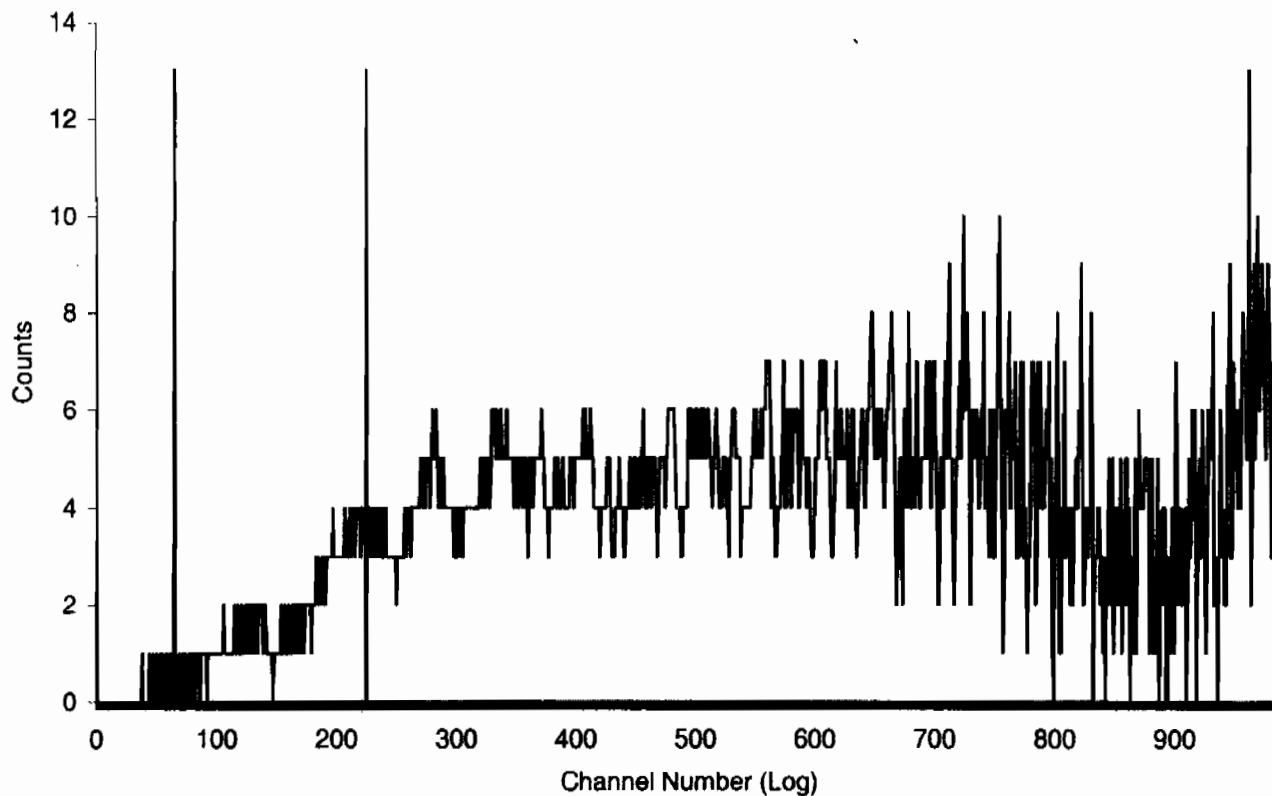
Sample Count Start Time:	22 Mar 2010 14:51:13		
Data Capture Date	22 Mar 2010 16:20:31		
User Filename	S02032208-1A.XLS		
	U02032208-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	RED		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	8-1	90.00
H#, Total Counts:	114.7	4798	
Win1: Tritium - Start, End, Counts:	65	225	251
Win2: - Start, End, Counts:	0	990	4033



Sample Count Start Time:	22 Mar 2010 16:24:29		
Data Capture Date	22 Mar 2010 17:53:47		
User Filename	S02032208-2A.XLS		
	U02032208-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	RED		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	8-2	90.00
H#, Total Counts:	115.2	4569	
Win1: Tritium - Start, End, Counts:	65	225	279
Win2: - Start, End, Counts:	0	990	3821

SPECTRUM PLOT

USER 02 - TRITIUM



ID:TRITIUM

19 MAR 2010 08:29

USER: 4

COMMENT:SILVER

PRESET TIME : 90.00

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: 20.0 - 280.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

SAM	POS	TIME	H#	WIND1		WIND2		LUMEX	ELAPSED
				CPM	%ERROR	CPM	%ERROR		
NO		MIN						%	TIME

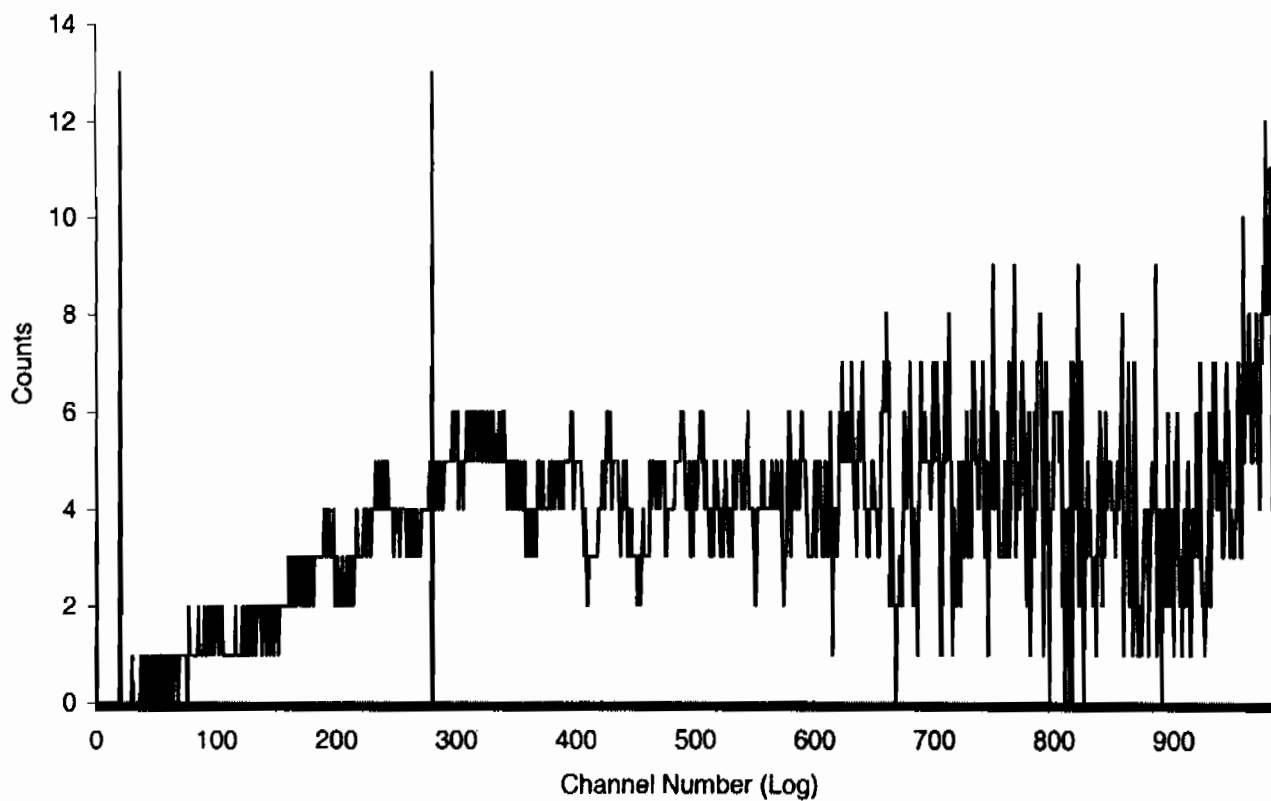
8kg
3-22-10

1	21-1	90.00	123.6	6.08	8.77	45.30	3.14	0.75	92.54
2	21-2	0.50	126.4	7.53	25.39	47.29	10.00	0.72	102.23
3	21-3	0.05	125.7	20.00	200.00	120.00	81.65	0.69	103.03
4	21-4	0.05	125.1	0.00	0.00	20.00	200.00	3.93	103.97
5	21-5	0.05	124.7	0.00	0.00	60.00	115.47	0.94	104.88
6	21-6	0.05	125.3	0.00	0.00	20.00	200.00	3.38	105.78
MISSING SAMPLE									
19	30-7	0.05	125.6	20.00	200.00	60.00	115.47	1.01	106.93
20	30-8	0.05	125.2	0.00	0.00	20.00	200.00	3.94	107.83
21	30-9	0.05	126.0	0.00	0.00	40.00	141.42	1.71	108.73
22	30-10	0.05	125.9	0.00	0.00	40.00	141.42	1.52	109.67
23	30-11	0.05	125.1	0.00	0.00	60.00	115.47	0.92	110.57
24	30-12	0.05	125.6	0.00	0.00	20.00	200.00	3.32	111.48
25	19-1	0.05	125.7	0.00	0.00	40.00	141.42	1.50	112.48
26	19-2	0.05	124.3	20.00	200.00	100.00	89.44	0.84	113.37
27	19-3	0.05	126.0	0.00	0.00	20.00	200.00	2.85	114.27
28	19-4	0.05	125.3	0.00	0.00	60.00	115.47	1.41	115.22
29	19-5	0.05	125.0	0.00	0.00	20.00	200.00	4.08	116.10
30	19-6	0.05	124.6	0.00	0.00	20.00	200.00	3.92	117.00
31	19-7	0.05	125.9	0.00	0.00	20.00	200.00	3.02	117.90
32	19-8	0.05	125.1	0.00	0.00	40.00	141.42	1.98	118.80
33	19-9	0.05	123.5	20.00	200.00	60.00	115.47	1.18	119.70
34	19-10	0.05	125.6	0.00	0.00	60.00	115.47	1.09	120.63

Sample Count Start Time:	19 Mar 2010 08:32:19		
Data Capture Date	19 Mar 2010 10:02:44		
User Filename	S04031921-1A.XLS		
	U04031921-1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	21-1	90.00
H#, Total Counts:	123.6	4077	
Win1: Tritium - Start, End, Counts:	20	280	551
Win2: - Start, End, Counts:	0	990	3710

SPECTRUM PLOT

USER 04 - TRITIUM



ID:TRITIUM

19 MAR 2010 11:03

USER: 4

COMMENT:SILVER

PRESET TIME : 50.00

DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT

TWO PHASE : NO AGC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 20.0 - 280.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

SAM	POS	TIME	H#	WIND1		WIND2		LUMEX	ELAPSED
				CPM	%ERROR	CPM	%ERROR		
NO		MIN						%	TIME
MISSING SAMPLE									
1	2	21-2	50.00 126.7	6.02	11.89	44.72	4.25	0.95	51.66
2	3	21-3	50.00 125.3	5.64	12.28	43.28	4.32	0.95	103.84
3	4	21-4	50.00 124.6	6.50	11.38	44.30	4.27	0.83	155.97
4	5	21-5	50.00 125.0	6.38	11.48	46.58	4.16	0.78	208.11
5	6	21-6	50.00 125.3	6.92	10.98	45.68	4.20	0.74	260.28
6	7	21-7	50.00 125.0	6.78	11.07	45.92	4.19	0.66	312.40
7	8	21-8	50.00 125.1	7.26	10.68	45.52	4.20	0.62	364.54
8	9	21-9	50.00 126.1	6.54	11.26	45.06	4.22	0.58	416.66
9	10	21-10	50.00 125.9	6.52	11.28	46.46	4.16	0.57	468.79
10	11	21-11	50.00 125.2	6.22	11.56	45.94	4.18	0.56	520.90
11	12	21-12	50.00 125.7	6.32	11.46	45.38	4.21	0.62	573.04
12	13	19-1	50.00 125.6	5.54	12.27	44.00	4.28	0.57	625.24
13	14	19-2	50.00 125.0	5.88	11.90	44.42	4.26	0.62	677.40
14	15	19-3	50.00 125.8	7.04	10.84	45.18	4.22	0.62	729.53
15	16	19-4	50.00 124.7	6.68	11.15	43.82	4.29	0.69	781.67
16	17	19-5	50.00 125.2	6.50	11.31	44.78	4.24	0.66	833.81
17	18	19-6	50.00 124.6	5.94	11.84	43.60	4.30	0.64	885.94
18	19	19-7	50.00 125.6	5.96	11.82	42.96	4.33	0.61	938.07
19	20	19-8	50.00 125.7	5.94	11.80	46.66	4.15	0.53	990.18
20	21	19-9	50.00 124.0	5.98	11.74	45.84	4.19	0.52	1042.30
21	22	19-10	50.00 125.9	6.50	11.25	45.50	4.20	0.51	1094.42

QP

INSTRUMENT CALIBRATION: Maxi 20 MAR 2010 05:20

Calibration successful

QP

Calibrating Auto DPM

Counting Standard for 14C

Calibration Complete: 14C

Counting Standard for 3H

Calibration Complete: 3H

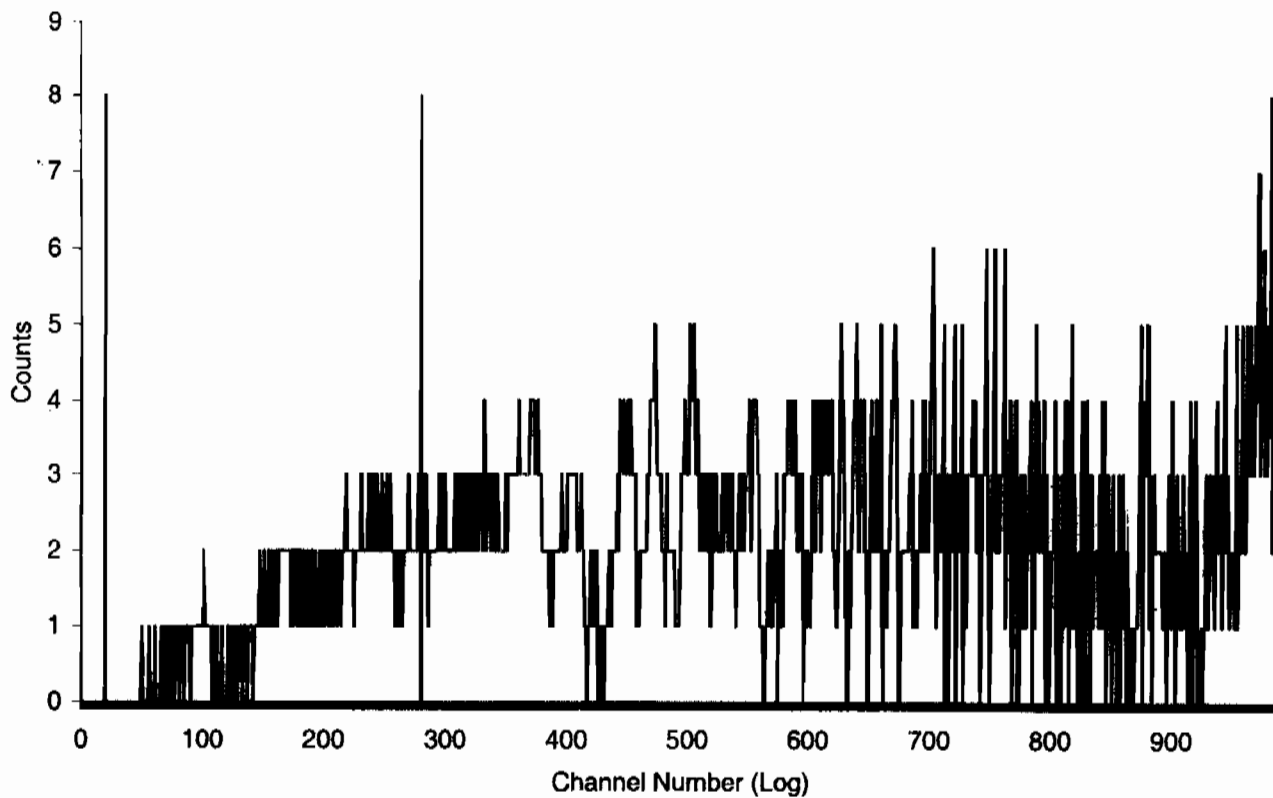
Calibration Successful

QPQP

Sample Count Start Time:	19 Mar 2010 11:05:08		
Data Capture Date	19 Mar 2010 11:55:31		
User Filename	S04031921-2B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	21-2	50.00
H#, Total Counts:	126.7	2236	
Win1: Tritium - Start, End, Counts:	20	280	304
Win2: - Start, End, Counts:	0	990	2040

SPECTRUM PLOT

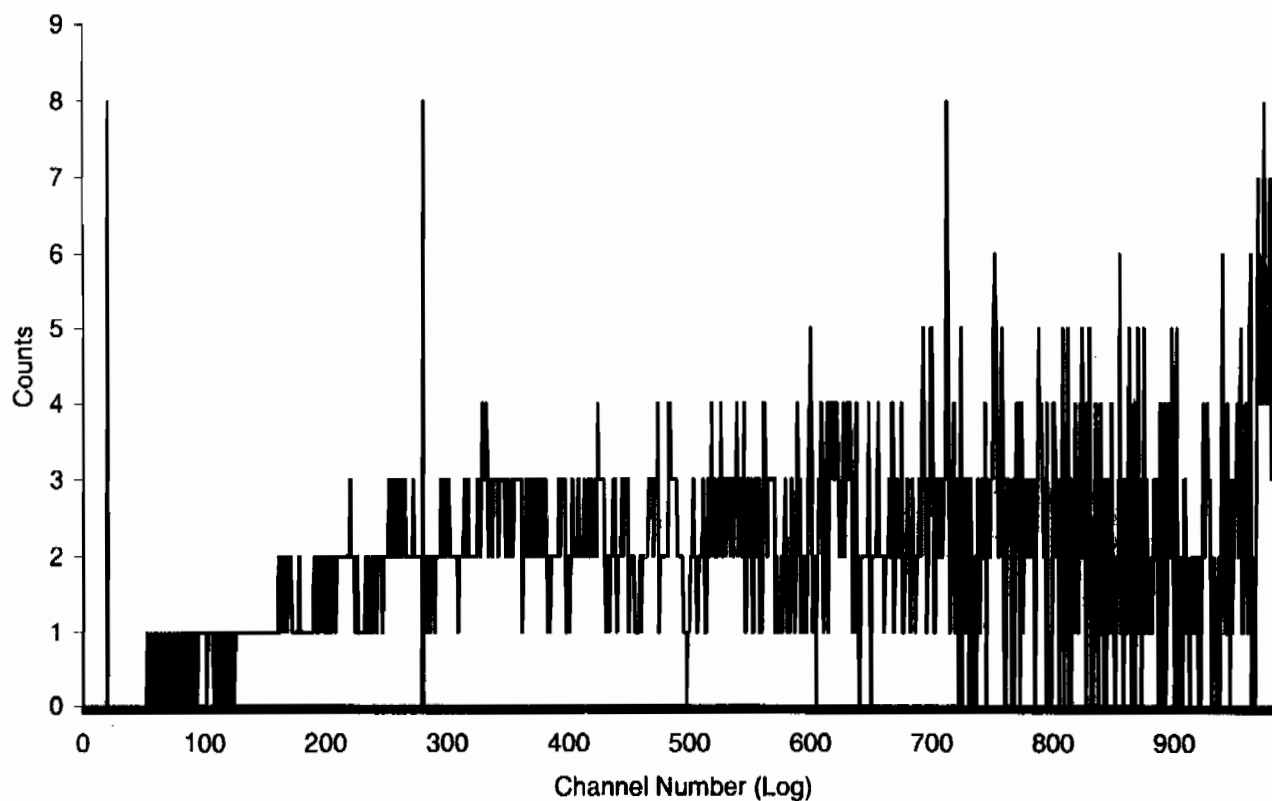
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 11:57:18		
Data Capture Date	19 Mar 2010 12:47:41		
User Filename	S04031921-3B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	21-3	50.00
H#, Total Counts:	125.3	2164	
Win1: Tritium - Start, End, Counts:	20	280	284
Win2: - Start, End, Counts:	0	990	1993

SPECTRUM PLOT

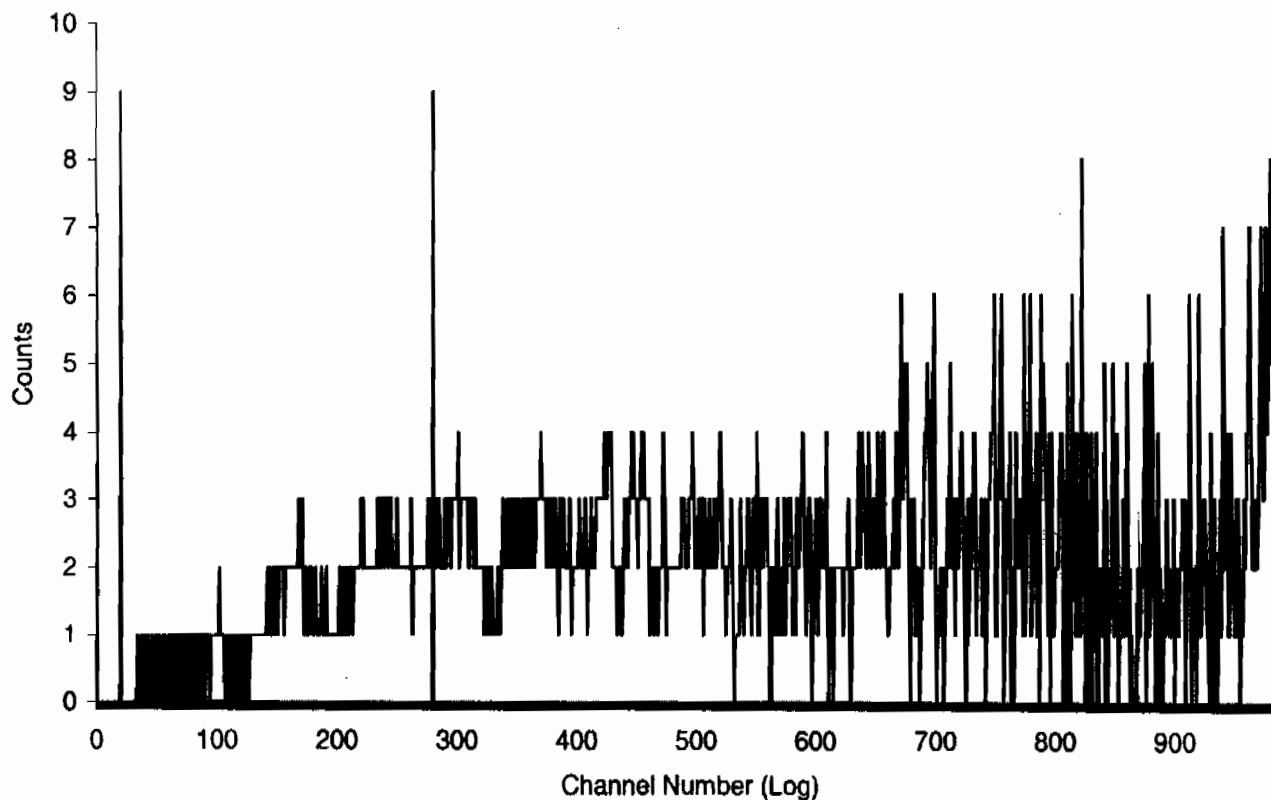
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 12:49:26		
Data Capture Date	19 Mar 2010 13:39:50		
User Filename	S04031921-4B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	21-4	50.00
H#, Total Counts:	124.6	2215	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2031

SPECTRUM PLOT

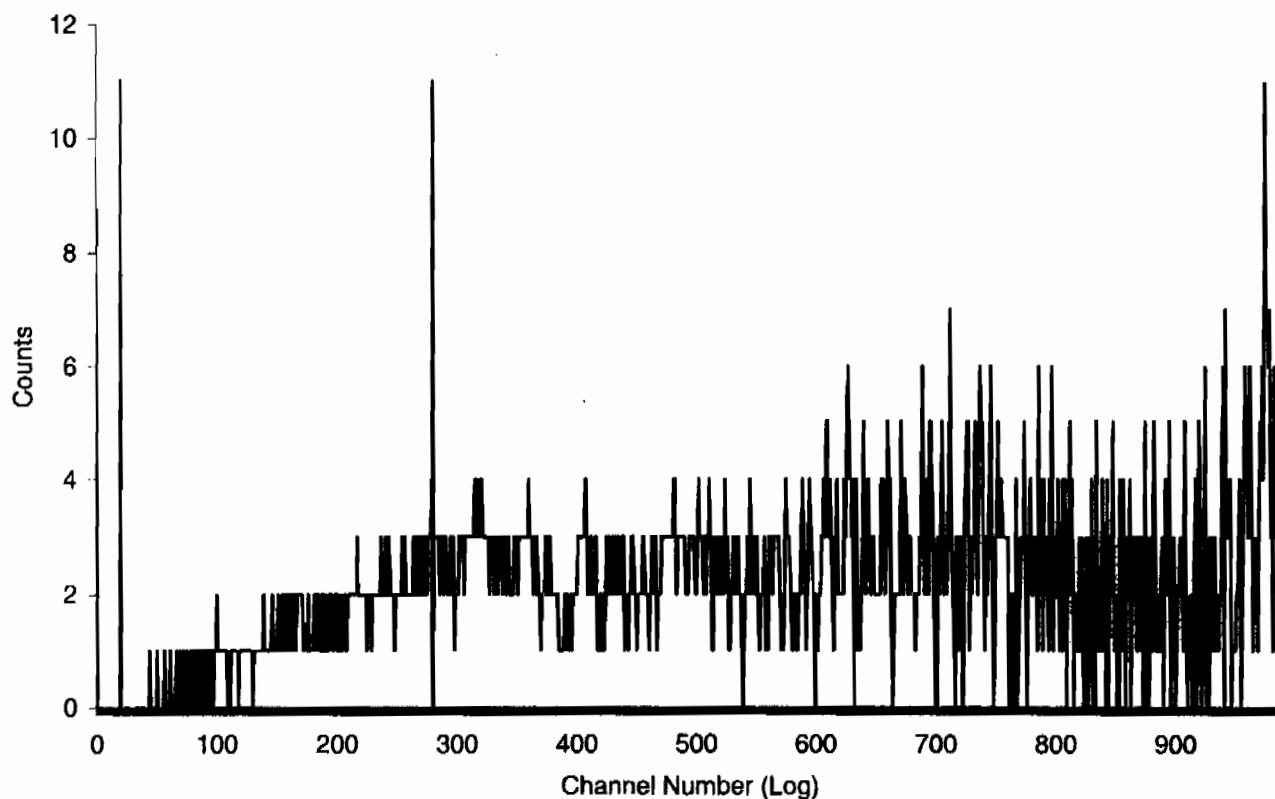
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 13:41:35		
Data Capture Date	19 Mar 2010 14:31:58		
User Filename	S04031921-5B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	21-5	50.00
H#, Total Counts:	125.0	2329	
Win1: Tritium - Start, End, Counts:	20	280	322
Win2: - Start, End, Counts:	0	990	2141

SPECTRUM PLOT

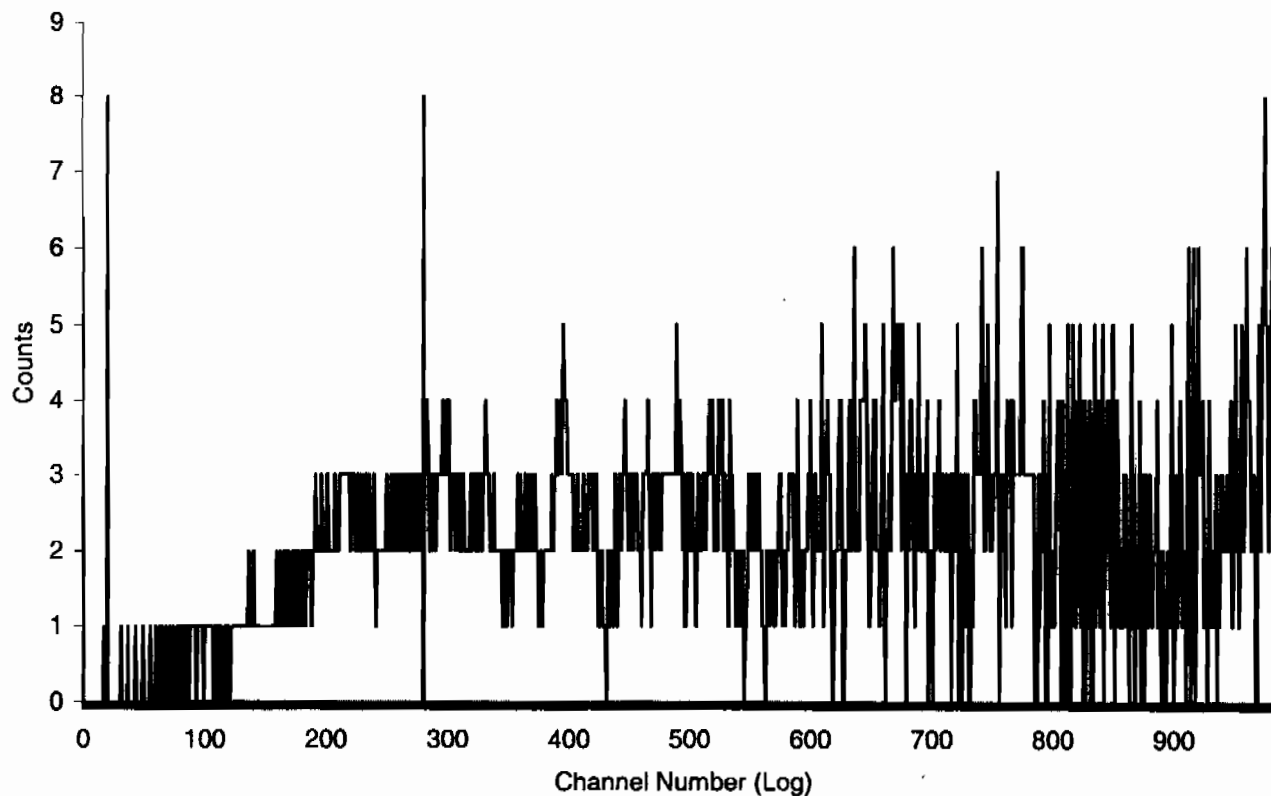
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 14:33:45		
Data Capture Date	19 Mar 2010 15:24:08		
User Filename	S04031921-6B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	21-6	50.00
H#, Total Counts:	125.3	2284	
Win1: Tritium - Start, End, Counts:	20	280	349
Win2: - Start, End, Counts:	0	990	2119

SPECTRUM PLOT

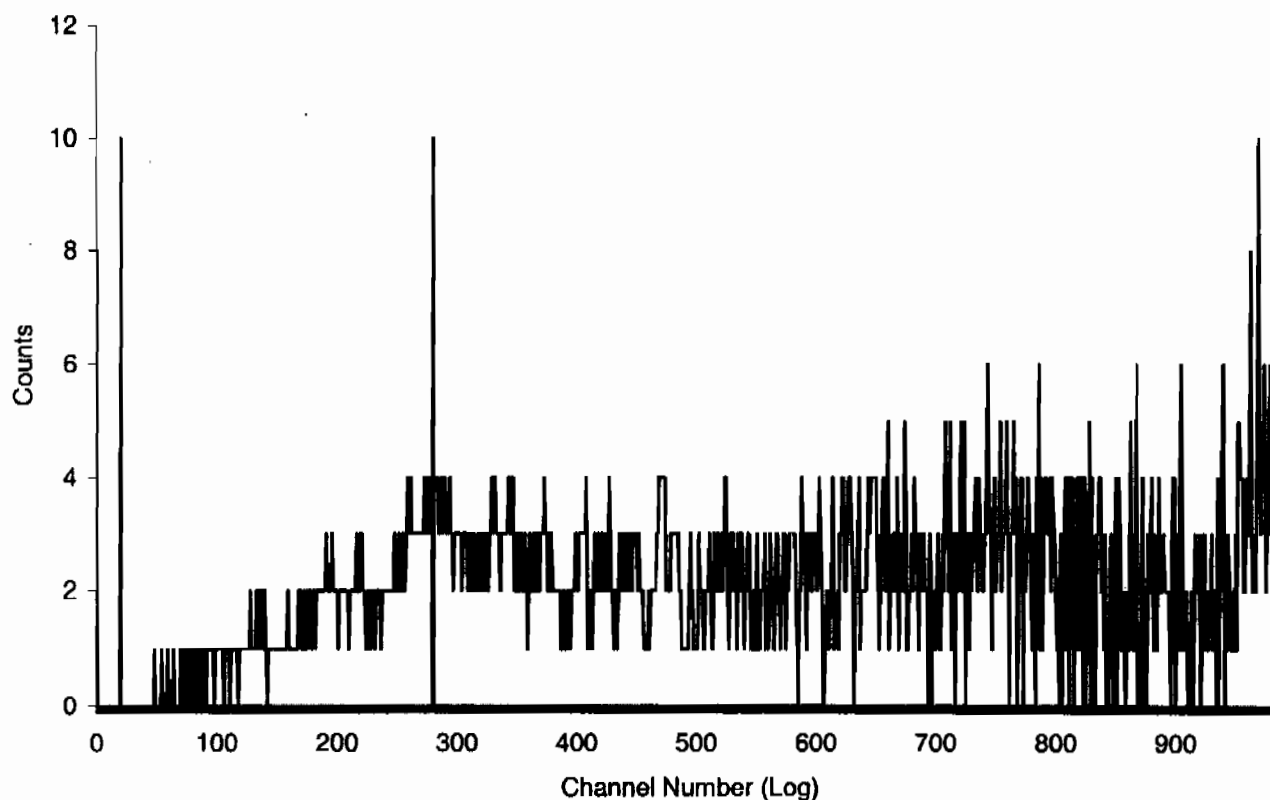
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 15:25:52		
Data Capture Date	19 Mar 2010 16:16:15		
User Filename	S04031921-7A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	21-7	50.00
H#, Total Counts:	125.0	2296	
Win1: Tritium - Start, End, Counts:	20	280	343
Win2: - Start, End, Counts:	0	990	2106

SPECTRUM PLOT

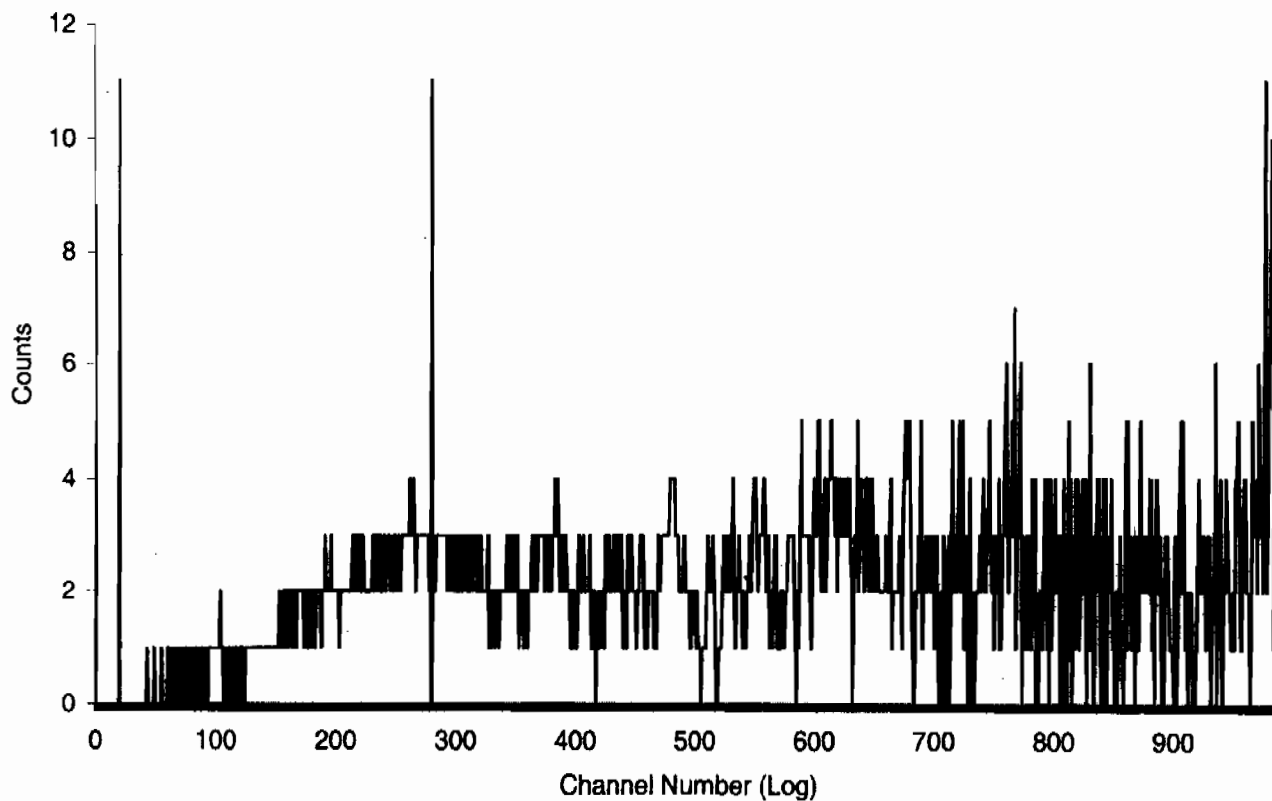
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 16:18:00		
Data Capture Date	19 Mar 2010 17:08:23		
User Filename	S04031921-8A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	21-8	50.00
H#, Total Counts:	125.1	2276	
Win1: Tritium - Start, End, Counts:	20	280	366
Win2: - Start, End, Counts:	0	990	2096

SPECTRUM PLOT

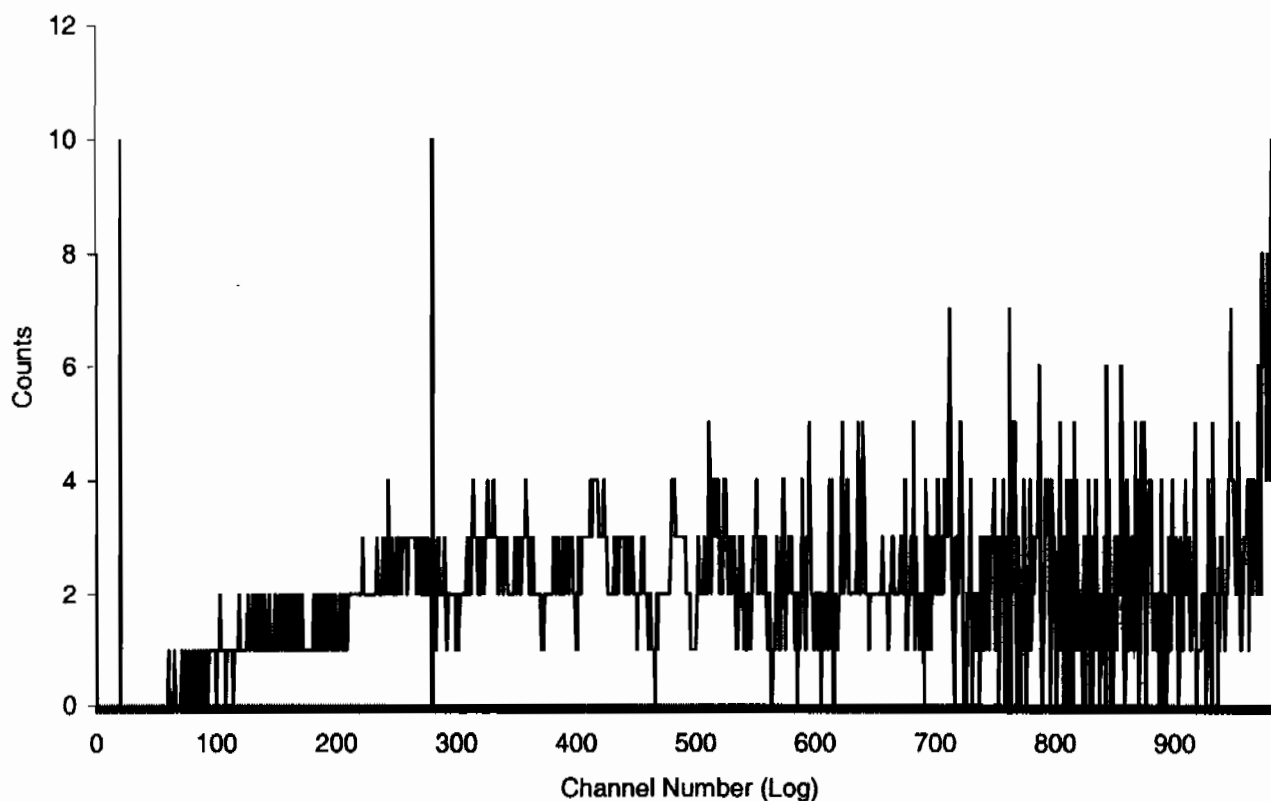
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 17:10:08		
Data Capture Date	19 Mar 2010 18:00:31		
User Filename	S04031921-9A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	21-9	50.00
H#, Total Counts:	126.1	2253	
Win1: Tritium - Start, End, Counts:	20	280	330
Win2: - Start, End, Counts:	0	990	2048

SPECTRUM PLOT

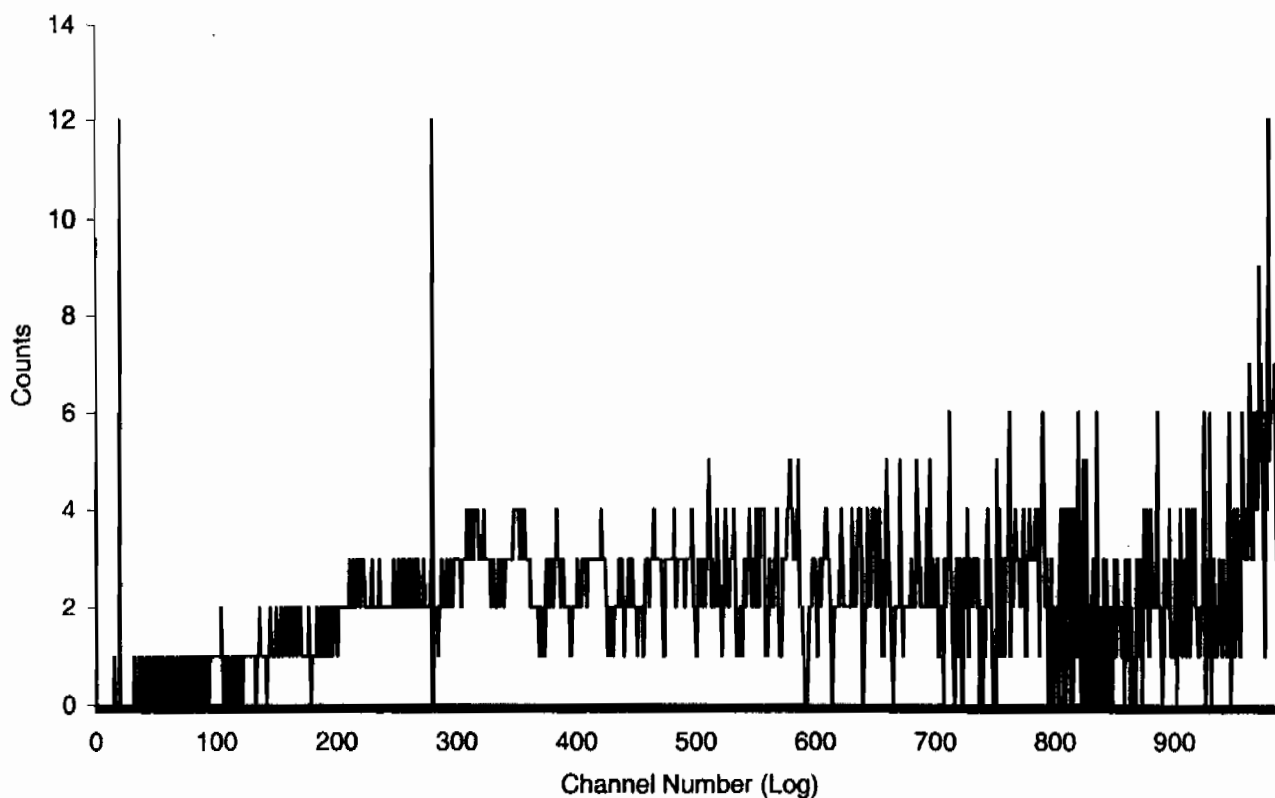
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 18:02:15		
Data Capture Date	19 Mar 2010 18:52:41		
User Filename:	S04031921-10A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	21-10	50.00
H#, Total Counts:	125.9	2323	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2133

SPECTRUM PLOT

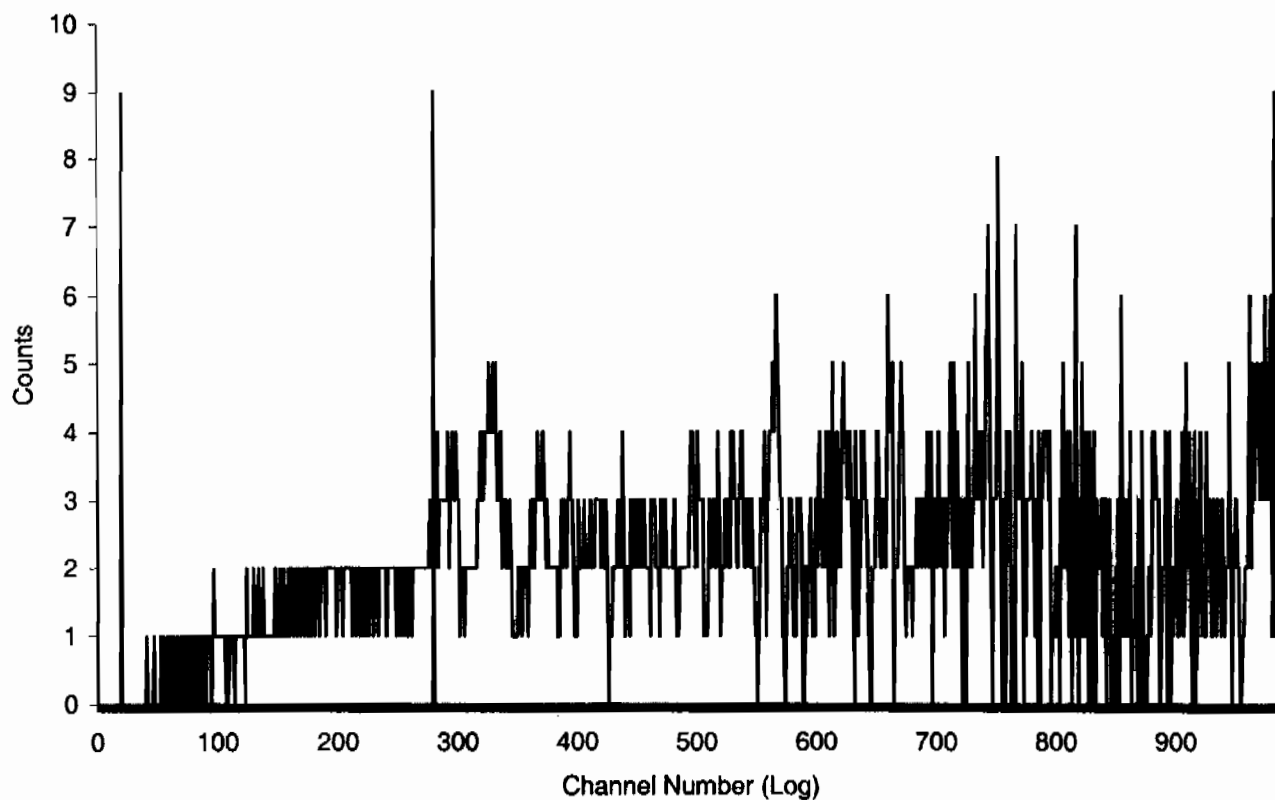
USER 04 - TRITIUM



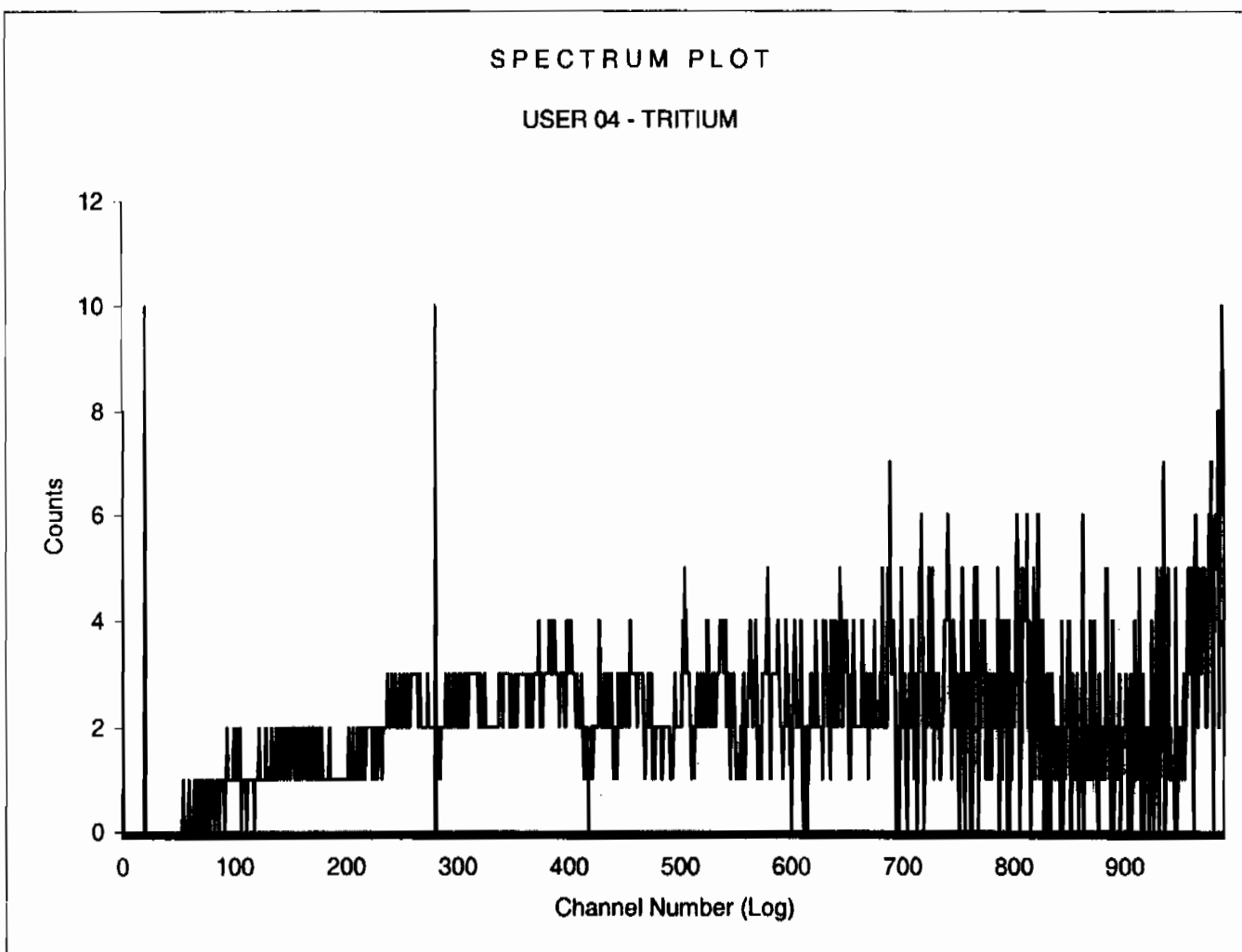
Sample Count Start Time:	19 Mar 2010 18:54:22		
Data Capture Date	19 Mar 2010 19:44:45		
User Filename	S04031921-11A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	21-11	50.00
H#, Total Counts:	125.2	2297	
Win1: Tritium - Start, End, Counts:	20	280	314
Win2: - Start, End, Counts:	0	990	2110

SPECTRUM PLOT

USER 04 - TRITIUM



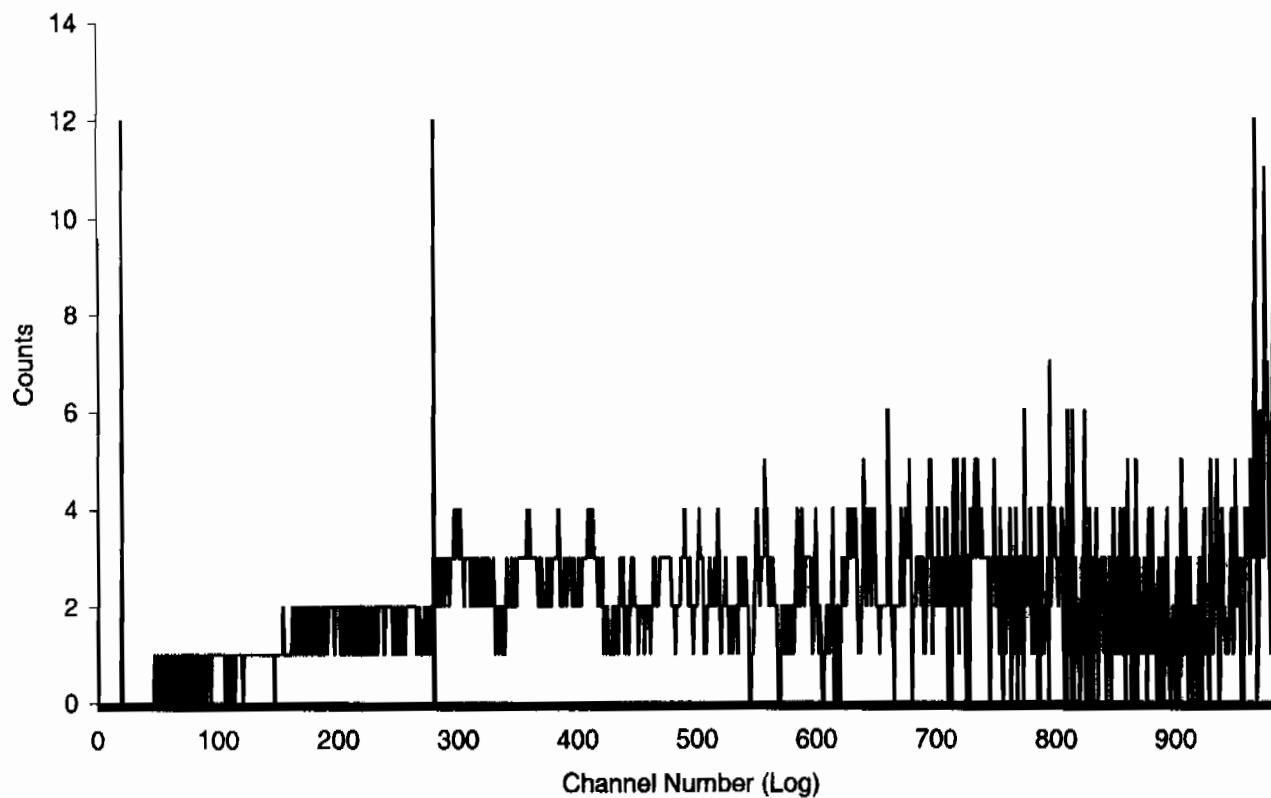
Sample Count Start Time:	19 Mar 2010 19:46:30		
Data Capture Date	19 Mar 2010 20:36:53		
User Filename	S04031921-12A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	21-12	50.00
H#, Total Counts:	125.7	2269	
Win1: Tritium - Start, End, Counts:	20	280	318
Win2: - Start, End, Counts:	0	990	2096



Sample Count Start Time:	19 Mar 2010 20:38:42		
Data Capture Date	19 Mar 2010 21:29:06		
User Filename	S04031919-1B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	13	19-1	50.00
H#, Total Counts:	125.6	2200	
Win1: Tritium - Start, End, Counts:	20	280	279
Win2: - Start, End, Counts:	0	990	2009

SPECTRUM PLOT

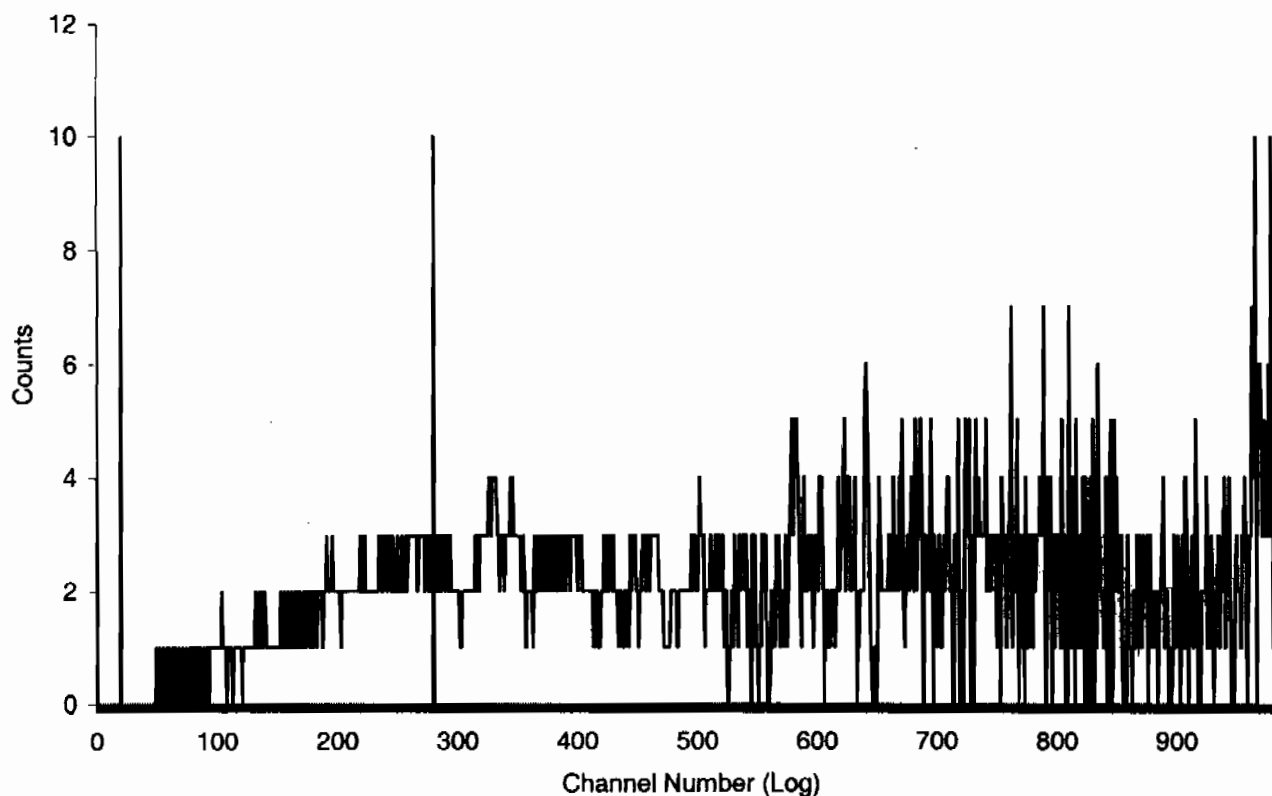
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 22:23:00		
Data Capture Date	19 Mar 2010 23:13:23		
User Filename	S04031919-3B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	15	19-3	50.00
H#, Total Counts:	125.8	2259	
Win1: Tritium - Start, End, Counts:	20	280	355
Win2: - Start, End, Counts:	0	990	2062

SPECTRUM PLOT

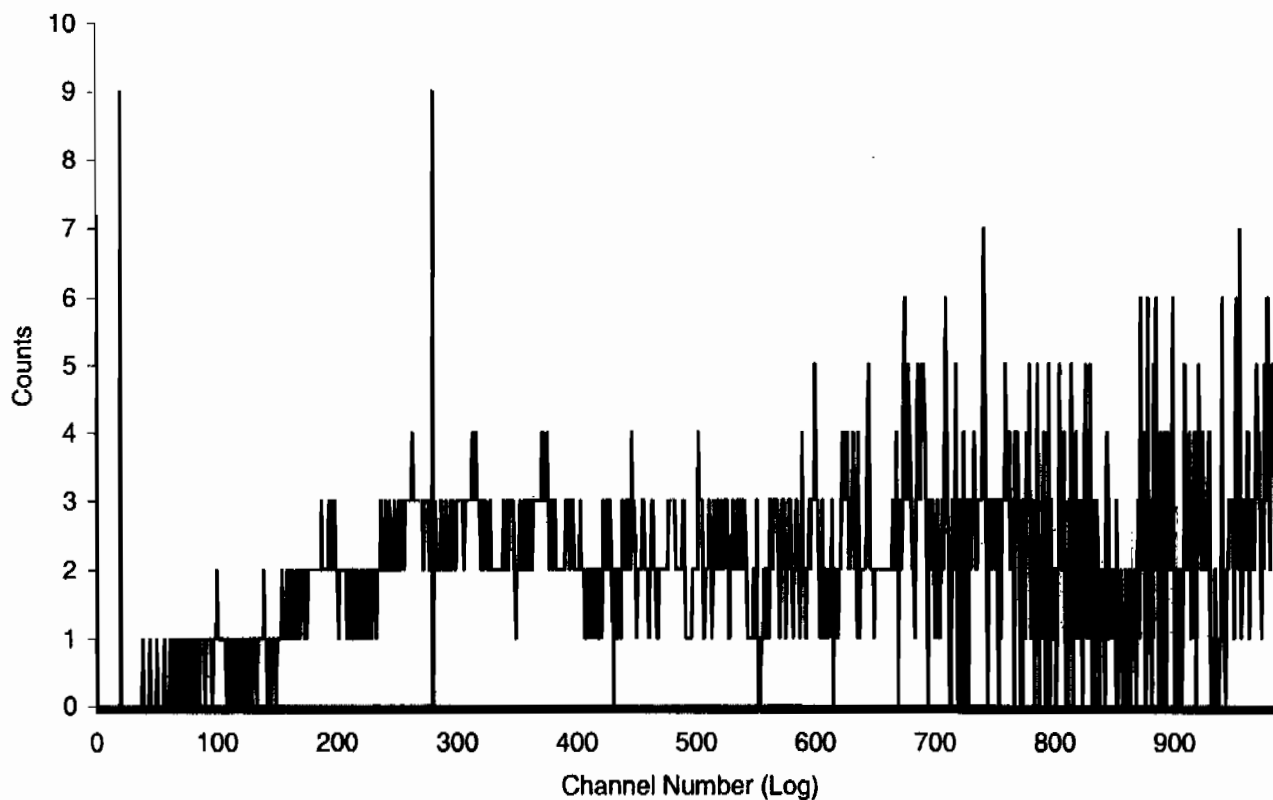
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 23:15:08		
Data Capture Date	20 Mar 2010 00:05:32		
User Filename	S04032019-4A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	16	19-4	50.00
H#, Total Counts:	124.7	2191	
Win1: Tritium - Start, End, Counts:	20	280	337
Win2: - Start, End, Counts:	0	990	1996

SPECTRUM PLOT

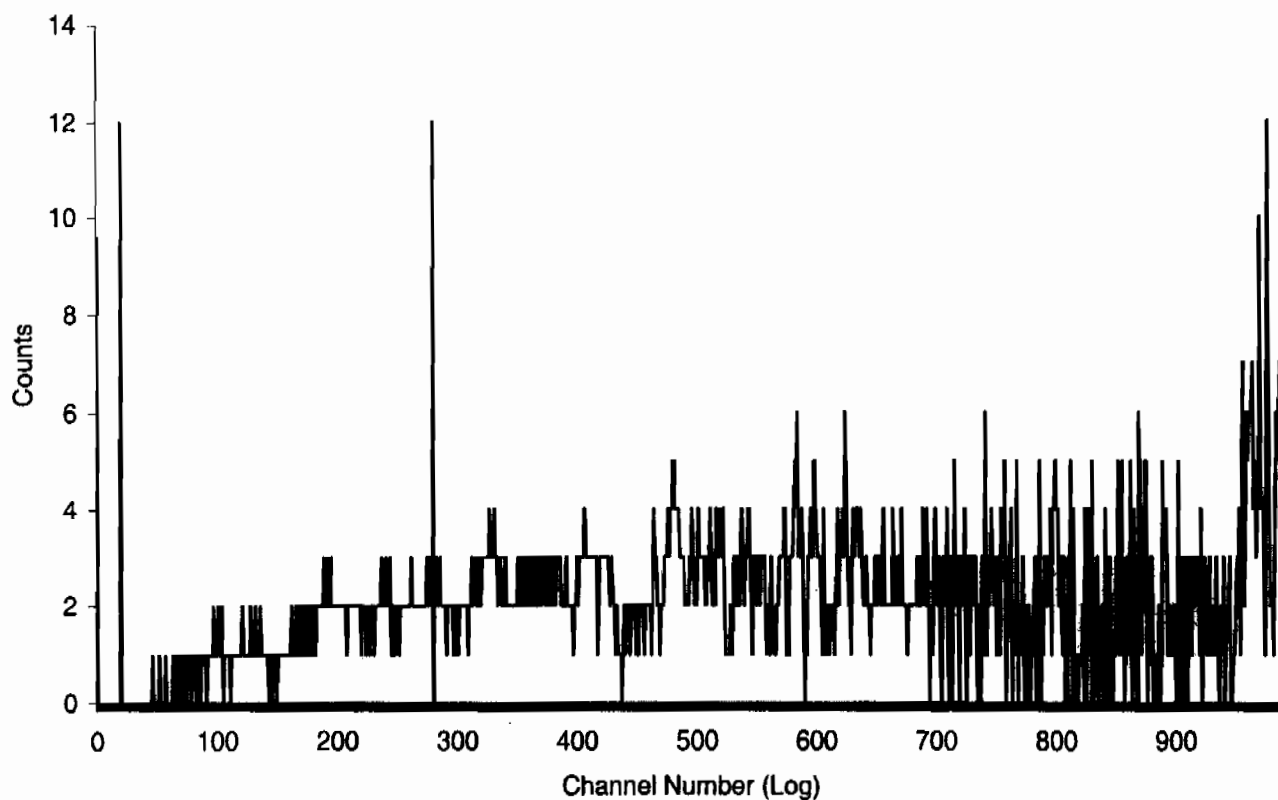
USER 04 - TRITIUM



Sample Count Start Time:	20 Mar 2010 00:07:17		
Data Capture Date	20 Mar 2010 00:57:40		
User Filename	S04032019-5A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	17	19-5	50.00
H#, Total Counts:	125.2	2239	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2047

SPECTRUM PLOT

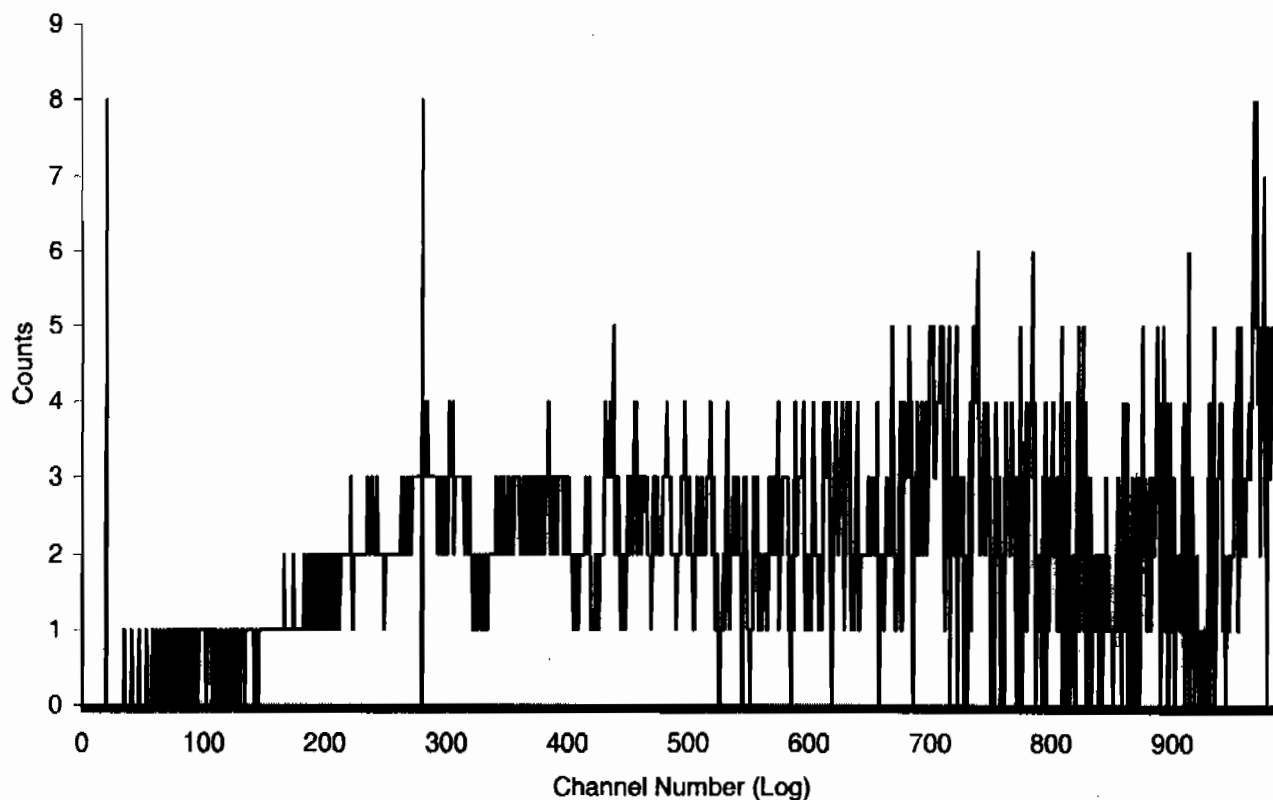
USER 04 - TRITIUM



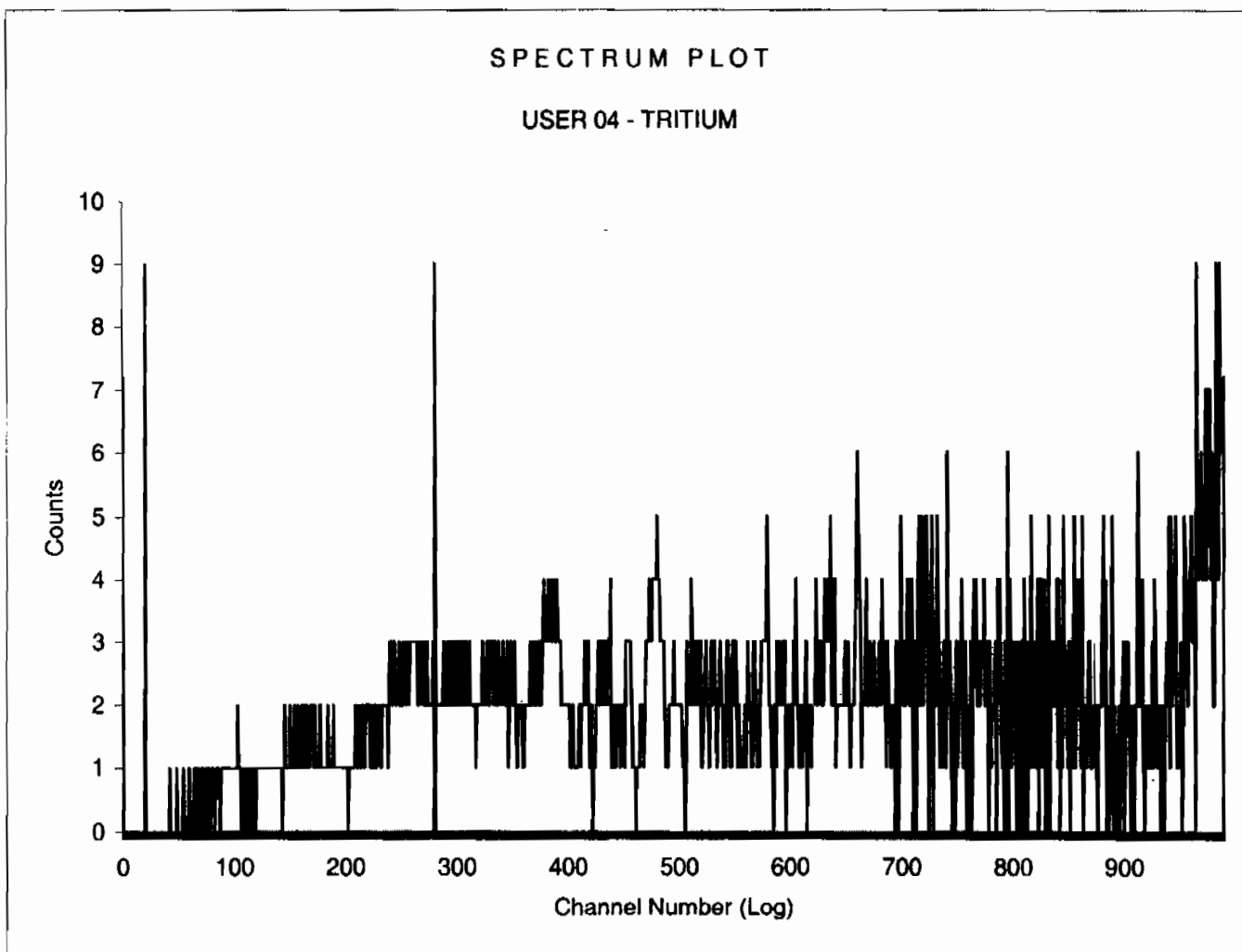
Sample Count Start Time:	20 Mar 2010 00:59:24		
Data Capture Date	20 Mar 2010 01:49:48		
User Filename	S04032019-6A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	18	19-6	50.00
H#, Total Counts:	124.6	2180	
Win1: Tritium - Start, End, Counts:	20	280	300
Win2: - Start, End, Counts:	0	990	2013

SPECTRUM PLOT

USER 04 - TRITIUM



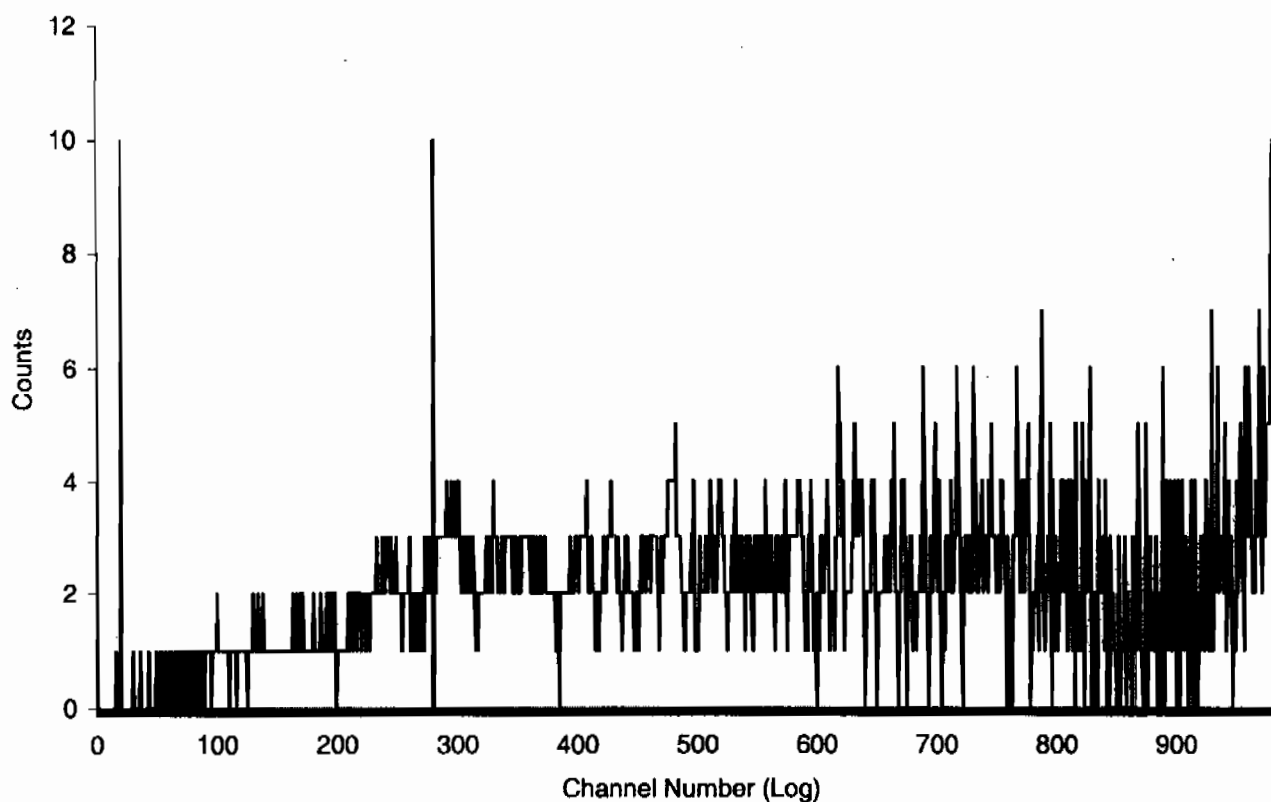
Sample Count Start Time:	20 Mar 2010 01:51:32		
Data Capture Date	20 Mar 2010 02:41:56		
User Filename	S04032019-7A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	19	19-7	50.00
H#, Total Counts:	125.6	2148	
Win1: Tritium - Start, End, Counts:	20	280	300
Win2: - Start, End, Counts:	0	990	1964



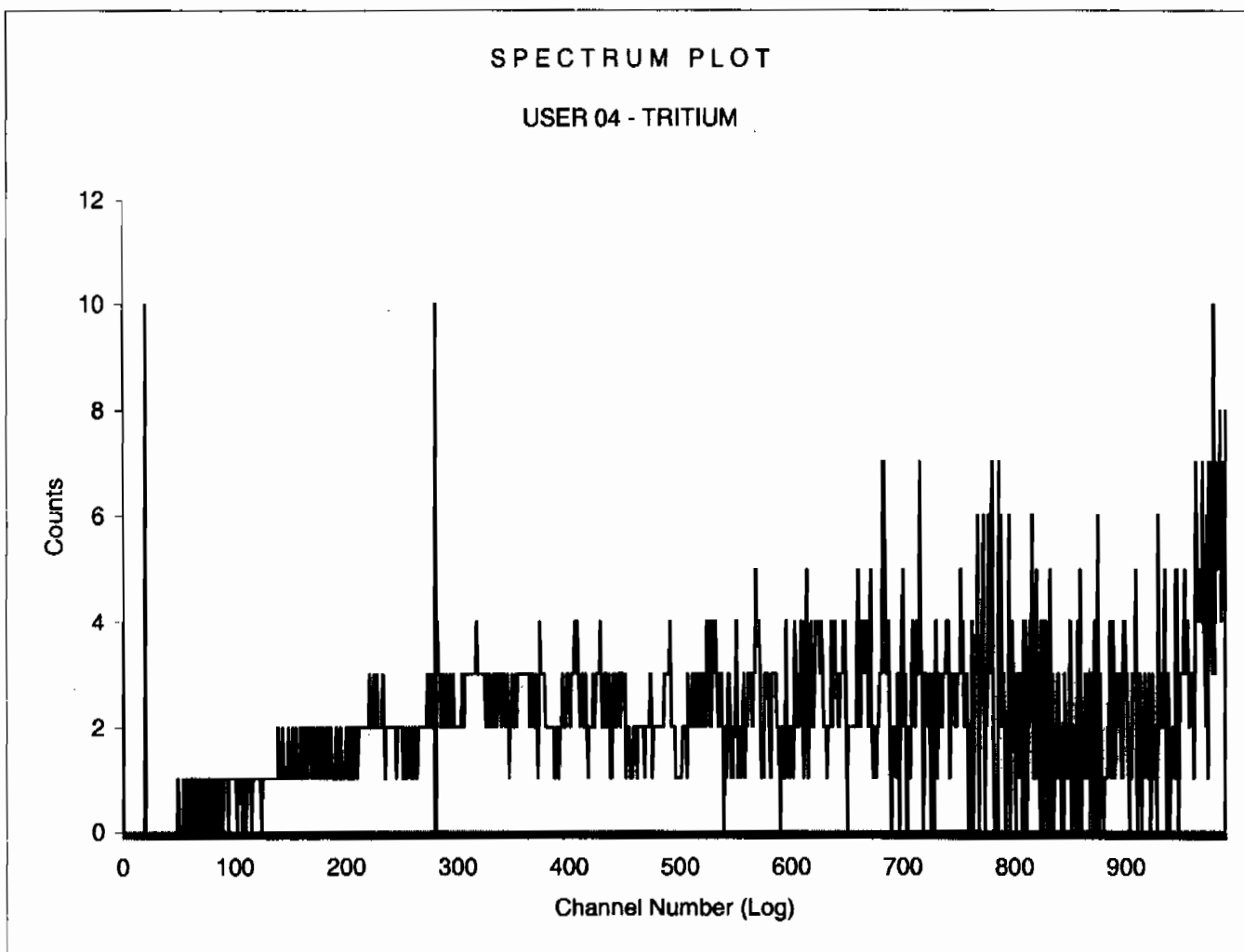
Sample Count Start Time:	20 Mar 2010 02:43:39		
Data Capture Date	20 Mar 2010 03:34:03		
User Filename	S04032019-8A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	20	19-8	50.00
H#, Total Counts:	125.7	2333	
Win1: Tritium - Start, End, Counts:	20	280	300
Win2: - Start, End, Counts:	0	990	2137

