

Wednesday, February 24, 2010

REQUEST NUMBER: 10-2073

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:906.0						
1	RE15-10-7901	R	2/19/2010			
1	RE15-10-7902	R	2/19/2010			
1	RE15-10-8027	R	2/19/2010			
1	RE15-10-8028	R	2/19/2010			
1	RE15-10-8029	R	2/19/2010			
1	RE15-10-8030	R	2/19/2010			
1	RE15-10-8031	R	2/19/2010			
1	RE15-10-8032	R	2/19/2010			
1	RE15-10-8067	R	2/19/2010			
HASL-300:AM-241						
1	RE15-10-7901	R	2/19/2010			
1	RE15-10-7902	R	2/19/2010			
1	RE15-10-8027	R	2/19/2010			
1	RE15-10-8028	R	2/19/2010			
1	RE15-10-8029	R	2/19/2010			
1	RE15-10-8030	R	2/19/2010			
1	RE15-10-8031	R	2/19/2010			
1	RE15-10-8032	R	2/19/2010			
1	RE15-10-8067	R	2/19/2010			
HASL-300:ISOPU						
1	RE15-10-7901	R	2/19/2010			
1	RE15-10-7902	R	2/19/2010			
1	RE15-10-8027	R	2/19/2010			
1	RE15-10-8028	R	2/19/2010			
1	RE15-10-8029	R	2/19/2010			
1	RE15-10-8030	R	2/19/2010			
1	RE15-10-8031	R	2/19/2010			
1	RE15-10-8032	R	2/19/2010			
1	RE15-10-8067	R	2/19/2010			
TOTAL CONTINUED						
4	PAGE 40 TOTAL	C	2/19/2010			

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REQUEST NUMBER: 10-2073

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PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
		1	RE15-10-8030	R	2/19/2010	
		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8067	R	2/19/2010	

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Wednesday, February 24, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2073

LOS ALAMOS

REQUEST NUMBER: 10-2073

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/26/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7902	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7902	1	POLY	H3	Ice	R
RE15-10-7901	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7901	1	POLY	H3	Ice	R
RE15-10-8027	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8027	1	POLY	H3	Ice	R
RE15-10-8028	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8028	1	POLY	H3	Ice	R
RE15-10-8030	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8030	1	POLY	H3	Ice	R
RE15-10-8031	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8031	1	POLY	H3	Ice	R
RE15-10-8029	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8029	1	POLY	H3	Ice	R
RE15-10-8032	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8032	1	POLY	H3	Ice	R
RE15-10-8067	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8067	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-7901

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		08:45		SUB-MEDIA:		TUFF 1	
PRS ID: 15-008(b)		ok		SAMPLE TECH CODE:		HA	
LOCATION ID: 15-610720		↓		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		NO/NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NO/NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 12 RS 01-11-10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: dark brown soil, with leaves, pine needles

FD: RE15-10-8067

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-25 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE NEG

Alpha = 5 dpm
Beta/Gamma = 1776 dpmRS 2-19-10
PID Ambient Reading = ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy R	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sherri Shewood (Signature) Sherri Shewood	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-7902

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:	QBT3	ALLH	
TIME COLLECTED(HH:MM)		09:00		SUB-MEDIA:	TUFF 1	NA	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA	ok	
LOCATION ID:	15-610720			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		
TOP DEPTH:	0	1.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	20		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

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

SAMPLE DESC: dark brown soil some roots, few pine needles

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-25 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha $\leq$ 22 dpm
Beta/Gamma $\leq$ 1942 dpm

RS 2/19/10
PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TL McFarland

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i>	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) <i>Shawn Sherwood</i> (Signature) <i>Shawn Sherwood</i>	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8027

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA: QBT3		PS 02-19-10 SED ALLH	
TIME COLLECTED (HH:MM)		09:15		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	15-610783	↓		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 SED ^{PS 02-19-10} Soil		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA	COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA	NO/NA	BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE DESC: Frozen dark brown soil, some leaves, pine needles, some rock

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-13

FIELD SCREENING/MEASUREMENT RESULTS:

HE NEG

Alpha = 22 dpm
Beta/Gamma = 1859 dpmPID ~~Ambient~~ ^{PS 2-19-10} ~~Reading~~ = ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) TLMcFarland	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sherry Sherwood (Signature) Sherry Sherwood	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8028

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		09:30		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610783	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	1.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	2.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA		NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA		NA	

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

SAMPLE DESC: Wet medium brown soil, few rocks

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-13

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 116 dpm
Beta/Gamma = 1817 dpm

RS 2-19-10
PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy M	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8029

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA: OBT3		ALLH	
TIME COLLECTED (HH:MM)		09:47		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE: HA		OK	
LOCATION ID:	15-610784	↓		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	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY liter 1/11/10	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: West sandy soil Medium brown

SAMPLE COMMENTS:
NA

LOCATION DESC: 8b-2

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 0 dpm
Beta/Gamma = 1596 dpm

HE negative

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

Tam 2/19/10

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sherri Shewood (Signature) <i>Sherri Shewood</i>	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8030

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:	QBT3	ALLH	
TIME COLLECTED (HH:MM)		10:12		SUB-MEDIA:	TUFF 1	NA	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	HA	OK	
LOCATION ID:	15-610784	↓		FIELD QC TYPE:	NA	↓	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA	↓	
TOP DEPTH:	0	1.0		SAMPLE USAGE:	INV	↓	
BOTTOM DEPTH:	0	2.0		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	NO/NA			BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

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

SAMPLE DESC: Medium brown sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

86-2

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 22 dpm
Beta/Gamma = 1907 dpm

PID $\frac{\text{Ambient Reading}}{73m \ 2/19/10} = \text{ppm}$

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy McFarland	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8031

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		10:32		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610785	↓		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	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1	↓	H3	500 ML POLY	Ice	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY liter 1/11/10	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: moist dark brown sand with roots, rocks, pine needles

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-3

FIELD SCREENING/MEASUREMENT RESULTS:

HE NEG

Alpha = 5 dpm
Beta/Gamma = 1879 dpmRS 02-19-10
PID $\frac{\text{Ambient Reading}}{=}$ ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy L McFarland	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sherrin Sherwood (Signature) Sherrin Sherwood	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8032

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		10:58		SUB-MEDIA:		TUFF 1	
PRS ID: 15-008(b)		OK		SAMPLE TECH CODE: HA		NA	
LOCATION ID: 15-610785		↓		FIELD QC TYPE: NA		OK	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		1.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		2.0		SCREEN/PORT DESC: NA			
FIELD MATRIX: R		5		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	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1	normal	H3	500 ML POLY	Ice	Y	
1	normal	Met+U+CLO4+C N	1 GAL POLY liter 1/11/10 LC	Ice	Y	
1	normal	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	normal	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Moist Medium brown sand

FR: RE15-10-8090

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-3

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 116 dpm
Beta/Gamma = 2080 dpm

PID $\frac{RS\ 02-19-10\ Ambient\ Reading}{Reading} = ppm$

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 2/19/10 1545
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8067

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		08:45		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	UNK	15-610720		FIELD QC TYPE:	ED		
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	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1.11.10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC Sample of RE15-10-7901

Dark brown soil, with leaves and pine needles

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-25 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 5 dpm
Beta/Gamma = 1776 dpm

HE NEG
RS 02-19-10
PID Ambient Reading = ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMcfarland

RELINQUISHED BY (Printed Name) TLMcfarland (Signature) <i>TLMcfarland</i>	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sherris Newwood (Signature) <i>Sherris Newwood</i>	Date/Time 2/19/10 1548
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

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

SAMPLE ID: RE15-10-8090

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/19/2010		MEDIA:	NA		OK
TIME COLLECTED(HH:MM)		1140		SUB-MEDIA:	OTHER		
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	DC		
LOCATION ID:	UNK	15-610785		FIELD QC TYPE:	FR		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	UF		
TOP DEPTH:	0			SAMPLE USAGE:	QC		
BOTTOM DEPTH:	0			SCREEN/PORT DESC:	NA		
FIELD MATRIX:	W	✓		EXCAVATED: YES (NO) NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES (NO) NA				WATER FLOWING: YES (NO) NA			
BOREHOLE DECLINATION:	NA			BOREHOLE DIRECTION:	NA		

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

SAMPLE DESC: QC Sample of RE15-10-8032

SAMPLE COMMENTS:

NA
RS 02-19-10 Rinsate

LOCATION DESC: 8b-3

FIELD SCREENING/MEASUREMENT RESULTS:

RS 02-19-10 NA
Alpha = ~~RS 02-19-10 dpm~~
Beta/Gamma = ~~dpm~~RS 02-19-10
PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) TLMcFarland

R Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy	Date/Time 2/19/10 1545	RECEIVED BY (Printed Name) Sherry Shewood (Signature) Sherry Shewood	Date/Time 2/19/10 1548
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):

RE 15-10-8031

7901

8032

8029

8030

8067

8027

8392

7902

8028

RE 15-10-8389

8388

8391

8390

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):

RE 15-10-8090 Rinsate

RE 15-10-8406 Rinsate

RE 15-10-8409 FTB

Reason:

Print Last Name McFarland

Signature Tracy

Date 2/19/10



133 State Road 4, White Rock, NM 87544
505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064
Client Sample ID: RE15-10-7901
Sample Collection Date: 02/19/10 08:45
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS2-10-00064-001
Date Received: 02/22/10 00:00
Report Date: 02/22/10 23:01

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	12.40	19.12	32.65	19.18		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	28.49	13.99	18.12	14.42		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.05	49.02	0.16	49.02		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	18.82	10.89	2.76	10.90		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.16	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.09	0.19	0.14	0.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.37	0.36	0.09	0.36		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.16	0.38	0.43	0.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	0.64	0.41	0.15	0.41		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.60	0.69	0.41	0.69		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.35	0.43	0.51	0.43		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	5.48	4.43	1.71	4.61		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.03	0.23	0.13	0.23		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 3.54										

Matthew J. Eder
Quality Assurance Review

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LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544
505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064
Client Sample ID: RE15-10-7902
Sample Collection Date: 02/19/10 09:00
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS2-10-00064-002
Date Received: 02/22/10 00:00
Report Date: 02/22/10 23:01

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	14.33	20.43	33.91	20.50		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	35.33	14.46	17.73	15.09		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.05	0.18	0.18	0.18		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	23.69	9.67	1.62	9.69		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.16	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.02	0.04	0.15	0.04		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.02	0.04	0.09	0.04		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.63	182.36	0.41	182.36		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.11	0.53	0.18	0.53		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.79	0.46	0.39	0.46		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	-0.69	237.70	0.53	237.70		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	6.74	5.46	1.97	5.67		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.28	0.39	0.16	0.39		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 2.10										

Matthew J. Eder
Quality Assurance Review

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NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064

Request or PO Number:

Client Sample ID: RE15-10-8027

ARS Sample ID: ARS2-10-00064-003

Sample Collection Date: 02/19/10 09:15

Date Received: 02/22/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 23:01

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	YPU	Quel	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	24.57	25.99	37.46	26.16		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	30.34	14.29	18.42	14.76		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	30.41	0.10	30.41		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	18.48	8.16	1.82	8.18		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.24	0.17	0.09	0.17		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.22	-0.94	0.28	-0.94		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.18	0.41	0.11	0.41		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-226	0.55	0.65	0.25	0.63		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.50	0.64	0.37	0.64		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	5.25	4.10	1.63	4.27		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	-0.02	28.80	0.06	28.80		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 2.58										

Matthew J. Eden
Quality Assurance Review

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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064

Client Sample ID: RE15-10-8028

Sample Collection Date: 02/19/10 09:30

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00064-004

Date Received: 02/22/10 00:00

Report Date: 02/22/10 23:01

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	18.94	22.35	33.94	22.47		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	29.76	13.88	17.78	14.35		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	37.54	0.12	37.54		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	26.73	9.17	1.29	9.20		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.28	0.19	0.10	0.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.00	0.00	0.07	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.51	145.30	0.33	145.30		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.98	0.57	0.13	0.58		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.94	0.63	0.31	0.63		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.17	0.61	0.45	0.61		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	1.91	2.61	1.28	2.65		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.30	0.33	0.13	0.33		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 1.26										

Matthew J. Edley
Quality Assurance Review

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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064

Client Sample ID: RE15-10-8029

Sample Collection Date: 02/19/10 09:47

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00064-005

Date Received: 02/22/10 00:00

Report Date: 02/22/10 23:01

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	22.08	23.38	32.73	23.53		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	37.57	15.54	18.50	16.21		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	30.45	0.10	30.45		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
K-40	32.55	9.11	1.05	9.16		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CO-60	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-134	0.07	0.07	0.09	0.07		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-137	0.00	0.00	0.06	0.00		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
EU-152	-0.41	126.54	0.28	126.54		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
PB-212	0.93	0.37	0.11	0.37		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
RA-228	1.23	0.60	0.25	0.61		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-235	0.57	0.40	0.37	0.40		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-238	3.84	2.67	1.02	2.81		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
AM-241	-0.02	23.67	0.08	23.67		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
NOTES: % Moisture: 2.46										

Matthew A. Eden
Quality Assurance Review

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LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064

Request or PO Number:

Client Sample ID: RE15-10-8030

ARS Sample ID: ARS2-10-00064-006

Sample Collection Date: 02/19/10 10:12

Date Received: 02/22/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 23:02

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Quel	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	51.05	32.64	33.89	33.23		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	49.06	16.71	17.91	17.75		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	47.03	0.15	47.03		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
K-40	15.79	7.88	1.62	7.89		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CO-60	0.09	0.19	0.16	0.19		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-134	0.05	0.10	0.11	0.10		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-137	0.33	0.27	0.09	0.27		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
EU-152	0.06	0.07	0.44	0.07		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
PB-212	1.38	0.56	0.16	0.56		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
RA-228	0.00	0.00	0.39	0.00		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-235	0.56	0.95	0.60	0.95		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-238	9.13	3.37	0.91	3.96		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
AM-241	0.74	0.43	0.12	0.44		pCi/g	EPA 901.1M	2/22/2010	ME	N/A

NOTES: % Moisture: 0.84

Matthew J. Eden
Quality Assurance Review

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

LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544
505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064
Client Sample ID: RE15-10-8031
Sample Collection Date: 02/19/10 10:32
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS2-10-00064-007
Date Received: 02/22/10 00:00
Report Date: 02/22/10 23:02

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	34.42	29.41	37.46	29.71		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	50.99	16.84	18.42	17.78		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	33.20	0.11	33.20		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
K-40	18.78	7.23	1.14	7.25		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CO-60	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-134	0.18	0.13	0.15	0.13		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-137	0.27	0.20	0.06	0.21		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
EU-152	-0.16	-0.35	0.31	-0.35		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
PB-212	1.24	0.46	0.14	0.46		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
RA-228	1.00	0.45	0.28	0.45		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-235	1.84	1.00	0.43	1.00		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-238	4.26	3.36	1.41	3.50		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
AM-241	0.54	0.35	0.11	0.36		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
NOTES: % Moisture: 2.19										

Matthew A. Eden
Quality Assurance Review

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LELAP Certificate# 30658

NE LAP Certificate # E87558



133 State Road 4, White Rock, NM 87544
505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064
Client Sample ID: RE15-10-8032
Sample Collection Date: 02/19/10 10:58
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS2-10-00064-008
Date Received: 02/22/10 00:00
Report Date: 02/22/10 23:02

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	37.47	28.81	34.06	29.17		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	20.77	13.23	17.92	13.48		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	43.92	0.14	43.92		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
K-40	23.92	9.38	1.51	9.41		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CO-60	0.18	0.25	0.15	0.25		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-134	0.07	0.17	0.12	0.17		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-137	0.51	0.32	0.08	0.32		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
EU-152	0.40	0.59	0.38	0.59		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
PB-212	1.49	0.54	0.13	0.54		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
RA-228	2.15	0.95	0.37	0.95		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-235	1.19	0.84	0.46	0.84		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-238	1.72	2.97	1.49	2.99		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
AM-241	0.07	0.30	0.15	0.30		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
NOTES: % Moisture: 1.41										

Matthew L. Eden
Quality Assurance Review

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

LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544
505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00064
Client Sample ID: RE15-10-8067
Sample Collection Date: 02/19/10 08:45
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS2-10-00064-009
Date Received: 02/22/10 00:00
Report Date: 02/22/10 23:02

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	YPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	31.73	26.94	32.73	27.21		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	38.92	15.86	16.50	16.55		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.05	49.54	0.16	49.54		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
K-40	23.87	9.95	1.71	9.98		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CO-60	0.00	0.00	0.17	0.00		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-134	-0.06	48.16	0.11	48.16		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
CS-137	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
EU-152	-0.21	-1.12	0.48	-1.12		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
PB-212	1.34	0.52	0.10	0.52		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
RA-228	3.09	1.21	0.41	1.22		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-235	2.28	1.29	0.51	1.29		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
U-238	4.32	2.96	1.19	3.12		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
AM-241	-0.04	54.02	0.12	54.02		pCi/g	EPA 901.1M	2/22/2010	ME	N/A
NOTES: % Moisture: 1.86										

Matthew J. Eder
Quality Assurance Review

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

LELAP Certificate# 30658

NELAP Certificate # EB7558

DATA VALIDATION COVER SHEET

5119-1

Data Validation Cover Sheet

Records Use only

**Section I.**REQUEST NUMBER: 10-2073 VALIDATION DATE: 04/02/10 LAB CODE: GELCONTRACT LABORATORY NAME: GEL Laboratories LLCVALIDATOR: Kevin A. Lambert ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

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

Section II. Completeness Check

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

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

1. All reported gamma spec results that were rejected by the laboratory due to high peak-width, interference, and low abundance were qualified R,R5a. Also, it should be noted that several results in the matrix QC samples were rejected by the laboratory. No sample data were qualified as a result.
2. The alpha spec Pu-236 tracer %R for sample RE15-10-8028 was > the laboratory UAL but $\leq 125\%$. The associated sample results were NDs and, thus, were qualified UJ,R3a.
3. The gamma spec K-40 duplicate RER was >1.0. All associated sample results were detects and, thus, were qualified J,R10.
4. It should be noted that an MS was not analyzed for tritium. However, an LCS was analyzed and passed acceptance criteria. Thus, no sample data were qualified.
5. It should be noted that the parent sample for tritium QC analyses was a LANL sample from another RN. No sample data were qualified as a result.

Reviewed by: Susan BallLevel: IDate: 4/2/10

DATA VALIDATION COVER SHEET	
5119-1	Records Use only
Data Validation Cover Sheet	 Los Alamos NATIONAL LABORATORY EST. 1945
VALIDATOR'S SIGNATURE: <u>Kevin A. Lambert</u> DATE: <u>04/02/10</u>	
Form 5119-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project

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

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, R9	J-, R9
☐	☒	☐	2. The holding time was >2 times the applicable holding time requirement.	R, R9a	J-, R9a
☐	☐	☒	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
☒	☐	☐	4. The analyte should be regarded as rejected because spectral interferences prevent positive identification of the analytes.	R, R5a	R, R5a
☐	☒	☐	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
☐	☐	☒	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
☐	☒	☐	7. The sample result is ≤5X the concentration of the related analyte in the method blank.	U, R4	N/A
☐	☒	☐	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
☐	☐	☒	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
☐	☒	☐	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
☐	☒	☐	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 (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				Non-detected Analyte	Detected Analyte
☐	☒	☐	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
☒	☐	☐	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
☐	☒	☐	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
☐	☒	☐	15. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, R12	R, R12
☐	☒	☐	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
☐	☒	☐	17. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, R12b
☐	☒	☐	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
☒	☐	☐	19. Associated duplicate sample has DER or RER > the analytical laboratory's acceptance limits.	R, R10	J, J10
☐	☒	☐	20. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R6	R, R6

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

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☐	☒	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
☐	☐	☒	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
☐	☐	☒	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
☒	☐	☐	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
☐	☒	☐	25. Duplicate, dilution, or reanalysis.	UJ, R88	J, R88
☐	☒	☐	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
☒	☐	☐	27. Quantification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB NQ, NQ

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-7902
Sample ID: 248030001
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 15.6%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00423	0.0316	+/-0.00816	0.050	pCi/g		CXM2	03/11/10	1619	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.011	0.0202	+/-0.00775	0.050	pCi/g		CXM2	03/09/10	2047	959856	3
Plutonium-239/240		0.0191	0.0171	+/-0.00597	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.64	0.124	+/-0.146	0.100	pCi/g		CXM2	03/11/10	2106	959857	4
Uranium-235/236	U	0.0545	0.0759	+/-0.0193	0.100	pCi/g						
Uranium-238		2.32	0.0874	+/-0.195	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.122	0.398	+/-0.122	0.200	pCi/g		MXR1	03/13/10	1430	958221	5
Bismuth-211	UI	4.06	R,R5a	0.322	+/-0.287	pCi/g						
Bismuth-214		1.35		0.0949	+/-0.102	pCi/g						
Cadmium-109	UI	3.75	R,R5a	1.41	+/-0.581	pCi/g						
Cerium-139	U	-0.0203		0.0502	+/-0.0156	pCi/g						
Cesium-134	UI	0.130	R,R5a	0.0969	+/-0.038	pCi/g						
Cesium-137		0.183		0.0647	+/-0.0349	pCi/g						
Cobalt-60	U	-0.0154		0.0719	+/-0.0224	pCi/g						
Europium-152	U	0.0323		0.167	+/-0.0481	pCi/g						
Lanthanum-140	U	-0.0518		0.223	+/-0.0719	pCi/g						
Lead-212		1.73		0.165	+/-0.098	pCi/g						
Lead-214		1.47		0.117	+/-0.112	pCi/g						
Mercury-203	U	0.030		0.0773	+/-0.0217	pCi/g						
Potassium-40		27.3	J,R10	0.591	+/-1.34	pCi/g						
Radium-223	U	-0.389		1.06	+/-0.369	pCi/g						
Radium-224	UI	6.98	R,R5a	1.89	+/-0.548	pCi/g						
Radium-226		1.35		0.0949	+/-0.102	pCi/g						
Radium-228		1.76		0.224	+/-0.203	pCi/g						
Ruthenium-106	U	0.0563		0.563	+/-0.172	pCi/g						
Sodium-22	U	0.0153		0.085	+/-0.0247	pCi/g						
Strontium-85	UI	0.0863	R,R5a	0.0826	+/-0.0224	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-7902
Sample ID: 248030001
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		0.586	0.0541	+/-0.040	0.080	pCi/g						
Thorium-227	U	0.0272	0.424	+/-0.122		pCi/g						
Thorium-231	U	-0.389	1.06	+/-0.369		pCi/g						
Thorium-234		4.37	3.08	+/-1.45	2.00	pCi/g						
Tin-113	U	-0.00763	0.0753	+/-0.0227	0.100	pCi/g						
Uranium-235	U	0.194	0.354	+/-0.102	0.500	pCi/g						
Yttrium-88	U	-0.0164	0.035	+/-0.0135	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		258	246	+/-79.5	250	pCi/L		KXK2	03/19/10	0734	964052	6

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	93.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-7901
Sample ID: 248030002
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 34.7%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.0165	0.025	+/-0.0108	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00396	0.0231	+/-0.00326	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240		0.0317	0.0195	+/-0.00782	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		4.43	0.137	+/-0.355	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.253	0.0839	+/-0.044	0.100	pCi/g						
Uranium-238		9.08	0.0965	+/-0.695	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.0353	0.117	+/-0.0396	0.200	pCi/g		MXR1	03/13/10	1430	958221	4
Bismuth-211	UI	4.38	R,R5a	0.361	+/-0.288	pCi/g						
Bismuth-214		1.21		0.127	+/-0.0972	0.200	pCi/g					
Cadmium-109	UI	4.03	R,R5a	1.38	+/-0.417	pCi/g						
Cerium-139	U	-0.0268		0.0525	+/-0.017	0.050	pCi/g					
Cesium-134	U	-0.0194		0.0971	+/-0.030	0.100	pCi/g					
Cesium-137		0.673		0.0833	+/-0.0545	0.100	pCi/g					
Cobalt-60	U	0.00627		0.0714	+/-0.022	0.100	pCi/g					
Europium-152	U	0.033		0.183	+/-0.0665	0.200	pCi/g					
Lanthanum-140	U	-0.0473		0.216	+/-0.0691	pCi/g						
Lead-212		1.74		0.101	+/-0.111	0.100	pCi/g					
Lead-214		1.59		0.135	+/-0.113	0.100	pCi/g					
Mercury-203	U	0.0474		0.084	+/-0.0245	0.100	pCi/g					
Potassium-40		23.9	J,R10	0.529	+/-1.09	1.00	pCi/g					
Radium-223	U	0.0506		1.20	+/-0.419	pCi/g						
Radium-224	UI	4.74	R,R5a	1.08	+/-0.642	pCi/g						
Radium-226		1.21		0.127	+/-0.0972	pCi/g						
Radium-228		1.57		0.273	+/-0.225	0.500	pCi/g					
Ruthenium-106	U	-0.165		0.656	+/-0.211	0.800	pCi/g					
Sodium-22	U	-0.0274		0.0727	+/-0.0241	0.080	pCi/g					
Strontium-85	UI	0.0988	R,R5a	0.083	+/-0.0258	pCi/g						
Thallium-208		0.480		0.0672	+/-0.051	0.080	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 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7901
248030002

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	0.299	0.487	+/-0.142		pCi/g						
Thorium-231	U	0.0506	1.20	+/-0.419		pCi/g						
Thorium-234		10.1	1.15	+/-1.14	2.00	pCi/g						
Tin-113	U	-0.0135	0.0911	+/-0.0282	0.100	pCi/g						
Uranium-235	U	0.278	0.350	+/-0.138	0.500	pCi/g						
Yttrium-88	U	0.0159	0.0743	+/-0.0216	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		517	301	+/-108	250	pCi/L		KXK2	03/18/10	1659	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	67.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8027
Sample ID: 248030003
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 23.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00942	0.0246	+/-0.0061	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.0126	0.0209	+/-0.00448	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.00987	0.0176	+/-0.00433	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.79	0.099	+/-0.149	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.130	0.0605	+/-0.0255	0.100	pCi/g						
Uranium-238		4.73	0.0696	+/-0.358	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	-0.0514	0.331	+/-0.106	0.200	pCi/g		MXR1	03/13/10	1431	958221	4
Bismuth-211	UI	4.38	R,R5a	0.370	+/-0.306	pCi/g						
Bismuth-214		1.14		0.130	+/-0.106	pCi/g						
Cadmium-109	UI	6.77	R,R5a	1.57	+/-0.841	pCi/g						
Cerium-139	U	0.0115		0.0565	+/-0.0168	pCi/g						
Cesium-134	UI	0.160	R,R5a	0.102	+/-0.0307	pCi/g						
Cesium-137		0.240		0.072	+/-0.0422	pCi/g						
Cobalt-60	U	-0.0044		0.0737	+/-0.0227	pCi/g						
Europium-152	U	0.00411		0.179	+/-0.0606	pCi/g						
Lanthanum-140	U	-0.143		0.191	+/-0.0689	pCi/g						
Lead-212		1.91		0.104	+/-0.116	pCi/g						
Lead-214		1.59		0.131	+/-0.119	pCi/g						
Mercury-203	U	0.0557		0.0879	+/-0.0244	pCi/g						
Potassium-40		29.1	J,R10	0.244	+/-1.65	pCi/g						
Radium-223	U	-0.152		1.26	+/-0.431	pCi/g						
Radium-224	UI	5.24	R,R5a	1.11	+/-0.749	pCi/g						
Radium-226		1.14		0.130	+/-0.106	pCi/g						
Radium-228		1.62		0.283	+/-0.190	pCi/g						
Ruthenium-106	U	0.266		0.651	+/-0.183	pCi/g						
Sodium-22	U	0.00835		0.0809	+/-0.0241	pCi/g						
Strontium-85	UI	0.0887	R,R5a	0.0873	+/-0.0257	pCi/g						
Thallium-208		0.482		0.0637	+/-0.0491	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8027
248030003

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	-0.23	0.446	+/-0.136		pCi/g						
Thorium-231	U	-0.152	1.26	+/-0.431		pCi/g						
Thorium-234		3.47	2.64	+/-1.30	2.00	pCi/g						
Tin-113	U	0.0223	0.0993	+/-0.0292	0.100	pCi/g						
Uranium-235	U	0.160	0.377	+/-0.111	0.500	pCi/g						
Yttrium-88	U	0.022	0.0669	+/-0.0181	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		271	241	+/-78.7	250	pCi/L		KXK2	03/19/10	0842	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	99.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	100	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8028
Sample ID: 248030004
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 10.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00471	0.0282	+/-0.00565	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00407	UJ,R3a	0.0211	+/-0.00357	0.050	pCi/g	CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.00248	UJ,R3a	0.0178	+/-0.0032	0.050	pCi/g					
ISOU "Dry Weight Corrected"												
Uranium-233/234		0.890		0.0988	+/-0.0839	0.100	pCi/g	CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.0693		0.0604	+/-0.018	0.100	pCi/g					
Uranium-238		0.992		0.0695	+/-0.0915	0.100	pCi/g					
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	-0.128		0.463	+/-0.152	0.200	pCi/g	MXR1	03/13/10	1431	958221	4
Bismuth-211	UI	3.83	R,R5a	0.382	+/-0.321		pCi/g					
Bismuth-214		1.16		0.118	+/-0.0971	0.200	pCi/g					
Cadmium-109	UI	2.32	R,R5a	1.77	+/-0.699		pCi/g					
Cerium-139	U	-0.0105		0.0628	+/-0.0187	0.050	pCi/g					
Cesium-134	UI	0.129	R,R5a	0.101	+/-0.0392	0.100	pCi/g					
Cesium-137	U	-0.0117		0.068	+/-0.0202	0.100	pCi/g					
Cobalt-60	U	0.00699		0.0731	+/-0.0221	0.100	pCi/g					
Europium-152	U	-0.0259		0.190	+/-0.0686	0.200	pCi/g					
Lanthanum-140	U	-0.192		0.224	+/-0.0805		pCi/g					
Lead-212		1.96		0.117	+/-0.136	0.100	pCi/g					
Lead-214		1.39		0.147	+/-0.123	0.100	pCi/g					
Mercury-203	U	0.0553		0.0891	+/-0.0245	0.100	pCi/g					
Potassium-40		26.8	J,R10	0.590	+/-1.59	1.00	pCi/g					
Radium-223	U	-0.612		1.35	+/-0.411		pCi/g					
Radium-224	UI	3.64	R,R5a	1.25	+/-0.613		pCi/g					
Radium-226		1.16		0.118	+/-0.0971		pCi/g					
Radium-228		2.05		0.248	+/-0.219	0.500	pCi/g					
Ruthenium-106	U	-0.153		0.599	+/-0.188	0.800	pCi/g					
Sodium-22	U	-0.0548		0.0729	+/-0.0255	0.080	pCi/g					
Strontium-85	UI	0.104	R,R5a	0.092	+/-0.0278		pCi/g					
Thallium-208		0.560		0.068	+/-0.0502	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8028
Sample ID: 248030004
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	-0.216	0.487	+/-0.145		pCi/g						
Thorium-231	U	-0.612	1.35	+/-0.411		pCi/g						
Thorium-234		4.33	3.56	+/-1.85	2.00	pCi/g						
Tin-113	U	0.000501	0.0958	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.0853	0.422	+/-0.123	0.500	pCi/g						
Yttrium-88	U	-0.0257	0.0474	+/-0.0174	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	227	238	+/-76.3	250	pCi/L		KXK2	03/19/10	0951	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	107 *	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8030
Sample ID: 248030005
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 8.78%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.012	0.028	+/-0.00773	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	-0.00237	0.0238	+/-0.00444	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.0143	0.0202	+/-0.00735	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		2.75	0.101	+/-0.219	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.160	0.0619	+/-0.0289	0.100	pCi/g						
Uranium-238		5.30	0.0712	+/-0.399	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	-0.00349	0.217	+/-0.0691	0.200	pCi/g		MXR1	03/13/10	1432	958221	4
Bismuth-211	UI	3.75	R,R5a	0.259	+/-0.281	pCi/g						
Bismuth-214		1.21		0.0879	+/-0.0956	0.200	pCi/g					
Cadmium-109	UI	3.57	R,R5a	0.986	+/-0.394	pCi/g						
Cerium-139	U	-0.0142		0.0424	+/-0.0123	0.050	pCi/g					
Cesium-134	UI	0.138	R,R5a	0.0836	+/-0.0294	0.100	pCi/g					
Cesium-137		0.352		0.0502	+/-0.0385	0.100	pCi/g					
Cobalt-60	U	-0.00188		0.0545	+/-0.0168	0.100	pCi/g					
Europium-152	U	0.0148		0.133	+/-0.0371	0.200	pCi/g					
Lanthanum-140	U	0.0245		0.167	+/-0.0492	pCi/g						
Lead-212		1.48		0.0785	+/-0.0999	0.100	pCi/g					
Lead-214		1.36		0.0942	+/-0.109	0.100	pCi/g					
Mercury-203	U	-0.000875		0.0589	+/-0.0175	0.100	pCi/g					
Potassium-40		28.2	J,R10	0.454	+/-1.46	1.00	pCi/g					
Radium-223	U	-0.151		0.886	+/-0.307	pCi/g						
Radium-224	UI	3.89	R,R5a	0.841	+/-0.484	pCi/g						
Radium-226		1.21		0.0879	+/-0.0956	pCi/g						
Radium-228		1.64		0.167	+/-0.179	0.500	pCi/g					
Ruthenium-106	U	0.248		0.462	+/-0.128	0.800	pCi/g					
Sodium-22	U	-0.0176		0.0573	+/-0.0184	0.080	pCi/g					
Strontium-85	U	0.0446		0.0622	+/-0.0189	pCi/g						
Thallium-208		0.429		0.0523	+/-0.0374	0.080	pCi/g					

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8030
Sample ID: 248030005
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	-0.101	0.340	+/-0.103		pCi/g						
Thorium-231	U	-0.151	0.886	+/-0.307		pCi/g						
Thorium-234		5.75	1.78	+/-1.12	2.00	pCi/g						
Tin-113	U	0.00714	0.0666	+/-0.0188	0.100	pCi/g						
Uranium-235		0.326	0.279	+/-0.131	0.500	pCi/g						
Yttrium-88	U	-0.0158	0.034	+/-0.0122	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		3080	295	+/-266	250	pCi/L		KXK2	03/18/10	1908	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	77.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(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 23, 2010

Client Sample ID: RE15-10-8031
Sample ID: 248030006
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 20.2%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.0182	0.0291	+/-0.00955	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.0132	0.0287	+/-0.00722	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.0206	0.0242	+/-0.00756	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		2.03	0.105	+/-0.168	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.190	0.0644	+/-0.0332	0.100	pCi/g						
Uranium-238		5.16	0.0741	+/-0.391	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.0411	0.119	+/-0.0357	0.200	pCi/g		MXR1	03/13/10	1432	958221	4
Bismuth-211	UI	4.05	R,R5a	0.351	+/-0.298	pCi/g						
Bismuth-214		1.34		0.125	+/-0.126	pCi/g						
Cadmium-109	UI	4.14	R,R5a	1.04	+/-0.560	pCi/g						
Cerium-139	U	-0.0317		0.0528	+/-0.0163	pCi/g						
Cesium-134	U	0.0345		0.108	+/-0.0305	pCi/g						
Cesium-137		0.245		0.0726	+/-0.0552	pCi/g						
Cobalt-60	U	0.00441		0.0831	+/-0.0244	pCi/g						
Europium-152	U	-0.00129		0.179	+/-0.0588	pCi/g						
Lanthanum-140	U	-0.0652		0.245	+/-0.0797	pCi/g						
Lead-212		1.57		0.101	+/-0.099	pCi/g						
Lead-214		1.47		0.128	+/-0.115	pCi/g						
Mercury-203	U	-0.0136		0.077	+/-0.0223	pCi/g						
Potassium-40		24.4	J,R10	0.713	+/-1.44	pCi/g						
Radium-223	U	0.732		1.27	+/-0.390	pCi/g						
Radium-224	UI	5.08	R,R5a	1.08	+/-0.627	pCi/g						
Radium-226		1.34		0.125	+/-0.126	pCi/g						
Radium-228		1.59		0.321	+/-0.197	pCi/g						
Ruthenium-106	U	0.177		0.669	+/-0.196	pCi/g						
Sodium-22	U	-0.0227		0.0893	+/-0.0291	pCi/g						
Strontium-85	U	0.0365		0.0807	+/-0.0257	pCi/g						
Thallium-208		0.549		0.0607	+/-0.0515	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8031
248030006

Project: LANL01004
Client ID: LANL010

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

GAMMA SPEC "Dry Weight Corrected"

Thorium-227	U	-0.187	0.445	+/-0.142		pCi/g						
Thorium-231	U	0.732	1.27	+/-0.390		pCi/g						
Thorium-234		5.72	1.14	+/-0.813	2.00	pCi/g						
Tin-113	U	-0.0123	0.0822	+/-0.0245	0.100	pCi/g						
Uranium-235	U	0.255	0.375	+/-0.107	0.500	pCi/g						
Yttrium-88	U	-0.0175	0.0636	+/-0.0217	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium		328	290	+/-96.3	250	pCi/L		KXK2	03/18/10	1951	964052	5
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The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	76.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.8	(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 23, 2010

Client Sample ID: RE15-10-8029
Sample ID: 248030007
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 23.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	-0.000504	0.0253	+/-0.00787	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00439	0.0291	+/-0.00311	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.0219	0.0246	+/-0.00702	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.71	0.126	+/-0.151	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236	U	0.0664	0.0771	+/-0.0198	0.100	pCi/g						
Uranium-238		3.39	0.0888	+/-0.274	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.0799	0.250	+/-0.077	0.200	pCi/g		MXR1	03/13/10	1433	958221	4
Bismuth-211	UI	3.10	R,R5a	0.307	+/-0.199	pCi/g						
Bismuth-214		0.900		0.108	+/-0.0749	0.200	pCi/g					
Cadmium-109	UI	1.55	R,R5a	1.30	+/-0.414	pCi/g						
Cerium-139	U	-0.00394	0.0504	+/-0.0147	0.050	pCi/g						
Cesium-134	U	0.0221	0.0701	+/-0.0202	0.100	pCi/g						
Cesium-137	U	0.0606	0.0692	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	-0.0141	0.0551	+/-0.0172	0.100	pCi/g						
Europium-152	U	-0.0261	0.143	+/-0.0507	0.200	pCi/g						
Lanthanum-140	U	-0.0148	0.184	+/-0.0595	pCi/g							
Lead-212		1.22	0.0869	+/-0.0652	0.100	pCi/g						
Lead-214		1.13	0.107	+/-0.0785	0.100	pCi/g						
Mercury-203	U	0.0513	0.0695	+/-0.0185	0.100	pCi/g						
Potassium-40		27.1	J,R10	0.444	+/-1.27	1.00	pCi/g					
Radium-223	U	-0.359		0.969	+/-0.286	pCi/g						
Radium-224	UI	2.86	R,R5a	0.931	+/-0.468	pCi/g						
Radium-226		0.900		0.108	+/-0.0749	pCi/g						
Radium-228		1.48		0.206	+/-0.139	0.500	pCi/g					
Ruthenium-106	U	0.0309		0.472	+/-0.138	0.800	pCi/g					
Sodium-22	U	-0.00607	0.0556	+/-0.0169	0.080	pCi/g						
Strontium-85	U	0.0599	0.0713	+/-0.0216	pCi/g							
Thallium-208		0.445	0.0468	+/-0.0397	0.080	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8029
248030007

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	-0.0772	0.398	+/-0.121		pCi/g						
Thorium-231	U	-0.359	0.969	+/-0.286		pCi/g						
Thorium-234		4.42	2.13	+/-1.04	2.00	pCi/g						
Tin-113	U	-0.00929	0.0665	+/-0.0194	0.100	pCi/g						
Uranium-235	U	0.270	0.334	+/-0.0944	0.500	pCi/g						
Yttrium-88	U	0.0135	0.0472	+/-0.0131	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	212	247	+/-78.3	250	pCi/L		KXK2	03/19/10	1100	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	75.7	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8032
Sample ID: 248030008
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 12.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.0039	0.0253	+/-0.00876	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.0144	0.0239	+/-0.00514	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.009	0.0202	+/-0.00405	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		0.943	0.110	+/-0.0903	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236	U	0.053	0.0671	+/-0.0164	0.100	pCi/g						
Uranium-238		1.13	0.0773	+/-0.104	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.0787	0.183	+/-0.0575	0.200	pCi/g		MXR1	03/13/10	1433	958221	4
Bismuth-211	UI	4.14	R,R5a	0.300	+/-0.312	pCi/g						
Bismuth-214		1.24		0.105	+/-0.109	pCi/g						
Cadmium-109	UI	3.69	R,R5a	1.11	+/-0.477	pCi/g						
Cerium-139	U	0.00803		0.0491	+/-0.0148	pCi/g						
Cesium-134	U	0.0854		0.0881	+/-0.0236	pCi/g						
Cesium-137	U	0.00711		0.0653	+/-0.0189	pCi/g						
Cobalt-60	U	0.0168		0.060	+/-0.0176	pCi/g						
Europium-152	U	-0.00823		0.154	+/-0.0475	pCi/g						
Lanthanum-140	U	0.0579		0.200	+/-0.0562	pCi/g						
Lead-212		1.70		0.0869	+/-0.106	pCi/g						
Lead-214		1.50		0.109	+/-0.121	pCi/g						
Mercury-203	UI	0.0708	R,R5a	0.0647	+/-0.0289	pCi/g						
Potassium-40		27.3	J,R10	0.509	+/-1.44	pCi/g						
Radium-223	U	0.321		0.965	+/-0.312	pCi/g						
Radium-224	UI	4.98	R,R5a	0.931	+/-0.741	pCi/g						
Radium-226		1.24		0.105	+/-0.109	pCi/g						
Radium-228		1.88		0.222	+/-0.190	pCi/g						
Ruthenium-106	U	-0.0447		0.475	+/-0.149	pCi/g						
Sodium-22	U	-0.00542		0.0713	+/-0.0224	pCi/g						
Strontium-85	UI	0.106	R,R5a	0.0775	+/-0.0227	pCi/g						
Thallium-208		0.486		0.0589	+/-0.0442	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8032
Sample ID: 248030008
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	0.159	0.418	+/-0.118		pCi/g						
Thorium-231	U	0.321	0.965	+/-0.312		pCi/g						
Thorium-234		2.77	1.65	+/-0.811	2.00	pCi/g						
Tin-113	U	0.000503	0.0717	+/-0.0214	0.100	pCi/g						
Uranium-235	U	0.00328	0.328	+/-0.0999	0.500	pCi/g						
Yttrium-88	U	0.0348	0.0628	+/-0.0161	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	187	252	+/-78.9	250	pCi/L		KXK2	03/19/10	1209	964052	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"	89.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.1	(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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- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8067
Sample ID: 248030009
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 17.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00399	0.029	+/-0.00872	0.050	pCi/g		CXM2	03/11/10	1619	959854	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00922	0.0232	+/-0.00448	0.050	pCi/g		CXM2	03/09/10	2047	959856	3
Plutonium-239/240		0.0262	0.0196	+/-0.00689	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.94	0.107	+/-0.162	0.100	pCi/g		CXM2	03/11/10	2106	959857	4
Uranium-235/236		0.145	0.0652	+/-0.0288	0.100	pCi/g						
Uranium-238		3.95	0.075	+/-0.305	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.106	0.229	+/-0.0711	0.200	pCi/g		MXR1	03/13/10	1434	958221	5
Bismuth-211	UI	3.95	R,R5a	0.322	+/-0.298	pCi/g						
Bismuth-214		1.34		0.105	+/-0.106	0.200	pCi/g					
Cadmium-109	UI	3.12	R,R5a	1.24	+/-0.446	pCi/g						
Cerium-139	U	0.00117		0.0516	+/-0.015	0.050	pCi/g					
Cesium-134	UI	0.0786	R,R5a	0.0774	+/-0.0218	0.100	pCi/g					
Cesium-137		0.376		0.0519	+/-0.0331	0.100	pCi/g					
Cobalt-60	U	-0.0315		0.0529	+/-0.0182	0.100	pCi/g					
Europium-152	U	-0.0586		0.147	+/-0.0519	0.200	pCi/g					
Lanthanum-140	U	-0.123		0.193	+/-0.0637	pCi/g						
Lead-212		1.78		0.0891	+/-0.129	0.100	pCi/g					
Lead-214		1.43		0.115	+/-0.115	0.100	pCi/g					
Mercury-203	U	0.0196		0.0727	+/-0.0218	0.100	pCi/g					
Potassium-40		29.6	J,R10	0.478	+/-1.53	1.00	pCi/g					
Radium-223	U	-0.317		0.963	+/-0.336	pCi/g						
Radium-224	UI	4.74	R,R5a	0.954	+/-0.657	pCi/g						
Radium-226		1.34		0.105	+/-0.106	pCi/g						
Radium-228		1.75		0.191	+/-0.186	0.500	pCi/g					
Ruthenium-106	U	-0.0642		0.496	+/-0.150	0.800	pCi/g					
Sodium-22	U	-0.0517		0.0594	+/-0.0199	0.080	pCi/g					
Strontium-85	UI	0.145	R,R5a	0.082	+/-0.0258	pCi/g						
Thallium-208		0.552		0.0534	+/-0.050	0.080	pCi/g					

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8067
Sample ID: 248030009
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	0.0758	0.428	+/-0.128		pCi/g						
Thorium-231	U	-0.317	0.963	+/-0.336		pCi/g						
Thorium-234		5.51	1.83	+/-1.12	2.00	pCi/g						
Tin-113	U	-0.0128	0.0722	+/-0.0219	0.100	pCi/g						
Uranium-235	U	0.0825	0.346	+/-0.101	0.500	pCi/g						
Yttrium-88	U	-0.00251	0.0476	+/-0.017	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	222	240	+/-76.7	250	pCi/L		KXK2	03/19/10	1317	964052	6

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	79.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.9	(50%-105%)

Notes:

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

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- 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

Wednesday, February 24, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2073

LOS ALAMOS

REQUEST NUMBER: 10-2073

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:

248030%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7902	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7902	1	POLY	H3	Ice	R
RE15-10-7901	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7901	1	POLY	H3	Ice	R
RE15-10-8027	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8027	1	POLY	H3	Ice	R
RE15-10-8028	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8028	1	POLY	H3	Ice	R
RE15-10-8030	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8030	1	POLY	H3	Ice	R
RE15-10-8031	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8031	1	POLY	H3	Ice	R
RE15-10-8029	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8029	1	POLY	H3	Ice	R
RE15-10-8032	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8032	1	POLY	H3	Ice	R
RE15-10-8067	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8067	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 2-25-10 0845

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Wednesday, February 24, 2010

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC

2040 Savage Rd

Charleston, SC 29407

These Samples are on:

LANL Request Number: 10-2073

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/24/2010

TURNAROUND/REPORT DUE: 3/26/2010

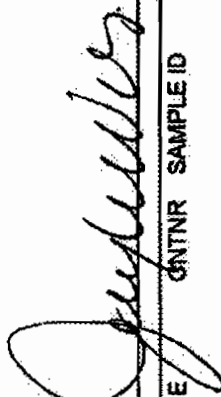
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ERM SMO CONTACT:

Signature:



PRIORITY	METHOD CODE	QNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1					
		1	RE15-10-7801	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
		1	RE15-10-8030	R	2/19/2010	
		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8087	R	2/19/2010	

Wednesday, February 24, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE15-10-7901	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
		1	RE15-10-8030	R	2/19/2010	
		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8067	R	2/19/2010	
	HASL-300:AM-241	1	RE15-10-7901	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
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		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8067	R	2/19/2010	
	HASL-300:ISOPU	1	RE15-10-7901	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
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		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8067	R	2/19/2010	
		1	RE15-10-7901	R	2/19/2010	

Wednesday, February 24, 2010

REQUEST NUMBER: 10-2073

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8026	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
		1	RE15-10-8030	R	2/19/2010	
		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8067	R	2/19/2010	

Final Page of REQUEST NUMBER 10-2073



March 24, 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: 248030
SDG: 10-2073

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 25, 2010, and analyzed for Radiochemistry. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Sincerely,

Valerie Davis
Project Manager

Purchase Order: 72733-001-09
Chain of Custody: 10-2073
Enclosures

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 248030
SDG: 10-2073

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 248030
SDG # : 10-2073**

March 24, 2010

Laboratory Identification:

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

Summary

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

Sample Identification The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
248030001	RE15-10-7902
248030002	RE15-10-7901
248030003	RE15-10-8027
248030004	RE15-10-8028
248030005	RE15-10-8030
248030006	RE15-10-8031
248030007	RE15-10-8029
248030008	RE15-10-8032
248030009	RE15-10-8067

Case Narrative

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

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

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


Valerie Davis
Project Manager

List of current GEL Certifications as of 24 March 2010

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

Chain of Custody and Supporting Documentation

Wednesday, February 24, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2073

LOS ALAMOS

REQUEST NUMBER: 10-2073

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/26/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248030%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7902	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7902	1	POLY	H3	Ice	R
RE15-10-7901	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7901	1	POLY	H3	Ice	R
RE15-10-8027	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8027	1	POLY	H3	Ice	R
RE15-10-8028	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8028	1	POLY	H3	Ice	R
RE15-10-8030	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8030	1	POLY	H3	Ice	R
RE15-10-8031	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8031	1	POLY	H3	Ice	R
RE15-10-8029	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8029	1	POLY	H3	Ice	R
RE15-10-8032	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8032	1	POLY	H3	Ice	R
RE15-10-8067	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8067	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Wednesday, February 24, 2010

**LOS ALAMOS
NATIONAL LABORATORY**

ATTN: Valerie Davis

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

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/24/2010

TURNAROUND/REPORT DUE: 3/26/2010

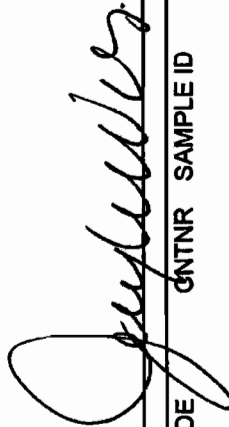
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



REQUEST NUMBER: 10-2073

These Samples are on:

LANL Request Number:10-2073
Per Agreement Number:126310011
Project Cost Code: MR3A05529E00

PRIORITY	METHOD CODE	QNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1						
1		1	RE15-10-7901	R	2/19/2010	
1		1	RE15-10-7902	R	2/19/2010	
1		1	RE15-10-8027	R	2/19/2010	
1		1	RE15-10-8028	R	2/19/2010	
1		1	RE15-10-8029	R	2/19/2010	
1		1	RE15-10-8030	R	2/19/2010	
1		1	RE15-10-8031	R	2/19/2010	
1		1	RE15-10-8032	R	2/19/2010	
1		1	RE15-10-8067	R	2/19/2010	

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE15-10-7901	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
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		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8087	R	2/19/2010	
	HASL-300:AM-241	1	RE15-10-7901	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
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		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8087	R	2/19/2010	
	HASL-300:ISOPU	1	RE15-10-7901	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
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		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8087	R	2/19/2010	
		1	RE15-10-7901	R	2/19/2010	
		1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
		1	RE15-10-8030	R	2/19/2010	
		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8087	R	2/	

Wednesday, February 24, 2010

Page 3 of 3

REQUEST NUMBER: 10-2073

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300/ISOU	1	RE15-10-7902	R	2/19/2010	
		1	RE15-10-8027	R	2/19/2010	
		1	RE15-10-8028	R	2/19/2010	
		1	RE15-10-8029	R	2/19/2010	
		1	RE15-10-8030	R	2/19/2010	
		1	RE15-10-8031	R	2/19/2010	
		1	RE15-10-8032	R	2/19/2010	
		1	RE15-10-8067	R	2/19/2010	

Final Page of REQUEST NUMBER 10-2073



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL			SDG/ARCO/Work Order: 10-2073		
Received By: Greg Tyler			Date Received: 2/25/10		
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*: 80cpm		
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 $0 \leq 6$ deg. C?	X			Preservation Method: ice bags blue ice dry ice none other 0-6C 12-14C
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH:
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 1919 0C 7209 7850 1882 2C 7209 7850 1941 3C 7209 7850 2010 5C 7209 7850 2098 13C
 7209 7850 2146 1C 7209 7850 2076 2C 7209 7850 2043 3C 7209 7850 2157 6C 7209 7850 1908 14C
 7209 7850 1952 1C 7209 7850 2065 2C 7209 7850 2238 3C 7209 7850 1871 12C
 7209 7850 2054 1C 7209 7850 1996 3C 7209 7850 2124 3C 7209 7850 1893 12C
 7209 7850 1963 1C 7209 7850 2135 3C 7209 7850 1974 4C 7209 7850 1849 12C
 7209 7850 2021 2C 7209 7850 2032 3C 7209 7850 1985 4C 7209 7850 1838 13C
 7209 7850 2113 2C 7209 7850 2249 3C 7209 7850 2000 4C 7209 7850 1860 13C
 7209 7850 2102 2C 7209 7850 2168 3C 7209 7850 2087 4C 7209 7850 1850 13C

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87645
UNITED STATES US

SHIP DATE: 24FEB11
ACTWGT: 49.0 LB M
CAD: 0014176/CAFE
BILL SENDER

ORIGIN ID: SAFA (505) 865-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87645
UNITED STATES US

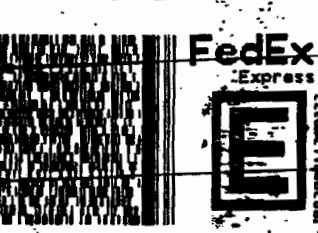
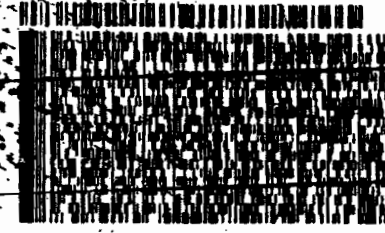
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VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

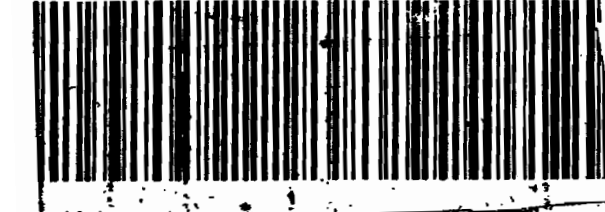
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(843) 556-8171
REF: 6B010AMR3A0532VA00

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGWMO



2 of 2
THU - 25FEB
PRIORITY OVERNIGHT
7209 7850 1919
7209 7850 1908 0201
X CHSA

2 of 2
THU - 25FEB A1
PRIORITY OVERNIGHT
7209 7850 2146
7209 7850 2135 0201
XX CHSA
29407
SC-US
CHS



VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD
CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A05529E00

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD
CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGWMO



2 of 3
THU - 25FEB A1
PRIORITY OVERNIGHT
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7209 7850 1941 0201
X CHSA
29407
SC-US
CHS

1 of 2
THU - 25FEB A1
PRIORITY OVERNIGHT
7209 7850 2054
MASTER NM
XX CHSA
29407
SC-US
CHS



SIN ID: SAFA (605) 665-9968
JOYLENE VALDEZ
ALAMOS NATL LAB
3 BLDG 1237 DPU 03

ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

LERIE DAVIS
GENERAL ENGINEERING LAB
40 SAVAGE RD

CHARLESTON SC 29407

(843) 656-8171
REF: 6B010AMR3A05529E00

0014176/CAFE2450



3 of 3
7209 7850 1963

7209 7850 1941 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

CHSA

29407
SC-US
CHS



ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

LERIE DAVIS
GENERAL ENGINEERING LAB
40 SAVAGE RD

CHARLESTON SC 29407

(843) 656-8171
REF: 6B010AMR1A015AGWMO

0014176/CAFE2450



1 of 2
7209 7850 2113

MASTER NH

THU - 25FEB A1
PRIORITY OVERNIGHT

CHSA

29407
SC-US
CHS



ORIGIN ID: SAFA (605) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
1A00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 656-8171
REF: 6B010AMR2A0515BYDO

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TRKH 7209 7850 2021

THU - 25FEB A1
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XX CHSA

29407
SC-US
CHS

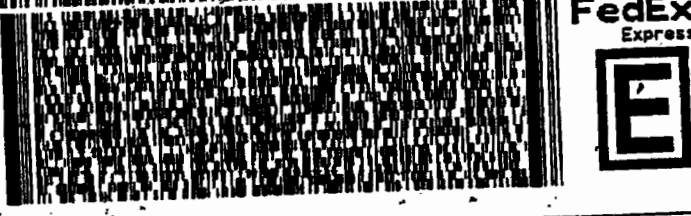


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GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 656-8171
REF: 6B010AMR1A015AGWMO

0014176/CAFE2450



2 of 2
MPS# 7209 7850 2102

Matr# 7209 7850 2098 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



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: 24FEB10
ACTWGT: 55.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

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

ACTWGT: 55.0 LB MAN
CAD: 0014176/CAFE2450

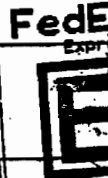
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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGM10



2 of 3
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Mstr# 7209 7850 1871 [0201]

XX CHSA

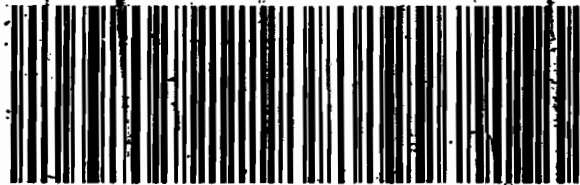


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PRIORITY OVERNIGHT

29407

1 of 2
TRK# 7209 7850 2076
MASTER

XX CHSA



THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24FEB10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGM10



2 of 2
NPS# 7209 7850 2065
Mstr# 7209 7850 2054 [0201]

XX CHSA

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

2 of 2
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Mstr# 7209 7850 1985 [0201]

XX CHSA

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

ORIGIN ID: SAFA (505) 885-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

SHIP DATE: 24FEB10
ACTWGT: 51.0 LB MAN
CAO: 0014176/CAFE2450

ORIGIN ID: SAFA (505) 885-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

SHIP DATE: 24FEB10
ACTWGT: 51.0 LB MAN
CAO: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 68010AMR1A015AGWMO

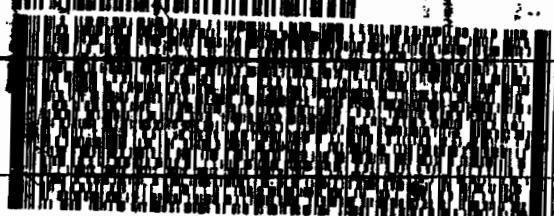
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(843) 556-8171

REF: 68010AMR3A0223KY10



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Express

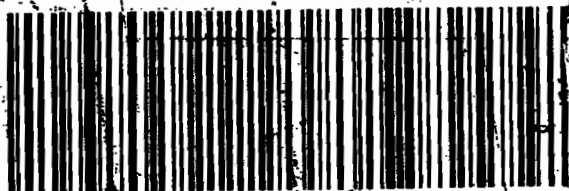


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NN MASTER NN

THU - 25FEB
PRIORITY OVERNIGHT

29

XX CHSA



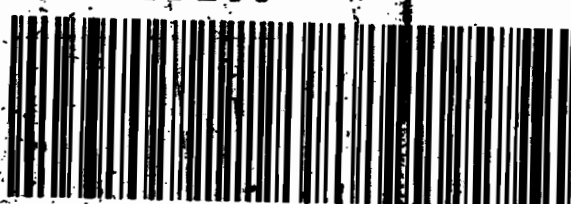
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THU - 25FEB A1
PRIORITY OVERNIGHT

29

XX CHSA

29407
SC-US
CHS



JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

ACTWGT: 50.0 LB MAN
CAO: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 68010AMR1A015AGWMO

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(843) 556-8171

REF: 68010AAREW0140T500



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2 of 2
MPS# 7209 7850 2249
0263

THU - 25FEB A1
PRIORITY OVERNIGHT

Matr# 7209 7850 2238 0201

29407
SC-US
CHS

XX CHSA



TRKH 7209 7850 2168
0201

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA



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: 24FEB10
ACTWGT: 52.0 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: 24FEB10
ACTWGT: 55.0 LB MAN
CAD: 0014176/CAFE2450

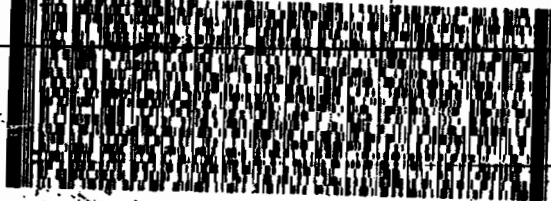
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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A05529E00

3c

0014176/CAFE2450



FedEx

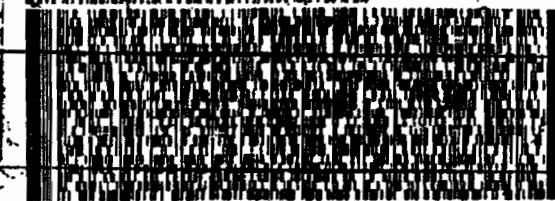


TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0223KY10

3c

0014176/CAFE2450



FedEx

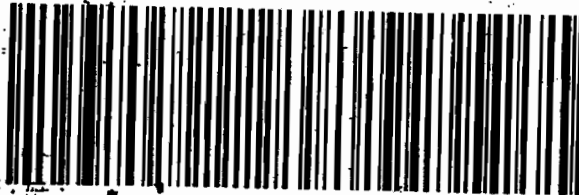


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0201
NM MASTER NM

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

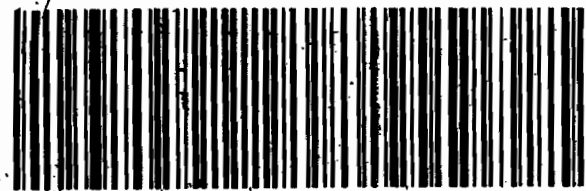


2 of 2
MPSH 7209 7850 2043
0263
MatrH 7209 7850 2032 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA



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

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 40.0 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: 24FEB10
ACTWGT: 57.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGWMO

3

0014176/CAFE2450



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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGWMO

3c

0014176/CAFE2450



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1 of 2
TRKH 7209 7850 2238
0201
NM MASTER NM

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

Page 14 of 683

0014176/CAFE2450



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2 of 2
MPSH 7209 7850 2124
0263
MatrH 7209 7850 2113 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

0014176/CAFE2450



FedEx



ORIGIN ID: 5AFA (505) 665-9988

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 83

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP D-
ACTWGT
CAD: 01

BILL SENDER

ATE: 24FEB10
49.8 LB MAN
314176/CAFE2450

IDER

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 83

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 51.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A05529E00

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR2A0515BYD0

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TRK# 7209 7850 1974

THU -
PRIORITY

25FEB A1
OVERNIGHT

XX CHSA

29407
SC-US
CHS

TRK# 7209 7850 1985

MM MASTER MM

THU - 25FEB A1
PRIORITY OVERNIGHT

XX 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: 6B010AMR2A0515BYD0

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 83

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 55.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A015AGWMO

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Express



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Express



TRK# 7209 7850 2000

MM MASTER MM

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

TRK# 7209 7850 2087

MM MASTER MM

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

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: 24FEB10
ACTWGT: 62.0 LB MAN
CAD: 0014176/CAFE24

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: 24FEB10
ACTWGT: 46.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

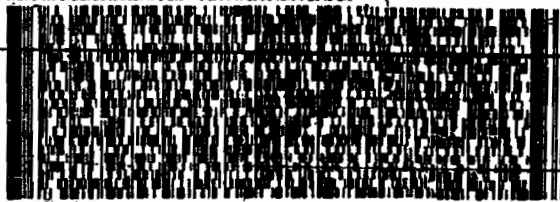
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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
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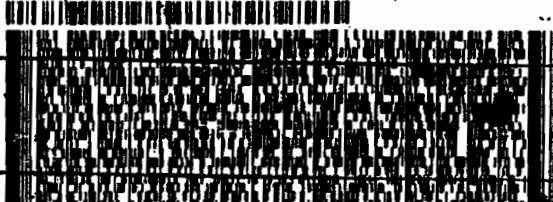
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(843) 556-8171

REF: 6B010AMEBL11570000



FedEx



FedEx

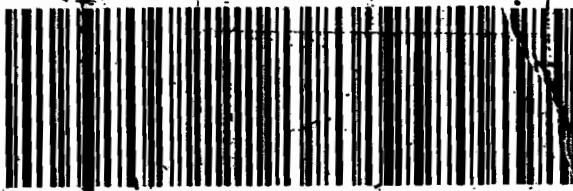
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2 of 2
MPS# 0263 7209 7850 2010
Matr# 7209 7850 2000 0201

THU - 25FEB
PRIORITY OVERNIGHT

XX CHSA



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

CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

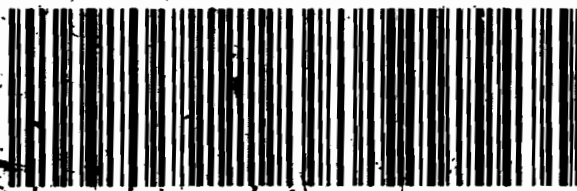
(843) 556-8171

REF: 6B010AMR3A0532VA00

TRK# 0201 7209 7850 2157

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA



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

CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A0532VA00



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Express



1 of 3
TRK# 0201 7209 7850 1871
MASTER

THU - 25FEB
PRIORITY OVERNIGHT

XX CHSA



294

3 of 3
MPS# 0263 7209 7850 1893
Matr# 7209 7850 1871 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

XX CHSA



29407

SC-US

CHS

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: 24FEB10
ACTNGT: 56.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
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BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

12c

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

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3 of 3
MPS# 7209 7850 1849
0263
Matr# 7209 7850 1827 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

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2 of 3
MPS# 7209 7850 1838
0263
Matr# 7209 7850 1827 0201

THU - 25FEB A1
PRIORITY OVERNIGHT

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SC-US
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TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

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Express



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2 of 2
MPS# 7209 7850 1860
0263
Matr# 7209 7850 1850 0201

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1 of 2
TRKH 7209 7850 1850
0201
NN MASTER NN

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PRIORITY OVERNIGHT

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SC-US
CHS

XX CHSA

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: 24FEB10
ACTNGT: 55.0 LB: MAN
CAD: 0014176/CAFE2450

BILL: SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR1A015AGWMO

13C



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Express

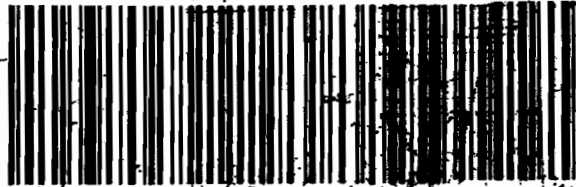


1 of 2
TRK# 7209 7850 2098
0201
MM MASTER MM

THU - 25FEB A1
PRIORITY OVERNIGHT

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SC-US
CHS

XX CHSA



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: 24FEB10
ACTNGT: 62.0 LB: MAN
CAD: 0014176/CAFE2450

BILL: SENDER

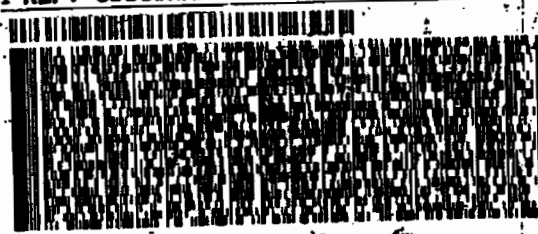
TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A0532VA00

14C



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1 of 2
TRK# 7209 7850 1908
0201
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PRIORITY OVERNIGHT

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CHS

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Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier Explanation

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

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-2073**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 959854
Prep Batch Number: 958215

Sample ID	Client ID
248030001	RE15-10-7902
248030002	RE15-10-7901
248030003	RE15-10-8027
248030004	RE15-10-8028
248030005	RE15-10-8030
248030006	RE15-10-8031
248030007	RE15-10-8029
248030008	RE15-10-8032
248030009	RE15-10-8067
1202058731	Method Blank (MB)
1202058732	248030001(RE15-10-7902) Sample Duplicate (DUP)
1202058733	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 1202058731 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248030001 (RE15-10-7902). The QC was from LANL work order 248030.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

Samples 248030001 (RE15-10-7902) and 248030009 (RE15-10-8067) were given additional clean-up steps and recounted in order to remove suspected interferences.

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The 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:	959856
Prep Batch Number:	958215

Sample ID	Client ID
248030001	RE15-10-7902
248030002	RE15-10-7901
248030003	RE15-10-8027
248030004	RE15-10-8028
248030005	RE15-10-8030
248030006	RE15-10-8031
248030007	RE15-10-8029
248030008	RE15-10-8032
248030009	RE15-10-8067
1202058734	Method Blank (MB)
1202058735	248030001(RE15-10-7902) Sample Duplicate (DUP)
1202058736	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 1202058734 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248030001 (RE15-10-7902). The QC was from LANL work order 248030.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Pu-238 blank, 1202058734 (MB), result is greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population. Sample, 248030004 (RE15-10-8028), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements. Sample 1202058735 (RE15-10-7902) did not meet the client's yield requirement. However, there are 400 tracer counts, GEL's standard tracer yield requirements are met, and the client's detection limits are met.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	959857
Prep Batch Number:	958215

Sample ID	Client ID
248030001	RE15-10-7902
248030002	RE15-10-7901
248030003	RE15-10-8027
248030004	RE15-10-8028
248030005	RE15-10-8030
248030006	RE15-10-8031
248030007	RE15-10-8029
248030008	RE15-10-8032
248030009	RE15-10-8067
1202058737	Method Blank (MB)
1202058738	248030001(RE15-10-7902) Sample Duplicate (DUP)
1202058739	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 1202058737 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248030001 (RE15-10-7902). The QC was from LANL work order 248030.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The U-238 blank result is greater than 1.65 times the CSU but less than the MDC.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

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

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

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

Manual Integration

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: 958221
Prep Batch Number: 958215

Sample ID	Client ID
248030001	RE15-10-7902
248030002	RE15-10-7901
248030003	RE15-10-8027
248030004	RE15-10-8028
248030005	RE15-10-8030
248030006	RE15-10-8031
248030007	RE15-10-8029
248030008	RE15-10-8032
248030009	RE15-10-8067
1202054956	Method Blank (MB)
1202054957	248030006(RE15-10-8031) Sample Duplicate (DUP)
1202054958	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, August 2009, October 2009, November 2009, December 2009, January 2010 and February 2010.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 248030006 (RE15-10-8031). The QC was from LANL work order 248030.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The method blank 1202054956 (MB) result is greater than 1.65 times the CSU but less than the MDC for Pb-212, K-40, and Sr-85.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following DER was generated for this SDG:

DER 803907 was generated due to Other. 1. Sample 248030006 and duplicate 1202054957 K-40 did not meet the relative error ratio. All other nuclides met the duplication requirements. 1. Reporting results.

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The method blank 1202054956 (MB) result is greater than the decision level but less than the MDC for Pb-212 and Sr-85.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to high peak-width.	Cadmium-109	248030003	RE15-10-8027
UI	Data rejected due to interference.	Bismuth-211	248030001	RE15-10-7902
			248030002	RE15-10-7901
			248030003	RE15-10-8027
			248030004	RE15-10-8028

			248030005	RE15-10-8030
			248030006	RE15-10-8031
			248030007	RE15-10-8029
			248030008	RE15-10-8032
			248030009	RE15-10-8067
			1202054957	RE15-10-8031(248030006DUP)
		Cadmium-109	248030001	RE15-10-7902
			248030002	RE15-10-7901
			248030004	RE15-10-8028
			248030005	RE15-10-8030
			248030006	RE15-10-8031
			248030007	RE15-10-8029
			248030008	RE15-10-8032
			248030009	RE15-10-8067
			1202054957	RE15-10-8031(248030006DUP)
		Mercury-203	248030008	RE15-10-8032
		Radium-224	248030002	RE15-10-7901
			248030003	RE15-10-8027
			248030004	RE15-10-8028
			248030005	RE15-10-8030
			248030006	RE15-10-8031
			248030007	RE15-10-8029
			248030008	RE15-10-8032
			248030009	RE15-10-8067
			1202054957	RE15-10-8031(248030006DUP)
UI	Data rejected due to low abundance.	Cesium-134	248030001	RE15-10-7902
			248030003	RE15-10-8027
			248030004	RE15-10-8028
			248030005	RE15-10-8030
			248030009	RE15-10-8067
		Radium-224	248030001	RE15-10-7902
		Strontium-85	248030001	RE15-10-7902

248030002	RE15-10-7901
248030003	RE15-10-8027
248030004	RE15-10-8028
248030008	RE15-10-8032
248030009	RE15-10-8067

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 964052

Sample ID	Client ID
248030001	RE15-10-7902
248030002	RE15-10-7901
248030003	RE15-10-8027
248030004	RE15-10-8028
248030005	RE15-10-8030
248030006	RE15-10-8031
248030007	RE15-10-8029
248030008	RE15-10-8032
248030009	RE15-10-8067
1202068207	Method Blank (MB)
1202068208	248112006(RE15-10-8394) Sample Duplicate (DUP)
1202068209	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: 248112006 (RE15-10-8394). The QC was from LANL work order 248112.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

Samples 1202068207 (MB), 1202068208 (RE15-10-8394), 248030001 (RE15-10-7902), 248030003 (RE15-10-8027), 248030004 (RE15-10-8028), 248030007 (RE15-10-8029), 248030008 (RE15-10-8032) and 248030009 (RE15-10-8067) were recounted due to high MDAs.

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

Samples 248030008 (RE15-10-8032) met the required detection limit by rounding.

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:

Theresa J. Austin 3/23/2010

Reviewer/Date: _____

DATA EXCEPTION REPORT

Mo.Day Yr. 14-MAR-10	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process			
Instrument Type: GAMMA SPECTROMETER	Test / Method: DOE HASL 300, 4.5.2.3/Ga-01-R	Matrix Type: Solid	Client Code: LANL			
Batch ID: 958221	Sample Numbers: See Below					
Potentially affected work order(s)(SDG): 248030(10-2073)						
Application Issues: Other						
Specification and Requirements Exception Description:		DER Disposition:				
1. Sample 248030006 and duplicate 1202054957 K-40 did not meet the relative error ratio. All other nuclides met the duplication requirements.		1. Reporting results.				

Originator's Name:

Shenise Euland 16-MAR-10

Data Validator/Group Leader:

Kenshalla Oston 17-MAR-10

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

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

Client SDG: 10-2073 GEL Work Order: 248030

The Qualifiers in this report are defined as follows:

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

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

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

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

Reviewed by



GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-7902
Sample ID: 248030001
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 15.6%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00423	0.0316	+/-0.00816	0.050	pCi/g		CXM2	03/11/10	1619	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.011	0.0202	+/-0.00775	0.050	pCi/g		CXM2	03/09/10	2047	959856	3
Plutonium-239/240		0.0191	0.0171	+/-0.00597	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.64	0.124	+/-0.146	0.100	pCi/g		CXM2	03/11/10	2106	959857	4
Uranium-235/236	U	0.0545	0.0759	+/-0.0193	0.100	pCi/g						
Uranium-238		2.32	0.0874	+/-0.195	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.122	0.398	+/-0.122	0.200	pCi/g		MXR1	03/13/10	1430	958221	5
Bismuth-211	UI	4.06	0.322	+/-0.287		pCi/g						
Bismuth-214		1.35	0.0949	+/-0.102	0.200	pCi/g						
Cadmium-109	UI	3.75	1.41	+/-0.581		pCi/g						
Cerium-139	U	-0.0203	0.0502	+/-0.0156	0.050	pCi/g						
Cesium-134	UI	0.130	0.0969	+/-0.038	0.100	pCi/g						
Cesium-137		0.183	0.0647	+/-0.0349	0.100	pCi/g						
Cobalt-60	U	-0.0154	0.0719	+/-0.0224	0.100	pCi/g						
Europium-152	U	0.0323	0.167	+/-0.0481	0.200	pCi/g						
Lanthanum-140	U	-0.0518	0.223	+/-0.0719		pCi/g						
Lead-212		1.73	0.165	+/-0.098	0.100	pCi/g						
Lead-214		1.47	0.117	+/-0.112	0.100	pCi/g						
Mercury-203	U	0.030	0.0773	+/-0.0217	0.100	pCi/g						
Potassium-40		27.3	0.591	+/-1.34	1.00	pCi/g						
Radium-223	U	-0.389	1.06	+/-0.369		pCi/g						
Radium-224	UI	6.98	1.89	+/-0.548		pCi/g						
Radium-226		1.35	0.0949	+/-0.102		pCi/g						
Radium-228		1.76	0.224	+/-0.203	0.500	pCi/g						
Ruthenium-106	U	0.0563	0.563	+/-0.172	0.800	pCi/g						
Sodium-22	U	0.0153	0.085	+/-0.0247	0.080	pCi/g						
Strontium-85	UI	0.0863	0.0826	+/-0.0224		pCi/g						

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7902
248030001

Project: LANL01004
Client ID: LANL010

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

GAMMA SPEC "Dry Weight Corrected"

Thallium-208		0.586	0.0541	+/-0.040	0.080	pCi/g						
Thorium-227	U	0.0272	0.424	+/-0.122		pCi/g						
Thorium-231	U	-0.389	1.06	+/-0.369		pCi/g						
Thorium-234		4.37	3.08	+/-1.45	2.00	pCi/g						
Tin-113	U	-0.00763	0.0753	+/-0.0227	0.100	pCi/g						
Uranium-235	U	0.194	0.354	+/-0.102	0.500	pCi/g						
Yttrium-88	U	-0.0164	0.035	+/-0.0135	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium		258	246	+/-79.5	250	pCi/L	KXK2	03/19/10	0734	964052	6	
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The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	74.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	93.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7902
Sample ID: 248030001
Project: LANL01004
Client ID: LANL010

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7901
Sample ID: 248030002
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 34.7%

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	0.0165	0.025	+/-0.0108	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00396	0.0231	+/-0.00326	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240		0.0317	0.0195	+/-0.00782	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.43	0.137	+/-0.355	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.253	0.0839	+/-0.044	0.100	pCi/g						
Uranium-238		9.08	0.0965	+/-0.695	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0353	0.117	+/-0.0396	0.200	pCi/g		MXR1	03/13/10	1430	958221	4
Bismuth-211	UI	4.38	0.361	+/-0.288		pCi/g						
Bismuth-214		1.21	0.127	+/-0.0972	0.200	pCi/g						
Cadmium-109	UI	4.03	1.38	+/-0.417		pCi/g						
Cerium-139	U	-0.0268	0.0525	+/-0.017	0.050	pCi/g						
Cesium-134	U	-0.0194	0.0971	+/-0.030	0.100	pCi/g						
Cesium-137		0.673	0.0833	+/-0.0545	0.100	pCi/g						
Cobalt-60	U	0.00627	0.0714	+/-0.022	0.100	pCi/g						
Europium-152	U	0.033	0.183	+/-0.0665	0.200	pCi/g						
Lanthanum-140	U	-0.0473	0.216	+/-0.0691		pCi/g						
Lead-212		1.74	0.101	+/-0.111	0.100	pCi/g						
Lead-214		1.59	0.135	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.0474	0.084	+/-0.0245	0.100	pCi/g						
Potassium-40		23.9	0.529	+/-1.09	1.00	pCi/g						
Radium-223	U	0.0506	1.20	+/-0.419		pCi/g						
Radium-224	UI	4.74	1.08	+/-0.642		pCi/g						
Radium-226		1.21	0.127	+/-0.0972		pCi/g						
Radium-228		1.57	0.273	+/-0.225	0.500	pCi/g						
Ruthenium-106	U	-0.165	0.656	+/-0.211	0.800	pCi/g						
Sodium-22	U	-0.0274	0.0727	+/-0.0241	0.080	pCi/g						
Strontium-85	UI	0.0988	0.083	+/-0.0258		pCi/g						
Thallium-208		0.480	0.0672	+/-0.051	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7901
Sample ID: 248030002

Project: LANL01004
Client ID: LANL010

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

GAMMA SPEC "Dry Weight Corrected"

Thorium-227	U	0.299	0.487	+/-0.142		pCi/g						
Thorium-231	U	0.0506	1.20	+/-0.419		pCi/g						
Thorium-234		10.1	1.15	+/-1.14	2.00	pCi/g						
Tin-113	U	-0.0135	0.0911	+/-0.0282	0.100	pCi/g						
Uranium-235	U	0.278	0.350	+/-0.138	0.500	pCi/g						
Yttrium-88	U	0.0159	0.0743	+/-0.0216	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium		517	301	+/-108	250	pCi/L		KXK2	03/18/10	1659	964052	5
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The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	67.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7901
Sample ID: 248030002

Project: LANL01004
Client ID: LANL010

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

M M if above MDC and less than LLD

M Matrix Related Failure

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

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

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

UI Gamma Spectroscopy--Uncertain identification

UJ Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

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

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8027
Sample ID: 248030003
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 23.8%

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	0.00942	0.0246	+/-0.0061	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0126	0.0209	+/-0.00448	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.00987	0.0176	+/-0.00433	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.79	0.099	+/-0.149	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.130	0.0605	+/-0.0255	0.100	pCi/g						
Uranium-238		4.73	0.0696	+/-0.358	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0514	0.331	+/-0.106	0.200	pCi/g		MXR1	03/13/10	1431	958221	4
Bismuth-211	UI	4.38	0.370	+/-0.306		pCi/g						
Bismuth-214		1.14	0.130	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	6.77	1.57	+/-0.841		pCi/g						
Cerium-139	U	0.0115	0.0565	+/-0.0168	0.050	pCi/g						
Cesium-134	UI	0.160	0.102	+/-0.0307	0.100	pCi/g						
Cesium-137		0.240	0.072	+/-0.0422	0.100	pCi/g						
Cobalt-60	U	-0.0044	0.0737	+/-0.0227	0.100	pCi/g						
Europium-152	U	0.00411	0.179	+/-0.0606	0.200	pCi/g						
Lanthanum-140	U	-0.143	0.191	+/-0.0689		pCi/g						
Lead-212		1.91	0.104	+/-0.116	0.100	pCi/g						
Lead-214		1.59	0.131	+/-0.119	0.100	pCi/g						
Mercury-203	U	0.0557	0.0879	+/-0.0244	0.100	pCi/g						
Potassium-40		29.1	0.244	+/-1.65	1.00	pCi/g						
Radium-223	U	-0.152	1.26	+/-0.431		pCi/g						
Radium-224	UI	5.24	1.11	+/-0.749		pCi/g						
Radium-226		1.14	0.130	+/-0.106		pCi/g						
Radium-228		1.62	0.283	+/-0.190	0.500	pCi/g						
Ruthenium-106	U	0.266	0.651	+/-0.183	0.800	pCi/g						
Sodium-22	U	0.00835	0.0809	+/-0.0241	0.080	pCi/g						
Strontium-85	UI	0.0887	0.0873	+/-0.0257		pCi/g						
Thallium-208		0.482	0.0637	+/-0.0491	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8027
Sample ID: 248030003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.23	0.446	+/-0.136		pCi/g						
Thorium-231	U	-0.152	1.26	+/-0.431		pCi/g						
Thorium-234		3.47	2.64	+/-1.30	2.00	pCi/g						
Tin-113	U	0.0223	0.0993	+/-0.0292	0.100	pCi/g						
Uranium-235	U	0.160	0.377	+/-0.111	0.500	pCi/g						
Yttrium-88	U	0.022	0.0669	+/-0.0181	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		271	241	+/-78.7	250	pCi/L		KXK2	03/19/10	0842	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	99.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	100	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8027
Sample ID: 248030003

Project: LANL01004
Client ID: LANL010

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8028
Sample ID: 248030004
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 10.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00471	0.0282	+/-0.00565	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00407	0.0211	+/-0.00357	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.00248	0.0178	+/-0.0032	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.890	0.0988	+/-0.0839	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.0693	0.0604	+/-0.018	0.100	pCi/g						
Uranium-238		0.992	0.0695	+/-0.0915	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.128	0.463	+/-0.152	0.200	pCi/g		MXR1	03/13/10	1431	958221	4
Bismuth-211	UI	3.83	0.382	+/-0.321		pCi/g						
Bismuth-214		1.16	0.118	+/-0.0971	0.200	pCi/g						
Cadmium-109	UI	2.32	1.77	+/-0.699		pCi/g						
Cerium-139	U	-0.0105	0.0628	+/-0.0187	0.050	pCi/g						
Cesium-134	UI	0.129	0.101	+/-0.0392	0.100	pCi/g						
Cesium-137	U	-0.0117	0.068	+/-0.0202	0.100	pCi/g						
Cobalt-60	U	0.00699	0.0731	+/-0.0221	0.100	pCi/g						
Europium-152	U	-0.0259	0.190	+/-0.0686	0.200	pCi/g						
Lanthanum-140	U	-0.192	0.224	+/-0.0805		pCi/g						
Lead-212		1.96	0.117	+/-0.136	0.100	pCi/g						
Lead-214		1.39	0.147	+/-0.123	0.100	pCi/g						
Mercury-203	U	0.0553	0.0891	+/-0.0245	0.100	pCi/g						
Potassium-40		26.8	0.590	+/-1.59	1.00	pCi/g						
Radium-223	U	-0.612	1.35	+/-0.411		pCi/g						
Radium-224	UI	3.64	1.25	+/-0.613		pCi/g						
Radium-226		1.16	0.118	+/-0.0971		pCi/g						
Radium-228		2.05	0.248	+/-0.219	0.500	pCi/g						
Ruthenium-106	U	-0.153	0.599	+/-0.188	0.800	pCi/g						
Sodium-22	U	-0.0548	0.0729	+/-0.0255	0.080	pCi/g						
Strontium-85	UI	0.104	0.092	+/-0.0278		pCi/g						
Thallium-208		0.560	0.068	+/-0.0502	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8028
Sample ID: 248030004

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	-0.216	0.487	+/-0.145		pCi/g						
Thorium-231	U	-0.612	1.35	+/-0.411		pCi/g						
Thorium-234		4.33	3.56	+/-1.85	2.00	pCi/g						
Tin-113	U	0.000501	0.0958	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.0853	0.422	+/-0.123	0.500	pCi/g						
Yttrium-88	U	-0.0257	0.0474	+/-0.0174	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	227	238	+/-76.3	250	pCi/L		KXK2	03/19/10	0951	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	107 *	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8028
Sample ID: 248030004

Project: LANL01004
Client ID: LANL010

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

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8030
Sample ID: 248030005
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 8.78%

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	0.012	0.028	+/-0.00773	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00237	0.0238	+/-0.00444	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.0143	0.0202	+/-0.00735	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.75	0.101	+/-0.219	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.160	0.0619	+/-0.0289	0.100	pCi/g						
Uranium-238		5.30	0.0712	+/-0.399	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00349	0.217	+/-0.0691	0.200	pCi/g		MXR1	03/13/10	1432	958221	4
Bismuth-211	UI	3.75	0.259	+/-0.281		pCi/g						
Bismuth-214		1.21	0.0879	+/-0.0956	0.200	pCi/g						
Cadmium-109	UI	3.57	0.986	+/-0.394		pCi/g						
Cerium-139	U	-0.0142	0.0424	+/-0.0123	0.050	pCi/g						
Cesium-134	UI	0.138	0.0836	+/-0.0294	0.100	pCi/g						
Cesium-137		0.352	0.0502	+/-0.0385	0.100	pCi/g						
Cobalt-60	U	-0.00188	0.0545	+/-0.0168	0.100	pCi/g						
Europium-152	U	0.0148	0.133	+/-0.0371	0.200	pCi/g						
Lanthanum-140	U	0.0245	0.167	+/-0.0492		pCi/g						
Lead-212		1.48	0.0785	+/-0.0999	0.100	pCi/g						
Lead-214		1.36	0.0942	+/-0.109	0.100	pCi/g						
Mercury-203	U	-0.000875	0.0589	+/-0.0175	0.100	pCi/g						
Potassium-40		28.2	0.454	+/-1.46	1.00	pCi/g						
Radium-223	U	-0.151	0.886	+/-0.307		pCi/g						
Radium-224	UI	3.89	0.841	+/-0.484		pCi/g						
Radium-226		1.21	0.0879	+/-0.0956		pCi/g						
Radium-228		1.64	0.167	+/-0.179	0.500	pCi/g						
Ruthenium-106	U	0.248	0.462	+/-0.128	0.800	pCi/g						
Sodium-22	U	-0.0176	0.0573	+/-0.0184	0.080	pCi/g						
Strontium-85	U	0.0446	0.0622	+/-0.0189		pCi/g						
Thallium-208		0.429	0.0523	+/-0.0374	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8030
Sample ID: 248030005

Project: LANL01004
Client ID: LANL010

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

GAMMA SPEC "Dry Weight Corrected"

Thorium-227	U	-0.101	0.340	+/-0.103		pCi/g						
Thorium-231	U	-0.151	0.886	+/-0.307		pCi/g						
Thorium-234		5.75	1.78	+/-1.12	2.00	pCi/g						
Tin-113	U	0.00714	0.0666	+/-0.0188	0.100	pCi/g						
Uranium-235		0.326	0.279	+/-0.131	0.500	pCi/g						
Yttrium-88	U	-0.0158	0.034	+/-0.0122	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium		3080	295	+/-266	250	pCi/L		KXK2	03/18/10	1908	964052	5
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The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	77.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

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

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

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

F Estimated Value

H Analytical holding time was exceeded

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8030
Sample ID: 248030005

Project: LANL01004
Client ID: LANL010

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

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8031
Sample ID: 248030006
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 20.2%

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	0.0182	0.0291	+/-0.00955	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0132	0.0287	+/-0.00722	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.0206	0.0242	+/-0.00756	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.03	0.105	+/-0.168	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236		0.190	0.0644	+/-0.0332	0.100	pCi/g						
Uranium-238		5.16	0.0741	+/-0.391	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0411	0.119	+/-0.0357	0.200	pCi/g		MXR1	03/13/10	1432	958221	4
Bismuth-211	UI	4.05	0.351	+/-0.298		pCi/g						
Bismuth-214		1.34	0.125	+/-0.126	0.200	pCi/g						
Cadmium-109	UI	4.14	1.04	+/-0.560		pCi/g						
Cerium-139	U	-0.0317	0.0528	+/-0.0163	0.050	pCi/g						
Cesium-134	U	0.0345	0.108	+/-0.0305	0.100	pCi/g						
Cesium-137		0.245	0.0726	+/-0.0552	0.100	pCi/g						
Cobalt-60	U	0.00441	0.0831	+/-0.0244	0.100	pCi/g						
Europium-152	U	-0.00129	0.179	+/-0.0588	0.200	pCi/g						
Lanthanum-140	U	-0.0652	0.245	+/-0.0797		pCi/g						
Lead-212		1.57	0.101	+/-0.099	0.100	pCi/g						
Lead-214		1.47	0.128	+/-0.115	0.100	pCi/g						
Mercury-203	U	-0.0136	0.077	+/-0.0223	0.100	pCi/g						
Potassium-40		24.4	0.713	+/-1.44	1.00	pCi/g						
Radium-223	U	0.732	1.27	+/-0.390		pCi/g						
Radium-224	UI	5.08	1.08	+/-0.627		pCi/g						
Radium-226		1.34	0.125	+/-0.126		pCi/g						
Radium-228		1.59	0.321	+/-0.197	0.500	pCi/g						
Ruthenium-106	U	0.177	0.669	+/-0.196	0.800	pCi/g						
Sodium-22	U	-0.0227	0.0893	+/-0.0291	0.080	pCi/g						
Strontium-85	U	0.0365	0.0807	+/-0.0257		pCi/g						
Thallium-208		0.549	0.0607	+/-0.0515	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8031
Sample ID: 248030006

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	-0.187	0.445	+/-0.142		pCi/g						
Thorium-231	U	0.732	1.27	+/-0.390		pCi/g						
Thorium-234		5.72	1.14	+/-0.813	2.00	pCi/g						
Tin-113	U	-0.0123	0.0822	+/-0.0245	0.100	pCi/g						
Uranium-235	U	0.255	0.375	+/-0.107	0.500	pCi/g						
Yttrium-88	U	-0.0175	0.0636	+/-0.0217	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		328	290	+/-96.3	250	pCi/L		KXK2	03/18/10	1951	964052	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	76.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.8	(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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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8031
Sample ID: 248030006

Project: LANL01004
Client ID: LANL010

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

M M if above MDC and less than LLD

M Matrix Related Failure

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

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

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

UI Gamma Spectroscopy--Uncertain identification

UJ Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

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

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8029
Sample ID: 248030007
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 23.4%

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	-0.000504	0.0253	+/-0.00787	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00439	0.0291	+/-0.00311	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.0219	0.0246	+/-0.00702	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.71	0.126	+/-0.151	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236	U	0.0664	0.0771	+/-0.0198	0.100	pCi/g						
Uranium-238		3.39	0.0888	+/-0.274	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0799	0.250	+/-0.077	0.200	pCi/g		MXR1	03/13/10	1433	958221	4
Bismuth-211	UI	3.10	0.307	+/-0.199		pCi/g						
Bismuth-214		0.900	0.108	+/-0.0749	0.200	pCi/g						
Cadmium-109	UI	1.55	1.30	+/-0.414		pCi/g						
Cerium-139	U	-0.00394	0.0504	+/-0.0147	0.050	pCi/g						
Cesium-134	U	0.0221	0.0701	+/-0.0202	0.100	pCi/g						
Cesium-137	U	0.0606	0.0692	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	-0.0141	0.0551	+/-0.0172	0.100	pCi/g						
Europium-152	U	-0.0261	0.143	+/-0.0507	0.200	pCi/g						
Lanthanum-140	U	-0.0148	0.184	+/-0.0595		pCi/g						
Lead-212		1.22	0.0869	+/-0.0652	0.100	pCi/g						
Lead-214		1.13	0.107	+/-0.0785	0.100	pCi/g						
Mercury-203	U	0.0513	0.0695	+/-0.0185	0.100	pCi/g						
Potassium-40		27.1	0.444	+/-1.27	1.00	pCi/g						
Radium-223	U	-0.359	0.969	+/-0.286		pCi/g						
Radium-224	UI	2.86	0.931	+/-0.468		pCi/g						
Radium-226		0.900	0.108	+/-0.0749		pCi/g						
Radium-228		1.48	0.206	+/-0.139	0.500	pCi/g						
Ruthenium-106	U	0.0309	0.472	+/-0.138	0.800	pCi/g						
Sodium-22	U	-0.00607	0.0556	+/-0.0169	0.080	pCi/g						
Strontium-85	U	0.0599	0.0713	+/-0.0216		pCi/g						
Thallium-208		0.445	0.0468	+/-0.0397	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8029
Sample ID: 248030007

Project: LANL01004
Client ID: LANL010

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

GAMMA SPEC "Dry Weight Corrected"

Thorium-227	U	-0.0772	0.398	+/-0.121		pCi/g						
Thorium-231	U	-0.359	0.969	+/-0.286		pCi/g						
Thorium-234		4.42	2.13	+/-1.04	2.00	pCi/g						
Tin-113	U	-0.00929	0.0665	+/-0.0194	0.100	pCi/g						
Uranium-235	U	0.270	0.334	+/-0.0944	0.500	pCi/g						
Yttrium-88	U	0.0135	0.0472	+/-0.0131	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	212	247	+/-78.3	250	pCi/L		KXK2	03/19/10	1100	964052	5
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The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	75.7	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

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

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

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

F Estimated Value

H Analytical holding time was exceeded

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8029
Sample ID: 248030007

Project: LANL01004
Client ID: LANL010

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

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8032
Sample ID: 248030008
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 12.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0039	0.0253	+/-0.00876	0.050	pCi/g		CXM2	03/09/10	2047	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0144	0.0239	+/-0.00514	0.050	pCi/g		CXM2	03/09/10	2047	959856	2
Plutonium-239/240	U	0.009	0.0202	+/-0.00405	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.943	0.110	+/-0.0903	0.100	pCi/g		CXM2	03/11/10	2106	959857	3
Uranium-235/236	U	0.053	0.0671	+/-0.0164	0.100	pCi/g						
Uranium-238		1.13	0.0773	+/-0.104	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0787	0.183	+/-0.0575	0.200	pCi/g		MXR1	03/13/10	1433	958221	4
Bismuth-211	UI	4.14	0.300	+/-0.312		pCi/g						
Bismuth-214		1.24	0.105	+/-0.109	0.200	pCi/g						
Cadmium-109	UI	3.69	1.11	+/-0.477		pCi/g						
Cerium-139	U	0.00803	0.0491	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0854	0.0881	+/-0.0236	0.100	pCi/g						
Cesium-137	U	0.00711	0.0653	+/-0.0189	0.100	pCi/g						
Cobalt-60	U	0.0168	0.060	+/-0.0176	0.100	pCi/g						
Europium-152	U	-0.00823	0.154	+/-0.0475	0.200	pCi/g						
Lanthanum-140	U	0.0579	0.200	+/-0.0562		pCi/g						
Lead-212		1.70	0.0869	+/-0.106	0.100	pCi/g						
Lead-214		1.50	0.109	+/-0.121	0.100	pCi/g						
Mercury-203	UI	0.0708	0.0647	+/-0.0289	0.100	pCi/g						
Potassium-40		27.3	0.509	+/-1.44	1.00	pCi/g						
Radium-223	U	0.321	0.965	+/-0.312		pCi/g						
Radium-224	UI	4.98	0.931	+/-0.741		pCi/g						
Radium-226		1.24	0.105	+/-0.109		pCi/g						
Radium-228		1.88	0.222	+/-0.190	0.500	pCi/g						
Ruthenium-106	U	-0.0447	0.475	+/-0.149	0.800	pCi/g						
Sodium-22	U	-0.00542	0.0713	+/-0.0224	0.080	pCi/g						
Strontium-85	UI	0.106	0.0775	+/-0.0227		pCi/g						
Thallium-208		0.486	0.0589	+/-0.0442	0.080	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8032
Sample ID: 248030008

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	0.159	0.418	+/-0.118		pCi/g						
Thorium-231	U	0.321	0.965	+/-0.312		pCi/g						
Thorium-234		2.77	1.65	+/-0.811	2.00	pCi/g						
Tin-113	U	0.000503	0.0717	+/-0.0214	0.100	pCi/g						
Uranium-235	U	0.00328	0.328	+/-0.0999	0.500	pCi/g						
Yttrium-88	U	0.0348	0.0628	+/-0.0161	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	187	252	+/-78.9	250	pCi/L		KXK2	03/19/10	1209	964052	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"	89.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.1	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8032
Sample ID: 248030008

Project: LANL01004
Client ID: LANL010

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

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8067
Sample ID: 248030009
Matrix: R
Collect Date: 19-FEB-10
Receive Date: 25-FEB-10
Collector: Client
Moisture: 17.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00399	0.029	+/-0.00872	0.050	pCi/g		CXM2	03/11/10	1619	959854	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00922	0.0232	+/-0.00448	0.050	pCi/g		CXM2	03/09/10	2047	959856	3
Plutonium-239/240		0.0262	0.0196	+/-0.00689	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.94	0.107	+/-0.162	0.100	pCi/g		CXM2	03/11/10	2106	959857	4
Uranium-235/236		0.145	0.0652	+/-0.0288	0.100	pCi/g						
Uranium-238		3.95	0.075	+/-0.305	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.106	0.229	+/-0.0711	0.200	pCi/g		MXR1	03/13/10	1434	958221	5
Bismuth-211	UI	3.95	0.322	+/-0.298		pCi/g						
Bismuth-214		1.34	0.105	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	3.12	1.24	+/-0.446		pCi/g						
Cerium-139	U	0.00117	0.0516	+/-0.015	0.050	pCi/g						
Cesium-134	UI	0.0786	0.0774	+/-0.0218	0.100	pCi/g						
Cesium-137		0.376	0.0519	+/-0.0331	0.100	pCi/g						
Cobalt-60	U	-0.0315	0.0529	+/-0.0182	0.100	pCi/g						
Europium-152	U	-0.0586	0.147	+/-0.0519	0.200	pCi/g						
Lanthanum-140	U	-0.123	0.193	+/-0.0637		pCi/g						
Lead-212		1.78	0.0891	+/-0.129	0.100	pCi/g						
Lead-214		1.43	0.115	+/-0.115	0.100	pCi/g						
Mercury-203	U	0.0196	0.0727	+/-0.0218	0.100	pCi/g						
Potassium-40		29.6	0.478	+/-1.53	1.00	pCi/g						
Radium-223	U	-0.317	0.963	+/-0.336		pCi/g						
Radium-224	UI	4.74	0.954	+/-0.657		pCi/g						
Radium-226		1.34	0.105	+/-0.106		pCi/g						
Radium-228		1.75	0.191	+/-0.186	0.500	pCi/g						
Ruthenium-106	U	-0.0642	0.496	+/-0.150	0.800	pCi/g						
Sodium-22	U	-0.0517	0.0594	+/-0.0199	0.080	pCi/g						
Strontium-85	UI	0.145	0.082	+/-0.0258		pCi/g						
Thallium-208		0.552	0.0534	+/-0.050	0.080	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8067
Sample ID: 248030009

Project: LANL01004
Client ID: LANL010

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

GAMMA SPEC "Dry Weight Corrected"

Thorium-227	U	0.0758	0.428	+/-0.128		pCi/g						
Thorium-231	U	-0.317	0.963	+/-0.336		pCi/g						
Thorium-234		5.51	1.83	+/-1.12	2.00	pCi/g						
Tin-113	U	-0.0128	0.0722	+/-0.0219	0.100	pCi/g						
Uranium-235	U	0.0825	0.346	+/-0.101	0.500	pCi/g						
Yttrium-88	U	-0.00251	0.0476	+/-0.017	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	222	240	+/-76.7	250	pCi/L	KXK2	03/19/10	1317	964052	6	
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The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	79.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8067
Sample ID: 248030009
Project: LANL01004
Client ID: LANL010

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

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

QUALITY CONTROL DATA

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QC Summary

Report Date: March 23, 2010

Page 1 of 6

Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Ms. Joylene Valdez
Workorder: 248030

Parmname	NOM	Sample	Qual	QC	Units	RER	REC %	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	959854										
QC1202058732	248030001	DUP									
Americium-241	U	0.00423	U	0.0104	pCi/g	0.234		(0-1)	CXM2	03/09/1008:07	
	TPU:	+/-0.00816		+/-0.00508							
	Yield:	74.3		78.9							
QC1202058733	LCS										
Americium-241	33.2			31.1	pCi/g		93.9	(75%-125%)		03/09/1008:07	
	TPU:			+/-2.48							
	Yield:			61.3							
QC1202058731	MB										
Americium-241	U	-0.0135			pCi/g					03/09/1008:07	
	TPU:	+/-0.00486									
	Yield:	79.3									
Batch	959856										
QC1202058735	248030001	DUP									
Plutonium-238	U	0.011	U	0.007	pCi/g	0.147		(0-1)	CXM2	03/09/1020:47	
	TPU:	+/-0.00775		+/-0.00577							
	Yield:	93.3		49.8							
Plutonium-239/240		0.0191	U	0.0123	pCi/g	0.281		(0-1)			
	TPU:	+/-0.00597		+/-0.00617							
	Yield:	93.3		49.8							
QC1202058736	LCS										
Plutonium-238				4.24	pCi/g			(75%-125%)			
	TPU:			+/-0.372							
	Yield:			97.8							
Plutonium-239/240	41.8			36.8	pCi/g		88.1	(75%-125%)			
	TPU:			+/-2.24							
	Yield:			97.8							
QC1202058734	MB										
Plutonium-238	U	0.00832			pCi/g						
	TPU:	+/-0.00458									
	Yield:	98.4									
Plutonium-239/240	U	0.00249			pCi/g						
	TPU:	+/-0.00309									
	Yield:	98.4									
Batch	959857										
QC1202058738	248030001	DUP									
Uranium-233/234		1.64		1.38	pCi/g	0.492		(0-1)	CXM2	03/11/1021:07	
	TPU:	+/-0.146		+/-0.123							
	Yield:	78.5		95.5							
Uranium-235/236	U	0.0545		0.0869	pCi/g	0.404		(0-1)			
	TPU:	+/-0.0193		+/-0.0209							
	Yield:	78.5		95.5							
Uranium-238		2.32		2.16	pCi/g	0.209		(0-1)			
	TPU:	+/-0.195		+/-0.180							

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QC Summary

Workorder: 248030

Page 2 of 6

Parmname		NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec												
Batch	959857											
			Yield:	78.5	95.5							
QC1202058739	LCS											
Uranium-233/234					5.52	pCi/g					03/11/1021:07	
			TPU:		+/-0.505							
			Yield:		102							
Uranium-235/236					0.424	pCi/g						
			TPU:		+/-0.094							
			Yield:		102							
Uranium-238		5.75			5.25	pCi/g		91.3	(75%-125%)			
			TPU:		+/-0.484							
			Yield:		102							
QC1202058737	MB											
Uranium-233/234				U	0.00319	pCi/g					03/11/1021:07	
			TPU:		+/-0.00422							
			Yield:		103							
Uranium-235/236				U	0.00432	pCi/g						
			TPU:		+/-0.00307							
			Yield:		103							
Uranium-238				U	0.0105	pCi/g						
			TPU:		+/-0.005							
			Yield:		103							
Rad Gamma Spec												
Batch	958221											
QC1202054957	248030006	DUP										
Americium-241			U	0.0411	U	0.00675	pCi/g	0.275		(0-1) MXR1	03/13/1014:35	
			TPU:	+/-0.0357		+/-0.0267						
Bismuth-211			UI	4.05	UI	4.45	pCi/g	0.327		(0-1)		
			TPU:	+/-0.298		+/-0.313						
Bismuth-214				1.34		1.47	pCi/g	0.255		(0-1)		
			TPU:	+/-0.126		+/-0.123						
Cadmium-109			UI	4.14	UI	3.93	pCi/g	0.107		(0-1)		
			TPU:	+/-0.560		+/-0.420						
Cerium-139			U	-0.0317	U	-0.0127	pCi/g	0.322		(0-1)		
			TPU:	+/-0.0163		+/-0.0132						
Cesium-134			U	0.0345	U	0.064	pCi/g	0.267		(0-1)		
			TPU:	+/-0.0305		+/-0.0248						
Cesium-137				0.245		0.327	pCi/g	0.416		(0-1)		
			TPU:	+/-0.0552		+/-0.0436						
Cobalt-60			U	0.00441	U	-0.0225	pCi/g	0.307		(0-1)		
			TPU:	+/-0.0244		+/-0.0194						
Europium-152			U	-0.00129	U	0.0208	pCi/g	0.109		(0-1)		
			TPU:	+/-0.0588		+/-0.0431						
Lanthanum-140			U	-0.0652	U	0.0928	pCi/g	0.555		(0-1)		
			TPU:	+/-0.0797		+/-0.0626						
Lead-212				1.57		1.55	pCi/g	0.0437		(0-1)		
			TPU:	+/-0.099		+/-0.107						
Lead-214				1.47		1.61	pCi/g	0.307		(0-1)		
			TPU:	+/-0.115		+/-0.122						
Mercury-203			U	-0.0136	U	0.00304	pCi/g	0.197		(0-1)		
			TPU:	+/-0.0223		+/-0.0201						

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QC Summary

Workorder: 248030

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	958221										
Potassium-40		24.4		25.8	pCi/g	1.20		(0-1)			
	TPU:	+/-1.44		+/-1.38							
Radium-223	U	0.732	U	0.120	pCi/g	0.429		(0-1)			
	TPU:	+/-0.390		+/-0.322							
Radium-224	UI	5.08	UI	3.78	pCi/g	0.595		(0-1)			
	TPU:	+/-0.627		+/-0.467							
Radium-226		1.34		1.47	pCi/g	0.255		(0-1)			
	TPU:	+/-0.126		+/-0.123							
Radium-228		1.59		1.89	pCi/g	0.379		(0-1)			
	TPU:	+/-0.197		+/-0.200							
Ruthenium-106	U	0.177	U	-0.202	pCi/g	0.552		(0-1)			
	TPU:	+/-0.196		+/-0.148							
Sodium-22	U	-0.0227	U	-0.0317	pCi/g	0.0861		(0-1)			
	TPU:	+/-0.0291		+/-0.0227							
Strontium-85	U	0.0365	U	0.0284	pCi/g	0.081		(0-1)			
	TPU:	+/-0.0257		+/-0.0239							
Thallium-208		0.549		0.579	pCi/g	0.142		(0-1)			
	TPU:	+/-0.0515		+/-0.0536							
Thorium-227	U	-0.187	U	-0.015	pCi/g	0.335		(0-1)			
	TPU:	+/-0.142		+/-0.115							
Thorium-231	U	0.732	U	0.120	pCi/g	0.429		(0-1)			
	TPU:	+/-0.390		+/-0.322							
Thorium-234		5.72		5.31	pCi/g	0.141		(0-1)			
	TPU:	+/-0.813		+/-0.643							
Tin-113	U	-0.0123	U	-0.0171	pCi/g	0.0522		(0-1)			
	TPU:	+/-0.0245		+/-0.0214							
Uranium-235	U	0.255	U	0.267	pCi/g	0.0269		(0-1)			
	TPU:	+/-0.107		+/-0.120							
Yttrium-88	U	-0.0175	U	0.0247	pCi/g	0.502		(0-1)			
	TPU:	+/-0.0217		+/-0.0202							
QC1202054958	LCS										
Americium-241	15.9			13.3	pCi/g		83.6	(75%-125%)		03/13/1014:40	
	TPU:			+/-0.766							
Bismuth-211				1.65	pCi/g						
	TPU:			+/-0.420							
Bismuth-214				0.672	pCi/g						
	TPU:			+/-0.142							
Cadmium-109				30.4	pCi/g						
	TPU:			+/-1.84							
Cerium-139			U	-0.00444	pCi/g						
	TPU:			+/-0.0237							
Cesium-134			U	-0.0536	pCi/g						
	TPU:			+/-0.0566							
Cesium-137	5.55			6.15	pCi/g		111	(75%-125%)			
	TPU:			+/-0.310							
Cobalt-60	6.34			6.73	pCi/g		106	(75%-125%)			
	TPU:			+/-0.346							
Europium-152			U	-0.165	pCi/g						
	TPU:			+/-0.120							
Lanthanum-140			U	-0.0315	pCi/g						
	TPU:			+/-0.0562							

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QC Summary

Workorder: 248030

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	958221								
Lead-212			1.11	pCi/g					
	TPU:		+/-0.131						
Lead-214			0.600	pCi/g					
	TPU:		+/-0.153						
Mercury-203		U	0.00306	pCi/g					
	TPU:		+/-0.0341						
Potassium-40		U	0.476	pCi/g					
	TPU:		+/-0.352						
Radium-223		U	-1.56	pCi/g					
	TPU:		+/-0.726						
Radium-224			5.14	pCi/g					
	TPU:		+/-0.786						
Radium-226			0.672	pCi/g					
	TPU:		+/-0.142						
Radium-228			1.64	pCi/g					
	TPU:		+/-0.308						
Ruthenium-106		U	0.379	pCi/g					
	TPU:		+/-0.361						
Sodium-22		U	-0.00147	pCi/g					
	TPU:		+/-0.0344						
Strontium-85		U	-0.252	pCi/g					
	TPU:		+/-0.0465						
Thallium-208			0.461	pCi/g					
	TPU:		+/-0.0693						
Thorium-227		U	0.238	pCi/g					
	TPU:		+/-0.254						
Thorium-231		U	-1.56	pCi/g					
	TPU:		+/-0.726						
Thorium-234		U	-0.508	pCi/g					
	TPU:		+/-0.635						
Tin-113		U	-0.00123	pCi/g					
	TPU:		+/-0.0483						
Uranium-235		U	-0.141	pCi/g					
	TPU:		+/-0.165						
Yttrium-88		U	-0.0305	pCi/g					
	TPU:		+/-0.0326						
QC1202054956 MB									
Americium-241		U	-0.12	pCi/g					03/13/1014:34
	TPU:		+/-0.0431						
Bismuth-211		U	-0.0579	pCi/g					
	TPU:		+/-0.0585						
Bismuth-214		U	0.0208	pCi/g					
	TPU:		+/-0.0229						
Cadmium-109		U	-0.367	pCi/g					
	TPU:		+/-0.180						
Cerium-139		U	-0.0016	pCi/g					
	TPU:		+/-0.00728						
Cesium-134		U	0.0086	pCi/g					
	TPU:		+/-0.0111						
Cesium-137		U	-0.00413	pCi/g					
	TPU:		+/-0.0102						

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QC Summary

Workorder: 248030

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	958221										
Cobalt-60			U	0.000544	pCi/g						
	TPU:			+/-0.011							
Europium-152			U	0.00256	pCi/g						
	TPU:			+/-0.0243							
Lanthanum-140			U	0.013	pCi/g						
	TPU:			+/-0.0138							
Lead-212			U	0.0337	pCi/g						
	TPU:			+/-0.0195							
Lead-214			U	-0.0253	pCi/g						
	TPU:			+/-0.0216							
Mercury-203			U	0.00773	pCi/g						
	TPU:			+/-0.00916							
Potassium-40			U	0.226	pCi/g						
	TPU:			+/-0.125							
Radium-223			U	-0.0541	pCi/g						
	TPU:			+/-0.164							
Radium-224			U	0.175	pCi/g						
	TPU:			+/-0.166							
Radium-226			U	0.0208	pCi/g						
	TPU:			+/-0.0229							
Radium-228			U	0.0221	pCi/g						
	TPU:			+/-0.0323							
Ruthenium-106			U	0.0637	pCi/g						
	TPU:			+/-0.0916							
Sodium-22			U	-0.00689	pCi/g						
	TPU:			+/-0.00972							
Strontium-85			U	0.0404	pCi/g						
	TPU:			+/-0.0119							
Thallium-208			U	-0.00844	pCi/g						
	TPU:			+/-0.00942							
Thorium-227			U	0.024	pCi/g						
	TPU:			+/-0.0665							
Thorium-231			U	-0.0541	pCi/g						
	TPU:			+/-0.164							
Thorium-234			U	-0.109	pCi/g						
	TPU:			+/-0.388							
Tin-113			U	-0.00341	pCi/g						
	TPU:			+/-0.0118							
Uranium-235			U	0.0276	pCi/g						
	TPU:			+/-0.0553							
Yttrium-88			U	0.00931	pCi/g						
	TPU:			+/-0.00907							
Rad Liquid Scintillation											
Batch	964052										
QC1202068208	248112006	DUP									
Tritium			318	U	188	pCi/L	0.374	(0-1)	KXK2	03/19/1021:09	
		TPU:	+/-96.7		+/-77.5						
QC1202068209	LCS										
Tritium	5530				5410	pCi/L	97.7	(80%-120%)		03/19/1006:57	
		TPU:			+/-488						

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QC Summary

Workorder: 248030

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation									
Batch	964052								
QC1202068207	MB								
Tritium		U	52.2	pCi/L					03/19/1020:02
	TPU:		+/-73.5						

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# 959854 Product: Am Date: 3/12/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
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.			N/A
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: Denise L. Sloan 3/12/10Secondary Review Performed By: Paul On 3/10/103/18
LANX

Am/Cm Que Sheet

02-MAR-10

Batch #: 959854 Analyst: CXM2 First Client Due Date: 18-MAR-10 Internal Due Date: 08-MAR-10 Comments:

Tracer(s): Am241/Cm244 Tracer Code: 445-96-2-SS Expiration Date: 5/11/10 Vol: 0.1mL NA X SRM

LCS Isotope(s): Am241/Cm244 LCS Code(s): 0244-B / NA Expiration Date: 4/30/26 / NA Vol(s): 0.105g / NA

Spike Isotope(s): Am241/Cm244 Spike Code(s): NA / NA Expiration Date: NA / NA Vol(s): NA / NA

Prep Date: 3/3/10 Initials: CMM Pipet ID: 2971058 Balance ID: 50410272 Witness: JEH 3-3-10

We (Dry)

Sample ID	Client Description	Type	Hazard	Min	Code	CRDL	Matrix	Client	Collection	Date	Pos.	Label #	Aliquot (g/l)	Am/Cm	Det #
248030001-1	RE15-10-7902	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		1	31	1.269	65	13
248030002-1	RE15-10-7901	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		2	32	1.260		14
248030003-1	RE15-10-8027	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		3	33	1.267		16
248030004-1	RE15-10-8028	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		4	34	1.254		17
248030005-1	RE15-10-8030	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		5	35	1.260		18
248030006-1	RE15-10-8031	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		6	36	1.252		19
248030007-1	RE15-10-8029	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		7	37	1.256		20
248030008-1	RE15-10-8032	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		8	38	1.253		22
248030009-1	RE15-10-8067	SAMPLE		.05	pCi/g	SOIL		LANL010	19-FEB-10		9	39	1.270	66	33
248063001-1	RE11-10-1627	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		10	40	1.256		24
248063002-1	RE11-10-1626	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		11	41	1.264		25
248063003-1	RE11-10-1624	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		12	42	1.270	67	26
248063004-1	RE11-10-1625	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		13	43	1.255		27
248063005-1	RE11-10-1623	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		14	44	1.252	229	
248063006-1	RE11-10-1628	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		15	45	1.262	229	
248063007-1	RE11-10-1622	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		16	46	1.251	230	
248063008-1	RE11-10-1621	SAMPLE		.05	pCi/g	SOIL		LANL010	20-FEB-10		17	47	1.255	231	
1202058731-1	MB for batch 959854	MB		.05	pCi/g	SOIL		QC ACCOUNT			18	48	1.00	232	
1202058732-1	RE15-10-7902(248030001DUP)	DUP		.05	pCi/g	SOIL		QC ACCOUNT	19-FEB-10		19	49	1.255	251	
1202058733-1	LCS for batch 959854	LCS		.05	pCi/g	SOIL		QC ACCOUNT			20	50	0.105	252	

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

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By:  3/12/10

GEL Laboratories LLC, Radiochemistry Division

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Blank Correction Report

Batch ID 959854

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202058732	DUP	Americium-241	1.26 g	0.0104	0.00508	0.0229	-0.01071429	pCi/g	NO
1202058733	LCS	Americium-241	0.105 g	31.1	2.48	0.365	-0.12857143	pCi/g	NO
1202058731	MB	Americium-241	1.00 g	-0.0135	0.00488	0.0299	-0.0135	pCi/g	NO
248030001	RE15-10-7902	Americium-241	1.27 g	0.00423	0.00816	0.0316	-0.01062992	pCi/g	NO
248030002	RE15-10-7901	Americium-241	1.26 g	0.0165	0.0108	0.025	-0.01071429	pCi/g	NO
248030003	RE15-10-8027	Americium-241	1.27 g	0.00942	0.0061	0.0246	-0.01062992	pCi/g	NO
248030004	RE15-10-8028	Americium-241	1.25 g	0.00471	0.00565	0.0282	-0.0108	pCi/g	NO
248030005	RE15-10-8030	Americium-241	1.26 g	0.012	0.00773	0.028	-0.01071429	pCi/g	NO
248030006	RE15-10-8031	Americium-241	1.25 g	0.0182	0.00955	0.0291	-0.0108	pCi/g	NO
248030007	RE15-10-8029	Americium-241	1.26 g	-0.000504	0.00787	0.0253	-0.01071429	pCi/g	NO
248030008	RE15-10-8032	Americium-241	1.25 g	0.0039	0.00876	0.0253	-0.0108	pCi/g	NO
248030009	RE15-10-8067	Americium-241	1.27 g	0.00399	0.00872	0.029	-0.01062992	pCi/g	NO
248063001	RE11-10-1627	Americium-241	1.26 g	0.0195	0.00811	0.0256	-0.01071429	pCi/g	NO
248063002	RE11-10-1626	Americium-241	1.26 g	0.00679	0.00722	0.0263	-0.01071429	pCi/g	NO
248063003	RE11-10-1624	Americium-241	1.27 g	0.0136	0.00647	0.0288	-0.01062992	pCi/g	NO
248063004	RE11-10-1625	Americium-241	1.26 g	0.0165	0.00611	0.0255	-0.01071429	pCi/g	NO
248063005	RE11-10-1623	Americium-241	1.25 g	0.0113	0.00438	0.0241	-0.0108	pCi/g	NO
248063006	RE11-10-1628	Americium-241	1.26 g	0.00511	0.00299	0.0254	-0.01071429	pCi/g	NO
248063007	RE11-10-1622	Americium-241	1.25 g	0.00902	0.00378	0.0227	-0.0108	pCi/g	NO
248063008	RE11-10-1621	Americium-241	1.26 g	0.0106	0.0041	0.0227	-0.01071429	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

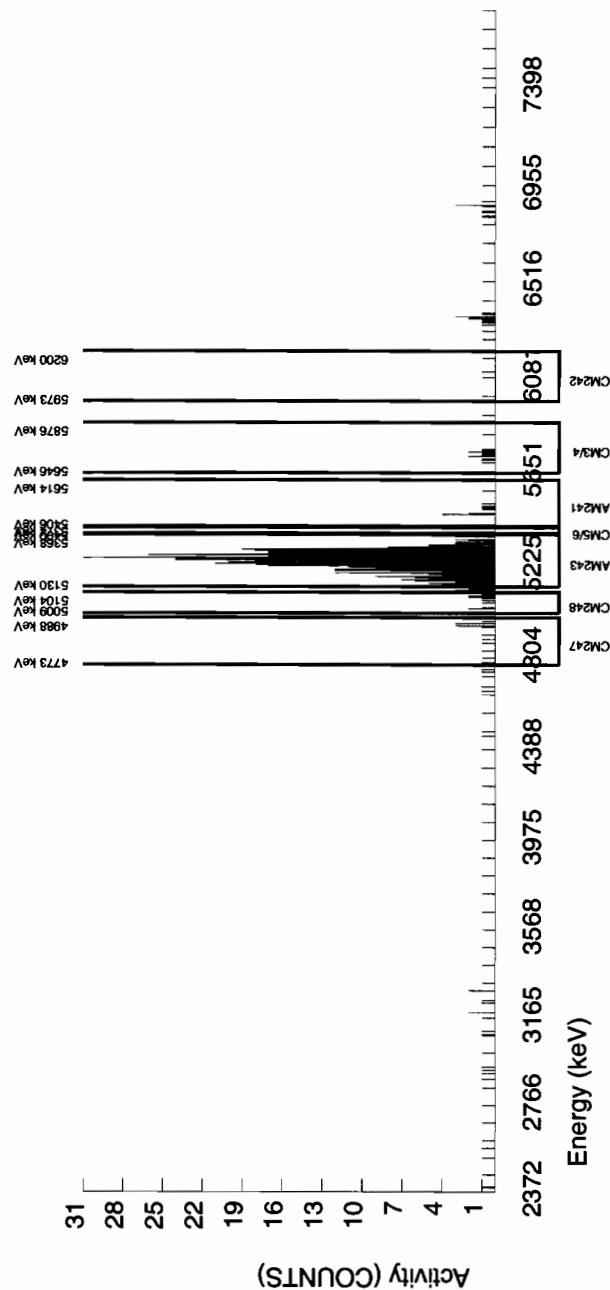
BATCH NUMBER : 959854 SAMPLE ID : S0248030001_AM SAMPLE QTY : 1.269 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 74.324		CHAMBER : 065 DETECTOR S/N : 68551 AVERAGE %EFFICIENCY : 30.8199 COUNT DATE : 11-MAR-2010 16:19:52 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_AM BKG FILE : B065.CNF:1951 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W065.CNF:307 CAL DATE : 9-FEB-2010
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.1677E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+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	5479.645	7.196	10.000	1.965	7.200	2.7707	99.94000	4.23E-03	8.16E-03	1.29E-02	3.16E-02	8.16E-03
AM243	5270.000	5252.686	71.747	485.000	479.960	5.040	2.2450	99.78000	1.04E+00	8.46E-02	1.04E-02	2.67E-02	4.77E-02
CM-242	6102.000	6113.475	4.899	1.000	0.280	0.720	4.0092	100.0000	6.59E-04	2.90E-03	1.86E-02	4.31E-02	2.90E-03
CM-3/4	5795.020	5731.741	26.792	11.000	0.200	10.800	4.8510	100.0000	4.31E-04	9.35E-03	2.25E-02	5.09E-02	9.35E-03
CM-5/6	5386.000	5387.085	0.000	1.000	0.280	0.720	6.1294	86.09000	7.00E-04	3.09E-03	3.31E-02	7.29E-02	3.08E-03
CM-247	4946.000	4921.984	15.871	11.000	7.400	3.600	6.3427	79.30000	2.01E-02	1.01E-02	3.71E-02	8.16E-02	1.00E-02
CM-248	5078.600	5059.207	61.086	13.000	11.560	1.440	11.0244	91.00000	2.73E-02	9.05E-03	5.63E-02	1.19E-01	8.86E-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

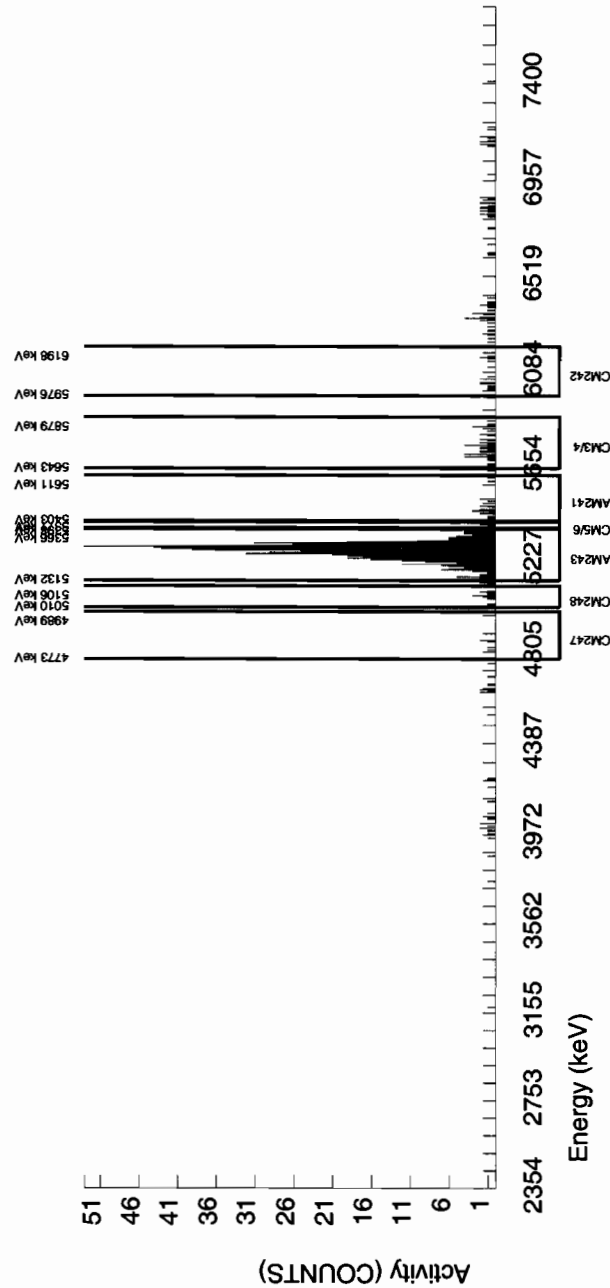
BATCH NUMBER : 959854 SAMPLE ID : S0248030002_AM SAMPLE QTY : 1.260 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 86.818	CHAMBER : 014 DETECTOR S/N : 67616 AVERAGE %EFFICIENCY : 33.5532 COUNT DATE : 9-MAR-2010 20:47:33 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_AM BKG FILE : B014.CNF;1102 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W014.CNF;328 CAL DATE : 4-MAR-2010
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.5321E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+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	5465.690	92.437	28.000	9.658	17.280	2.7707	99.94000	1.65E-02	1.08E-02	1.02E-02	2.50E-02	1.07E-02
AM243	5270.000	5271.321	48.896	619.000	610.360	8.640	2.9394	99.78000	1.04E+00	8.06E-02	1.08E-02	2.63E-02	4.27E-02
CM-242	6102.000	6074.835	115.508	17.000	8.360	8.640	4.0092	100.0000	1.55E-02	8.97E-03	1.47E-02	3.41E-02	8.91E-03
CM-3/4	5795.020	5741.765	178.371	54.000	27.360	26.640	4.8510	100.0000	4.67E-02	1.49E-02	1.78E-02	4.03E-02	1.46E-02
CM-5/6	5386.000	5385.120	0.000	9.000	5.400	3.600	6.1294	86.09000	1.07E-02	6.78E-03	2.62E-02	5.77E-02	6.74E-03
CM-247	4946.000	4834.771	7.277	6.000	4.560	1.440	6.3427	79.30000	9.80E-03	5.74E-03	2.94E-02	6.47E-02	5.70E-03
CM-248	5078.600	5061.634	19.736	13.000	11.560	1.440	11.0244	91.00000	2.17E-02	7.16E-03	4.45E-02	9.42E-02	7.02E-03

NOTES:

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

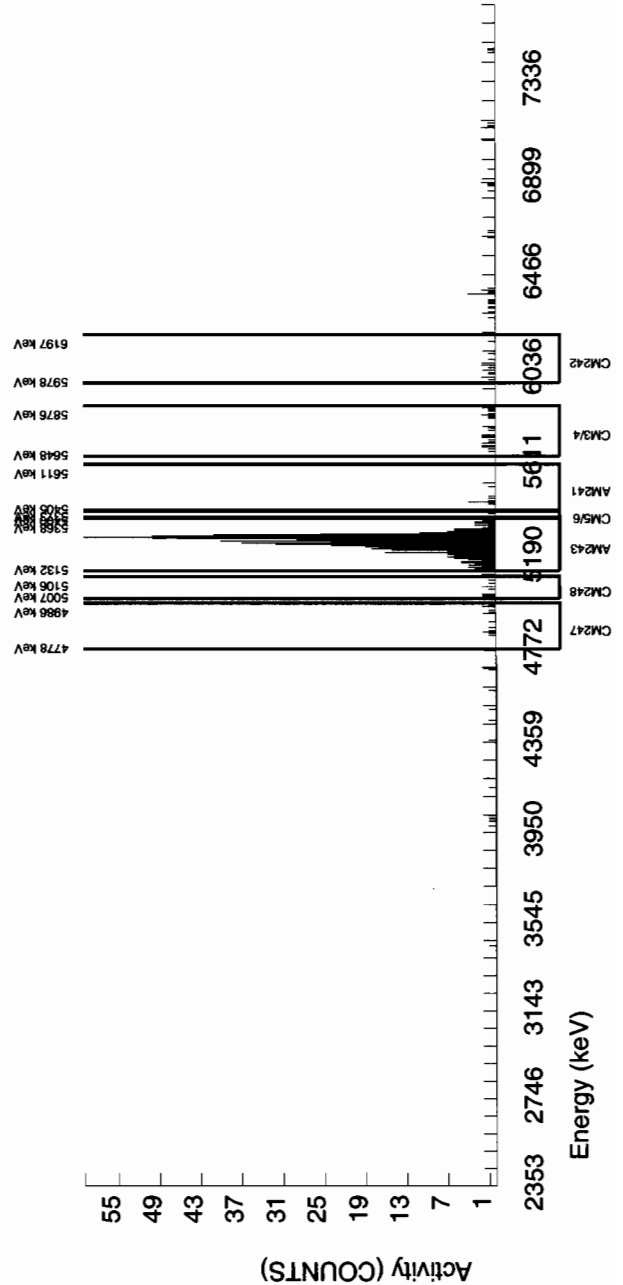


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959854 SAMPLE ID : S0248030003_AM SAMPLE QTY : 1.267 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 87.812				CHAMBER : 016 DETECTOR S/N : 78774 AVERAGE %EFFICIENCY : 33.4863 COUNT DATE : 9-MAR-2010 20:47:33 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_AM BKG FILE : B016.CNF;1097 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W016.CNF;313 CAL DATE : 4-MAR-2010					
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.5611E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+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	5463.967	6.519	11.000	5.608	4.320	2.7707	99.94000	9.42E-03	6.10E-03	1.00E-02	2.46E-02	6.07E-03
AM243	5270.000	5266.502	43.920	619.000	616.120	2.880	1.6971	99.78000	1.04E+00	7.96E-02	6.16E-03	1.69E-02	4.19E-02
CM-242	6102.000	6059.688	63.558	13.000	10.840	2.160	4.0092	100.0000	1.97E-02	7.07E-03	1.45E-02	3.36E-02	6.95E-03
CM-3/4	5795.020	5767.558	165.617	31.000	18.760	12.240	4.8510	100.0000	3.16E-02	1.08E-02	1.76E-02	3.97E-02	1.06E-02
CM-5/6	5386.000	5394.500	4.889	1.000	0.280	0.720	6.1294	86.09000	5.46E-04	2.41E-03	2.58E-02	5.69E-02	2.40E-03
CM-247	4946.000	4919.473	7.181	10.000	10.000	0.000	6.3427	79.30000	2.12E-02	6.84E-03	2.90E-02	6.37E-02	6.70E-03
CM-248	5078.600	5054.754	0.000	13.000	13.000	0.000	11.0244	91.00000	2.40E-02	6.84E-03	4.39E-02	9.28E-02	6.65E-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 : 959854 SAMPLE ID : S0248030004_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 87.500	CHAMBER : 017 DETECTOR S/N : 78791 AVERAGE %EFFICIENCY : 29.7179 COUNT DATE : 9-MAR-2010 20:47:33 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_AM BKG FILE : B017.CNF;1944 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W017.CNF;1264 CAL DATE : 4-MAR-2010
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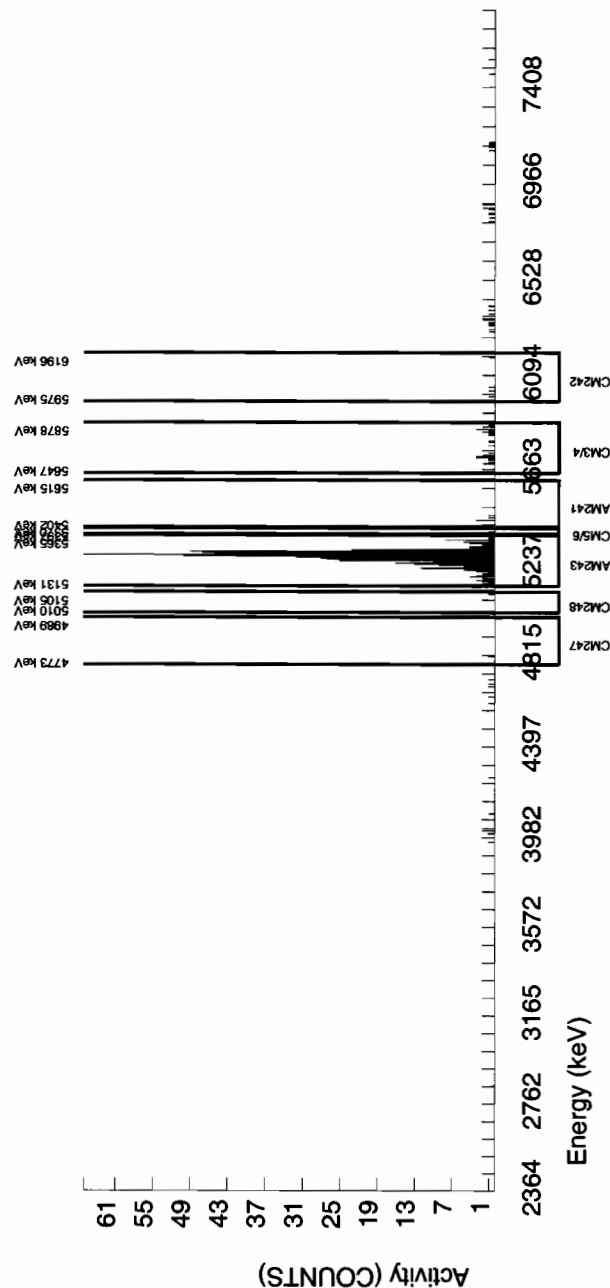
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.5520E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5437.692	23.555	7.000	2.452	3.600	2.7707	99.94000	4.71E-03	5.65E-03	1.15E-02	2.82E-02	5.64E-03
AM243	5270.000	5269.753	27.552	547.000	544.840	2.160	1.4697	99.78000	1.05E+00	8.33E-02	6.10E-03	1.74E-02	4.50E-02
CM-242	6102.000	6063.941	168.607	4.000	-0.320	4.320	4.0092	100.0000	-6.66E-04	5.55E-03	1.66E-02	3.84E-02	5.55E-03
CM-3/4	5795.020	5777.680	156.520	29.000	11.000	18.000	4.8510	100.0000	2.11E-02	1.25E-02	2.01E-02	4.54E-02	1.25E-02
CM-5/6	5386.000	5380.657	9.918	4.000	3.280	0.720	6.1294	86.09000	7.31E-03	4.76E-03	2.95E-02	6.50E-02	4.74E-03
CM-247	4946.000	4814.935	4.959	1.000	0.280	0.720	6.3427	79.30000	6.77E-04	2.99E-03	3.31E-02	7.28E-02	2.98E-03
CM-248	5078.600	5054.640	0.000	2.000	2.000	0.000	11.0244	91.00000	4.22E-03	3.00E-03	5.01E-02	1.06E-01	2.98E-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

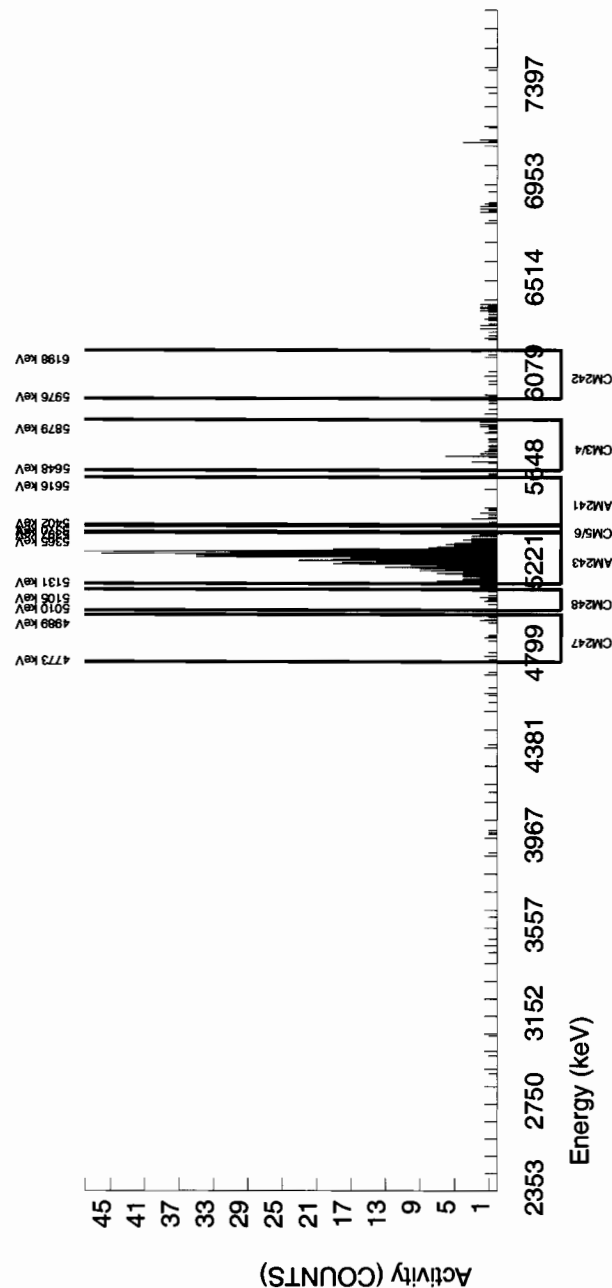
BATCH NUMBER : 959854 SAMPLE ID : S0248030005_AM SAMPLE QTY : 1.260 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 77.613	CHAMBER : 018 DETECTOR S/N : 78782 AVERAGE %EFFICIENCY : 33.5036 COUNT DATE : 9-MAR-2010 20:47:33 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_AM BKG FILE : B018.CNF;1096 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W018.CNF;308 CAL DATE : 4-MAR-2010
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.2636E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+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	5439.071	46.830	13.000	6.292	5.760	2.7707	99.94000	1.20E-02	7.73E-03	1.14E-02	2.80E-02	7.69E-03
AM243	5270.000	5257.121	36.209	547.000	544.840	2.160	1.4697	99.78000	1.04E+00	8.29E-02	6.07E-03	1.73E-02	4.48E-02
CM-242	6102.000	6077.743	177.695	5.000	-1.480	6.480	4.0092	100.0000	-3.07E-03	6.44E-03	1.65E-02	3.82E-02	6.44E-03
CM-3/4	5795.020	5772.672	5.419	30.000	6.240	23.760	4.8510	100.0000	1.19E-02	1.32E-02	2.00E-02	4.51E-02	1.31E-02
CM-5/6	5386.000	5375.528	0.000	2.000	1.280	0.720	6.1294	86.09000	2.84E-03	3.53E-03	2.93E-02	6.47E-02	3.52E-03
CM-247	4946.000	4901.306	4.936	11.000	11.000	0.000	6.3427	79.30000	2.65E-02	8.18E-03	3.29E-02	7.24E-02	7.99E-03
CM-248	5078.600	5062.476	0.000	13.000	12.280	0.720	11.0244	91.00000	2.58E-02	7.91E-03	4.99E-02	1.06E-01	7.72E-03

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959854 SAMPLE ID : S0248030006_AM SAMPLE QTY : 1.252 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 82.284				CHAMBER : 019 DETECTOR S/N : 78786 AVERAGE %EFFICIENCY : 30.6248 COUNT DATE : 9-MAR-2010 20:47:34 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B019.CNF;1108 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W019.CNF;309 CAL DATE : 4-MAR-2010					
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.3999E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+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	5465.915	7.441	18.000	9.161	7.920	2.7707	99.94000	1.82E-02	9.55E-03	1.19E-02	2.91E-02	9.47E-03
AM243	5270.000	5281.377	30.059	528.000	528.000	0.000	0.0000	99.78000	1.05E+00	8.41E-02	0.00E+00	5.39E-03	4.57E-02
CM-242	6102.000	6077.880	5.066	15.000	14.280	0.720	4.0092	100.0000	3.07E-02	8.72E-03	1.72E-02	3.97E-02	8.47E-03
CM-3/4	5795.020	5763.997	65.831	32.000	12.560	19.440	4.8510	100.0000	2.50E-02	1.36E-02	2.08E-02	4.69E-02	1.35E-02
CM-5/6	5386.000	5374.917	0.000	4.000	3.280	0.720	6.1294	86.09000	7.56E-03	4.92E-03	3.05E-02	6.72E-02	4.90E-03
CM-247	4946.000	4906.868	5.066	6.000	5.280	0.720	6.3427	79.30000	1.32E-02	6.45E-03	3.42E-02	7.52E-02	6.38E-03
CM-248	5078.600	5062.946	0.000	6.000	6.000	0.000	11.0244	91.00000	1.31E-02	5.41E-03	5.18E-02	1.10E-01	5.34E-03

NOTES:

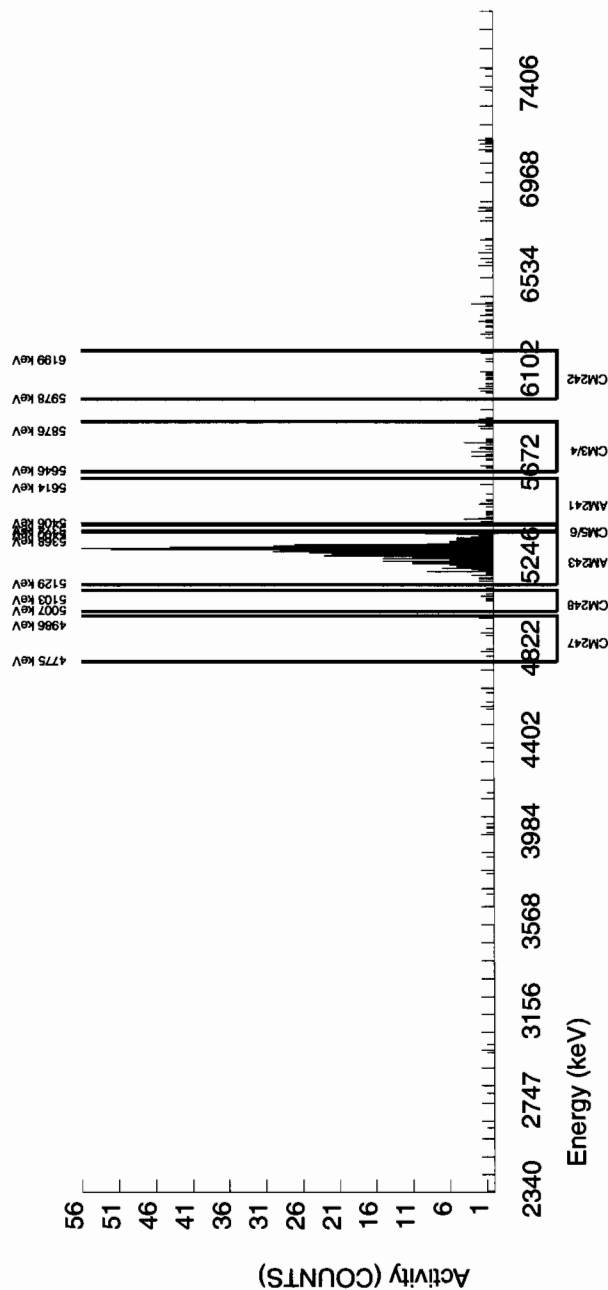
* BKG Sg calculated via blank population.

(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

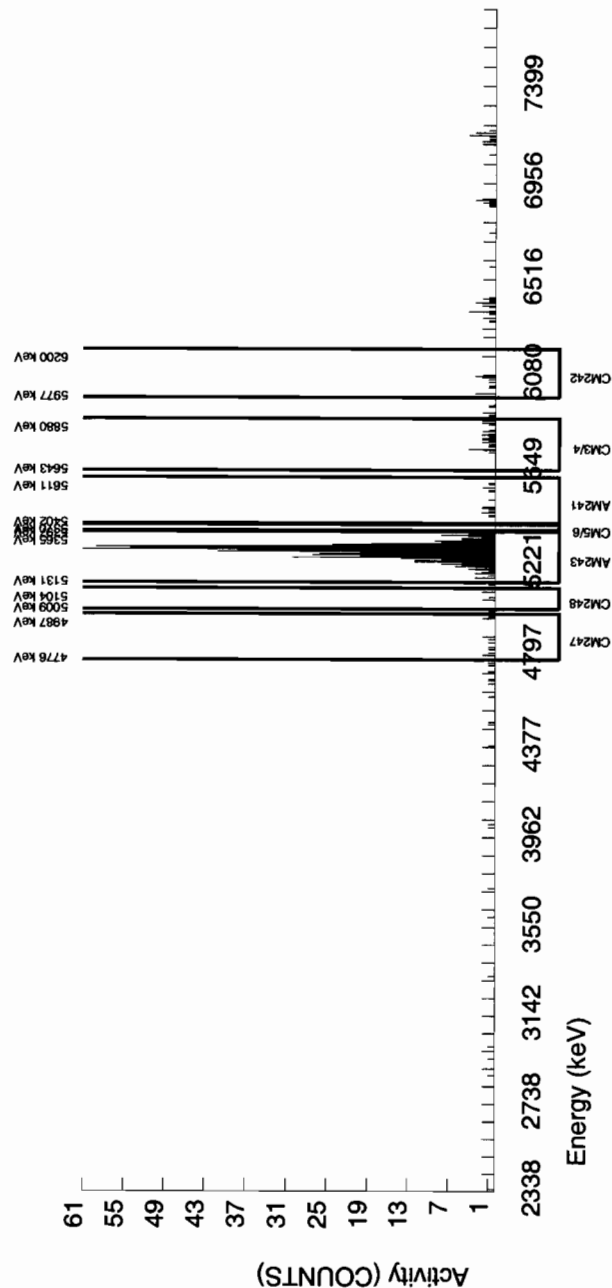
BATCH NUMBER : 959854 SAMPLE ID : S0248030007_AM SAMPLE QTY : 1.256 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 82.634		CHAMBER : 020 DETECTOR S/N : 78787 AVERAGE %EFFICIENCY : 34.9079 COUNT DATE : 9-MAR-2010 20:47:34 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B020.CNF;1103 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W020.CNF;322 CAL DATE : 4-MAR-2010
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.4101E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5498.496	24.770	13.000	-0.292	12.240	2.7707	99.94000	-5.04E-04	7.87E-03	1.03E-02	2.53E-02	7.87E-03
AM243	5270.000	5281.414	30.863	608.000	604.400	3.600	1.8974	99.78000	1.05E+00	8.08E-02	7.08E-03	1.89E-02	4.28E-02
CM-242	6102.000	6059.610	162.921	17.000	15.560	1.440	4.0092	100.0000	2.91E-02	8.18E-03	1.49E-02	3.46E-02	7.96E-03
CM-3/4	5795.020	5795.335	5.778	30.000	10.560	19.440	4.8510	100.0000	1.83E-02	1.15E-02	1.81E-02	4.08E-02	1.15E-02
CM-5/6	5386.000	5372.848	0.000	6.000	5.280	0.720	6.1294	86.09000	1.06E-02	5.17E-03	2.65E-02	5.85E-02	5.12E-03
CM-247	4946.000	4882.919	164.165	8.000	6.560	1.440	6.3427	79.30000	1.43E-02	6.61E-03	2.98E-02	6.55E-02	6.55E-03
CM-248	5078.600	5082.769	4.975	5.000	4.280	0.720	11.0244	91.00000	8.12E-03	4.49E-03	4.51E-02	9.54E-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 : 959854 SAMPLE ID : S0248030008_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 89.468	CHAMBER : 022 DETECTOR S/N : 72530 AVERAGE %EFFICIENCY : 32.3779 COUNT DATE : 9-MAR-2010 20:47:34 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B022.CNF;1115 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W022.CNF;320 CAL DATE : 4-MAR-2010
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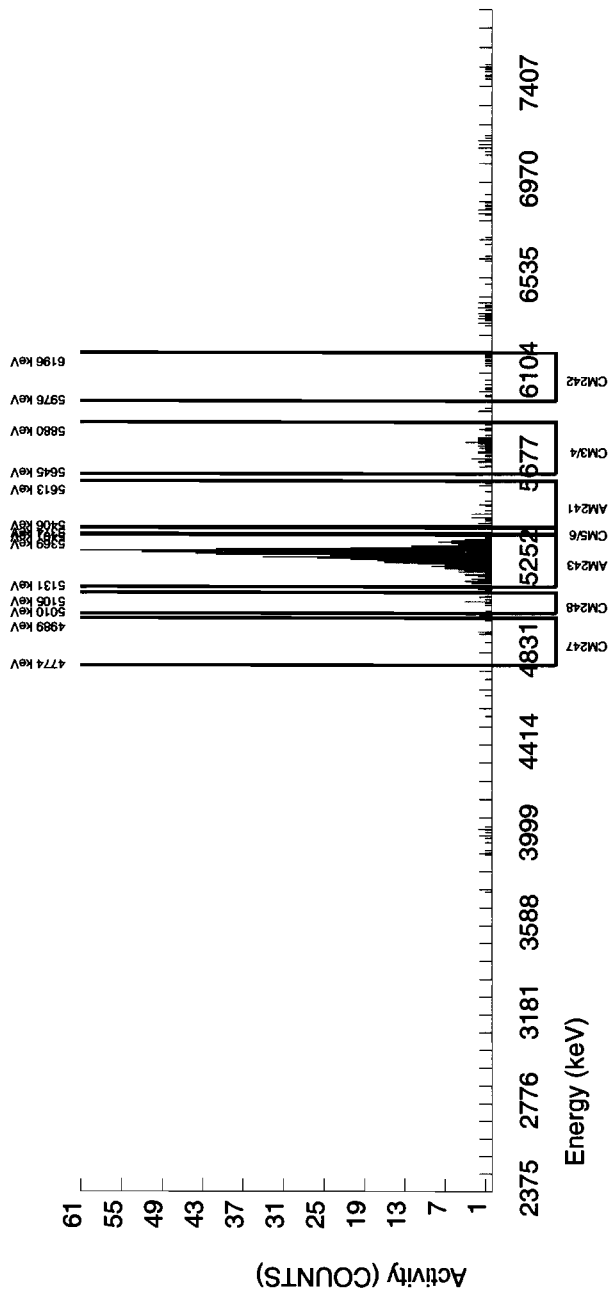
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.6094E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5486.061	43.627	17.000	2.264	13.680	2.7707	99.94000	3.90E-03	8.76E-03	1.03E-02	2.53E-02	8.76E-03
AM243	5270.000	5280.790	39.406	612.000	606.960	5.040	2.2450	99.78000	1.05E+00	8.10E-02	8.37E-03	2.14E-02	4.29E-02
CM-242	6102.000	6107.781	179.082	13.000	4.360	8.640	4.0092	100.0000	8.15E-03	8.21E-03	1.49E-02	3.45E-02	8.20E-03
CM-3/4	5795.020	5773.113	77.374	43.000	17.800	25.200	4.8510	100.0000	3.07E-02	1.37E-02	1.80E-02	4.07E-02	1.35E-02
CM-5/6	5386.000	5377.142	0.000	7.000	4.840	2.160	6.1294	86.09000	9.69E-03	5.89E-03	2.65E-02	5.84E-02	5.86E-03
CM-247	4946.000	4931.129	7.332	5.000	4.280	0.720	6.3427	79.30000	9.30E-03	5.14E-03	2.97E-02	6.54E-02	5.11E-03
CM-248	5078.600	5074.873	0.000	12.000	11.280	0.720	11.0244	91.00000	2.14E-02	6.85E-03	4.50E-02	9.52E-02	6.70E-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 : 959854 SAMPLE ID : S0248030009_AM SAMPLE QTY : 1.270 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 79.748	CHAMBER : 066 DETECTOR S/N : 46-089C1 AVERAGE %EFFICIENCY : 31.2039 COUNT DATE : 11-MAR-2010 16:19:52 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_AM BKG FILE : B066.CNF;1112 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W066.CNF;308 CAL DATE : 9-FEB-2010
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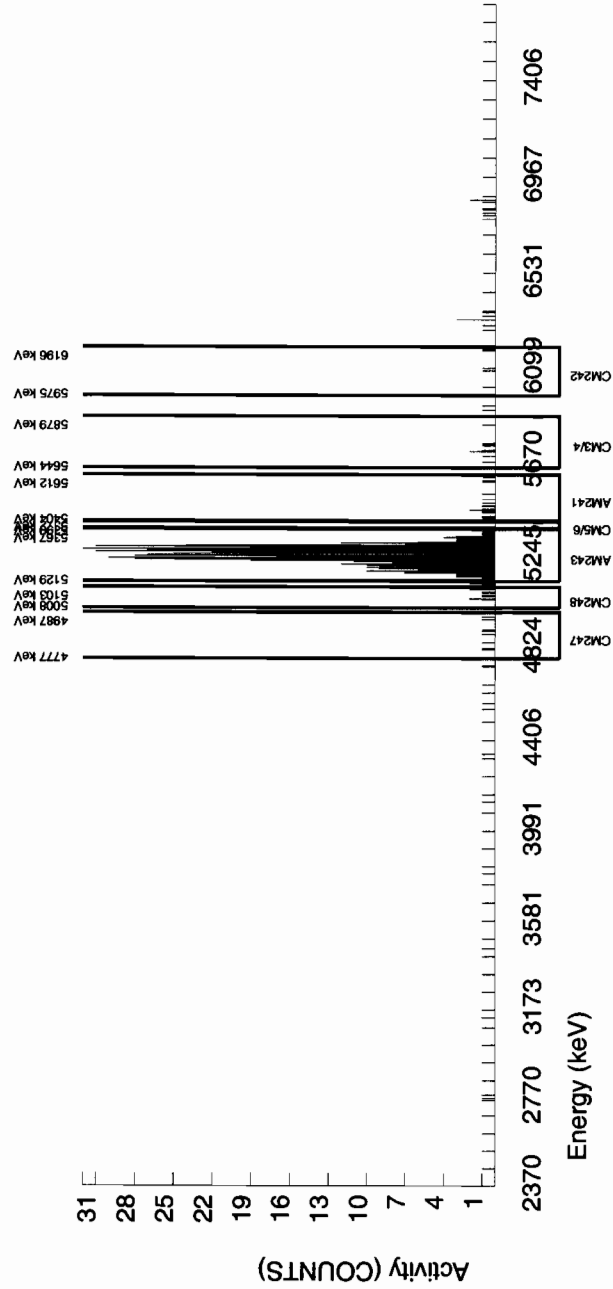
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.3259E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5484.249	9.957	13.000	2.013	10.080	2.7707	99.94000	3.99E-03	8.72E-03	1.18E-02	2.90E-02	8.71E-03
AM243	5270.000	5252.833	68.724	525.000	521.400	3.600	1.8974	99.78000	1.03E+00	8.22E-02	8.12E-03	2.16E-02	4.56E-02
CM-242	6102.000	6139.202	89.609	2.000	-0.160	2.160	4.0092	100.00000	-3.46E-04	4.08E-03	1.71E-02	3.96E-02	4.08E-03
CM-3/4	5795.020	5730.736	7.312	6.000	-1.200	7.200	4.8510	100.00000	-2.38E-03	6.64E-03	2.07E-02	4.68E-02	6.63E-03
CM-5/6	5386.000	5382.941	4.978	1.000	0.280	0.720	6.1294	86.09000	6.44E-04	2.84E-03	3.04E-02	6.70E-02	2.83E-03
CM-247	4946.000	4878.835	174.239	8.000	5.840	2.160	6.3427	79.30000	1.46E-02	7.78E-03	3.42E-02	7.51E-02	7.72E-03
CM-248	5078.600	5062.756	47.138	11.000	9.560	1.440	11.0244	91.00000	2.08E-02	7.67E-03	5.17E-02	1.09E-01	7.55E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

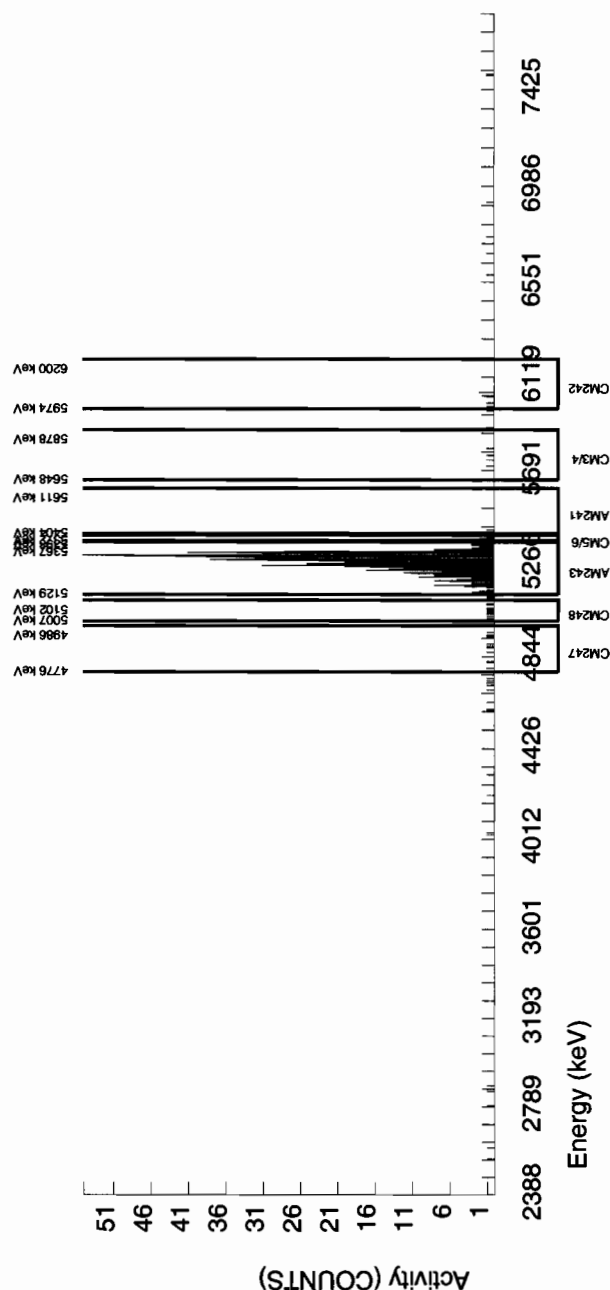
BATCH NUMBER : 959854 SAMPLE ID : S1202058731_AM SAMPLE QTY : 1.000 G SAMPLE DATE : 3-MAR-2010 00:00:00. ANALYST : CXM2 % YIELD : 79.292		CHAMBER : 232 DETECTOR S/N : 79425 AVERAGE %EFFICIENCY : 38.7095 COUNT DATE : 9-MAR-2010 08:07:04 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B232.CNF:89 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W232.CNF:30 CAL DATE : 28-FEB-2010
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.3126E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3151E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3151E+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	5424.860	4.988	1.000	-6.599	6.480	2.7707	99.94000	-1.35E-02	4.86E-03	1.22E-02	2.99E-02	4.85E-03
AM243	5270.000	5281.497	61.072	646.000	5.000	2.880	1.6971	99.78000	1.31E+00	9.96E-02	7.48E-03	2.05E-02	5.20E-02
CM-242	6102.000	6027.920	4.988	5.000	5.000	0.000	4.0092	100.0000	1.05E-02	4.74E-03	1.76E-02	4.08E-02	4.69E-03
CM-3/4	5795.020	5778.925	144.658	6.000	6.000	0.000	4.8510	100.0000	1.22E-02	5.06E-03	2.13E-02	4.82E-02	5.00E-03
CM-5/6	5386.000	5379.396	12.366	21.000	20.280	0.720	6.1294	86.09000	4.80E-02	1.14E-02	3.13E-02	6.90E-02	1.10E-02
CM-247	4946.000	4891.660	159.622	11.000	8.840	2.160	6.3427	79.30000	2.27E-02	9.23E-03	3.52E-02	7.73E-02	9.11E-03
CM-248	5078.600	5049.814	7.482	15.000	14.280	0.720	11.0244	91.00000	3.20E-02	9.06E-03	5.33E-02	1.13E-01	8.82E-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

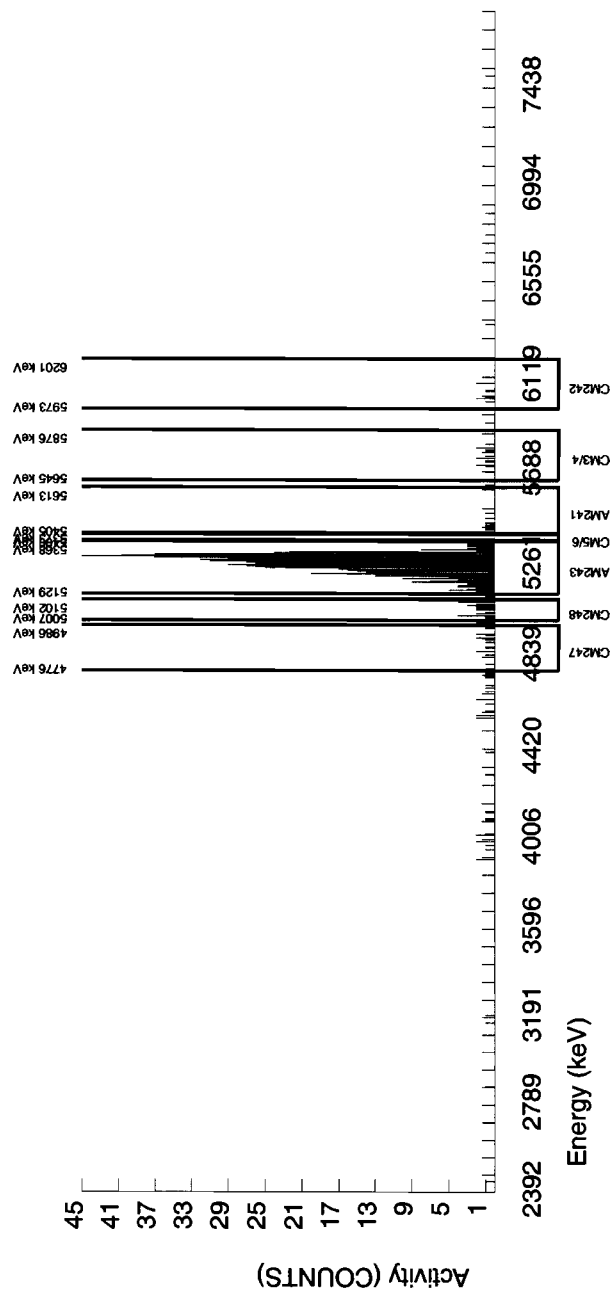
BATCH NUMBER : 959854 SAMPLE ID : S1202058732_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 78.935		CHAMBER : 251 DETECTOR S/N : 79444 AVERAGE %EFFICIENCY : 40.4400 COUNT DATE : 9-MAR-2010 08:07:06 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B251.CNF:87 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W251.CNF:31 CAL DATE : 28-FEB-2010
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.3022E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+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	5448.200	0.000	10.000	6.676	2.160	2.7707	99.94000	1.04E-02	5.08E-03	9.34E-03	2.29E-02	5.04E-03
AM243	5270.000	5269.504	69.323	671.000	668.840	2.160	1.4697	99.78000	1.05E+00	7.85E-02	4.96E-03	1.42E-02	4.06E-02
CM-242	6102.000	6050.768	69.045	9.000	8.280	0.720	4.0092	100.0000	1.40E-02	5.29E-03	1.35E-02	3.12E-02	5.21E-03
CM-3/4	5795.020	5765.071	81.341	16.000	15.280	0.720	4.8510	100.0000	2.39E-02	6.54E-03	1.63E-02	3.69E-02	6.36E-03
CM-5/6	5386.000	5386.395	0.000	2.000	2.000	0.000	6.1294	86.09000	3.63E-03	2.58E-03	2.40E-02	5.29E-02	2.57E-03
CM-247	4946.000	4906.078	79.026	18.000	12.240	5.760	6.3427	79.30000	2.41E-02	9.40E-03	2.69E-02	5.92E-02	9.27E-03
CM-248	5078.600	5064.162	65.826	28.000	28.000	0.000	11.0244	91.00000	4.81E-02	9.59E-03	4.08E-02	8.63E-02	9.08E-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 : 959854 SAMPLE ID : S1202058733_AM SAMPLE QTY : 0.105 G SAMPLE DATE : 3-MAR-2010 00:00:00. ANALYST : CXM2 % YIELD : 61.273	CHAMBER : 252 DETECTOR S/N : 79445 AVERAGE %EFFICIENCY : 39.1229 COUNT DATE : 9-MAR-2010 08:07:09 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B252.CNF:87 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W252.CNF:31 CAL DATE : 28-FEB-2010
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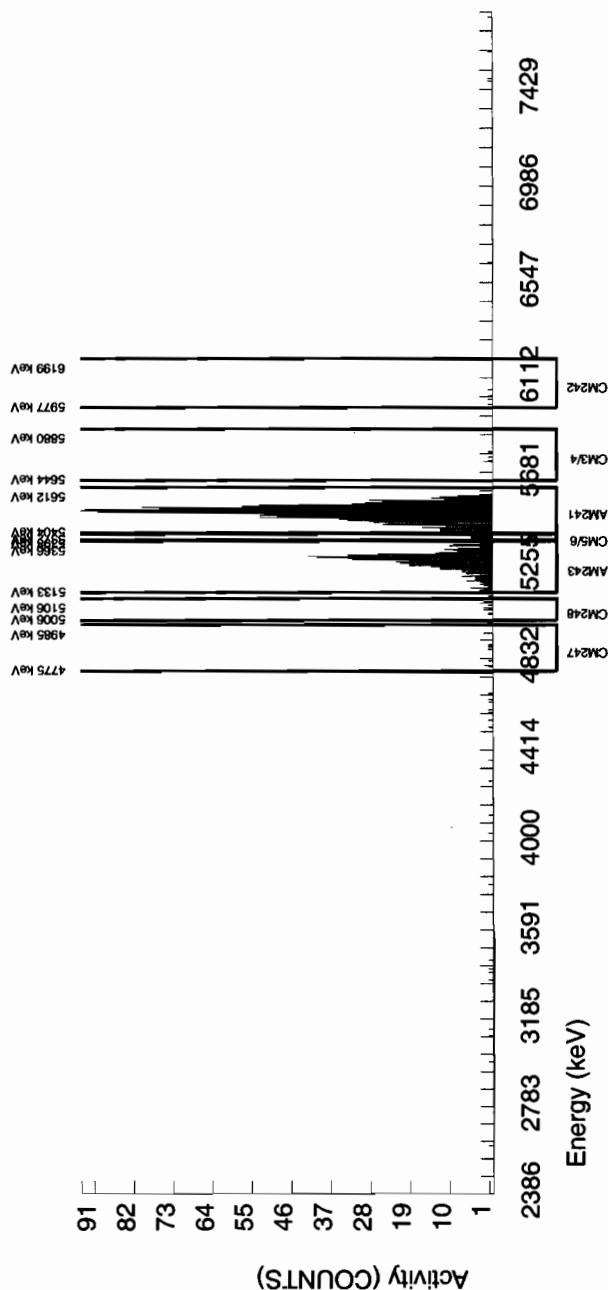
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 1.7871E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3151E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3151E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5501.969	57.334	1252.000	1251.126	0.000	2.7707	99.94000	3.11E+01	2.48E+00	1.49E-01	3.65E-01	8.80E-01
AM243	5270.000	5280.130	39.934	503.000	502.280	0.720	0.8485	99.78000	1.25E+01	1.09E+00	4.56E-02	1.59E-01	5.59E-01
CM-242	6102.000	6029.821	64.213	5.000	5.000	0.000	4.0092	100.0000	1.28E-01	5.79E-02	2.15E-01	4.97E-01	5.72E-02
CM-3/4	5795.020	5754.572	7.255	6.000	4.560	1.440	4.8510	100.0000	1.13E-01	6.65E-02	2.60E-01	5.88E-01	6.60E-02
CM-5/6	5386.000	5385.849	0.000	36.000	36.000	0.000	6.1294	86.09000	1.04E+00	1.90E-01	3.82E-01	8.42E-01	1.73E-01
CM-247	4946.000	4871.348	145.559	10.000	10.000	0.000	6.3427	79.30000	3.13E-01	1.02E-01	4.29E-01	9.43E-01	9.91E-02
CM-248	5078.600	5054.067	0.000	13.000	12.280	0.720	11.0244	91.00000	3.35E-01	1.03E-01	6.50E-01	1.37E+00	1.00E-01

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# 9598570 Product: Pu Date: 3/12/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10" MDA/ MDC, error is 150% or less of sample activity. If greater 10" MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5" MDA/ MDC, then RPD is 100% or less. If greater 5" MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		Case narrative
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs Initialed and dated.	✓		
No transcription errors are apparent.			N/A
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (if 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: Deise Dean 3/12/10

Secondary Review Performed By: John Bell 3/12/10

3/18
LANC

Plutonium Que Sheet

02-MAR-10

Batch #: 959856 Analyst: CXM2 First Client Due Date: 18-MAR-10 Internal Due Date: 08-MAR-10
 Tracer Isotope(s): Pu-239/240 Tracer Code: 1430-13 Expiration Date: 1/27/11 Vol: 0.1mL
 LCS Isotope(s): Pu-239/240 LCS Code: 0244-13 Expiration Date: 4/30/20 Vol: 0.105g * SEM
 Spike Isotope(s): Pu-239/240 Spike Code: Expiration Date: Vol:
 Prep Date: 3/3/10 Initials: CMM Pipet ID: 2971058 Balance ID: 50410272 Witness: JEH 3-3-10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry	Aliquot g/l/n	Pu Det #
248030001-1	RE15-10-7902	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	1	31	1.269		93
248030002-1	RE15-10-7901	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	2	32	1.260		94
248030003-1	RE15-10-8027	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	3	33	1.267		85
248030004-1	RE15-10-8028	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	4	34	1.264		86
248030005-1	RE15-10-8030	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	5	35	1.260		87
248030006-1	RE15-10-8031	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	6	36	1.252		88
248030007-1	RE15-10-8029	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	7	37	1.256		89
248030008-1	RE15-10-8032	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	8	38	1.253		90
248030009-1	RE15-10-8067	SAMPLE	.05 pCi/g		SOIL	LANL010	19-FEB-10	9	39	1.270		91
24803001-1	RE11-10-1627	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	10	40	1.256		92
24803002-1	RE11-10-1626	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	11	41	1.264		93
24803003-1	RE11-10-1624	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	12	42	1.270		94
24803004-1	RE11-10-1625	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	13	43	1.255		95
24803005-1	RE11-10-1623	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	14	44	1.252	76	97
24803006-1	RE11-10-1628	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	15	45	1.262		99
24803007-1	RE11-10-1622	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	16	46	1.251		100
24803008-1	RE11-10-1621	SAMPLE	.05 pCi/g		SOIL	LANL010	20-FEB-10	17	47	1.255	85	101
1202058734-1	MB for batch 959856	MB	.05 pCi/g		SOIL	QC ACCOUNT		18	48	1		102
1202058735-1	RE15-10-7902(248030001DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	19-FEB-10	19	49	1.255		103
1202058736-1	LCS for batch 959856	LCS	.05 pCi/g		SOIL	QC ACCOUNT		20	50	0.105		105

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

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

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: [Signature] 3/2/10

Blank Correction Report

Batch ID 959856

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202058735	DUP	Plutonium-238	1.26 g	0.007	0.00577	0.0408	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0123	0.00617	0.0344	.001976190	pCi/g	NO
1202058736	LCS	Plutonium-238	0.105 g	4.24	0.372	0.255	.079238095	pCi/g	NO
		Plutonium-239/240	0.105 g	36.8	2.24	0.215	.023714286	pCi/g	NO
1202058734	MB	Plutonium-238	1.00 g	0.00832	0.00458	0.0258	.00832	pCi/g	YES
		Plutonium-239/240	1.00 g	0.00249	0.00309	0.0218	.00249	pCi/g	YES
248030001	RE15-10-7902	Plutonium-238	1.27 g	0.011	0.00775	0.0202	.006551181	pCi/g	YES
		Plutonium-239/240	1.27 g	0.0191	0.00597	0.0171	.001960630	pCi/g	NO
248030002	RE15-10-7901	Plutonium-238	1.26 g	0.00396	0.00326	0.0231	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0317	0.00782	0.0195	.001976190	pCi/g	NO
248030003	RE15-10-8027	Plutonium-238	1.27 g	0.0128	0.00448	0.0209	.006551181	pCi/g	YES
		Plutonium-239/240	1.27 g	0.00987	0.00433	0.0176	.001960630	pCi/g	NO
248030004	RE15-10-8028	Plutonium-238	1.25 g	0.00407	0.00357	0.0211	.006656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00248	0.0032	0.0178	.001992	pCi/g	YES
248030005	RE15-10-8030	Plutonium-238	1.26 g	-0.00237	0.00444	0.0238	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0143	0.00735	0.0202	.001976190	pCi/g	NO
248030006	RE15-10-8031	Plutonium-238	1.25 g	0.0132	0.00722	0.0287	.006656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0206	0.00756	0.0242	.001992	pCi/g	NO
248030007	RE15-10-8029	Plutonium-238	1.26 g	0.00439	0.00311	0.0291	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0219	0.00702	0.0246	.001976190	pCi/g	NO
248030008	RE15-10-8032	Plutonium-238	1.25 g	0.0144	0.00514	0.0239	.006656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.009	0.00405	0.0202	.001992	pCi/g	YES
248030009	RE15-10-8067	Plutonium-238	1.27 g	0.00922	0.00448	0.0232	.006551181	pCi/g	YES
		Plutonium-239/240	1.27 g	0.0262	0.00689	0.0196	.001960630	pCi/g	NO
248063001	RE11-10-1627	Plutonium-238	1.26 g	0.00713	0.00358	0.0237	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0112	0.00492	0.020	.001976190	pCi/g	NO
248063002	RE11-10-1626	Plutonium-238	1.26 g	0.00697	0.00453	0.0282	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0085	0.00427	0.0238	.001976190	pCi/g	YES
248063003	RE11-10-1624	Plutonium-238	1.27 g	0.00902	0.00453	0.0299	.006551181	pCi/g	YES
		Plutonium-239/240	1.27 g	0.00	0.00226	0.0253	.001960630	pCi/g	YES
248063004	RE11-10-1625	Plutonium-238	1.26 g	0.00421	0.0114	0.0318	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0188	0.00819	0.0268	.001976190	pCi/g	NO
248063005	RE11-10-1623	Plutonium-238	1.25 g	0.0132	0.00596	0.0351	.006656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0143	0.00904	0.0297	.001992	pCi/g	NO
248063006	RE11-10-1628	Plutonium-238	1.26 g	0.0171	0.00603	0.0245	.006603175	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00973	0.00473	0.0207	.001976190	pCi/g	YES
248063007	RE11-10-1622	Plutonium-238	1.25 g	0.0134	0.00511	0.0254	.006656	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00574	0.00333	0.0215	.001992	pCi/g	YES
248063008	RE11-10-1621	Plutonium-238	1.26 g	0.00658	0.00456	0.0245	.006603175	pCi/g	YES

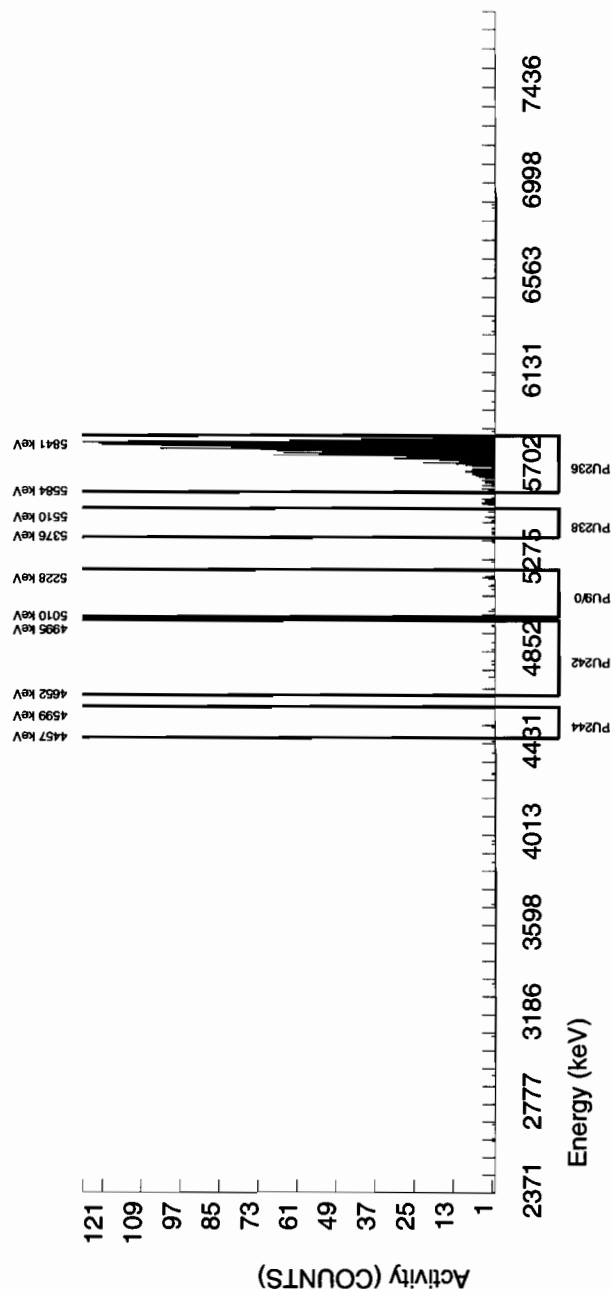
Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248063008	RE11-10-1621	Plutonium-239/240	1.26 g	0.0135	0.00543	0.0208	.001976190	pCi/g	NO

NOTES:

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

* BKG Sg of PU-236 calculated as $\sqrt{\text{BKG AREA}}$.

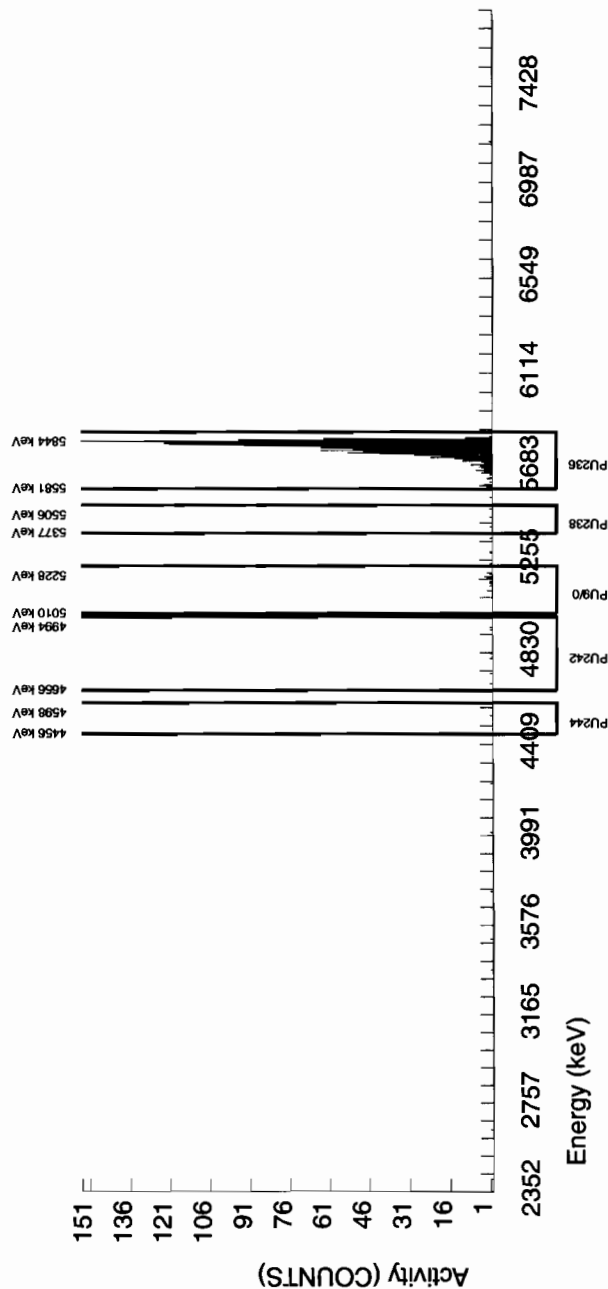


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S0248030002_PU SAMPLE QTY : 1.260 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 84.981				CHAMBER : 084 DETECTOR S/N : 78265 AVERAGE %EFFICIENCY : 33.6931 COUNT DATE : 9-MAR-2010 20:47:42 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B084.CNF;1028 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W084.CNF;295 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 5.5817E+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	5779.380	30.985	1337.000	1337.000	0.000	0.0000	100.0000	2.35E+00	1.29E-01	0.00E+00	4.70E-03	6.42E-02
PU-238	5499.000	5455.789	80.568	3.000	2.280	0.720	2.4495	99.900000	3.96E-03	3.26E-03	9.17E-03	2.31E-02	3.26E-03
PU-9/0	5155.000	5171.174	13.344	19.000	18.280	0.720	1.9732	99.900000	3.17E-02	7.82E-03	7.39E-03	1.95E-02	7.67E-03
PU242	4890.000	4803.614	281.988	7.000	4.840	2.160	*****	100.0000	8.39E-03	5.09E-03	4.66E-01	9.37E-01	5.07E-03
PU-244	4589.000	4545.299	5.035	1.000	0.280	0.720	6.4609	99.900000	4.86E-04	2.14E-03	2.42E-02	5.31E-02	2.14E-03

NOTES:

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



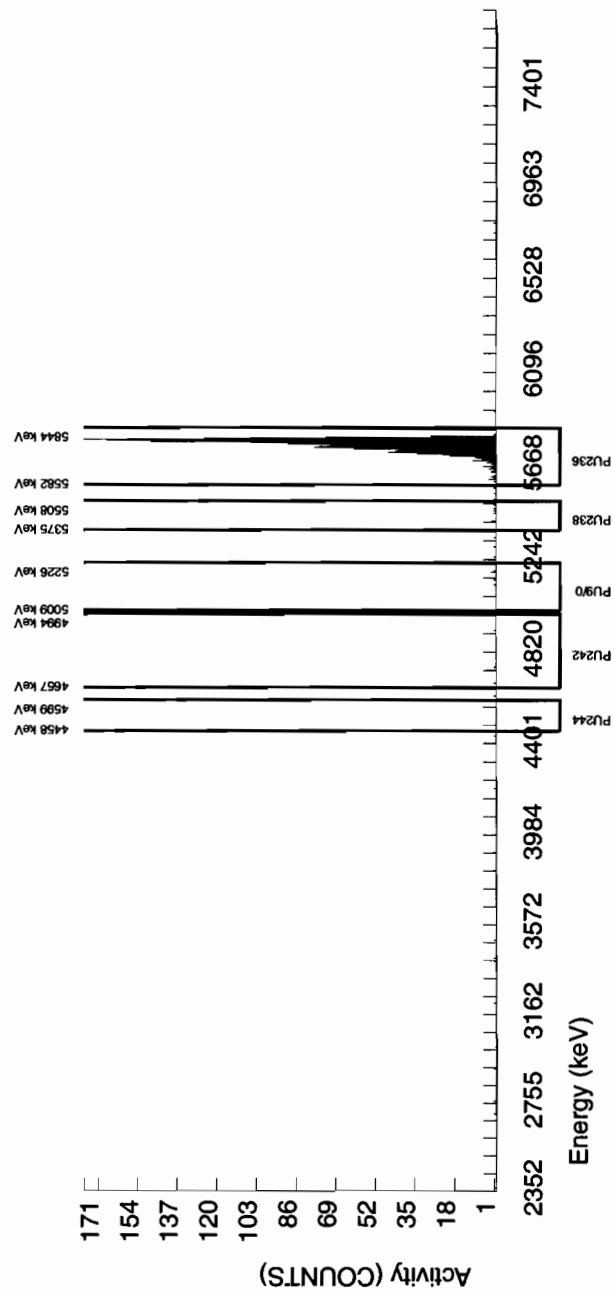
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S0248030003_PU SAMPLE QTY : 1.267 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 99.799				CHAMBER : 085 DETECTOR S/N : 78776 AVERAGE %EFFICIENCY : 31.5289 COUNT DATE : 9-MAR-2010 20:47:42 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B085.CNF;1031 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W085.CNF;302 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 6.5550E+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	5772.998	27.999	1470.000	1469.280	0.720	0.8485	100.0000	2.34E+00	1.28E-01	2.87E-03	1.00E-02	6.09E-02
PU-238	5499.000	5439.834	5.022	8.000	8.000	0.000	2.4495	99.900000	1.26E-02	4.48E-03	8.30E-03	2.09E-02	4.44E-03
PU-9/0	5155.000	5167.943	7.376	7.000	6.280	0.720	1.9732	99.900000	9.86E-03	4.33E-03	6.69E-03	1.76E-02	4.31E-03
PU242	4890.000	4839.442	0.000	4.000	3.280	0.720	*****	100.0000	5.15E-03	3.34E-03	4.22E-01	8.48E-01	3.34E-03
PU-244	4589.000	4528.552	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.57E-03	2.19E-02	4.80E-02	1.57E-03

NOTES:

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

* BKG Sg of PU-236 calculated as $\sqrt{\text{BKG AREA}}$.

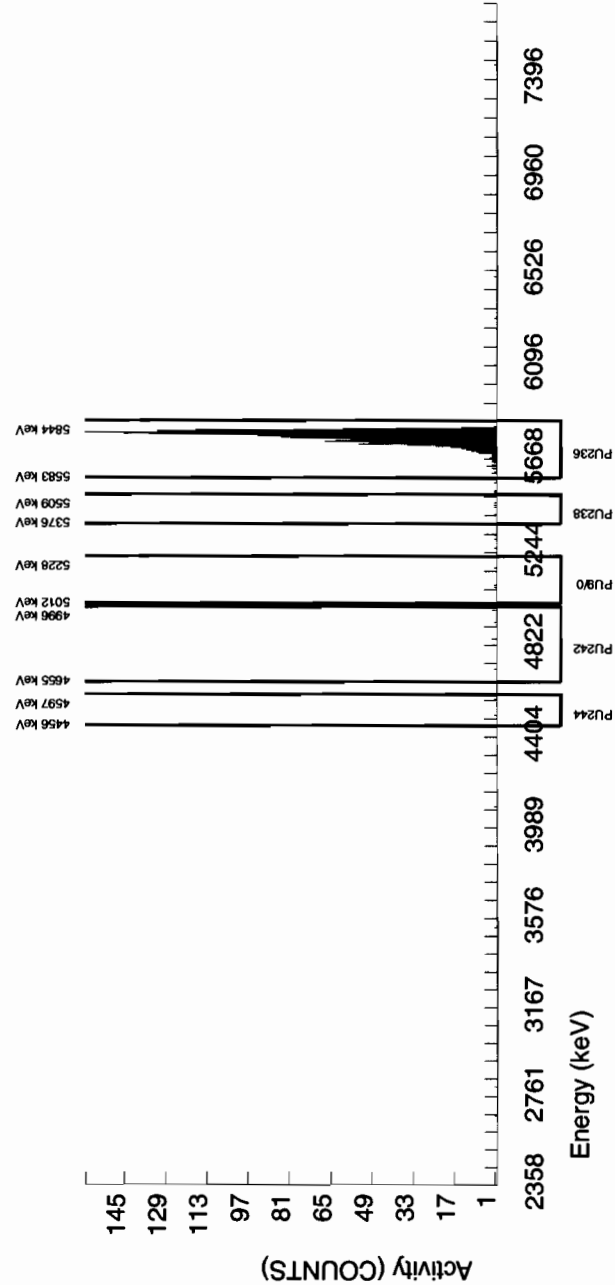


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S0248030004_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 106.750				CHAMBER : 086 DETECTOR S/N : 78198 AVERAGE %EFFICIENCY : 29.4361 COUNT DATE : 9-MAR-2010 20:47:42 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B086.CNF;1030 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W086.CNF;283 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 7.0115E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5775.875	38.074	1468.000	1467.280	0.720	0.8485	100.0000	2.36E+00	1.27E-01	2.91E-03	1.01E-02	6.16E-02
PU-238	5499.000	5455.533	55.227	4.000	2.560	1.440	2.4495	99.90000	4.07E-03	3.57E-03	8.40E-03	2.11E-02	3.57E-03
PU-9/0	5155.000	5123.983	90.371	3.000	1.560	1.440	1.9732	99.90000	2.48E-03	3.20E-03	6.77E-03	1.78E-02	3.19E-03
PU242	4890.000	4891.305	130.536	7.000	5.560	1.440	*****	100.0000	8.83E-03	4.52E-03	4.27E-01	8.58E-01	4.50E-03
PU-244	4589.000	4516.917	120.495	3.000	2.280	0.720	6.4609	99.90000	3.62E-03	2.99E-03	2.22E-02	4.86E-02	2.98E-03

NOTES:

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



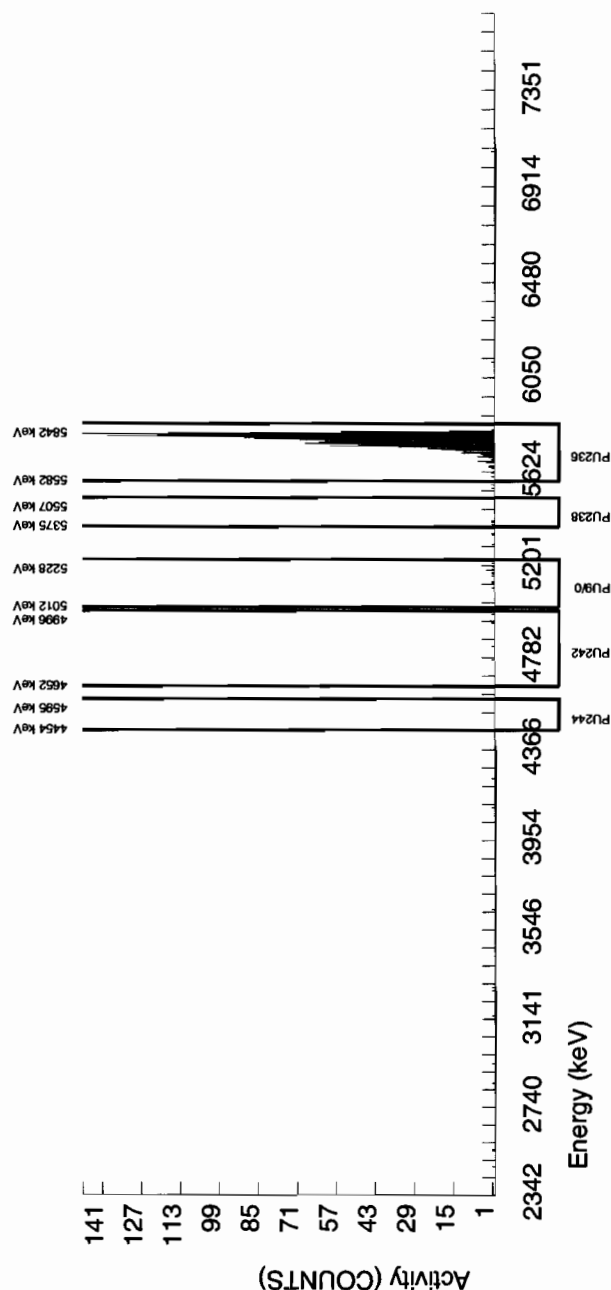
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S0248030005_PU SAMPLE QTY : 1.260 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 90.288				CHAMBER : 087 DETECTOR S/N : 78199 AVERAGE %EFFICIENCY : 30.6587 COUNT DATE : 9-MAR-2010 20:47:42 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B087.CNF;1037 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W087.CNF;276 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 5.9303E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5775.798	31.877	1294.000	1292.560	1.440	1.2000	100.0000	2.35E+00	1.31E-01	4.64E-03	1.41E-02	6.54E-02
PU-238	5499.000	5399.848	19.793	3.000	-1.320	4.320	2.4495	99.90000	-2.37E-03	4.44E-03	9.49E-03	2.38E-02	4.44E-03
PU-9/0	5155.000	5157.939	6.134	13.000	7.960	5.040	1.9732	99.90000	1.43E-02	7.35E-03	7.64E-03	2.02E-02	7.32E-03
PU242	4890.000	4899.049	202.875	5.000	0.680	4.320	*****	100.0000	1.22E-03	5.11E-03	4.82E-01	9.70E-01	5.11E-03
PU-244	4589.000	4524.449	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.80E-03	2.50E-02	5.49E-02	1.80E-03

NOTES:

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

* BKG Sg of PU-236 calculated as $\sqrt{\text{BKG AREA}}$.



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

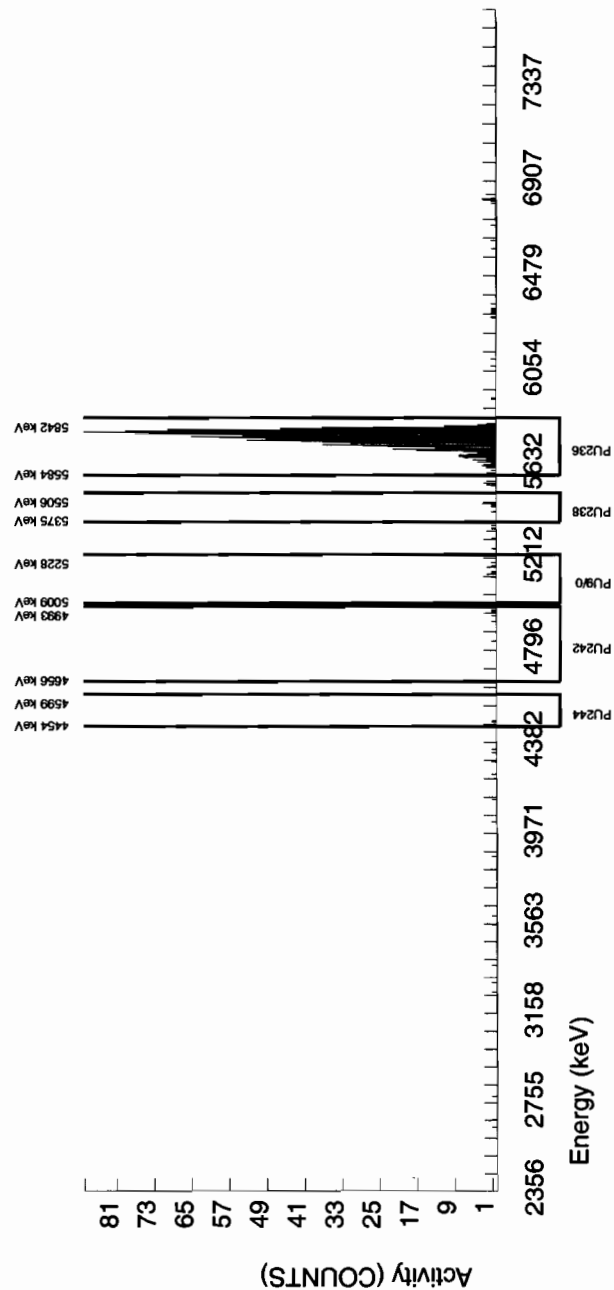
BATCH NUMBER : 959856 SAMPLE ID : S0248030006_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 76.351		CHAMBER : 088 DETECTOR S/N : 33452 AVERAGE %EFFICIENCY : 30.3479 COUNT DATE : 9-MAR-2010 20:47:42 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B088.CNF;1025 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W088.CNF;286 CAL DATE : 9-FEB-2010
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 5.0149E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5758.137	55.303	1087.000	1081.960	5.040	2.2450	100.0000	2.36E+00	1.38E-01	1.04E-02	2.67E-02	7.21E-02
PU-238	5499.000	5461.395	7.468	9.000	6.120	2.880	2.4495	99.90000	1.32E-02	7.22E-03	1.14E-02	2.87E-02	7.19E-03
PU-9/0	5155.000	5137.479	37.185	11.000	9.560	1.440	1.9732	99.90000	2.06E-02	7.56E-03	9.19E-03	2.42E-02	7.49E-03
PU242	4890.000	4944.012	139.405	6.000	6.000	0.000	*****	100.0000	1.29E-02	5.32E-03	5.80E-01	1.17E+00	5.28E-03
PU-244	4589.000	4482.810	9.335	2.000	2.000	0.000	6.4609	99.90000	4.32E-03	3.06E-03	3.01E-02	6.60E-02	3.05E-03

NOTES:

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

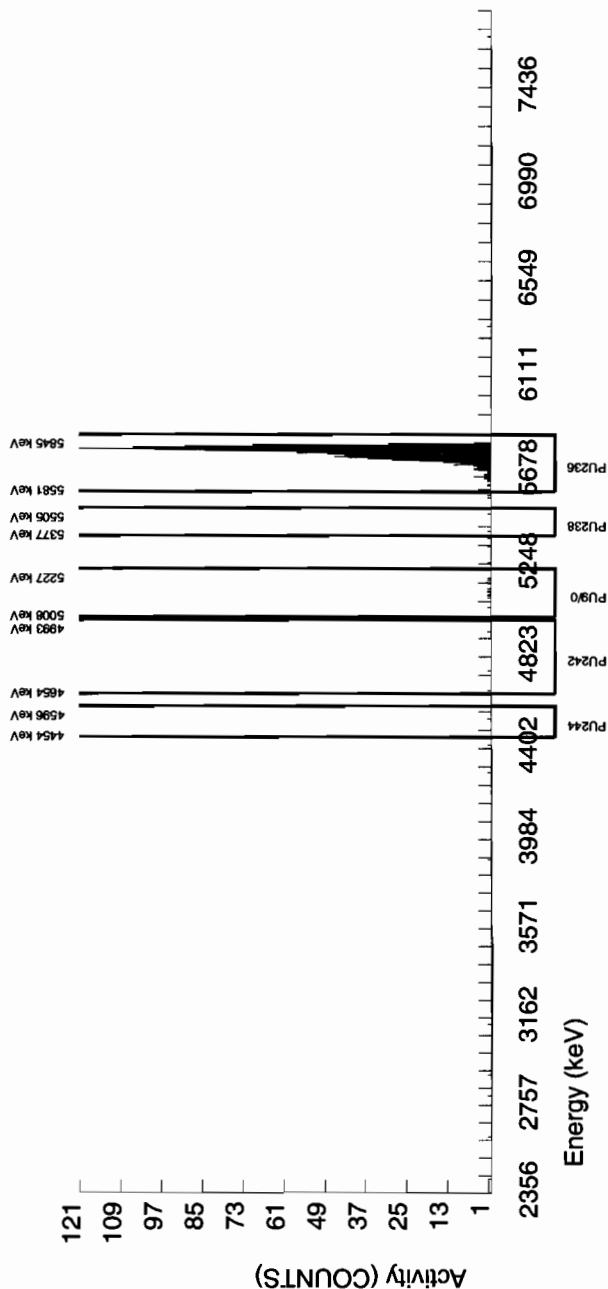


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S0248030007_PU SAMPLE QTY : 1.256 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 77.126				CHAMBER : 089 DETECTOR S/N : 78262 AVERAGE %EFFICIENCY : 29.4965 COUNT DATE : 9-MAR-2010 20:47:43 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B089.CNF;725 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W089.CNF;195 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 5.0658E+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	5768.303	30.801	1063.000	1062.280	0.720	0.8485	100.0000	2.36E+00	1.38E-01	4.01E-03	1.40E-02	7.23E-02
PU-238	5499.000	5443.655	79.811	2.000	2.000	0.000	2.4495	99.90000	4.39E-03	3.11E-03	1.16E-02	2.91E-02	3.10E-03
PU-9/0	5155.000	5130.865	129.693	10.000	10.000	0.000	1.9732	99.90000	2.19E-02	7.02E-03	9.33E-03	2.46E-02	6.93E-03
PU242	4890.000	4805.950	0.000	5.000	5.000	0.000	*****	100.0000	1.09E-02	4.93E-03	5.89E-01	1.18E+00	4.90E-03
PU-244	4589.000	4569.602	0.000	2.000	2.000	0.000	6.4609	99.90000	4.38E-03	3.11E-03	3.05E-02	6.70E-02	3.10E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

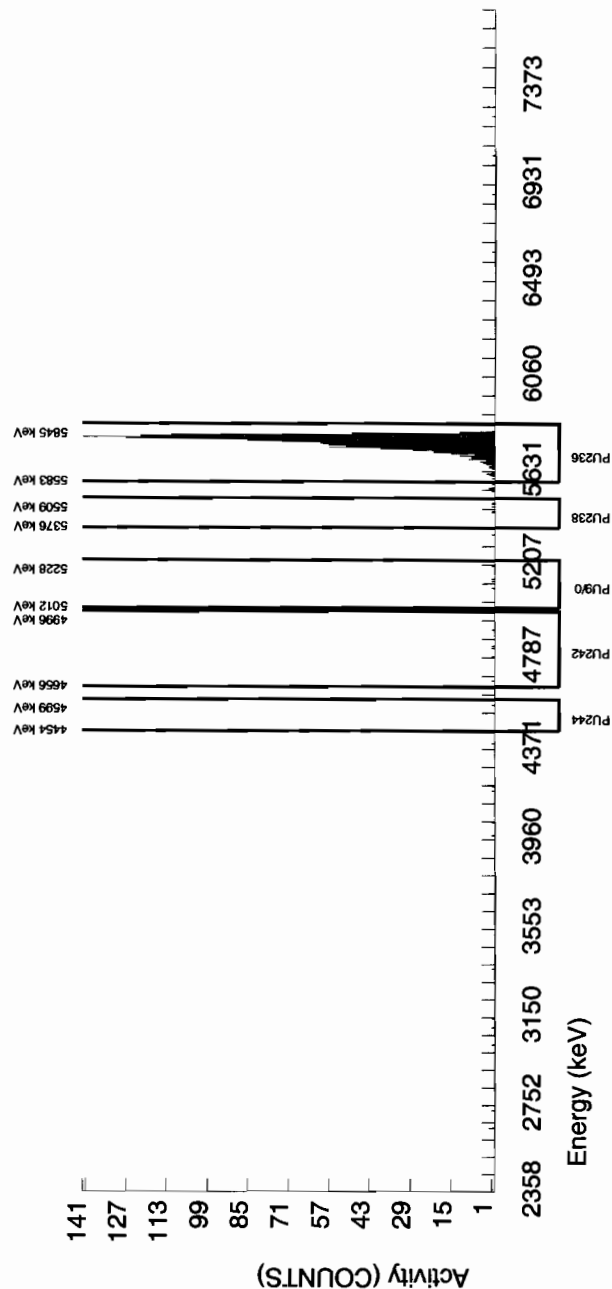
BATCH NUMBER : 959856 SAMPLE ID : S0248030008_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 85.371	CHAMBER : 090 DETECTOR S/N : 78263 AVERAGE %EFFICIENCY : 32.5428 COUNT DATE : 9-MAR-2010 20:47:43 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B090.CNF;733 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W090.CNF;201 CAL DATE : 9-FEB-2010
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 5.6074E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5769.015	32.754	1298.000	1297.280	0.720	0.8485	100.0000	2.36E+00	1.35E-01	3.29E-03	1.15E-02	6.56E-02
PU-238	5499.000	5437.098	0.000	8.000	8.000	0.000	2.4495	99.900000	1.44E-02	5.14E-03	9.51E-03	2.39E-02	5.09E-03
PU-9/0	5155.000	5165.706	0.000	5.000	5.000	0.000	1.9732	99.900000	9.00E-03	4.05E-03	7.66E-03	2.02E-02	4.02E-03
PU242	4890.000	4790.280	244.697	6.000	3.840	2.160	*****	100.0000	6.90E-03	4.95E-03	4.83E-01	9.71E-01	4.94E-03
PU-244	4589.000	4578.413	4.894	1.000	1.000	0.000	6.4609	99.900000	1.80E-03	1.80E-03	2.51E-02	5.50E-02	1.80E-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

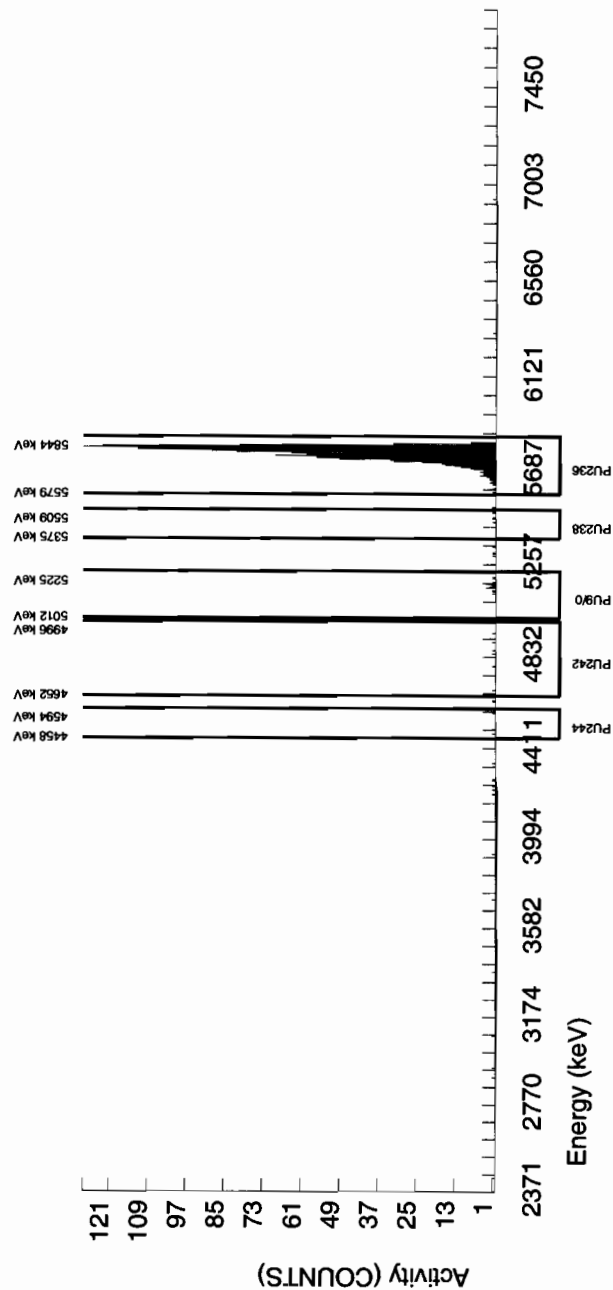
BATCH NUMBER : 959856 SAMPLE ID : S0248030009_PU SAMPLE QTY : 1.270 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 81.876		CHAMBER : 091 DETECTOR S/N : 78259 AVERAGE %EFFICIENCY : 34.5001 COUNT DATE : 9-MAR-2010 20:47:43 ELAPSED LIVE TIME(SEC) : 43200.00		LIB FILE : ENV_ALPHA_PU BKG FILE : B091.CNF;731 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W091.CNF;192 CAL DATE : 9-FEB-2010	
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 5.3778E+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	5774.985	47.982	1319.000	1319.000	0.000	0.0000	100.0000	2.33E+00	1.33E-01	0.00E+00	4.73E-03	6.41E-02
PU-238	5499.000	5486.075	0.000	6.000	5.280	0.720	2.4495	99.900000	9.22E-03	4.48E-03	9.23E-03	2.32E-02	4.46E-03
PU-9/0	5155.000	5164.800	19.644	15.000	15.000	0.000	1.9732	99.900000	2.62E-02	6.89E-03	7.43E-03	1.96E-02	6.76E-03
PU242	4890.000	4828.563	0.000	8.000	7.280	0.720	*****	100.0000	1.27E-02	5.13E-03	4.69E-01	9.43E-01	5.09E-03
PU-244	4589.000	4522.624	94.292	3.000	2.280	0.720	6.4609	99.900000	3.98E-03	3.28E-03	2.43E-02	5.34E-02	3.27E-03

NOTES:

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

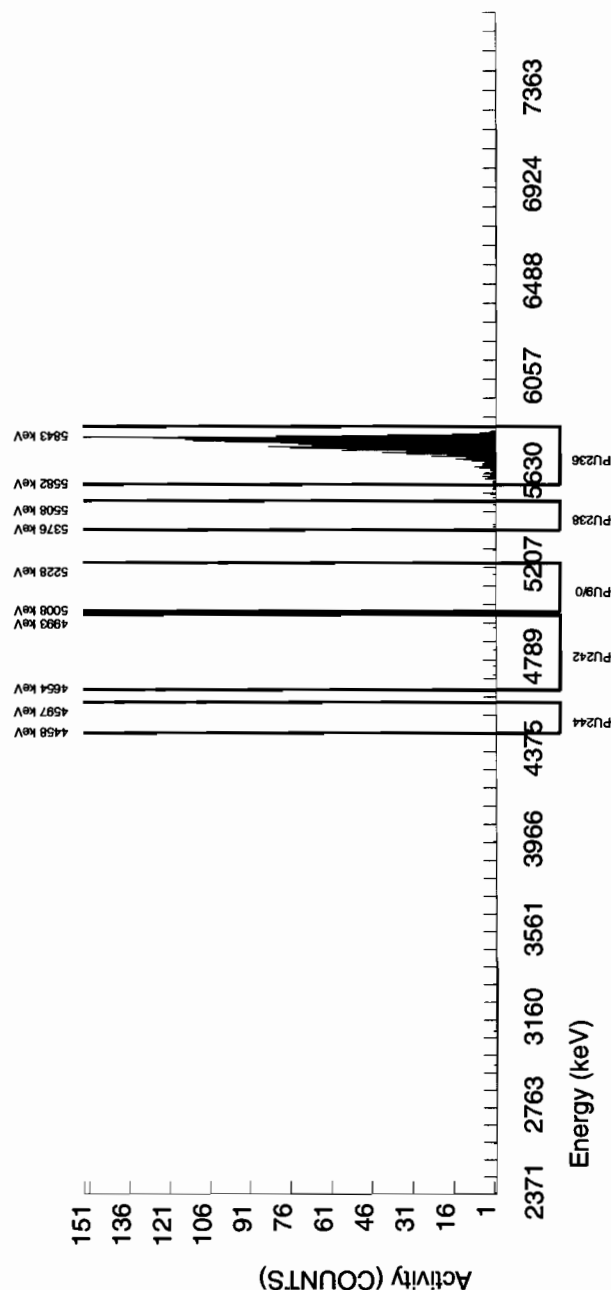


GEL LABORATORIES LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S1202058734_PU SAMPLE QTY : 1.000 G SAMPLE DATE : 3-MAR-2010 00:00:00. ANALYST : CXM2 % YIELD : 98.406				CHAMBER : 102 DETECTOR S/N : 72525 AVERAGE %EFFICIENCY : 32.7311 COUNT DATE : 9-MAR-2010 20:47:45 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B102.CNF;688 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W102.CNF;194 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5161E+00 dpm RESULTS : 6.4122E+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	5767.017	47.994	1504.000	1504.000	0.000	0.0000	100.0000	2.94E+00	1.57E-01	0.00E+00	5.26E-03	7.57E-02
PU-238	5499.000	5428.708	0.000	5.000	4.280	0.720	2.4495	99.900000	8.32E-03	4.58E-03	1.03E-02	2.58E-02	4.57E-03
PU-9/0	5155.000	5204.788	0.000	2.000	1.280	0.720	1.9732	99.900000	2.49E-03	3.09E-03	8.28E-03	2.18E-02	3.09E-03
PU242	4890.000	4819.125	204.734	4.000	1.840	2.160	*****	100.0000	3.57E-03	4.58E-03	5.22E-01	1.05E+00	4.58E-03
PU-244	4589.000	4527.452	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.40E-03	2.40E-03	2.71E-02	5.95E-02	2.40E-03

NOTES:

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



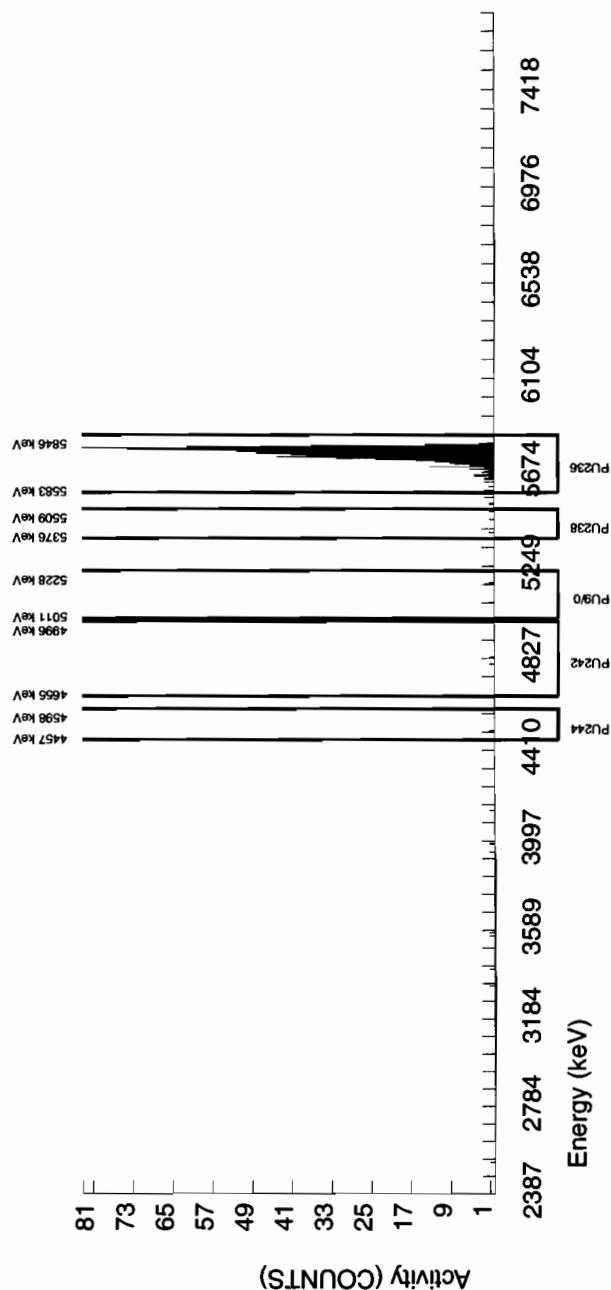
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S1202058735_PU SAMPLE QTY : 1.255 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 49.791				CHAMBER : 103 DETECTOR S/N : 79461 AVERAGE %EFFICIENCY : 32.6574 COUNT DATE : 9-MAR-2010 20:47:45 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B103.CNF;692 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W103.CNF;198 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5682E+00 dpm RESULTS : 3.2704E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5766.396	49.222	760.000	759.280	0.720	0.8485	100.0000	2.36E+00	1.52E-01	5.61E-03	1.95E-02	8.56E-02
PU-238	5499.000	5459.197	93.602	3.000	2.280	0.720	2.4495	99.90000	7.00E-03	5.77E-03	1.62E-02	4.08E-02	5.76E-03
PU-9/0	5155.000	5154.940	7.236	4.000	4.000	0.000	1.9732	99.90000	1.23E-02	6.17E-03	1.31E-02	3.44E-02	6.14E-03
PU242	4890.000	4822.258	34.485	2.000	1.280	0.720	*****	100.0000	3.92E-03	4.87E-03	8.24E-01	1.66E+00	4.87E-03
PU-244	4589.000	4503.879	4.926	1.000	0.280	0.720	6.4609	99.90000	8.59E-04	3.79E-03	4.28E-02	9.39E-02	3.78E-03

NOTES:

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

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

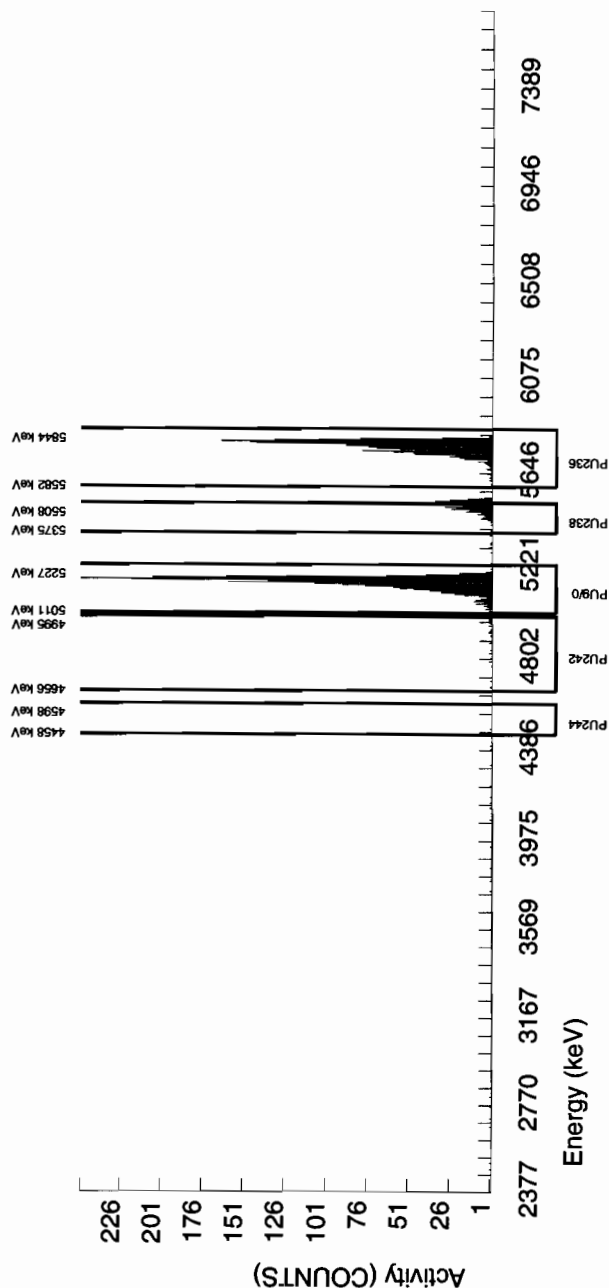


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959856 SAMPLE ID : S1202058736_PU SAMPLE QTY : 0.105 G SAMPLE DATE : 3-MAR-2010 00:00:00. ANALYST : CXM2 % YIELD : 97.814				CHAMBER : 105 DETECTOR S/N : 78777 AVERAGE %EFFICIENCY : 31.7688 COUNT DATE : 9-MAR-2010 20:47:45 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B105.CNF;690 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W105.CNF;175 CAL DATE : 9-FEB-2010					
TRACER ID : 1430-B NUCLIDE : PU-236 NOMINAL : 6.5161E+00 dpm RESULTS : 6.3736E+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	5772.030	31.416	1451.000	1451.000	0.000	0.0000	100.0000	2.80E+01	1.74E+00	0.00E+00	5.20E-02	7.34E-01
PU-238	5499.000	5483.876	0.000	221.000	221.000	0.000	2.4495	99.900000	4.24E+00	3.72E-01	1.01E-01	2.55E-01	2.85E-01
PU-9/0	5155.000	5152.727	29.485	1920.000	1917.840	2.160	1.9732	99.900000	3.68E+01	2.24E+00	8.17E-02	2.15E-01	8.41E-01
PU242	4890.000	4902.625	0.000	33.000	30.840	2.160	*****	100.0000	5.91E-01	1.18E-01	5.16E+00	1.04E+01	1.13E-01
PU-244	4589.000	4489.558	4.882	1.000	0.280	0.720	6.4609	99.900000	5.37E-03	2.37E-02	2.68E-01	5.87E-01	2.37E-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# 959887 Product: U Date: 3/12/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: E. [Signature] 3/12/10