SPECTRUM PLOT

USER 04 - TRITIUM



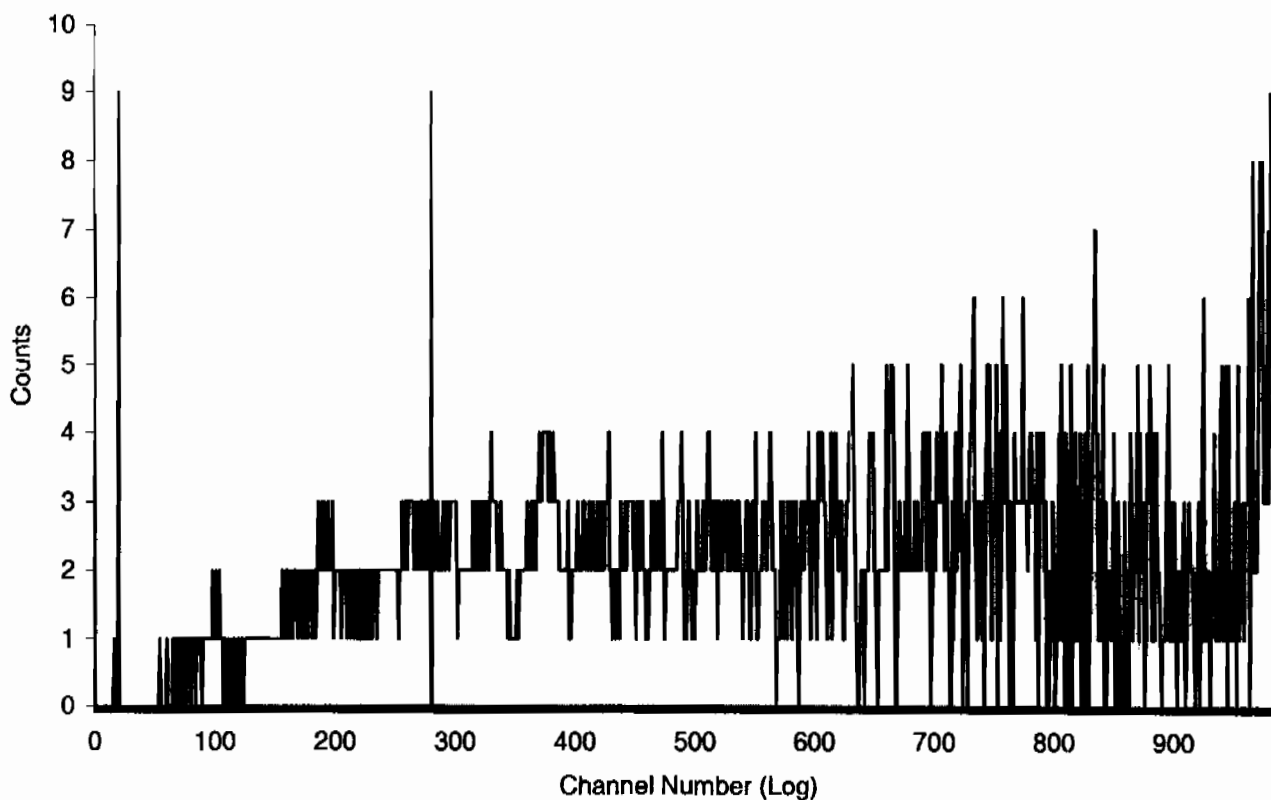
Sample Count Start Time:	20 Mar 2010 03:35:46		
Data Capture Date	20 Mar 2010 04:26:10		
User Filename	S04032019-9A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	21	19-9	50.00
H#, Total Counts:	124.0	2292	
Win1: Tritium - Start, End, Counts:	20	280	302
Win2: - Start, End, Counts:	0	990	2080



Sample Count Start Time:	20 Mar 2010 04:27:53		
Data Capture Date	20 Mar 2010 05:18:18		
User Filename	S04032019-10A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	22	19-10	50.00
H#, Total Counts:	125.9	2275	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2066

SPECTRUM PLOT

USER 04 - TRITIUM



ID:H-3

19 MAR 2010 10:46

USER: 3

COMMENT:SILVER

PRESET TIME : 15.00

DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT

TWO PHASE : NO ADC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 20.0 - 280.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

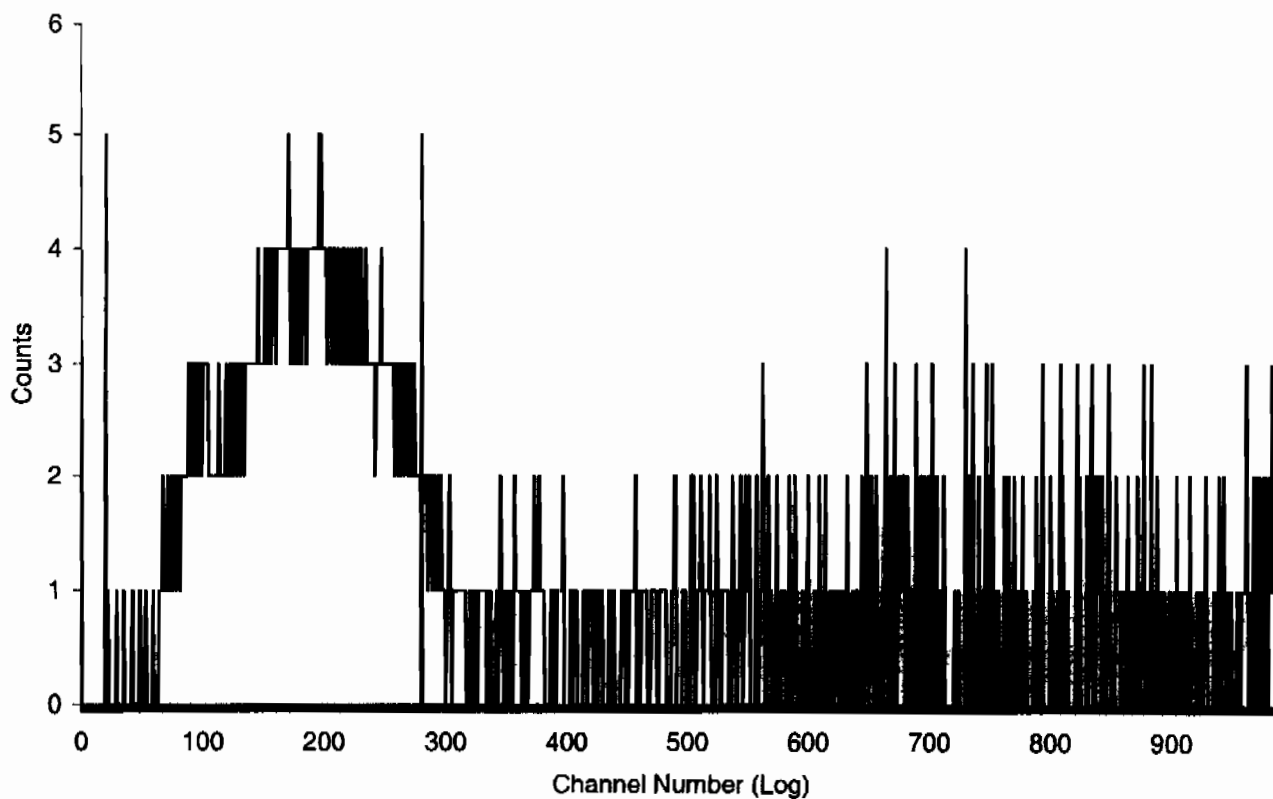
SAM NO	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	60-1	15.00	125.1	43.00	7.91	80.87	5.76	0.67	15.83

JP
QPQP

Sample Count Start Time:	19 Mar 2010 10:47:35		
Data Capture Date	19 Mar 2010 11:02:59		
User Filename	S03031960-1A.XLS		
	U03031960-1A.XLS		
Spectrum Type	Log Counts		
User Number	03		
User Id	H-3		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	60-1	15.00
H#, Total Counts:	125.1	1213	
Win1: Tritium - Start, End, Counts:	20	280	647
Win2: - Start, End, Counts:	0	990	1158

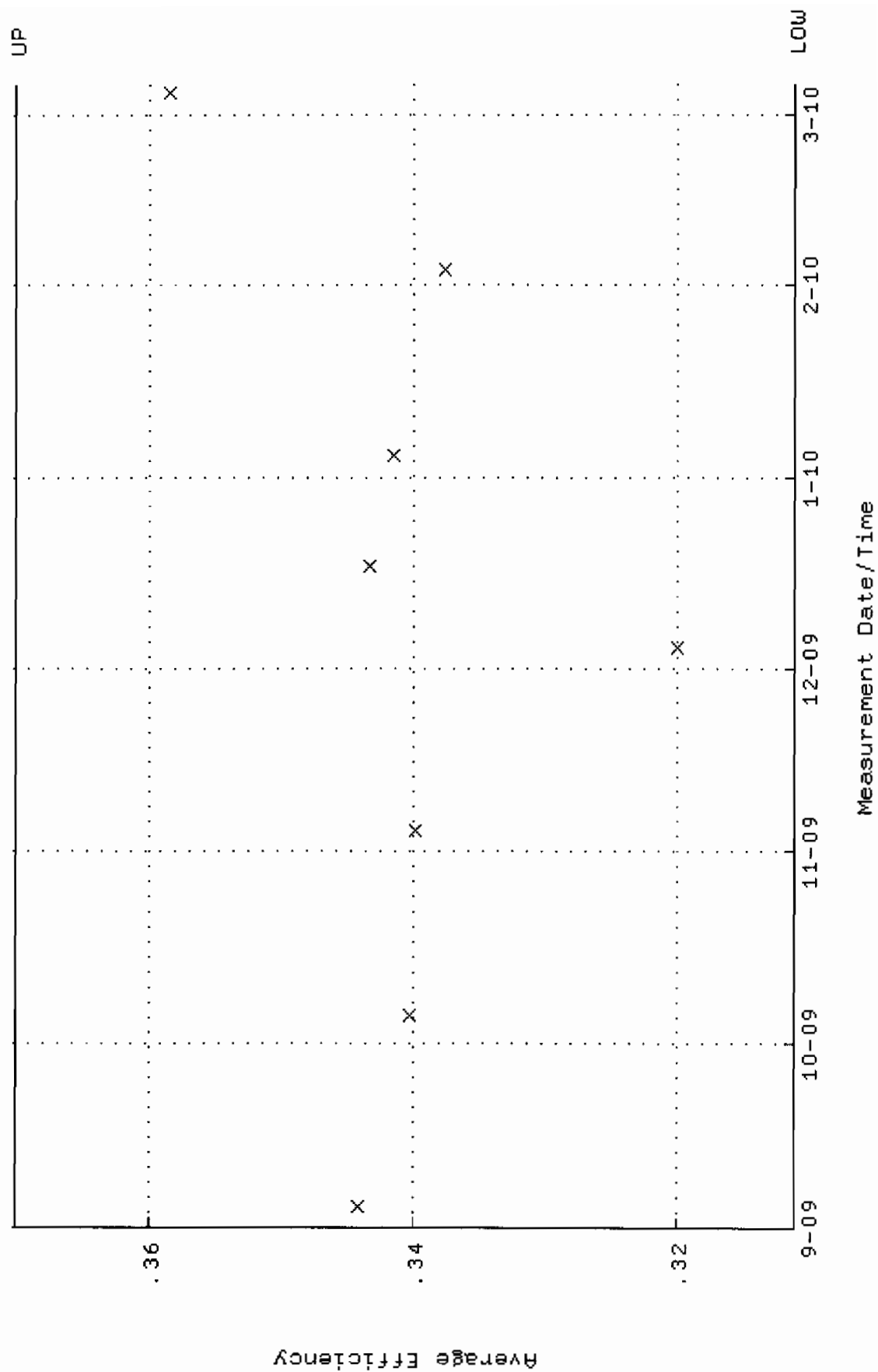
SPECTRUM PLOT

USER 03 - H-3

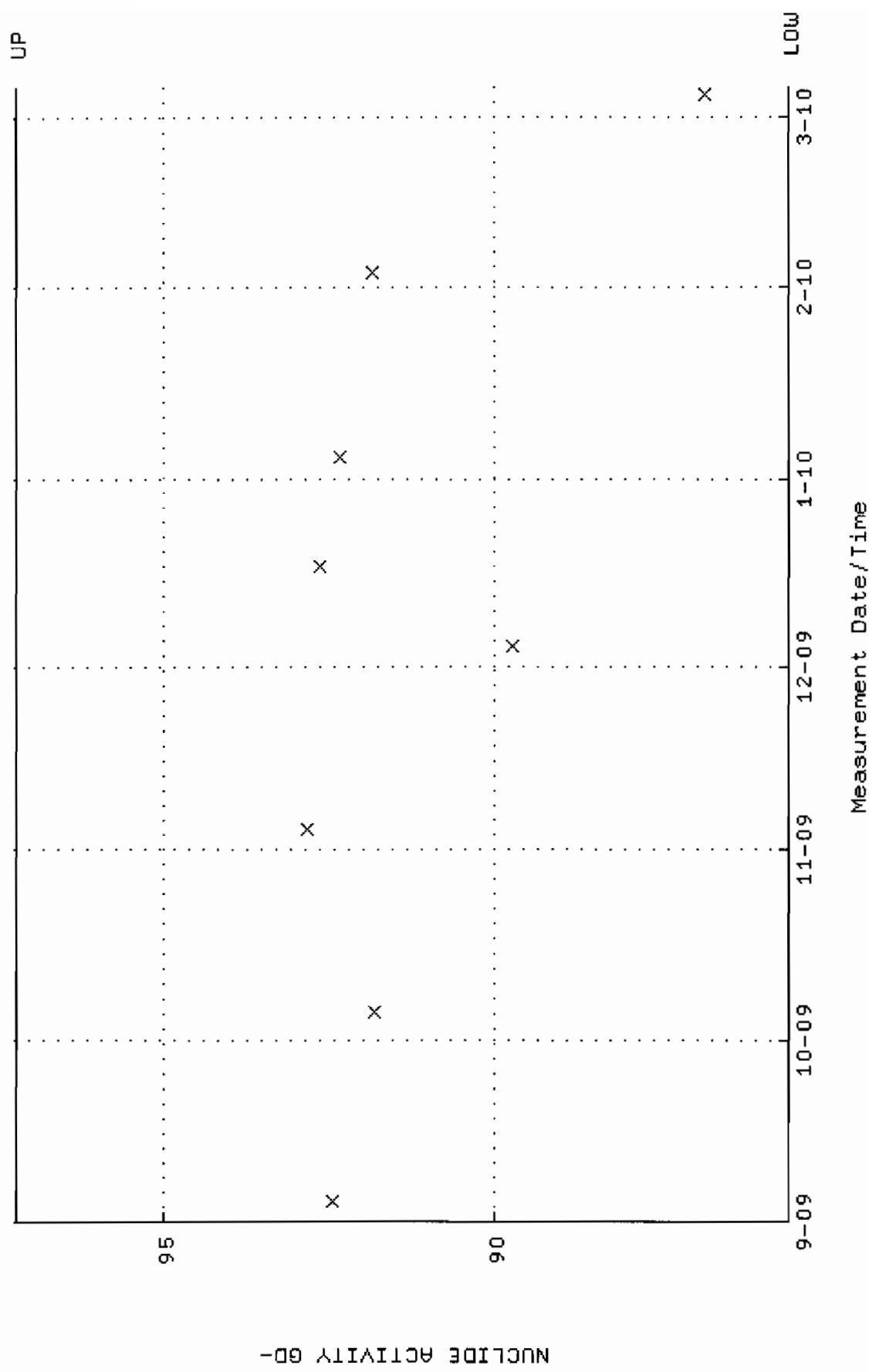


BACKGROUND AND EFFICIENCY DATA

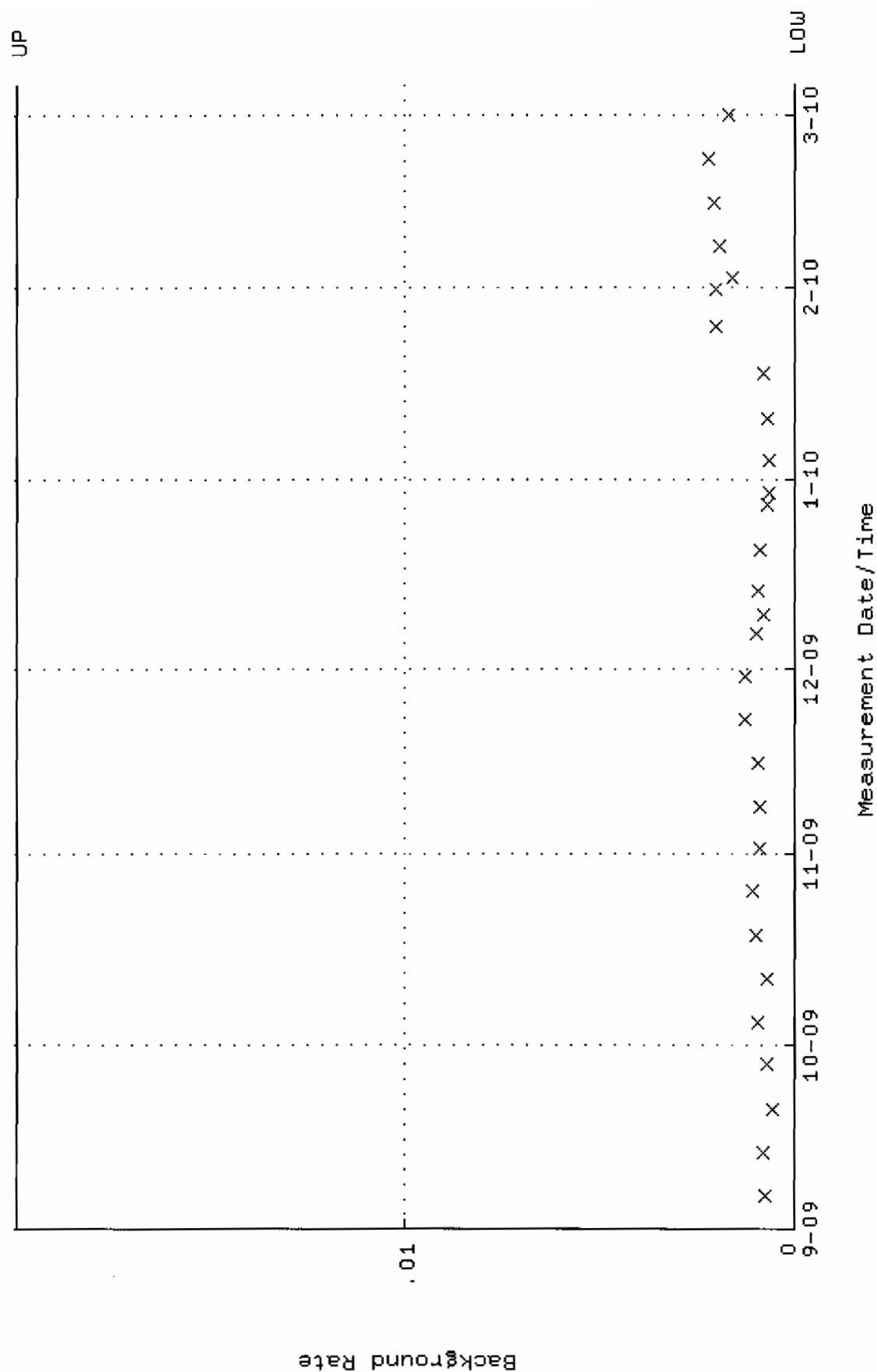
QA filename : DKA100:[ENV_ALPHA,QA,W]W013.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.311179 through 0.370113



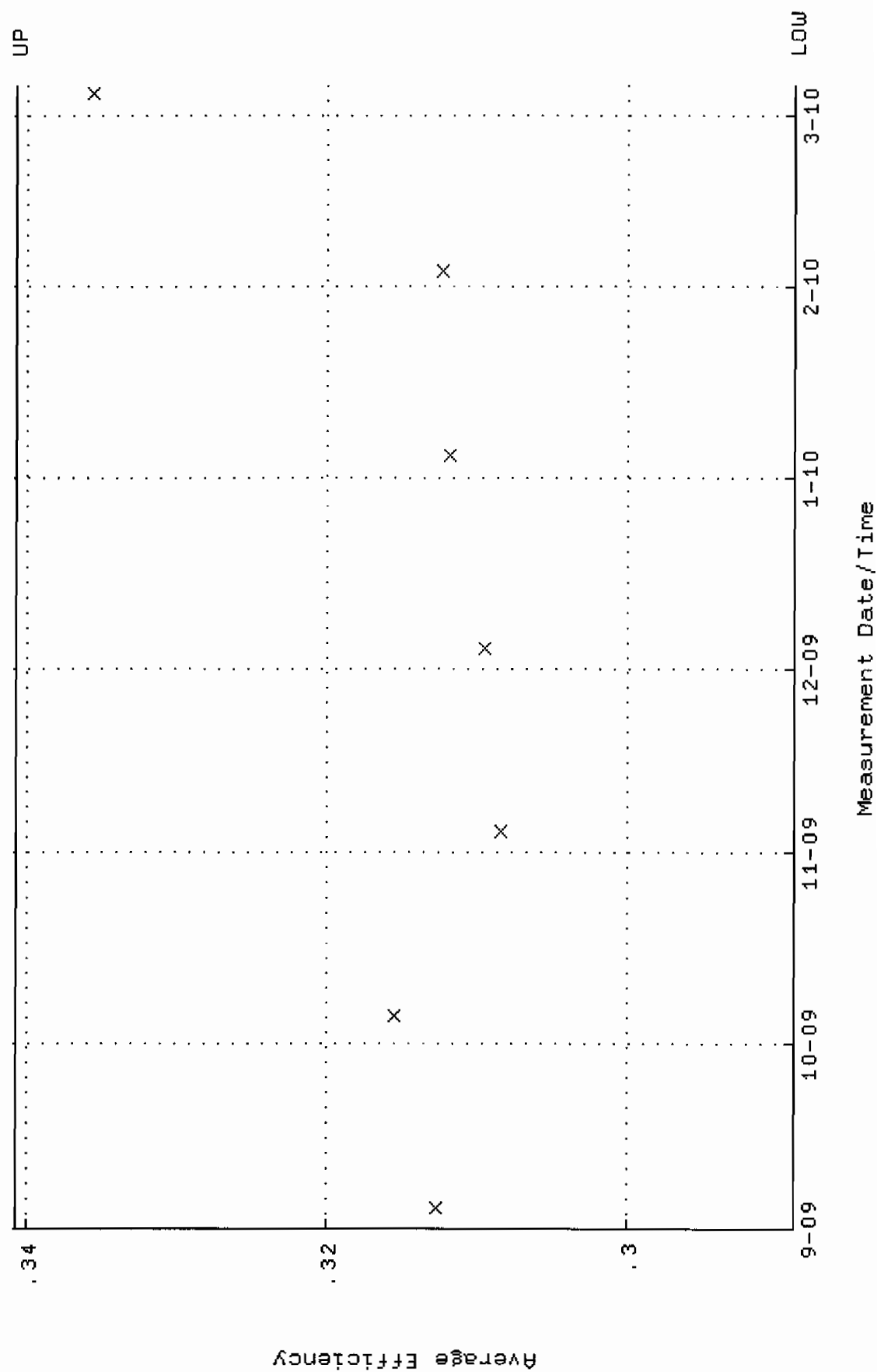
QA filename : DKA100:[ENV-ALPHA.QA.W]W013.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5651 through 97.2315



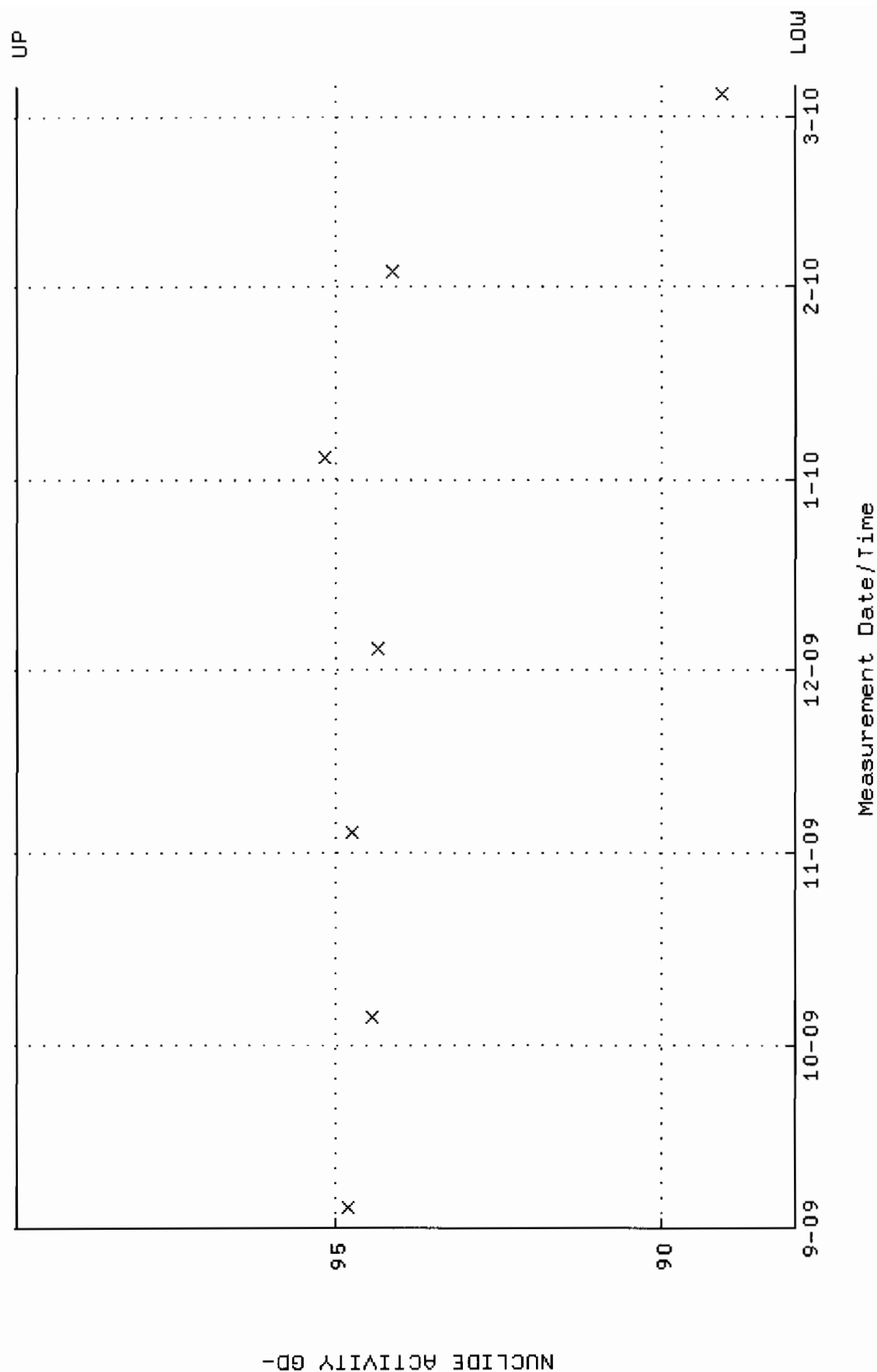
QA filename : DKA100:[ENV_ALPHA.QA.B]B013.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W014.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.288973 through 0.340739



QA filename : DKA100:[ENV_ALPHA.QA.W]W014.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.9529 through 99.8771



UP

Background Rate

Measurement Date/Time

LOW

3-10

2-10

1-10

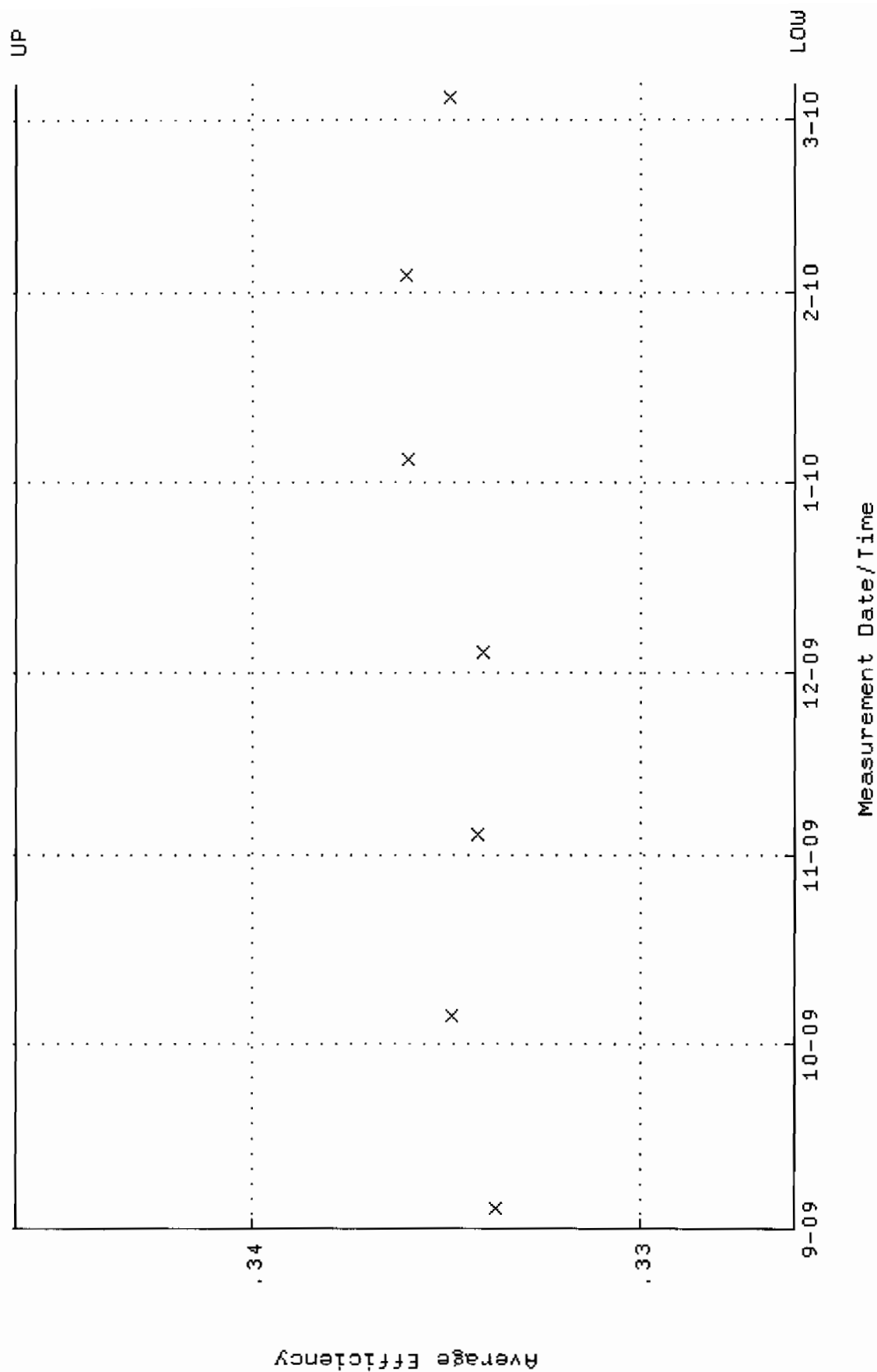
12-09

11-09

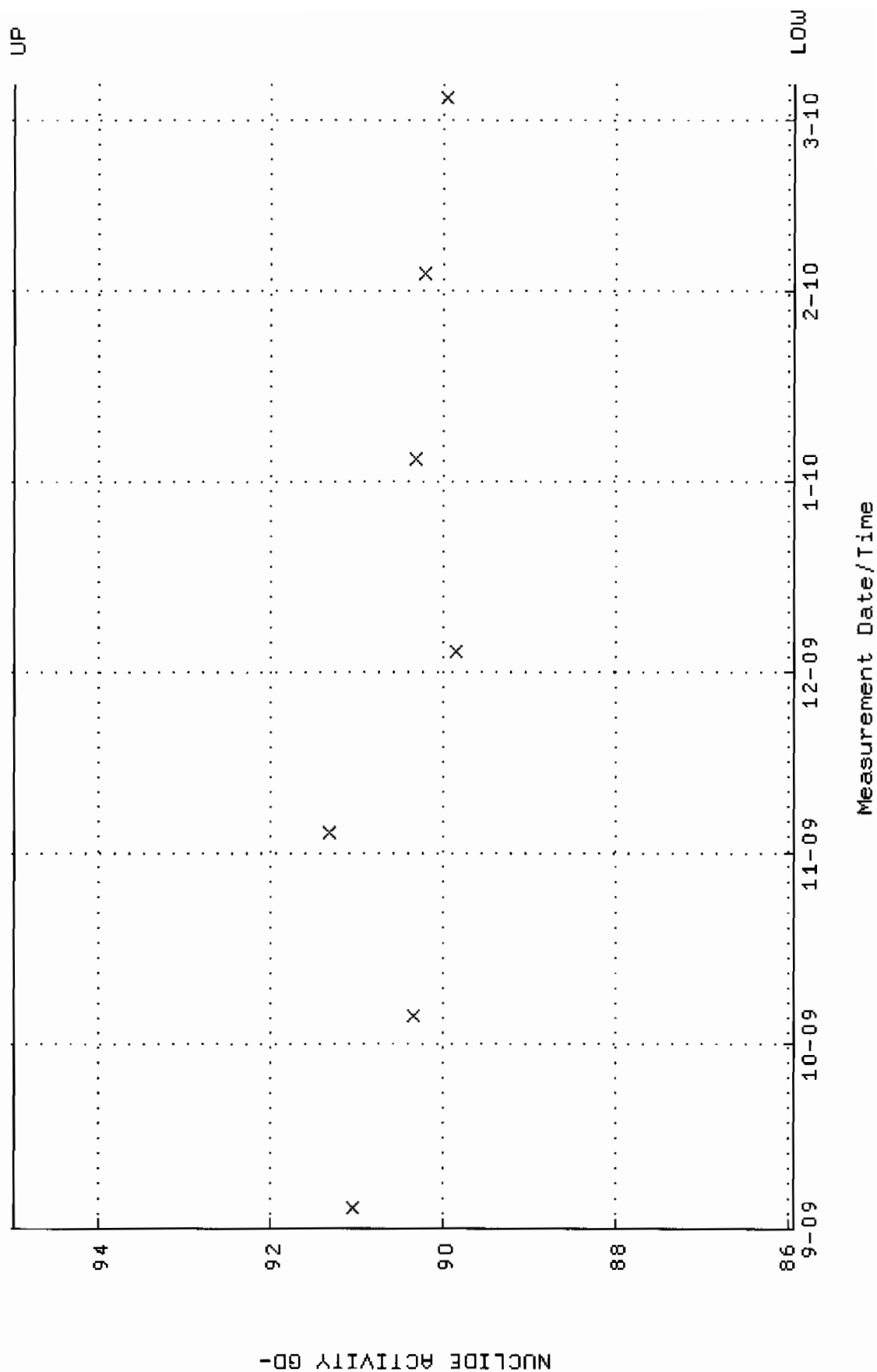
10-09

9-09

QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.326058 through 0.346058



QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.9280 through 94.9730

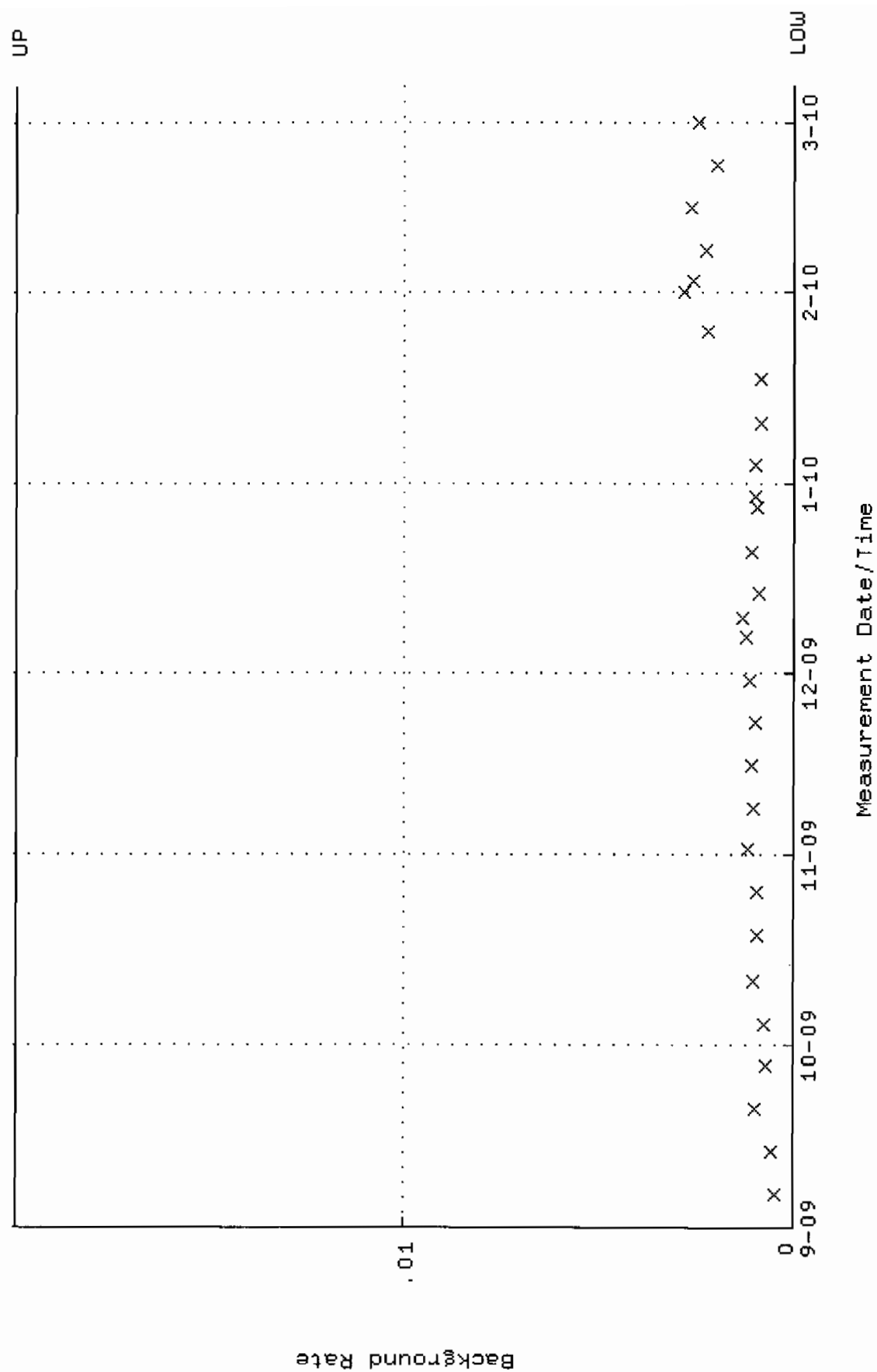


QA filename : DKA100:[ENV_ALPHA.QA.B]B016.QAF;2

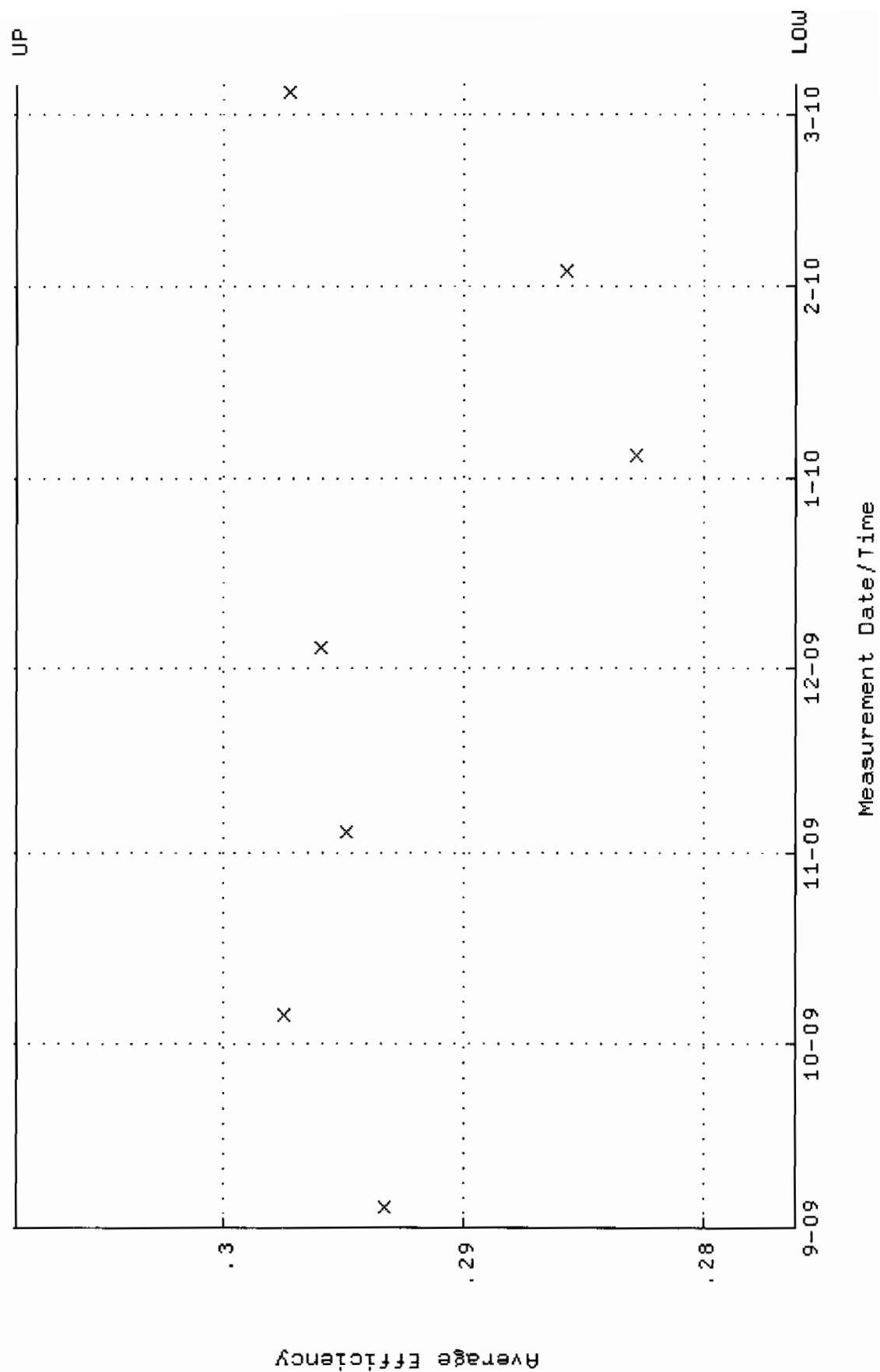
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:02 through 6-MAR-2010 12:00:00

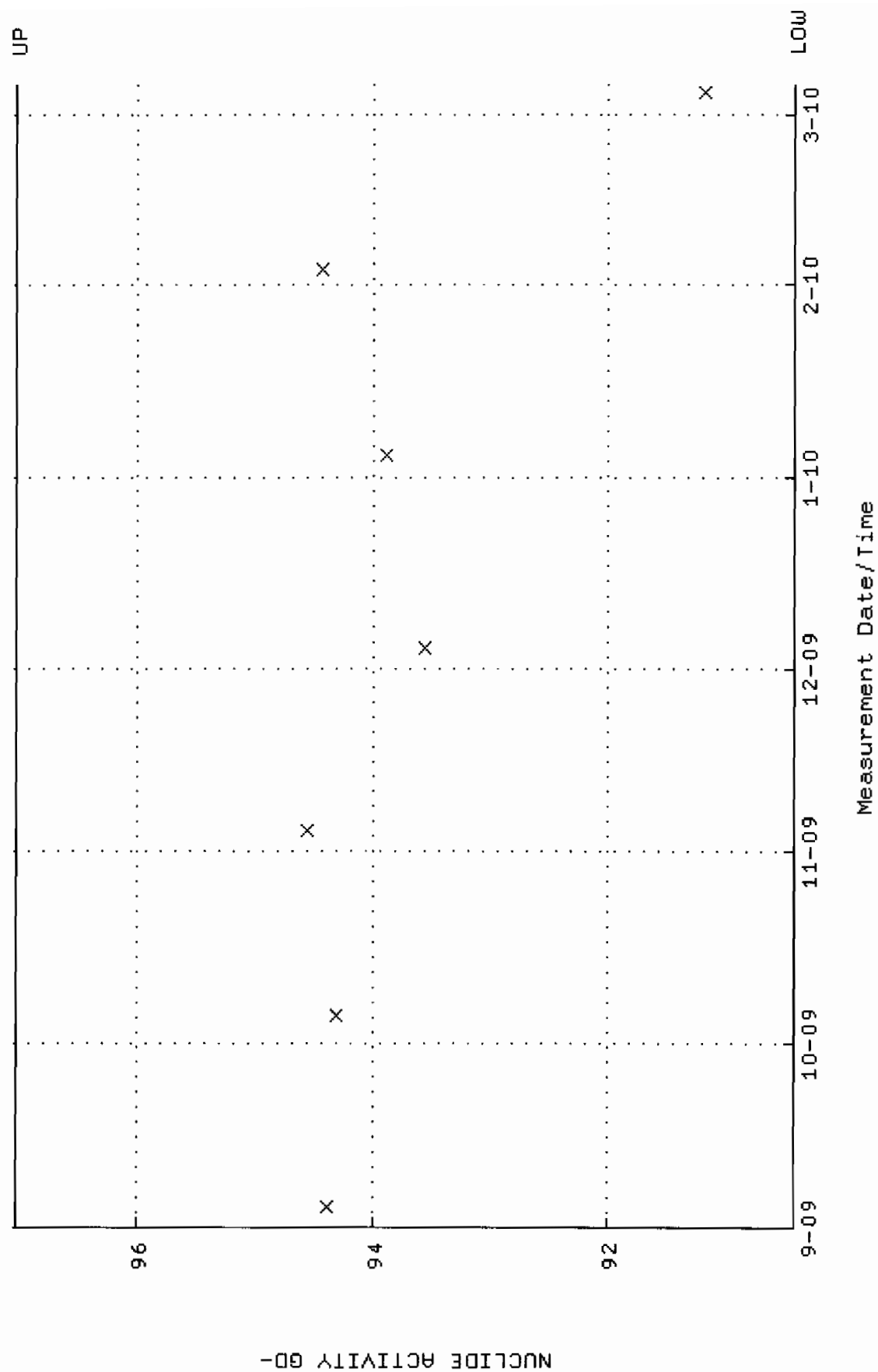
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



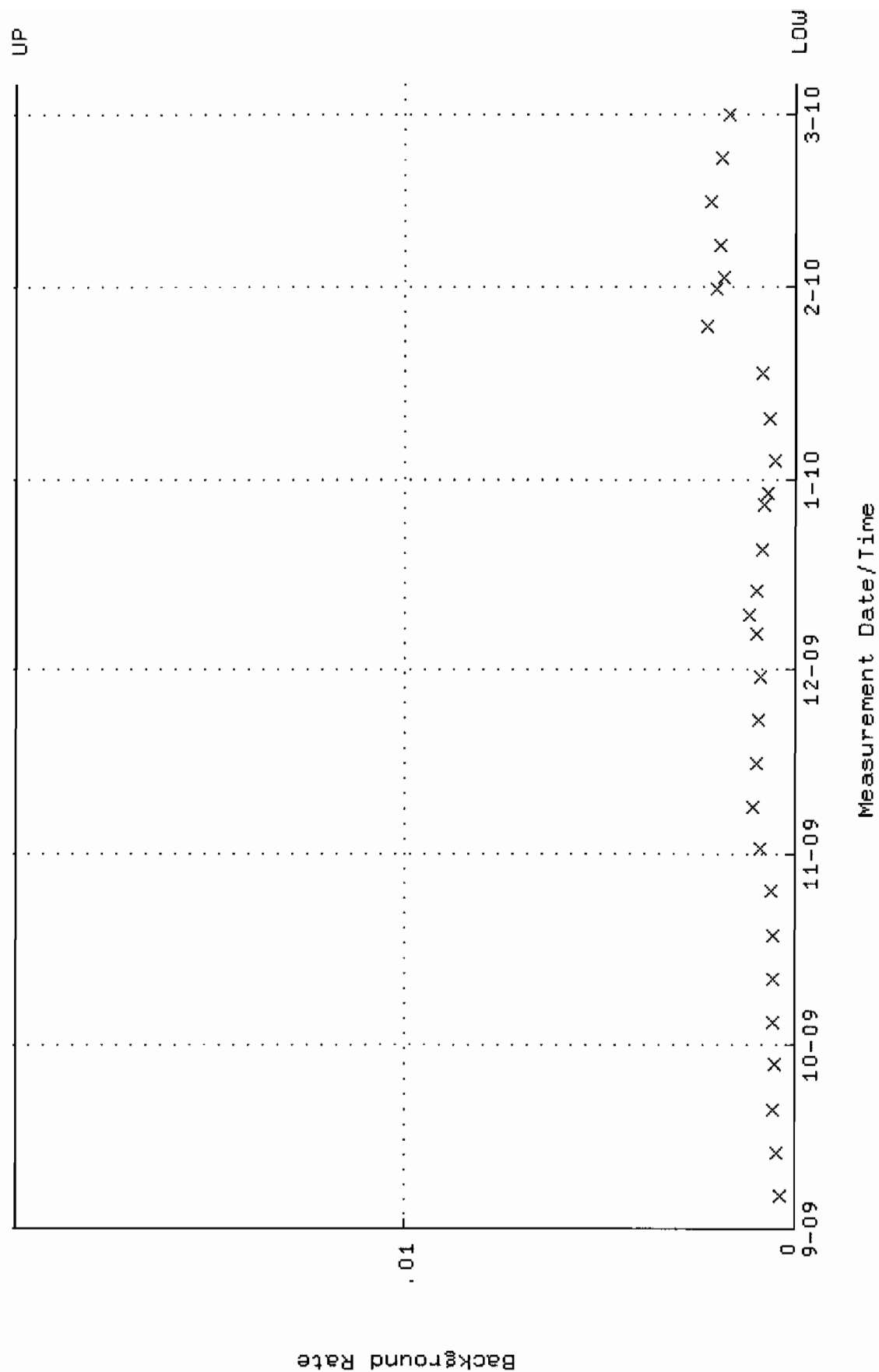
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.276155 through 0.308631



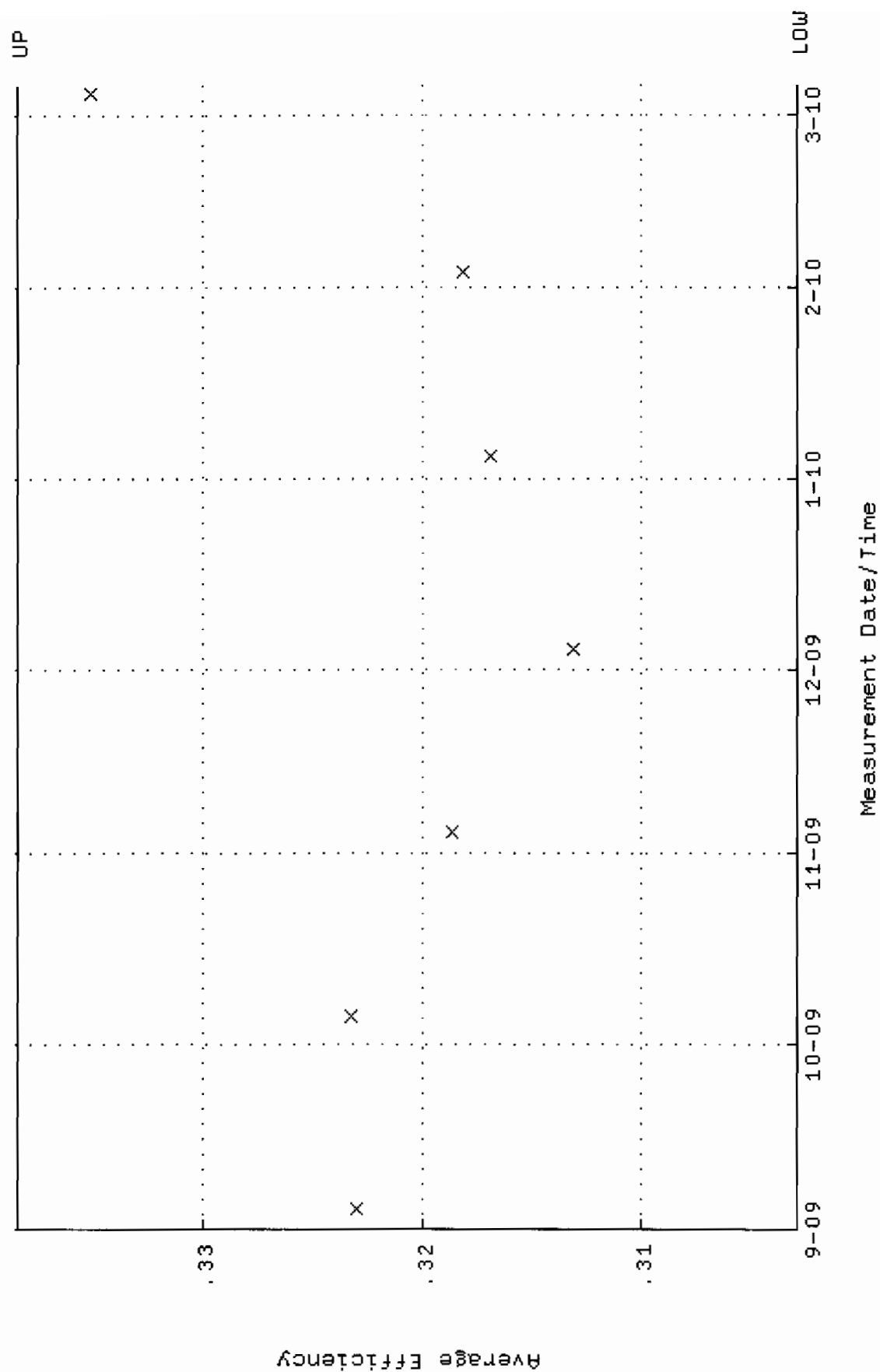
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.4251 through 97.0169



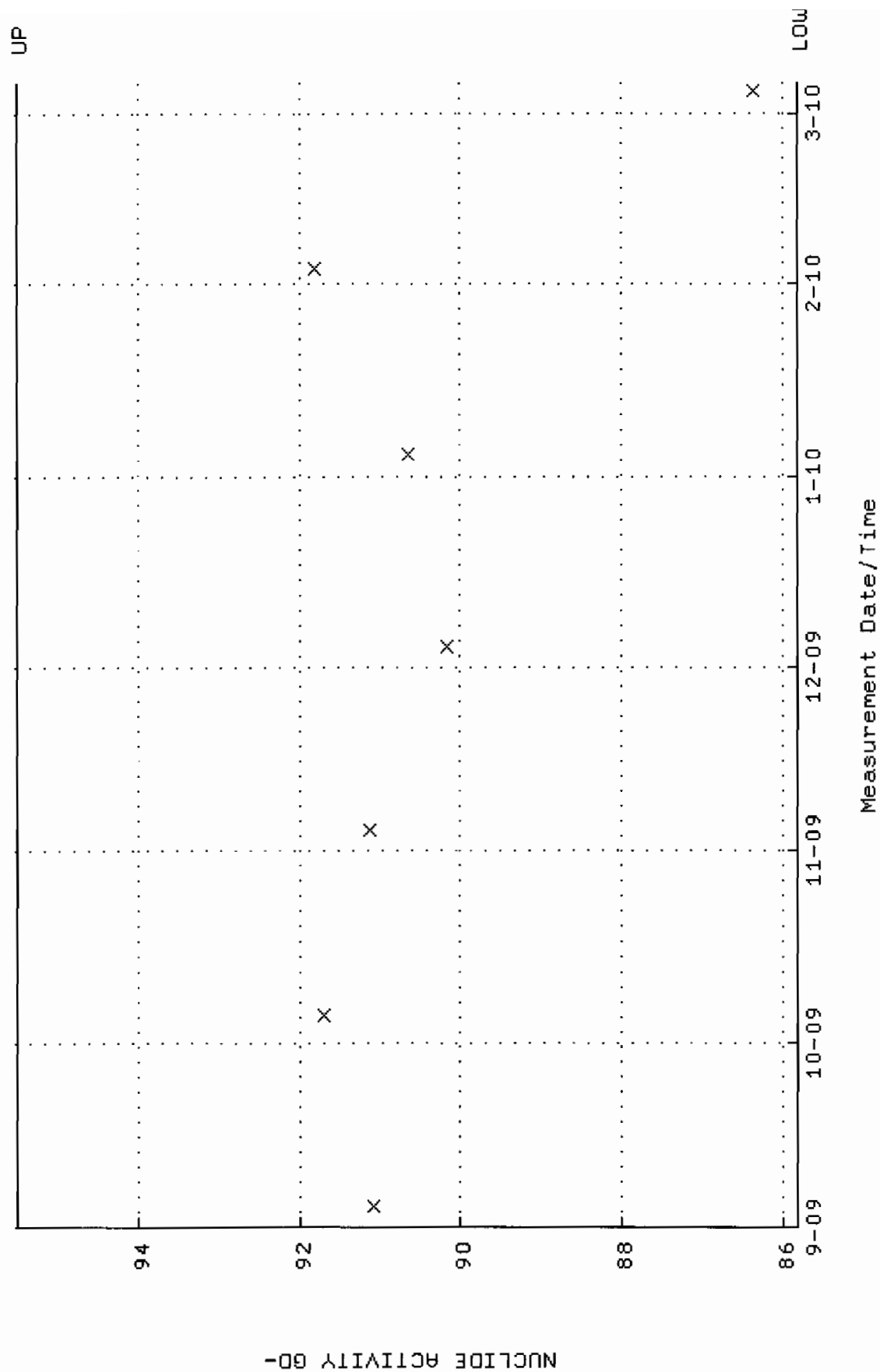
QA filename : DKA100:[ENV_ALPHA.QA.B]B017.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



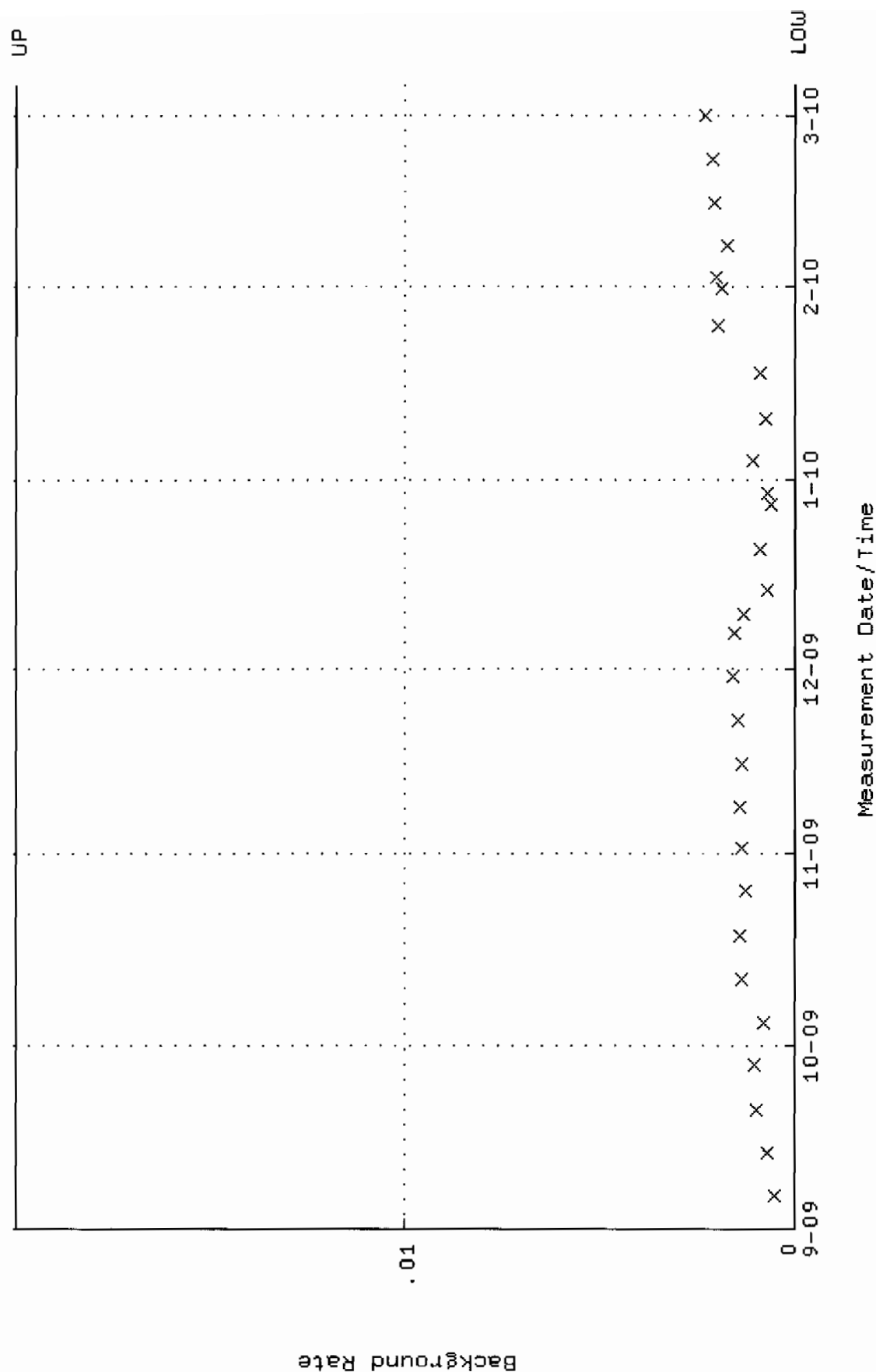
QA filename : DKA100:[ENV_ALPHA.QA.w]W018.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.302900 through 0.338496



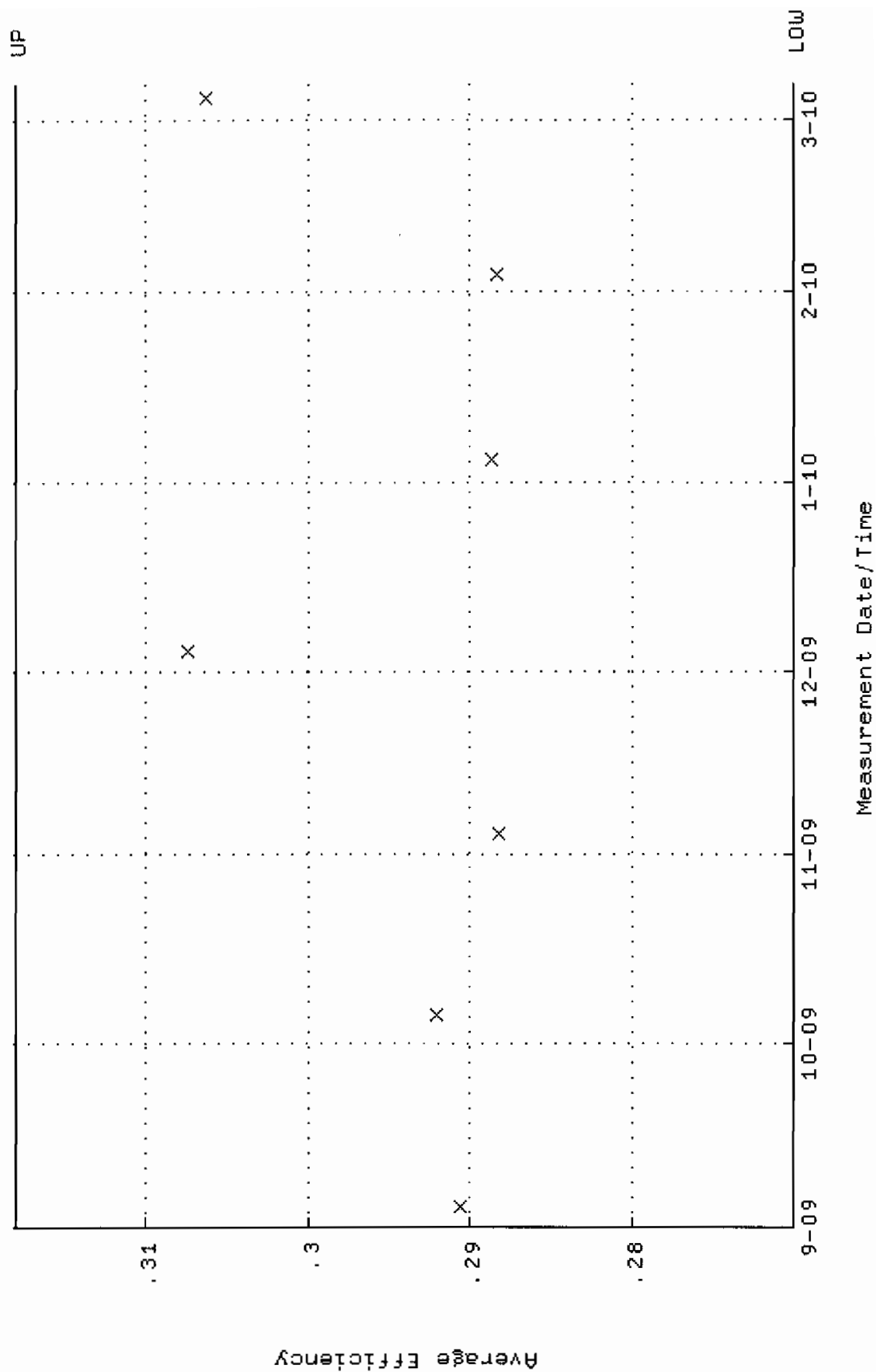
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.8111 through 95.5079



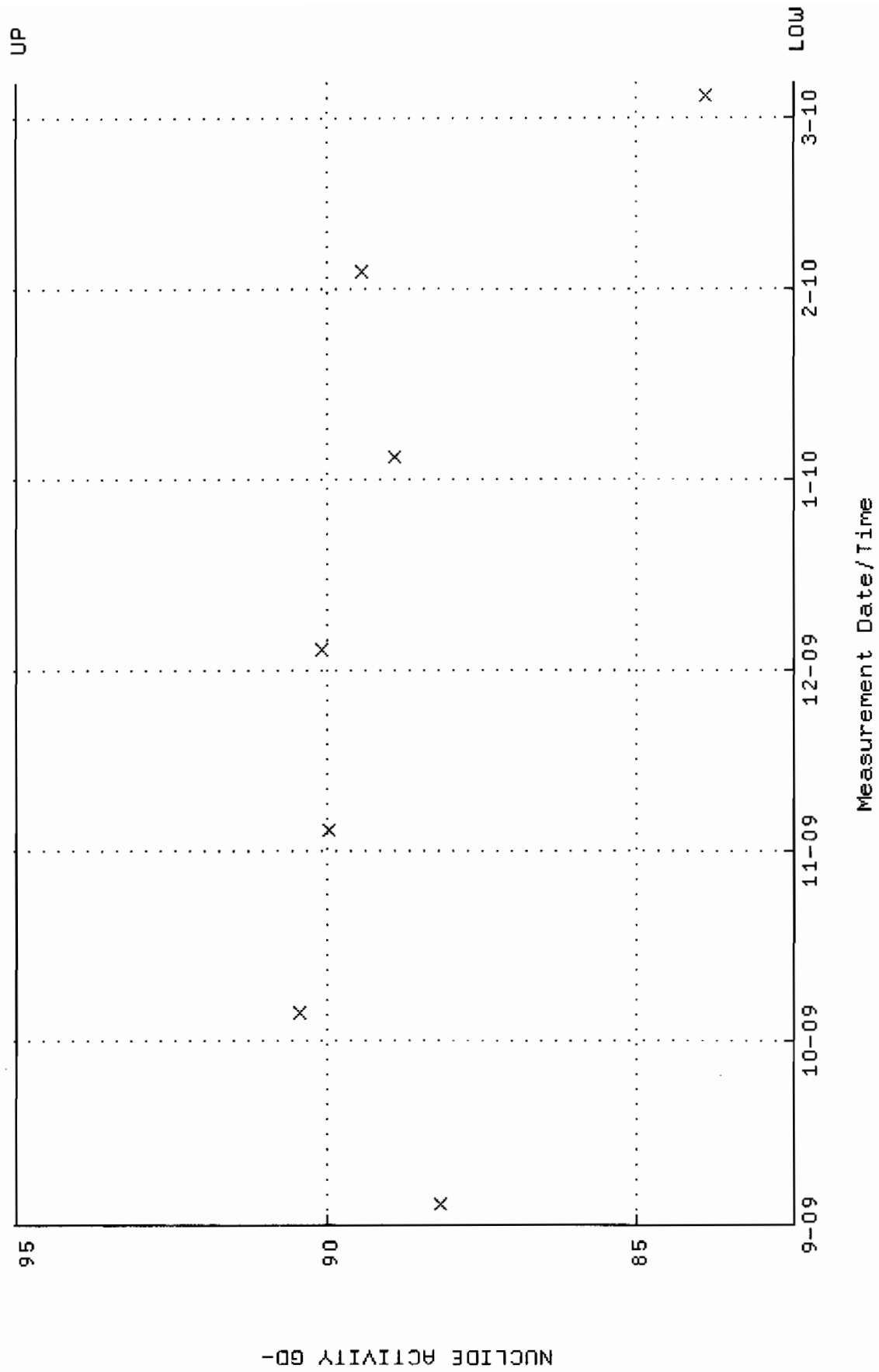
QA filename : DKA100:[ENV_ALPHA.QA.B]B018.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



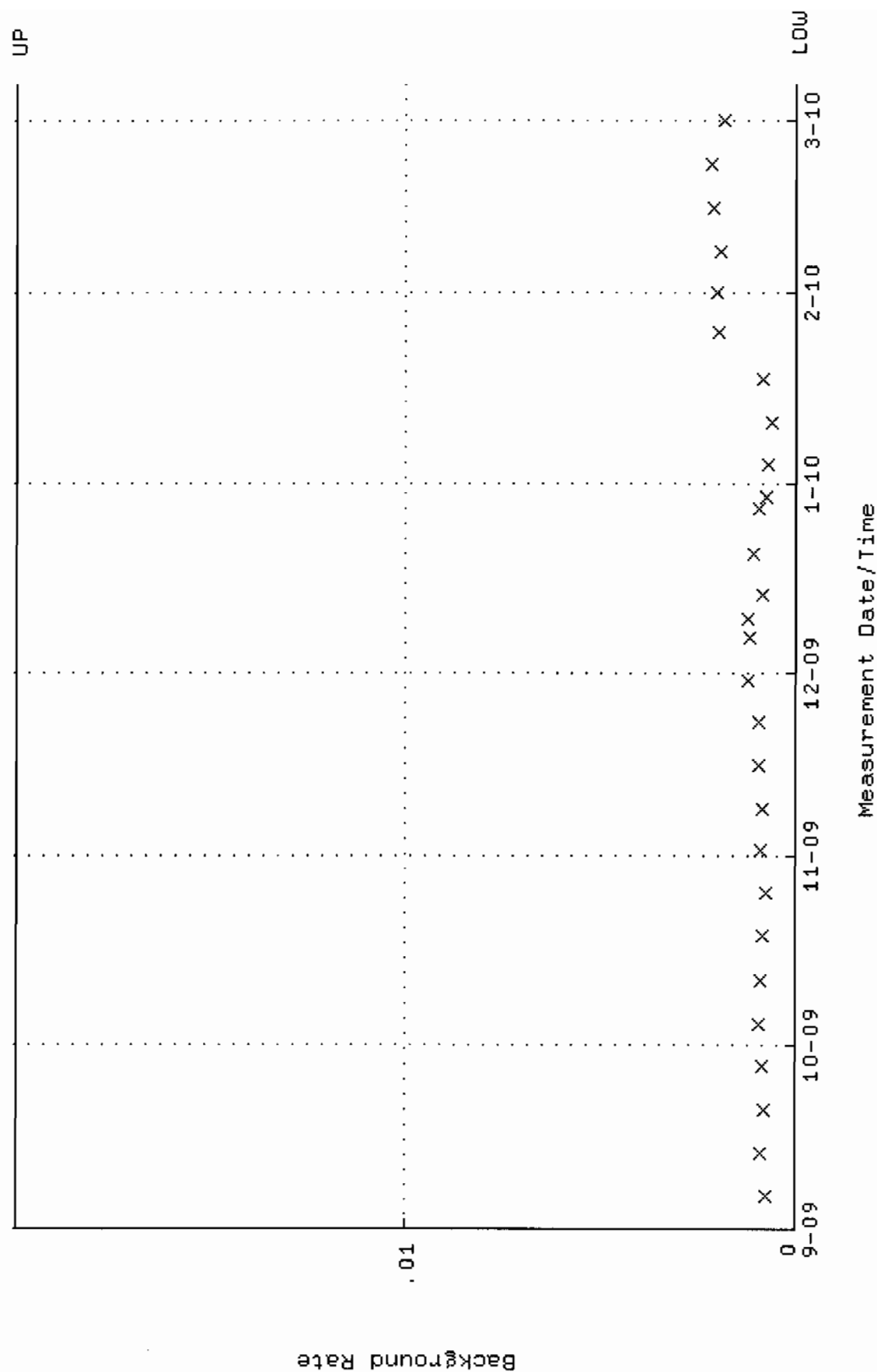
QA filename : DKA100:[ENV_ALPHA.QA.W]W019.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.270093 through 0.318005



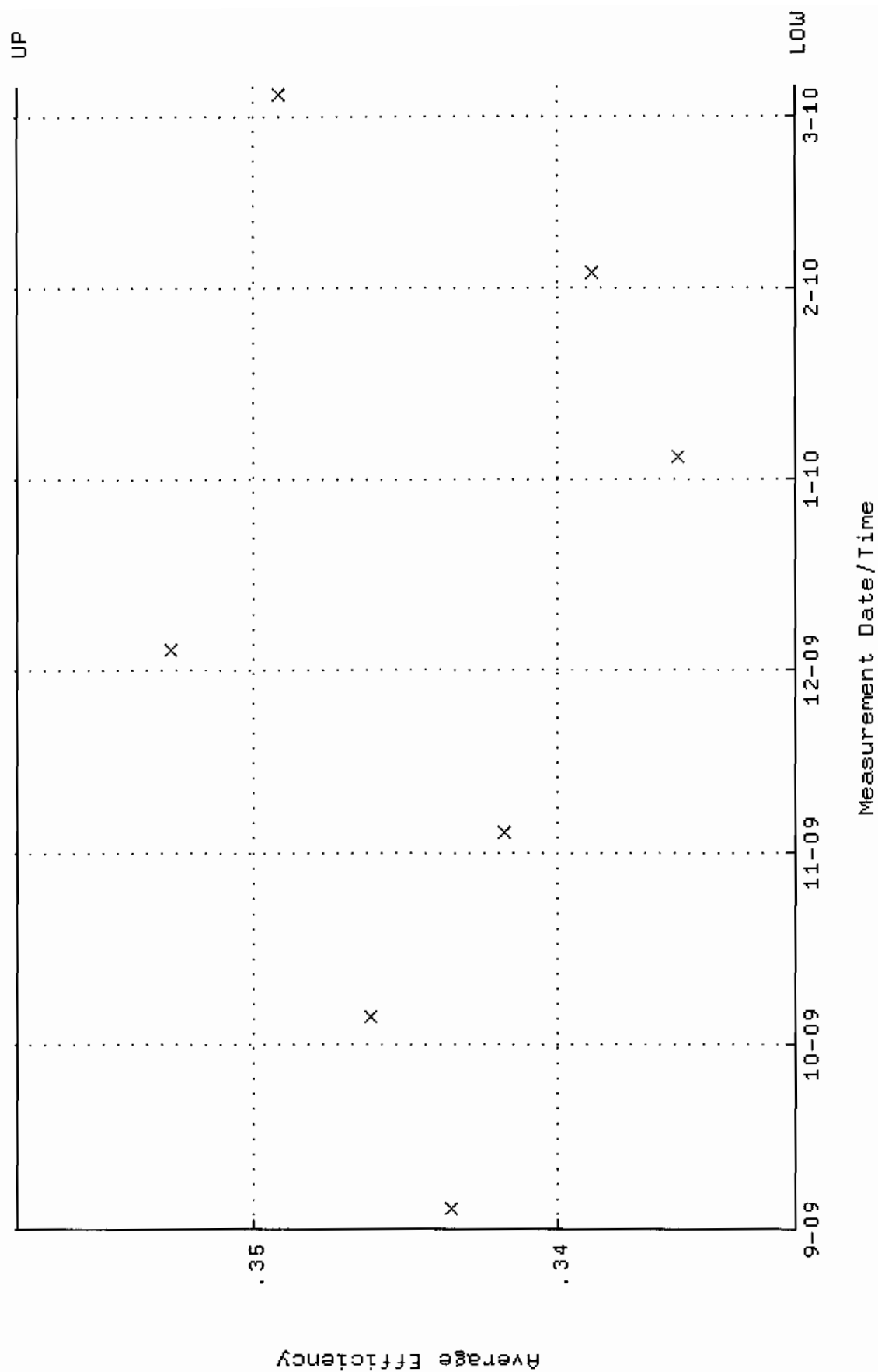
QA filename : DKA100:[ENV_ALPHA.QA.W]W019.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4717 through 95.0017



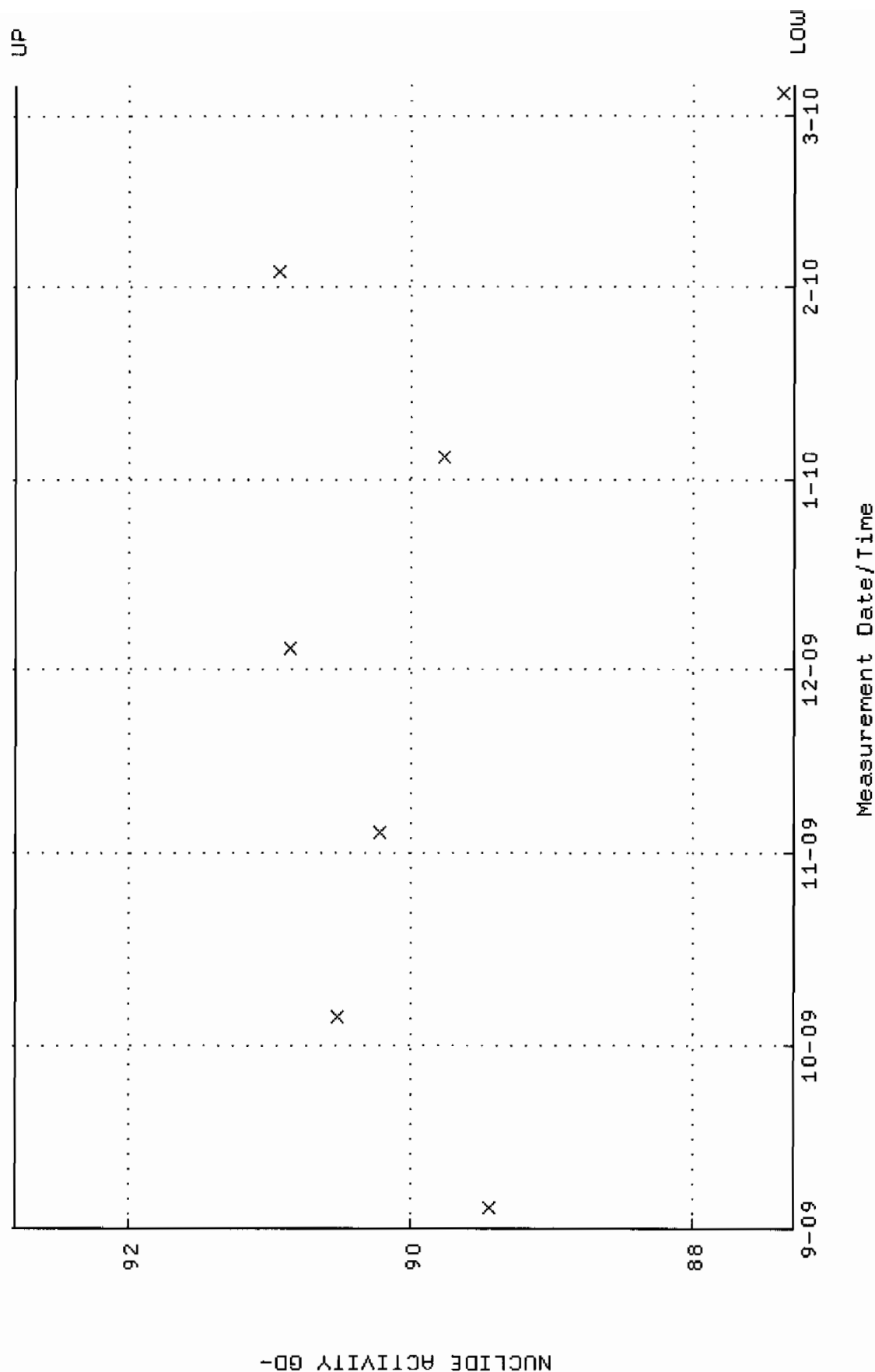
QA filename : DKA100:[ENV_ALPHA.QA.B]B019.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:03 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.332206 through 0.357714



QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.2879 through 92.8099

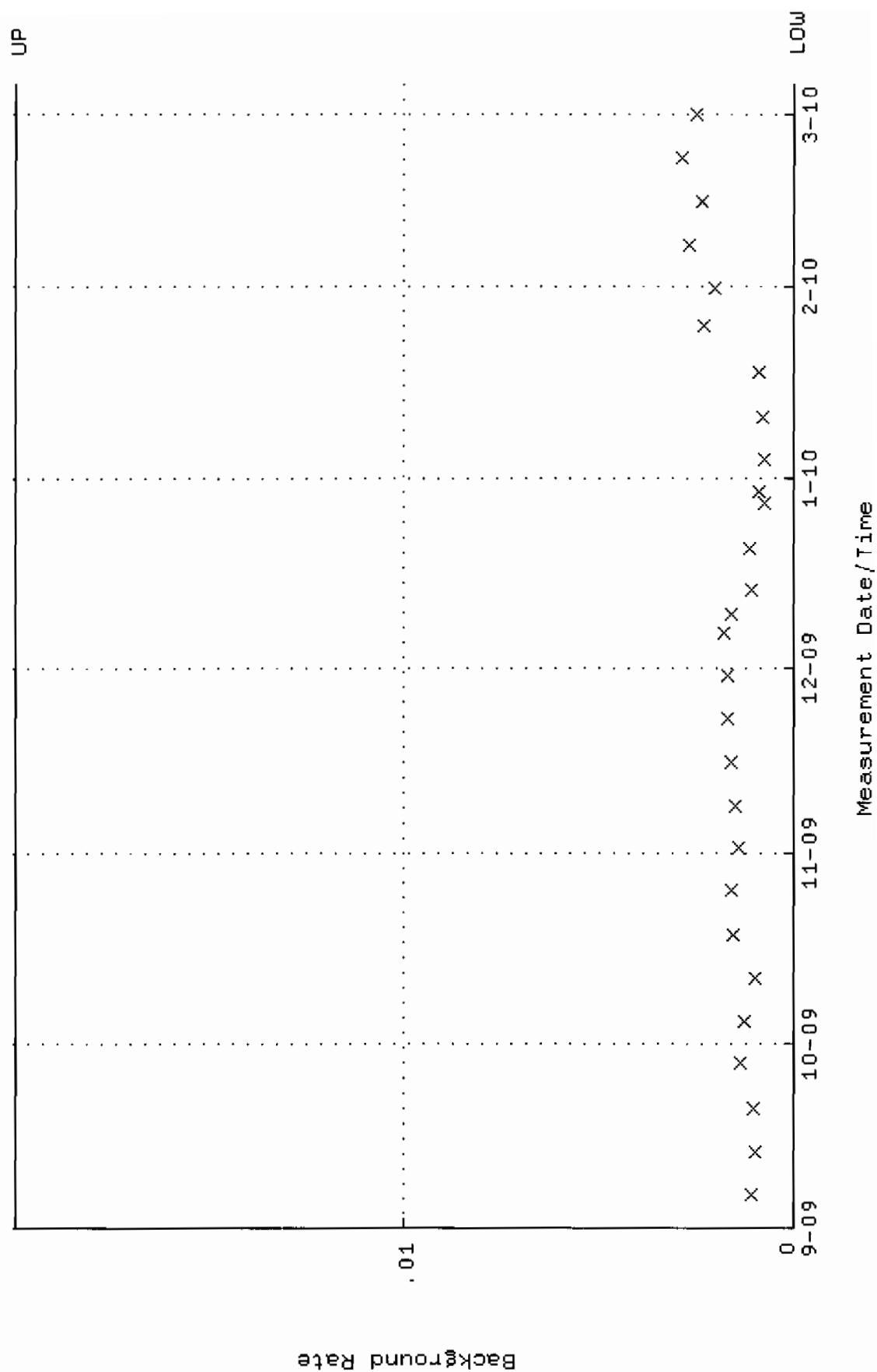


QA filename : DKA100:[ENV_ALPHA.QA.B]B020.QAF;1

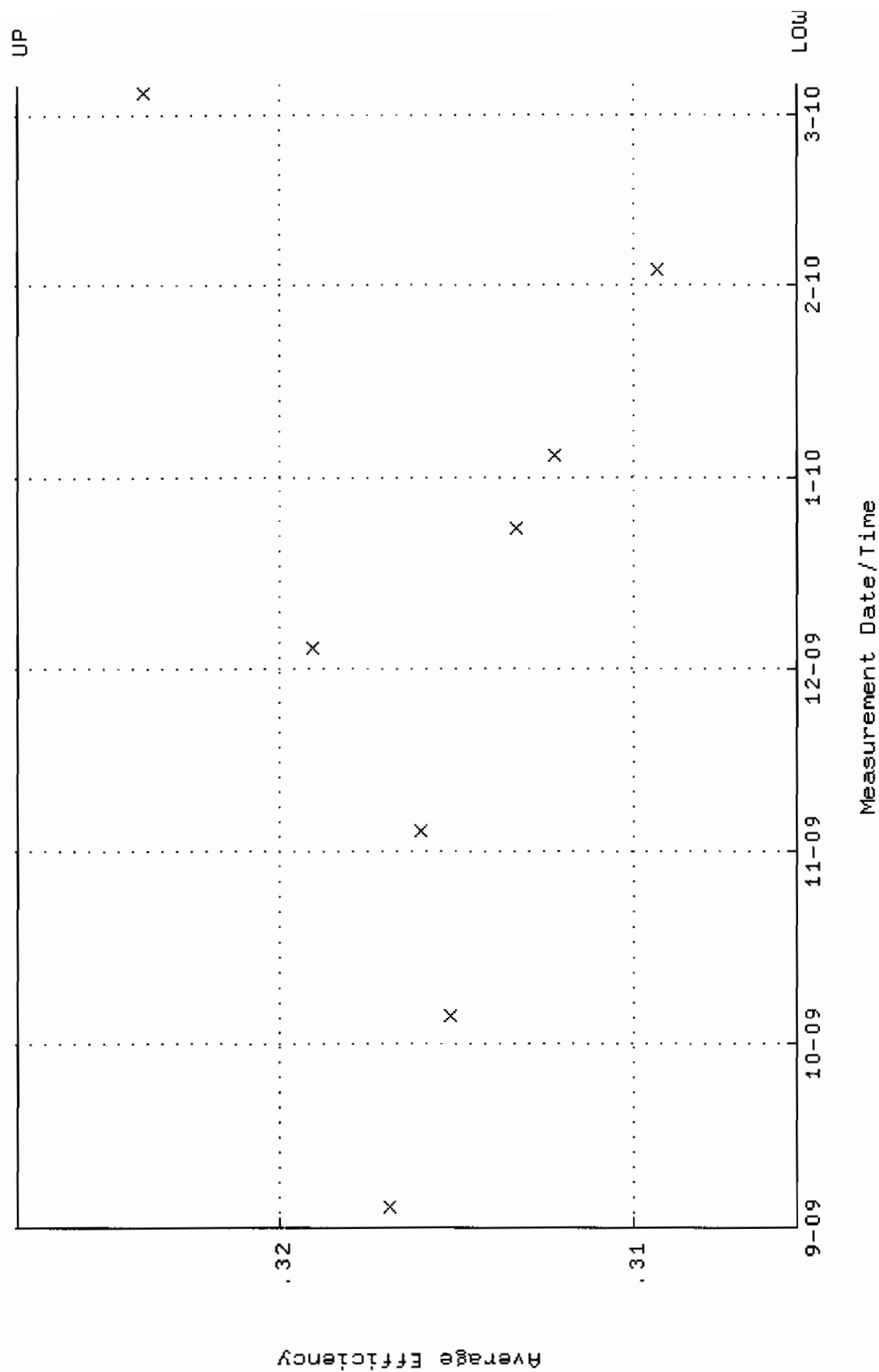
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00

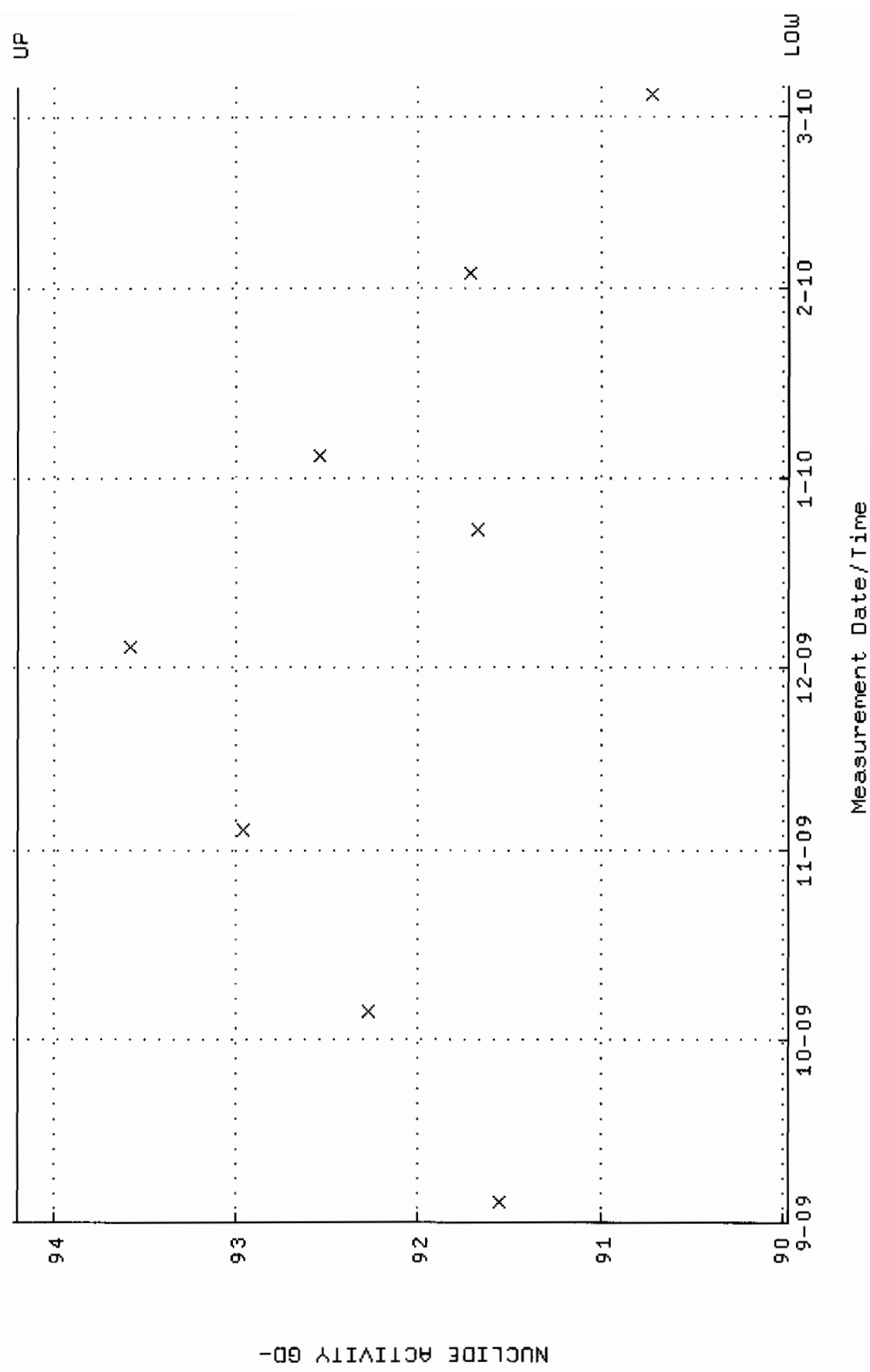
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



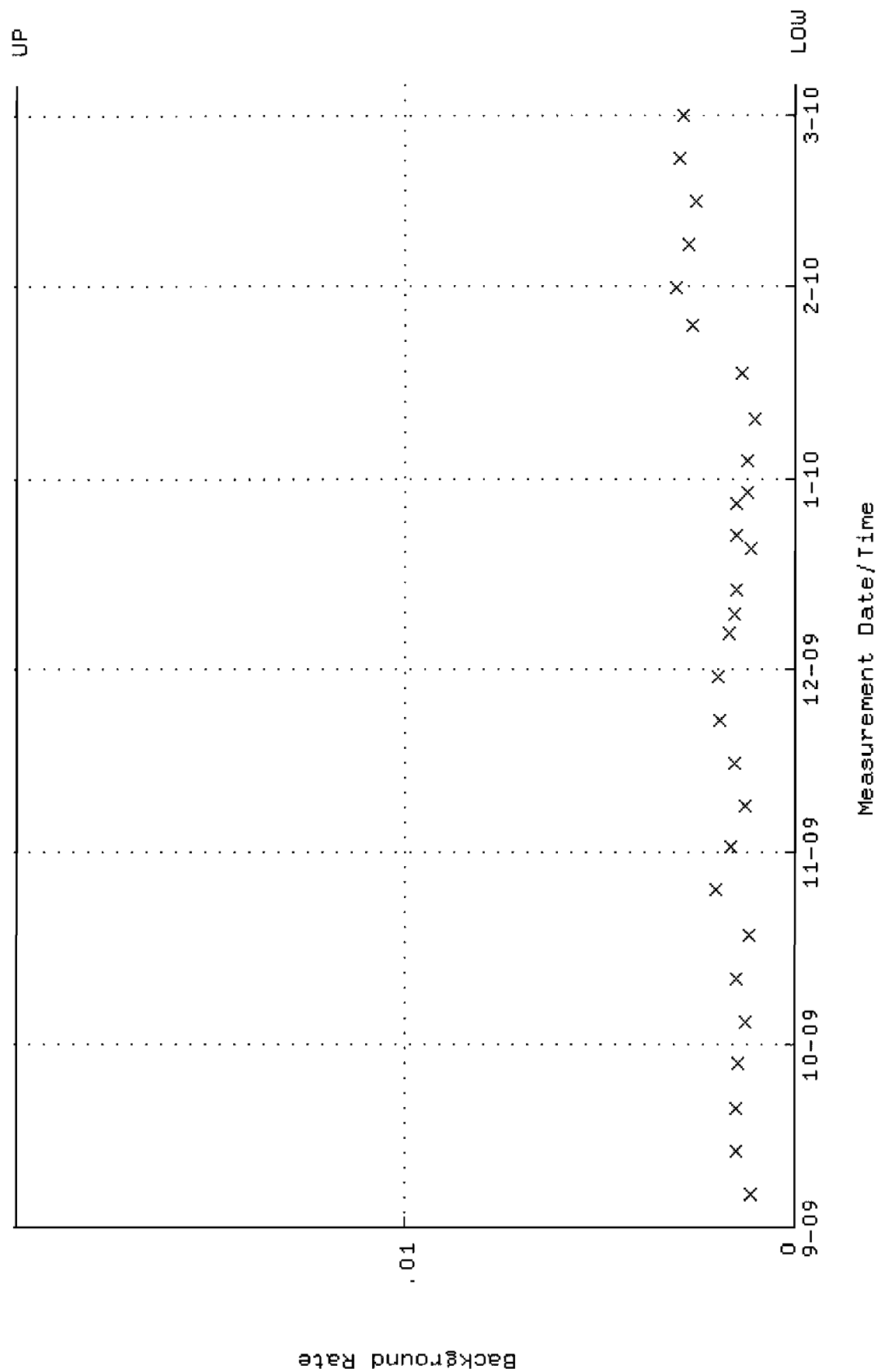
QA filename : DKA100:[ENV_ALPHA.QA.W]W022.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.305380 through 0.327376



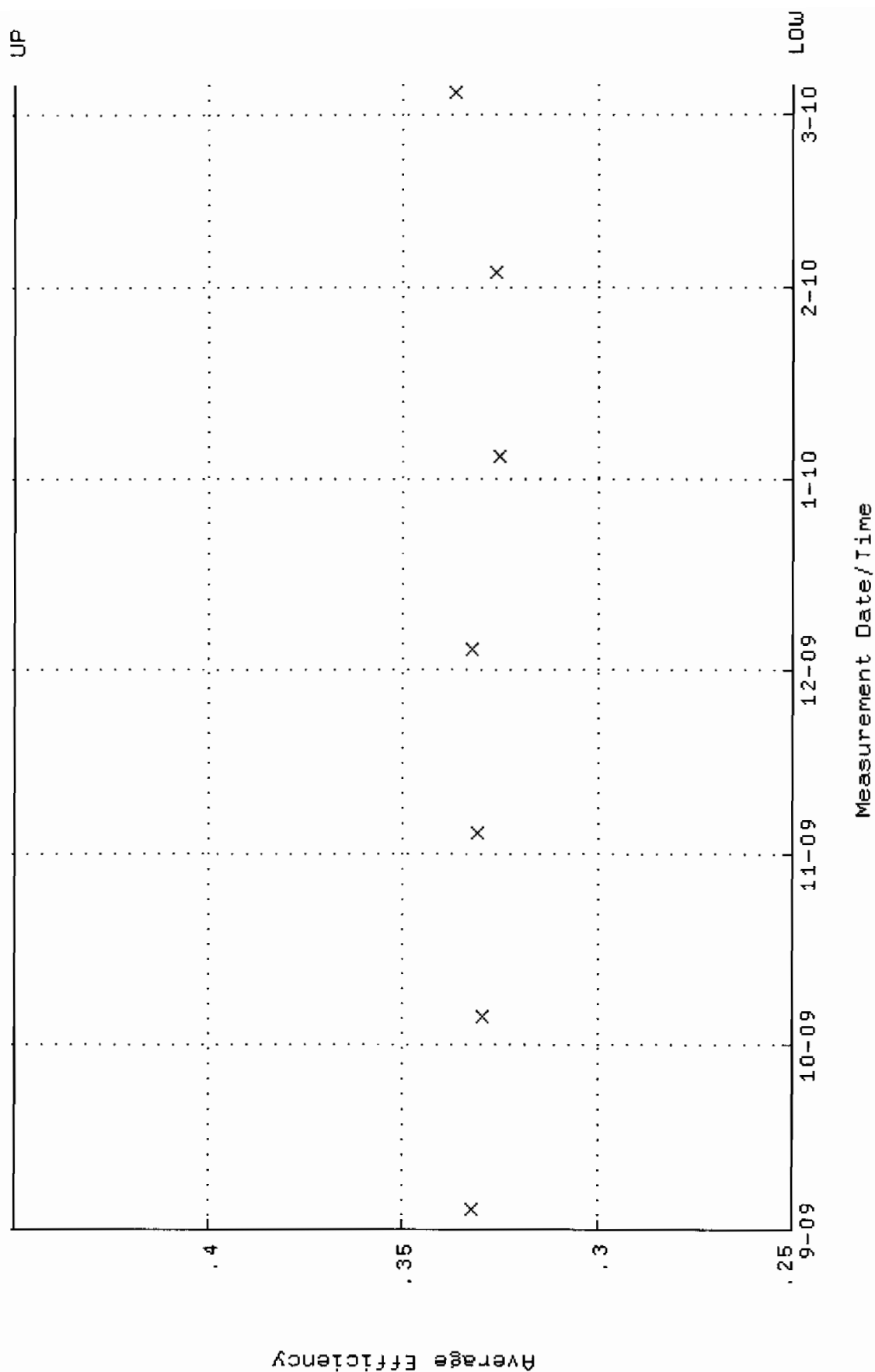
QA filename : DKA100:[ENV_ALPHA.QA.W]W022.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.9706 through 94.2088



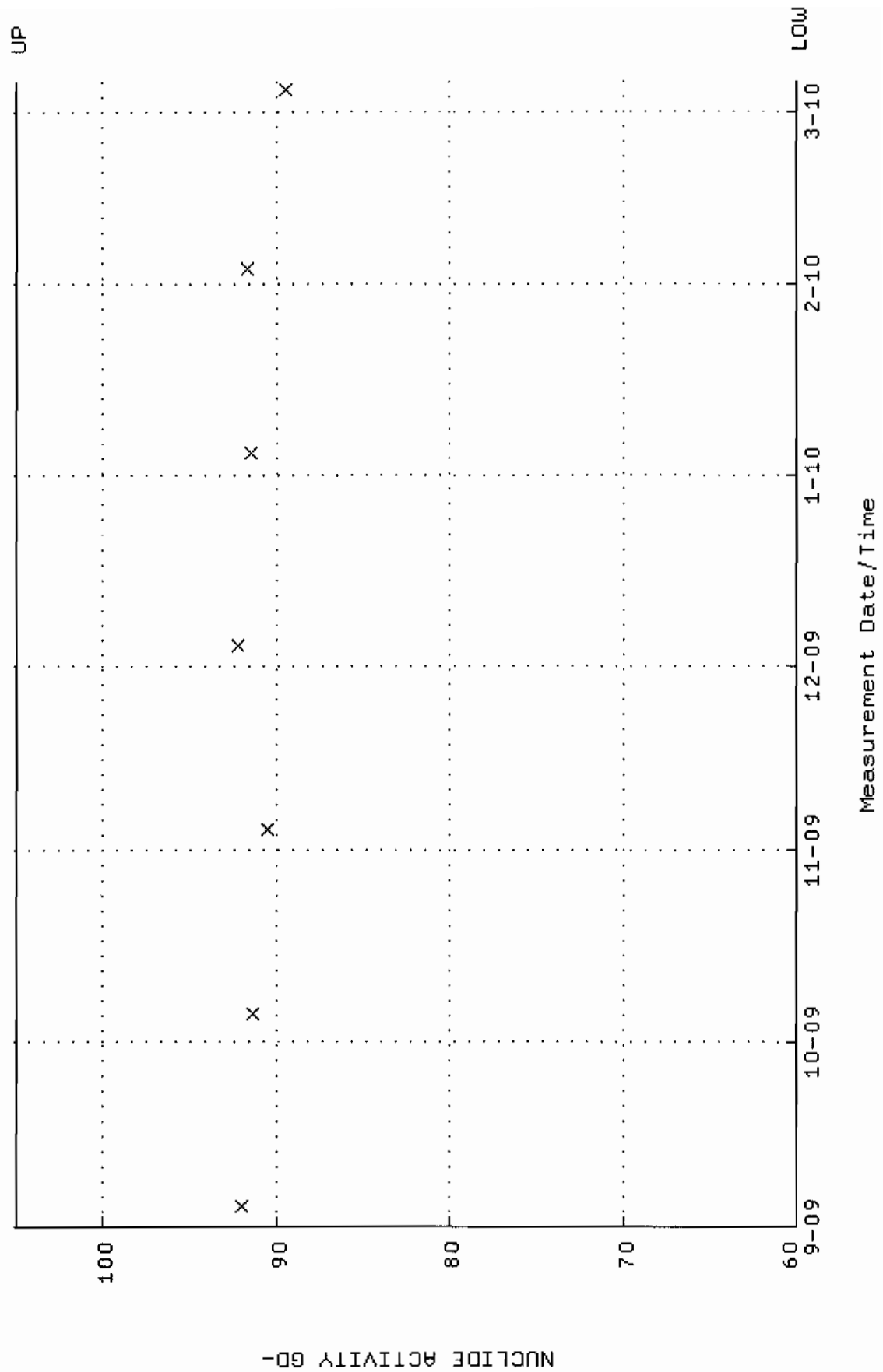
QA filename : DKA100:[ENV_ALPHA.QA.B]B022.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



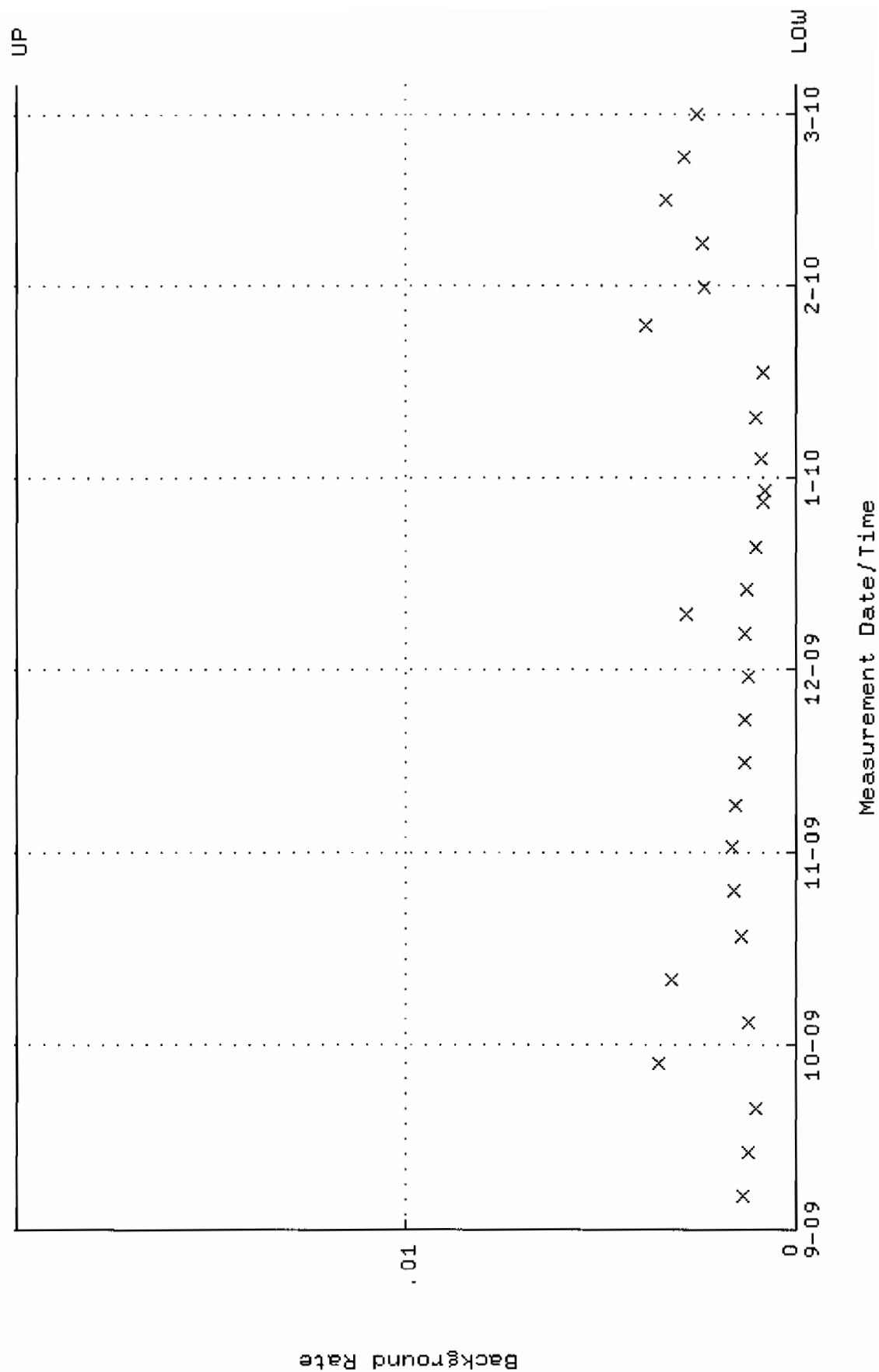
QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000



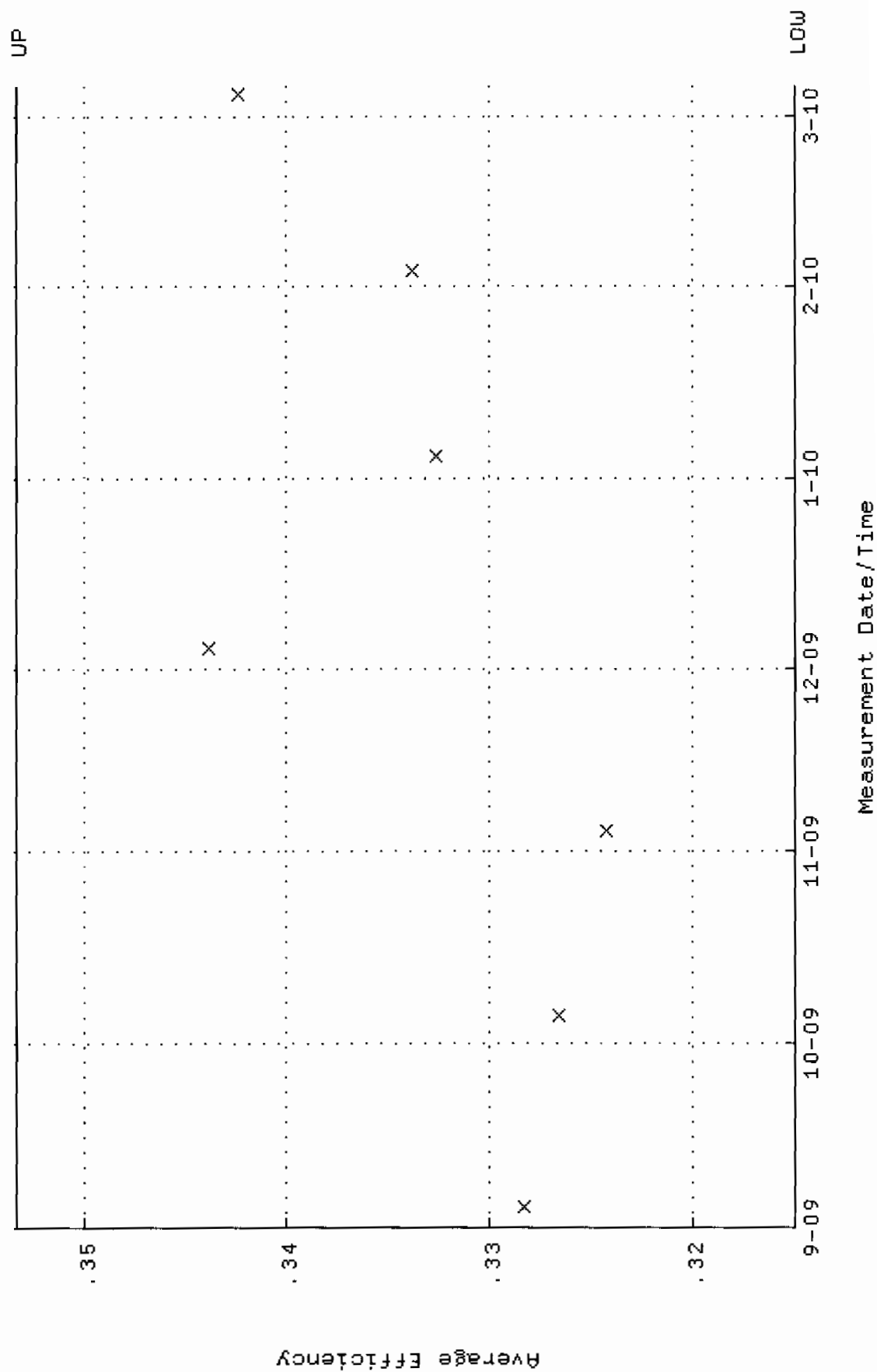
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QA filename      : DKA100:[ENV_ALPHA.QA.B]B023.QAF;1
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 6-SEP-2009 14:27:03 through 5-MAR-
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

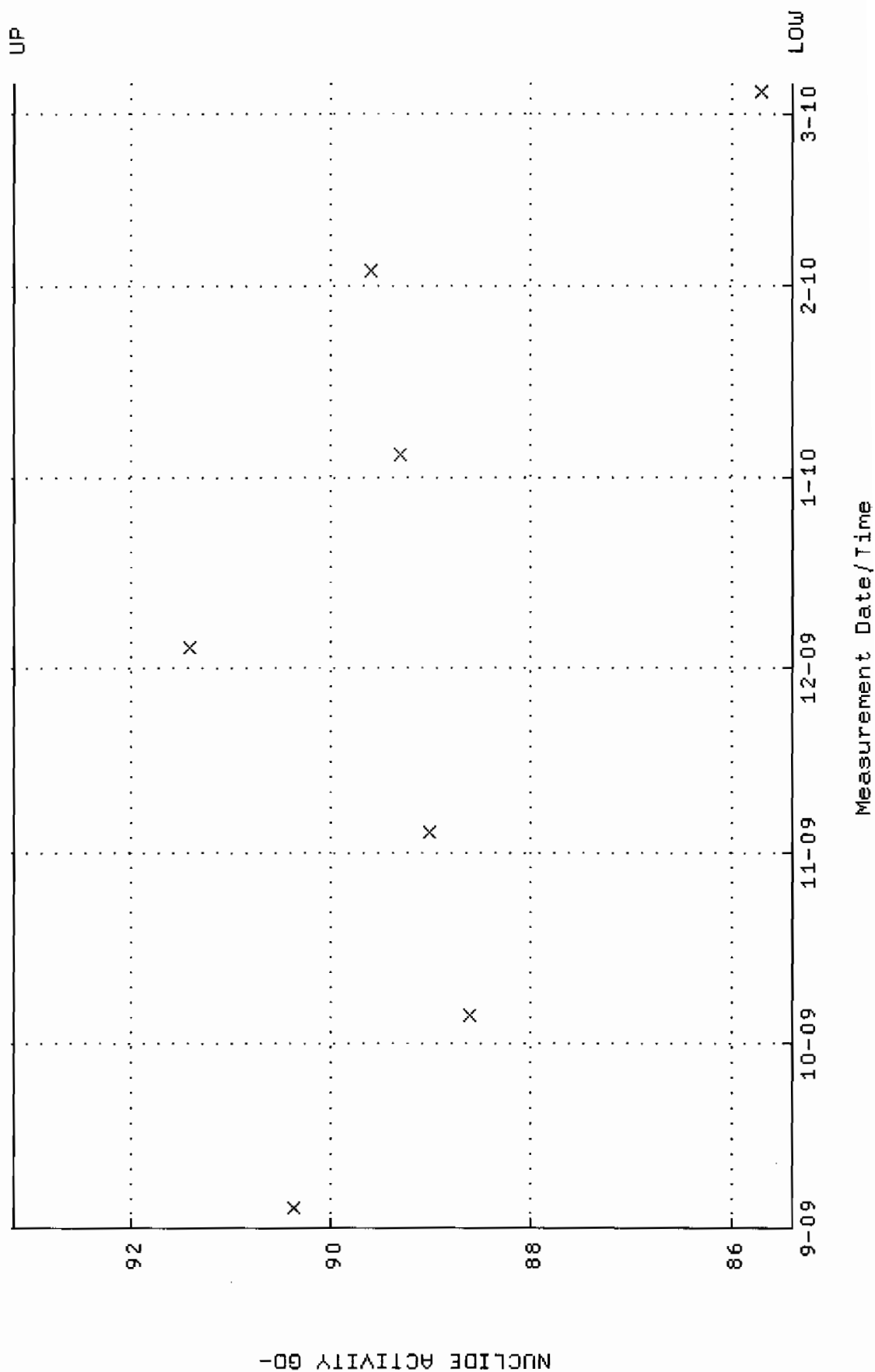
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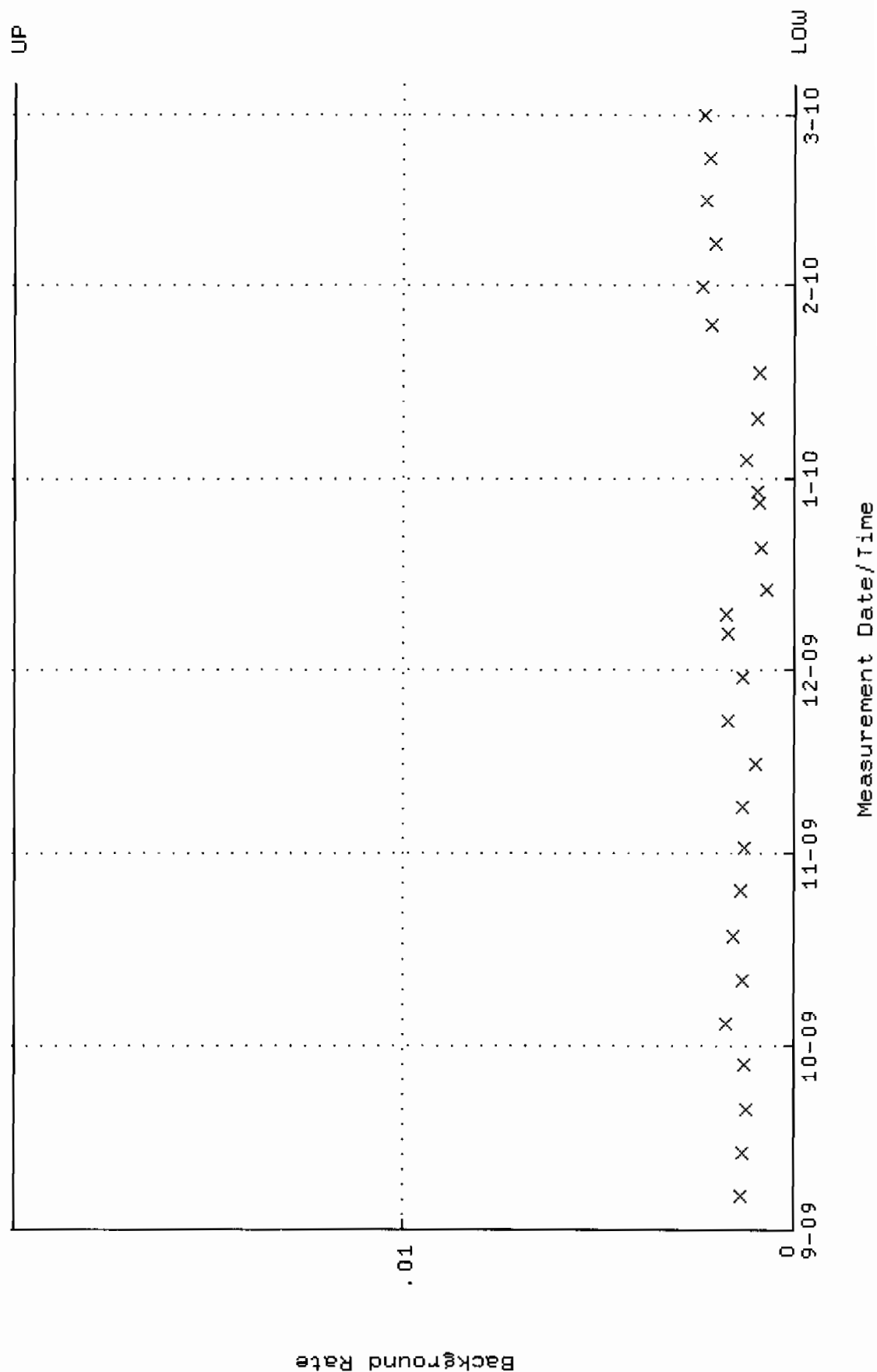
QA filename : DKA100:[ENV_ALPHA.QA.W]w024.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.314917 through 0.353325



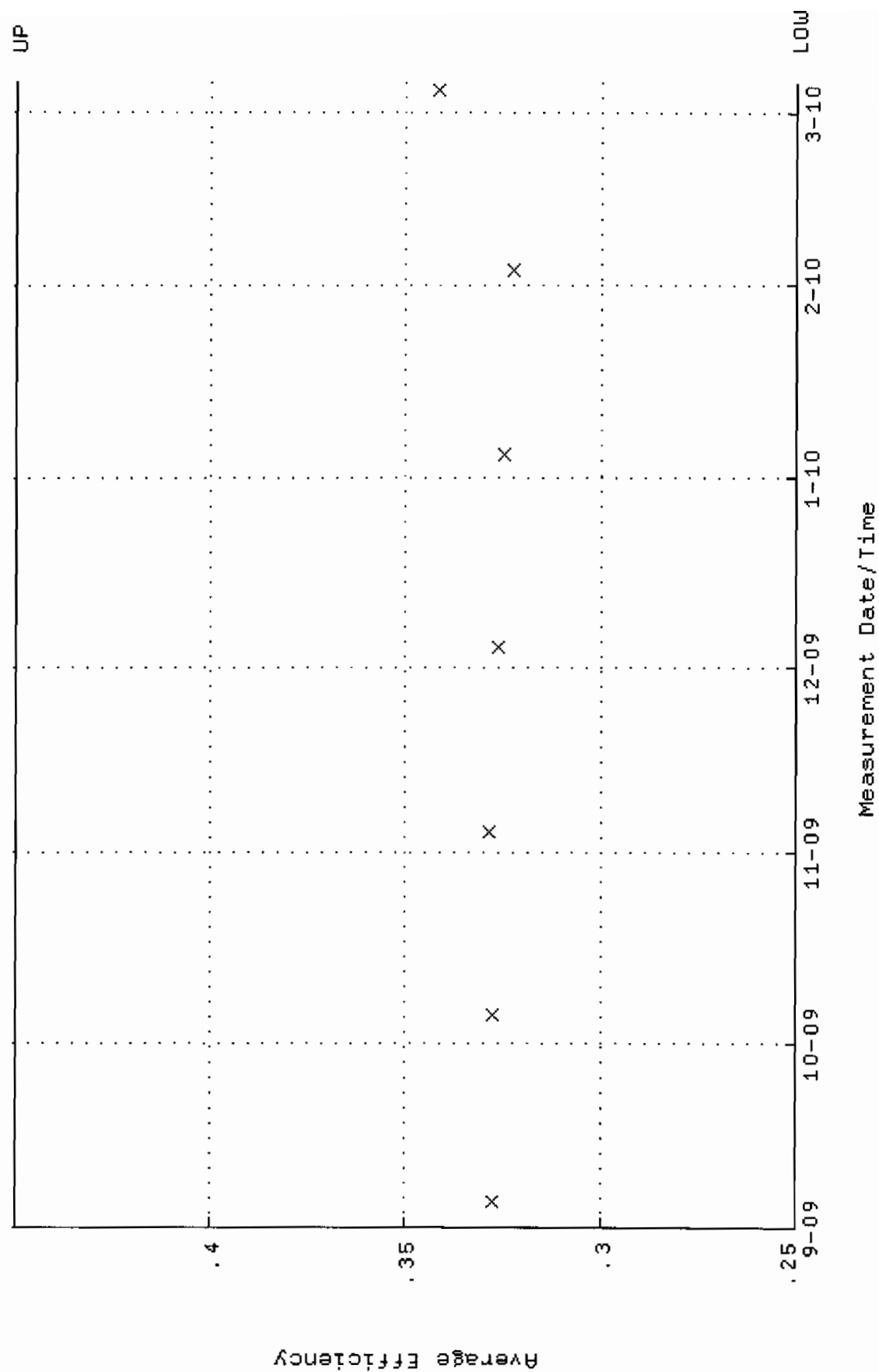
QA filename : DKA100:[ENV_ALPHA.QA.W]W024.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.3858 through 93.1784



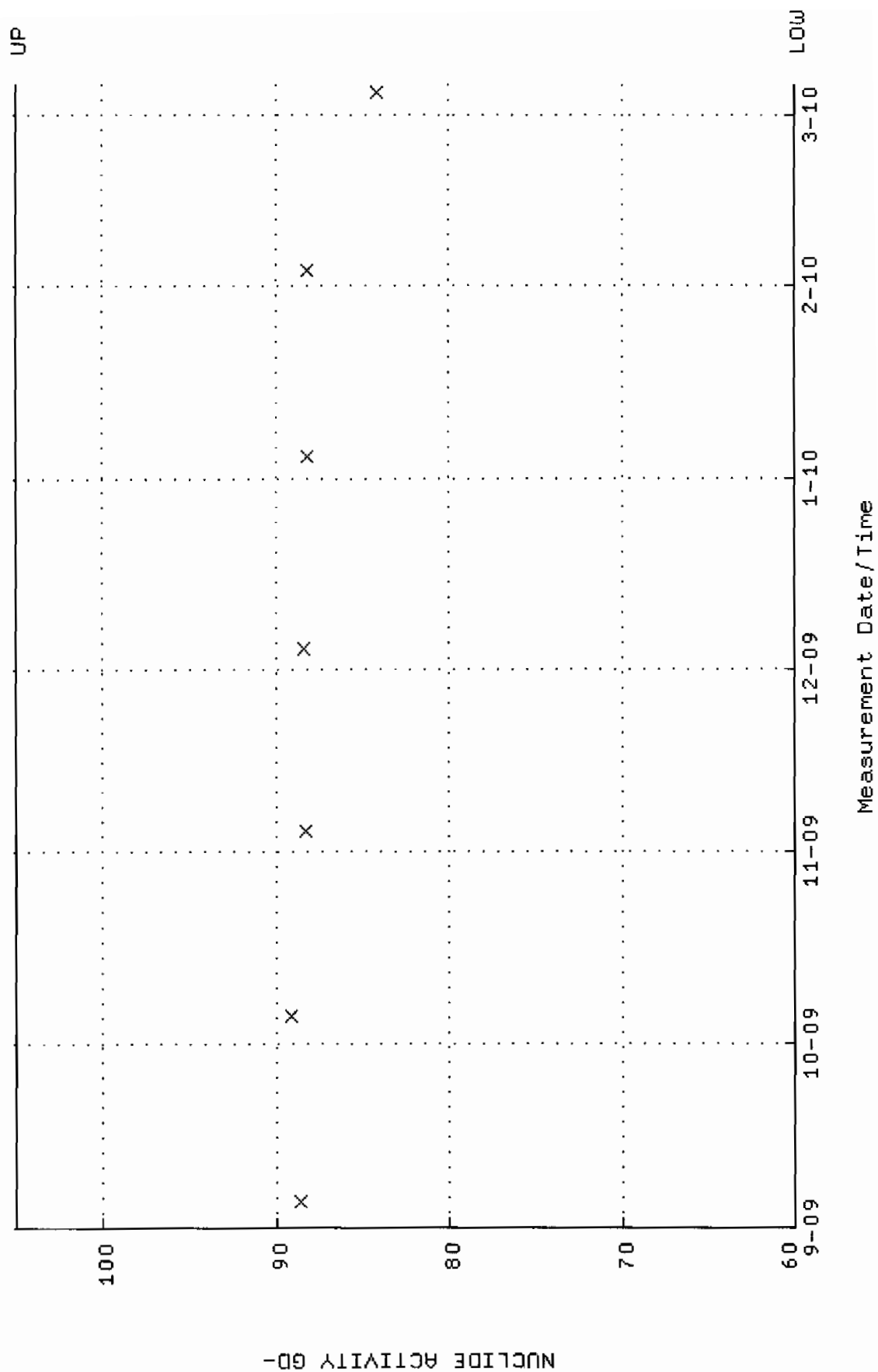
QA filename : DKA100:[ENV_ALPHA.QA.B]B024.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W025.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV_ALPHA.QA.W]W025.QAF;4
 Parameter Name : NLAIVITY-G0148 (NUCLIDE ACTIVITY G0-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000

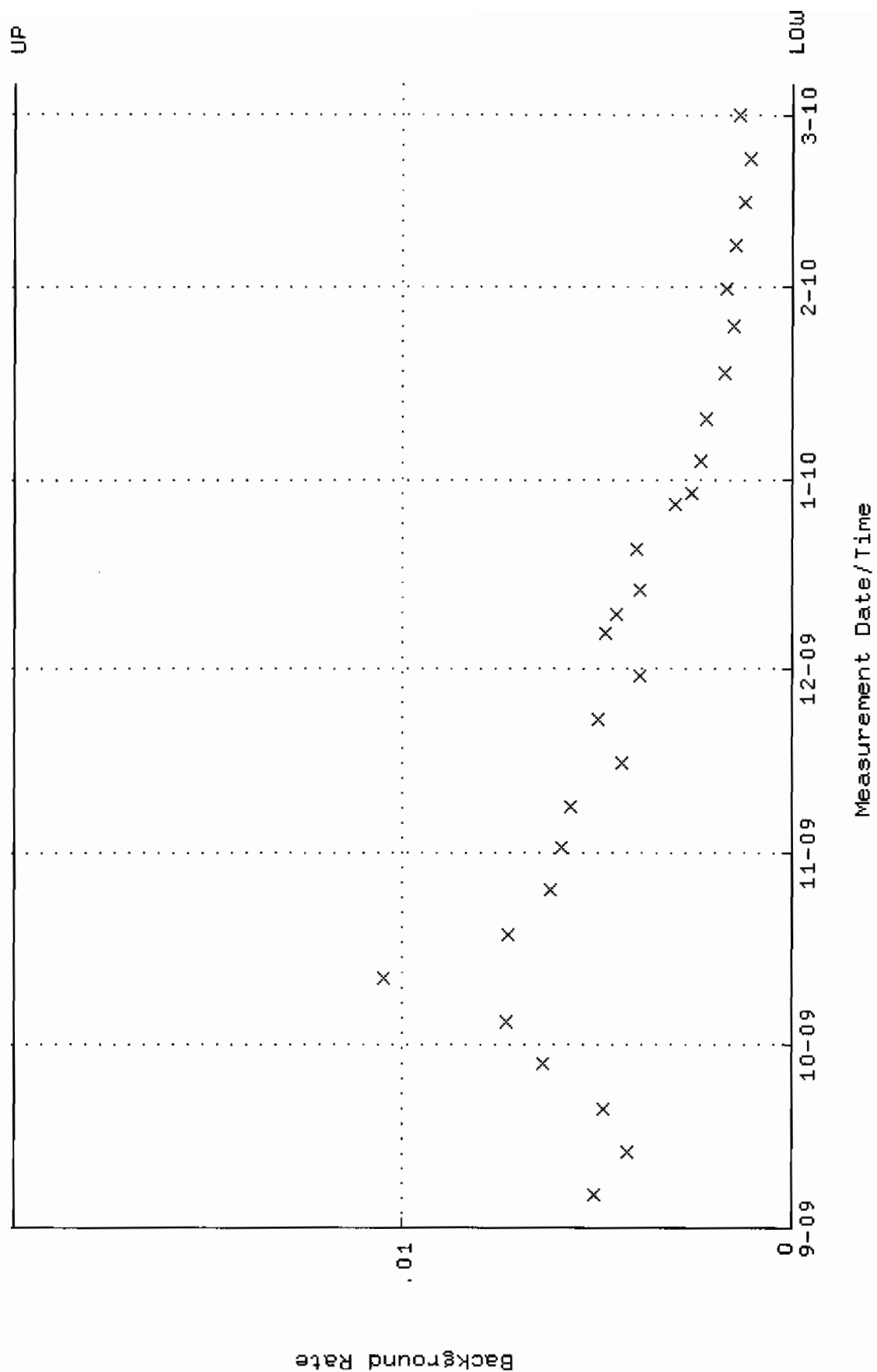


QA filename : DKA100:[ENV_ALPHA.QA.B]B025.QAF;2

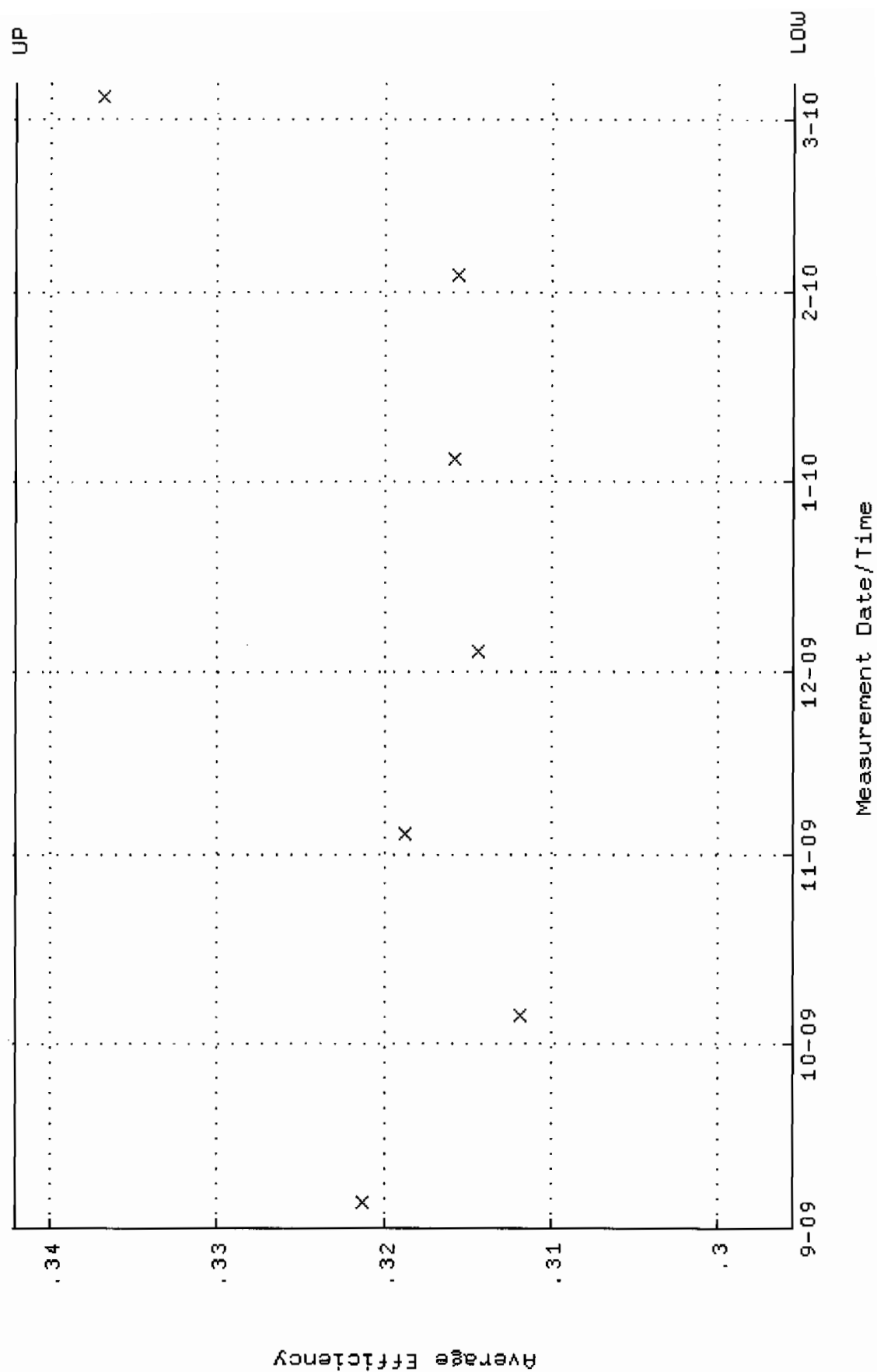
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00

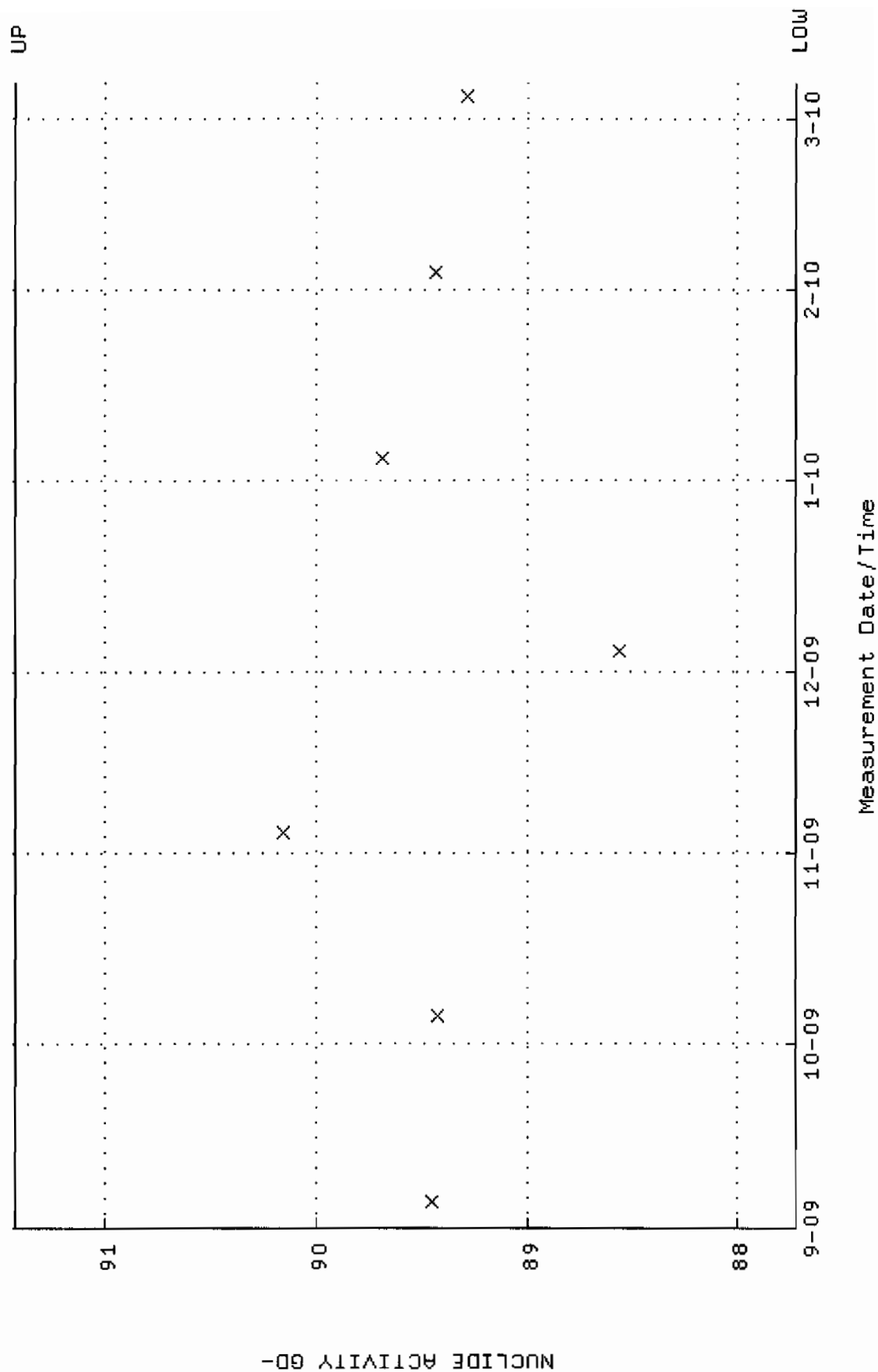
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



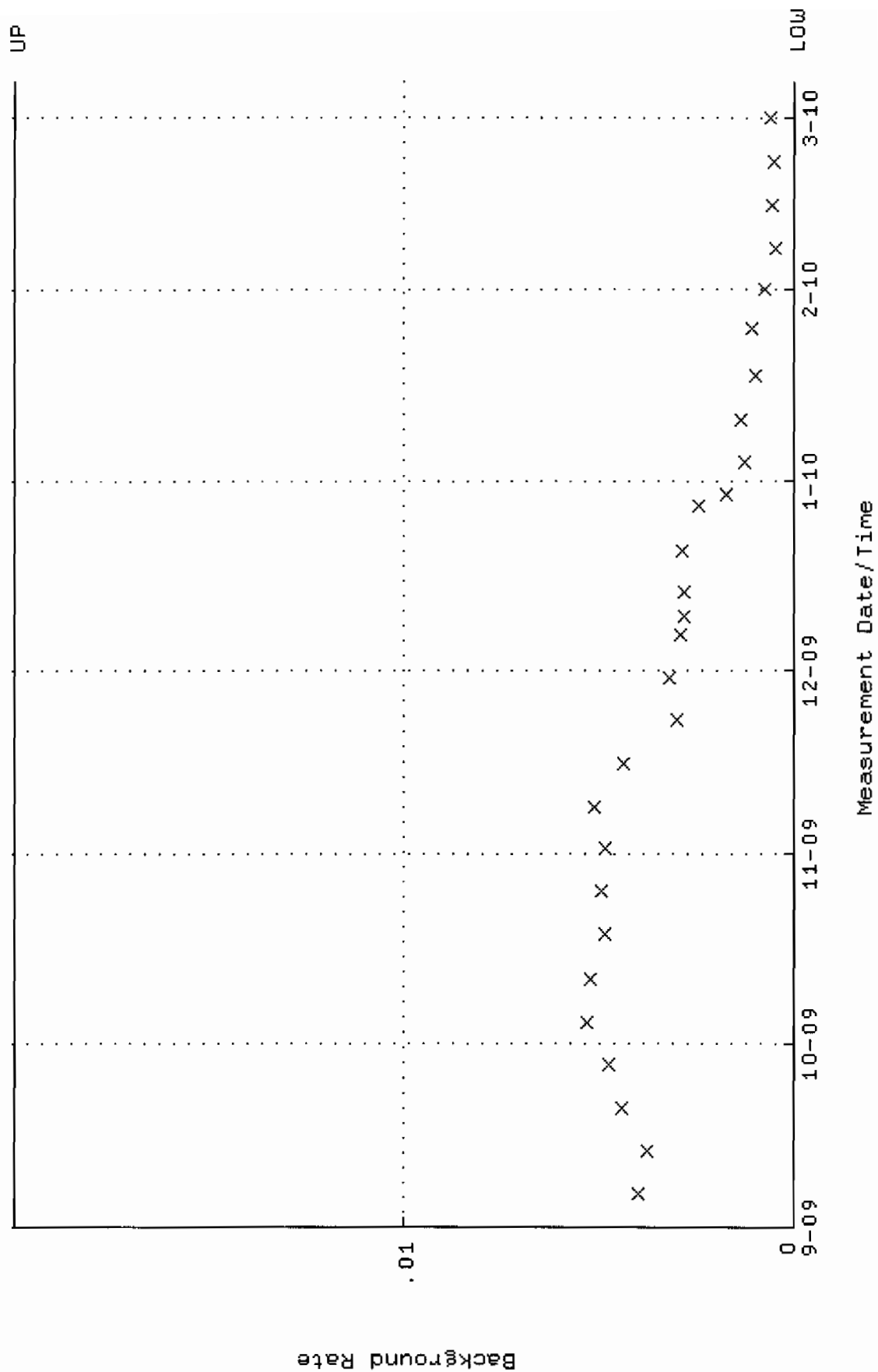
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.295501 through 0.342091



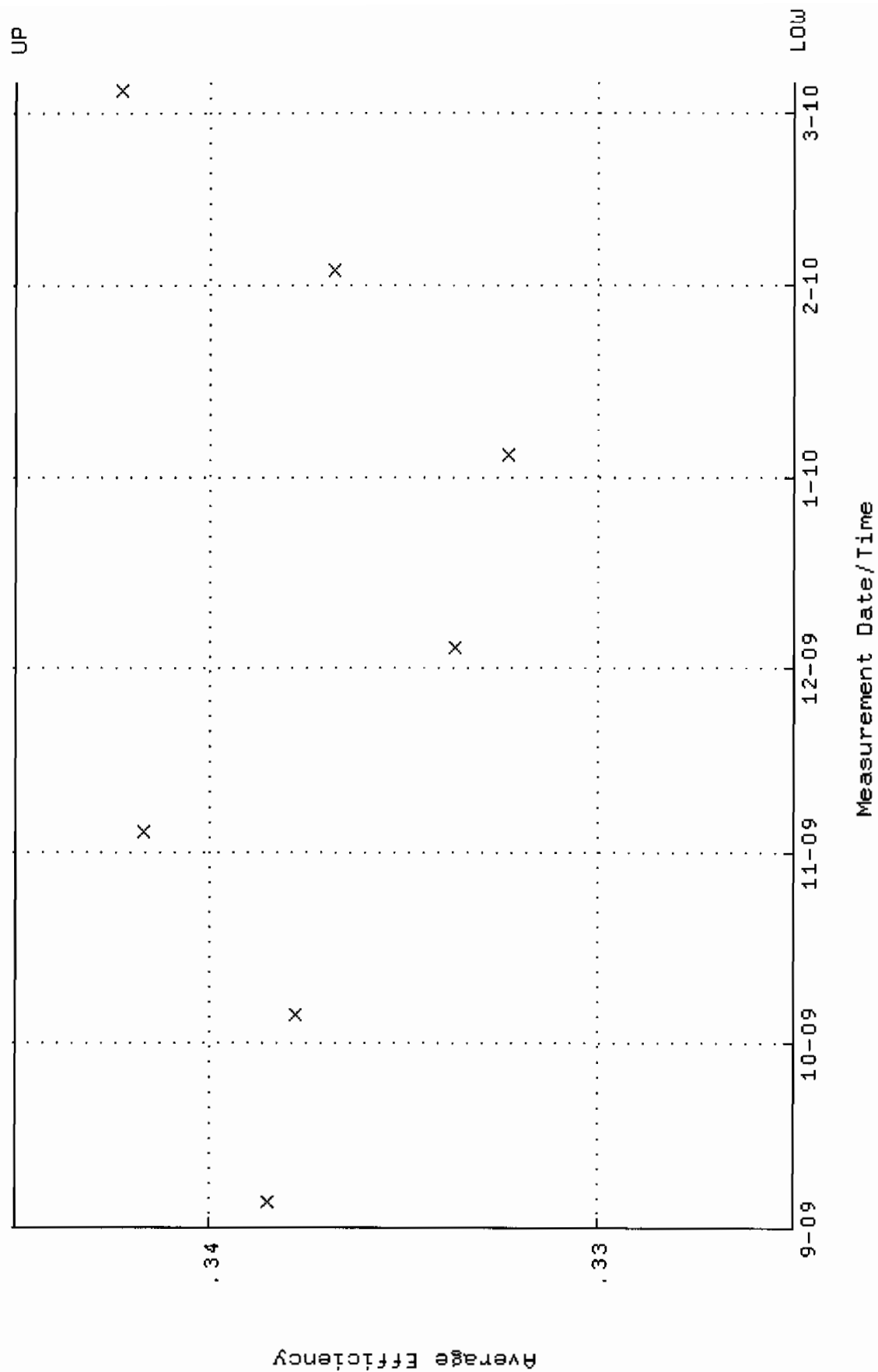
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7241 through 91.4271



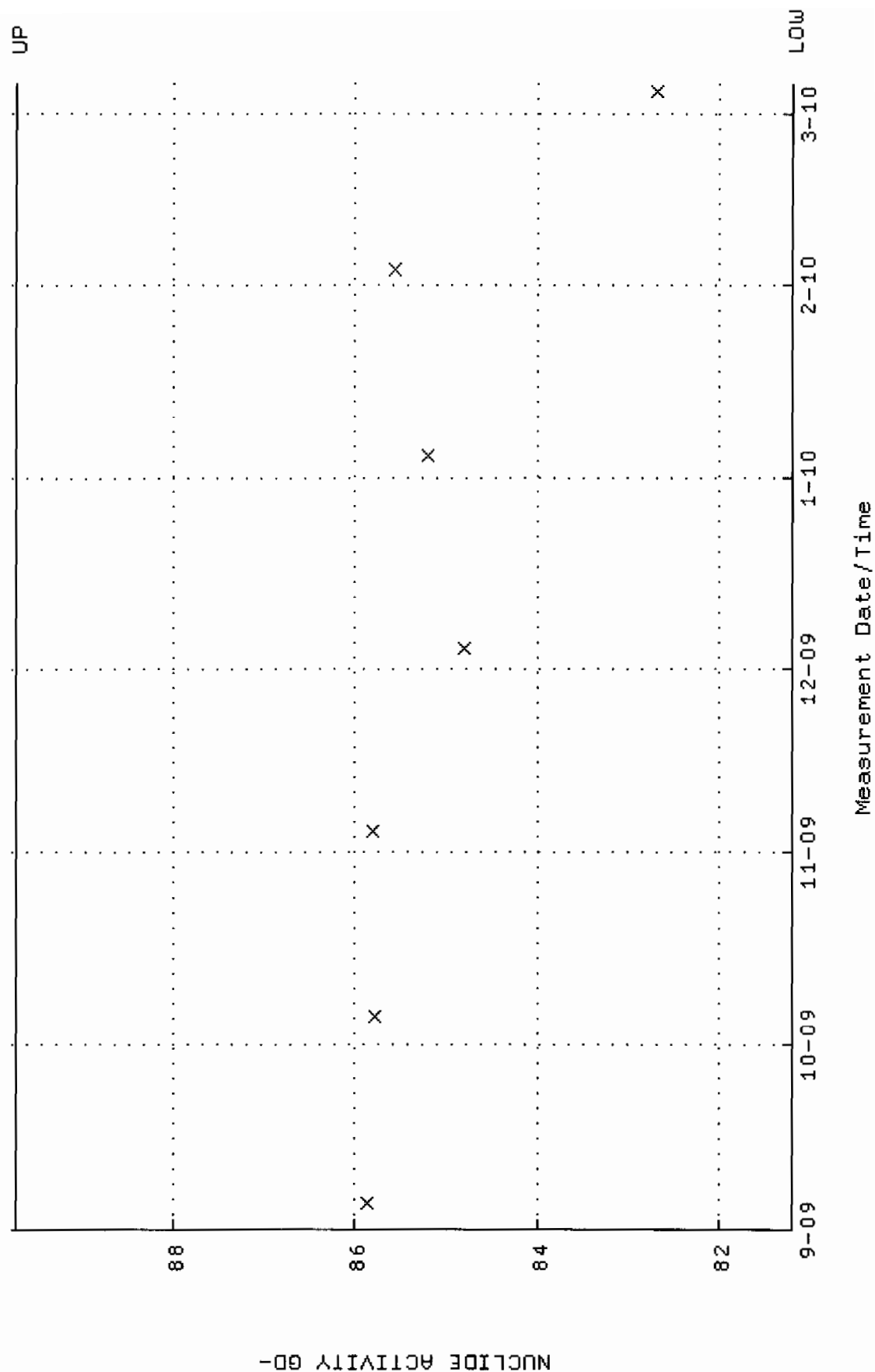
QA filename : DKA100:[ENV_ALPHA.QA.B]B026.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:03 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.324980 through 0.344980



QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.2030 through 89.7506

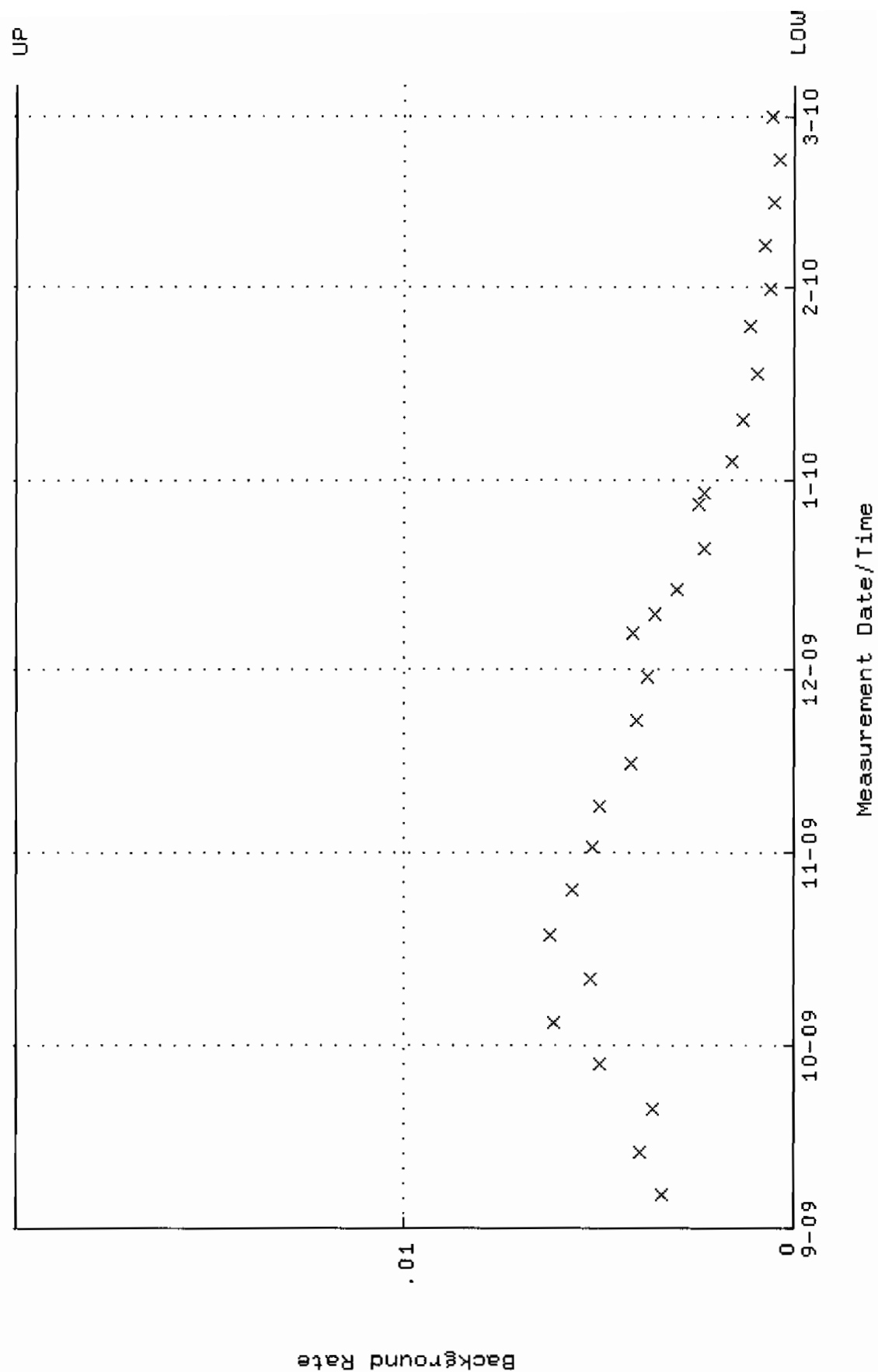


QA filename : DKA100:[ENV_ALPHA.QA.B]B027.QAF;1

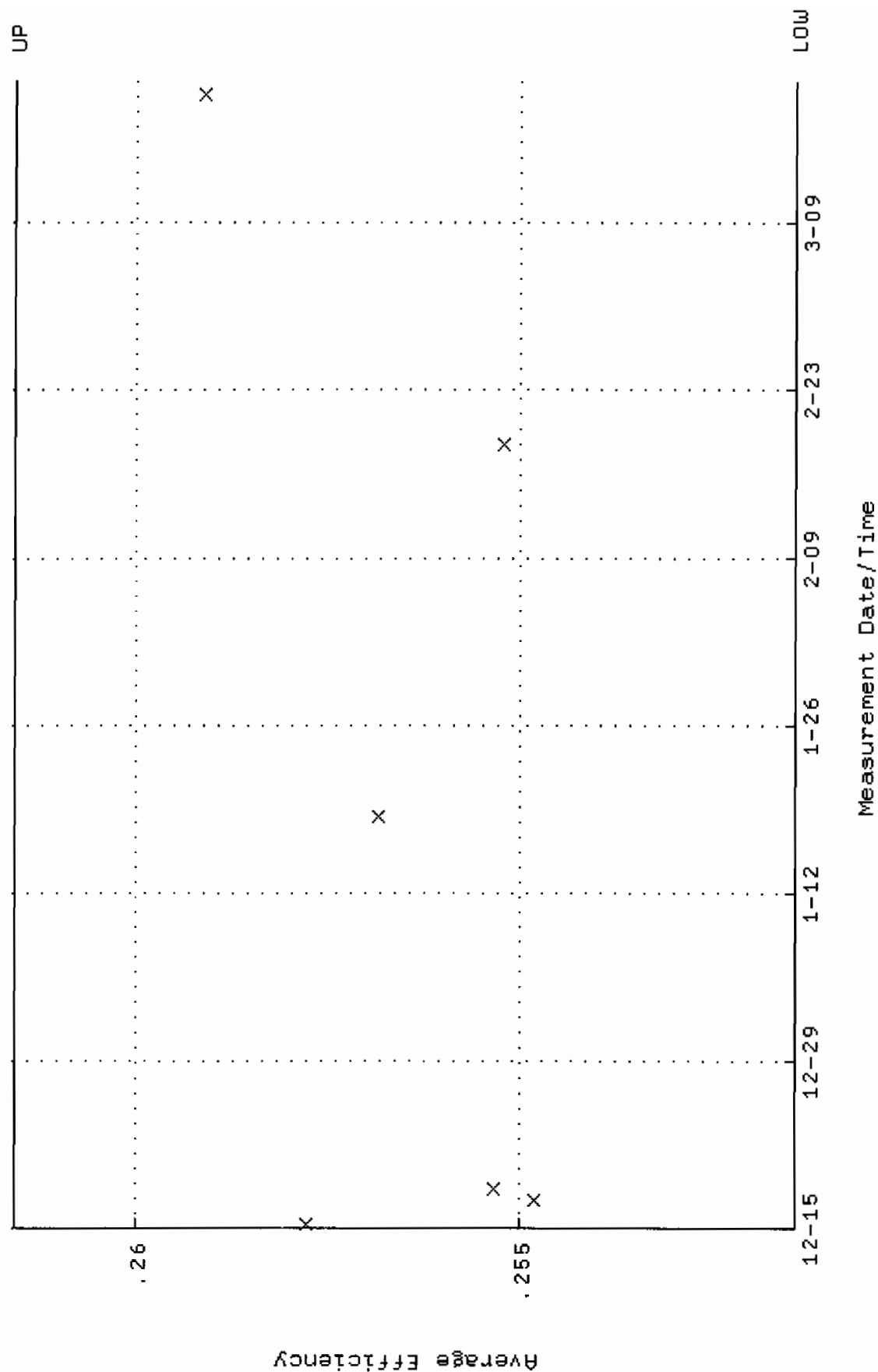
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00

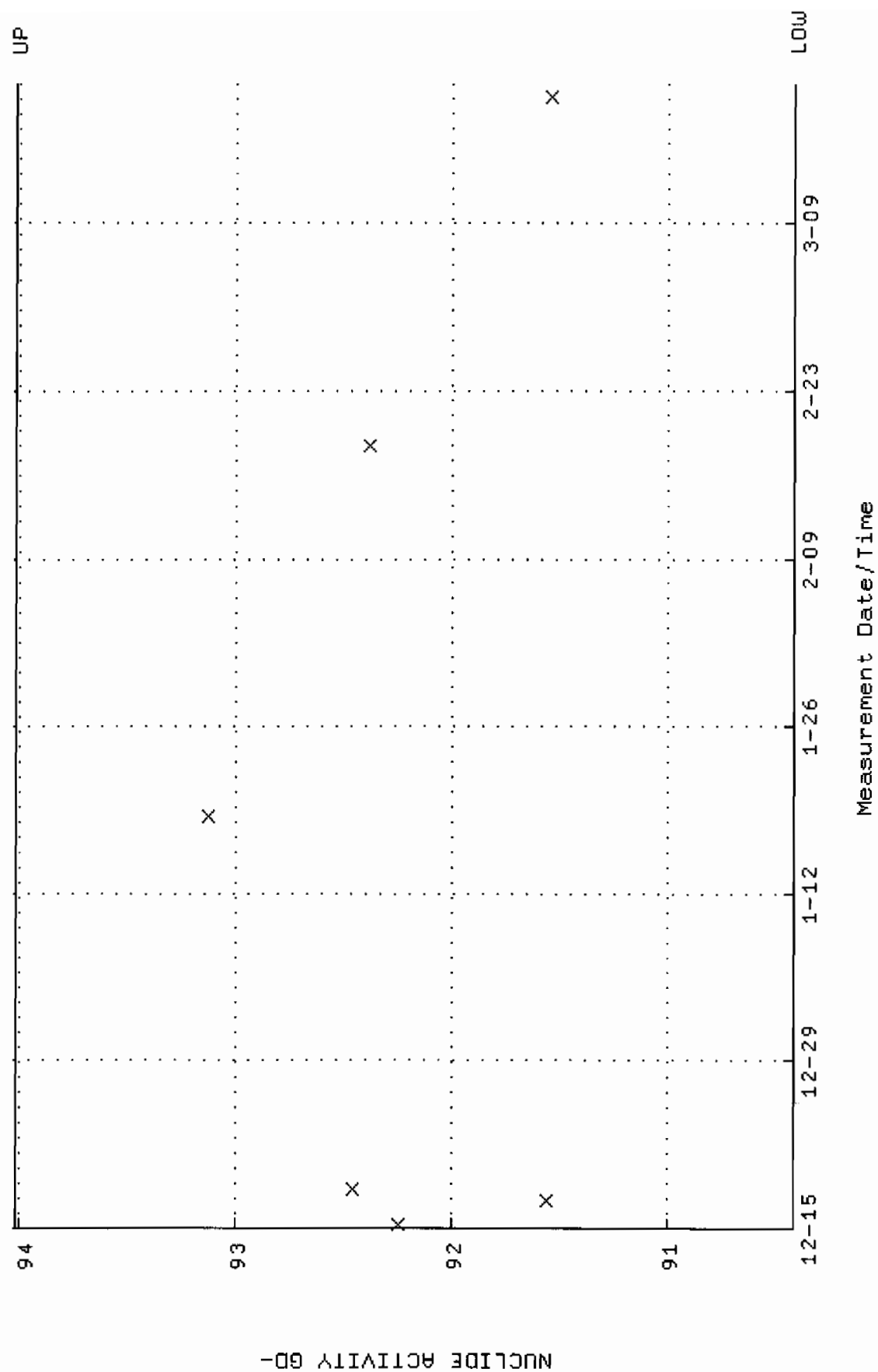
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



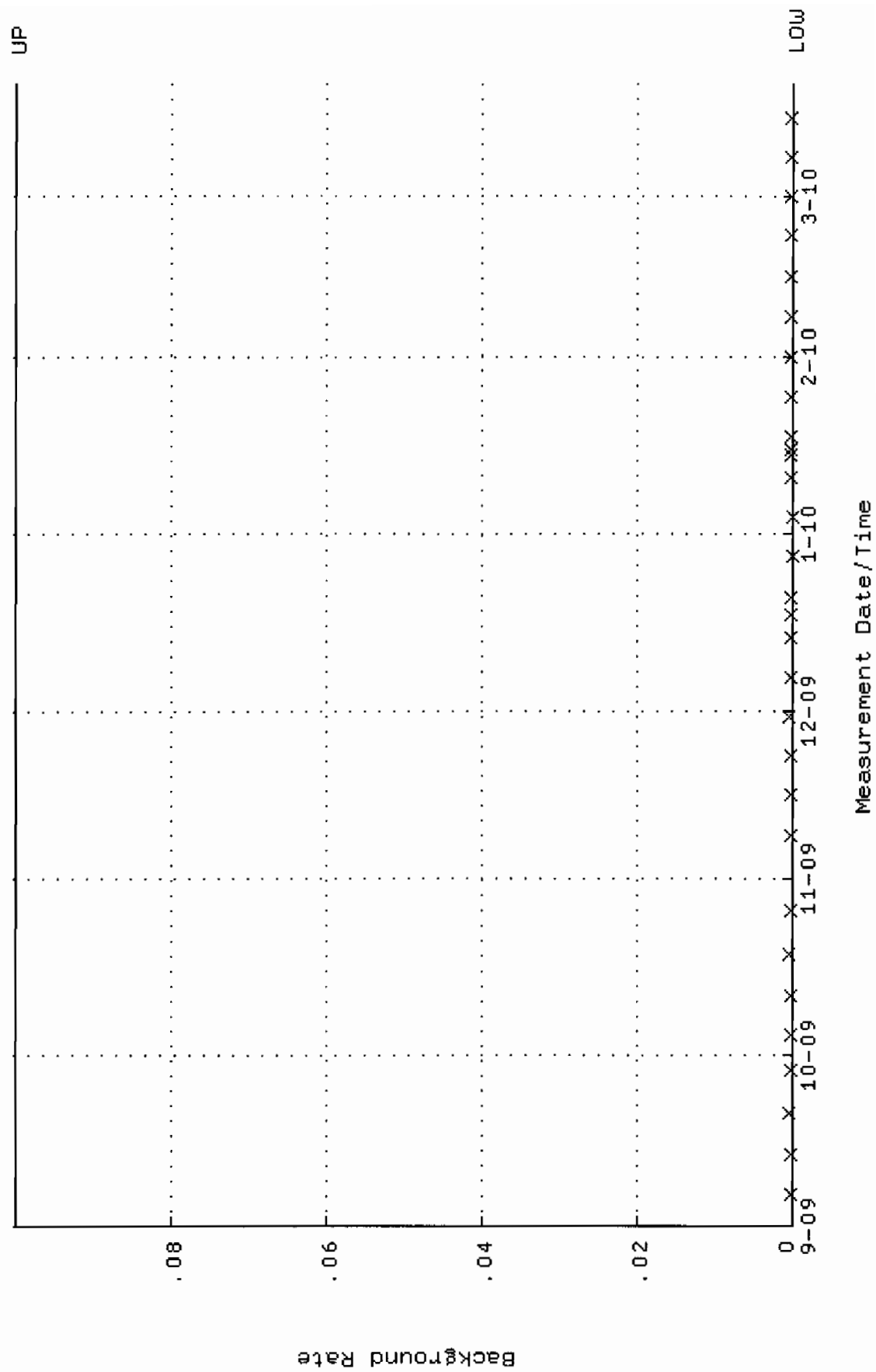
QA filename : DKA100:[ENV_ALPHA.QA.W]W119.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.251416 through 0.261570