Secondary Review Performed By: [Signature] 3/13/10

LANL

Uranium Que Sheet

02-MAR-10

Batch #: 959857 Analyst: CXM2 First Client Due Date: 18-MAR-10 Internal Due Date: 08-MAR-10
 Tracer Isotope: U-232 U-236 Tracer Code: 1283-H Expiration Date: 12/9/10 Vol: 0.1mL
 LCS Isotope: U-238 LCS Code: 0244-A Expiration Date: 10/31/20 Vol: 0.120g * SEM
 Spike Isotope: U-238 Spike Code: --- Expiration Date: --- Vol: ---
 Prep Date: 3/3/10 Initials: CMM Pipet ID: 2971056 Balance ID: 50410272
 Witness: JF 3-3-10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Allquot (g)	U Det #
248030001-1	RE15-10-7902	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	1	31	0.510	119
248030002-1	RE15-10-7901	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	2	32	0.525	120
248030003-1	RE15-10-8027	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	3	33	0.519	121
248030004-1	RE15-10-8028	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	4	34	0.518	122
248030005-1	RE15-10-8030	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	5	35	0.523	123
248030006-1	RE15-10-8031	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	6	36	0.511	124
248030007-1	RE15-10-8029	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	7	37	0.518	125
248030008-1	RE15-10-8032	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	8	38	0.506	126
248030009-1	RE15-10-8067	SAMPLE		.1 pCi/g	SOIL	LANL010	19-FEB-10	9	39	0.507	127
24803001-1	RE11-10-1627	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	10	40	0.519	128
24803002-1	RE11-10-1626	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	11	41	0.513	129
24803003-1	RE11-10-1624	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	12	42	0.523	130
24803004-1	RE11-10-1625	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	13	43	0.510	131
24803005-1	RE11-10-1623	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	14	44	0.521	132
24803006-1	RE11-10-1628	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	15	45	0.525	141
24803007-1	RE11-10-1622	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	16	46	0.502	142
24803008-1	RE11-10-1621	SAMPLE		.1 pCi/g	SOIL	LANL010	20-FEB-10	17	47	0.518	143
1202058737-1	MB for batch 959857	MB		.1 pCi/g	SOIL	QC ACCOUNT		18	48	1.0	144
1202058738-1	RE15-10-7902(248030001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	19-FEB-10	19	49	0.511	145
1202058739-1	LCS for batch 959857	LCS		.1 pCi/g	SOIL	QC ACCOUNT		20	50	0.120	146

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: [Signature] 3/12/10
AJ 1/17/10

Blank Correction Report

Batch ID 959857

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202058738	DUP	Uranium-233/234	0.511 g	1.38	0.123	0.104	.006242681	pCi/g	NO
		Uranium-235/236	0.511 g	0.0869	0.0209	0.0638	.008454012	pCi/g	NO
		Uranium-238	0.511 g	2.16	0.180	0.0734	.020547945	pCi/g	NO
1202058739	LCS	Uranium-233/234	0.120 g	5.52	0.505	0.421	.026583333	pCi/g	NO
		Uranium-235/236	0.120 g	0.424	0.094	0.257	.036	pCi/g	NO
		Uranium-238	0.120 g	5.25	0.484	0.296	.0875	pCi/g	NO
1202058737	MB	Uranium-233/234	1.00 g	0.00319	0.00422	0.0493	.00319	pCi/g	YES
		Uranium-235/236	1.00 g	0.00432	0.00307	0.0301	.00432	pCi/g	YES
		Uranium-238	1.00 g	0.0105	0.005	0.0346	.0105	pCi/g	YES
248030001	RE15-10-7902	Uranium-233/234	0.510 g	1.64	0.146	0.124	.006254902	pCi/g	NO
		Uranium-235/236	0.510 g	0.0545	0.0193	0.0759	.008470588	pCi/g	NO
		Uranium-238	0.510 g	2.32	0.195	0.0874	.020588235	pCi/g	NO
248030002	RE15-10-7901	Uranium-233/234	0.525 g	4.43	0.355	0.137	.006076190	pCi/g	NO
		Uranium-235/236	0.525 g	0.253	0.044	0.0839	.008228571	pCi/g	NO
		Uranium-238	0.525 g	9.08	0.695	0.0965	.02	pCi/g	NO
248030003	RE15-10-8027	Uranium-233/234	0.519 g	1.79	0.149	0.099	.006148435	pCi/g	NO
		Uranium-235/236	0.519 g	0.130	0.0255	0.0605	.008323699	pCi/g	NO
		Uranium-238	0.519 g	4.73	0.358	0.0696	.020231214	pCi/g	NO
248030004	RE15-10-8028	Uranium-233/234	0.518 g	0.890	0.0839	0.0988	.006158301	pCi/g	NO
		Uranium-235/236	0.518 g	0.0693	0.018	0.0604	.008339768	pCi/g	NO
		Uranium-238	0.518 g	0.992	0.0915	0.0695	.020270270	pCi/g	NO
248030005	RE15-10-8030	Uranium-233/234	0.523 g	2.75	0.219	0.101	.006099426	pCi/g	NO
		Uranium-235/236	0.523 g	0.160	0.0289	0.0619	.008260038	pCi/g	NO
		Uranium-238	0.523 g	5.30	0.399	0.0712	.020076482	pCi/g	NO
248030006	RE15-10-8031	Uranium-233/234	0.511 g	2.03	0.168	0.105	.006242681	pCi/g	NO
		Uranium-235/236	0.511 g	0.190	0.0332	0.0644	.008454012	pCi/g	NO
		Uranium-238	0.511 g	5.16	0.391	0.0741	.020547945	pCi/g	NO
248030007	RE15-10-8029	Uranium-233/234	0.518 g	1.71	0.151	0.126	.006158301	pCi/g	NO
		Uranium-235/236	0.518 g	0.0664	0.0198	0.0771	.008339768	pCi/g	NO
		Uranium-238	0.518 g	3.39	0.274	0.0888	.020270270	pCi/g	NO
248030008	RE15-10-8032	Uranium-233/234	0.506 g	0.943	0.0903	0.110	.006304348	pCi/g	NO
		Uranium-235/236	0.506 g	0.053	0.0164	0.0671	.008537549	pCi/g	NO
		Uranium-238	0.506 g	1.13	0.104	0.0773	.020750988	pCi/g	NO
248030009	RE15-10-8067	Uranium-233/234	0.507 g	1.94	0.162	0.107	.006291913	pCi/g	NO
		Uranium-235/236	0.507 g	0.145	0.0288	0.0652	.008520710	pCi/g	NO
		Uranium-238	0.507 g	3.95	0.305	0.075	.020710059	pCi/g	NO
248063001	RE11-10-1627	Uranium-233/234	0.519 g	1.22	0.108	0.100	.006146435	pCi/g	NO
		Uranium-235/236	0.519 g	0.0836	0.0201	0.0613	.008323699	pCi/g	NO
		Uranium-238	0.519 g	1.38	0.120	0.0705	.020231214	pCi/g	NO
248063002	RE11-10-1626	Uranium-233/234	0.513 g	0.867	0.0829	0.102	.006218324	pCi/g	NO
		Uranium-235/236	0.513 g	0.0581	0.0189	0.0623	.008421053	pCi/g	NO

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248063002	RE11-10-1626	Uranium-238	0.513 g	0.712	0.0716	0.0717	.020467836	pCi/g	NO
248063003	RE11-10-1624	Uranium-233/234	0.523 g	0.755	0.0739	0.0974	.006099426	pCi/g	NO
		Uranium-235/236	0.523 g	0.0384	0.0131	0.0595	.008260038	pCi/g	YES
		Uranium-238	0.523 g	0.842	0.0801	0.0684	.020076482	pCi/g	NO
248063004	RE11-10-1625	Uranium-233/234	0.510 g	1.86	0.157	0.111	.006254902	pCi/g	NO
		Uranium-235/236	0.510 g	0.118	0.0251	0.0675	.008470588	pCi/g	NO
		Uranium-238	0.510 g	2.18	0.179	0.0777	.020588235	pCi/g	NO
248063005	RE11-10-1623	Uranium-233/234	0.521 g	0.886	0.0851	0.105	.006122841	pCi/g	NO
		Uranium-235/236	0.521 g	0.0508	0.0157	0.0644	.008291747	pCi/g	NO
		Uranium-238	0.521 g	0.994	0.0932	0.0741	.020153551	pCi/g	NO
248063006	RE11-10-1628	Uranium-233/234	0.525 g	0.744	0.0747	0.101	.006078190	pCi/g	NO
		Uranium-235/236	0.525 g	0.0444	0.0144	0.0619	.008228571	pCi/g	NO
		Uranium-238	0.525 g	0.734	0.0739	0.0713	.02	pCi/g	NO
248063007	RE11-10-1622	Uranium-233/234	0.502 g	0.908	0.0882	0.112	.006354582	pCi/g	NO
		Uranium-235/236	0.502 g	0.0343	0.0132	0.0683	.008605578	pCi/g	YES
		Uranium-238	0.502 g	0.881	0.0864	0.0786	.020916335	pCi/g	NO
248063008	RE11-10-1621	Uranium-233/234	0.518 g	1.14	0.107	0.109	.006158301	pCi/g	NO
		Uranium-235/236	0.518 g	0.0478	0.0155	0.0666	.008339768	pCi/g	NO
		Uranium-238	0.518 g	1.15	0.107	0.0767	.020270270	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

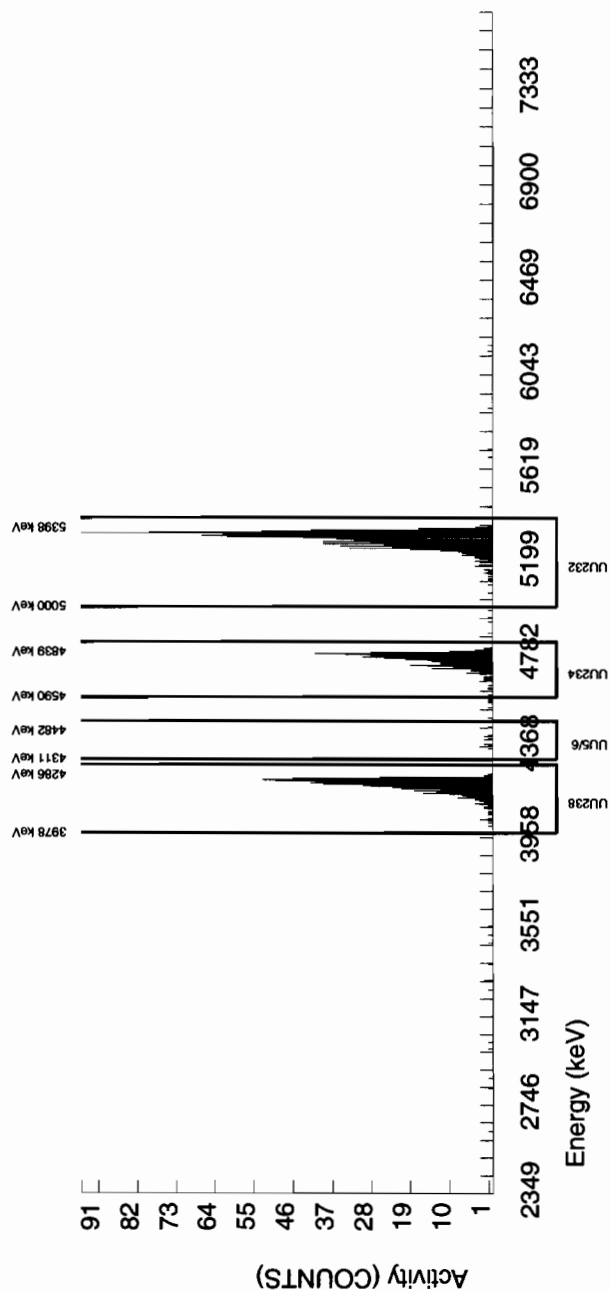
BATCH NUMBER : 959857 SAMPLE ID : S0248030001_UU SAMPLE QTY : 0.510 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 78.529	CHAMBER : 119 DETECTOR S/N : 79450 AVERAGE %EFFICIENCY : 25.5204 COUNT DATE : 11-MAR-2010 21:06:27 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B119.CNF;467 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W119.CNF;121 CAL DATE : 18-FEB-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 3.5365E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5307.509	29.883	905.000	902.000	3.000	1.7321	100.0000	3.98E+00	3.15E-01	1.78E-02	4.75E-02	1.33E-01
U-3/4	4763.020	4762.120	31.087	374.000	373.087	0.000	5.4790	100.0000	1.64E+00	1.46E-01	5.62E-02	1.24E-01	8.51E-02
U-235	4391.000	4404.605	44.289	11.000	10.000	1.000	2.4127	80.90000	5.45E-02	1.93E-02	3.06E-02	7.59E-02	1.89E-02
U-238	4184.730	4197.075	40.787	530.000	526.000	4.000	3.6781	100.0000	2.32E+00	1.95E-01	3.77E-02	8.74E-02	1.02E-01

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

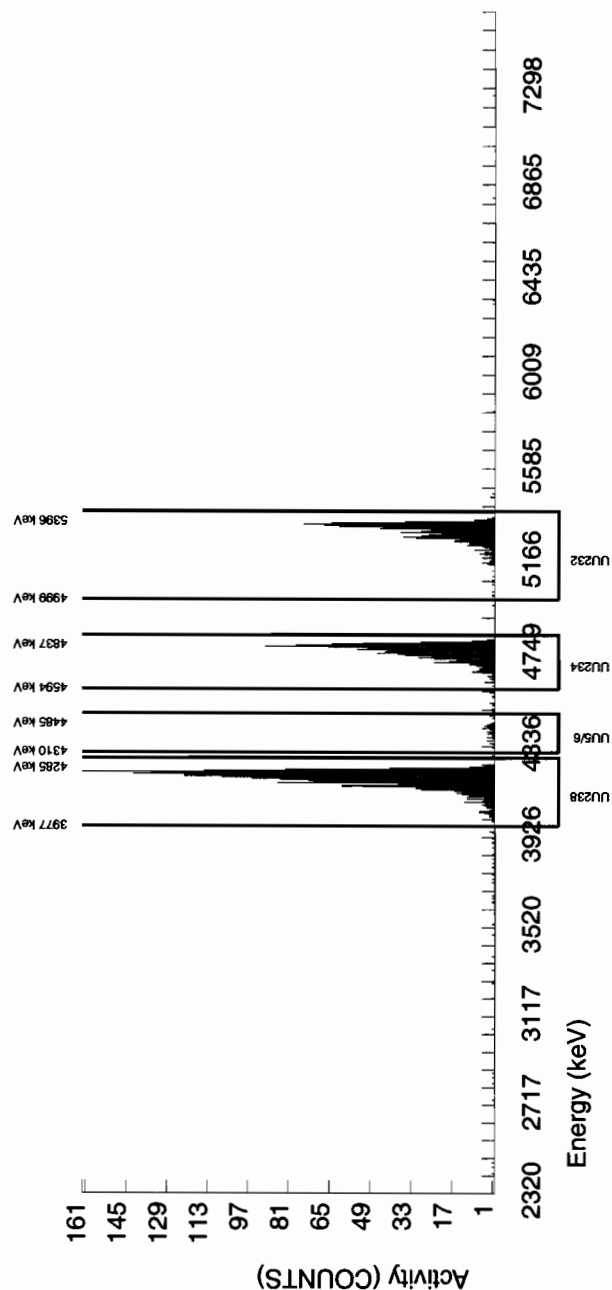
BATCH NUMBER : 959857 SAMPLE ID : S0248030002_UU SAMPLE QTY : 0.525 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 67.418		CHAMBER : 120 DETECTOR S/N : 74430 AVERAGE %EFFICIENCY : 26.1342 COUNT DATE : 11-MAR-2010 21:06:29 ELAPSED LIVE TIME(SEC) : 60000.00		LIB FILE : ENV_ALPHA_UU BKG FILE : B120.CNF;471 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W120.CNF;128 CAL DATE : 18-FEB-2010	
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 3.0361E+00 dpm		MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G		LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5308.469	31.024	794.000	793.000	1.000	1.0000	100.0000	3.86E+00	3.14E-01	1.13E-02	3.59E-02	1.37E-01
U-3/4	4763.020	4767.035	46.169	913.000	910.197	2.000	5.4790	100.0000	4.43E+00	3.55E-01	6.21E-02	1.37E-01	1.47E-01
U-235	4391.000	4410.637	75.673	43.000	42.000	1.000	2.4127	80.90000	2.53E-01	4.40E-02	3.38E-02	8.39E-02	3.99E-02
U-238	4184.730	4194.670	59.680	1865.000	1864.000	1.000	3.6781	100.0000	9.08E+00	6.95E-01	4.17E-02	9.65E-02	2.10E-01

NOTES:

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

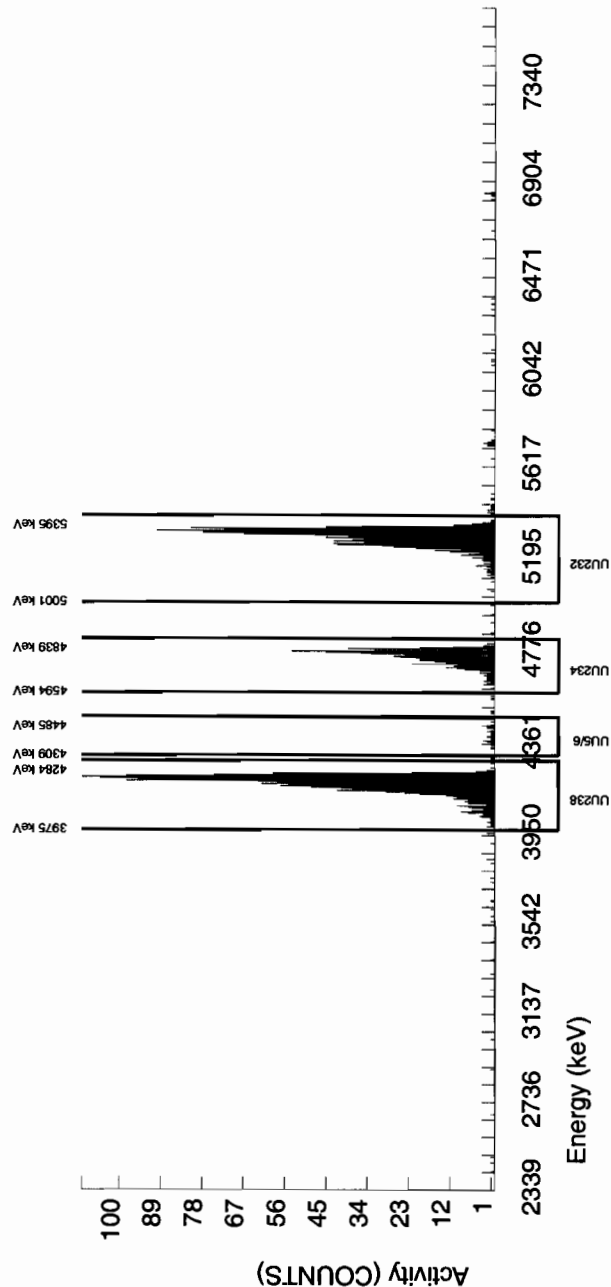


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959857 SAMPLE ID : S0248030003_UU SAMPLE QTY : 0.519 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 100.341				CHAMBER : 121 DETECTOR S/N : 75545 AVERAGE %EFFICIENCY : 24.6447 COUNT DATE : 11-MAR-2010 21:06:31 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B121.CNF;453 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W121.CNF;119 CAL DATE : 18-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 4.5188E+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	5300.936	36.207	1116.000	1113.000	3.000	1.7321	100.0000	3.91E+00	2.99E-01	1.41E-02	3.78E-02	1.17E-01
U-3/4	4763.020	4759.920	25.921	512.000	509.873	1.000	5.4790	100.0000	1.79E+00	1.49E-01	4.47E-02	9.90E-02	7.94E-02
U-235	4391.000	4401.994	67.830	30.000	30.000	0.000	2.4127	80.90000	1.30E-01	2.55E-02	2.44E-02	6.05E-02	2.38E-02
U-238	4184.730	4185.241	56.023	1351.000	1349.000	2.000	3.6781	100.0000	4.73E+00	3.58E-01	3.00E-02	6.96E-02	1.29E-01

NOTES:

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

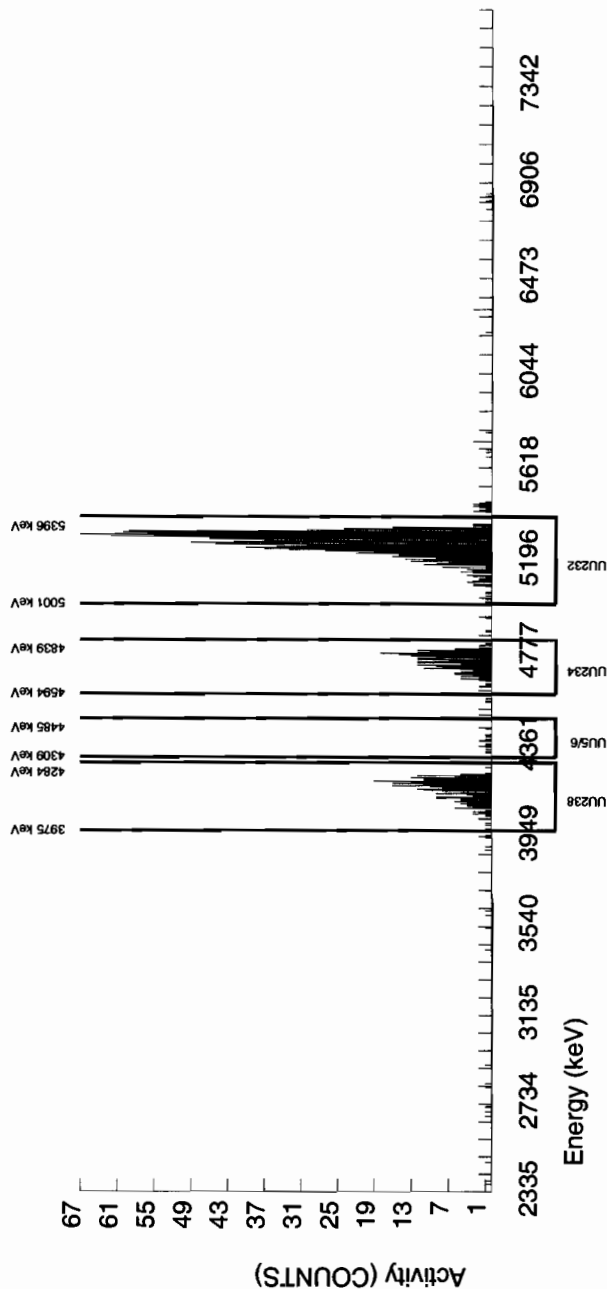


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959857 SAMPLE ID : S0248030004_UU SAMPLE QTY : 0.518 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 96.518				CHAMBER : 122 DETECTOR S/N : 75546 AVERAGE %EFFICIENCY : 25.7131 COUNT DATE : 11-MAR-2010 21:06:34 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B122.CNF;455 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W122.CNF;122 CAL DATE : 18-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 4.3466E+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	5281.936	83.015	1123.000	1117.000	6.000	2.4495	100.0000	3.92E+00	3.00E-01	2.00E-02	4.94E-02	1.18E-01
U-3/4	4763.020	4743.120	83.307	255.000	253.869	0.000	5.4790	100.0000	8.90E-01	8.39E-02	4.47E-02	9.88E-02	5.58E-02
U-235	4391.000	4380.758	11.459	16.000	16.000	0.000	2.4127	80.90000	6.93E-02	1.80E-02	2.43E-02	6.04E-02	1.73E-02
U-238	4184.730	4165.859	68.621	284.000	283.000	1.000	3.6781	100.0000	9.92E-01	9.15E-02	3.00E-02	6.95E-02	5.92E-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

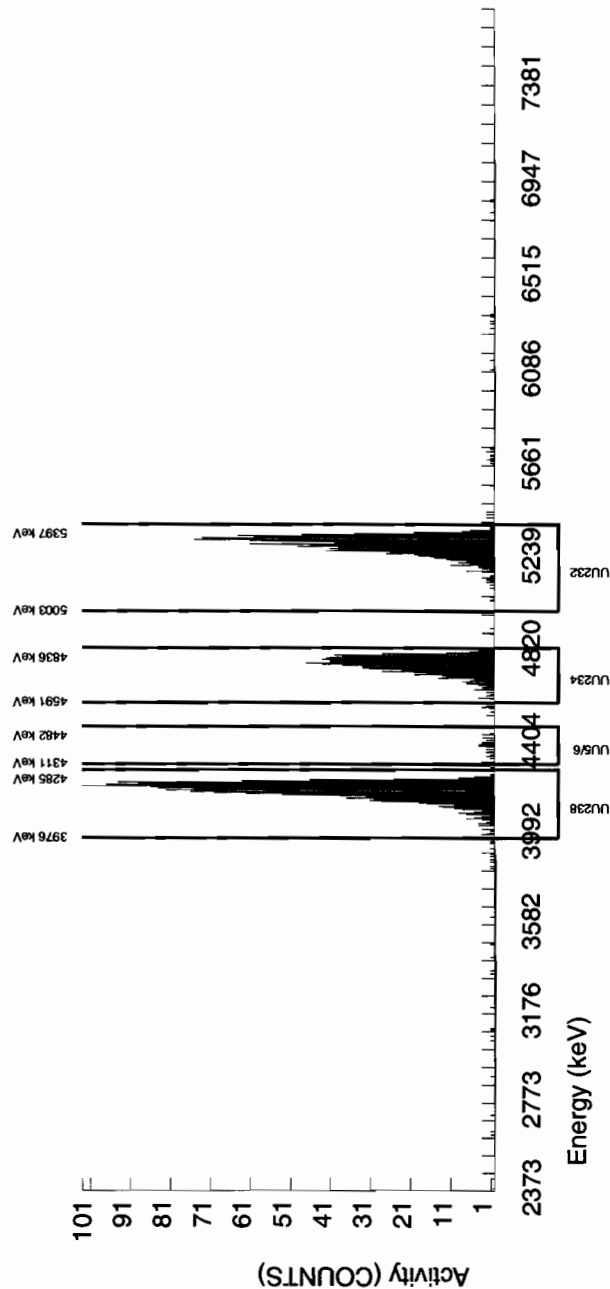
BATCH NUMBER : 959857 SAMPLE ID : S0248030005_UU SAMPLE QTY : 0.523 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 93.397		CHAMBER : 123 DETECTOR S/N : 45-142V3 AVERAGE %EFFICIENCY : 25.6683 COUNT DATE : 11-MAR-2010 21:06:36 ELAPSED LIVE TIME(SEC) : 60000.00		LIB FILE : ENV_ALPHA_UU BKG FILE : B123.CNF;453 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W123.CNF;118 CAL DATE : 18-FEB-2010	
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 4.2061E+00 dpm		MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G		LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5308.019	74.712	1084.000	1079.000	5.000	2.2361	100.0000	3.88E+00	2.99E-01	1.87E-02	4.71E-02	1.19E-01
U-3/4	4763.020	4763.248	78.836	770.000	765.907	3.000	5.4790	100.0000	2.75E+00	2.19E-01	4.58E-02	1.01E-01	9.98E-02
U-235	4391.000	4395.725	56.617	36.000	36.000	0.000	2.4127	80.90000	1.60E-01	2.89E-02	2.49E-02	6.19E-02	2.66E-02
U-238	4184.730	4194.358	63.447	1474.000	1474.000	0.000	3.6781	100.0000	5.30E+00	3.99E-01	3.07E-02	7.12E-02	1.38E-01

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

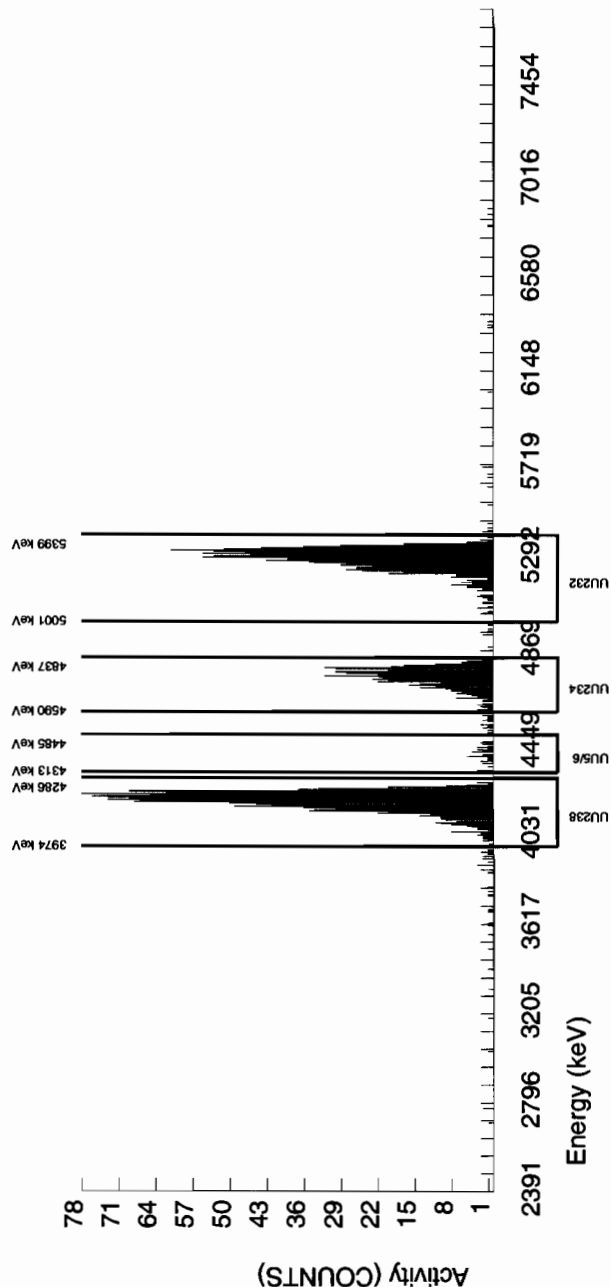
BATCH NUMBER : 959857 SAMPLE ID : S0248030006_UU SAMPLE QTY : 0.511 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 90.771	CHAMBER : 124 DETECTOR S/N : 45-142V2 AVERAGE %EFFICIENCY : 25.9705 COUNT DATE : 11-MAR-2010 21:06:38 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B124.CNF;449 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W124.CNF;114 CAL DATE : 18-FEB-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 4.0878E+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	5292.907	77.615	1071.000	1061.000	10.000	3.1623	100.0000	3.97E+00	3.07E-01	2.75E-02	6.52E-02	1.23E-01
U-3/4	4763.020	4751.854	74.088	543.000	541.926	0.000	5.4790	100.0000	2.03E+00	1.68E-01	4.77E-02	1.05E-01	8.71E-02
U-235	4391.000	4402.810	103.097	42.000	41.000	1.000	2.4127	80.90000	1.90E-01	3.32E-02	2.59E-02	6.44E-02	3.03E-02
U-238	4184.730	4184.880	79.332	1380.000	1379.000	1.000	3.6781	100.0000	5.16E+00	3.91E-01	3.20E-02	7.41E-02	1.39E-01

NOTES:

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

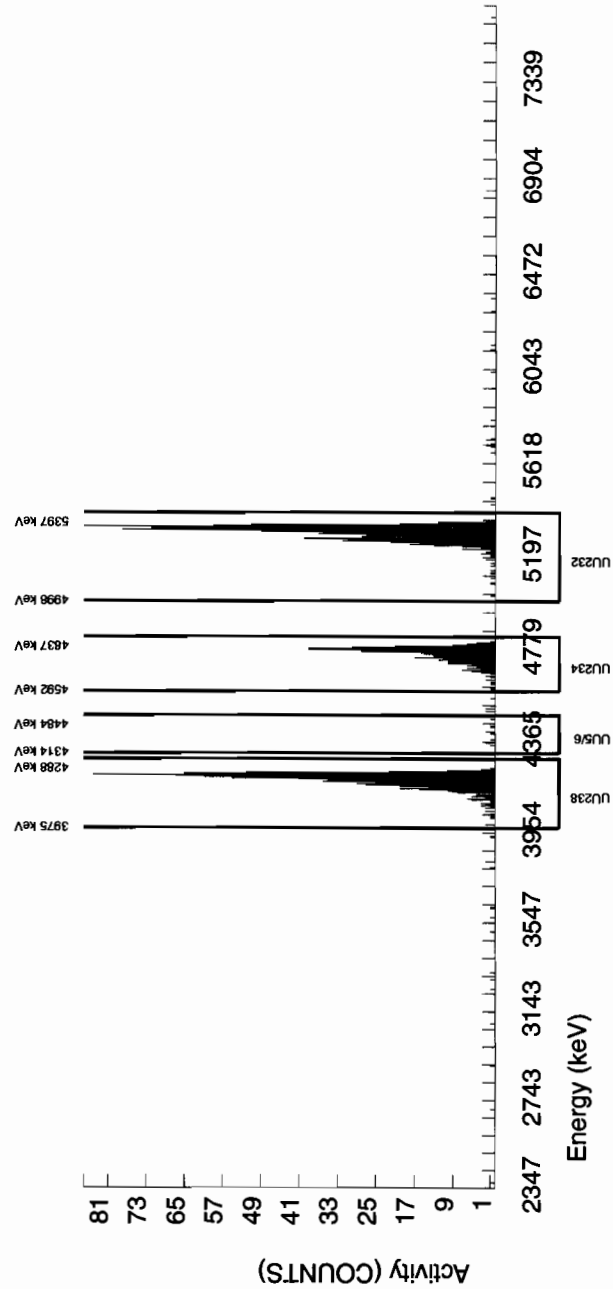


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 959857 SAMPLE ID : S0248030007_UU SAMPLE QTY : 0.518 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 75.651				CHAMBER : 125 DETECTOR S/N : 75547 AVERAGE %EFFICIENCY : 25.6687 COUNT DATE : 11-MAR-2010 21:06:40 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B125.CNF;459 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W125.CNF;132 CAL DATE : 18-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 3.4069E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.451	33.022	878.000	874.000	4.000	2.0000	100.0000	3.92E+00	3.12E-01	2.08E-02	5.38E-02	1.33E-01
U-3/4	4763.020	4761.224	28.273	385.000	381.115	3.000	5.4790	100.0000	1.71E+00	1.51E-01	5.71E-02	1.26E-01	8.81E-02
U-235	4391.000	4398.583	54.284	12.000	12.000	0.000	2.4127	80.90000	6.64E-02	1.98E-02	3.11E-02	7.71E-02	1.92E-02
U-238	4184.730	4195.899	30.596	757.000	757.000	0.000	3.6781	100.0000	3.39E+00	2.74E-01	3.83E-02	8.88E-02	1.23E-01

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

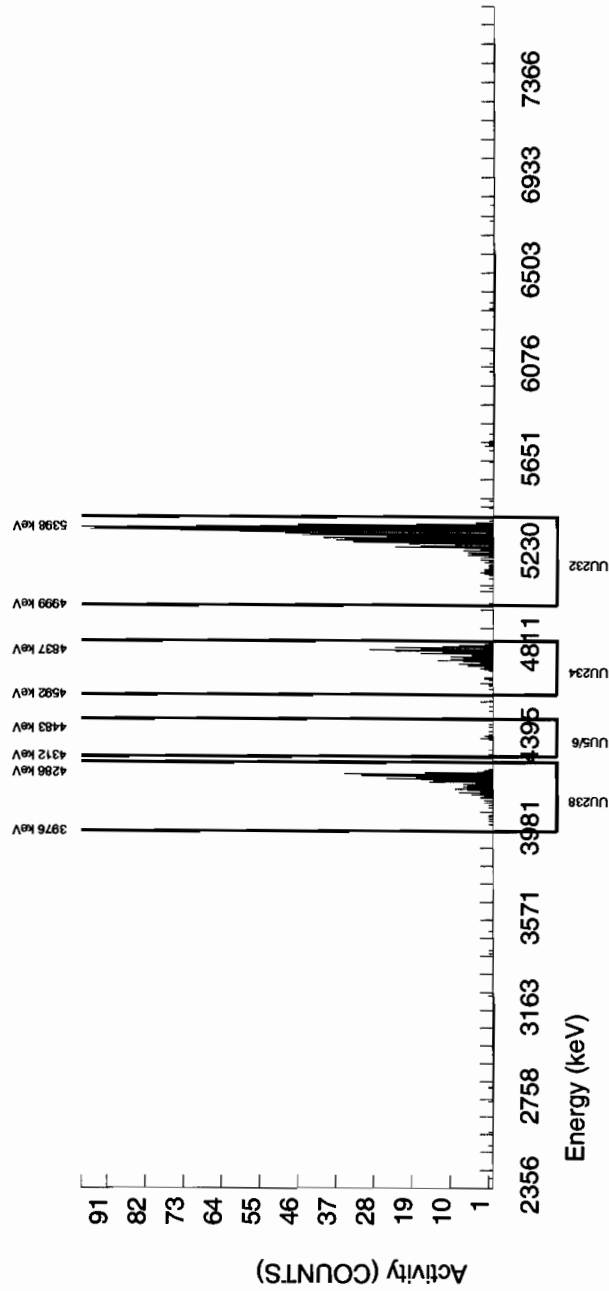
BATCH NUMBER : 959857 SAMPLE ID : S0248030008_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 91.104	CHAMBER : 126 DETECTOR S/N : 75548 AVERAGE %EFFICIENCY : 25.0705 COUNT DATE : 11-MAR-2010 21:06:43 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B126.CNF:458 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W126.CNF:134 CAL DATE : 18-FEB-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 4.1028E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5323.287	33.936	1032.000	1028.000	4.000	2.0000	100.0000	4.01E+00	3.11E-01	1.81E-02	4.68E-02	1.26E-01
U-3/4	4763.020	4778.558	30.045	243.000	241.959	0.000	5.4790	100.0000	9.43E-01	9.03E-02	4.97E-02	1.10E-01	6.06E-02
U-235	4391.000	4396.989	10.017	11.000	11.000	0.000	2.4127	80.90000	5.30E-02	1.64E-02	2.70E-02	6.71E-02	1.60E-02
U-238	4184.730	4207.817	28.798	291.000	290.000	1.000	3.6781	100.0000	1.13E+00	1.04E-01	3.34E-02	7.73E-02	6.66E-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

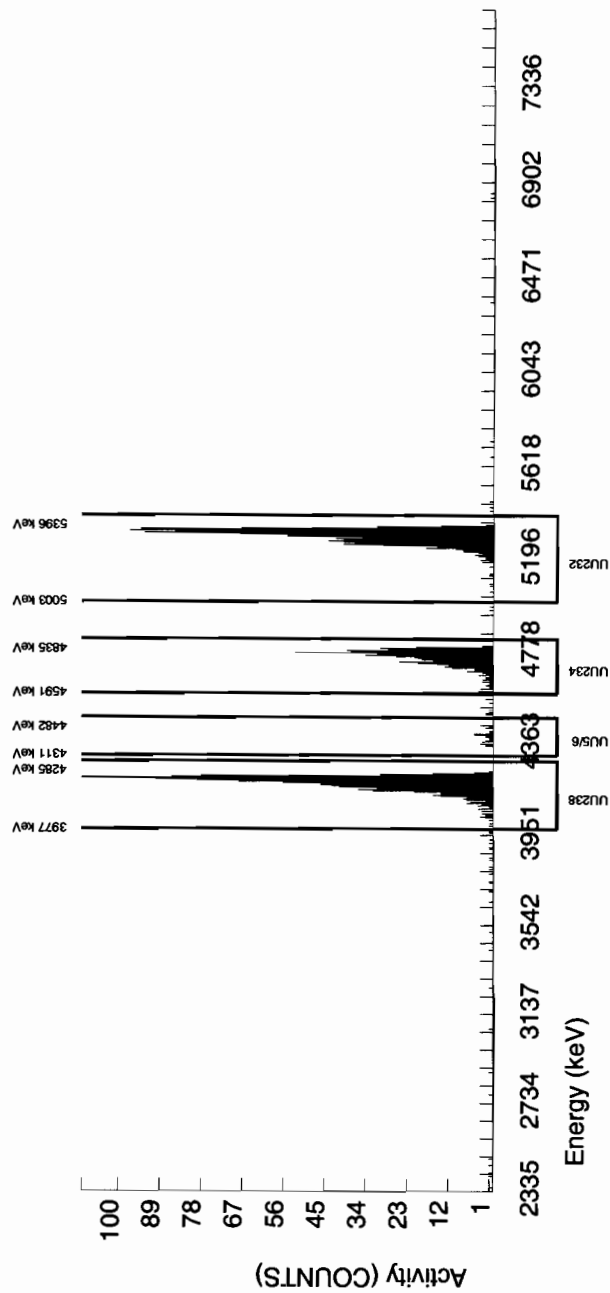
BATCH NUMBER : 959857 SAMPLE ID : S0248030009_UU SAMPLE QTY : 0.507 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 95.880	CHAMBER : 127 DETECTOR S/N : 78770 AVERAGE %EFFICIENCY : 24.4938 COUNT DATE : 11-MAR-2010 21:06:45 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B127.CNF;462 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W127.CNF;125 CAL DATE : 18-FEB-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 4.3179E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5306.896	38.821	1059.000	1057.000	2.000	1.4142	100.0000	4.00E+00	3.09E-01	1.24E-02	3.51E-02	1.23E-01
U-3/4	4763.020	4755.342	35.315	516.000	511.930	3.000	5.4790	100.0000	1.94E+00	1.62E-01	4.82E-02	1.07E-01	8.61E-02
U-235	4391.000	4397.307	38.173	32.000	31.000	1.000	2.4127	80.90000	1.45E-01	2.88E-02	2.62E-02	6.52E-02	2.69E-02
U-238	4184.730	4187.928	32.875	1044.000	1044.000	0.000	3.6781	100.0000	3.95E+00	3.05E-01	3.24E-02	7.50E-02	1.22E-01

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

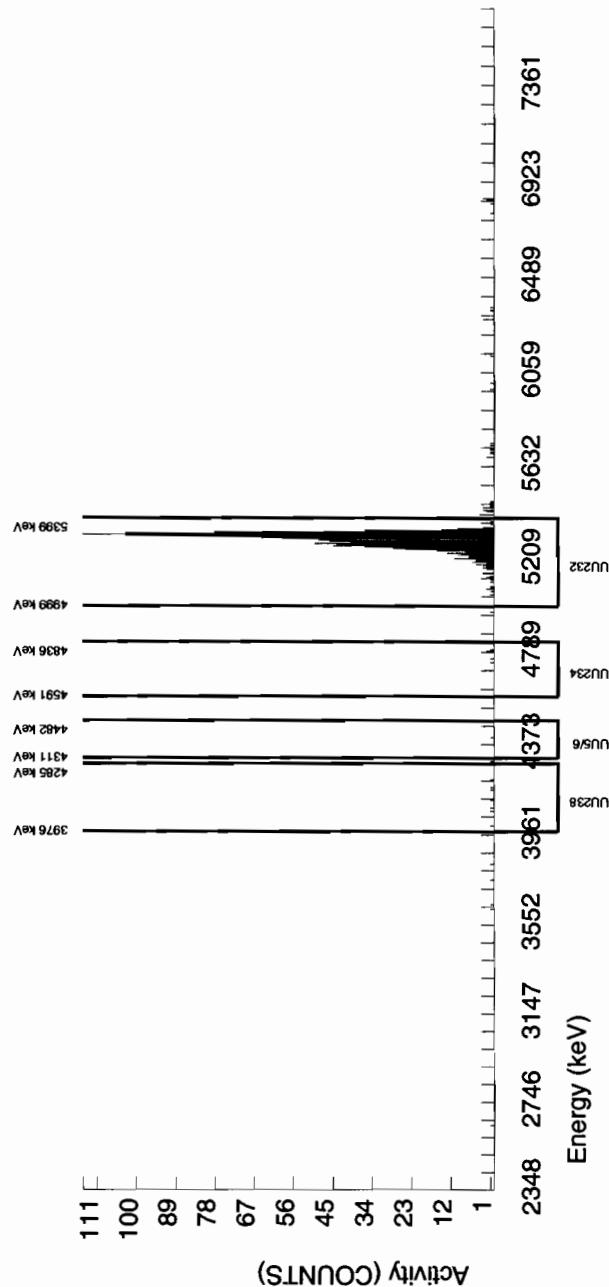
BATCH NUMBER : 959857 SAMPLE ID : S1202058737_UU SAMPLE QTY : 1.000 G SAMPLE DATE : 3-MAR-2010 00:00:00. ANALYST : CXM2 % YIELD : 102.524	CHAMBER : 144 DETECTOR S/N : 75551 AVERAGE %EFFICIENCY : 25.1386 COUNT DATE : 11-MAR-2010 21:07:08 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B144.CNF;401 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W144.CNF;108 CAL DATE : 19-FEB-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5020E+00 dpm RESULTS : 4.6156E+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	5302.139	32.852	1169.000	1160.000	9.000	3.0000	100.0000	2.03E+00	1.54E-01	1.22E-02	2.91E-02	6.00E-02
U-3/4	4763.020	4782.967	7.269	5.000	1.825	2.000	5.4790	100.0000	3.19E-03	4.22E-03	2.23E-02	4.93E-02	4.22E-03
U-235	4391.000	4443.255	69.285	2.000	2.000	0.000	2.4127	80.90000	4.32E-03	3.07E-03	1.21E-02	3.01E-02	3.06E-03
U-238	4184.730	4124.051	207.855	7.000	6.000	1.000	3.6781	100.0000	1.05E-02	5.00E-03	1.50E-02	3.46E-02	4.94E-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

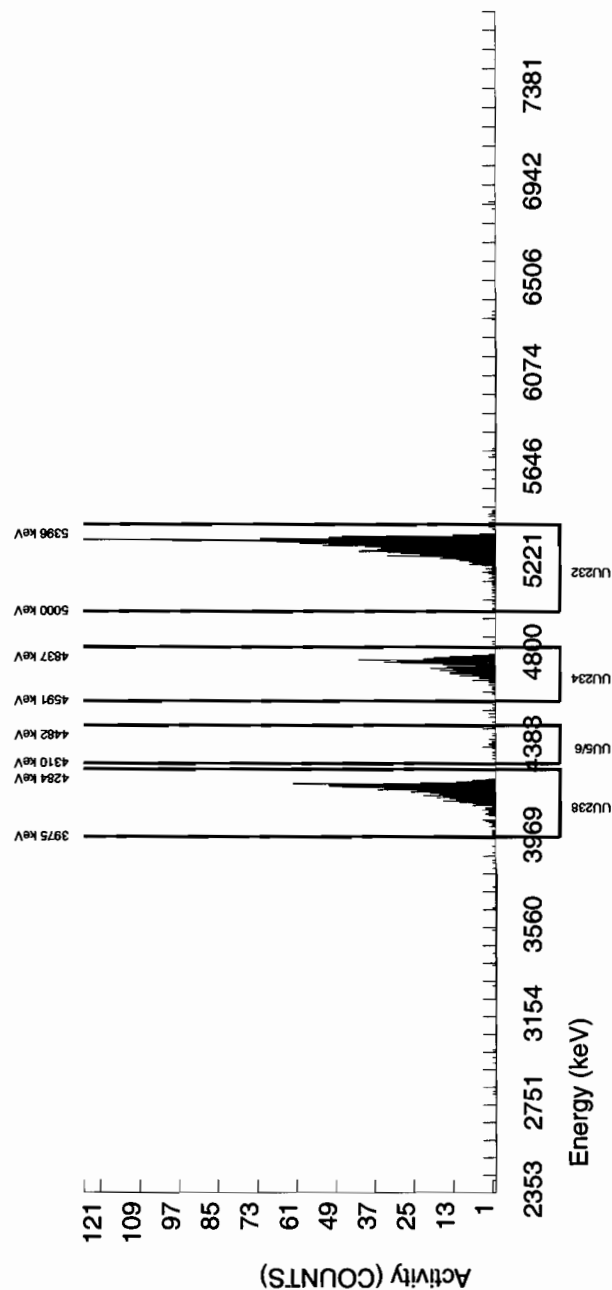
BATCH NUMBER : 959857 SAMPLE ID : S1202058738_UU SAMPLE QTY : 0.511 G SAMPLE DATE : 19-FEB-2010 00:00:00 ANALYST : CXM2 % YIELD : 95.536	CHAMBER : 145 DETECTOR S/N : 72526 AVERAGE %EFFICIENCY : 24.9308 COUNT DATE : 11-MAR-2010 21:07:10 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B145.CNF;399 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W145.CNF;113 CAL DATE : 19-FEB-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5034E+00 dpm RESULTS : 4.3024E+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	5301.947	19.305	1075.000	1072.000	3.000	1.7321	100.0000	3.97E+00	3.11E-01	1.49E-02	3.99E-02	1.22E-01
U-3/4	4763.020	4758.000	24.286	374.000	372.914	0.000	5.4790	100.0000	1.38E+00	1.23E-01	4.72E-02	1.04E-01	7.15E-02
U-235	4391.000	4405.560	31.768	19.000	19.000	0.000	2.4127	80.90000	8.69E-02	2.09E-02	2.57E-02	6.38E-02	1.99E-02
U-238	4184.730	4185.656	30.273	584.000	584.000	0.000	3.6781	100.0000	2.16E+00	1.80E-01	3.17E-02	7.34E-02	8.94E-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

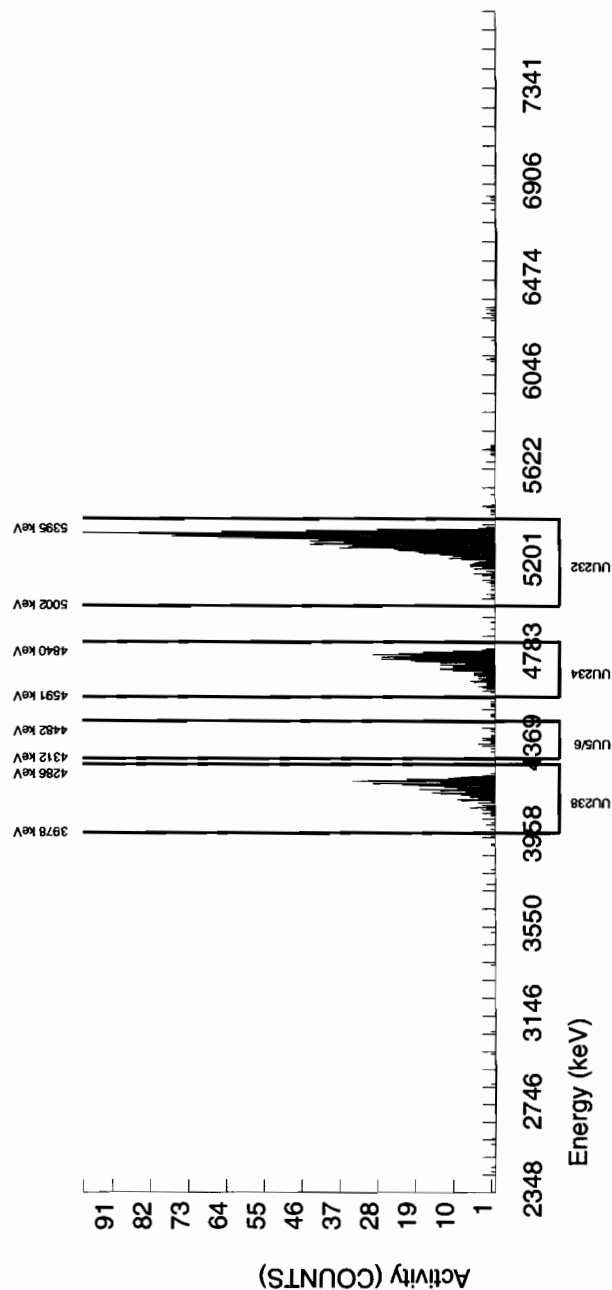
BATCH NUMBER : 959857 SAMPLE ID : S1202058739_UU SAMPLE QTY : 0.120 G SAMPLE DATE : 3-MAR-2010 00:00:00. ANALYST : CXM2 % YIELD : 101.672	CHAMBER : 146 DETECTOR S/N : 72527 AVERAGE %EFFICIENCY : 24.7373 COUNT DATE : 11-MAR-2010 21:07:13 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B146.CNF;404 BKG DATE : 7-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W146.CNF;115 CAL DATE : 19-FEB-2010
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5020E+00 dpm RESULTS : 4.5772E+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	5297.766	36.811	1136.000	1132.000	4.000	2.0000	100.0000	1.69E+01	1.37E+00	6.94E-02	1.79E-01	5.04E-01
U-3/4	4763.020	4751.035	44.970	372.000	369.854	1.000	5.4790	100.0000	5.52E+00	5.05E-01	1.90E-01	4.21E-01	2.88E-01
U-235	4391.000	4401.317	29.632	23.000	23.000	0.000	2.4127	80.90000	4.24E-01	9.40E-02	1.04E-01	2.57E-01	8.85E-02
U-238	4184.730	4181.459	46.393	352.000	352.000	0.000	3.6781	100.0000	5.25E+00	4.84E-01	1.28E-01	2.96E-01	2.80E-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# 958221

Product: 85

Date: 3/16/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.		✓	DER # 803907
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.			
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.	✓		DER # 803907
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.	✓		
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: SEILAN 3/16/10

Secondary Review Performed By: K. Bat 3/17/10

LANL

3/25/10

Gamma Spec Que Sheet

1.6. - 3/10/10

03/04/2010

Batch #: 958221 Analyst: MXR1 First Client Due Date: 03/25/2010 Internal Due Date: 03/14/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: NA Expiration Date: NA Vol: NA Nominal Concentration: NA G-60 6.344
 Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 12/2/10 Vol: 1.0 mL Nominal Concentration: CS-137 5.552 NA 15.90
 Initials: MS Prep Date: 3/3/10 Library: SOLD Witness: NA

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Aliquot (1/6) F	Detector	Sealing Date/Time (if Applicable)
248030001-1	RE15-10-7902	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00	Car	124.60	4	3/2/10
248030002-1	RE15-10-7901	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		97.91	5	
248030003-1	RE15-10-8027	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		137.71	6	
248030004-1	RE15-10-8028	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		144.17	15	
248030005-1	RE15-10-8030	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		155.86	16	
248030006-1	RE15-10-8031	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		136.68	17	
248030007-1	RE15-10-8029	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		155.11	19	
248030008-1	RE15-10-8032	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		126.80	20	
248030009-1	RE15-10-8067	SAMPLE		LANL010	SOIL	19-FEB-10 12:00:00		125.92	22	3/3/10
1202054956-1	MB	MB		QC ACCOUNT	SOIL	2/3/10		155.86	23	3/3/10
1202054957-1	DUP RE15-10-8031 (248030006)	DUP		QC ACCOUNT	SOIL	19-FEB-10 12:00:00		136.06	25	3/2/10
1202054958-1	LCS	LCS		QC ACCOUNT	SOIL	3/3/10		155.44	13	3/3/10

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: [Signature] 3/14/10
 100317/10 Page 1 of 1

initials
 / no history

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
958221	248030001	SAMPLE	13-MAR-10		Americium-241	0.1221	0.3979	0.200
					Cerium-139	-0.02029	0.05015	0.050
					Sodium-22	0.01532	0.08501	0.080
958221	248030002	SAMPLE	13-MAR-10		Cerium-139	-0.02675	0.05253	0.050
958221	248030003	SAMPLE	13-MAR-10		Americium-241	-0.05139	0.331	0.200
					Cerium-139	0.01151	0.05653	0.050
					Sodium-22	0.00835	0.0809	0.080
958221	248030004	SAMPLE	13-MAR-10		Americium-241	-0.1284	0.463	0.200
					Cerium-139	-0.01045	0.06275	0.050
958221	248030005	SAMPLE	13-MAR-10		Americium-241	-0.00349	0.2169	0.200
958221	248030006	SAMPLE	13-MAR-10		Cerium-139	-0.03169	0.05275	0.050
					Cesium-134	0.03447	0.1079	0.100
					Sodium-22	-0.02274	0.08931	0.080
958221	248030007	SAMPLE	13-MAR-10		Americium-241	0.07993	0.2497	0.200
					Cerium-139	-0.00394	0.05036	0.050
958221	248030008	SAMPLE	13-MAR-10					
958221	248030009	SAMPLE	13-MAR-10		Americium-241	0.1056	0.2287	0.200
					Cerium-139	0.00117	0.05164	0.050
958221	1202054956	MB	13-MAR-10					
958221	1202054957	DUP	13-MAR-10					
958221	1202054958	LCS	13-MAR-10		Cerium-139	-0.00444	0.08436	0.050
					Cesium-134	-0.0536	0.1872	0.100
					Europium-152	-0.1645	0.3312	0.200
					Mercury-203	0.00306	0.1169	0.100
					Potassium-40	0.4762	1.27	1.00
					Ruthenium-106	0.379	1.25	0.800
					Sodium-22	-0.00147	0.1157	0.080
					Thorium-234	-0.5076	2.148	2.00
					Tin-113	-0.00123	0.1691	0.100
					Uranium-235	-0.1405	0.5823	0.500

GEL QUALS

Batch ID: 958221

Report run on: March 14, 2010 9:15 PM

Samp Id	Parmname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
248030001-1 13-MAR-2010 14:30	Bismuth-211	UI	UI	Data rejected due to interference.		4.06			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.753			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1304		.1	.1
	Radium-224	UI	UI	Data rejected due to low abundance.		6.978			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.08632			
248030002-1 13-MAR-2010 14:30	Bismuth-211	UI	UI	Data rejected due to interference.		4.383			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.032			
	Radium-224	UI	UI	Data rejected due to interference.		4.739			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.09883			
248030003-1 13-MAR-2010 14:31	Bismuth-211	UI	UI	Data rejected due to interference.		4.376			
	Cadmium-109	UI	UI	Data rejected due to high peak-width.		6.767			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1596		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.24			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.08866			
248030004-1 13-MAR-2010 14:31	Bismuth-211	UI	UI	Data rejected due to interference.		3.829			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.321			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1294		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		3.642			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1044			
248030005-1 13-MAR-2010 14:32	Bismuth-211	UI	UI	Data rejected due to interference.		3.752			

GEL QUALS

Batch ID: 958221

Report run on: March 14, 2010 9:15 PM

Samp Id	Parmname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
248030005-1 13-MAR-2010 14:32	Cadmium-109	UI	UI	Data rejected due to interference.		3.571			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1379		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		3.891			
248030006-1 13-MAR-2010 14:32	Bismuth-211	UI	UI	Data rejected due to interference.		4.046			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.143			
	Radium-224	UI	UI	Data rejected due to interference.		5.079			
248030007-1 13-MAR-2010 14:33	Bismuth-211	UI	UI	Data rejected due to interference.		3.101			
	Cadmium-109	UI	UI	Data rejected due to interference.		1.553			
	Radium-224	UI	UI	Data rejected due to interference.		2.857			
248030008-1 13-MAR-2010 14:33	Bismuth-211	UI	UI	Data rejected due to interference.		4.142			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.69			
	Mercury-203	UI	UI	Data rejected due to interference.		.0708		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.978			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1062			
248030009-1 13-MAR-2010 14:34	Bismuth-211	UI	UI	Data rejected due to interference.		3.945			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.122			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.07858		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.743			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1447			

GEL QUALS

Batch ID: 958221

Report run on: March 14, 2010 9:15 PM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
1202054957-1 DUP 13-MAR-2010 14:35	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.446			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.933			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.777			

Gamma Review Report based on Result > MDA for Batch:958221

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248030001	19-FEB-10 12:00	13-MAR-10 14:30	22.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	1.757	0.2029	pCi/g	0.2243	N	911.9 3	1.742	IDENTIFIED 10.08	☐	
Annihilation Rad.	HE 0.1218	0.04018	pCi/g	0.04775	N	511.6 1	1.788	IDENTIFIED 32.86	☐	
Barium-137m <i>ML</i>	0.1735	0.03302	pCi/g	0.06122	N	662 2	1.827	IDENTIFIED 18.87	☐	
Bismuth-211 <i>DT</i>	4.06	0.2871	pCi/g	0.3224	Y	352.1 2	1.286	IDENTIFIED 6.215	☒ <i>UI</i>	
Bismuth-212 <i>LA</i>	2.106	0.4155	pCi/g	1.254	N	0 9 0		FAIL_ABUND 0	☐	
Bismuth-214 <i>✓</i>	1.346	0.1016	pCi/g	0.09492	0.200	609.5 2	1.415	IDENTIFIED 6.582	☐	
Cadmium-109 <i>DT</i>	3.753	0.5812	pCi/g	1.411	Y	87.3 3	1.054	IDENTIFIED 14.28	☒ <i>UI</i>	
Cadmium-115 HE	4.658	53.83	pCi/g	0	N	0 9 0		SHORT_HLIF 0	☐	
Cerium-143 <i>—</i>	10790	2953	pCi/g	0	N	0 9 0		SHORT_HLIF 0	☐	
Cesium-134 <i>LA</i>	0.1304	0.03803	pCi/g	0.09687	0.100	0 9 0		FAIL_ABUND 0	☒ <i>UI</i>	Data rejected due to low abundance.
Cesium-137 <i>✓</i>	0.1833	0.03488	pCi/g	0.06467	0.100	662 2	1.827	IDENTIFIED 18.87	☐	
Gross Gamma <i>—</i>	9.73	1.395	pCi/g	3.418	N	0			☐	
Iodine-133 <i>—</i>	2.28E+06	8.35E+05	pCi/g	0	N	0 9 0		SHORT_HLIF 0	☐	
Iodine-135 <i>—</i>	2.15E+23	0	pCi/g	0	N	0 9 0		SHORT_HLIF 0	☐	
Lead-212 <i>✓</i>	1.729	0.09798	pCi/g	0.165	0.100	238.7 2	1.199	IDENTIFIED 3.968	☐	
Lead-214 <i>✓</i>	1.474	0.1119	pCi/g	0.1172	0.100	352.1 2	1.286	IDENTIFIED 6.215	☐	
Neptunium-237 <i>ML</i>	1.083	0.2026	pCi/g	0.4687	N	87.3 3	1.054	IDENTIFIED 14.28	☐	
Potassium-40 <i>✓</i>	27.28	1.338	pCi/g	0.5908	1.00	1462 1	1.799	IDENTIFIED 3.384	☐	
Radium-224 <i>DT LA</i>	6.978	0.5484	pCi/g	1.893	Y	0 9 0		NOT_IDENTI 0	☒ <i>UI</i>	Data rejected due to low abundance.
Radium-226 <i>✓</i>	1.346	0.1016	pCi/g	0.09492	Y	609.5 2	1.415	IDENTIFIED 6.582	☐	
Radium-228 <i>✓</i>	1.757	0.2029	pCi/g	0.2243	0.500	911.9 3	1.742	IDENTIFIED 10.08	☐	
Sodium-24 HE	1.36E+09	9.26E+08	pCi/g	0	N	0 9 0		SHORT_HLIF 0	☐	
Strontium-85 <i>LA</i>	0.08632	0.02244	pCi/g	0.0826	Y	0 9 0		NOT_IDENTI 0	☒ <i>UI</i>	Data rejected due to low abundance.
Thallium-208 <i>✓</i>	0.5856	0.03999	pCi/g	0.05411	0.080	583.6 1	1.365	IDENTIFIED 6.066	☐	
Thorium-228 <i>ML</i>	1.729	0.09798	pCi/g	0.165	N	238.7 2	1.199	IDENTIFIED 3.968	☐	
Thorium-232 <i>ML</i>	1.757	0.2029	pCi/g	0.2243	N	911.9 3	1.742	IDENTIFIED 10.08	☐	
Thorium-234 <i>✓</i>	4.366	1.454	pCi/g	3.079	2.00	63.29 2	0.9407	IDENTIFIED 31.74	☐	
Tin-126 <i>ML</i>	0.363	0.05622	pCi/g	0.1376	N	87.3 3	1.054	IDENTIFIED 14.28	☐	
Total Uranium	13.078	4.33E-06	ug/g	4.5827	N	0			☐	
Uranium-238 HE	4.366	1.454	pCi/g	3.079	N	63.29 2	0.9407	IDENTIFIED 31.74	☐	

*** = 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
248030002	19-FEB-10 12:00	13-MAR-10 14:30	22.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	1.57	0.225	pCi/g	0.2729	N	910.2 3	1.541	IDENTIFIED 12.84	☐	
Annihilation Rad.	0.2158	0.03945	pCi/g	0.05459	N	510.3 1	1.794	IDENTIFIED 17.99	☐	
Barium-137m <i>ML</i>	0.6373	0.05158	pCi/g	0.07882	N	660.7 2	1.461	IDENTIFIED 7.396	☐	
Bismuth-211 <i>DT</i>	4.383	0.288	pCi/g	0.3607	Y	351.3 2	1.326	IDENTIFIED 5.244	☒ <i>UI</i>	
Bismuth-212 HE	2.347	0.5066	pCi/g	1.342	N	0 12 0		FAIL_ABUND 0	☐	

Uranium-238 HE 4.333 1.846 pCi/g 3.558 N 63.11 2 1.721 IDENTIFIED 41.44 ☐

*** = 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
248030005	19-FEB-10 12:00	13-MAR-10 14:32	22.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>LM</i>	1.638	0.1786	pCi/g	0.1671	N	911.3	3	1.695 IDENTIFIED	9.037	☐
Annihilation Rad.	0.1116	0.02994	pCi/g	0.04109	N	510.7	1	1.64 IDENTIFIED	26.4	☐
Barium-137m <i>LM</i>	0.333	0.03644	pCi/g	0.04752	N	661.3	2	1.382 IDENTIFIED	10	☐
Bismuth-211 <i>INT</i>	3.752	0.2807	pCi/g	0.2589	Y	351.8	2	1.231 IDENTIFIED	5.12	☒ <i>UI</i>
Bismuth-212 <i>✓</i>	1.557	0.3616	pCi/g	0.7244	N	727.5	1	1.469 IDENTIFIED	22.32	☐
Bismuth-214 <i>✓</i>	1.207	0.09562	pCi/g	0.0879	0.200	609.3	2	1.344 IDENTIFIED	5.882	☐
Cadmium-109 <i>INT</i>	3.571	0.3937	pCi/g	0.9864	Y	87.3	3	1.157 IDENTIFIED	9.935	☒ <i>UI</i>
Cerium-143 <i>—</i>	12770	2778	pCi/g	0	N	0	4	0 SHORT_HLIF	0	☐
Cesium-134 <i>LA</i>	0.1379	0.0294	pCi/g	0.08363	0.100	0	4	0 FAIL_ABUND	0	☒ <i>UI</i> Data rejected due to low abundance.
Cesium-137 <i>✓</i>	0.3518	0.0385	pCi/g	0.0502	0.100	661.3	2	1.382 IDENTIFIED	10	☐
Gross Gamma <i>—</i>	9.639	1.315	pCi/g	3.208	N	0				☐
Iodine-135 <i>—</i>	9.16E+22	0	pCi/g	0	N	0	4	0 SHORT_HLIF	0	☐
Lead-212 <i>✓</i>	1.478	0.09993	pCi/g	0.07846	0.100	238.6	2	0.9454 IDENTIFIED	3.234	☐
Lead-214 <i>✓</i>	1.362	0.1086	pCi/g	0.09417	0.100	351.8	2	1.231 IDENTIFIED	5.12	☐
Neptunium-237 <i>NL</i>	1.031	0.1568	pCi/g	0.2966	N	87.3	3	1.157 IDENTIFIED	9.935	☐
Potassium-40 <i>✓</i>	28.18	1.455	pCi/g	0.4538	1.00	1461	1	1.848 IDENTIFIED	2.706	☐
Radium-224 <i>INT</i>	3.891	0.484	pCi/g	0.8409	Y	241.6	1	1.495 IDENTIFIED	11.15	☒ <i>UI</i>
Radium-226 <i>✓</i>	1.207	0.09562	pCi/g	0.0879	Y	609.3	2	1.344 IDENTIFIED	5.882	☐
Radium-228 <i>✓</i>	1.638	0.1786	pCi/g	0.1671	0.500	911.3	3	1.695 IDENTIFIED	9.037	☐
Technetium-99m	1.15E+24	0	pCi/g	0	N	0	4	0 SHORT_HLIF	0	☐
Thallium-208 <i>✓</i>	0.4285	0.03743	pCi/g	0.05231	0.080	583.1	1	1.263 IDENTIFIED	7.196	☐
Thorium-228 <i>LM</i>	1.478	0.09993	pCi/g	0.07846	N	238.6	2	0.9454 IDENTIFIED	3.234	☐
Thorium-232 <i>LM</i>	1.638	0.1786	pCi/g	0.1671	N	911.3	3	1.695 IDENTIFIED	9.037	☐
Thorium-234 <i>✓</i>	5.751	1.116	pCi/g	1.782	2.00	63.27	2	0.7227 IDENTIFIED	17.24	☐
Tin-126 <i>NL</i>	0.3454	0.03808	pCi/g	0.09586	N	87.3	3	1.157 IDENTIFIED	9.935	☐
Total Uranium <i>—</i>	17.261	3.32E-06	ug/g	2.6526	N	0				☐
Uranium-235 <i>✓</i>	0.3264	0.1314	pCi/g	0.2788	0.500	143.5	1	0.9945 IDENTIFIED	39.36	☐
Uranium-238 <i>LM</i>	5.751	1.116	pCi/g	1.782	N	63.27	2	0.7227 IDENTIFIED	17.24	☐

*** = 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
248030006	19-FEB-10 12:00	13-MAR-10 14:32	22.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>LM</i>	1.586	0.1972	pCi/g	0.3208	N	909.9	3	1.401 IDENTIFIED	10.98	☐
Annihilation Rad.	0.1724	0.04368	pCi/g	0.05122	N	510.4	1	1.921 IDENTIFIED	24.95	☐
Barium-137m <i>LM</i>	0.2321	0.05221	pCi/g	0.06867	N	661.1	2	1.399 IDENTIFIED	22.1	☐
Bismuth-211 <i>INT</i>	4.046	0.2979	pCi/g	0.3506	Y	351.6	2	1.184 IDENTIFIED	5.696	☒ <i>UI</i>
Bismuth-212 HE	1.491	0.5288	pCi/g	1.438	N	0	6	0 FAIL_ABUND	0	☐
Bismuth-214 <i>✓</i>	1.342	0.1262	pCi/g	0.125	0.200	608.4	2	1.376 IDENTIFIED	7.901	☐
Cadmium-109 <i>INT</i>	4.143	0.5597	pCi/g	1.042	Y	87.24	3	1.479 IDENTIFIED	12.6	☒ <i>UI</i>
Cadmium-115 <i>—</i>	124.1	58.13	pCi/g	0	N	0	6	0 SHORT_HLIF	0	☐

Cerium-143	✓	44530	6454	pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Cesium-135	HE	0.5561	0.1481	pCi/g 0.2759	N	270.3	1	1.746	IDENTIFIED 26.12	□
Cesium-137	✓	0.2451	0.05516	pCi/g 0.07255	0.100	661.1	2	1.399	IDENTIFIED 22.1	□
Gross Gamma	-	9.405	1.22	pCi/g 4.065	N		0			□
Iodine-135	✓	1.40E+23	0	pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Lead-210	u	1.894	0.4254	pCi/g 0.8805	N	46.66	1	0.9393	IDENTIFIED 21.8	□
Lead-212	✓	1.565	0.09901	pCi/g 0.1006	0.100	238.4	2	1.004	IDENTIFIED 3.792	□
Lead-214	✓	1.468	0.1154	pCi/g 0.1276	0.100	351.6	2	1.184	IDENTIFIED 5.696	□
Molybdenum-99	HE	33.59	45.89	pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Neptunium-237	u	1.196	0.2045	pCi/g 0.2993	N	87.24	3	1.479	IDENTIFIED 12.6	□
Potassium-40	✓	24.35	1.439	pCi/g 0.7126	1.00	1459	1	1.757	IDENTIFIED 3.901	□
Promethium-149	HE	239.5	421.4	pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Radium-224	INT	5.079	0.6274	pCi/g 1.079	Y	241.6	1	1.608	IDENTIFIED 11.49	✓ u
Radium-226	✓	1.342	0.1262	pCi/g 0.125	Y	608.4	2	1.376	IDENTIFIED 7.901	□
Radium-228	✓	1.586	0.1972	pCi/g 0.3208	0.500	909.9	3	1.401	IDENTIFIED 10.98	□
Thallium-208	✓	0.5492	0.05147	pCi/g 0.0607	0.080	582.5	1	1.229	IDENTIFIED 8.093	□
Thorium-228	u	1.565	0.09901	pCi/g 0.1006	N	238.4	2	1.004	IDENTIFIED 3.792	□
Thorium-232	u	1.586	0.1972	pCi/g 0.3208	N	909.9	3	1.401	IDENTIFIED 10.98	□
Thorium-234	✓	5.723	0.8132	pCi/g 1.137	2.00	63.41	2	0.9373	IDENTIFIED 10.56	□
Tin-126	u	0.4008	0.05414	pCi/g 0.1006	N	87.24	3	1.479	IDENTIFIED 12.6	□
Total Uranium		17.143	2.42E-06 ug/g	1.6946	N		0			□
Uranium-238	u	5.723	0.8132	pCi/g 1.137	N	63.41	2	0.9373	IDENTIFIED 10.56	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248030007	19-FEB-10 12:00	13-MAR-10 14:33	22.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	u	1.484	0.1387	pCi/g 0.2056	N	911.8	3	2.013	IDENTIFIED 7.307	□
Annihilation Rad.	HE	0.0699	0.03015	pCi/g 0.04274	N	510.9	1	1.976	IDENTIFIED 43.04	□
Bismuth-211	INT	3.101	0.1986	pCi/g 0.3074	Y	351.8	2	1.343	IDENTIFIED 5.55	✓ u
Bismuth-212	X-wash	1.899	0.356	pCi/g 1	N	0	8	0	FAIL_ABUND 0	□
Bismuth-214	✓	0.8995	0.07494	pCi/g 0.1078	0.200	609.5	2	1.615	IDENTIFIED 7.33	□
Cadmium-109	INT	1.553	0.4137	pCi/g 1.297	Y	87.36	3	1.453	IDENTIFIED 26.26	✓ u
Cerium-143	-	24400	3819	pCi/g 0	N	0	8	0	SHORT_HLIF 0	□
Cesium-135	HE	0.2757	0.07958	pCi/g 0.2701	N	0	8	0	NOT_IDENTI 0	□
Gross Gamma	-	7.929	1.164	pCi/g 3.39	N		0			□
Iodine-133	HE	9.90E+05	6.78E+05	pCi/g 0	N	0	8	0	SHORT_HLIF 0	□
Iodine-135	-	2.32E+22	0	pCi/g 0	N	0	8	0	SHORT_HLIF 0	□
Lead-212	✓	1.221	0.0652	pCi/g 0.08693	0.100	238.6	2	1.34	IDENTIFIED 3.908	□
Lead-214	Y	1.126	0.07847	pCi/g 0.1069	0.100	351.8	2	1.343	IDENTIFIED 5.55	□
Molybdenum-99	HE	5.75	28.53	pCi/g 0	N	0	8	0	SHORT_HLIF 0	□
Neptunium-237	HE	0.4483	0.1283	pCi/g 0.4048	N	87.36	3	1.453	IDENTIFIED 26.26	□
Niobium-95m	HE	0.3933	0.07382	pCi/g 0.2463	N	0	8	0	NOT_IDENTI 0	□
Potassium-40	✓	27.09	1.271	pCi/g 0.4436	1.00	1462	1	1.931	IDENTIFIED 2.857	□
Promethium-149	HE	443.6	352.1	pCi/g 0	N	0	8	0	SHORT_HLIF 0	□
Radium-224	INT	2.857	0.4684	pCi/g 0.931	Y	241.6	1	1.635	IDENTIFIED 16.14	✓ u
Radium-226	✓	0.8995	0.07494	pCi/g 0.1078	Y	609.5	2	1.615	IDENTIFIED 7.33	□

Radium-228	✓	1.484	0.1387	pCi/g	0.2056	0.500	911.8	3	2.013	IDENTIFIED	7.307	□
Thallium-208	✓	0.4448	0.03973	pCi/g	0.04679	0.080	583.4	1	1.711	IDENTIFIED	8.263	□
Thorium-228	μ	1.221	0.0652	pCi/g	0.08693	N	238.6	2	1.34	IDENTIFIED	3.908	□
Thorium-232	μ	1.484	0.1387	pCi/g	0.2056	N	911.8	3	2.013	IDENTIFIED	7.307	□
Thorium-234	✓	4.419	1.037	pCi/g	2.129	2.00	63.57	2	1.307	IDENTIFIED	21.7	□
Tin-126	HE	0.1502	0.04002	pCi/g	0.1261	N	87.36	3	1.453	IDENTIFIED	26.26	□
Total Uranium	—	13.273	3.09E-06	ug/g	3.1693	N	0					□
Uranium-238	μ	4.419	1.037	pCi/g	2.129	N	63.57	2	1.307	IDENTIFIED	21.7	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248030008	19-FEB-10 12:00	13-MAR-10 14:33	22.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	μ	1.88	0.1898	pCi/g	0.2221	N	911.8	3	1.765	IDENTIFIED	7.903	□		
Annihilation Rad.	0.1449	0.03448	pCi/g	0.04322	N	511.3	1	1.727	IDENTIFIED	23.34	□			
Bismuth-211	INT	4.142	0.3123	pCi/g	0.3001	Y	352.2	2	1.24	IDENTIFIED	5.831	✓ UI		
Bismuth-212	LA	2.034	0.4425	pCi/g	1.14	N	0	5	0	FAIL_ABUND	0	□		
Bismuth-214	✓	1.238	0.1089	pCi/g	0.1047	0.200	609.9	2	1.249	IDENTIFIED	6.795	□		
Cadmium-109	INT	3.69	0.4774	pCi/g	1.109	Y	87.39	3	1.197	IDENTIFIED	12.06	✓ UI		
Cerium-143	—	15730	2950	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□		
Gross Gamma	—	9.431	1.209	pCi/g	3.528	N	0					□		
Lead-212	✓	1.698	0.1059	pCi/g	0.08686	0.100	238.8	2	1.063	IDENTIFIED	3.224	□		
Lead-214	✓	1.503	0.1207	pCi/g	0.1091	0.100	352.2	2	1.24	IDENTIFIED	5.831	□		
Mercury-203	INT	0.0708	0.02886	pCi/g	0.06469	0.100	278.2	1	0.8236	IDENTIFIED	40.45	✓ UI		
Neptunium-237	μ	1.065	0.1773	pCi/g	0.3232	N	87.39	3	1.197	IDENTIFIED	12.06	□		
Potassium-40	✓	27.25	1.44	pCi/g	0.5086	1.00	1462	1	1.851	IDENTIFIED	2.984	□		
Promethium-149	HE	260.4	380.8	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□		
Radium-224	INT	4.978	0.7414	pCi/g	0.9306	Y	241.7	1	1.973	IDENTIFIED	14.09	✓ UI		
Radium-226	✓	1.238	0.1089	pCi/g	0.1047	Y	609.9	2	1.249	IDENTIFIED	6.795	□		
Radium-228	✓	1.88	0.1898	pCi/g	0.2221	0.500	911.8	3	1.765	IDENTIFIED	7.903	□		
Sodium-24	HE	5.19E+08	6.88E+08	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□		
Strontium-85	LA	0.1062	0.02272	pCi/g	0.07746	Y	0	5	0	NOT_IDENTI	0	□	UI	Data rejected due to low abundance.
Thallium-208	✓	0.4861	0.04416	pCi/g	0.05894	0.080	583.8	1	1.264	IDENTIFIED	7.493	□		
Thorium-228	μ	1.698	0.1059	pCi/g	0.08686	N	238.8	2	1.063	IDENTIFIED	3.224	□		
Thorium-232	μ	1.88	0.1898	pCi/g	0.2221	N	911.8	3	1.765	IDENTIFIED	7.903	□		
Thorium-234	✓	2.765	0.8106	pCi/g	1.646	2.00	63.09	2	0.8783	IDENTIFIED	27.94	□		
Tin-126	μ	0.3569	0.04618	pCi/g	0.1075	N	87.39	3	1.197	IDENTIFIED	12.06	□		
Total Uranium	—	8.2268	2.41E-06	ug/g	2.4508	N	0					□		
Uranium-238	HE	2.765	0.8106	pCi/g	1.646	N	63.09	2	0.8783	IDENTIFIED	27.94	□		

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248030009	19-FEB-10 12:00	13-MAR-10 14:34	22.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	μ	1.754	0.1857	pCi/g	0.1914	N	911.2	3	2.069	IDENTIFIED	8.136	□		
Annihilation Rad.	0.1267	0.03443	pCi/g	0.04404	N	510.8	1	2.096	IDENTIFIED	26.71	□			
Barium-137m	μ	0.3563	0.03127	pCi/g	0.04914	N	661.8	2	2.215	IDENTIFIED	7.016	□		

Bismuth-211	INT	3.945	0.2979	pCi/g 0.3219	Y	352	2	1.413	IDENTIFIED	4.819	U
Bismuth-212	HE	1.746	0.3956	pCi/g 1.022	N	0	6	0	FAIL_ABUND	0	
Bismuth-214	V	1.335	0.1058	pCi/g 0.1048	0.200	609.5	2	1.801	IDENTIFIED	5.369	
Cadmium-109	INT	3.122	0.4464	pCi/g 1.238	Y	87.28	3	1.03	IDENTIFIED	13.5	U
Cerium-143	-	25300	4274	pCi/g 0	N	0	6	0	SHORT_HLIF	0	
Cesium-134	LA	0.07858	0.02184	pCi/g 0.07735	0.100	0	6	0	NOT_IDENTI	0	UI Data rejected due to low abundance.
Cesium-137	V	0.3764	0.03305	pCi/g 0.05192	0.100	661.8	2	2.215	IDENTIFIED	7.016	
Gross Gamma	-	10.39	1.215	pCi/g 2.785	N	0					
Iodine-126	HE	0.5686	0.1407	pCi/g 0.5302	N	0	6	0	FAIL_ABUND	0	
Lead-212	V	1.776	0.1289	pCi/g 0.0891	0.100	238.7	2	1.186	IDENTIFIED	2.971	
Lead-214	V	1.432	0.1151	pCi/g 0.1145	0.100	352	2	1.413	IDENTIFIED	4.819	
Molybdenum-99	HE	21.62	34.31	pCi/g 0	N	0	6	0	SHORT_HLIF	0	
Neptunium-237	INT	0.9011	0.1598	pCi/g 0.3625	N	87.28	3	1.03	IDENTIFIED	13.5	
Potassium-40	V	29.57	1.533	pCi/g 0.4784	1.00	1461	1	2.827	IDENTIFIED	2.428	
Radium-224	INT	4.743	0.6571	pCi/g 0.9539	Y	241.7	1	1.886	IDENTIFIED	12.35	U
Radium-226	V	1.335	0.1058	pCi/g 0.1048	Y	609.5	2	1.801	IDENTIFIED	5.369	
Radium-228	V	1.754	0.1857	pCi/g 0.1914	0.500	911.2	3	2.069	IDENTIFIED	8.136	
Strontium-85	LA	0.1447	0.02576	pCi/g 0.08196	Y	0	6	0	NOT_IDENTI	0	UI Data rejected due to low abundance.
Thallium-208	V	0.5523	0.04997	pCi/g 0.05336	0.080	583.2	1	1.665	IDENTIFIED	7.246	
Thorium-228	ML	1.776	0.1289	pCi/g 0.0891	N	238.7	2	1.186	IDENTIFIED	2.971	
Thorium-232	ML	1.754	0.1857	pCi/g 0.1914	N	911.2	3	2.069	IDENTIFIED	8.136	
Thorium-234	V	5.51	1.12	pCi/g 1.825	2.00	63.35	2	1.051	IDENTIFIED	18.28	
Tin-126	ML	0.302	0.04318	pCi/g 0.1202	N	87.28	3	1.03	IDENTIFIED	13.5	
Total Uranium		16.431	3.33E-06 ug/g	2.7176	N	0					
Uranium-238	ML	5.51	1.12	pCi/g 1.825	N	63.35	2	1.051	IDENTIFIED	18.28	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202054956		13-MAR-10 14:34	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Annihilation Rad. HE	0.03967	0.01835	pCi/g	0.02828	N	510.5	1	2.006	IDENTIFIED	46.17				
Iodine-133 HE	16.82	37.15	pCi/g	0	N	0	1	0	SHORT_HLIF	0				

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202054957	19-FEB-10 12:00	13-MAR-10 14:35	22.1	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 ML	1.887	0.1996	pCi/g	0.226	N	911	3	1.564	IDENTIFIED	8.634				
Annihilation Rad.	0.1474	0.03568	pCi/g	0.04466	N	510.7	1	1.542	IDENTIFIED	23.66				
Barium-137m ML	0.3097	0.04127	pCi/g	0.0604	N	661.8	2	1.132	IDENTIFIED	12.12				
Bismuth-211 INT	4.446	0.3134	pCi/g	0.311	Y	351.9	2	1.139	IDENTIFIED	4.693	U			
Bismuth-212 HE	2.161	0.4826	pCi/g	1.242	N	0	8	0	FAIL_ABUND	0				
Bismuth-214 V	1.469	0.1229	pCi/g	0.1025	0.200	609.4	2	1.354	IDENTIFIED	5.776				
Cadmium-109 INT	3.933	0.4204	pCi/g	0.7902	Y	87.19	3	1.095	IDENTIFIED	9.253	U			
Cadmium-115 HE	22.09	50.06	pCi/g	0	N	0	8	0	SHORT_HLIF	0				
Cerium-143	14070	2833	pCi/g	0	N	0	8	0	SHORT_HLIF	0				
Cesium-137 V	0.3272	0.04361	pCi/g	0.06381	0.100	661.8	2	1.132	IDENTIFIED	12.12				

Gadolinium-153 HE	0.1348	0.04697	pCi/g 0.1012	N	0	8	0	FAIL_ABUND 0	☐
Gross Gamma	10.33	1.382	pCi/g 3.89	N		0			☐
Iodine-133 HE	4.22E+05	8.05E+05	pCi/g 0	N	0	8	0	SHORT_HLIF 0	☐
Iodine-135	1.09E+23	0	pCi/g 0	N	0	8	0	SHORT_HLIF 0	☐
Lead-210 <i>ML</i>	1.249	0.2961	pCi/g 0.6102	N	46.54	1	0.9277	IDENTIFIED 23.14	☐
Lead-212 <i>V</i>	1.547	0.1071	pCi/g 0.1018	0.100	238.6	2	0.9154	IDENTIFIED 3.916	☐
Lead-214 <i>V</i>	1.614	0.1221	pCi/g 0.1126	0.100	351.9	2	1.139	IDENTIFIED 4.693	☐
Neptunium-237 <i>ML</i>	1.135	0.17	pCi/g 0.2373	N	87.19	3	1.095	IDENTIFIED 9.253	☐
Potassium-40 <i>V</i>	25.78	1.375	pCi/g 0.4876	1.00	1461	1	2.153	IDENTIFIED 3.209	☐
Promethium-149 HE	43.28	384.9	pCi/g 0	N	0	8	0	SHORT_HLIF 0	☐
Radium-224 <i>INT</i>	3.777	0.4665	pCi/g 1.248	Y	241.8	1	1.85	IDENTIFIED 11.17	☒ <i>UI</i>
Radium-226 <i>V</i>	1.469	0.1229	pCi/g 0.1025	Y	609.4	2	1.354	IDENTIFIED 5.776	☐
Radium-228 <i>V</i>	1.887	0.1996	pCi/g 0.226	0.500	911	3	1.564	IDENTIFIED 8.634	☐
Sodium-24 HE	1.51E+08	8.13E+08	pCi/g 0	N	0	8	0	SHORT_HLIF 0	☐
Thallium-208 <i>V</i>	0.579	0.05356	pCi/g 0.05636	0.080	583	1	1.482	IDENTIFIED 7.339	☐
Thorium-228 <i>ML</i>	1.547	0.1071	pCi/g 0.1018	N	238.6	2	0.9154	IDENTIFIED 3.916	☐
Thorium-232 <i>ML</i>	1.887	0.1996	pCi/g 0.226	N	911	3	1.564	IDENTIFIED 8.634	☐
Thorium-234 <i>V</i>	5.311	0.6428	pCi/g 0.8118	2.00	63.31	2	0.7321	IDENTIFIED 7.508	☐
Tin-126 <i>ML</i>	0.3805	0.04067	pCi/g 0.07628	N	87.19	3	1.095	IDENTIFIED 9.253	☐
Total Uranium	15.925	1.91E-06	ug/g 1.2099	N		0			☐
Uranium-238 <i>ML</i>	5.311	0.6428	pCi/g 0.8118	N	63.31	2	0.7321	IDENTIFIED 7.508	☐

*** = 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	
1202054958		13-MAR-10 14:40	0	LCS	LOAD	1		GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.636	0.3079	pCi/g	0.8981	N	0	10	0	FAIL_ABUND	0	☐
Americium-241 ✓	13.29	0.7661	pCi/g	0.2724	0.200	59.56	1	1.367	IDENTIFIED	1.577	☐
Barium-137m	5.823	0.2928	pCi/g	0.1528	N	661.3	2	1.746	IDENTIFIED	2.541	☐
Bismuth-211	1.653	0.42	pCi/g	0.7627	Y	352	2	1.458	IDENTIFIED	24.96	☐
Bismuth-214	0.6723	0.1422	pCi/g	0.3789	0.200	0	10	0	FAIL_ABUND	0	☐
Cadmium-109	30.42	1.842	pCi/g	1.825	Y	88.03	2	1.366	IDENTIFIED	3.332	☐
Cerium-143 HE	52.11	16.11	pCi/g	49.86	N	0	10	0	NOT_IDENTI	0	☐
Cesium-137 ✓	6.151	0.3098	pCi/g	0.1614	0.100	661.3	2	1.746	IDENTIFIED	2.541	☐
Cobalt-57	0.1863	0.04013	pCi/g	0.07171	N	122	1	1.439	IDENTIFIED	20.62	☐
Cobalt-60 ✓	6.732	0.3457	pCi/g	0.1244	0.100	1332	1	2.353	IDENTIFIED	2.772	☐
Gross Gamma	26.74	1.93	pCi/g	2.801	N	0					☐
Lead-212	1.11	0.1306	pCi/g	0.2049	0.100	238.3	2	1.779	IDENTIFIED	10.58	☐
Lead-214	0.5999	0.1533	pCi/g	0.2774	0.100	352	2	1.458	IDENTIFIED	24.96	☐
Neptunium-237	4.827	0.6153	pCi/g	1.008	N	0	10	0	NOT_IDENTI	0	☐
Radium-224	5.138	0.7864	pCi/g	2.682	Y	0	10	0	NOT_IDENTI	0	☐
Radium-226	0.6723	0.1422	pCi/g	0.3789	Y	0	10	0	FAIL_ABUND	0	☐
Radium-228	1.636	0.3079	pCi/g	0.8981	0.500	0	10	0	FAIL_ABUND	0	☐
Silver-110m	0.8208	0.07546	pCi/g	0.2609	N	0	10	0	NOT_IDENTI	0	☐
Sodium-24 HE	323.6	3944	pCi/g	0	N	0	10	0	SHORT_HLIF	0	☐
Thallium-208	0.4607	0.06933	pCi/g	0.1313	0.080	583	1	1.434	IDENTIFIED	14.26	☐
Thorium-228	1.11	0.1306	pCi/g	0.2049	N	238.3	2	1.779	IDENTIFIED	10.58	☐

Thorium-232	1.636	0.3079	pCi/g	0.8981	N	0	10	0	FAIL_ABUND	0	☐
Tin-126	2.994	0.1813	pCi/g	0.1794	N	88.03	2	1.366	IDENTIFIED	3.332	☐

*** = 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
958221	248030009	SAMPLE	13-MAR-10	Radium-228	1.754	0.1857	pCi/g	0.09574	0.500
				Strontium-85	0.1447	0.02576	pCi/g	0.041	Y
				Thallium-208	0.5523	0.04997	pCi/g	0.02669	0.080
				Thorium-234	5.51	1.12	pCi/g	0.9131	2.00
				Uranium-238	5.51	1.12	pCi/g	0.9131	N
958221	1202054956	MB	13-MAR-10	Iodine-133	16.82	37.15	pCi/g	0	N
				Lead-212	0.03365	0.0195	pCi/g	0.03019	0.100
				Strontium-85	0.04044	0.01186	pCi/g	0.02162	Y
958221	1202054957	DUP	13-MAR-10	Bismuth-211	4.446	0.3134	pCi/g	0.1556	Y
				Bismuth-214	1.469	0.1229	pCi/g	0.05129	0.200
				Cadmium-109	3.933	0.4204	pCi/g	0.3953	Y
				Cadmium-115	22.09	50.06	pCi/g	0	N
				Cerium-143	14070	2833	pCi/g	0	N
				Cesium-134	0.06402	0.02477	pCi/g	0.04497	0.100
				Cesium-137	0.3272	0.04361	pCi/g	0.03192	0.100
				Gross Gamma	10.33	1.382	pCi/g	1.891	N
				Iodine-133	4.22E+05	8.05E+05	pCi/g	0	N
				Iodine-135	1.09E+23	0	pCi/g	0	N
				Lead-212	1.547	0.1071	pCi/g	0.05094	0.100
				Lead-214	1.614	0.1221	pCi/g	0.05634	0.100
				Potassium-40	25.78	1.375	pCi/g	0.244	1.00
				Promethium-149	43.28	384.9	pCi/g	0	N
				Protactinium-234m	6.878	2.885	pCi/g	4.61	N
				Radium-224	3.777	0.4665	pCi/g	0.6246	Y
				Radium-226	1.469	0.1229	pCi/g	0.05129	Y
				Radium-228	1.887	0.1996	pCi/g	0.1131	0.500
				Sodium-24	1.51E+08	8.13E+08	pCi/g	0	N
				Thallium-208	0.579	0.05356	pCi/g	0.0282	0.080
				Thorium-234	5.311	0.6428	pCi/g	0.4061	2.00
				Uranium-235	0.2673	0.1198	pCi/g	0.1863	0.500
				Uranium-238	5.311	0.6428	pCi/g	0.4061	N
958221	1202054958	LCS	13-MAR-10	Americium-241	13.29	0.7861	pCi/g	0.1363	0.200
				Barium-137m	5.823	0.2928	pCi/g	0.07645	N
				Bismuth-211	1.653	0.42	pCi/g	0.3816	Y
				Bismuth-214	0.6723	0.1422	pCi/g	0.1896	0.200
				Cadmium-109	30.42	1.842	pCi/g	0.9133	Y
				Cerium-143	52.11	16.11	pCi/g	24.94	N

28E
3/16/10

28E
3/16/10

VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:30:57.99

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030001.CNF;1
Sample date     : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:30:30
Sample ID       : G248030001 Sample quantity : 1.24600E+02 GRAM
Detector name   : GAM04 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.29 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID        : 958221 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	63.29*	111	367	0.94	126.62	123	8	1.54E-02	31.7	
2	2	74.84	303	368	0.94	149.71	146	12	4.21E-02	11.4	1.73E+00
3	2	77.11	516	290	0.92	154.26	146	12	7.16E-02	6.7	
4	4	87.30	224	355	1.05	174.65	171	21	3.11E-02	14.3	1.75E+00
5	4	89.89	146	379	1.21	179.82	171	21	2.03E-02	23.5	
6	4	92.89*	312	384	1.34	185.82	171	21	4.33E-02	13.1	
7	0	129.77	69	392	1.15	259.60	255	9	9.64E-03	52.9	
8	0	185.85*	245	329	1.53	371.75	367	10	3.40E-02	15.7	
9	0	209.76	116	261	0.84	419.59	416	9	1.61E-02	26.9	
10	0	238.75*	1207	348	1.20	477.57	473	8	1.68E-01	4.0	
11	0	270.56	100	234	0.90	541.19	536	10	1.39E-02	30.4	
12	0	295.31*	423	218	1.11	590.70	584	13	5.88E-02	8.8	
13	0	300.48	115	169	1.11	601.05	597	11	1.60E-02	23.8	
14	0	328.24	80	160	1.25	656.56	651	10	1.11E-02	31.5	
15	0	338.42	285	124	1.34	676.93	672	9	3.96E-02	9.2	
16	0	352.08*	631	205	1.29	704.24	698	13	8.77E-02	6.2	
17	0	462.93	108	96	1.31	925.95	920	11	1.50E-02	20.1	
18	0	511.59*	110	180	1.79	1023.28	1015	18	1.53E-02	32.9	
19	0	583.58*	405	43	1.36	1167.25	1162	13	5.63E-02	6.1	
20	0	609.52*	481	96	1.42	1219.14	1211	16	6.68E-02	6.6	
21	0	661.96*	114	74	1.83	1324.01	1317	13	1.58E-02	18.9	
22	0	727.99*	95	59	1.45	1456.07	1452	11	1.32E-02	19.0	
23	0	769.99	100	52	4.82	1540.06	1531	18	1.39E-02	19.8	
24	0	795.51	61	57	1.45	1591.09	1585	14	8.49E-03	29.0	
25	0	861.43	41	37	1.83	1722.93	1718	9	5.65E-03	31.5	
26	0	911.90*	248	79	1.74	1823.86	1817	14	3.45E-02	10.1	
27	1	965.40	57	45	1.87	1930.84	1926	19	7.93E-03	24.0	1.87E+00
28	1	969.54	146	55	1.84	1939.12	1926	19	2.03E-02	13.2	
29	0	1121.27*	77	61	2.02	2242.55	2236	15	1.08E-02	25.0	
30	0	1239.05	40	62	1.75	2478.08	2472	12	5.54E-03	42.7	
31	0	1461.78*	1037	32	1.80	2923.44	2915	18	1.44E-01	3.4	
32	0	1765.63*	90	7	1.41	3530.99	3524	14	1.25E-02	12.7	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:31:01

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:30:30
Sample ID         : G248030001 Sample quantity : 124.60 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA4 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.29 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00
    
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.728E+01	2.677E+00	5.914E-01	4.204E-02	46.120
CD-109	+	88.03	*	3.753E+00	1.162E+00	1.359E+00	1.634E-01	2.761
SN-126	+	64.28		1.683E+00	1.107E+00	1.128E+00	1.943E-01	1.492
	+	86.94		1.509E+00	7.689E-01	5.568E-01	2.348E-01	2.711
	+	87.57	*	3.630E-01	1.124E-01	1.325E-01	1.589E-02	2.740
BA-137M	+	661.66	*	1.735E-01	6.603E-02	6.060E-02	2.956E-03	2.863
CS-137	+	661.66	*	1.833E-01	6.976E-02	6.402E-02	3.141E-03	2.863
TL-208		277.37		3.122E-01	3.952E-01	6.894E-01	7.766E-02	0.453
	+	583.19	*	5.856E-01	7.999E-02	5.347E-02	3.355E-03	10.953
	+	860.56		5.632E-01	3.575E-01	4.370E-01	3.644E-02	1.289
BI-211		72.87		2.398E+00	3.993E+00	6.193E+00	7.101E-01	0.387
	+	351.06	*	4.060E+00	5.742E-01	3.163E-01	2.138E-02	12.836
PB-212	+	74.82		2.438E+00	6.643E-01	6.852E-01	1.030E-01	3.558
	+	77.11		2.313E+00	4.069E-01	3.826E-01	4.389E-02	6.046
	+	238.63	*	1.729E+00	1.960E-01	1.611E-01	1.303E-02	10.734
	+	300.09		2.584E+00	1.250E+00	1.068E+00	9.540E-02	2.420
BI-214	+	609.32	*	1.346E+00	2.033E-01	9.386E-02	6.959E-03	14.336
	+	1120.29		1.152E+00	5.868E-01	4.887E-01	4.581E-02	2.358
	+	1764.49		1.862E+00	4.868E-01	3.144E-01	1.916E-02	5.923
PB-214	+	74.82		4.320E+00	1.152E+00	1.214E+00	1.692E-01	3.558
	+	77.11		4.078E+00	7.922E-01	6.745E-01	9.530E-02	6.046
	+	242.00		2.285E+00	5.479E-01	8.860E-01	7.826E-02	2.579
	+	295.22		1.676E+00	3.322E-01	2.288E-01	2.121E-02	7.325
	+	351.93	*	1.474E+00	2.237E-01	1.151E-01	1.003E-02	12.808
RA-226	+	609.32	*	1.346E+00	2.033E-01	9.386E-02	6.959E-03	14.336
	+	1120.29		1.152E+00	5.868E-01	4.887E-01	4.581E-02	2.358
	+	1764.49		1.862E+00	4.868E-01	3.144E-01	1.916E-02	5.923
AC-228	+	338.32		2.041E+00	9.226E-01	3.742E-01	1.545E-01	5.453
	+	911.20	*	1.757E+00	4.058E-01	2.230E-01	2.511E-02	7.880
	+	968.97		1.787E+00	6.386E-01	3.855E-01	9.290E-02	4.635
RA-228	+	338.32		2.041E+00	9.226E-01	3.742E-01	1.545E-01	5.453
	+	911.20	*	1.757E+00	4.058E-01	2.230E-01	2.511E-02	7.880
	+	968.97		1.787E+00	6.386E-01	3.855E-01	9.290E-02	4.635
TH-228	+	74.82		2.438E+00	6.212E-01	6.852E-01	7.887E-02	3.558

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		2.313E+00	4.069E-01	3.826E-01	4.389E-02	6.046
	+	238.63	*	1.729E+00	1.960E-01	1.611E-01	1.303E-02	10.734
	+	300.09		2.584E+00	1.998E+00	1.068E+00	6.509E-01	2.420
TH-232	+	338.32		2.041E+00	3.968E-01	3.742E-01	2.352E-02	5.453
	+	911.20	*	1.757E+00	4.058E-01	2.230E-01	2.511E-02	7.880
	+	968.97		1.787E+00	6.386E-01	3.855E-01	9.290E-02	4.635
TH-234	+	63.29	*	4.366E+00	2.907E+00	2.953E+00	5.943E-01	1.479
	+	92.59		4.055E+00	1.411E+00	1.077E+00	2.481E-01	3.764
U-235	+	89.96		2.418E+00	1.294E+00	1.361E+00	3.504E-01	1.777
	+	93.35		3.063E+00	1.086E+00	8.062E-01	1.929E-01	3.799
		143.76	*	1.939E-01	2.046E-01	3.433E-01	5.489E-02	0.565
		163.33		1.841E-01	4.461E-01	7.342E-01	1.247E-01	0.251
	+	185.72		2.261E-01	7.226E-02	6.746E-02	4.350E-03	3.351
		205.31		-2.277E-01	5.862E-01	8.106E-01	1.399E-01	-0.281
NP-237	+	86.48	*	1.083E+00	4.052E-01	4.514E-01	1.088E-01	2.400
		95.86		-2.408E-01	1.021E+00	1.499E+00	3.681E-01	-0.161
U-238	+	63.29	*	4.366E+00	2.907E+00	2.953E+00	5.943E-01	1.479
	+	92.59		4.055E+00	1.145E+00	1.077E+00	1.165E-01	3.764
ANH-511	+	511.00	*	1.218E-01	8.036E-02	4.710E-02	2.634E-03	2.586

---- 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	*	1.843E-01	3.694E-01	6.240E-01	4.131E-02	0.295
NA-22		1274.54	*	1.532E-02	4.931E-02	8.493E-02	5.553E-03	0.180
NA-24		1368.63	*	1.357E+03	4.931E-02	Half-Life too short		
SC-46		889.28	*	3.753E-03	4.340E-02	7.206E-02	5.829E-03	0.052
	+	1120.55		2.065E-01	1.042E-01	1.379E-01	9.031E-03	1.498
V-48		944.13		-3.492E-01	1.163E+00	1.842E+00	1.473E-01	-0.190
		983.53	*	-3.511E-03	9.990E-02	1.626E-01	1.260E-02	-0.022
		1312.11		2.944E-02	1.081E-01	1.862E-01	1.255E-02	0.158
CR-51		320.08	*	-3.027E-02	4.502E-01	7.507E-01	5.280E-02	-0.040
MN-54		834.85	*	-4.381E-02	3.962E-02	5.869E-02	4.248E-03	-0.746
CO-56		846.77	*	-1.983E-02	4.134E-02	6.498E-02	4.821E-03	-0.305
		1037.84		1.016E-01	3.468E-01	5.750E-01	4.520E-02	0.177
	+	1238.28		1.773E-01	1.521E-01	2.049E-01	1.364E-02	0.866
		1771.35		-3.146E-02	2.428E-01	3.216E-01	1.953E-02	-0.098
CO-57		122.06	*	4.801E-03	2.487E-02	4.123E-02	2.862E-03	0.116
		136.47		-5.349E-02	2.054E-01	3.317E-01	2.463E-02	-0.161
CO-58		810.76	*	1.583E-02	4.324E-02	7.405E-02	5.112E-03	0.214
FE-59		1099.45	*	8.251E-02	1.119E-01	1.942E-01	1.483E-02	0.425
		1291.59		-5.294E-02	1.325E-01	2.107E-01	1.703E-02	-0.251
CO-60		1173.23		-1.964E-02	5.333E-02	8.276E-02	4.922E-03	-0.237
		1332.49	*	-1.539E-02	4.483E-02	7.183E-02	4.922E-03	-0.214
ZN-65		1115.54	*	3.695E-02	1.088E-01	1.593E-01	1.054E-02	0.232
SE-75		121.12		-8.614E-02	1.343E-01	2.138E-01	2.113E-02	-0.403
		136.00		1.571E-02	3.988E-02	6.636E-02	4.449E-03	0.237
		264.66	*	-3.498E-02	4.937E-02	7.408E-02	4.984E-03	-0.472

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	279.54			-6.626E-02	1.163E-01	1.905E-01	1.346E-02	-0.348
	400.66			-7.724E-03	2.810E-01	4.629E-01	4.152E-02	-0.017
SR-85	514.00	*		8.632E-02	4.488E-02	8.148E-02	4.551E-03	1.059
Y-88	898.04			9.578E-03	4.295E-02	7.227E-02	5.979E-03	0.133
	1836.06	*		-1.635E-02	2.698E-02	3.512E-02	2.049E-03	-0.466
Y-91	1204.77	*		-3.317E+00	2.565E+01	4.065E+01	2.491E+00	-0.082
NB-94	702.65	*		-1.194E-03	3.404E-02	5.690E-02	3.065E-03	-0.021
	871.09			-3.788E-03	3.320E-02	5.410E-02	4.219E-03	-0.070
NB-95	765.81	*		3.382E-02	4.392E-02	7.012E-02	4.370E-03	0.482
NB-95M	235.69	*		9.529E-02	1.579E-01	2.312E-01	1.903E-02	0.412
ZR-95	724.19			1.719E-02	1.042E-01	1.546E-01	1.039E-02	0.111
	756.73	*		9.433E-02	8.528E-02	1.537E-01	1.126E-02	0.614
MO-99	140.51			-2.476E-05	8.528E-02	Half-Life	too short	
	181.07			-4.764E-06	8.528E-02	Half-Life	too short	
	366.42			-1.637E-04	8.528E-02	Half-Life	too short	
	739.50	*		-4.618E-05	8.528E-02	Half-Life	too short	
	777.92			1.766E-05	8.528E-02	Half-Life	too short	
TC-99M	140.51	*		-1.778E+18	8.528E-02	Half-Life	too short	
RU-103	497.08	*		-1.184E-02	4.528E-02	7.201E-02	8.889E-03	-0.164
	610.33			1.571E+01	3.116E+00	3.467E+00	5.143E-01	4.531
RH-106	621.93	*		5.630E-02	3.434E-01	5.568E-01	6.295E-02	0.101
	1050.41			-1.176E+00	2.744E+00	4.248E+00	3.071E-01	-0.277
RU-106	621.93	*		5.630E-02	3.433E-01	5.568E-01	2.860E-02	0.101
	1050.41			-1.176E+00	2.744E+00	4.248E+00	3.071E-01	-0.277
AG-108M	433.94	*		-3.595E-02	3.130E-02	4.698E-02	2.859E-03	-0.765
	614.28			2.472E-02	3.616E-02	5.505E-02	3.105E-03	0.449
	722.91			-5.903E-03	4.245E-02	6.073E-02	3.683E-03	-0.097
AG-110M	657.76	*		2.640E-02	4.026E-02	6.334E-02	3.385E-03	0.417
	677.62			1.042E-01	2.905E-01	5.032E-01	2.759E-02	0.207
	706.68			-1.192E-01	2.218E-01	3.555E-01	2.070E-02	-0.335
	763.94			-1.097E-02	1.653E-01	2.371E-01	1.548E-02	-0.046
	884.68			-5.332E-03	5.050E-02	8.228E-02	6.838E-03	-0.065
	937.49			-1.299E-01	1.258E-01	1.844E-01	1.543E-02	-0.704
	1384.29			-2.367E-01	1.991E-01	2.829E-01	2.019E-02	-0.837
	1505.03			-1.966E-01	2.977E-01	4.401E-01	2.970E-02	-0.447
SN-113	391.69	*		-7.629E-03	4.531E-02	7.400E-02	4.459E-03	-0.103
CD-115	260.90			4.915E-04	4.531E-02	Half-Life	too short	
	492.35			1.922E-04	4.531E-02	Half-Life	too short	
	527.90	*		4.658E-06	4.531E-02	Half-Life	too short	
SN-117M	156.02			1.243E-01	3.324E+00	5.405E+00	3.467E-01	0.023
	158.56	*		-4.640E-02	8.002E-02	1.262E-01	8.071E-03	-0.368
TE-123M	159.00	*		-2.542E-02	3.057E-02	4.759E-02	3.076E-03	-0.534
SB-124	602.73			1.361E-02	5.186E-02	7.461E-02	3.915E-03	0.182
	645.85			-1.196E-01	4.982E-01	8.228E-01	4.773E-02	-0.145
	722.78			-5.250E-03	4.504E-01	6.544E-01	3.892E-02	-0.008
	1690.97	*		-5.318E-02	8.710E-02	1.238E-01	8.447E-03	-0.429
SB-125	427.87	*		1.007E-02	8.891E-02	1.473E-01	8.707E-03	0.068
	463.37			1.061E+00	4.312E-01	5.911E-01	3.908E-02	1.794
	600.60			3.656E-01	1.870E-01	3.440E-01	2.149E-02	1.063