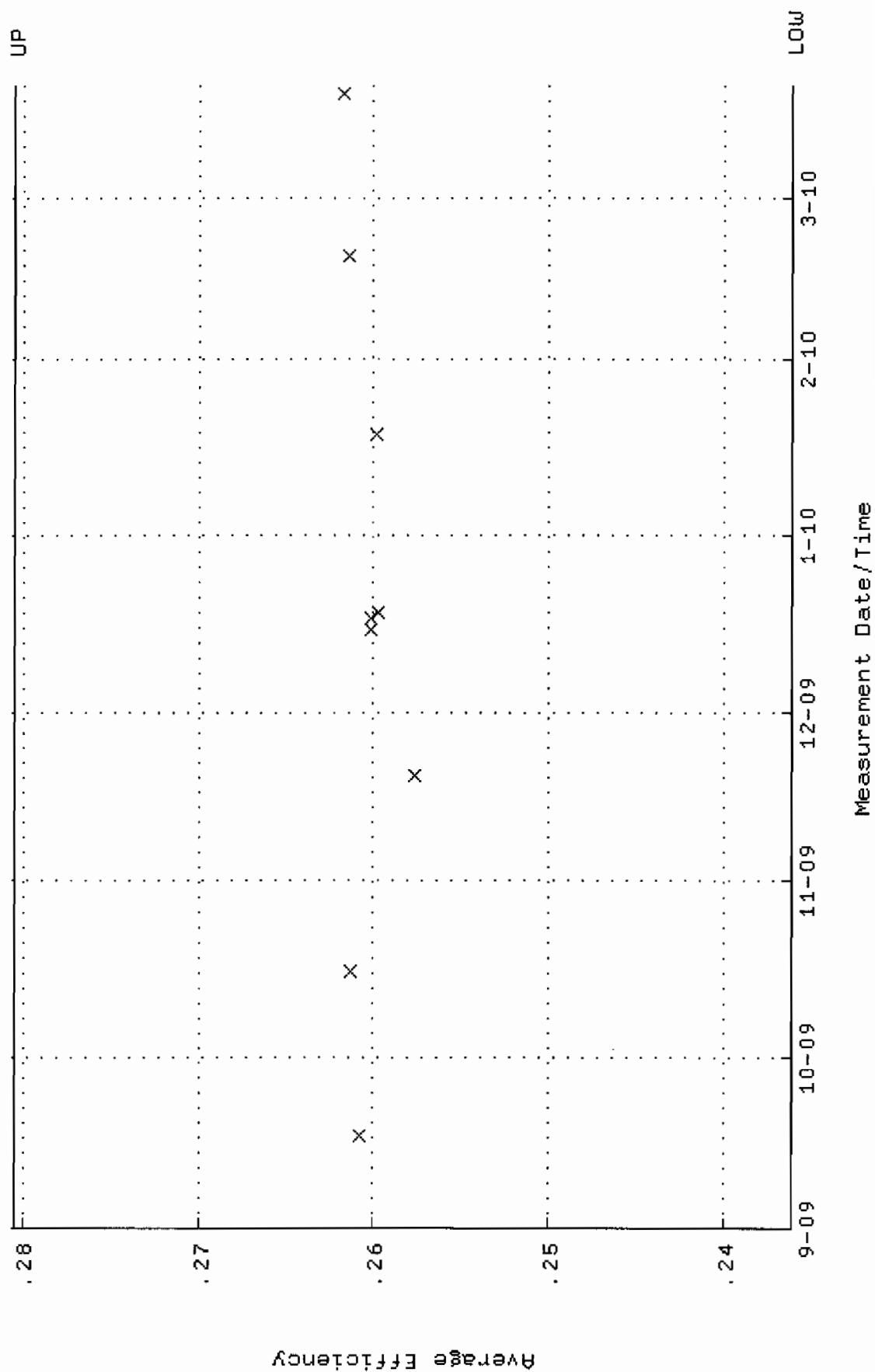
QA filename : DKA100:[ENV_ALPHA.QA.W]W119.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.4178 through 94.0134



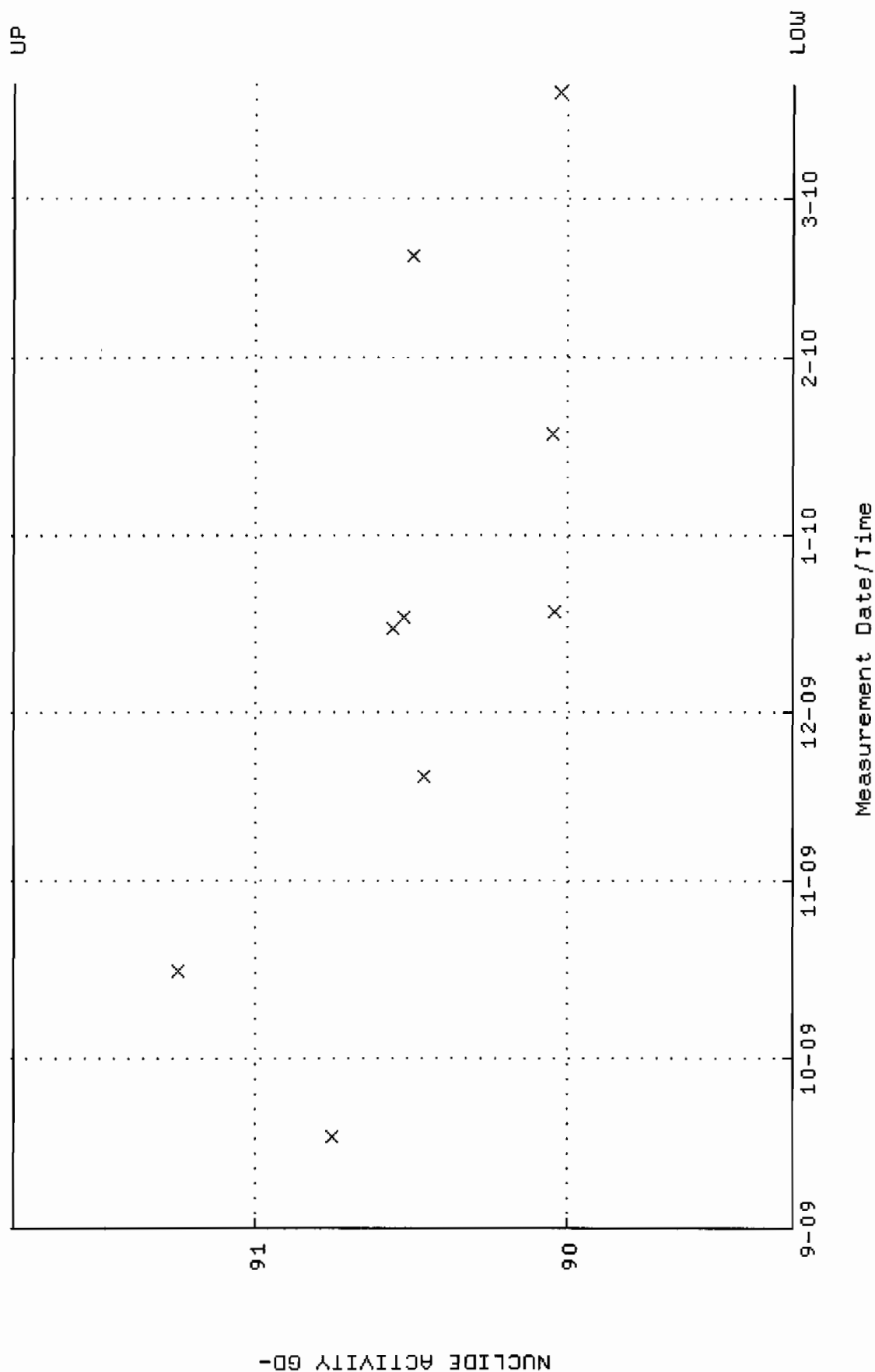
QA filename : DKA100:[ENV_ALPHA.QA.B]B119.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:34 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



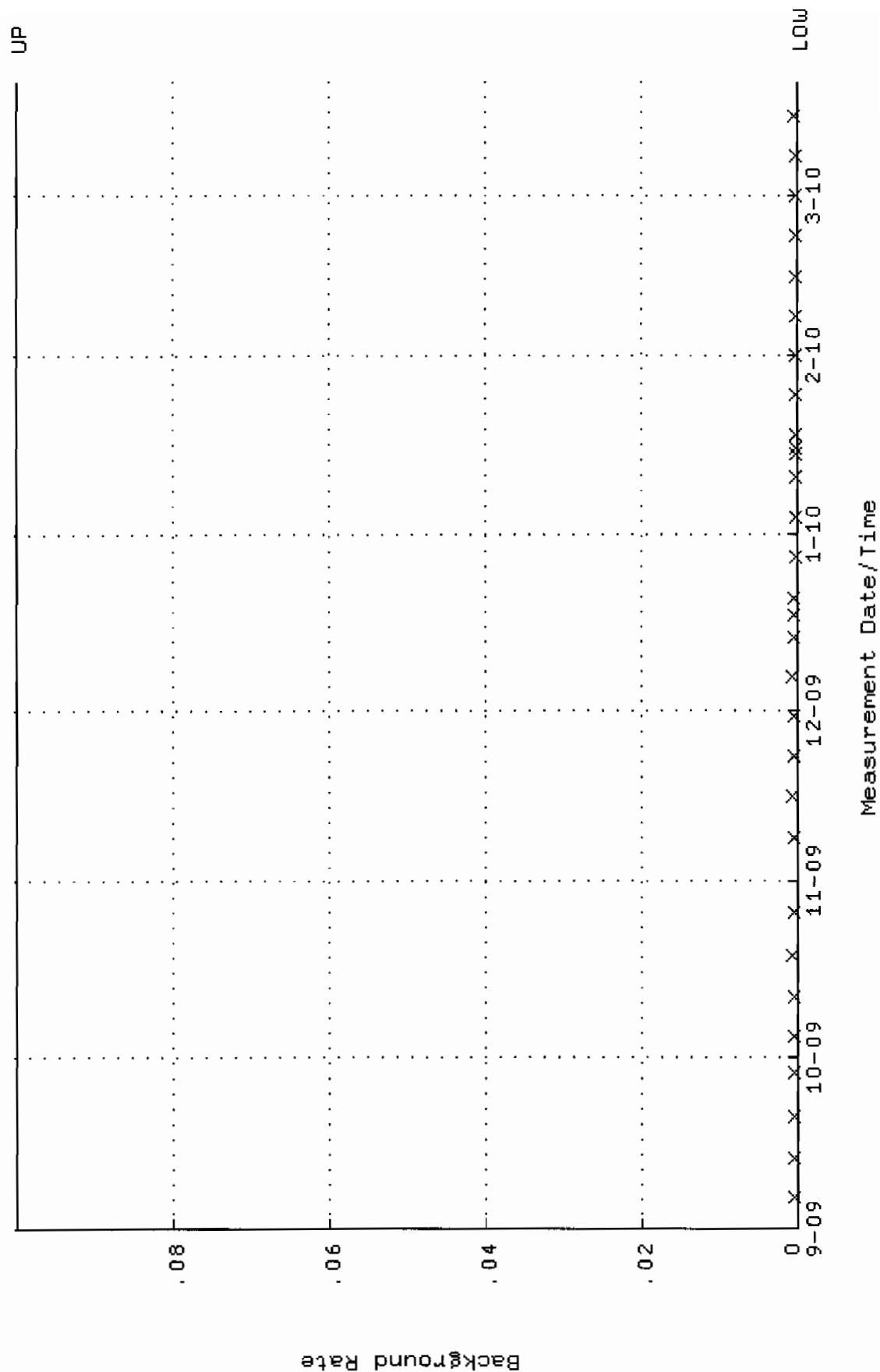
QA filename : DKA100:[ENV_ALPHA.QA.W]W120.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:19 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.236163 through 0.280493



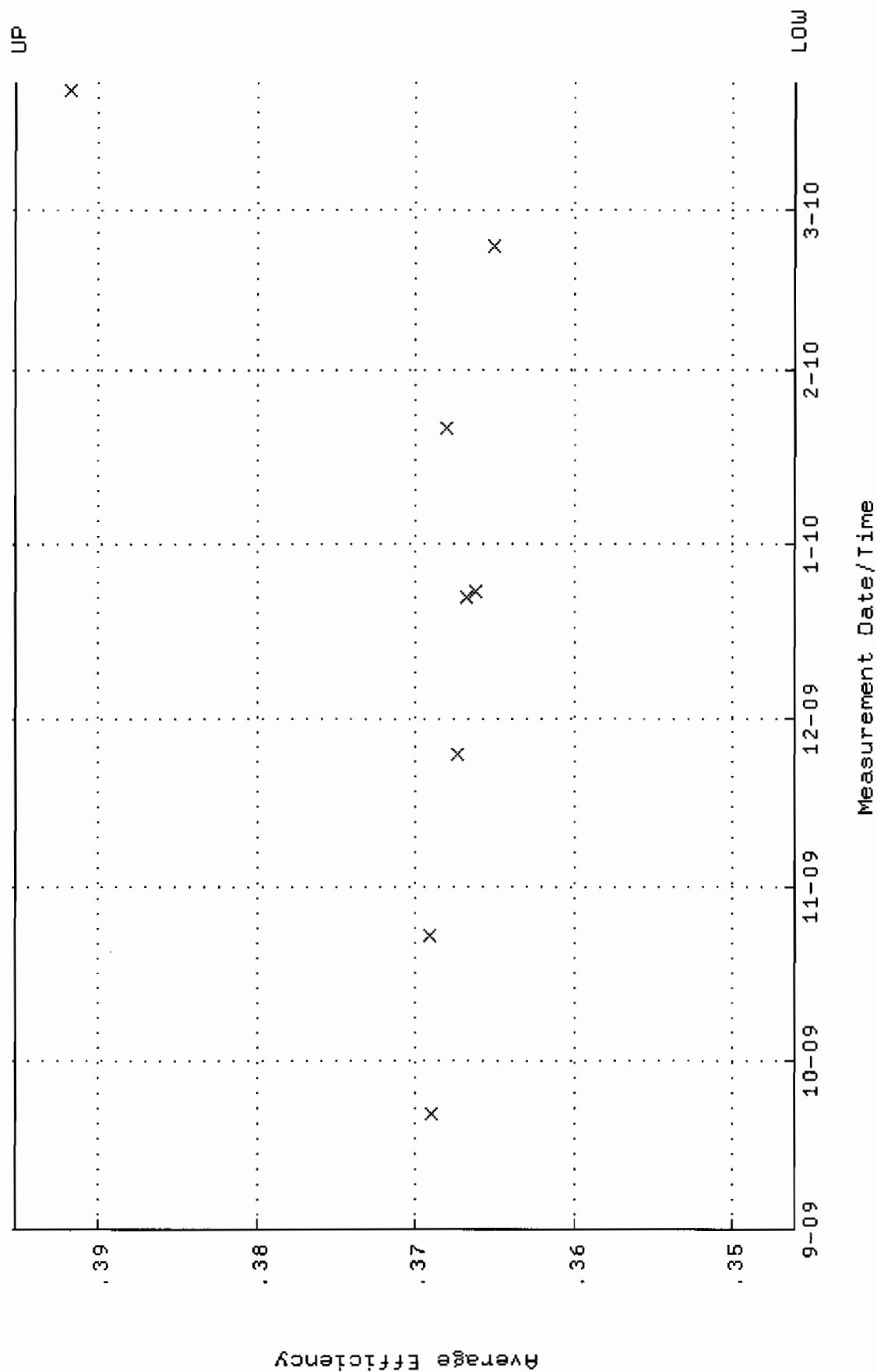
QA filename : DKA100:[ENV_ALPHA.QA.W]W120.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:19 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.2737 through 91.7767



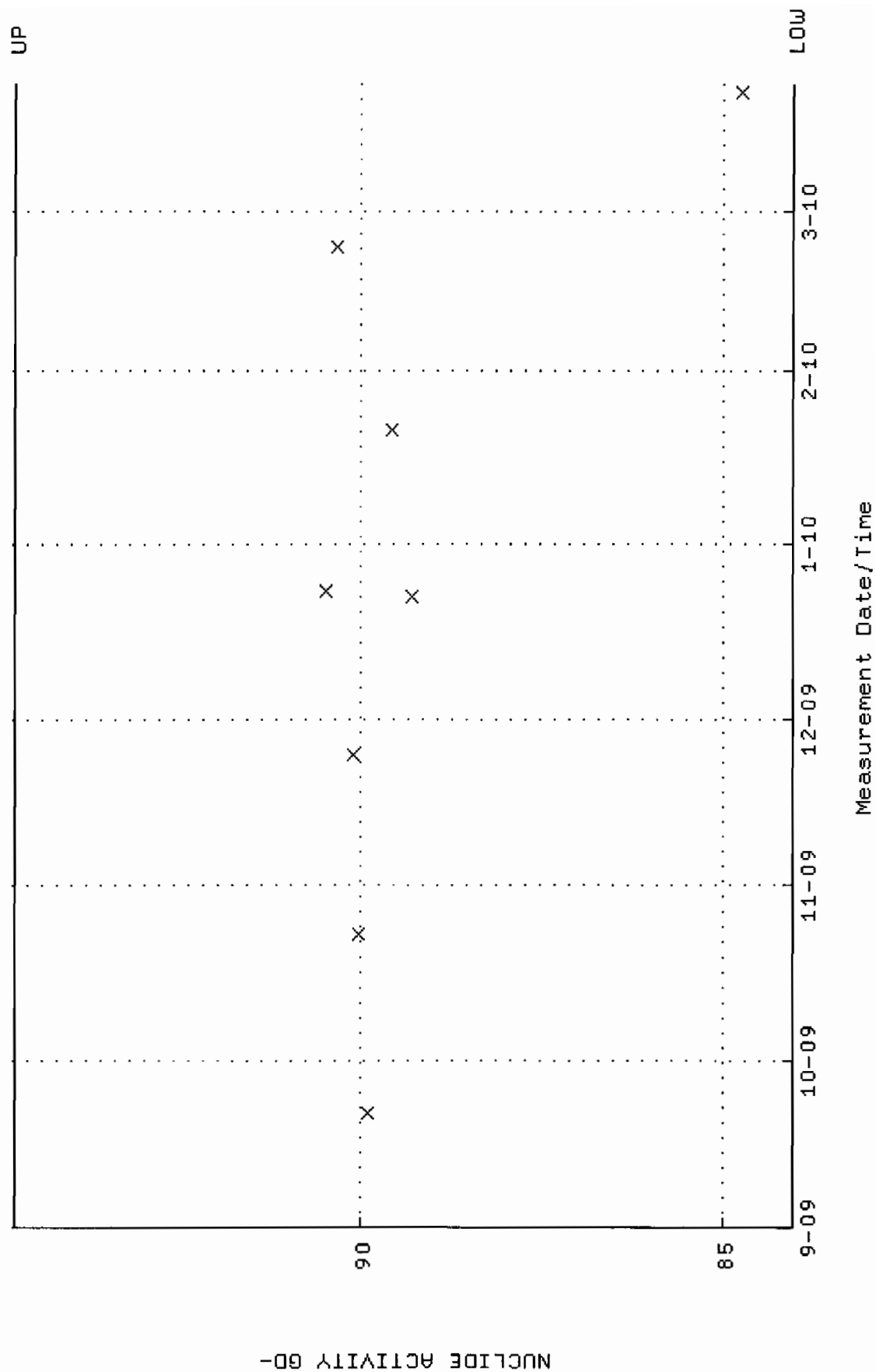
QA filename : DKA100:[ENV_ALPHA.QA.B]B120.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:39 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



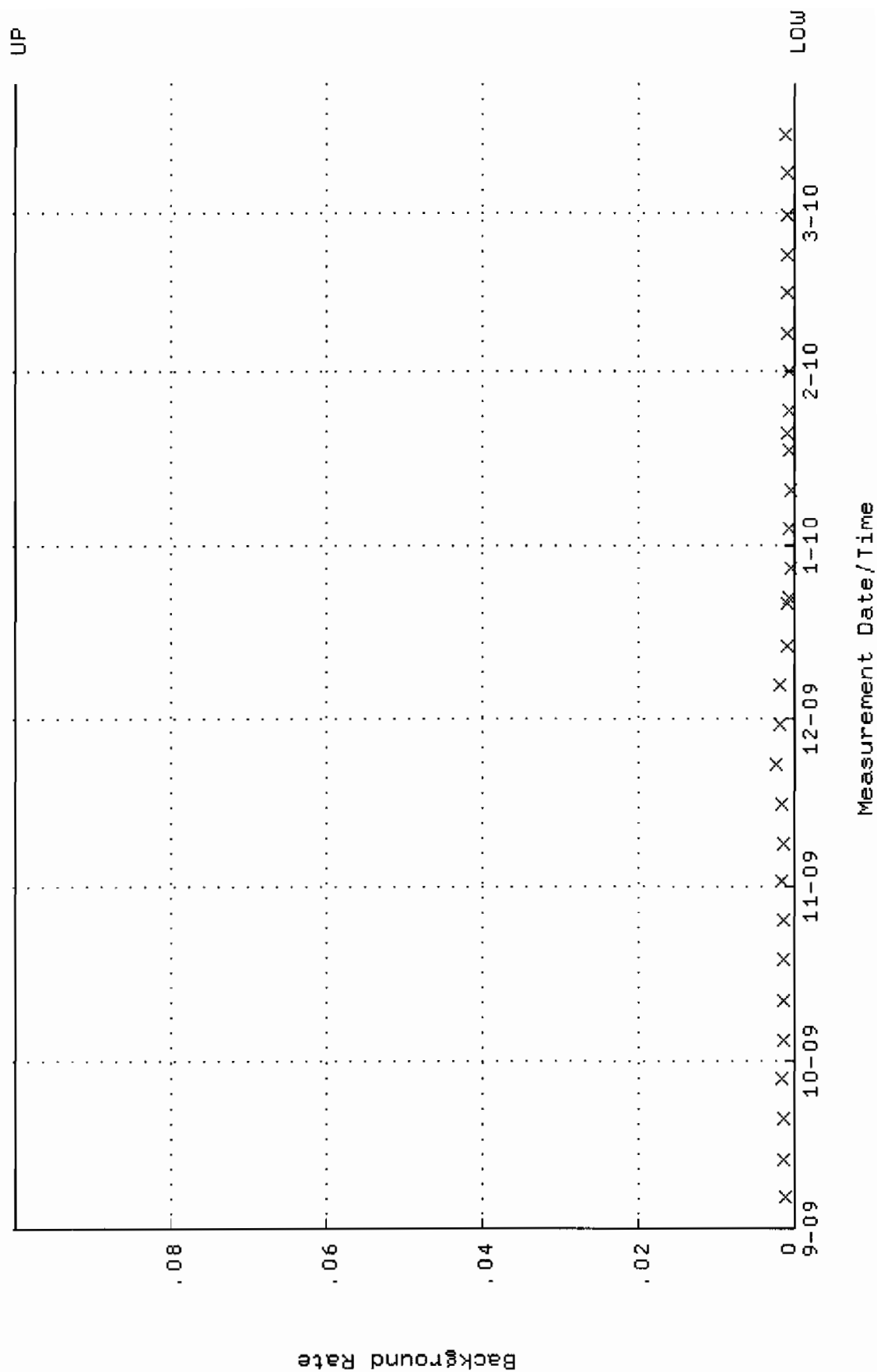
QA filename : DKA100:[ENV_ALPHA.QA.W]W161.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:18 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346063 through 0.395257



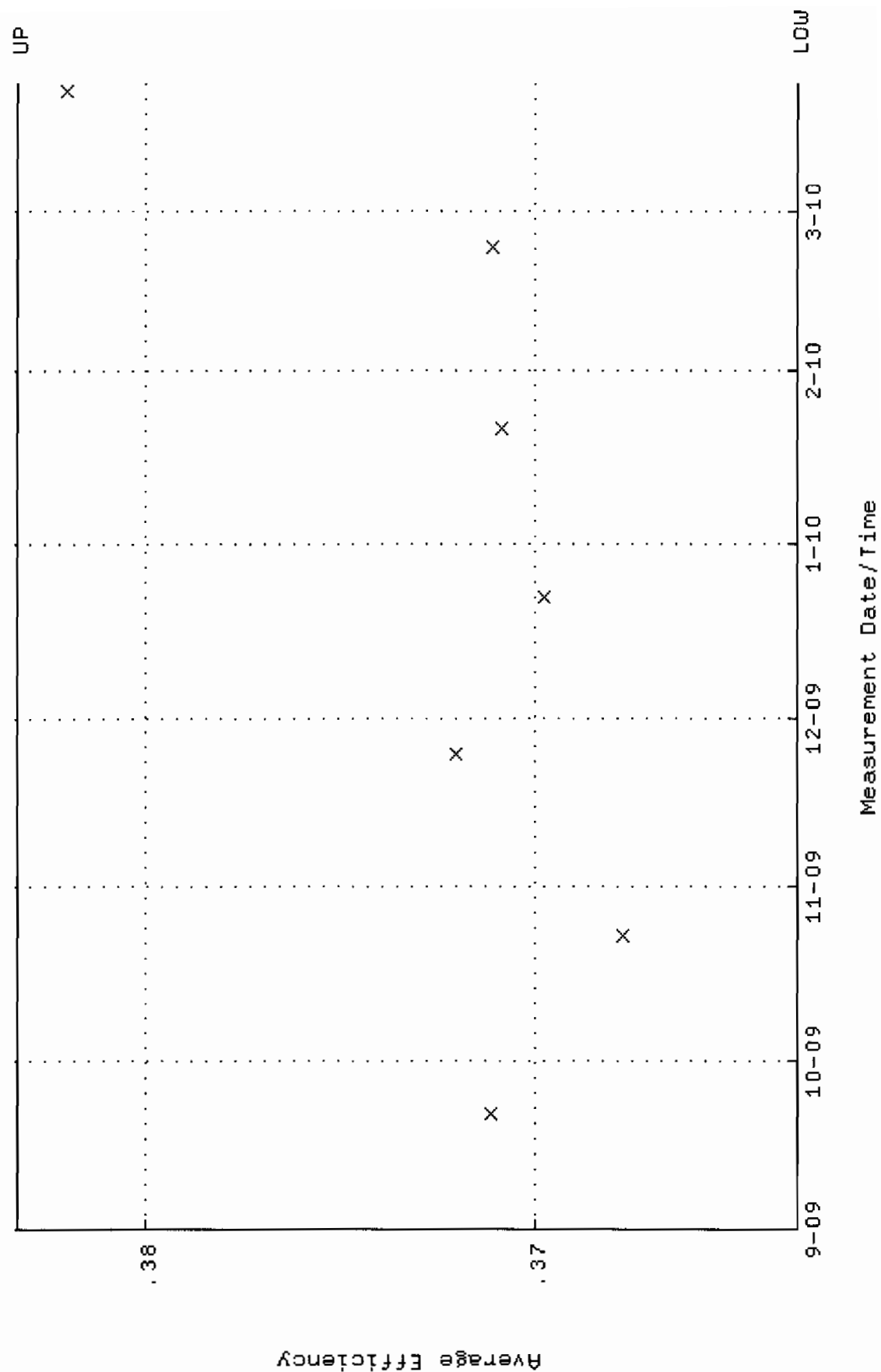
QA filename : DKA100:[ENV_ALPHA.QA.W]W161.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:18 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.0330 through 94.7716



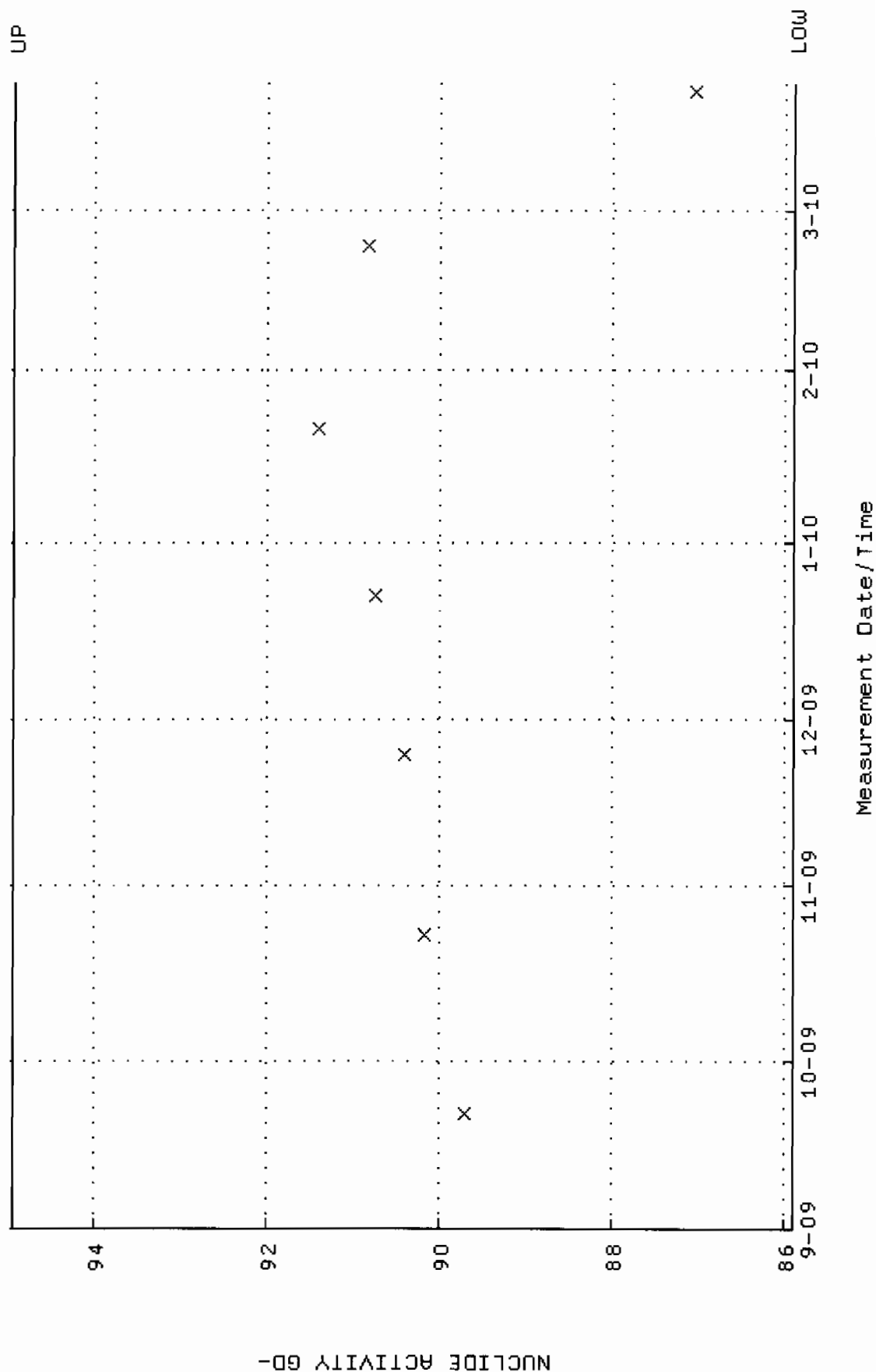
QA filename : DKA100:[ENV_ALPHA.QA.B]B161.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:12 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



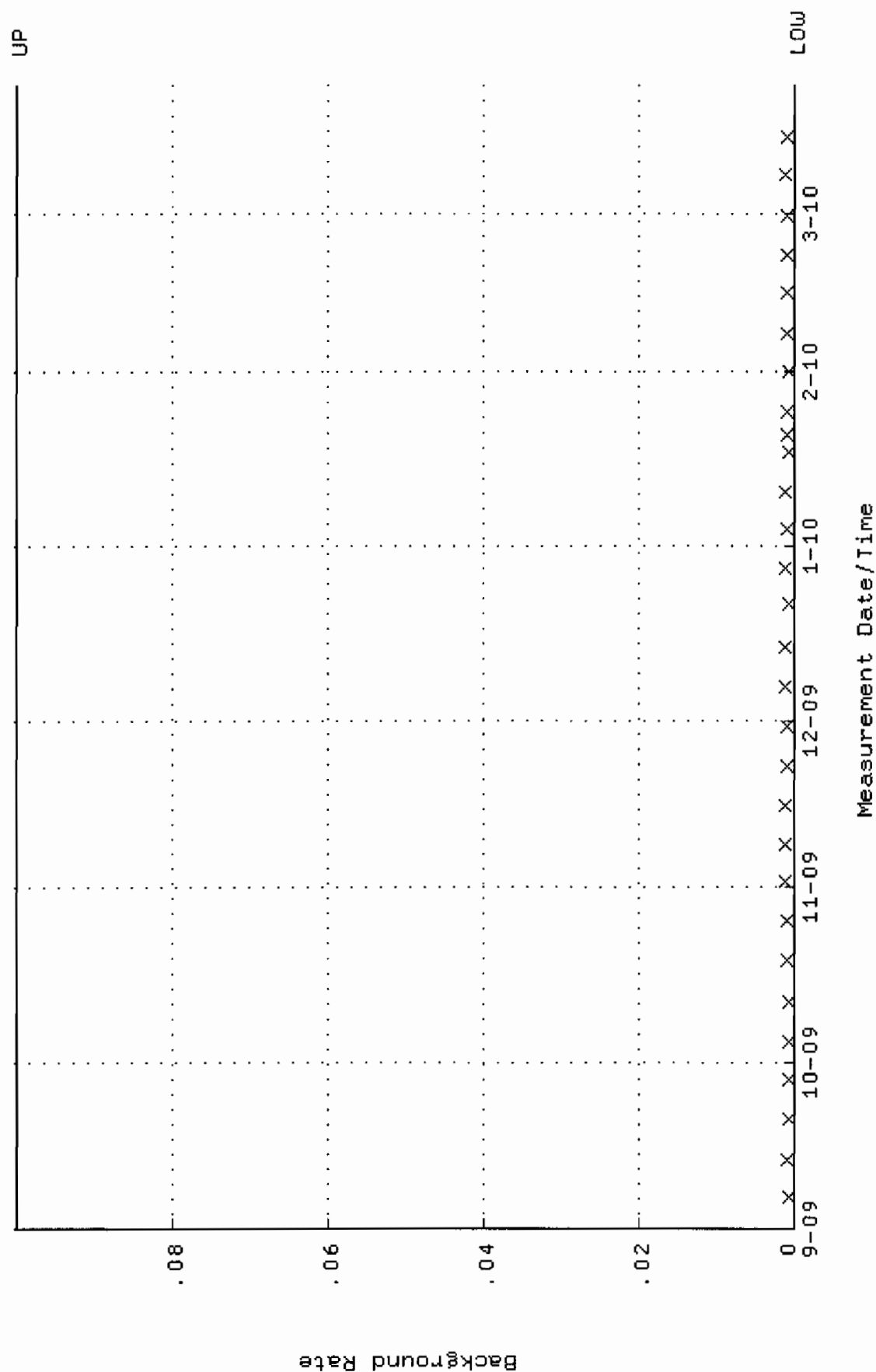
QA filename : DKA100:[ENV_ALPHA.QA.W]w162.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:25 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363287 through 0.383287



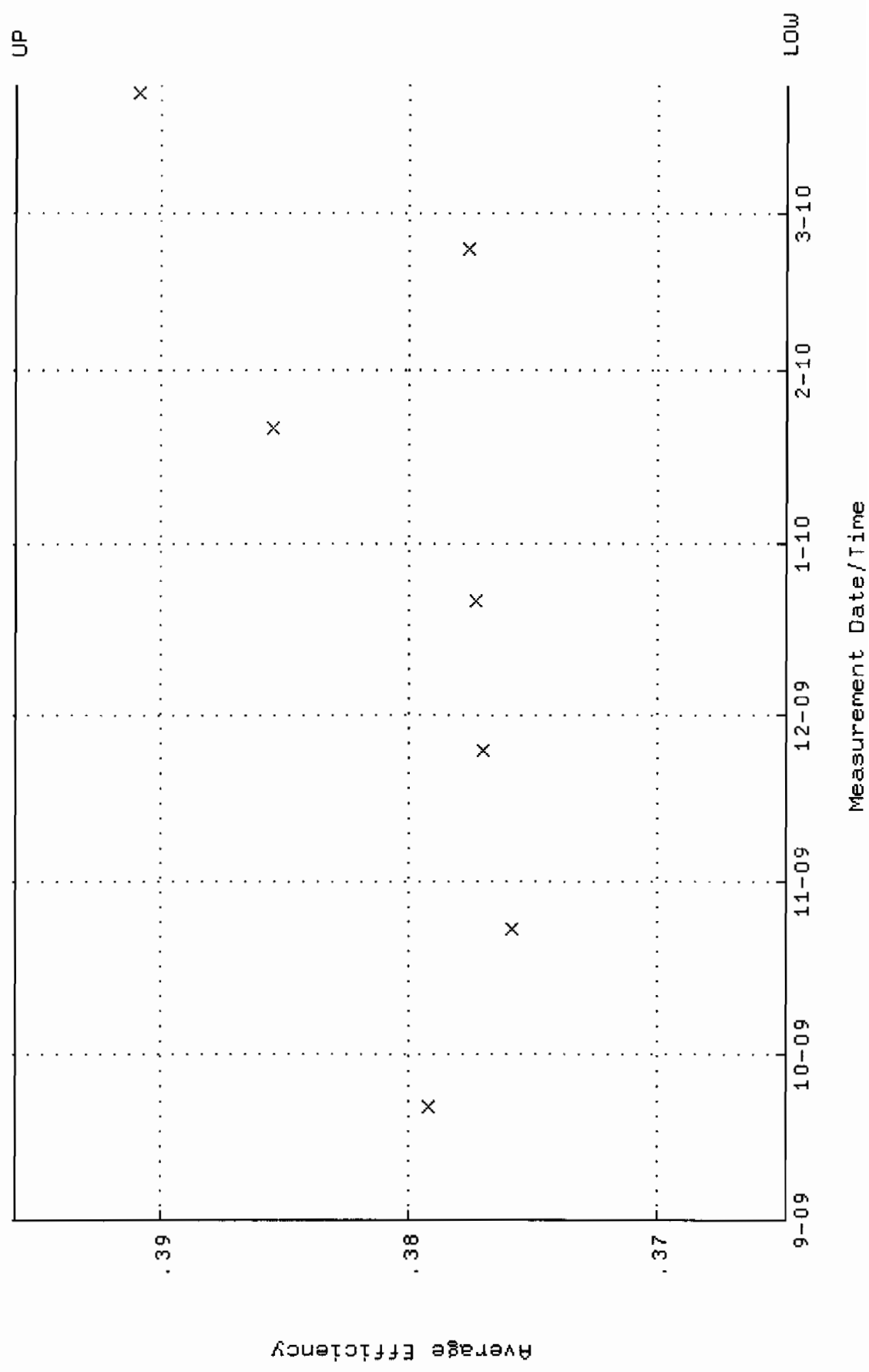
QA filename : DKA100:[ENV_ALPHA.QA.W]W162.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:25 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.8969 through 94.9387



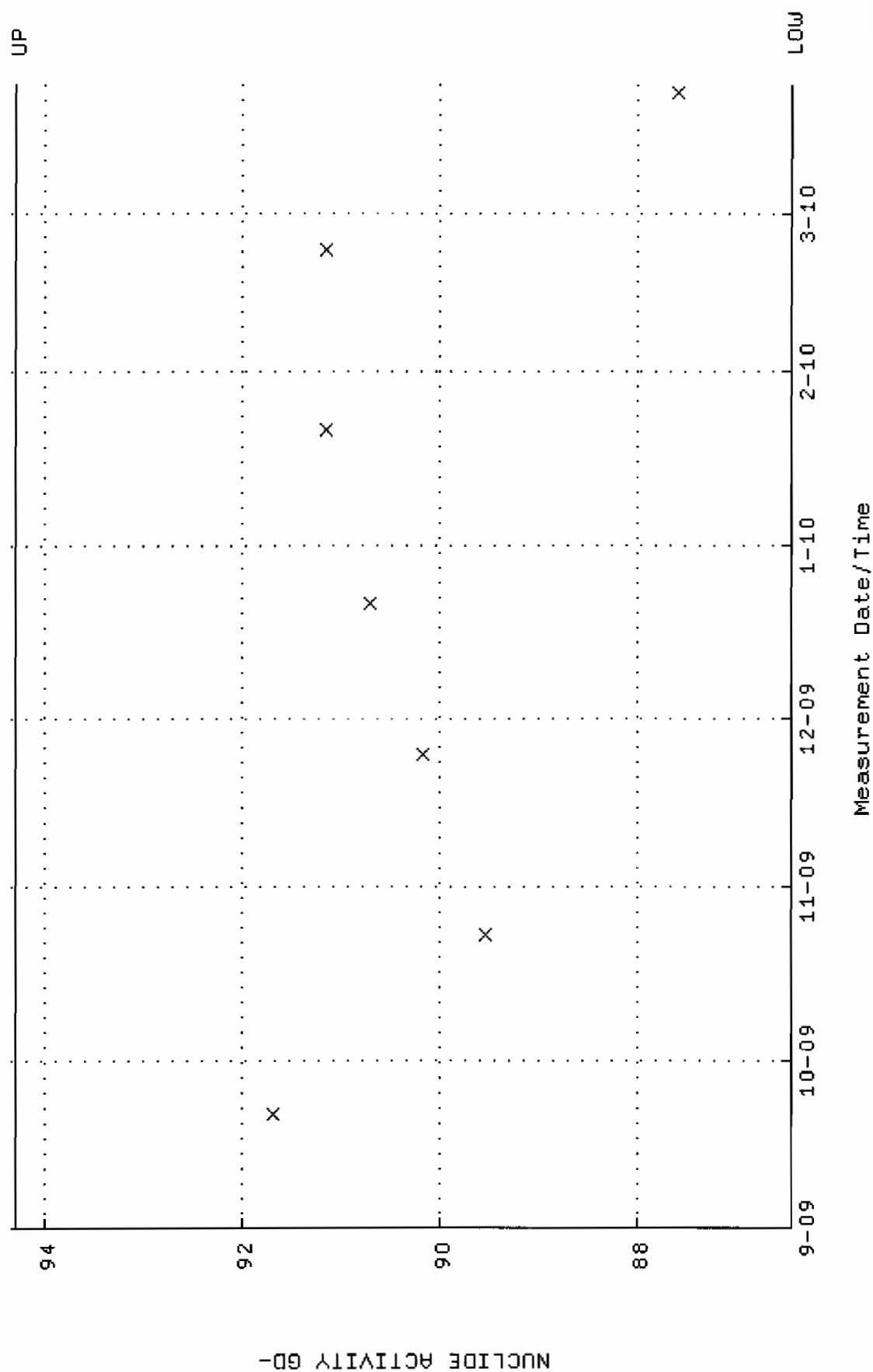
QA filename : DKA100:[ENV_ALPHA.QA.B]B162.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:17 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



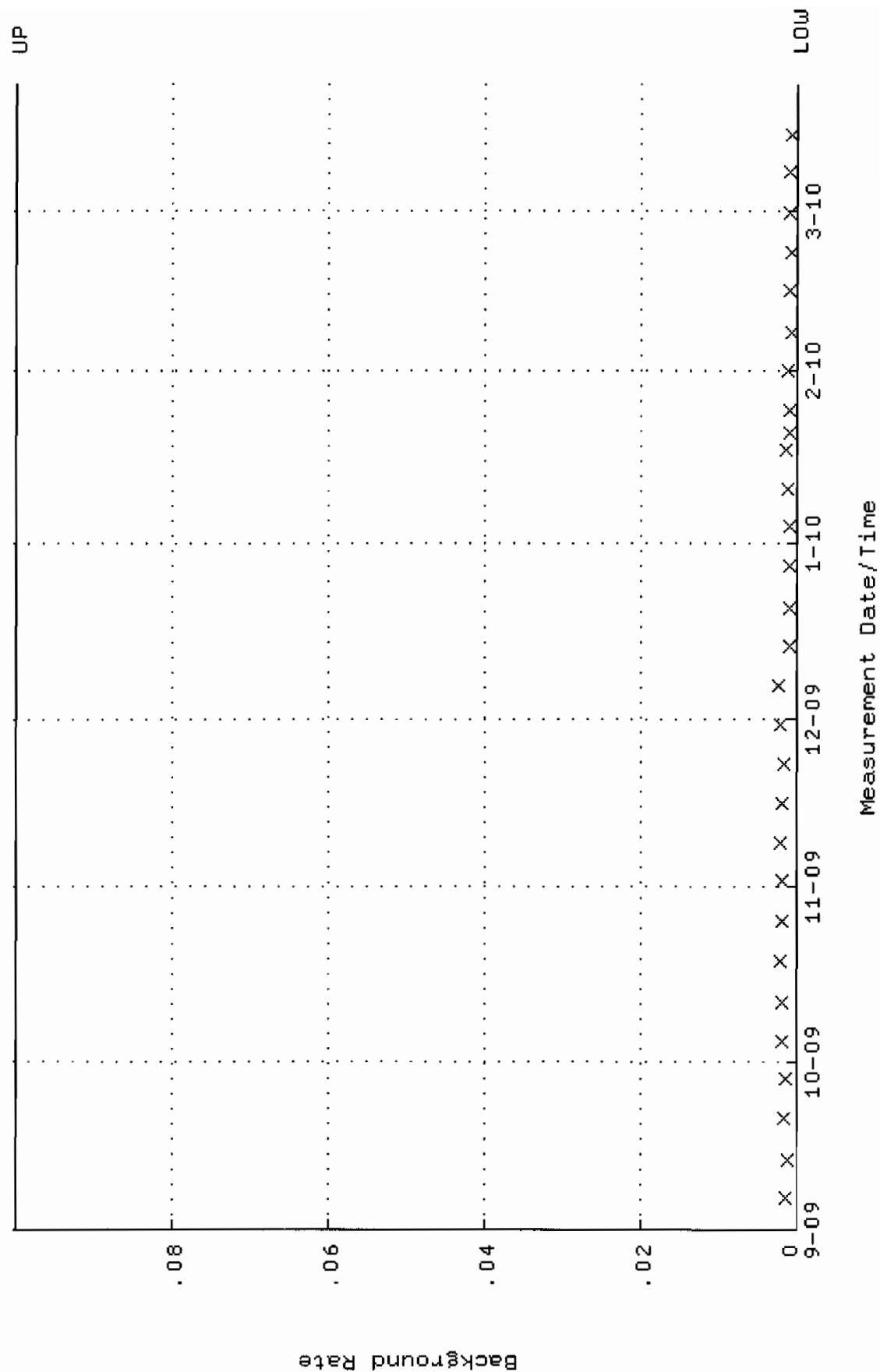
QA filename : DKA100:[ENV_ALPHA.QA.W]W164.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:39 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.364871 through 0.395783



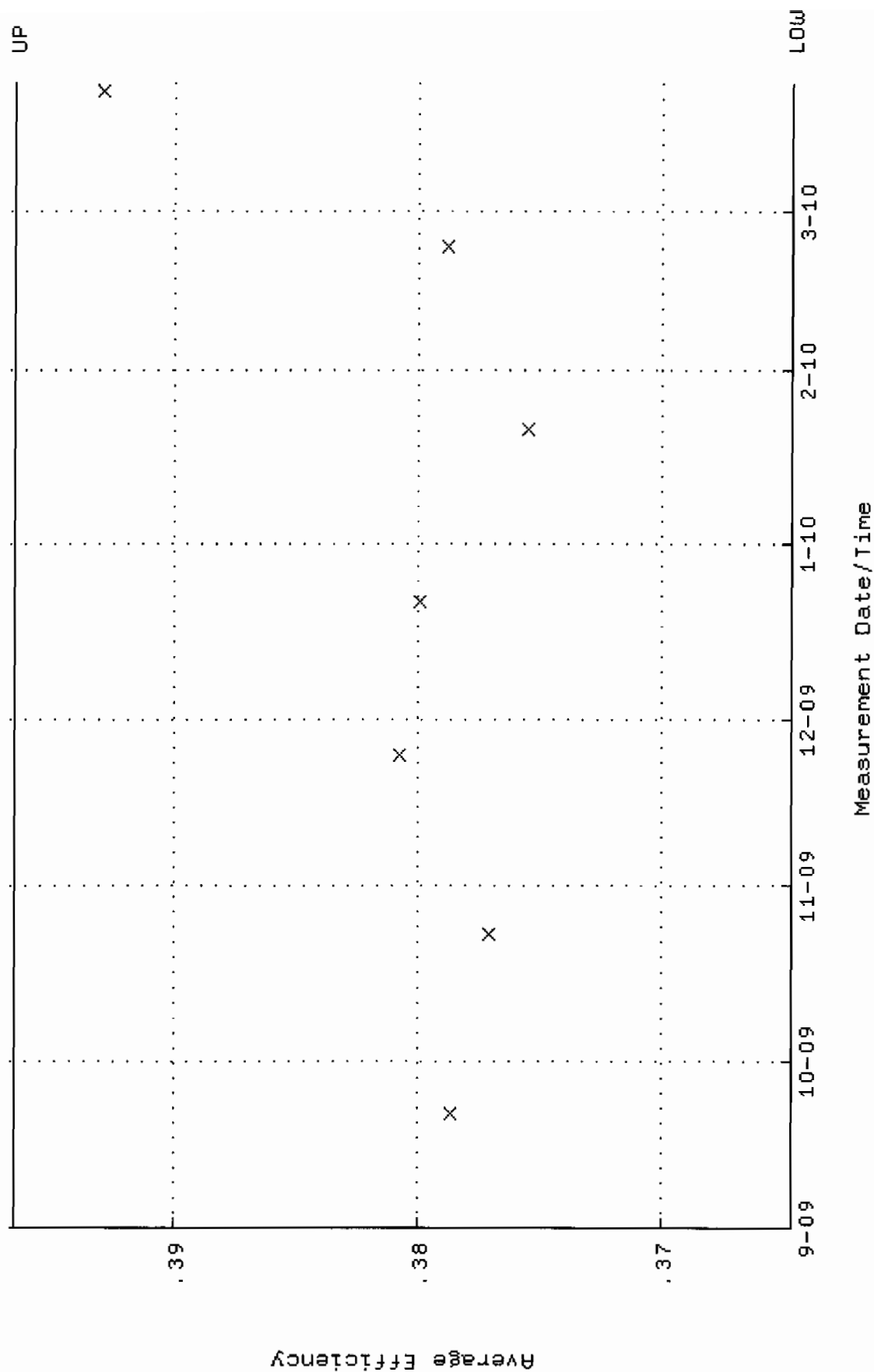
QA filename : DKA100:[ENV_ALPHA.QA.W]W164.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:39 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.4520 through 94.3102



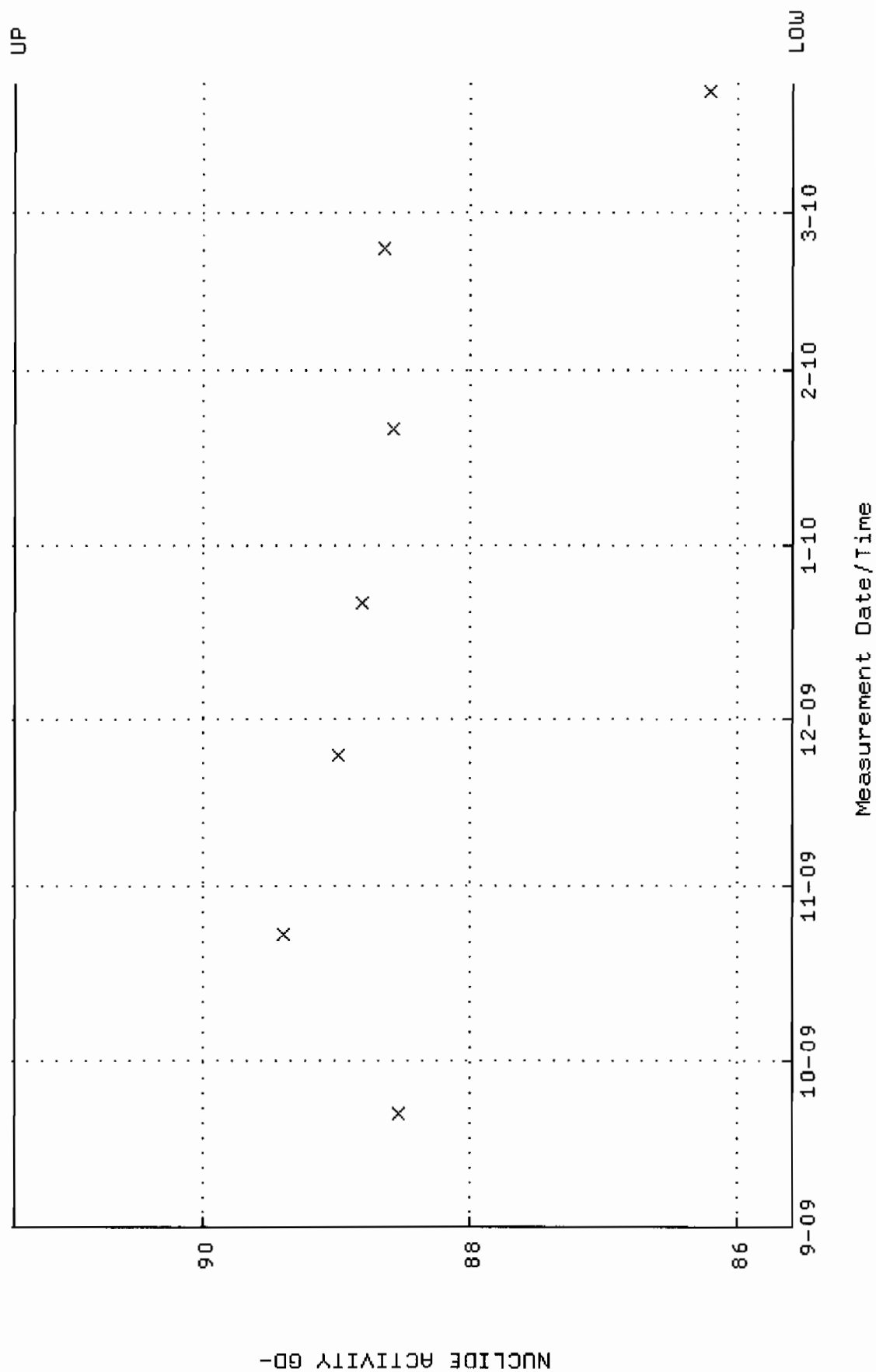
QA filename : DKA100:[ENV_ALPHA.QA.B]B164.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



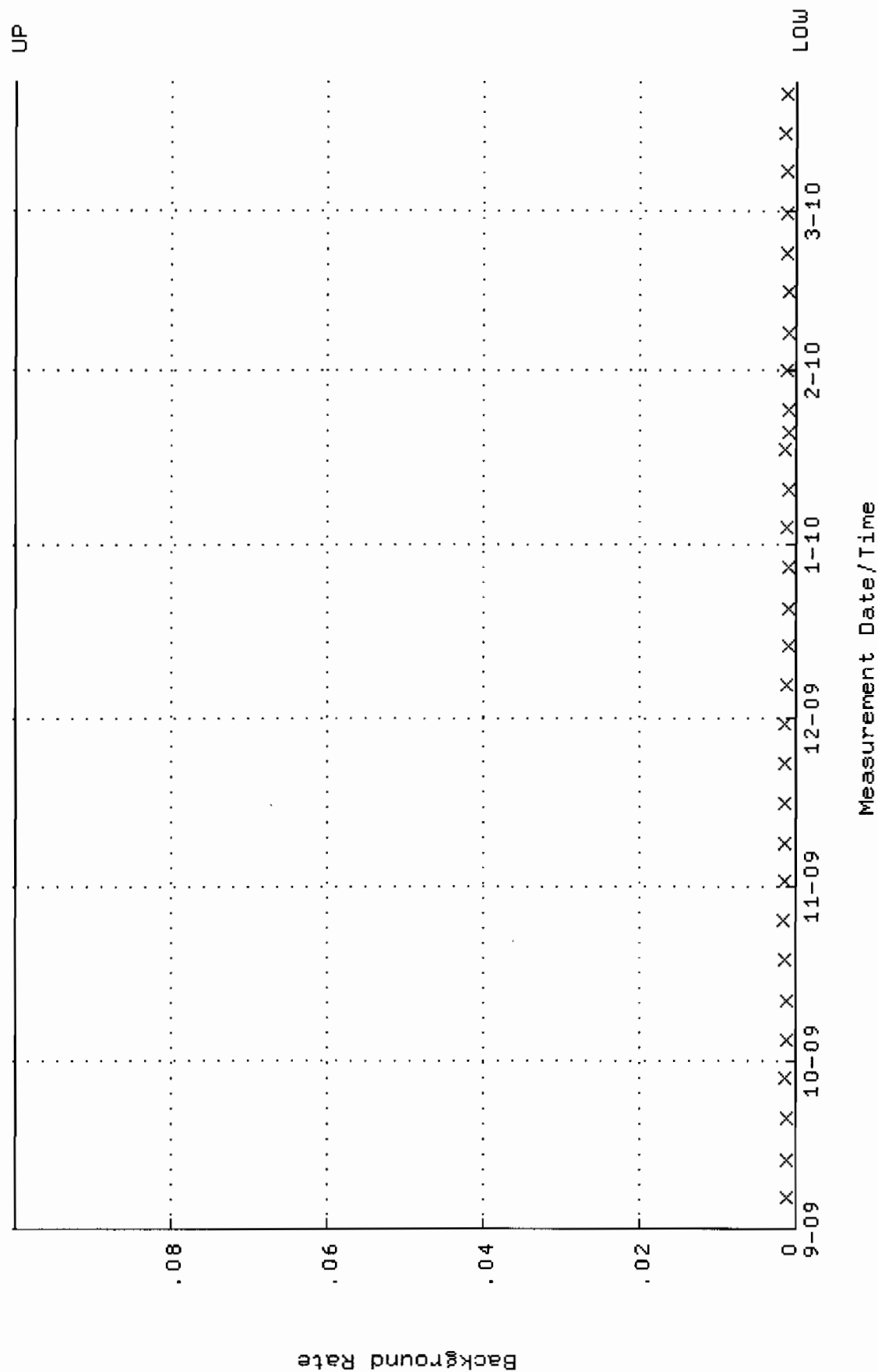
QA filename : DKA100:[ENV_ALPHA.QA.W]w165.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.364660 through 0.396652



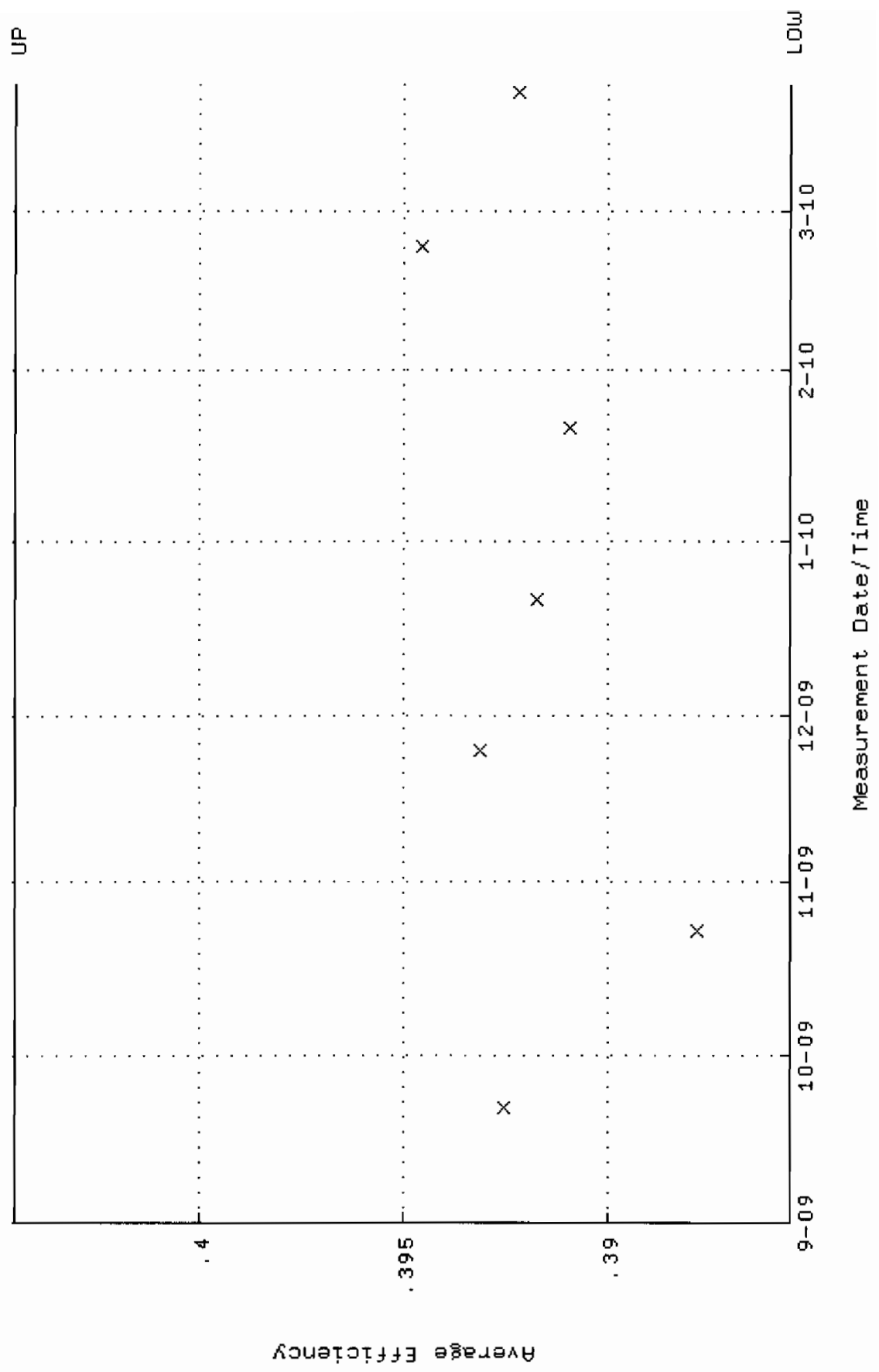
QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5935 through 91.4009



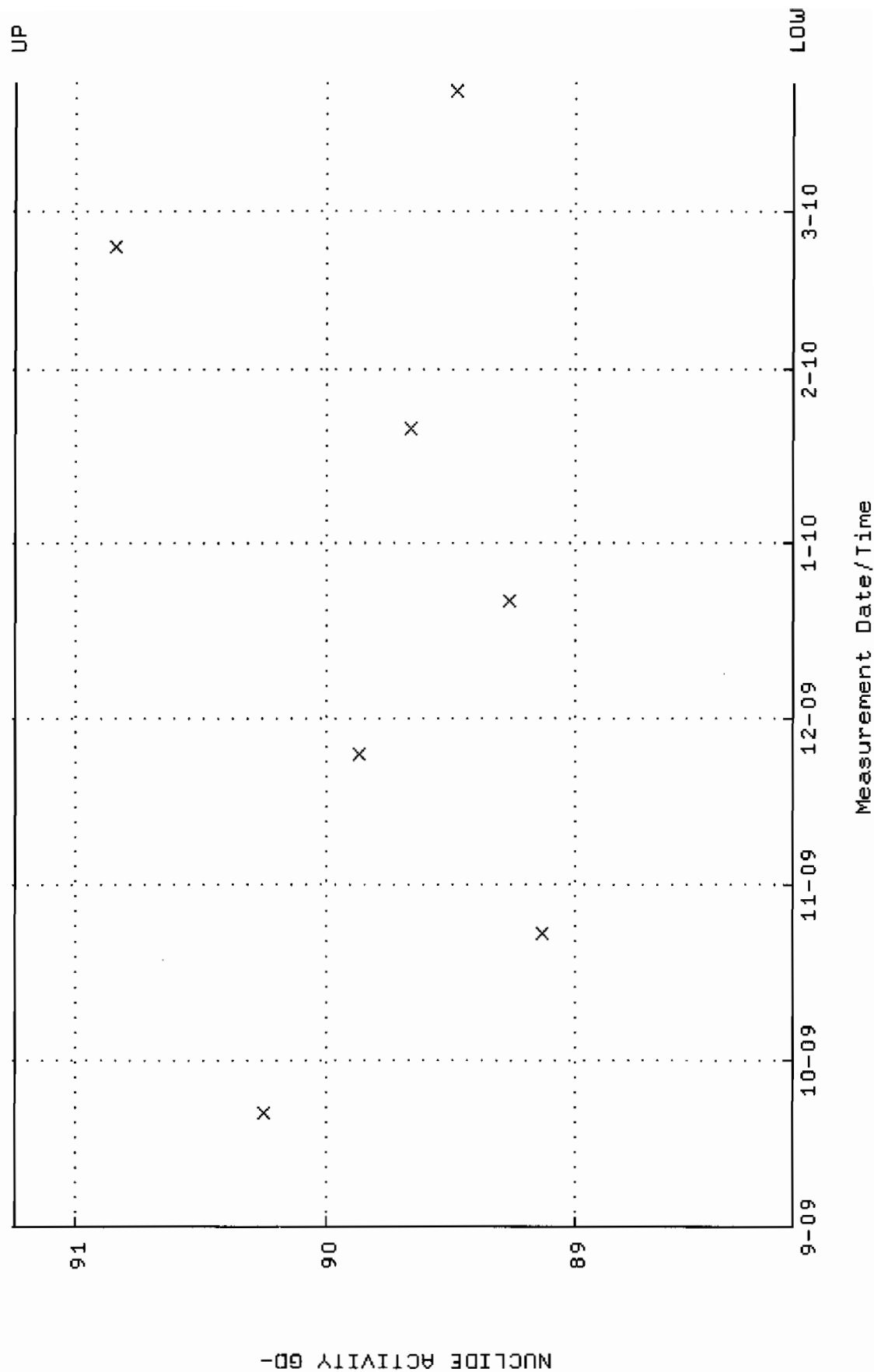
QA filename : DKA100:[ENV_ALPHA.QA.B]B165.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:31 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



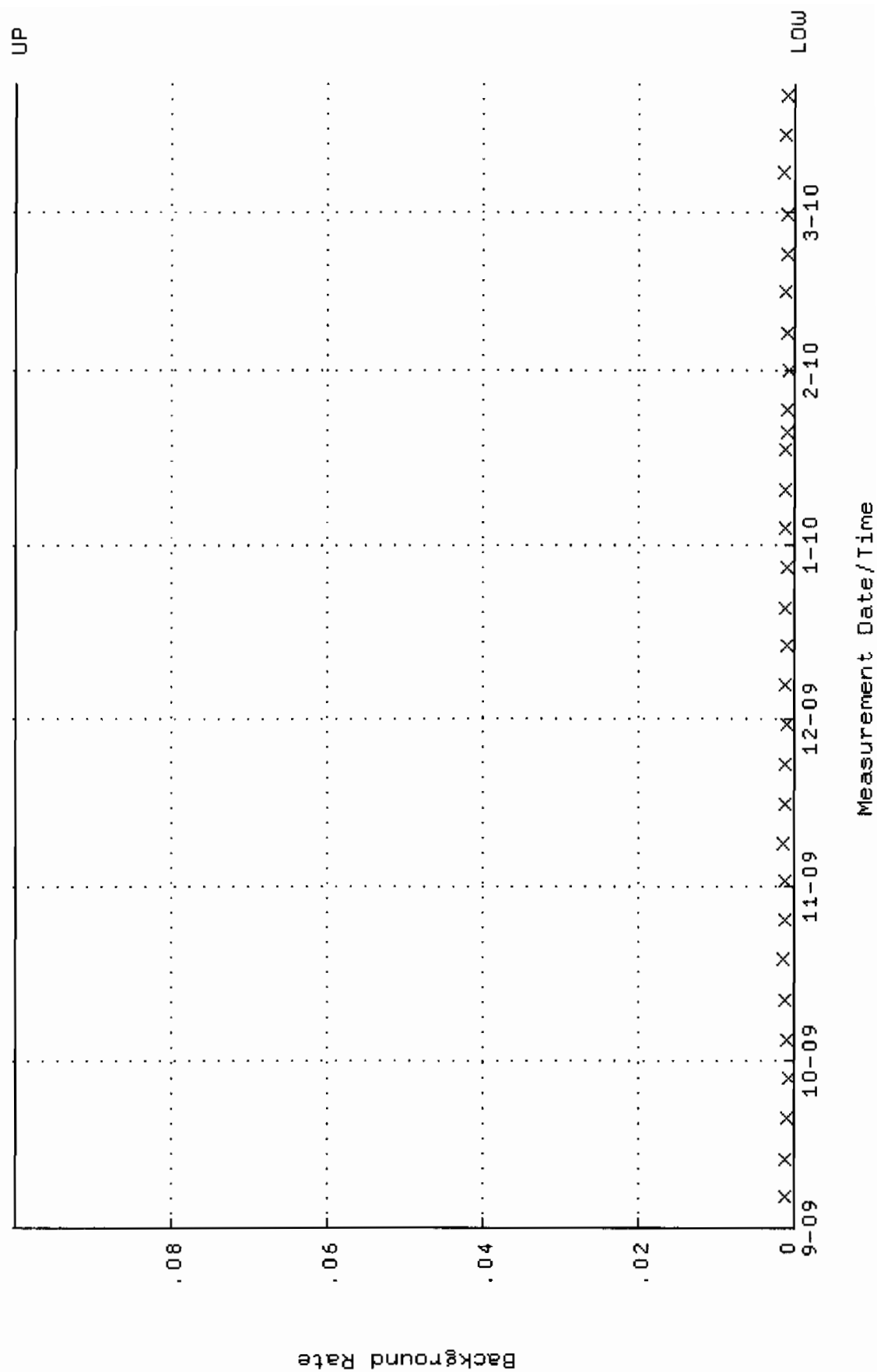
QA filename : DKA100:[ENV_ALPHA.QA.W]U166.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:52 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.385564 through 0.404504



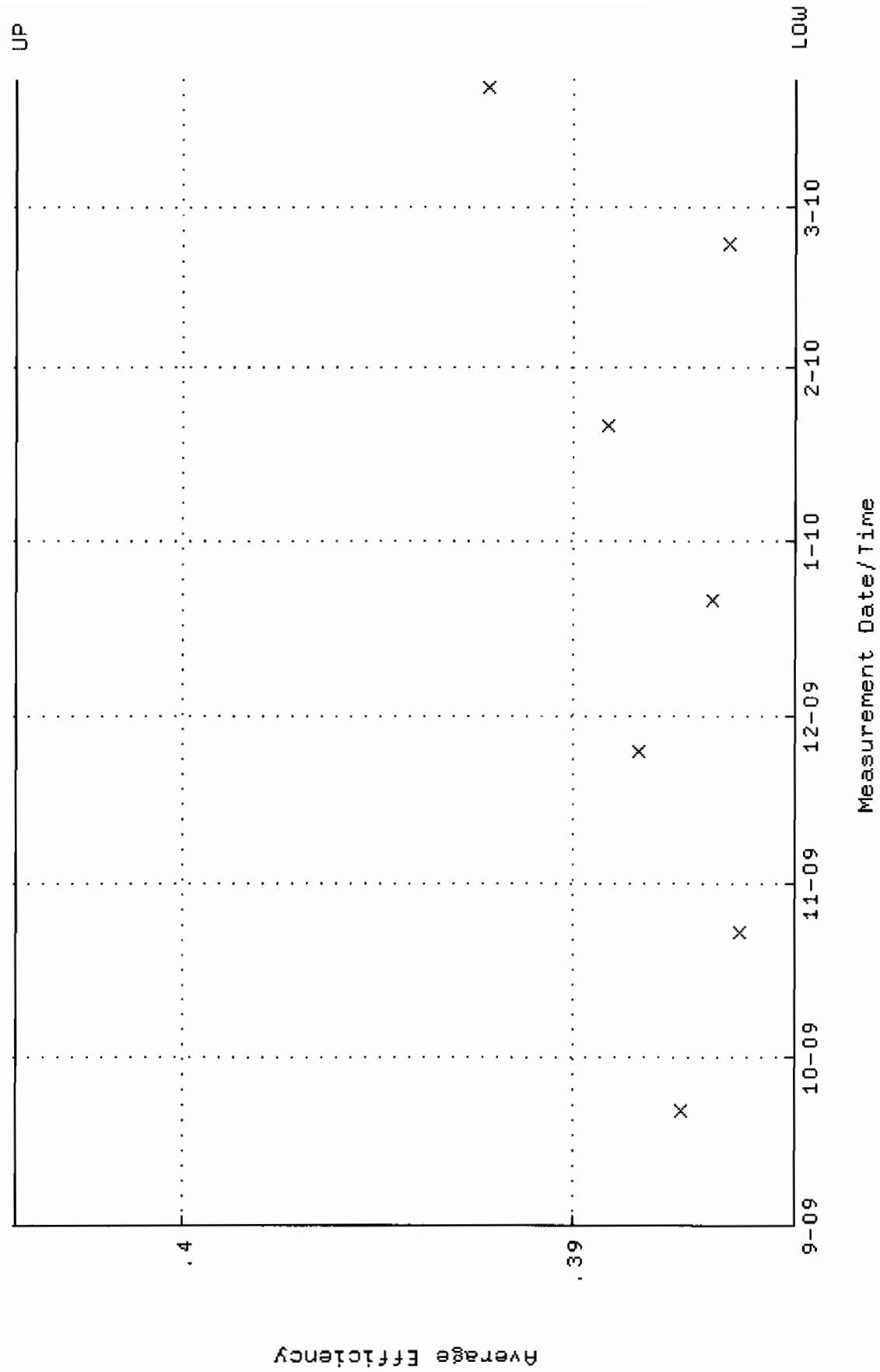
QA filename : DKA100:[ENV-ALPHA.QA.W]W166.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:52 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.1264 through 91.2442



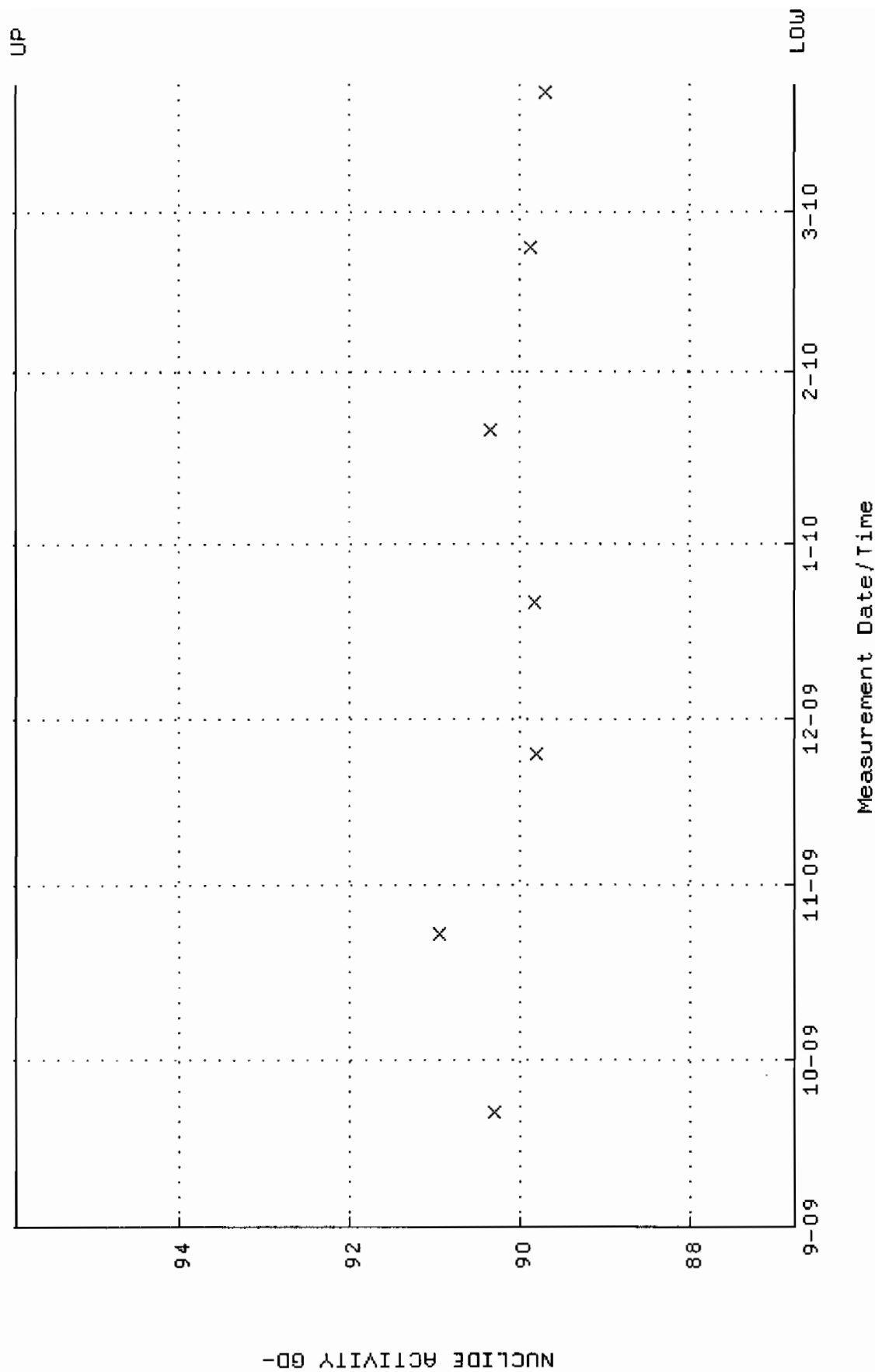
QA filename : DKA100:[ENV_ALPHA.QA.B]B166.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:35 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



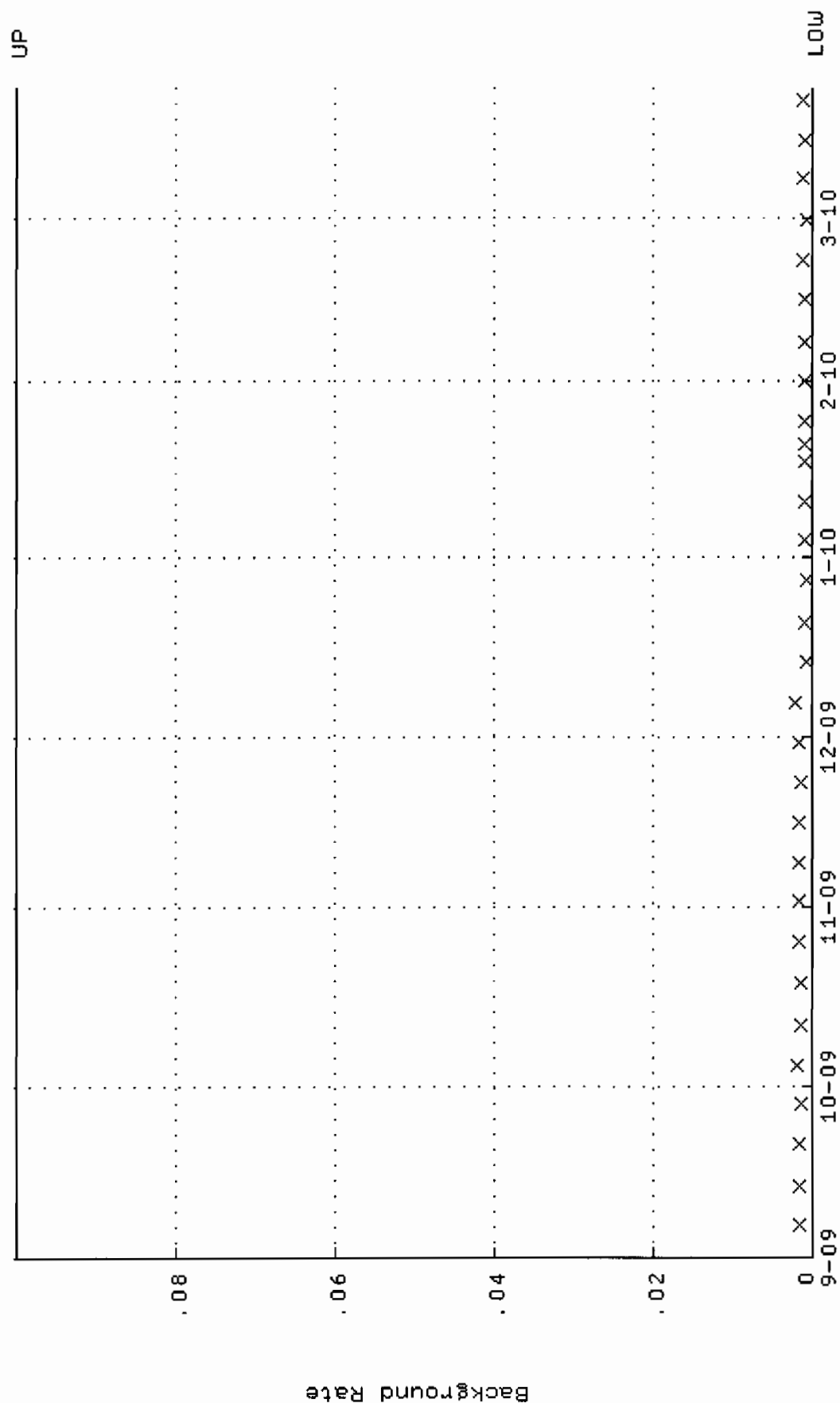
QA filename : DKA100:[ENV_ALPHA.QA.W]u167.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:59 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.384285 through 0.404285



QA filename : DKA100:[ENV-ALPHA.QA.W]W167.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:59 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7740 through 95.9082

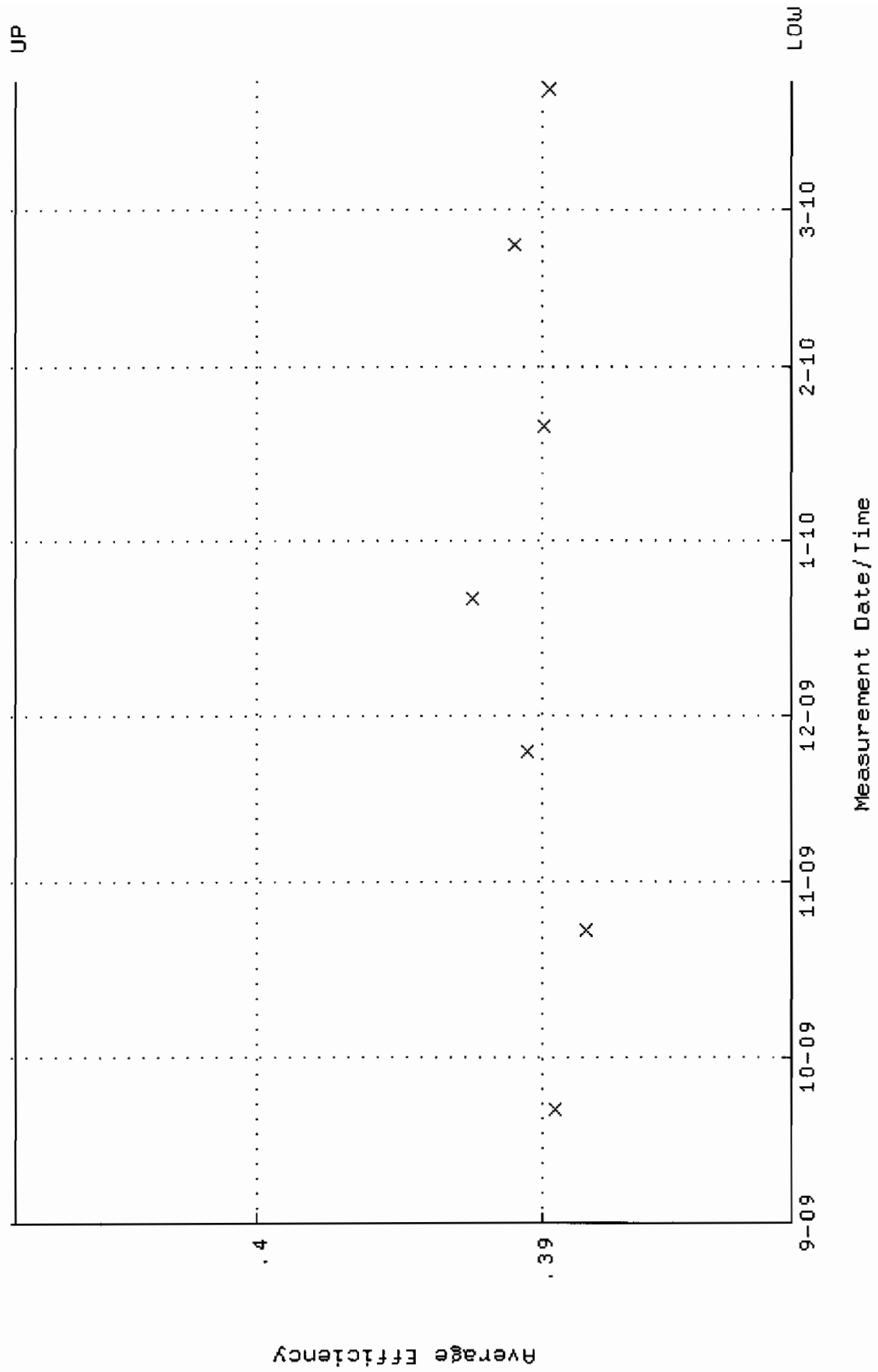


QA filename : DKA100:[ENV-ALPHA.QA.B]B167.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:40 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

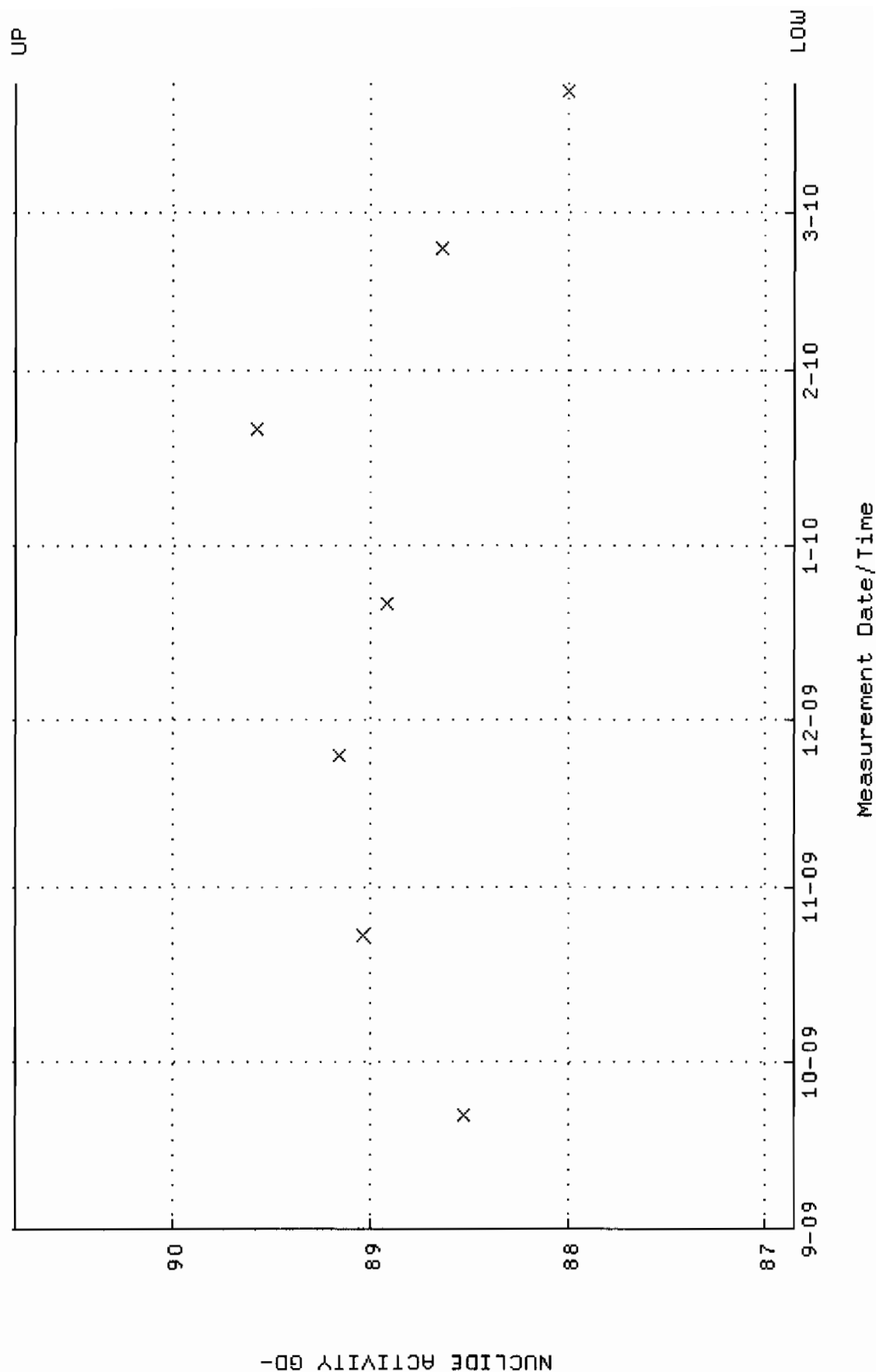


Measurement Date/Time

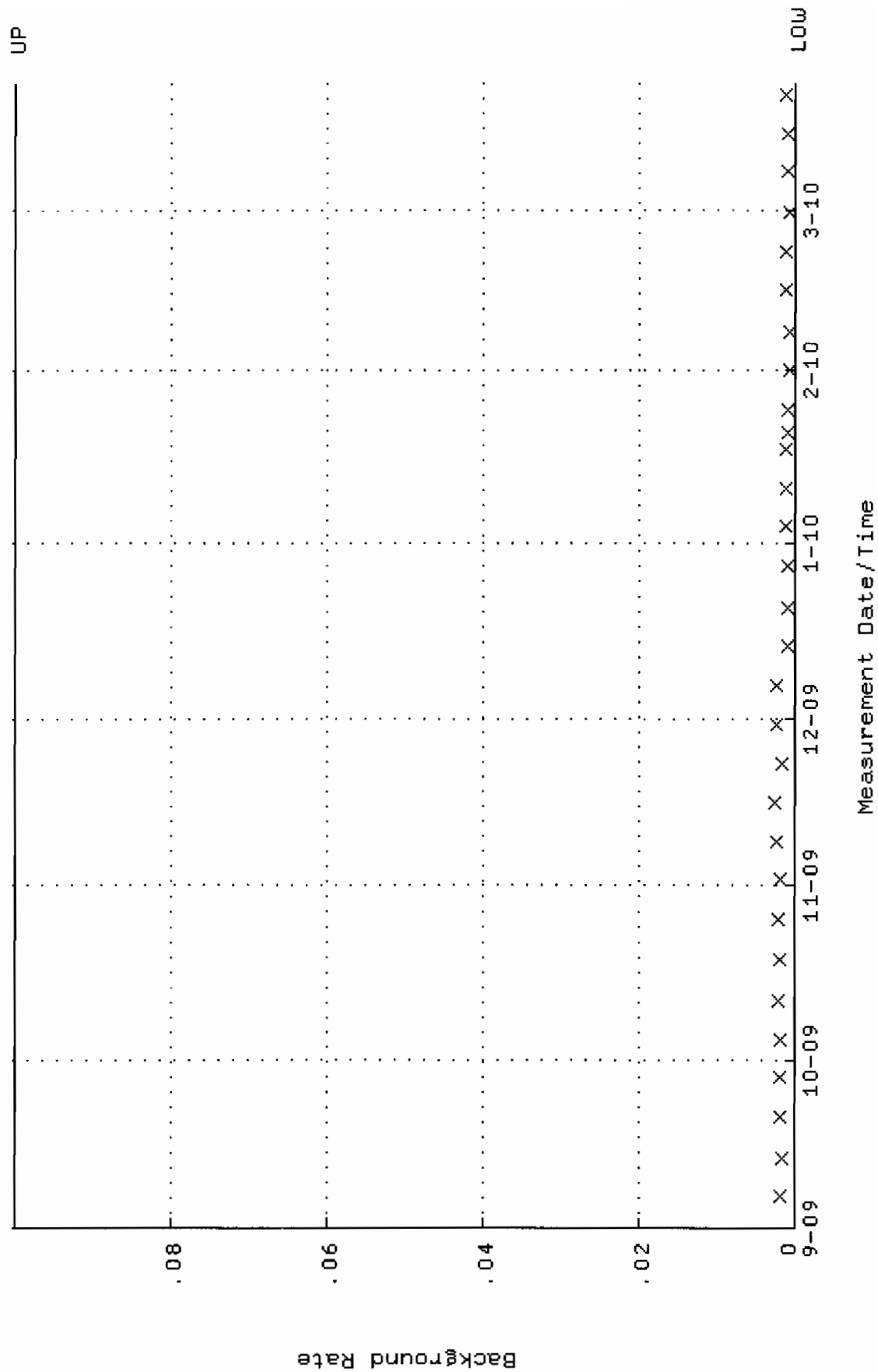
QA filename : DKA100:[ENV_ALPHA.QA.W]w168.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:07 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.381339 through 0.408495



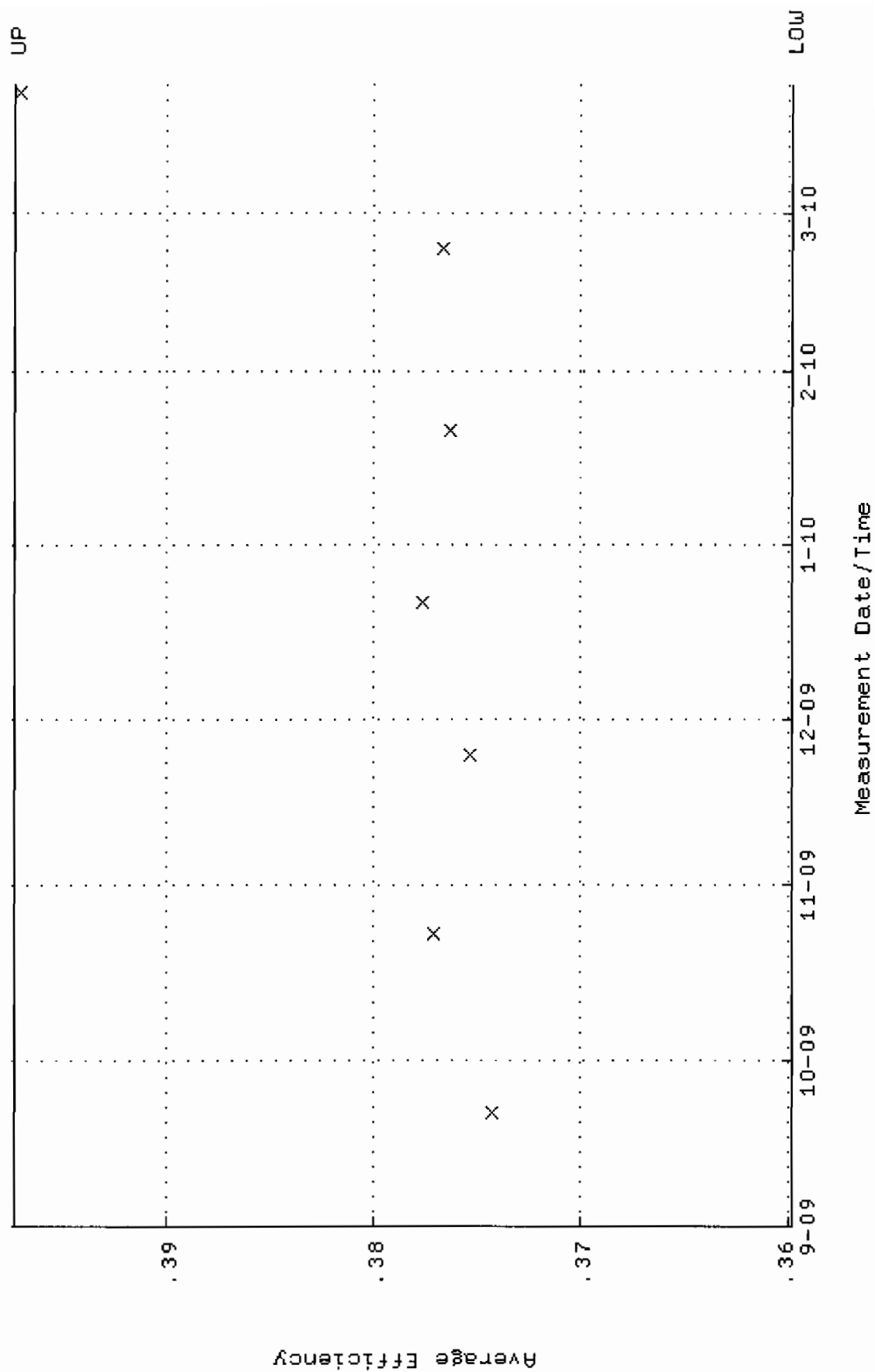
QA filename : OKA100:[ENV-ALPHA.QA.W]W168.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:07 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.8544 through 90.7976



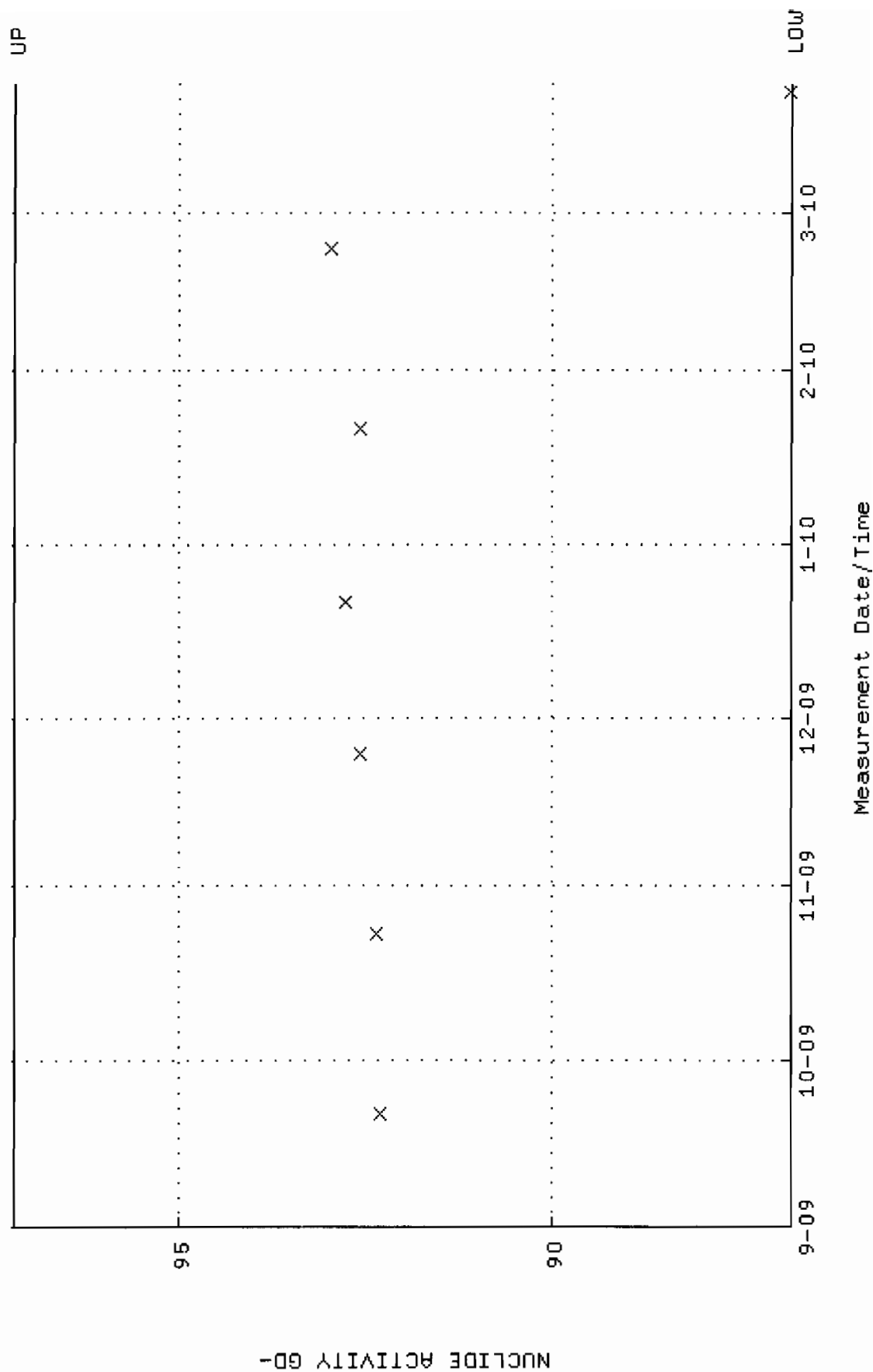
QA filename : DKA100:[ENV-ALPHA.QA.B]B168.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:44 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



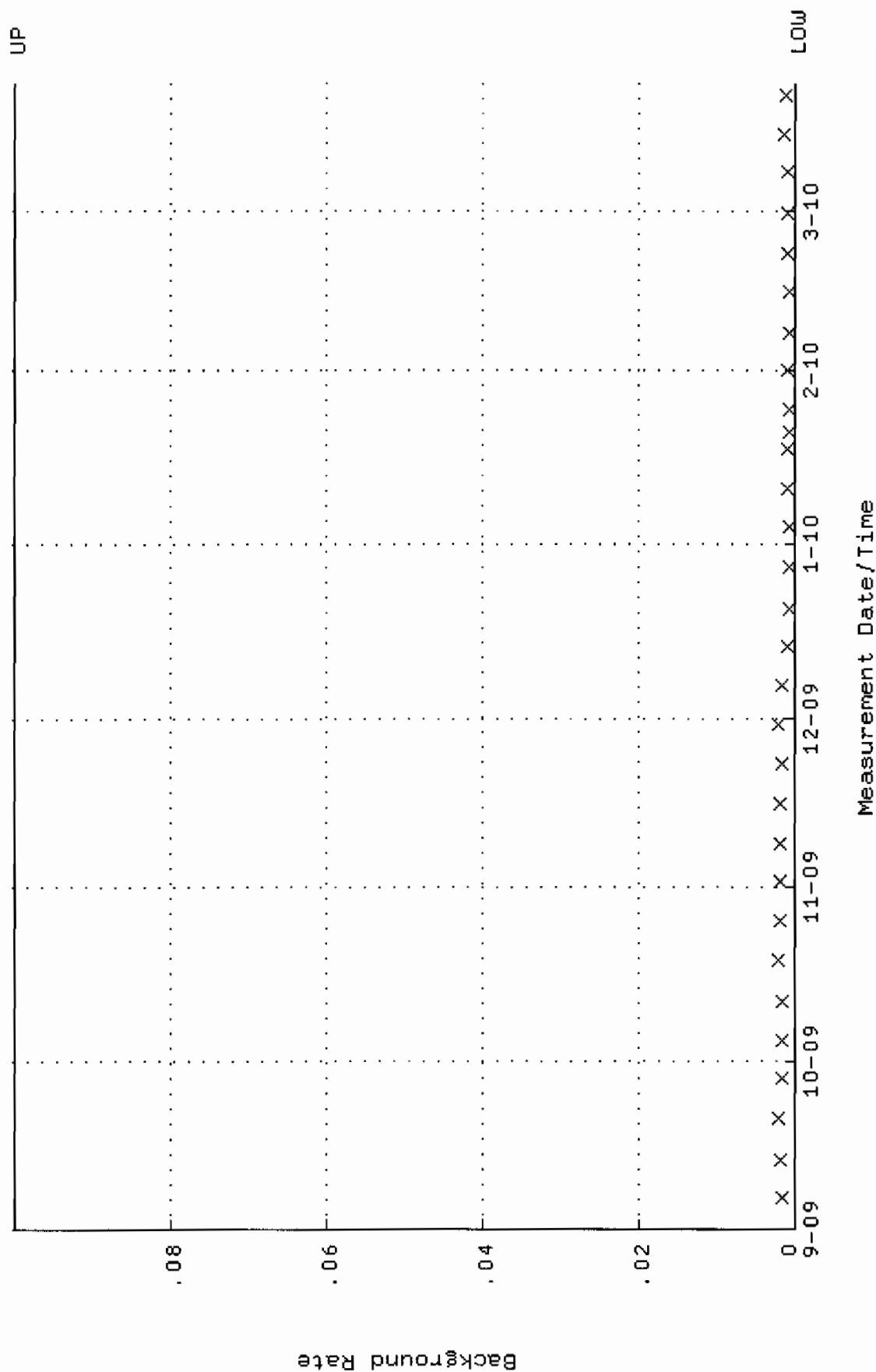
QA filename : OKA100: [ENV_ALPHA.QA.W]U169.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:13 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.359789 through 0.397279



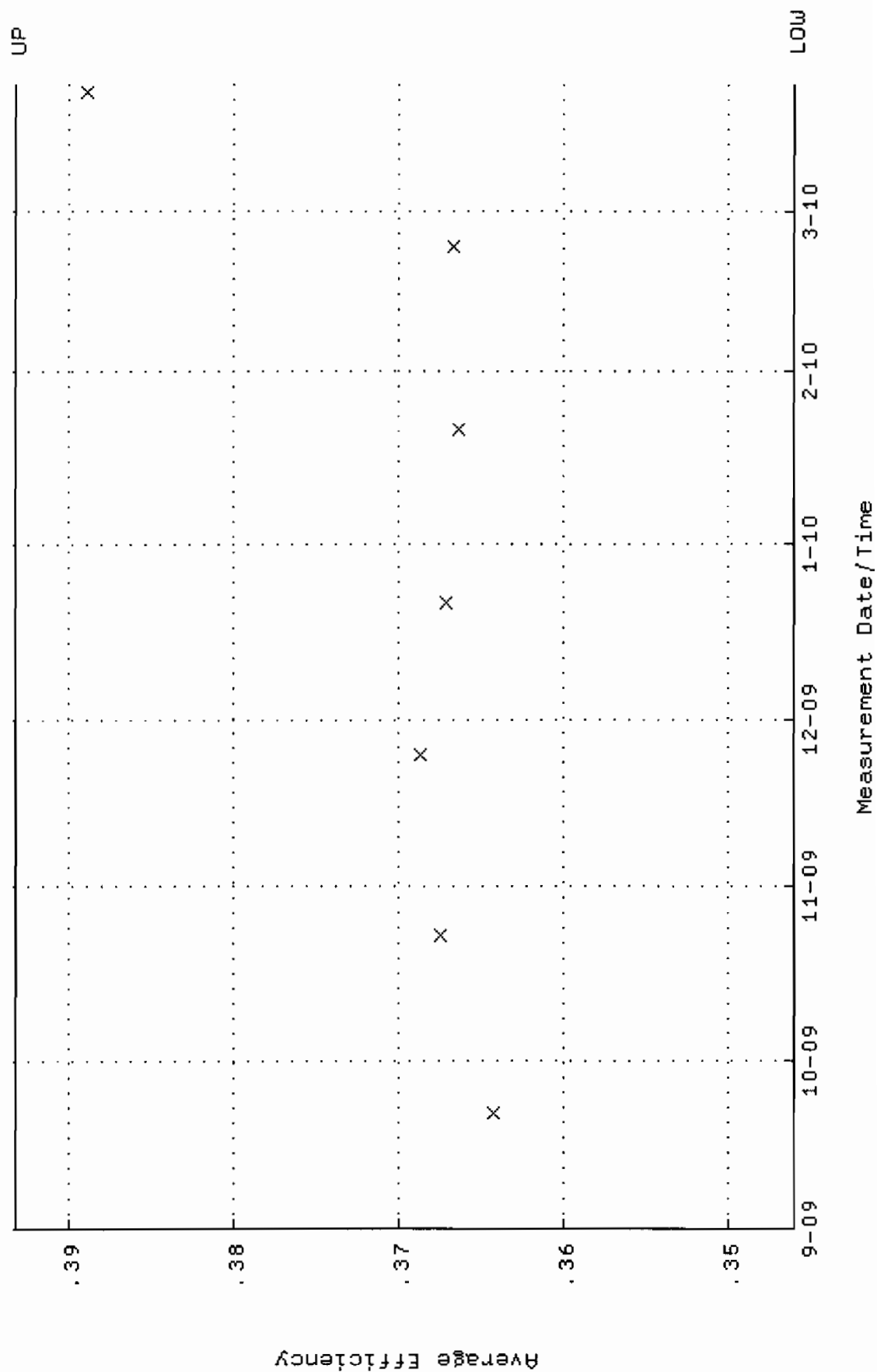
QA filename : DKA100:[ENV_ALPHA.QA.W]W169.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:13 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7806 through 97.2228



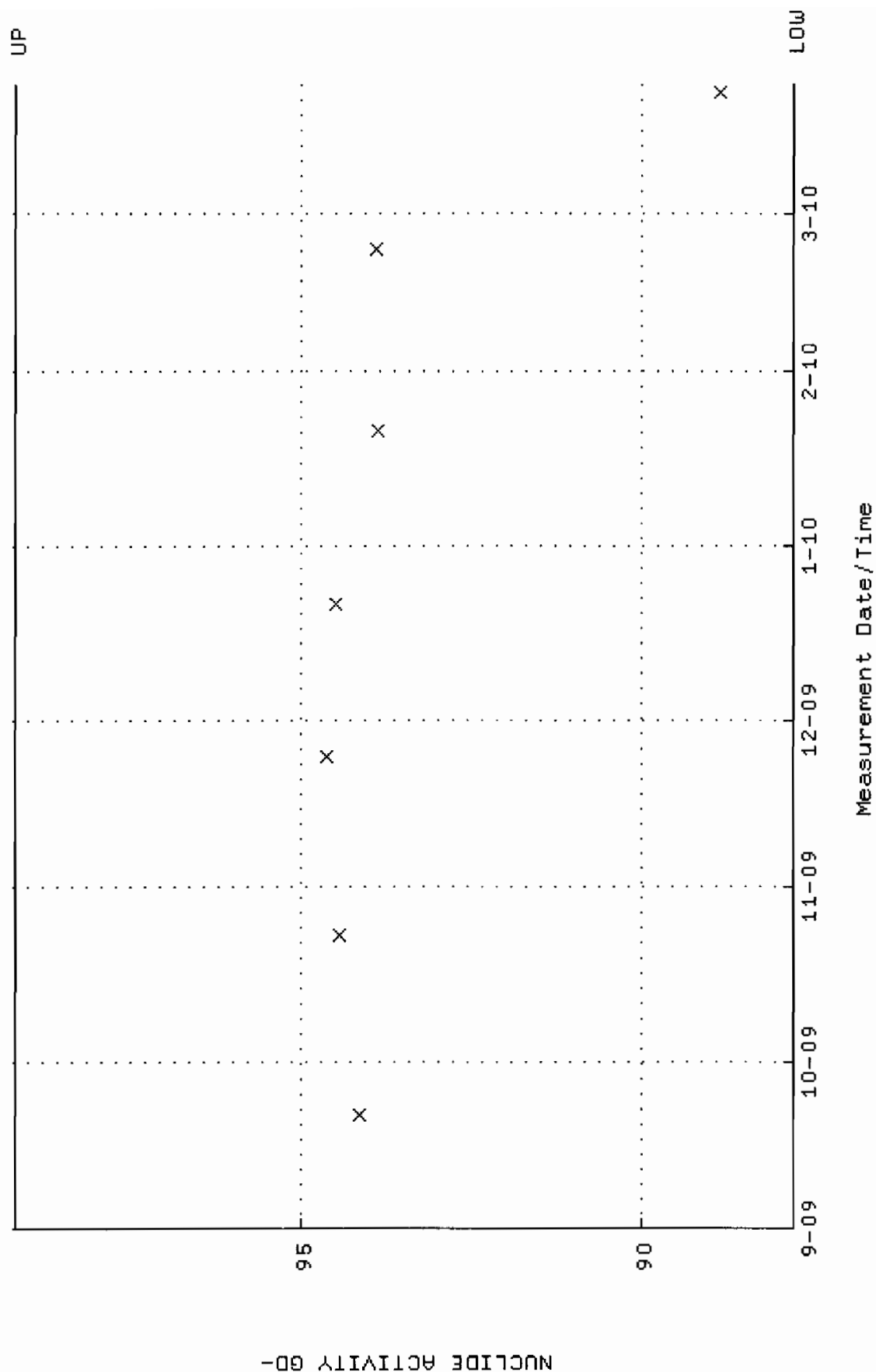
QA filename : DKA100:[ENV_ALPHA.QA.B]B169.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:48 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



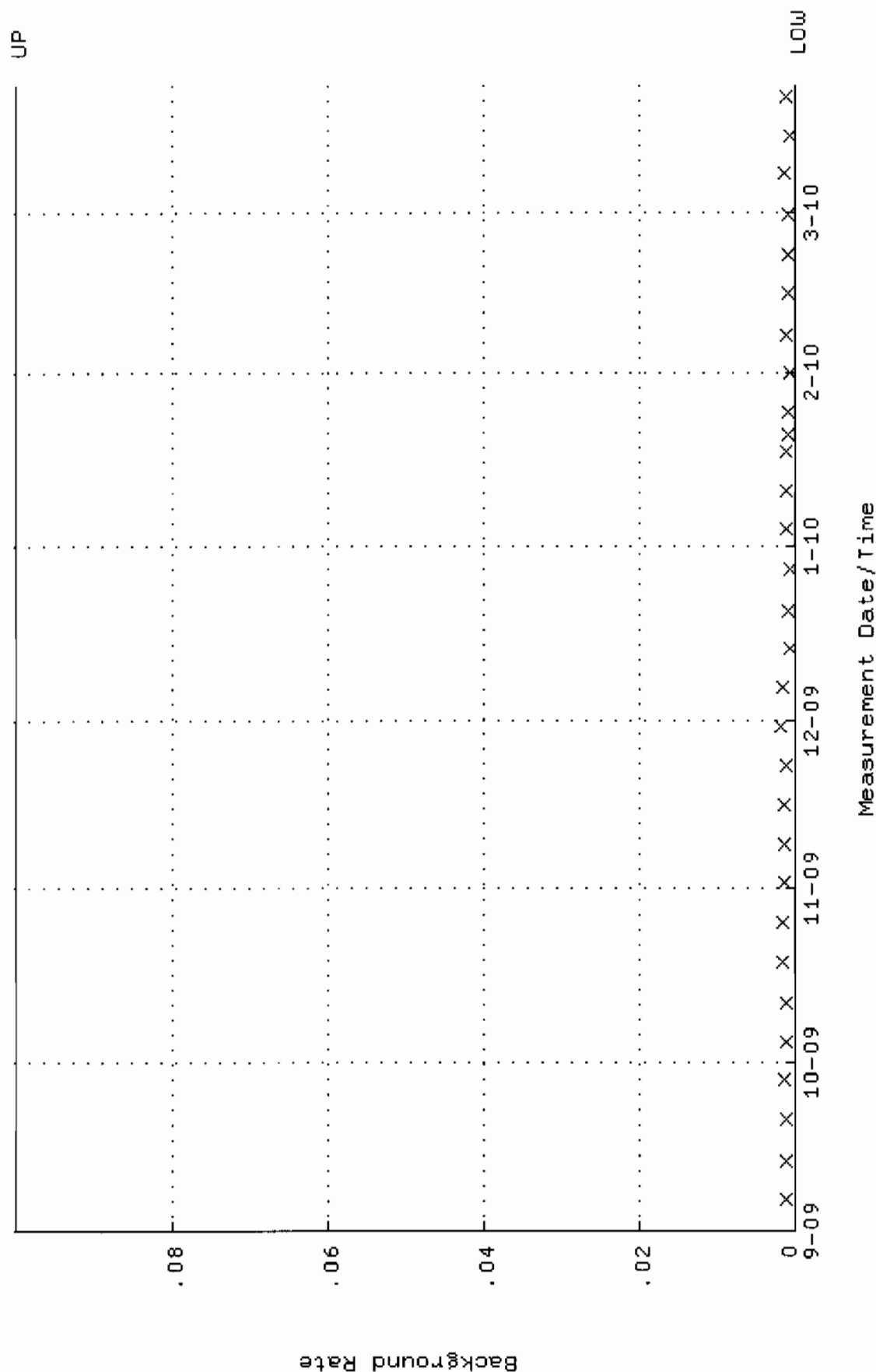
QA filename : DKA100:[ENV_ALPHA.QA.W]W170.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:20 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.345988 through 0.393202



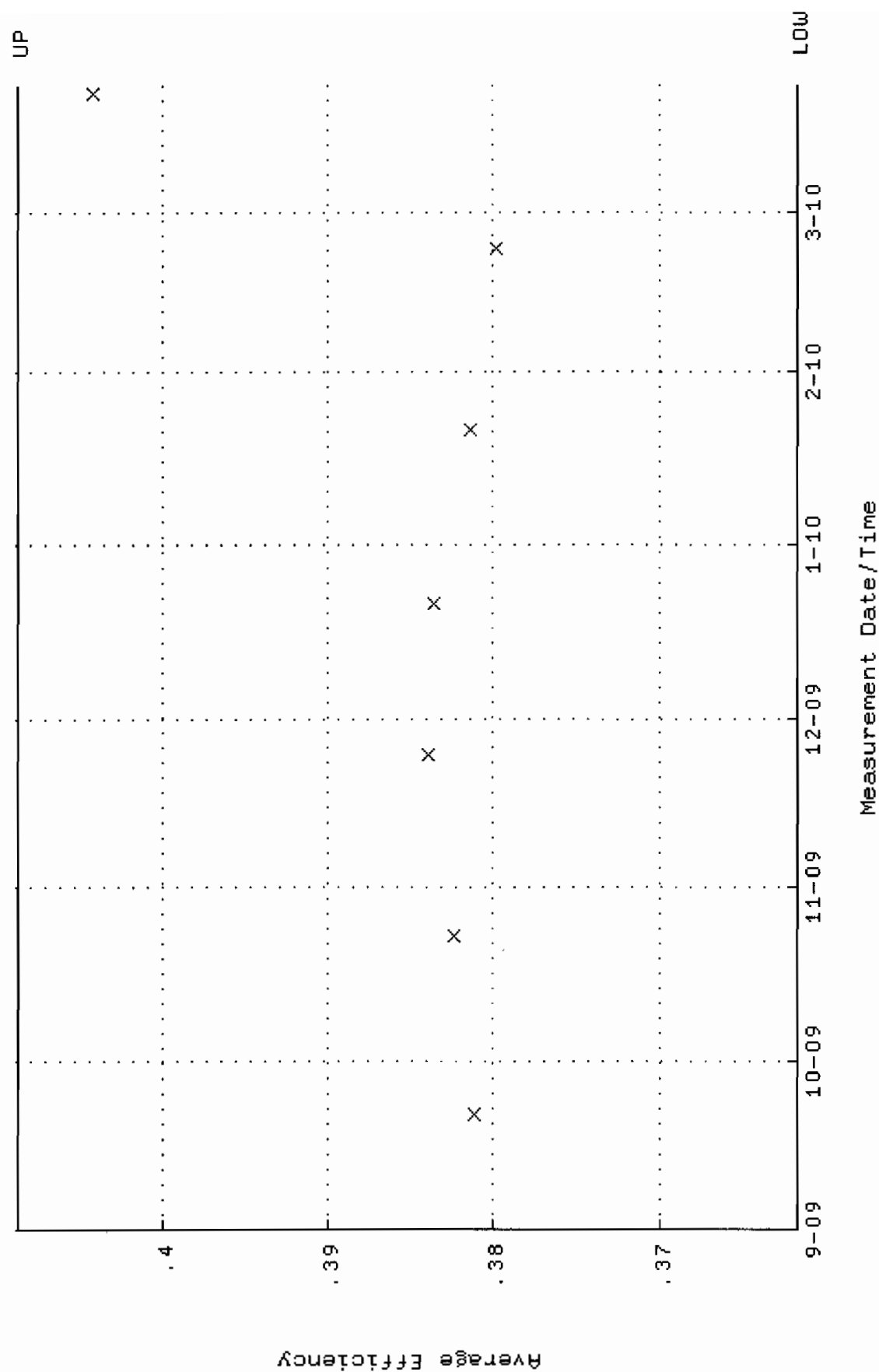
QA filename : DKA100:[ENV_ALPHA.QA.W]w170.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:20 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7657 through 99.2031



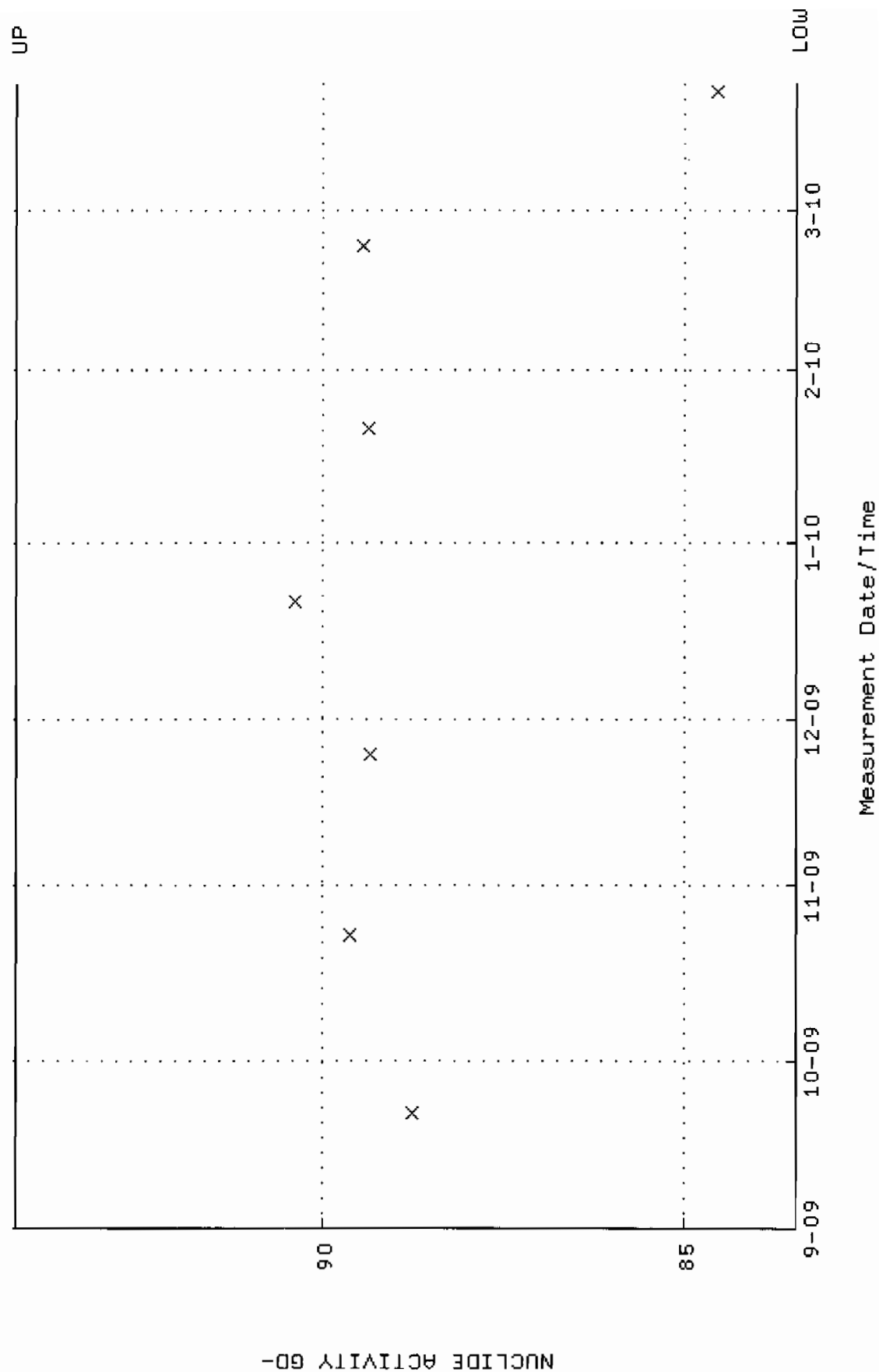
QA filename : DKA100:[ENV_ALPHA.QA.B]B170.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:53 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



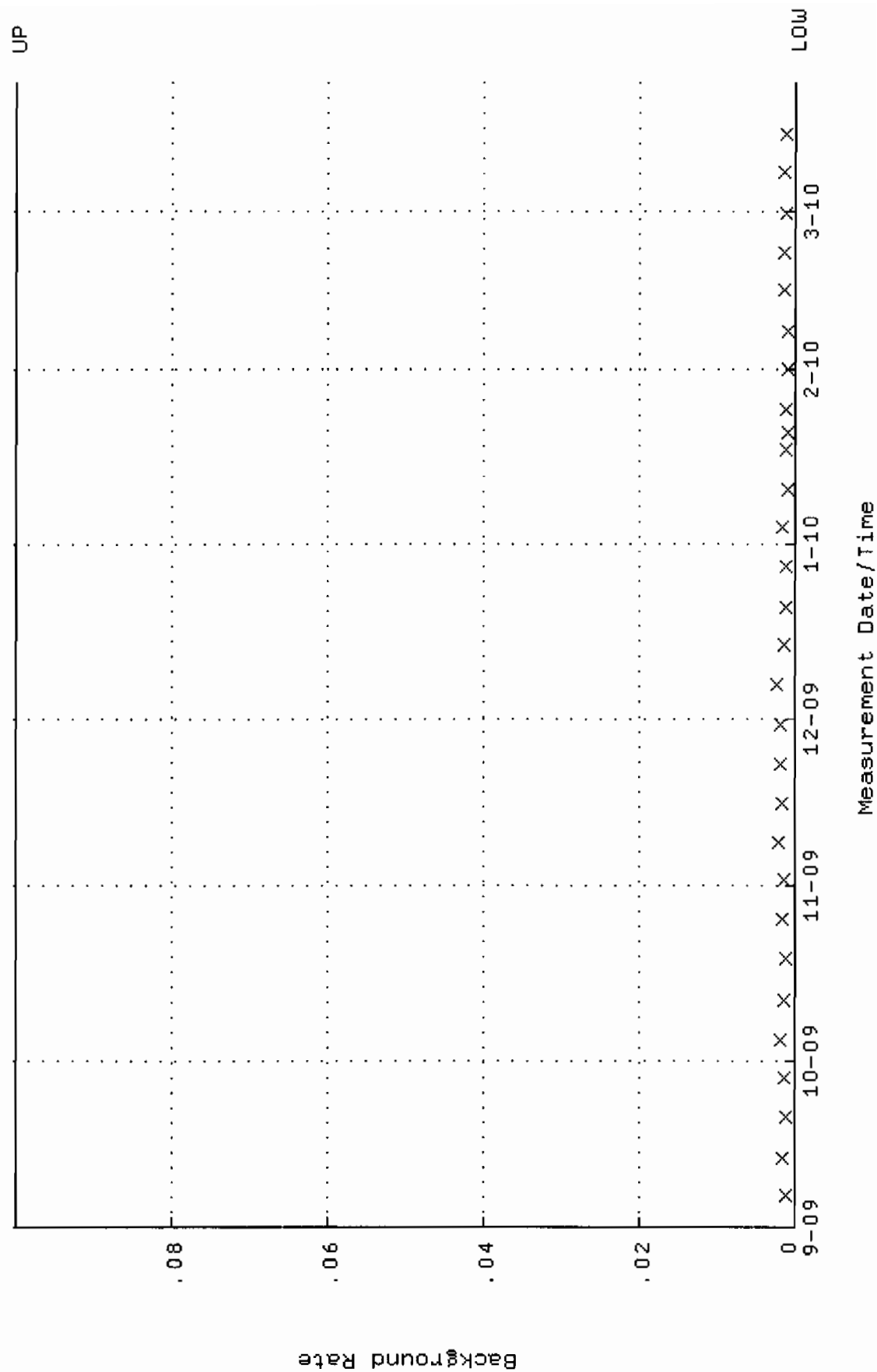
QA filename : DKA100:[ENV_ALPHA.QA.W]W171.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.361650 through 0.408748



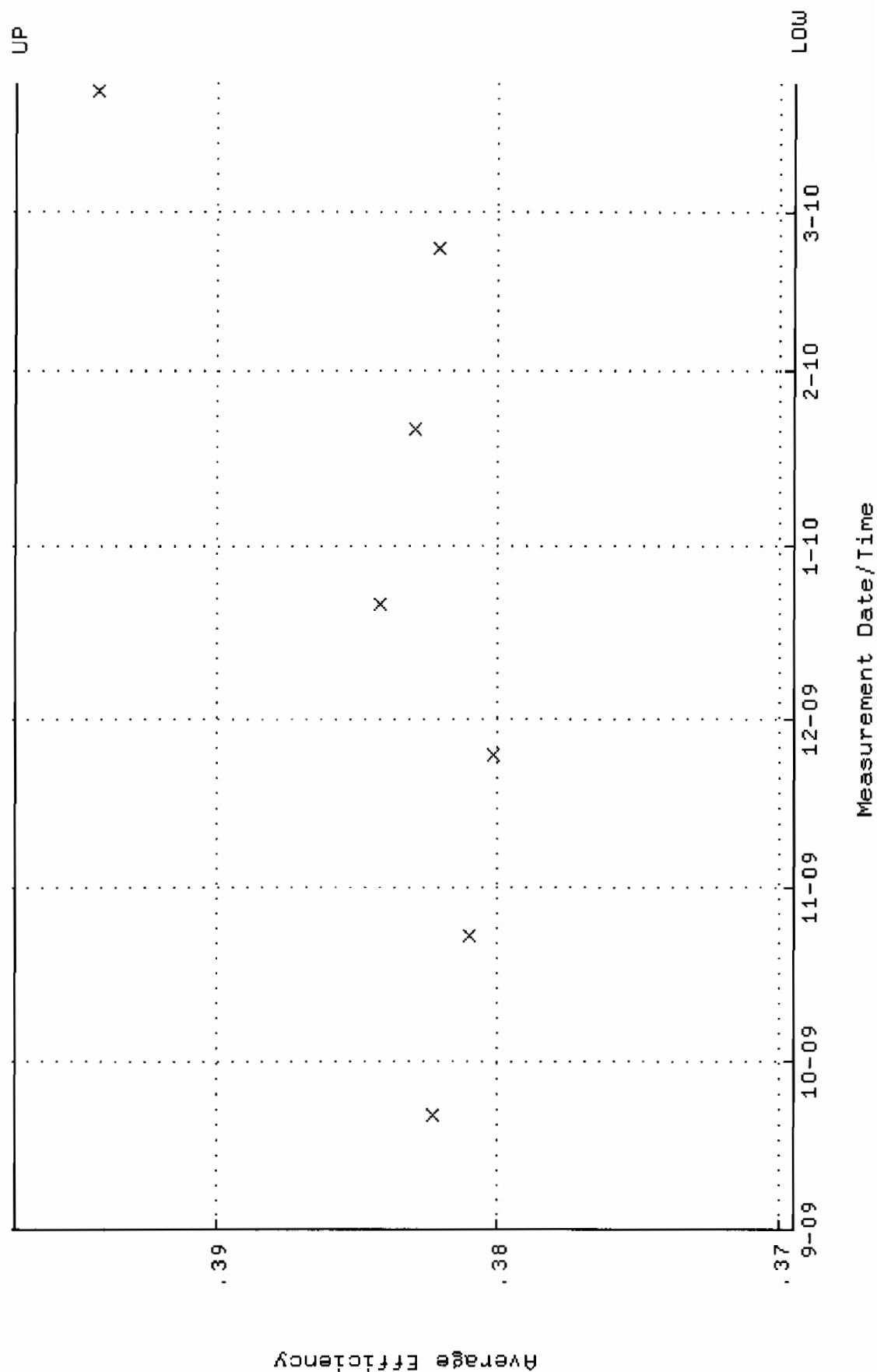
QA filename : DKA100:[ENV_ALPHA.QA.W]U171.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4334 through 94.2602



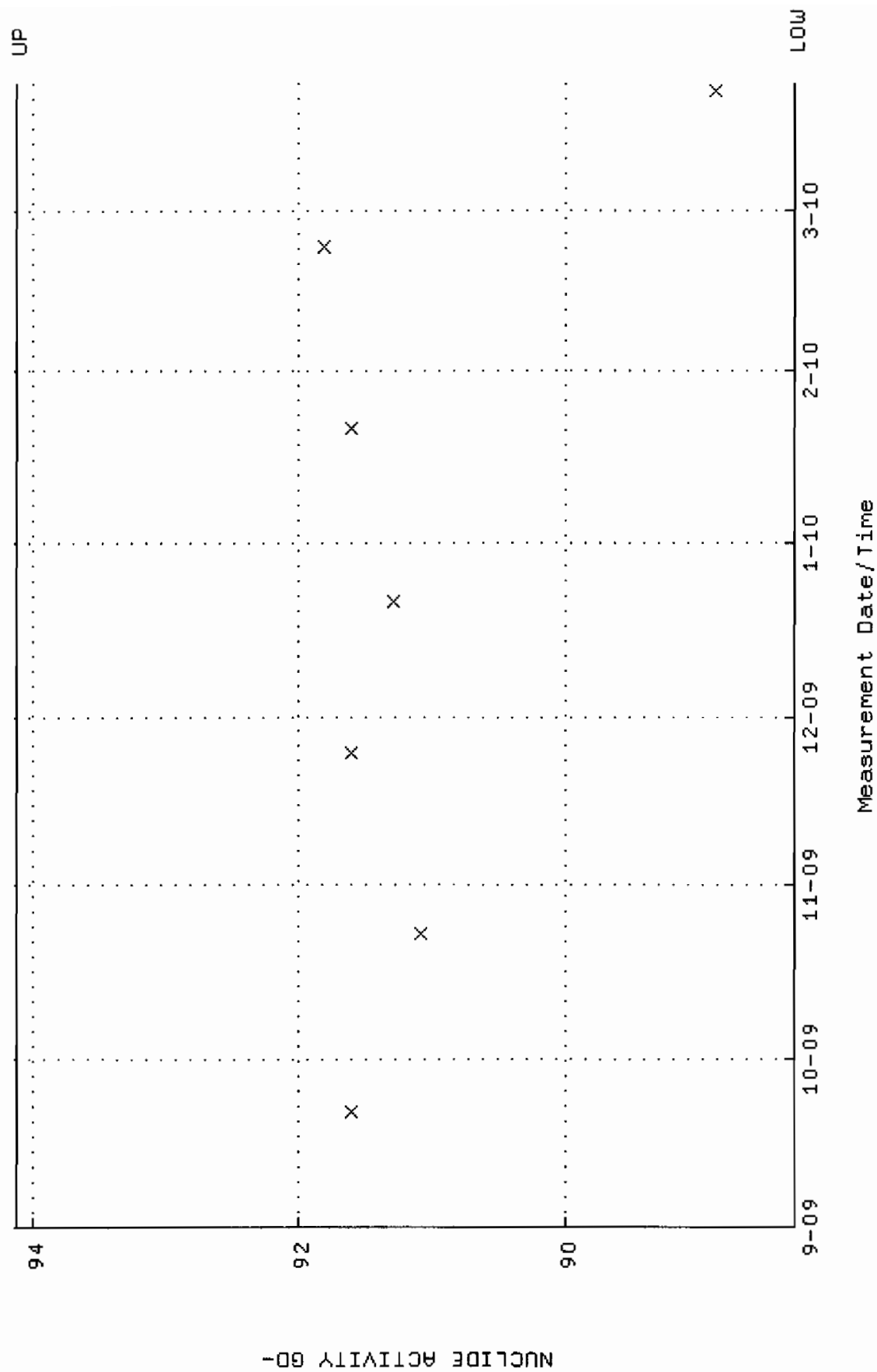
QA filename : DKA100:[ENV_ALPHA.QA.B]B171.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:58 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



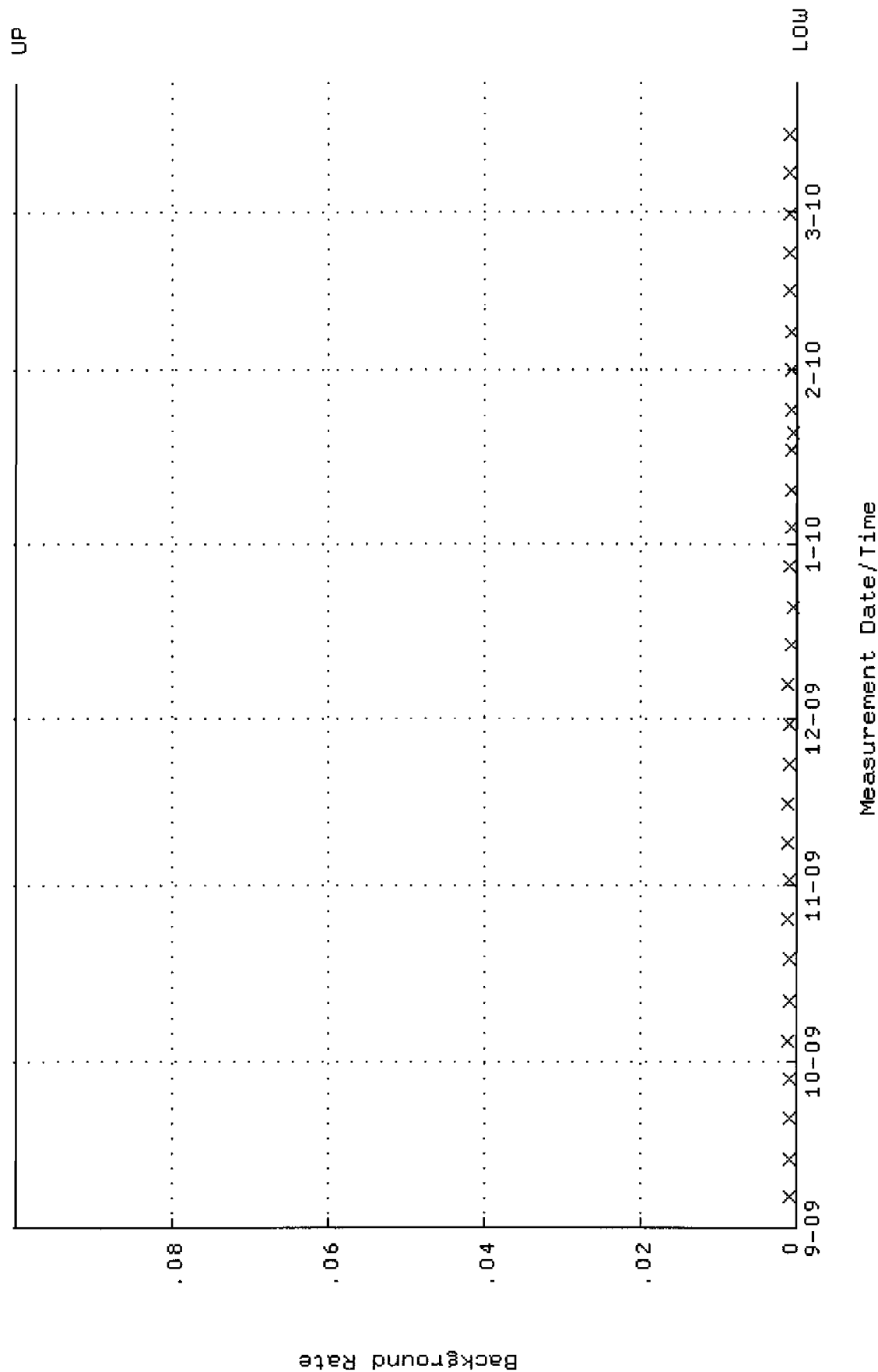
QA filename : DKA100:[ENV_ALPHA.QA.W]W172.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.369454 through 0.397138



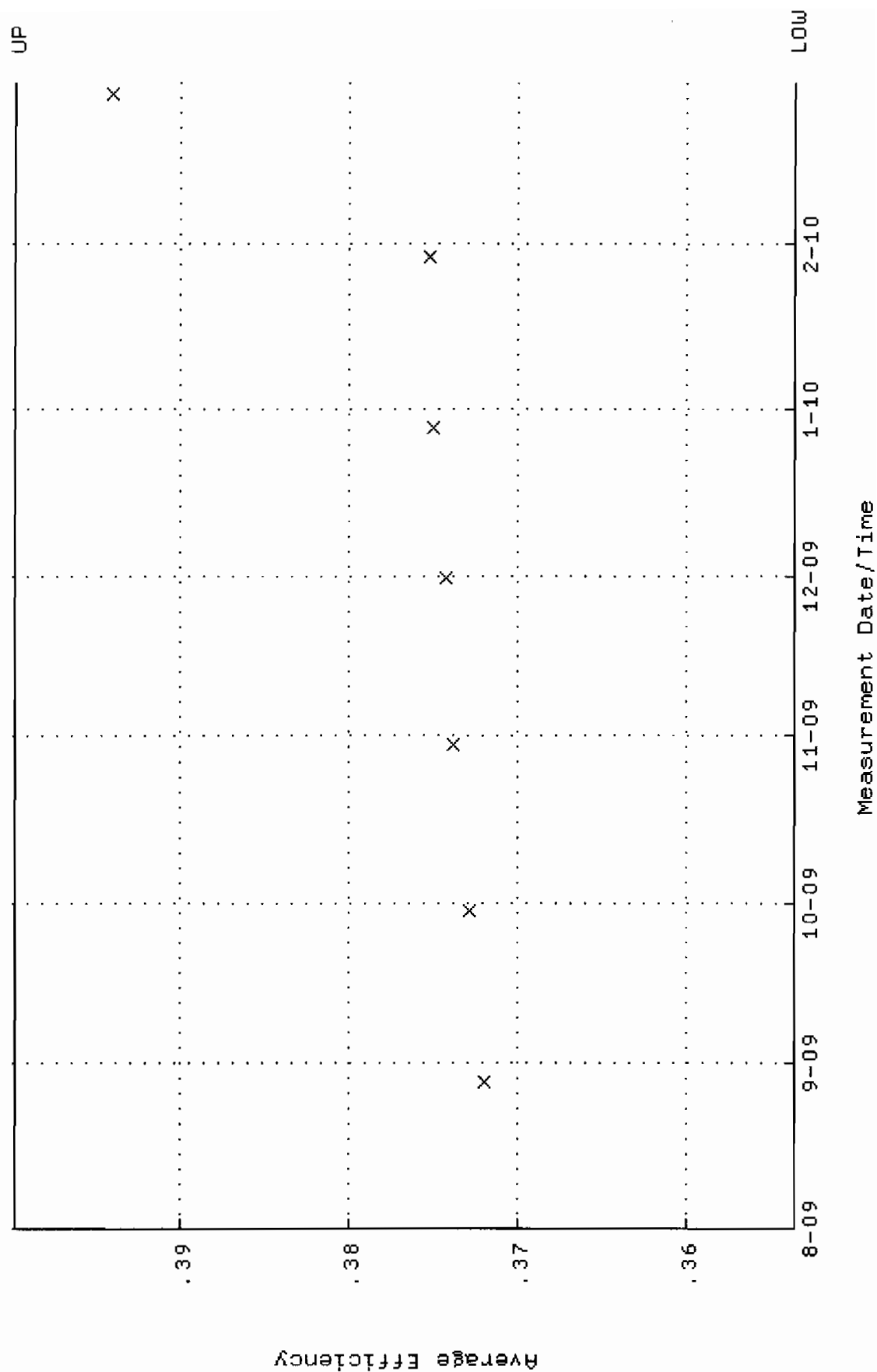
QA filename : DKA100:[ENV_ALPHA.QA.W]W172.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.2917 through 94.1169



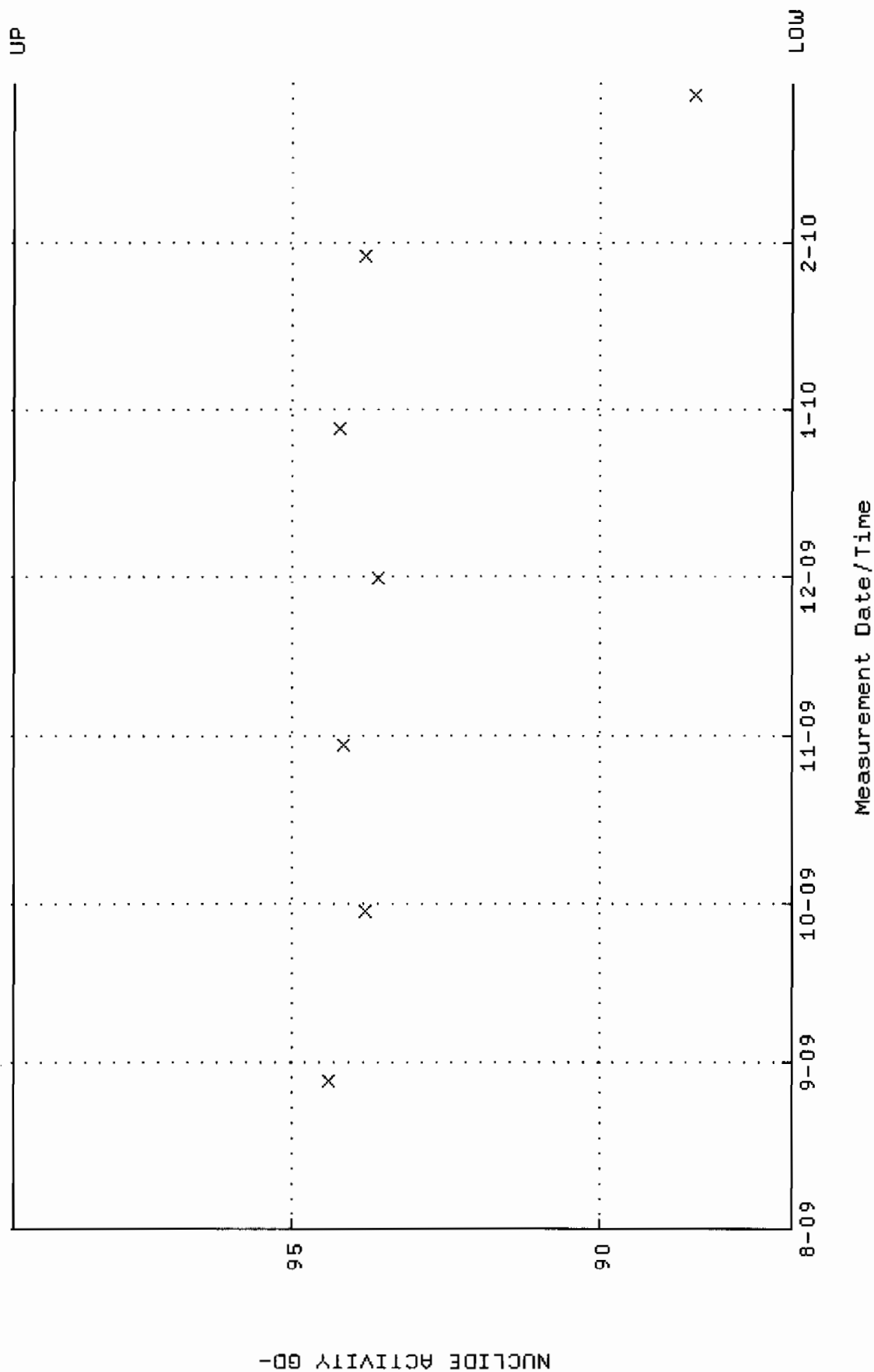
QA filename : DKA100:[ENV_ALPHA.QA.B]B172.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:45:02 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



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

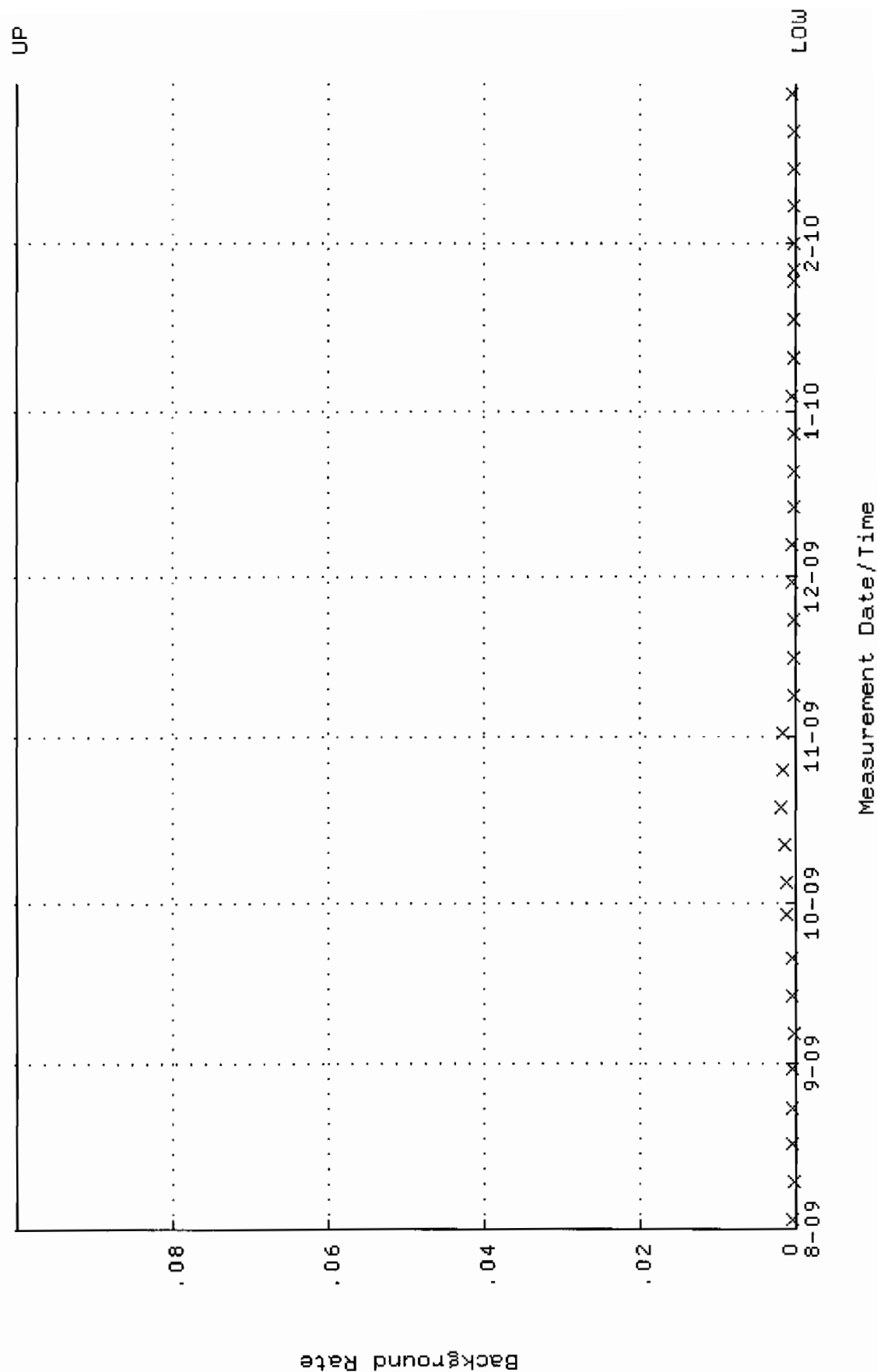


QA filename : DKA100:[ENV_ALPHA.QA.B]B218.QAF;1

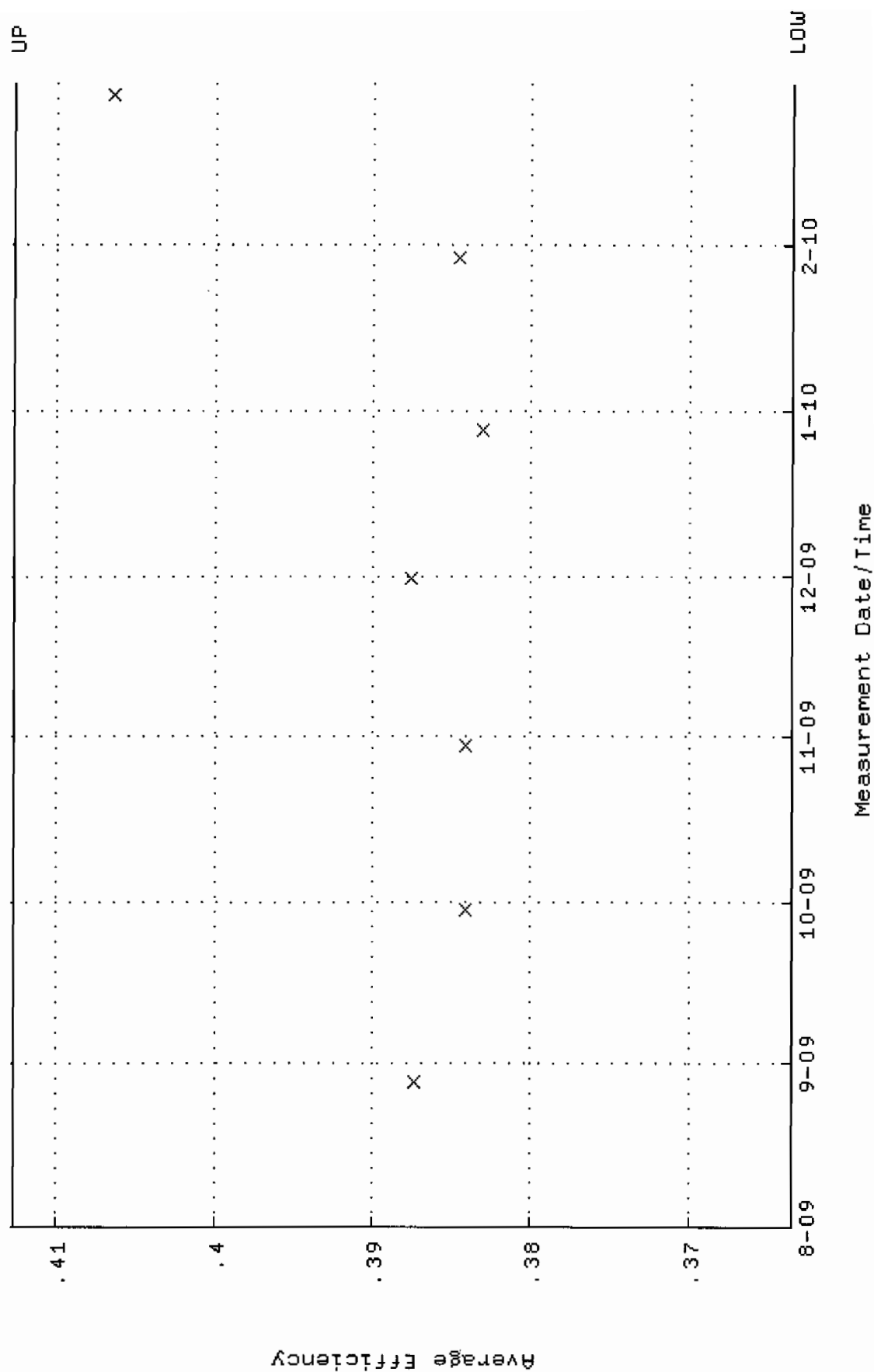
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:48 through 2-MAR-2010 12:00:00

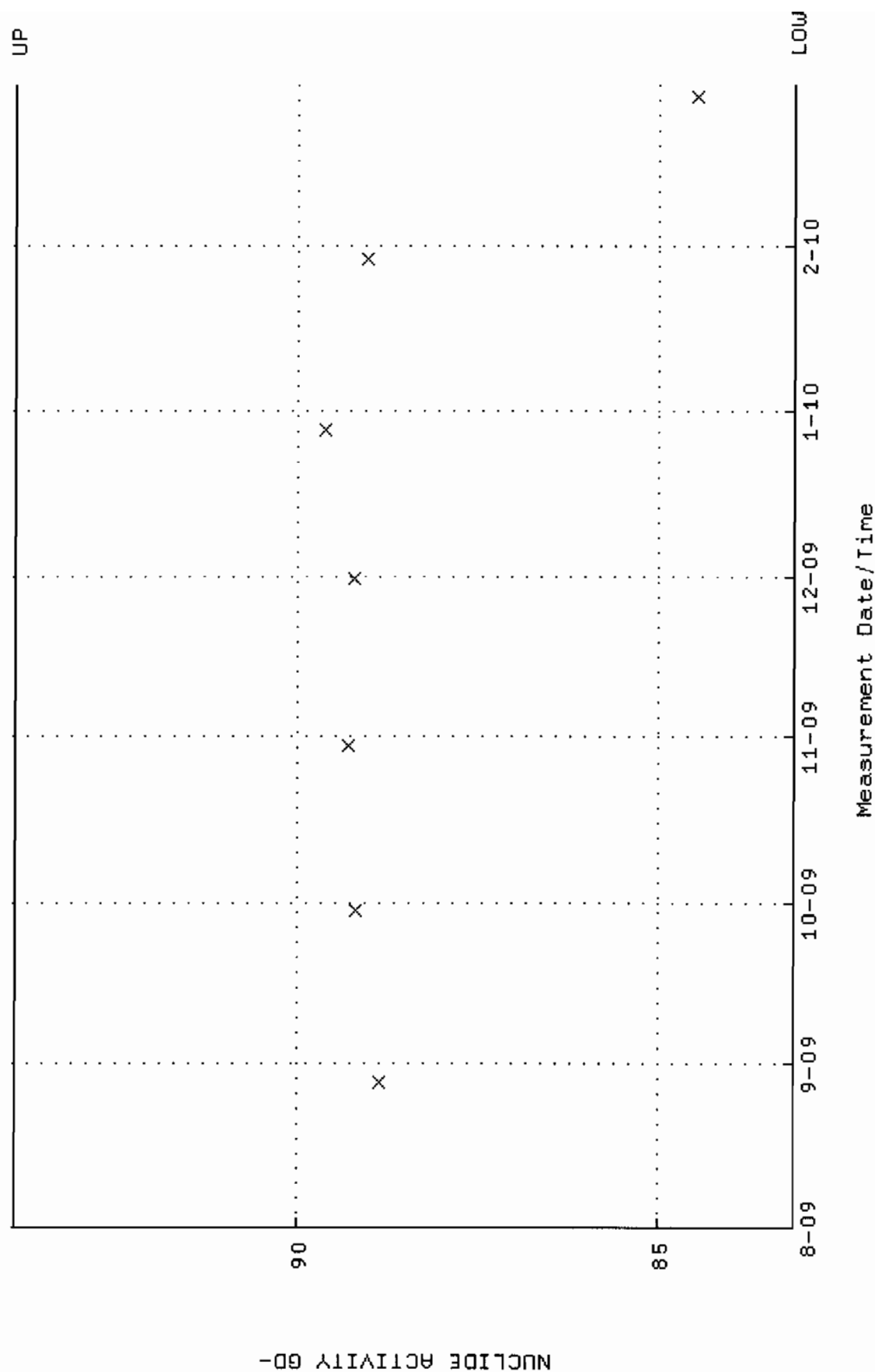
Lower/Upper Lmts: 0.000000E+00 through 0.100000



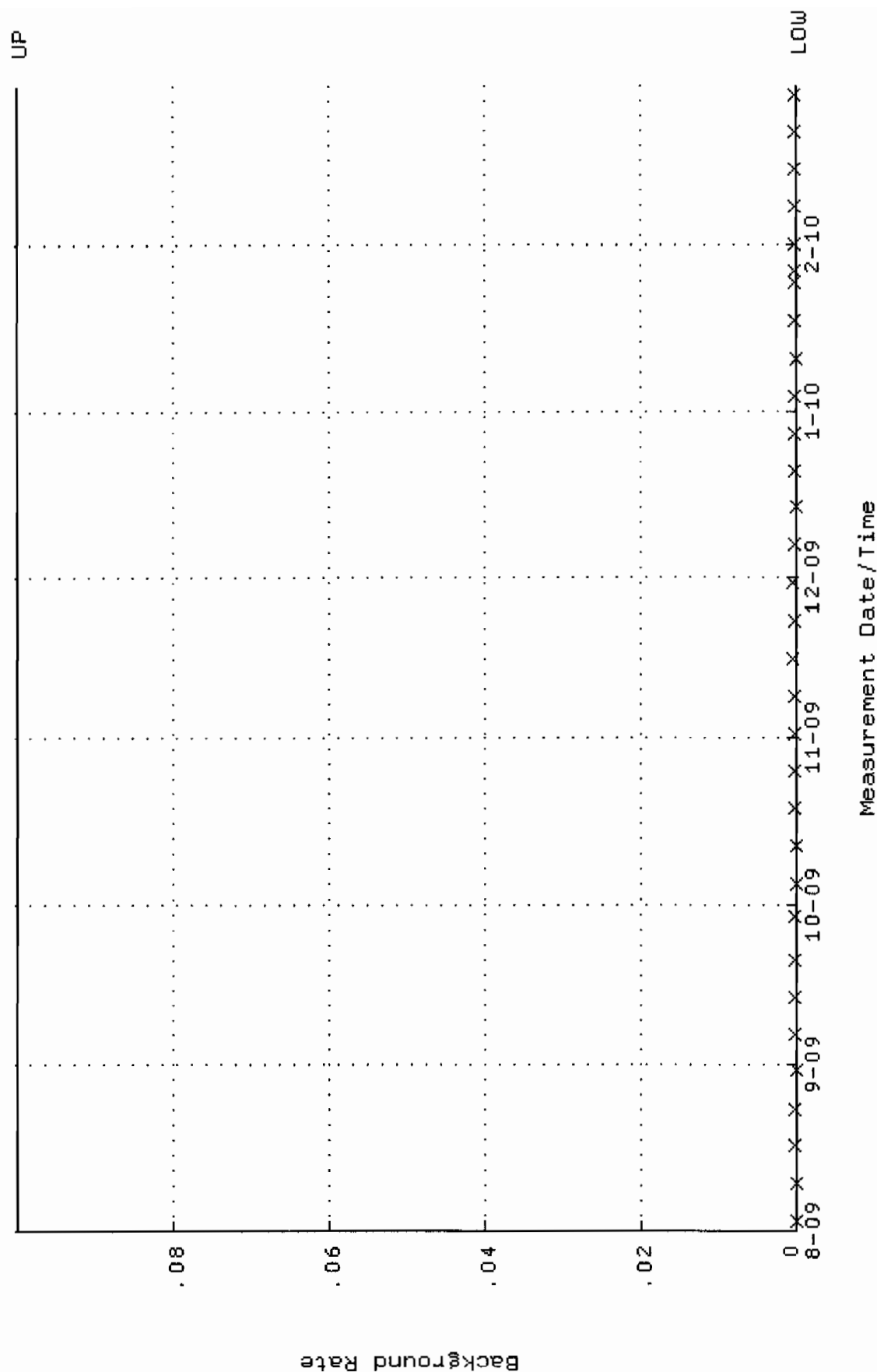
QA filename : DKA100:[ENV_ALPHA.QA.W]W219.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363471 through 0.412689



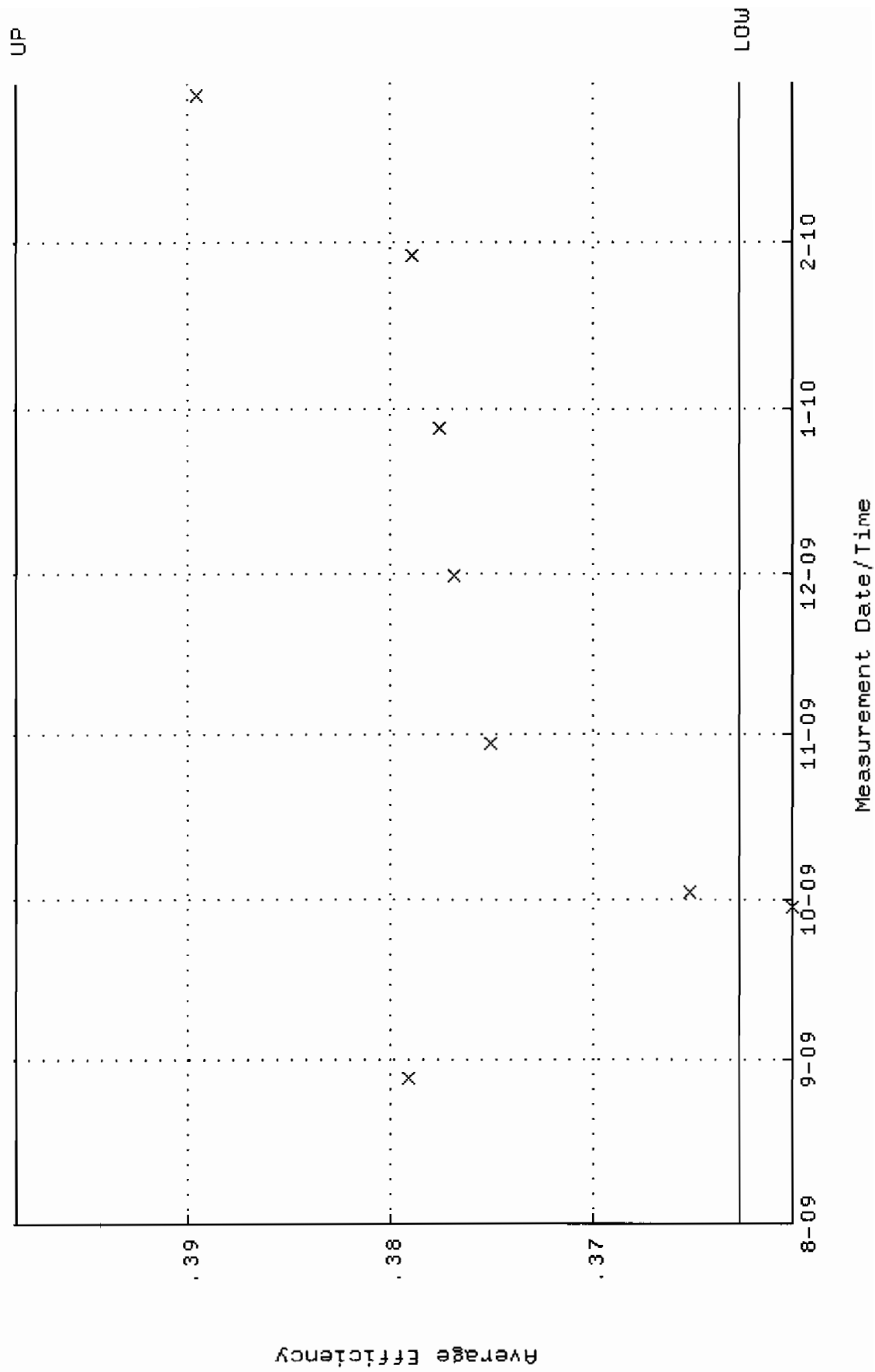
QA filename : DKA100:[ENV-ALPHA.QA.W]W219.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.1251 through 93.8923