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M		635.95		3.090E-02	2.642E-01	4.266E-01	2.632E-02	0.072
		109.28	*	6.818E+00	1.066E+01	1.805E+01	1.824E+00	0.378
		388.63		7.692E-02	2.367E-01	3.933E-01	2.231E-02	0.196
		666.33	*	3.198E-02	3.608E-01	5.342E-01	2.635E-02	0.060
SB-126		753.82		2.564E+00	2.979E+00	5.279E+00	3.203E-01	0.486
		414.70		-3.474E-02	1.131E-01	1.823E-01	1.031E-02	-0.191
		666.50		4.078E-02	1.227E-01	1.868E-01	9.219E-03	0.218
		695.00		-1.569E-02	1.173E-01	1.947E-01	1.030E-02	-0.081
		697.00		1.610E-01	4.245E-01	7.315E-01	3.888E-02	0.220
		720.70	*	-9.470E-03	2.117E-01	3.528E-01	1.983E-02	-0.027
		856.80		-2.488E-01	8.247E-01	1.132E+00	8.571E-02	-0.220
SB-127		252.40		3.248E+00	1.409E+01	2.409E+01	1.008E+01	0.135
		473.00		-4.779E+00	5.942E+00	9.030E+00	1.204E+00	-0.529
		685.70	*	2.119E-01	4.185E+00	7.059E+00	8.314E-01	0.030
		783.70		9.910E+00	1.322E+01	2.319E+01	3.088E+00	0.427
I-131		80.19		8.618E+00	9.909E+00	1.547E+01	1.801E+00	0.557
		284.31		2.159E-01	2.684E+00	4.543E+00	3.303E-01	0.048
		364.49	*	8.304E-02	2.087E-01	3.553E-01	2.392E-02	0.234
		636.99		-7.275E-01	2.819E+00	4.381E+00	2.603E-01	-0.166
TE-132		49.72		-3.517E+01	1.851E+02	3.127E+02	4.962E+01	-0.112
		111.76		-9.882E+01	1.510E+02	2.412E+02	3.068E+01	-0.410
		116.30		3.481E+01	1.292E+02	2.152E+02	2.679E+01	0.162
		228.16	*	-5.035E-01	3.333E+00	5.247E+00	8.670E-01	-0.096
BA-133		81.00		-8.262E-02	1.175E-01	1.691E-01	2.933E-02	-0.489
		276.40		5.981E-01	3.778E-01	6.547E-01	8.515E-02	0.914
		302.85		9.974E-02	1.405E-01	2.195E-01	2.592E-02	0.454
		356.01	*	1.479E-02	4.362E-02	6.575E-02	7.517E-03	0.225
		383.85		-2.043E-01	2.789E-01	4.358E-01	4.633E-02	-0.469
I-133		529.87	*	2.284E+00	2.789E-01	Half-Life	too short	
		875.33		1.260E+01	2.789E-01	Half-Life	too short	
		1298.22		-2.299E+01	2.789E-01	Half-Life	too short	
CS-134		563.25		1.622E-01	3.693E-01	6.168E-01	3.428E-02	0.263
		569.33		1.663E-02	2.011E-01	3.261E-01	1.822E-02	0.051
		604.72		-3.392E-02	4.253E-02	5.390E-02	2.841E-03	-0.629
	+	795.86	*	1.304E-01	7.606E-02	9.614E-02	6.480E-03	1.356
		801.95		-2.325E-02	4.832E-01	6.921E-01	4.713E-02	-0.034
CS-135		1365.19		-1.969E-01	1.267E+00	2.063E+00	1.516E-01	-0.095
		268.22	*	1.827E-01	1.746E-01	2.781E-01	2.318E-02	0.657
		546.56		1.297E+16	1.746E-01	Half-Life	too short	
I-135		836.80		3.745E+16	1.746E-01	Half-Life	too short	
		1038.76		-4.607E+17	1.746E-01	Half-Life	too short	
		1131.51		1.275E+17	1.746E-01	Half-Life	too short	
		1260.41	*	2.151E+17	1.746E-01	Half-Life	too short	
		1457.56		4.434E+18	1.746E-01	Half-Life	too short	
		1678.03		7.692E+16	1.746E-01	Half-Life	too short	
		1791.20		7.850E+15	1.746E-01	Half-Life	too short	
		153.25		5.495E-01	1.274E+00	2.108E+00	1.797E-01	0.261
		176.60		6.508E-02	7.648E-01	1.238E+00	9.367E-02	0.053
		273.65		-5.492E-01	8.431E-01	1.199E+00	9.101E-02	-0.458

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		340.55		4.703E-01	2.472E-01	4.088E-01	2.747E-02	1.150
		818.51		-1.242E-02	1.095E-01	1.795E-01	1.259E-02	-0.069
		1048.07	*	-1.832E-02	1.678E-01	2.695E-01	2.071E-02	-0.068
		1235.36		4.067E-01	1.063E+00	1.605E+00	1.637E-01	0.253
CE-139		165.86	*	-2.029E-02	3.112E-02	4.872E-02	3.096E-03	-0.416
BA-140		162.66		9.643E-01	1.218E+00	2.040E+00	1.456E-01	0.473
		304.85		-8.580E-01	2.064E+00	2.924E+00	8.400E-01	-0.293
		423.72		6.039E-01	2.689E+00	4.483E+00	1.446E+00	0.135
		537.26	*	3.436E-01	3.845E-01	6.422E-01	2.136E-01	0.535
LA-140	+	328.76		1.039E+00	6.594E-01	8.562E-01	6.014E-02	1.213
		487.02		-1.275E-02	2.093E-01	3.391E-01	2.178E-02	-0.038
		815.77		-2.832E-02	4.609E-01	7.594E-01	6.205E-02	-0.037
		1596.21	*	-5.177E-02	1.438E-01	2.233E-01	1.471E-02	-0.232
CE-141		145.44	*	5.573E-02	7.169E-02	1.207E-01	8.103E-03	0.462
CE-143		57.36		-1.737E-03	7.169E-02	Half-Life	too short	
		293.27	*	1.079E-02	7.169E-02	Half-Life	too short	
		664.57		4.125E-02	7.169E-02	Half-Life	too short	
		721.93		-3.248E-02	7.169E-02	Half-Life	too short	
CE-144		80.12		1.459E+00	3.024E+00	4.648E+00	5.371E-01	0.314
		133.52	*	-6.817E-02	2.213E-01	3.171E-01	4.527E-02	-0.215
PM-144		476.78		3.014E-03	6.792E-02	1.111E-01	7.487E-03	0.027
		618.01		-3.767E-02	3.297E-02	4.671E-02	2.596E-03	-0.806
		696.49	*	1.608E-02	3.564E-02	6.180E-02	3.287E-03	0.260
PR-144		696.51	*	1.001E+00	2.693E+00	4.642E+00	2.465E-01	0.216
		1489.16		-9.284E+00	1.102E+01	1.496E+01	1.013E+00	-0.621
PM-146		453.88	*	2.512E-02	4.248E-02	7.243E-02	6.061E-03	0.347
		633.25		-5.414E-01	1.451E+00	2.210E+00	8.300E-01	-0.245
		735.93		7.457E-03	1.509E-01	2.466E-01	6.732E-02	0.030
		747.24		-1.274E-02	1.007E-01	1.662E-01	2.193E-02	-0.077
ND-147	+	91.11		1.217E+00	5.897E-01	8.382E-01	9.834E-02	1.452
		319.41		-7.197E-01	5.341E+00	8.872E+00	5.723E-01	-0.081
		531.02	*	1.751E-01	8.924E-01	1.467E+00	1.968E-01	0.119
PM-149		285.90	*	-6.964E-04	8.924E-01	Half-Life	too short	
EU-152		121.78		8.429E-04	6.979E-02	1.148E-01	9.751E-03	0.007
		244.70		-1.546E+00	4.335E-01	5.412E-01	3.611E-02	-2.856
		344.28	*	3.228E-02	9.609E-02	1.633E-01	1.129E-02	0.198
		778.90		-9.766E-02	2.777E-01	4.347E-01	2.789E-02	-0.225
	+	964.08		7.526E-01	3.667E-01	6.024E-01	4.744E-02	1.249
		1085.87		-5.251E-02	4.033E-01	6.439E-01	4.445E-02	-0.082
		1112.07		5.074E-02	3.373E-01	5.537E-01	3.676E-02	0.092
		1408.01		1.571E-01	1.935E-01	3.528E-01	2.413E-02	0.445
GD-153		69.67		-1.702E+00	2.141E+00	3.479E+00	4.017E-01	-0.489
		97.43	*	-3.646E-02	9.986E-02	1.455E-01	1.428E-02	-0.251
		103.18		-7.425E-02	1.171E-01	1.884E-01	1.677E-02	-0.394
EU-154		123.07		5.423E-03	5.025E-02	8.296E-02	8.386E-03	0.065
		723.31		-4.451E-02	1.914E-01	2.705E-01	1.871E-02	-0.165
		873.19		-3.168E-01	2.848E-01	4.098E-01	4.645E-02	-0.773
		996.26		1.666E-02	4.041E-01	6.620E-01	1.126E-01	0.025
		1004.73		-1.784E-02	2.329E-01	3.768E-01	4.108E-02	-0.047

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1274.44	*	3.568E-02	1.398E-01	2.395E-01	2.368E-02	0.149
		86.55		4.414E-01	1.368E-01	2.114E-01	2.533E-02	2.088
		105.31	*	9.186E-02	1.071E-01	1.832E-01	1.596E-02	0.501
TB-160	+	86.79		1.249E+00	3.868E-01	6.020E-01	7.183E-02	2.074
		197.04		2.351E-02	6.441E-01	1.006E+00	6.549E-02	0.023
		215.65		2.821E-01	8.174E-01	1.326E+00	8.746E-02	0.213
		298.57		2.265E-01	1.689E-01	2.140E-01	1.407E-02	1.058
		879.36	*	9.253E-02	1.476E-01	2.582E-01	2.047E-02	0.358
		962.29		4.487E-01	5.847E-01	9.184E-01	7.242E-02	0.489
		966.15	+	5.617E-01	2.736E-01	4.806E-01	3.778E-02	1.169
HO-166M	+	1177.93		-9.939E-02	4.457E-01	7.014E-01	4.190E-02	-0.142
		1271.85		2.972E-01	8.415E-01	1.456E+00	9.477E-02	0.204
		80.57		1.698E-02	3.269E-01	4.926E-01	5.700E-02	0.034
		184.41		1.796E-01	5.741E-02	6.634E-02	4.273E-03	2.708
		280.46		-6.984E-02	8.698E-02	1.406E-01	9.339E-03	-0.497
		410.95		2.367E-01	2.769E-01	4.784E-01	2.705E-02	0.495
		711.68	*	-1.722E-02	6.075E-02	9.932E-02	5.466E-03	-0.173
		752.31		-2.043E-01	3.064E-01	4.833E-01	2.922E-02	-0.423
		810.29		9.548E-03	6.115E-02	1.028E-01	7.065E-03	0.093
		67.75		-5.017E-02	1.501E-01	2.379E-01	2.768E-02	-0.211
TA-182	+	100.11		1.692E-01	1.917E-01	3.285E-01	3.074E-02	0.515
		152.43		1.797E-01	3.719E-01	6.171E-01	3.975E-02	0.291
		222.11		-1.228E-01	3.761E-01	5.874E-01	3.887E-02	-0.209
		1121.30	+	5.634E-01	2.844E-01	3.800E-01	2.486E-02	1.483
		1189.05		-6.567E-02	3.787E-01	5.986E-01	3.615E-02	-0.110
		1221.41	*	3.270E-03	2.165E-01	3.640E-01	2.265E-02	0.009
		1231.02		-1.690E-01	6.014E-01	9.105E-01	5.716E-02	-0.186
IR-192	+	295.96		1.324E+00	2.481E-01	3.364E-01	2.244E-02	3.934
		308.46		1.548E-03	1.009E-01	1.694E-01	1.114E-02	0.009
		316.51	*	1.333E-02	3.787E-02	6.464E-02	4.197E-03	0.206
		468.07		2.005E-02	8.265E-02	1.211E-01	7.967E-03	0.166
HG-203		70.83		2.131E+00	1.942E+00	3.044E+00	5.412E-01	0.700
		72.87		6.625E-01	1.106E+00	1.711E+00	2.956E-01	0.387
		279.20	*	2.996E-02	4.343E-02	7.565E-02	5.243E-03	0.396
BI-207	+	72.81		1.338E-01	2.301E-01	3.567E-01	4.090E-02	0.375
		74.97		7.028E-01	1.789E-01	2.716E-01	3.110E-02	2.588
		569.70		-5.208E-03	3.153E-02	5.004E-02	2.703E-03	-0.104
		1063.66	*	1.592E-02	5.689E-02	9.499E-02	6.755E-03	0.168
		1770.23		-1.449E-01	5.589E-01	7.164E-01	4.353E-02	-0.202
PB-210		46.54	*	5.715E+00	9.267E+00	1.620E+01	1.414E+00	0.353
PB-211		404.85	*	-6.087E-01	8.198E-01	1.198E+00	5.746E-01	-0.508
		427.09		1.430E-01	1.496E+00	2.472E+00	1.132E+00	0.058
		832.01		2.698E-02	9.715E-01	1.612E+00	8.324E-01	0.017
BI-212	+	727.33	*	2.106E+00	8.310E-01	1.243E+00	1.325E-01	1.694
		785.37		3.412E+00	3.278E+00	5.897E+00	3.838E-01	0.579
		1620.50		1.071E+00	2.588E+00	4.515E+00	2.948E-01	0.237
RN-219	+	271.23		6.347E-01	3.896E-01	4.682E-01	4.063E-02	1.356
		401.81	*	9.136E-02	4.199E-01	7.023E-01	9.389E-02	0.130
RA-223		81.07		-1.913E-01	2.644E-01	3.816E-01	4.424E-02	-0.501

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		83.79		1.096E-01	1.494E-01	2.313E-01	2.713E-02	0.474
		94.87		7.253E-01	5.184E-01	8.196E-01	8.451E-02	0.885
		144.24		8.877E-01	6.678E-01	1.146E+00	8.934E-02	0.775
		154.21		9.141E-02	4.064E-01	6.665E-01	4.997E-02	0.137
	+	269.46		4.932E-01	3.016E-01	3.724E-01	2.565E-02	1.324
		323.87	*	-3.889E-01	7.372E-01	1.035E+00	1.692E-01	-0.376
	+	338.28		8.098E+00	1.717E+00	2.590E+00	2.728E-01	3.126
RA-224		240.99	*	6.978E+00	1.097E+00	1.848E+00	1.232E-01	3.775
AC-227		79.69		-3.691E-01	1.507E+00	2.236E+00	4.219E-01	-0.165
		235.96		1.165E-01	1.807E-01	2.649E-01	2.324E-02	0.440
		256.23	*	2.721E-02	2.431E-01	4.144E-01	4.454E-02	0.066
	+	299.98		2.842E+00	1.390E+00	1.679E+00	1.916E-01	1.693
		304.50		-7.518E-01	1.690E+00	2.400E+00	3.732E-01	-0.313
		334.37		3.065E-01	1.854E+00	2.761E+00	3.989E-01	0.111
TH-227		79.80		-3.845E-01	1.987E+00	2.957E+00	6.827E-01	-0.130
		235.96		1.165E-01	1.807E-01	2.649E-01	2.140E-02	0.440
		256.23	*	2.721E-02	2.431E-01	4.144E-01	5.166E-02	0.066
	+	299.98		2.842E+00	1.390E+00	1.679E+00	1.916E-01	1.693
		304.50		-7.518E-01	1.690E+00	2.400E+00	3.732E-01	-0.313
		334.37		3.065E-01	1.854E+00	2.761E+00	3.989E-01	0.111
TH-229		85.43		-1.706E-02	2.523E-01	3.769E-01	4.461E-02	-0.045
	+	88.47		5.597E-01	1.733E-01	2.601E-01	3.092E-02	2.151
		193.51	*	-3.281E-01	5.400E-01	8.388E-01	5.443E-02	-0.391
	+	210.85		2.364E+00	1.282E+00	1.591E+00	1.046E-01	1.486
PA-231		283.69	*	4.187E-01	1.424E+00	2.435E+00	3.288E-01	0.172
	+	301.36		1.826E+00	8.902E-01	1.057E+00	1.140E-01	1.728
TH-231		81.07		-1.913E-01	2.644E-01	3.816E-01	4.424E-02	-0.501
		83.79		1.096E-01	1.494E-01	2.313E-01	2.713E-02	0.474
		94.87		7.253E-01	5.184E-01	8.196E-01	8.451E-02	0.885
		144.24		8.877E-01	6.678E-01	1.146E+00	8.934E-02	0.775
		154.21		9.141E-02	4.064E-01	6.665E-01	4.997E-02	0.137
	+	269.46		4.932E-01	3.016E-01	3.724E-01	2.565E-02	1.324
		323.87	*	-3.889E-01	7.372E-01	1.035E+00	1.692E-01	-0.376
	+	338.28		8.098E+00	1.717E+00	2.590E+00	2.728E-01	3.126
PA-233	+	300.13		1.286E+00	6.365E-01	7.597E-01	1.044E-01	1.693
		311.90	*	-5.091E-04	6.481E-02	1.086E-01	7.408E-03	-0.005
		340.48		1.662E+00	8.333E-01	1.251E+00	2.919E-01	1.328
PA-234		94.67		4.203E-01	1.963E-01	3.108E-01	4.247E-02	1.352
		98.44		2.989E-02	1.010E-01	1.600E-01	8.950E-02	0.187
		111.00		-7.353E-02	1.847E-01	2.994E-01	3.478E-02	-0.246
	+	131.20		1.576E-01	1.670E-01	1.772E-01	1.188E-02	0.890
		569.50		2.746E-02	2.758E-01	4.478E-01	2.419E-02	0.061
		733.00		2.969E-02	4.257E-01	6.238E-01	1.326E-01	0.048
		880.51		1.296E-02	2.819E-01	4.667E-01	3.710E-02	0.028
		883.24		1.045E-02	2.854E-01	4.718E-01	3.168E-01	0.022
		926.50		2.697E-02	1.852E-01	3.082E-01	7.737E-02	0.087
		946.00	*	-1.274E-01	3.060E-01	4.776E-01	8.826E-02	-0.267
		949.00		2.751E-01	4.497E-01	7.817E-01	6.227E-02	0.352
PA-234M		766.42		1.458E+01	1.364E+01	1.925E+01	9.699E+00	0.758

---- 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	*		2.097E+00	5.269E+00	8.912E+00	8.125E-01	0.235
	99.53			1.305E-01	1.707E-01	2.913E-01	2.754E-02	0.448
	103.37			-1.587E-02	1.024E-01	1.685E-01	1.495E-02	-0.094
	106.12			-6.619E-03	8.601E-02	1.418E-01	1.207E-02	-0.047
	117.23	*		-2.298E-01	3.945E-01	6.319E-01	4.637E-02	-0.364
AM-241	228.18			-3.413E-02	2.172E-01	3.419E-01	2.269E-02	-0.100
	277.60			1.228E-01	1.805E-01	3.141E-01	2.090E-02	0.391
	59.54	*		1.221E-01	2.437E-01	3.814E-01	4.815E-02	0.320
CM-247	278.00			4.823E-01	7.747E-01	1.344E+00	8.942E-02	0.359
	287.50			-1.407E-02	1.216E+00	2.048E+00	1.356E-01	-0.007
CF-249	402.40	*		8.965E-03	3.857E-02	6.458E-02	3.645E-03	0.139
	252.80			7.888E-02	8.788E-01	1.498E+00	1.000E-01	0.053
	333.37			4.024E-02	2.377E-01	3.009E-01	1.905E-02	0.134
CF-251	388.16	*		1.216E-02	3.888E-02	6.455E-02	3.666E-03	0.188
	177.52	*		8.337E-02	1.379E-01	2.284E-01	1.463E-02	0.365
	227.38			-2.916E-02	3.561E-01	5.631E-01	3.736E-02	-0.052
	285.41			-1.254E+00	2.207E+00	3.606E+00	2.390E-01	-0.348

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030001      *
* Acquisition date   : 13-MAR-2010 14:30:30 Detector SN#                   *
* Detector ID        : GAM04                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance : 1.500      *
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:01.29                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030001 Analyst initials: MXRl                *
* Batch Number       : 958221 Sample Quantity : 1.2460E+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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---- Identified Nuclides ----

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

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CO-56	-1.983E-02	4.051E-02	6.542E-02	0.000E+00	FAIL ABUN
CO-57	4.801E-03	2.437E-02	4.262E-02	0.000E+00	NOT IDENT.
CO-58	1.583E-02	4.238E-02	7.459E-02	0.000E+00	NOT IDENT.
FE-59	8.251E-02	1.096E-01	1.947E-01	0.000E+00	NOT IDENT.
CO-60	-1.539E-02	4.393E-02	7.185E-02	0.000E+00	NOT IDENT.
ZN-65	3.695E-02	1.066E-01	1.598E-01	0.000E+00	NOT IDENT.
SE-75	-3.498E-02	4.838E-02	7.579E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.398E-02	8.260E-02	0.000E+00	NOT IDENT.
Y-88	-1.635E-02	2.644E-02	3.497E-02	0.000E+00	NOT IDENT.
Y-91	-3.317E+00	2.514E+01	4.072E+01	0.000E+00	NOT IDENT.
NB-94	-1.194E-03	3.336E-02	5.743E-02	0.000E+00	NOT IDENT.
NB-95	3.382E-02	4.304E-02	7.069E-02	0.000E+00	NOT IDENT.
NB-95M	9.529E-02	1.548E-01	2.369E-01	0.000E+00	NOT IDENT.
ZR-95	9.433E-02	8.358E-02	1.550E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.157E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.001E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.184E-02	4.438E-02	7.303E-02	0.000E+00	FAIL ABUN
RH-106	5.630E-02	3.365E-01	5.630E-01	0.000E+00	NOT IDENT.
RU-106	5.630E-02	3.365E-01	5.630E-01	0.000E+00	NOT IDENT.
AG-108M	-3.595E-02	3.067E-02	4.774E-02	0.000E+00	NOT IDENT.
AG-110M	2.640E-02	3.945E-02	6.399E-02	0.000E+00	NOT IDENT.
SN-113	-7.629E-03	4.441E-02	7.530E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.055E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-4.640E-02	7.842E-02	1.300E-01	0.000E+00	NOT IDENT.
TE-123M	-2.542E-02	2.996E-02	4.902E-02	0.000E+00	NOT IDENT.
SB-124	-5.318E-02	8.536E-02	1.234E-01	0.000E+00	NOT IDENT.
SB-125	1.007E-02	8.713E-02	1.497E-01	0.000E+00	FAIL ABUN
TE-125M	6.818E+00	1.045E+01	1.869E+01	0.000E+00	NOT IDENT.
I-126	3.198E-02	3.536E-01	5.396E-01	0.000E+00	NOT IDENT.
SB-126	-9.470E-03	2.074E-01	3.560E-01	0.000E+00	NOT IDENT.
SB-127	2.119E-01	4.101E+00	7.127E+00	0.000E+00	NOT IDENT.
I-131	8.304E-02	2.045E-01	3.619E-01	0.000E+00	NOT IDENT.
TE-132	-5.035E-01	3.266E+00	5.378E+00	0.000E+00	NOT IDENT.
BA-133	1.479E-02	4.274E-02	6.699E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.636E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.454E-02	9.687E-02	0.000E+00	FAIL ABUN
CS-135	1.827E-01	1.711E-01	2.844E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.113E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.832E-02	1.644E-01	2.705E-01	0.000E+00	NOT IDENT.
CE-139	-2.029E-02	3.050E-02	5.015E-02	0.000E+00	NOT IDENT.
BA-140	3.436E-01	3.768E-01	6.506E-01	0.000E+00	NOT IDENT.
LA-140	-5.177E-02	1.409E-01	2.228E-01	0.000E+00	FAIL ABUN
CE-141	5.573E-02	7.025E-02	1.245E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.788E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.817E-02	2.169E-01	3.274E-01	0.000E+00	NOT IDENT.
PM-144	1.608E-02	3.492E-02	6.239E-02	0.000E+00	NOT IDENT.
PR-144	1.001E+00	2.639E+00	4.686E+00	0.000E+00	NOT IDENT.
PM-146	2.512E-02	4.163E-02	7.355E-02	0.000E+00	NOT IDENT.
ND-147	1.751E-01	8.746E-01	1.487E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	8.113E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	3.228E-02	9.417E-02	1.665E-01	0.000E+00	FAIL ABUN
GD-153	-3.646E-02	9.786E-02	1.509E-01	0.000E+00	NOT IDENT.
EU-154	3.568E-02	1.370E-01	2.397E-01	0.000E+00	NOT IDENT.
EU-155	9.186E-02	1.050E-01	1.898E-01	0.000E+00	FAIL ABUN
TB-160	9.253E-02	1.447E-01	2.598E-01	0.000E+00	FAIL ABUN
HO-166M	-1.722E-02	5.953E-02	1.002E-01	0.000E+00	FAIL ABUN
TA-182	3.270E-03	2.122E-01	3.645E-01	0.000E+00	FAIL ABUN
IR-192	1.333E-02	3.711E-02	6.597E-02	0.000E+00	FAIL ABUN
HG-203	2.996E-02	4.256E-02	7.733E-02	0.000E+00	NOT IDENT.
BI-207	1.592E-02	5.575E-02	9.532E-02	0.000E+00	FAIL ABUN
PB-210	5.715E+00	9.081E+00	1.696E+01	0.000E+00	NOT IDENT.
PB-211	-6.087E-01	8.034E-01	1.219E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.143E-01	1.254E+00	0.000E+00	FAIL ABUN
RN-219	9.136E-02	4.115E-01	7.143E-01	0.000E+00	FAIL ABUN
RA-223	-3.889E-01	7.225E-01	1.056E+00	0.000E+00	FAIL ABUN
RA-224	0.000E+00	1.075E+00	1.893E+00	0.000E+00	NOT IDENT.
AC-227	2.721E-02	2.382E-01	4.241E-01	0.000E+00	FAIL ABUN
TH-227	2.721E-02	2.382E-01	4.241E-01	0.000E+00	FAIL ABUN
TH-229	-3.281E-01	5.292E-01	8.617E-01	0.000E+00	FAIL ABUN
PA-231	4.187E-01	1.395E+00	2.488E+00	0.000E+00	FAIL ABUN
TH-231	-3.889E-01	7.225E-01	1.056E+00	0.000E+00	FAIL ABUN
PA-233	-5.091E-04	6.352E-02	1.108E-01	0.000E+00	FAIL ABUN
PA-234	-1.274E-01	2.999E-01	4.801E-01	0.000E+00	FAIL ABUN
PA-234M	2.097E+00	5.163E+00	8.951E+00	0.000E+00	NOT IDENT.
NP-239	-2.298E-01	3.867E-01	6.536E-01	0.000E+00	NOT IDENT.
AM-241	1.221E-01	2.388E-01	3.979E-01	0.000E+00	NOT IDENT.
CM-247	8.965E-03	3.780E-02	6.569E-02	0.000E+00	NOT IDENT.
CF-249	1.216E-02	3.811E-02	6.569E-02	0.000E+00	NOT IDENT.

CF-251	8.337E-02	1.352E-01	2.349E-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]G248030001.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:30:30
Sample ID          : G248030001          Sample quantity  : 1.24600E+02 GRAM
Detector name      : GAM04              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.29  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 958221             Detector SN#       :
Matrix Spike ID    :                    LCS ID            : 1032-A
*****

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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	1037	10.66*	1.074E+00	2.728E+01	2.728E+01	9.81
CD-109	88.03	224	3.70*	5.022E+00	3.630E+00	3.753E+00	30.97
SN-126	64.28	111	9.60	2.068E+00	1.683E+00	1.683E+00	65.79
	86.94	224	8.90	5.022E+00	1.509E+00	1.509E+00	50.94
	87.57	224	37.00*	5.022E+00	3.630E-01	3.630E-01	30.97
BA-137M	661.66	114	89.90*	2.207E+00	1.733E-01	1.735E-01	38.06
CS-137	661.66	114	85.10*	2.207E+00	1.830E-01	1.833E-01	38.06
TL-208	277.37	-----	6.60	4.326E+00	-----	Line Not Found	-----
	583.19	405	85.00*	2.453E+00	5.856E-01	5.856E-01	13.66
	860.56	41	12.50	1.742E+00	5.632E-01	5.632E-01	63.48
BI-211	72.87	-----	1.23	3.384E+00	-----	Line Not Found	-----
	351.06	631	12.92*	3.625E+00	4.060E+00	4.060E+00	14.14
PB-212	74.82	303	10.28	3.642E+00	2.438E+00	2.438E+00	27.25
	77.11	516	17.10	3.928E+00	2.313E+00	2.313E+00	17.59
	238.63	1207	43.60*	4.824E+00	1.729E+00	1.729E+00	11.33
	300.09	115	3.30	4.078E+00	2.584E+00	2.584E+00	48.38
BI-214	609.32	481	45.49*	2.367E+00	1.346E+00	1.346E+00	15.11
	1120.29	77	14.92	1.357E+00	1.152E+00	1.152E+00	50.92
	1764.49	90	15.30	9.526E-01	1.862E+00	1.862E+00	26.15
PB-214	74.82	303	5.80	3.642E+00	4.320E+00	4.320E+00	26.66
	77.11	516	9.70	3.928E+00	4.078E+00	4.078E+00	19.43
	242.00	-----	7.25	4.777E+00	-----	Line Not Found	-----
	295.22	423	18.42	4.131E+00	1.676E+00	1.676E+00	19.82
	351.93	631	35.60*	3.625E+00	1.474E+00	1.474E+00	15.18
RA-226	609.32	481	45.49*	2.367E+00	1.346E+00	1.346E+00	15.11
	1120.29	77	14.92	1.357E+00	1.152E+00	1.152E+00	50.92
	1764.49	90	15.30	9.526E-01	1.862E+00	1.862E+00	26.15
AC-228	338.32	285	11.27	3.733E+00	2.041E+00	2.041E+00	45.21
	911.20	248	25.80*	1.651E+00	1.757E+00	1.757E+00	23.10
	968.97	146	15.80	1.558E+00	1.787E+00	1.787E+00	35.74
RA-228	338.32	285	11.27	3.733E+00	2.041E+00	2.041E+00	45.21
	911.20	248	25.80*	1.651E+00	1.757E+00	1.757E+00	23.10

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	146	15.80	1.558E+00	1.787E+00	1.787E+00	35.74
	74.82	303	10.28	3.642E+00	2.438E+00	2.438E+00	25.48
	77.11	516	17.10	3.928E+00	2.313E+00	2.313E+00	17.59
TH-232	238.63	1207	43.60*	4.824E+00	1.729E+00	1.729E+00	11.33
	300.09	115	3.30	4.078E+00	2.584E+00	2.584E+00	77.31
	338.32	285	11.27	3.733E+00	2.041E+00	2.041E+00	19.44
TH-234	911.20	248	25.80*	1.651E+00	1.757E+00	1.757E+00	23.10
	968.97	146	15.80	1.558E+00	1.787E+00	1.787E+00	35.74
	63.29	111	3.70*	2.068E+00	4.366E+00	4.366E+00	66.60
U-235	92.59	312	4.23	5.477E+00	4.055E+00	4.055E+00	34.80
	89.96	146	3.47	5.245E+00	2.418E+00	2.418E+00	53.54
	93.35	312	5.60	5.477E+00	3.063E+00	3.063E+00	35.45
NP-237	143.76	-----	10.96*	6.399E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.104E+00	-----	Line Not Found	-----
	185.72	245	57.20	5.698E+00	2.261E-01	2.261E-01	31.96
U-238	205.31	-----	5.01	5.352E+00	-----	Line Not Found	-----
	86.48	224	12.40*	5.022E+00	1.083E+00	1.083E+00	37.40
	95.86	-----	2.68	5.677E+00	-----	Line Not Found	-----
ANH-511	63.29	111	3.70*	2.068E+00	4.366E+00	4.366E+00	66.60
	92.59	312	4.23	5.477E+00	4.055E+00	4.055E+00	28.24
	511.00	110	100.00*	2.727E+00	1.218E-01	1.218E-01	65.96

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 1
Number of lines tentatively identified by NID 31 96.88%

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	2.728E+01	2.728E+01	0.268E+01	9.81	
CD-109	461.40D	1.03	3.630E+00	3.753E+00	1.162E+00	30.97	
SN-126	2.30E+05Y	1.00	3.630E-01	3.630E-01	1.124E-01	30.97	
BA-137M	30.08Y	1.00	1.733E-01	1.735E-01	0.660E-01	38.06	
CS-137	30.08Y	1.00	1.830E-01	1.833E-01	0.698E-01	38.06	
TL-208	1.41E+10Y	1.00	5.856E-01	5.856E-01	0.800E-01	13.66	
BI-211	7.04E+08Y	1.00	4.060E+00	4.060E+00	0.574E+00	14.14	
PB-212	1.41E+10Y	1.00	1.729E+00	1.729E+00	0.196E+00	11.33	
BI-214	1600.00Y	1.00	1.346E+00	1.346E+00	0.203E+00	15.11	
PB-214	1600.00Y	1.00	1.474E+00	1.474E+00	0.224E+00	15.18	
RA-226	1600.00Y	1.00	1.346E+00	1.346E+00	0.203E+00	15.11	
AC-228	1.41E+10Y	1.00	1.757E+00	1.757E+00	0.406E+00	23.10	
RA-228	1.41E+10Y	1.00	1.757E+00	1.757E+00	0.406E+00	23.10	
TH-228	1.41E+10Y	1.00	1.729E+00	1.729E+00	0.196E+00	11.33	
TH-232	1.41E+10Y	1.00	1.757E+00	1.757E+00	0.406E+00	23.10	
TH-234	4.47E+09Y	1.00	4.366E+00	4.366E+00	2.907E+00	66.60	
U-235	7.04E+08Y	1.00	2.261E-01	2.261E-01	0.723E-01	31.96	K
NP-237	2.14E+06Y	1.00	1.083E+00	1.083E+00	0.405E+00	37.40	
U-238	4.47E+09Y	1.00	4.366E+00	4.366E+00	2.907E+00	66.60	
ANH-511	1.00E+09Y	1.00	1.218E-01	1.218E-01	0.804E-01	65.96	

Total Activity : 5.933E+01 5.945E+01

Grand Total Activity : 5.933E+01 5.945E+01

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

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

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.77	69	392	1.15	259.60	255	9	9.64E-03	****	6.50E+00	T
0	209.76	116	261	0.84	419.59	416	9	1.61E-02	53.8	5.28E+00	T
0	270.56	100	234	0.90	541.19	536	10	1.39E-02	60.8	4.41E+00	T
0	328.24	80	160	1.25	656.56	651	10	1.11E-02	63.1	3.82E+00	T
0	462.93	108	96	1.31	925.95	920	11	1.50E-02	40.1	2.95E+00	T
0	727.99	95	59	1.45	1456.07	1452	11	1.32E-02	38.0	2.03E+00	T
0	769.99	100	52	4.82	1540.06	1531	18	1.39E-02	39.6	1.93E+00	T
0	795.51	61	57	1.45	1591.09	1585	14	8.49E-03	58.0	1.88E+00	T
1	965.40	57	45	1.87	1930.84	1926	19	7.93E-03	48.1	1.56E+00	T
0	1239.05	40	62	1.75	2478.08	2472	12	5.54E-03	85.5	1.24E+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]G248030001.CNF;1
* Acquisition date   : 13-MAR-2010 14:30:30   Detector SN#      :
* Detector ID        : GAM04                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.29          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248030001             Analyst initials: MXR1
* Batch Number       : 958221                 Sample Quantity : 1.24600E+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
K-40	2.728E+01	2.677E+00	5.914E-01	4.204E-02	46.120
CD-109	3.753E+00	1.162E+00	1.359E+00	1.634E-01	2.761
SN-126	3.630E-01	1.124E-01	1.325E-01	1.589E-02	2.740
BA-137M	1.735E-01	6.603E-02	6.060E-02	2.956E-03	2.863
CS-137	1.833E-01	6.976E-02	6.402E-02	3.141E-03	2.863
TL-208	5.856E-01	7.999E-02	5.347E-02	3.355E-03	10.953
BI-211	4.060E+00	5.742E-01	3.163E-01	2.138E-02	12.836
PB-212	1.729E+00	1.960E-01	1.611E-01	1.303E-02	10.734
BI-214	1.346E+00	2.033E-01	9.386E-02	6.959E-03	14.336
PB-214	1.474E+00	2.237E-01	1.151E-01	1.003E-02	12.808
RA-226	1.346E+00	2.033E-01	9.386E-02	6.959E-03	14.336
AC-228	1.757E+00	4.058E-01	2.230E-01	2.511E-02	7.880
RA-228	1.757E+00	4.058E-01	2.230E-01	2.511E-02	7.880
TH-228	1.729E+00	1.960E-01	1.611E-01	1.303E-02	10.734
TH-232	1.757E+00	4.058E-01	2.230E-01	2.511E-02	7.880
TH-234	4.366E+00	2.907E+00	2.953E+00	5.943E-01	1.479
U-235	2.261E-01	7.226E-02	3.433E-01	5.489E-02	0.659
NP-237	1.083E+00	4.052E-01	4.514E-01	1.088E-01	2.400

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	4.366E+00	2.907E+00	2.953E+00	5.943E-01	1.479
ANH-511	1.218E-01	8.036E-02	4.710E-02	2.634E-03	2.586

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.843E-01		3.694E-01	6.240E-01	4.131E-02	0.295
NA-22	1.532E-02		4.931E-02	8.493E-02	5.553E-03	0.180
NA-24	1.357E+03		9.262E+02	Half-Life too short		
SC-46	3.753E-03		4.340E-02	7.206E-02	5.829E-03	0.052
V-48	-3.511E-03		9.990E-02	1.626E-01	1.260E-02	-0.022
CR-51	-3.027E-02		4.502E-01	7.507E-01	5.280E-02	-0.040
MN-54	-4.381E-02		3.962E-02	5.869E-02	4.248E-03	-0.746
CO-56	-1.983E-02		4.134E-02	6.498E-02	4.821E-03	-0.305
CO-57	4.801E-03		2.487E-02	4.123E-02	2.862E-03	0.116
CO-58	1.583E-02		4.324E-02	7.405E-02	5.112E-03	0.214
FE-59	8.251E-02		1.119E-01	1.942E-01	1.483E-02	0.425
CO-60	-1.539E-02		4.483E-02	7.183E-02	4.922E-03	-0.214
ZN-65	3.695E-02		1.088E-01	1.593E-01	1.054E-02	0.232
SE-75	-3.498E-02		4.937E-02	7.408E-02	4.984E-03	-0.472
SR-85	8.632E-02		4.488E-02	8.148E-02	4.551E-03	1.059
Y-88	-1.635E-02		2.698E-02	3.512E-02	2.049E-03	-0.466
Y-91	-3.317E+00		2.565E+01	4.065E+01	2.491E+00	-0.082
NB-94	-1.194E-03		3.404E-02	5.690E-02	3.065E-03	-0.021
NB-95	3.382E-02		4.392E-02	7.012E-02	4.370E-03	0.482
NB-95M	9.529E-02		1.579E-01	2.312E-01	1.903E-02	0.412
ZR-95	9.433E-02		8.528E-02	1.537E-01	1.126E-02	0.614
MO-99	-4.618E-05		3.652E-05	Half-Life too short		
TC-99M	-1.778E+18		4.592E+18	Half-Life too short		
RU-103	-1.184E-02		4.528E-02	7.201E-02	8.889E-03	-0.164
RH-106	5.630E-02		3.434E-01	5.568E-01	6.295E-02	0.101
RU-106	5.630E-02		3.433E-01	5.568E-01	2.860E-02	0.101
AG-108M	-3.595E-02		3.130E-02	4.698E-02	2.859E-03	-0.765
AG-110M	2.640E-02		4.026E-02	6.334E-02	3.385E-03	0.417
SN-113	-7.629E-03		4.531E-02	7.400E-02	4.459E-03	-0.103
CD-115	4.658E-06		5.383E-05	Half-Life too short		
SN-117M	-4.640E-02		8.002E-02	1.262E-01	8.071E-03	-0.368
TE-123M	-2.542E-02		3.057E-02	4.759E-02	3.076E-03	-0.534
SB-124	-5.318E-02		8.710E-02	1.238E-01	8.447E-03	-0.429
SB-125	1.007E-02		8.891E-02	1.473E-01	8.707E-03	0.068
TE-125M	6.818E+00		1.066E+01	1.805E+01	1.824E+00	0.378
I-126	3.198E-02		3.608E-01	5.342E-01	2.635E-02	0.060
SB-126	-9.470E-03		2.117E-01	3.528E-01	1.983E-02	-0.027
SB-127	2.119E-01		4.185E+00	7.059E+00	8.314E-01	0.030
I-131	8.304E-02		2.087E-01	3.553E-01	2.392E-02	0.234
TE-132	-5.035E-01		3.333E+00	5.247E+00	8.670E-01	-0.096
BA-133	1.479E-02		4.362E-02	6.575E-02	7.517E-03	0.225

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	2.284E+00		8.347E-01	Half-Life too short		
CS-134	1.304E-01	+	7.606E-02	9.614E-02	6.480E-03	1.356
CS-135	1.827E-01		1.746E-01	2.781E-01	2.318E-02	0.657
I-135	2.151E+17		1.588E+17	Half-Life too short		
CS-136	-1.832E-02		1.678E-01	2.695E-01	2.071E-02	-0.068
CE-139	-2.029E-02		3.112E-02	4.872E-02	3.096E-03	-0.416
BA-140	3.436E-01		3.845E-01	6.422E-01	2.136E-01	0.535
LA-140	-5.177E-02		1.438E-01	2.233E-01	1.471E-02	-0.232
CE-141	5.573E-02		7.169E-02	1.207E-01	8.103E-03	0.462
CE-143	1.079E-02		2.953E-03	Half-Life too short		
CE-144	-6.817E-02		2.213E-01	3.171E-01	4.527E-02	-0.215
PM-144	1.608E-02		3.564E-02	6.180E-02	3.287E-03	0.260
PR-144	1.001E+00		2.693E+00	4.642E+00	2.465E-01	0.216
PM-146	2.512E-02		4.248E-02	7.243E-02	6.061E-03	0.347
ND-147	1.751E-01		8.924E-01	1.467E+00	1.968E-01	0.119
PM-149	-6.964E-04		4.140E-04	Half-Life too short		
EU-152	3.228E-02		9.609E-02	1.633E-01	1.129E-02	0.198
GD-153	-3.646E-02		9.986E-02	1.455E-01	1.428E-02	-0.251
EU-154	3.568E-02		1.398E-01	2.395E-01	2.368E-02	0.149
EU-155	9.186E-02		1.071E-01	1.832E-01	1.596E-02	0.501
TB-160	9.253E-02		1.476E-01	2.582E-01	2.047E-02	0.358
HO-166M	-1.722E-02		6.075E-02	9.932E-02	5.466E-03	-0.173
TA-182	3.270E-03		2.165E-01	3.640E-01	2.265E-02	0.009
IR-192	1.333E-02		3.787E-02	6.464E-02	4.197E-03	0.206
HG-203	2.996E-02		4.343E-02	7.565E-02	5.243E-03	0.396
BI-207	1.592E-02		5.689E-02	9.499E-02	6.755E-03	0.168
PB-210	5.715E+00		9.267E+00	1.620E+01	1.414E+00	0.353
PB-211	-6.087E-01		8.198E-01	1.198E+00	5.746E-01	-0.508
BI-212	2.106E+00	+	8.310E-01	1.243E+00	1.325E-01	1.694
RN-219	9.136E-02		4.199E-01	7.023E-01	9.389E-02	0.130
RA-223	-3.889E-01		7.372E-01	1.035E+00	1.692E-01	-0.376
RA-224	6.978E+00		1.097E+00	1.848E+00	1.232E-01	3.775
AC-227	2.721E-02		2.431E-01	4.144E-01	4.454E-02	0.066
TH-227	2.721E-02		2.431E-01	4.144E-01	5.166E-02	0.066
TH-229	-3.281E-01		5.400E-01	8.388E-01	5.443E-02	-0.391
PA-231	4.187E-01		1.424E+00	2.435E+00	3.288E-01	0.172
TH-231	-3.889E-01		7.372E-01	1.035E+00	1.692E-01	-0.376
PA-233	-5.091E-04		6.481E-02	1.086E-01	7.408E-03	-0.005
PA-234	-1.274E-01		3.060E-01	4.776E-01	8.826E-02	-0.267
PA-234M	2.097E+00		5.269E+00	8.912E+00	8.125E-01	0.235
NP-239	-2.298E-01		3.945E-01	6.319E-01	4.637E-02	-0.364
AM-241	1.221E-01		2.437E-01	3.814E-01	4.815E-02	0.320
CM-247	8.965E-03		3.857E-02	6.458E-02	3.645E-03	0.139
CF-249	1.216E-02		3.888E-02	6.455E-02	3.666E-03	0.188
CF-251	8.337E-02		1.379E-01	2.284E-01	1.463E-02	0.365