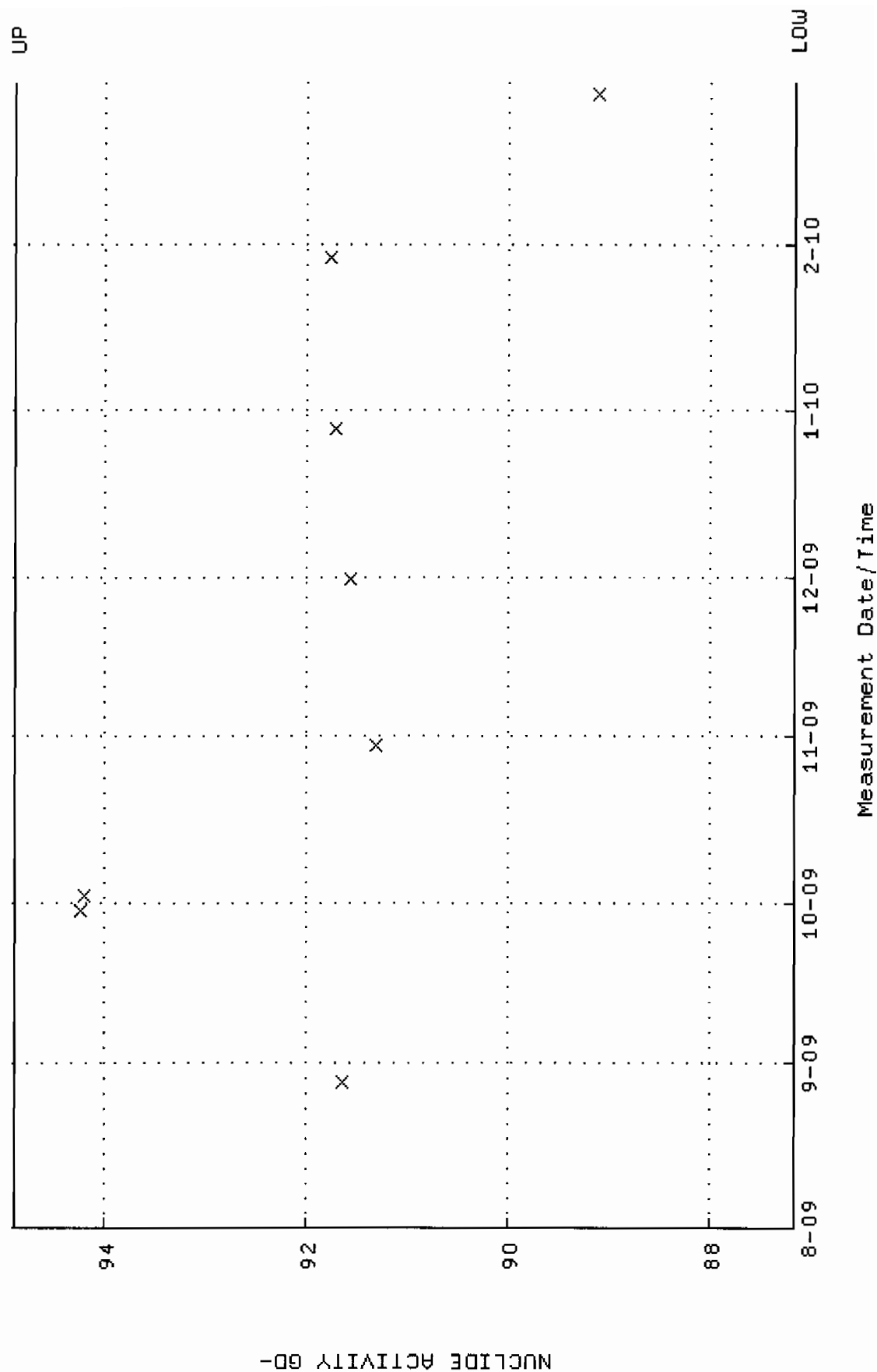
QA filename : OKA100:[ENV_ALPHA.QA.B]B219.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:52 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W220.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 : NLAIVITY-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

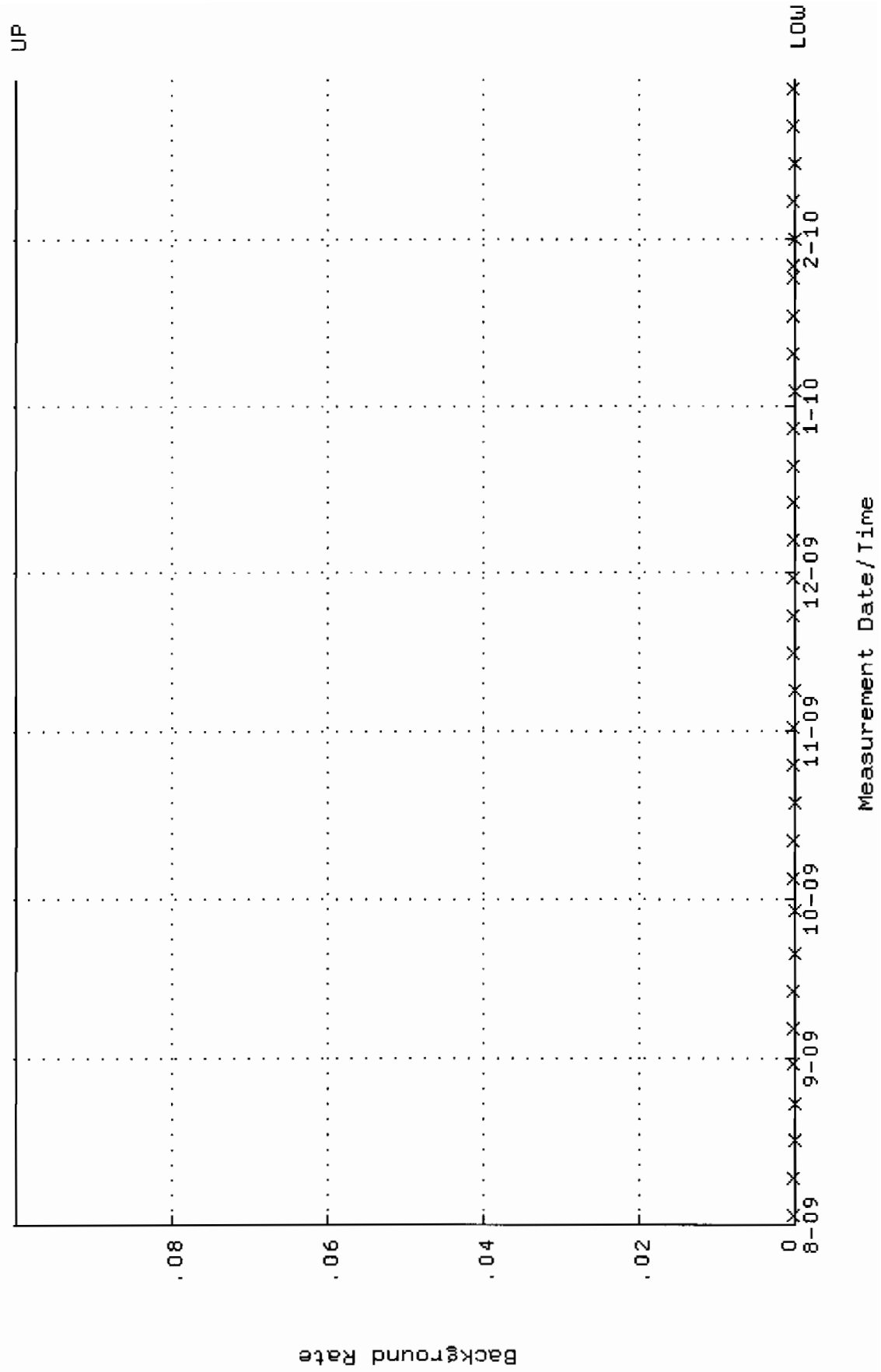


QA filename : DKA100:[ENV_ALPHA.QA.B]B220.QAF;1

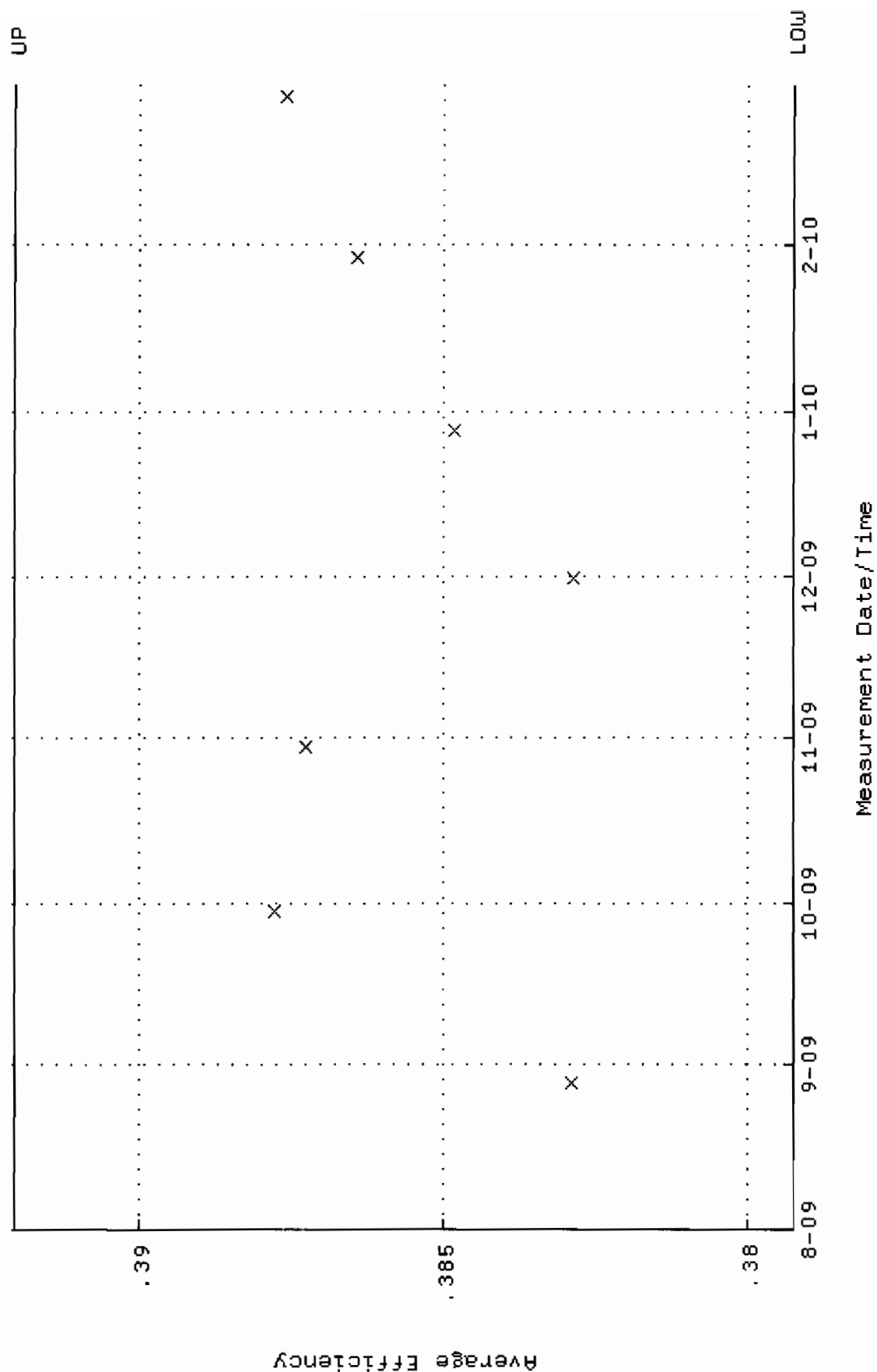
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:56 through 2-MAR-2010 12:00:00

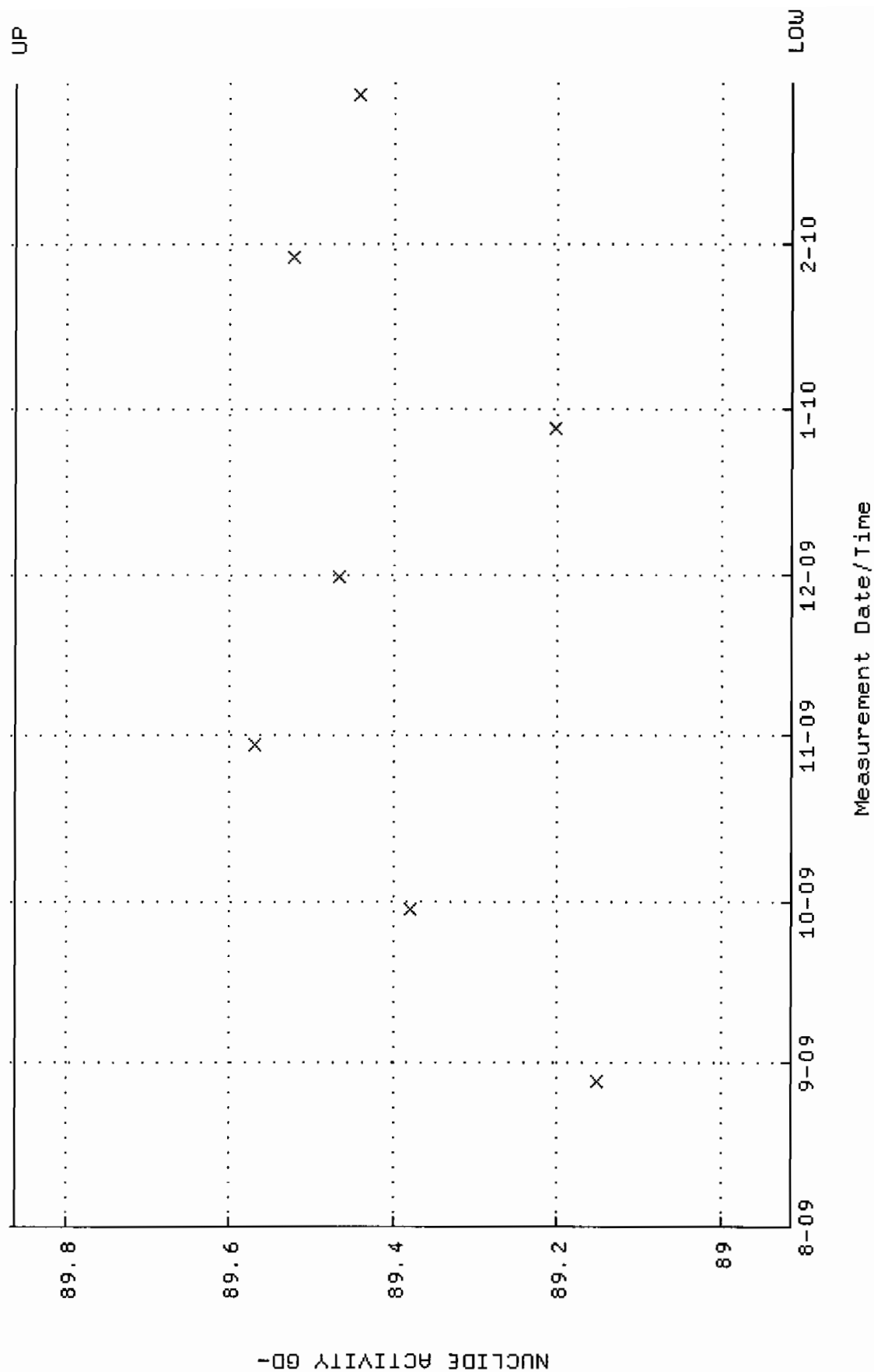
Lower/Upper Lmts: 0.000000E+00 through 0.100000



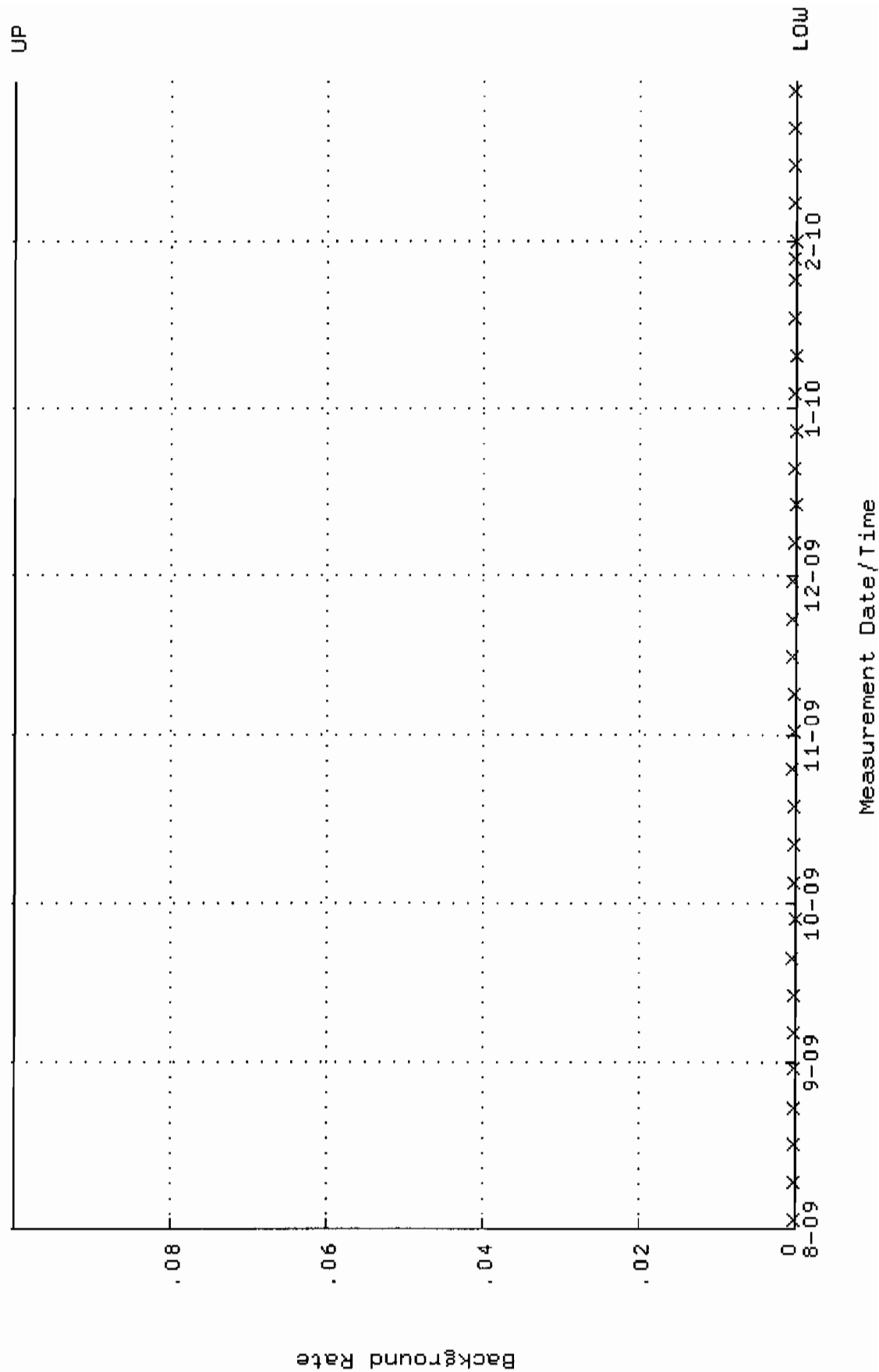
QA filename : DKA100:[ENV_ALPHA.QA.W]W227.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:03 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.379260 through 0.392050



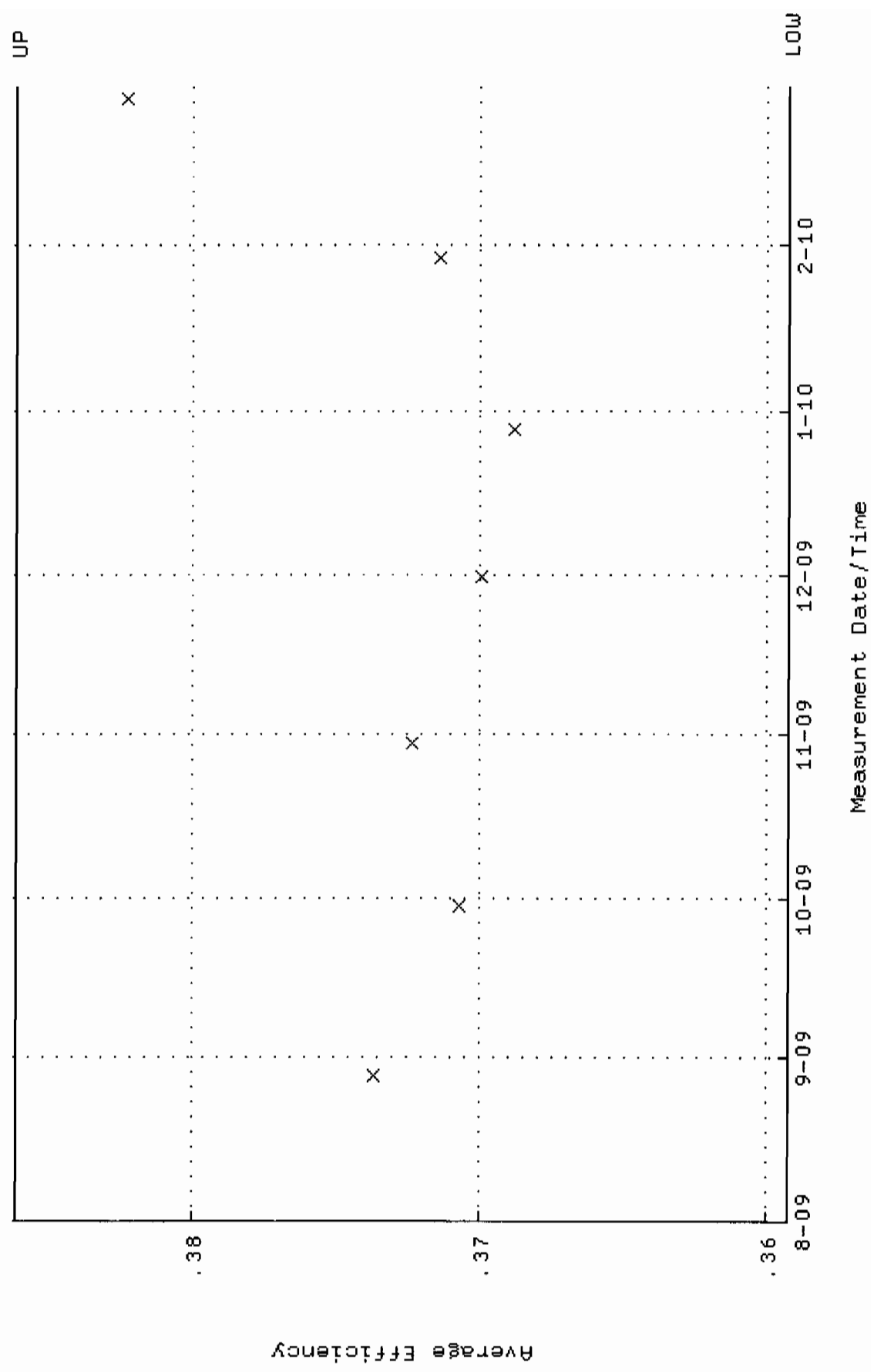
QA filename : DKA100:[ENV_ALPHA.QA.W]W227.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:03 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.9145 through 89.8637



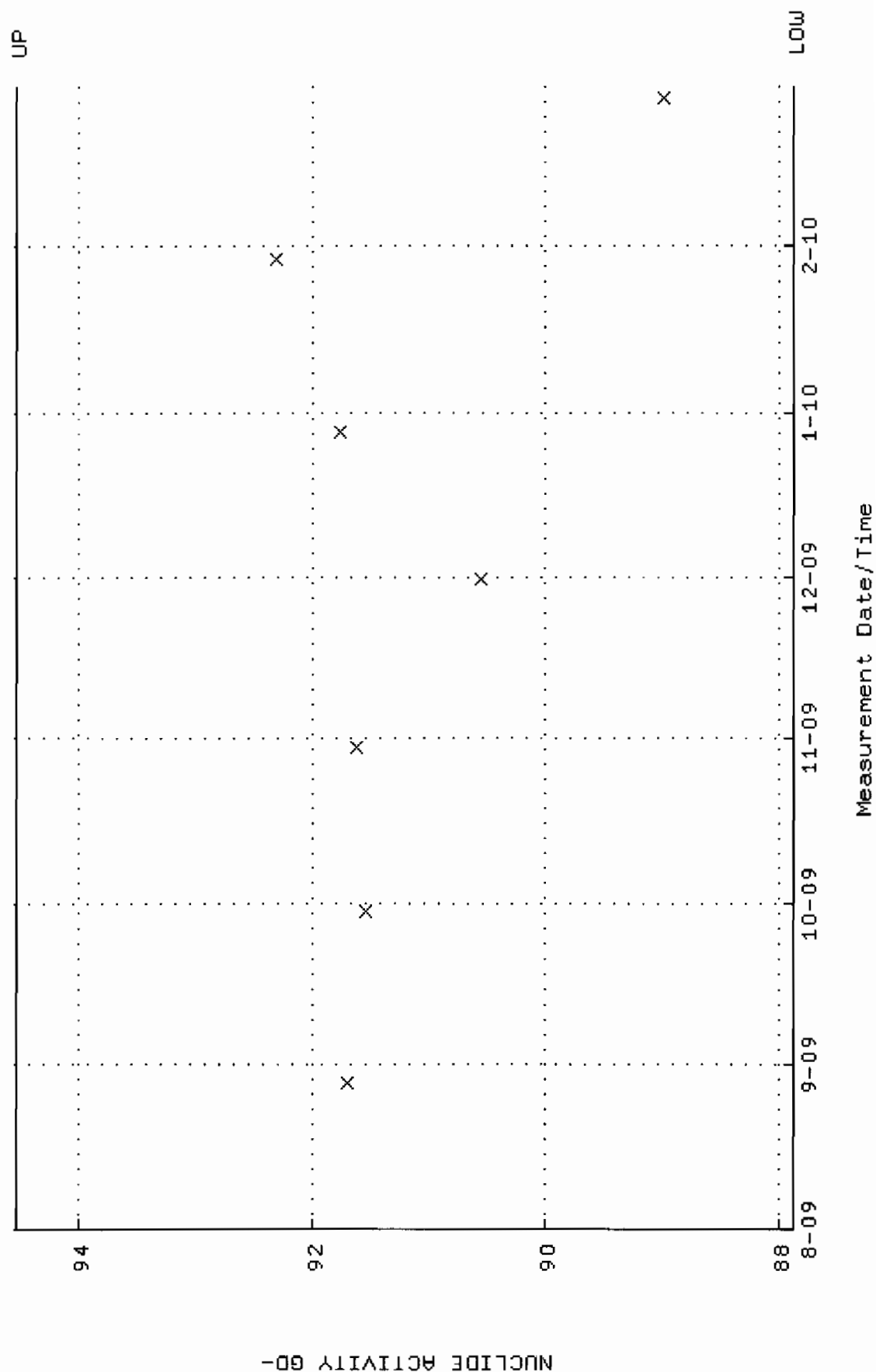
QA filename : DKA100:[ENV_ALPHA.QA.B]B227.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:24 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W228.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 28-AUG-2009 07:08:10 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 0.359272 through 0.386096



QA filename : DKA100:[ENV_ALPHA.QA.W]W228.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:10 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.8750 through 94.5380

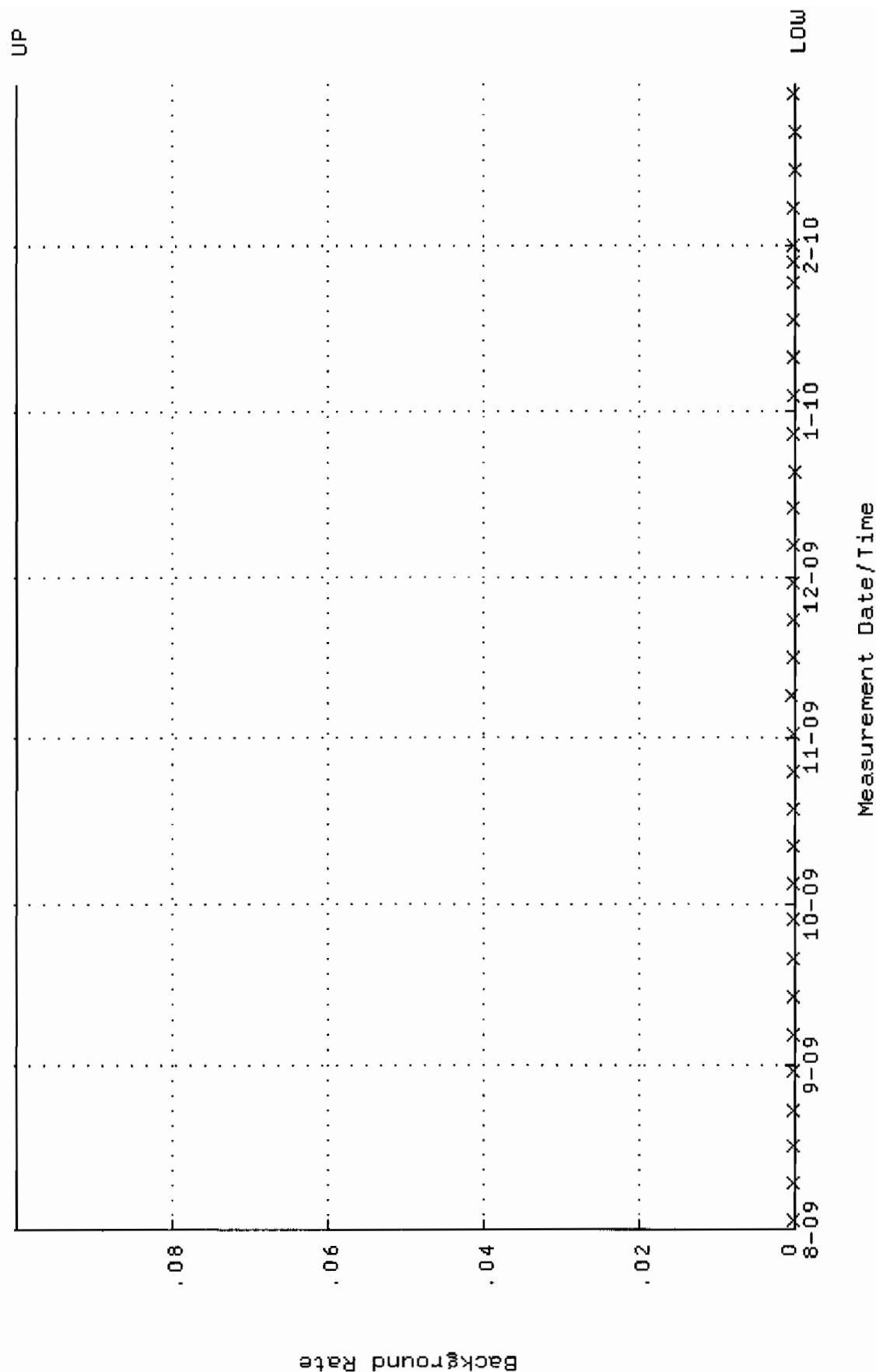


QA filename : DKA100:[ENV_ALPHA.QA.B]B228.QAF;1

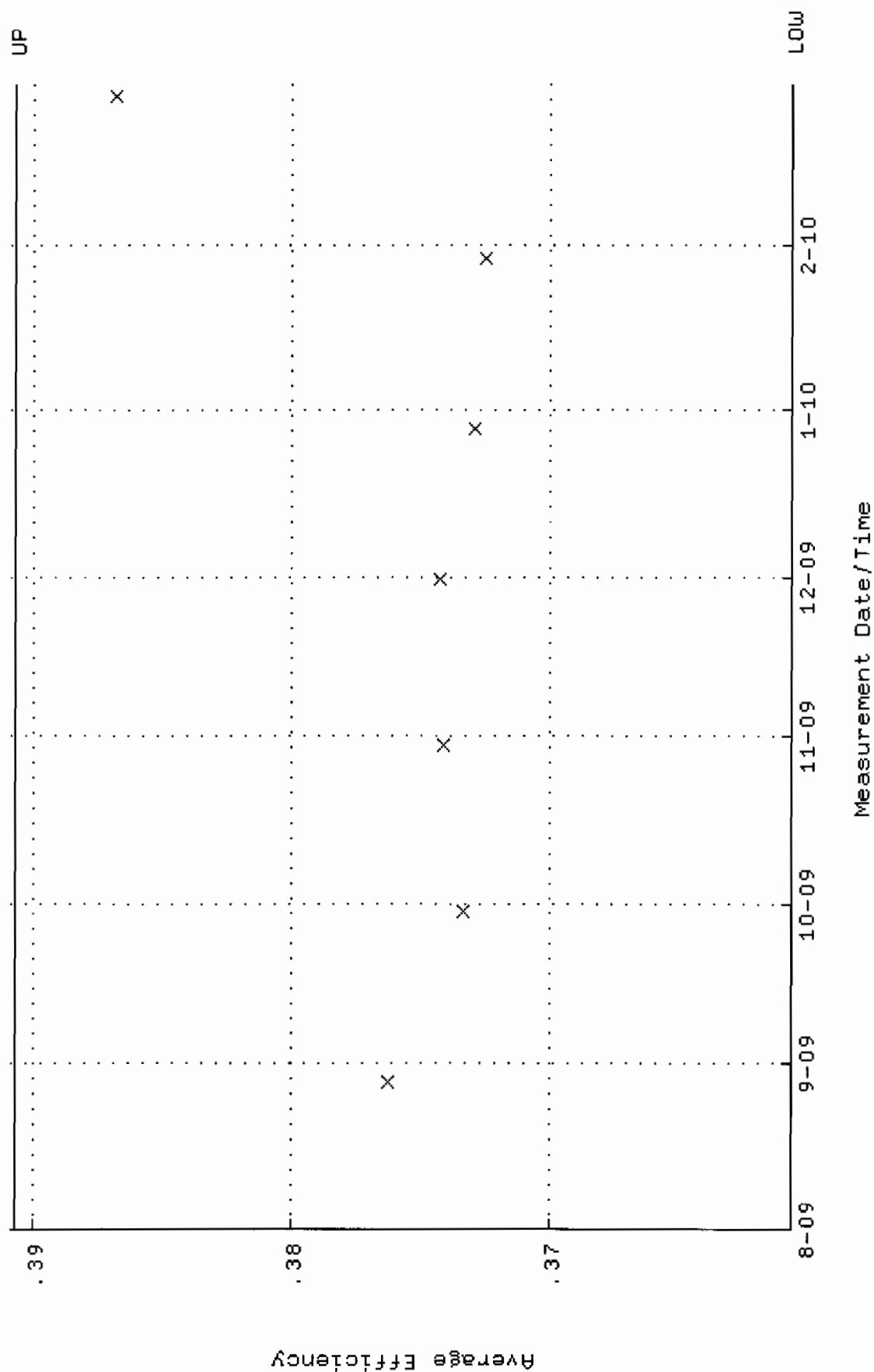
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:29 through 2-MAR-2010 12:00:00

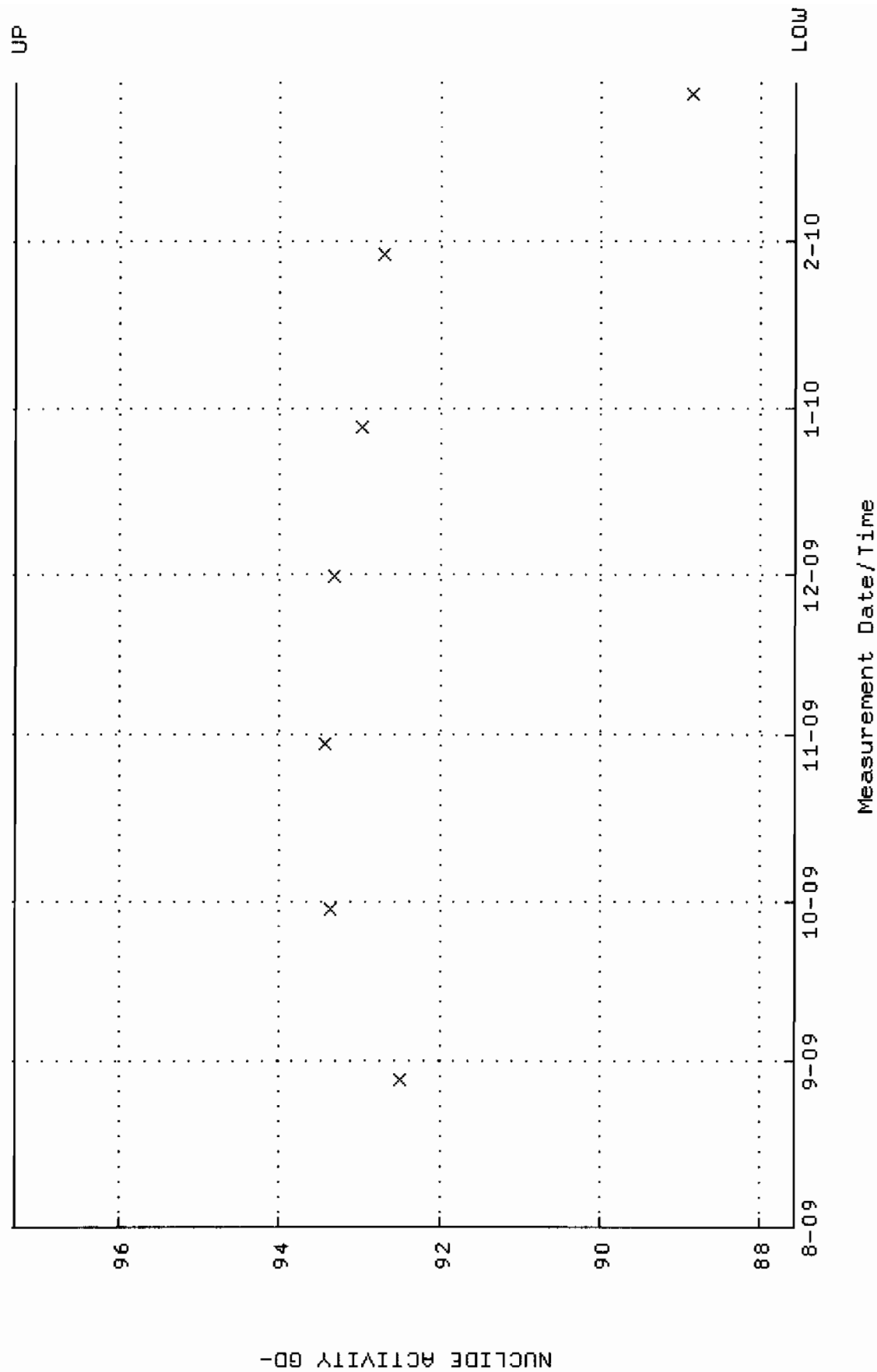
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W229.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.360663 through 0.390815



QA filename : DKA100:[ENV_ALPHA.QA.W]W229.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.5648 through 97.3078

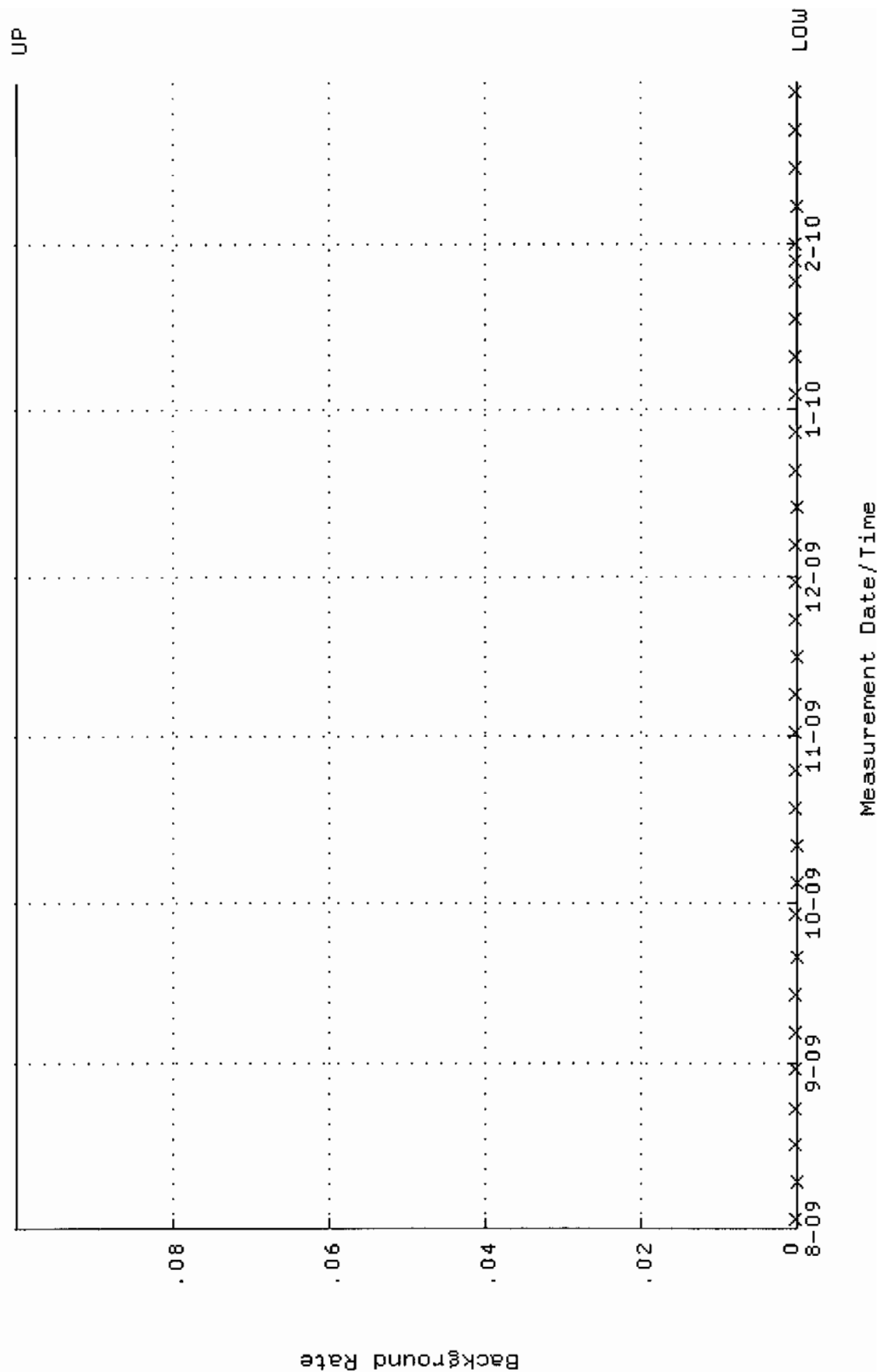


QA filename : DKA100:[ENV_ALPHA.QA.B]B229.QAF;1

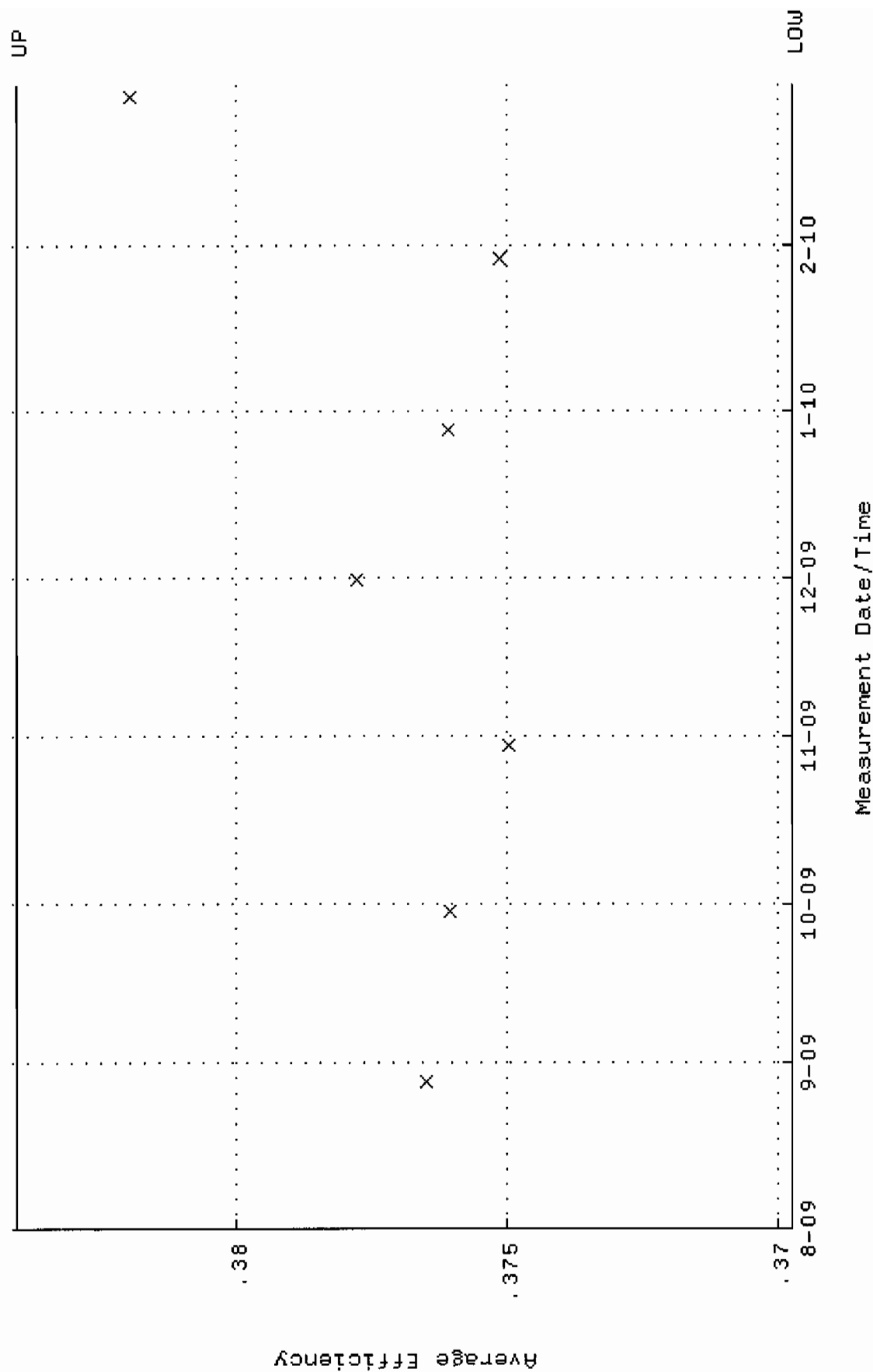
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:34 through 2-MAR-2010 12:00:00

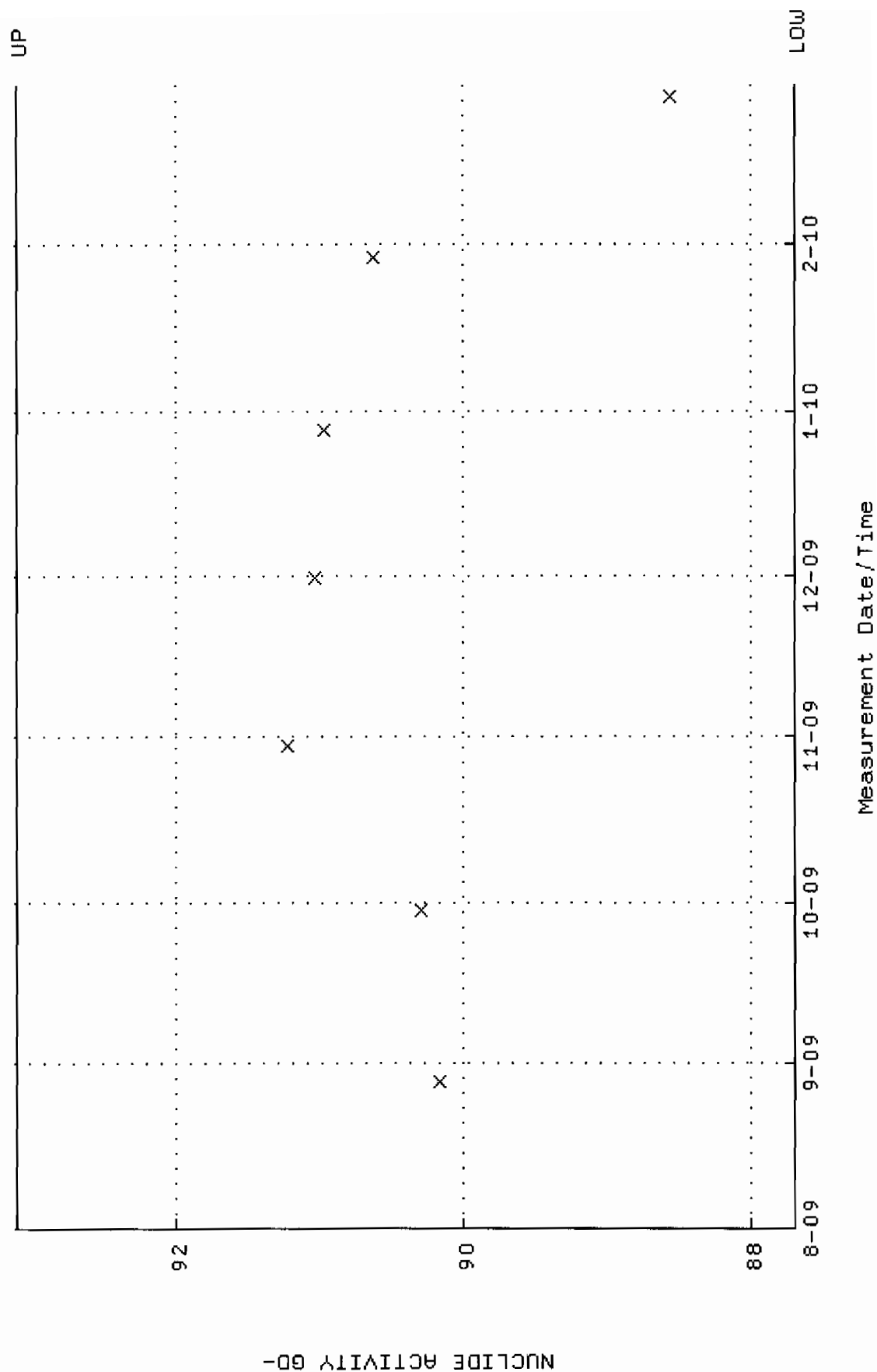
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W230.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:19 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.369716 through 0.384082



QA filename : DKA100:[ENV_ALPHA.QA.W]W230.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:19 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.6979 through 93.1141

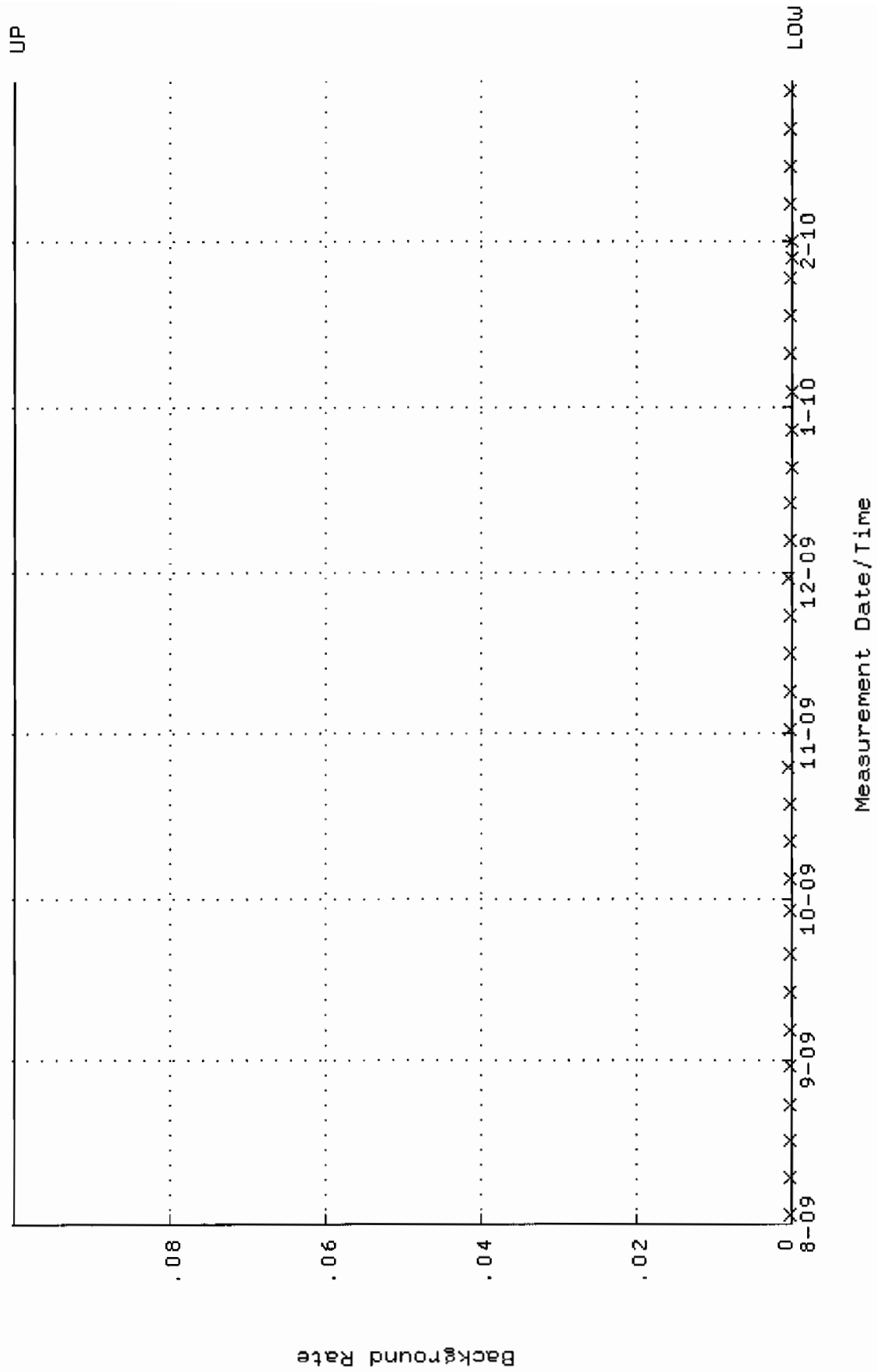


QA filename : DKA100:[ENV_ALPHA.QA.B]B230.QAF;1

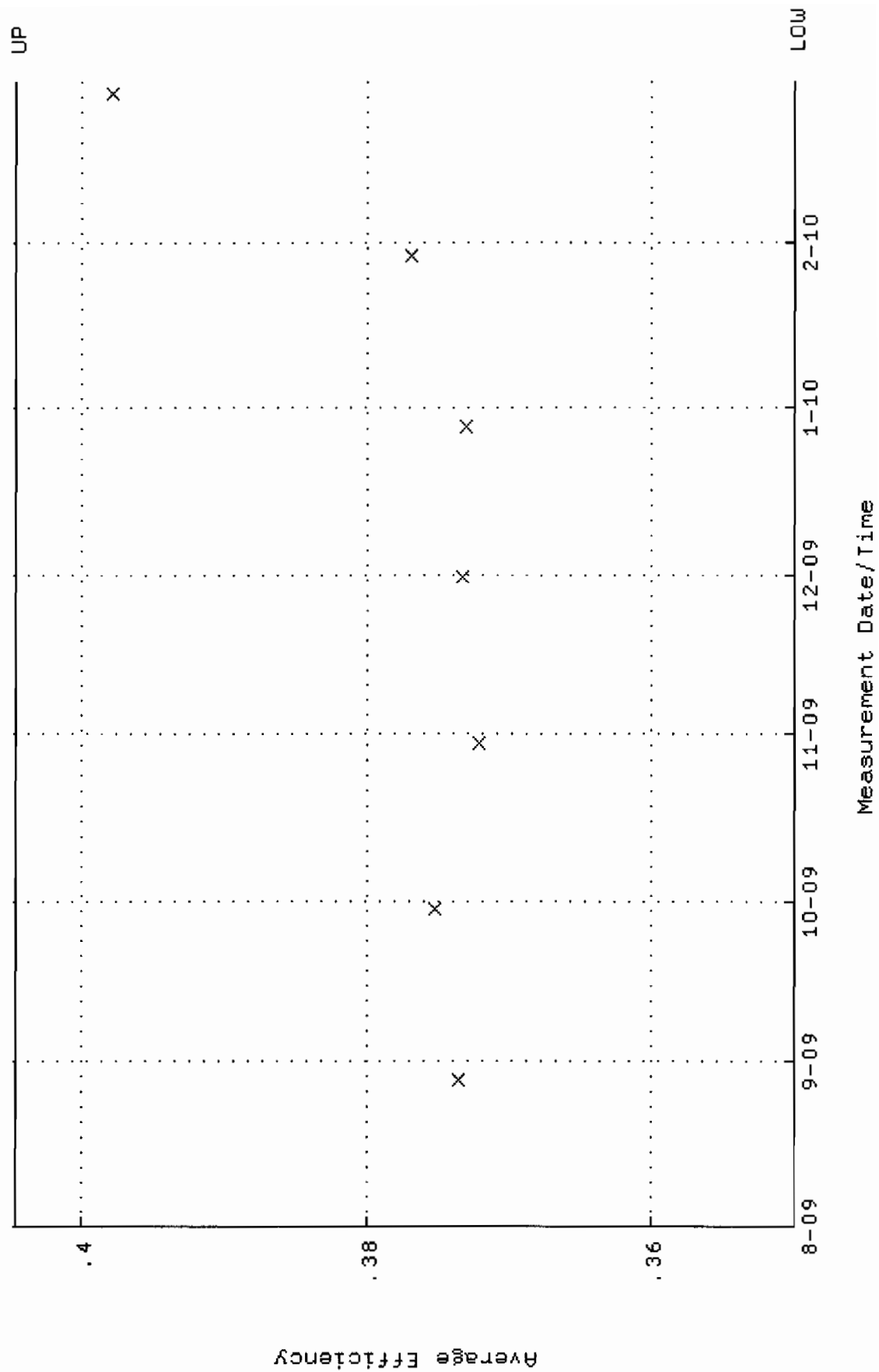
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:38 through 2-MAR-2010 12:00:00

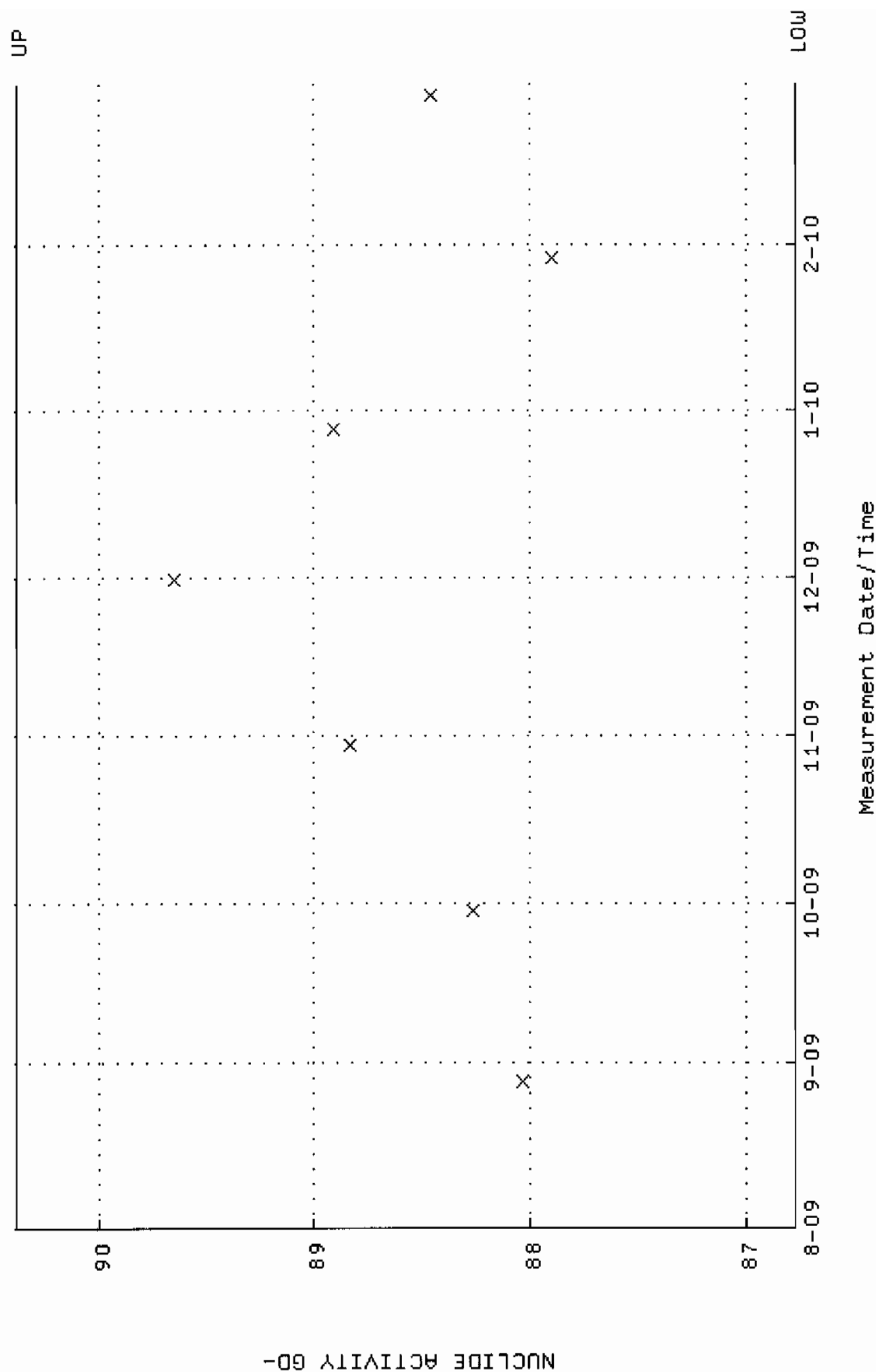
Lower/Upper Lmts: 0.000000E+00 through 0.100000



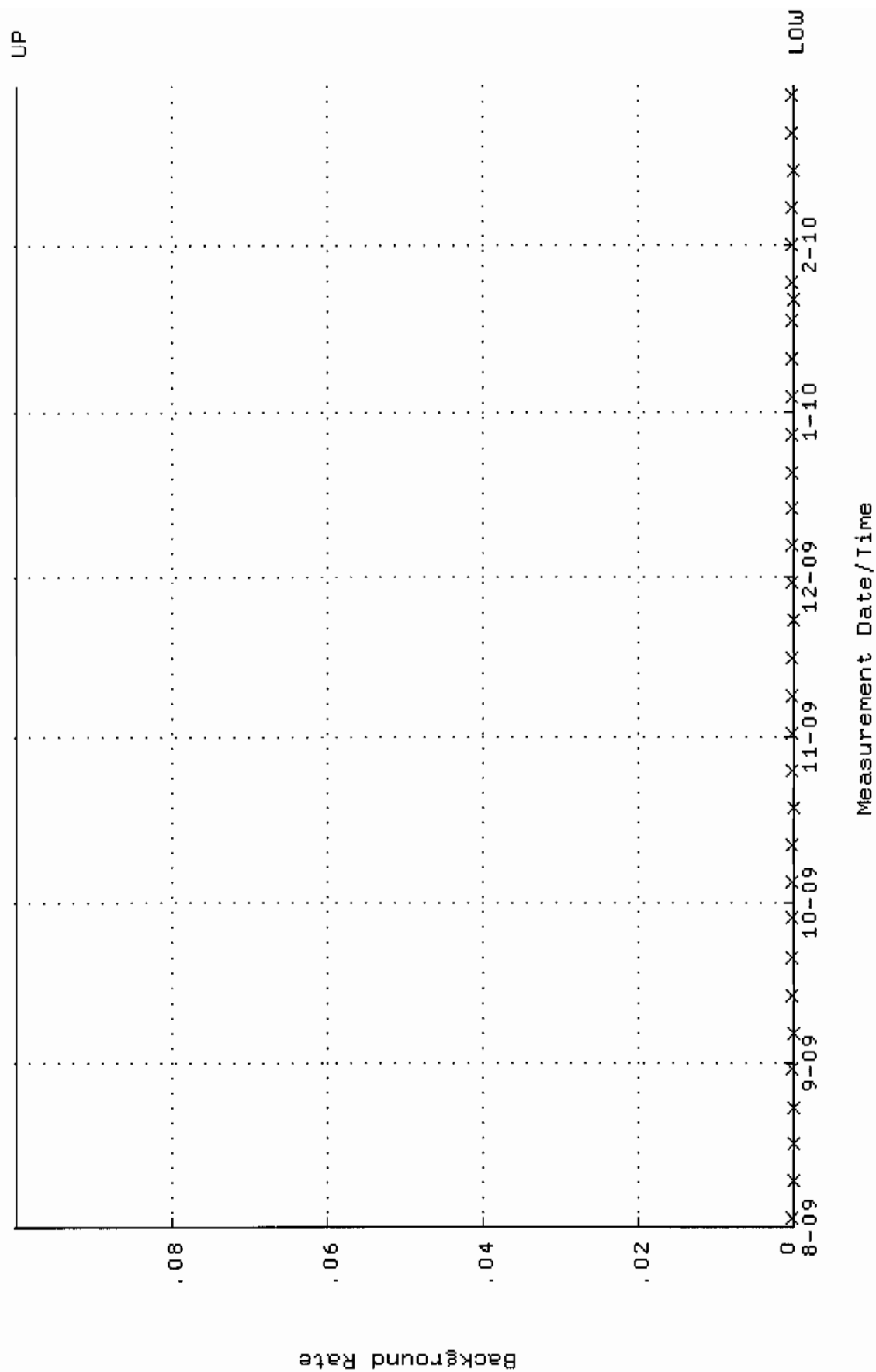
QA filename : DKA100:[ENV_ALPHA.QA.W]W235.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:45 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.350020 through 0.404668



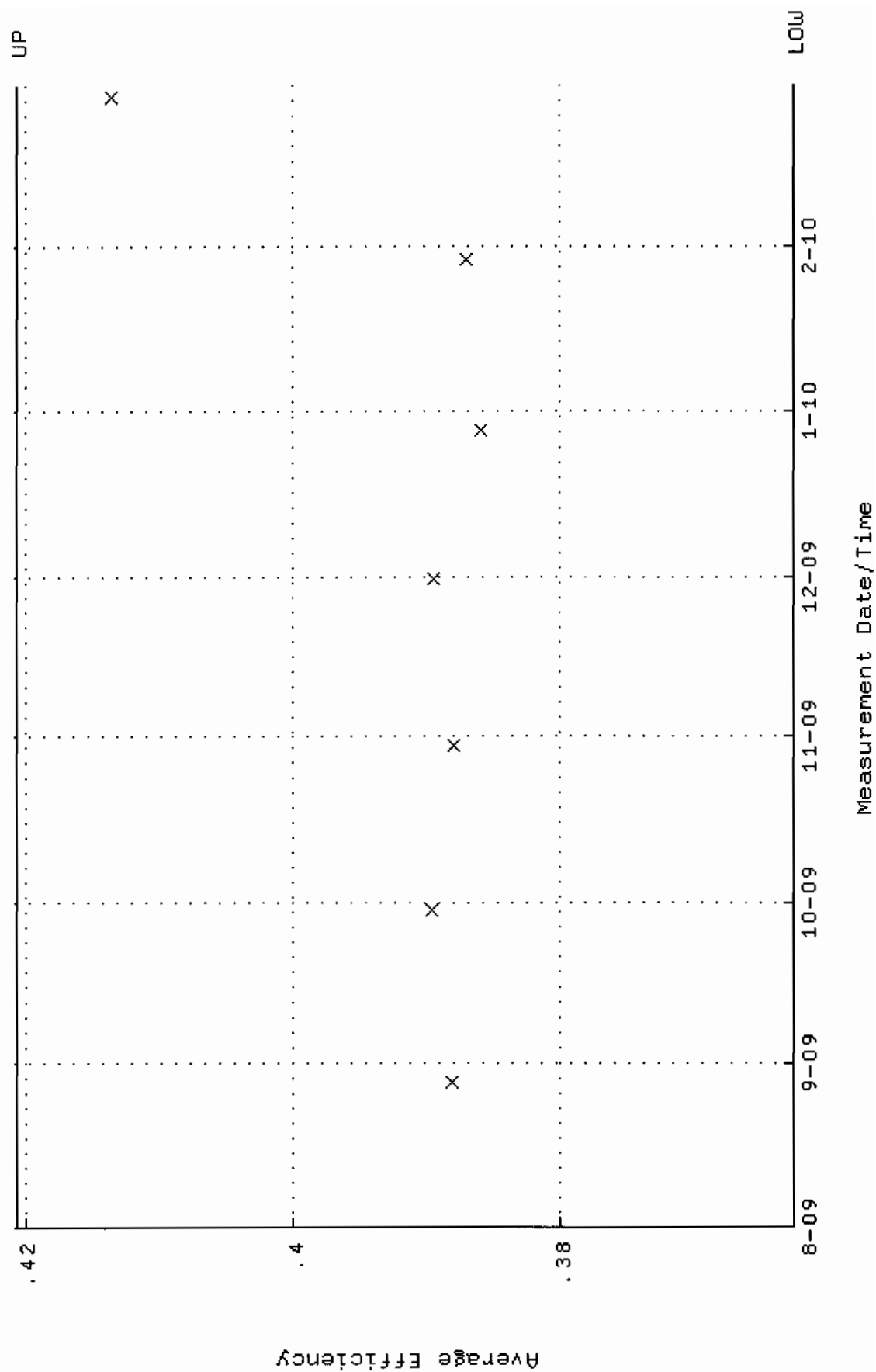
QA filename : DKA100:[ENV-ALPHA.QA.W]W235.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:45 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7703 through 90.3803



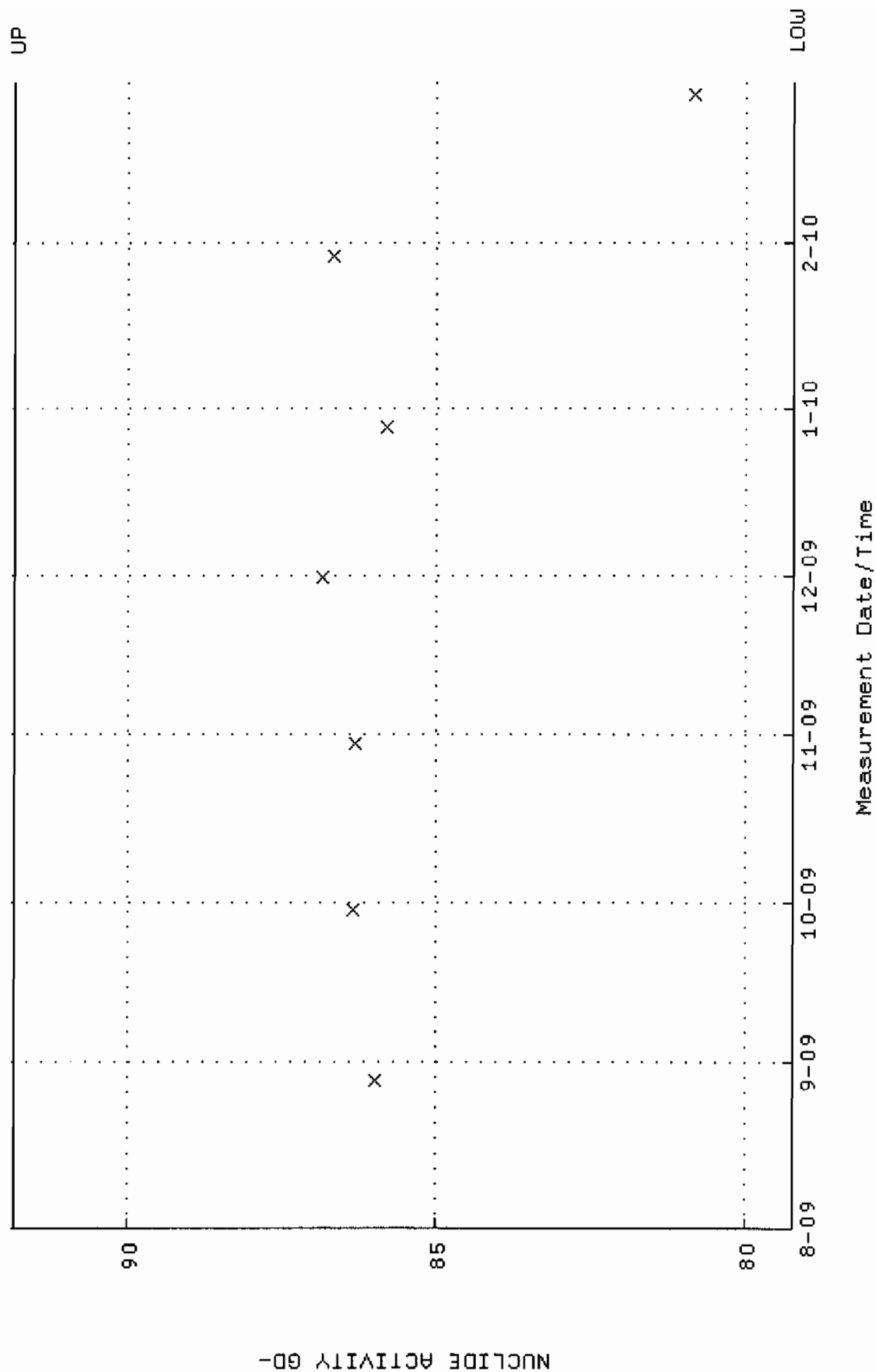
QA filename : DKA100:[ENV_ALPHA.QA.B]B235.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:00 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



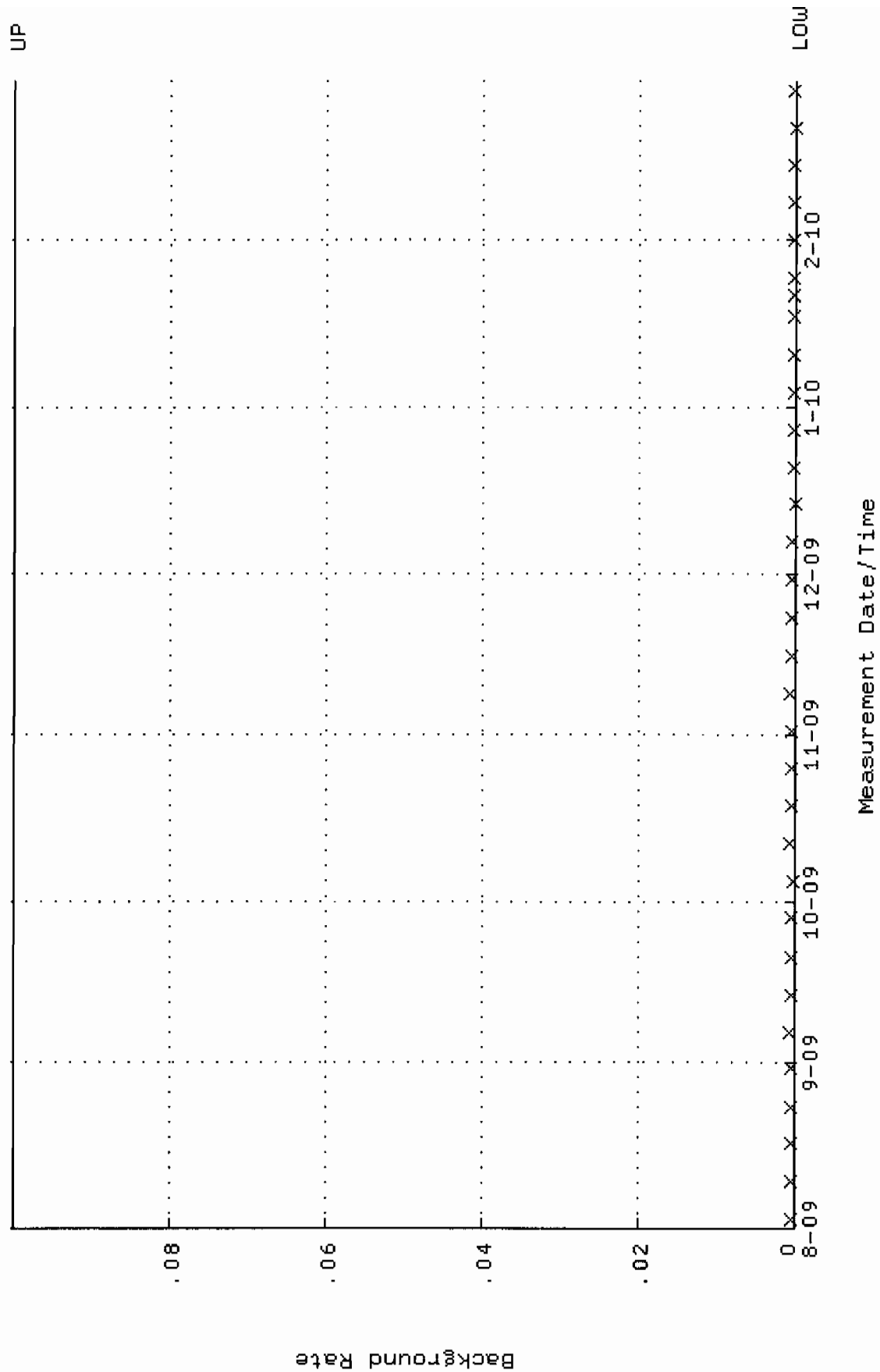
QA filename : DKA100: [ENV_ALPHA.QA.W]w236.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:51 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.362418 through 0.420706



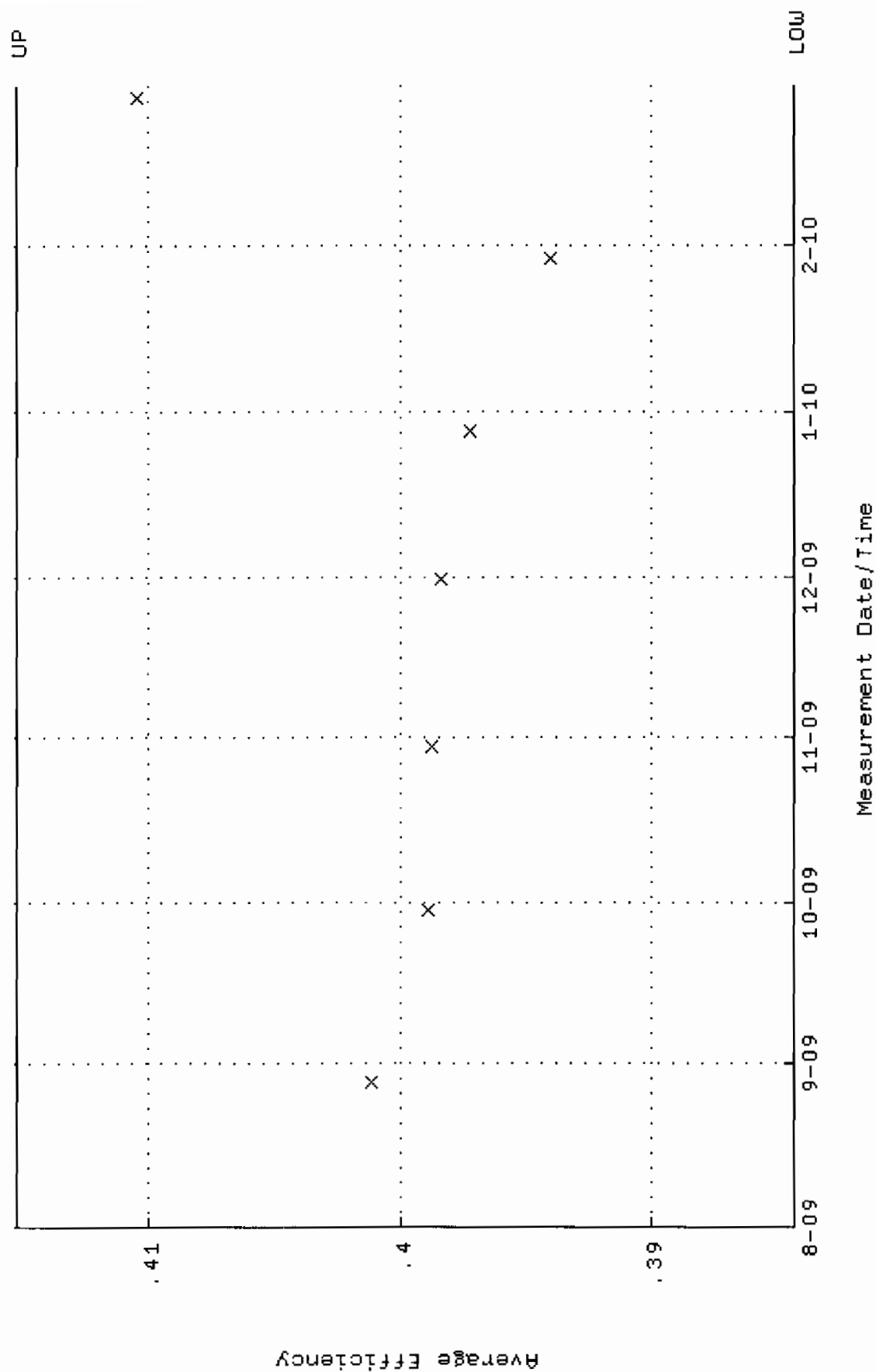
QA filename : DKA100:[ENV_ALPHA.QA.W]W236.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:51 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 79.2135 through 91.8401