VAX/VMS Nuclide Identification Report Generated

```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248030001          *
* Acquisition date   : 13-MAR-2010 14:30:30 Detector SN#      :             *
* Detector ID        : GAM04                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.29              Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G248030001              Analyst initials: MXR1          *
* Batch Number       : 958221                  Sample Quantity : 1.2460E+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  :             *
*****
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.728E+01	2.623E+00	2.956E-01	1.338E+00
CD-109	3.753E+00	1.139E+00	7.060E-01	5.812E-01
SN-126	3.630E-01	1.102E-01	6.882E-02	5.622E-02
BA-137M	1.735E-01	6.471E-02	3.063E-02	3.302E-02
CS-137	1.833E-01	6.837E-02	3.236E-02	3.488E-02
TL-208	5.856E-01	7.839E-02	2.707E-02	3.999E-02
BI-211	4.060E+00	5.628E-01	1.613E-01	2.871E-01
PB-212	1.729E+00	1.920E-01	8.256E-02	9.798E-02
BI-214	1.346E+00	1.992E-01	4.749E-02	1.016E-01
PB-214	1.474E+00	2.192E-01	5.866E-02	1.119E-01
RA-226	1.346E+00	1.992E-01	4.749E-02	1.016E-01
AC-228	1.757E+00	3.977E-01	1.122E-01	2.029E-01
RA-228	1.757E+00	3.977E-01	1.122E-01	2.029E-01
TH-228	1.729E+00	1.920E-01	8.256E-02	9.798E-02
TH-232	1.757E+00	3.977E-01	1.122E-01	2.029E-01
TH-234	4.366E+00	2.849E+00	1.540E+00	1.454E+00
U-235	1.939E-01	2.005E-01	1.771E-01	1.023E-01
NP-237	1.083E+00	3.971E-01	2.345E-01	2.026E-01
U-238	4.366E+00	2.849E+00	1.540E+00	1.454E+00
ANH-511	1.218E-01	7.875E-02	2.389E-02	4.018E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.843E-01	3.620E-01	3.168E-01	1.847E-01 NOT IDENT.
NA-22	1.532E-02	4.833E-02	4.253E-02	2.466E-02 NOT IDENT.
NA-24	1.357E+09	1.815E+09	0.000E+00	9.262E+08 SHORT HLIF
SC-46	3.753E-03	4.253E-02	3.627E-02	2.170E-02 FAIL ABUN
V-48	-3.511E-03	9.790E-02	8.171E-02	4.995E-02 NOT IDENT.
CR-51	-3.027E-02	4.412E-01	3.832E-01	2.251E-01 NOT IDENT.
MN-54	-4.381E-02	3.882E-02	2.957E-02	1.981E-02 NOT IDENT.

CO-56	-1.983E-02	4.051E-02	3.273E-02	2.067E-02	FAIL ABUN
CO-57	4.801E-03	2.437E-02	2.132E-02	1.243E-02	NOT IDENT.
CO-58	1.583E-02	4.238E-02	3.732E-02	2.162E-02	NOT IDENT.
FE-59	8.251E-02	1.096E-01	9.743E-02	5.594E-02	NOT IDENT.
CO-60	-1.539E-02	4.393E-02	3.595E-02	2.241E-02	NOT IDENT.
ZN-65	3.695E-02	1.066E-01	7.992E-02	5.440E-02	NOT IDENT.
SE-75	-3.498E-02	4.838E-02	3.792E-02	2.468E-02	NOT IDENT.
SR-85	8.632E-02	4.398E-02	4.132E-02	2.244E-02	NOT IDENT.
Y-88	-1.635E-02	2.644E-02	1.749E-02	1.349E-02	NOT IDENT.
Y-91	-3.317E+00	2.514E+01	2.037E+01	1.283E+01	NOT IDENT.
NB-94	-1.194E-03	3.336E-02	2.873E-02	1.702E-02	NOT IDENT.
NB-95	3.382E-02	4.304E-02	3.536E-02	2.196E-02	NOT IDENT.
NB-95M	9.529E-02	1.548E-01	1.185E-01	7.897E-02	NOT IDENT.
ZR-95	9.433E-02	8.358E-02	7.755E-02	4.264E-02	NOT IDENT.
MO-99	-4.618E+01	7.157E+01	0.000E+00	3.652E+01	SHORT HLIF
TC-99M	-1.778E+24	9.001E+24	0.000E+00	0.000E+00	SHORT HLIF
RH-103	-1.184E-02	4.438E-02	3.654E-02	2.264E-02	FAIL ABUN
RH-106	5.630E-02	3.365E-01	2.817E-01	1.717E-01	NOT IDENT.
RU-106	5.630E-02	3.365E-01	2.817E-01	1.717E-01	NOT IDENT.
AG-108M	-3.595E-02	3.067E-02	2.388E-02	1.565E-02	NOT IDENT.
AG-110M	2.640E-02	3.945E-02	3.201E-02	2.013E-02	NOT IDENT.
SN-113	-7.629E-03	4.441E-02	3.767E-02	2.266E-02	NOT IDENT.
CD-115	4.658E+00	1.055E+02	0.000E+00	5.383E+01	SHORT HLIF
SN-117M	-4.640E-02	7.842E-02	6.503E-02	4.001E-02	NOT IDENT.
TE-123M	-2.542E-02	2.996E-02	2.452E-02	1.529E-02	NOT IDENT.
SB-124	-5.318E-02	8.536E-02	6.175E-02	4.355E-02	NOT IDENT.
SB-125	1.007E-02	8.713E-02	7.488E-02	4.445E-02	FAIL ABUN
TE-125M	6.818E+00	1.045E+01	9.351E+00	5.331E+00	NOT IDENT.
I-126	3.198E-02	3.536E-01	2.700E-01	1.804E-01	NOT IDENT.
SB-126	-9.470E-03	2.074E-01	1.781E-01	1.058E-01	NOT IDENT.
SB-127	2.119E-01	4.101E+00	3.566E+00	2.092E+00	NOT IDENT.
I-131	8.304E-02	2.045E-01	1.810E-01	1.044E-01	NOT IDENT.
TE-132	-5.035E-01	3.266E+00	2.691E+00	1.667E+00	NOT IDENT.
BA-133	1.479E-02	4.274E-02	3.351E-02	2.181E-02	NOT IDENT.
I-133	2.284E+06	1.636E+06	0.000E+00	8.347E+05	SHORT HLIF
CS-134	1.304E-01	7.454E-02	4.847E-02	3.803E-02	FAIL ABUN
CS-135	1.827E-01	1.711E-01	1.423E-01	8.730E-02	NOT IDENT.
I-135	2.151E+23	3.113E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.832E-02	1.644E-01	1.353E-01	8.388E-02	NOT IDENT.
CE-139	-2.029E-02	3.050E-02	2.509E-02	1.556E-02	NOT IDENT.
BA-140	3.436E-01	3.768E-01	3.255E-01	1.922E-01	NOT IDENT.
LA-140	-5.177E-02	1.409E-01	1.115E-01	7.190E-02	FAIL ABUN
CE-141	5.573E-02	7.025E-02	6.227E-02	3.584E-02	NOT IDENT.
CE-143	1.079E+04	5.788E+03	0.000E+00	2.953E+03	SHORT HLIF
CE-144	-6.817E-02	2.169E-01	1.638E-01	1.106E-01	NOT IDENT.
PM-144	1.608E-02	3.492E-02	3.121E-02	1.782E-02	NOT IDENT.
PR-144	1.001E+00	2.639E+00	2.345E+00	1.346E+00	NOT IDENT.
PM-146	2.512E-02	4.163E-02	3.680E-02	2.124E-02	NOT IDENT.
ND-147	1.751E-01	8.746E-01	7.437E-01	4.462E-01	FAIL ABUN
PM-149	-6.964E+02	8.113E+02	0.000E+00	4.140E+02	SHORT HLIF
EU-152	3.228E-02	9.417E-02	8.328E-02	4.805E-02	FAIL ABUN
GD-153	-3.646E-02	9.786E-02	7.547E-02	4.993E-02	NOT IDENT.
EU-154	3.568E-02	1.370E-01	1.199E-01	6.989E-02	NOT IDENT.
EU-155	9.186E-02	1.050E-01	9.493E-02	5.357E-02	FAIL ABUN
TB-160	9.253E-02	1.447E-01	1.300E-01	7.381E-02	FAIL ABUN
HO-166M	-1.722E-02	5.953E-02	5.014E-02	3.037E-02	FAIL ABUN
TA-182	3.270E-03	2.122E-01	1.824E-01	1.082E-01	FAIL ABUN
IR-192	1.333E-02	3.711E-02	3.300E-02	1.893E-02	FAIL ABUN
HG-203	2.996E-02	4.256E-02	3.869E-02	2.171E-02	NOT IDENT.
BI-207	1.592E-02	5.575E-02	4.769E-02	2.844E-02	FAIL ABUN
PB-210	5.715E+00	9.081E+00	8.483E+00	4.633E+00	NOT IDENT.
PB-211	-6.087E-01	8.034E-01	6.097E-01	4.099E-01	NOT IDENT.
BI-212	2.106E+00	8.143E-01	6.275E-01	4.155E-01	FAIL ABUN
RN-219	9.136E-02	4.115E-01	3.574E-01	2.100E-01	FAIL ABUN
RA-223	-3.889E-01	7.225E-01	5.283E-01	3.686E-01	FAIL ABUN
RA-224	6.978E+00	1.075E+00	9.473E-01	5.484E-01	NOT IDENT.
AC-227	2.721E-02	2.382E-01	2.122E-01	1.215E-01	FAIL ABUN
TH-227	2.721E-02	2.382E-01	2.122E-01	1.215E-01	FAIL ABUN
TH-229	-3.281E-01	5.292E-01	4.311E-01	2.700E-01	FAIL ABUN
PA-231	4.187E-01	1.395E+00	1.245E+00	7.118E-01	FAIL ABUN
TH-231	-3.889E-01	7.225E-01	5.283E-01	3.686E-01	FAIL ABUN
PA-233	-5.091E-04	6.352E-02	5.545E-02	3.241E-02	FAIL ABUN
PA-234	-1.274E-01	2.999E-01	2.402E-01	1.530E-01	FAIL ABUN
PA-234M	2.097E+00	5.163E+00	4.478E+00	2.634E+00	NOT IDENT.
NP-239	-2.298E-01	3.867E-01	3.270E-01	1.973E-01	NOT IDENT.
AM-241	1.221E-01	2.388E-01	1.991E-01	1.218E-01	NOT IDENT.
CM-247	8.965E-03	3.780E-02	3.286E-02	1.929E-02	NOT IDENT.
CF-249	1.216E-02	3.811E-02	3.286E-02	1.944E-02	NOT IDENT.

CF-251

8.337E-02

1.352E-01

1.175E-01

6.897E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	220.2215
49.72	224.8697
57.36	0.0000
59.54	212.3444
63.29	259.8971
63.29	259.8971
64.28	290.0704
67.75	285.9850
69.67	314.6523
70.83	263.2090
72.81	305.4868
72.87	305.5276
72.87	305.5276
74.82	334.8302
74.82	334.8302
74.82	334.8302
74.97	334.9398
77.11	336.5029
77.11	336.5029
77.11	336.5029
79.69	332.3339
79.80	332.4104
80.12	308.9737
80.19	289.5309
80.57	330.1622
81.00	363.9229
81.07	363.9746
81.07	363.9746
83.79	322.5479
83.79	322.5479
85.43	371.4595
86.48	390.5731
86.55	390.6281
86.79	311.3327
86.94	311.4270
87.57	311.8176
88.03	312.1004
88.47	312.3715
89.96	313.2823
91.11	313.9793
92.59	314.8716
92.59	314.8716
93.35	315.3261
94.67	257.8560
94.87	272.2842
94.87	272.2842
95.86	277.0944
97.43	285.1009
98.44	271.2038
99.53	258.2523
100.11	251.7711
103.18	290.0151
103.37	269.7367
105.31	243.3980
106.12	273.9653
109.28	249.9702
111.00	272.3295
111.76	275.6293
116.30	242.9937
117.23	259.2543
121.12	251.8808
121.78	230.1310
122.06	230.2328
123.07	236.6146
131.20	240.5995
133.52	253.6581
136.00	230.0468

136.47	250.6674
140.51	0.0000
140.51	0.0000
143.76	250.1976
144.24	230.7106
144.24	230.7106
145.44	238.3526
152.43	258.4374
153.25	265.0087
154.21	276.8853
154.21	276.8853
156.02	267.0431
158.56	268.9946
159.00	278.6497
162.66	239.6790
163.33	245.1931
165.86	256.6362
176.60	256.8504
177.52	244.1712
181.07	0.0000
184.41	241.8347
185.72	246.5714
193.51	242.1961
197.04	226.5856
205.31	261.0196
210.85	218.8235
215.65	201.8940
222.11	207.7999
227.38	189.5143
228.16	189.6646
228.18	189.6680
235.69	215.8470
235.96	226.2676
235.96	226.2676
238.63	585.3369
238.63	585.3369
240.99	216.9685
242.00	217.1822
244.70	377.4310
252.40	150.0320
252.80	150.0882
256.23	162.0164
256.23	162.0164
260.90	0.0000
264.66	177.4719
268.22	155.2531
269.46	161.1298
269.46	161.1298
271.23	164.2400
273.65	194.6500
276.40	147.5709
277.37	167.8252
277.60	170.5524
278.00	175.1001
279.20	160.9023
279.54	186.1250
280.46	188.9763
283.69	147.9944
284.31	152.5863
285.41	171.7091
285.90	0.0000
287.50	152.0988
293.27	0.0000
295.22	154.5514
295.96	154.6472
298.57	120.6220
299.98	120.7630
299.98	120.7630
300.09	105.4037
300.09	105.4037
300.13	105.4072
301.36	105.5127
302.85	110.0446
304.50	132.2314
304.50	132.2314
304.85	132.2688
308.46	135.4214
311.90	140.4172

316.51	136.2984
319.41	145.9034
320.08	143.1907
323.87	149.2114
323.87	149.2114
328.76	140.7912
333.37	132.7739
334.37	124.8526
334.37	124.8526
338.28	126.3529
338.28	126.3529
338.32	126.3570
338.32	126.3570
338.32	126.3570
340.48	126.9413
340.55	126.9475
344.28	119.3459
351.06	112.3301
351.93	112.4003
356.01	97.8313
364.49	104.7738
366.42	0.0000
383.85	109.1255
388.16	87.9483
388.63	87.9758
391.69	105.7901
400.66	121.2076
401.81	111.4396
402.40	111.4827
404.85	136.3660
410.95	124.0139
414.70	109.3991
423.72	85.0246
427.09	92.2246
427.87	90.2637
433.94	121.8179
453.88	83.5690
463.37	91.8340
468.07	88.8007
473.00	102.0454
476.78	90.9058
477.60	86.8160
487.02	89.3646
492.35	0.0000
497.08	84.6498
511.00	84.2542
514.00	84.3927
527.90	0.0000
529.87	0.0000
531.02	75.5892
537.26	55.5452
546.56	0.0000
563.25	71.4564
569.33	74.9360
569.50	74.9423
569.70	80.3797
583.19	63.4269
600.60	55.1468
602.73	84.7922
604.72	102.5564
609.32	52.0560
609.32	52.0560
610.33	52.0818
614.28	51.5132
618.01	81.1893
621.93	73.5390
621.93	73.5390
633.25	68.3290
635.95	57.1991
636.99	62.8359
645.85	63.0923
657.76	61.9237
661.66	73.5308
661.66	73.5308
664.57	0.0000
666.33	68.2269
666.50	62.1673
677.62	52.1127

685.70	53.2153
695.00	74.6165
696.49	68.2124
696.51	70.0569
697.00	75.6038
702.65	73.0133
706.68	78.6935
711.68	69.5837
720.70	65.1909
721.93	0.0000
722.78	63.6955
722.91	68.3597
723.31	68.3704
724.19	57.5144
727.33	45.1379
733.00	60.8455
735.93	61.4391
739.50	0.0000
747.24	65.9087
752.31	83.9720
753.82	67.0288
756.73	58.6018
763.94	50.5560
765.81	41.1074
766.42	42.6984
777.92	0.0000
778.90	66.7495
783.70	60.1868
785.37	53.5350
795.86	51.8339
801.95	62.5387
810.29	55.9822
810.76	53.0959
815.77	49.3291
818.51	55.1895
832.01	52.5498
834.85	75.9853
836.80	0.0000
846.77	54.7955
856.80	58.9248
860.56	46.2209
871.09	46.3964
873.19	59.2749
875.33	0.0000
879.36	40.5936
880.51	47.5441
883.24	46.5984
884.68	48.6064
889.28	50.6725
898.04	44.8495
911.20	46.0562
911.20	46.0562
911.20	46.0562
926.50	49.3194
937.49	68.6989
944.13	45.5647
946.00	50.6592
949.00	40.5684
962.29	39.0502
964.08	40.7725
966.15	45.8998
968.97	45.9426
968.97	45.9426
968.97	45.9426
983.53	47.1882
996.26	55.6242
1001.03	50.5504
1004.73	53.7088
1037.84	41.7480
1038.76	0.0000
1048.07	50.2570
1050.41	51.3423
1050.41	51.3423
1063.66	46.2902
1085.87	45.5426
1099.45	43.6005
1112.07	51.2367
1115.54	46.3019

1120.29	49.9320
1120.29	49.9320
1120.55	55.6436
1121.30	55.6562
1131.51	0.0000
1173.23	66.2690
1177.93	62.0042
1189.05	64.3786
1204.77	56.9893
1221.41	58.7161
1231.02	72.3608
1235.36	67.8834
1238.28	77.4170
1260.41	0.0000
1271.85	43.7049
1274.44	46.5271
1274.54	45.5966
1291.59	36.4530
1298.22	0.0000
1312.11	30.0690
1332.49	40.6161
1365.19	26.6647
1368.63	0.0000
1384.29	48.7982
1408.01	22.1343
1457.56	0.0000
1460.82	23.3887
1489.16	17.6572
1505.03	26.5825
1596.21	26.1227
1620.50	17.1702
1678.03	0.0000
1690.97	16.4017
1764.49	10.7030
1764.49	10.7030
1770.23	14.2868
1771.35	8.9310
1791.20	0.0000
1836.06	8.4421

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030001

Total Uranium Activity	1.3078E+01	ug/g
Total Uranium Counting Unc.	8.4773E+00	ug/g
Total Uranium Tpu	4.3252E-06	ug/g
Total Uranium Mda	4.5827E+00	ug/g

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*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221                          SAMPLE ID   : G248030001
*  ANALYST       : MXR1                             DETECTOR    : GAM04
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 13-MAR-2010 14:30:30.15          SAMPLE ALQT  : 124.600 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.730E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.395E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.418E+00
GROSS GAMMA DLC       (pCi/GRAM ) : 1.655E+00

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VAX/VMS Nuclide Identification Report Generated 14-MAR-2010 16:17:43.09

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030002.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:30:59
Sample ID          : G248030002 Sample quantity : 9.79100E+01 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 03:00:00.00 Elapsed real time: 0 03:00:02.56 0.0%
Energy tolerance   : 2.00000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958221 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	45.95*	751	874	1.23	92.89	87	11	6.95E-02	9.1	
2	0	62.86*	1179	1203	1.18	126.70	122	12	1.09E-01	6.7	
3	3	74.36*	947	994	1.44	149.69	143	35	8.77E-02	6.9	2.40E+00
4	3	76.64*	1287	709	1.16	154.26	143	35	1.19E-01	4.7	
5	3	86.74	444	507	1.25	174.46	143	35	4.11E-02	9.6	
6	0	92.48*	1462	1293	1.33	185.94	181	13	1.35E-01	6.0	
7	0	128.53	70	463	1.17	258.03	255	8	6.48E-03	54.4	
8	0	143.27	78	461	1.39	287.49	284	8	7.25E-03	48.8	
9	0	185.31*	521	518	1.14	371.58	366	12	4.82E-02	10.1	
10	0	208.95	165	332	1.21	418.84	415	9	1.53E-02	21.4	
11	4	238.16*	1422	234	1.24	477.25	469	19	1.32E-01	3.3	1.49E+00
12	4	241.03	360	312	1.67	482.99	469	19	3.34E-02	12.6	
13	0	269.89	93	220	1.19	540.70	537	8	8.61E-03	29.5	
14	0	294.55*	445	270	1.31	589.99	584	12	4.12E-02	9.0	
15	0	299.25	112	196	1.51	599.40	596	9	1.04E-02	24.4	
16	0	327.36	95	160	1.04	655.60	652	8	8.79E-03	25.4	
17	0	337.63	285	286	1.40	676.12	669	13	2.64E-02	13.6	
18	0	351.27*	780	204	1.33	703.40	697	12	7.22E-02	5.2	
19	0	510.28*	215	187	1.79	1021.30	1013	16	1.99E-02	18.0	
20	0	582.37*	361	191	1.46	1165.41	1159	14	3.34E-02	10.0	
21	0	608.54*	468	131	1.70	1217.74	1212	11	4.33E-02	6.8	
22	0	660.73	452	157	1.46	1322.05	1315	13	4.18E-02	7.4	
23	0	726.70	113	104	0.77	1453.90	1446	13	1.05E-02	20.8	
24	0	767.25	65	123	1.76	1534.95	1527	13	6.00E-03	37.5	
25	0	859.84	49	72	0.82	1720.01	1712	14	4.58E-03	39.3	
26	0	910.19*	240	123	1.54	1820.63	1812	18	2.22E-02	12.8	
27	1	963.22	68	62	2.19	1926.60	1917	31	6.27E-03	26.7	1.12E+00
28	1	967.62*	201	57	2.19	1935.40	1917	31	1.86E-02	11.2	
29	0	1118.96	86	71	1.79	2237.81	2233	12	7.99E-03	22.1	
30	0	1375.27	50	17	1.85	2749.90	2744	13	4.65E-03	21.8	
31	0	1459.13*	1000	17	2.06	2917.42	2908	17	9.26E-02	3.4	
32	0	1587.19*	20	20	1.75	3173.22	3164	13	1.87E-03	53.5	
33	0	1728.74	33	13	1.38	3455.92	3447	18	3.04E-03	31.4	
34	0	1762.77*	100	0	2.24	3523.87	3518	12	9.27E-03	10.9	

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

VMS Nuclide Identification Report V3.1 Generated 14-MAR-2010 16:17:46

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:30:59
Sample ID        : G248030002 Sample quantity : 97.910 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA5 Detector geometry: CAN
Elapsed live time: 0 03:00:00.00 Elapsed real time: 0 03:00:02.56 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
    
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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	*	2.386E+01	2.182E+00	5.343E-01	3.323E-02	44.665
NB-95	+	765.81	*	1.197E-01	9.020E-02	9.123E-02	7.379E-03	1.312
CD-109	+	88.03	*	4.032E+00	8.337E-01	1.391E+00	1.059E-01	2.899
SN-126	+	64.28		3.893E+00	7.811E-01	4.440E-01	6.617E-02	8.769
	+	86.94		1.621E+00	7.365E-01	5.575E-01	2.295E-01	2.908
	+	87.57	*	3.899E-01	8.064E-02	1.247E-01	9.498E-03	3.127
CS-135	+	268.22	*	3.414E-01	2.047E-01	2.709E-01	2.898E-02	1.260
BA-137M	+	661.66	*	6.373E-01	1.032E-01	7.946E-02	5.226E-03	8.020
CS-137	+	661.66	*	6.732E-01	1.090E-01	8.395E-02	5.538E-03	8.020
TL-208		277.37		9.747E-01	4.570E-01	7.943E-01	1.034E-01	1.227
	+	583.19	*	4.795E-01	1.021E-01	6.774E-02	4.975E-03	7.079
	+	860.56		6.363E-01	5.042E-01	4.995E-01	5.069E-02	1.274
PB-210	+	46.54	*	5.951E+00	1.172E+00	9.608E-01	7.410E-02	6.194
BI-211	+	72.87		2.447E+01	3.888E+00	3.810E+00	2.999E-01	6.423
	+	351.06	*	4.383E+00	5.760E-01	3.633E-01	2.879E-02	12.064
PB-212	+	74.82		2.928E+00	5.454E-01	4.574E-01	5.711E-02	6.401
	+	77.11		2.400E+00	2.920E-01	2.762E-01	2.150E-02	8.688
	+	238.63	*	1.744E+00	2.212E-01	1.011E-01	1.095E-02	17.250
	+	300.09		2.168E+00	1.085E+00	1.384E+00	1.486E-01	1.567
BI-214	+	609.32	*	1.210E+00	1.945E-01	1.281E-01	1.081E-02	9.447
	+	1120.29		1.174E+00	5.313E-01	5.951E-01	5.717E-02	1.972
	+	1764.49		1.941E+00	4.371E-01	3.942E-01	2.279E-02	4.923
PB-214	+	74.82		5.189E+00	9.215E-01	8.107E-01	9.035E-02	6.401
	+	77.11		4.231E+00	6.219E-01	4.869E-01	5.522E-02	8.688
	+	242.00		2.680E+00	7.424E-01	6.078E-01	6.907E-02	4.410
	+	295.22		1.518E+00	3.220E-01	2.370E-01	2.627E-02	6.406
	+	351.93	*	1.591E+00	2.267E-01	1.363E-01	1.313E-02	11.671
RA-224	+	240.99	*	4.739E+00	1.284E+00	1.084E+00	1.060E-01	4.373
RA-226	+	609.32	*	1.210E+00	1.945E-01	1.281E-01	1.081E-02	9.447
	+	1120.29		1.174E+00	5.313E-01	5.951E-01	5.717E-02	1.972
	+	1764.49		1.941E+00	4.371E-01	3.942E-01	2.279E-02	4.923
AC-228	+	338.32		1.776E+00	8.822E-01	4.689E-01	1.949E-01	3.788
	+	911.20	*	1.570E+00	4.499E-01	2.753E-01	3.494E-02	5.703
	+	968.97		2.269E+00	7.562E-01	4.265E-01	1.050E-01	5.321

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.776E+00	8.822E-01	4.689E-01	1.949E-01	3.788
	+	911.20	*	1.570E+00	4.499E-01	2.753E-01	3.494E-02	5.703
	+	968.97		2.269E+00	7.562E-01	4.265E-01	1.050E-01	5.321
TH-228	+	74.82		2.928E+00	4.664E-01	4.574E-01	3.621E-02	6.401
	+	77.11		2.400E+00	2.920E-01	2.762E-01	2.150E-02	8.688
	+	238.63	*	1.744E+00	2.212E-01	1.011E-01	1.095E-02	17.250
	+	300.09		2.168E+00	1.699E+00	1.384E+00	8.477E-01	1.567
TH-229	+	85.43		9.815E-01	2.030E-01	3.279E-01	2.507E-02	2.993
	+	88.47		6.012E-01	1.243E-01	2.077E-01	1.597E-02	2.895
	+	193.51	*	-2.832E-01	6.163E-01	9.686E-01	9.673E-02	-0.292
	+	210.85		2.878E+00	1.265E+00	1.551E+00	1.546E-01	1.855
TH-232	+	338.32		1.776E+00	5.026E-01	4.689E-01	3.676E-02	3.788
	+	911.20	*	1.570E+00	4.499E-01	2.753E-01	3.494E-02	5.703
	+	968.97		2.269E+00	7.562E-01	4.265E-01	1.050E-01	5.321
TH-234	+	63.29	*	1.010E+01	2.280E+00	1.152E+00	2.090E-01	8.769
	+	92.59		1.139E+01	2.857E+00	1.057E+00	2.325E-01	10.774
U-235	+	89.96		4.261E+00	1.783E+00	1.718E+00	4.189E-01	2.481
	+	93.35		8.602E+00	2.235E+00	8.004E-01	1.846E-01	10.748
	+	143.76	*	2.781E-01	2.768E-01	3.514E-01	6.703E-02	0.791
	+	163.33		5.388E-01	4.838E-01	7.942E-01	1.491E-01	0.678
	+	185.72		4.102E-01	9.264E-02	7.256E-02	7.242E-03	5.653
	+	205.31		-1.516E-01	6.388E-01	8.772E-01	1.652E-01	-0.173
NP-237	+	86.48	*	1.164E+00	3.427E-01	4.050E-01	9.037E-02	2.873
	+	95.86		-1.202E-01	1.020E+00	1.456E+00	3.513E-01	-0.083
U-238	+	63.29	*	1.010E+01	2.280E+00	1.152E+00	2.090E-01	8.769
	+	92.59		1.139E+01	1.674E+00	1.057E+00	8.882E-02	10.774
ANH-511	+	511.00	*	2.158E-01	7.889E-02	5.501E-02	3.521E-03	3.924

---- 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	*	5.286E-02	5.017E-01	7.782E-01	5.572E-02	0.068
NA-22		1274.54	*	-2.743E-02	4.821E-02	7.332E-02	4.271E-03	-0.374
NA-24		1368.63	*	8.378E+02	4.821E-02	Half-Life too short		
SC-46		889.28	*	1.328E-02	4.989E-02	8.419E-02	8.456E-03	0.158
	+	1120.55		2.104E-01	9.418E-02	1.433E-01	9.856E-03	1.468
V-48		944.13		2.773E-01	1.480E+00	2.475E+00	2.394E-01	0.112
		983.53	*	3.798E-02	1.114E-01	1.883E-01	1.725E-02	0.202
		1312.11		2.045E-02	1.233E-01	2.027E-01	1.175E-02	0.101
CR-51		320.08	*	2.690E-01	5.039E-01	8.563E-01	7.566E-02	0.314
MN-54		834.85	*	-3.420E-02	4.875E-02	7.697E-02	7.051E-03	-0.444
CO-56		846.77	*	4.762E-03	4.805E-02	8.030E-02	7.510E-03	0.059
		1037.84		-5.013E-02	3.719E-01	6.023E-01	5.308E-02	-0.083
		1238.28		8.812E-02	1.245E-01	2.112E-01	1.305E-02	0.417
		1771.35		-2.090E-01	2.994E-01	4.357E-01	2.516E-02	-0.480
CO-57		122.06	*	-1.668E-02	2.764E-02	4.386E-02	6.223E-03	-0.380
		136.47		-1.295E-01	2.329E-01	3.692E-01	4.943E-02	-0.351
CO-58		810.76	*	-2.263E-02	4.849E-02	7.767E-02	6.836E-03	-0.291

---- 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	*		-3.094E-03	1.085E-01	1.767E-01	1.430E-02	-0.018
	1291.59			-1.119E-01	1.583E-01	2.366E-01	1.757E-02	-0.473
CO-60	1173.23			3.977E-02	5.497E-02	9.446E-02	5.479E-03	0.421
	1332.49	*		6.270E-03	4.390E-02	7.202E-02	4.168E-03	0.087
ZN-65	1115.54	*		2.255E-01	1.284E-01	2.122E-01	1.482E-02	1.063
SE-75	121.12			8.662E-02	1.446E-01	2.390E-01	3.733E-02	0.362
	136.00			-1.458E-02	4.555E-02	7.294E-02	9.513E-03	-0.200
	264.66	*		-1.168E-02	5.754E-02	8.278E-02	7.904E-03	-0.141
	279.54			8.369E-02	1.279E-01	2.188E-01	2.096E-02	0.383
	400.66			-2.649E-02	3.297E-01	5.405E-01	4.928E-02	-0.049
SR-85	514.00	*		9.883E-02	5.165E-02	8.364E-02	5.361E-03	1.182
Y-88	898.04			7.676E-03	5.611E-02	9.366E-02	9.576E-03	0.082
	1836.06	*		1.591E-02	4.314E-02	7.507E-02	4.295E-03	0.212
Y-91	1204.77	*		9.575E+00	2.787E+01	4.651E+01	2.703E+00	0.206
NB-94	702.65	*		-6.410E-03	4.231E-02	7.024E-02	5.026E-03	-0.091
	871.09			1.706E-02	4.263E-02	7.261E-02	7.077E-03	0.235
NB-95M	235.69	*		1.503E+00	2.624E-01	3.780E-01	4.142E-02	3.976
ZR-95	724.19			2.831E-01	1.540E-01	2.511E-01	2.083E-02	1.127
	756.73	*		-1.101E-01	9.457E-02	1.441E-01	1.286E-02	-0.764
MO-99	140.51			1.001E-04	9.457E-02	Half-Life	too short	
	181.07			5.290E-06	9.457E-02	Half-Life	too short	
	366.42			-3.432E-04	9.457E-02	Half-Life	too short	
	739.50	*		8.166E-06	9.457E-02	Half-Life	too short	
	777.92			1.109E-04	9.457E-02	Half-Life	too short	
TC-99M	140.51	*		7.558E+18	9.457E-02	Half-Life	too short	
RU-103	497.08	*		-2.167E-02	5.763E-02	9.174E-02	1.164E-02	-0.236
	610.33			1.413E+01	2.908E+00	3.285E+00	5.049E-01	4.303
RH-106	621.93	*		-1.646E-01	4.219E-01	6.615E-01	7.962E-02	-0.249
	1050.41			5.315E-01	2.935E+00	4.884E+00	3.977E-01	0.109
RU-106	621.93	*		-1.646E-01	4.216E-01	6.615E-01	4.361E-02	-0.249
	1050.41			5.315E-01	2.935E+00	4.884E+00	3.977E-01	0.109
AG-108M	433.94	*		-2.466E-02	3.547E-02	5.586E-02	3.606E-03	-0.441
	614.28			-1.664E-02	4.983E-02	6.696E-02	4.657E-03	-0.249
	722.91			2.929E-02	5.077E-02	7.709E-02	5.989E-03	0.380
AG-110M	657.76	*		2.331E-01	6.779E-02	1.137E-01	7.859E-03	2.050
	677.62			2.423E-01	3.778E-01	6.587E-01	4.684E-02	0.368
	706.68			1.828E-01	2.714E-01	4.719E-01	3.543E-02	0.387
	763.94			2.982E-01	2.323E-01	3.705E-01	3.080E-02	0.805
	884.68			-2.725E-02	5.920E-02	9.419E-02	9.616E-03	-0.289
	937.49			-2.960E-01	1.458E-01	1.956E-01	1.962E-02	-1.513
	1384.29			1.051E-01	1.978E-01	3.310E-01	2.040E-02	0.317
	1505.03			2.172E-01	3.508E-01	6.223E-01	3.658E-02	0.349
SN-113	391.69	*		-1.346E-02	5.639E-02	9.180E-02	5.695E-03	-0.147
CD-115	260.90			-6.431E-04	5.639E-02	Half-Life	too short	
	492.35			-9.219E-05	5.639E-02	Half-Life	too short	
	527.90	*		-5.540E-05	5.639E-02	Half-Life	too short	
SN-117M	156.02			1.718E+00	3.685E+00	6.034E+00	6.653E-01	0.285
	158.56	*		-2.074E-02	8.823E-02	1.410E-01	1.516E-02	-0.147
TE-123M	159.00	*		-1.165E-02	3.347E-02	5.325E-02	5.722E-03	-0.219

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124	602.73			-2.549E-02	6.229E-02	8.341E-02	5.493E-03	-0.306
	645.85			1.609E-01	6.727E-01	1.099E+00	7.940E-02	0.146
	722.78			1.780E-01	5.603E-01	8.319E-01	6.386E-02	0.214
	1690.97	*		6.018E-02	9.210E-02	1.677E-01	1.066E-02	0.359
SB-125	427.87	*		2.769E-02	1.097E-01	1.825E-01	1.143E-02	0.152
	463.37			4.402E-01	3.644E-01	6.284E-01	4.454E-02	0.700
	600.60			-7.394E-02	2.393E-01	3.677E-01	2.720E-02	-0.201
	635.95			1.785E-01	3.290E-01	5.494E-01	4.111E-02	0.325
TE-125M	109.28	*		-8.690E+00	1.231E+01	1.893E+01	2.459E+00	-0.459
I-126	388.63			1.653E-01	2.985E-01	5.047E-01	3.003E-02	0.328
	666.33	*		2.808E-01	4.616E-01	6.753E-01	4.484E-02	0.416
	753.82			3.116E+00	3.091E+00	5.489E+00	4.341E-01	0.568
SB-126	414.70			-1.431E-01	1.378E-01	2.138E-01	1.274E-02	-0.669
	666.50			9.361E-02	1.610E-01	2.350E-01	1.561E-02	0.398
	695.00			4.147E-02	1.584E-01	2.342E-01	1.650E-02	0.177
	697.00			-3.292E-01	4.889E-01	7.844E-01	5.549E-02	-0.420
	720.70	*		1.915E-01	2.888E-01	4.424E-01	3.281E-02	0.433
	856.80			1.284E+00	9.571E-01	1.542E+00	1.467E-01	0.833
SB-127	252.40			-3.143E+00	1.657E+01	2.749E+01	1.167E+01	-0.114
	473.00			-5.472E+00	7.495E+00	1.169E+01	1.590E+00	-0.468
	685.70	*		2.319E+00	5.451E+00	9.381E+00	1.186E+00	0.247
	783.70			2.190E+01	1.649E+01	2.914E+01	4.177E+00	0.752
I-131	80.19			-1.631E+01	7.491E+00	1.105E+01	8.682E-01	-1.476
	284.31			-7.591E-01	2.952E+00	4.873E+00	4.706E-01	-0.156
	364.49	*		8.374E-02	2.482E-01	4.168E-01	3.159E-02	0.201
	636.99			7.316E-01	3.547E+00	5.788E+00	4.225E-01	0.126
TE-132	49.72			-1.446E+01	2.294E+01	3.270E+01	4.008E+00	-0.442
	111.76			2.511E+02	1.743E+02	2.888E+02	4.517E+01	0.870
	116.30			-1.704E+02	1.463E+02	2.249E+02	3.680E+01	-0.758
	228.16	*		-7.043E-01	3.609E+00	6.029E+00	1.090E+00	-0.117
BA-133	81.00			-1.759E-01	8.848E-02	1.268E-01	1.907E-02	-1.387
	276.40			4.518E-01	4.212E-01	7.076E-01	1.030E-01	0.639
	302.85			-7.241E-02	1.774E-01	2.496E-01	3.292E-02	-0.290
	356.01	*		-2.000E-03	5.411E-02	7.744E-02	9.357E-03	-0.026
	383.85			-9.101E-02	3.668E-01	5.976E-01	6.491E-02	-0.152
I-133	529.87	*		-2.928E-01	3.668E-01	Half-Life	too short	
	875.33			-2.633E+01	3.668E-01	Half-Life	too short	
	1298.22			5.258E+01	3.668E-01	Half-Life	too short	
CS-134	563.25			-2.222E-01	4.792E-01	7.327E-01	4.867E-02	-0.303
	569.33			4.418E-02	2.758E-01	4.403E-01	2.950E-02	0.100
	604.72			2.631E-02	5.060E-02	7.343E-02	4.857E-03	0.358
	795.86	*		-1.942E-02	6.008E-02	9.789E-02	8.430E-03	-0.198
	801.95			-1.025E-01	5.139E-01	8.302E-01	7.216E-02	-0.123
	1365.19			3.308E-01	1.482E+00	2.450E+00	1.565E-01	0.135
I-135	546.56			5.920E+17	1.482E+00	Half-Life	too short	
	836.80			1.415E+18	1.482E+00	Half-Life	too short	
	1038.76			4.791E+17	1.482E+00	Half-Life	too short	
	1131.51			-3.369E+17	1.482E+00	Half-Life	too short	
	1260.41	*		2.855E+17	1.482E+00	Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	+	1457.56		6.361E+19	1.482E+00	Half-Life	too short	
		1678.03		6.666E+16	1.482E+00	Half-Life	too short	
		1791.20		9.451E+17	1.482E+00	Half-Life	too short	
		153.25		7.388E-01	1.429E+00	2.343E+00	2.958E-01	0.315
		176.60		8.936E-01	8.252E-01	1.370E+00	1.472E-01	0.652
		273.65		-1.812E+00	1.018E+00	1.308E+00	1.316E-01	-1.385
		340.55		6.388E-01	2.660E-01	4.322E-01	3.518E-02	1.478
		818.51		6.896E-02	1.285E-01	2.216E-01	1.976E-02	0.311
		1048.07	*	1.119E-01	1.778E-01	3.066E-01	2.628E-02	0.365
		1235.36		1.534E+00	1.041E+00	1.843E+00	1.826E-01	0.832
CE-139		165.86	*	-2.675E-02	3.395E-02	5.284E-02	5.246E-03	-0.506
BA-140		162.66		1.391E+00	1.309E+00	2.178E+00	2.349E-01	0.639
		304.85		1.564E+00	2.512E+00	3.716E+00	1.089E+00	0.421
		423.72		-2.615E+00	3.639E+00	5.587E+00	1.805E+00	-0.468
		537.26	*	-1.367E-01	4.739E-01	7.512E-01	2.512E-01	-0.182
LA-140	+	328.76		1.068E+00	5.496E-01	9.117E-01	7.886E-02	1.172
		487.02		-1.864E-01	2.594E-01	4.051E-01	2.845E-02	-0.460
		815.77		-1.307E-01	5.572E-01	9.092E-01	8.952E-02	-0.144
		1596.21	*	-4.726E-02	1.383E-01	2.185E-01	1.284E-02	-0.216
CE-141		145.44	*	8.204E-02	9.483E-02	1.386E-01	1.695E-02	0.592
CE-143		57.36		-9.245E-03	9.483E-02	Half-Life	too short	
	+	293.27	*	4.595E-02	9.483E-02	Half-Life	too short	
		664.57		5.162E-02	9.483E-02	Half-Life	too short	
		721.93		2.024E-02	9.483E-02	Half-Life	too short	
CE-144		80.12		-4.888E+00	2.246E+00	3.314E+00	2.562E-01	-1.475
		133.52	*	1.390E-01	2.548E-01	3.688E-01	6.742E-02	0.377
PM-144		476.78		-1.135E-02	9.386E-02	1.439E-01	1.045E-02	-0.079
		618.01		-6.658E-03	4.134E-02	6.588E-02	4.551E-03	-0.101
		696.49	*	-3.547E-02	4.907E-02	6.807E-02	4.815E-03	-0.521
PR-144		696.51	*	-2.639E+00	3.687E+00	5.118E+00	3.617E-01	-0.516
		1489.16		-2.019E-01	1.296E+01	2.154E+01	1.266E+00	-0.009
PM-146		453.88	*	2.230E-03	5.408E-02	8.869E-02	7.728E-03	0.025
		633.25		-1.212E+00	1.860E+00	2.763E+00	1.044E+00	-0.439
		735.93		3.299E-02	1.883E-01	3.178E-01	8.815E-02	0.104
		747.24		-1.700E-01	1.264E-01	1.817E-01	2.566E-02	-0.936
ND-147	+	91.11		6.997E+00	1.059E+00	1.110E+00	9.877E-02	6.307
		319.41		6.712E-01	6.008E+00	1.003E+01	8.422E-01	0.067
		531.02	*	3.597E-01	1.032E+00	1.711E+00	2.365E-01	0.210
PM-149		285.90	*	6.986E-05	1.032E+00	Half-Life	too short	
EU-152		121.78		-1.853E-02	7.708E-02	1.242E-01	1.856E-02	-0.149
		244.70		2.247E-01	3.811E-01	5.750E-01	5.606E-02	0.391
		344.28	*	3.296E-02	1.331E-01	1.839E-01	1.511E-02	0.179
		778.90		1.530E-01	3.363E-01	5.761E-01	4.775E-02	0.266
	+	964.08		8.249E-01	4.467E-01	7.255E-01	6.835E-02	1.137
		1085.87		-3.200E-01	4.845E-01	7.221E-01	5.436E-02	-0.443
		1112.07		7.233E-02	4.028E-01	5.991E-01	4.218E-02	0.121
		1408.01		2.532E-01	1.875E-01	3.588E-01	2.096E-02	0.706
GD-153		69.67		7.968E-01	1.592E+00	1.987E+00	1.580E-01	0.401
		97.43	*	1.695E-01	9.673E-02	1.467E-01	1.360E-02	1.155

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		103.18		-1.533E-01	1.195E-01	1.860E-01	1.923E-02	-0.824
		123.07		-3.344E-02	5.782E-02	8.840E-02	1.408E-02	-0.378
		723.31		1.879E-01	2.407E-01	3.703E-01	3.130E-02	0.507
		873.19		-1.391E-01	3.598E-01	5.781E-01	7.377E-02	-0.241
		996.26		-1.489E-01	4.647E-01	7.438E-01	1.313E-01	-0.200
EU-155		1004.73		-4.896E-01	2.944E-01	4.121E-01	4.869E-02	-1.188
		1274.44	*	-8.787E-02	1.353E-01	2.034E-01	1.919E-02	-0.432
	+	86.55		4.741E-01	9.823E-02	1.668E-01	1.289E-02	2.843
		105.31	*	5.861E-02	1.109E-01	1.837E-01	1.989E-02	0.319
	+	86.79		1.342E+00	2.775E-01	4.690E-01	3.577E-02	2.861
TB-160		197.04		4.271E-01	7.362E-01	1.154E+00	1.152E-01	0.370
		215.65		6.957E-01	8.881E-01	1.498E+00	1.490E-01	0.464
	+	298.57		3.266E-01	1.622E-01	2.433E-01	2.165E-02	1.342
		879.36	*	4.489E-02	1.832E-01	3.088E-01	3.051E-02	0.145
	+	962.29		1.656E+00	8.965E-01	1.248E+00	1.179E-01	1.326
HO-166M		966.15		1.832E+00	4.456E-01	7.066E-01	6.638E-02	2.593
		1177.93		-2.423E-01	4.572E-01	7.099E-01	4.119E-02	-0.341
		1271.85		-1.085E+00	8.382E-01	1.161E+00	6.745E-02	-0.935
	+	80.57		-5.331E-01	2.420E-01	3.567E-01	2.754E-02	-1.494
		184.41		3.259E-01	7.360E-02	9.060E-02	9.040E-03	3.597
TA-182		280.46		-7.764E-02	9.728E-02	1.568E-01	1.452E-02	-0.495
		410.95		1.900E-01	2.986E-01	5.059E-01	3.003E-02	0.376
		711.68	*	-2.489E-02	7.451E-02	1.221E-01	8.893E-03	-0.204
		752.31		3.125E-01	3.307E-01	5.844E-01	4.608E-02	0.535
		810.29		-4.550E-02	7.028E-02	1.110E-01	9.739E-03	-0.410
IR-192		67.75		1.267E-02	9.871E-02	1.214E-01	9.718E-03	0.104
		100.11		2.770E-01	1.952E-01	3.195E-01	3.119E-02	0.867
		152.43		4.191E-01	4.180E-01	6.934E-01	7.909E-02	0.604
		222.11		-3.128E-02	3.860E-01	6.485E-01	6.432E-02	-0.048
		1121.30		2.518E-01	2.377E-01	3.646E-01	2.503E-02	0.691
HG-203		1189.05		1.709E-01	3.809E-01	6.416E-01	3.726E-02	0.266
		1221.41	*	5.669E-02	2.327E-01	3.852E-01	2.240E-02	0.147
		1231.02		-3.813E-01	6.090E-01	9.388E-01	5.459E-02	-0.406
	+	295.96		1.199E+00	2.423E-01	3.232E-01	2.914E-02	3.709
		308.46		-1.237E-02	1.182E-01	1.958E-01	1.706E-02	-0.063
BI-207		316.51	*	8.463E-03	4.180E-02	7.012E-02	5.952E-03	0.121
		468.07		-5.248E-02	9.142E-02	1.446E-01	1.023E-02	-0.363
		70.83		6.554E-01	1.187E+00	1.743E+00	2.736E-01	0.376
	+	72.87		6.762E+00	1.385E+00	1.353E+00	2.048E-01	4.997
		279.20	*	4.739E-02	4.898E-02	8.456E-02	8.021E-03	0.560
PB-211		72.81		1.408E+00	2.237E-01	2.803E-01	2.207E-02	5.024
	+	74.97		8.442E-01	1.341E-01	2.141E-01	1.676E-02	3.943
		569.70		-4.126E-03	4.238E-02	6.663E-02	4.361E-03	-0.062
		1063.66	*	5.028E-02	6.539E-02	1.133E-01	8.974E-03	0.444
		1770.23		-1.813E+00	7.280E-01	7.491E-01	4.327E-02	-2.420
BI-212		404.85	*	-1.122E+00	1.060E+00	1.413E+00	6.778E-01	-0.794
		427.09		-2.990E-01	1.885E+00	3.059E+00	1.403E+00	-0.098
		832.01		3.768E-01	1.253E+00	2.098E+00	1.090E+00	0.180
	+	727.33	*	2.347E+00	1.013E+00	1.354E+00	1.586E-01	1.734

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	785.37		5.200E-01	4.177E+00	7.008E+00	5.878E-01	0.074
		1620.50		2.709E+00	2.789E+00	5.169E+00	3.034E-01	0.524
		271.23		5.057E-01	3.035E-01	4.865E-01	5.317E-02	1.039
		401.81	*	1.851E-01	5.051E-01	8.449E-01	1.138E-01	0.219
RA-223		81.07		-3.894E-01	1.938E-01	2.879E-01	2.221E-02	-1.352
		83.79		-1.076E-01	1.224E-01	1.883E-01	1.444E-02	-0.571
		94.87		8.715E-01	5.282E-01	7.942E-01	6.995E-02	1.097
		144.24		9.320E-01	9.184E-01	1.326E+00	1.718E-01	0.703
	+	154.21		1.578E-01	4.454E-01	7.270E-01	8.626E-02	0.217
		269.46		3.929E-01	2.349E-01	3.659E-01	3.511E-02	1.074
		323.87	*	5.057E-02	8.373E-01	1.212E+00	2.080E-01	0.042
		338.28		7.049E+00	2.082E+00	2.554E+00	2.945E-01	2.760
AC-227	+	79.69		-2.562E+00	1.210E+00	1.631E+00	2.742E-01	-1.571
		235.96		2.590E+00	3.869E-01	4.876E-01	5.543E-02	5.310
		256.23	*	2.992E-01	2.835E-01	4.901E-01	6.266E-02	0.611
		299.98		2.385E+00	1.205E+00	1.766E+00	2.274E-01	1.350
	+	304.50		2.153E+00	2.024E+00	3.081E+00	5.115E-01	0.699
		334.37		8.038E-01	2.297E+00	3.375E+00	5.141E-01	0.238
		79.80		-3.617E+00	1.678E+00	2.135E+00	4.578E-01	-1.694
		235.96		2.590E+00	3.766E-01	4.876E-01	5.285E-02	5.310
	+	256.23	*	2.992E-01	2.841E-01	4.901E-01	6.989E-02	0.611
		299.98		2.385E+00	1.205E+00	1.766E+00	2.274E-01	1.350
		304.50		2.153E+00	2.024E+00	3.081E+00	5.115E-01	0.699
		334.37		8.038E-01	2.297E+00	3.375E+00	5.141E-01	0.238
PA-231	*	283.69		-7.560E-01	1.594E+00	2.601E+00	3.885E-01	-0.291
		301.36		4.004E-01	7.345E-01	1.094E+00	1.347E-01	0.366
TH-231		81.07		-3.894E-01	1.938E-01	2.879E-01	2.221E-02	-1.352
		83.79		-1.076E-01	1.224E-01	1.883E-01	1.444E-02	-0.571
		94.87		8.715E-01	5.282E-01	7.942E-01	6.995E-02	1.097
		144.24		9.320E-01	9.184E-01	1.326E+00	1.718E-01	0.703
	+	154.21		1.578E-01	4.454E-01	7.270E-01	8.626E-02	0.217
		269.46		3.929E-01	2.349E-01	3.659E-01	3.511E-02	1.074
		323.87	*	5.057E-02	8.373E-01	1.212E+00	2.080E-01	0.042
		338.28		7.049E+00	2.082E+00	2.554E+00	2.945E-01	2.760
PA-233	+	300.13		1.079E+00	5.515E-01	7.989E-01	1.196E-01	1.351
		311.90	*	2.597E-02	7.190E-02	1.215E-01	1.073E-02	0.214
PA-234		340.48		2.044E+00	9.158E-01	1.296E+00	3.082E-01	1.577
		94.67		8.170E-01	2.177E-01	3.150E-01	3.940E-02	2.594
		98.44		2.056E-01	1.548E-01	1.604E-01	8.968E-02	1.282
		111.00		1.645E-01	2.156E-01	3.456E-01	5.040E-02	0.476
		131.20		3.808E-02	1.360E-01	1.953E-01	2.622E-02	0.195
		569.50		3.314E-02	3.762E-01	5.981E-01	3.914E-02	0.055
		733.00		2.297E-02	5.269E-01	7.933E-01	1.731E-01	0.029
		880.51		9.273E-02	3.421E-01	5.775E-01	5.718E-02	0.161
		883.24		-2.542E-02	3.322E-01	5.456E-01	3.677E-01	-0.047
		926.50		-5.422E-02	2.295E-01	3.714E-01	9.557E-02	-0.146
		946.00	*	5.629E-02	3.662E-01	6.106E-01	1.176E-01	0.092
		949.00		-8.873E-02	5.263E-01	8.553E-01	8.222E-02	-0.104
PA-234M	+	766.42		2.937E+01	2.656E+01	2.782E+01	1.409E+01	1.055

---- 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	*		9.825E+00	6.545E+00	1.133E+01	1.158E+00	0.867
	99.53			4.302E-01	1.818E-01	2.909E-01	2.809E-02	1.479
	103.37			-2.223E-02	1.029E-01	1.671E-01	1.734E-02	-0.133
	106.12			3.566E-02	8.807E-02	1.454E-01	1.586E-02	0.245
	117.23	*		-6.004E-01	4.381E-01	6.691E-01	8.798E-02	-0.897
AM-241	228.18			-4.740E-02	2.341E-01	3.911E-01	3.866E-02	-0.121
	277.60			4.288E-01	2.050E-01	3.626E-01	3.375E-02	1.183
	59.54	*		3.529E-02	7.919E-02	1.169E-01	1.046E-02	0.302
CM-247	278.00			1.530E+00	8.612E-01	1.516E+00	1.410E-01	1.010
	287.50			8.548E-01	1.454E+00	2.277E+00	2.079E-01	0.375
CF-249	402.40	*		1.020E-02	4.598E-02	7.648E-02	4.500E-03	0.133
	252.80			3.150E-01	1.040E+00	1.764E+00	1.704E-01	0.179
	333.37			2.749E-02	2.712E-01	3.444E-01	2.752E-02	0.080
CF-251	388.16	*		1.303E-02	4.956E-02	8.269E-02	4.938E-03	0.158
	177.52	*		4.656E-02	1.499E-01	2.434E-01	2.425E-02	0.191
	227.38			7.840E-02	3.755E-01	6.369E-01	6.297E-02	0.123
	285.41			-1.047E+00	2.353E+00	3.849E+00	3.528E-01	-0.272

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030002      *
* Acquisition date   : 13-MAR-2010 14:30:59 Detector SN#                   *
* Detector ID        : GAM05                      Sensitivity               : 5.000 *
* Geometry           : CAN                      Energy tolerance: 2.000      *
* Elapsed live time: 0 03:00:00.00                      Abundance limit : 75.000      *
* Elapsed real time: 0 03:00:02.56                      Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030002                      Analyst initials: MXR1      *
* Batch Number       : 958221                          Sample Quantity : 9.7910E+01 GRAM *
* Recovery           : 1.00000                          Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope :
* MSD DPM             : 0.000                          MSD Isotope :
* LCS DPM             : 0.000                          LCS Isotope :
* LCSD DPM            : 0.000                          LCSD Isotope :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.386E+01	2.138E+00	5.293E-01	0.000E+00
NB-95	1.197E-01	8.839E-02	9.047E-02	0.000E+00
CD-109	4.032E+00	8.170E-01	1.384E+00	0.000E+00
SN-126	3.899E-01	7.903E-02	1.241E-01	0.000E+00
CS-135	3.414E-01	2.006E-01	2.691E-01	0.000E+00
BA-137M	6.373E-01	1.011E-01	7.882E-02	0.000E+00
CS-137	6.732E-01	1.069E-01	8.327E-02	0.000E+00
TL-208	4.795E-01	1.000E-01	6.721E-02	0.000E+00
PB-210	5.951E+00	1.148E+00	9.571E-01	0.000E+00
BI-211	4.383E+00	5.645E-01	3.607E-01	0.000E+00
PB-212	1.744E+00	2.168E-01	1.005E-01	0.000E+00
BI-214	1.210E+00	1.906E-01	1.271E-01	0.000E+00
PB-214	1.591E+00	2.222E-01	1.353E-01	0.000E+00
RA-224	4.739E+00	1.258E+00	1.077E+00	0.000E+00
RA-226	1.210E+00	1.906E-01	1.271E-01	0.000E+00
AC-228	1.570E+00	4.409E-01	2.729E-01	0.000E+00
RA-228	1.570E+00	4.409E-01	2.729E-01	0.000E+00
TH-228	1.744E+00	2.168E-01	1.005E-01	0.000E+00
TH-229	-2.832E-01	6.040E-01	9.627E-01	0.000E+00
TH-232	1.570E+00	4.409E-01	2.729E-01	0.000E+00
TH-234	1.010E+01	2.234E+00	1.147E+00	0.000E+00
U-235	2.781E-01	2.712E-01	3.495E-01	0.000E+00
NP-237	1.164E+00	3.358E-01	4.031E-01	0.000E+00
U-238	1.010E+01	2.234E+00	1.147E+00	0.000E+00
ANH-511	2.158E-01	7.732E-02	5.459E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	5.286E-02	4.916E-01	7.723E-01	0.000E+00 NOT IDENT.
NA-22	-2.743E-02	4.724E-02	7.265E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.279E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	1.328E-02	4.889E-02	8.347E-02	0.000E+00	FAIL ABUN
V-48	3.798E-02	1.092E-01	1.867E-01	0.000E+00	NOT IDENT.
CR-51	2.690E-01	4.938E-01	8.504E-01	0.000E+00	NOT IDENT.
MN-54	-3.420E-02	4.777E-02	7.632E-02	0.000E+00	NOT IDENT.
CO-56	4.762E-03	4.709E-02	7.962E-02	0.000E+00	NOT IDENT.
CO-57	-1.668E-02	2.709E-02	4.362E-02	0.000E+00	NOT IDENT.
CO-58	-2.263E-02	4.752E-02	7.702E-02	0.000E+00	NOT IDENT.
FE-59	-3.094E-03	1.063E-01	1.751E-01	0.000E+00	NOT IDENT.
CO-60	6.270E-03	4.303E-02	7.136E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	1.258E-01	2.103E-01	0.000E+00	NOT IDENT.
SE-75	-1.168E-02	5.639E-02	8.223E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.061E-02	8.300E-02	0.000E+00	NOT IDENT.
Y-88	1.591E-02	4.228E-02	7.434E-02	0.000E+00	NOT IDENT.
Y-91	9.575E+00	2.731E+01	4.609E+01	0.000E+00	NOT IDENT.
NB-94	-6.410E-03	4.147E-02	6.967E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.572E-01	3.756E-01	0.000E+00	NOT IDENT.
ZR-95	-1.101E-01	9.268E-02	1.429E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.175E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.270E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.167E-02	5.647E-02	9.104E-02	0.000E+00	FAIL ABUN
RH-106	-1.646E-01	4.135E-01	6.562E-01	0.000E+00	NOT IDENT.
RU-106	-1.646E-01	4.132E-01	6.562E-01	0.000E+00	NOT IDENT.
AG-108M	-2.466E-02	3.476E-02	5.544E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	6.644E-02	1.128E-01	0.000E+00	NOT IDENT.
SN-113	-1.346E-02	5.527E-02	9.114E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.188E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.074E-02	8.646E-02	1.402E-01	0.000E+00	NOT IDENT.
TE-123M	-1.165E-02	3.280E-02	5.294E-02	0.000E+00	NOT IDENT.
SB-124	6.018E-02	9.026E-02	1.661E-01	0.000E+00	NOT IDENT.
SB-125	2.769E-02	1.076E-01	1.812E-01	0.000E+00	NOT IDENT.
TE-125M	-8.690E+00	1.206E+01	1.883E+01	0.000E+00	NOT IDENT.
I-126	2.808E-01	4.524E-01	6.699E-01	0.000E+00	NOT IDENT.
SB-126	1.915E-01	2.830E-01	4.387E-01	0.000E+00	NOT IDENT.
SB-127	2.319E+00	5.342E+00	9.304E+00	0.000E+00	NOT IDENT.
I-131	8.374E-02	2.432E-01	4.139E-01	0.000E+00	NOT IDENT.
TE-132	-7.043E-01	3.537E+00	5.991E+00	0.000E+00	NOT IDENT.
BA-133	-2.000E-03	5.302E-02	7.689E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.933E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-1.942E-02	5.888E-02	9.708E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.850E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.119E-01	1.743E-01	3.039E-01	0.000E+00	NOT IDENT.
CE-139	-2.675E-02	3.327E-02	5.253E-02	0.000E+00	NOT IDENT.
BA-140	-1.367E-01	4.644E-01	7.454E-01	0.000E+00	NOT IDENT.
LA-140	-4.726E-02	1.355E-01	2.164E-01	0.000E+00	FAIL ABUN
CE-141	8.204E-02	9.294E-02	1.378E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.380E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.390E-01	2.497E-01	3.668E-01	0.000E+00	NOT IDENT.
PM-144	-3.547E-02	4.808E-02	6.751E-02	0.000E+00	NOT IDENT.
PR-144	-2.639E+00	3.613E+00	5.077E+00	0.000E+00	NOT IDENT.
PM-146	2.230E-03	5.300E-02	8.803E-02	0.000E+00	NOT IDENT.
ND-147	3.597E-01	1.011E+00	1.698E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	8.726E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	3.296E-02	1.304E-01	1.826E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	9.480E-02	1.460E-01	0.000E+00	NOT IDENT.
EU-154	-8.787E-02	1.326E-01	2.016E-01	0.000E+00	NOT IDENT.
EU-155	5.861E-02	1.087E-01	1.827E-01	0.000E+00	FAIL ABUN
TB-160	4.489E-02	1.796E-01	3.061E-01	0.000E+00	FAIL ABUN
HO-166M	-2.489E-02	7.302E-02	1.211E-01	0.000E+00	FAIL ABUN
TA-182	5.669E-02	2.280E-01	3.817E-01	0.000E+00	NOT IDENT.
IR-192	8.463E-03	4.097E-02	6.964E-02	0.000E+00	FAIL ABUN
HG-203	4.739E-02	4.800E-02	8.400E-02	0.000E+00	FAIL ABUN
BI-207	5.028E-02	6.408E-02	1.123E-01	0.000E+00	FAIL ABUN
PB-211	-1.122E+00	1.039E+00	1.402E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.930E-01	1.342E+00	0.000E+00	FAIL ABUN
RN-219	1.851E-01	4.950E-01	8.387E-01	0.000E+00	FAIL ABUN
RA-223	5.057E-02	8.205E-01	1.204E+00	0.000E+00	FAIL ABUN
AC-227	2.992E-01	2.778E-01	4.869E-01	0.000E+00	FAIL ABUN
TH-227	2.992E-01	2.784E-01	4.869E-01	0.000E+00	FAIL ABUN
PA-231	-7.560E-01	1.562E+00	2.584E+00	0.000E+00	NOT IDENT.
TH-231	5.057E-02	8.205E-01	1.204E+00	0.000E+00	FAIL ABUN
PA-233	2.597E-02	7.047E-02	1.207E-01	0.000E+00	FAIL ABUN
PA-234	5.629E-02	3.589E-01	6.053E-01	0.000E+00	NOT IDENT.
PA-234M	9.825E+00	6.414E+00	1.123E+01	0.000E+00	FAIL ABUN
NP-239	-6.004E-01	4.294E-01	6.655E-01	0.000E+00	NOT IDENT.
AM-241	3.529E-02	7.760E-02	1.165E-01	0.000E+00	NOT IDENT.
CM-247	1.020E-02	4.506E-02	7.592E-02	0.000E+00	NOT IDENT.
CF-249	1.303E-02	4.857E-02	8.210E-02	0.000E+00	NOT IDENT.

CF-251	4.656E-02	1.469E-01	2.419E-01	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030002.CNF;1
Sample date   : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:30:59
Sample ID     : G248030002 Sample quantity : 9.79100E+01 GRAM
Detector name : GAM05 Detector geometry: CAN
Elapsed live time: 0 03:00:00.00 Elapsed real time: 0 03:00:02.56 0.0%
Energy tolerance: 2.00000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 958221 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	1000	10.66*	1.004E+00	2.386E+01	2.386E+01	9.14
NB-95	765.81	65	99.81*	1.763E+00	9.416E-02	1.197E-01	75.36
CD-109	88.03	444	3.70*	7.868E+00	3.899E+00	4.032E+00	20.68
SN-126	64.28	1179	9.60	8.062E+00	3.893E+00	3.893E+00	20.06
	86.94	444	8.90	7.868E+00	1.621E+00	1.621E+00	45.43
	87.57	444	37.00*	7.868E+00	3.899E-01	3.899E-01	20.68
CS-135	268.22	93	16.00*	4.352E+00	3.414E-01	3.414E-01	59.97
BA-137M	661.66	452	89.90*	2.018E+00	6.364E-01	6.373E-01	16.19
CS-137	661.66	452	85.10*	2.018E+00	6.723E-01	6.732E-01	16.20
TL-208	277.37	-----	6.60	4.261E+00	-----	Line Not Found	-----
	583.19	361	85.00*	2.262E+00	4.795E-01	4.795E-01	21.29
	860.56	49	12.50	1.591E+00	6.363E-01	6.363E-01	79.24
PB-210	46.54	751	4.25*	7.602E+00	5.940E+00	5.951E+00	19.69
BI-211	72.87	947	1.23	8.040E+00	2.447E+01	2.447E+01	15.89
	351.06	780	12.92*	3.521E+00	4.383E+00	4.383E+00	13.14
PB-212	74.82	947	10.28	8.040E+00	2.928E+00	2.928E+00	18.63
	77.11	1287	17.10	8.017E+00	2.400E+00	2.400E+00	12.17
	238.63	1422	43.60*	4.779E+00	1.744E+00	1.744E+00	12.68
	300.09	112	3.30	4.014E+00	2.168E+00	2.168E+00	50.02
BI-214	609.32	468	45.49*	2.174E+00	1.210E+00	1.210E+00	16.07
	1120.29	86	14.92	1.259E+00	1.174E+00	1.174E+00	45.27
	1764.49	100	15.30	8.618E-01	1.940E+00	1.941E+00	22.52
PB-214	74.82	947	5.80	8.040E+00	5.189E+00	5.189E+00	17.76
	77.11	1287	9.70	8.017E+00	4.230E+00	4.231E+00	14.70
	242.00	360	7.25	4.738E+00	2.680E+00	2.680E+00	27.70
	295.22	445	18.42	4.065E+00	1.518E+00	1.518E+00	21.21
	351.93	780	35.60*	3.521E+00	1.591E+00	1.591E+00	14.25
RA-224	240.99	360	4.10*	4.738E+00	4.739E+00	4.739E+00	27.09
RA-226	609.32	468	45.49*	2.174E+00	1.210E+00	1.210E+00	16.07
	1120.29	86	14.92	1.259E+00	1.174E+00	1.174E+00	45.27
	1764.49	100	15.30	8.618E-01	1.940E+00	1.941E+00	22.52
AC-228	338.32	285	11.27	3.639E+00	1.776E+00	1.776E+00	49.67

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	240	25.80*	1.511E+00	1.570E+00	1.570E+00	28.66
	968.97	201	15.80	1.431E+00	2.269E+00	2.269E+00	33.32
	338.32	285	11.27	3.639E+00	1.776E+00	1.776E+00	49.67
	911.20	240	25.80*	1.511E+00	1.570E+00	1.570E+00	28.66
TH-228	968.97	201	15.80	1.431E+00	2.269E+00	2.269E+00	33.32
	74.82	947	10.28	8.040E+00	2.928E+00	2.928E+00	15.93
	77.11	1287	17.10	8.017E+00	2.400E+00	2.400E+00	12.17
	238.63	1422	43.60*	4.779E+00	1.744E+00	1.744E+00	12.68
TH-229	300.09	112	3.30	4.014E+00	2.168E+00	2.168E+00	78.35
	85.43	444	14.70	7.868E+00	9.815E-01	9.815E-01	20.68
	88.47	444	24.00	7.868E+00	6.012E-01	6.012E-01	20.68
	193.51	-----	4.41*	5.516E+00	-----	Line Not Found	-----
TH-232	210.85	165	2.80	5.241E+00	2.878E+00	2.878E+00	43.95
	338.32	285	11.27	3.639E+00	1.776E+00	1.776E+00	28.30
	911.20	240	25.80*	1.511E+00	1.570E+00	1.570E+00	28.66
	968.97	201	15.80	1.431E+00	2.269E+00	2.269E+00	33.32
TH-234	63.29	1179	3.70*	8.062E+00	1.010E+01	1.010E+01	22.57
	92.59	1462	4.23	7.758E+00	1.139E+01	1.139E+01	25.09
U-235	89.96	-----	3.47	7.808E+00	-----	Line Not Found	-----
	93.35	1462	5.60	7.758E+00	8.602E+00	8.602E+00	25.99
	143.76	78	10.96*	6.568E+00	2.781E-01	2.781E-01	99.53
	163.33	-----	5.08	6.119E+00	-----	Line Not Found	-----
NP-237	185.72	521	57.20	5.670E+00	4.102E-01	4.102E-01	22.58
	205.31	-----	5.01	5.304E+00	-----	Line Not Found	-----
	86.48	444	12.40*	7.868E+00	1.164E+00	1.164E+00	29.45
	95.86	-----	2.68	7.688E+00	-----	Line Not Found	-----
U-238	63.29	1179	3.70*	8.062E+00	1.010E+01	1.010E+01	22.57
	92.59	1462	4.23	7.758E+00	1.139E+01	1.139E+01	14.70
ANH-511	511.00	215	100.00*	2.546E+00	2.158E-01	2.158E-01	36.55

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	Hliffe	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.386E+01	2.386E+01	0.218E+01	9.14	
NB-95	64.03D	1.27	9.416E-02	1.197E-01	0.902E-01	75.36	
CD-109	461.40D	1.03	3.899E+00	4.032E+00	0.834E+00	20.68	
SN-126	2.30E+05Y	1.00	3.899E-01	3.899E-01	0.806E-01	20.68	
CS-135	2.30E+06Y	1.00	3.414E-01	3.414E-01	2.047E-01	59.97	
BA-137M	30.08Y	1.00	6.364E-01	6.373E-01	1.032E-01	16.19	
CS-137	30.08Y	1.00	6.723E-01	6.732E-01	1.090E-01	16.20	
TL-208	1.41E+10Y	1.00	4.795E-01	4.795E-01	1.021E-01	21.29	
PB-210	22.20Y	1.00	5.940E+00	5.951E+00	1.172E+00	19.69	
BI-211	7.04E+08Y	1.00	4.383E+00	4.383E+00	0.576E+00	13.14	
PB-212	1.41E+10Y	1.00	1.744E+00	1.744E+00	0.221E+00	12.68	
BI-214	1600.00Y	1.00	1.210E+00	1.210E+00	0.194E+00	16.07	
PB-214	1600.00Y	1.00	1.591E+00	1.591E+00	0.227E+00	14.25	
RA-224	1.41E+10Y	1.00	4.739E+00	4.739E+00	1.284E+00	27.09	
RA-226	1600.00Y	1.00	1.210E+00	1.210E+00	0.194E+00	16.07	
AC-228	1.41E+10Y	1.00	1.570E+00	1.570E+00	0.450E+00	28.66	
RA-228	1.41E+10Y	1.00	1.570E+00	1.570E+00	0.450E+00	28.66	
TH-228	1.41E+10Y	1.00	1.744E+00	1.744E+00	0.221E+00	12.68	
TH-229	7340.00Y	1.00	6.012E-01	6.012E-01	1.243E-01	20.68	K
TH-232	1.41E+10Y	1.00	1.570E+00	1.570E+00	0.450E+00	28.66	
TH-234	4.47E+09Y	1.00	1.010E+01	1.010E+01	0.228E+01	22.57	
U-235	7.04E+08Y	1.00	2.781E-01	2.781E-01	2.768E-01	99.53	
NP-237	2.14E+06Y	1.00	1.164E+00	1.164E+00	0.343E+00	29.45	
U-238	4.47E+09Y	1.00	1.010E+01	1.010E+01	0.228E+01	22.57	
ANH-511	1.00E+09Y	1.00	2.158E-01	2.158E-01	0.789E-01	36.55	

Total Activity : 8.011E+01 8.028E+01

Grand Total Activity : 8.011E+01 8.028E+01

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

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

Unidentified Energy Lines
Sample ID : G248030002

Page : 4
Acquisition date : 13-MAR-2010 14:30:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.53	70	463	1.17	258.03	255	8	6.48E-03	****	6.92E+00	
0	327.36	95	160	1.04	655.60	652	8	8.79E-03	50.7	3.73E+00	T
0	726.70	113	104	0.77	1453.90	1446	13	1.05E-02	41.6	1.85E+00	T
1	963.22	68	62	2.19	1926.60	1917	31	6.27E-03	53.3	1.44E+00	T
0	1375.27	50	17	1.85	2749.90	2744	13	4.65E-03	43.6	1.06E+00	
0	1587.19	20	20	1.75	3173.22	3164	13	1.87E-03	****	9.37E-01	
0	1728.74	33	13	1.38	3455.92	3447	18	3.04E-03	62.8	8.75E-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]G248030002.CNF;1
* Acquisition date   : 13-MAR-2010 14:30:59   Detector SN#      :
* Detector ID        : GAM05                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 2.00000
* Elapsed live time  : 0 03:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 03:00:02.56          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248030002             Analyst initials: MXR1
* Batch Number       : 958221                 Sample Quantity  : 9.79100E+01 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                    LCS Isotope    :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.386E+01	2.182E+00	5.343E-01	3.323E-02	44.665
NB-95	1.197E-01	9.020E-02	9.123E-02	7.379E-03	1.312
CD-109	4.032E+00	8.337E-01	1.391E+00	1.059E-01	2.899
SN-126	3.899E-01	8.064E-02	1.247E-01	9.498E-03	3.127
CS-135	3.414E-01	2.047E-01	2.709E-01	2.898E-02	1.260
BA-137M	6.373E-01	1.032E-01	7.946E-02	5.226E-03	8.020
CS-137	6.732E-01	1.090E-01	8.395E-02	5.538E-03	8.020
TL-208	4.795E-01	1.021E-01	6.774E-02	4.975E-03	7.079
PB-210	5.951E+00	1.172E+00	9.608E-01	7.410E-02	6.194
BI-211	4.383E+00	5.760E-01	3.633E-01	2.879E-02	12.064
PB-212	1.744E+00	2.212E-01	1.011E-01	1.095E-02	17.250
BI-214	1.210E+00	1.945E-01	1.281E-01	1.081E-02	9.447
PB-214	1.591E+00	2.267E-01	1.363E-01	1.313E-02	11.671
RA-224	4.739E+00	1.284E+00	1.084E+00	1.060E-01	4.373
RA-226	1.210E+00	1.945E-01	1.281E-01	1.081E-02	9.447
AC-228	1.570E+00	4.499E-01	2.753E-01	3.494E-02	5.703
RA-228	1.570E+00	4.499E-01	2.753E-01	3.494E-02	5.703
TH-228	1.744E+00	2.212E-01	1.011E-01	1.095E-02	17.250

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	6.012E-01	1.243E-01	9.686E-01	9.673E-02	0.621
TH-232	1.570E+00	4.499E-01	2.753E-01	3.494E-02	5.703
TH-234	1.010E+01	2.280E+00	1.152E+00	2.090E-01	8.769
U-235	2.781E-01	2.768E-01	3.514E-01	6.703E-02	0.791
NP-237	1.164E+00	3.427E-01	4.050E-01	9.037E-02	2.873
U-238	1.010E+01	2.280E+00	1.152E+00	2.090E-01	8.769
ANH-511	2.158E-01	7.889E-02	5.501E-02	3.521E-03	3.924

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.286E-02		5.017E-01	7.782E-01	5.572E-02	0.068
NA-22	-2.743E-02		4.821E-02	7.332E-02	4.271E-03	-0.374
NA-24	8.378E+02		1.163E+03	Half-Life	too short	
SC-46	1.328E-02		4.989E-02	8.419E-02	8.456E-03	0.158
V-48	3.798E-02		1.114E-01	1.883E-01	1.725E-02	0.202
CR-51	2.690E-01		5.039E-01	8.563E-01	7.566E-02	0.314
MN-54	-3.420E-02		4.875E-02	7.697E-02	7.051E-03	-0.444
CO-56	4.762E-03		4.805E-02	8.030E-02	7.510E-03	0.059
CO-57	-1.668E-02		2.764E-02	4.386E-02	6.223E-03	-0.380
CO-58	-2.263E-02		4.849E-02	7.767E-02	6.836E-03	-0.291
FE-59	-3.094E-03		1.085E-01	1.767E-01	1.430E-02	-0.018
CO-60	6.270E-03		4.390E-02	7.202E-02	4.168E-03	0.087
ZN-65	2.255E-01		1.284E-01	2.122E-01	1.482E-02	1.063
SE-75	-1.168E-02		5.754E-02	8.278E-02	7.904E-03	-0.141
SR-85	9.883E-02		5.165E-02	8.364E-02	5.361E-03	1.182
Y-88	1.591E-02		4.314E-02	7.507E-02	4.295E-03	0.212
Y-91	9.575E+00		2.787E+01	4.651E+01	2.703E+00	0.206
NB-94	-6.410E-03		4.231E-02	7.024E-02	5.026E-03	-0.091
NB-95M	1.503E+00		2.624E-01	3.780E-01	4.142E-02	3.976
ZR-95	-1.101E-01		9.457E-02	1.441E-01	1.286E-02	-0.764
MO-99	8.166E-06		4.681E-05	Half-Life	too short	
TC-99M	7.558E+18		6.479E+18	Half-Life	too short	
RU-103	-2.167E-02		5.763E-02	9.174E-02	1.164E-02	-0.236
RH-106	-1.646E-01		4.219E-01	6.615E-01	7.962E-02	-0.249
RU-106	-1.646E-01		4.216E-01	6.615E-01	4.361E-02	-0.249
AG-108M	-2.466E-02		3.547E-02	5.586E-02	3.606E-03	-0.441
AG-110M	2.331E-01		6.779E-02	1.137E-01	7.859E-03	2.050
SN-113	-1.346E-02		5.639E-02	9.180E-02	5.695E-03	-0.147
CD-115	-5.540E-05		6.059E-05	Half-Life	too short	
SN-117M	-2.074E-02		8.823E-02	1.410E-01	1.516E-02	-0.147
TE-123M	-1.165E-02		3.347E-02	5.325E-02	5.722E-03	-0.219
SB-124	6.018E-02		9.210E-02	1.677E-01	1.066E-02	0.359
SB-125	2.769E-02		1.097E-01	1.825E-01	1.143E-02	0.152
TE-125M	-8.690E+00		1.231E+01	1.893E+01	2.459E+00	-0.459
I-126	2.808E-01		4.616E-01	6.753E-01	4.484E-02	0.416
SB-126	1.915E-01		2.888E-01	4.424E-01	3.281E-02	0.433

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	2.319E+00		5.451E+00	9.381E+00	1.186E+00	0.247
I-131	8.374E-02		2.482E-01	4.168E-01	3.159E-02	0.201
TE-132	-7.043E-01		3.609E+00	6.029E+00	1.090E+00	-0.117
BA-133	-2.000E-03		5.411E-02	7.744E-02	9.357E-03	-0.026
I-133	-2.928E-01		9.863E-01	Half-Life	too short	
CS-134	-1.942E-02		6.008E-02	9.789E-02	8.430E-03	-0.198
I-135	2.855E+17		1.964E+17	Half-Life	too short	
CS-136	1.119E-01		1.778E-01	3.066E-01	2.628E-02	0.365
CE-139	-2.675E-02		3.395E-02	5.284E-02	5.246E-03	-0.506
BA-140	-1.367E-01		4.739E-01	7.512E-01	2.512E-01	-0.182
LA-140	-4.726E-02		1.383E-01	2.185E-01	1.284E-02	-0.216
CE-141	8.204E-02		9.483E-02	1.386E-01	1.695E-02	0.592
CE-143	4.595E-02	+	7.042E-03	Half-Life	too short	
CE-144	1.390E-01		2.548E-01	3.688E-01	6.742E-02	0.377
PM-144	-3.547E-02		4.907E-02	6.807E-02	4.815E-03	-0.521
PR-144	-2.639E+00		3.687E+00	5.118E+00	3.617E-01	-0.516
PM-146	2.230E-03		5.408E-02	8.869E-02	7.728E-03	0.025
ND-147	3.597E-01		1.032E+00	1.711E+00	2.365E-01	0.210
PM-149	6.986E-05		4.452E-04	Half-Life	too short	
EU-152	3.296E-02		1.331E-01	1.839E-01	1.511E-02	0.179
GD-153	1.695E-01		9.673E-02	1.467E-01	1.360E-02	1.155
EU-154	-8.787E-02		1.353E-01	2.034E-01	1.919E-02	-0.432
EU-155	5.861E-02		1.109E-01	1.837E-01	1.989E-02	0.319
TB-160	4.489E-02		1.832E-01	3.088E-01	3.051E-02	0.145
HO-166M	-2.489E-02		7.451E-02	1.221E-01	8.893E-03	-0.204
TA-182	5.669E-02		2.327E-01	3.852E-01	2.240E-02	0.147
IR-192	8.463E-03		4.180E-02	7.012E-02	5.952E-03	0.121
HG-203	4.739E-02		4.898E-02	8.456E-02	8.021E-03	0.560
BI-207	5.028E-02		6.539E-02	1.133E-01	8.974E-03	0.444
PB-211	-1.122E+00		1.060E+00	1.413E+00	6.778E-01	-0.794
BI-212	2.347E+00	+	1.013E+00	1.354E+00	1.586E-01	1.734
RN-219	1.851E-01		5.051E-01	8.449E-01	1.138E-01	0.219
RA-223	5.057E-02		8.373E-01	1.212E+00	2.080E-01	0.042
AC-227	2.992E-01		2.835E-01	4.901E-01	6.266E-02	0.611
TH-227	2.992E-01		2.841E-01	4.901E-01	6.989E-02	0.611
PA-231	-7.560E-01		1.594E+00	2.601E+00	3.885E-01	-0.291
TH-231	5.057E-02		8.373E-01	1.212E+00	2.080E-01	0.042
PA-233	2.597E-02		7.190E-02	1.215E-01	1.073E-02	0.214
PA-234	5.629E-02		3.662E-01	6.106E-01	1.176E-01	0.092
PA-234M	9.825E+00		6.545E+00	1.133E+01	1.158E+00	0.867
NP-239	-6.004E-01		4.381E-01	6.691E-01	8.798E-02	-0.897
AM-241	3.529E-02		7.919E-02	1.169E-01	1.046E-02	0.302
CM-247	1.020E-02		4.598E-02	7.648E-02	4.500E-03	0.133
CF-249	1.303E-02		4.956E-02	8.269E-02	4.938E-03	0.158
CF-251	4.656E-02		1.499E-01	2.434E-01	2.425E-02	0.191

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248030002
* Acquisition date   : 13-MAR-2010 14:30:59 Detector SN#      :
* Detector ID        : GAM05                               Sensitivity      : 5.000
* Geometry           : CAN                               Energy tolerance: 2.000
* Elapsed live time  : 0 03:00:00.00                     Abundance limit : 75.000
* Elapsed real time  : 0 03:00:02.56                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248030002                     Analyst initials: MXR1
* Batch Number       : 958221                         Sample Quantity : 9.7910E+01 GRAM
* Recovery           : 1.00000                         Carrier Weight  : 0.00000
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope      :
* MSD DPM             : 0.000                           MSD Isotope      :
* LCS DPM             : 0.000                           LCS Isotope      :
* LCSD DPM            : 0.000                           LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.386E+01	2.138E+00	2.648E-01	1.091E+00
NB-95	1.197E-01	8.839E-02	4.526E-02	4.510E-02
CD-109	4.032E+00	8.170E-01	6.924E-01	4.168E-01
SN-126	3.899E-01	7.903E-02	6.209E-02	4.032E-02
CS-135	3.414E-01	2.006E-01	1.346E-01	1.024E-01
BA-137M	6.373E-01	1.011E-01	3.943E-02	5.158E-02
CS-137	6.732E-01	1.069E-01	4.166E-02	5.452E-02
TL-208	4.795E-01	1.000E-01	3.362E-02	5.104E-02
PB-210	5.951E+00	1.148E+00	4.788E-01	5.859E-01
BI-211	4.383E+00	5.645E-01	1.805E-01	2.880E-01
PB-212	1.744E+00	2.168E-01	5.026E-02	1.106E-01
BI-214	1.210E+00	1.906E-01	6.357E-02	9.723E-02
PB-214	1.591E+00	2.222E-01	6.771E-02	1.134E-01
RA-224	4.739E+00	1.258E+00	5.388E-01	6.419E-01
RA-226	1.210E+00	1.906E-01	6.357E-02	9.723E-02
AC-228	1.570E+00	4.409E-01	1.366E-01	2.250E-01
RA-228	1.570E+00	4.409E-01	1.366E-01	2.250E-01
TH-228	1.744E+00	2.168E-01	5.026E-02	1.106E-01
TH-229	-2.832E-01	6.040E-01	4.816E-01	3.081E-01
TH-232	1.570E+00	4.409E-01	1.366E-01	2.250E-01
TH-234	1.010E+01	2.234E+00	5.738E-01	1.140E+00
U-235	2.781E-01	2.712E-01	1.748E-01	1.384E-01
NP-237	1.164E+00	3.358E-01	2.016E-01	1.713E-01
U-238	1.010E+01	2.234E+00	5.738E-01	1.140E+00
ANH-511	2.158E-01	7.732E-02	2.731E-02	3.945E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	5.286E-02	4.916E-01	3.864E-01	2.508E-01 NOT IDENT.
NA-22	-2.743E-02	4.724E-02	3.635E-02	2.410E-02 NOT IDENT.

NA-24	8.378E+08	2.279E+09	0.000E+00	1.163E+09	SHORT HLIF
SC-46	1.328E-02	4.889E-02	4.176E-02	2.494E-02	FAIL ABUN
V-48	3.798E-02	1.092E-01	9.341E-02	5.569E-02	NOT IDENT.
CR-51	2.690E-01	4.938E-01	4.254E-01	2.519E-01	NOT IDENT.
MN-54	-3.420E-02	4.777E-02	3.818E-02	2.437E-02	NOT IDENT.
CO-56	4.762E-03	4.709E-02	3.984E-02	2.402E-02	NOT IDENT.
CO-57	-1.668E-02	2.709E-02	2.182E-02	1.382E-02	NOT IDENT.
CO-58	-2.263E-02	4.752E-02	3.853E-02	2.424E-02	NOT IDENT.
FE-59	-3.094E-03	1.063E-01	8.762E-02	5.423E-02	NOT IDENT.
CO-60	6.270E-03	4.303E-02	3.570E-02	2.195E-02	NOT IDENT.
ZN-65	2.255E-01	1.258E-01	1.052E-01	6.420E-02	NOT IDENT.
SE-75	-1.168E-02	5.639E-02	4.114E-02	2.877E-02	NOT IDENT.
SR-85	9.883E-02	5.061E-02	4.152E-02	2.582E-02	NOT IDENT.
Y-88	1.591E-02	4.228E-02	3.719E-02	2.157E-02	NOT IDENT.
Y-91	9.575E+00	2.731E+01	2.306E+01	1.393E+01	NOT IDENT.
NB-94	-6.410E-03	4.147E-02	3.485E-02	2.116E-02	NOT IDENT.
NB-95M	1.503E+00	2.572E-01	1.879E-01	1.312E-01	NOT IDENT.
ZR-95	-1.101E-01	9.268E-02	7.151E-02	4.728E-02	NOT IDENT.
MO-99	8.166E+00	9.175E+01	0.000E+00	4.681E+01	SHORT HLIF
TC-99M	7.558E+24	1.270E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.167E-02	5.647E-02	4.555E-02	2.881E-02	FAIL ABUN
RH-106	-1.646E-01	4.135E-01	3.283E-01	2.110E-01	NOT IDENT.
RU-106	-1.646E-01	4.132E-01	3.283E-01	2.108E-01	NOT IDENT.
AG-108M	-2.466E-02	3.476E-02	2.774E-02	1.774E-02	NOT IDENT.
AG-110M	2.331E-01	6.644E-02	5.642E-02	3.390E-02	NOT IDENT.
SN-113	-1.346E-02	5.527E-02	4.560E-02	2.820E-02	NOT IDENT.
CD-115	-5.540E+01	1.188E+02	0.000E+00	6.059E+01	SHORT HLIF
SN-117M	-2.074E-02	8.646E-02	7.015E-02	4.411E-02	NOT IDENT.
TE-123M	-1.165E-02	3.280E-02	2.649E-02	1.673E-02	NOT IDENT.
SB-124	6.018E-02	9.026E-02	8.310E-02	4.605E-02	NOT IDENT.
SB-125	2.769E-02	1.076E-01	9.063E-02	5.487E-02	NOT IDENT.
TE-125M	-8.690E+00	1.206E+01	9.420E+00	6.154E+00	NOT IDENT.
I-126	2.808E-01	4.524E-01	3.351E-01	2.308E-01	NOT IDENT.
SB-126	1.915E-01	2.830E-01	2.195E-01	1.444E-01	NOT IDENT.
SB-127	2.319E+00	5.342E+00	4.655E+00	2.726E+00	NOT IDENT.
I-131	8.374E-02	2.432E-01	2.071E-01	1.241E-01	NOT IDENT.
TE-132	-7.043E-01	3.537E+00	2.997E+00	1.805E+00	NOT IDENT.
BA-133	-2.000E-03	5.302E-02	3.847E-02	2.705E-02	NOT IDENT.
I-133	-2.928E+05	1.933E+06	0.000E+00	9.863E+05	SHORT HLIF
CS-134	-1.942E-02	5.888E-02	4.857E-02	3.004E-02	NOT IDENT.
I-135	2.855E+23	3.850E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.119E-01	1.743E-01	1.520E-01	8.891E-02	NOT IDENT.
CE-139	-2.675E-02	3.327E-02	2.628E-02	1.697E-02	NOT IDENT.
BA-140	-1.367E-01	4.644E-01	3.729E-01	2.370E-01	NOT IDENT.
LA-140	-4.726E-02	1.355E-01	1.083E-01	6.913E-02	FAIL ABUN
CE-141	8.204E-02	9.294E-02	6.896E-02	4.742E-02	NOT IDENT.
CE-143	4.595E+04	1.380E+04	0.000E+00	7.042E+03	SHORT HLIF
CE-144	1.390E-01	2.497E-01	1.835E-01	1.274E-01	NOT IDENT.
PM-144	-3.547E-02	4.808E-02	3.378E-02	2.453E-02	NOT IDENT.
PR-144	-2.639E+00	3.613E+00	2.540E+00	1.843E+00	NOT IDENT.
PM-146	2.230E-03	5.300E-02	4.404E-02	2.704E-02	NOT IDENT.
ND-147	3.597E-01	1.011E+00	8.496E-01	5.159E-01	FAIL ABUN
PM-149	6.986E+01	8.726E+02	0.000E+00	4.452E+02	SHORT HLIF
EU-152	3.296E-02	1.304E-01	9.135E-02	6.653E-02	FAIL ABUN
GD-153	1.695E-01	9.480E-02	7.303E-02	4.837E-02	NOT IDENT.
EU-154	-8.787E-02	1.326E-01	1.008E-01	6.764E-02	NOT IDENT.
EU-155	5.861E-02	1.087E-01	9.143E-02	5.544E-02	FAIL ABUN
TB-160	4.489E-02	1.796E-01	1.532E-01	9.162E-02	FAIL ABUN
HO-166M	-2.489E-02	7.302E-02	6.057E-02	3.725E-02	FAIL ABUN
TA-182	5.669E-02	2.280E-01	1.910E-01	1.163E-01	NOT IDENT.
IR-192	8.463E-03	4.097E-02	3.484E-02	2.090E-02	FAIL ABUN
HG-203	4.739E-02	4.800E-02	4.202E-02	2.449E-02	FAIL ABUN
BI-207	5.028E-02	6.408E-02	5.620E-02	3.269E-02	FAIL ABUN
PB-211	-1.122E+00	1.039E+00	7.015E-01	5.301E-01	NOT IDENT.
BI-212	2.347E+00	9.930E-01	6.716E-01	5.066E-01	FAIL ABUN
RN-219	1.851E-01	4.950E-01	4.196E-01	2.525E-01	FAIL ABUN
RA-223	5.057E-02	8.205E-01	6.022E-01	4.186E-01	FAIL ABUN
AC-227	2.992E-01	2.778E-01	2.436E-01	1.417E-01	FAIL ABUN
TH-227	2.992E-01	2.784E-01	2.436E-01	1.421E-01	FAIL ABUN
PA-231	-7.560E-01	1.562E+00	1.293E+00	7.972E-01	NOT IDENT.
TH-231	5.057E-02	8.205E-01	6.022E-01	4.186E-01	FAIL ABUN
PA-233	2.597E-02	7.047E-02	6.037E-02	3.595E-02	FAIL ABUN
PA-234	5.629E-02	3.589E-01	3.028E-01	1.831E-01	NOT IDENT.
PA-234M	9.825E+00	6.414E+00	5.618E+00	3.273E+00	FAIL ABUN
NP-239	-6.004E-01	4.294E-01	3.330E-01	2.191E-01	NOT IDENT.
AM-241	3.529E-02	7.760E-02	5.826E-02	3.959E-02	NOT IDENT.
CM-247	1.020E-02	4.506E-02	3.798E-02	2.299E-02	NOT IDENT.
CF-249	1.303E-02	4.857E-02	4.107E-02	2.478E-02	NOT IDENT.

CF-251

4.656E-02

1.469E-01

1.210E-01

7.493E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	685.1172
49.72	749.9078
57.36	0.0000
59.54	764.6856
63.29	836.3589
63.29	836.3589
64.28	837.5478
67.75	868.4537
69.67	881.2412
70.83	929.9090
72.81	1008.0004
72.87	1008.0821
72.87	1008.0821
74.82	1010.6711
74.82	1010.6711
74.82	1010.6711
74.97	1010.8657
77.11	1013.6649
77.11	1013.6649
77.11	1013.6649
79.69	1016.9897
79.80	1017.1298
80.12	1017.5386
80.19	1017.6282
80.57	1018.1109
81.00	1018.6559
81.07	1018.7455
81.07	1018.7455
83.79	1022.1637
83.79	1022.1637
85.43	1024.1959
86.48	1106.6395
86.55	1106.7319
86.79	1077.5615
86.94	1077.7578
87.57	929.6573
88.03	1079.1523
88.47	1079.7125
89.96	1081.6018
91.11	1083.0536
92.59	851.2664
92.59	851.2664
93.35	852.0076
94.67	642.7483
94.87	709.4556
94.87	709.4556
95.86	646.8618
97.43	522.6320
98.44	528.1078
99.53	500.4559
100.11	531.8781
103.18	632.8333
103.37	565.3650
105.31	548.0618
106.12	548.5323
109.28	621.4619
111.00	558.5543
111.76	544.5242
116.30	560.5231
117.23	542.3408
121.12	429.6953
121.78	462.3224
122.06	483.3272
123.07	486.0379
131.20	507.1145
133.52	452.4855
136.00	469.5854

136.47	479.3080
140.51	0.0000
140.51	0.0000
143.76	451.5416
144.24	427.8643
144.24	427.8643
145.44	460.7369
152.43	442.0438
153.25	467.0429
154.21	463.1198
154.21	463.1198
156.02	443.3734
158.56	438.9149
159.00	443.3885
162.66	376.5469
163.33	365.9251
165.86	417.6541
176.60	375.2400
177.52	407.2525
181.07	0.0000
184.41	399.6968
185.72	391.0547
193.51	419.8893
197.04	379.8629
205.31	400.4137
210.85	362.4756
215.65	334.0566
222.11	326.3652
227.38	313.8919
228.16	336.7441
228.18	336.7486
235.69	340.5117
235.96	340.5710
235.96	340.5710
238.63	313.4313
238.63	313.4313
240.99	313.8982
242.00	306.7712
244.70	264.4839
252.40	285.7112
252.80	273.7969
256.23	264.2053
256.23	264.2053
260.90	0.0000
264.66	264.6130
268.22	254.3148
269.46	271.8787
269.46	271.8787
271.23	264.0825
273.65	373.3447
276.40	275.2617
277.37	246.0039
277.60	248.8425
278.00	253.5762
279.20	266.8605
279.54	263.1665
280.46	305.4698
283.69	263.7874
284.31	250.7330
285.41	251.8290
285.90	0.0000
287.50	224.4383
293.27	0.0000
295.22	222.0280
295.96	222.1198
298.57	222.4382
299.98	236.8164
299.98	236.8164
300.09	236.8317
300.09	236.8317
300.13	236.8378
301.36	265.4360
302.85	253.0013
304.50	204.1634
304.50	204.1634
304.85	221.6154
308.46	246.4705
311.90	218.3215

316.51	222.6754
319.41	234.4996
320.08	220.2183
323.87	231.8460
323.87	231.8460
328.76	237.2420
333.37	236.1923
334.37	239.5271
334.37	239.5271
338.28	260.9396
338.28	260.9396
338.32	260.9462
338.32	260.9462
338.32	260.9462
340.48	178.9907
340.55	178.9974
344.28	203.5631
351.06	193.5489
351.93	205.9564
356.01	198.2401
364.49	193.8331
366.42	0.0000
383.85	224.2540
388.16	209.8495
388.63	199.0052
391.69	208.2056
400.66	212.0380
401.81	202.1897
402.40	202.2417
404.85	248.3404
410.95	190.0116
414.70	215.3674
423.72	206.1561
427.09	188.3286
427.87	170.2584
433.94	181.8105
453.88	183.3333
463.37	183.0249
468.07	190.5433
473.00	190.9225
476.78	179.9026
477.60	172.7619
487.02	178.5667
492.35	0.0000
497.08	166.8351
511.00	138.5574
514.00	107.7734
527.90	0.0000
529.87	0.0000
531.02	119.6582
537.26	135.7114
546.56	0.0000
563.25	149.7333
569.33	141.5430
569.50	141.5495
569.70	144.7523
583.19	119.7711
600.60	153.0000
602.73	152.5130
604.72	145.4348
609.32	113.2903
609.32	113.2903
610.33	131.3174
614.28	131.4927
618.01	129.8525
621.93	140.8545
621.93	140.8545
633.25	129.4183
635.95	99.0536
636.99	108.8867
645.85	112.4752
657.76	131.5400
661.66	146.3379
661.66	146.3379
664.57	0.0000
666.33	108.0826
666.50	108.0874
677.62	99.2736

685.70	97.6799
695.00	102.5788
696.49	128.5139
696.51	128.5139
697.00	133.1572
702.65	131.5332
706.68	113.1464
711.68	119.8195
720.70	94.1979
721.93	0.0000
722.78	107.0383
722.91	100.6501
723.31	107.0546
724.19	115.0739
727.33	108.7806
733.00	114.9722
735.93	114.1367
739.50	0.0000
747.24	118.2686
752.31	87.4221
753.82	81.8174
756.73	118.5941
763.94	93.7766
765.81	113.2397
766.42	107.5963
777.92	0.0000
778.90	105.1375
783.70	98.6405
785.37	121.4583
795.86	121.8151
801.95	92.4689
810.29	96.5040
810.76	88.8715
815.77	85.1649
818.51	78.5249
832.01	95.1509
834.85	122.1553
836.80	0.0000
846.77	77.1940
856.80	69.6592
860.56	69.7280
871.09	81.5732
873.19	96.1923
875.33	0.0000
879.36	80.7744
880.51	78.8511
883.24	75.0105
884.68	81.8604
889.28	76.1021
898.04	91.9174
911.20	81.4329
911.20	81.4329
911.20	81.4329
926.50	94.5488
937.49	115.5432
944.13	79.1341
946.00	77.1907
949.00	77.2478
962.29	65.5743
964.08	65.6025
966.15	65.6361
968.97	65.6804
968.97	65.6804
968.97	65.6804
983.53	64.9101
996.26	92.1516
1001.03	68.1881
1004.73	120.4370
1037.84	65.7379
1038.76	0.0000
1048.07	58.7953
1050.41	62.8830
1050.41	62.8830
1063.66	68.1587
1085.87	68.4967
1099.45	58.4473
1112.07	70.9485
1115.54	61.7407

1120.29	88.2917
1120.29	88.2917
1120.55	88.2952
1121.30	100.6724
1131.51	0.0000
1173.23	71.8778
1177.93	83.4180
1189.05	72.1136
1204.77	76.5407
1221.41	73.6458
1231.02	101.1953
1235.36	81.2391
1238.28	104.5107
1260.41	0.0000
1271.85	65.8901
1274.44	58.4800
1274.54	58.4800
1291.59	60.8107
1298.22	0.0000
1312.11	46.0567
1332.49	39.7837
1365.19	37.8654
1368.63	0.0000
1384.29	36.7176
1408.01	21.4975
1457.56	0.0000
1460.82	23.1174
1489.16	22.7586
1505.03	32.3304
1596.21	28.9704
1620.50	20.3606
1678.03	0.0000
1690.97	13.7285
1764.49	19.0942
1764.49	19.0942
1770.23	55.5957
1771.35	24.8239
1791.20	0.0000
1836.06	16.0430

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030002

Total Uranium Activity	3.0179E+01	ug/g
Total Uranium Counting Unc.	6.6472E+00	ug/g
Total Uranium Tpu	3.3914E-06	ug/g
Total Uranium Mda	1.7088E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221                          SAMPLE ID   : G248030002
*  ANALYST       : MXR1                             DETECTOR    : GAM05
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00          COUNT TIME   : 0 03:00:00.00
*  ANALYSIS DATE : 13-MAR-2010 14:30:59.62          SAMPLE ALQT  : 97.910 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.078E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.241E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 5.777E+00
GROSS GAMMA DLC       (pCi/GRAM ) : 2.838E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:31:58.14

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030003.CNF;1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:31:30
Sample ID        : G248030003 Sample quantity   : 1.37710E+02 GRAM
Detector name    : GAM06 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 958221 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	63.42*	128	611	0.84	126.43	122	9	1.78E-02	36.3	
2	2	74.79*	345	459	1.21	149.15	143	15	4.79E-02	12.0	1.68E+00
3	2	77.12	625	393	1.04	153.80	143	15	8.68E-02	6.5	
4	0	88.21	465	585	3.75	175.97	171	11	6.46E-02	11.1	
5	0	92.93*	465	415	1.49	185.40	182	9	6.45E-02	9.6	
6	0	186.07*	340	457	1.26	371.60	365	14	4.72E-02	14.7	
7	0	209.14	89	266	1.36	417.72	414	8	1.24E-02	33.5	
8	5	238.71*	1277	144	1.21	476.84	469	19	1.77E-01	3.3	1.19E+00
9	5	241.58	327	213	1.77	482.58	469	19	4.55E-02	13.5	
10	0	270.04	104	208	1.40	539.46	535	10	1.45E-02	27.6	
11	0	295.44*	376	209	1.22	590.24	585	11	5.22E-02	9.3	
12	0	300.58	137	160	1.30	600.53	596	11	1.90E-02	19.9	
13	0	328.64	37	164	0.98	656.62	652	8	5.13E-03	62.5	
14	0	338.39*	203	268	1.44	676.12	670	14	2.82E-02	18.7	
15	0	352.01*	652	133	1.16	703.35	698	10	9.06E-02	5.2	
16	0	464.28	96	127	1.60	927.82	920	15	1.33E-02	27.6	
17	0	510.73*	90	140	2.07	1020.69	1014	15	1.25E-02	34.4	
18	0	583.29*	319	117	1.56	1165.80	1159	13	4.44E-02	9.1	
19	0	609.45*	390	112	1.45	1218.09	1211	14	5.42E-02	7.8	
20	0	661.78	143	102	1.17	1322.76	1316	14	1.98E-02	17.1	
21	0	727.59	102	68	1.49	1454.36	1449	13	1.42E-02	19.4	
22	0	795.10	72	27	1.42	1589.38	1584	12	9.96E-03	18.7	
23	0	860.91	29	53	1.10	1721.01	1717	9	4.04E-03	48.4	
24	0	911.35*	219	53	1.65	1821.89	1816	14	3.04E-02	10.1	
25	0	967.84	211	80	1.81	1934.88	1925	20	2.94E-02	12.4	
26	0	1119.93*	105	55	1.45	2239.12	2231	16	1.45E-02	19.1	
27	0	1402.39	22	13	1.91	2804.23	2798	13	3.06E-03	40.0	
28	0	1460.60*	1062	13	2.27	2920.71	2911	17	1.47E-01	3.2	
29	0	1764.46*	84	6	1.27	3528.78	3520	15	1.16E-02	13.4	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:32:01

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:31:30
Sample ID         : G248030003 Sample quantity : 137.71 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA6 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 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	*	2.907E+01	3.305E+00	2.431E-01	2.291E-02	119.581
CD-109	+	88.03	*	6.767E+00	1.682E+00	1.484E+00	1.651E-01	4.560
SN-126	+	64.28		1.336E+00	9.905E-01	9.150E-01	1.416E-01	1.460
	+	86.94		2.721E+00	1.292E+00	6.323E-01	2.651E-01	4.303
	+	87.57	*	6.545E-01	1.627E-01	1.443E-01	1.598E-02	4.537
BA-137M	+	661.66	*	2.269E-01	7.996E-02	6.690E-02	5.414E-03	3.392
CS-137	+	661.66	*	2.397E-01	8.448E-02	7.068E-02	5.732E-03	3.392
TL-208		277.37		4.341E-01	4.387E-01	7.541E-01	9.813E-02	0.576
	+	583.19	*	4.820E-01	9.818E-02	6.238E-02	5.696E-03	7.726
	+	860.56		4.203E-01	4.087E-01	5.057E-01	4.917E-02	0.831
BI-211		72.87		5.243E+00	3.852E+00	5.960E+00	5.728E-01	0.880
	+	351.06	*	4.376E+00	6.123E-01	3.587E-01	3.367E-02	12.198
PB-212	+	74.82		2.218E+00	6.137E-01	6.002E-01	8.268E-02	3.695
	+	77.11		2.284E+00	3.725E-01	3.423E-01	3.404E-02	6.672
	+	238.63	*	1.905E+00	2.315E-01	9.961E-02	1.022E-02	19.124
	+	300.09		3.188E+00	1.315E+00	1.255E+00	1.392E-01	2.541
BI-214	+	609.32	*	1.140E+00	2.114E-01	1.274E-01	1.264E-02	8.949
	+	1120.29		1.622E+00	6.429E-01	5.171E-01	5.586E-02	3.136
	+	1764.49		1.805E+00	5.091E-01	3.469E-01	2.990E-02	5.203
PB-214	+	74.82		3.931E+00	1.065E+00	1.064E+00	1.337E-01	3.695
	+	77.11		4.026E+00	7.358E-01	6.035E-01	7.796E-02	6.672
	+	242.00		2.964E+00	8.645E-01	6.062E-01	6.591E-02	4.889
	+	295.22		1.554E+00	3.373E-01	2.382E-01	2.705E-02	6.522
	+	351.93	*	1.588E+00	2.389E-01	1.274E-01	1.386E-02	12.468
RA-224	+	240.99	*	5.240E+00	1.498E+00	1.068E+00	9.822E-02	4.906
RA-226	+	609.32	*	1.140E+00	2.114E-01	1.274E-01	1.264E-02	8.949
	+	1120.29		1.622E+00	6.429E-01	5.171E-01	5.586E-02	3.136
	+	1764.49		1.805E+00	5.091E-01	3.469E-01	2.990E-02	5.203
AC-228	+	338.32		1.517E+00	8.519E-01	4.104E-01	1.716E-01	3.697
	+	911.20	*	1.616E+00	3.799E-01	2.797E-01	3.378E-02	5.778
	+	968.97		2.695E+00	9.415E-01	4.388E-01	1.077E-01	6.141
RA-228	+	338.32		1.517E+00	8.519E-01	4.104E-01	1.716E-01	3.697
	+	911.20	*	1.616E+00	3.799E-01	2.797E-01	3.378E-02	5.778
	+	968.97		2.695E+00	9.415E-01	4.388E-01	1.077E-01	6.141

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.218E+00	5.752E-01	6.002E-01	5.897E-02	3.695
	+	77.11		2.284E+00	3.725E-01	3.423E-01	3.404E-02	6.672
	+	238.63	*	1.905E+00	2.315E-01	9.961E-02	1.022E-02	19.124
	+	300.09		3.188E+00	2.329E+00	1.255E+00	7.695E-01	2.541
TH-232	+	338.32		1.517E+00	5.850E-01	4.104E-01	3.725E-02	3.697
	+	911.20	*	1.616E+00	3.799E-01	2.797E-01	3.378E-02	5.778
	+	968.97		2.695E+00	9.415E-01	4.388E-01	1.077E-01	6.141
TH-234	+	63.29	*	3.467E+00	2.595E+00	2.479E+00	4.607E-01	1.399
	+	92.59		5.455E+00	1.625E+00	9.906E-01	2.263E-01	5.507
U-238	+	63.29	*	3.467E+00	2.595E+00	2.479E+00	4.607E-01	1.399
	+	92.59		5.455E+00	1.187E+00	9.906E-01	1.033E-01	5.507
ANH-511	+	511.00	*	1.034E-01	7.174E-02	5.286E-02	4.588E-03	1.956

---- 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	*	-3.230E-01	3.749E-01	5.924E-01	5.533E-02	-0.545
NA-22		1274.54	*	8.351E-03	4.818E-02	8.043E-02	7.066E-03	0.104
NA-24		1368.63	*	1.241E+01	4.818E-02	Half-Life too short		
SC-46		889.28	*	3.930E-02	4.506E-02	7.887E-02	7.289E-03	0.498
	+	1120.55		2.907E-01	1.136E-01	1.580E-01	1.338E-02	1.840
V-48		944.13		-1.258E-01	1.287E+00	2.140E+00	1.969E-01	-0.059
		983.53	*	2.996E-02	9.641E-02	1.663E-01	1.513E-02	0.180
		1312.11		-4.655E-03	1.189E-01	1.933E-01	1.743E-02	-0.024
CR-51		320.08	*	3.670E-02	5.174E-01	8.513E-01	8.196E-02	0.043
MN-54		834.85	*	5.875E-03	4.478E-02	7.333E-02	6.608E-03	0.080
CO-56		846.77	*	4.522E-02	4.940E-02	8.623E-02	7.816E-03	0.524
		1037.84		6.841E-02	3.801E-01	6.435E-01	6.009E-02	0.106
		1238.28		1.406E-01	1.137E-01	2.036E-01	1.790E-02	0.691
		1771.35		-1.445E+00	4.817E-01	4.363E-01	3.750E-02	-3.311
CO-57		122.06	*	6.938E-03	2.835E-02	4.609E-02	3.881E-03	0.151
		136.47		1.194E-01	2.237E-01	3.661E-01	3.288E-02	0.326
CO-58		810.76	*	9.218E-03	4.731E-02	7.817E-02	6.974E-03	0.118
FE-59		1099.45	*	1.242E-02	1.097E-01	1.839E-01	1.710E-02	0.068
		1291.59		2.683E-02	1.472E-01	2.459E-01	2.465E-02	0.109
CO-60		1173.23		-1.151E-03	5.275E-02	8.683E-02	7.040E-03	-0.013
		1332.49	*	-4.401E-03	4.548E-02	7.331E-02	6.706E-03	-0.060
ZN-65		1115.54	*	-6.796E-02	1.223E-01	1.607E-01	1.368E-02	-0.423
SE-75		121.12		-8.984E-02	1.520E-01	2.378E-01	2.605E-02	-0.378
		136.00		3.213E-02	4.319E-02	7.134E-02	5.983E-03	0.450
		264.66	*	2.505E-03	5.408E-02	7.910E-02	7.382E-03	0.032
		279.54		1.739E-02	1.287E-01	2.141E-01	2.060E-02	0.081
		400.66		-3.720E-01	3.061E-01	4.479E-01	4.921E-02	-0.831
SR-85		514.00	*	8.866E-02	5.129E-02	8.523E-02	7.394E-03	1.040
Y-88		898.04		1.374E-02	4.757E-02	7.884E-02	7.343E-03	0.174
		1836.06	*	2.199E-02	3.623E-02	6.699E-02	5.600E-03	0.328
Y-91		1204.77	*	-1.771E+01	2.585E+01	3.959E+01	3.293E+00	-0.447
NB-94		702.65	*	2.668E-03	3.843E-02	6.314E-02	5.262E-03	0.042

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	871.09			-8.600E-03	3.894E-02	6.141E-02	5.630E-03	-0.140
NB-95	765.81	*		5.767E-02	5.286E-02	9.311E-02	8.080E-03	0.619
NB-95M	235.69	*		-4.036E-02	1.584E-01	2.289E-01	2.372E-02	-0.176
ZR-95	724.19			-1.840E-03	1.253E-01	1.772E-01	1.630E-02	-0.010
	756.73	*		-6.314E-02	8.483E-02	1.283E-01	1.223E-02	-0.492
MO-99	140.51			-2.208E-04	8.483E-02	Half-Life	too short	
	181.07			1.846E-05	8.483E-02	Half-Life	too short	
	366.42			-2.417E-04	8.483E-02	Half-Life	too short	
	739.50	*		-5.078E-05	8.483E-02	Half-Life	too short	
	777.92			5.979E-05	8.483E-02	Half-Life	too short	
TC-99M	140.51	*		-1.588E+19	8.483E-02	Half-Life	too short	
RU-103	497.08	*		1.930E-02	4.646E-02	8.031E-02	1.125E-02	0.240
	610.33		+	1.331E+01	3.003E+00	3.487E+00	5.659E-01	3.817
RH-106	621.93	*		2.661E-01	3.676E-01	6.383E-01	8.346E-02	0.417
	1050.41			-1.308E+00	2.945E+00	4.688E+00	4.147E-01	-0.279
RU-106	621.93	*		2.661E-01	3.666E-01	6.383E-01	5.323E-02	0.417
	1050.41			-1.308E+00	2.945E+00	4.688E+00	4.147E-01	-0.279
AG-108M	433.94	*		-1.205E-02	3.126E-02	4.862E-02	4.320E-03	-0.248
	614.28			-1.235E-02	4.108E-02	5.696E-02	4.938E-03	-0.217
	722.91			1.717E-02	4.361E-02	6.488E-02	5.664E-03	0.265
AG-110M	657.76	*		2.356E-02	4.298E-02	6.537E-02	5.486E-03	0.360
	677.62			-1.801E-01	3.456E-01	5.426E-01	4.584E-02	-0.332
	706.68			-5.212E-03	2.435E-01	3.988E-01	3.434E-02	-0.013
	763.94			-8.776E-02	2.003E-01	3.150E-01	2.804E-02	-0.279
	884.68			7.029E-03	5.577E-02	9.105E-02	8.633E-03	0.077
	937.49			-4.446E-02	1.248E-01	2.026E-01	1.926E-02	-0.219
	1384.29			-5.321E-03	1.837E-01	2.977E-01	2.800E-02	-0.018
	1505.03			1.971E-02	3.147E-01	5.131E-01	4.707E-02	0.038
SN-113	391.69	*		2.226E-02	5.834E-02	9.645E-02	8.413E-03	0.231
CD-115	260.90			1.161E-04	5.834E-02	Half-Life	too short	
	492.35			1.431E-05	5.834E-02	Half-Life	too short	
	527.90	*		2.730E-05	5.834E-02	Half-Life	too short	
SN-117M	156.02			-3.405E+00	3.625E+00	5.485E+00	4.602E-01	-0.621
	158.56	*		3.125E-02	8.457E-02	1.340E-01	1.126E-02	0.233
TE-123M	159.00	*		-4.669E-03	3.268E-02	5.054E-02	4.276E-03	-0.092
SB-124	602.73			-4.538E-02	5.552E-02	7.273E-02	6.135E-03	-0.624
	645.85			7.165E-01	5.547E-01	1.007E+00	8.783E-02	0.711
	722.78			1.821E-01	4.744E-01	7.050E-01	6.097E-02	0.258
	1690.97	*		1.098E-03	9.321E-02	1.552E-01	1.428E-02	0.007
SB-125	427.87	*		2.673E-02	9.786E-02	1.605E-01	1.405E-02	0.167
	463.37		+	9.877E-01	5.523E-01	6.080E-01	5.661E-02	1.625
	600.60			-1.460E-01	2.066E-01	3.184E-01	2.895E-02	-0.459
	635.95			1.853E-01	3.082E-01	5.324E-01	4.785E-02	0.348
TE-125M	109.28	*		-6.944E-01	1.176E+01	1.862E+01	2.008E+00	-0.037
I-126	388.63			3.947E-01	2.925E-01	5.088E-01	4.324E-02	0.776
	666.33	*		-2.245E-01	4.334E-01	5.823E-01	4.728E-02	-0.385
	753.82			8.821E-01	2.763E+00	4.642E+00	3.999E-01	0.190
SB-126	414.70			4.352E-02	1.279E-01	2.107E-01	1.801E-02	0.207
	666.50			-9.866E-02	1.502E-01	1.980E-01	1.608E-02	-0.498

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

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	695.00			-4.164E-02	1.211E-01	1.929E-01	1.599E-02	-0.216
	697.00			-6.925E-02	4.235E-01	6.857E-01	5.692E-02	-0.101
	720.70	*		1.577E-01	2.405E-01	3.837E-01	3.237E-02	0.411
	856.80			-5.440E-01	9.327E-01	1.191E+00	1.085E-01	-0.457
SB-127	252.40			5.420E+00	1.642E+01	2.748E+01	1.164E+01	0.197
	473.00			-1.064E+00	6.341E+00	9.978E+00	1.483E+00	-0.107
	685.70	*		1.628E+00	5.128E+00	8.646E+00	1.159E+00	0.188
	783.70			-1.950E+00	1.436E+01	2.309E+01	3.364E+00	-0.084
I-131	80.19			-3.264E+00	9.623E+00	1.388E+01	1.434E+00	-0.235
	284.31			-1.083E+00	2.926E+00	4.729E+00	4.624E-01	-0.229
	364.49	*		-3.747E-02	2.243E-01	3.603E-01	3.362E-02	-0.104
	636.99			1.566E+00	3.190E+00	5.472E+00	4.831E-01	0.286
TE-132	49.72			2.520E+01	1.137E+02	1.916E+02	2.640E+01	0.132
	111.76			5.111E+01	1.656E+02	2.707E+02	3.611E+01	0.189
	116.30			-1.305E+01	1.447E+02	2.325E+02	3.069E+01	-0.056
	228.16	*		-2.524E+00	3.734E+00	6.013E+00	1.062E+00	-0.420
BA-133	81.00			-2.091E-01	1.203E-01	1.546E-01	2.553E-02	-1.353
	276.40			3.996E-01	4.291E-01	7.129E-01	1.037E-01	0.561
	302.85			8.526E-02	1.679E-01	2.515E-01	3.397E-02	0.339
	356.01	*		-2.720E-02	5.057E-02	6.814E-02	8.960E-03	-0.399
	383.85			-9.801E-02	3.235E-01	5.126E-01	6.351E-02	-0.191
I-133	529.87	*		-3.746E-01	3.235E-01	Half-Life	too short	
	875.33			1.374E+01	3.235E-01	Half-Life	too short	
	1298.22			-1.039E+02	3.235E-01	Half-Life	too short	
CS-134	563.25			2.532E-01	3.968E-01	6.908E-01	5.986E-02	0.366
	569.33			-1.257E-01	2.272E-01	3.618E-01	3.141E-02	-0.347
	604.72			1.599E-02	3.988E-02	5.991E-02	5.061E-03	0.267
	795.86	*		1.596E-01	6.137E-02	1.001E-01	8.896E-03	1.595
	801.95			-9.484E-02	4.903E-01	7.144E-01	6.362E-02	-0.133
	1365.19			1.030E+00	1.312E+00	2.366E+00	2.260E-01	0.435
CS-135	268.22	*		2.747E-01	1.932E-01	3.055E-01	3.226E-02	0.899
I-135	546.56			-9.364E+17	1.932E-01	Half-Life	too short	
	836.80			6.559E+17	1.932E-01	Half-Life	too short	
	1038.76			5.693E+17	1.932E-01	Half-Life	too short	
	1131.51			-3.048E+17	1.932E-01	Half-Life	too short	
	1260.41	*		-1.208E+17	1.932E-01	Half-Life	too short	
	1457.56			4.070E+19	1.932E-01	Half-Life	too short	
	1678.03			4.793E+17	1.932E-01	Half-Life	too short	
	1791.20			-3.391E+17	1.932E-01	Half-Life	too short	
CS-136	153.25			1.968E+00	1.424E+00	2.377E+00	2.393E-01	0.828
	176.60			6.791E-01	7.365E-01	1.290E+00	1.223E-01	0.526
	273.65			-1.059E+00	9.852E-01	1.318E+00	1.318E-01	-0.803
	340.55			7.735E-01	2.891E-01	4.765E-01	4.468E-02	1.623
	818.51			1.204E-01	1.172E-01	2.079E-01	1.861E-02	0.579
	1048.07	*		-8.983E-02	1.754E-01	2.771E-01	2.554E-02	-0.324
	1235.36			3.083E-01	1.010E+00	1.699E+00	1.987E-01	0.181
CE-139	165.86	*		1.151E-02	3.359E-02	5.403E-02	4.569E-03	0.213
BA-140	162.66			-6.194E-01	1.313E+00	1.995E+00	1.801E-01	-0.310
	304.85			4.914E-01	2.212E+00	3.244E+00	9.561E-01	0.151

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

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LA-140	+	423.72		1.243E-01	3.144E+00	5.071E+00	1.668E+00	0.025
		537.26	*	3.182E-02	4.310E-01	7.247E-01	2.458E-01	0.044
		328.76		4.995E-01	6.264E-01	9.053E-01	8.704E-02	0.552
		487.02		-7.148E-02	2.189E-01	3.603E-01	3.319E-02	-0.198
CE-141	+	815.77		7.310E-02	5.286E-01	8.689E-01	8.606E-02	0.084
		1596.21	*	-1.425E-01	1.378E-01	1.904E-01	1.725E-02	-0.748
CE-143	+	145.44	*	6.688E-02	7.938E-02	1.310E-01	1.113E-02	0.511
		57.36		-1.062E-02	7.938E-02	Half-Life	too short	
		293.27	*	2.064E-02	7.938E-02	Half-Life	too short	
		664.57		1.470E-01	7.938E-02	Half-Life	too short	
CE-144	+	721.93		1.727E-02	7.938E-02	Half-Life	too short	
		80.12		-1.027E+00	2.894E+00	4.171E+00	4.265E-01	-0.246
PM-144	+	133.52	*	-2.425E-01	2.234E-01	3.353E-01	5.070E-02	-0.723
		476.78		-3.019E-03	6.811E-02	1.145E-01	1.079E-02	-0.026
PR-144	+	618.01		-2.586E-02	3.646E-02	5.692E-02	4.902E-03	-0.454
		696.49	*	-1.089E-02	3.699E-02	5.919E-02	4.915E-03	-0.184
		696.51	*	-8.180E-01	2.778E+00	4.446E+00	3.689E-01	-0.184
		1489.16		-5.169E+00	1.407E+01	2.127E+01	1.953E+00	-0.243
PM-146	+	453.88	*	1.276E-02	4.688E-02	7.657E-02	8.129E-03	0.167
		633.25		2.430E-01	1.581E+00	2.643E+00	1.007E+00	0.092
ND-147	+	735.93		8.270E-02	1.632E-01	2.697E-01	7.550E-02	0.307
		747.24		-4.982E-02	1.077E-01	1.681E-01	2.448E-02	-0.296
		91.11		1.876E+00	6.290E-01	8.559E-01	9.609E-02	2.192
		319.41		3.378E-01	5.926E+00	9.746E+00	8.977E-01	0.035
PM-149	+	531.02	*	4.539E-01	9.388E-01	1.622E+00	2.429E-01	0.280
		285.90	*	6.027E-05	9.388E-01	Half-Life	too short	
EU-152	+	121.78		-1.005E-02	8.061E-02	1.290E-01	1.256E-02	-0.078
		244.70		1.903E-02	3.618E-01	5.324E-01	4.906E-02	0.036
		344.28	*	4.110E-03	1.213E-01	1.737E-01	1.653E-02	0.024
		778.90		1.751E-04	2.825E-01	4.600E-01	4.022E-02	0.000
GD-153	+	964.08		4.269E-01	4.315E-01	6.808E-01	6.232E-02	0.627
		1085.87		-1.730E-01	4.269E-01	6.790E-01	5.887E-02	-0.255