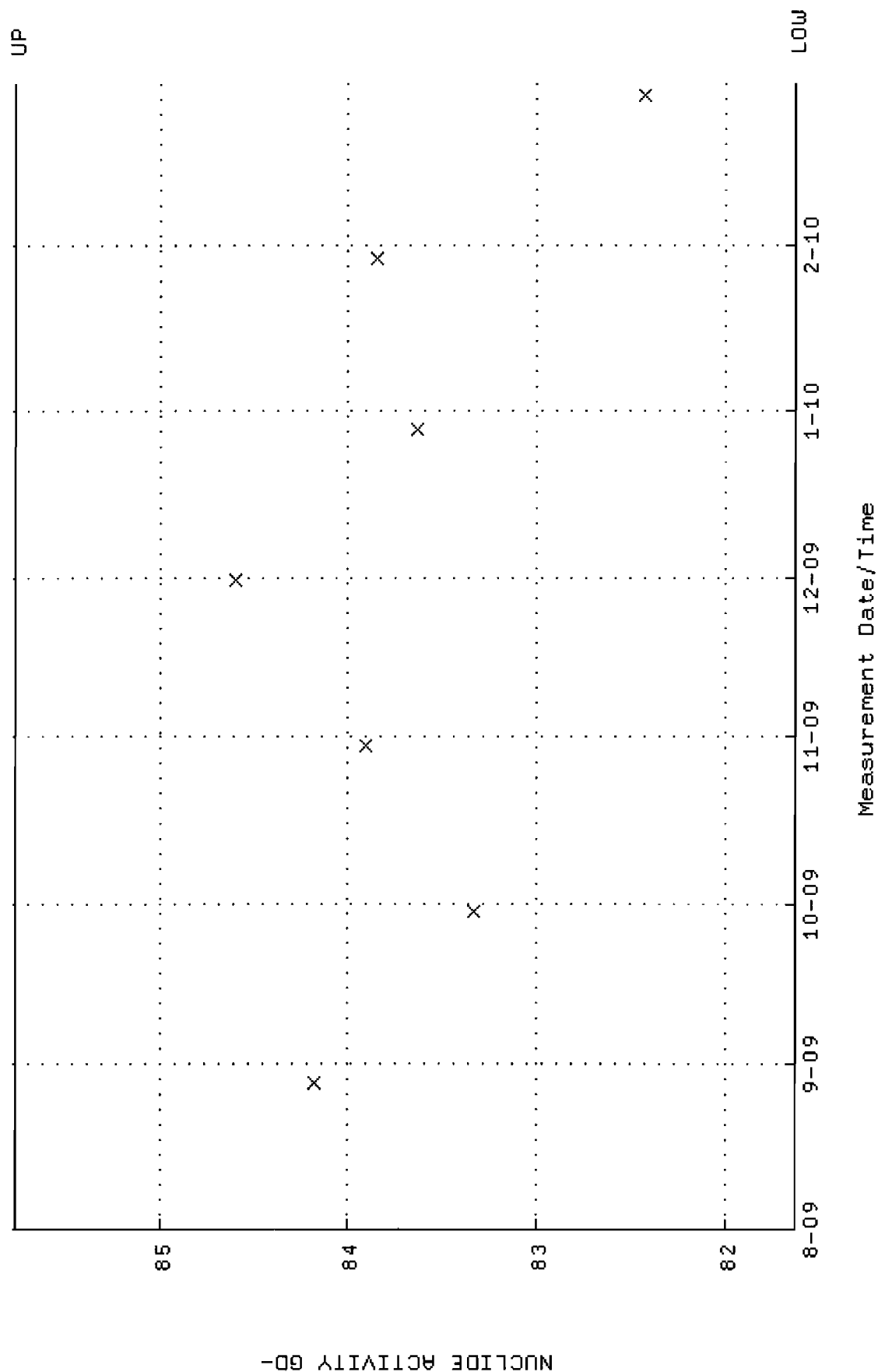
QA filename : DKA100:[ENV_ALPHA.QA.B]B236.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:04 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W237.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:55 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.384343 through 0.415273



QA filename : DKA100:[ENV_ALPHA.QA.W]W237.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:55 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.6308 through 85.7646

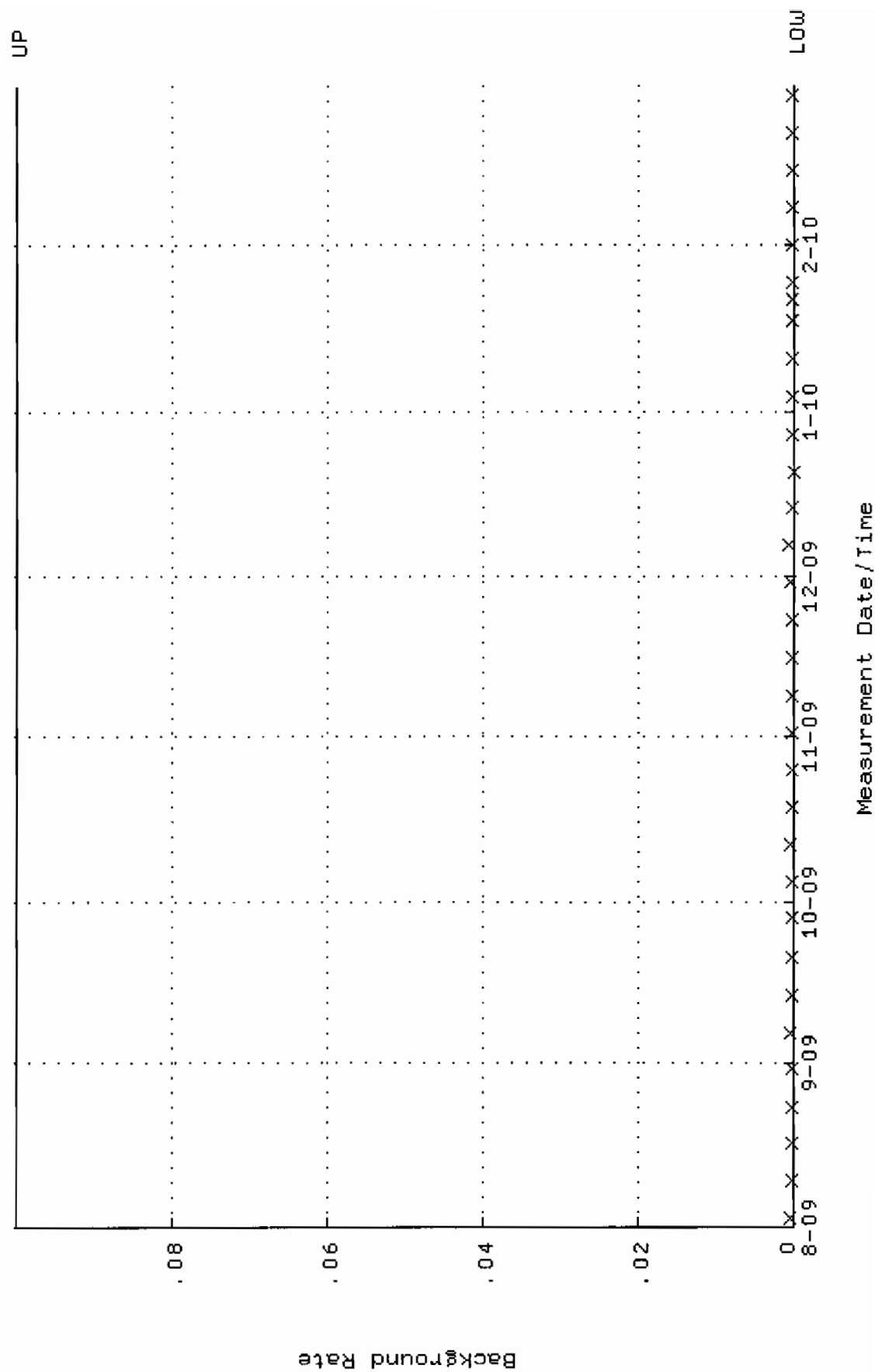


QA filename : OKA100:[ENV_ALPHA.QA.B]B237.QAF;1

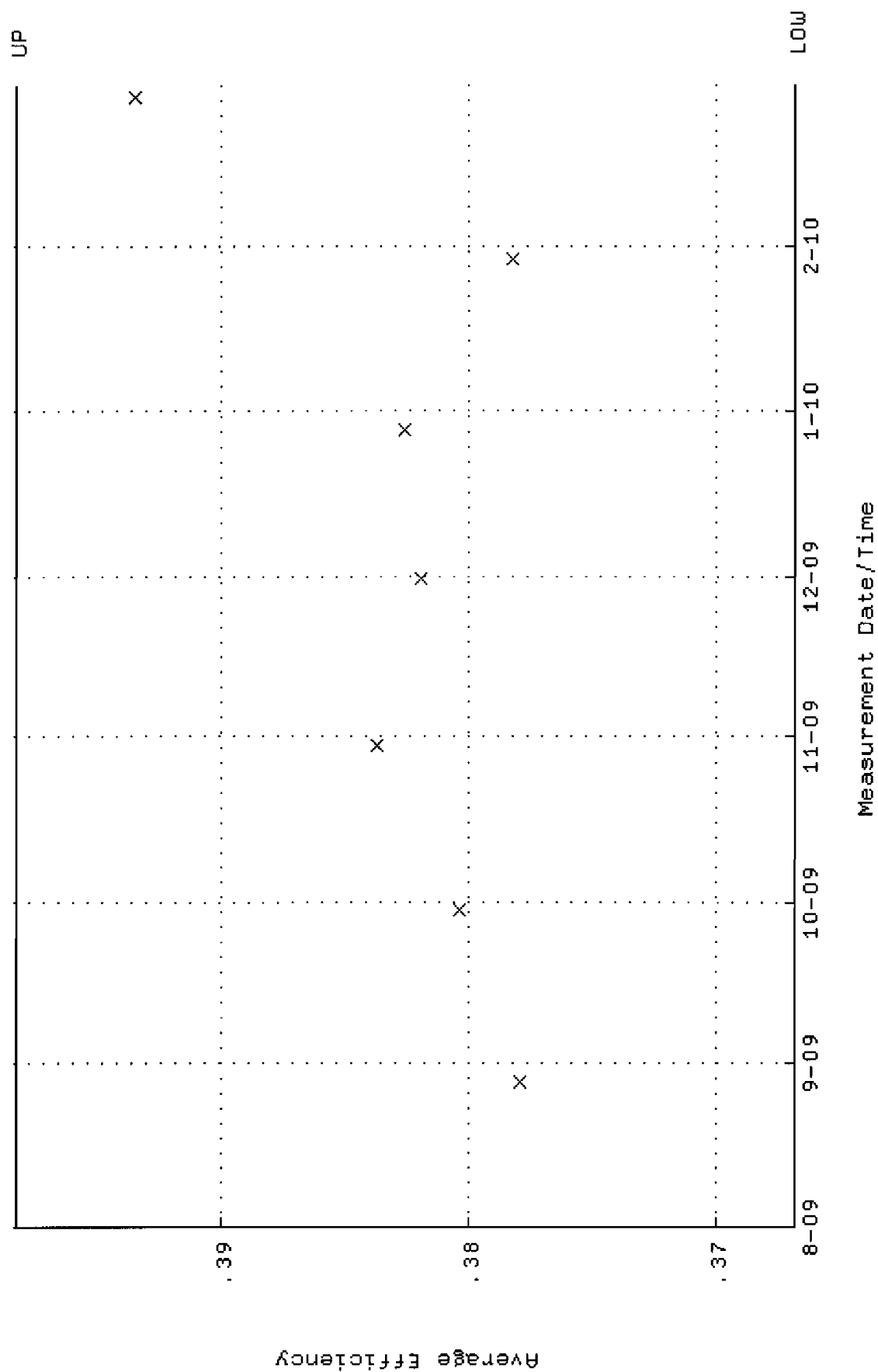
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:27:08 through 2-MAR-2010 12:00:00

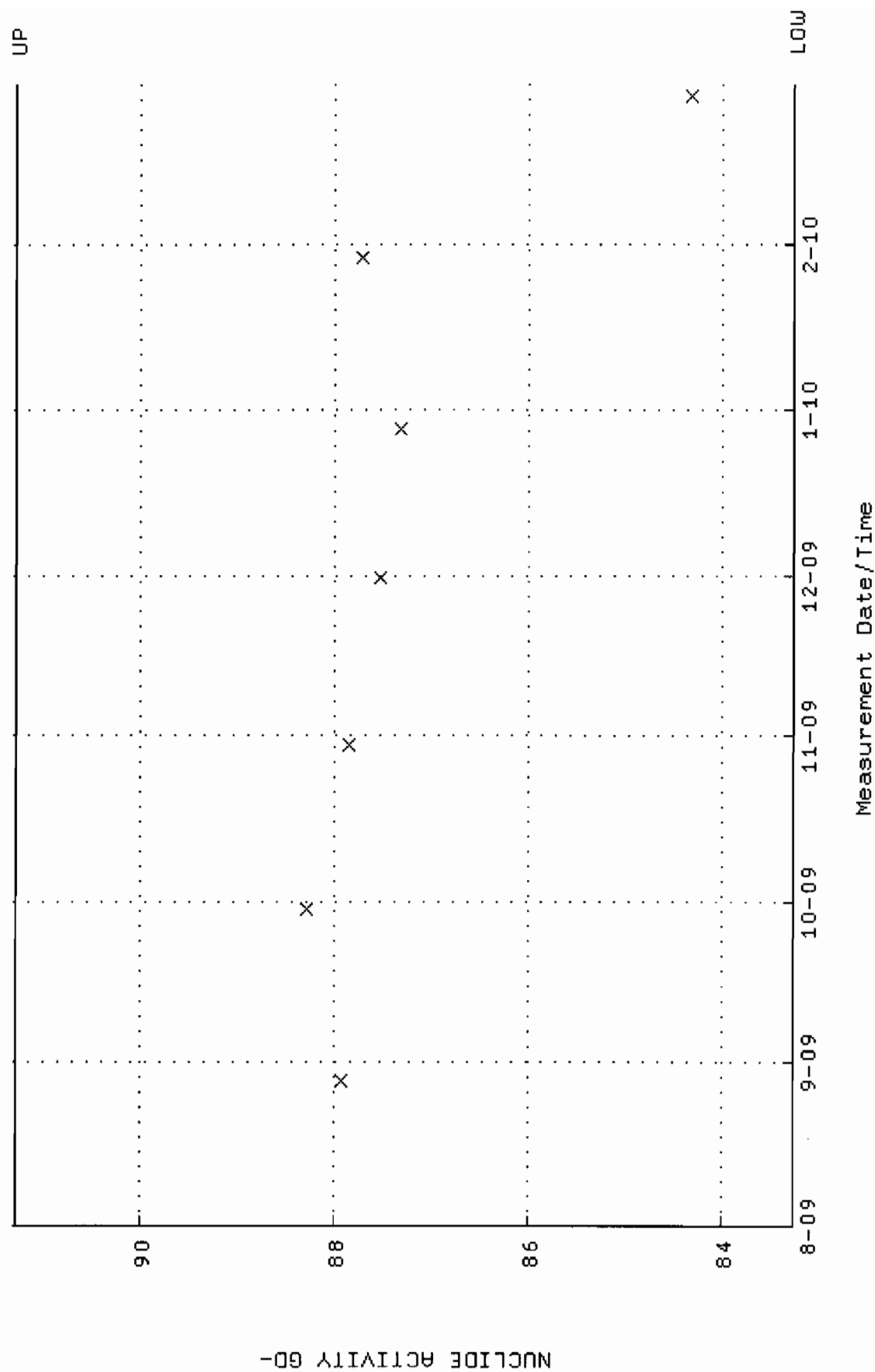
Lower/Upper Lmts: 0.000000E+00 through 0.100000



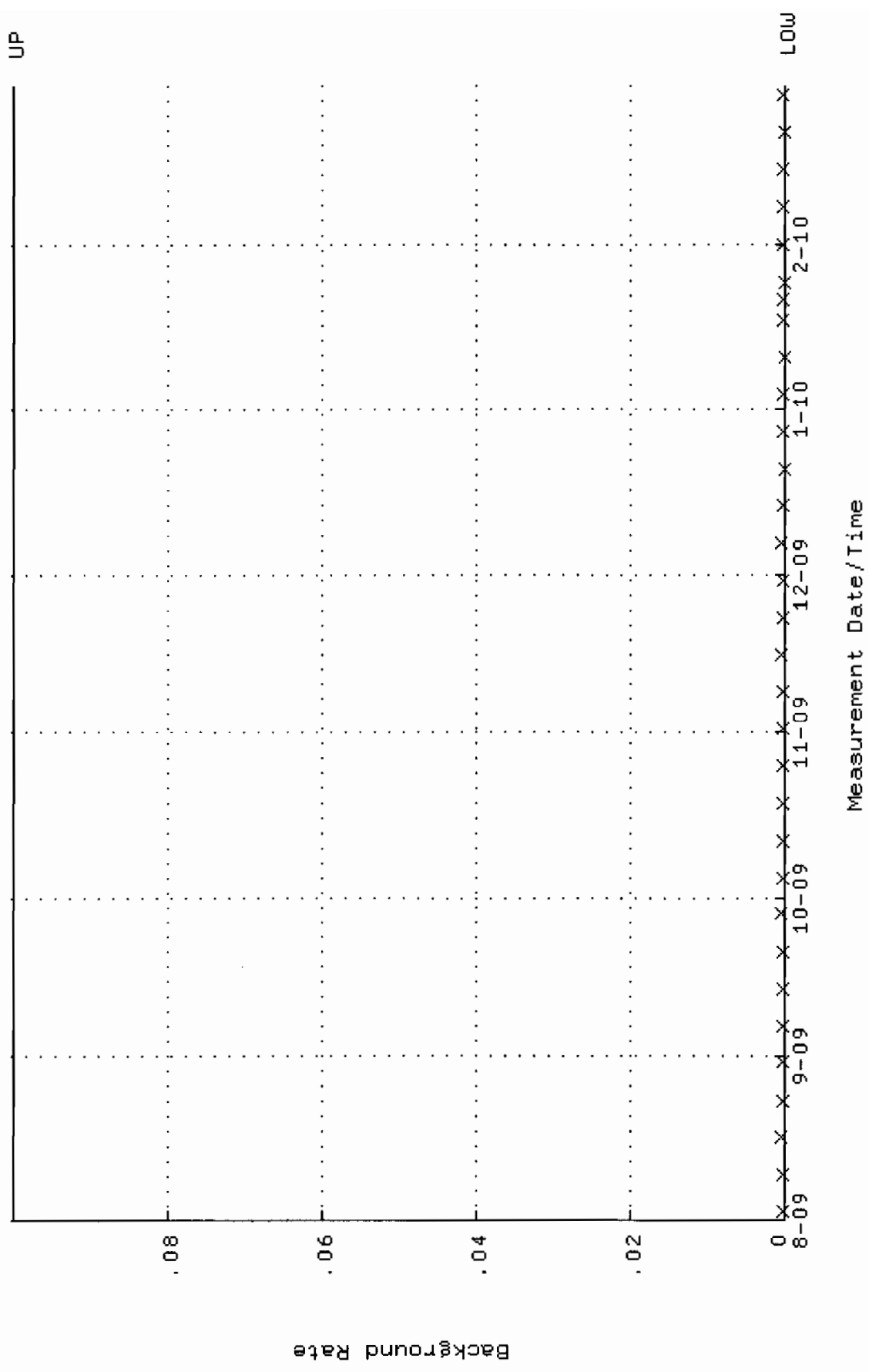
QA filename : DKA100:[ENV_ALPHA.QA.W]W239.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:05 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.366836 through 0.398318



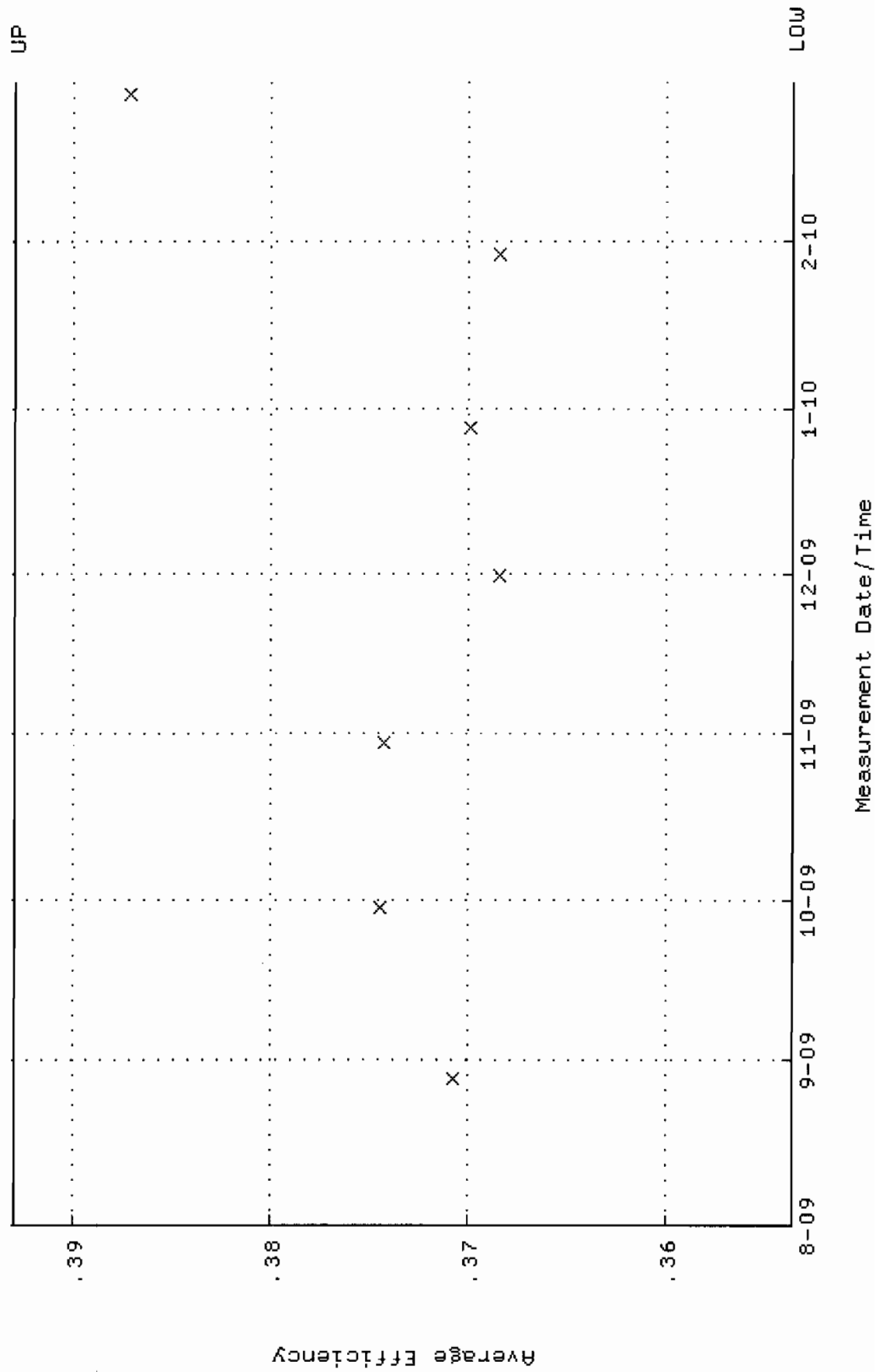
QA filename : DKA100:[ENV_ALPHA.QA.W]W239.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:05 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.2587 through 91.2737



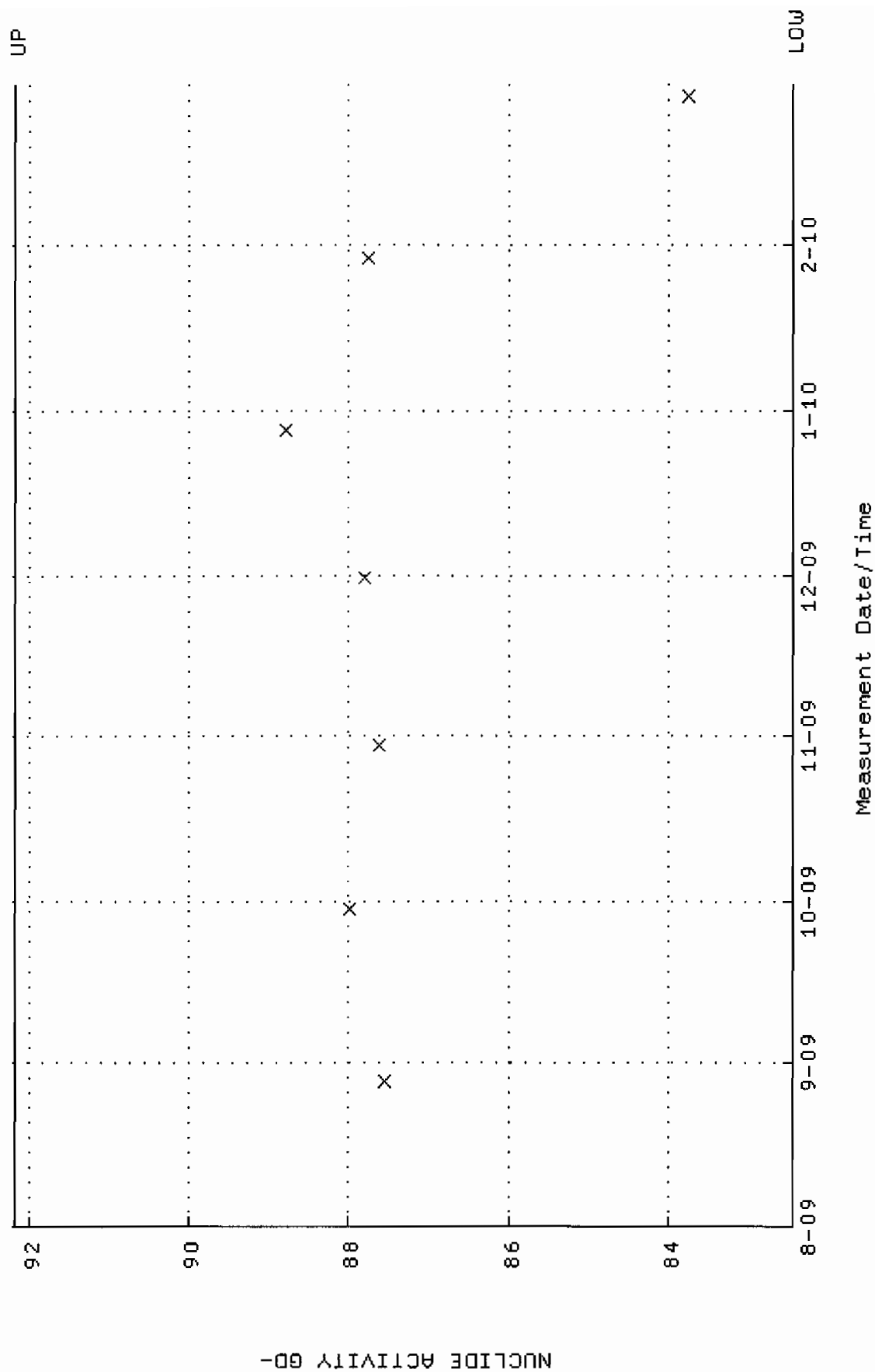
QA filename : DKA100:[ENV_ALPHA.QA.B]B239.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-AUG-2009 17:27:16 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



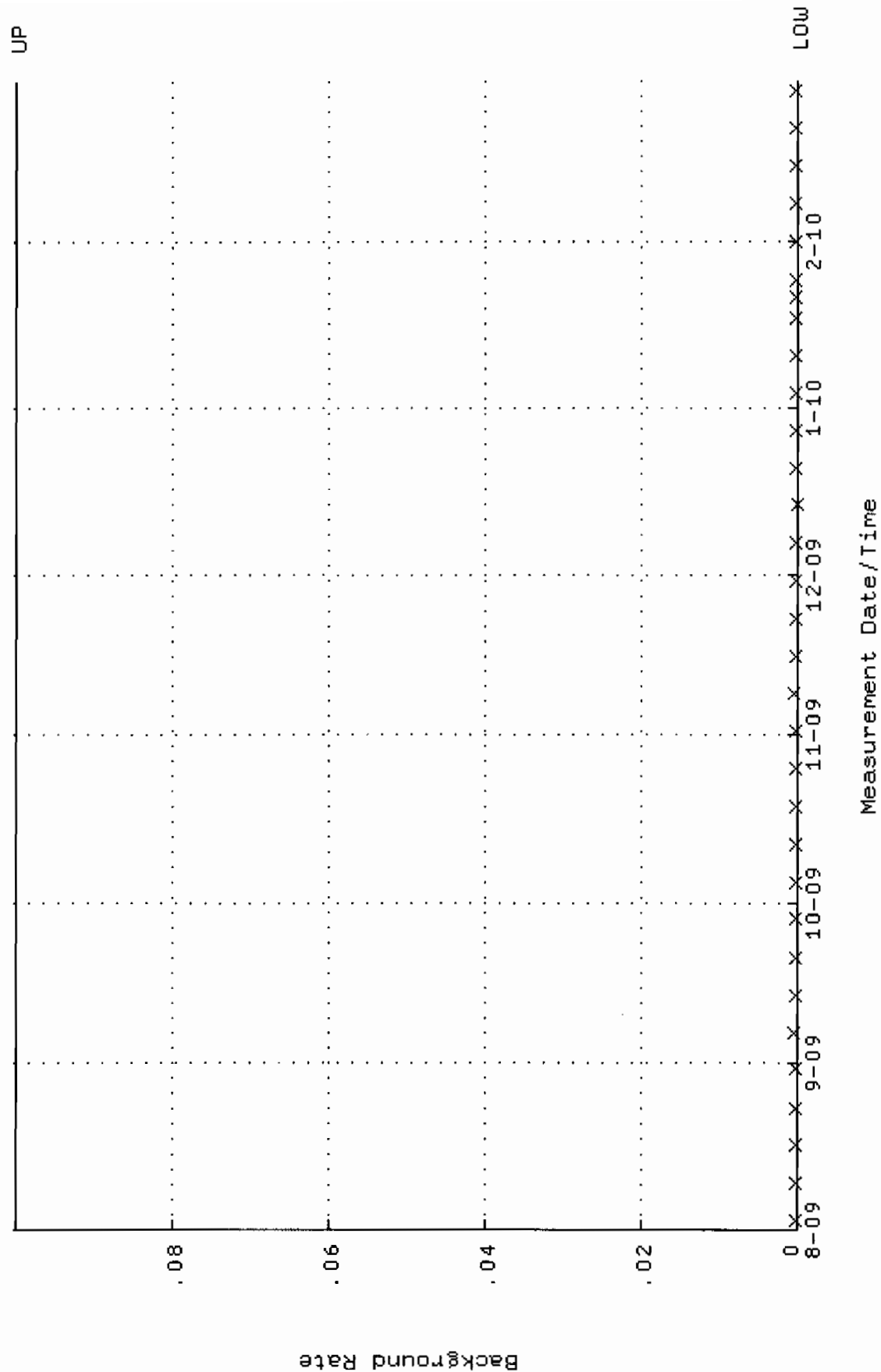
QA filename : DKA100:[ENV_ALPHA.QA.W]W240.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.353617 through 0.392947



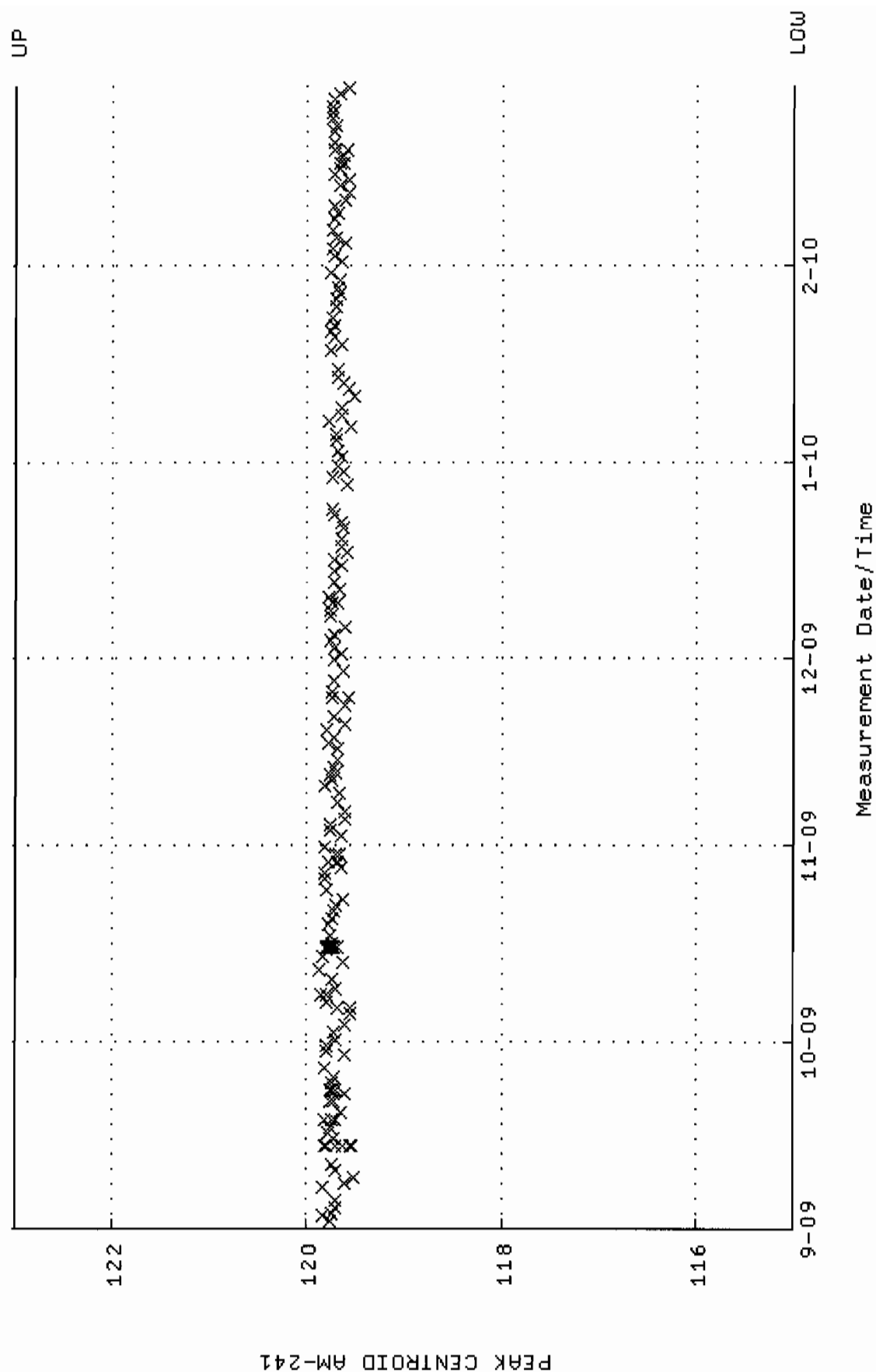
QA filename : DKA100:[ENV_ALPHA.QA.W]W240.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4439 through 92.1786



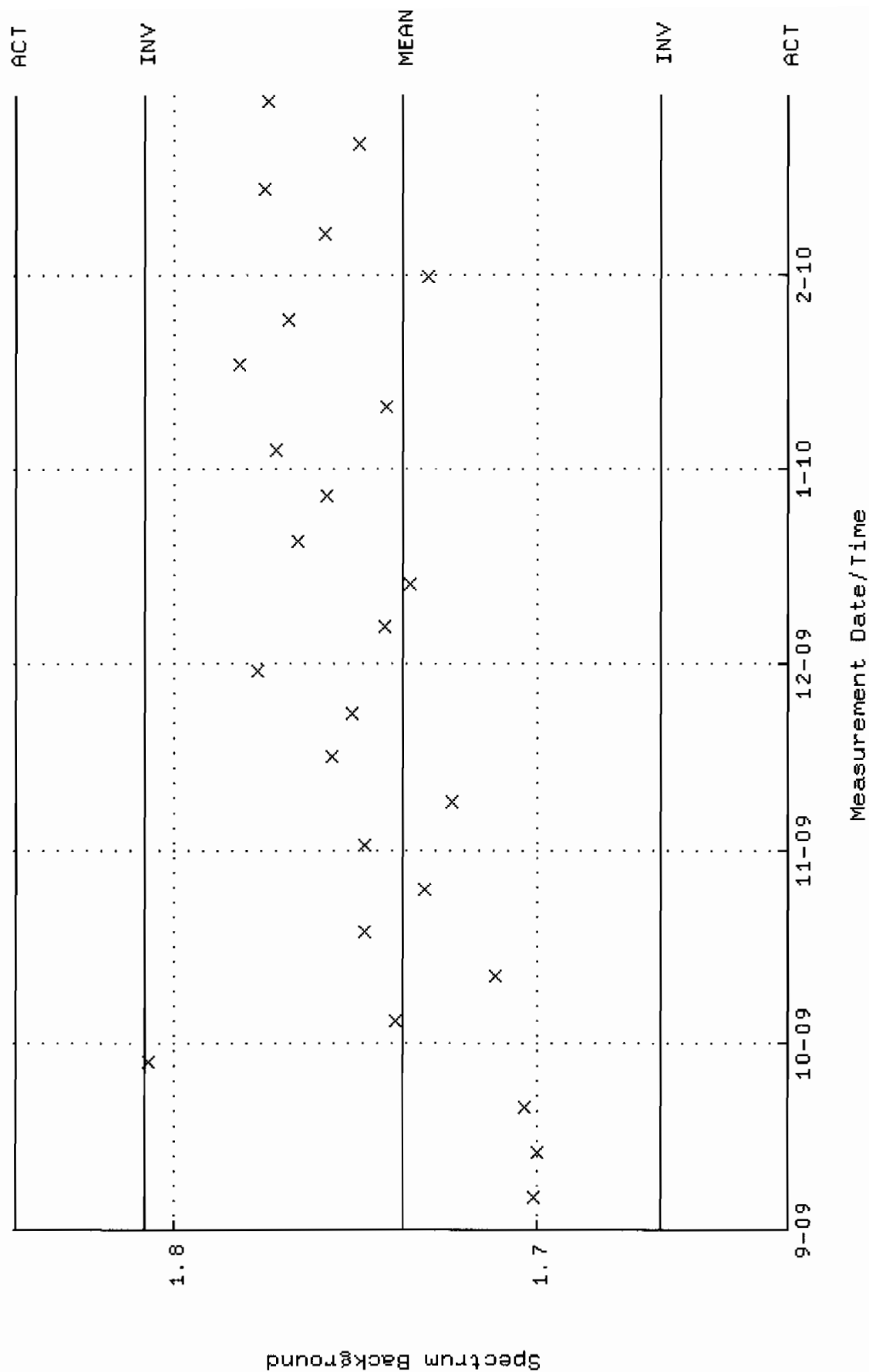
QA filename : DKA100:[ENV_ALPHA.QA.B]B240.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:21 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



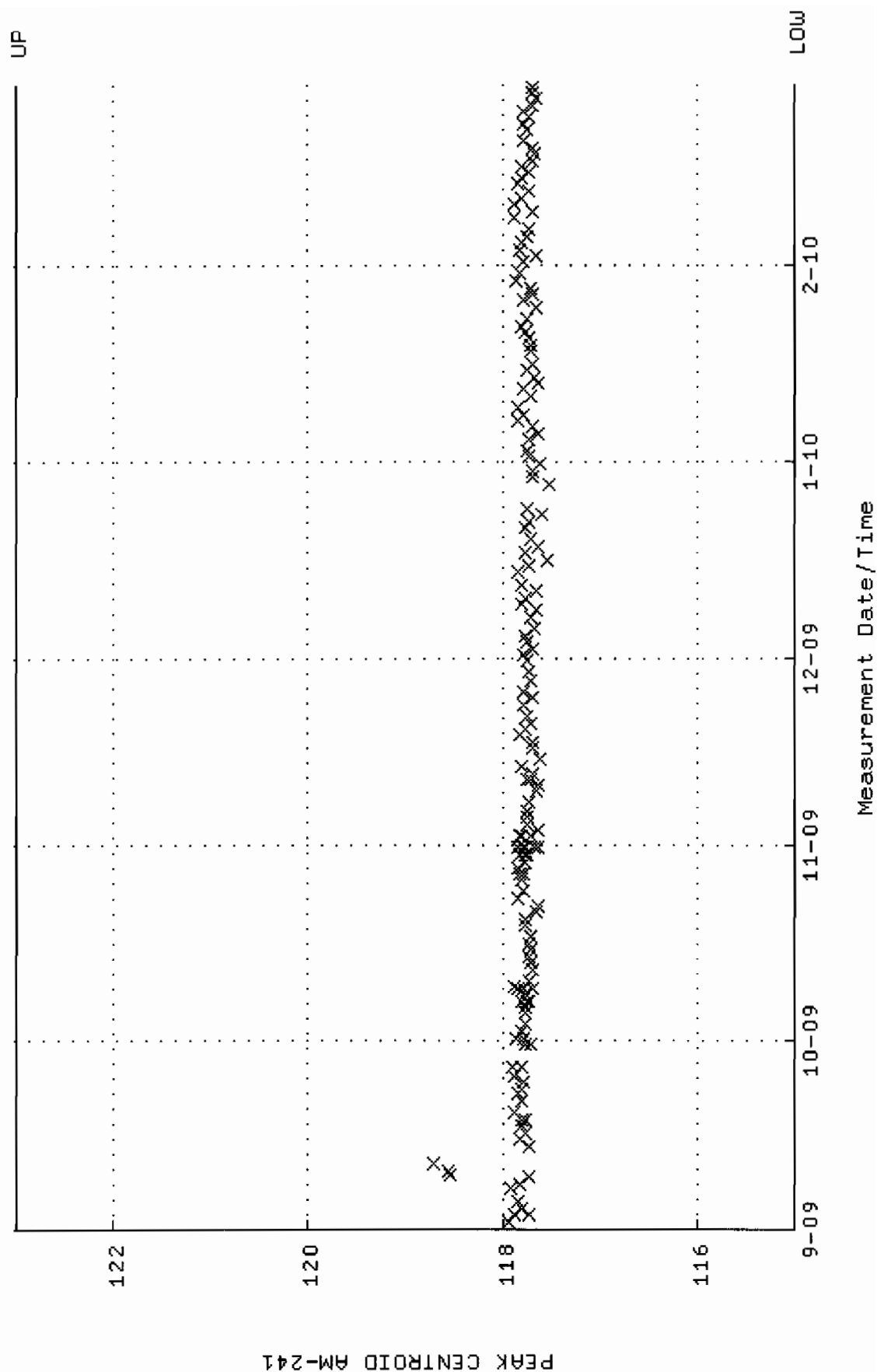
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM01-500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:39:53 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



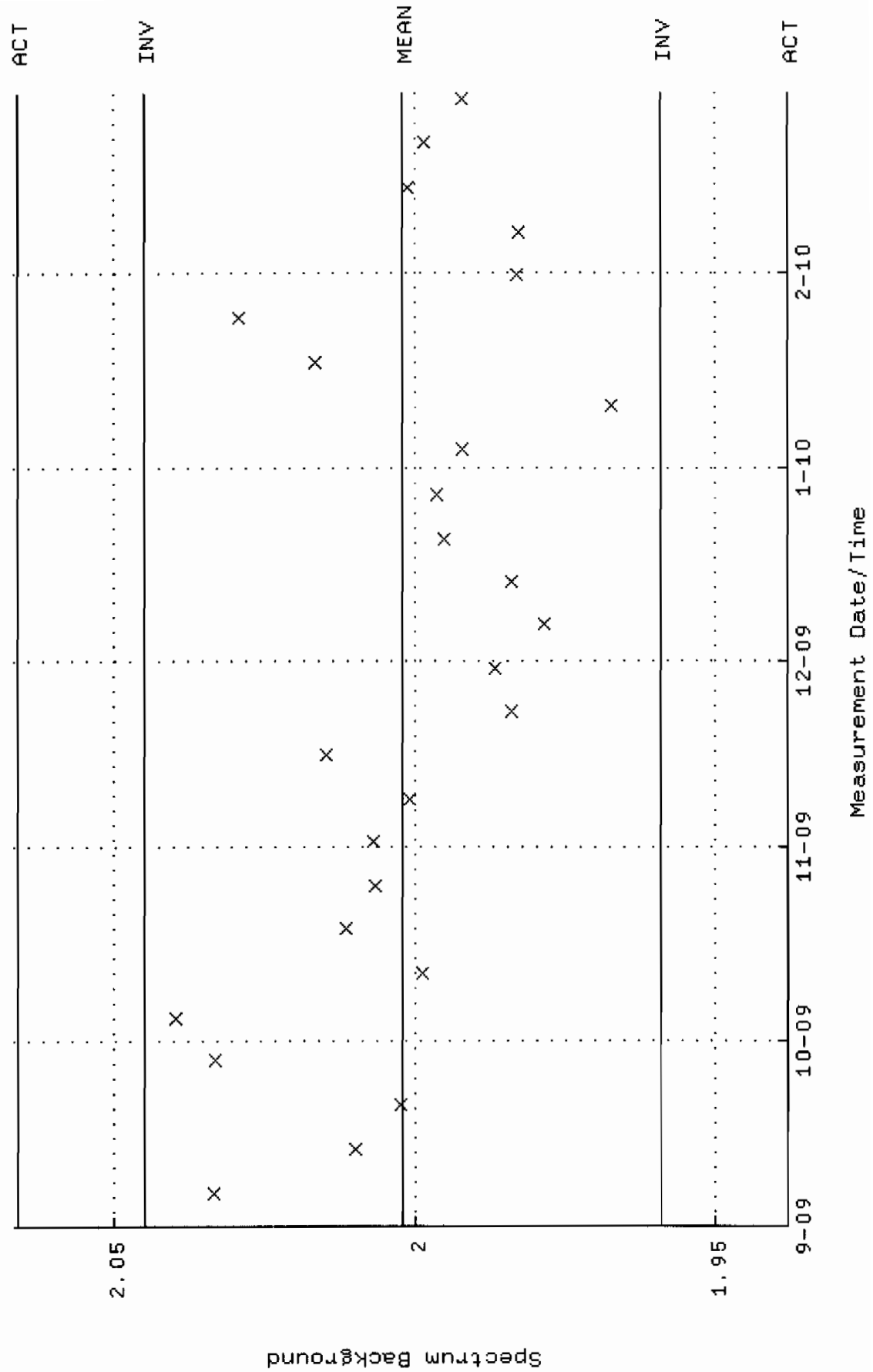
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM01.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:36:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73723 +- 3.552524E-02 (2.04 %)



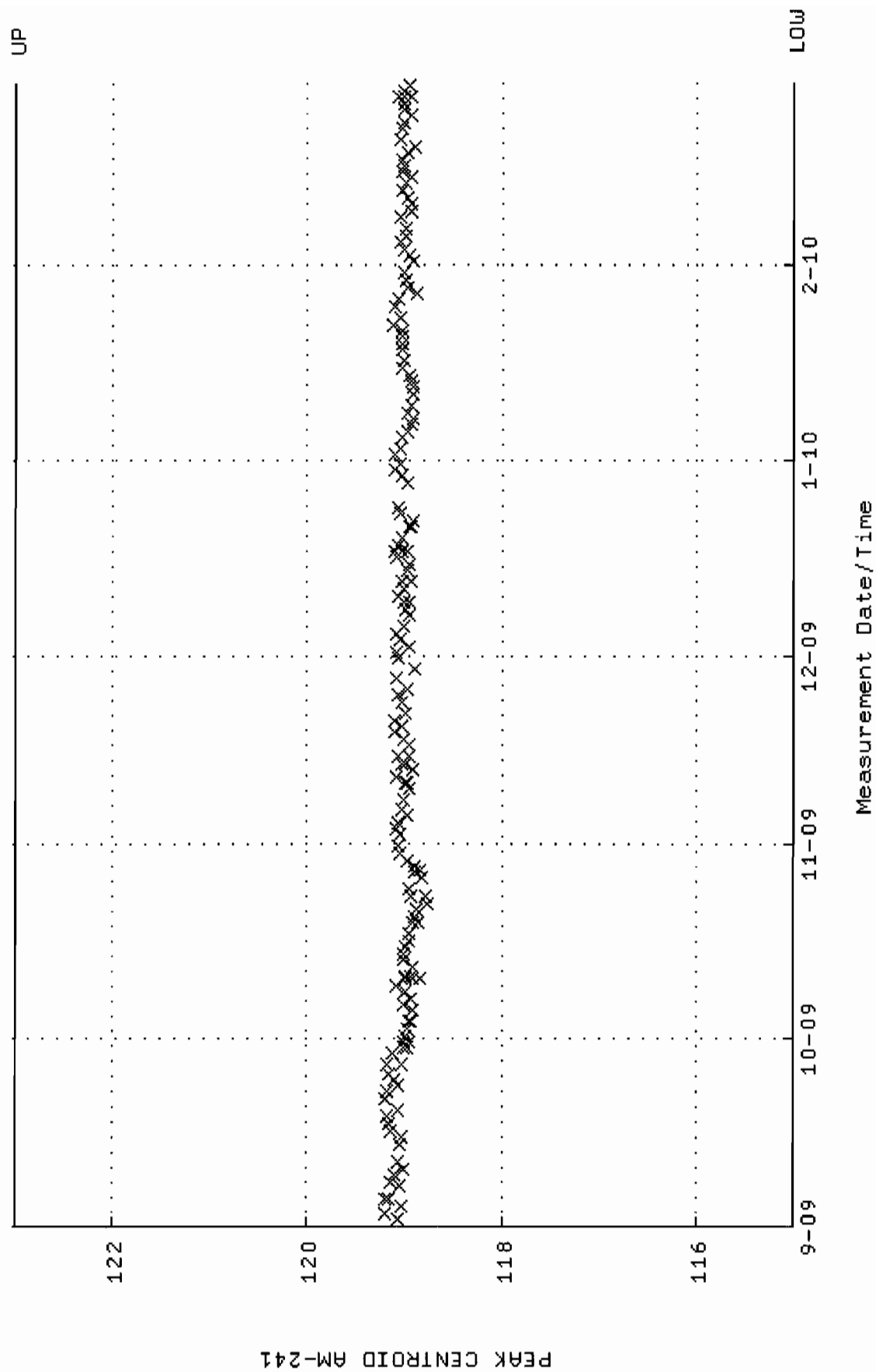
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM02-CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 04:40:02 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



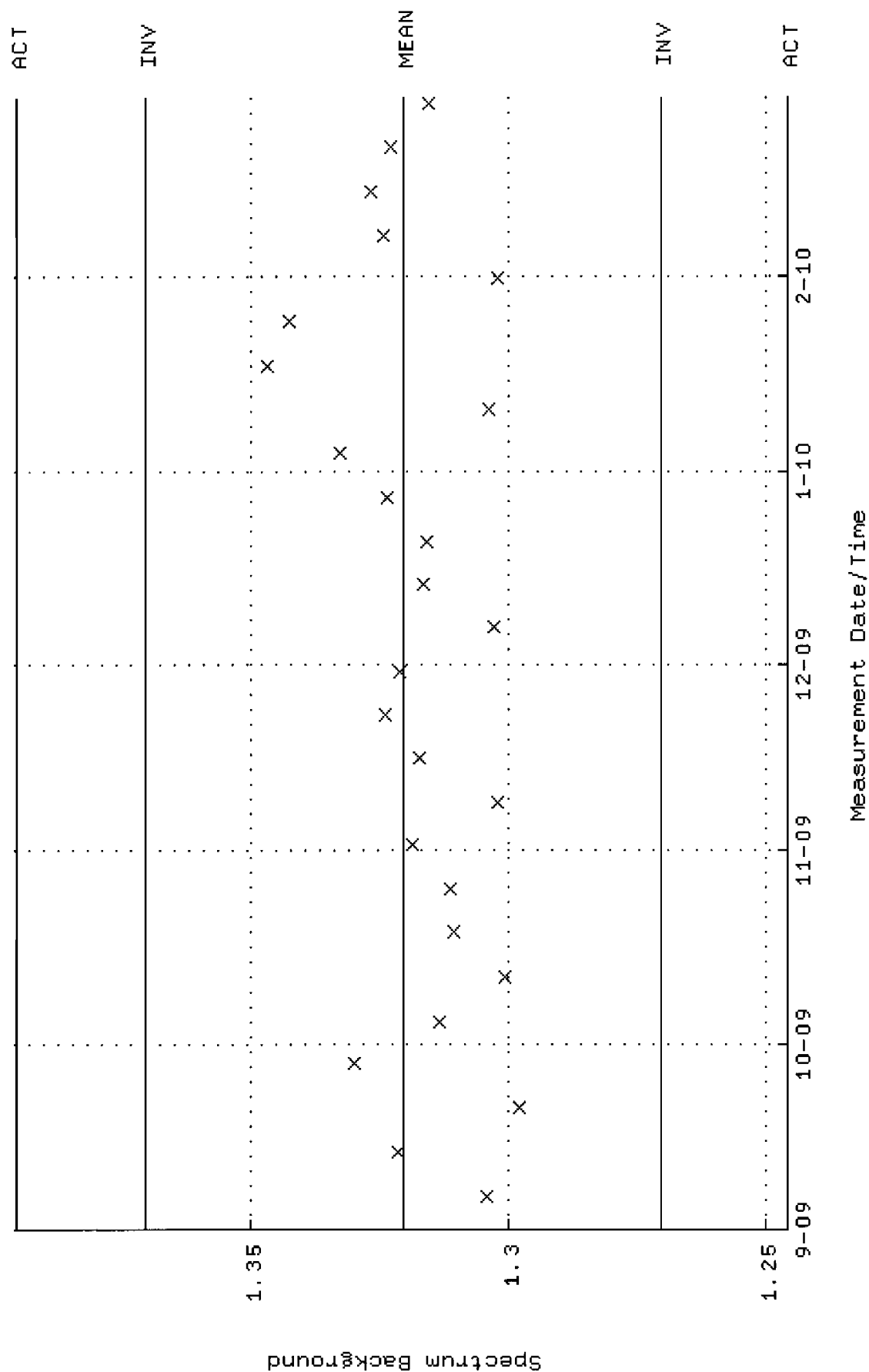
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM02.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:37:17 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.00226 +- 2.139827E-02 (1.07 %)



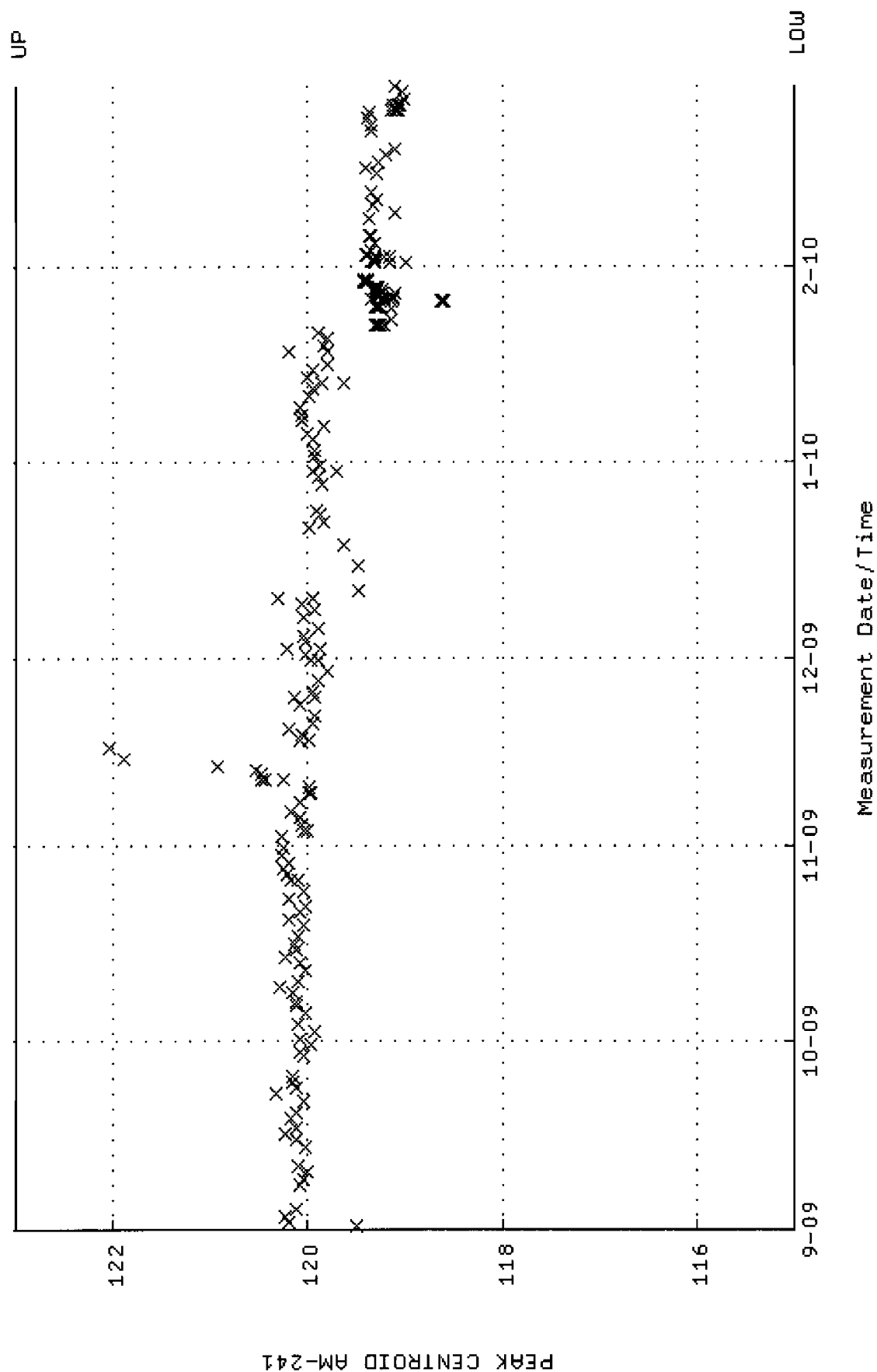
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM04-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:22:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



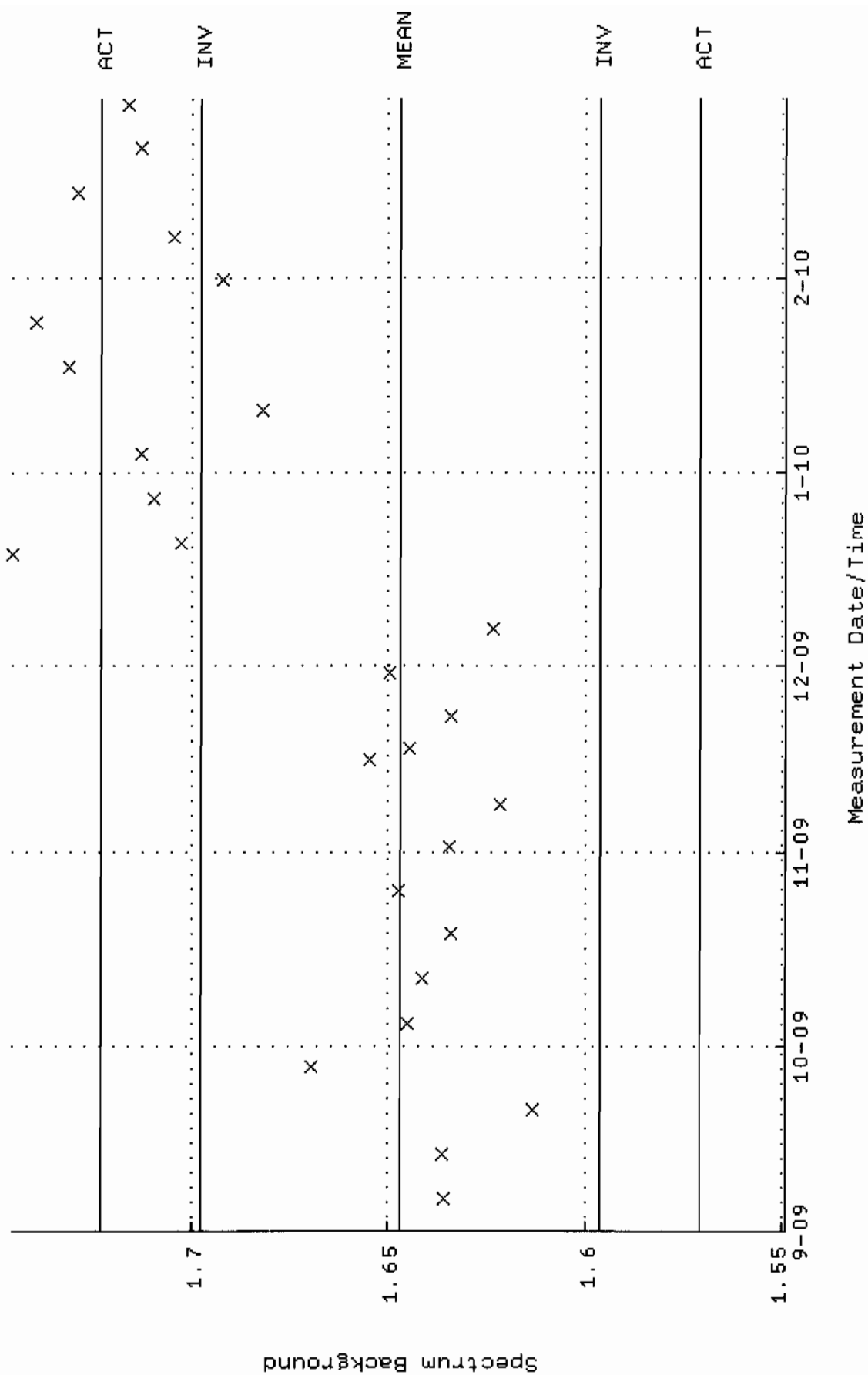
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM04.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:38:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



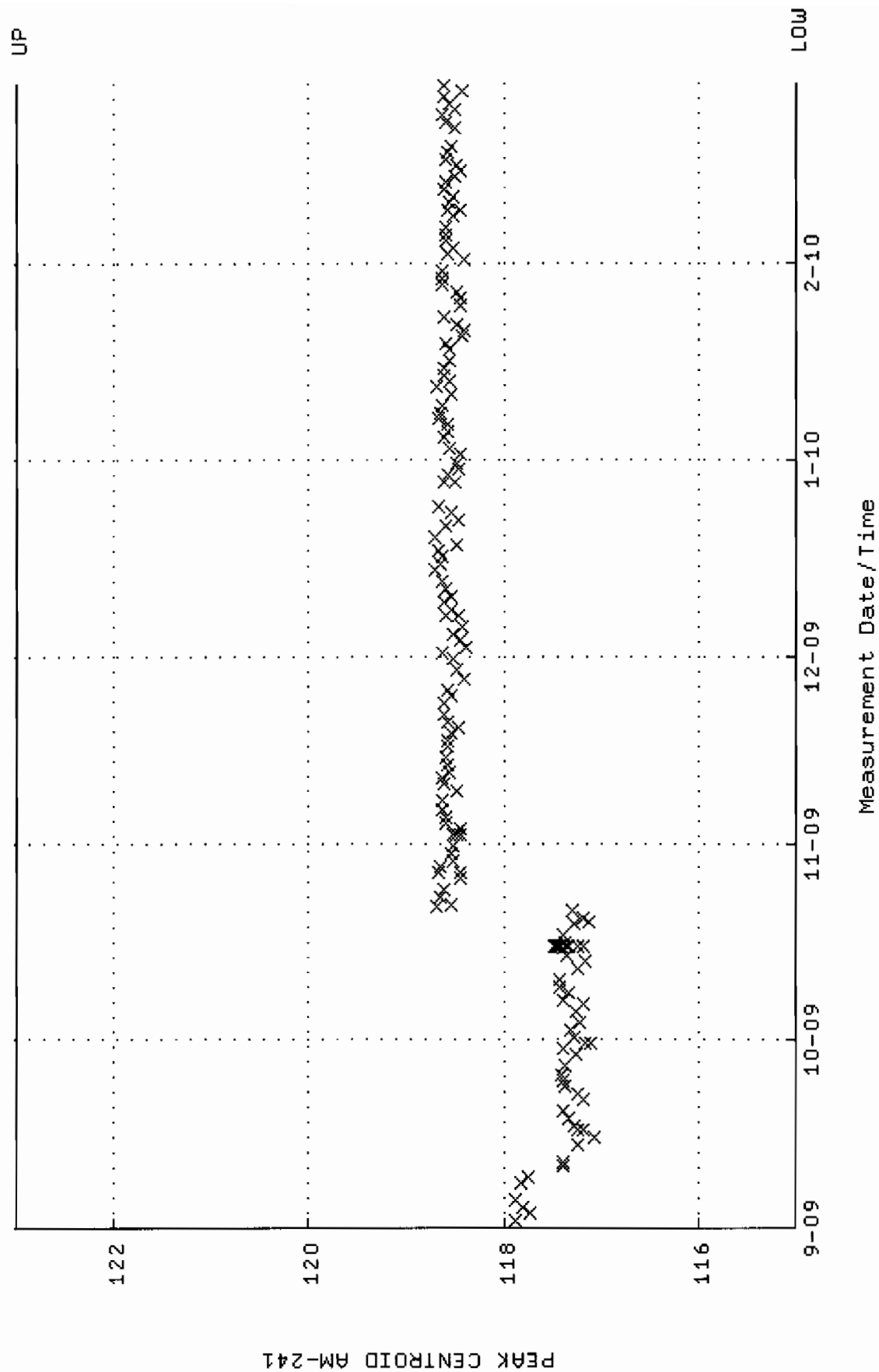
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM05_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-SEP-2009 14:54:46 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



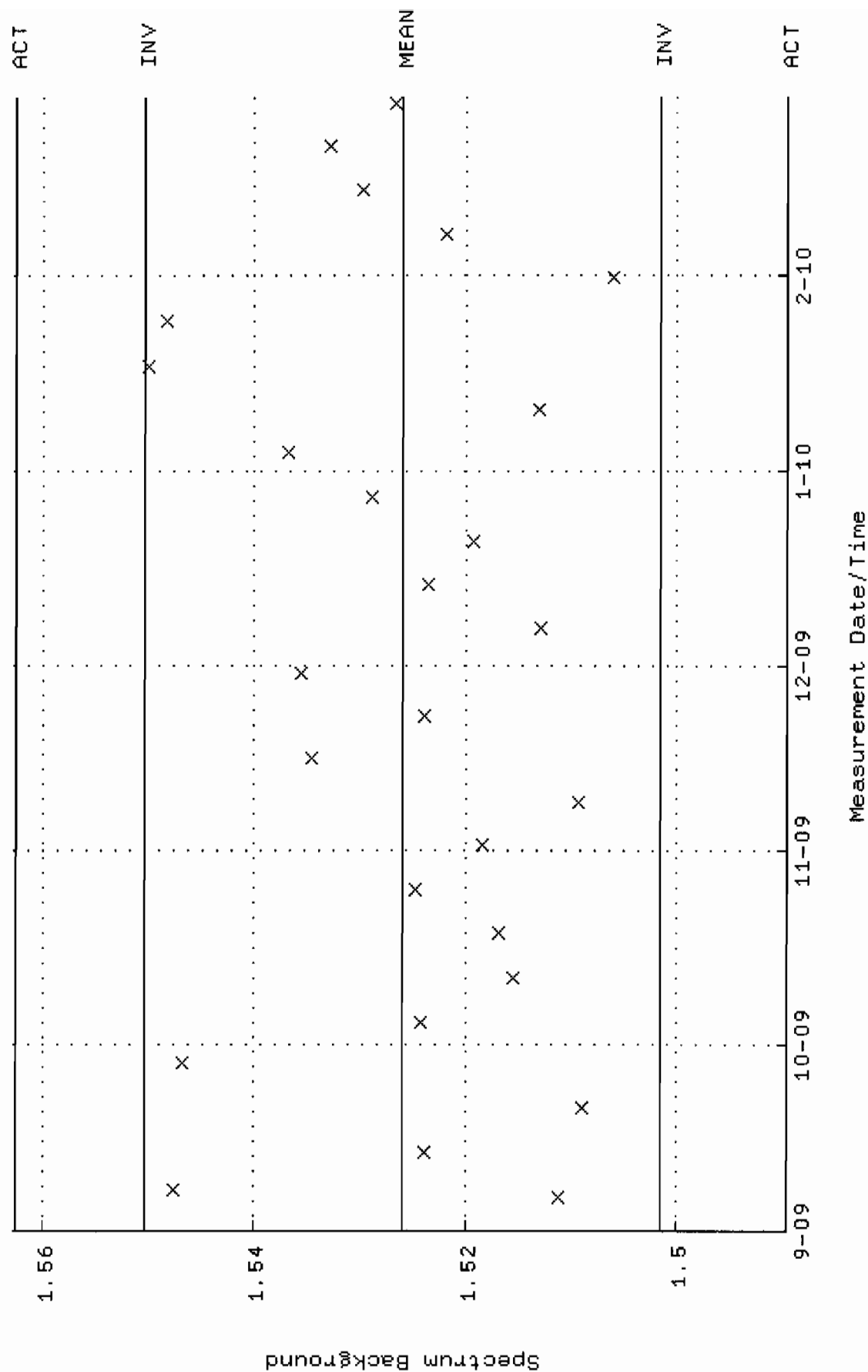
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM05.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



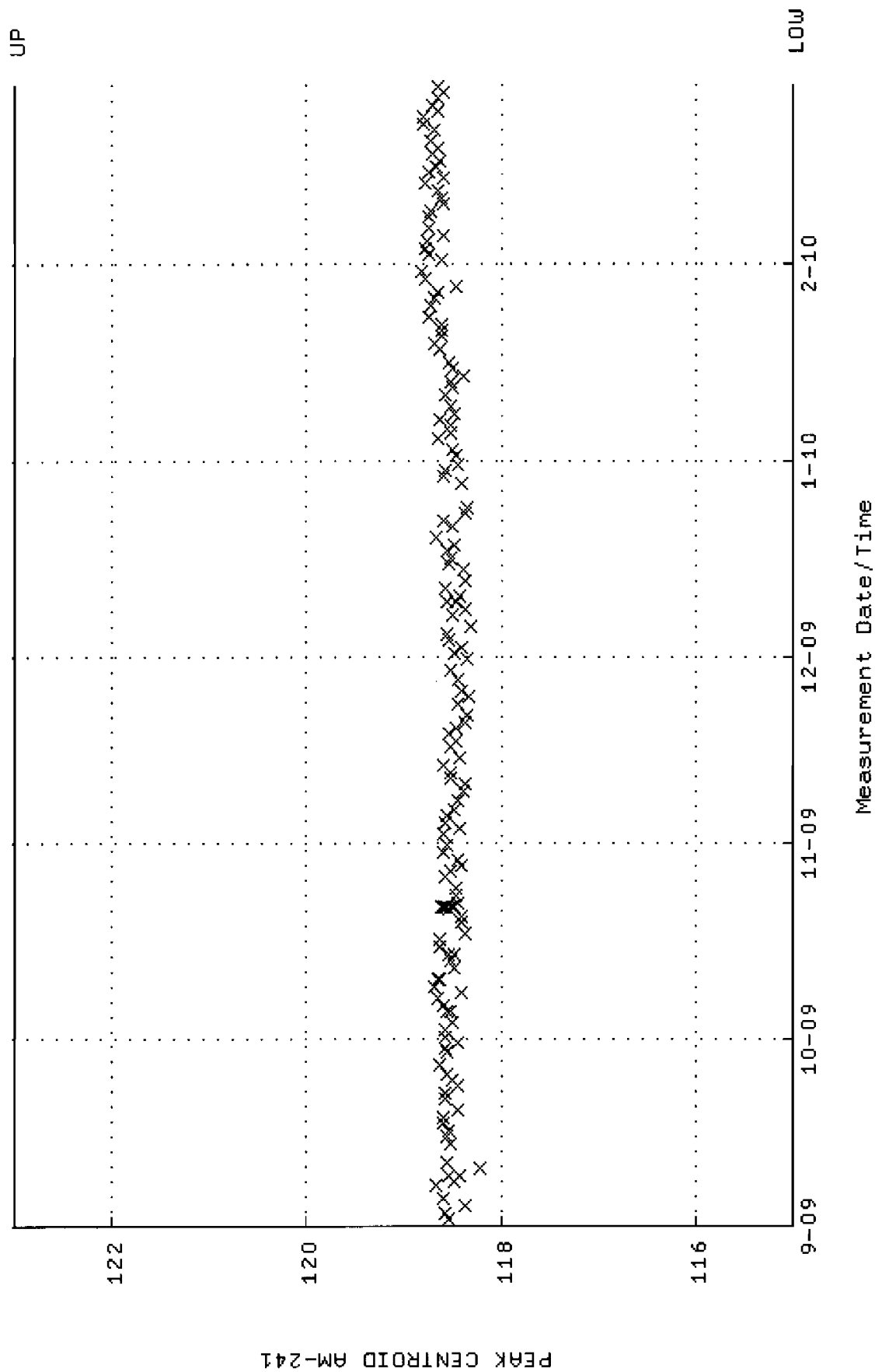
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:19 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



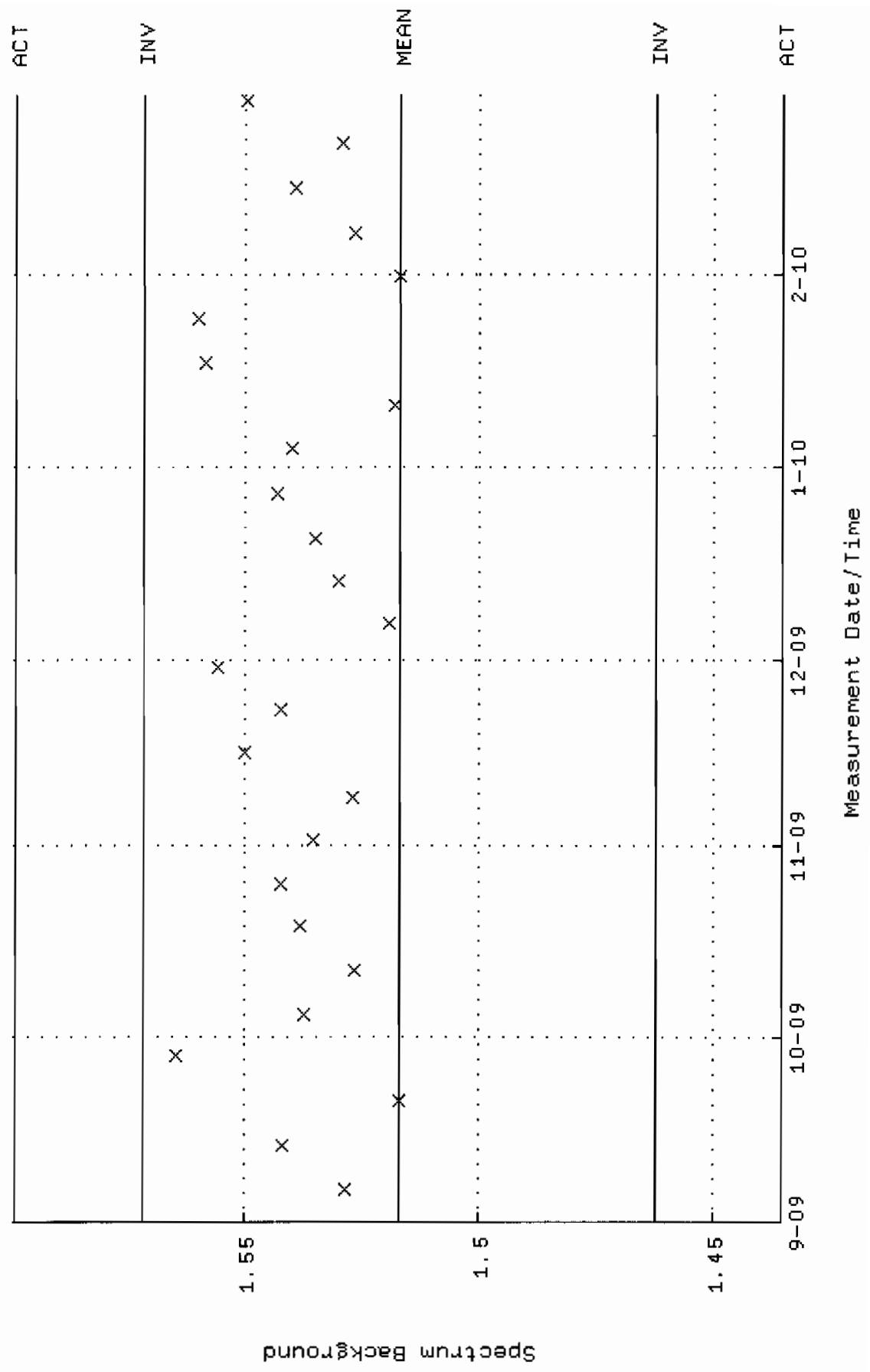
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



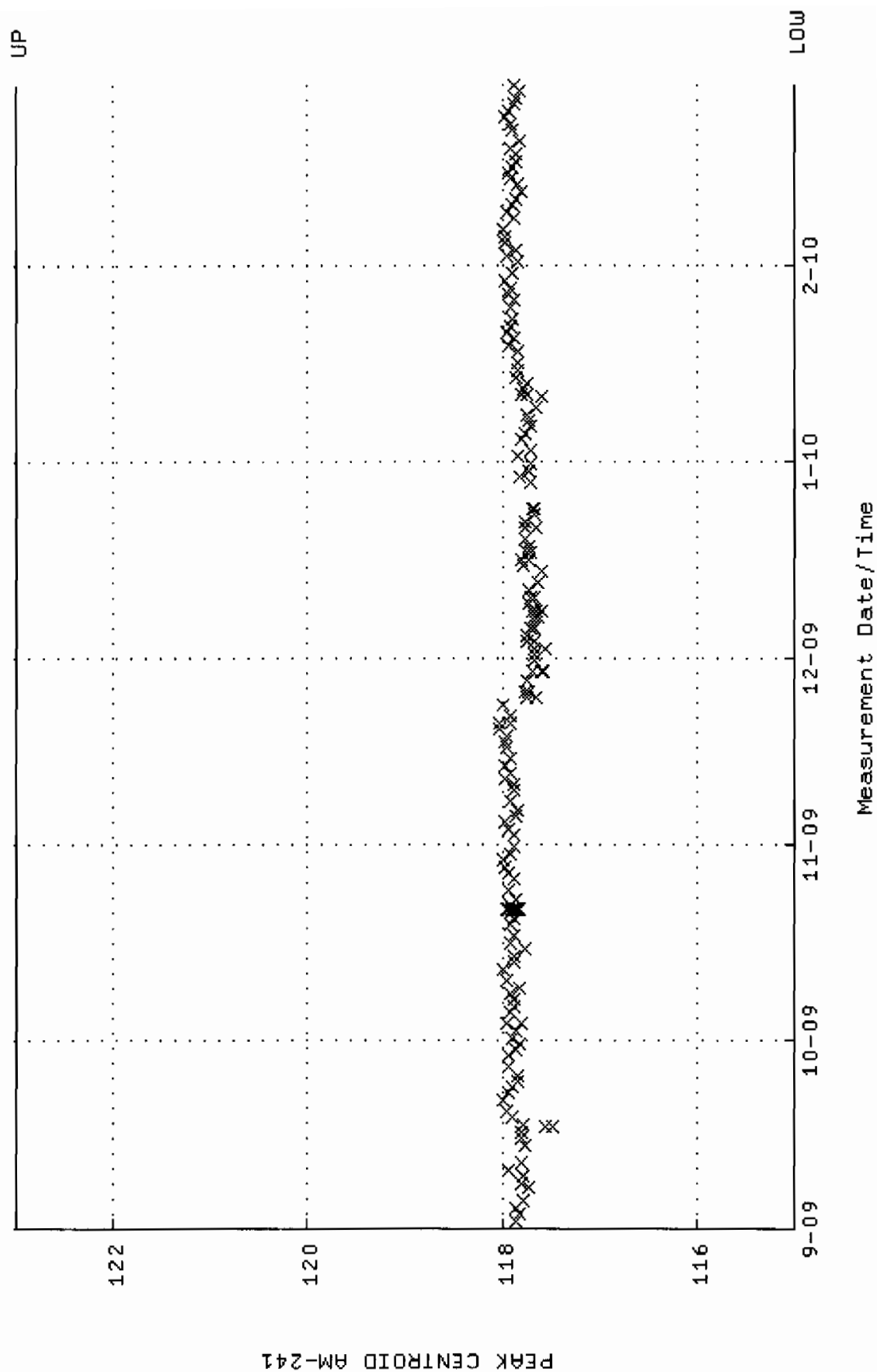
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM07-JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:09:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



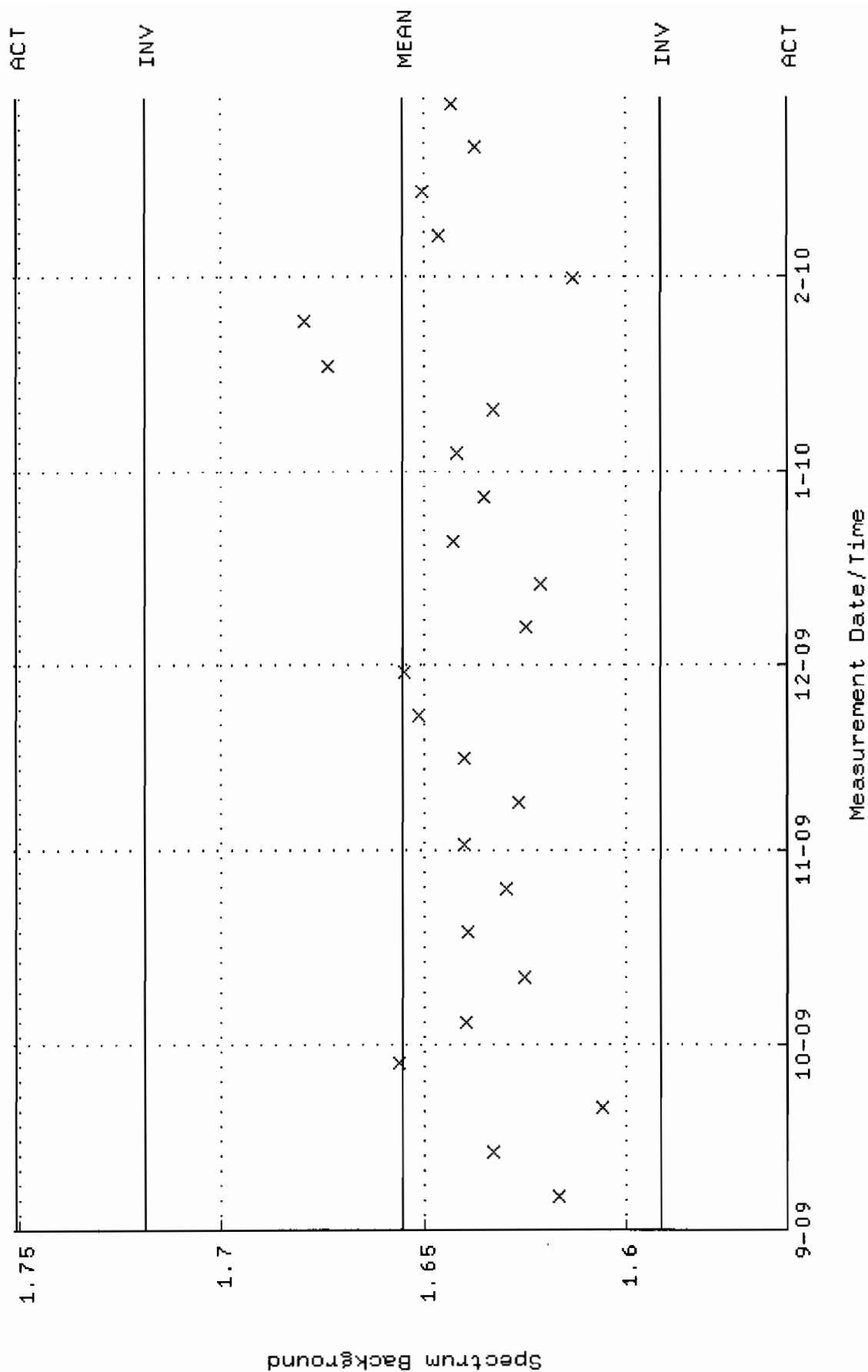
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM07.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:54 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