		1112.07		4.534E-01	3.771E-01	6.234E-01	5.312E-02	0.727
		1408.01		-4.327E-02	2.595E-01	3.492E-01	3.212E-02	-0.124
EU-154	+	69.67		3.196E-01	2.121E+00	3.154E+00	2.967E-01	0.101
		97.43	*	8.894E-02	1.029E-01	1.556E-01	1.536E-02	0.571
		103.18		7.234E-02	1.199E-01	1.990E-01	1.863E-02	0.364
		123.07		6.566E-02	5.632E-02	9.436E-02	1.055E-02	0.696
EU-155	+	723.31		7.958E-03	2.059E-01	2.932E-01	2.738E-02	0.027
		873.19		3.848E-02	3.221E-01	5.258E-01	6.470E-02	0.073
		996.26		-5.242E-01	4.165E-01	5.934E-01	1.050E-01	-0.883
		1004.73		-1.086E-01	2.642E-01	4.254E-01	5.081E-02	-0.255
TB-160	+	1274.44	*	4.877E-03	1.390E-01	2.285E-01	2.627E-02	0.021
		86.55		1.687E-01	1.330E-01	2.022E-01	2.228E-02	0.835
TB-160	+	105.31	*	2.712E-02	1.135E-01	1.857E-01	1.728E-02	0.146
		86.79		2.252E+00	5.595E-01	5.717E-01	6.276E-02	3.938
		197.04		-5.355E-02	6.427E-01	1.080E+00	9.520E-02	-0.050
		215.65		2.957E-01	8.583E-01	1.461E+00	1.315E-01	0.202
		298.57		3.378E-01	1.840E-01	2.369E-01	2.201E-02	1.426

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	879.36	*		8.278E-03	1.559E-01	2.528E-01	2.326E-02	0.033
	962.29			1.232E+00	7.555E-01	1.271E+00	1.164E-01	0.969
	966.15			1.284E+00	3.332E-01	6.403E-01	5.857E-02	2.006
	1177.93			-2.929E-01	4.517E-01	6.984E-01	5.684E-02	-0.419
	1271.85			5.473E-01	8.394E-01	1.469E+00	1.287E-01	0.373
	80.57			-1.643E-01	3.130E-01	4.468E-01	4.590E-02	-0.368
	184.41			1.567E-01	4.166E-02	7.513E-02	6.515E-03	2.085
	280.46			-8.119E-02	9.557E-02	1.504E-01	1.401E-02	-0.540
	410.95			1.156E-01	2.857E-01	4.724E-01	4.031E-02	0.245
	711.68	*		8.609E-03	6.018E-02	9.999E-02	8.384E-03	0.086
TA-182	752.31			3.487E-01	2.780E-01	5.040E-01	4.338E-02	0.692
	810.29			8.021E-03	6.725E-02	1.104E-01	9.819E-03	0.073
	67.75			-8.435E-02	1.464E-01	2.092E-01	1.945E-02	-0.403
	100.11			-4.201E-02	1.984E-01	3.194E-01	3.070E-02	-0.132
	152.43			4.597E-01	4.179E-01	6.932E-01	5.801E-02	0.663
	222.11			-1.720E-01	4.016E-01	6.596E-01	5.976E-02	-0.261
	+ 1121.30			7.929E-01	3.098E-01	4.283E-01	3.625E-02	1.851
	1189.05			8.211E-02	3.705E-01	6.227E-01	5.115E-02	0.132
	1221.41	*		-8.227E-02	2.514E-01	4.015E-01	3.384E-02	-0.205
	1231.02			9.111E-02	5.971E-01	9.934E-01	8.437E-02	0.092
IR-192	+ 295.96			1.227E+00	2.544E-01	3.506E-01	3.280E-02	3.499
	308.46			-9.644E-03	1.095E-01	1.790E-01	1.665E-02	-0.054
	316.51	*		3.838E-03	4.153E-02	6.848E-02	6.329E-03	0.056
HG-203	468.07			5.063E-02	8.293E-02	1.234E-01	1.147E-02	0.410
	70.83			5.108E-01	1.752E+00	2.618E+00	4.329E-01	0.195
	72.87			1.448E+00	1.080E+00	1.646E+00	2.652E-01	0.880
BI-207	279.20	*		5.566E-02	4.888E-02	8.481E-02	8.072E-03	0.656
	72.81			2.775E-01	2.210E-01	3.410E-01	3.276E-02	0.814
	+ 74.97			6.394E-01	1.657E-01	2.430E-01	2.374E-02	2.631
	569.70			-1.556E-02	3.463E-02	5.559E-02	4.760E-03	-0.280
PB-210	1063.66	*		-5.741E-02	5.992E-02	8.978E-02	7.886E-03	-0.639
	1770.23			1.647E-03	5.487E-01	7.764E-01	6.677E-02	0.002
	46.54	*		4.392E-01	5.109E+00	8.468E+00	8.147E-01	0.052
PB-211	404.85	*		5.113E-01	8.867E-01	1.426E+00	6.899E-01	0.358
	427.09			-4.783E-01	1.661E+00	2.587E+00	1.197E+00	-0.185
	832.01			-5.733E-01	1.145E+00	1.700E+00	8.829E-01	-0.337
BI-212	+ 727.33	*		2.373E+00	9.648E-01	1.323E+00	1.634E-01	1.794
	785.37			1.715E+00	3.612E+00	6.110E+00	5.363E-01	0.281
	1620.50			3.505E-01	2.605E+00	4.476E+00	4.035E-01	0.078
RN-219	+ 271.23			6.873E-01	3.872E-01	4.951E-01	5.366E-02	1.388
	401.81	*		6.310E-03	4.567E-01	7.380E-01	1.092E-01	0.009
RA-223	81.07			-4.680E-01	2.651E-01	3.501E-01	3.614E-02	-1.337
	83.79			2.213E-01	1.487E-01	2.296E-01	2.438E-02	0.964
	94.87			8.795E-01	5.321E-01	8.254E-01	8.375E-02	1.066
	144.24			6.993E-01	7.549E-01	1.233E+00	1.155E-01	0.567
	154.21			3.792E-01	4.368E-01	7.187E-01	6.629E-02	0.528
	+ 269.46			5.340E-01	2.996E-01	3.867E-01	3.659E-02	1.381
	323.87	*		-1.516E-01	8.614E-01	1.219E+00	2.147E-01	-0.124
	+ 338.28			6.021E+00	2.376E+00	2.665E+00	3.305E-01	2.260

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		79.69		-1.348E-01	1.426E+00	2.083E+00	3.764E-01	-0.065
		235.96		9.152E-02	1.854E-01	2.800E-01	3.024E-02	0.327
		256.23	*	-2.295E-01	2.724E-01	4.301E-01	5.386E-02	-0.534
	+	299.98		3.507E+00	1.467E+00	1.848E+00	2.433E-01	1.898
		304.50		-3.606E-01	1.868E+00	2.648E+00	4.470E-01	-0.136
TH-227		334.37		3.431E-01	2.131E+00	3.090E+00	4.902E-01	0.111
		79.80		-3.399E-01	1.875E+00	2.725E+00	6.118E-01	-0.125
		235.96		9.152E-02	1.854E-01	2.800E-01	2.867E-02	0.327
		256.23	*	-2.295E-01	2.727E-01	4.301E-01	6.032E-02	-0.534
	+	299.98		3.507E+00	1.467E+00	1.848E+00	2.433E-01	1.898
TH-229		304.50		-3.606E-01	1.868E+00	2.648E+00	4.470E-01	-0.136
		334.37		3.431E-01	2.131E+00	3.090E+00	4.902E-01	0.111
		85.43		4.052E-01	2.559E-01	3.942E-01	4.262E-02	1.028
	+	88.47		1.009E+00	2.508E-01	2.544E-01	2.812E-02	3.966
		193.51	*	-6.532E-02	5.433E-01	9.121E-01	8.005E-02	-0.072
PA-231		210.85		1.243E+00	1.066E+00	1.675E+00	1.500E-01	0.742
		283.69	*	-7.261E-01	1.567E+00	2.516E+00	3.775E-01	-0.289
	+	301.36		2.253E+00	9.389E-01	1.204E+00	1.521E-01	1.871
TH-231		81.07		-4.680E-01	2.651E-01	3.501E-01	3.614E-02	-1.337
		83.79		2.213E-01	1.487E-01	2.296E-01	2.438E-02	0.964
		94.87		8.795E-01	5.321E-01	8.254E-01	8.375E-02	1.066
		144.24		6.993E-01	7.549E-01	1.233E+00	1.155E-01	0.567
		154.21		3.792E-01	4.368E-01	7.187E-01	6.629E-02	0.528
PA-233	+	269.46		5.340E-01	2.996E-01	3.867E-01	3.659E-02	1.381
		323.87	*	-1.516E-01	8.614E-01	1.219E+00	2.147E-01	-0.124
	+	338.28		6.021E+00	2.376E+00	2.665E+00	3.305E-01	2.260
	+	300.13		1.587E+00	6.750E-01	8.409E-01	1.280E-01	1.887
		311.90	*	-6.533E-03	6.926E-02	1.131E-01	1.071E-02	-0.058
PA-234		340.48		2.454E+00	1.027E+00	1.436E+00	3.479E-01	1.709
		94.67		4.547E-01	2.042E-01	3.144E-01	4.253E-02	1.446
		98.44		5.424E-02	1.069E-01	1.625E-01	9.098E-02	0.334
		111.00		-7.723E-02	2.064E-01	3.220E-01	3.950E-02	-0.240
		131.20		-5.181E-02	1.195E-01	1.880E-01	1.567E-02	-0.276
PA-234M		569.50		-1.683E-01	3.114E-01	4.965E-01	4.252E-02	-0.339
		733.00		1.686E-01	4.637E-01	6.843E-01	1.516E-01	0.246
		880.51		-2.360E-02	2.899E-01	4.631E-01	4.263E-02	-0.051
		883.24		-2.746E-01	3.697E-01	4.677E-01	3.148E-01	-0.587
		926.50		-2.068E-01	1.966E-01	2.648E-01	6.750E-02	-0.781
		946.00	*	1.355E-01	3.209E-01	5.577E-01	1.062E-01	0.243
		949.00		-1.705E-01	4.651E-01	7.518E-01	6.908E-02	-0.227
		766.42		1.358E+01	1.497E+01	2.335E+01	1.185E+01	0.581
		1001.03	*	6.016E+00	5.692E+00	1.020E+01	1.054E+00	0.590
		89.96		2.815E+00	1.319E+00	1.516E+00	3.859E-01	1.857
U-235	+	93.35		4.121E+00	1.259E+00	1.171E+00	2.787E-01	3.518
		143.76	*	1.604E-01	2.225E-01	3.592E-01	6.037E-02	0.447
		163.33		8.415E-02	4.728E-01	7.418E-01	1.325E-01	0.113
	+	185.72		3.250E-01	9.962E-02	1.060E-01	9.206E-03	3.066
NP-237		205.31		-3.342E-01	6.143E-01	8.789E-01	1.607E-01	-0.380
		86.48	*	5.069E-01	3.415E-01	4.966E-01	1.175E-01	1.021

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	95.86			5.153E-01	1.060E+00	1.569E+00	3.851E-01	0.328
	99.53			-8.364E-02	1.785E-01	2.842E-01	2.747E-02	-0.294
	103.37			6.934E-02	1.070E-01	1.779E-01	1.664E-02	0.390
	106.12			-3.398E-02	9.143E-02	1.458E-01	1.335E-02	-0.233
	117.23	*		3.002E-02	4.359E-01	7.048E-01	6.053E-02	0.043
	228.18			-1.050E-01	2.394E-01	3.923E-01	3.574E-02	-0.268
AM-241	277.60			2.058E-01	2.003E-01	3.460E-01	3.223E-02	0.595
	59.54	*		-5.139E-02	2.111E-01	3.104E-01	2.947E-02	-0.166
CM-247	278.00			1.065E+00	8.528E-01	1.485E+00	1.383E-01	0.717
	287.50			3.112E-01	1.381E+00	2.306E+00	2.147E-01	0.135
CF-249	402.40	*		2.049E-02	4.265E-02	7.098E-02	6.033E-03	0.289
	252.80			2.297E-01	1.037E+00	1.743E+00	1.613E-01	0.132
	333.37			-7.898E-02	2.762E-01	3.216E-01	2.932E-02	-0.246
CF-251	388.16	*		3.358E-02	4.801E-02	8.091E-02	6.881E-03	0.415
	177.52	*		-3.208E-02	1.328E-01	2.228E-01	1.914E-02	-0.144
	227.38			-3.715E-01	3.882E-01	6.187E-01	5.632E-02	-0.600
	285.41			-2.586E-01	2.334E+00	3.829E+00	3.566E-01	-0.068

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]G248030003      *
* Acquisition date   : 13-MAR-2010 14:31:30 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 02:00:01.36              Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030003              Analyst initials: MXR1         *
* Batch Number       : 958221                  Sample Quantity : 1.3771E+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	2.907E+01	3.239E+00	2.438E-01	0.000E+00
CD-109	6.767E+00	1.648E+00	1.571E+00	0.000E+00
SN-126	6.545E-01	1.594E-01	1.527E-01	0.000E+00
BA-137M	2.269E-01	7.836E-02	6.818E-02	0.000E+00
CS-137	2.397E-01	8.279E-02	7.202E-02	0.000E+00
TL-208	4.820E-01	9.621E-02	6.373E-02	0.000E+00
BI-211	4.376E+00	6.001E-01	3.701E-01	0.000E+00
PB-212	1.905E+00	2.269E-01	1.035E-01	0.000E+00
BI-214	1.140E+00	2.072E-01	1.300E-01	0.000E+00
PB-214	1.588E+00	2.341E-01	1.314E-01	0.000E+00
RA-224	5.240E+00	1.468E+00	1.110E+00	0.000E+00
RA-226	1.140E+00	2.072E-01	1.300E-01	0.000E+00
AC-228	1.616E+00	3.723E-01	2.833E-01	0.000E+00
RA-228	1.616E+00	3.723E-01	2.833E-01	0.000E+00
TH-228	1.905E+00	2.269E-01	1.035E-01	0.000E+00
TH-232	1.616E+00	3.723E-01	2.833E-01	0.000E+00
TH-234	3.467E+00	2.543E+00	2.640E+00	0.000E+00
U-238	3.467E+00	2.543E+00	2.640E+00	0.000E+00
ANH-511	1.034E-01	7.030E-02	5.414E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.230E-01	3.674E-01	6.075E-01	0.000E+00 NOT IDENT.
NA-22	8.351E-03	4.722E-02	8.090E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.977E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	3.930E-02	4.416E-02	7.991E-02	0.000E+00 FAIL ABUN
V-48	2.996E-02	9.448E-02	1.681E-01	0.000E+00 NOT IDENT.
CR-51	3.670E-02	5.070E-01	8.798E-01	0.000E+00 NOT IDENT.
MN-54	5.875E-03	4.388E-02	7.438E-02	0.000E+00 NOT IDENT.
CO-56	4.522E-02	4.841E-02	8.744E-02	0.000E+00 NOT IDENT.

CO-57	6.938E-03	2.779E-02	4.850E-02	0.000E+00	NOT IDENT.
CO-58	9.218E-03	4.636E-02	7.934E-02	0.000E+00	NOT IDENT.
FE-59	1.242E-02	1.075E-01	1.855E-01	0.000E+00	NOT IDENT.
CO-60	-4.401E-03	4.457E-02	7.367E-02	0.000E+00	NOT IDENT.
ZN-65	-6.796E-02	1.199E-01	1.621E-01	0.000E+00	NOT IDENT.
SE-75	2.505E-03	5.300E-02	8.204E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.027E-02	8.728E-02	0.000E+00	NOT IDENT.
Y-88	2.199E-02	3.551E-02	6.689E-02	0.000E+00	NOT IDENT.
Y-91	-1.771E+01	2.533E+01	3.986E+01	0.000E+00	NOT IDENT.
NB-94	2.668E-03	3.766E-02	6.427E-02	0.000E+00	NOT IDENT.
NB-95	5.767E-02	5.180E-02	9.461E-02	0.000E+00	NOT IDENT.
NB-95M	-4.036E-02	1.552E-01	2.380E-01	0.000E+00	NOT IDENT.
ZR-95	-6.314E-02	8.314E-02	1.304E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.772E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.207E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.930E-02	4.553E-02	8.230E-02	0.000E+00	FAIL ABUN
RH-106	2.661E-01	3.602E-01	6.513E-01	0.000E+00	NOT IDENT.
RU-106	2.661E-01	3.593E-01	6.513E-01	0.000E+00	NOT IDENT.
AG-108M	-1.205E-02	3.063E-02	4.995E-02	0.000E+00	NOT IDENT.
AG-110M	2.356E-02	4.212E-02	6.662E-02	0.000E+00	NOT IDENT.
SN-113	2.226E-02	5.717E-02	9.929E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.089E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	3.125E-02	8.287E-02	1.403E-01	0.000E+00	NOT IDENT.
TE-123M	-4.669E-03	3.202E-02	5.293E-02	0.000E+00	NOT IDENT.
SB-124	1.098E-03	9.135E-02	1.552E-01	0.000E+00	NOT IDENT.
SB-125	2.673E-02	9.591E-02	1.650E-01	0.000E+00	FAIL ABUN
TE-125M	-6.944E-01	1.152E+01	1.963E+01	0.000E+00	NOT IDENT.
I-126	-2.245E-01	4.248E-01	5.933E-01	0.000E+00	NOT IDENT.
SB-126	1.577E-01	2.357E-01	3.904E-01	0.000E+00	NOT IDENT.
SB-127	1.628E+00	5.026E+00	8.804E+00	0.000E+00	NOT IDENT.
I-131	-3.747E-02	2.199E-01	3.715E-01	0.000E+00	NOT IDENT.
TE-132	-2.524E+00	3.659E+00	6.255E+00	0.000E+00	NOT IDENT.
BA-133	-2.720E-02	4.956E-02	7.028E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.742E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.014E-02	1.016E-01	0.000E+00	FAIL ABUN
CS-135	2.747E-01	1.893E-01	3.168E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.781E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.983E-02	1.719E-01	2.798E-01	0.000E+00	NOT IDENT.
CE-139	1.151E-02	3.292E-02	5.653E-02	0.000E+00	NOT IDENT.
BA-140	3.182E-02	4.224E-01	7.415E-01	0.000E+00	NOT IDENT.
LA-140	-1.425E-01	1.351E-01	1.906E-01	0.000E+00	FAIL ABUN
CE-141	6.688E-02	7.779E-02	1.374E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	7.854E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.425E-01	2.190E-01	3.522E-01	0.000E+00	NOT IDENT.
PM-144	-1.089E-02	3.625E-02	6.025E-02	0.000E+00	NOT IDENT.
PR-144	-8.180E-01	2.723E+00	4.526E+00	0.000E+00	NOT IDENT.
PM-146	1.276E-02	4.594E-02	7.860E-02	0.000E+00	NOT IDENT.
ND-147	4.539E-01	9.201E-01	1.660E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	8.797E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.110E-03	1.188E-01	1.793E-01	0.000E+00	NOT IDENT.
GD-153	8.894E-02	1.008E-01	1.645E-01	0.000E+00	NOT IDENT.
EU-154	4.877E-03	1.362E-01	2.298E-01	0.000E+00	NOT IDENT.
EU-155	2.712E-02	1.112E-01	1.959E-01	0.000E+00	NOT IDENT.
TB-160	8.278E-03	1.527E-01	2.561E-01	0.000E+00	FAIL ABUN
HO-166M	8.609E-03	5.898E-02	1.017E-01	0.000E+00	NOT IDENT.
TA-182	-8.227E-02	2.463E-01	4.042E-01	0.000E+00	FAIL ABUN
IR-192	3.838E-03	4.070E-02	7.079E-02	0.000E+00	FAIL ABUN
HG-203	5.566E-02	4.790E-02	8.787E-02	0.000E+00	NOT IDENT.
BI-207	-5.741E-02	5.872E-02	9.063E-02	0.000E+00	FAIL ABUN
PB-210	4.392E-01	5.007E+00	9.068E+00	0.000E+00	NOT IDENT.
PB-211	5.113E-01	8.689E-01	1.467E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.455E-01	1.345E+00	0.000E+00	FAIL ABUN
RN-219	6.310E-03	4.475E-01	7.594E-01	0.000E+00	FAIL ABUN
RA-223	-1.516E-01	8.442E-01	1.259E+00	0.000E+00	FAIL ABUN
AC-227	-2.295E-01	2.669E-01	4.464E-01	0.000E+00	FAIL ABUN
TH-227	-2.295E-01	2.673E-01	4.464E-01	0.000E+00	FAIL ABUN
TH-229	-6.532E-02	5.324E-01	9.516E-01	0.000E+00	FAIL ABUN
PA-231	-7.261E-01	1.536E+00	2.606E+00	0.000E+00	FAIL ABUN
TH-231	-1.516E-01	8.442E-01	1.259E+00	0.000E+00	FAIL ABUN
PA-233	-6.533E-03	6.788E-02	1.169E-01	0.000E+00	FAIL ABUN
PA-234	1.355E-01	3.145E-01	5.643E-01	0.000E+00	NOT IDENT.
PA-234M	6.016E+00	5.578E+00	1.031E+01	0.000E+00	NOT IDENT.
U-235	1.604E-01	2.181E-01	3.768E-01	0.000E+00	FAIL ABUN
NP-237	5.069E-01	3.346E-01	5.259E-01	0.000E+00	NOT IDENT.
NP-239	3.002E-02	4.272E-01	7.423E-01	0.000E+00	NOT IDENT.
AM-241	-5.139E-02	2.069E-01	3.310E-01	0.000E+00	NOT IDENT.
CM-247	2.049E-02	4.180E-02	7.303E-02	0.000E+00	NOT IDENT.
CF-249	3.358E-02	4.705E-02	8.330E-02	0.000E+00	NOT IDENT.

CF-251	-3.208E-02	1.301E-01	2.329E-01	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030003.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:31:30
Sample ID          : G248030003 Sample quantity : 1.37710E+02 GRAM
Detector name      : GAM06 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958221 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	1062	10.66*	9.339E-01	2.907E+01	2.907E+01	11.37
CD-109	88.03	465	3.70*	5.237E+00	6.545E+00	6.767E+00	24.85
SN-126	64.28	128	9.60	2.727E+00	1.336E+00	1.336E+00	74.14
	86.94	465	8.90	5.237E+00	2.721E+00	2.721E+00	47.47
	87.57	465	37.00*	5.237E+00	6.545E-01	6.545E-01	24.85
BA-137M	661.66	143	89.90*	1.912E+00	2.266E-01	2.269E-01	35.24
CS-137	661.66	143	85.10*	1.912E+00	2.394E-01	2.397E-01	35.24
TL-208	277.37	---	6.60	3.754E+00	-----	Line Not Found	-----
	583.19	319	85.00*	2.126E+00	4.820E-01	4.820E-01	20.37
	860.56	29	12.50	1.511E+00	4.203E-01	4.203E-01	97.23
BI-211	72.87	-----	1.23	3.914E+00	-----	Line Not Found	-----
	351.06	652	12.92*	3.144E+00	4.376E+00	4.376E+00	13.99
PB-212	74.82	345	10.28	4.124E+00	2.218E+00	2.218E+00	27.67
	77.11	625	17.10	4.362E+00	2.284E+00	2.284E+00	16.31
	238.63	1277	43.60*	4.191E+00	1.905E+00	1.905E+00	12.15
	300.09	137	3.30	3.536E+00	3.188E+00	3.188E+00	41.23
BI-214	609.32	390	45.49*	2.050E+00	1.140E+00	1.140E+00	18.54
	1120.29	105	14.92	1.180E+00	1.622E+00	1.622E+00	39.64
	1764.49	84	15.30	8.244E-01	1.805E+00	1.805E+00	28.21
PB-214	74.82	345	5.80	4.124E+00	3.931E+00	3.931E+00	27.09
	77.11	625	9.70	4.362E+00	4.026E+00	4.026E+00	18.28
	242.00	327	7.25	4.155E+00	2.963E+00	2.964E+00	29.17
	295.22	376	18.42	3.582E+00	1.554E+00	1.554E+00	21.71
	351.93	652	35.60*	3.144E+00	1.588E+00	1.588E+00	15.04
RA-224	240.99	327	4.10*	4.155E+00	5.240E+00	5.240E+00	28.59
RA-226	609.32	390	45.49*	2.050E+00	1.140E+00	1.140E+00	18.54
	1120.29	105	14.92	1.180E+00	1.622E+00	1.622E+00	39.64
	1764.49	84	15.30	8.244E-01	1.805E+00	1.805E+00	28.21
AC-228	338.32	203	11.27	3.238E+00	1.517E+00	1.517E+00	56.15
	911.20	219	25.80*	1.433E+00	1.616E+00	1.616E+00	23.50
	968.97	211	15.80	1.354E+00	2.695E+00	2.695E+00	34.94
RA-228	338.32	203	11.27	3.238E+00	1.517E+00	1.517E+00	56.15

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	219	25.80*	1.433E+00	1.616E+00	1.616E+00	23.50
	968.97	211	15.80	1.354E+00	2.695E+00	2.695E+00	34.94
	74.82	345	10.28	4.124E+00	2.218E+00	2.218E+00	25.93
	77.11	625	17.10	4.362E+00	2.284E+00	2.284E+00	16.31
TH-232	238.63	1277	43.60*	4.191E+00	1.905E+00	1.905E+00	12.15
	300.09	137	3.30	3.536E+00	3.188E+00	3.188E+00	73.05
	338.32	203	11.27	3.238E+00	1.517E+00	1.517E+00	38.55
	911.20	219	25.80*	1.433E+00	1.616E+00	1.616E+00	23.50
TH-234	968.97	211	15.80	1.354E+00	2.695E+00	2.695E+00	34.94
	63.29	128	3.70*	2.727E+00	3.467E+00	3.467E+00	74.85
	92.59	465	4.23	5.487E+00	5.455E+00	5.455E+00	29.78
U-238	63.29	128	3.70*	2.727E+00	3.467E+00	3.467E+00	74.85
	92.59	465	4.23	5.487E+00	5.455E+00	5.455E+00	21.77
ANH-511	511.00	90	100.00*	2.366E+00	1.034E-01	1.034E-01	69.38

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 2
Number of lines tentatively identified by NID 27 93.10%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.907E+01	2.907E+01	0.330E+01	11.37	
CD-109	461.40D	1.03	6.545E+00	6.767E+00	1.682E+00	24.85	
SN-126	2.30E+05Y	1.00	6.545E-01	6.545E-01	1.627E-01	24.85	
BA-137M	30.08Y	1.00	2.266E-01	2.269E-01	0.800E-01	35.24	
CS-137	30.08Y	1.00	2.394E-01	2.397E-01	0.845E-01	35.24	
TL-208	1.41E+10Y	1.00	4.820E-01	4.820E-01	0.982E-01	20.37	
BI-211	7.04E+08Y	1.00	4.376E+00	4.376E+00	0.612E+00	13.99	
PB-212	1.41E+10Y	1.00	1.905E+00	1.905E+00	0.231E+00	12.15	
BI-214	1600.00Y	1.00	1.140E+00	1.140E+00	0.211E+00	18.54	
PB-214	1600.00Y	1.00	1.588E+00	1.588E+00	0.239E+00	15.04	
RA-224	1.41E+10Y	1.00	5.240E+00	5.240E+00	1.498E+00	28.59	
RA-226	1600.00Y	1.00	1.140E+00	1.140E+00	0.211E+00	18.54	
AC-228	1.41E+10Y	1.00	1.616E+00	1.616E+00	0.380E+00	23.50	
RA-228	1.41E+10Y	1.00	1.616E+00	1.616E+00	0.380E+00	23.50	
TH-228	1.41E+10Y	1.00	1.905E+00	1.905E+00	0.231E+00	12.15	
TH-232	1.41E+10Y	1.00	1.616E+00	1.616E+00	0.380E+00	23.50	
TH-234	4.47E+09Y	1.00	3.467E+00	3.467E+00	2.595E+00	74.85	
U-238	4.47E+09Y	1.00	3.467E+00	3.467E+00	2.595E+00	74.85	
ANH-511	1.00E+09Y	1.00	1.034E-01	1.034E-01	0.717E-01	69.38	
Total Activity :			6.639E+01	6.662E+01			

Grand Total Activity : 6.639E+01 6.662E+01

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

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

Unidentified Energy Lines
Sample ID : G248030003

Page : 4
Acquisition date : 13-MAR-2010 14:31:30

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.07	340	457	1.26	371.60	365	14	4.72E-02	29.4	4.98E+00	T
0	209.14	89	266	1.36	417.72	414	8	1.24E-02	67.0	4.61E+00	
0	270.04	104	208	1.40	539.46	535	10	1.45E-02	55.3	3.83E+00	T
0	328.64	37	164	0.98	656.62	652	8	5.13E-03	****	3.31E+00	T
0	464.28	96	127	1.60	927.82	920	15	1.33E-02	55.1	2.55E+00	T
0	727.59	102	68	1.49	1454.36	1449	13	1.42E-02	38.7	1.76E+00	T
0	795.10	72	27	1.42	1589.38	1584	12	9.96E-03	37.4	1.63E+00	T
0	1402.39	22	13	1.91	2804.23	2798	13	3.06E-03	79.9	9.65E-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]G248030003.CNF;1
* Acquisition date   : 13-MAR-2010 14:31:30   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 02:00:01.36          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248030003             Analyst initials: MXR1
* Batch Number       : 958221                 Sample Quantity  : 1.37710E+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	2.907E+01	3.305E+00	2.431E-01	2.291E-02	119.581
CD-109	6.767E+00	1.682E+00	1.484E+00	1.651E-01	4.560
SN-126	6.545E-01	1.627E-01	1.443E-01	1.598E-02	4.537
BA-137M	2.269E-01	7.996E-02	6.690E-02	5.414E-03	3.392
CS-137	2.397E-01	8.448E-02	7.068E-02	5.732E-03	3.392
TL-208	4.820E-01	9.818E-02	6.238E-02	5.696E-03	7.726
BI-211	4.376E+00	6.123E-01	3.587E-01	3.367E-02	12.198
PB-212	1.905E+00	2.315E-01	9.961E-02	1.022E-02	19.124
BI-214	1.140E+00	2.114E-01	1.274E-01	1.264E-02	8.949
PB-214	1.588E+00	2.389E-01	1.274E-01	1.386E-02	12.468
RA-224	5.240E+00	1.498E+00	1.068E+00	9.822E-02	4.906
RA-226	1.140E+00	2.114E-01	1.274E-01	1.264E-02	8.949
AC-228	1.616E+00	3.799E-01	2.797E-01	3.378E-02	5.778
RA-228	1.616E+00	3.799E-01	2.797E-01	3.378E-02	5.778
TH-228	1.905E+00	2.315E-01	9.961E-02	1.022E-02	19.124
TH-232	1.616E+00	3.799E-01	2.797E-01	3.378E-02	5.778
TH-234	3.467E+00	2.595E+00	2.479E+00	4.607E-01	1.399
U-238	3.467E+00	2.595E+00	2.479E+00	4.607E-01	1.399

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.034E-01	7.174E-02	5.286E-02	4.588E-03	1.956

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.230E-01		3.749E-01	5.924E-01	5.533E-02	-0.545
NA-22	8.351E-03		4.818E-02	8.043E-02	7.066E-03	0.104
NA-24	1.241E+01		1.009E+03	Half-Life	too short	
SC-46	3.930E-02		4.506E-02	7.887E-02	7.289E-03	0.498
V-48	2.996E-02		9.641E-02	1.663E-01	1.513E-02	0.180
CR-51	3.670E-02		5.174E-01	8.513E-01	8.196E-02	0.043
MN-54	5.875E-03		4.478E-02	7.333E-02	6.608E-03	0.080
CO-56	4.522E-02		4.940E-02	8.623E-02	7.816E-03	0.524
CO-57	6.938E-03		2.835E-02	4.609E-02	3.881E-03	0.151
CO-58	9.218E-03		4.731E-02	7.817E-02	6.974E-03	0.118
FE-59	1.242E-02		1.097E-01	1.839E-01	1.710E-02	0.068
CO-60	-4.401E-03		4.548E-02	7.331E-02	6.706E-03	-0.060
ZN-65	-6.796E-02		1.223E-01	1.607E-01	1.368E-02	-0.423
SE-75	2.505E-03		5.408E-02	7.910E-02	7.382E-03	0.032
SR-85	8.866E-02		5.129E-02	8.523E-02	7.394E-03	1.040
Y-88	2.199E-02		3.623E-02	6.699E-02	5.600E-03	0.328
Y-91	-1.771E+01		2.585E+01	3.959E+01	3.293E+00	-0.447
NB-94	2.668E-03		3.843E-02	6.314E-02	5.262E-03	0.042
NB-95	5.767E-02		5.286E-02	9.311E-02	8.080E-03	0.619
NB-95M	-4.036E-02		1.584E-01	2.289E-01	2.372E-02	-0.176
ZR-95	-6.314E-02		8.483E-02	1.283E-01	1.223E-02	-0.492
MO-99	-5.078E-05		3.965E-05	Half-Life	too short	
TC-99M	-1.588E+19		6.157E+18	Half-Life	too short	
RU-103	1.930E-02		4.646E-02	8.031E-02	1.125E-02	0.240
RH-106	2.661E-01		3.676E-01	6.383E-01	8.346E-02	0.417
RU-106	2.661E-01		3.666E-01	6.383E-01	5.323E-02	0.417
AG-108M	-1.205E-02		3.126E-02	4.862E-02	4.320E-03	-0.248
AG-110M	2.356E-02		4.298E-02	6.537E-02	5.486E-03	0.360
SN-113	2.226E-02		5.834E-02	9.645E-02	8.413E-03	0.231
CD-115	2.730E-05		5.557E-05	Half-Life	too short	
SN-117M	3.125E-02		8.457E-02	1.340E-01	1.126E-02	0.233
TE-123M	-4.669E-03		3.268E-02	5.054E-02	4.276E-03	-0.092
SB-124	1.098E-03		9.321E-02	1.552E-01	1.428E-02	0.007
SB-125	2.673E-02		9.786E-02	1.605E-01	1.405E-02	0.167
TE-125M	-6.944E-01		1.176E+01	1.862E+01	2.008E+00	-0.037
I-126	-2.245E-01		4.334E-01	5.823E-01	4.728E-02	-0.385
SB-126	1.577E-01		2.405E-01	3.837E-01	3.237E-02	0.411
SB-127	1.628E+00		5.128E+00	8.646E+00	1.159E+00	0.188
I-131	-3.747E-02		2.243E-01	3.603E-01	3.362E-02	-0.104
TE-132	-2.524E+00		3.734E+00	6.013E+00	1.062E+00	-0.420
BA-133	-2.720E-02		5.057E-02	6.814E-02	8.960E-03	-0.399
I-133	-3.746E-01		8.890E-01	Half-Life	too short	

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.596E-01	+	6.137E-02	1.001E-01	8.896E-03	1.595
CS-135	2.747E-01		1.932E-01	3.055E-01	3.226E-02	0.899
I-135	-1.208E+17		1.929E+17	Half-Life	too short	
CS-136	-8.983E-02		1.754E-01	2.771E-01	2.554E-02	-0.324
CE-139	1.151E-02		3.359E-02	5.403E-02	4.569E-03	0.213
BA-140	3.182E-02		4.310E-01	7.247E-01	2.458E-01	0.044
LA-140	-1.425E-01		1.378E-01	1.904E-01	1.725E-02	-0.748
CE-141	6.688E-02		7.938E-02	1.310E-01	1.113E-02	0.511
CE-143	2.064E-02		4.007E-03	Half-Life	too short	
CE-144	-2.425E-01		2.234E-01	3.353E-01	5.070E-02	-0.723
PM-144	-1.089E-02		3.699E-02	5.919E-02	4.915E-03	-0.184
PR-144	-8.180E-01		2.778E+00	4.446E+00	3.689E-01	-0.184
PM-146	1.276E-02		4.688E-02	7.657E-02	8.129E-03	0.167
ND-147	4.539E-01		9.388E-01	1.622E+00	2.429E-01	0.280
PM-149	6.027E-05		4.489E-04	Half-Life	too short	
EU-152	4.110E-03		1.213E-01	1.737E-01	1.653E-02	0.024
GD-153	8.894E-02		1.029E-01	1.556E-01	1.536E-02	0.571
EU-154	4.877E-03		1.390E-01	2.285E-01	2.627E-02	0.021
EU-155	2.712E-02		1.135E-01	1.857E-01	1.728E-02	0.146
TB-160	8.278E-03		1.559E-01	2.528E-01	2.326E-02	0.033
HO-166M	8.609E-03		6.018E-02	9.999E-02	8.384E-03	0.086
TA-182	-8.227E-02		2.514E-01	4.015E-01	3.384E-02	-0.205
IR-192	3.838E-03		4.153E-02	6.848E-02	6.329E-03	0.056
HG-203	5.566E-02		4.888E-02	8.481E-02	8.072E-03	0.656
BI-207	-5.741E-02		5.992E-02	8.978E-02	7.886E-03	-0.639
PB-210	4.392E-01		5.109E+00	8.468E+00	8.147E-01	0.052
PB-211	5.113E-01		8.867E-01	1.426E+00	6.899E-01	0.358
BI-212	2.373E+00	+	9.648E-01	1.323E+00	1.634E-01	1.794
RN-219	6.310E-03		4.567E-01	7.380E-01	1.092E-01	0.009
RA-223	-1.516E-01		8.614E-01	1.219E+00	2.147E-01	-0.124
AC-227	-2.295E-01		2.724E-01	4.301E-01	5.386E-02	-0.534
TH-227	-2.295E-01		2.727E-01	4.301E-01	6.032E-02	-0.534
TH-229	-6.532E-02		5.433E-01	9.121E-01	8.005E-02	-0.072
PA-231	-7.261E-01		1.567E+00	2.516E+00	3.775E-01	-0.289
TH-231	-1.516E-01		8.614E-01	1.219E+00	2.147E-01	-0.124
PA-233	-6.533E-03		6.926E-02	1.131E-01	1.071E-02	-0.058
PA-234	1.355E-01		3.209E-01	5.577E-01	1.062E-01	0.243
PA-234M	6.016E+00		5.692E+00	1.020E+01	1.054E+00	0.590
U-235	1.604E-01		2.225E-01	3.592E-01	6.037E-02	0.447
NP-237	5.069E-01		3.415E-01	4.966E-01	1.175E-01	1.021
NP-239	3.002E-02		4.359E-01	7.048E-01	6.053E-02	0.043
AM-241	-5.139E-02		2.111E-01	3.104E-01	2.947E-02	-0.166
CM-247	2.049E-02		4.265E-02	7.098E-02	6.033E-03	0.289
CF-249	3.358E-02		4.801E-02	8.091E-02	6.881E-03	0.415
CF-251	-3.208E-02		1.328E-01	2.228E-01	1.914E-02	-0.144

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]G248030003
* Acquisition date   : 13-MAR-2010 14:31:30 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 02:00:01.36                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248030003 Analyst initials: MXR1
* Batch Number       : 958221 Sample Quantity : 1.3771E+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	2.907E+01	3.239E+00	1.220E-01	1.652E+00
CD-109	6.767E+00	1.648E+00	7.859E-01	8.408E-01
SN-126	6.545E-01	1.594E-01	7.641E-02	8.133E-02
BA-137M	2.269E-01	7.836E-02	3.411E-02	3.998E-02
CS-137	2.397E-01	8.279E-02	3.603E-02	4.224E-02
TL-208	4.820E-01	9.621E-02	3.188E-02	4.909E-02
BI-211	4.376E+00	6.001E-01	1.851E-01	3.062E-01
PB-212	1.905E+00	2.269E-01	5.179E-02	1.157E-01
BI-214	1.140E+00	2.072E-01	6.505E-02	1.057E-01
PB-214	1.588E+00	2.341E-01	6.574E-02	1.194E-01
RA-224	5.240E+00	1.468E+00	5.552E-01	7.491E-01
RA-226	1.140E+00	2.072E-01	6.505E-02	1.057E-01
AC-228	1.616E+00	3.723E-01	1.417E-01	1.899E-01
RA-228	1.616E+00	3.723E-01	1.417E-01	1.899E-01
TH-228	1.905E+00	2.269E-01	5.179E-02	1.157E-01
TH-232	1.616E+00	3.723E-01	1.417E-01	1.899E-01
TH-234	3.467E+00	2.543E+00	1.321E+00	1.297E+00
U-238	3.467E+00	2.543E+00	1.321E+00	1.297E+00
ANH-511	1.034E-01	7.030E-02	2.709E-02	3.587E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-3.230E-01	3.674E-01	3.039E-01	1.874E-01	NOT IDENT.
NA-22	8.351E-03	4.722E-02	4.047E-02	2.409E-02	NOT IDENT.
NA-24	1.241E+07	1.977E+09	0.000E+00	1.009E+09	SHORT HLIF
SC-46	3.930E-02	4.416E-02	3.998E-02	2.253E-02	FAIL ABUN
V-48	2.996E-02	9.448E-02	8.412E-02	4.820E-02	NOT IDENT.
CR-51	3.670E-02	5.070E-01	4.402E-01	2.587E-01	NOT IDENT.
MN-54	5.875E-03	4.388E-02	3.721E-02	2.239E-02	NOT IDENT.
CO-56	4.522E-02	4.841E-02	4.375E-02	2.470E-02	NOT IDENT.

CO-57	6.938E-03	2.779E-02	2.427E-02	1.418E-02	NOT IDENT.
CO-58	9.218E-03	4.636E-02	3.969E-02	2.365E-02	NOT IDENT.
FE-59	1.242E-02	1.075E-01	9.283E-02	5.485E-02	NOT IDENT.
CO-60	-4.401E-03	4.457E-02	3.686E-02	2.274E-02	NOT IDENT.
ZN-65	-6.796E-02	1.199E-01	8.109E-02	6.115E-02	NOT IDENT.
SE-75	2.505E-03	5.300E-02	4.105E-02	2.704E-02	NOT IDENT.
SR-85	8.866E-02	5.027E-02	4.367E-02	2.565E-02	NOT IDENT.
Y-88	2.199E-02	3.551E-02	3.346E-02	1.811E-02	NOT IDENT.
Y-91	-1.771E+01	2.533E+01	1.994E+01	1.292E+01	NOT IDENT.
NB-94	2.668E-03	3.766E-02	3.215E-02	1.921E-02	NOT IDENT.
NB-95	5.767E-02	5.180E-02	4.733E-02	2.643E-02	NOT IDENT.
NB-95M	-4.036E-02	1.552E-01	1.191E-01	7.919E-02	NOT IDENT.
ZR-95	-6.314E-02	8.314E-02	6.526E-02	4.242E-02	NOT IDENT.
MO-99	-5.078E+01	7.772E+01	0.000E+00	3.965E+01	SHORT HLIF
TC-99M	-1.588E+25	1.207E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.930E-02	4.553E-02	4.117E-02	2.323E-02	FAIL ABUN
RH-106	2.661E-01	3.602E-01	3.258E-01	1.838E-01	NOT IDENT.
RU-106	2.661E-01	3.593E-01	3.258E-01	1.833E-01	NOT IDENT.
AG-108M	-1.205E-02	3.063E-02	2.499E-02	1.563E-02	NOT IDENT.
AG-110M	2.356E-02	4.212E-02	3.333E-02	2.149E-02	NOT IDENT.
SN-113	2.226E-02	5.717E-02	4.968E-02	2.917E-02	NOT IDENT.
CD-115	2.730E+01	1.089E+02	0.000E+00	5.557E+01	SHORT HLIF
SN-117M	3.125E-02	8.287E-02	7.021E-02	4.228E-02	NOT IDENT.
TE-123M	-4.669E-03	3.202E-02	2.648E-02	1.634E-02	NOT IDENT.
SB-124	1.098E-03	9.135E-02	7.765E-02	4.661E-02	NOT IDENT.
SB-125	2.673E-02	9.591E-02	8.253E-02	4.893E-02	FAIL ABUN
TE-125M	-6.944E-01	1.152E+01	9.821E+00	5.878E+00	NOT IDENT.
I-126	-2.245E-01	4.248E-01	2.968E-01	2.167E-01	NOT IDENT.
SB-126	1.577E-01	2.357E-01	1.953E-01	1.203E-01	NOT IDENT.
SB-127	1.628E+00	5.026E+00	4.405E+00	2.564E+00	NOT IDENT.
I-131	-3.747E-02	2.199E-01	1.858E-01	1.122E-01	NOT IDENT.
TE-132	-2.524E+00	3.659E+00	3.129E+00	1.867E+00	NOT IDENT.
BA-133	-2.720E-02	4.956E-02	3.516E-02	2.528E-02	NOT IDENT.
I-133	-3.746E+05	1.742E+06	0.000E+00	8.890E+05	SHORT HLIF
CS-134	1.596E-01	6.014E-02	5.084E-02	3.068E-02	FAIL ABUN
CS-135	2.747E-01	1.893E-01	1.585E-01	9.659E-02	NOT IDENT.
I-135	-1.208E+23	3.781E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.983E-02	1.719E-01	1.400E-01	8.768E-02	NOT IDENT.
CE-139	1.151E-02	3.292E-02	2.828E-02	1.680E-02	NOT IDENT.
BA-140	3.182E-02	4.224E-01	3.710E-01	2.155E-01	NOT IDENT.
LA-140	-1.425E-01	1.351E-01	9.537E-02	6.892E-02	FAIL ABUN
CE-141	6.688E-02	7.779E-02	6.873E-02	3.969E-02	NOT IDENT.
CE-143	2.064E+04	7.854E+03	0.000E+00	4.007E+03	SHORT HLIF
CE-144	-2.425E-01	2.190E-01	1.762E-01	1.117E-01	NOT IDENT.
PM-144	-1.089E-02	3.625E-02	3.014E-02	1.849E-02	NOT IDENT.
PR-144	-8.180E-01	2.723E+00	2.264E+00	1.389E+00	NOT IDENT.
PM-146	1.276E-02	4.594E-02	3.933E-02	2.344E-02	NOT IDENT.
ND-147	4.539E-01	9.201E-01	8.307E-01	4.694E-01	NOT IDENT.
PM-149	6.027E+01	8.797E+02	0.000E+00	4.489E+02	SHORT HLIF
EU-152	4.110E-03	1.188E-01	8.969E-02	6.063E-02	NOT IDENT.
GD-153	8.894E-02	1.008E-01	8.228E-02	5.145E-02	NOT IDENT.
EU-154	4.877E-03	1.362E-01	1.150E-01	6.948E-02	NOT IDENT.
EU-155	2.712E-02	1.112E-01	9.801E-02	5.674E-02	NOT IDENT.
TB-160	8.278E-03	1.527E-01	1.281E-01	7.793E-02	FAIL ABUN
HO-166M	8.609E-03	5.898E-02	5.090E-02	3.009E-02	NOT IDENT.
TA-182	-8.227E-02	2.463E-01	2.022E-01	1.257E-01	FAIL ABUN
IR-192	3.838E-03	4.070E-02	3.542E-02	2.077E-02	FAIL ABUN
HG-203	5.566E-02	4.790E-02	4.396E-02	2.444E-02	NOT IDENT.
BI-207	-5.741E-02	5.872E-02	4.534E-02	2.996E-02	FAIL ABUN
PB-210	4.392E-01	5.007E+00	4.537E+00	2.554E+00	NOT IDENT.
PB-211	5.113E-01	8.689E-01	7.341E-01	4.433E-01	NOT IDENT.
BI-212	2.373E+00	9.455E-01	6.730E-01	4.824E-01	FAIL ABUN
RN-219	6.310E-03	4.475E-01	3.799E-01	2.283E-01	FAIL ABUN
RA-223	-1.516E-01	8.442E-01	6.301E-01	4.307E-01	FAIL ABUN
AC-227	-2.295E-01	2.669E-01	2.233E-01	1.362E-01	FAIL ABUN
TH-227	-2.295E-01	2.673E-01	2.233E-01	1.364E-01	FAIL ABUN
TH-229	-6.532E-02	5.324E-01	4.761E-01	2.716E-01	FAIL ABUN
PA-231	-7.261E-01	1.536E+00	1.304E+00	7.837E-01	FAIL ABUN
TH-231	-1.516E-01	8.442E-01	6.301E-01	4.307E-01	FAIL ABUN
PA-233	-6.533E-03	6.788E-02	5.849E-02	3.463E-02	FAIL ABUN
PA-234	1.355E-01	3.145E-01	2.823E-01	1.604E-01	NOT IDENT.
PA-234M	6.016E+00	5.578E+00	5.159E+00	2.846E+00	NOT IDENT.
U-235	1.604E-01	2.181E-01	1.885E-01	1.113E-01	FAIL ABUN
NP-237	5.069E-01	3.346E-01	2.631E-01	1.707E-01	NOT IDENT.
NP-239	3.002E-02	4.272E-01	3.714E-01	2.180E-01	NOT IDENT.
AM-241	-5.139E-02	2.069E-01	1.656E-01	1.056E-01	NOT IDENT.
CM-247	2.049E-02	4.180E-02	3.654E-02	2.132E-02	NOT IDENT.
CF-249	3.358E-02	4.705E-02	4.168E-02	2.401E-02	NOT IDENT.

CF-251	-3.208E-02	1.301E-01	1.165E-01	6.640E-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	313.2699
49.72	306.8719
57.36	0.0000
59.54	387.7527
63.29	384.1633
63.29	384.1633
64.28	388.0173
67.75	410.3922
69.67	390.0824
70.83	388.1627
72.81	419.6803
72.87	419.7383
72.87	419.7383
74.82	403.6302
74.82	403.6302
74.82	403.6302
74.97	403.7640
77.11	405.6613
77.11	405.6613
77.11	405.6613
79.69	404.8932
79.80	404.9873
80.12	409.7998
80.19	409.8598
80.57	423.8110
81.00	504.4897
81.07	504.5634
81.07	504.5634
83.79	371.8025
83.79	371.8025
85.43	406.6834
86.48	502.5378
86.55	524.0632
86.79	524.3137
86.94	524.4729
87.57	479.0687
88.03	479.5067
88.47	479.9257
89.96	299.2915
91.11	299.9635
92.59	327.1810
92.59	327.1810
93.35	327.6575
94.67	323.8098
94.87	323.9320
94.87	323.9320
95.86	318.2955
97.43	308.2739
98.44	316.0613
99.53	348.7398
100.11	330.2383
103.18	297.2813
103.37	297.3817
105.31	311.1024
106.12	335.9176
109.28	314.3198
111.00	324.8601
111.76	316.7177
116.30	318.0424
117.23	301.2510
121.12	316.1869
121.78	306.7307
122.06	294.8969
123.07	262.6720
131.20	339.9361
133.52	320.0802
136.00	247.8897

136.47	262.5231
140.51	0.0000
140.51	0.0000
143.76	269.7949
144.24	273.3528
144.24	273.3528
145.44	271.5614
152.43	284.4366
153.25	276.7788
154.21	277.1397
154.21	277.1397
156.02	312.1099
158.56	236.3099
159.00	258.2542
162.66	269.8746
163.33	243.5588
165.86	248.9852
176.60	226.2397
177.52	253.8127
181.07	0.0000
184.41	249.7061
185.72	250.0920
193.51	242.4895
197.04	266.0091
205.31	291.2231
210.85	228.5271
215.65	228.2296
222.11	244.6036
227.38	247.7961
228.16	251.7222
228.18	241.4708
235.69	234.4704
235.96	242.0503
235.96	242.0503
238.63	206.3234
238.63	206.3234
240.99	206.8012
242.00	207.0051
244.70	169.8293
252.40	176.6189
252.80	182.4170
256.23	196.4182
256.23	196.4182
260.90	0.0000
264.66	156.0445
268.22	158.0975
269.46	184.6534
269.46	184.6534
271.23	194.2719
273.65	236.7467
276.40	188.4746
277.37	177.7538
277.60	177.7899
278.00	172.9677
279.20	170.2139
279.54	186.8994
280.46	200.7615
283.69	171.8624
284.31	168.0255
285.41	161.2999
285.90	0.0000
287.50	168.4873
293.27	0.0000
295.22	153.9236
295.96	154.0206
298.57	115.3699
299.98	115.5044
299.98	115.5044
300.09	133.8381
300.09	133.8381
300.13	133.8422
301.36	133.9796
302.85	142.1284
304.50	137.5244
304.50	137.5244
304.85	124.7676
308.46	142.3813
311.90	142.7800

316.51	149.3640
319.41	154.7650
320.08	163.9553
323.87	172.1620
323.87	172.1620
328.76	153.2549
333.37	160.8888
334.37	144.0936
334.37	144.0936
338.28	139.5963
338.28	139.5963
338.32	139.6005
338.32	139.6005
338.32	139.6005
340.48	134.8936
340.55	133.2545
344.28	133.6283
351.06	132.6465
351.93	126.5087
356.01	126.4725
364.49	115.1109
366.42	0.0000
383.85	121.9910
388.16	127.6721
388.63	116.0054
391.69	143.9772
400.66	142.7006
401.81	119.1875
402.40	116.0123
404.85	124.8076
410.95	123.1498
414.70	112.6217
423.72	105.6527
427.09	103.6975
427.87	93.9195
433.94	97.5678
453.88	94.3345
463.37	92.6417
468.07	73.4256
473.00	94.2936
476.78	90.9025
477.60	106.2533
487.02	99.5895
492.35	0.0000
497.08	78.3081
511.00	97.2723
514.00	85.7893
527.90	0.0000
529.87	0.0000
531.02	77.9276
537.26	88.4247
546.56	0.0000
563.25	78.3090
569.33	94.6411
569.50	94.6509
569.70	90.8719
583.19	79.1013
600.60	96.1230
602.73	101.0343
604.72	75.4475
609.32	87.8408
609.32	87.8408
610.33	70.8215
614.28	75.7936
618.01	91.1153
621.93	74.7761
621.93	74.7761
633.25	74.1983
635.95	70.3811
636.99	69.4365
645.85	50.0811
657.76	62.5308
661.66	82.0922
661.66	82.0922
664.57	0.0000
666.33	92.5062
666.50	92.5153
677.62	75.7068

685.70	66.9787
695.00	72.2689
696.49	73.3199
696.51	73.3208
697.00	72.3322
702.65	75.5292
706.68	76.6680
711.68	55.6016
720.70	53.6392
721.93	0.0000
722.78	57.5562
722.91	57.5590
723.31	66.0347
724.19	74.5275
727.33	63.0929
733.00	59.5011
735.93	56.7369
739.50	0.0000
747.24	69.7697
752.31	41.1260
753.82	55.5530
756.73	71.0687
763.94	90.9025
765.81	66.1609
766.42	71.3466
777.92	0.0000
778.90	60.2713
783.70	73.9190
785.37	64.5914
795.86	54.0469
801.95	56.9205
810.29	59.9585
810.76	57.8655
815.77	54.8133
818.51	43.2632
832.01	65.7569
834.85	70.0734
836.80	0.0000
846.77	52.2551
856.80	67.7896
860.56	56.8068
871.09	57.0242
873.19	53.8367
875.33	0.0000
879.36	45.3233
880.51	45.3417
883.24	60.5145
884.68	49.7341
889.28	40.0695
898.04	47.7974
911.20	66.5698
911.20	66.5698
911.20	66.5698
926.50	57.0489
937.49	58.7318
944.13	51.5065
946.00	45.0961
949.00	51.5908
962.29	53.9361
964.08	82.5395
966.15	54.6667
968.97	54.7171
968.97	54.7171
968.97	54.7171
983.53	39.1383
996.26	68.3083
1001.03	51.5446
1004.73	70.3705
1037.84	52.1488
1038.76	0.0000
1048.07	57.0728
1050.41	57.1143
1050.41	57.1143
1063.66	62.1250
1085.87	51.9609
1099.45	46.3750
1112.07	36.5741
1115.54	64.9039

1120.29	51.5227
1120.29	51.5227
1120.55	51.5271
1121.30	46.6758
1131.51	0.0000
1173.23	59.2236
1177.93	66.2203
1189.05	55.5215
1204.77	61.7376
1221.41	74.0271
1231.02	68.2020
1235.36	73.3030
1238.28	59.2905
1260.41	0.0000
1271.85	35.4899
1274.44	42.6169
1274.54	39.5729
1291.59	34.6544
1298.22	0.0000
1312.11	34.8384
1332.49	35.0210
1365.19	18.6936
1368.63	0.0000
1384.29	29.2168
1408.01	34.1830
1457.56	0.0000
1460.82	3.6440
1489.16	21.3973
1505.03	21.4754
1596.21	27.2401
1620.50	14.1640
1678.03	0.0000
1690.97	14.3764
1764.49	11.9180
1764.49	11.9180
1770.23	11.9317
1771.35	68.1982
1791.20	0.0000
1836.06	7.8937

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030003

Total Uranium Activity	1.0387E+01	ug/g
Total Uranium Counting Unc.	7.5660E+00	ug/g
Total Uranium Tpu	3.8602E-06	ug/g
Total Uranium Mda	3.9298E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G248030003
*  ANALYST       : MXR1            DETECTOR    : GAM06
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 13-MAR-2010 14:31:30.73  SAMPLE ALQT: 137.710 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.927E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.338E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.571E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.737E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:32:49.05

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030004.CNF;1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:31:55
Sample ID        : G248030004 Sample quantity : 1.44170E+02 GRAM
Detector name    : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 958221 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	63.11*	111	480	1.72	125.14	119	12	1.54E-02	41.4	
2	3	75.01*	273	402	1.19	148.94	145	16	3.79E-02	13.8	1.55E+00
3	3	77.28*	485	466	1.55	153.48	145	16	6.74E-02	9.9	
4	0	86.66	140	531	1.88	172.25	170	8	1.95E-02	29.5	
5	1	90.15	101	296	1.21	179.22	177	14	1.41E-02	26.9	1.36E+00
6	1	93.06*	208	428	1.33	185.04	177	14	2.89E-02	19.9	
7	0	186.20*	164	426	1.28	371.31	365	11	2.28E-02	26.5	
8	0	209.31	82	306	1.24	417.52	413	9	1.14E-02	40.2	
9	1	238.70*	1347	232	1.68	476.31	468	21	1.87E-01	3.6	4.68E+00
10	1	241.90*	234	246	1.69	482.69	468	21	3.25E-02	15.9	
11	0	270.05	179	273	1.48	539.00	532	13	2.49E-02	20.4	
12	0	295.21*	376	260	1.45	589.32	582	13	5.22E-02	10.4	
13	0	300.30*	100	267	1.83	599.51	595	15	1.39E-02	37.7	
14	0	338.27*	249	193	1.50	675.43	670	12	3.46E-02	13.0	
15	0	352.00*	597	245	1.38	702.90	697	12	8.29E-02	6.7	
16	0	463.23	79	121	1.16	925.36	918	11	1.10E-02	29.2	
17	0	510.64*	141	126	2.43	1020.18	1013	14	1.95E-02	21.8	
18	0	583.12*	400	114	1.55	1165.15	1157	14	5.56E-02	7.7	
19	0	609.13*	428	89	1.47	1217.18	1212	13	5.95E-02	6.7	
20	0	726.76*	47	96	1.34	1452.45	1447	11	6.54E-03	43.8	
21	0	795.00	63	66	0.76	1588.96	1582	14	8.81E-03	30.0	
22	0	910.86*	304	64	1.71	1820.70	1811	20	4.23E-02	8.8	
23	1	964.30	67	66	2.20	1927.60	1920	23	9.30E-03	26.5	1.81E+00
24	1	968.60*	156	39	1.98	1936.21	1920	23	2.17E-02	12.4	
25	0	1119.70*	115	72	2.03	2238.46	2230	18	1.59E-02	20.0	
26	0	1377.27	35	20	2.14	2753.75	2746	13	4.79E-03	31.4	
27	0	1460.14	1060	34	1.63	2919.53	2912	16	1.47E-01	3.3	
28	0	1763.74*	96	4	1.64	3526.97	3520	14	1.33E-02	11.7	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:32:52

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:31:55
Sample ID         : G248030004 Sample quantity : 144.17 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 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	*	2.679E+01	3.177E+00	5.871E-01	5.769E-02	45.633
CD-109	+	88.03	*	2.321E+00	1.398E+00	1.654E+00	2.054E-01	1.403
SN-126	+	64.28		1.670E+00	1.413E+00	1.296E+00	2.193E-01	1.289
	+	86.94		9.335E-01	6.771E-01	7.224E-01	3.055E-01	1.292
	+	87.57	*	2.245E-01	1.352E-01	1.717E-01	2.124E-02	1.308
TL-208		277.37		1.749E-01	4.521E-01	7.480E-01	1.058E-01	0.234
	+	583.19	*	5.598E-01	1.003E-01	6.628E-02	6.062E-03	8.446
		860.56		5.812E-01	3.695E-01	6.603E-01	6.455E-02	0.880
BI-211		72.87		8.440E+00	5.160E+00	7.850E+00	8.991E-01	1.075
	+	351.06	*	3.829E+00	6.418E-01	3.685E-01	3.670E-02	10.391
PB-212	+	74.82		2.125E+00	6.677E-01	7.770E-01	1.171E-01	2.735
	+	77.11		2.108E+00	4.831E-01	4.334E-01	5.024E-02	4.865
	+	238.63	*	1.955E+00	2.721E-01	1.114E-01	1.331E-02	17.551
	+	300.09		2.253E+00	1.722E+00	1.461E+00	1.778E-01	1.542
BI-214	+	609.32	*	1.157E+00	1.941E-01	1.149E-01	1.145E-02	10.071
	+	1120.29		1.629E+00	6.739E-01	4.996E-01	5.410E-02	3.260
	+	1764.49		1.910E+00	4.784E-01	3.236E-01	2.838E-02	5.903
PB-214	+	74.82		3.767E+00	1.164E+00	1.377E+00	1.924E-01	2.735
	+	77.11		3.717E+00	9.051E-01	7.641E-01	1.087E-01	4.865
	+	242.00		2.060E+00	7.035E-01	6.770E-01	8.434E-02	3.042
	+	295.22		1.498E+00	3.640E-01	2.646E-01	3.298E-02	5.659
	+	351.93	*	1.390E+00	2.452E-01	1.420E-01	1.614E-02	9.785
RA-224	+	240.99	*	3.642E+00	1.226E+00	1.193E+00	1.316E-01	3.052
RA-226	+	609.32	*	1.157E+00	1.941E-01	1.149E-01	1.145E-02	10.071
	+	1120.29		1.629E+00	6.739E-01	4.996E-01	5.410E-02	3.260
	+	1764.49		1.910E+00	4.784E-01	3.236E-01	2.838E-02	5.903
AC-228	+	338.32		1.781E+00	8.799E-01	4.520E-01	1.898E-01	3.939
	+	911.20	*	2.054E+00	4.387E-01	2.437E-01	2.952E-02	8.429
	+	968.97		1.827E+00	6.391E-01	4.390E-01	1.078E-01	4.162
RA-228	+	338.32		1.781E+00	8.799E-01	4.520E-01	1.898E-01	3.939
	+	911.20	*	2.054E+00	4.387E-01	2.437E-01	2.952E-02	8.429
	+	968.97		1.827E+00	6.391E-01	4.390E-01	1.078E-01	4.162
TH-228	+	74.82		2.125E+00	6.354E-01	7.770E-01	8.985E-02	2.735
	+	77.11		2.108E+00	4.831E-01	4.334E-01	5.024E-02	4.865

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.955E+00	2.721E-01	1.114E-01	1.331E-02	17.551
	+	300.09		2.253E+00	2.193E+00	1.461E+00	8.987E-01	1.542
TH-232	+	338.32		1.781E+00	4.959E-01	4.520E-01	4.456E-02	3.939
	+	911.20	*	2.054E+00	4.387E-01	2.437E-01	2.952E-02	8.429
	+	968.97		1.827E+00	6.391E-01	4.390E-01	1.078E-01	4.162
TH-234	+	63.29	*	4.333E+00	3.693E+00	3.308E+00	6.559E-01	1.310
	+	92.59		2.640E+00	1.219E+00	1.200E+00	2.810E-01	2.200
U-235	+	89.96		1.636E+00	9.770E-01	1.656E+00	4.308E-01	0.988
	+	93.35		1.994E+00	9.308E-01	8.980E-01	2.185E-01	2.221
		143.76	*	8.527E-02	2.463E-01	3.986E-01	7.092E-02	0.214
		163.33		-3.027E-01	5.302E-01	8.285E-01	1.573E-01	-0.365
	+	185.72		1.538E-01	8.307E-02	7.701E-02	8.335E-03	1.998
		205.31		-1.989E-01	6.886E-01	9.398E-01	1.820E-01	-0.212
NP-237	+	86.48	*	6.700E-01	4.272E-01	4.854E-01	1.179E-01	1.380
		95.86		-9.127E-01	1.369E+00	1.873E+00	4.690E-01	-0.487
U-238	+	63.29	*	4.333E+00	3.693E+00	3.308E+00	6.559E-01	1.310
	+	92.59		2.640E+00	1.095E+00	1.200E+00	1.395E-01	2.200
ANH-511	+	511.00	*	1.514E-01	6.732E-02	5.299E-02	4.578E-03	2.858

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	6.249E-02	4.026E-01	6.632E-01	6.164E-02	0.094
NA-22		1274.54	*	-5.476E-02	5.096E-02	7.228E-02	6.566E-03	-0.758
NA-24		1368.63	*	-1.386E+03	5.096E-02	Half-Life too short		
SC-46		889.28	*	-1.030E-02	4.400E-02	7.108E-02	6.606E-03	-0.145
	+	1120.55		2.919E-01	1.192E-01	1.537E-01	1.307E-02	1.899
V-48		944.13		-8.269E-01	1.331E+00	2.062E+00	1.907E-01	-0.401
		983.53	*	2.596E-02	9.702E-02	1.635E-01	1.495E-02	0.159
		1312.11		-3.600E-02	1.153E-01	1.787E-01	1.684E-02	-0.201
CR-51		320.08	*	1.788E-01	5.246E-01	8.851E-01	9.393E-02	0.202
MN-54		834.85	*	-4.233E-03	4.438E-02	7.282E-02	6.609E-03	-0.058
CO-56		846.77	*	-1.711E-02	4.417E-02	7.058E-02	6.441E-03	-0.242
		1037.84		-2.263E-01	3.499E-01	5.338E-01	5.006E-02	-0.424
		1238.28		1.096E-01	1.042E-01	1.827E-01	1.642E-02	0.600
		1771.35		-7.695E-01	3.533E-01	3.536E-01	3.089E-02	-2.176
CO-57		122.06	*	-3.321E-03	3.099E-02	5.014E-02	5.051E-03	-0.066
		136.47		2.450E-02	2.562E-01	4.165E-01	4.425E-02	0.059
CO-58		810.76	*	4.890E-03	4.500E-02	7.538E-02	6.777E-03	0.065
FE-59		1099.45	*	-1.119E-01	1.190E-01	1.761E-01	1.643E-02	-0.635
		1291.59		3.154E-02	1.584E-01	2.611E-01	2.697E-02	0.121
CO-60		1173.23		-1.309E-02	5.223E-02	8.289E-02	6.747E-03	-0.158
		1332.49	*	6.994E-03	4.419E-02	7.256E-02	6.975E-03	0.096
ZN-65		1115.54	*	8.863E-03	1.142E-01	1.610E-01	1.376E-02	0.055
SE-75		121.12		1.354E-02	1.670E-01	2.723E-01	3.335E-02	0.050
		136.00		1.734E-02	4.999E-02	8.200E-02	8.301E-03	0.211
		264.66	*	-3.200E-03	6.433E-02	9.330E-02	1.023E-02	-0.034
		279.54		1.047E-01	1.304E-01	2.248E-01	2.489E-02	0.466

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	400.66			-1.405E-02	3.207E-01	5.258E-01	5.761E-02	-0.027
SR-85	514.00	*		1.044E-01	5.569E-02	8.939E-02	7.723E-03	1.168
Y-88	898.04			4.113E-03	4.772E-02	7.936E-02	7.432E-03	0.052
	1836.06	*		-2.574E-02	3.484E-02	4.737E-02	3.989E-03	-0.543
Y-91	1204.77	*		1.181E+01	2.879E+01	4.824E+01	4.066E+00	0.245
NB-94	702.65	*		-1.223E-02	4.052E-02	6.645E-02	5.610E-03	-0.184
	871.09			2.391E-02	3.737E-02	6.507E-02	6.001E-03	0.368
NB-95	765.81	*		8.068E-02	5.656E-02	1.013E-01	8.879E-03	0.796
NB-95M	235.69	*		4.467E-01	1.997E-01	3.128E-01	3.769E-02	1.428
ZR-95	724.19			8.305E-03	1.388E-01	2.010E-01	1.867E-02	0.041
	756.73	*		2.695E-02	8.159E-02	1.394E-01	1.340E-02	0.193
MO-99	140.51			-7.209E-05	8.159E-02	Half-Life	too short	
	181.07			-5.689E-05	8.159E-02	Half-Life	too short	
	366.42			-3.254E-04	8.159E-02	Half-Life	too short	
	739.50	*		-5.367E-05	8.159E-02	Half-Life	too short	
	777.92			-2.774E-04	8.159E-02	Half-Life	too short	
TC-99M	140.51	*		-5.189E+18	8.159E-02	Half-Life	too short	
RU-103	497.08	*		-2.404E-02	4.632E-02	7.209E-02	1.008E-02	-0.334
	610.33			1.351E+01	2.855E+00	3.354E+00	5.452E-01	4.028
RH-106	621.93	*		-1.530E-01	3.757E-01	5.845E-01	7.666E-02	-0.262
	1050.41			4.864E-01	3.058E+00	5.071E+00	4.506E-01	0.096
RU-106	621.93	*		-1.530E-01	3.754E-01	5.845E-01	4.912E-02	-0.262
	1050.41			4.864E-01	3.058E+00	5.071E+00	4.506E-01	0.096
AG-108M	433.94	*		-4.908E-03	3.409E-02	5.533E-02	4.890E-03	-0.089
	614.28			-2.802E-02	4.864E-02	6.325E-02	5.517E-03	-0.443
	722.91			1.850E-02	4.683E-02	7.019E-02	6.195E-03	0.264
AG-110M	657.76	*		1.417E-02	3.642E-02	6.284E-02	5.348E-03	0.226
	677.62			-1.991E-01	3.297E-01	5.259E-01	4.505E-02	-0.379
	706.68			-4.154E-02	2.371E-01	3.915E-01	3.412E-02	-0.106
	763.94			-3.954E-02	1.959E-01	3.202E-01	2.877E-02	-0.123
	884.68			-4.771E-02	5.375E-02	8.102E-02	7.724E-03	-0.589
	937.49			1.269E-02	1.235E-01	2.052E-01	1.960E-02	0.062
	1384.29			9.854E-02	1.746E-01	2.842E-01	2.797E-02	0.347
	1505.03			-1.344E-01	2.814E-01	4.332E-01	4.140E-02	-0.310
SN-113	391.69	*		5.013E-04	5.622E-02	9.256E-02	8.039E-03	0.005
CD-115	260.90			7.474E-04	5.622E-02	Half-Life	too short	
	492.35			-2.487E-04	5.622E-02	Half-Life	too short	
	527.90	*		-3.089E-05	5.622E-02	Half-Life	too short	
SN-117M	156.02			1.928E-02	3.974E+00	6.408E+00	6.679E-01	0.003
	158.56	*		-1.922E-03	9.596E-02	1.545E-01	1.620E-02	-0.012
TE-123M	159.00	*		1.056E-02	3.597E-02	5.861E-02	6.176E-03	0.180
SB-124	602.73			1.226E-02	5.041E-02	7.192E-02	6.095E-03	0.171
	645.85			-3.976E-01	5.631E-01	8.444E-01	7.443E-02	-0.471
	722.78			2.058E-01	5.101E-01	7.651E-01	6.693E-02	0.269
	1690.97	*		1.601E-03	7.877E-02	1.304E-01	1.228E-02	0.012
SB-125	427.87	*		-1.620E-02	1.005E-01	1.629E-01	1.418E-02	-0.099
	463.37			7.626E-01	4.509E-01	6.062E-01	5.617E-02	1.258
	600.60			1.228E-02	1.885E-01	3.054E-01	2.788E-02	0.040
	635.95			-3.270E-02	2.996E-01	4.768E-01	4.323E-02	-0.069

---- 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	*		-4.112E+00	1.301E+01	2.095E+01	2.493E+00	-0.196
I-126	388.63			8.067E-02	3.022E-01	4.875E-01	4.148E-02	0.165
	666.33	*		1.299E-02	3.459E-01	5.819E-01	4.798E-02	0.022
	753.82			1.272E+00	2.760E+00	4.762E+00	4.145E-01	0.267
SB-126	414.70			3.326E-03	1.333E-01	2.191E-01	1.863E-02	0.015
	666.50			1.231E-02	1.215E-01	2.052E-01	1.692E-02	0.060
	695.00			-1.861E-02	1.390E-01	2.307E-01	1.938E-02	-0.081
	697.00			3.585E-01	4.764E-01	8.334E-01	7.011E-02	0.430
	720.70	*		2.676E-01	2.614E-01	4.161E-01	3.552E-02	0.643
	856.80			-3.862E-01	8.798E-01	1.408E+00	1.291E-01	-0.274
SB-127	252.40			-3.311E+00	1.704E+01	2.821E+01	1.206E+01	-0.117
	473.00			-1.137E+00	6.621E+00	1.067E+01	1.583E+00	-0.107
	685.70	*		1.534E+00	5.203E+00	8.888E+00	1.198E+00	0.173
	783.70			1.552E+01	1.433E+01	2.534E+01	3.704E+00	0.612
I-131	80.19			-1.684E+00	1.240E+01	1.777E+01	2.105E+00	-0.095
	284.31			1.148E+00	3.204E+00	5.428E+00	6.060E-01	0.212
	364.49	*		-9.875E-02	2.338E-01	3.759E-01	3.649E-02	-0.263
	636.99			1.291E+00	2.979E+00	4.962E+00	4.422E-01	0.260
TE-132	49.72			1.030E+02	2.382E+02	4.013E+02	6.772E+01	0.257
	111.76			-1.522E+02	1.843E+02	2.888E+02	4.124E+01	-0.527
	116.30			2.660E+01	1.620E+02	2.652E+02	3.769E+01	0.100
	228.16	*		-2.814E+00	3.908E+00	6.321E+00	1.184E+00	-0.445
BA-133	81.00			-1.808E-01	1.447E-01	1.916E-01	3.351E-02	-0.944
	276.40			3.188E-01	4.452E-01	7.006E-01	1.091E-01	0.455
	302.85			1.055E-01	1.795E-01	2.694E-01	3.877E-02	0.392
	356.01	*		2.211E-02	5.690E-02	8.386E-02	1.133E-02	0.264
	383.85			-2.008E-01	3.433E-01	5.447E-01	6.782E-02	-0.369
I-133	529.87	*		-3.391E-01	3.433E-01	Half-Life	too short	
	875.33			-2.761E+01	3.433E-01	Half-Life	too short	
	1298.22			2.939E+01	3.433E-01	Half-Life	too short	
CS-134	563.25			1.489E-01	4.226E-01	7.000E-01	6.064E-02	0.213
	569.33			6.703E-02	2.247E-01	3.709E-01	3.221E-02	0.181
	604.72			-2.243E-02	4.133E-02	5.372E-02	4.561E-03	-0.417
	795.86	*		1.294E-01	7.847E-02	9.927E-02	8.897E-03	1.303
	801.95			-1.600E-01	5.287E-01	7.207E-01	6.470E-02	-0.222
	1365.19			1.573E+00	1.237E+00	2.371E+00	2.368E-01	0.663
CS-135	268.22	*		2.743E-01	2.283E-01	3.512E-01	4.214E-02	0.781
I-135	546.56			-8.399E+16	2.283E-01	Half-Life	too short	
	836.80			7.737E+17	2.283E-01	Half-Life	too short	
	1038.76			-4.721E+16	2.283E-01	Half-Life	too short	
	1131.51			1.005E+17	2.283E-01	Half-Life	too short	
	1260.41	*		-8.725E+16	2.283E-01	Half-Life	too short	
	1457.56			5.464E+19	2.283E-01	Half-Life	too short	
	1678.03			5.682E+17	2.283E-01	Half-Life	too short	
	1791.20			-4.806E+16	2.283E-01	Half-Life	too short	
CS-136	153.25			1.898E+00	1.521E+00	2.543E+00	2.994E-01	0.746
	176.60			5.099E-02	8.646E-01	1.391E+00	1.598E-01	0.037
	273.65			-4.395E-01	1.019E+00	1.438E+00	1.648E-01	-0.306
	340.55			8.695E-01	3.200E-01	5.109E-01	5.163E-02	1.702

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		818.51		5.666E-02	1.153E-01	1.990E-01	1.795E-02	0.285
		1048.07	*	-6.818E-02	1.835E-01	2.899E-01	2.683E-02	-0.235
		1235.36		8.697E-01	9.289E-01	1.611E+00	1.908E-01	0.540
BA-137M		661.66	*	-1.110E-02	3.825E-02	6.285E-02	5.167E-03	-0.177
CS-137		661.66	*	-1.172E-02	4.041E-02	6.640E-02	5.470E-03	-0.177
CE-139		165.86	*	-1.045E-02	3.743E-02	5.951E-02	6.352E-03	-0.176
BA-140		162.66		-1.231E-01	1.435E+00	2.302E+00	2.548E-01	-0.053
		304.85		8.155E-01	2.407E+00	3.550E+00	1.061E+00	0.230
		423.72		7.594E-01	3.095E+00	5.139E+00	1.689E+00	0.148
		537.26	*	2.501E-01	4.483E-01	7.426E-01	2.519E-01	0.337
LA-140		328.76		3.509E-01	5.349E-01	9.117E-01	9.561E-02	0.385
		487.02		2.458E-01	2.207E-01	3.854E-01	3.533E-02	0.638
		815.77		2.587E-02	5.204E-01	8.673E-01	8.643E-02	0.030
		1596.21	*	-1.915E-01	1.610E-01	2.229E-01	2.090E-02	-0.859
CE-141		145.44	*	3.427E-02	8.603E-02	1.411E-01	1.458E-02	0.243
CE-143		57.36		-2.223E-02	8.603E-02	Half-Life	too short	
		293.27	*	3.275E-02	8.603E-02	Half-Life	too short	
		664.57		1.241E-02	8.603E-02	Half-Life	too short	
		721.93		4.068E-02	8.603E-02	Half-Life	too short	
CE-144		80.12		-9.121E-02	3.746E+00	5.396E+00	6.342E-01	-0.017
		133.52	*	-1.374E-01	2.515E-01	3.976E-01	6.416E-02	-0.346
PM-144		476.78		2.824E-02	7.369E-02	1.232E-01	1.155E-02	0.229
		618.01		4.811E-02	3.858E-02	6.599E-02	5.720E-03	0.729
		696.49	*	2.879E-02	4.280E-02	7.448E-02	6.268E-03	0.387
PR-144		696.51	*	2.480E+00	3.199E+00	5.598E+00	4.708E-01	0.443
		1489.16		-1.157E+01	1.295E+01	1.829E+01	1.752E+00	-0.632
PM-146		453.88	*	4.288E-02	4.763E-02	8.201E-02	8.672E-03	0.523
		633.25		-1.505E+00	1.659E+00	2.290E+00	8.735E-01	-0.657
		735.93		9.697E-02	1.638E-01	2.814E-01	7.885E-02	0.345
		747.24		-8.272E-02	1.036E-01	1.604E-01	2.344E-02	-0.516
ND-147	+	91.11		8.236E-01	4.547E-01	1.009E+00	1.250E-01	0.816
		319.41		1.162E+00	6.232E+00	1.044E+01	1.070E+00	0.111
		531.02	*	-6.622E-01	9.874E-01	1.512E+00	2.262E-01	-0.438
PM-149		285.90	*	5.359E-04	9.874E-01	Half-Life	too short	
EU-152		121.78		3.124E-03	8.765E-02	1.426E-01	1.596E-02	0.022
		244.70		4.243E-01	4.439E-01	6.802E-01	7.497E-02	0.624
		344.28	*	-2.590E-02	1.373E-01	1.828E-01	1.860E-02	-0.142
		778.90		-2.036E-01	2.778E-01	4.332E-01	3.822E-02	-0.470
	+	964.08		8.434E-01	4.529E-01	6.892E-01	6.338E-02	1.224
		1085.87		-3.633E-01	4.312E-01	6.421E-01	5.591E-02	-0.566
		1112.07		-1.077E-01	3.913E-01	5.246E-01	4.489E-02	-0.205
		1408.01		1.163E-01	2.108E-01	3.722E-01	3.586E-02	0.312
GD-153		69.67		-5.431E-01	2.925E+00	4.198E+00	4.791E-01	-0.129
		97.43	*	-1.871E-02	1.256E-01	1.786E-01	1.971E-02	-0.105
		103.18		-1.955E-01	1.440E-01	2.210E-01	2.337E-02	-0.885
EU-154		123.07		-2.442E-02	6.292E-02	1.006E-01	1.255E-02	-0.243
		723.31		-3.394E-02	2.240E-01	3.176E-01	2.995E-02	-0.107
		873.19		-8.923E-02	3.086E-01	4.968E-01	6.133E-02	-0.180
		996.26		-5.265E-01	3.952E-01	5.419E-01	9.599E-02	-0.972

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EU-155	+	1004.73		-1.051E-02	2.236E-01	3.651E-01	4.372E-02	-0.029
		1274.44	*	-1.427E-01	1.424E-01	2.030E-01	2.381E-02	-0.703
		86.55		2.730E-01	1.644E-01	2.357E-01	2.907E-02	1.158
		105.31	*	-1.034E-02	1.302E-01	2.118E-01	2.231E-02	-0.049
TB-160	+	86.79		7.724E-01	4.651E-01	6.589E-01	8.102E-02	1.172
		197.04		-9.179E-02	7.501E-01	1.193E+00	1.301E-01	-0.077
		215.65		3.108E-01	9.795E-01	1.628E+00	1.791E-01	0.191
		298.57		3.454E-01	2.419E-01	2.736E-01	2.895E-02	1.262
HO-166M		879.36	*	9.725E-02	1.642E-01	2.847E-01	2.635E-02	0.342
		962.29		2.036E+00	7.714E-01	1.348E+00	1.240E-01	1.510
		966.15		1.767E+00	3.709E-01	6.930E-01	6.370E-02	2.549
		1177.93		1.560E-01	4.303E-01	7.217E-01	5.906E-02	0.216
		1271.85		-1.414E-01	8.197E-01	1.299E+00	1.176E-01	-0.109
		80.57		-4.593E-01	4.108E-01	5.570E-01	6.563E-02	-0.825
		184.41		1.627E-01	5.187E-02	7.947E-02	8.594E-03	2.048
		280.46		-6.475E-02	9.767E-02	1.575E-01	1.701E-02	-0.411
		410.95		9.858E-02	2.893E-01	4.840E-01	4.108E-02	0.204
		711.68	*	-1.943E-02	6.122E-02	9.972E-02	8.466E-03	-0.195
		752.31		1.150E-01	2.885E-01	4.956E-01	4.310E-02	0.232
		810.29		-3.295E-02	6.439E-02	1.022E-01	9.165E-03	-0.322
TA-182		67.75		-7.474E-02	2.013E-01	2.856E-01	3.259E-02	-0.262
		100.11		2.434E-01	2.392E-01	3.939E-01	4.252E-02	0.618
		152.43		6.322E-01	4.490E-01	7.551E-01	7.809E-02	0.837
		222.11		8.626E-02	4.256E-01	7.219E-01	7.956E-02	0.119
IR-192	+	1121.30		5.597E-01	2.496E-01	4.144E-01	3.522E-02	1.351
		1189.05		-1.897E-01	3.566E-01	5.487E-01	4.546E-02	-0.346
		1221.41	*	-5.233E-02	2.261E-01	3.585E-01	3.077E-02	-0.146
		1231.02		-2.016E-01	5.786E-01	9.084E-01	7.877E-02	-0.222
		295.96		1.182E+00	2.772E-01	3.506E-01	3.740E-02	3.372
		308.46		-1.180E-01	1.343E-01	1.799E-01	1.883E-02	-0.656
HG-203		316.51	*	-4.095E-03	4.348E-02	7.187E-02	7.410E-03	-0.057
		468.07		7.208E-03	9.100E-02	1.294E-01	1.196E-02	0.056
		70.83		6.968E-01	2.399E+00	3.516E+00	6.231E-01	0.198
		72.87		2.332E+00	1.457E+00	2.169E+00	3.745E-01	1.075
BI-207		279.20	*	5.528E-02	4.905E-02	8.542E-02	9.387E-03	0.647
		72.81		4.331E-01	2.951E-01	4.476E-01	5.126E-02	0.968
	+	74.97		6.127E-01	1.831E-01	3.118E-01	3.588E-02	1.965
		569.70		1.179E-02	3.460E-02	5.728E-02	4.907E-03	0.206
PB-210		1063.66	*	-3.261E-02	6.161E-02	9.566E-02	8.439E-03	-0.341
		1770.23		1.533E-01	4.235E-01	6.678E-01	5.838E-02	0.229
		46.54	*	-1.275E+00	1.193E+01	1.942E+01	2.391E+00	-0.066
		404.85	*	-5.961E-01	9.393E-01	1.415E+00	6.843E-01	-0.421
PB-211		427.09		-1.121E-01	1.655E+00	2.700E+00	1.249E+00	-0.042
		832.01		3.108E-01	1.124E+00	1.885E+00	9.789E-01	0.165
	+	727.33	*	1.004E+00	8.877E-01	1.277E+00	1.587E-01	0.786
		785.37		3.418E+00	3.659E+00	6.464E+00	5.723E-01	0.529
RN-219	+	1620.50		2.754E+00	2.292E+00	4.473E+00	4.163E-01	0.616
		271.23		1.144E+00	4.879E-01	5.656E-01	6.911E-02	2.023
		401.81	*	3.191E-01	4.865E-01	8.252E-01	1.219E-01	0.387

---- 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		-4.156E-01	3.228E-01	4.323E-01	5.108E-02	-0.962
		83.79		1.665E-01	2.392E-01	2.639E-01	3.173E-02	0.631
		94.87		1.423E+00	6.922E-01	1.053E+00	1.192E-01	1.351
		144.24		8.472E-02	8.360E-01	1.343E+00	1.483E-01	0.063
		154.21		1.528E-01	4.812E-01	7.850E-01	8.694E-02	0.195
	+	269.46		8.889E-01	3.762E-01	4.453E-01	4.913E-02	1.996
		323.87	*	-6.116E-01	8.215E-01	1.303E+00	2.364E-01	-0.470
	+	338.28		7.066E+00	2.057E+00	2.670E+00	3.467E-01	2.646
		79.69		2.799E+00	1.918E+00	2.836E+00	5.383E-01	0.987
		235.96		9.233E-01	2.555E-01	3.935E-01	4.889E-02	2.346
AC-227		256.23	*	-2.156E-01	2.895E-01	4.657E-01	6.444E-02	-0.463
	+	299.98		2.478E+00	1.902E+00	1.905E+00	2.685E-01	1.301
		304.50		7.003E-01	1.979E+00	2.931E+00	5.152E-01	0.239
		334.37		1.339E+00	2.241E+00	3.348E+00	5.477E-01	0.400
		79.80		1.176E+00	2.483E+00	3.635E+00	8.429E-01	0.323
TH-227		235.96		9.233E-01	2.536E-01	3.935E-01	4.700E-02	2.346
		256.23	*	-2.156E-01	2.898E-01	4.657E-01	7.083E-02	-0.463
	+	299.98		2.478E+00	1.902E+00	1.905E+00	2.685E-01	1.301
		304.50		7.003E-01	1.979E+00	2.931E+00	5.152E-01	0.239
		334.37		1.339E+00	2.241E+00	3.348E+00	5.477E-01	0.400
TH-229	+	85.43		5.652E-01	3.403E-01	4.874E-01	5.930E-02	1.160
		88.47		5.676E-01	2.574E-01	2.990E-01	3.685E-02	1.899
		193.51	*	-3.184E-01	6.285E-01	9.813E-01	1.068E-01	-0.324
		210.85		1.066E+00	1.214E+00	1.855E+00	2.037E-01	0.574
PA-231		283.69	*	-5.974E-02	1.683E+00	2.802E+00	4.469E-01	-0.021
	+	301.36		1.592E+00	1.220E+00	1.216E+00	1.652E-01	1.309
TH-231		81.07		-4.156E-01	3.228E-01	4.323E-01	5.108E-02	-0.962
		83.79		1.665E-01	2.392E-01	2.639E-01	3.173E-02	0.631
		94.87		1.423E+00	6.922E-01	1.053E+00	1.192E-01	1.351
		144.24		8.472E-02	8.360E-01	1.343E+00	1.483E-01	0.063
		154.21		1.528E-01	4.812E-01	7.850E-01	8.694E-02	0.195
	+	269.46		8.889E-01	3.762E-01	4.453E-01	4.913E-02	1.996
		323.87	*	-6.116E-01	8.215E-01	1.303E+00	2.364E-01	-0.470
	+	338.28		7.066E+00	2.057E+00	2.670E+00	3.467E-01	2.646
	+	300.13		1.121E+00	8.649E-01	8.624E-01	1.383E-01	1.300
		311.90	*	6.616E-03	7.325E-02	1.216E-01	1.287E-02	0.054
PA-234		340.48		2.756E+00	1.138E+00	1.533E+00	3.760E-01	1.798
		94.67		7.153E-01	2.661E-01	3.948E-01	5.697E-02	1.812
		98.44		1.042E-01	1.455E-01	1.949E-01	1.095E-01	0.534
		111.00		-1.970E-01	2.236E-01	3.498E-01	4.643E-02	-0.563
		131.20		8.836E-02	1.311E-01	2.173E-01	2.181E-02	0.407
		569.50		9.410E-02	3.079E-01	5.085E-01	4.356E-02	0.185
		733.00		-4.959E-02	4.828E-01	6.866E-01	1.523E-01	-0.072
		880.51		1.899E-02	3.160E-01	5.184E-01	4.800E-02	0.037
		883.24		2.066E-02	2.989E-01	4.966E-01	3.342E-01	0.042
		926.50		-7.887E-02	2.031E-01	3.217E-01	8.207E-02	-0.245
PA-234M		946.00	*	7.484E-02	3.275E-01	5.496E-01	1.047E-01	0.136
		949.00		4.534E-01	4.797E-01	8.525E-01	7.873E-02	0.532
		766.42		2.374E+01	1.826E+01	2.527E+01	1.283E+01	0.940

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		4.184E+00	5.013E+00	8.535E+00	8.851E-01	0.490
	99.53			2.778E-01	2.200E-01	3.538E-01	3.836E-02	0.785
	103.37			-8.200E-02	1.250E-01	1.987E-01	2.099E-02	-0.413
	106.12			6.985E-02	1.034E-01	1.725E-01	1.795E-02	0.405
	117.23	*		3.133E-01	4.928E-01	8.191E-01	8.267E-02	0.383
	228.18			-1.854E-01	2.532E-01	4.118E-01	4.543E-02	-0.450
AM-241	277.60			9.028E-02	2.052E-01	3.406E-01	3.688E-02	0.265
	59.54	*		-1.284E-01	3.029E-01	4.298E-01	5.045E-02	-0.299
CM-247	278.00			2.316E-01	8.610E-01	1.454E+00	1.574E-01	0.159
	287.50			9.011E-01	1.648E+00	2.526E+00	2.708E-01	0.357
CF-249	402.40	*		5.766E-02	4.445E-02	7.785E-02	6.584E-03	0.741
	252.80			-2.615E-01	1.061E+00	1.757E+00	1.932E-01	-0.149
	333.37			7.575E-02	2.424E-01	3.563E-01	3.551E-02	0.213
CF-251	388.16	*		2.434E-02	4.842E-02	7.900E-02	6.734E-03	0.308
	177.52	*		4.518E-02	1.599E-01	2.541E-01	2.734E-02	0.178
	227.38			-1.300E-01	4.077E-01	6.766E-01	7.463E-02	-0.192
	285.41			9.041E-01	2.595E+00	4.394E+00	4.722E-01	0.206

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]G248030004
* Acquisition date   : 13-MAR-2010 14:31:55 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 02:00:01.36                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248030004 Analyst initials: MXR1
* Batch Number       : 958221 Sample Quantity : 1.4417E+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	2.679E+01	3.113E+00	5.900E-01	0.000E+00
CD-109	2.321E+00	1.370E+00	1.768E+00	0.000E+00
SN-126	2.245E-01	1.325E-01	1.835E-01	0.000E+00
TL-208	5.598E-01	9.832E-02	6.802E-02	0.000E+00
BI-211	3.829E+00	6.289E-01	3.824E-01	0.000E+00
PB-212	1.955E+00	2.667E-01	1.165E-01	0.000E+00
BI-214	1.157E+00	1.902E-01	1.178E-01	0.000E+00
PB-214	1.390E+00	2.403E-01	1.474E-01	0.000E+00
RA-224	3.642E+00	1.201E+00	1.249E+00	0.000E+00
RA-226	1.157E+00	1.902E-01	1.178E-01	0.000E+00
AC-228	2.054E+00	4.299E-01	2.476E-01	0.000E+00
RA-228	2.054E+00	4.299E-01	2.476E-01	0.000E+00
TH-228	1.955E+00	2.667E-01	1.165E-01	0.000E+00
TH-232	2.054E+00	4.299E-01	2.476E-01	0.000E+00
TH-234	4.333E+00	3.619E+00	3.558E+00	0.000E+00
U-235	8.527E-02	2.414E-01	4.216E-01	0.000E+00
NP-237	6.700E-01	4.186E-01	5.189E-01	0.000E+00
U-238	4.333E+00	3.619E+00	3.558E+00	0.000E+00
ANH-511	1.514E-01	6.598E-02	5.454E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	6.249E-02	3.945E-01	6.836E-01	0.000E+00 NOT IDENT.
NA-22	-5.476E-02	4.994E-02	7.287E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.961E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.030E-02	4.312E-02	7.226E-02	0.000E+00 FAIL ABUN
V-48	2.596E-02	9.508E-02	1.659E-01	0.000E+00 NOT IDENT.
CR-51	1.788E-01	5.142E-01	9.204E-01	0.000E+00 NOT IDENT.
MN-54	-4.233E-03	4.350E-02	7.414E-02	0.000E+00 NOT IDENT.
CO-56	-1.711E-02	4.328E-02	7.183E-02	0.000E+00 NOT IDENT.

CO-57	-3.321E-03	3.037E-02	5.322E-02	0.000E+00	NOT IDENT.
CO-58	4.890E-03	4.410E-02	7.679E-02	0.000E+00	NOT IDENT.
FE-59	-1.119E-01	1.167E-01	1.782E-01	0.000E+00	NOT IDENT.
CO-60	6.994E-03	4.330E-02	7.308E-02	0.000E+00	NOT IDENT.
ZN-65	8.863E-03	1.119E-01	1.629E-01	0.000E+00	NOT IDENT.
SE-75	-3.200E-03	6.304E-02	9.742E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.457E-02	9.200E-02	0.000E+00	NOT IDENT.
Y-88	-2.574E-02	3.414E-02	4.736E-02	0.000E+00	NOT IDENT.
Y-91	1.181E+01	2.822E+01	4.870E+01	0.000E+00	NOT IDENT.
NB-94	-1.223E-02	3.971E-02	6.791E-02	0.000E+00	NOT IDENT.
NB-95	8.068E-02	5.543E-02	1.034E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.957E-01	3.275E-01	0.000E+00	NOT IDENT.
ZR-95	2.695E-02	7.996E-02	1.423E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.749E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.129E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.404E-02	4.539E-02	7.425E-02	0.000E+00	FAIL ABUN
RH-106	-1.530E-01	3.682E-01	5.990E-01	0.000E+00	NOT IDENT.
RU-106	-1.530E-01	3.679E-01	5.990E-01	0.000E+00	NOT IDENT.
AG-108M	-4.908E-03	3.341E-02	5.716E-02	0.000E+00	NOT IDENT.
AG-110M	1.417E-02	3.569E-02	6.432E-02	0.000E+00	NOT IDENT.
SN-113	5.013E-04	5.509E-02	9.583E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.105E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.922E-03	9.404E-02	1.631E-01	0.000E+00	NOT IDENT.
TE-123M	1.056E-02	3.525E-02	6.186E-02	0.000E+00	NOT IDENT.
SB-124	1.601E-03	7.719E-02	1.306E-01	0.000E+00	NOT IDENT.
SB-125	-1.620E-02	9.846E-02	1.683E-01	0.000E+00	FAIL ABUN
TE-125M	-4.112E+00	1.275E+01	2.229E+01	0.000E+00	NOT IDENT.
I-126	1.299E-02	3.390E-01	5.954E-01	0.000E+00	NOT IDENT.
SB-126	2.676E-01	2.562E-01	4.250E-01	0.000E+00	NOT IDENT.
SB-127	1.534E+00	5.099E+00	9.089E+00	0.000E+00	NOT IDENT.
I-131	-9.875E-02	2.291E-01	3.898E-01	0.000E+00	NOT IDENT.
TE-132	-2.814E+00	3.830E+00	6.622E+00	0.000E+00	NOT IDENT.
BA-133	2.211E-02	5.577E-02	8.700E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.720E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.690E-02	1.012E-01	0.000E+00	FAIL ABUN
CS-135	2.743E-01	2.237E-01	3.666E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.483E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.818E-02	1.798E-01	2.936E-01	0.000E+00	NOT IDENT.
BA-137M	-1.110E-02	3.749E-02	6.432E-02	0.000E+00	NOT IDENT.
CS-137	-1.172E-02	3.960E-02	6.795E-02	0.000E+00	NOT IDENT.
CE-139	-1.045E-02	3.668E-02	6.275E-02	0.000E+00	NOT IDENT.
BA-140	2.501E-01	4.393E-01	7.635E-01	0.000E+00	NOT IDENT.
LA-140	-1.915E-01	1.578E-01	2.236E-01	0.000E+00	NOT IDENT.
CE-141	3.427E-02	8.431E-02	1.492E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.046E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.374E-01	2.465E-01	4.212E-01	0.000E+00	NOT IDENT.
PM-144	2.879E-02	4.195E-02	7.613E-02	0.000E+00	NOT IDENT.
PR-144	2.480E+00	3.135E+00	5.722E+00	0.000E+00	NOT IDENT.
PM-146	4.288E-02	4.668E-02	8.463E-02	0.000E+00	NOT IDENT.
ND-147	-6.622E-01	9.676E-01	1.555E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.702E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-2.590E-02	1.345E-01	1.897E-01	0.000E+00	FAIL ABUN
GD-153	-1.871E-02	1.231E-01	1.904E-01	0.000E+00	NOT IDENT.
EU-154	-1.427E-01	1.395E-01	2.047E-01	0.000E+00	NOT IDENT.
EU-155	-1.034E-02	1.276E-01	2.255E-01	0.000E+00	FAIL ABUN
TB-160	9.725E-02	1.609E-01	2.895E-01	0.000E+00	FAIL ABUN
HO-166M	-1.943E-02	6.000E-02	1.019E-01	0.000E+00	NOT IDENT.
TA-182	-5.233E-02	2.216E-01	3.618E-01	0.000E+00	NOT IDENT.
IR-192	-4.095E-03	4.261E-02	7.475E-02	0.000E+00	FAIL ABUN
HG-203	5.528E-02	4.807E-02	8.909E-02	0.000E+00	NOT IDENT.
BI-207	-3.261E-02	6.038E-02	9.684E-02	0.000E+00	FAIL ABUN
PB-210	-1.275E+00	1.169E+01	2.102E+01	0.000E+00	NOT IDENT.
PB-211	-5.961E-01	9.205E-01	1.464E+00	0.000E+00	NOT IDENT.
BI-212	1.004E+00	8.700E-01	1.304E+00	0.000E+00	FAIL ABUN
RN-219	3.191E-01	4.767E-01	8.538E-01	0.000E+00	FAIL ABUN
RA-223	-6.116E-01	8.051E-01	1.354E+00	0.000E+00	FAIL ABUN
AC-227	-2.156E-01	2.837E-01	4.865E-01	0.000E+00	FAIL ABUN
TH-227	-2.156E-01	2.840E-01	4.865E-01	0.000E+00	FAIL ABUN
TH-229	-3.184E-01	6.159E-01	1.031E+00	0.000E+00	FAIL ABUN
PA-231	-5.974E-02	1.649E+00	2.922E+00	0.000E+00	FAIL ABUN
TH-231	-6.116E-01	8.051E-01	1.354E+00	0.000E+00	FAIL ABUN
PA-233	6.616E-03	7.179E-02	1.265E-01	0.000E+00	FAIL ABUN
PA-234	7.484E-02	3.209E-01	5.580E-01	0.000E+00	NOT IDENT.
PA-234M	4.184E+00	4.912E+00	8.653E+00	0.000E+00	NOT IDENT.
NP-239	3.133E-01	4.830E-01	8.701E-01	0.000E+00	NOT IDENT.
AM-241	-1.284E-01	2.968E-01	4.630E-01	0.000E+00	NOT IDENT.
CM-247	5.766E-02	4.356E-02	8.055E-02	0.000E+00	NOT IDENT.
CF-249	2.434E-02	4.745E-02	8.181E-02	0.000E+00	NOT IDENT.

CF-251	4.518E-02	1.567E-01	2.675E-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]G248030004.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:31:55
Sample ID          : G248030004 Sample quantity : 1.44170E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958221 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	1060	10.66*	9.665E-01	2.679E+01	2.679E+01	11.86
CD-109	88.03	140	3.70*	4.394E+00	2.245E+00	2.321E+00	60.21
SN-126	64.28	111	9.60	1.796E+00	1.670E+00	1.670E+00	84.59
	86.94	140	8.90	4.394E+00	9.335E-01	9.335E-01	72.53
	87.57	140	37.00*	4.394E+00	2.245E-01	2.245E-01	60.21
TL-208	277.37	-----	6.60	3.705E+00	-----	Line Not Found	-----
	583.19	400	85.00*	2.191E+00	5.598E-01	5.598E-01	17.92
	860.56	-----	12.50	1.576E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	597	12.92*	3.140E+00	3.829E+00	3.829E+00	16.76
PB-212	74.82	273	10.28	3.250E+00	2.125E+00	2.125E+00	31.42
	77.11	485	17.10	3.503E+00	2.108E+00	2.108E+00	22.91
	238.63	1347	43.60*	4.115E+00	1.955E+00	1.955E+00	13.92
	300.09	100	3.30	3.505E+00	2.253E+00	2.253E+00	76.41
BI-214	609.32	428	45.49*	2.118E+00	1.157E+00	1.157E+00	16.78
	1120.29	115	14.92	1.227E+00	1.628E+00	1.629E+00	41.38
	1764.49	96	15.30	8.555E-01	1.910E+00	1.910E+00	25.04
PB-214	74.82	273	5.80	3.250E+00	3.766E+00	3.767E+00	30.91
	77.11	485	9.70	3.503E+00	3.717E+00	3.717E+00	24.35
	242.00	234	7.25	4.077E+00	2.060E+00	2.060E+00	34.15
	295.22	376	18.42	3.547E+00	1.498E+00	1.498E+00	24.31
	351.93	597	35.60*	3.140E+00	1.390E+00	1.390E+00	17.65
RA-224	240.99	234	4.10*	4.077E+00	3.642E+00	3.642E+00	33.66
RA-226	609.32	428	45.49*	2.118E+00	1.157E+00	1.157E+00	16.78
	1120.29	115	14.92	1.227E+00	1.628E+00	1.629E+00	41.38
	1764.49	96	15.30	8.555E-01	1.910E+00	1.910E+00	25.04
AC-228	338.32	249	11.27	3.228E+00	1.781E+00	1.781E+00	49.41
	911.20	304	25.80*	1.495E+00	2.054E+00	2.054E+00	21.36
	968.97	156	15.80	1.410E+00	1.827E+00	1.827E+00	34.98
RA-228	338.32	249	11.27	3.228E+00	1.781E+00	1.781E+00	49.41
	911.20	304	25.80*	1.495E+00	2.054E+00	2.054E+00	21.36
	968.97	156	15.80	1.410E+00	1.827E+00	1.827E+00	34.98

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	273	10.28	3.250E+00	2.125E+00	2.125E+00	29.90
	77.11	485	17.10	3.503E+00	2.108E+00	2.108E+00	22.91
	238.63	1347	43.60*	4.115E+00	1.955E+00	1.955E+00	13.92
	300.09	100	3.30	3.505E+00	2.253E+00	2.253E+00	97.34
TH-232	338.32	249	11.27	3.228E+00	1.781E+00	1.781E+00	27.85
	911.20	304	25.80*	1.495E+00	2.054E+00	2.054E+00	21.36
	968.97	156	15.80	1.410E+00	1.827E+00	1.827E+00	34.98
	63.29	111	3.70*	1.796E+00	4.333E+00	4.333E+00	85.22
TH-234	92.59	208	4.23	4.845E+00	2.640E+00	2.640E+00	46.18
	89.96	101	3.47	4.655E+00	1.636E+00	1.636E+00	59.72
	93.35	208	5.60	4.845E+00	1.994E+00	1.994E+00	46.68
	143.76	-----	10.96*	5.506E+00	-----	Line Not Found	-----
U-235	163.33	-----	5.08	5.224E+00	-----	Line Not Found	-----
	185.72	164	57.20	4.854E+00	1.538E-01	1.538E-01	54.00
	205.31	-----	5.01	4.560E+00	-----	Line Not Found	-----
	86.48	140	12.40*	4.394E+00	6.700E-01	6.700E-01	63.76
NP-237	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
	63.29	111	3.70*	1.796E+00	4.333E+00	4.333E+00	85.22
U-238	92.59	208	4.23	4.845E+00	2.640E+00	2.640E+00	41.47
	511.00	141	100.00*	2.420E+00	1.514E-01	1.514E-01	44.46
ANH-511							

Flag: "*" = Keyline

Total number of lines in spectrum 28
Number of unidentified lines 2
Number of lines tentatively identified by NID 26 92.86%

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	2.679E+01	2.679E+01	0.318E+01	11.86	
CD-109	461.40D	1.03	2.245E+00	2.321E+00	1.398E+00	60.21	
SN-126	2.30E+05Y	1.00	2.245E-01	2.245E-01	1.352E-01	60.21	
TL-208	1.41E+10Y	1.00	5.598E-01	5.598E-01	1.003E-01	17.92	
BI-211	7.04E+08Y	1.00	3.829E+00	3.829E+00	0.642E+00	16.76	
PB-212	1.41E+10Y	1.00	1.955E+00	1.955E+00	0.272E+00	13.92	
BI-214	1600.00Y	1.00	1.157E+00	1.157E+00	0.194E+00	16.78	
PB-214	1600.00Y	1.00	1.390E+00	1.390E+00	0.245E+00	17.65	
RA-224	1.41E+10Y	1.00	3.642E+00	3.642E+00	1.226E+00	33.66	
RA-226	1600.00Y	1.00	1.157E+00	1.157E+00	0.194E+00	16.78	
AC-228	1.41E+10Y	1.00	2.054E+00	2.054E+00	0.439E+00	21.36	
RA-228	1.41E+10Y	1.00	2.054E+00	2.054E+00	0.439E+00	21.36	
TH-228	1.41E+10Y	1.00	1.955E+00	1.955E+00	0.272E+00	13.92	
TH-232	1.41E+10Y	1.00	2.054E+00	2.054E+00	0.439E+00	21.36	
TH-234	4.47E+09Y	1.00	4.333E+00	4.333E+00	3.693E+00	85.22	
U-235	7.04E+08Y	1.00	1.538E-01	1.538E-01	0.831E-01	54.00	K
NP-237	2.14E+06Y	1.00	6.700E-01	6.700E-01	4.272E-01	63.76	
U-238	4.47E+09Y	1.00	4.333E+00	4.333E+00	3.693E+00	85.22	
ANH-511	1.00E+09Y	1.00	1.514E-01	1.514E-01	0.673E-01	44.46	
Total Activity :			6.071E+01	6.078E+01			

Grand Total Activity : 6.071E+01 6.078E+01

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

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

Unidentified Energy Lines
Sample ID : G248030004

Page : 4
Acquisition date : 13-MAR-2010 14:31:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.31	82	306	1.24	417.52	413	9	1.14E-02	80.3	4.50E+00	
0	270.05	179	273	1.48	539.00	532	13	2.49E-02	40.9	3.78E+00	T
0	463.23	79	121	1.16	925.36	918	11	1.10E-02	58.4	2.60E+00	T
0	726.76	47	96	1.34	1452.45	1447	11	6.54E-03	87.6	1.83E+00	T
0	795.00	63	66	0.76	1588.96	1582	14	8.81E-03	60.0	1.69E+00	T
1	964.30	67	66	2.20	1927.60	1920	23	9.30E-03	52.9	1.42E+00	T
0	1377.27	35	20	2.14	2753.75	2746	13	4.79E-03	62.8	1.01E+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]G248030004.CNF;1
* Acquisition date   : 13-MAR-2010 14:31:55   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 02:00:01.36           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248030004             Analyst initials: MXR1
* Batch Number       : 958221                 Sample Quantity  : 1.44170E+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	2.679E+01	3.177E+00	5.871E-01	5.769E-02	45.633
CD-109	2.321E+00	1.398E+00	1.654E+00	2.054E-01	1.403
SN-126	2.245E-01	1.352E-01	1.717E-01	2.124E-02	1.308
TL-208	5.598E-01	1.003E-01	6.628E-02	6.062E-03	8.446
BI-211	3.829E+00	6.418E-01	3.685E-01	3.670E-02	10.391
PB-212	1.955E+00	2.721E-01	1.114E-01	1.331E-02	17.551
BI-214	1.157E+00	1.941E-01	1.149E-01	1.145E-02	10.071
PB-214	1.390E+00	2.452E-01	1.420E-01	1.614E-02	9.785
RA-224	3.642E+00	1.226E+00	1.193E+00	1.316E-01	3.052
RA-226	1.157E+00	1.941E-01	1.149E-01	1.145E-02	10.071
AC-228	2.054E+00	4.387E-01	2.437E-01	2.952E-02	8.429
RA-228	2.054E+00	4.387E-01	2.437E-01	2.952E-02	8.429
TH-228	1.955E+00	2.721E-01	1.114E-01	1.331E-02	17.551
TH-232	2.054E+00	4.387E-01	2.437E-01	2.952E-02	8.429
TH-234	4.333E+00	3.693E+00	3.308E+00	6.559E-01	1.310
U-235	1.538E-01	8.307E-02	3.986E-01	7.092E-02	0.386
NP-237	6.700E-01	4.272E-01	4.854E-01	1.179E-01	1.380
U-238	4.333E+00	3.693E+00	3.308E+00	6.559E-01	1.310

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.514E-01	6.732E-02	5.299E-02	4.578E-03	2.858

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	6.249E-02		4.026E-01	6.632E-01	6.164E-02	0.094
NA-22	-5.476E-02		5.096E-02	7.228E-02	6.566E-03	-0.758
NA-24	-1.386E+03		1.001E+03	Half-Life too short		
SC-46	-1.030E-02		4.400E-02	7.108E-02	6.606E-03	-0.145
V-48	2.596E-02		9.702E-02	1.635E-01	1.495E-02	0.159
CR-51	1.788E-01		5.246E-01	8.851E-01	9.393E-02	0.202
MN-54	-4.233E-03		4.438E-02	7.282E-02	6.609E-03	-0.058
CO-56	-1.711E-02		4.417E-02	7.058E-02	6.441E-03	-0.242
CO-57	-3.321E-03		3.099E-02	5.014E-02	5.051E-03	-0.066
CO-58	4.890E-03		4.500E-02	7.538E-02	6.777E-03	0.065
FE-59	-1.119E-01		1.190E-01	1.761E-01	1.643E-02	-0.635
CO-60	6.994E-03		4.419E-02	7.256E-02	6.975E-03	0.096
ZN-65	8.863E-03		1.142E-01	1.610E-01	1.376E-02	0.055
SE-75	-3.200E-03		6.433E-02	9.330E-02	1.023E-02	-0.034
SR-85	1.044E-01		5.569E-02	8.939E-02	7.723E-03	1.168
Y-88	-2.574E-02		3.484E-02	4.737E-02	3.989E-03	-0.543
Y-91	1.181E+01		2.879E+01	4.824E+01	4.066E+00	0.245
NB-94	-1.223E-02		4.052E-02	6.645E-02	5.610E-03	-0.184
NB-95	8.068E-02		5.656E-02	1.013E-01	8.879E-03	0.796
NB-95M	4.467E-01		1.997E-01	3.128E-01	3.769E-02	1.428
ZR-95	2.695E-02		8.159E-02	1.394E-01	1.340E-02	0.193
MO-99	-5.367E-05		3.953E-05	Half-Life too short		
TC-99M	-5.189E+18		5.762E+18	Half-Life too short		
RU-103	-2.404E-02		4.632E-02	7.209E-02	1.008E-02	-0.334
RH-106	-1.530E-01		3.757E-01	5.845E-01	7.666E-02	-0.262
RU-106	-1.530E-01		3.754E-01	5.845E-01	4.912E-02	-0.262
AG-108M	-4.908E-03		3.409E-02	5.533E-02	4.890E-03	-0.089
AG-110M	1.417E-02		3.642E-02	6.284E-02	5.348E-03	0.226
SN-113	5.013E-04		5.622E-02	9.256E-02	8.039E-03	0.005
CD-115	-3.089E-05		5.640E-05	Half-Life too short		
SN-117M	-1.922E-03		9.596E-02	1.545E-01	1.620E-02	-0.012
TE-123M	1.056E-02		3.597E-02	5.861E-02	6.176E-03	0.180
SB-124	1.601E-03		7.877E-02	1.304E-01	1.228E-02	0.012
SB-125	-1.620E-02		1.005E-01	1.629E-01	1.418E-02	-0.099
TE-125M	-4.112E+00		1.301E+01	2.095E+01	2.493E+00	-0.196
I-126	1.299E-02		3.459E-01	5.819E-01	4.798E-02	0.022
SB-126	2.676E-01		2.614E-01	4.161E-01	3.552E-02	0.643
SB-127	1.534E+00		5.203E+00	8.888E+00	1.198E+00	0.173
I-131	-9.875E-02		2.338E-01	3.759E-01	3.649E-02	-0.263
TE-132	-2.814E+00		3.908E+00	6.321E+00	1.184E+00	-0.445
BA-133	2.211E-02		5.690E-02	8.386E-02	1.133E-02	0.264
I-133	-3.391E-01		8.773E-01	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.294E-01	+	7.847E-02	9.927E-02	8.897E-03	1.303
CS-135	2.743E-01		2.283E-01	3.512E-01	4.214E-02	0.781
I-135	-8.725E+16		1.777E+17	Half-Life too short		
CS-136	-6.818E-02		1.835E-01	2.899E-01	2.683E-02	-0.235
BA-137M	-1.110E-02		3.825E-02	6.285E-02	5.167E-03	-0.177
CS-137	-1.172E-02		4.041E-02	6.640E-02	5.470E-03	-0.177
CE-139	-1.045E-02		3.743E-02	5.951E-02	6.352E-03	-0.176
BA-140	2.501E-01		4.483E-01	7.426E-01	2.519E-01	0.337
LA-140	-1.915E-01		1.610E-01	2.229E-01	2.090E-02	-0.859
CE-141	3.427E-02		8.603E-02	1.411E-01	1.458E-02	0.243
CE-143	3.275E-02		5.339E-03	Half-Life too short		
CE-144	-1.374E-01		2.515E-01	3.976E-01	6.416E-02	-0.346
PM-144	2.879E-02		4.280E-02	7.448E-02	6.268E-03	0.387
PR-144	2.480E+00		3.199E+00	5.598E+00	4.708E-01	0.443
PM-146	4.288E-02		4.763E-02	8.201E-02	8.672E-03	0.523
ND-147	-6.622E-01		9.874E-01	1.512E+00	2.262E-01	-0.438
PM-149	5.359E-04		4.950E-04	Half-Life too short		
EU-152	-2.590E-02		1.373E-01	1.828E-01	1.860E-02	-0.142
GD-153	-1.871E-02		1.256E-01	1.786E-01	1.971E-02	-0.105
EU-154	-1.427E-01		1.424E-01	2.030E-01	2.381E-02	-0.703
EU-155	-1.034E-02		1.302E-01	2.118E-01	2.231E-02	-0.049
TB-160	9.725E-02		1.642E-01	2.847E-01	2.635E-02	0.342
HO-166M	-1.943E-02		6.122E-02	9.972E-02	8.466E-03	-0.195
TA-182	-5.233E-02		2.261E-01	3.585E-01	3.077E-02	-0.146
IR-192	-4.095E-03		4.348E-02	7.187E-02	7.410E-03	-0.057
HG-203	5.528E-02		4.905E-02	8.542E-02	9.387E-03	0.647
BI-207	-3.261E-02		6.161E-02	9.566E-02	8.439E-03	-0.341
PB-210	-1.275E+00		1.193E+01	1.942E+01	2.391E+00	-0.066
PB-211	-5.961E-01		9.393E-01	1.415E+00	6.843E-01	-0.421
BI-212	1.004E+00	+	8.877E-01	1.277E+00	1.587E-01	0.786
RN-219	3.191E-01		4.865E-01	8.252E-01	1.219E-01	0.387
RA-223	-6.116E-01		8.215E-01	1.303E+00	2.364E-01	-0.470
AC-227	-2.156E-01		2.895E-01	4.657E-01	6.444E-02	-0.463
TH-227	-2.156E-01		2.898E-01	4.657E-01	7.083E-02	-0.463
TH-229	-3.184E-01		6.285E-01	9.813E-01	1.068E-01	-0.324
PA-231	-5.974E-02		1.683E+00	2.802E+00	4.469E-01	-0.021
TH-231	-6.116E-01		8.215E-01	1.303E+00	2.364E-01	-0.470
PA-233	6.616E-03		7.325E-02	1.216E-01	1.287E-02	0.054
PA-234	7.484E-02		3.275E-01	5.496E-01	1.047E-01	0.136
PA-234M	4.184E+00		5.013E+00	8.535E+00	8.851E-01	0.490
NP-239	3.133E-01		4.928E-01	8.191E-01	8.267E-02	0.383
AM-241	-1.284E-01		3.029E-01	4.298E-01	5.045E-02	-0.299
CM-247	5.766E-02		4.445E-02	7.785E-02	6.584E-03	0.741
CF-249	2.434E-02		4.842E-02	7.900E-02	6.734E-03	0.308
CF-251	4.518E-02		1.599E-01	2.541E-01	2.734E-02	0.178

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]G248030004          *
* Acquisition date   : 13-MAR-2010 14:31:55 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 02:00:01.36 Half life ratio : 8.000    *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030004 Analyst initials: MXR1          *
* Batch Number       : 958221 Sample Quantity : 1.4417E+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	2.679E+01	3.113E+00	2.952E-01	1.588E+00
CD-109	2.321E+00	1.370E+00	8.844E-01	6.988E-01
SN-126	2.245E-01	1.325E-01	9.178E-02	6.760E-02
TL-208	5.598E-01	9.832E-02	3.403E-02	5.016E-02
BI-211	3.829E+00	6.289E-01	1.913E-01	3.209E-01
PB-212	1.955E+00	2.667E-01	5.831E-02	1.361E-01
BI-214	1.157E+00	1.902E-01	5.893E-02	9.706E-02
PB-214	1.390E+00	2.403E-01	7.373E-02	1.226E-01
RA-224	3.642E+00	1.201E+00	6.246E-01	6.130E-01
RA-226	1.157E+00	1.902E-01	5.893E-02	9.706E-02
AC-228	2.054E+00	4.299E-01	1.239E-01	2.193E-01
RA-228	2.054E+00	4.299E-01	1.239E-01	2.193E-01
TH-228	1.955E+00	2.667E-01	5.831E-02	1.361E-01
TH-232	2.054E+00	4.299E-01	1.239E-01	2.193E-01
TH-234	4.333E+00	3.619E+00	1.780E+00	1.846E+00
U-235	8.527E-02	2.414E-01	2.109E-01	1.232E-01
NP-237	6.700E-01	4.186E-01	2.596E-01	2.136E-01
U-238	4.333E+00	3.619E+00	1.780E+00	1.846E+00
ANH-511	1.514E-01	6.598E-02	2.728E-02	3.366E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	6.249E-02	3.945E-01	3.420E-01	2.013E-01 NOT IDENT.
NA-22	-5.476E-02	4.994E-02	3.646E-02	2.548E-02 NOT IDENT.
NA-24	-1.386E+09	1.961E+09	0.000E+00	1.001E+09 SHORT HLIF
SC-46	-1.030E-02	4.312E-02	3.615E-02	2.200E-02 FAIL ABUN
V-48	2.596E-02	9.508E-02	8.299E-02	4.851E-02 NOT IDENT.
CR-51	1.788E-01	5.142E-01	4.605E-01	2.623E-01 NOT IDENT.
MN-54	-4.233E-03	4.350E-02	3.709E-02	2.219E-02 NOT IDENT.
CO-56	-1.711E-02	4.328E-02	3.594E-02	2.208E-02 NOT IDENT.

CO-57	-3.321E-03	3.037E-02	2.663E-02	1.549E-02	NOT IDENT.
CO-58	4.890E-03	4.410E-02	3.842E-02	2.250E-02	NOT IDENT.
FE-59	-1.119E-01	1.167E-01	8.913E-02	5.952E-02	NOT IDENT.
CO-60	6.994E-03	4.330E-02	3.656E-02	2.209E-02	NOT IDENT.
ZN-65	8.863E-03	1.119E-01	8.148E-02	5.708E-02	NOT IDENT.
SE-75	-3.200E-03	6.304E-02	4.874E-02	3.216E-02	NOT IDENT.
SR-85	1.044E-01	5.457E-02	4.603E-02	2.784E-02	NOT IDENT.
Y-88	-2.574E-02	3.414E-02	2.369E-02	1.742E-02	NOT IDENT.
Y-91	1.181E+01	2.822E+01	2.436E+01	1.440E+01	NOT IDENT.
NB-94	-1.223E-02	3.971E-02	3.398E-02	2.026E-02	NOT IDENT.
NB-95	8.068E-02	5.543E-02	5.172E-02	2.828E-02	NOT IDENT.
NB-95M	4.467E-01	1.957E-01	1.638E-01	9.983E-02	NOT IDENT.
ZR-95	2.695E-02	7.996E-02	7.118E-02	4.080E-02	NOT IDENT.
MO-99	-5.367E+01	7.749E+01	0.000E+00	3.953E+01	SHORT HLIF
TC-99M	-5.189E+24	1.129E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.404E-02	4.539E-02	3.714E-02	2.316E-02	FAIL ABUN
RH-106	-1.530E-01	3.682E-01	2.997E-01	1.879E-01	NOT IDENT.
RU-106	-1.530E-01	3.679E-01	2.997E-01	1.877E-01	NOT IDENT.
AG-108M	-4.908E-03	3.341E-02	2.859E-02	1.705E-02	NOT IDENT.
AG-110M	1.417E-02	3.569E-02	3.218E-02	1.821E-02	NOT IDENT.
SN-113	5.013E-04	5.509E-02	4.794E-02	2.811E-02	NOT IDENT.
CD-115	-3.089E+01	1.105E+02	0.000E+00	5.640E+01	SHORT HLIF
SN-117M	-1.922E-03	9.404E-02	8.159E-02	4.798E-02	NOT IDENT.
TE-123M	1.056E-02	3.525E-02	3.095E-02	1.798E-02	NOT IDENT.
SB-124	1.601E-03	7.719E-02	6.536E-02	3.938E-02	NOT IDENT.
SB-125	-1.620E-02	9.846E-02	8.422E-02	5.024E-02	FAIL ABUN
TE-125M	-4.112E+00	1.275E+01	1.115E+01	6.505E+00	NOT IDENT.
I-126	1.299E-02	3.390E-01	2.979E-01	1.730E-01	NOT IDENT.
SB-126	2.676E-01	2.562E-01	2.126E-01	1.307E-01	NOT IDENT.
SB-127	1.534E+00	5.099E+00	4.547E+00	2.602E+00	NOT IDENT.
I-131	-9.875E-02	2.291E-01	1.950E-01	1.169E-01	NOT IDENT.
TE-132	-2.814E+00	3.830E+00	3.313E+00	1.954E+00	NOT IDENT.
BA-133	2.211E-02	5.577E-02	4.353E-02	2.845E-02	NOT IDENT.
I-133	-3.391E+05	1.720E+06	0.000E+00	8.773E+05	SHORT HLIF
CS-134	1.294E-01	7.690E-02	5.061E-02	3.923E-02	FAIL ABUN
CS-135	2.743E-01	2.237E-01	1.834E-01	1.141E-01	NOT IDENT.
I-135	-8.725E+22	3.483E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.818E-02	1.798E-01	1.469E-01	9.173E-02	NOT IDENT.
BA-137M	-1.110E-02	3.749E-02	3.218E-02	1.913E-02	NOT IDENT.
CS-137	-1.172E-02	3.960E-02	3.399E-02	2.021E-02	NOT IDENT.
CE-139	-1.045E-02	3.668E-02	3.140E-02	1.872E-02	NOT IDENT.
BA-140	2.501E-01	4.393E-01	3.820E-01	2.241E-01	NOT IDENT.
LA-140	-1.915E-01	1.578E-01	1.118E-01	8.052E-02	NOT IDENT.
CE-141	3.427E-02	8.431E-02	7.464E-02	4.302E-02	NOT IDENT.
CE-143	3.275E+04	1.046E+04	0.000E+00	5.339E+03	SHORT HLIF
CE-144	-1.374E-01	2.465E-01	2.107E-01	1.258E-01	NOT IDENT.
PM-144	2.879E-02	4.195E-02	3.809E-02	2.140E-02	NOT IDENT.
PR-144	2.480E+00	3.135E+00	2.863E+00	1.599E+00	NOT IDENT.
PM-146	4.288E-02	4.668E-02	4.234E-02	2.382E-02	NOT IDENT.
ND-147	-6.622E-01	9.676E-01	7.781E-01	4.937E-01	FAIL ABUN
PM-149	5.359E+02	9.702E+02	0.000E+00	4.950E+02	SHORT HLIF
EU-152	-2.590E-02	1.345E-01	9.493E-02	6.863E-02	FAIL ABUN
GD-153	-1.871E-02	1.231E-01	9.528E-02	6.278E-02	NOT IDENT.
EU-154	-1.427E-01	1.395E-01	1.024E-01	7.118E-02	NOT IDENT.
EU-155	-1.034E-02	1.276E-01	1.128E-01	6.509E-02	FAIL ABUN
TB-160	9.725E-02	1.609E-01	1.448E-01	8.211E-02	FAIL ABUN
HO-166M	-1.943E-02	6.000E-02	5.097E-02	3.061E-02	NOT IDENT.
TA-182	-5.233E-02	2.216E-01	1.810E-01	1.131E-01	NOT IDENT.
IR-192	-4.095E-03	4.261E-02	3.740E-02	2.174E-02	FAIL ABUN
HG-203	5.528E-02	4.807E-02	4.457E-02	2.452E-02	NOT IDENT.
BI-207	-3.261E-02	6.038E-02	4.845E-02	3.080E-02	FAIL ABUN
PB-210	-1.275E+00	1.169E+01	1.052E+01	5.964E+00	NOT IDENT.
PB-211	-5.961E-01	9.205E-01	7.323E-01	4.696E-01	NOT IDENT.
BI-212	1.004E+00	8.700E-01	6.524E-01	4.439E-01	FAIL ABUN
RN-219	3.191E-01	4.767E-01	4.272E-01	2.432E-01	FAIL ABUN
RA-223	-6.116E-01	8.051E-01	6.775E-01	4.108E-01	FAIL ABUN
AC-227	-2.156E-01	2.837E-01	2.434E-01	1.447E-01	FAIL ABUN
TH-227	-2.156E-01	2.840E-01	2.434E-01	1.449E-01	FAIL ABUN
TH-229	-3.184E-01	6.159E-01	5.161E-01	3.143E-01	FAIL ABUN
PA-231	-5.974E-02	1.649E+00	1.462E+00	8.413E-01	FAIL ABUN
TH-231	-6.116E-01	8.051E-01	6.775E-01	4.108E-01	FAIL ABUN
PA-233	6.616E-03	7.179E-02	6.331E-02	3.663E-02	FAIL ABUN
PA-234	7.484E-02	3.209E-01	2.791E-01	1.637E-01	NOT IDENT.
PA-234M	4.184E+00	4.912E+00	4.329E+00	2.506E+00	NOT IDENT.
NP-239	3.133E-01	4.830E-01	4.353E-01	2.464E-01	NOT IDENT.
AM-241	-1.284E-01	2.968E-01	2.316E-01	1.515E-01	NOT IDENT.
CM-247	5.766E-02	4.356E-02	4.030E-02	2.222E-02	NOT IDENT.
CF-249	2.434E-02	4.745E-02	4.093E-02	2.421E-02	NOT IDENT.

CF-251	4.518E-02	1.567E-01	1.339E-01	7.994E-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	311.0550
49.72	316.5785
57.36	0.0000
59.54	329.5297
63.29	338.0111
63.29	338.0111
64.28	397.5870
67.75	410.5637
69.67	435.3199
70.83	431.2713
72.81	453.0195
72.87	453.0553
72.87	453.0553
74.82	453.6354
74.82	453.6354
74.82	453.6354
74.97	453.7260
77.11	454.9952
77.11	454.9952
77.11	454.9952
79.69	433.1286
79.80	477.9474
80.12	478.1408
80.19	478.1828
80.57	529.6141
81.00	528.3001
81.07	528.3464
81.07	528.3464
83.79	413.6691
83.79	413.6691
85.43	428.1830
86.48	473.8579
86.55	473.8991
86.79	498.2191
86.94	549.9166
87.57	548.7190
88.03	484.4312
88.47	484.6857
89.96	485.5426
91.11	406.7873
92.59	407.4890
92.59	407.4890
93.35	407.8474
94.67	426.3689
94.87	445.9992
94.87	445.9992
95.86	477.4644
97.43	426.0733
98.44	385.6981
99.53	369.3358
100.11	373.5199
103.18	448.7075
103.37	413.8827
105.31	393.1375
106.12	372.8768
109.28	403.0638
111.00	403.7868
111.76	406.1775
116.30	384.1221
117.23	362.6013
121.12	362.9585
121.78	357.9608
122.06	362.2478
123.07	379.3720
131.20	384.4422
133.52	405.3830
136.00	357.5097

136.47	370.3998
140.51	0.0000
140.51	0.0000
143.76	352.5359
144.24	369.7843
144.24	369.7843
145.44	348.7776
152.43	335.8251
153.25	339.2897
154.21	375.1397
154.21	375.1397
156.02	371.3947
158.56	358.1195
159.00	342.0135
162.66	349.5613
163.33	360.6148
165.86	347.2050
176.60	318.3380
177.52	305.3817
181.07	0.0000
184.41	312.7382
185.72	312.8261
193.51	312.4140
197.04	341.0843
205.31	331.8934
210.85	318.1725
215.65	301.1556
222.11	275.8562
227.38	275.9142
228.16	292.4560
228.18	292.4599
235.69	299.0822
235.96	299.1341
235.96	299.1341
238.63	272.4337
238.63	272.4337
240.99	272.8434
242.00	273.0192
244.70	247.0881
252.40	219.2843
252.80	215.6359
256.23	235.5662
256.23	235.5662
260.90	0.0000
264.66	236.1455
268.22	245.9878
269.46	233.7036
269.46	233.7036
271.23	219.9109
273.65	257.7084
276.40	202.4744
277.37	211.8300
277.60	207.6857
278.00	217.0221
279.20	187.0896
279.54	193.7084
280.46	223.9181
283.69	207.3645
284.31	203.6681
285.41	207.5686
285.90	0.0000
287.50	195.6706
293.27	0.0000
295.22	203.9718
295.96	194.5648
298.57	194.8476
299.98	194.9977
299.98	194.9977
300.09	195.0103
300.09	195.0103
300.13	195.0153
301.36	174.5203
302.85	174.6635
304.50	157.3381
304.50	157.3381
304.85	157.3683
308.46	189.5304
311.90	162.7555

316.51	185.2300
319.41	187.4376
320.08	181.7325
323.87	235.0853
323.87	235.0853
328.76	200.9109
333.37	182.3468
334.37	166.2958
334.37	166.2958
338.28	184.4220
338.28	184.4220
338.32	184.4266
338.32	184.4266
338.32	184.4266
340.48	171.6720
340.55	171.6774
344.28	171.3508
351.06	153.0445
351.93	172.0039
356.01	161.5779
364.49	145.5303
366.42	0.0000
383.85	160.7660
388.16	138.2178
388.63	151.1762
391.69	160.3534
400.66	160.0117
401.81	143.0838
402.40	130.1111
404.85	183.3596
410.95	147.6909
414.70	147.9367
423.72	115.1815
427.09	118.3854
427.87	122.4741
433.94	130.9133
453.88	104.3881
463.37	113.0172
468.07	111.5177
473.00	121.7120
476.78	106.4023
477.60	113.6698
487.02	86.0922
492.35	0.0000
497.08	95.8049
511.00	112.0267
514.00	108.3114
527.90	0.0000
529.87	0.0000
531.02	109.7129
537.26	93.0488
546.56	0.0000
563.25	102.4711
569.33	97.3451
569.50	97.3518
569.70	96.2886
583.19	103.9119
600.60	87.5971
602.73	84.7744
604.72	99.2712
609.32	83.5176
609.32	83.5176
610.33	84.9943
614.28	117.7014
618.01	78.5664
621.93	103.4795
621.93	103.4795
633.25	94.0289
635.95	83.1677
636.99	67.8715
645.85	83.4386
657.76	74.3917
661.66	92.8751
661.66	92.8751
664.57	0.0000
666.33	89.3291
666.50	89.3350
677.62	85.0277

685.70	85.2430
695.00	112.4356
696.49	104.1204
696.51	101.3315
697.00	97.6279
702.65	115.4932
706.68	91.3905
711.68	76.5847
720.70	67.4297
721.93	0.0000
722.78	81.9287
722.91	81.9323
723.31	98.0102
724.19	110.8929
727.33	88.4753
733.00	85.4022
735.93	73.3805
739.50	0.0000
747.24	83.0640
752.31	68.0625
753.82	67.1461
756.73	68.1504
763.94	99.5932
765.81	86.3604
766.42	85.4260
777.92	0.0000
778.90	80.9672
783.70	72.4932
785.37	76.3444
795.86	63.9912
801.95	75.6051
810.29	75.9173
810.76	66.3159
815.77	67.3696
818.51	59.7156
832.01	72.5021
834.85	84.1662
836.80	0.0000
846.77	66.9673
856.80	99.2607
860.56	66.2388
871.09	55.6780
873.19	66.4588
875.33	0.0000
879.36	56.7775
880.51	61.6901
883.24	55.8542
884.68	68.6186
889.28	60.8496
898.04	62.9531
911.20	60.2045
911.20	60.2045
911.20	60.2045
926.50	71.3350
937.49	60.6029
944.13	68.6631
946.00	56.7472
949.00	47.8232
962.29	51.4056
964.08	63.0000
966.15	63.0308
968.97	65.2197
968.97	65.2197
968.97	65.2197
983.53	46.2162
996.26	70.5426
1001.03	40.3556
1004.73	54.5273
1037.84	59.0195
1038.76	0.0000
1048.07	69.3586
1050.41	63.2740
1050.41	63.2740
1063.66	69.6048
1085.87	64.8098
1099.45	74.2910
1112.07	60.3087
1115.54	58.5787

1120.29	57.0097
1120.29	57.0097
1120.55	57.0142
1121.30	78.2031
1131.51	0.0000
1173.23	69.1904
1177.93	57.7169
1189.05	67.3177
1204.77	72.8127
1221.41	67.7682
1231.02	79.5715
1235.36	62.6515
1238.28	59.5000
1260.41	0.0000
1271.85	47.0651
1274.44	61.0009
1274.54	63.1436
1291.59	46.1739
1298.22	0.0000
1312.11	39.8906
1332.49	35.7178
1365.19	16.8028
1368.63	0.0000
1384.29	21.8587
1408.01	31.9912
1457.56	0.0000
1460.82	24.9362
1489.16	25.7777
1505.03	24.8919
1596.21	41.8122
1620.50	9.7628
1678.03	0.0000
1690.97	11.8497
1764.49	12.2372
1764.49	12.2372
1770.23	6.9988
1771.35	42.0000
1791.20	0.0000
1836.06	15.1481

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030004

Total Uranium Activity	1.2931E+01	ug/g
Total Uranium Counting Unc.	1.0767E+01	ug/g
Total Uranium Tpu	5.4933E-06	ug/g
Total Uranium Mda	5.2973E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G248030004
*  ANALYST       : MXR1            DETECTOR    : GAM15
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 13-MAR-2010 14:31:55.47  SAMPLE ALQT: 144.170 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.116E+00
GROSS GAMMA ERROR  (pCi/GRAM )  : 1.377E+00
GROSS GAMMA MDA    (pCi/GRAM )  : 3.427E+00
GROSS GAMMA DLC    (pCi/GRAM )  : 1.668E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:33:45.13

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030005.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:32:17
Sample ID          : G248030005 Sample quantity : 1.55860E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.28 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958221 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	52.91	75	434	1.44	106.01	103	8	1.04E-02	49.6	
2	0	63.27*	312	718	0.72	126.72	122	10	4.33E-02	17.2	
3	5	74.90*	448	515	1.06	149.99	145	14	6.23E-02	9.5	8.88E-01
4	5	77.17*	661	428	0.86	154.53	145	14	9.18E-02	6.2	
5	0	84.19*	196	504	1.23	168.57	165	7	2.73E-02	20.5	
6	3	87.30*	332	336	1.16	174.78	172	20	4.62E-02	9.9	1.94E+00
7	3	89.96	202	465	1.16	180.10	172	20	2.81E-02	19.3	
8	3	92.66*	892	458	1.17	185.50	172	20	1.24E-01	5.4	
9	0	128.86	74	406	0.88	257.91	255	7	1.03E-02	46.6	
10	0	143.51*	103	451	0.99	287.21	283	9	1.43E-02	39.4	
11	0	185.77*	415	463	1.16	371.73	366	11	5.77E-02	11.5	
12	0	209.21*	166	298	0.94	418.62	415	9	2.31E-02	20.6	
13	6	238.55*	1398	240	0.95	477.30	472	18	1.94E-01	3.2	1.94E+00
14	6	241.57	343	279	1.50	483.34	472	18	4.77E-02	11.1	
15	0	270.80	182	301	1.40	541.80	536	13	2.53E-02	21.1	
16	4	295.10*	408	140	0.98	590.40	586	19	5.67E-02	6.9	2.73E+00
17	4	299.92	102	226	1.49	600.04	586	19	1.42E-02	27.4	
18	0	327.97	47	162	1.17	656.14	652	8	6.60E-03	48.8	
19	0	338.15	254	150	1.16	676.48	673	8	3.53E-02	10.5	
20	0	351.78*	793	206	1.23	703.74	698	12	1.10E-01	5.1	
21	0	462.73	88	126	1.49	925.63	921	9	1.22E-02	25.5	
22	0	510.69*	137	192	1.64	1021.54	1014	16	1.91E-02	26.4	
23	0	583.09*	404	113	1.26	1166.32	1162	10	5.60E-02	7.2	
24	0	609.35*	587	117	1.34	1218.83	1212	15	8.15E-02	5.9	
25	0	661.28	299	128	1.38	1322.67	1315	14	4.15E-02	10.0	
26	0	727.52	96	96	1.47	1455.14	1449	11	1.33E-02	22.3	
27	0	768.15	56	86	1.17	1536.38	1531	12	7.74E-03	35.6	
28	0	794.79	89	63	1.08	1589.64	1584	12	1.23E-02	20.8	
29	0	860.29	61	69	0.82	1720.60	1715	11	8.41E-03	29.5	
30	0	911.27*	320	89	1.69	1822.54	1814	18	4.45E-02	9.0	
31	1	964.67	48	75	1.76	1929.32	1921	26	6.71E-03	38.8	1.34E+00
32	1	968.85*	168	75	1.66	1937.68	1921	26	2.34E-02	12.6	
33	0	1001.21*	41	60	1.14	2002.38	1997	12	5.68E-03	42.3	
34	0	1120.52*	92	75	1.34	2240.91	2235	12	1.28E-02	22.1	
35	0	1460.57*	1507	26	1.85	2920.75	2912	17	2.09E-01	2.7	
36	0	1588.07	35	18	1.48	3175.62	3169	12	4.90E-03	29.3	
37	0	1620.84	23	7	2.30	3241.12	3236	9	3.24E-03	28.8	
38	0	1764.15*	129	13	1.73	3527.58	3518	18	1.79E-02	11.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
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Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:33:49

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:32:17
Sample ID        : G248030005 Sample quantity : 155.86 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.28 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	*	2.818E+01	2.909E+00	4.499E-01	3.955E-02	62.648
CD-109	+	88.03	*	3.571E+00	7.874E-01	9.080E-01	8.750E-02	3.933
SN-126	+	64.28		2.217E+00	8.295E-01	6.021E-01	8.772E-02	3.681
	+	86.94		1.436E+00	6.616E-01	3.783E-01	1.572E-01	3.796
	+	87.57	*	3.454E-01	7.616E-02	8.823E-02	8.459E-03	3.915
BA-137M	+	661.66	*	3.330E-01	7.288E-02	4.609E-02	4.090E-03	7.225
CS-137	+	661.66	*	3.518E-01	7.701E-02	4.869E-02	4.328E-03	7.225
TL-208		277.37		4.901E-01	3.198E-01	5.394E-01	8.104E-02	0.909
	+	583.19	*	4.285E-01	7.486E-02	5.055E-02	5.005E-03	8.477
	+	860.56		6.076E-01	3.637E-01	3.978E-01	3.981E-02	1.527
BI-211		72.87		-9.933E-01	2.605E+00	3.965E+00	3.223E-01	-0.251
	+	351.06	*	3.752E+00	5.615E-01	2.469E-01	2.700E-02	15.197
BI-212	+	727.33	*	1.557E+00	7.231E-01	7.043E-01	9.026E-02	2.211
		785.37		4.941E+00	2.799E+00	5.197E+00	4.830E-01	0.951
	+	1620.50		3.425E+00	1.994E+00	2.213E+00	1.880E-01	1.548
PB-212	+	74.82		2.054E+00	4.695E-01	4.478E-01	5.724E-02	4.587
	+	77.11		1.733E+00	2.615E-01	2.570E-01	2.183E-02	6.744
	+	238.63	*	1.478E+00	1.999E-01	7.406E-02	8.798E-03	19.955
	+	300.09		1.682E+00	9.480E-01	1.049E+00	1.384E-01	1.602
BI-214	+	609.32	*	1.207E+00	1.912E-01	8.505E-02	9.031E-03	14.189
	+	1120.29		9.833E-01	4.469E-01	4.452E-01	4.801E-02	2.209
	+	1764.49		1.917E+00	4.616E-01	1.822E-01	1.508E-02	10.521
PB-214	+	74.82		3.641E+00	8.066E-01	7.937E-01	9.107E-02	4.587
	+	77.11		3.055E+00	5.254E-01	4.531E-01	5.364E-02	6.744
	+	242.00		2.201E+00	5.621E-01	4.505E-01	5.620E-02	4.885
	+	295.22		1.189E+00	2.293E-01	1.854E-01	2.498E-02	6.413
	+	351.93	*	1.362E+00	2.172E-01	8.980E-02	1.098E-02	15.164
RA-224	+	240.99	*	3.891E+00	9.681E-01	7.939E-01	8.749E-02	4.901
RA-226	+	609.32	*	1.207E+00	1.912E-01	8.505E-02	9.031E-03	14.189
	+	1120.29		9.833E-01	4.469E-01	4.452E-01	4.801E-02	2.209
	+	1764.49		1.917E+00	4.616E-01	1.822E-01	1.508E-02	10.521
AC-228	+	338.32		1.339E+00	6.314E-01	3.161E-01	1.336E-01	4.236
	+	911.20	*	1.638E+00	3.572E-01	1.635E-01	1.996E-02	10.019
	+	968.97		1.486E+00	5.222E-01	2.960E-01	7.281E-02	5.020

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.339E+00	6.314E-01	3.161E-01	1.336E-01	4.236
	+	911.20	*	1.638E+00	3.572E-01	1.635E-01	1.996E-02	10.019
	+	968.97		1.486E+00	5.222E-01	2.960E-01	7.281E-02	5.020
TH-228	+	74.82		2.054E+00	4.256E-01	4.478E-01	3.750E-02	4.587
	+	77.11		1.733E+00	2.615E-01	2.570E-01	2.183E-02	6.744
	+	238.63	*	1.478E+00	1.999E-01	7.406E-02	8.798E-03	19.955
	+	300.09		1.682E+00	1.388E+00	1.049E+00	6.478E-01	1.602
TH-229	+	85.43		5.339E-01	2.240E-01	2.329E-01	2.175E-02	2.293
	+	88.47		5.326E-01	1.174E-01	1.348E-01	1.293E-02	3.949
		193.51	*	2.082E-01	4.073E-01	6.803E-01	6.637E-02	0.306
		210.85		7.735E-01	7.901E-01	1.207E+00	1.233E-01	0.641
TH-232	+	338.32		1.339E+00	3.161E-01	3.161E-01	3.450E-02	4.236
	+	911.20	*	1.638E+00	3.572E-01	1.635E-01	1.996E-02	10.019
	+	968.97		1.486E+00	5.222E-01	2.960E-01	7.281E-02	5.020
TH-234	+	63.29	*	5.751E+00	2.233E+00	1.627E+00	2.901E-01	3.535
	+	92.59		7.710E+00	1.913E+00	7.399E-01	1.651E-01	10.421
U-235	+	89.96		2.180E+00	1.000E+00	9.204E-01	2.293E-01	2.368
	+	93.35		5.824E+00	1.498E+00	5.560E-01	1.295E-01	10.476
	+	143.76	*	3.264E-01	2.629E-01	2.598E-01	4.395E-02	1.257
		163.33		4.270E-01	3.605E-01	6.029E-01	1.094E-01	0.708
	+	185.72		2.844E-01	7.070E-02	5.150E-02	4.920E-03	5.522
		205.31		-7.458E-02	4.401E-01	6.332E-01	1.195E-01	-0.118
NP-237	+	86.48	*	1.031E+00	3.136E-01	2.729E-01	6.277E-02	3.777
		95.86		-5.010E-01	7.758E-01	1.132E+00	2.731E-01	-0.442
U-238	+	63.29	*	5.751E+00	2.233E+00	1.627E+00	2.901E-01	3.535
	+	92.59		7.710E+00	1.096E+00	7.399E-01	6.814E-02	10.421
ANH-511	+	511.00	*	1.116E-01	5.988E-02	3.957E-02	3.764E-03	2.820

---- 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	*	-1.988E-01	2.906E-01	4.581E-01	4.633E-02	-0.434
NA-22		1274.54	*	-1.762E-02	3.679E-02	5.656E-02	4.706E-03	-0.311
NA-24		1368.63	*	-9.731E+02	3.679E-02	Half-Life too short		
SC-46		889.28	*	-1.824E-02	3.257E-02	5.154E-02	4.872E-03	-0.354
	+	1120.55		1.762E-01	7.922E-02	1.139E-01	9.618E-03	1.548
V-48		944.13		7.922E-01	1.033E+00	1.821E+00	1.701E-01	0.435
		983.53	*	1.543E-02	8.304E-02	1.398E-01	1.287E-02	0.110
		1312.11		1.074E-02	9.239E-02	1.513E-01	1.270E-02	0.071
CR-51		320.08	*	1.160E-01	3.700E-01	5.967E-01	6.973E-02	0.194
MN-54		834.85	*	1.077E-02	3.193E-02	5.490E-02	5.156E-03	0.196
CO-56		846.77	*	8.611E-03	3.273E-02	5.609E-02	5.278E-03	0.154
		1037.84		9.076E-03	2.609E-01	4.320E-01	4.057E-02	0.021
		1238.28		1.800E-01	9.357E-02	1.696E-01	1.439E-02	1.061
		1771.35		-4.025E-01	2.206E-01	2.266E-01	1.873E-02	-1.776
CO-57		122.06	*	-4.871E-03	2.023E-02	3.356E-02	2.789E-03	-0.145
		136.47		-3.121E-02	1.651E-01	2.730E-01	2.479E-02	-0.114
CO-58		810.76	*	-9.196E-03	3.267E-02	5.366E-02	5.027E-03	-0.171

---- 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	*		-9.512E-02	8.618E-02	1.257E-01	1.168E-02	-0.757
	1291.59			-1.318E-01	1.118E-01	1.540E-01	1.471E-02	-0.856
CO-60	1173.23			-1.060E-02	4.032E-02	6.435E-02	5.174E-03	-0.165
	1332.49	*		-1.884E-03	3.359E-02	5.389E-02	4.546E-03	-0.035
ZN-65	1115.54	*		1.122E-01	8.480E-02	1.392E-01	1.182E-02	0.806
SE-75	121.12			2.211E-02	1.065E-01	1.799E-01	1.951E-02	0.123
	136.00			-1.090E-02	3.271E-02	5.378E-02	4.565E-03	-0.203
	264.66	*		-3.061E-02	4.067E-02	5.880E-02	6.863E-03	-0.521
	279.54			-5.190E-02	9.376E-02	1.447E-01	1.772E-02	-0.359
	400.66			-1.627E-01	2.203E-01	3.524E-01	4.093E-02	-0.462
SR-85	514.00	*		4.458E-02	3.776E-02	5.986E-02	5.692E-03	0.745
Y-88	898.04			6.625E-03	3.106E-02	5.290E-02	5.024E-03	0.125
	1836.06	*		-1.582E-02	2.446E-02	3.388E-02	2.750E-03	-0.467
Y-91	1204.77	*		-1.782E+01	2.079E+01	3.123E+01	2.540E+00	-0.571
NB-94	702.65	*		2.089E-02	2.826E-02	4.804E-02	4.343E-03	0.435
	871.09			-1.262E-02	2.628E-02	4.198E-02	3.963E-03	-0.301
NB-95	765.81	*		2.806E-02	4.226E-02	6.335E-02	5.856E-03	0.443
NB-95M	235.69	*		8.344E-02	1.173E-01	1.759E-01	2.094E-02	0.474
ZR-95	724.19			4.892E-02	9.490E-02	1.404E-01	1.377E-02	0.348
	756.73	*		-8.887E-03	6.656E-02	1.052E-01	1.059E-02	-0.084
MO-99	140.51			1.592E-05	6.656E-02	Half-Life	too short	
	181.07			5.400E-05	6.656E-02	Half-Life	too short	
	366.42			6.935E-05	6.656E-02	Half-Life	too short	
	739.50	*		-3.402E-06	6.656E-02	Half-Life	too short	
	777.92			-1.286E-04	6.656E-02	Half-Life	too short	
TC-99M	140.51	*		1.147E+18	6.656E-02	Half-Life	too short	
RU-103	497.08	*		6.382E-03	3.483E-02	5.829E-02	8.474E-03	0.109
	610.33			1.409E+01	2.875E+00	2.802E+00	4.669E-01	5.029
RH-106	621.93	*		2.477E-01	2.580E-01	4.474E-01	6.086E-02	0.554
	1050.41			3.135E-01	2.057E+00	3.441E+00	3.059E-01	0.091
RU-106	621.93	*		2.477E-01	2.568E-01	4.474E-01	4.091E-02	0.554
	1050.41			3.135E-01	2.057E+00	3.441E+00	3.059E-01	0.091
AG-108M	433.94	*		-5.847E-03	2.195E-02	3.594E-02	3.477E-03	-0.163
	614.28			1.353E-02	2.800E-02	4.214E-02	3.984E-03	0.321
	722.91			4.566E-03	3.647E-02	5.202E-02	4.877E-03	0.088
AG-110M	657.76	*		2.379E-02	2.846E-02	4.443E-02	4.066E-03	0.535
	677.62			-4.497E-03	2.639E-01	4.254E-01	3.906E-02	-0.011
	706.68			-9.844E-02	1.750E-01	2.672E-01	2.483E-02	-0.368
	763.94			-5.731E-04	1.499E-01	2.088E-01	1.975E-02	-0.003
	884.68			1.794E-02	4.092E-02	7.087E-02	6.876E-03	0.253
	937.49			-8.432E-02	9.384E-02	1.430E-01	1.380E-02	-0.590
	1384.29			-7.798E-02	1.385E-01	2.060E-01	1.798E-02	-0.379
	1505.03			-3.029E-02	2.459E-01	4.051E-01	3.464E-02	-0.075
SN-113	391.69	*		7.140E-03	3.753E-02	6.370E-02	6.047E-03	0.112
CD-115	260.90			6.400E-05	3.753E-02	Half-Life	too short	
	492.35			-1.793E-05	3.753E-02	Half-Life	too short	
	527.90	*		-3.989E-05	3.753E-02	Half-Life	too short	
SN-117M	156.02			-1.343E+00	2.545E+00	4.115E+00	3.629E-01	-0.326
	158.56	*		6.649E-03	5.995E-02	9.955E-02	8.842E-03	0.067

---- 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	*		-1.547E-03	2.275E-02	3.749E-02	3.353E-03	-0.041
SB-124	602.73			-1.114E-02	3.982E-02	5.510E-02	5.097E-03	-0.202
	645.85			-2.579E-01	4.490E-01	6.918E-01	6.549E-02	-0.373
	722.78			-2.943E-02	4.040E-01	5.636E-01	5.241E-02	-0.052
	1690.97	*		2.301E-02	5.777E-02	1.030E-01	9.045E-03	0.223
SB-125	427.87	*		5.357E-02	6.950E-02	1.214E-01	1.160E-02	0.441
	463.37	+		6.338E-01	3.289E-01	4.803E-01	4.843E-02	1.320
	600.60			-3.648E-02	1.486E-01	2.377E-01	2.342E-02	-0.153
	635.95			-8.042E-02	2.248E-01	3.536E-01	3.439E-02	-0.227
TE-125M	109.28	*		8.586E+00	8.206E+00	1.425E+01	1.476E+00	0.602
I-126	388.63			-3.870E-02	1.942E-01	3.225E-01	3.018E-02	-0.120
	666.33	*		8.905E-02	3.055E-01	4.452E-01	3.959E-02	0.200
	753.82			5.985E-02	2.316E+00	3.714E+00	3.420E-01	0.016
SB-126	414.70			-4.933E-02	8.450E-02	1.358E-01	1.270E-02	-0.363
	666.50			3.720E-02	1.050E-01	1.541E-01	1.370E-02	0.241
	695.00			-3.063E-02	9.899E-02	1.554E-01	1.400E-02	-0.197
	697.00			-3.042E-01	3.378E-01	5.012E-01	4.520E-02	-0.607
	720.70	*		6.267E-03	1.982E-01	2.952E-01	2.688E-02	0.021
	856.80			-7.982E-02	6.333E-01	9.093E-01	8.568E-02	-0.088
SB-127	252.40			5.866E+00	1.218E+01	1.968E+01	8.433E+00	0.298
	473.00			2.496E+00	4.685E+00	8.011E+00	1.231E+00	0.312
	685.70	*		-1.653E+00	4.071E+00	6.258E+00	8.683E-01	-0.264
	783.70			3.058E+00	1.171E+01	1.905E+01	2.836E+00	0.160
I-131	80.19			1.849E-01	8.498E+00	1.048E+01	9.325E-01	0.018
	284.31			-1.221E+00	2.268E+00	3.498E+00	4.307E-01	-0.349
	364.49	*		1.881E-03	1.640E-01	2.769E-01	2.942E-02	0.007
	636.99			-8.802E-01	2.301E+00	3.607E+00	3.456E-01	-0.244
TE-132	49.72			2.991E+01	7.035E+01	1.042E+02	1.340E+01	0.287
	111.76			2.891E+01	1.194E+02	2.025E+02	2.643E+01	0.143
	116.30			1.867E+01	9.968E+01	1.685E+02	2.192E+01	0.111
	228.16	*		3.318E+00	2.795E+00	4.664E+00	8.639E-01	0.711
BA-133	81.00			-1.499E-02	9.535E-02	1.160E-01	1.817E-02	-0.129
	276.40			2.796E-01	3.296E-01	4.926E-01	8.055E-02	0.568
	302.85			-6.044E-03	1.236E-01	1.737E-01	2.650E-02	-0.035
	356.01	*		-1.130E-03	3.421E-02	5.090E-02	7.239E-03	-0.022
	383.85			-4.870E-02	2.283E-01	3.790E-01	4.954E-02	-0.129
I-133	529.87	*		-9.925E-01	2.283E-01	Half-Life	too short	
	875.33			2.367E+00	2.283E-01	Half-Life	too short	
	1298.22			5.646E+01	2.283E-01	Half-Life	too short	
CS-134	563.25			5.368E-01	3.016E-01	5.475E-01	5.193E-02	0.981
	569.33			1.094E-01	1.594E-01	2.727E-01	2.590E-02	0.401
	604.72			-8.340E-03	3.142E-02	4.353E-02	4.030E-03	-0.192
	795.86	+		1.379E-01	5.880E-02	8.152E-02	7.643E-03	1.692
	801.95	*		-9.318E-02	3.325E-01	5.169E-01	4.847E-02	-0.180
	1365.19			3.206E-01	8.819E-01	1.499E+00	1.331E-01	0.214
CS-135	268.22	*		6.703E-02	1.449E-01	2.129E-01	2.715E-02	0.315
I-135	546.56			-5.700E+17	1.449E-01	Half-Life	too short	
	836.80			6.252E+17	1.449E-01	Half-Life	too short	
	1038.76			4.507E+17	1.449E-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		1131.51		6.604E+16	1.449E-01	Half-Life	too short	
		1260.41	*	9.162E+16	1.449E-01	Half-Life	too short	
		1457.56		2.672E+19	1.449E-01	Half-Life	too short	
		1678.03		-1.147E+16	1.449E-01	Half-Life	too short	
		1791.20		-1.308E+17	1.449E-01	Half-Life	too short	
		153.25		1.464E-01	9.853E-01	1.641E+00	1.705E-01	0.089
		176.60		5.364E-02	5.735E-01	9.460E-01	9.610E-02	0.057
		273.65		-1.966E-01	6.450E-01	8.958E-01	1.112E-01	-0.220
		340.55		3.145E-02	1.750E-01	2.653E-01	2.952E-02	0.119
		818.51		5.283E-02	7.649E-02	1.363E-01	1.278E-02	0.388
CE-139		1048.07	*	-5.379E-02	1.255E-01	1.971E-01	1.825E-02	-0.273
		1235.36		1.110E-01	8.245E-01	1.353E+00	1.553E-01	0.082
		165.86	*	-1.422E-02	2.465E-02	3.961E-02	3.593E-03	-0.359
		162.66		1.241E+00	9.528E-01	1.626E+00	1.551E-01	0.763
BA-140		304.85		-1.486E+00	1.875E+00	2.394E+00	7.252E-01	-0.621
		423.72		-1.402E+00	2.268E+00	3.558E+00	1.178E+00	-0.394
		537.26	*	1.698E-03	2.893E-01	4.756E-01	1.624E-01	0.004
		328.76		4.524E-01	4.446E-01	6.165E-01	7.110E-02	0.734
LA-140	+	487.02		1.329E-01	1.581E-01	2.758E-01	2.757E-02	0.482
		815.77		-3.741E-02	3.585E-01	5.973E-01	6.151E-02	-0.063
		1596.21	*	2.447E-02	9.833E-02	1.663E-01	1.416E-02	0.147
		145.44	*	2.665E-02	6.247E-02	9.393E-02	8.217E-03	0.284
CE-141		57.36		-2.773E-02	6.247E-02	Half-Life	too short	
		293.27	*	1.277E-02	6.247E-02	Half-Life	too short	
		664.57		3.112E-02	6.247E-02	Half-Life	too short	
		721.93		3.800E-03	6.247E-02	Half-Life	too short	
CE-144		80.12		1.870E-02	2.556E+00	3.148E+00	2.763E-01	0.006
		133.52	*	9.700E-03	1.701E-01	2.715E-01	4.115E-02	0.036
		476.78		-7.139E-02	5.492E-02	8.213E-02	8.368E-03	-0.869
		618.01		-1.241E-02	2.489E-02	3.868E-02	3.635E-03	-0.321
PM-144		696.49	*	-2.805E-02	3.024E-02	4.483E-02	4.045E-03	-0.626
		696.51	*	-2.133E+00	2.270E+00	3.361E+00	3.030E-01	-0.635
		1489.16		3.283E-01	8.231E+00	1.387E+01	1.186E+00	0.024
		453.88	*	2.764E-02	3.463E-02	5.967E-02	6.740E-03	0.463
PM-146		633.25		6.191E-01	1.164E+00	1.931E+00	7.396E-01	0.321
		735.93		-7.221E-02	1.209E-01	1.803E-01	5.083E-02	-0.401
		747.24		-8.517E-03	8.098E-02	1.284E-01	1.917E-02	-0.066
		91.11		1.097E+00	4.371E-01	7.035E-01	7.036E-02	1.560
ND-147	+	319.41		1.628E+00	4.300E+00	6.962E+00	7.906E-01	0.234
		531.02	*	3.973E-01	6.878E-01	1.175E+00	1.817E-01	0.338
		285.90	*	-2.763E-06	6.878E-01	Half-Life	too short	
		121.78		-1.715E-02	5.727E-02	9.481E-02	9.130E-03	-0.181
PM-149		244.70		3.800E-02	2.766E-01	4.009E-01	4.458E-02	0.095
		344.28	*	1.476E-02	7.412E-02	1.268E-01	1.417E-02	0.116
		778.90		-1.090E-01	2.198E-01	3.343E-01	3.101E-02	-0.326
		964.08		4.596E-01	3.591E-01	4.834E-01	4.485E-02	0.951
EU-152	+	1085.87		-5.417E-02	3.123E-01	5.046E-01	4.381E-02	-0.107
		1112.07		-3.493E-01	2.671E-01	3.819E-01	3.249E-02	-0.915
		1408.01		5.080E-02	1.486E-01	2.496E-01	2.125E-02	0.204

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		69.67		5.740E-01	1.419E+00	2.361E+00	1.861E-01	0.243
		97.43	*	-3.513E-02	7.578E-02	1.126E-01	1.000E-02	-0.312
		103.18		-9.232E-02	8.669E-02	1.400E-01	1.206E-02	-0.659
EU-154		123.07		7.349E-03	4.085E-02	6.884E-02	7.651E-03	0.107
		723.31		2.020E-02	1.622E-01	2.305E-01	2.292E-02	0.088
		873.19		-4.066E-02	2.118E-01	3.479E-01	4.350E-02	-0.117
		996.26		4.063E-02	2.960E-01	4.337E-01	7.693E-02	0.094
		1004.73		1.358E-01	1.741E-01	2.767E-01	3.322E-02	0.491
		1274.44	*	-4.802E-02	1.041E-01	1.603E-01	1.787E-02	-0.300
EU-155	+	86.55		4.200E-01	9.275E-02	1.502E-01	1.434E-02	2.797
		105.31	*	5.401E-02	8.211E-02	1.415E-01	1.224E-02	0.382
TB-160	+	86.79		1.188E+00	2.620E-01	4.296E-01	4.079E-02	2.766
		197.04		-1.202E-01	4.862E-01	7.707E-01	7.589E-02	-0.156
		215.65		1.884E-01	6.481E-01	1.066E+00	1.103E-01	0.177
	+	298.57		2.532E-01	1.419E-01	1.726E-01	2.026E-02	1.467
		879.36	*	-3.303E-02	1.190E-01	1.941E-01	1.834E-02	-0.170
		962.29		5.850E-01	4.967E-01	8.229E-01	7.639E-02	0.711
	+	966.15		3.430E-01	2.680E-01	4.632E-01	4.294E-02	0.741
		1177.93		4.134E-02	3.305E-01	5.455E-01	4.394E-02	0.076
		1271.85		1.353E-01	6.665E-01	1.102E+00	9.155E-02	0.123
HO-166M		80.57		1.253E-02	2.719E-01	3.356E-01	2.962E-02	0.037
	+	184.41		2.259E-01	5.617E-02	5.967E-02	5.680E-03	3.787
		280.46		-4.196E-02	7.050E-02	1.085E-01	1.301E-02	-0.387
		410.95		1.063E-01	1.880E-01	3.249E-01	3.033E-02	0.327
		711.68	*	7.039E-02	4.787E-02	8.591E-02	7.795E-03	0.819
		752.31		3.167E-02	2.337E-01	3.784E-01	3.483E-02	0.084
		810.29		-2.911E-02	4.620E-02	7.345E-02	6.866E-03	-0.396
TA-182		67.75		-4.984E-02	1.085E-01	1.508E-01	1.167E-02	-0.331
		100.11		-9.858E-03	1.451E-01	2.448E-01	2.140E-02	-0.040
		152.43		1.200E-01	2.908E-01	4.891E-01	4.273E-02	0.245
		222.11		-9.667E-02	3.116E-01	4.977E-01	5.234E-02	-0.194
	+	1121.30		4.807E-01	2.161E-01	3.072E-01	2.593E-02	1.565
		1189.05		-1.950E-02	2.908E-01	4.717E-01	3.815E-02	-0.041
		1221.41	*	1.018E-01	1.743E-01	2.973E-01	2.431E-02	0.342
		1231.02		9.627E-02	4.527E-01	7.485E-01	6.140E-02	0.129
IR-192	+	295.96		9.387E-01	1.707E-01	2.574E-01	3.044E-02	3.647
		308.46		1.713E-02	8.264E-02	1.328E-01	1.541E-02	0.129
		316.51	*	-1.618E-03	3.097E-02	4.889E-02	5.587E-03	-0.033
		468.07		-2.435E-03	6.266E-02	9.608E-02	9.675E-03	-0.025
HG-203		70.83		6.894E-01	1.264E+00	1.991E+00	3.130E-01	0.346
		72.87		-2.744E-01	7.206E-01	1.095E+00	1.672E-01	-0.251
		279.20	*	-8.751E-04	3.501E-02	5.585E-02	6.797E-03	-0.016
BI-207		72.81		-5.614E-02	1.502E-01	2.286E-01	1.857E-02	-0.246
	+	74.97		5.922E-01	1.225E-01	1.840E-01	1.528E-02	3.219
		569.70		1.991E-02	2.484E-02	4.279E-02	4.017E-03	0.465
		1063.66	*	3.636E-02	4.337E-02	7.662E-02	6.754E-03	0.475
		1770.23		-3.637E-01	3.934E-01	3.798E-01	3.138E-02	-0.958
PB-210		46.54	*	2.105E+00	2.829E+00	4.564E+00	4.220E-01	0.461
PB-211		404.85	*	3.105E-01	5.845E-01	9.766E-01	4.738E-01	0.318

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	427.09	*	3.360E-02	1.165E+00	1.950E+00	9.049E-01	0.017
		832.01		-3.558E-01	8.270E-01	1.306E+00	6.788E-01	-0.273
		271.23		8.504E-01	3.755E-01	3.827E-01	4.994E-02	2.222
		401.81		-2.932E-01	3.290E-01	5.171E-01	7.899E-02	-0.567
RA-223	+	81.07	*	-2.496E-02	2.159E-01	2.635E-01	2.338E-02	-0.095
		83.79		3.178E-01	1.333E-01	1.792E-01	1.642E-02	1.773
		94.87		6.331E-01	3.711E-01	6.017E-01	5.441E-02	1.052
		144.24		1.094E+00	8.677E-01	9.661E-01	9.251E-02	1.132
AC-227	+	154.21	*	1.270E-01	3.059E-01	5.142E-01	4.931E-02	0.247
		269.46		6.607E-01	2.896E-01	2.884E-01	3.429E-02	2.291
		323.87		-1.509E-01	6.138E-01	8.433E-01	1.584E-01	-0.179
		338.28		5.314E+00	1.332E+00	1.918E+00	2.648E-01	2.770
TH-227	+	79.69	*	-2.574E-01	1.099E+00	1.532E+00	2.650E-01	-0.168
		235.96		6.870E-02	1.341E-01	1.988E-01	2.444E-02	0.346
		256.23		-1.011E-01	2.062E-01	3.215E-01	4.563E-02	-0.315
		299.98		1.850E+00	1.051E+00	1.346E+00	2.016E-01	1.374
PA-231	+	304.50	*	-1.274E+00	1.516E+00	1.963E+00	3.590E-01	-0.649
		334.37		4.424E-01	1.485E+00	2.271E+00	3.868E-01	0.195
		79.80		-2.970E-01	1.450E+00	2.024E+00	4.418E-01	-0.147
		235.96		6.870E-02	1.341E-01	1.988E-01	2.347E-02	0.346
TH-231	+	256.23	*	-1.011E-01	2.063E-01	3.215E-01	4.994E-02	-0.315
		299.98		1.850E+00	1.051E+00	1.346E+00	2.016E-01	1.374
		304.50		-1.274E+00	1.516E+00	1.963E+00	3.590E-01	-0.649
		334.37		4.424E-01	1.485E+00	2.271E+00	3.868E-01	0.195
PA-233	+	283.69	*	-7.733E-01	1.184E+00	1.804E+00	3.027E-01	-0.429
		301.36		1.188E+00	6.737E-01	8.484E-01	1.230E-01	1.401
		81.07		-2.496E-02	2.159E-01	2.635E-01	2.338E-02	-0.095
		83.79		3.178E-01	1.333E-01	1.792E-01	1.642E-02	1.773
PA-234	+	94.87	*	6.331E-01	3.711E-01	6.017E-01	5.441E-02	1.052
		144.24		1.094E+00	8.677E-01	9.661E-01	9.251E-02	1.132
		154.21		1.270E-01	3.059E-01	5.142E-01	4.931E-02	0.247
		269.46		6.607E-01	2.896E-01	2.884E-01	3.429E-02	2.291
PA-234M	+	323.87	*	-1.509E-01	6.138E-01	8.433E-01	1.584E-01	-0.179
		338.28		5.314E+00	1.332E+00	1.918E+00	2.648E-01	2.770
		300.13		8.370E-01	4.799E-01	6.096E-01	1.025E-01	1.373
		311.90		2.383E-02	5.247E-02	8.545E-02	9.989E-03	0.279
PA-234	+	340.48	*	1.472E-01	5.208E-01	7.935E-01	1.981E-01	0.185
		94.67		3.605E-01	1.440E-01	2.314E-01	2.941E-02	1.558
		98.44		6.973E-02	8.461E-02	1.254E-01	7.000E-02	0.556
		111.00		-4.178E-02	1.439E-01	2.394E-01	2.857E-02	-0.175
PA-234M	+	131.20	*	-4.457E-02	9.376E-02	1.369E-01	1.145E-02	-0.326
		569.50		1.635E-01	2.194E-01	3.767E-01	3.536E-02	0.434
		733.00		5.677E-02	3.250E-01	4.899E-01	1.098E-01	0.116
		880.51		-6.432E-02	2.358E-01	3.856E-01	3.643E-02	-0.167
PA-234M	+	883.24	*	7.350E-02	2.404E-01	4.035E-01	2.717E-01	0.182
		926.50		1.670E-02	1.355E-01	2.282E-01	5.830E-02	0.073
		946.00		3.281E-02	2.668E-01	4.479E-01	8.556E-02	0.073
		949.00		8.046E-02	3.830E-01	6.475E-01	6.039E-02	0.124
PA-234M		766.42		8.989E+00	1.230E+01	1.723E+01	8.763E+00	0.522

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	1001.03	*	6.995E+00	5.966E+00	7.741E+00	8.060E-01	0.904
NP-239		99.53		1.458E-01	1.299E-01	2.259E-01	1.981E-02	0.645
		103.37		-7.818E-02	7.666E-02	1.240E-01	1.068E-02	-0.630
		106.12		3.741E-02	6.550E-02	1.125E-01	9.589E-03	0.332
		117.23	*	-2.686E-01	3.126E-01	5.060E-01	4.212E-02	-0.531
		228.18		2.169E-01	1.793E-01	3.042E-01	3.248E-02	0.713
		277.60		2.519E-01	1.436E-01	2.461E-01	2.945E-02	1.024
AM-241		59.54	*	-3.485E-03	1.381E-01	1.978E-01	1.552E-02	-0.018
CM-247		278.00		7.857E-01	6.254E-01	1.054E+00	1.263E-01	0.745
		287.50		9.239E-01	1.036E+00	1.725E+00	2.053E-01	0.536
		402.40	*	-3.006E-02	3.078E-02	4.845E-02	4.505E-03	-0.621
CF-249		252.80		3.430E-01	7.501E-01	1.235E+00	1.399E-01	0.278
		333.37		-7.009E-02	1.600E-01	2.320E-01	2.561E-02	-0.302
		388.16	*	-5.293E-03	3.220E-02	5.360E-02	5.024E-03	-0.099
CF-251		177.52	*	4.503E-02	1.026E-01	1.715E-01	1.603E-02	0.263
		227.38		1.598E-01	2.957E-01	4.900E-01	5.222E-02	0.326
		285.41		4.961E-01	1.810E+00	2.932E+00	3.498E-01	0.169

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]G248030005      *
* Acquisition date   : 13-MAR-2010 14:32:17 Detector SN#                   *
* Detector ID        : GAM16 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time: 0 02:00:00.00 Abundance limit : 75.000              *
* Elapsed real time: 0 02:00:02.28 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248030005 Analyst initials: MXR1                  *
* Batch Number       : 958221 Sample Quantity : 1.5586E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 MS Isotope                    *
* MSD DPM            : 0.000 MSD Isotope :                               *
* LCS DPM            : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.818E+01	2.851E+00	4.538E-01	0.000E+00
CD-109	3.571E+00	7.716E-01	9.864E-01	0.000E+00
SN-126	3.454E-01	7.464E-02	9.586E-02	0.000E+00
BA-137M	3.330E-01	7.142E-02	4.752E-02	0.000E+00
CS-137	3.518E-01	7.547E-02	5.020E-02	0.000E+00
TL-208	4.285E-01	7.337E-02	5.231E-02	0.000E+00
BI-211	3.752E+00	5.503E-01	2.589E-01	0.000E+00
BI-212	1.557E+00	7.087E-01	7.244E-01	0.000E+00
PB-212	1.478E+00	1.959E-01	7.846E-02	0.000E+00
BI-214	1.207E+00	1.874E-01	8.790E-02	0.000E+00
PB-214	1.362E+00	2.128E-01	9.417E-02	0.000E+00
RA-224	3.891E+00	9.487E-01	8.409E-01	0.000E+00
RA-226	1.207E+00	1.874E-01	8.790E-02	0.000E+00
AC-228	1.638E+00	3.501E-01	1.671E-01	0.000E+00
RA-228	1.638E+00	3.501E-01	1.671E-01	0.000E+00
TH-228	1.478E+00	1.959E-01	7.846E-02	0.000E+00
TH-229	2.082E-01	3.992E-01	7.247E-01	0.000E+00
TH-232	1.638E+00	3.501E-01	1.671E-01	0.000E+00
TH-234	5.751E+00	2.188E+00	1.782E+00	0.000E+00
U-235	3.264E-01	2.576E-01	2.788E-01	0.000E+00
NP-237	1.031E+00	3.073E-01	2.966E-01	0.000E+00
U-238	5.751E+00	2.188E+00	1.782E+00	0.000E+00
ANH-511	1.116E-01	5.868E-02	4.109E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.988E-01	2.848E-01	4.765E-01	0.000E+00 NOT IDENT.
NA-22	-1.762E-02	3.605E-02	5.727E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.303E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.824E-02	3.192E-02	5.272E-02	0.000E+00 FAIL ABUN

V-48	1.543E-02	8.138E-02	1.426E-01	0.000E+00	NOT IDENT.
CR-51	1.160E-01	3.626E-01	6.273E-01	0.000E+00	NOT IDENT.
MN-54	1.077E-02	3.129E-02	5.625E-02	0.000E+00	NOT IDENT.
CO-56	8.611E-03	3.208E-02	5.744E-02	0.000E+00	NOT IDENT.
CO-57	-4.871E-03	1.982E-02	3.617E-02	0.000E+00	NOT IDENT.
CO-58	-9.196E-03	3.202E-02	5.502E-02	0.000E+00	NOT IDENT.
FE-59	-9.512E-02	8.446E-02	1.278E-01	0.000E+00	NOT IDENT.
CO-60	-1.884E-03	3.292E-02	5.450E-02	0.000E+00	NOT IDENT.
ZN-65	1.122E-01	8.310E-02	1.415E-01	0.000E+00	NOT IDENT.
SE-75	-3.061E-02	3.986E-02	6.213E-02	0.000E+00	NOT IDENT.
SR-85	4.458E-02	3.701E-02	6.215E-02	0.000E+00	NOT IDENT.
Y-88	-1.582E-02	2.397E-02	3.395E-02	0.000E+00	NOT IDENT.
Y-91	-1.782E+01	2.037E+01	3.168E+01	0.000E+00	NOT IDENT.
NB-94	2.089E-02	2.770E-02	4.946E-02	0.000E+00	NOT IDENT.
NB-95	2.806E-02	4.142E-02	6.506E-02	0.000E+00	NOT IDENT.
NB-95M	8.344E-02	1.150E-01	1.864E-01	0.000E+00	NOT IDENT.
ZR-95	-8.887E-03	6.523E-02	1.081E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	5.715E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.280E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	6.382E-03	3.413E-02	6.057E-02	0.000E+00	FAIL ABUN
RH-106	2.477E-01	2.529E-01	4.621E-01	0.000E+00	NOT IDENT.
RU-106	2.477E-01	2.517E-01	4.621E-01	0.000E+00	NOT IDENT.
AG-108M	-5.847E-03	2.152E-02	3.748E-02	0.000E+00	NOT IDENT.
AG-110M	2.379E-02	2.789E-02	4.582E-02	0.000E+00	NOT IDENT.
SN-113	7.140E-03	3.678E-02	6.662E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	7.542E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	6.649E-03	5.876E-02	1.066E-01	0.000E+00	NOT IDENT.
TE-123M	-1.547E-03	2.230E-02	4.013E-02	0.000E+00	NOT IDENT.
SB-124	2.301E-02	5.661E-02	1.035E-01	0.000E+00	NOT IDENT.
SB-125	5.357E-02	6.811E-02	1.267E-01	0.000E+00	FAIL ABUN
TE-125M	8.586E+00	8.042E+00	1.540E+01	0.000E+00	NOT IDENT.
I-126	8.905E-02	2.994E-01	4.589E-01	0.000E+00	NOT IDENT.
SB-126	6.267E-03	1.942E-01	3.037E-01	0.000E+00	NOT IDENT.
SB-127	-1.653E+00	3.990E+00	6.446E+00	0.000E+00	NOT IDENT.
I-131	1.881E-03	1.607E-01	2.902E-01	0.000E+00	NOT IDENT.
TE-132	3.318E+00	2.740E+00	4.947E+00	0.000E+00	NOT IDENT.
BA-133	-1.130E-03	3.353E-02	5.336E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.269E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.762E-02	8.363E-02	0.000E+00	FAIL ABUN
CS-135	6.703E-02	1.420E-01	2.249E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.607E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.379E-02	1.230E-01	2.007E-01	0.000E+00	NOT IDENT.
CE-139	-1.422E-02	2.416E-02	4.236E-02	0.000E+00	NOT IDENT.
BA-140	1.698E-03	2.835E-01	4.932E-01	0.000E+00	NOT IDENT.
LA-140	2.447E-02	9.637E-02	1.673E-01	0.000E+00	FAIL ABUN
CE-141	2.665E-02	6.122E-02	1.008E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.444E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	9.700E-03	1.667E-01	2.919E-01	0.000E+00	NOT IDENT.
PM-144	-2.805E-02	2.964E-02	4.617E-02	0.000E+00	NOT IDENT.
PR-144	-2.133E+00	2.225E+00	3.461E+00	0.000E+00	NOT IDENT.
PM-146	2.764E-02	3.394E-02	6.216E-02	0.000E+00	NOT IDENT.
ND-147	3.973E-01	6.740E-01	1.219E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	6.786E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	1.476E-02	7.264E-02	1.331E-01	0.000E+00	FAIL ABUN
GD-153	-3.513E-02	7.426E-02	1.220E-01	0.000E+00	NOT IDENT.
EU-154	-4.802E-02	1.020E-01	1.623E-01	0.000E+00	NOT IDENT.
EU-155	5.401E-02	8.047E-02	1.531E-01	0.000E+00	FAIL ABUN
TB-160	-3.303E-02	1.167E-01	1.986E-01	0.000E+00	FAIL ABUN
HO-166M	7.039E-02	4.691E-02	8.841E-02	0.000E+00	FAIL ABUN
TA-182	1.018E-01	1.708E-01	3.014E-01	0.000E+00	FAIL ABUN
IR-192	-1.618E-03	3.035E-02	5.141E-02	0.000E+00	FAIL ABUN
HG-203	-8.751E-04	3.431E-02	5.893E-02	0.000E+00	NOT IDENT.
BI-207	3.636E-02	4.250E-02	7.798E-02	0.000E+00	FAIL ABUN
PB-210	2.105E+00	2.772E+00	5.035E+00	0.000E+00	NOT IDENT.
PB-211	3.105E-01	5.728E-01	1.020E+00	0.000E+00	NOT IDENT.
RN-219	-2.932E-01	3.224E-01	5.404E-01	0.000E+00	FAIL ABUN
RA-223	-1.509E-01	6.015E-01	8.864E-01	0.000E+00	FAIL ABUN
AC-227	-1.011E-01	2.021E-01	3.400E-01	0.000E+00	FAIL ABUN
TH-227	-1.011E-01	2.022E-01	3.400E-01	0.000E+00	FAIL ABUN
PA-231	-7.733E-01	1.160E+00	1.903E+00	0.000E+00	FAIL ABUN
TH-231	-1.509E-01	6.015E-01	8.864E-01	0.000E+00	FAIL ABUN
PA-233	2.383E-02	5.142E-02	8.990E-02	0.000E+00	FAIL ABUN
PA-234	3.281E-02	2.615E-01	4.573E-01	0.000E+00	NOT IDENT.
PA-234M	6.995E+00	5.847E+00	7.892E+00	0.000E+00	FAIL ABUN
NP-239	-2.686E-01	3.063E-01	5.458E-01	0.000E+00	NOT IDENT.
AM-241	-3.485E-03	1.353E-01	2.169E-01	0.000E+00	NOT IDENT.
CM-247	-3.006E-02	3.016E-02	5.063E-02	0.000E+00	NOT IDENT.
CF-249	-5.293E-03	3.156E-02	5.607E-02	0.000E+00	NOT IDENT.

CF-251	4.503E-02	1.005E-01	1.831E-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]G248030005.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:32:17
Sample ID          : G248030005 Sample quantity : 1.55860E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.28 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958221 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	1507	10.66*	1.208E+00	2.818E+01	2.818E+01	10.32
CD-109	88.03	332	3.70*	6.262E+00	3.454E+00	3.571E+00	22.05
SN-126	64.28	312	9.60	3.526E+00	2.217E+00	2.217E+00	37.42
	86.94	332	8.90	6.262E+00	1.436E+00	1.436E+00	46.07
	87.57	332	37.00*	6.262E+00	3.454E-01	3.454E-01	22.05
BA-137M	661.66	299	89.90*	2.406E+00	3.325E-01	3.330E-01	21.89
CS-137	661.66	299	85.10*	2.406E+00	3.513E-01	3.518E-01	21.89
TL-208	277.37	-----	6.60	4.694E+00	-----	Line Not Found	-----
	583.19	404	85.00*	2.668E+00	4.285E-01	4.285E-01	17.47
	860.56	61	12.50	1.920E+00	6.076E-01	6.076E-01	59.85
BI-211	72.87	-----	1.23	4.872E+00	-----	Line Not Found	-----
	351.06	793	12.92*	3.941E+00	3.752E+00	3.752E+00	14.97
BI-212	727.33	96	6.67*	2.220E+00	1.557E+00	1.557E+00	46.45
	785.37	-----	1.10	2.079E+00	-----	Line Not Found	-----
	1620.50	23	1.47	1.117E+00	3.425E+00	3.425E+00	58.20
PB-212	74.82	448	10.28	5.115E+00	2.054E+00	2.054E+00	22.86
	77.11	661	17.10	5.369E+00	1.733E+00	1.733E+00	15.09
	238.63	1398	43.60*	5.226E+00	1.478E+00	1.478E+00	13.52
	300.09	102	3.30	4.434E+00	1.682E+00	1.682E+00	56.37
BI-214	609.32	587	45.49*	2.574E+00	1.207E+00	1.207E+00	15.85
	1120.29	92	14.92	1.516E+00	9.833E-01	9.833E-01	45.45
	1764.49	129	15.30	1.056E+00	1.917E+00	1.917E+00	24.09
PB-214	74.82	448	5.80	5.115E+00	3.641E+00	3.641E+00	22.15
	77.11	661	9.70	5.369E+00	3.055E+00	3.055E+00	17.20
	242.00	343	7.25	5.180E+00	2.201E+00	2.201E+00	25.54
	295.22	408	18.42	4.487E+00	1.189E+00	1.189E+00	19.29
	351.93	793	35.60*	3.941E+00	1.362E+00	1.362E+00	15.95
RA-224	240.99	343	4.10*	5.180E+00	3.891E+00	3.891E+00	24.88
RA-226	609.32	587	45.49*	2.574E+00	1.207E+00	1.207E+00	15.85
	1120.29	92	14.92	1.516E+00	9.833E-01	9.833E-01	45.45
	1764.49	129	15.30	1.056E+00	1.917E+00	1.917E+00	24.09
AC-228	338.32	254	11.27	4.058E+00	1.339E+00	1.339E+00	47.15

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	320	25.80*	1.824E+00	1.638E+00	1.638E+00	21.81
	968.97	168	15.80	1.727E+00	1.486E+00	1.486E+00	35.14
	338.32	254	11.27	4.058E+00	1.339E+00	1.339E+00	47.15
	911.20	320	25.80*	1.824E+00	1.638E+00	1.638E+00	21.81
TH-228	968.97	168	15.80	1.727E+00	1.486E+00	1.486E+00	35.14
	74.82	448	10.28	5.115E+00	2.054E+00	2.054E+00	20.72
	77.11	661	17.10	5.369E+00	1.733E+00	1.733E+00	15.09
	238.63	1398	43.60*	5.226E+00	1.478E+00	1.478E+00	13.52
TH-229	300.09	102	3.30	4.434E+00	1.682E+00	1.682E+00	82.55
	85.43	196	14.70	6.029E+00	5.339E-01	5.339E-01	41.96
	88.47	332	24.00	6.262E+00	5.325E-01	5.326E-01	22.05
	193.51	-----	4.41*	5.998E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	5.681E+00	-----	Line Not Found	-----
	338.32	254	11.27	4.058E+00	1.339E+00	1.339E+00	23.60
	911.20	320	25.80*	1.824E+00	1.638E+00	1.638E+00	21.81
	968.97	168	15.80	1.727E+00	1.486E+00	1.486E+00	35.14
TH-234	63.29	312	3.70*	3.526E+00	5.751E+00	5.751E+00	38.82
	92.59	892	4.23	6.589E+00	7.710E+00	7.710E+00	24.81
	89.96	202	3.47	6.436E+00	2.180E+00	2.180E+00	45.89
	93.35	892	5.60	6.589E+00	5.824E+00	5.824E+00	25.72
U-235	143.76	103	10.96*	6.947E+00	3.264E-01	3.264E-01	80.53
	163.33	-----	5.08	6.588E+00	-----	Line Not Found	-----
	185.72	415	57.20	6.147E+00	2.844E-01	2.844E-01	24.86
	205.31	-----	5.01	5.780E+00	-----	Line Not Found	-----
NP-237	86.48	332	12.40*	6.262E+00	1.031E+00	1.031E+00	30.43
	95.86	-----	2.68	6.742E+00	-----	Line Not Found	-----
	63.29	312	3.70*	3.526E+00	5.751E+00	5.751E+00	38.82
	92.59	892	4.23	6.589E+00	7.710E+00	7.710E+00	14.22
ANH-511	511.00	137	100.00*	2.965E+00	1.116E-01	1.116E-01	53.65

Flag: "*" = Keyline

Total number of lines in spectrum 38
Number of unidentified lines 5
Number of lines tentatively identified by NID 33 86.84%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.818E+01	2.818E+01	0.291E+01	10.32	
CD-109	461.40D	1.03	3.454E+00	3.571E+00	0.787E+00	22.05	
SN-126	2.30E+05Y	1.00	3.454E-01	3.454E-01	0.762E-01	22.05	
BA-137M	30.08Y	1.00	3.325E-01	3.330E-01	0.729E-01	21.89	
CS-137	30.08Y	1.00	3.513E-01	3.518E-01	0.770E-01	21.89	
TL-208	1.41E+10Y	1.00	4.285E-01	4.285E-01	0.749E-01	17.47	
BI-211	7.04E+08Y	1.00	3.752E+00	3.752E+00	0.561E+00	14.97	
BI-212	1.41E+10Y	1.00	1.557E+00	1.557E+00	0.723E+00	46.45	
PB-212	1.41E+10Y	1.00	1.478E+00	1.478E+00	0.200E+00	13.52	
BI-214	1600.00Y	1.00	1.207E+00	1.207E+00	0.191E+00	15.85	
PB-214	1600.00Y	1.00	1.362E+00	1.362E+00	0.217E+00	15.95	
RA-224	1.41E+10Y	1.00	3.891E+00	3.891E+00	0.968E+00	24.88	
RA-226	1600.00Y	1.00	1.207E+00	1.207E+00	0.191E+00	15.85	
AC-228	1.41E+10Y	1.00	1.638E+00	1.638E+00	0.357E+00	21.81	
RA-228	1.41E+10Y	1.00	1.638E+00	1.638E+00	0.357E+00	21.81	
TH-228	1.41E+10Y	1.00	1.478E+00	1.478E+00	0.200E+00	13.52	
TH-229	7340.00Y	1.00	5.325E-01	5.326E-01	1.174E-01	22.05	K
TH-232	1.41E+10Y	1.00	1.638E+00	1.638E+00	0.357E+00	21.81	
TH-234	4.47E+09Y	1.00	5.751E+00	5.751E+00	2.233E+00	38.82	
U-235	7.04E+08Y	1.00	3.264E-01	3.264E-01	2.629E-01	80.53	
NP-237	2.14E+06Y	1.00	1.031E+00	1.031E+00	0.314E+00	30.43	
U-238	4.47E+09Y	1.00	5.751E+00	5.751E+00	2.233E+00	38.82	
ANH-511	1.00E+09Y	1.00	1.116E-01	1.116E-01	0.599E-01	53.65	
Total Activity :			6.744E+01	6.756E+01			

Grand Total Activity : 6.744E+01 6.756E+01

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

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	52.91	75	434	1.44	106.01	103	8	1.04E-02	99.2	1.91E+00	
0	128.86	74	406	0.88	257.91	255	7	1.03E-02	93.3	7.13E+00	
0	209.21	166	298	0.94	418.62	415	9	2.31E-02	41.2	5.71E+00	
0	270.80	182	301	1.40	541.80	536	13	2.53E-02	42.2	4.78E+00	T
0	327.97	47	162	1.17	656.14	652	8	6.60E-03	97.6	4.15E+00	T
0	462.73	88	126	1.49	925.63	921	9	1.22E-02	50.9	3.20E+00	T
0	768.15	56	86	1.17	1536.38	1531	12	7.74E-03	71.3	2.12E+00	
0	794.79	89	63	1.08	1589.64	1584	12	1.23E-02	41.6	2.06E+00	T
1	964.67	48	75	1.76	1929.32	1921	26	6.71E-03	77.6	1.73E+00	T
0	1001.21	41	60	1.14	2002.38	1997	12	5.68E-03	84.6	1.68E+00	T
0	1588.07	35	18	1.48	3175.62	3169	12	4.90E-03	58.6	1.13E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030005.CNF;1
* Acquisition date   : 13-MAR-2010 14:32:17  Detector SN#      :
* Detector ID        : GAM16                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit    : 75.00000
* Elapsed real time  : 0 02:00:02.28          Half life ratio   : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G248030005            Analyst initials  : MXR1
* Batch Number       : 958221                Sample Quantity  : 1.55860E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16.1MS Isotope       :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.818E+01	2.909E+00	4.499E-01	3.955E-02	62.648
CD-109	3.571E+00	7.874E-01	9.080E-01	8.750E-02	3.933
SN-126	3.454E-01	7.616E-02	8.823E-02	8.459E-03	3.915
BA-137M	3.330E-01	7.288E-02	4.609E-02	4.090E-03	7.225
CS-137	3.518E-01	7.701E-02	4.869E-02	4.328E-03	7.225
TL-208	4.285E-01	7.486E-02	5.055E-02	5.005E-03	8.477
BI-211	3.752E+00	5.615E-01	2.469E-01	2.700E-02	15.197
BI-212	1.557E+00	7.231E-01	7.043E-01	9.026E-02	2.211
PB-212	1.478E+00	1.999E-01	7.406E-02	8.798E-03	19.955
BI-214	1.207E+00	1.912E-01	8.505E-02	9.031E-03	14.189
PB-214	1.362E+00	2.172E-01	8.980E-02	1.098E-02	15.164
RA-224	3.891E+00	9.681E-01	7.939E-01	8.749E-02	4.901
RA-226	1.207E+00	1.912E-01	8.505E-02	9.031E-03	14.189
AC-228	1.638E+00	3.572E-01	1.635E-01	1.996E-02	10.019
RA-228	1.638E+00	3.572E-01	1.635E-01	1.996E-02	10.019
TH-228	1.478E+00	1.999E-01	7.406E-02	8.798E-03	19.955
TH-229	5.326E-01	1.174E-01	6.803E-01	6.637E-02	0.783
TH-232	1.638E+00	3.572E-01	1.635E-01	1.996E-02	10.019

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	5.751E+00	2.233E+00	1.627E+00	2.901E-01	3.535
U-235	3.264E-01	2.629E-01	2.598E-01	4.395E-02	1.257
NP-237	1.031E+00	3.136E-01	2.729E-01	6.277E-02	3.777
U-238	5.751E+00	2.233E+00	1.627E+00	2.901E-01	3.535
ANH-511	1.116E-01	5.988E-02	3.957E-02	3.764E-03	2.820

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.988E-01		2.906E-01	4.581E-01	4.633E-02	-0.434
NA-22	-1.762E-02		3.679E-02	5.656E-02	4.706E-03	-0.311
NA-24	-9.731E+02		6.648E+02	Half-Life too short		
SC-46	-1.824E-02		3.257E-02	5.154E-02	4.872E-03	-0.354
V-48	1.543E-02		8.304E-02	1.398E-01	1.287E-02	0.110
CR-51	1.160E-01		3.700E-01	5.967E-01	6.973E-02	0.194
MN-54	1.077E-02		3.193E-02	5.490E-02	5.156E-03	0.196
CO-56	8.611E-03		3.273E-02	5.609E-02	5.278E-03	0.154
CO-57	-4.871E-03		2.023E-02	3.356E-02	2.789E-03	-0.145
CO-58	-9.196E-03		3.267E-02	5.366E-02	5.027E-03	-0.171
FE-59	-9.512E-02		8.618E-02	1.257E-01	1.168E-02	-0.757
CO-60	-1.884E-03		3.359E-02	5.389E-02	4.546E-03	-0.035
ZN-65	1.122E-01		8.480E-02	1.392E-01	1.182E-02	0.806
SE-75	-3.061E-02		4.067E-02	5.880E-02	6.863E-03	-0.521
SR-85	4.458E-02		3.776E-02	5.986E-02	5.692E-03	0.745
Y-88	-1.582E-02		2.446E-02	3.388E-02	2.750E-03	-0.467
Y-91	-1.782E+01		2.079E+01	3.123E+01	2.540E+00	-0.571
NB-94	2.089E-02		2.826E-02	4.804E-02	4.343E-03	0.435
NB-95	2.806E-02		4.226E-02	6.335E-02	5.856E-03	0.443
NB-95M	8.344E-02		1.173E-01	1.759E-01	2.094E-02	0.474
ZR-95	-8.887E-03		6.656E-02	1.052E-01	1.059E-02	-0.084
MO-99	-3.402E-06		2.916E-05	Half-Life too short		
TC-99M	1.147E+18		4.224E+18	Half-Life too short		
RU-103	6.382E-03		3.483E-02	5.829E-02	8.474E-03	0.109
RH-106	2.477E-01		2.580E-01	4.474E-01	6.086E-02	0.554
RU-106	2.477E-01		2.568E-01	4.474E-01	4.091E-02	0.554
AG-108M	-5.847E-03		2.195E-02	3.594E-02	3.477E-03	-0.163
AG-110M	2.379E-02		2.846E-02	4.443E-02	4.066E-03	0.535
SN-113	7.140E-03		3.753E-02	6.370E-02	6.047E-03	0.112
CD-115	-3.989E-05		3.848E-05	Half-Life too short		
SN-117M	6.649E-03		5.995E-02	9.955E-02	8.842E-03	0.067
TE-123M	-1.547E-03		2.275E-02	3.749E-02	3.353E-03	-0.041
SB-124	2.301E-02		5.777E-02	1.030E-01	9.045E-03	0.223
SB-125	5.357E-02		6.950E-02	1.214E-01	1.160E-02	0.441
TE-125M	8.586E+00		8.206E+00	1.425E+01	1.476E+00	0.602
I-126	8.905E-02		3.055E-01	4.452E-01	3.959E-02	0.200
SB-126	6.267E-03		1.982E-01	2.952E-01	2.688E-02	0.021
SB-127	-1.653E+00		4.071E+00	6.258E+00	8.683E-01	-0.264

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	1.881E-03		1.640E-01	2.769E-01	2.942E-02	0.007
TE-132	3.318E+00		2.795E+00	4.664E+00	8.639E-01	0.711
BA-133	-1.130E-03		3.421E-02	5.090E-02	7.239E-03	-0.022
I-133	-9.925E-01		6.473E-01	Half-Life	too short	
CS-134	1.379E-01	+	5.880E-02	8.152E-02	7.643E-03	1.692
CS-135	6.703E-02		1.449E-01	2.129E-01	2.715E-02	0.315
I-135	9.162E+16		1.330E+17	Half-Life	too short	
CS-136	-5.379E-02		1.255E-01	1.971E-01	1.825E-02	-0.273
CE-139	-1.422E-02		2.465E-02	3.961E-02	3.593E-03	-0.359
BA-140	1.698E-03		2.893E-01	4.756E-01	1.624E-01	0.004
LA-140	2.447E-02		9.833E-02	1.663E-01	1.416E-02	0.147
CE-141	2.665E-02		6.247E-02	9.393E-02	8.217E-03	0.284
CE-143	1.277E-02		2.778E-03	Half-Life	too short	
CE-144	9.700E-03		1.701E-01	2.715E-01	4.115E-02	0.036
PM-144	-2.805E-02		3.024E-02	4.483E-02	4.045E-03	-0.626
PR-144	-2.133E+00		2.270E+00	3.361E+00	3.030E-01	-0.635
PM-146	2.764E-02		3.463E-02	5.967E-02	6.740E-03	0.463
ND-147	3.973E-01		6.878E-01	1.175E+00	1.817E-01	0.338
PM-149	-2.763E-06		3.462E-04	Half-Life	too short	
EU-152	1.476E-02		7.412E-02	1.268E-01	1.417E-02	0.116
GD-153	-3.513E-02		7.578E-02	1.126E-01	1.000E-02	-0.312
EU-154	-4.802E-02		1.041E-01	1.603E-01	1.787E-02	-0.300
EU-155	5.401E-02		8.211E-02	1.415E-01	1.224E-02	0.382
TB-160	-3.303E-02		1.190E-01	1.941E-01	1.834E-02	-0.170
HO-166M	7.039E-02		4.787E-02	8.591E-02	7.795E-03	0.819
TA-182	1.018E-01		1.743E-01	2.973E-01	2.431E-02	0.342
IR-192	-1.618E-03		3.097E-02	4.889E-02	5.587E-03	-0.033
HG-203	-8.751E-04		3.501E-02	5.585E-02	6.797E-03	-0.016
BI-207	3.636E-02		4.337E-02	7.662E-02	6.754E-03	0.475
PB-210	2.105E+00		2.829E+00	4.564E+00	4.220E-01	0.461
PB-211	3.105E-01		5.845E-01	9.766E-01	4.738E-01	0.318
RN-219	-2.932E-01		3.290E-01	5.171E-01	7.899E-02	-0.567
RA-223	-1.509E-01		6.138E-01	8.433E-01	1.584E-01	-0.179
AC-227	-1.011E-01		2.062E-01	3.215E-01	4.563E-02	-0.315
TH-227	-1.011E-01		2.063E-01	3.215E-01	4.994E-02	-0.315
PA-231	-7.733E-01		1.184E+00	1.804E+00	3.027E-01	-0.429
TH-231	-1.509E-01		6.138E-01	8.433E-01	1.584E-01	-0.179
PA-233	2.383E-02		5.247E-02	8.545E-02	9.989E-03	0.279
PA-234	3.281E-02		2.668E-01	4.479E-01	8.556E-02	0.073
PA-234M	6.995E+00	+	5.966E+00	7.741E+00	8.060E-01	0.904
NP-239	-2.686E-01		3.126E-01	5.060E-01	4.212E-02	-0.531
AM-241	-3.485E-03		1.381E-01	1.978E-01	1.552E-02	-0.018
CM-247	-3.006E-02		3.078E-02	4.845E-02	4.505E-03	-0.621
CF-249	-5.293E-03		3.220E-02	5.360E-02	5.024E-03	-0.099
CF-251	4.503E-02		1.026E-01	1.715E-01	1.603E-02	0.263

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248030005          *
* Acquisition date   : 13-MAR-2010 14:32:17 Detector SN#      :             *
* Detector ID        : GAM16                      Sensitivity    : 5.000      *
* Geometry           : CAN                        Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:02.28              Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030005              Analyst initials: MXR1         *
* Batch Number       : 958221                  Sample Quantity : 1.5586E+02 GRAM *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 MS Isotope         :             *
* MSD DPM             : 0.000                      MSD Isotope    :             *
* LCS DPM             : 0.000                      LCS Isotope    :             *
* LCSD DPM           : 0.000                      LCSD Isotope   :             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.818E+01	2.851E+00	2.270E-01	1.455E+00
CD-109	3.571E+00	7.716E-01	4.935E-01	3.937E-01
SN-126	3.454E-01	7.464E-02	4.796E-02	3.808E-02
BA-137M	3.330E-01	7.142E-02	2.378E-02	3.644E-02
CS-137	3.518E-01	7.547E-02	2.512E-02	3.850E-02
TL-208	4.285E-01	7.337E-02	2.617E-02	3.743E-02
BI-211	3.752E+00	5.503E-01	1.295E-01	2.807E-01
BI-212	1.557E+00	7.087E-01	3.624E-01	3.616E-01
PB-212	1.478E+00	1.959E-01	3.925E-02	9.993E-02
BI-214	1.207E+00	1.874E-01	4.398E-02	9.562E-02
PB-214	1.362E+00	2.128E-01	4.711E-02	1.086E-01
RA-224	3.891E+00	9.487E-01	4.207E-01	4.840E-01
RA-226	1.207E+00	1.474E-01	4.398E-02	9.562E-02
AC-228	1.638E+00	3.501E-01	8.360E-02	1.786E-01
RA-228	1.638E+00	3.501E-01	8.360E-02	1.786E-01
TH-228	1.478E+00	1.959E-01	3.925E-02	9.993E-02
TH-229	2.082E-01	3.992E-01	3.625E-01	2.037E-01
TH-232	1.638E+00	3.501E-01	8.360E-02	1.786E-01
TH-234	5.751E+00	2.188E+00	8.914E-01	1.116E+00
U-235	3.264E-01	2.576E-01	1.395E-01	1.314E-01
NP-237	1.031E+00	3.073E-01	1.484E-01	1.568E-01
U-238	5.751E+00	2.188E+00	8.914E-01	1.116E+00
ANH-511	1.116E-01	5.868E-02	2.056E-02	2.994E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.988E-01	2.848E-01	2.384E-01	1.453E-01 NOT IDENT.
NA-22	-1.762E-02	3.605E-02	2.865E-02	1.840E-02 NOT IDENT.
NA-24	-9.731E+08	1.303E+09	0.000E+00	6.648E+08 SHORT HLIF
SC-46	-1.824E-02	3.192E-02	2.637E-02	1.628E-02 FAIL ABUN

V-48	1.543E-02	8.138E-02	7.133E-02	4.152E-02	NOT IDENT.
CR-51	1.160E-01	3.626E-01	3.139E-01	1.850E-01	NOT IDENT.
MN-54	1.077E-02	3.129E-02	2.814E-02	1.596E-02	NOT IDENT.
CO-56	8.611E-03	3.208E-02	2.874E-02	1.636E-02	NOT IDENT.
CO-57	-4.871E-03	1.982E-02	1.809E-02	1.011E-02	NOT IDENT.
CO-58	-9.196E-03	3.202E-02	2.753E-02	1.634E-02	NOT IDENT.
FE-59	-9.512E-02	8.446E-02	6.394E-02	4.309E-02	NOT IDENT.
CO-60	-1.884E-03	3.292E-02	2.726E-02	1.680E-02	NOT IDENT.
ZN-65	1.122E-01	8.310E-02	7.079E-02	4.240E-02	NOT IDENT.
SE-75	-3.061E-02	3.986E-02	3.108E-02	2.034E-02	NOT IDENT.
SR-85	4.458E-02	3.701E-02	3.109E-02	1.888E-02	NOT IDENT.
Y-88	-1.582E-02	2.397E-02	1.698E-02	1.223E-02	NOT IDENT.
Y-91	-1.782E+01	2.037E+01	1.585E+01	1.039E+01	NOT IDENT.
NB-94	2.089E-02	2.770E-02	2.474E-02	1.413E-02	NOT IDENT.
NB-95	2.806E-02	4.142E-02	3.255E-02	2.113E-02	NOT IDENT.
NB-95M	8.344E-02	1.150E-01	9.325E-02	5.866E-02	NOT IDENT.
ZR-95	-8.887E-03	6.523E-02	5.408E-02	3.328E-02	NOT IDENT.
MO-99	-3.402E+00	5.715E+01	0.000E+00	2.916E+01	SHORT HLIF
TC-99M	1.147E+24	8.280E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	6.382E-03	3.413E-02	3.031E-02	1.742E-02	FAIL ABUN
RH-106	2.477E-01	2.529E-01	2.312E-01	1.290E-01	NOT IDENT.
RU-106	2.477E-01	2.517E-01	2.312E-01	1.284E-01	NOT IDENT.
AG-108M	-5.847E-03	2.152E-02	1.875E-02	1.098E-02	NOT IDENT.
AG-110M	2.379E-02	2.789E-02	2.292E-02	1.423E-02	NOT IDENT.
SN-113	7.140E-03	3.678E-02	3.333E-02	1.877E-02	NOT IDENT.
CD-115	-3.989E+01	7.542E+01	0.000E+00	3.848E+01	SHORT HLIF
SN-117M	6.649E-03	5.876E-02	5.332E-02	2.998E-02	NOT IDENT.
TE-123M	-1.547E-03	2.230E-02	2.008E-02	1.138E-02	NOT IDENT.
SB-124	2.301E-02	5.661E-02	5.177E-02	2.888E-02	NOT IDENT.
SB-125	5.357E-02	6.811E-02	6.338E-02	3.475E-02	FAIL ABUN
TE-125M	8.586E+00	8.042E+00	7.706E+00	4.103E+00	NOT IDENT.
I-126	8.905E-02	2.994E-01	2.296E-01	1.527E-01	NOT IDENT.
SB-126	6.267E-03	1.942E-01	1.519E-01	9.910E-02	NOT IDENT.
SB-127	-1.653E+00	3.990E+00	3.225E+00	2.035E+00	NOT IDENT.
I-131	1.881E-03	1.607E-01	1.452E-01	8.201E-02	NOT IDENT.
TE-132	3.318E+00	2.740E+00	2.475E+00	1.398E+00	NOT IDENT.
BA-133	-1.130E-03	3.353E-02	2.670E-02	1.711E-02	NOT IDENT.
I-133	-9.925E+05	1.269E+06	0.000E+00	6.473E+05	SHORT HLIF
CS-134	1.379E-01	5.762E-02	4.184E-02	2.940E-02	FAIL ABUN
CS-135	6.703E-02	1.420E-01	1.125E-01	7.243E-02	NOT IDENT.
I-135	9.162E+22	2.607E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.379E-02	1.230E-01	1.004E-01	6.275E-02	NOT IDENT.
CE-139	-1.422E-02	2.416E-02	2.119E-02	1.233E-02	NOT IDENT.
BA-140	1.698E-03	2.835E-01	2.467E-01	1.447E-01	NOT IDENT.
LA-140	2.447E-02	9.637E-02	8.368E-02	4.917E-02	FAIL ABUN
CE-141	2.665E-02	6.122E-02	5.042E-02	3.123E-02	NOT IDENT.
CE-143	1.277E+04	5.444E+03	0.000E+00	2.778E+03	SHORT HLIF
CE-144	9.700E-03	1.667E-01	1.460E-01	8.505E-02	NOT IDENT.
PM-144	-2.805E-02	2.964E-02	2.310E-02	1.512E-02	NOT IDENT.
PR-144	-2.133E+00	2.225E+00	1.731E+00	1.135E+00	NOT IDENT.
PM-146	2.764E-02	3.394E-02	3.110E-02	1.732E-02	NOT IDENT.
ND-147	3.973E-01	6.740E-01	6.097E-01	3.439E-01	FAIL ABUN
PM-149	-2.763E+00	6.786E+02	0.000E+00	3.462E+02	SHORT HLIF
EU-152	1.476E-02	7.264E-02	6.658E-02	3.706E-02	FAIL ABUN
GD-153	-3.513E-02	7.426E-02	6.103E-02	3.789E-02	NOT IDENT.
EU-154	-4.802E-02	1.020E-01	8.119E-02	5.205E-02	NOT IDENT.
EU-155	5.401E-02	8.047E-02	7.657E-02	4.106E-02	FAIL ABUN
TB-160	-3.303E-02	1.167E-01	9.937E-02	5.952E-02	FAIL ABUN
HO-166M	7.039E-02	4.691E-02	4.423E-02	2.393E-02	FAIL ABUN
TA-182	1.018E-01	1.708E-01	1.508E-01	8.713E-02	FAIL ABUN
IR-192	-1.618E-03	3.035E-02	2.572E-02	1.548E-02	FAIL ABUN
HG-203	-8.751E-04	3.431E-02	2.948E-02	1.750E-02	NOT IDENT.
BI-207	3.636E-02	4.250E-02	3.901E-02	2.169E-02	FAIL ABUN
PB-210	2.105E+00	2.772E+00	2.519E+00	1.414E+00	NOT IDENT.
PB-211	3.105E-01	5.728E-01	5.105E-01	2.923E-01	NOT IDENT.
RN-219	-2.932E-01	3.224E-01	2.704E-01	1.645E-01	FAIL ABUN
RA-223	-1.509E-01	6.015E-01	4.434E-01	3.069E-01	FAIL ABUN
AC-227	-1.011E-01	2.021E-01	1.701E-01	1.031E-01	FAIL ABUN
TH-227	-1.011E-01	2.022E-01	1.701E-01	1.031E-01	FAIL ABUN
PA-231	-7.733E-01	1.160E+00	9.521E-01	5.920E-01	FAIL ABUN
TH-231	-1.509E-01	6.015E-01	4.434E-01	3.069E-01	FAIL ABUN
PA-233	2.383E-02	5.142E-02	4.498E-02	2.623E-02	FAIL ABUN
PA-234	3.281E-02	2.615E-01	2.288E-01	1.334E-01	NOT IDENT.
PA-234M	6.995E+00	5.847E+00	3.948E+00	2.983E+00	FAIL ABUN
NP-239	-2.686E-01	3.063E-01	2.731E-01	1.563E-01	NOT IDENT.
AM-241	-3.485E-03	1.353E-01	1.085E-01	6.905E-02	NOT IDENT.
CM-247	-3.006E-02	3.016E-02	2.533E-02	1.539E-02	NOT IDENT.
CF-249	-5.293E-03	3.156E-02	2.805E-02	1.610E-02	NOT IDENT.

CF-251

4.503E-02

1.005E-01

9.159E-02

5.128E-02 NOT IDENT.

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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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ENERGY	MDA COUNTS
46.54	262.1643
49.72	253.2796
57.36	0.0000
59.54	350.0103
63.29	360.0649
63.29	360.0649
64.28	360.9816
67.75	432.3151
69.67	431.0131
70.83	438.4999
72.81	474.6530
72.87	474.7189
72.87	474.7189
74.82	440.5239
74.82	440.5239
74.82	440.5239
74.97	440.6776
77.11	442.8373
77.11	442.8373
77.11	442.8373
79.69	429.1619
79.80	429.2666
80.12	421.0107
80.19	421.0758
80.57	416.2893
81.00	421.8265
81.07	421.8916
81.07	421.8916
83.79	390.7438
83.79	390.7438
85.43	350.5600
86.48	351.3345
86.55	351.3860
86.79	351.5611
86.94	351.6744
87.57	335.1812
88.03	335.5008
88.47	335.8066
89.96	336.8341
91.11	337.6203
92.59	338.6262
92.59	338.6262
93.35	339.1399
94.67	313.5668
94.87	318.9841
94.87	318.9841
95.86	371.3239
97.43	365.8072
98.44	320.9369
99.53	311.6333
100.11	349.4141
103.18	352.3264
103.37	346.1745
105.31	313.2120
106.12	319.0840
109.28	297.3368
111.00	338.2527
111.76	331.4209
116.30	295.4942
117.23	332.7281
121.12	294.2011
121.78	315.8250
122.06	314.1192
123.07	308.1446
131.20	341.3427
133.52	322.7611
136.00	318.3120

136.47	310.0053
140.51	0.0000
140.51	0.0000
143.76	311.4947
144.24	274.7869
144.24	274.7869
145.44	260.8586
152.43	302.7927
153.25	308.9715
154.21	292.8461
154.21	292.8461
156.02	310.1684
158.56	270.1489
159.00	275.2058
162.66	244.0972
163.33	253.1831
165.86	301.4878
176.60	272.6419
177.52	258.9107
181.07	0.0000
184.41	261.1442
185.72	261.5641
193.51	235.3766
197.04	262.0479
205.31	277.0114
210.85	242.7267
215.65	242.4438
222.11	269.5160
227.38	233.8306
228.16	211.6845
228.18	211.6885
235.69	225.1395
235.96	241.2895
235.96	241.2895
238.63	226.8941
238.63	226.8941
240.99	227.4372
242.00	227.6690
244.70	188.2540
252.40	174.4287
252.80	173.4065
256.23	203.5283
256.23	203.5283
260.90	0.0000
264.66	206.4943
268.22	192.5746
269.46	176.1771
269.46	176.1771
271.23	176.4650
273.65	185.2021
276.40	178.9788
277.37	159.6036
277.60	150.7077
278.00	173.0978
279.20	187.8174
279.54	197.9402
280.46	199.2251
283.69	185.2121
284.31	190.9283
285.41	174.2520
285.90	0.0000
287.50	163.3138
293.27	0.0000
295.22	187.1021
295.96	187.2229
298.57	187.6425
299.98	187.8708
299.98	187.8708
300.09	187.8876
300.09	187.8876
300.13	187.8943
301.36	152.1838
302.85	157.5129
304.50	180.0233
304.50	180.0233
304.85	180.0778
308.46	146.7943
311.90	143.7658

316.51	158.1693
319.41	146.9729
320.08	152.8425
323.87	168.9951
323.87	168.9951
328.76	146.9231
333.37	171.3361
334.37	151.7959
334.37	151.7959
338.28	166.5372
338.28	166.5372
338.32	166.5430
338.32	166.5430
338.32	166.5430
340.48	151.1114
340.55	151.1192
344.28	138.1020
351.06	126.3626
351.93	126.4449
356.01	121.4767
364.49	130.3376
366.42	0.0000
383.85	130.3531
388.16	138.9792
388.63	137.1964
391.69	131.9919
400.66	153.1047
401.81	146.7649
402.40	155.1339
404.85	119.3215
410.95	112.3851
414.70	120.1167
423.72	124.5840
427.09	107.9617
427.87	94.8663
433.94	102.7846
453.88	94.5422
463.37	115.2704
468.07	113.0329
473.00	100.4882
476.78	131.7064
477.60	120.1439
487.02	83.7941
492.35	0.0000
497.08	89.1893
511.00	109.6637
514.00	101.3375
527.90	0.0000
529.87	0.0000
531.02	79.9268
537.26	78.1952
546.56	0.0000
563.25	70.1413
569.33	75.4634
569.50	75.4702
569.70	75.4792
583.19	104.7642
600.60	100.5078
602.73	102.8964
604.72	101.3380
609.32	79.0917
609.32	79.0917
610.33	79.1288
614.28	61.7582
618.01	80.4731
621.93	68.0627
621.93	68.0627
633.25	70.5393
635.95	85.3901
636.99	81.2133
645.85	91.0863
657.76	51.1230
661.66	78.9570
661.66	78.9570
664.57	0.0000
666.33	82.1203
666.50	78.7054
677.62	79.5351

685.70	87.3776
695.00	93.1570
696.49	102.9727
696.51	102.9756
697.00	98.6592
702.65	76.0818
706.68	83.8381
711.68	52.3770
720.70	78.8730
721.93	0.0000
722.78	85.9605
722.91	80.7021
723.31	80.7156
724.19	78.9917
727.33	86.7872
733.00	67.5438
735.93	77.1841
739.50	0.0000
747.24	73.1201
752.31	74.3854
753.82	81.0980
756.73	77.8592
763.94	71.3965
765.81	69.6649
766.42	83.9781
777.92	0.0000
778.90	77.4460
783.70	91.0904
785.37	65.7196
795.86	51.2297
801.95	62.3047
810.29	70.9198
810.76	66.3862
815.77	58.3156
818.51	43.7824
832.01	76.1043
834.85	76.1853
836.80	0.0000
846.77	58.0904
856.80	66.3319
860.56	72.6037
871.09	60.4821
873.19	54.9409
875.33	0.0000
879.36	62.5328
880.51	62.5590
883.24	58.8825
884.68	56.1079
889.28	62.7602
898.04	46.0440
911.20	47.2058
911.20	47.2058
911.20	47.2058
926.50	52.2084
937.49	73.3718
944.13	57.3047
946.00	68.8096
949.00	64.0982
962.29	46.4500
964.08	51.9275
966.15	51.9645
968.97	52.0146
968.97	52.0146
968.97	52.0146
983.53	61.9484
996.26	43.7421
1001.03	47.7056
1004.73	37.3666
1037.84	52.2185
1038.76	0.0000
1048.07	56.3432
1050.41	51.4389
1050.41	51.4389
1063.66	47.6813
1085.87	55.0134
1099.45	72.3164
1112.07	80.6602
1115.54	47.0996

1120.29	80.8594
1120.29	80.8594
1120.55	80.8633
1121.30	52.2368
1131.51	0.0000
1173.23	74.9426
1177.93	64.7626
1189.05	75.2813
1204.77	83.9070
1221.41	63.4841
1231.02	81.3935
1235.36	105.5174
1238.28	72.1468
1260.41	0.0000
1271.85	52.7588
1274.44	54.9098
1274.54	54.9098
1291.59	54.1003
1298.22	0.0000
1312.11	42.6621
1332.49	39.6720
1365.19	20.5437
1368.63	0.0000
1384.29	39.1131
1408.01	28.4159
1457.56	0.0000
1460.82	26.7544
1489.16	14.8607
1505.03	31.6965
1596.21	19.7287
1620.50	10.5264
1678.03	0.0000
1690.97	9.7160
1764.49	6.9057
1764.49	6.9057
1770.23	16.9315
1771.35	29.6375
1791.20	0.0000
1836.06	13.0101

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030005

Total Uranium Activity	1.7261E+01	ug/g
Total Uranium Counting Unc.	6.5105E+00	ug/g
Total Uranium Tpu	3.3217E-06	ug/g
Total Uranium Mda	2.6526E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G248030005
*  ANALYST       : MXR1            DETECTOR    : GAM16
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 13-MAR-2010 14:32:17.87  SAMPLE ALQT: 155.860 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.639E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.315E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.208E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.557E+00

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VAX/VMS Nuclide Identification Report Generated 14-MAR-2010 19:08:00.54

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030006.CNF;1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:32:43
Sample ID        : G248030006 Sample quantity   : 1.36680E+02 GRAM
Detector name    : GAM17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.42 0.1%
Energy tolerance : 2.50000 keV Analyst Initials  : MXR1
Abundance limit  : 75.00000 Sensitivity         : 5.00000
Batch ID        : 958221 Detector SN#         :
Matrix Spike ID  : LCS ID                   : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.66*	185	437	0.94	92.95	89	8	2.57E-02	21.8	
2	0	63.41*	523	735	0.94	126.45	122	9	7.26E-02	10.6	
3	3	74.87*	624	500	0.98	149.38	144	16	8.67E-02	7.0	2.15E+00
4	3	77.15*	893	451	1.00	153.95	144	16	1.24E-01	5.2	
5	5	87.24*	360	525	1.48	174.14	165	28	5.01E-02	12.6	2.80E+00
6	5	89.94	235	436	1.26	179.53	165	28	3.27E-02	17.2	
7	5	92.64*	931	347	1.18	184.93	165	28	1.29E-01	5.0	
8	0	128.62	76	287	0.75	256.93	254	7	1.05E-02	39.0	
9	0	185.91*	271	338	1.21	371.56	366	11	3.76E-02	14.9	
10	5	238.42*	1000	146	1.00	476.61	472	16	1.39E-01	3.8	7.99E-01
11	5	241.57	302	187	1.61	482.92	472	16	4.20E-02	11.5	
12	0	270.27	118	203	1.75	540.34	534	12	1.64E-02	26.1	
13	3	294.95	338	114	1.16	589.72	585	20	4.69E-02	7.5	1.04E+00
14	3	299.70	76	153	1.59	599.23	585	20	1.06E-02	33.2	
15	0	327.71	73	135	0.98	655.27	651	9	1.02E-02	30.8	
16	0	338.39*	245	160	1.35	676.64	671	14	3.40E-02	12.9	
17	0	351.55*	554	115	1.18	702.97	698	10	7.69E-02	5.7	
18	0	462.14	101	111	1.12	924.25	917	14	1.40E-02	24.4	
19	0	510.44*	129	127	1.92	1020.92	1012	20	1.79E-02	24.9	
20	0	582.45*	308	75	1.23	1165.00	1160	11	4.28E-02	8.1	
21	0	608.40*	386	110	1.38	1216.94	1210	15	5.37E-02	7.9	
22	0	661.06*	122	125	1.40	1322.32	1316	15	1.69E-02	22.1	
23	0	726.44*	53	73	1.23	1453.14	1448	12	7.37E-03	34.9	
24	0	859.64*	33	34	1.87	1719.71	1714	9	4.63E-03	37.5	
25	0	909.89*	176	43	1.40	1820.29	1813	12	2.45E-02	11.0	
26	0	967.80	67	44	1.50	1936.18	1932	9	9.32E-03	22.0	
27	0	1118.74*	57	54	1.25	2238.29	2235	11	7.95E-03	30.1	
28	0	1237.33	34	72	1.55	2475.64	2468	17	4.77E-03	60.5	
29	0	1375.92	18	10	1.86	2753.05	2747	10	2.52E-03	40.0	
30	0	1458.70*	736	19	1.76	2918.75	2911	14	1.02E-01	3.9	
31	0	1761.91*	73	4	3.38	3525.76	3519	15	1.02E-02	13.4	

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

VMS Nuclide Identification Report V3.1 Generated 14-MAR-2010 19:08:03

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:32:43
Sample ID         : G248030006 Sample quantity : 136.68 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA17 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:10.42 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.50 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	*	2.435E+01	2.878E+00	7.107E-01	6.310E-02	34.258
CD-109	+	88.03	*	4.143E+00	1.119E+00	9.853E-01	9.619E-02	4.205
SN-126	+	64.28		2.206E+00	5.840E-01	4.180E-01	6.672E-02	5.276
	+	86.94		1.666E+00	8.104E-01	3.949E-01	1.643E-01	4.219
	+	87.57	*	4.008E-01	1.083E-01	9.517E-02	9.287E-03	4.211
CS-135	+	268.22	*	5.561E-01	2.962E-01	2.663E-01	2.779E-02	2.088
BA-137M	+	661.66	*	2.321E-01	1.044E-01	6.744E-02	5.681E-03	3.441
CS-137	+	661.66	*	2.451E-01	1.103E-01	7.124E-02	6.013E-03	3.441
TL-208		277.37		2.415E-01	4.080E-01	7.105E-01	9.179E-02	0.340
	+	583.19	*	5.492E-01	1.029E-01	5.947E-02	5.618E-03	9.236
	+	860.56		5.867E-01	4.436E-01	5.296E-01	4.980E-02	1.108
PB-210	+	46.54	*	1.894E+00	8.507E-01	8.237E-01	8.880E-02	2.300
BI-211	+	72.87		2.051E+01	3.484E+00	3.503E+00	3.425E-01	5.855
	+	351.06	*	4.046E+00	5.957E-01	3.402E-01	3.175E-02	11.892
PB-212	+	74.82		2.454E+00	4.804E-01	3.944E-01	5.435E-02	6.222
	+	77.11		2.115E+00	3.010E-01	2.382E-01	2.322E-02	8.881
	+	238.63	*	1.565E+00	1.980E-01	9.694E-02	9.818E-03	16.145
	+	300.09		1.891E+00	1.273E+00	1.215E+00	1.336E-01	1.556
BI-214	+	609.32	*	1.342E+00	2.525E-01	1.226E-01	1.253E-02	10.944
	+	1120.29		1.077E+00	6.586E-01	5.674E-01	6.094E-02	1.898
		1764.49		1.206E+00	4.413E-01	9.054E-01	7.656E-02	1.332
PB-214	+	74.82		4.349E+00	8.154E-01	6.991E-01	8.792E-02	6.222
	+	77.11		3.729E+00	6.133E-01	4.199E-01	5.362E-02	8.881
	+	242.00		2.873E+00	7.288E-01	5.903E-01	6.343E-02	4.866
	+	295.22		1.486E+00	2.783E-01	2.143E-01	2.413E-02	6.933
	+	351.93	*	1.468E+00	2.309E-01	1.238E-01	1.341E-02	11.862
RA-224	+	240.99	*	5.079E+00	1.255E+00	1.040E+00	9.405E-02	4.884
RA-226	+	609.32	*	1.342E+00	2.525E-01	1.226E-01	1.253E-02	10.944
	+	1120.29		1.077E+00	6.586E-01	5.674E-01	6.094E-02	1.898
		1764.49		1.206E+00	4.413E-01	9.054E-01	7.656E-02	1.332
AC-228	+	338.32		1.985E+00	9.745E-01	3.686E-01	1.541E-01	5.384
	+	911.20	*	1.586E+00	3.944E-01	3.170E-01	3.705E-02	5.002
	+	968.97		1.045E+00	5.251E-01	4.185E-01	1.021E-01	2.498
RA-228	+	338.32		1.985E+00	9.745E-01	3.686E-01	1.541E-01	5.384

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	911.20	*	1.586E+00	3.944E-01	3.170E-01	3.705E-02	5.002
	+	968.97		1.045E+00	5.251E-01	4.185E-01	1.021E-01	2.498
TH-228	+	74.82		2.454E+00	4.178E-01	3.944E-01	3.877E-02	6.222
	+	77.11		2.115E+00	3.010E-01	2.382E-01	2.322E-02	8.881
	+	238.63	*	1.565E+00	1.980E-01	9.694E-02	9.818E-03	16.145
	+	300.09		1.891E+00	1.709E+00	1.215E+00	7.450E-01	1.556
TH-229	+	85.43		1.009E+00	2.725E-01	2.380E-01	2.320E-02	4.238
	+	88.47		6.178E-01	1.669E-01	1.471E-01	1.439E-02	4.199
		193.51	*	-2.028E-01	5.458E-01	8.630E-01	7.463E-02	-0.235
		210.85		4.027E-01	9.630E-01	1.553E+00	1.369E-01	0.259
TH-232	+	338.32		1.985E+00	5.418E-01	3.686E-01	3.321E-02	5.384
	+	911.20	*	1.586E+00	3.944E-01	3.170E-01	3.705E-02	5.002
	+	968.97		1.045E+00	5.251E-01	4.185E-01	1.021E-01	2.498
TH-234	+	63.29	*	5.723E+00	1.626E+00	1.069E+00	2.035E-01	5.351
	+	92.59		9.164E+00	2.268E+00	8.460E-01	1.916E-01	10.833
U-235	+	89.96		2.804E+00	1.193E+00	1.022E+00	2.563E-01	2.742
	+	93.35		6.922E+00	1.776E+00	6.407E-01	1.515E-01	10.805
		143.76	*	2.551E-01	2.134E-01	3.576E-01	6.367E-02	0.713
		163.33		6.204E-01	4.739E-01	7.962E-01	1.427E-01	0.779
	+	185.72		2.706E-01	8.374E-02	6.675E-02	5.716E-03	4.054
		205.31		-1.755E-01	5.083E-01	8.009E-01	1.459E-01	-0.219
NP-237	+	86.48	*	1.196E+00	4.090E-01	2.831E-01	6.546E-02	4.225
		95.86		-5.436E-01	8.792E-01	1.262E+00	3.101E-01	-0.431
U-238	+	63.29	*	5.723E+00	1.626E+00	1.069E+00	2.035E-01	5.351
	+	92.59		9.164E+00	1.294E+00	8.460E-01	8.440E-02	10.833
ANH-511	+	511.00	*	1.724E-01	8.737E-02	5.005E-02	4.470E-03	3.444

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-6.371E-02	4.035E-01	6.529E-01	6.211E-02	-0.098
NA-22		1274.54	*	-2.274E-02	5.813E-02	8.882E-02	7.483E-03	-0.256
NA-24		1368.63	*	-9.658E+02	5.813E-02	Half-Life too short		
SC-46		889.28	*	2.279E-02	5.211E-02	8.995E-02	7.874E-03	0.253
	+	1120.55		1.930E-01	1.173E-01	1.549E-01	1.300E-02	1.246
V-48		944.13		7.656E-01	1.587E+00	2.735E+00	2.393E-01	0.280
		983.53	*	6.270E-03	1.150E-01	1.900E-01	1.657E-02	0.033
		1312.11		5.550E-02	1.385E-01	2.427E-01	2.060E-02	0.229
CR-51		320.08	*	-4.862E-01	4.690E-01	7.350E-01	7.014E-02	-0.661
MN-54		834.85	*	3.297E-02	5.031E-02	8.810E-02	7.747E-03	0.374
CO-56		846.77	*	-2.302E-04	5.525E-02	9.176E-02	8.066E-03	-0.003
		1037.84		1.838E-01	4.057E-01	6.960E-01	6.323E-02	0.264
	+	1238.28		1.922E-01	2.330E-01	2.200E-01	1.891E-02	0.874
		1771.35		-3.934E-02	2.852E-01	4.513E-01	3.811E-02	-0.087
CO-57		122.06	*	1.130E-02	2.507E-02	4.221E-02	4.945E-03	0.268
		136.47		-1.168E-01	2.070E-01	3.307E-01	3.721E-02	-0.353
CO-58		810.76	*	-5.860E-03	4.772E-02	7.853E-02	6.916E-03	-0.075
FE-59		1099.45	*	5.439E-02	1.222E-01	2.088E-01	1.916E-02	0.260

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1291.59			1.015E-01	1.560E-01	2.727E-01	2.627E-02	0.372
	1173.23			-1.576E-02	5.921E-02	9.303E-02	7.600E-03	-0.169
	1332.49	*		4.408E-03	4.884E-02	8.274E-02	7.052E-03	0.053
ZN-65	1115.54	*		1.511E-01	1.380E-01	2.223E-01	1.871E-02	0.680
	121.12			1.113E-01	1.328E-01	2.263E-01	3.072E-02	0.492
	136.00			1.786E-04	4.094E-02	6.734E-02	7.284E-03	0.003
SE-75	264.66	*		4.307E-03	5.560E-02	7.870E-02	7.231E-03	0.055
	279.54			-5.556E-02	1.180E-01	1.950E-01	1.850E-02	-0.285
	400.66			3.026E-02	2.818E-01	4.711E-01	5.173E-02	0.064
SR-85	514.00	*		3.646E-02	5.136E-02	7.890E-02	7.049E-03	0.462
	898.04			2.608E-02	5.434E-02	9.407E-02	8.262E-03	0.277
	1836.06	*		-1.745E-02	4.343E-02	6.376E-02	5.317E-03	-0.274
Y-88	1204.77	*		-2.227E+01	3.394E+01	5.118E+01	4.224E+00	-0.435
	702.65	*		-3.714E-03	4.186E-02	7.001E-02	6.006E-03	-0.053
	871.09			-1.613E-02	4.275E-02	6.808E-02	5.974E-03	-0.237
NB-91	765.81	*		8.772E-02	6.226E-02	1.140E-01	9.956E-03	0.770
	235.69	*		-3.675E-03	1.603E-01	2.269E-01	2.321E-02	-0.016
	724.19	*		2.856E-01	2.012E-01	2.451E-01	2.296E-02	1.165
NB-95M	756.73	*		6.053E-02	9.398E-02	1.660E-01	1.596E-02	0.365
	140.51			-7.909E-05	9.398E-02	Half-Life	too short	
	181.07			2.665E-05	9.398E-02	Half-Life	too short	
MO-99	366.42			-5.758E-05	9.398E-02	Half-Life	too short	
	739.50	*		3.359E-05	9.398E-02	Half-Life	too short	
	777.92			3.521E-05	9.398E-02	Half-Life	too short	
TC-99M	140.51	*		-5.701E+18	9.398E-02	Half-Life	too short	
	497.08	*		-5.498E-02	5.407E-02	7.987E-02	1.130E-02	-0.688
	610.33	*		1.566E+01	3.570E+00	3.624E+00	5.949E-01	4.322
RU-103	621.93	*		1.768E-01	3.922E-01	6.557E-01	8.721E-02	0.270
	1050.41			-2.619E-01	3.121E+00	5.048E+00	4.344E-01	-0.052
	621.93	*		1.768E-01	3.918E-01	6.557E-01	5.697E-02	0.270
RU-106	1050.41			-2.619E-01	3.121E+00	5.048E+00	4.344E-01	-0.052
	433.94	*		9.758E-03	3.519E-02	5.918E-02	5.305E-03	0.165
	614.28			-6.930E-03	4.465E-02	6.136E-02	5.526E-03	-0.113
AG-108M	722.91			-2.108E-02	5.114E-02	7.096E-02	6.326E-03	-0.297
	657.76	*		5.172E-02	5.024E-02	7.907E-02	6.892E-03	0.654
	677.62			-2.006E-01	3.931E-01	5.942E-01	5.194E-02	-0.338
AG-110M	706.68			1.255E-01	2.619E-01	4.577E-01	4.046E-02	0.274
	763.94			8.332E-02	2.201E-01	3.791E-01	3.398E-02	0.220
	884.68			8.532E-04	6.287E-02	1.042E-01	9.416E-03	0.008
SN-113	937.49			-2.408E-01	1.554E-01	2.124E-01	1.924E-02	-1.134
	1384.29			7.937E-02	1.698E-01	3.038E-01	2.677E-02	0.261
	1505.03			2.477E-01	4.100E-01	7.318E-01	6.328E-02	0.338
CD-115	391.69	*		-1.228E-02	4.902E-02	7.996E-02	6.947E-03	-0.154
	260.90			-2.392E-04	4.902E-02	Half-Life	too short	
	492.35			2.304E-04	4.902E-02	Half-Life	too short	
SN-117M	527.90	*		1.241E-04	4.902E-02	Half-Life	too short	
	156.02			-1.957E+00	3.467E+00	5.510E+00	5.073E-01	-0.355
	158.56	*		-6.046E-03	8.124E-02	1.321E-01	1.187E-02	-0.046
TE-123M	159.00	*		-6.355E-03	3.076E-02	4.968E-02	4.471E-03	-0.128

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		602.73		-1.545E-02	5.418E-02	7.330E-02	6.437E-03	-0.211
		645.85		3.569E-01	6.169E-01	1.046E+00	9.452E-02	0.341
		722.78		-6.359E-02	5.349E-01	7.712E-01	6.814E-02	-0.082
		1690.97	*	-9.463E-02	9.005E-02	1.032E-01	9.202E-03	-0.917
SB-125		427.87	*	2.531E-02	9.442E-02	1.592E-01	1.404E-02	0.159
	+	463.37		1.176E+00	5.844E-01	6.706E-01	6.340E-02	1.754
		600.60		-1.254E-01	2.255E-01	3.307E-01	3.115E-02	-0.379
		635.95		-1.525E-01	3.040E-01	4.605E-01	4.285E-02	-0.331
TE-125M		109.28	*	-1.382E+00	9.919E+00	1.639E+01	2.038E+00	-0.084
I-126		388.63		6.906E-02	2.496E-01	4.230E-01	3.580E-02	0.163
		666.33	*	9.884E-02	4.659E-01	6.636E-01	5.603E-02	0.149
		753.82		2.654E-01	3.299E+00	5.567E+00	4.850E-01	0.048
SB-126		414.70		6.863E-02	1.284E-01	2.200E-01	1.887E-02	0.312
		666.50		3.474E-02	1.628E-01	2.319E-01	1.958E-02	0.150
		695.00		-6.643E-02	1.436E-01	2.330E-01	1.992E-02	-0.285
		697.00		-2.992E-02	4.861E-01	8.152E-01	6.977E-02	-0.037
		720.70	*	2.440E-01	2.873E-01	4.629E-01	3.996E-02	0.527
		856.80		8.962E-01	8.499E-01	1.415E+00	1.243E-01	0.633
SB-127		252.40		7.019E-02	1.591E+01	2.527E+01	1.069E+01	0.003
		473.00		3.130E+00	6.741E+00	1.142E+01	1.710E+00	0.274
		685.70	*	-3.014E+00	5.861E+00	8.837E+00	1.201E+00	-0.341
		783.70		1.146E+01	1.568E+01	2.766E+01	4.029E+00	0.414
I-131		80.19		1.218E+01	7.828E+00	1.036E+01	1.019E+00	1.177
		284.31		1.761E+00	2.840E+00	4.962E+00	4.791E-01	0.355
		364.49	*	7.770E-03	2.329E-01	3.896E-01	3.619E-02	0.020
		636.99		-9.904E-01	3.223E+00	4.999E+00	4.576E-01	-0.198
TE-132		49.72		-2.665E+00	1.917E+01	2.946E+01	4.171E+00	-0.090
		111.76		1.002E+02	1.482E+02	2.474E+02	3.685E+01	0.405
		116.30		-8.517E+00	1.262E+02	2.085E+02	3.151E+01	-0.041
		228.16	*	4.180E-01	3.469E+00	5.581E+00	9.815E-01	0.075
BA-133		81.00		9.130E-02	8.737E-02	1.118E-01	1.808E-02	0.817
		276.40		4.755E-01	3.785E-01	6.553E-01	9.475E-02	0.726
		302.85		-4.329E-02	1.549E-01	2.252E-01	3.026E-02	-0.192
		356.01	*	4.084E-02	4.806E-02	7.589E-02	9.953E-03	0.538
		383.85		-2.661E-01	3.125E-01	4.849E-01	5.995E-02	-0.549
I-133		529.87	*	-8.743E-01	3.125E-01	Half-Life too short		
		875.33		5.271E+00	3.125E-01	Half-Life too short		
		1298.22		-8.898E+01	3.125E-01	Half-Life too short		
CS-134		563.25		-3.497E-01	4.725E-01	7.167E-01	6.440E-02	-0.488
		569.33		3.448E-02	2.360E-01	3.869E-01	3.485E-02	0.089
		604.72		8.177E-03	4.042E-02	5.846E-02	5.141E-03	0.140
		795.86	*	3.447E-02	6.096E-02	1.063E-01	9.396E-03	0.324
		801.95		-3.814E-01	4.986E-01	7.711E-01	6.807E-02	-0.495
		1365.19		-2.633E-01	1.379E+00	2.238E+00	2.006E-01	-0.118
I-135		546.56		4.051E+17	1.379E+00	Half-Life too short		
		836.80		1.723E+18	1.379E+00	Half-Life too short		
		1038.76		1.037E+18	1.379E+00	Half-Life too short		
		1131.51		4.681E+17	1.379E+00	Half-Life too short		
		1260.41	*	1.398E+17	1.379E+00	Half-Life too short		

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	+	1457.56		6.191E+19	1.379E+00	Half-Life	too short	
		1678.03		3.999E+17	1.379E+00	Half-Life	too short	
		1791.20		-7.725E+17	1.379E+00	Half-Life	too short	
		153.25		1.699E+00	1.278E+00	2.191E+00	2.404E-01	0.775
		176.60		-4.018E-01	7.427E-01	1.170E+00	1.096E-01	-0.343
		273.65		-5.966E-01	9.098E-01	1.200E+00	1.184E-01	-0.497
CE-139	+	340.55		1.702E+00	4.664E-01	3.888E-01	3.622E-02	4.377
		818.51		4.002E-02	1.330E-01	2.277E-01	2.005E-02	0.176
		1048.07	*	-1.666E-01	1.803E-01	2.523E-01	2.266E-02	-0.660
	+	1235.36		1.692E+00	2.056E+00	2.058E+00	2.379E-01	0.822
		165.86	*	-3.169E-02	3.266E-02	5.048E-02	4.209E-03	-0.628
		162.66		7.967E-01	1.255E+00	2.102E+00	1.935E-01	0.379
BA-140		304.85		1.064E+00	2.186E+00	3.356E+00	9.878E-01	0.317
		423.72		-2.128E+00	3.149E+00	4.801E+00	1.579E+00	-0.443
		537.26	*	-6.246E-02	4.904E-01	7.881E-01	2.679E-01	-0.079
	+	328.76		1.070E+00	6.669E-01	8.949E-01	8.538E-02	1.195
		487.02		1.719E-01	2.293E-01	3.971E-01	3.736E-02	0.433
		815.77		2.811E-01	5.942E-01	1.033E+00	1.010E-01	0.272
CE-141		1596.21	*	-6.522E-02	1.593E-01	2.445E-01	2.110E-02	-0.267
		145.44	*	-2.584E-02	7.711E-02	1.234E-01	1.258E-02	-0.209
		57.36		-1.490E-03	7.711E-02	Half-Life	too short	
	+	293.27	*	4.453E-02	7.711E-02	Half-Life	too short	
		664.57		7.087E-03	7.711E-02	Half-Life	too short	
		721.93		2.607E-03	7.711E-02	Half-Life	too short	
CE-144		80.12		3.802E+00	2.357E+00	3.127E+00	3.046E-01	1.216
		133.52	*	-5.825E-02	2.031E-01	3.298E-01	5.509E-02	-0.177
		476.78		-1.770E-02	7.554E-02	1.215E-01	1.165E-02	-0.146
		618.01		-1.953E-02	3.716E-02	5.648E-02	5.055E-03	-0.346
		696.49	*	-2.200E-02	4.322E-02	6.979E-02	5.977E-03	-0.315
		696.51	*	-1.624E+00	3.249E+00	5.251E+00	4.493E-01	-0.309
PM-144		1489.16		-2.163E+01	1.475E+01	1.672E+01	1.445E+00	-1.294
		453.88	*	5.057E-02	5.138E-02	8.987E-02	9.637E-03	0.563
		633.25		-5.304E-01	1.662E+00	2.561E+00	9.782E-01	-0.207
		735.93		-4.315E-02	1.824E-01	2.992E-01	8.391E-02	-0.144
		747.24		-1.191E-01	1.132E-01	1.678E-01	2.455E-02	-0.710
	+	91.11		1.411E+00	5.071E-01	8.133E-01	8.570E-02	1.735
ND-147		319.41		-1.360E+00	5.189E+00	8.585E+00	7.831E-01	-0.158
		531.02	*	-2.754E-01	1.061E+00	1.686E+00	2.553E-01	-0.163
		285.90	*	2.395E-04	1.061E+00	Half-Life	too short	
		121.78		6.444E-02	7.037E-02	1.202E-01	1.523E-02	0.536
		244.70		-2.979E-02	3.783E-01	5.315E-01	4.818E-02	-0.056
		344.28	*	-1.291E-03	1.175E-01	1.733E-01	1.638E-02	-0.007
EU-152		778.90		-4.569E-03	3.030E-01	5.059E-01	4.429E-02	-0.009
		964.08		6.968E-01	4.476E-01	7.463E-01	6.522E-02	0.934
		1085.87		-6.343E-02	4.533E-01	7.255E-01	6.174E-02	-0.087
		1112.07		-7.161E-02	3.817E-01	5.892E-01	4.962E-02	-0.122
		1408.01		-4.827E-03	2.372E-01	3.945E-01	3.394E-02	-0.012
		69.67		-1.505E-01	1.217E+00	1.835E+00	1.802E-01	-0.082
GD-153		97.43	*	-1.409E-02	8.553E-02	1.271E-01	1.299E-02	-0.111

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		103.18		-1.141E-01	1.015E-01	1.601E-01	1.687E-02	-0.713
		123.07		-1.949E-02	4.962E-02	8.044E-02	1.110E-02	-0.242
		723.31		-6.076E-03	2.391E-01	3.491E-01	3.320E-02	-0.017
		873.19		-2.471E-02	3.565E-01	5.868E-01	7.046E-02	-0.042
		996.26		-5.494E-01	5.080E-01	7.249E-01	1.270E-01	-0.758
EU-155		1004.73		-1.053E-01	2.839E-01	4.469E-01	5.225E-02	-0.236
		1274.44	*	-6.090E-02	1.645E-01	2.520E-01	2.829E-02	-0.242
	+	86.55		4.873E-01	1.318E-01	1.625E-01	1.597E-02	3.000
		105.31	*	7.483E-02	9.763E-02	1.669E-01	1.793E-02	0.448
	+	86.79		1.379E+00	3.725E-01	4.635E-01	4.521E-02	2.975
TB-160		197.04		-1.654E-02	6.055E-01	9.747E-01	8.464E-02	-0.017
		215.65		1.647E-01	8.461E-01	1.371E+00	1.215E-01	0.120
	+	298.57		2.847E-01	1.910E-01	2.354E-01	2.161E-02	1.210
		879.36	*	-7.498E-02	1.927E-01	3.066E-01	2.688E-02	-0.245
		962.29		9.770E-01	8.829E-01	1.418E+00	1.239E-01	0.689
HO-166M	+	966.15		8.438E-01	3.778E-01	6.711E-01	5.864E-02	1.257
		1177.93		-9.727E-02	4.871E-01	7.702E-01	6.302E-02	-0.126
		1271.85		1.402E-01	9.522E-01	1.558E+00	1.310E-01	0.090
		80.57		3.302E-01	2.481E-01	3.251E-01	3.167E-02	1.016
	+	184.41		2.150E-01	6.653E-02	7.381E-02	6.310E-03	2.913
TA-182		280.46		-1.426E-01	9.033E-02	1.384E-01	1.271E-02	-1.030
		410.95		3.734E-03	2.858E-01	4.738E-01	4.052E-02	0.008
		711.68	*	2.516E-02	6.890E-02	1.196E-01	1.030E-02	0.210
		752.31		8.210E-02	3.361E-01	5.753E-01	5.010E-02	0.143
		810.29		-2.446E-02	7.043E-02	1.133E-01	9.951E-03	-0.216
IR-192		67.75		-1.279E-02	7.602E-02	1.147E-01	1.130E-02	-0.111
		100.11		1.343E-01	1.678E-01	2.875E-01	2.981E-02	0.467
		152.43		3.537E-01	3.641E-01	6.195E-01	5.889E-02	0.571
		222.11		2.075E-01	3.980E-01	6.545E-01	5.833E-02	0.317
		1121.30		1.678E-01	2.259E-01	3.517E-01	2.950E-02	0.477
HG-203		1189.05		1.926E-02	4.149E-01	6.739E-01	5.534E-02	0.029
		1221.41	*	-1.586E-01	2.739E-01	4.145E-01	3.438E-02	-0.383
		1231.02		1.485E-01	6.998E-01	1.004E+00	8.349E-02	0.148
	+	295.96		1.173E+00	2.064E-01	3.323E-01	3.071E-02	3.530
		308.46		6.256E-02	1.065E-01	1.855E-01	1.706E-02	0.337
BI-207		316.51	*	-2.620E-02	3.716E-02	5.961E-02	5.454E-03	-0.439
		468.07		-2.353E-03	8.873E-02	1.273E-01	1.203E-02	-0.018
		70.83		3.040E-01	1.041E+00	1.592E+00	2.662E-01	0.191
	+	72.87		5.666E+00	1.209E+00	9.730E-01	1.577E-01	5.823
		279.20	*	-1.362E-02	4.459E-02	7.438E-02	6.983E-03	-0.183
PB-211		72.81		1.180E+00	2.005E-01	2.011E-01	1.966E-02	5.871
	+	74.97		7.075E-01	1.202E-01	1.749E-01	1.707E-02	4.045
		569.70		-4.836E-03	3.670E-02	5.870E-02	5.220E-03	-0.082
		1063.66	*	2.991E-02	6.509E-02	1.115E-01	9.563E-03	0.268
		1770.23		-2.368E-01	5.456E-01	8.003E-01	6.760E-02	-0.296
BI-212		404.85	*	-1.950E-01	8.015E-01	1.297E+00	6.274E-01	-0.150
		427.09		1.044E+00	1.594E+00	2.649E+00	1.226E+00	0.394
		832.01		-7.553E-01	1.323E+00	1.983E+00	1.029E+00	-0.381
	+	727.33	*	1.491E+00	1.058E+00	1.414E+00	1.765E-01	1.055

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	785.37	*	2.901E+00	4.107E+00	7.244E+00	6.348E-01	0.400
		1620.50		3.013E+00	2.929E+00	5.619E+00	4.841E-01	0.536
		271.23		8.238E-01	4.393E-01	4.490E-01	4.813E-02	1.835
RA-223	+	401.81	*	-3.289E-01	4.343E-01	6.753E-01	9.993E-02	-0.487
		81.07		1.788E-01	1.973E-01	2.525E-01	2.460E-02	0.708
		83.79		9.114E-02	1.103E-01	1.718E-01	1.674E-02	0.531
	+	94.87	*	6.813E+00	9.619E-01	6.793E-01	6.855E-02	10.029
		144.24		7.722E-01	7.150E-01	1.210E+00	1.334E-01	0.638
		154.21		1.036E-01	4.121E-01	6.807E-01	6.891E-02	0.152
	+	269.46	*	6.401E-01	3.397E-01	3.708E-01	3.457E-02	1.726
		323.87		7.315E-01	7.804E-01	1.228E+00	2.159E-01	0.595
		338.28		7.875E+00	2.251E+00	2.652E+00	3.275E-01	2.970
AC-227	+	79.69	*	1.576E+00	1.056E+00	1.536E+00	2.737E-01	1.026
		235.96		3.899E+00	5.109E-01	2.830E-01	3.019E-02	13.781
		256.23		-1.872E-01	2.833E-01	4.292E-01	5.328E-02	-0.436
	+	299.98	*	2.080E+00	1.408E+00	1.729E+00	2.263E-01	1.203
		304.50		8.593E-01	1.787E+00	2.762E+00	4.645E-01	0.311
		334.37		-1.076E+00	1.943E+00	2.717E+00	4.299E-01	-0.396
TH-227	+	79.80	*	2.504E+00	1.440E+00	2.026E+00	4.506E-01	1.236
		235.96		3.899E+00	4.931E-01	2.830E-01	2.859E-02	13.781
		256.23		-1.872E-01	2.836E-01	4.292E-01	5.978E-02	-0.436
	+	299.98	*	2.080E+00	1.408E+00	1.729E+00	2.263E-01	1.203
		304.50		8.593E-01	1.787E+00	2.762E+00	4.645E-01	0.311
		334.37		-1.076E+00	1.943E+00	2.717E+00	4.299E-01	-0.396
PA-231	+	283.69	*	6.814E-01	1.493E+00	2.586E+00	3.860E-01	0.263
		301.36		1.336E+00	9.034E-01	1.022E+00	1.282E-01	1.308
		81.07		1.788E-01	1.973E-01	2.525E-01	2.460E-02	0.708
TH-231	+	83.79	*	9.114E-02	1.103E-01	1.718E-01	1.674E-02	0.531
		94.87		6.813E+00	9.619E-01	6.793E-01	6.855E-02	10.029
		144.24		7.722E-01	7.150E-01	1.210E+00	1.334E-01	0.638
	+	154.21	*	1.036E-01	4.121E-01	6.807E-01	6.891E-02	0.152