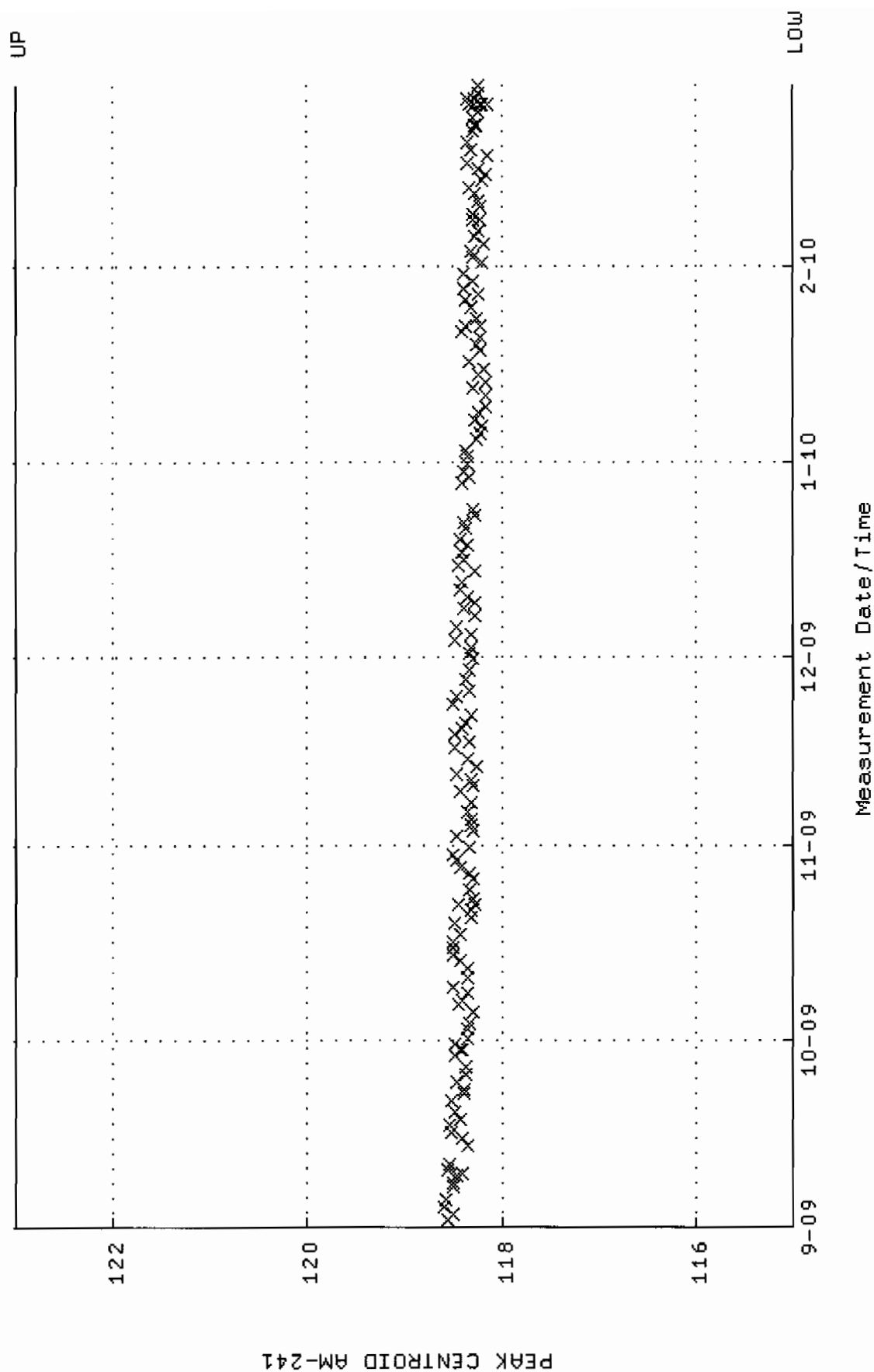
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM11_JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:47:51 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



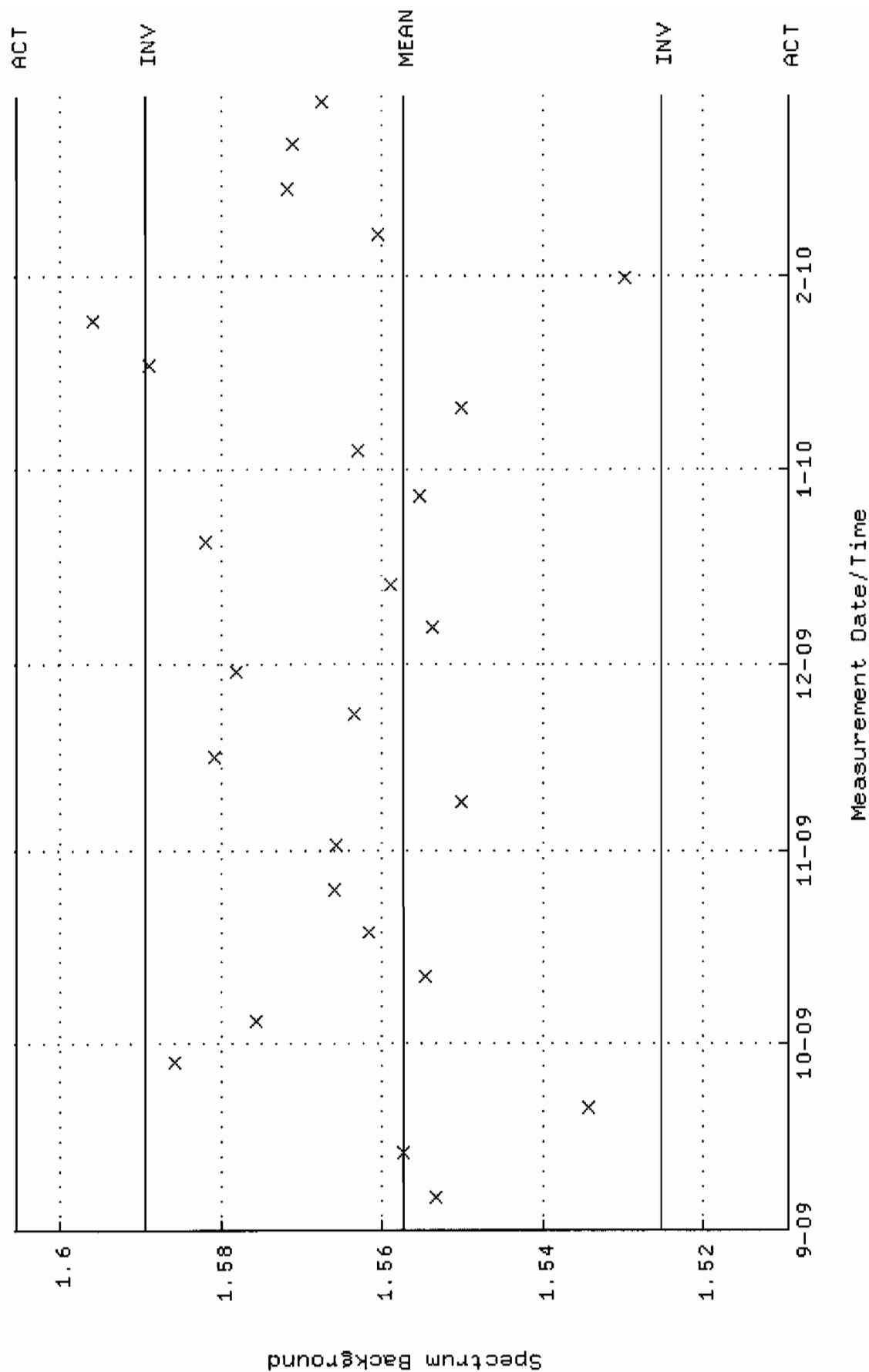
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM11.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:41:47 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



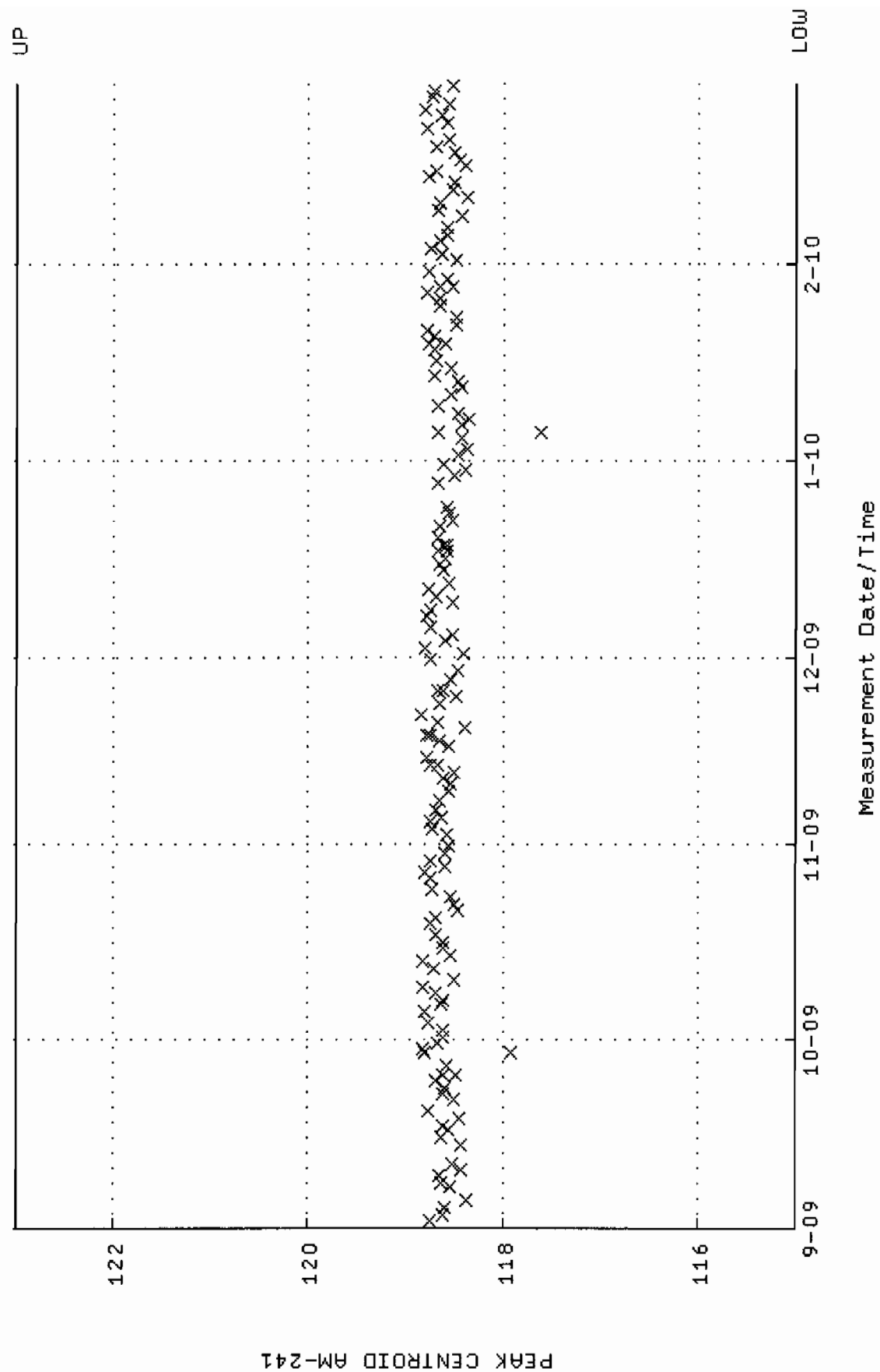
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM12-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 07:07:38 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



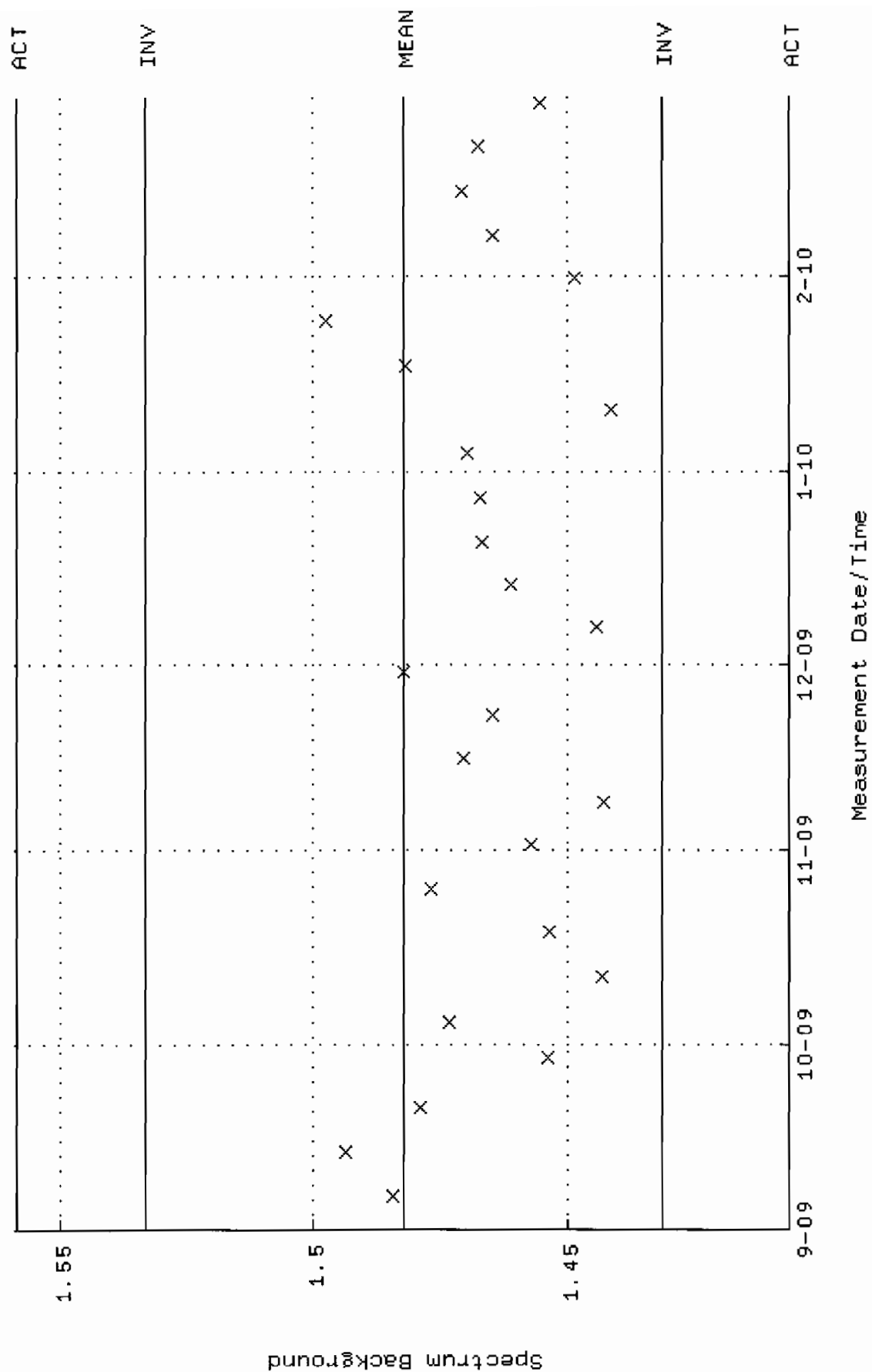
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM12.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:42:20 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)



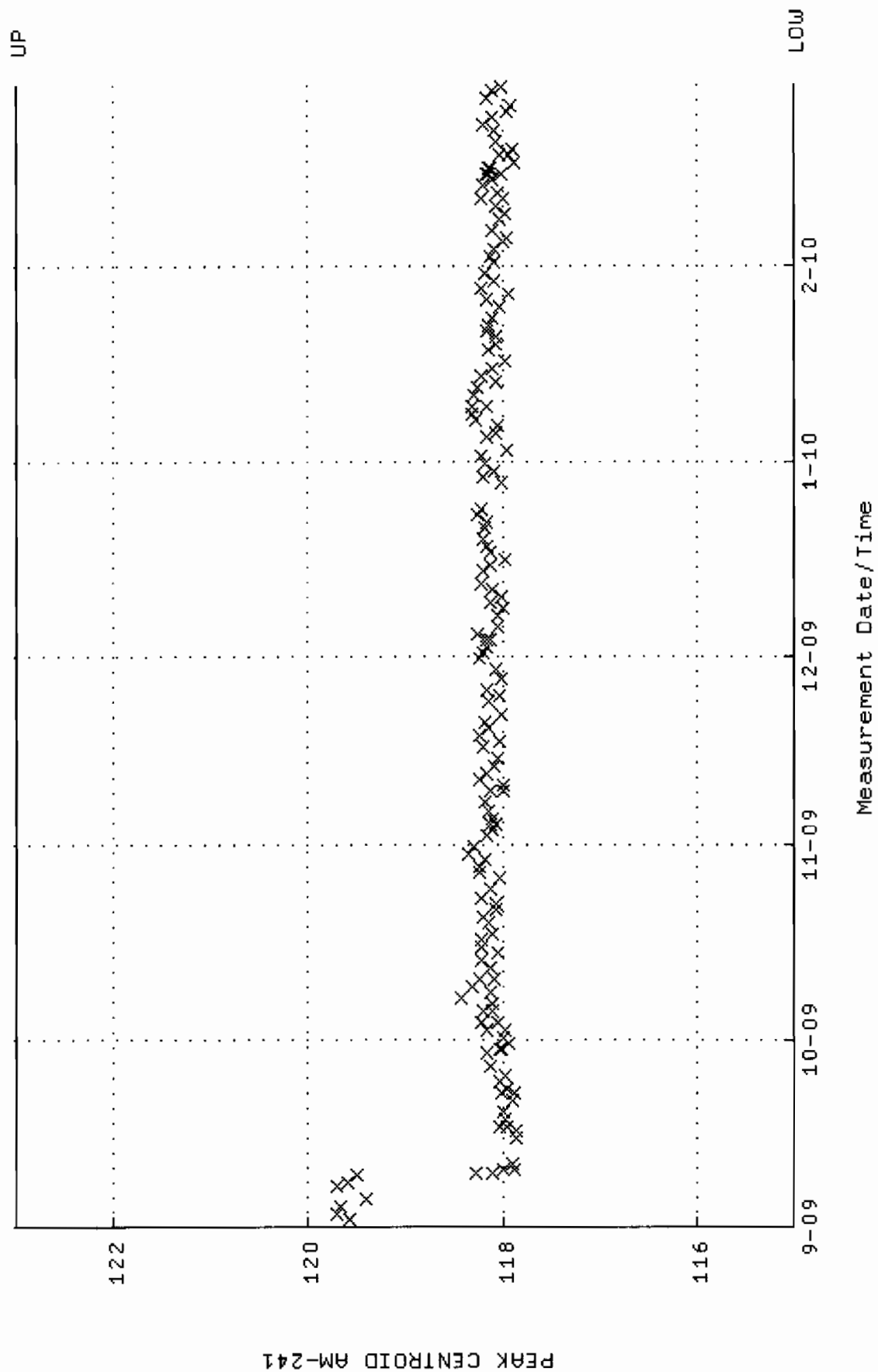
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM14_2LMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:36 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



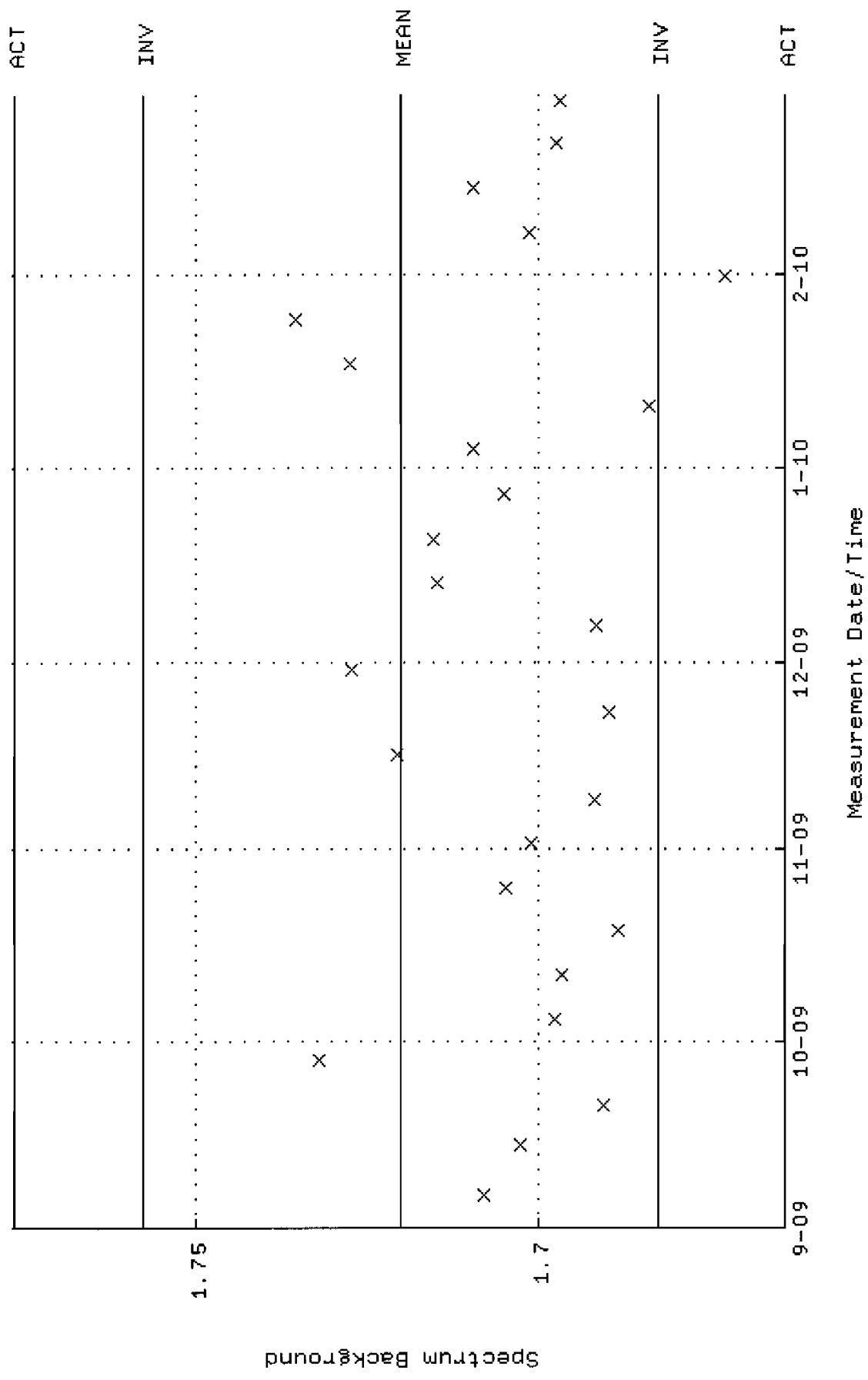
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM14.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:43:20 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48240 +- 2.535500E-02 (1.71 %)



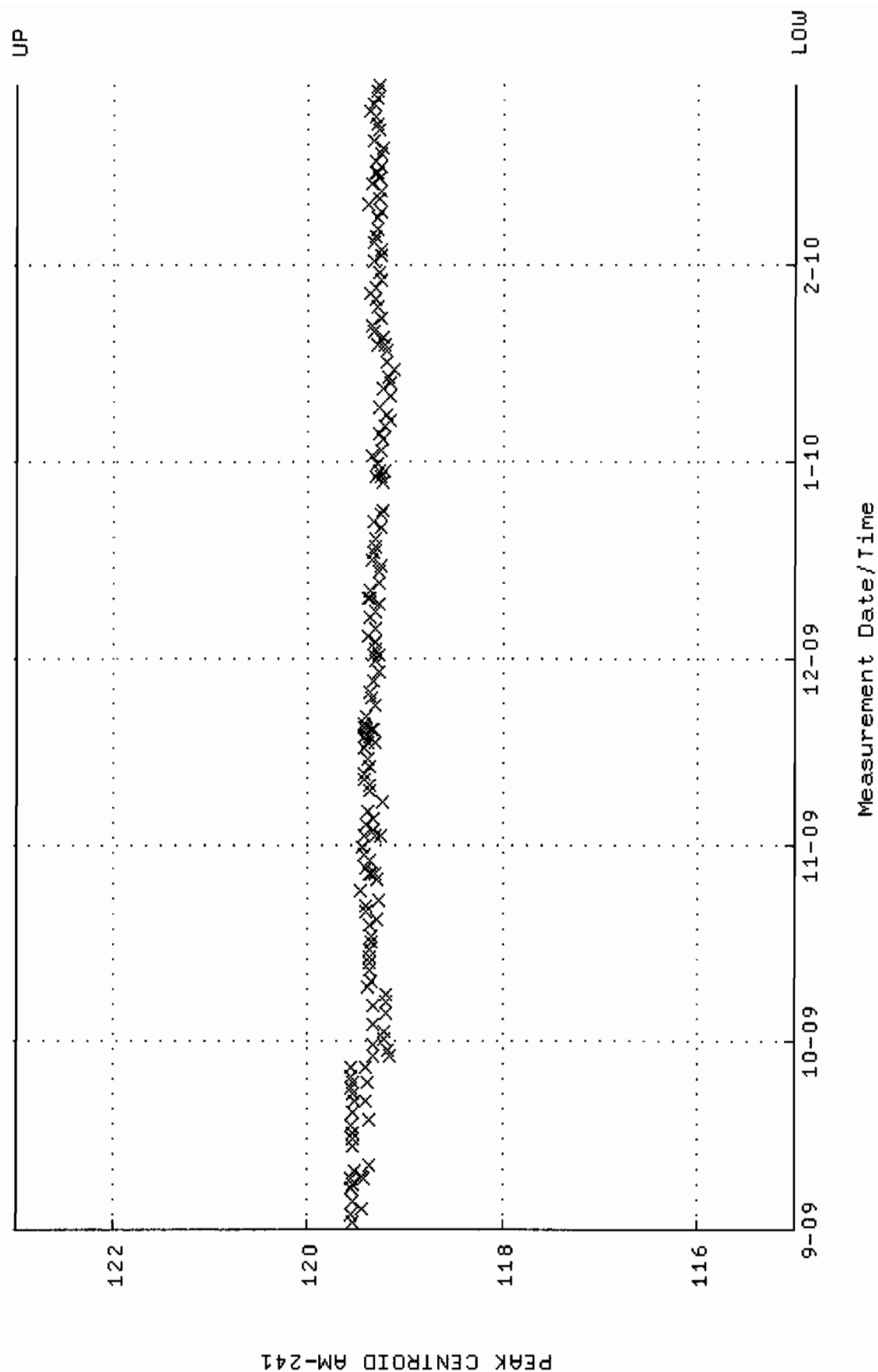
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM15_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:32:23 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



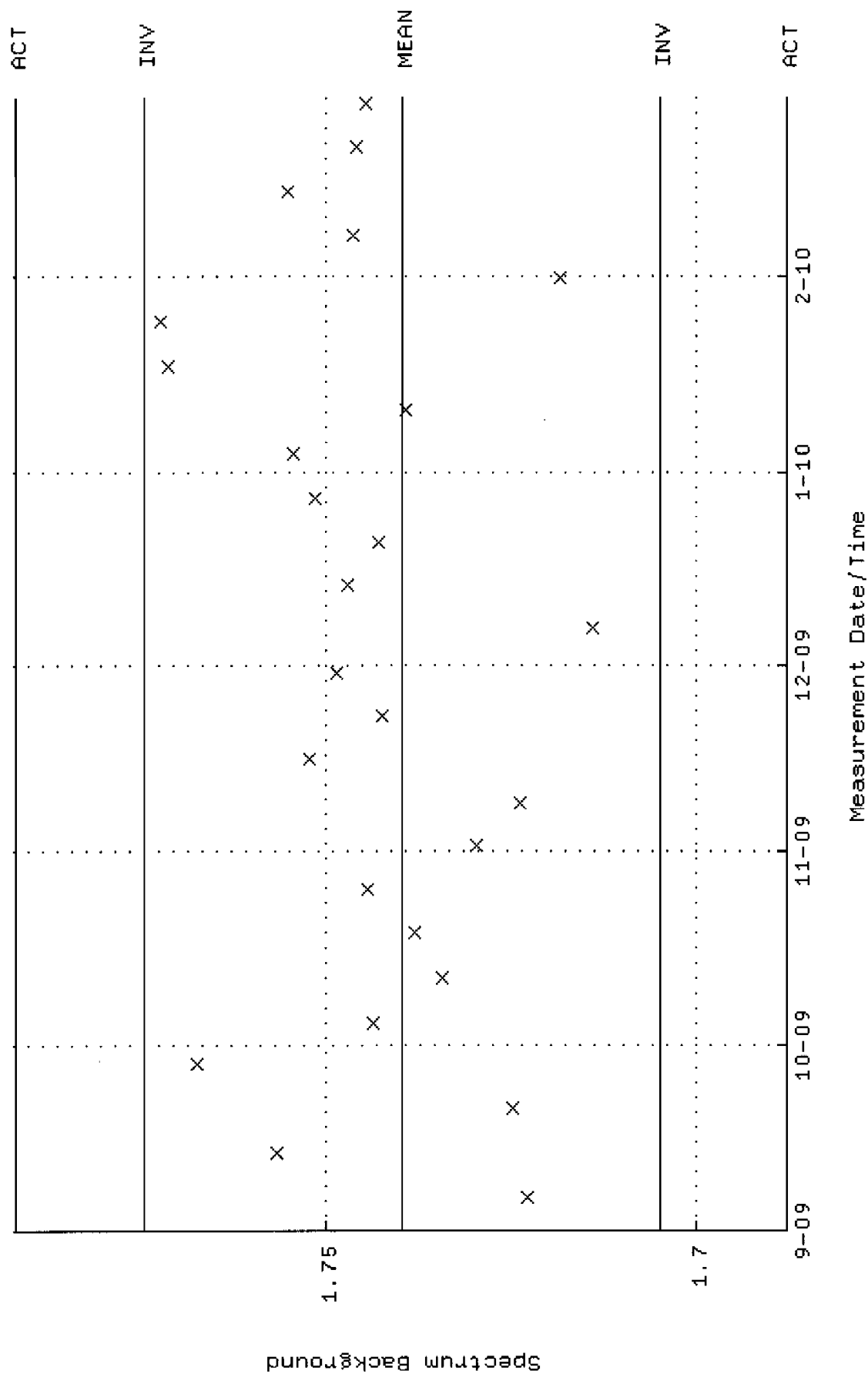
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM15.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:43:44 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



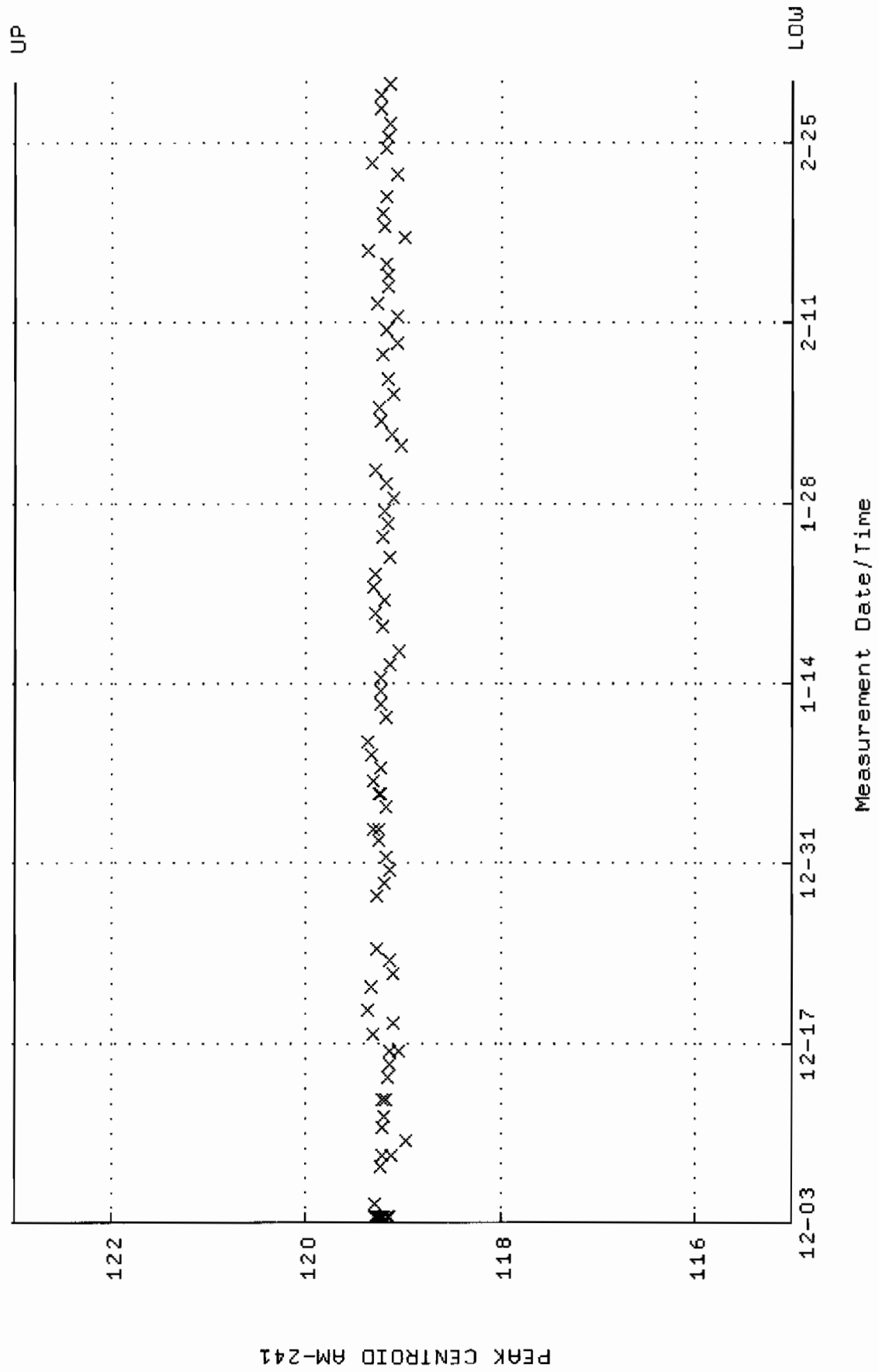
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM16-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



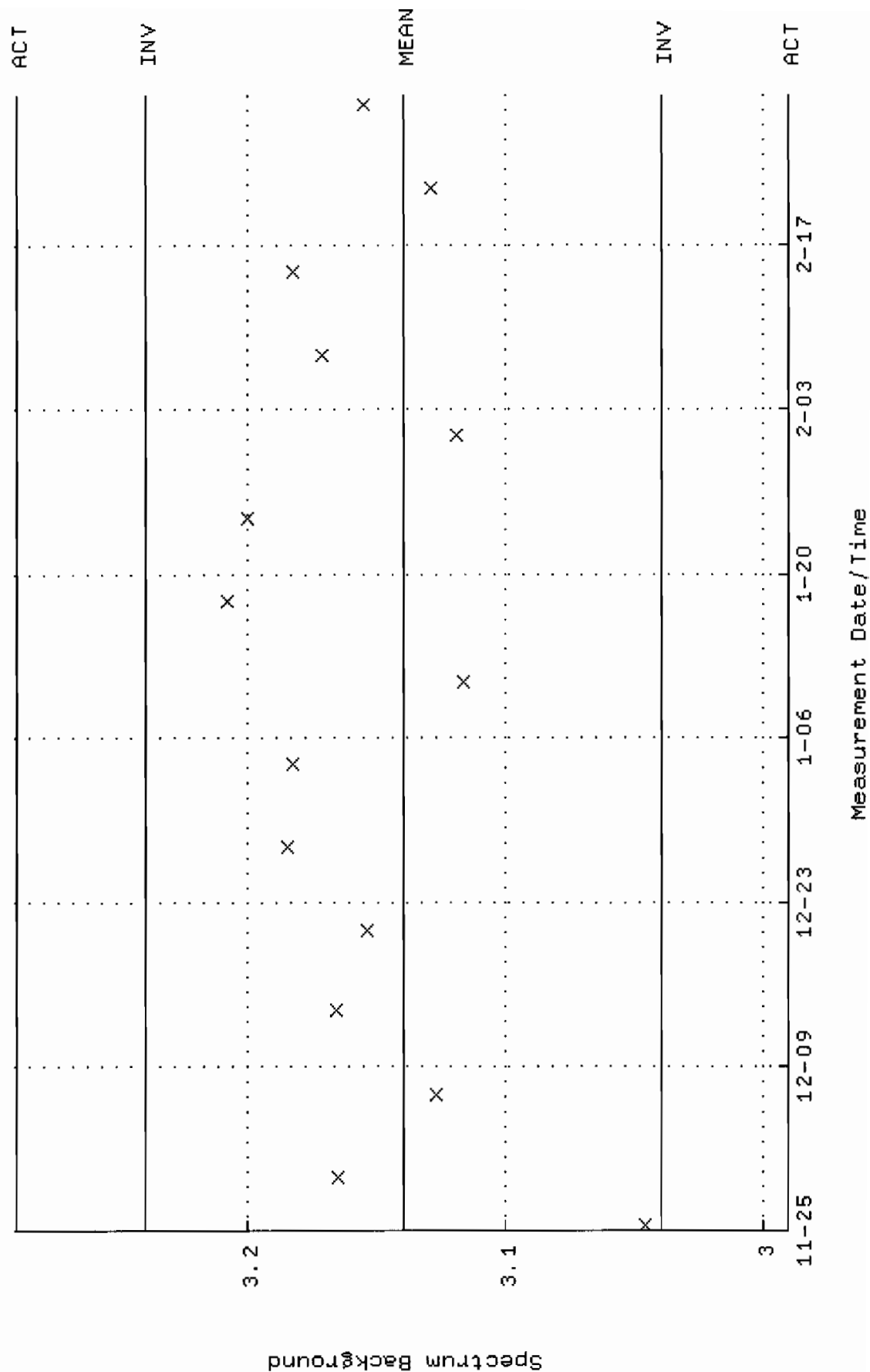
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:09 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



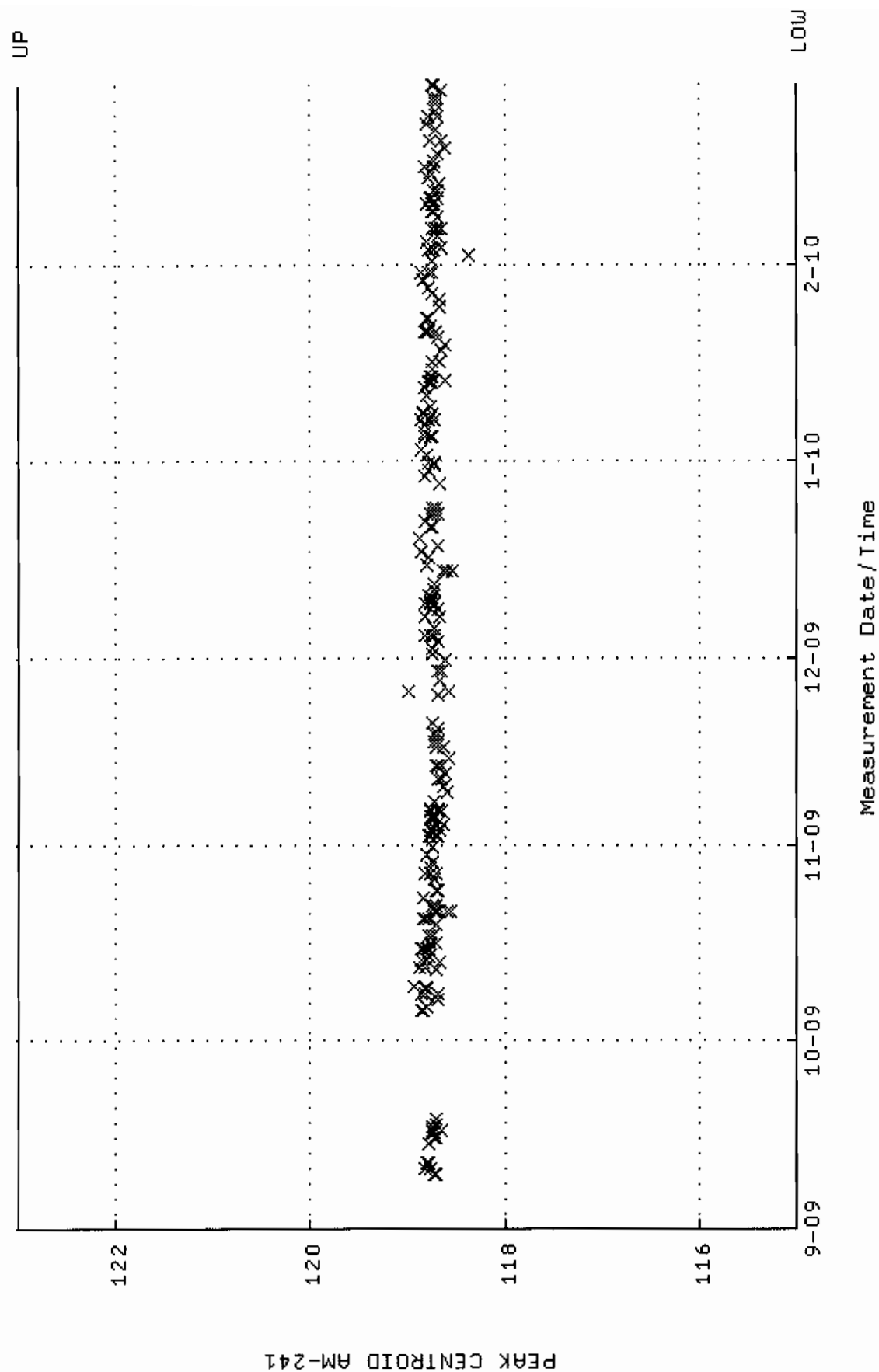
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM22_CAN.QAF;1
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



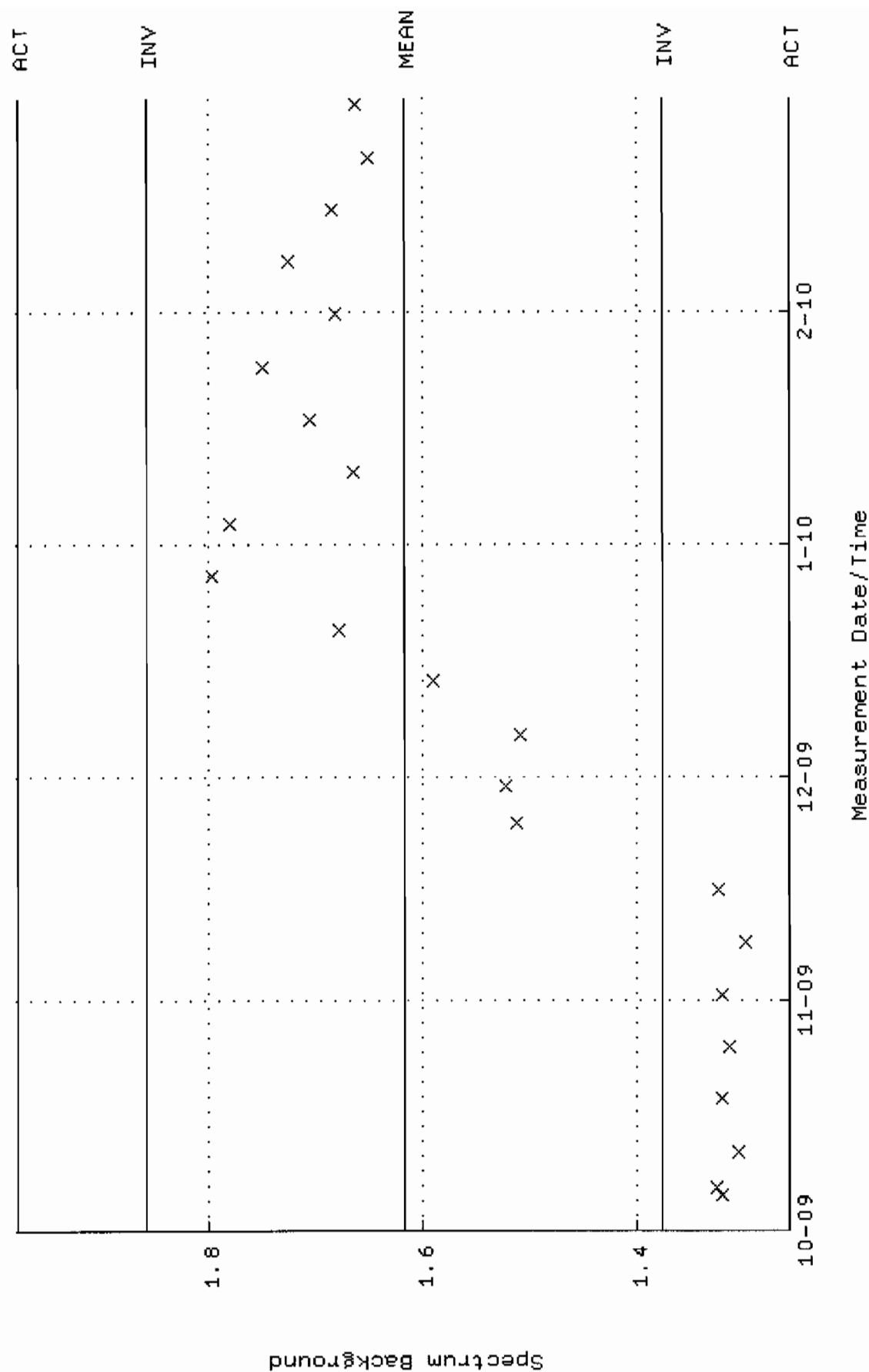
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



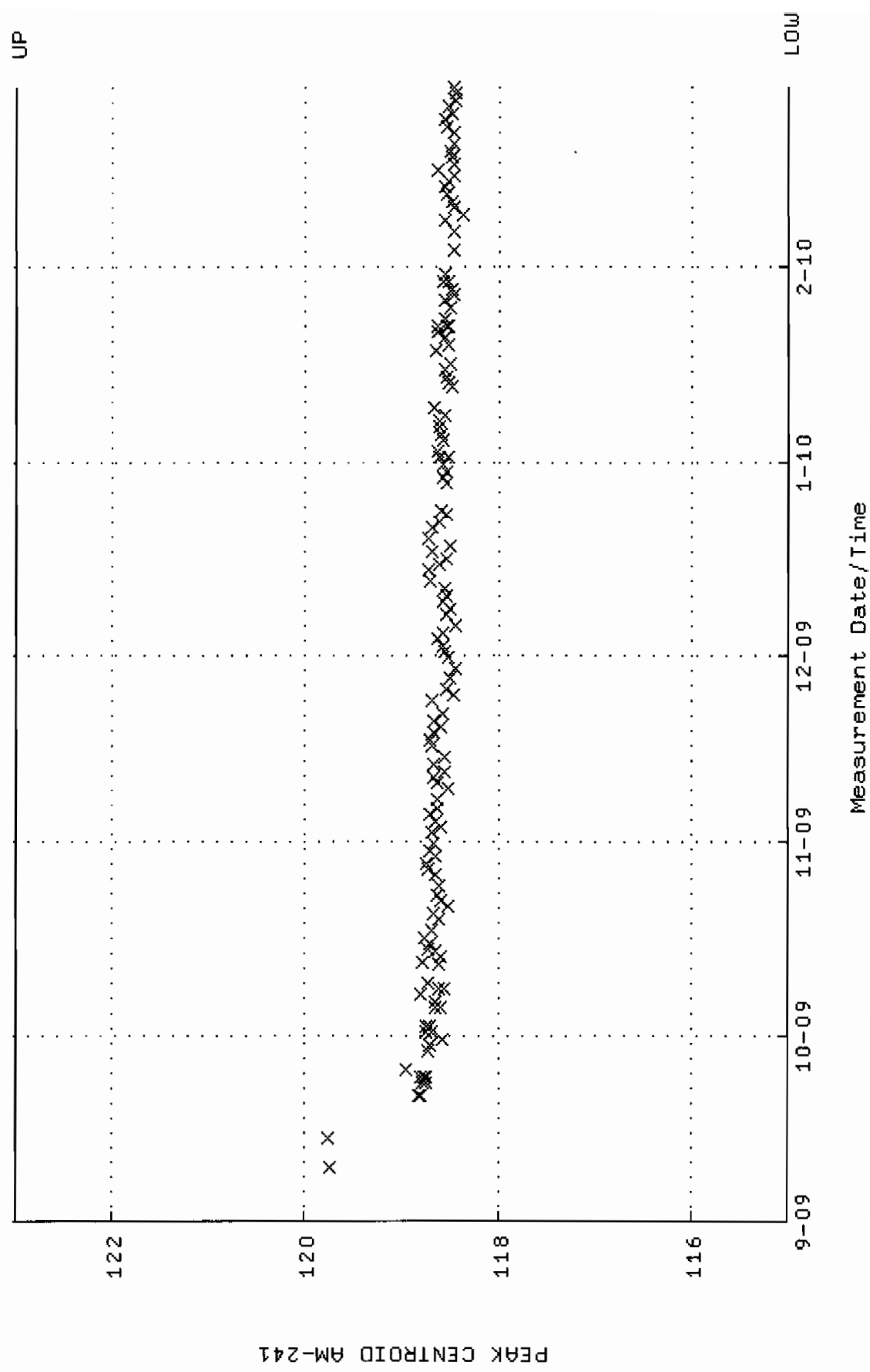
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM23_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:19:12 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



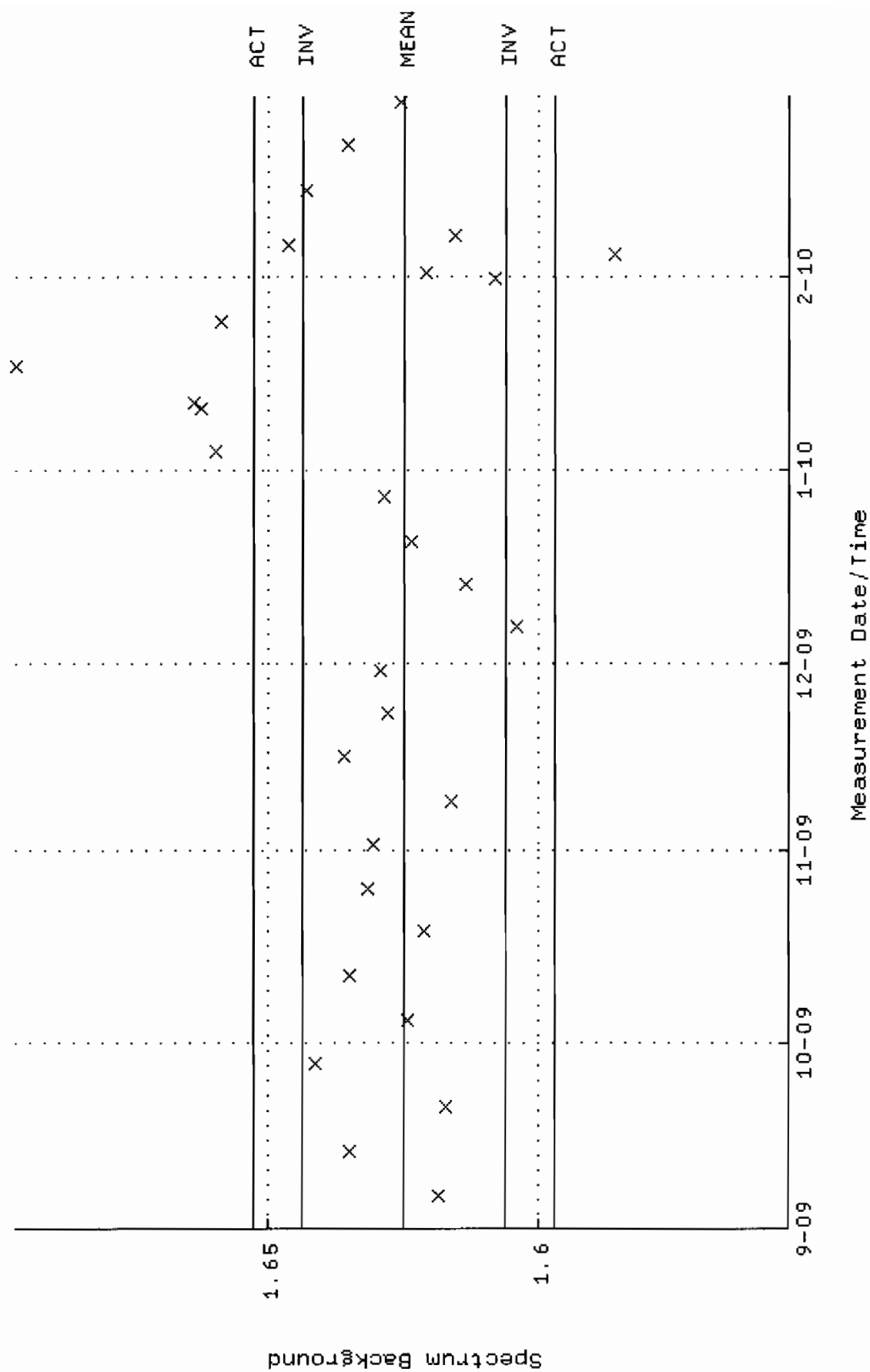
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM23.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-OCT-2009 15:13:53 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM25-2LMB.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:18:34 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



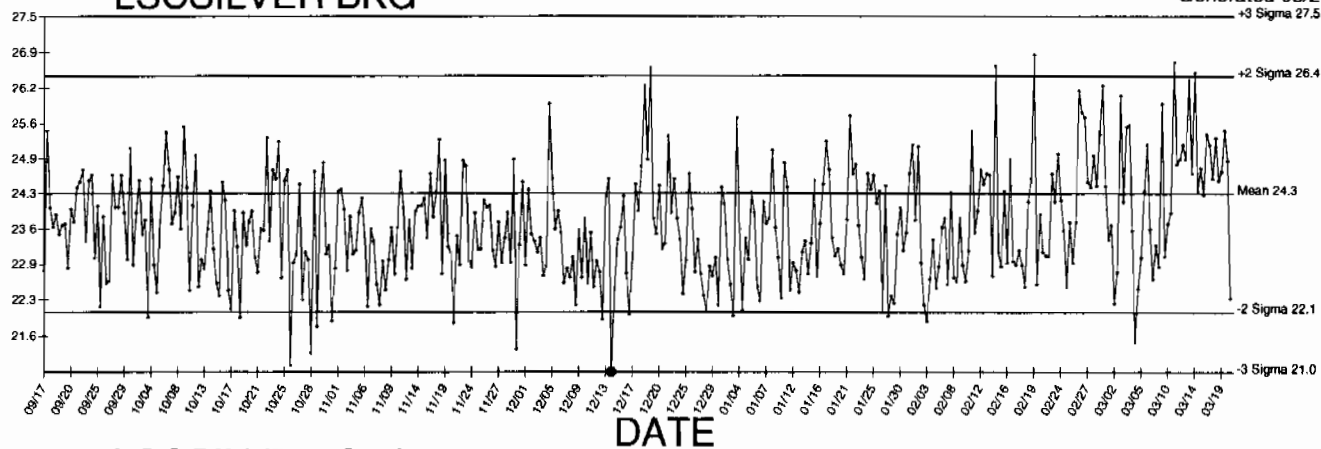
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM25.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:47:27 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.62502 +- 9.370414E-03 (0.58 %)



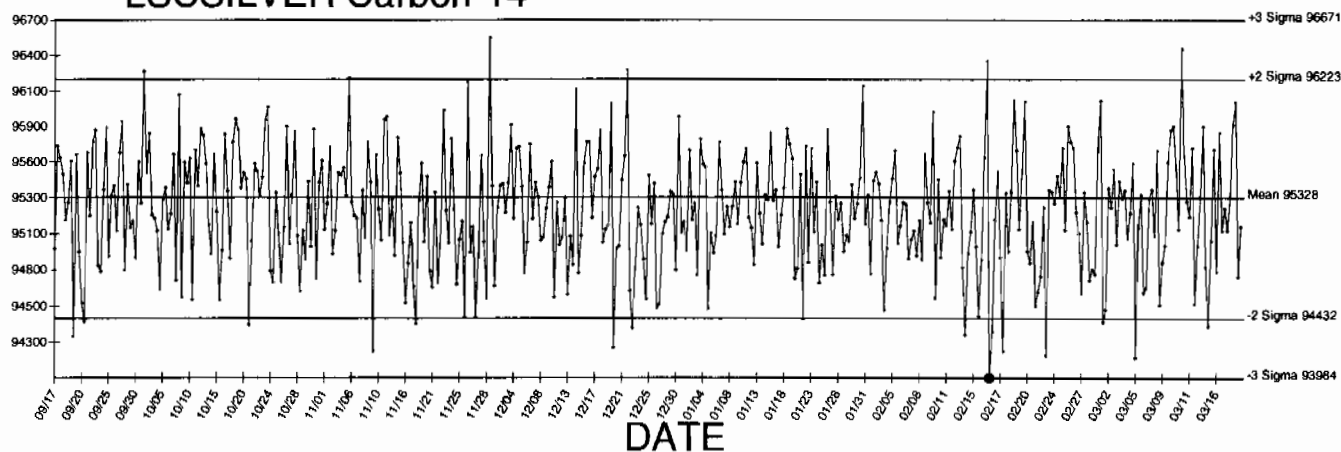
LSCSILVER BKG

Generated 03/20/2010

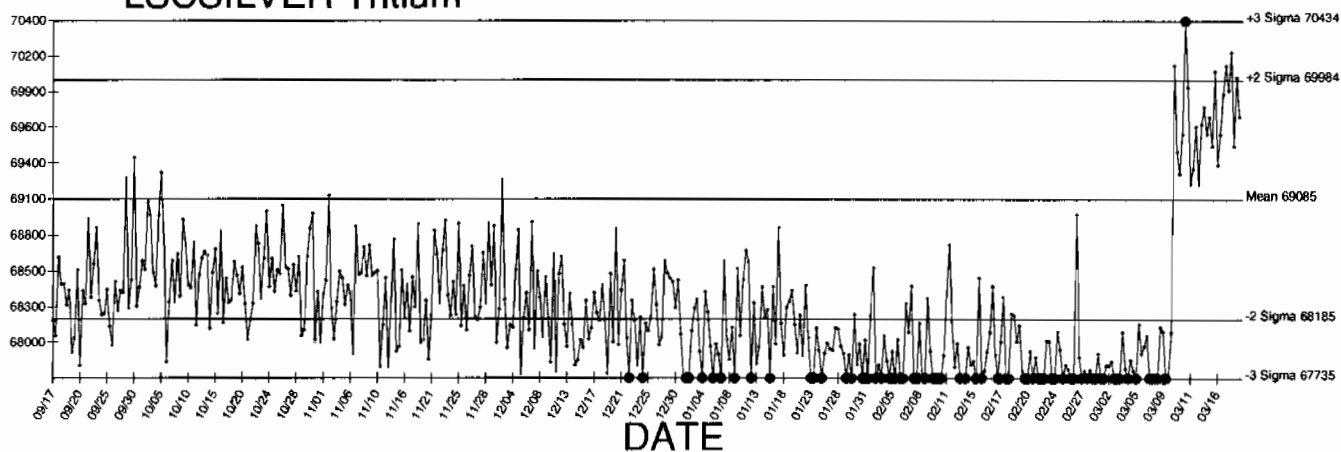
CPM



LSCSILVER Carbon-14



LSCSILVER Tritium



● Denotes Outlier

STANDARDS DATA

0134



CALIBRATION
No. 0146

Description Radionuclide: TRITIUM (HYDROGEN-3) Product code: TRY-64
Chemical form: water Batch: 111

Measurement Reference time: 1200 GMT on 1 March 1996
Radioactive concentration of tritium: 488.0 kilobecquerels per gram of water
which is equivalent to: 13.19 microcuries per gram of water
or: 2.93×10^7 disintegrations per minute per gram of water

Method of Measurement

This reference material was calibrated by direct comparison with a standard of tritium-labelled water obtained from the National Institute of Standards and Technology, USA.

Accuracy The OVERALL UNCERTAINTY of the result quoted above is estimated to be less than $\pm 2.5\%$

This estimate of uncertainty was calculated in accordance with the recommendations of the International Commission on Radiation Units and Measurements (ICRU Report 12). The limits of uncertainty were taken as the arithmetic sum of the uncertainty due to random variations, calculated at the 99.7% confidence level, and the estimated systematic uncertainties.

Purity No radioactive impurities were detected. (Impurities with total activity greater than 0.001% of the activity of the tritium would have been detected).

Physical Data Half-life of tritium: 12.43 ± 0.11 years
Maximum beta energy of tritium: 18.6 keV

Remarks: The S.I. unit of radioactivity is the becquerel.

1 becquerel (Bq) = 1 nuclear transformation per second, therefore
1 curie (Ci) = 3.7×10^{10} becquerels exactly.

Useful conversion factors are:

1 microcurie (μCi) = 3.7×10^4 Bq = 37 kilobecquerels (kBq)

1 kilobecquerel (kBq) = 27.027 nanocuries (nCi)

This product meets the quality assurance requirements of NRC Regulatory Guide 4.15 for achieving implicit NIST (NBS) traceability as defined in NCRP58 (1985).

**Approved
signatory**

W. F. Case
Page 721 of 756
W.F. Case

2(-5-023-061a

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0134
Prepared By:	Angela Johnson
Carrier Conc:	DI WATER
Reference Date:	03/01/1996
Ampoule Mass (g):	5 g
Uncertainty:	+/- 2.5 %
LogBook No:	RC S 023 061

A Solution Material Info	
Isotope:	Tritium
Prepared By:	Angela Johnson
Prep Date:	02/21/2001
Verification Date:	09/10/2008
Expiration Date:	03/27/2010
Primary Code:	0134-A
Dilution(mL):	100 mL
Mass of Parent(g):	3.3659 g
Density(g/mL):	1.0004
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/20/2004	Amanda Fehr	5.86	1000	0134-H	5773.1566 dpm/mL	07/25/2006	07/25/2007
12/20/2005	Amanda Fehr	5.5451	1000	0134-I	5462.92 dpm/mL	12/20/2006	12/20/2007
07/11/2007	Daniel Roy	5.5863	1000	0134-J	5503.5128 dpm/ml	07/29/2008	07/29/2009
03/25/2009	Mary Aders	5.4917	1000	0134-K	5410.3147 dpm/ml	03/27/2009	03/27/2010

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

M. Aders	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff Mass. Used (mL)	Source DPM/mL
4/8/2009	0134-K N1	1097.2000	54.0000	1043.2000	1.0000	2741.3099
	0134-K N2	1073.2000	54.0000	1019.2000	1.0000	2678.242955
	0134-K N3	1085.2000	54.0000	1031.2000	1.0000	2709.776428
Mean Value (Counting) =	2709.776428		104.954429	Pass		
Stdev =	31.53347278		0.01163693	Rule 3 (Pass/Fail)		

Certificate Value = 2581.86 dpm/mL
 Lower Limit = 2646.709482 dpm/mL
 Upper Limit = 2772.843373 dpm/mL
 Rule 1 Pass/Fail **Fail**
 Two sigma = 63.06694556 dpm/mL
 10 % of Mean = 270.9776428 dpm/mL
 Rule 2 (Pass/Fail) **Pass**

*exception taken due to full recovery of standard

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. Ten mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on Silver for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 4/9/09 using 0020-A (H-3). Calibration data is recorded in this logbook under H-3 0020. Each verification source calculation was performed as follows:

$$\text{Source dpm/g} = (A - B)/(C)(D)$$

where:

- A = Ver. source cpm,
- B = BKG cpm,
- C = System efficiency, (cpm/dpm), and
- D = mass used for standard verification.

Reference RAD SOP M-001

Handwritten: 4/12/09
 Amanda J. Teh 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. Analytix maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE	GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432 y	3339	3.0
Cd-109	88	462.6 d	4815	3.3
Co-57	122	271.79 d	2409	3.0
Ce-139	166	137.6 d	3408	2.8
Hg-203	279	46.61 d	7522	2.7
Sn-113	392	115.1 d	4728	2.6
Cs-137	662	30.07 y	2973	3.0
Y-88	898	106.6 d	11600	2.6
Co-60	1173	5.2714 y	5780	2.7
Co-60	1332	5.2714 y	5783	2.6
Y-88	1836	106.6 d	12260	2.6

5.31725 grams 4M HCl solution.
P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED:

W.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytisc.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	Weighting	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1032
Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL
Reference Date:	10/01/2006
Ampoule Mass (g):	5.31725 g
Uncertainty:	+/- 2.81 %
LogBook No:	RC-S-045-073

A Solution Material Info	
Isotope:	Mixed Gamma
Prepared By:	Daniel Roy
Prep Date:	11/30/2006
Verification Date:	12/02/2009
Expiration Date:	12/02/2010
Primary Code:	1032-A
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-100-1
	Mixed Gamma N1	2534	pCi/L - Var-100-3
	Mixed Gamma N2	2510	pCi/L - Var-100-5
	Mixed Gamma N3	2413	

Mean Value (Counting) = 2485.67
Stdev = 64.065
100.00 Pass
Rule 3 (Pass/Fail)

Certificate Value =
Lower Limit = 2485.68018
Upper Limit = 2357.536524
Rule 1 (Pass/Fail) 2613.796809
Two sigma = Pass
128.1301422
10 % of Mean = 248.56666667
Rule 2 (Pass/Fail) Pass

M. Stamps
12/2/09
independent
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

Cs-137

Isotope	Result	pCi/L - Ver. Tab. 1
Mixed Gamma N1	854.2	pCi/L
Mixed Gamma N2	907.6	pCi/L
Mixed Gamma N3	898.9	pCi/L

Mean Value (Counting) = 886.90
Stdev = 28.651
Rule 3 (Pass/Fail) Pass

Certificate Value = 933.44144
Lower Limit = 829.597644
Upper Limit = 944.202356
Rule 1 (Pass/Fail) Pass
Two sigma = 57.30235597
10 % of Mean = 88.69000000
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

12/2/09
Stamps
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - VER-1A2-5
Mixed Gamma N1	1572	pCi/L - VER-1A2-2
Mixed Gamma N2	1495	pCi/L - VER-1A2-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67 Pass
Stdev = 42.829 Rule 3 (Pass/Fail)

Certificate Value = 1545.8378 pCi/L
Lower Limit = 1437.008431 pCi/L
Upper Limit = 1608.324902 pCi/L
Rule 1 (Pass/Fail) Pass
Two sigma = 85.65823564
10 % of Mean = 152.26666667
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

U.S. Stamp issued 12/2/09

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATA 4/11/2000 *fit c held 12/1/04*

angela d. johnson 12/13/04

TRM

Invoice:

5 boxes of TRM-1
 10 " " TRM-2 and 3
 5 " each of TRM-1 through 6
 7 " baghouse dirt

use 1/4 gm x 10 samples WITH Together
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM-1	TRM-2	TRM-3	TRM-4
U-238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U-234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th-230	471 ± 11	24.5 ± 0.6	58.5 ± 2.1	44.0 ± 1.6
Ra-226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb-210	24 ± 5	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

0244-B Characterization

Sample #	Plutonium-239 Result (pCi/g)	Plutonium-238 Result (pCi/g)	Americium-241 Result (pCi/g)
0244-B 1	39.9	7.88	38.4
0244-B 2	44.1	7.97	40.6
0244-B 3	45.8	6.56	31.8
0244-B 4	43.6	7.69	31.5
0244-B 5	43	7.9	40.2
0244-B 6	43.5	7.84	29.4
0244-B 7	41.3	7.67	36
0244-B 8	44.3	6.95	33.2
0244-B 9	42.7	7.2	29.2
0244-B 10	44.9	7.69	30
0244-B 11	41.4	7.22	30.2
0244-B 12	41.3	7.74	36
0244-B 13	39.2	6.65	33.8
0244-B 14	39.6	7.78	31.1
0244-B 15	45.3	8.41	37.3
0244-B 16	38.1	6.74	33.6
0244-B 17	48.5	8.51	30.5
0244-B 18	36.5	7.23	38.6
0244-B 19	35.3	6.98	30.9
0244-B 20	37.4	8.55	31.3
Mean Value	41.79	7.56	33.68
1 sigma	3.418	0.596	3.724
2 sigma	6.835	1.193	7.448
75% Limit	30.75	6.02	24.38
125% Limit	51.25	10.04	40.63
Expected Result	41.0 +/- 3.0	8.03 +/- 0.37	32.5 +/- 1.1
Achieved Results	41.79 +/- 3.418	7.56 +/- .596	33.68 +/- 3.724

REFERENCE DATA 4/14/2000

Amanda L. Lehn 4/30/04
 Lott & Shale 5/1/04

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE

☒ 1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 2. SOAK TEST

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.

☒ 5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	03/09/2010
Ampoule Mass (g):	5.3739 g	Expiration Date:	03/09/2011
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$

$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$

$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Tara Sides	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/14/2009	09/14/2010
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/mL	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/mL	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/09/2010	Ashley Drochter	.011	1000	445-96-2-VV	22.7878 dpm/mL	03/09/2010	03/09/2011
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
03/23/2010	Ashley Drochter	.0163	1000	445-96-2-WW	33.7674 dpm/mL	03/23/2010	03/23/2011
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Am-243 Standard 445-96-2-VV

A.Drochter 3/15/2010	Isotope	Value	Uncertainty
	445-96-2-VV #1	1.040	0.1630
	445-96-2-VV #2	0.964	0.1480
	445-96-2-VV #3	0.970	0.1550
Mean Value (Counting) =	0.991	96.72	Pass
Stdev =	0.042253205	Rule 3 (Pass/Fail)	
Target =	1.025		
Lower Limit =	0.906826923		
Upper Limit =	1.075839743		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.08450641		
10 % of Mean =	0.099133333		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard **445-96-2-VV** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **Cm-244** standard **0533-O** and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

fil 3/15/10
 3/16/10



NATIONAL PHYSICAL LABORATORY

Teddington Middlesex UK TW11 0LW Telephone +44 20 8977 3222

Certificate of Calibration



0478

PLUTONIUM-236 SOLUTION R37-02

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

FOR: GEL Laboratories LLC
2040 Savage Road
Charleston, SC 29407
USA

FOR THE ATTENTION OF: Mr Tim Winters

NPL PRODUCT CODE: R37-02

IDENTIFICATION: A09881

DESCRIPTION: An aqueous solution of ^{236}Pu also containing 2 mol dm^{-3} of nitric acid. The solution is contained in a flame sealed ampoule of type Q and nominal volume 5 ml (squat) as defined in BS 795:1983.

DATE(S) OF CALIBRATION: 26 June 2009 to 1 July 2009

INTENDED USE: Calibration of instruments for response to ^{236}Pu

STORAGE: The material may be stored at room temperature in a suitably sealed container. Flame-sealed glass ampoules are recommended for long-term storage. Regulatory conditions may apply to the manner in which this material is stored.

MEASUREMENTS

The samples were prepared by gravimetric dilution of a ^{236}Pu solution, which had been previously standardised using liquid scintillation counting. The accuracy of the dilution factor was checked using liquid scintillation counting.

Reference: 2009100356

Date of Issue: 4 November 2009

Checked by: *Ch Ali*

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Signed: *MAH*

Name: Dr Arvic Harms

Page 1 of 3

(Authorised Signatory)

for Managing Director

RESULTS

Principal radionuclide:	^{236}Pu
Reference time:	2009-07-01 12:00 UTC
Activity concentration of principal radionuclide:	170.8 Bq g^{-1}
Expanded uncertainty:	$\pm 0.6 \text{ Bq g}^{-1} (\pm 0.36 \%)$
Contaminants present:	$^{226}\text{Ra}, ^{232}\text{U}, ^{228}\text{Th}, ^{237}\text{Np}$
Activity concentration of ^{226}Ra :	11.0 mBq g^{-1}
Expanded uncertainty:	$\pm 4.0 \text{ mBq g}^{-1} (\pm 36 \%)$
Activity concentration of ^{232}U :	0.67 Bq g^{-1}
Expanded uncertainty:	$\pm 0.12 \text{ Bq g}^{-1} (\pm 18 \%)$
Activity concentration of ^{228}Th :	11.38 mBq g^{-1}
Expanded uncertainty:	$\pm 0.46 \text{ mBq g}^{-1} (\pm 4 \%)$
Activity concentration of ^{237}Np :	5.00 mBq g^{-1}
Expanded uncertainty:	$\pm 0.34 \text{ mBq g}^{-1} (\pm 8 \%)$
Sample Mass:	$4.97 \text{ g} \pm 0.02 \text{ g}$

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

NOTES

- [1]. The reported reference time is stated consistent with the format given in ISO 8601:2004. UTC is the abbreviation for Universal Time, Coordinated. The date is stated in the format YYYY-MM-DD such that 2008-09-01 represents 1 September 2008.
- [2]. The recommended half life of ^{236}Pu is 1044 (6) days and is taken from the evaluations published in *Nuclear Data Sheets*.
- [3]. The recommended half life of ^{226}Ra is $5.844 (50) \times 10^5$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [4]. The recommended half life of ^{232}U is 25800 (800) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [5]. The recommended half life of ^{237}Np is $7.83 (6) \times 10^8$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [6]. The recommended half life of ^{228}Th is 698.60 (46) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1430
Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO3
Reference Date:	07/01/2009
Ampoule Mass (g):	4.97 g
Uncertainty:	+/- .36 %
LogBook No:	RC-S-051-149

A Solution Material Info	
Isotope:	Plutonium-236
Prepared By:	Ashley Drochter
Prep Date:	01/27/2010
Verification Date:	01/27/2010
Expiration Date:	01/27/2011
Primary Code:	1430-A
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
h 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: W. Mac

W. Mac, Radiochemist

QA Approved: D. M. Montgomery

D. M. Montgomery, QA Manager

Date: 12-11-08

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/ml	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/02/2009	12/02/2010
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/ml	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/08/2010	12/02/2010
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

Verification for Uranium-232 Standard 1283-H

Analyst: A. Drochter	Serial #	Value	Uncertainty					
Date: 12/10/09	1283-H N1	2.020	pCi/L	0.238	pCi/L			
	1283-H N2	2.000	pCi/L	0.234	pCi/L			
	1283-H N3	2.060	pCi/L	0.242	pCi/L			
Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass				
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)					
Target =	2.033	pCi/L						
Lower Limit =	1.965565657	pCi/L						
Upper Limit =	2.087767676	pCi/L						
Rule 1 Pass/Fail	Pass							
Two sigma =	0.061101009							
10 % of Mean =	0.202666667							
Rule 2 (Pass/Fail)	Pass							

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

A. Drochter
12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 959280

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248243001	SAMPLE	MXR1	GAM16	19-MAR-10 10:50	DONE	CAN	16-NOV-09 00:00
248243002	SAMPLE	MXR1	GAM23	19-MAR-10 10:51	DONE	CAN	02-JUN-09 00:00
248243003	SAMPLE	MXR1	GAM12	19-MAR-10 10:52	DONE	CAN	25-FEB-10 00:00
248243004	SAMPLE	MXR1	GAM05	19-MAR-10 10:52	DONE	CAN	11-JUN-09 00:00
248243005	SAMPLE	MXR1	GAM07	19-MAR-10 10:53	DONE	CAN	20-JUL-09 00:00
248243006	SAMPLE	MXR1	GAM11	19-MAR-10 10:54	DONE	CAN	18-NOV-09 00:00
248243007	SAMPLE	MXR1	GAM06	19-MAR-10 10:55	DONE	CAN	16-FEB-10 00:00
248243008	SAMPLE	MXR1	GAM15	19-MAR-10 10:55	DONE	CAN	03-FEB-10 00:00
248243009	SAMPLE	MXR1	GAM22	19-MAR-10 10:56	DONE	CAN	02-DEC-09 00:00
248243010	SAMPLE	MXR1	GAM25	19-MAR-10 10:57	DONE	CAN	07-OCT-09 00:00
248248001	SAMPLE	MXR1	GAM01	19-MAR-10 10:58	DONE	CAN	12-JAN-10 00:00
248248002	SAMPLE	MXR1	GAM19	19-MAR-10 10:58	DONE	CAN	12-MAR-09 00:00
248248003	SAMPLE	MXR1	GAM14	19-MAR-10 10:59	DONE	CAN	06-MAR-09 00:00
248248004	SAMPLE	MXR1	GAM17	19-MAR-10 11:00	DONE	CAN	06-JAN-10 00:00
248248005	SAMPLE	MXR1	GAM18	19-MAR-10 11:00	DONE	CAN	23-APR-09 00:00
248248006	SAMPLE	MXR1	GAM21	19-MAR-10 11:01	DONE	CAN	28-JUL-09 00:00
248248007	SAMPLE	MXR1	GAM20	19-MAR-10 11:02	DONE	CAN	26-AUG-09 00:00
248248008	SAMPLE	MXR1	GAM29	19-MAR-10 11:03	DONE	CAN	23-FEB-10 00:00
1202057355	MB	MXR1	GAM02	19-MAR-10 11:16	DONE	CAN	29-OCT-09 00:00
1202057357	LCS	MXR1	GAM04	19-MAR-10 11:17	DONE	CAN	05-MAY-09 00:00
1202057356	DUP	MXR1	GAM14	19-MAR-10 13:09	DONE	CAN	06-MAR-09 00:00

Instrument Run Log

Instrument Type: LSC

Batch ID: 964056

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202068218	LCS	KXK2	LSCSILVER	19-MAR-10 10:47	DONE		
248243001	SAMPLE	KXK2	LSCSILVER	19-MAR-10 11:05	DONE		
248243002	SAMPLE	KXK2	LSCSILVER	19-MAR-10 11:57	DONE		
248243003	SAMPLE	KXK2	LSCSILVER	19-MAR-10 12:49	DONE		
248243004	SAMPLE	KXK2	LSCSILVER	19-MAR-10 13:41	DONE		
248243005	SAMPLE	KXK2	LSCSILVER	19-MAR-10 14:33	DONE		
248243006	SAMPLE	KXK2	LSCSILVER	19-MAR-10 15:25	DONE		
248243007	SAMPLE	KXK2	LSCSILVER	19-MAR-10 16:18	DONE		
248243008	SAMPLE	KXK2	LSCSILVER	19-MAR-10 17:10	DONE		
248243009	SAMPLE	KXK2	LSCSILVER	19-MAR-10 18:02	DONE		
248243010	SAMPLE	KXK2	LSCSILVER	19-MAR-10 18:54	DONE		
248248001	SAMPLE	KXK2	LSCSILVER	19-MAR-10 19:46	DONE		
248248002	SAMPLE	KXK2	LSCSILVER	19-MAR-10 20:38	DONE		
248248004	SAMPLE	KXK2	LSCSILVER	19-MAR-10 22:23	DONE		
248248005	SAMPLE	KXK2	LSCSILVER	19-MAR-10 23:15	DONE		
248248006	SAMPLE	KXK2	LSCSILVER	20-MAR-10 00:07	DONE		
248248007	SAMPLE	KXK2	LSCSILVER	20-MAR-10 00:59	DONE		
248248008	SAMPLE	KXK2	LSCSILVER	20-MAR-10 01:51	DONE		
248660002	SAMPLE	KXK2	LSCSILVER	20-MAR-10 02:43	DONE		
1202068216	MB	KXK2	LSCSILVER	20-MAR-10 03:35	DONE		
1202068217	DUP	KXK2	LSCSILVER	20-MAR-10 04:27	DONE		
248248003	SAMPLE	KXK2	LSCRED	22-MAR-10 16:24	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID:964861

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248243001	SAMPLE	KXM4	1218	24-MAR-10 20:55	DONE		
248243002	SAMPLE	KXM4	1219	24-MAR-10 20:55	DONE		
248243003	SAMPLE	KXM4	1220	24-MAR-10 20:55	DONE		
248243004	SAMPLE	KXM4	1227	24-MAR-10 20:55	DONE		
248243005	SAMPLE	KXM4	1228	24-MAR-10 20:55	DONE		
248243006	SAMPLE	KXM4	1229	24-MAR-10 20:55	DONE		
248243007	SAMPLE	KXM4	1230	24-MAR-10 20:55	DONE		
248243008	SAMPLE	KXM4	1235	24-MAR-10 20:55	DONE		
248243009	SAMPLE	KXM4	1236	24-MAR-10 20:55	DONE		
248243010	SAMPLE	KXM4	1237	24-MAR-10 20:55	DONE		
1202070015	MB	KXM4	1238	24-MAR-10 20:55	DUSE		
1202070016	DUP	KXM4	1239	24-MAR-10 20:55	DONE		
1202070017	LCS	KXM4	1240	24-MAR-10 20:55	DONE		
1202070015	MB	KXM4	1239	25-MAR-10 16:39	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 964862

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202070018	MB	KXM4	1013	25-MAR-10 07:54	DONE		
1202070019	DUP	KXM4	1014	25-MAR-10 07:54	DONE		
1202070020	LCS	KXM4	1016	25-MAR-10 07:54	DONE		
248243001	SAMPLE	KXM4	1017	25-MAR-10 07:54	DONE		
248243002	SAMPLE	KXM4	1018	25-MAR-10 07:54	DONE		
248243003	SAMPLE	KXM4	1019	25-MAR-10 07:54	DONE		
248243004	SAMPLE	KXM4	1020	25-MAR-10 07:54	DONE		
248243005	SAMPLE	KXM4	1022	25-MAR-10 07:54	DONE		
248243006	SAMPLE	KXM4	1023	25-MAR-10 07:54	DONE		
248243007	SAMPLE	KXM4	1024	25-MAR-10 07:54	DONE		
248243008	SAMPLE	KXM4	1025	25-MAR-10 07:54	DONE		
248243009	SAMPLE	KXM4	1026	25-MAR-10 07:54	DONE		
248243010	SAMPLE	KXM4	1027	25-MAR-10 07:54	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 964864

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248243005	SAMPLE	KXM4	1161	25-MAR-10 08:36	DONE		
248243006	SAMPLE	KXM4	1162	25-MAR-10 08:36	DONE		
248243007	SAMPLE	KXM4	1164	25-MAR-10 08:36	DONE		
248243008	SAMPLE	KXM4	1165	25-MAR-10 08:36	DONE		
248243009	SAMPLE	KXM4	1166	25-MAR-10 08:36	DONE		
248243010	SAMPLE	KXM4	1167	25-MAR-10 08:36	DONE		
1202070021	MB	KXM4	1168	25-MAR-10 08:36	DONE		
248243001	SAMPLE	KXM4	1169	25-MAR-10 08:36	DONE		
248243002	SAMPLE	KXM4	1170	25-MAR-10 08:36	DONE		
248243003	SAMPLE	KXM4	1171	25-MAR-10 08:36	DONE		
248243004	SAMPLE	KXM4	1172	25-MAR-10 08:37	DONE		
1202070022	DUP	KXM4	1119	25-MAR-10 09:39	DONE		
1202070023	LCS	KXM4	1120	25-MAR-10 09:39	DONE		