		269.46		6.401E-01	3.397E-01	3.708E-01	3.457E-02	1.726
		323.87		7.315E-01	7.804E-01	1.228E+00	2.159E-01	0.595
PA-233	+	338.28	*	7.875E+00	2.251E+00	2.652E+00	3.275E-01	2.970
		300.13		9.412E-01	6.414E-01	7.805E-01	1.183E-01	1.206
		311.90		-3.964E-02	6.650E-02	1.078E-01	1.011E-02	-0.368
	+	340.48	*	5.026E+00	1.777E+00	1.179E+00	2.854E-01	4.263
		94.67		2.469E+00	4.123E-01	2.701E-01	3.635E-02	9.143
		98.44		1.590E-01	1.267E-01	1.469E-01	8.234E-02	1.082
	+	111.00	*	-9.629E-02	1.787E-01	2.844E-01	3.948E-02	-0.339
		131.20		-4.541E-02	1.154E-01	1.660E-01	1.843E-02	-0.274
		569.50		9.526E-03	3.250E-01	5.275E-01	4.690E-02	0.018
	+	733.00	*	-6.896E-02	4.955E-01	7.457E-01	1.656E-01	-0.092
		880.51		-1.063E-01	3.597E-01	5.779E-01	5.066E-02	-0.184
		883.24		-1.997E-01	3.865E-01	5.660E-01	3.806E-01	-0.353
	+	926.50	*	3.573E-02	2.211E-01	3.705E-01	9.382E-02	0.096
		946.00		-4.781E-01	4.167E-01	5.880E-01	1.107E-01	-0.813
		949.00		2.448E-01	5.604E-01	9.635E-01	8.429E-02	0.254
PA-234M	+	766.42		1.580E+01	1.739E+01	2.772E+01	1.407E+01	0.570

---- 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	*		9.304E+00	6.386E+00	1.184E+01	1.188E+00	0.786
	99.53			2.209E-01	1.495E-01	2.604E-01	2.691E-02	0.848
	103.37			-1.082E-01	9.102E-02	1.430E-01	1.508E-02	-0.757
	106.12			6.437E-02	7.853E-02	1.344E-01	1.439E-02	0.479
	117.23	*		-4.396E-01	3.876E-01	6.047E-01	6.887E-02	-0.727
	228.18			2.748E-02	2.261E-01	3.638E-01	3.260E-02	0.076
AM-241	277.60			1.226E-01	1.851E-01	3.238E-01	2.972E-02	0.379
	59.54	*		4.108E-02	7.141E-02	1.114E-01	1.183E-02	0.369
CM-247	278.00			6.636E-01	7.790E-01	1.374E+00	1.261E-01	0.483
	287.50			1.450E-01	1.235E+00	2.104E+00	1.933E-01	0.069
CF-249	402.40	*		-3.760E-02	4.127E-02	6.376E-02	5.415E-03	-0.590
	252.80			1.864E-02	1.018E+00	1.618E+00	1.473E-01	0.012
	333.37			1.146E-01	2.083E-01	3.039E-01	2.749E-02	0.377
	388.16	*		1.862E-02	4.136E-02	7.091E-02	6.006E-03	0.263
CF-251	177.52	*		2.497E-02	1.311E-01	2.146E-01	1.818E-02	0.116
	227.38			-5.573E-02	3.615E-01	5.724E-01	5.124E-02	-0.097
	285.41			3.252E-01	2.268E+00	3.872E+00	3.557E-01	0.084

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]G248030006      *
* Acquisition date   : 13-MAR-2010 14:32:43 Detector SN#                   *
* Detector ID        : GAM17 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 2.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:10.42 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030006 Analyst initials: MXR1                  *
* Batch Number       : 958221 Sample Quantity : 1.3668E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36 MS Isotope                     *
* MSD DPM             : 0.000 MSD Isotope                                *
* LCS DPM             : 0.000 LCS Isotope                                 *
* LCSD DPM            : 0.000 LCSD Isotope                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.435E+01	2.820E+00	7.126E-01	0.000E+00
CD-109	4.143E+00	1.097E+00	1.042E+00	0.000E+00
SN-126	4.008E-01	1.061E-01	1.006E-01	0.000E+00
CS-135	5.561E-01	2.903E-01	2.759E-01	0.000E+00
BA-137M	2.321E-01	1.023E-01	6.867E-02	0.000E+00
CS-137	2.451E-01	1.081E-01	7.255E-02	0.000E+00
TL-208	5.492E-01	1.009E-01	6.070E-02	0.000E+00
PB-210	1.894E+00	8.337E-01	8.805E-01	0.000E+00
BI-211	4.046E+00	5.838E-01	3.506E-01	0.000E+00
PB-212	1.565E+00	1.941E-01	1.006E-01	0.000E+00
BI-214	1.342E+00	2.474E-01	1.250E-01	0.000E+00
PB-214	1.468E+00	2.263E-01	1.276E-01	0.000E+00
RA-224	5.079E+00	1.230E+00	1.079E+00	0.000E+00
RA-226	1.342E+00	2.474E-01	1.250E-01	0.000E+00
AC-228	1.586E+00	3.865E-01	3.208E-01	0.000E+00
RA-228	1.586E+00	3.865E-01	3.208E-01	0.000E+00
TH-228	1.565E+00	1.941E-01	1.006E-01	0.000E+00
TH-229	-2.028E-01	5.349E-01	8.994E-01	0.000E+00
TH-232	1.586E+00	3.865E-01	3.208E-01	0.000E+00
TH-234	5.723E+00	1.594E+00	1.137E+00	0.000E+00
U-235	2.551E-01	2.092E-01	3.747E-01	0.000E+00
NP-237	1.196E+00	4.008E-01	2.993E-01	0.000E+00
U-238	5.723E+00	1.594E+00	1.137E+00	0.000E+00
ANH-511	1.724E-01	8.562E-02	5.122E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-6.371E-02	3.954E-01	6.690E-01	0.000E+00 NOT IDENT.
NA-22	-2.274E-02	5.697E-02	8.931E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.109E+09	0.000E+00	0.000E+00 SHORT HLIF

SC-46	2.279E-02	5.106E-02	9.108E-02	0.000E+00	FAIL ABUN
V-48	6.270E-03	1.127E-01	1.920E-01	0.000E+00	NOT IDENT.
CR-51	-4.862E-01	4.596E-01	7.589E-01	0.000E+00	NOT IDENT.
MN-54	3.297E-02	4.931E-02	8.932E-02	0.000E+00	NOT IDENT.
CO-56	-2.302E-04	5.414E-02	9.300E-02	0.000E+00	FAIL ABUN
CO-57	1.130E-02	2.457E-02	4.436E-02	0.000E+00	NOT IDENT.
CO-58	-5.860E-03	4.677E-02	7.966E-02	0.000E+00	NOT IDENT.
FE-59	5.439E-02	1.197E-01	2.106E-01	0.000E+00	NOT IDENT.
CO-60	4.408E-03	4.786E-02	8.311E-02	0.000E+00	NOT IDENT.
ZN-65	1.511E-01	1.352E-01	2.241E-01	0.000E+00	NOT IDENT.
SE-75	4.307E-03	5.448E-02	8.154E-02	0.000E+00	NOT IDENT.
SR-85	3.646E-02	5.033E-02	8.074E-02	0.000E+00	NOT IDENT.
Y-88	-1.745E-02	4.256E-02	6.364E-02	0.000E+00	NOT IDENT.
Y-91	-2.227E+01	3.326E+01	5.151E+01	0.000E+00	NOT IDENT.
NB-94	-3.714E-03	4.102E-02	7.122E-02	0.000E+00	NOT IDENT.
NB-95	8.772E-02	6.102E-02	1.157E-01	0.000E+00	NOT IDENT.
NB-95M	-3.675E-03	1.571E-01	2.356E-01	0.000E+00	NOT IDENT.
ZR-95	6.053E-02	9.210E-02	1.686E-01	0.000E+00	FAIL ABUN
MO-99	0.000E+00	8.995E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.604E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.498E-02	5.298E-02	8.178E-02	0.000E+00	FAIL ABUN
RH-106	1.768E-01	3.843E-01	6.686E-01	0.000E+00	NOT IDENT.
RU-106	1.768E-01	3.839E-01	6.686E-01	0.000E+00	NOT IDENT.
AG-108M	9.758E-03	3.449E-02	6.075E-02	0.000E+00	NOT IDENT.
AG-110M	5.172E-02	4.924E-02	8.053E-02	0.000E+00	NOT IDENT.
SN-113	-1.228E-02	4.804E-02	8.224E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.139E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-6.046E-03	7.962E-02	1.382E-01	0.000E+00	NOT IDENT.
TE-123M	-6.355E-03	3.014E-02	5.195E-02	0.000E+00	NOT IDENT.
SB-124	-9.463E-02	8.825E-02	1.032E-01	0.000E+00	NOT IDENT.
SB-125	2.531E-02	9.253E-02	1.635E-01	0.000E+00	FAIL ABUN
TE-125M	-1.382E+00	9.721E+00	1.726E+01	0.000E+00	NOT IDENT.
I-126	9.884E-02	4.566E-01	6.757E-01	0.000E+00	NOT IDENT.
SB-126	2.440E-01	2.816E-01	4.706E-01	0.000E+00	NOT IDENT.
SB-127	-3.014E+00	5.744E+00	8.993E+00	0.000E+00	NOT IDENT.
I-131	7.770E-03	2.283E-01	4.013E-01	0.000E+00	NOT IDENT.
TE-132	4.180E-01	3.399E+00	5.798E+00	0.000E+00	NOT IDENT.
BA-133	4.084E-02	4.710E-02	7.819E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.917E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.447E-02	5.974E-02	1.079E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.767E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.666E-01	1.767E-01	2.547E-01	0.000E+00	FAIL ABUN
CE-139	-3.169E-02	3.201E-02	5.275E-02	0.000E+00	NOT IDENT.
BA-140	-6.246E-02	4.806E-01	8.057E-01	0.000E+00	NOT IDENT.
LA-140	-6.522E-02	1.561E-01	2.447E-01	0.000E+00	FAIL ABUN
CE-141	-2.584E-02	7.557E-02	1.292E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.265E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.825E-02	1.991E-01	3.460E-01	0.000E+00	NOT IDENT.
PM-144	-2.200E-02	4.235E-02	7.100E-02	0.000E+00	NOT IDENT.
PR-144	-1.624E+00	3.184E+00	5.342E+00	0.000E+00	NOT IDENT.
PM-146	5.057E-02	5.036E-02	9.218E-02	0.000E+00	NOT IDENT.
ND-147	-2.754E-01	1.039E+00	1.724E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	8.259E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.291E-03	1.152E-01	1.786E-01	0.000E+00	NOT IDENT.
GD-153	-1.409E-02	8.382E-02	1.341E-01	0.000E+00	NOT IDENT.
EU-154	-6.090E-02	1.612E-01	2.534E-01	0.000E+00	NOT IDENT.
EU-155	7.483E-02	9.568E-02	1.759E-01	0.000E+00	FAIL ABUN
TB-160	-7.498E-02	1.888E-01	3.105E-01	0.000E+00	FAIL ABUN
HO-166M	2.516E-02	6.753E-02	1.217E-01	0.000E+00	FAIL ABUN
TA-182	-1.586E-01	2.684E-01	4.171E-01	0.000E+00	NOT IDENT.
IR-192	-2.620E-02	3.642E-02	6.155E-02	0.000E+00	FAIL ABUN
HG-203	-1.362E-02	4.369E-02	7.699E-02	0.000E+00	FAIL ABUN
BI-207	2.991E-02	6.379E-02	1.126E-01	0.000E+00	FAIL ABUN
PB-211	-1.950E-01	7.854E-01	1.333E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.036E+00	1.438E+00	0.000E+00	FAIL ABUN
RN-219	-3.289E-01	4.256E-01	6.942E-01	0.000E+00	FAIL ABUN
RA-223	7.315E-01	7.648E-01	1.268E+00	0.000E+00	FAIL ABUN
AC-227	-1.872E-01	2.776E-01	4.450E-01	0.000E+00	FAIL ABUN
TH-227	-1.872E-01	2.779E-01	4.450E-01	0.000E+00	FAIL ABUN
PA-231	6.814E-01	1.463E+00	2.676E+00	0.000E+00	FAIL ABUN
TH-231	7.315E-01	7.648E-01	1.268E+00	0.000E+00	FAIL ABUN
PA-233	-3.964E-02	6.517E-02	1.113E-01	0.000E+00	FAIL ABUN
PA-234	-4.781E-01	4.084E-01	5.947E-01	0.000E+00	FAIL ABUN
PA-234M	9.304E+00	6.259E+00	1.196E+01	0.000E+00	NOT IDENT.
NP-239	-4.396E-01	3.799E-01	6.359E-01	0.000E+00	NOT IDENT.
AM-241	4.108E-02	6.998E-02	1.186E-01	0.000E+00	NOT IDENT.
CM-247	-3.760E-02	4.044E-02	6.554E-02	0.000E+00	NOT IDENT.
CF-249	1.862E-02	4.053E-02	7.295E-02	0.000E+00	NOT IDENT.

CF-251	2.497E-02	1.285E-01	2.240E-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]G248030006.CNF;1
Sample date      : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:32:43
Sample ID        : G248030006      Sample quantity   : 1.36680E+02 GRAM
Detector name    : GAM17           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:10.42  0.1%
Energy tolerance : 2.50000 keV     Analyst Initials  : MXR1
Abundance limit  : 75.00000        Sensitivity     : 5.00000
Batch ID         : 958221          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	736	10.66*	7.787E-01	2.435E+01	2.435E+01	11.82
CD-109	88.03	360	3.70*	6.675E+00	4.008E+00	4.143E+00	27.02
SN-126	64.28	523	9.60	6.778E+00	2.206E+00	2.206E+00	26.48
	86.94	360	8.90	6.675E+00	1.666E+00	1.666E+00	48.64
	87.57	360	37.00*	6.675E+00	4.008E-01	4.008E-01	27.02
CS-135	268.22	118	16.00*	3.644E+00	5.561E-01	5.561E-01	53.27
BA-137M	661.66	122	89.90*	1.605E+00	2.317E-01	2.321E-01	45.00
CS-137	661.66	122	85.10*	1.605E+00	2.448E-01	2.451E-01	45.00
TL-208	277.37	-----	6.60	3.568E+00	-----	Line Not Found	-----
	583.19	308	85.00*	1.813E+00	5.492E-01	5.492E-01	18.74
	860.56	33	12.50	1.248E+00	5.867E-01	5.867E-01	75.61
PB-210	46.54	185	4.25*	6.320E+00	1.891E+00	1.894E+00	44.91
BI-211	72.87	624	1.23	6.795E+00	2.051E+01	2.051E+01	16.99
	351.06	554	12.92*	2.910E+00	4.046E+00	4.046E+00	14.72
PB-212	74.82	624	10.28	6.795E+00	2.454E+00	2.454E+00	19.57
	77.11	893	17.10	6.782E+00	2.115E+00	2.115E+00	14.23
	238.63	1000	43.60*	4.024E+00	1.565E+00	1.565E+00	12.65
	300.09	76	3.30	3.344E+00	1.891E+00	1.891E+00	67.34
BI-214	609.32	386	45.49*	1.739E+00	1.341E+00	1.342E+00	18.82
	1120.29	57	14.92	9.781E-01	1.077E+00	1.077E+00	61.16
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
PB-214	74.82	624	5.80	6.795E+00	4.349E+00	4.349E+00	18.75
	77.11	893	9.70	6.782E+00	3.729E+00	3.729E+00	16.45
	242.00	302	7.25	3.984E+00	2.873E+00	2.873E+00	25.37
	295.22	338	18.42	3.390E+00	1.486E+00	1.486E+00	18.73
	351.93	554	35.60*	2.910E+00	1.468E+00	1.468E+00	15.72
RA-224	240.99	302	4.10*	3.984E+00	5.079E+00	5.079E+00	24.70
RA-226	609.32	386	45.49*	1.739E+00	1.341E+00	1.342E+00	18.82
	1120.29	57	14.92	9.781E-01	1.077E+00	1.077E+00	61.16
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
AC-228	338.32	245	11.27	3.010E+00	1.985E+00	1.985E+00	49.10
	911.20	176	25.80*	1.183E+00	1.586E+00	1.586E+00	24.87

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	67	15.80	1.117E+00	1.045E+00	1.045E+00	50.24
	338.32	245	11.27	3.010E+00	1.985E+00	1.985E+00	49.10
	911.20	176	25.80*	1.183E+00	1.586E+00	1.586E+00	24.87
TH-228	968.97	67	15.80	1.117E+00	1.045E+00	1.045E+00	50.24
	74.82	624	10.28	6.795E+00	2.454E+00	2.454E+00	17.03
	77.11	893	17.10	6.782E+00	2.115E+00	2.115E+00	14.23
TH-229	238.63	1000	43.60*	4.024E+00	1.565E+00	1.565E+00	12.65
	300.09	76	3.30	3.344E+00	1.891E+00	1.891E+00	90.39
	85.43	360	14.70	6.675E+00	1.009E+00	1.009E+00	27.02
TH-232	88.47	360	24.00	6.675E+00	6.178E-01	6.178E-01	27.02
	193.51	-----	4.41*	4.680E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.409E+00	-----	Line Not Found	-----
TH-234	338.32	245	11.27	3.010E+00	1.985E+00	1.985E+00	27.30
	911.20	176	25.80*	1.183E+00	1.586E+00	1.586E+00	24.87
	968.97	67	15.80	1.117E+00	1.045E+00	1.045E+00	50.24
U-235	63.29	523	3.70*	6.778E+00	5.723E+00	5.723E+00	28.42
	92.59	931	4.23	6.596E+00	9.164E+00	9.164E+00	24.75
	89.96	235	3.47	6.637E+00	2.804E+00	2.804E+00	42.54
NP-237	93.35	931	5.60	6.596E+00	6.922E+00	6.922E+00	25.66
	143.76	-----	10.96*	5.592E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
U-238	185.72	271	57.20	4.807E+00	2.706E-01	2.706E-01	30.95
	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
	86.48	360	12.40*	6.675E+00	1.196E+00	1.196E+00	34.20
ANH-511	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
	63.29	523	3.70*	6.778E+00	5.723E+00	5.723E+00	28.42
	92.59	931	4.23	6.596E+00	9.164E+00	9.164E+00	14.12
	511.00	129	100.00*	2.058E+00	1.724E-01	1.724E-01	50.69

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	2.435E+01	2.435E+01	0.288E+01	11.82	
CD-109	461.40D	1.03	4.008E+00	4.143E+00	1.119E+00	27.02	
SN-126	2.30E+05Y	1.00	4.008E-01	4.008E-01	1.083E-01	27.02	
CS-135	2.30E+06Y	1.00	5.561E-01	5.561E-01	2.962E-01	53.27	
BA-137M	30.08Y	1.00	2.317E-01	2.321E-01	1.044E-01	45.00	
CS-137	30.08Y	1.00	2.448E-01	2.451E-01	1.103E-01	45.00	
TL-208	1.41E+10Y	1.00	5.492E-01	5.492E-01	1.029E-01	18.74	
PB-210	22.20Y	1.00	1.891E+00	1.894E+00	0.851E+00	44.91	
BI-211	7.04E+08Y	1.00	4.046E+00	4.046E+00	0.596E+00	14.72	
PB-212	1.41E+10Y	1.00	1.565E+00	1.565E+00	0.198E+00	12.65	
BI-214	1600.00Y	1.00	1.341E+00	1.342E+00	0.252E+00	18.82	
PB-214	1600.00Y	1.00	1.468E+00	1.468E+00	0.231E+00	15.72	
RA-224	1.41E+10Y	1.00	5.079E+00	5.079E+00	1.255E+00	24.70	
RA-226	1600.00Y	1.00	1.341E+00	1.342E+00	0.252E+00	18.82	
AC-228	1.41E+10Y	1.00	1.586E+00	1.586E+00	0.394E+00	24.87	
RA-228	1.41E+10Y	1.00	1.586E+00	1.586E+00	0.394E+00	24.87	
TH-228	1.41E+10Y	1.00	1.565E+00	1.565E+00	0.198E+00	12.65	
TH-229	7340.00Y	1.00	6.178E-01	6.178E-01	1.669E-01	27.02	K
TH-232	1.41E+10Y	1.00	1.586E+00	1.586E+00	0.394E+00	24.87	
TH-234	4.47E+09Y	1.00	5.723E+00	5.723E+00	1.626E+00	28.42	
U-235	7.04E+08Y	1.00	2.706E-01	2.706E-01	0.837E-01	30.95	K
NP-237	2.14E+06Y	1.00	1.196E+00	1.196E+00	0.409E+00	34.20	
U-238	4.47E+09Y	1.00	5.723E+00	5.723E+00	1.626E+00	28.42	
ANH-511	1.00E+09Y	1.00	1.724E-01	1.724E-01	0.874E-01	50.69	

Total Activity : 6.709E+01 6.723E+01

Grand Total Activity : 6.709E+01 6.723E+01

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

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

Unidentified Energy Lines
Sample ID : G248030006

Page : 4
Acquisition date : 13-MAR-2010 14:32:43

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.62	76	287	0.75	256.93	254	7	1.05E-02	77.9	5.90E+00	
0	327.71	73	135	0.98	655.27	651	9	1.02E-02	61.6	3.10E+00	T
0	462.14	101	111	1.12	924.25	917	14	1.40E-02	48.8	2.26E+00	T
0	726.44	53	73	1.23	1453.14	1448	12	7.37E-03	69.8	1.47E+00	T
0	1237.33	34	72	1.55	2475.64	2468	17	4.77E-03	****	8.95E-01	T
0	1375.92	18	10	1.86	2753.05	2747	10	2.52E-03	80.1	8.17E-01	
0	1761.91	73	4	3.38	3525.76	3519	15	1.02E-02	26.8	6.72E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030006.CNF;1
* Acquisition date   : 13-MAR-2010 14:32:43   Detector SN#      :
* Detector ID        : GAM17                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 2.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:10.42           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248030006             Analyst initials: MXR1
* Batch Number       : 958221                 Sample Quantity : 1.36680E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36.18MS Isotope      :
* MSD ID             :                          MSD Isotope    :
* LCS ID             : 1032-A                   LCS Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.435E+01	2.878E+00	7.107E-01	6.310E-02	34.258
CD-109	4.143E+00	1.119E+00	9.853E-01	9.619E-02	4.205
SN-126	4.008E-01	1.083E-01	9.517E-02	9.287E-03	4.211
CS-135	5.561E-01	2.962E-01	2.663E-01	2.779E-02	2.088
BA-137M	2.321E-01	1.044E-01	6.744E-02	5.681E-03	3.441
CS-137	2.451E-01	1.103E-01	7.124E-02	6.013E-03	3.441
TL-208	5.492E-01	1.029E-01	5.947E-02	5.618E-03	9.236
PB-210	1.894E+00	8.507E-01	8.237E-01	8.880E-02	2.300
BI-211	4.046E+00	5.957E-01	3.402E-01	3.175E-02	11.892
PB-212	1.565E+00	1.980E-01	9.694E-02	9.818E-03	16.145
BI-214	1.342E+00	2.525E-01	1.226E-01	1.253E-02	10.944
PB-214	1.468E+00	2.309E-01	1.238E-01	1.341E-02	11.862
RA-224	5.079E+00	1.255E+00	1.040E+00	9.405E-02	4.884
RA-226	1.342E+00	2.525E-01	1.226E-01	1.253E-02	10.944
AC-228	1.586E+00	3.944E-01	3.170E-01	3.705E-02	5.002
RA-228	1.586E+00	3.944E-01	3.170E-01	3.705E-02	5.002
TH-228	1.565E+00	1.980E-01	9.694E-02	9.818E-03	16.145
TH-229	6.178E-01	1.669E-01	8.630E-01	7.463E-02	0.716

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.586E+00	3.944E-01	3.170E-01	3.705E-02	5.002
TH-234	5.723E+00	1.626E+00	1.069E+00	2.035E-01	5.351
U-235	2.706E-01	8.374E-02	3.576E-01	6.367E-02	0.757
NP-237	1.196E+00	4.090E-01	2.831E-01	6.546E-02	4.225
U-238	5.723E+00	1.626E+00	1.069E+00	2.035E-01	5.351
ANH-511	1.724E-01	8.737E-02	5.005E-02	4.470E-03	3.444

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.371E-02		4.035E-01	6.529E-01	6.211E-02	-0.098
NA-22	-2.274E-02		5.813E-02	8.882E-02	7.483E-03	-0.256
NA-24	-9.658E+02		1.076E+03	Half-Life	too short	
SC-46	2.279E-02		5.211E-02	8.995E-02	7.874E-03	0.253
V-48	6.270E-03		1.150E-01	1.900E-01	1.657E-02	0.033
CR-51	-4.862E-01		4.690E-01	7.350E-01	7.014E-02	-0.661
MN-54	3.297E-02		5.031E-02	8.810E-02	7.747E-03	0.374
CO-56	-2.302E-04		5.525E-02	9.176E-02	8.066E-03	-0.003
CO-57	1.130E-02		2.507E-02	4.221E-02	4.945E-03	0.268
CO-58	-5.860E-03		4.772E-02	7.853E-02	6.916E-03	-0.075
FE-59	5.439E-02		1.222E-01	2.088E-01	1.916E-02	0.260
CO-60	4.408E-03		4.884E-02	8.274E-02	7.052E-03	0.053
ZN-65	1.511E-01		1.380E-01	2.223E-01	1.871E-02	0.680
SE-75	4.307E-03		5.560E-02	7.870E-02	7.231E-03	0.055
SR-85	3.646E-02		5.136E-02	7.890E-02	7.049E-03	0.462
Y-88	-1.745E-02		4.343E-02	6.376E-02	5.317E-03	-0.274
Y-91	-2.227E+01		3.394E+01	5.118E+01	4.224E+00	-0.435
NB-94	-3.714E-03		4.186E-02	7.001E-02	6.006E-03	-0.053
NB-95	8.772E-02		6.226E-02	1.140E-01	9.956E-03	0.770
NB-95M	-3.675E-03		1.603E-01	2.269E-01	2.321E-02	-0.016
ZR-95	6.053E-02		9.398E-02	1.660E-01	1.596E-02	0.365
MO-99	3.359E-05		4.589E-05	Half-Life	too short	
TC-99M	-5.701E+18		4.900E+18	Half-Life	too short	
RU-103	-5.498E-02		5.407E-02	7.987E-02	1.130E-02	-0.688
RH-106	1.768E-01		3.922E-01	6.557E-01	8.721E-02	0.270
RU-106	1.768E-01		3.918E-01	6.557E-01	5.697E-02	0.270
AG-108M	9.758E-03		3.519E-02	5.918E-02	5.305E-03	0.165
AG-110M	5.172E-02		5.024E-02	7.907E-02	6.892E-03	0.654
SN-113	-1.228E-02		4.902E-02	7.996E-02	6.947E-03	-0.154
CD-115	1.241E-04		5.813E-05	Half-Life	too short	
SN-117M	-6.046E-03		8.124E-02	1.321E-01	1.187E-02	-0.046
TE-123M	-6.355E-03		3.076E-02	4.968E-02	4.471E-03	-0.128
SB-124	-9.463E-02		9.005E-02	1.032E-01	9.202E-03	-0.917
SB-125	2.531E-02		9.442E-02	1.592E-01	1.404E-02	0.159
TE-125M	-1.382E+00		9.919E+00	1.639E+01	2.038E+00	-0.084
I-126	9.884E-02		4.659E-01	6.636E-01	5.603E-02	0.149
SB-126	2.440E-01		2.873E-01	4.629E-01	3.996E-02	0.527

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	-3.014E+00		5.861E+00	8.837E+00	1.201E+00	-0.341
I-131	7.770E-03		2.329E-01	3.896E-01	3.619E-02	0.020
TE-132	4.180E-01		3.469E+00	5.581E+00	9.815E-01	0.075
BA-133	4.084E-02		4.806E-02	7.589E-02	9.953E-03	0.538
I-133	-8.743E-01		9.780E-01	Half-Life	too short	
CS-134	3.447E-02		6.096E-02	1.063E-01	9.396E-03	0.324
I-135	1.398E+17		1.922E+17	Half-Life	too short	
CS-136	-1.666E-01		1.803E-01	2.523E-01	2.266E-02	-0.660
CE-139	-3.169E-02		3.266E-02	5.048E-02	4.209E-03	-0.628
BA-140	-6.246E-02		4.904E-01	7.881E-01	2.679E-01	-0.079
LA-140	-6.522E-02		1.593E-01	2.445E-01	2.110E-02	-0.267
CE-141	-2.584E-02		7.711E-02	1.234E-01	1.258E-02	-0.209
CE-143	4.453E-02	+	6.454E-03	Half-Life	too short	
CE-144	-5.825E-02		2.031E-01	3.298E-01	5.509E-02	-0.177
PM-144	-2.200E-02		4.322E-02	6.979E-02	5.977E-03	-0.315
PR-144	-1.624E+00		3.249E+00	5.251E+00	4.493E-01	-0.309
PM-146	5.057E-02		5.138E-02	8.987E-02	9.637E-03	0.563
ND-147	-2.754E-01		1.061E+00	1.686E+00	2.553E-01	-0.163
PM-149	2.395E-04		4.214E-04	Half-Life	too short	
EU-152	-1.291E-03		1.175E-01	1.733E-01	1.638E-02	-0.007
GD-153	-1.409E-02		8.553E-02	1.271E-01	1.299E-02	-0.111
EU-154	-6.090E-02		1.645E-01	2.520E-01	2.829E-02	-0.242
EU-155	7.483E-02		9.763E-02	1.669E-01	1.793E-02	0.448
TB-160	-7.498E-02		1.927E-01	3.066E-01	2.688E-02	-0.245
HO-166M	2.516E-02		6.890E-02	1.196E-01	1.030E-02	0.210
TA-182	-1.586E-01		2.739E-01	4.145E-01	3.438E-02	-0.383
IR-192	-2.620E-02		3.716E-02	5.961E-02	5.454E-03	-0.439
HG-203	-1.362E-02		4.459E-02	7.438E-02	6.983E-03	-0.183
BI-207	2.991E-02		6.509E-02	1.115E-01	9.563E-03	0.268
PB-211	-1.950E-01		8.015E-01	1.297E+00	6.274E-01	-0.150
BI-212	1.491E+00	+	1.058E+00	1.414E+00	1.765E-01	1.055
RN-219	-3.289E-01		4.343E-01	6.753E-01	9.993E-02	-0.487
RA-223	7.315E-01		7.804E-01	1.228E+00	2.159E-01	0.595
AC-227	-1.872E-01		2.833E-01	4.292E-01	5.328E-02	-0.436
TH-227	-1.872E-01		2.836E-01	4.292E-01	5.978E-02	-0.436
PA-231	6.814E-01		1.493E+00	2.586E+00	3.860E-01	0.263
TH-231	7.315E-01		7.804E-01	1.228E+00	2.159E-01	0.595
PA-233	-3.964E-02		6.650E-02	1.078E-01	1.011E-02	-0.368
PA-234	-4.781E-01		4.167E-01	5.880E-01	1.107E-01	-0.813
PA-234M	9.304E+00		6.386E+00	1.184E+01	1.188E+00	0.786
NP-239	-4.396E-01		3.876E-01	6.047E-01	6.887E-02	-0.727
AM-241	4.108E-02		7.141E-02	1.114E-01	1.183E-02	0.369
CM-247	-3.760E-02		4.127E-02	6.376E-02	5.415E-03	-0.590
CF-249	1.862E-02		4.136E-02	7.091E-02	6.006E-03	0.263
CF-251	2.497E-02		1.311E-01	2.146E-01	1.818E-02	0.116

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]G248030006          *
* Acquisition date   : 13-MAR-2010 14:32:43 Detector SN# :                  *
* Detector ID        : GAM17 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 2.500                      *
* Elapsed live time: 0 02:00:00.00 Abundance limit : 75.000              *
* Elapsed real time: 0 02:00:10.42 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030006 Analyst initials: MXR1                  *
* Batch Number       : 958221 Sample Quantity : 1.3668E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                  *
* LCS DPM             : 0.000 LCS Isotope :                  *
* LCSD DPM            : 0.000 LCSD Isotope :                  *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.435E+01	2.820E+00	3.565E-01	1.439E+00
CD-109	4.143E+00	1.097E+00	5.211E-01	5.597E-01
SN-126	4.008E-01	1.061E-01	5.034E-02	5.414E-02
CS-135	5.561E-01	2.903E-01	1.380E-01	1.481E-01
BA-137M	2.321E-01	1.023E-01	3.436E-02	5.221E-02
CS-137	2.451E-01	1.081E-01	3.630E-02	5.516E-02
TL-208	5.492E-01	1.009E-01	3.037E-02	5.147E-02
PB-210	1.894E+00	8.337E-01	4.405E-01	4.254E-01
BI-211	4.046E+00	5.838E-01	1.754E-01	2.979E-01
PB-212	1.565E+00	1.941E-01	5.035E-02	9.901E-02
BI-214	1.342E+00	2.474E-01	6.255E-02	1.262E-01
PB-214	1.468E+00	2.263E-01	6.382E-02	1.154E-01
RA-224	5.079E+00	1.230E+00	5.400E-01	6.274E-01
RA-226	1.342E+00	2.474E-01	6.255E-02	1.262E-01
AC-228	1.586E+00	3.865E-01	1.605E-01	1.972E-01
RA-228	1.586E+00	3.865E-01	1.605E-01	1.972E-01
TH-228	1.565E+00	1.941E-01	5.035E-02	9.901E-02
TH-229	-2.028E-01	5.349E-01	4.499E-01	2.729E-01
TH-232	1.586E+00	3.865E-01	1.605E-01	1.972E-01
TH-234	5.723E+00	1.594E+00	5.689E-01	8.132E-01
U-235	2.551E-01	2.092E-01	1.875E-01	1.067E-01
NP-237	1.196E+00	4.008E-01	1.497E-01	2.045E-01
U-238	5.723E+00	1.594E+00	5.689E-01	8.132E-01
ANH-511	1.724E-01	8.562E-02	2.563E-02	4.368E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-6.371E-02	3.954E-01	3.347E-01	2.017E-01 NOT IDENT.
NA-22	-2.274E-02	5.697E-02	4.468E-02	2.907E-02 NOT IDENT.
NA-24	-9.658E+08	2.109E+09	0.000E+00	1.076E+09 SHORT HLIF

SC-46	2.279E-02	5.106E-02	4.556E-02	2.605E-02	FAIL ABUN
V-48	6.270E-03	1.127E-01	9.606E-02	5.750E-02	NOT IDENT.
CR-51	-4.862E-01	4.596E-01	3.797E-01	2.345E-01	NOT IDENT.
MN-54	3.297E-02	4.931E-02	4.469E-02	2.516E-02	NOT IDENT.
CO-56	-2.302E-04	5.414E-02	4.653E-02	2.762E-02	FAIL ABUN
CO-57	1.130E-02	2.457E-02	2.219E-02	1.254E-02	NOT IDENT.
CO-58	-5.860E-03	4.677E-02	3.985E-02	2.386E-02	NOT IDENT.
FE-59	5.439E-02	1.197E-01	1.053E-01	6.110E-02	NOT IDENT.
CO-60	4.408E-03	4.786E-02	4.158E-02	2.442E-02	NOT IDENT.
ZN-65	1.511E-01	1.352E-01	1.121E-01	6.898E-02	NOT IDENT.
SE-75	4.307E-03	5.448E-02	4.079E-02	2.780E-02	NOT IDENT.
SR-85	3.646E-02	5.033E-02	4.039E-02	2.568E-02	NOT IDENT.
Y-88	-1.745E-02	4.256E-02	3.184E-02	2.171E-02	NOT IDENT.
Y-91	-2.227E+01	3.326E+01	2.577E+01	1.697E+01	NOT IDENT.
NB-94	-3.714E-03	4.102E-02	3.563E-02	2.093E-02	NOT IDENT.
NB-95	8.772E-02	6.102E-02	5.791E-02	3.113E-02	NOT IDENT.
NB-95M	-3.675E-03	1.571E-01	1.179E-01	8.013E-02	NOT IDENT.
ZR-95	6.053E-02	9.210E-02	8.436E-02	4.699E-02	FAIL ABUN
MO-99	3.359E+01	8.995E+01	0.000E+00	4.589E+01	SHORT HLIF
TC-99M	-5.701E+24	9.604E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.498E-02	5.298E-02	4.092E-02	2.703E-02	FAIL ABUN
RH-106	1.768E-01	3.843E-01	3.345E-01	1.961E-01	NOT IDENT.
RU-106	1.768E-01	3.839E-01	3.345E-01	1.959E-01	NOT IDENT.
AG-108M	9.758E-03	3.449E-02	3.039E-02	1.759E-02	NOT IDENT.
AG-110M	5.172E-02	4.924E-02	4.029E-02	2.512E-02	NOT IDENT.
SN-113	-1.228E-02	4.804E-02	4.114E-02	2.451E-02	NOT IDENT.
CD-115	1.241E+02	1.139E+02	0.000E+00	5.813E+01	SHORT HLIF
SN-117M	-6.046E-03	7.962E-02	6.912E-02	4.062E-02	NOT IDENT.
TE-123M	-6.355E-03	3.014E-02	2.599E-02	1.538E-02	NOT IDENT.
SB-124	-9.463E-02	8.825E-02	5.161E-02	4.503E-02	NOT IDENT.
SB-125	2.531E-02	9.253E-02	8.180E-02	4.721E-02	FAIL ABUN
TE-125M	-1.382E+00	9.721E+00	8.633E+00	4.960E+00	NOT IDENT.
I-126	9.884E-02	4.566E-01	3.381E-01	2.329E-01	NOT IDENT.
SB-126	2.440E-01	2.816E-01	2.354E-01	1.436E-01	NOT IDENT.
SB-127	-3.014E+00	5.744E+00	4.499E+00	2.931E+00	NOT IDENT.
I-131	7.770E-03	2.283E-01	2.008E-01	1.165E-01	NOT IDENT.
TE-132	4.180E-01	3.399E+00	2.901E+00	1.734E+00	NOT IDENT.
BA-133	4.084E-02	4.710E-02	3.912E-02	2.403E-02	NOT IDENT.
I-133	-8.743E+05	1.917E+06	0.000E+00	9.780E+05	SHORT HLIF
CS-134	3.447E-02	5.974E-02	5.398E-02	3.048E-02	NOT IDENT.
I-135	1.398E+23	3.767E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.666E-01	1.767E-01	1.274E-01	9.016E-02	FAIL ABUN
CE-139	-3.169E-02	3.201E-02	2.639E-02	1.633E-02	NOT IDENT.
BA-140	-6.246E-02	4.806E-01	4.031E-01	2.452E-01	NOT IDENT.
LA-140	-6.522E-02	1.561E-01	1.224E-01	7.966E-02	FAIL ABUN
CE-141	-2.584E-02	7.557E-02	6.465E-02	3.856E-02	NOT IDENT.
CE-143	4.453E+04	1.265E+04	0.000E+00	6.454E+03	SHORT HLIF
CE-144	-5.825E-02	1.991E-01	1.731E-01	1.016E-01	NOT IDENT.
PM-144	-2.200E-02	4.235E-02	3.552E-02	2.161E-02	NOT IDENT.
PR-144	-1.624E+00	3.184E+00	2.673E+00	1.624E+00	NOT IDENT.
PM-146	5.057E-02	5.036E-02	4.612E-02	2.569E-02	NOT IDENT.
ND-147	-2.754E-01	1.039E+00	8.627E-01	5.303E-01	FAIL ABUN
PM-149	2.395E+02	8.259E+02	0.000E+00	4.214E+02	SHORT HLIF
EU-152	-1.291E-03	1.152E-01	8.937E-02	5.876E-02	NOT IDENT.
GD-153	-1.409E-02	8.382E-02	6.710E-02	4.276E-02	NOT IDENT.
EU-154	-6.090E-02	1.612E-01	1.268E-01	8.226E-02	NOT IDENT.
EU-155	7.483E-02	9.568E-02	8.799E-02	4.881E-02	FAIL ABUN
TB-160	-7.498E-02	1.888E-01	1.553E-01	9.634E-02	FAIL ABUN
HO-166M	2.516E-02	6.753E-02	6.087E-02	3.445E-02	FAIL ABUN
TA-182	-1.586E-01	2.684E-01	2.087E-01	1.370E-01	NOT IDENT.
IR-192	-2.620E-02	3.642E-02	3.080E-02	1.858E-02	FAIL ABUN
HG-203	-1.362E-02	4.369E-02	3.852E-02	2.229E-02	FAIL ABUN
BI-207	2.991E-02	6.379E-02	5.631E-02	3.255E-02	FAIL ABUN
PB-211	-1.950E-01	7.854E-01	6.670E-01	4.007E-01	NOT IDENT.
BI-212	1.491E+00	1.036E+00	7.192E-01	5.288E-01	FAIL ABUN
RN-219	-3.289E-01	4.256E-01	3.473E-01	2.171E-01	FAIL ABUN
RA-223	7.315E-01	7.648E-01	6.344E-01	3.902E-01	FAIL ABUN
AC-227	-1.872E-01	2.776E-01	2.226E-01	1.417E-01	FAIL ABUN
TH-227	-1.872E-01	2.779E-01	2.226E-01	1.418E-01	FAIL ABUN
PA-231	6.814E-01	1.463E+00	1.339E+00	7.464E-01	FAIL ABUN
TH-231	7.315E-01	7.648E-01	6.344E-01	3.902E-01	FAIL ABUN
PA-233	-3.964E-02	6.517E-02	5.571E-02	3.325E-02	FAIL ABUN
PA-234	-4.781E-01	4.084E-01	2.975E-01	2.083E-01	FAIL ABUN
PA-234M	9.304E+00	6.259E+00	5.983E+00	3.193E+00	NOT IDENT.
NP-239	-4.396E-01	3.799E-01	3.181E-01	1.938E-01	NOT IDENT.
AM-241	4.108E-02	6.998E-02	5.932E-02	3.570E-02	NOT IDENT.
CM-247	-3.760E-02	4.044E-02	3.279E-02	2.063E-02	NOT IDENT.
CF-249	1.862E-02	4.053E-02	3.650E-02	2.068E-02	NOT IDENT.

CF-251	2.497E-02	1.285E-01	1.121E-01	6.555E-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	298.3972
49.72	347.8511
57.36	0.0000
59.54	398.7314
63.29	440.8629
63.29	440.8629
64.28	454.6036
67.75	483.5192
69.67	491.0167
70.83	476.3646
72.81	526.6359
72.87	526.7081
72.87	526.7081
74.82	465.4578
74.82	465.4578
74.82	465.4578
74.97	465.6138
77.11	467.8037
77.11	467.8037
77.11	467.8037
79.69	336.5214
79.80	336.5990
80.12	334.1116
80.19	334.1604
80.57	326.2720
81.00	326.5686
81.07	334.7816
81.07	334.7816
83.79	421.5344
83.79	421.5344
85.43	336.8935
86.48	337.6104
86.55	337.6571
86.79	337.8181
86.94	337.9211
87.57	338.3478
88.03	338.6585
88.47	338.9543
89.96	339.9500
91.11	340.7137
92.59	341.6907
92.59	341.6907
93.35	342.1886
94.67	343.0478
94.87	343.1769
94.87	343.1769
95.86	334.9432
97.43	320.4650
98.44	264.7365
99.53	269.0298
100.11	283.4398
103.18	305.8452
103.37	309.7376
105.31	267.0821
106.12	270.3177
109.28	285.2014
111.00	289.8790
111.76	262.3804
116.30	267.2781
117.23	285.1445
121.12	226.4315
121.78	223.7388
122.06	240.4546
123.07	251.6092
131.20	260.2436
133.52	260.6567
136.00	241.6455

136.47	249.8067
140.51	0.0000
140.51	0.0000
143.76	225.1868
144.24	235.4437
144.24	235.4437
145.44	264.1834
152.43	211.5610
153.25	215.8895
154.21	256.1264
154.21	256.1264
156.02	274.2084
158.56	238.0402
159.00	240.2410
162.66	228.9629
163.33	212.5699
165.86	255.9172
176.60	223.5355
177.52	199.5070
181.07	0.0000
184.41	220.3292
185.72	206.8118
193.51	209.7722
197.04	196.5761
205.31	213.6602
210.85	201.7928
215.65	187.3971
222.11	182.0126
227.38	167.3813
228.16	169.7476
228.18	169.7507
235.69	199.1682
235.96	199.2222
235.96	199.2222
238.63	177.1792
238.63	177.1792
240.99	177.5896
242.00	177.7653
244.70	158.3651
252.40	144.0956
252.80	147.5815
256.23	172.1611
256.23	172.1611
260.90	0.0000
264.66	137.0687
268.22	149.6995
269.46	141.7327
269.46	141.7327
271.23	153.5945
273.65	164.4225
276.40	127.2503
277.37	150.9252
277.60	147.4460
278.00	140.4736
279.20	157.3215
279.54	157.3679
280.46	180.3697
283.69	130.5840
284.31	130.6551
285.41	137.8485
285.90	0.0000
287.50	126.5891
293.27	0.0000
295.22	109.5994
295.96	109.6689
298.57	109.9091
299.98	110.0367
299.98	110.0367
300.09	110.0480
300.09	110.0480
300.13	110.0517
301.36	124.6717
302.85	123.3920
304.50	107.7557
304.50	107.7557
304.85	107.7869
308.46	112.6080
311.90	128.2802

316.51	120.5962
319.41	112.6948
320.08	139.1232
323.87	110.9032
323.87	110.9032
328.76	117.1855
333.37	93.7153
334.37	117.6934
334.37	117.6934
338.28	95.9115
338.28	95.9115
338.32	95.9147
338.32	95.9147
338.32	95.9147
340.48	87.2036
340.55	87.2079
344.28	114.1333
351.06	100.5579
351.93	100.6221
356.01	85.2245
364.49	106.2461
366.42	0.0000
383.85	105.7969
388.16	83.1675
388.63	84.1503
391.69	94.8669
400.66	89.6567
401.81	101.3038
402.40	110.9956
404.85	103.4407
410.95	109.6808
414.70	92.4357
423.72	93.9536
427.09	62.7705
427.87	72.6145
433.94	93.5780
453.88	81.7723
463.37	80.2344
468.07	75.6314
473.00	77.6674
476.78	82.8934
477.60	80.9106
487.02	65.0820
492.35	0.0000
497.08	92.0462
511.00	64.9356
514.00	71.0314
527.90	0.0000
529.87	0.0000
531.02	78.1517
537.26	81.5491
546.56	0.0000
563.25	93.2583
569.33	68.0352
569.50	70.1673
569.70	72.3019
583.19	51.3838
600.60	77.7393
602.73	65.7133
604.72	53.6597
609.32	57.4657
609.32	57.4657
610.33	65.9545
614.28	59.1248
618.01	62.0602
621.93	58.9043
621.93	58.9043
633.25	58.1208
635.95	54.9011
636.99	53.8285
645.85	47.4315
657.76	51.4594
661.66	57.7716
661.66	57.7716
664.57	0.0000
666.33	60.5658
666.50	60.5708
677.62	63.7806

685.70	65.1296
695.00	74.8662
696.49	74.9128
696.51	74.9148
697.00	67.7087
702.65	70.5885
706.68	58.0187
711.68	49.9659
720.70	48.6367
721.93	0.0000
722.78	57.8071
722.91	65.4168
723.31	65.4273
724.19	59.3633
727.33	60.9652
733.00	58.9275
735.93	62.4069
739.50	0.0000
747.24	60.8550
752.31	54.5131
753.82	59.1688
756.73	48.1317
763.94	68.6939
765.81	60.3837
766.42	67.8333
777.92	0.0000
778.90	49.4934
783.70	52.3947
785.37	56.1738
795.86	58.2839
801.95	54.6525
810.29	51.0469
810.76	44.4377
815.77	45.4699
818.51	46.4663
832.01	61.9531
834.85	56.2934
836.80	0.0000
846.77	55.5857
856.80	28.8574
860.56	41.7401
871.09	50.2798
873.19	48.3826
875.33	0.0000
879.36	53.3390
880.51	51.4201
883.24	52.4417
884.68	45.6666
889.28	41.8494
898.04	41.9785
911.20	57.2111
911.20	57.2111
911.20	57.2111
926.50	43.3823
937.49	70.2668
944.13	44.6353
946.00	63.5219
949.00	40.7347
962.29	53.2240
964.08	49.9280
966.15	101.5897
968.97	33.3390
968.97	33.3390
968.97	33.3390
983.53	38.1893
996.26	64.5844
1001.03	35.3743
1004.73	52.6183
1037.84	35.7896
1038.76	0.0000
1048.07	40.0074
1050.41	39.0094
1050.41	39.0094
1063.66	36.0767
1085.87	36.3210
1099.45	34.3857
1112.07	41.8359
1115.54	40.1339

1120.29	41.9375
1120.29	41.9375
1120.55	41.9395
1121.30	43.6971
1131.51	0.0000
1173.23	51.0984
1177.93	46.9025
1189.05	47.0486
1204.77	68.7344
1221.41	60.4160
1231.02	45.0704
1235.36	48.7332
1238.28	39.0182
1260.41	0.0000
1271.85	33.9017
1274.44	42.6791
1274.54	42.6810
1291.59	21.9854
1298.22	0.0000
1312.11	30.3910
1332.49	27.7722
1365.19	20.5346
1368.63	0.0000
1384.29	15.0052
1408.01	27.3551
1457.56	0.0000
1460.82	21.2882
1489.16	23.0781
1505.03	22.1970
1596.21	20.6847
1620.50	9.9015
1678.03	0.0000
1690.97	13.0656
1764.49	5.2469
1764.49	5.2469
1770.23	12.2568
1771.35	11.1448
1791.20	0.0000
1836.06	11.3818

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030006

Total Uranium Activity	1.7143E+01	ug/g
Total Uranium Counting Unc.	4.7427E+00	ug/g
Total Uranium Tpu	2.4197E-06	ug/g
Total Uranium Mda	1.6946E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G248030006
*  ANALYST       : MXR1            DETECTOR    : GAM17
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 13-MAR-2010 14:32:43.40  SAMPLE ALQT: 136.680 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.405E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.220E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.065E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.975E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:35:36.33

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030007.CNF;1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:33:12
Sample ID        : G248030007 Sample quantity   : 1.55110E+02 GRAM
Detector name    : GAM19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.59 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 958221 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*	248	684	1.31	127.00	122	11	3.44E-02	21.7	
2	3	74.88*	364	591	1.35	149.61	145	13	5.06E-02	13.2	7.05E-01
3	3	77.25	594	408	1.08	154.34	145	13	8.25E-02	7.0	
4	2	87.36	140	485	1.45	174.53	171	22	1.95E-02	26.3	5.08E+00
5	2	92.87*	638	493	1.64	185.55	171	22	8.86E-02	8.2	
6	0	129.03	70	418	1.01	257.82	253	9	9.71E-03	54.0	
7	0	186.26*	288	464	1.47	372.20	364	15	4.00E-02	17.8	
8	0	209.04	130	262	1.28	417.72	414	9	1.81E-02	24.0	
9	1	238.59*	1103	234	1.34	476.77	468	20	1.53E-01	3.9	8.19E-01
10	1	241.55	241	264	1.63	482.70	468	20	3.34E-02	16.1	
11	0	270.22*	144	259	1.55	539.99	533	13	2.01E-02	24.7	
12	0	295.14*	332	269	1.45	589.80	582	12	4.61E-02	11.4	
13	0	300.65	79	218	1.07	600.82	596	11	1.10E-02	38.2	
14	0	338.40*	241	187	1.50	676.29	671	13	3.35E-02	13.5	
15	0	351.85	627	153	1.34	703.16	698	11	8.71E-02	5.6	
16	0	462.99	86	87	1.34	925.33	920	10	1.19E-02	23.0	
17	0	510.89*	82	184	1.98	1021.09	1014	16	1.14E-02	43.0	
18	0	569.22	190	135	2.18	1137.70	1128	18	2.64E-02	16.1	
19	0	583.41*	399	125	1.71	1166.08	1159	17	5.54E-02	8.3	
20	0	609.50*	417	126	1.62	1218.24	1213	12	5.79E-02	7.3	
21	0	663.55	69	124	1.88	1326.31	1317	18	9.55E-03	40.1	
22	0	727.90	111	64	1.34	1454.97	1449	14	1.54E-02	17.9	
23	0	860.92*	55	86	1.00	1720.96	1714	17	7.67E-03	40.9	
24	0	911.81	276	32	2.01	1822.74	1817	12	3.83E-02	7.3	
25	1	965.41	56	41	2.01	1929.94	1925	29	7.76E-03	25.9	9.18E-01
26	1	969.55*	109	51	2.01	1938.23	1925	29	1.51E-02	17.8	
27	0	1121.57	101	65	1.64	2242.29	2234	16	1.40E-02	20.8	
28	0	1378.47	29	23	1.25	2756.22	2751	10	4.04E-03	35.8	
29	0	1461.56*	1394	31	1.93	2922.48	2914	18	1.94E-01	2.9	
30	0	1589.43	17	13	0.84	3178.35	3173	9	2.35E-03	45.9	
31	0	1764.94*	72	8	2.41	3529.61	3521	16	1.00E-02	15.3	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:35:39

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030007.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:33:12
 Sample ID : G248030007 Sample quantity : 155.11 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA19 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.59 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	*	2.709E+01	2.542E+00	4.399E-01	3.276E-02	61.568
CD-109	+	88.03	*	1.553E+00	8.274E-01	1.196E+00	1.071E-01	1.299
SN-126	+	64.28		1.703E+00	7.799E-01	7.224E-01	1.055E-01	2.358
	+	86.94		6.246E-01	4.178E-01	5.410E-01	2.240E-01	1.155
	+	87.57	*	1.502E-01	8.003E-02	1.161E-01	1.036E-02	1.294
TL-208		277.37		6.447E-01	3.428E-01	6.004E-01	6.470E-02	1.074
	+	583.19	*	4.448E-01	7.946E-02	4.524E-02	3.070E-03	9.831
	+	860.56		5.828E-01	4.798E-01	3.829E-01	3.428E-02	1.522
BI-211		72.87		8.472E+00	3.443E+00	5.320E+00	4.169E-01	1.592
	+	351.06	*	3.101E+00	3.971E-01	2.933E-01	1.873E-02	10.574
PB-212	+	74.82		1.688E+00	4.949E-01	5.174E-01	6.496E-02	3.263
	+	77.11		1.583E+00	2.556E-01	2.927E-01	2.365E-02	5.408
	+	238.63	*	1.221E+00	1.304E-01	8.212E-02	5.980E-03	14.864
	+	300.09		1.368E+00	1.050E+00	1.246E+00	1.046E-01	1.098
BI-214	+	609.32	*	8.995E-01	1.499E-01	1.043E-01	8.267E-03	8.621
	+	1120.29		1.122E+00	4.782E-01	3.617E-01	3.329E-02	3.103
	+	1764.49		1.107E+00	3.452E-01	1.775E-01	1.076E-02	6.234
PB-214	+	74.82		2.992E+00	8.608E-01	9.170E-01	1.029E-01	3.263
	+	77.11		2.791E+00	5.060E-01	5.161E-01	5.958E-02	5.408
	+	242.00		1.616E+00	5.380E-01	4.626E-01	3.750E-02	3.493
	+	295.22		1.012E+00	2.461E-01	1.890E-01	1.650E-02	5.354
	+	351.93	*	1.126E+00	1.569E-01	1.020E-01	8.605E-03	11.036
RA-224	+	240.99	*	2.857E+00	9.367E-01	8.797E-01	4.985E-02	3.248
RA-226	+	609.32	*	8.995E-01	1.499E-01	1.043E-01	8.267E-03	8.621
	+	1120.29		1.122E+00	4.782E-01	3.617E-01	3.329E-02	3.103
	+	1764.49		1.107E+00	3.452E-01	1.775E-01	1.076E-02	6.234
AC-228	+	338.32		1.328E+00	6.545E-01	3.178E-01	1.310E-01	4.180
	+	911.20	*	1.484E+00	2.774E-01	2.012E-01	2.346E-02	7.376
	+	968.97		1.010E+00	4.352E-01	3.216E-01	7.787E-02	3.139
RA-228	+	338.32		1.328E+00	6.545E-01	3.178E-01	1.310E-01	4.180
	+	911.20	*	1.484E+00	2.774E-01	2.012E-01	2.346E-02	7.376
	+	968.97		1.010E+00	4.352E-01	3.216E-01	7.787E-02	3.139
TH-228	+	74.82		1.688E+00	4.672E-01	5.174E-01	4.152E-02	3.263
	+	77.11		1.583E+00	2.556E-01	2.927E-01	2.365E-02	5.408

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.221E+00	1.304E-01	8.212E-02	5.980E-03	14.864
	+	300.09		1.368E+00	1.335E+00	1.246E+00	7.584E-01	1.098
TH-232	+	338.32		1.328E+00	3.668E-01	3.178E-01	1.837E-02	4.180
	+	911.20	*	1.484E+00	2.774E-01	2.012E-01	2.346E-02	7.376
	+	968.97		1.010E+00	4.352E-01	3.216E-01	7.787E-02	3.139
TH-234	+	63.29	*	4.419E+00	2.074E+00	1.946E+00	3.480E-01	2.271
	+	92.59		5.712E+00	1.568E+00	9.757E-01	2.144E-01	5.854
NP-237	+	86.48	*	4.483E-01	2.566E-01	3.728E-01	8.481E-02	1.202
		95.86		-2.347E-01	9.819E-01	1.389E+00	3.300E-01	-0.169
U-238	+	63.29	*	4.419E+00	2.074E+00	1.946E+00	3.480E-01	2.271
	+	92.59		5.712E+00	1.054E+00	9.757E-01	8.123E-02	5.854
ANH-511	+	511.00	*	6.990E-02	6.030E-02	4.118E-02	2.430E-03	1.697

---- 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	*	3.720E-01	3.114E-01	5.521E-01	3.746E-02	0.674
NA-22		1274.54	*	-6.073E-03	3.371E-02	5.487E-02	3.660E-03	-0.111
NA-24		1368.63	*	-5.250E+00	3.371E-02	Half-Life too short		
SC-46		889.28	*	-1.250E-02	3.667E-02	5.717E-02	4.968E-03	-0.219
	+	1120.55		2.011E-01	8.463E-02	1.111E-01	7.004E-03	1.811
V-48		944.13		-4.405E-01	1.155E+00	1.793E+00	1.510E-01	-0.246
		983.53	*	-9.505E-03	8.717E-02	1.385E-01	1.113E-02	-0.069
		1312.11		5.848E-02	9.281E-02	1.636E-01	1.165E-02	0.357
CR-51		320.08	*	-2.236E-01	3.534E-01	5.714E-01	3.692E-02	-0.391
MN-54		834.85	*	2.194E-02	3.544E-02	6.009E-02	4.780E-03	0.365
CO-56		846.77	*	-1.777E-02	3.589E-02	5.521E-02	4.479E-03	-0.322
		1037.84		-2.255E-01	2.914E-01	4.544E-01	3.610E-02	-0.496
		1238.28		8.445E-02	8.945E-02	1.581E-01	1.038E-02	0.534
		1771.35		-2.023E-01	2.140E-01	1.931E-01	1.164E-02	-1.047
CO-57		122.06	*	4.872E-03	2.357E-02	3.866E-02	2.307E-03	0.126
		136.47		-9.553E-02	1.833E-01	2.911E-01	1.918E-02	-0.328
CO-58		810.76	*	-1.530E-02	3.679E-02	5.730E-02	4.391E-03	-0.267
FE-59		1099.45	*	-3.548E-02	8.523E-02	1.370E-01	1.028E-02	-0.259
		1291.59		-5.119E-02	1.171E-01	1.826E-01	1.512E-02	-0.280
CO-60		1173.23		-1.753E-02	3.403E-02	5.379E-02	2.948E-03	-0.326
		1332.49	*	-1.412E-02	3.446E-02	5.445E-02	4.013E-03	-0.259
ZN-65		1115.54	*	-3.243E-02	8.037E-02	1.090E-01	6.972E-03	-0.297
SE-75		121.12		7.736E-02	1.252E-01	2.084E-01	1.918E-02	0.371
		136.00		-2.467E-02	3.617E-02	5.702E-02	3.286E-03	-0.433
		264.66	*	-4.276E-03	4.487E-02	6.556E-02	3.813E-03	-0.065
		279.54		5.808E-02	9.888E-02	1.708E-01	1.070E-02	0.340
		400.66		3.277E-02	2.285E-01	3.836E-01	3.432E-02	0.085
SR-85		514.00	*	5.986E-02	4.327E-02	6.869E-02	4.056E-03	0.871
Y-88		898.04		-1.503E-02	3.680E-02	5.685E-02	5.032E-03	-0.264
		1836.06	*	1.352E-02	2.609E-02	4.712E-02	2.690E-03	0.287
Y-91		1204.77	*	2.948E+00	2.056E+01	3.463E+01	2.022E+00	0.085
NB-94		702.65	*	9.910E-04	3.072E-02	5.021E-02	3.163E-03	0.020

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	871.09			7.333E-03	2.881E-02	4.768E-02	4.025E-03	0.154
NB-95	765.81	*		1.590E-02	4.192E-02	7.000E-02	4.947E-03	0.227
NB-95M	235.69	*		3.933E-01	1.476E-01	2.326E-01	1.729E-02	1.691
ZR-95	724.19			7.030E-02	9.367E-02	1.430E-01	1.071E-02	0.492
	756.73	*		-1.065E-02	7.145E-02	1.147E-01	9.227E-03	-0.093
MO-99	140.51			-7.828E-05	7.145E-02	Half-Life	too short	
	181.07			3.249E-05	7.145E-02	Half-Life	too short	
	366.42			2.529E-04	7.145E-02	Half-Life	too short	
	739.50	*		5.750E-06	7.145E-02	Half-Life	too short	
	777.92			-2.716E-04	7.145E-02	Half-Life	too short	
TC-99M	140.51	*		-5.647E+18	7.145E-02	Half-Life	too short	
RU-103	497.08	*		-7.628E-03	3.809E-02	6.205E-02	7.733E-03	-0.123
	610.33			1.050E+01	2.210E+00	2.710E+00	4.091E-01	3.875
RH-106	621.93	*		3.090E-02	2.767E-01	4.573E-01	5.337E-02	0.068
	1050.41			2.837E-01	2.336E+00	3.954E+00	2.875E-01	0.072
RU-106	621.93	*		3.090E-02	2.767E-01	4.573E-01	2.697E-02	0.068
	1050.41			2.837E-01	2.336E+00	3.954E+00	2.875E-01	0.072
AG-108M	433.94	*		-1.051E-02	2.543E-02	4.112E-02	2.523E-03	-0.256
	614.28			2.922E-02	3.378E-02	5.222E-02	3.296E-03	0.560
	722.91			5.013E-04	3.521E-02	4.962E-02	3.424E-03	0.010
AG-110M	657.76	*		-2.762E-02	3.825E-02	4.975E-02	3.087E-03	-0.555
	677.62			7.327E-02	2.811E-01	4.683E-01	2.977E-02	0.156
	706.68			-1.632E-01	1.999E-01	3.047E-01	2.035E-02	-0.536
	763.94			-1.034E-01	1.532E-01	2.354E-01	1.725E-02	-0.439
	884.68			2.263E-02	4.347E-02	7.357E-02	6.550E-03	0.308
	937.49			-7.974E-02	1.084E-01	1.623E-01	1.428E-02	-0.491
	1384.29			1.912E-01	1.614E-01	2.723E-01	2.062E-02	0.702
	1505.03			-1.833E-02	2.352E-01	3.830E-01	2.699E-02	-0.048
SN-113	391.69	*		-9.289E-03	3.871E-02	6.359E-02	3.794E-03	-0.146
CD-115	260.90			6.153E-05	3.871E-02	Half-Life	too short	
	492.35			4.747E-05	3.871E-02	Half-Life	too short	
	527.90	*		-3.951E-05	3.871E-02	Half-Life	too short	
SN-117M	156.02			1.343E+00	2.925E+00	4.818E+00	2.582E-01	0.279
	158.56	*		5.313E-02	7.235E-02	1.203E-01	6.405E-03	0.442
TE-123M	159.00	*		5.435E-03	2.790E-02	4.547E-02	2.456E-03	0.120
SB-124	602.73			2.497E-02	4.193E-02	6.269E-02	3.712E-03	0.398
	645.85			-1.078E-01	4.771E-01	7.670E-01	5.035E-02	-0.141
	722.78			1.251E-02	3.838E-01	5.421E-01	3.685E-02	0.023
	1690.97	*		-3.230E-02	6.555E-02	9.641E-02	6.629E-03	-0.335
SB-125	427.87	*		-1.637E-03	7.599E-02	1.261E-01	7.498E-03	-0.013
	463.37			6.511E-01	3.032E-01	4.646E-01	3.130E-02	1.401
	600.60			2.891E-02	1.694E-01	2.646E-01	1.803E-02	0.109
	635.95			-2.321E-01	2.343E-01	3.512E-01	2.410E-02	-0.661
TE-125M	109.28	*		-1.738E+01	1.011E+01	1.526E+01	1.380E+00	-1.139
I-126	388.63			1.321E-01	2.060E-01	3.559E-01	1.986E-02	0.371
	666.33	*		1.383E-01	2.933E-01	4.376E-01	2.571E-02	0.316
	753.82			3.867E-02	2.306E+00	3.754E+00	2.597E-01	0.010
SB-126	414.70			-1.646E-01	9.863E-02	1.464E-01	8.285E-03	-1.124
	666.50			4.832E-02	1.024E-01	1.529E-01	8.985E-03	0.316

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		695.00		-3.236E-02	1.036E-01	1.649E-01	1.024E-02	-0.196
		697.00		-2.363E-01	3.659E-01	5.671E-01	3.534E-02	-0.417
		720.70	*	-7.708E-02	1.999E-01	2.823E-01	1.839E-02	-0.273
		856.80		-1.019E-01	6.637E-01	9.050E-01	7.465E-02	-0.113
		252.40		1.056E+01	1.468E+01	2.320E+01	9.677E+00	0.455
		473.00		-5.703E+00	4.794E+00	7.158E+00	9.597E-01	-0.797
I-131		685.70	*	-4.147E-01	4.140E+00	6.569E+00	8.023E-01	-0.063
		783.70		1.171E+01	1.068E+01	1.870E+01	2.567E+00	0.626
		80.19		-4.245E+00	8.649E+00	1.218E+01	1.025E+00	-0.349
		284.31		1.194E+00	2.323E+00	4.002E+00	2.609E-01	0.298
TE-132		364.49	*	3.642E-02	1.814E-01	3.064E-01	1.981E-02	0.119
		636.99		-9.525E-01	2.500E+00	3.968E+00	2.642E-01	-0.240
		49.72		-9.201E+01	7.138E+01	1.113E+02	1.368E+01	-0.827
		111.76		1.996E+02	1.412E+02	2.385E+02	2.856E+01	0.837
BA-133		116.30		-1.298E+02	1.235E+02	1.917E+02	2.264E+01	-0.677
		228.16	*	-5.762E-01	3.064E+00	4.863E+00	7.848E-01	-0.118
		81.00		-1.672E-01	1.042E-01	1.353E-01	2.079E-02	-1.236
		276.40		2.680E-01	3.346E-01	5.346E-01	6.727E-02	0.501
I-133		302.85		6.356E-02	1.361E-01	2.053E-01	2.343E-02	0.310
		356.01	*	-1.382E-02	3.988E-02	5.629E-02	6.327E-03	-0.245
		383.85		9.327E-02	2.481E-01	4.224E-01	4.460E-02	0.221
		529.87	*	9.896E-01	2.481E-01	Half-Life	too short	
CS-134		875.33		-1.981E+00	2.481E-01	Half-Life	too short	
		1298.22		-1.536E+01	2.481E-01	Half-Life	too short	
		563.25		-1.629E-01	3.477E-01	4.695E-01	2.843E-02	-0.347
	+	569.33		1.171E+00	3.834E-01	4.505E-01	2.750E-02	2.600
CS-135		604.72		-2.259E-02	3.523E-02	4.677E-02	2.782E-03	-0.483
		795.86	*	2.206E-02	4.036E-02	6.839E-02	5.142E-03	0.323
		801.95		7.256E-04	3.514E-01	5.697E-01	4.319E-02	0.001
		1365.19		2.229E-01	9.700E-01	1.653E+00	1.289E-01	0.135
I-135		268.22	*	2.757E-01	1.592E-01	2.559E-01	1.953E-02	1.078
CS-136		546.56		1.250E+17	1.592E-01	Half-Life	too short	
		836.80		8.854E+17	1.592E-01	Half-Life	too short	
		1038.76		-3.688E+17	1.592E-01	Half-Life	too short	
		1131.51		-8.046E+15	1.592E-01	Half-Life	too short	
		1260.41	*	2.315E+16	1.592E-01	Half-Life	too short	
		1457.56		8.109E+18	1.592E-01	Half-Life	too short	
		1678.03		9.606E+16	1.592E-01	Half-Life	too short	
		1791.20		-5.883E+17	1.592E-01	Half-Life	too short	
		153.25		-4.958E-02	1.128E+00	1.823E+00	1.417E-01	-0.027
		176.60		-2.990E-01	6.388E-01	1.009E+00	6.707E-02	-0.296
		273.65		-9.974E-01	7.486E-01	9.997E-01	6.829E-02	-0.998
		340.55		6.024E-01	2.142E-01	3.632E-01	2.276E-02	1.659
BA-137M		818.51		1.854E-02	8.918E-02	1.473E-01	1.143E-02	0.126
		1048.07	*	2.977E-02	1.461E-01	2.488E-01	1.924E-02	0.120
		1235.36		-6.439E-01	8.161E-01	1.278E+00	1.294E-01	-0.504
		661.66	*	5.739E-02	3.530E-02	6.351E-02	3.698E-03	0.904
CS-137		661.66	*	6.063E-02	3.729E-02	6.709E-02	3.923E-03	0.904
CE-139		165.86	*	-3.937E-03	2.932E-02	4.713E-02	2.460E-03	-0.084

---- 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		4.171E-01	1.137E+00	1.849E+00	1.141E-01	0.226
		304.85		1.432E+00	1.854E+00	2.798E+00	7.995E-01	0.512
		423.72		-4.391E-01	2.376E+00	3.897E+00	1.257E+00	-0.113
		537.26	*	3.160E-02	3.288E-01	5.454E-01	1.818E-01	0.058
LA-140		328.76		2.158E-01	3.978E-01	6.829E-01	4.445E-02	0.316
		487.02		-5.892E-02	1.685E-01	2.717E-01	1.799E-02	-0.217
		815.77		-4.360E-02	3.980E-01	6.379E-01	5.627E-02	-0.068
		1596.21	*	-1.481E-02	1.190E-01	1.825E-01	1.235E-02	-0.081
CE-141		145.44	*	3.179E-02	6.720E-02	1.109E-01	6.386E-03	0.287
CE-143		57.36		-1.952E-02	6.720E-02	Half-Life	too short	
		293.27	*	2.440E-02	6.720E-02	Half-Life	too short	
		664.57		8.877E-02	6.720E-02	Half-Life	too short	
		721.93		8.383E-03	6.720E-02	Half-Life	too short	
CE-144		80.12		-9.945E-01	2.608E+00	3.692E+00	3.059E-01	-0.269
		133.52	*	1.272E-01	2.002E-01	2.934E-01	4.066E-02	0.433
PM-144		476.78		8.359E-02	5.752E-02	1.034E-01	7.130E-03	0.809
		618.01		-2.091E-02	2.823E-02	4.354E-02	2.723E-03	-0.480
PR-144		696.49	*	2.915E-03	3.078E-02	5.056E-02	3.152E-03	0.058
		696.51	*	1.982E-01	2.310E+00	3.793E+00	2.361E-01	0.052
PM-146		1489.16		8.952E-01	1.034E+01	1.726E+01	1.223E+00	0.052
		453.88	*	3.188E-02	3.595E-02	6.278E-02	5.303E-03	0.508
		633.25		-3.088E-01	1.150E+00	1.831E+00	6.897E-01	-0.169
		735.93		-5.309E-02	1.314E-01	1.916E-01	5.267E-02	-0.277
ND-147		747.24		2.277E-02	8.754E-02	1.453E-01	1.977E-02	0.157
		91.11		2.955E+00	5.263E-01	8.496E-01	7.853E-02	3.478
		319.41		-2.180E+00	4.117E+00	6.698E+00	3.896E-01	-0.325
		531.02	*	1.013E+00	7.308E-01	1.302E+00	1.768E-01	0.778
PM-149		285.90	*	4.436E-04	7.308E-01	Half-Life	too short	
EU-152		121.78		-7.566E-03	6.696E-02	1.085E-01	8.369E-03	-0.070
		244.70		1.638E-01	3.202E-01	4.621E-01	2.626E-02	0.355
		344.28	*	-2.614E-02	1.014E-01	1.362E-01	8.859E-03	-0.192
		778.90		-1.595E-01	2.151E-01	3.240E-01	2.343E-02	-0.492
		964.08		5.580E-01	2.926E-01	4.774E-01	3.932E-02	1.169
		1085.87		2.235E-01	3.478E-01	6.123E-01	4.166E-02	0.365
GD-153		1112.07		-1.482E-01	2.640E-01	3.960E-01	2.547E-02	-0.374
		1408.01		-2.596E-02	1.638E-01	2.657E-01	1.929E-02	-0.098
		69.67		1.971E-01	2.185E+00	2.670E+00	2.055E-01	0.074
		97.43	*	4.695E-02	8.874E-02	1.303E-01	1.014E-02	0.360
EU-154		103.18		-2.232E-01	1.087E-01	1.625E-01	1.177E-02	-1.374
		123.07		-9.775E-03	5.155E-02	7.684E-02	7.279E-03	-0.127
		723.31		1.671E-02	1.589E-01	2.265E-01	1.735E-02	0.074
		873.19		6.664E-02	2.360E-01	3.915E-01	4.615E-02	0.170
EU-155		996.26		-4.832E-01	3.740E-01	5.141E-01	8.805E-02	-0.940
		1004.73		-1.903E-01	2.000E-01	3.080E-01	3.403E-02	-0.618
		1274.44	*	-3.343E-02	9.676E-02	1.546E-01	1.542E-02	-0.216
		86.55		1.827E-01	9.734E-02	1.694E-01	1.509E-02	1.078
TB-160		105.31	*	1.281E-01	9.754E-02	1.659E-01	1.193E-02	0.772
		86.79		5.168E-01	2.753E-01	4.726E-01	4.181E-02	1.094
		197.04		-2.087E-01	5.391E-01	8.523E-01	4.618E-02	-0.245

---- 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		2.998E-02	7.304E-01	1.174E+00	6.498E-02	0.026
		298.57		6.277E-02	1.913E-01	1.960E-01	1.139E-02	0.320
		879.36	*	-7.051E-03	1.236E-01	1.984E-01	1.697E-02	-0.036
		962.29		3.534E-01	5.086E-01	7.699E-01	6.354E-02	0.459
	+	966.15		4.164E-01	2.183E-01	4.135E-01	3.397E-02	1.007
		1177.93		-4.569E-02	3.271E-01	5.385E-01	2.979E-02	-0.085
		1271.85		-2.015E-01	5.736E-01	9.149E-01	6.062E-02	-0.220
		80.57		-4.085E-01	2.871E-01	3.855E-01	3.208E-02	-1.060
		184.41		1.156E-01	3.522E-02	6.218E-02	3.317E-03	1.859
		280.46		-8.252E-02	7.519E-02	1.200E-01	6.951E-03	-0.688
		410.95		2.982E-01	2.092E-01	3.750E-01	2.116E-02	0.795
		711.68	*	3.455E-02	5.438E-02	9.287E-02	5.949E-03	0.372
		752.31		-1.648E-01	2.425E-01	3.707E-01	2.558E-02	-0.445
		810.29		-1.224E-02	5.170E-02	8.196E-02	6.256E-03	-0.149
TA-182		67.75		-9.466E-03	1.213E-01	1.746E-01	1.332E-02	-0.054
		100.11		2.495E-01	1.757E-01	2.909E-01	2.186E-02	0.858
		152.43		2.120E-01	3.296E-01	5.468E-01	2.959E-02	0.388
		222.11		2.560E-03	3.402E-01	5.456E-01	3.039E-02	0.005
	+	1121.30		5.486E-01	2.309E-01	3.055E-01	1.924E-02	1.796
		1189.05		-2.441E-01	2.878E-01	4.446E-01	2.515E-02	-0.549
IR-192		1221.41	*	-1.748E-01	1.907E-01	2.938E-01	1.772E-02	-0.595
	+	1231.02		6.192E-01	4.799E-01	8.665E-01	5.322E-02	0.715
		295.96		7.989E-01	1.874E-01	2.604E-01	1.538E-02	3.068
		308.46		-3.439E-02	8.787E-02	1.446E-01	8.506E-03	-0.238
		316.51	*	-9.578E-03	3.037E-02	5.009E-02	2.927E-03	-0.191
HG-203		468.07		2.201E-02	6.277E-02	9.347E-02	6.277E-03	0.235
		70.83		1.592E-01	1.546E+00	2.239E+00	3.495E-01	0.071
		72.87		2.341E+00	9.982E-01	1.470E+00	2.221E-01	1.592
BI-207		279.20	*	5.128E-02	3.702E-02	6.590E-02	4.029E-03	0.778
		72.81		3.671E-01	1.990E-01	3.034E-01	2.376E-02	1.210
	+	74.97		4.868E-01	1.346E-01	2.099E-01	1.669E-02	2.318
	+	569.70		1.807E-01	5.908E-02	6.944E-02	4.122E-03	2.601
		1063.66	*	-1.856E-02	4.944E-02	8.024E-02	5.698E-03	-0.231
PB-210		1770.23		-1.242E-01	3.479E-01	4.214E-01	2.542E-02	-0.295
PB-211		46.54	*	2.693E+00	2.783E+00	4.722E+00	3.560E-01	0.570
		404.85	*	-3.726E-01	6.362E-01	9.796E-01	4.697E-01	-0.380
		427.09		-2.368E-01	1.308E+00	2.141E+00	9.808E-01	-0.111
BI-212		832.01		-5.080E-01	9.611E-01	1.426E+00	7.377E-01	-0.356
	+	727.33	*	1.899E+00	7.120E-01	9.728E-01	1.085E-01	1.952
		785.37		2.627E+00	2.729E+00	4.768E+00	3.487E-01	0.551
RN-219		1620.50		1.005E+00	2.339E+00	3.993E+00	2.667E-01	0.252
	+	271.23		7.040E-01	3.526E-01	3.995E-01	3.201E-02	1.762
RA-223		401.81	*	-2.574E-01	3.463E-01	5.480E-01	7.319E-02	-0.470
		81.07		-3.774E-01	2.306E-01	3.061E-01	2.558E-02	-1.233
		83.79		3.695E-02	1.321E-01	1.920E-01	1.647E-02	0.192
		94.87		2.073E+00	5.340E-01	8.433E-01	6.792E-02	2.459
		144.24		9.385E-01	6.159E-01	1.039E+00	7.268E-02	0.903
	+	154.21		-3.065E-01	3.543E-01	5.527E-01	3.662E-02	-0.555
		269.46		5.470E-01	2.725E-01	3.134E-01	1.887E-02	1.745

---- 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	*	-3.594E-01	5.710E-01	9.225E-01	1.487E-01	-0.390
		338.28		5.271E+00	1.522E+00	1.976E+00	2.023E-01	2.668
		79.69		2.191E+00	1.333E+00	1.969E+00	3.358E-01	1.113
	235.96		8.317E-01	1.867E-01	3.010E-01	2.418E-02	2.763	
	256.23	*	-7.724E-02	2.419E-01	3.766E-01	3.836E-02	-0.205	
TH-227	+	299.98		1.505E+00	1.160E+00	1.442E+00	1.586E-01	1.043
		304.50		7.758E-01	1.537E+00	2.324E+00	3.545E-01	0.334
		334.37		-1.258E+00	1.707E+00	2.338E+00	3.325E-01	-0.538
	79.80		1.863E+00	1.708E+00	2.500E+00	5.409E-01	0.745	
	235.96		8.317E-01	1.845E-01	3.010E-01	2.186E-02	2.763	
TH-229	+	256.23	*	-7.724E-02	2.419E-01	3.766E-01	4.514E-02	-0.205
		299.98		1.505E+00	1.160E+00	1.442E+00	1.586E-01	1.043
		304.50		7.758E-01	1.537E+00	2.324E+00	3.545E-01	0.334
	334.37		-1.258E+00	1.707E+00	2.338E+00	3.325E-01	-0.538	
	85.43		5.530E-01	2.257E-01	3.475E-01	3.031E-02	1.591	
PA-231	+	88.47		2.316E-01	1.234E-01	2.141E-01	1.903E-02	1.082
		193.51	*	1.431E-01	4.839E-01	7.621E-01	4.112E-02	0.188
		210.85		1.745E+00	9.116E-01	1.412E+00	7.774E-02	1.236
	283.69	*	-1.878E-01	1.248E+00	2.086E+00	2.736E-01	-0.090	
	301.36		9.666E-01	7.444E-01	8.934E-01	9.249E-02	1.082	
TH-231	+	81.07		-3.774E-01	2.306E-01	3.061E-01	2.558E-02	-1.233
		83.79		3.695E-02	1.321E-01	1.920E-01	1.647E-02	0.192
		94.87		2.073E+00	5.340E-01	8.433E-01	6.792E-02	2.459
	144.24		9.385E-01	6.159E-01	1.039E+00	7.268E-02	0.903	
	154.21		-3.065E-01	3.543E-01	5.527E-01	3.662E-02	-0.555	
PA-233	+	269.46		5.470E-01	2.725E-01	3.134E-01	1.887E-02	1.745
		323.87	*	-3.594E-01	5.710E-01	9.225E-01	1.487E-01	-0.390
		338.28		5.271E+00	1.522E+00	1.976E+00	2.023E-01	2.668
	300.13		6.808E-01	5.275E-01	6.504E-01	8.712E-02	1.047	
	311.90	*	1.637E-02	5.497E-02	9.365E-02	5.784E-03	0.175	
PA-234	+	340.48		1.920E+00	7.707E-01	1.092E+00	2.534E-01	1.758
		94.67		1.066E+00	2.256E-01	3.237E-01	3.895E-02	3.294
		98.44		1.421E-01	1.221E-01	1.431E-01	7.966E-02	0.993
	111.00		-1.122E-02	1.713E-01	2.787E-01	3.001E-02	-0.040	
	131.20		1.196E-01	1.111E-01	1.664E-01	9.576E-03	0.719	
PA-234M	+	569.50		1.603E+00	5.244E-01	6.178E-01	3.667E-02	2.595
		733.00		2.663E-01	3.560E-01	5.400E-01	1.162E-01	0.493
		880.51		-3.943E-02	2.375E-01	3.770E-01	3.230E-02	-0.105
	883.24		9.791E-02	2.617E-01	4.235E-01	2.847E-01	0.231	
	926.50		4.838E-02	1.600E-01	2.642E-01	6.675E-02	0.183	
U-235	+	946.00	*	-2.720E-02	3.013E-01	4.808E-01	8.976E-02	-0.057
		949.00		5.145E-01	4.299E-01	7.586E-01	6.357E-02	0.678
		766.42		6.923E+00	1.102E+01	1.780E+01	8.987E+00	0.389
	1001.03	*	7.434E+00	4.375E+00	8.149E+00	7.586E-01	0.912	
	89.96		1.816E+00	9.107E-01	1.382E+00	3.403E-01	1.314	
+	93.35		4.314E+00	1.220E+00	1.066E+00	2.447E-01	4.047	
	143.76	*	2.700E-01	1.887E-01	3.113E-01	4.860E-02	0.867	
	163.33		5.641E-02	4.199E-01	6.766E-01	1.123E-01	0.083	
+	185.72		2.071E-01	7.454E-02	8.180E-02	4.371E-03	2.532	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	205.31			1.497E-01	5.008E-01	7.132E-01	1.204E-01	0.210
	99.53			3.207E-01	1.607E-01	2.610E-01	1.975E-02	1.229
	103.37			-1.352E-01	9.484E-02	1.461E-01	1.055E-02	-0.925
	106.12			1.019E-01	7.694E-02	1.310E-01	9.171E-03	0.778
	117.23	*		-3.146E-01	3.763E-01	5.929E-01	3.700E-02	-0.531
	228.18			-3.840E-02	1.996E-01	3.169E-01	1.776E-02	-0.121
AM-241	277.60			3.017E-01	1.548E-01	2.756E-01	1.595E-02	1.095
	59.54	*		7.993E-02	1.540E-01	2.279E-01	1.876E-02	0.351
CM-247	278.00			1.132E+00	6.486E-01	1.168E+00	6.762E-02	0.969
	287.50			-8.277E-01	1.185E+00	1.737E+00	1.008E-01	-0.476
CF-249	402.40	*		-2.293E-02	3.237E-02	5.161E-02	2.894E-03	-0.444
	252.80			4.463E-01	9.002E-01	1.472E+00	8.414E-02	0.303
	333.37			4.408E-03	1.758E-01	2.567E-01	1.487E-02	0.017
CF-251	388.16	*		1.791E-02	3.398E-02	5.834E-02	3.257E-03	0.307
	177.52	*		-3.100E-02	1.156E-01	1.843E-01	9.749E-03	-0.168
	227.38			-2.865E-02	3.262E-01	5.205E-01	2.915E-02	-0.055
	285.41			1.438E+00	1.839E+00	3.205E+00	1.859E-01	0.449

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]G248030007
* Acquisition date   : 13-MAR-2010 14:33:12 Detector SN#      :
* Detector ID        : GAM19                               Sensitivity      : 5.000
* Geometry           : CAN                               Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.59                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248030007 Analyst initials: MXR1
* Batch Number       : 958221 Sample Quantity : 1.5511E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope                  :
* LCS DPM             : 0.000 LCS Isotope                  :
* LCSD DPM            : 0.000 LCSD Isotope                 :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.709E+01	2.492E+00	4.436E-01	0.000E+00
CD-109	1.553E+00	8.109E-01	1.297E+00	0.000E+00
SN-126	1.502E-01	7.843E-02	1.261E-01	0.000E+00
TL-208	4.448E-01	7.787E-02	4.679E-02	0.000E+00
BI-211	3.101E+00	3.892E-01	3.074E-01	0.000E+00
PB-212	1.221E+00	1.278E-01	8.693E-02	0.000E+00
BI-214	8.995E-01	1.469E-01	1.078E-01	0.000E+00
PB-214	1.126E+00	1.538E-01	1.069E-01	0.000E+00
RA-224	2.857E+00	9.180E-01	9.310E-01	0.000E+00
RA-226	8.995E-01	1.469E-01	1.078E-01	0.000E+00
AC-228	1.484E+00	2.718E-01	2.056E-01	0.000E+00
RA-228	1.484E+00	2.718E-01	2.056E-01	0.000E+00
TH-228	1.221E+00	1.278E-01	8.693E-02	0.000E+00
TH-232	1.484E+00	2.718E-01	2.056E-01	0.000E+00
TH-234	4.419E+00	2.033E+00	2.129E+00	0.000E+00
NP-237	4.483E-01	2.515E-01	4.048E-01	0.000E+00
U-238	4.419E+00	2.033E+00	2.129E+00	0.000E+00
ANH-511	6.990E-02	5.910E-02	4.274E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	3.720E-01	3.052E-01	5.741E-01	0.000E+00 NOT IDENT.
NA-22	-6.073E-03	3.304E-02	5.555E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.274E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.250E-02	3.593E-02	5.845E-02	0.000E+00 FAIL ABUN
V-48	-9.505E-03	8.543E-02	1.412E-01	0.000E+00 NOT IDENT.
CR-51	-2.236E-01	3.463E-01	6.004E-01	0.000E+00 NOT IDENT.
MN-54	2.194E-02	3.473E-02	6.154E-02	0.000E+00 NOT IDENT.
CO-56	-1.777E-02	3.517E-02	5.652E-02	0.000E+00 NOT IDENT.
CO-57	4.872E-03	2.310E-02	4.162E-02	0.000E+00 NOT IDENT.

CO-58	-1.530E-02	3.605E-02	5.874E-02	0.000E+00	NOT IDENT.
FE-59	-3.548E-02	8.353E-02	1.393E-01	0.000E+00	NOT IDENT.
CO-60	-1.412E-02	3.377E-02	5.505E-02	0.000E+00	NOT IDENT.
ZN-65	-3.243E-02	7.876E-02	1.108E-01	0.000E+00	NOT IDENT.
SE-75	-4.276E-03	4.398E-02	6.921E-02	0.000E+00	NOT IDENT.
SR-85	5.986E-02	4.241E-02	7.127E-02	0.000E+00	NOT IDENT.
Y-88	1.352E-02	2.557E-02	4.721E-02	0.000E+00	NOT IDENT.
Y-91	2.948E+00	2.015E+01	3.511E+01	0.000E+00	NOT IDENT.
NB-94	9.910E-04	3.011E-02	5.167E-02	0.000E+00	NOT IDENT.
NB-95	1.590E-02	4.108E-02	7.186E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.447E-01	2.463E-01	0.000E+00	NOT IDENT.
ZR-95	-1.065E-02	7.002E-02	1.178E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	5.592E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.480E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.628E-03	3.732E-02	6.444E-02	0.000E+00	FAIL ABUN
RH-106	3.090E-02	2.712E-01	4.721E-01	0.000E+00	NOT IDENT.
RU-106	3.090E-02	2.712E-01	4.721E-01	0.000E+00	NOT IDENT.
AG-108M	-1.051E-02	2.492E-02	4.286E-02	0.000E+00	NOT IDENT.
AG-110M	-2.762E-02	3.748E-02	5.128E-02	0.000E+00	NOT IDENT.
SN-113	-9.289E-03	3.794E-02	6.645E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	8.402E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	5.313E-02	7.090E-02	1.287E-01	0.000E+00	NOT IDENT.
TE-123M	5.435E-03	2.734E-02	4.863E-02	0.000E+00	NOT IDENT.
SB-124	-3.230E-02	6.424E-02	9.682E-02	0.000E+00	NOT IDENT.
SB-125	-1.637E-03	7.447E-02	1.315E-01	0.000E+00	FAIL ABUN
TE-125M	-1.738E+01	9.910E+00	1.647E+01	0.000E+00	NOT IDENT.
I-126	1.383E-01	2.874E-01	4.509E-01	0.000E+00	NOT IDENT.
SB-126	-7.708E-02	1.959E-01	2.902E-01	0.000E+00	NOT IDENT.
SB-127	-4.147E-01	4.057E+00	6.763E+00	0.000E+00	NOT IDENT.
I-131	3.642E-02	1.777E-01	3.208E-01	0.000E+00	NOT IDENT.
TE-132	-5.762E-01	3.003E+00	5.154E+00	0.000E+00	NOT IDENT.
BA-133	-1.382E-02	3.909E-02	5.897E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.329E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.206E-02	3.956E-02	7.013E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.560E-01	2.701E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.475E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.977E-02	1.432E-01	2.532E-01	0.000E+00	NOT IDENT.
BA-137M	5.739E-02	3.459E-02	6.546E-02	0.000E+00	NOT IDENT.
CS-137	6.063E-02	3.654E-02	6.915E-02	0.000E+00	NOT IDENT.
CE-139	-3.937E-03	2.874E-02	5.036E-02	0.000E+00	NOT IDENT.
BA-140	3.160E-02	3.222E-01	5.653E-01	0.000E+00	NOT IDENT.
LA-140	-1.481E-02	1.166E-01	1.835E-01	0.000E+00	NOT IDENT.
CE-141	3.179E-02	6.586E-02	1.188E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	7.485E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.272E-01	1.962E-01	3.152E-01	0.000E+00	NOT IDENT.
PM-144	2.915E-03	3.016E-02	5.204E-02	0.000E+00	NOT IDENT.
PR-144	1.982E-01	2.264E+00	3.904E+00	0.000E+00	NOT IDENT.
PM-146	3.188E-02	3.523E-02	6.536E-02	0.000E+00	NOT IDENT.
ND-147	1.013E+00	7.162E-01	1.350E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	6.901E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-2.614E-02	9.937E-02	1.428E-01	0.000E+00	FAIL ABUN
GD-153	4.695E-02	8.697E-02	1.411E-01	0.000E+00	NOT IDENT.
EU-154	-3.343E-02	9.483E-02	1.565E-01	0.000E+00	NOT IDENT.
EU-155	1.281E-01	9.559E-02	1.793E-01	0.000E+00	FAIL ABUN
TB-160	-7.051E-03	1.211E-01	2.029E-01	0.000E+00	FAIL ABUN
HO-166M	3.455E-02	5.329E-02	9.553E-02	0.000E+00	NOT IDENT.
TA-182	-1.748E-01	1.868E-01	2.978E-01	0.000E+00	FAIL ABUN
IR-192	-9.578E-03	2.977E-02	5.264E-02	0.000E+00	FAIL ABUN
HG-203	5.128E-02	3.628E-02	6.948E-02	0.000E+00	NOT IDENT.
BI-207	-1.856E-02	4.845E-02	8.164E-02	0.000E+00	FAIL ABUN
PB-210	2.693E+00	2.727E+00	5.204E+00	0.000E+00	NOT IDENT.
PB-211	-3.726E-01	6.235E-01	1.023E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.978E-01	1.000E+00	0.000E+00	FAIL ABUN
RN-219	-2.574E-01	3.394E-01	5.724E-01	0.000E+00	FAIL ABUN
RA-223	-3.594E-01	5.596E-01	9.689E-01	0.000E+00	FAIL ABUN
AC-227	-7.724E-02	2.370E-01	3.980E-01	0.000E+00	FAIL ABUN
TH-227	-7.724E-02	2.371E-01	3.980E-01	0.000E+00	FAIL ABUN
TH-229	1.431E-01	4.743E-01	8.111E-01	0.000E+00	FAIL ABUN
PA-231	-1.878E-01	1.223E+00	2.199E+00	0.000E+00	FAIL ABUN
TH-231	-3.594E-01	5.596E-01	9.689E-01	0.000E+00	FAIL ABUN
PA-233	1.637E-02	5.388E-02	9.846E-02	0.000E+00	FAIL ABUN
PA-234	-2.720E-02	2.953E-01	4.908E-01	0.000E+00	FAIL ABUN
PA-234M	7.434E+00	4.288E+00	8.305E+00	0.000E+00	NOT IDENT.
U-235	2.700E-01	1.849E-01	3.337E-01	0.000E+00	FAIL ABUN
NP-239	-3.146E-01	3.688E-01	6.390E-01	0.000E+00	NOT IDENT.
AM-241	7.993E-02	1.509E-01	2.497E-01	0.000E+00	NOT IDENT.
CM-247	-2.293E-02	3.172E-02	5.390E-02	0.000E+00	NOT IDENT.
CF-249	1.791E-02	3.330E-02	6.098E-02	0.000E+00	NOT IDENT.

CF-251

-3.100E-02

1.133E-01

1.966E-01

0.000E+00 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030007.CNF;1
Sample date     : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:33:12
Sample ID       : G248030007 Sample quantity : 1.55110E+02 GRAM
Detector name   : GAM19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.59 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID        : 958221 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	1394	10.66*	1.168E+00	2.709E+01	2.709E+01	9.39
CD-109	88.03	140	3.70*	6.101E+00	1.502E+00	1.553E+00	53.27
SN-126	64.28	248	9.60	3.664E+00	1.703E+00	1.703E+00	45.79
	86.94	140	8.90	6.101E+00	6.246E-01	6.246E-01	66.89
	87.57	140	37.00*	6.101E+00	1.502E-01	1.502E-01	53.27
TL-208	277.37	-----	6.60	4.511E+00	-----	Line Not Found	-----
	583.19	399	85.00*	2.554E+00	4.448E-01	4.448E-01	17.86
	860.56	55	12.50	1.835E+00	5.828E-01	5.828E-01	82.32
BI-211	72.87	-----	1.23	4.857E+00	-----	Line Not Found	-----
	351.06	627	12.92*	3.787E+00	3.101E+00	3.101E+00	12.81
PB-212	74.82	364	10.28	5.075E+00	1.688E+00	1.688E+00	29.31
	77.11	594	17.10	5.313E+00	1.583E+00	1.583E+00	16.15
	238.63	1103	43.60*	5.016E+00	1.221E+00	1.221E+00	10.68
	300.09	79	3.30	4.255E+00	1.368E+00	1.368E+00	76.78
BI-214	609.32	417	45.49*	2.464E+00	8.994E-01	8.995E-01	16.66
	1120.29	101	14.92	1.454E+00	1.122E+00	1.122E+00	42.61
	1764.49	72	15.30	1.029E+00	1.107E+00	1.107E+00	31.20
PB-214	74.82	364	5.80	5.075E+00	2.992E+00	2.992E+00	28.77
	77.11	594	9.70	5.313E+00	2.791E+00	2.791E+00	18.13
	242.00	241	7.25	4.974E+00	1.616E+00	1.616E+00	33.29
	295.22	332	18.42	4.313E+00	1.012E+00	1.012E+00	24.33
	351.93	627	35.60*	3.787E+00	1.125E+00	1.126E+00	13.94
RA-224	240.99	241	4.10*	4.974E+00	2.857E+00	2.857E+00	32.78
RA-226	609.32	417	45.49*	2.464E+00	8.994E-01	8.995E-01	16.66
	1120.29	101	14.92	1.454E+00	1.122E+00	1.122E+00	42.61
	1764.49	72	15.30	1.029E+00	1.107E+00	1.107E+00	31.20
AC-228	338.32	241	11.27	3.899E+00	1.328E+00	1.328E+00	49.28
	911.20	276	25.80*	1.745E+00	1.484E+00	1.484E+00	18.69
	968.97	109	15.80	1.653E+00	1.010E+00	1.010E+00	43.11
RA-228	338.32	241	11.27	3.899E+00	1.328E+00	1.328E+00	49.28
	911.20	276	25.80*	1.745E+00	1.484E+00	1.484E+00	18.69
	968.97	109	15.80	1.653E+00	1.010E+00	1.010E+00	43.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	364	10.28	5.075E+00	1.688E+00	1.688E+00	27.68
	77.11	594	17.10	5.313E+00	1.583E+00	1.583E+00	16.15
	238.63	1103	43.60*	5.016E+00	1.221E+00	1.221E+00	10.68
	300.09	79	3.30	4.255E+00	1.368E+00	1.368E+00	97.63
TH-232	338.32	241	11.27	3.899E+00	1.328E+00	1.328E+00	27.62
	911.20	276	25.80*	1.745E+00	1.484E+00	1.484E+00	18.69
	968.97	109	15.80	1.653E+00	1.010E+00	1.010E+00	43.11
TH-234	63.29	248	3.70*	3.664E+00	4.419E+00	4.419E+00	46.94
	92.59	638	4.23	6.391E+00	5.712E+00	5.712E+00	27.46
NP-237	86.48	140	12.40*	6.101E+00	4.483E-01	4.483E-01	57.25
	95.86	-----	2.68	6.514E+00	-----	Line Not Found	-----
U-238	63.29	248	3.70*	3.664E+00	4.419E+00	4.419E+00	46.94
	92.59	638	4.23	6.391E+00	5.712E+00	5.712E+00	18.45
ANH-511	511.00	82	100.00*	2.842E+00	6.990E-02	6.990E-02	86.27

Flag: "*" = Keyline

Total number of lines in spectrum 31
Number of unidentified lines 4
Number of lines tentatively identified by NID 27 87.10%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.709E+01	2.709E+01	0.254E+01	9.39	
CD-109	461.40D	1.03	1.502E+00	1.553E+00	0.827E+00	53.27	
SN-126	2.30E+05Y	1.00	1.502E-01	1.502E-01	0.800E-01	53.27	
TL-208	1.41E+10Y	1.00	4.448E-01	4.448E-01	0.795E-01	17.86	
BI-211	7.04E+08Y	1.00	3.101E+00	3.101E+00	0.397E+00	12.81	
PB-212	1.41E+10Y	1.00	1.221E+00	1.221E+00	0.130E+00	10.68	
BI-214	1600.00Y	1.00	8.994E-01	8.995E-01	1.499E-01	16.66	
PB-214	1600.00Y	1.00	1.125E+00	1.126E+00	0.157E+00	13.94	
RA-224	1.41E+10Y	1.00	2.857E+00	2.857E+00	0.937E+00	32.78	
RA-226	1600.00Y	1.00	8.994E-01	8.995E-01	1.499E-01	16.66	
AC-228	1.41E+10Y	1.00	1.484E+00	1.484E+00	0.277E+00	18.69	
RA-228	1.41E+10Y	1.00	1.484E+00	1.484E+00	0.277E+00	18.69	
TH-228	1.41E+10Y	1.00	1.221E+00	1.221E+00	0.130E+00	10.68	
TH-232	1.41E+10Y	1.00	1.484E+00	1.484E+00	0.277E+00	18.69	
TH-234	4.47E+09Y	1.00	4.419E+00	4.419E+00	2.074E+00	46.94	
NP-237	2.14E+06Y	1.00	4.483E-01	4.483E-01	2.566E-01	57.25	
U-238	4.47E+09Y	1.00	4.419E+00	4.419E+00	2.074E+00	46.94	
ANH-511	1.00E+09Y	1.00	6.990E-02	6.990E-02	6.030E-02	86.27	

Total Activity : 5.432E+01 5.437E+01

Grand Total Activity : 5.432E+01 5.437E+01

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

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.03	70	418	1.01	257.82	253	9	9.71E-03	****	6.82E+00	
0	186.26	288	464	1.47	372.20	364	15	4.00E-02	35.6	5.88E+00	T
0	209.04	130	262	1.28	417.72	414	9	1.81E-02	47.9	5.48E+00	
0	270.22	144	259	1.55	539.99	533	13	2.01E-02	49.4	4.60E+00	T
0	462.99	86	87	1.34	925.33	920	10	1.19E-02	46.1	3.07E+00	T
0	569.22	190	135	2.18	1137.70	1128	18	2.64E-02	32.2	2.61E+00	T
0	663.55	69	124	1.88	1326.31	1317	18	9.55E-03	80.1	2.30E+00	T
0	727.90	111	64	1.34	1454.97	1449	14	1.54E-02	35.8	2.12E+00	T
1	965.41	56	41	2.01	1929.94	1925	29	7.76E-03	51.8	1.66E+00	T
0	1378.47	29	23	1.25	2756.22	2751	10	4.04E-03	71.6	1.22E+00	
0	1589.43	17	13	0.84	3178.35	3173	9	2.35E-03	91.8	1.10E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030007.CNF;1
* Acquisition date   : 13-MAR-2010 14:33:12   Detector SN#      :
* Detector ID        : GAM19                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit      : 75.00000
* Elapsed real time  : 0 02:00:01.59           Half life ratio      : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G248030007             Analyst initials  : MXR1
* Batch Number       : 958221                 Sample Quantity   : 1.55110E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope        :
* MSD ID             :                          MSD Isotope     :
* LCS ID             : 1032-A                   LCS Isotope        :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.709E+01	2.542E+00	4.399E-01	3.276E-02	61.568
CD-109	1.553E+00	8.274E-01	1.196E+00	1.071E-01	1.299
SN-126	1.502E-01	8.003E-02	1.161E-01	1.036E-02	1.294
TL-208	4.448E-01	7.946E-02	4.524E-02	3.070E-03	9.831
BI-211	3.101E+00	3.971E-01	2.933E-01	1.873E-02	10.574
PB-212	1.221E+00	1.304E-01	8.212E-02	5.980E-03	14.864
BI-214	8.995E-01	1.499E-01	1.043E-01	8.267E-03	8.621
PB-214	1.126E+00	1.569E-01	1.020E-01	8.605E-03	11.036
RA-224	2.857E+00	9.367E-01	8.797E-01	4.985E-02	3.248
RA-226	8.995E-01	1.499E-01	1.043E-01	8.267E-03	8.621
AC-228	1.484E+00	2.774E-01	2.012E-01	2.346E-02	7.376
RA-228	1.484E+00	2.774E-01	2.012E-01	2.346E-02	7.376
TH-228	1.221E+00	1.304E-01	8.212E-02	5.980E-03	14.864
TH-232	1.484E+00	2.774E-01	2.012E-01	2.346E-02	7.376
TH-234	4.419E+00	2.074E+00	1.946E+00	3.480E-01	2.271
NP-237	4.483E-01	2.566E-01	3.728E-01	8.481E-02	1.202
U-238	4.419E+00	2.074E+00	1.946E+00	3.480E-01	2.271
ANH-511	6.990E-02	6.030E-02	4.118E-02	2.430E-03	1.697

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.720E-01		3.114E-01	5.521E-01	3.746E-02	0.674
NA-22	-6.073E-03		3.371E-02	5.487E-02	3.660E-03	-0.111
NA-24	-5.250E+00		6.498E+02	Half-Life too short		
SC-46	-1.250E-02		3.667E-02	5.717E-02	4.968E-03	-0.219
V-48	-9.505E-03		8.717E-02	1.385E-01	1.113E-02	-0.069
CR-51	-2.236E-01		3.534E-01	5.714E-01	3.692E-02	-0.391
MN-54	2.194E-02		3.544E-02	6.009E-02	4.780E-03	0.365
CO-56	-1.777E-02		3.589E-02	5.521E-02	4.479E-03	-0.322
CO-57	4.872E-03		2.357E-02	3.866E-02	2.307E-03	0.126
CO-58	-1.530E-02		3.679E-02	5.730E-02	4.391E-03	-0.267
FE-59	-3.548E-02		8.523E-02	1.370E-01	1.028E-02	-0.259
CO-60	-1.412E-02		3.446E-02	5.445E-02	4.013E-03	-0.259
ZN-65	-3.243E-02		8.037E-02	1.090E-01	6.972E-03	-0.297
SE-75	-4.276E-03		4.487E-02	6.556E-02	3.813E-03	-0.065
SR-85	5.986E-02		4.327E-02	6.869E-02	4.056E-03	0.871
Y-88	1.352E-02		2.609E-02	4.712E-02	2.690E-03	0.287
Y-91	2.948E+00		2.056E+01	3.463E+01	2.022E+00	0.085
NB-94	9.910E-04		3.072E-02	5.021E-02	3.163E-03	0.020
NB-95	1.590E-02		4.192E-02	7.000E-02	4.947E-03	0.227
NB-95M	3.933E-01		1.476E-01	2.326E-01	1.729E-02	1.691
ZR-95	-1.065E-02		7.145E-02	1.147E-01	9.227E-03	-0.093
MO-99	5.750E-06		2.853E-05	Half-Life too short		
TC-99M	-5.647E+18		4.327E+18	Half-Life too short		
RU-103	-7.628E-03		3.809E-02	6.205E-02	7.733E-03	-0.123
RH-106	3.090E-02		2.767E-01	4.573E-01	5.337E-02	0.068
RU-106	3.090E-02		2.767E-01	4.573E-01	2.697E-02	0.068
AG-108M	-1.051E-02		2.543E-02	4.112E-02	2.523E-03	-0.256
AG-110M	-2.762E-02		3.825E-02	4.975E-02	3.087E-03	-0.555
SN-113	-9.289E-03		3.871E-02	6.359E-02	3.794E-03	-0.146
CD-115	-3.951E-05		4.287E-05	Half-Life too short		
SN-117M	5.313E-02		7.235E-02	1.203E-01	6.405E-03	0.442
TE-123M	5.435E-03		2.790E-02	4.547E-02	2.456E-03	0.120
SB-124	-3.230E-02		6.555E-02	9.641E-02	6.629E-03	-0.335
SB-125	-1.637E-03		7.599E-02	1.261E-01	7.498E-03	-0.013
TE-125M	-1.738E+01		1.011E+01	1.526E+01	1.380E+00	-1.139
I-126	1.383E-01		2.933E-01	4.376E-01	2.571E-02	0.316
SB-126	-7.708E-02		1.999E-01	2.823E-01	1.839E-02	-0.273
SB-127	-4.147E-01		4.140E+00	6.569E+00	8.023E-01	-0.063
I-131	3.642E-02		1.814E-01	3.064E-01	1.981E-02	0.119
TE-132	-5.762E-01		3.064E+00	4.863E+00	7.848E-01	-0.118
BA-133	-1.382E-02		3.988E-02	5.629E-02	6.327E-03	-0.245
I-133	9.896E-01		6.780E-01	Half-Life too short		
CS-134	2.206E-02		4.036E-02	6.839E-02	5.142E-03	0.323
CS-135	2.757E-01		1.592E-01	2.559E-01	1.953E-02	1.078
I-135	2.315E+16		1.263E+17	Half-Life too short		
CS-136	2.977E-02		1.461E-01	2.488E-01	1.924E-02	0.120
BA-137M	5.739E-02		3.530E-02	6.351E-02	3.698E-03	0.904
CS-137	6.063E-02		3.729E-02	6.709E-02	3.923E-03	0.904

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-139	-3.937E-03		2.932E-02	4.713E-02	2.460E-03	-0.084
BA-140	3.160E-02		3.288E-01	5.454E-01	1.818E-01	0.058
LA-140	-1.481E-02		1.190E-01	1.825E-01	1.235E-02	-0.081
CE-141	3.179E-02		6.720E-02	1.109E-01	6.386E-03	0.287
CE-143	2.440E-02		3.819E-03	Half-Life too short		
CE-144	1.272E-01		2.002E-01	2.934E-01	4.066E-02	0.433
PM-144	2.915E-03		3.078E-02	5.056E-02	3.152E-03	0.058
PR-144	1.982E-01		2.310E+00	3.793E+00	2.361E-01	0.052
PM-146	3.188E-02		3.595E-02	6.278E-02	5.303E-03	0.508
ND-147	1.013E+00		7.308E-01	1.302E+00	1.768E-01	0.778
PM-149	4.436E-04		3.521E-04	Half-Life too short		
EU-152	-2.614E-02		1.014E-01	1.362E-01	8.859E-03	-0.192
GD-153	4.695E-02		8.874E-02	1.303E-01	1.014E-02	0.360
EU-154	-3.343E-02		9.676E-02	1.546E-01	1.542E-02	-0.216
EU-155	1.281E-01		9.754E-02	1.659E-01	1.193E-02	0.772
TB-160	-7.051E-03		1.236E-01	1.984E-01	1.697E-02	-0.036
HO-166M	3.455E-02		5.438E-02	9.287E-02	5.949E-03	0.372
TA-182	-1.748E-01		1.907E-01	2.938E-01	1.772E-02	-0.595
IR-192	-9.578E-03		3.037E-02	5.009E-02	2.927E-03	-0.191
HG-203	5.128E-02		3.702E-02	6.590E-02	4.029E-03	0.778
BI-207	-1.856E-02		4.944E-02	8.024E-02	5.698E-03	-0.231
PB-210	2.693E+00		2.783E+00	4.722E+00	3.560E-01	0.570
PB-211	-3.726E-01		6.362E-01	9.796E-01	4.697E-01	-0.380
BI-212	1.899E+00	+	7.120E-01	9.728E-01	1.085E-01	1.952
RN-219	-2.574E-01		3.463E-01	5.480E-01	7.319E-02	-0.470
RA-223	-3.594E-01		5.710E-01	9.225E-01	1.487E-01	-0.390
AC-227	-7.724E-02		2.419E-01	3.766E-01	3.836E-02	-0.205
TH-227	-7.724E-02		2.419E-01	3.766E-01	4.514E-02	-0.205
TH-229	1.431E-01		4.839E-01	7.621E-01	4.112E-02	0.188
PA-231	-1.878E-01		1.248E+00	2.086E+00	2.736E-01	-0.090
TH-231	-3.594E-01		5.710E-01	9.225E-01	1.487E-01	-0.390
PA-233	1.637E-02		5.497E-02	9.365E-02	5.784E-03	0.175
PA-234	-2.720E-02		3.013E-01	4.808E-01	8.976E-02	-0.057
PA-234M	7.434E+00		4.375E+00	8.149E+00	7.586E-01	0.912
U-235	2.700E-01		1.887E-01	3.113E-01	4.860E-02	0.867
NP-239	-3.146E-01		3.763E-01	5.929E-01	3.700E-02	-0.531
AM-241	7.993E-02		1.540E-01	2.279E-01	1.876E-02	0.351
CM-247	-2.293E-02		3.237E-02	5.161E-02	2.894E-03	-0.444
CF-249	1.791E-02		3.398E-02	5.834E-02	3.257E-03	0.307
CF-251	-3.100E-02		1.156E-01	1.843E-01	9.749E-03	-0.168

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]G248030007          *
* Acquisition date   : 13-MAR-2010 14:33:12 Detector SN#      :             *
* Detector ID        : GAM19                      Sensitivity   : 5.000        *
* Geometry           : CAN                          Energy tolerance: 1.500      *
* Elapsed live time:  0 02:00:00.00                Abundance limit: 75.000     *
* Elapsed real time:  0 02:00:01.59                Half life ratio : 8.000     *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030007                Analyst initials: MXR1       *
* Batch Number       : 958221                     Sample Quantity : 1.5511E+02 GRAM *
* Recovery           : 1.00000                     Carrier Weight  : 0.00000    *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope      :             *
* MSD DPM             : 0.000                      MSD Isotope  :             *
* LCS DPM             : 0.000                      LCS Isotope   :             *
* LCSD DPM            : 0.000                      LCSD Isotope  :             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.709E+01	2.492E+00	2.220E-01	1.271E+00
CD-109	1.553E+00	8.109E-01	6.491E-01	4.137E-01
SN-126	1.502E-01	7.843E-02	6.306E-02	4.002E-02
TL-208	4.448E-01	7.787E-02	2.341E-02	3.973E-02
BI-211	3.101E+00	3.892E-01	1.538E-01	1.986E-01
PB-212	1.221E+00	1.278E-01	4.349E-02	6.520E-02
BI-214	8.995E-01	1.469E-01	5.392E-02	7.494E-02
PB-214	1.126E+00	1.538E-01	5.347E-02	7.847E-02
RA-224	2.857E+00	9.180E-01	4.658E-01	4.684E-01
RA-226	8.995E-01	1.469E-01	5.392E-02	7.494E-02
AC-228	1.484E+00	2.718E-01	1.029E-01	1.387E-01
RA-228	1.484E+00	2.718E-01	1.029E-01	1.387E-01
TH-228	1.221E+00	1.278E-01	4.349E-02	6.520E-02
TH-232	1.484E+00	2.718E-01	1.029E-01	1.387E-01
TH-234	4.419E+00	2.033E+00	1.065E+00	1.037E+00
NP-237	4.483E-01	2.515E-01	2.025E-01	1.283E-01
U-238	4.419E+00	2.033E+00	1.065E+00	1.037E+00
ANH-511	6.990E-02	5.910E-02	2.138E-02	3.015E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	3.720E-01	3.052E-01	2.872E-01	1.557E-01 NOT IDENT.
NA-22	-6.073E-03	3.304E-02	2.779E-02	1.686E-02 NOT IDENT.
NA-24	-5.250E+06	1.274E+09	0.000E+00	6.498E+08 SHORT HLIF
SC-46	-1.250E-02	3.593E-02	2.924E-02	1.833E-02 FAIL ABUN
V-48	-9.505E-03	8.543E-02	7.063E-02	4.358E-02 NOT IDENT.
CR-51	-2.236E-01	3.463E-01	3.004E-01	1.767E-01 NOT IDENT.
MN-54	2.194E-02	3.473E-02	3.079E-02	1.772E-02 NOT IDENT.
CO-56	-1.777E-02	3.517E-02	2.828E-02	1.794E-02 NOT IDENT.
CO-57	4.872E-03	2.310E-02	2.082E-02	1.178E-02 NOT IDENT.

CO-58	-1.530E-02	3.605E-02	2.939E-02	1.839E-02	NOT IDENT.
FE-59	-3.548E-02	8.353E-02	6.969E-02	4.262E-02	NOT IDENT.
CO-60	-1.412E-02	3.377E-02	2.754E-02	1.723E-02	NOT IDENT.
ZN-65	-3.243E-02	7.876E-02	5.543E-02	4.018E-02	NOT IDENT.
SE-75	-4.276E-03	4.398E-02	3.463E-02	2.244E-02	NOT IDENT.
SR-85	5.986E-02	4.241E-02	3.566E-02	2.164E-02	NOT IDENT.
Y-88	1.352E-02	2.557E-02	2.362E-02	1.305E-02	NOT IDENT.
Y-91	2.948E+00	2.015E+01	1.757E+01	1.028E+01	NOT IDENT.
NB-94	9.910E-04	3.011E-02	2.585E-02	1.536E-02	NOT IDENT.
NB-95	1.590E-02	4.108E-02	3.595E-02	2.096E-02	NOT IDENT.
NB-95M	3.933E-01	1.447E-01	1.232E-01	7.382E-02	NOT IDENT.
ZR-95	-1.065E-02	7.002E-02	5.893E-02	3.573E-02	NOT IDENT.
MO-99	5.750E+00	5.592E+01	0.000E+00	2.853E+01	SHORT HLIF
TC-99M	-5.647E+24	8.480E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.628E-03	3.732E-02	3.224E-02	1.904E-02	FAIL ABUN
RH-106	3.090E-02	2.712E-01	2.362E-01	1.384E-01	NOT IDENT.
RU-106	3.090E-02	2.712E-01	2.362E-01	1.384E-01	NOT IDENT.
AG-108M	-1.051E-02	2.492E-02	2.144E-02	1.272E-02	NOT IDENT.
AG-110M	-2.762E-02	3.748E-02	2.566E-02	1.912E-02	NOT IDENT.
SN-113	-9.289E-03	3.794E-02	3.325E-02	1.936E-02	NOT IDENT.
CD-115	-3.951E+01	8.402E+01	0.000E+00	4.287E+01	SHORT HLIF
SN-117M	5.313E-02	7.090E-02	6.440E-02	3.618E-02	NOT IDENT.
TE-123M	5.435E-03	2.734E-02	2.433E-02	1.395E-02	NOT IDENT.
SB-124	-3.230E-02	6.424E-02	4.844E-02	3.277E-02	NOT IDENT.
SB-125	-1.637E-03	7.447E-02	6.578E-02	3.799E-02	FAIL ABUN
TE-125M	-1.738E+01	9.910E+00	8.241E+00	5.056E+00	NOT IDENT.
I-126	1.383E-01	2.874E-01	2.256E-01	1.466E-01	NOT IDENT.
SB-126	-7.708E-02	1.959E-01	1.452E-01	9.993E-02	NOT IDENT.
SB-127	-4.147E-01	4.057E+00	3.384E+00	2.070E+00	NOT IDENT.
I-131	3.642E-02	1.777E-01	1.605E-01	9.068E-02	NOT IDENT.
TE-132	-5.762E-01	3.003E+00	2.578E+00	1.532E+00	NOT IDENT.
BA-133	-1.382E-02	3.909E-02	2.950E-02	1.994E-02	NOT IDENT.
I-133	9.896E+05	1.329E+06	0.000E+00	6.780E+05	SHORT HLIF
CS-134	2.206E-02	3.956E-02	3.509E-02	2.018E-02	FAIL ABUN
CS-135	2.757E-01	1.560E-01	1.351E-01	7.958E-02	NOT IDENT.
I-135	2.315E+22	2.475E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.977E-02	1.432E-01	1.267E-01	7.305E-02	NOT IDENT.
BA-137M	5.739E-02	3.459E-02	3.275E-02	1.765E-02	NOT IDENT.
CS-137	6.063E-02	3.654E-02	3.460E-02	1.864E-02	NOT IDENT.
CE-139	-3.937E-03	2.874E-02	2.519E-02	1.466E-02	NOT IDENT.
BA-140	3.160E-02	3.222E-01	2.828E-01	1.644E-01	NOT IDENT.
LA-140	-1.481E-02	1.166E-01	9.183E-02	5.949E-02	NOT IDENT.
CE-141	3.179E-02	6.586E-02	5.945E-02	3.360E-02	NOT IDENT.
CE-143	2.440E+04	7.485E+03	0.000E+00	3.819E+03	SHORT HLIF
CE-144	1.272E-01	1.962E-01	1.577E-01	1.001E-01	NOT IDENT.
PM-144	2.915E-03	3.016E-02	2.604E-02	1.539E-02	NOT IDENT.
PR-144	1.982E-01	2.264E+00	1.953E+00	1.155E+00	NOT IDENT.
PM-146	3.188E-02	3.523E-02	3.270E-02	1.798E-02	NOT IDENT.
ND-147	1.013E+00	7.162E-01	6.755E-01	3.654E-01	NOT IDENT.
PM-149	4.436E+02	6.901E+02	0.000E+00	3.521E+02	SHORT HLIF
EU-152	-2.614E-02	9.937E-02	7.146E-02	5.070E-02	FAIL ABUN
GD-153	4.695E-02	8.697E-02	7.059E-02	4.437E-02	NOT IDENT.
EU-154	-3.343E-02	9.483E-02	7.829E-02	4.838E-02	NOT IDENT.
EU-155	1.281E-01	9.559E-02	8.970E-02	4.877E-02	FAIL ABUN
TB-160	-7.051E-03	1.211E-01	1.015E-01	6.180E-02	FAIL ABUN
HO-166M	3.455E-02	5.329E-02	4.779E-02	2.719E-02	NOT IDENT.
TA-182	-1.748E-01	1.868E-01	1.490E-01	9.533E-02	FAIL ABUN
IR-192	-9.578E-03	2.977E-02	2.634E-02	1.519E-02	FAIL ABUN
HG-203	5.128E-02	3.628E-02	3.476E-02	1.851E-02	NOT IDENT.
BI-207	-1.856E-02	4.845E-02	4.084E-02	2.472E-02	FAIL ABUN
PB-210	2.693E+00	2.727E+00	2.603E+00	1.391E+00	NOT IDENT.
PB-211	-3.726E-01	6.235E-01	5.118E-01	3.181E-01	NOT IDENT.
BI-212	1.899E+00	6.978E-01	5.003E-01	3.560E-01	FAIL ABUN
RN-219	-2.574E-01	3.394E-01	2.864E-01	1.732E-01	FAIL ABUN
RA-223	-3.594E-01	5.596E-01	4.847E-01	2.855E-01	FAIL ABUN
AC-227	-7.724E-02	2.370E-01	1.991E-01	1.209E-01	FAIL ABUN
TH-227	-7.724E-02	2.371E-01	1.991E-01	1.210E-01	FAIL ABUN
TH-229	1.431E-01	4.743E-01	4.058E-01	2.420E-01	FAIL ABUN
PA-231	-1.878E-01	1.223E+00	1.100E+00	6.242E-01	FAIL ABUN
TH-231	-3.594E-01	5.596E-01	4.847E-01	2.855E-01	FAIL ABUN
PA-233	1.637E-02	5.388E-02	4.926E-02	2.749E-02	FAIL ABUN
PA-234	-2.720E-02	2.953E-01	2.455E-01	1.506E-01	FAIL ABUN
PA-234M	7.434E+00	4.288E+00	4.155E+00	2.188E+00	NOT IDENT.
U-235	2.700E-01	1.849E-01	1.670E-01	9.436E-02	FAIL ABUN
NP-239	-3.146E-01	3.688E-01	3.197E-01	1.882E-01	NOT IDENT.
AM-241	7.993E-02	1.509E-01	1.249E-01	7.699E-02	NOT IDENT.
CM-247	-2.293E-02	3.172E-02	2.697E-02	1.619E-02	NOT IDENT.
CF-249	1.791E-02	3.330E-02	3.051E-02	1.699E-02	NOT IDENT.

CF-251	-3.100E-02	1.133E-01	9.835E-02	5.781E-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	369.3093
49.72	460.4793
57.36	0.0000
59.54	462.4237
63.29	537.7263
63.29	537.7263
64.28	538.2731
67.75	566.6166
69.67	574.0708
70.83	587.4883
72.81	623.7953
72.87	588.6405
72.87	588.6405
74.82	573.9006
74.82	573.9006
74.82	573.9006
74.97	573.9814
77.11	555.6526
77.11	555.6526
77.11	555.6526
79.69	521.5483
79.80	521.6017
80.12	584.5554
80.19	584.5931
80.57	642.7885
81.00	663.9879
81.07	664.0281
81.07	664.0281
83.79	588.0853
83.79	588.0853
85.43	535.5355
86.48	616.9949
86.55	617.0321
86.79	617.1577
86.94	675.5609
87.57	545.0374
88.03	545.2508
88.47	545.4561
89.96	546.1456
91.11	546.6730
92.59	547.3483
92.59	547.3483
93.35	547.6931
94.67	406.0186
94.87	446.8571
94.87	446.8571
95.86	481.4942
97.43	393.8564
98.44	356.5585
99.53	341.0441
100.11	364.9884
103.18	492.5171
103.37	459.7510
105.31	360.7490
106.12	355.8305
109.28	466.9921
111.00	403.5976
111.76	353.2198
116.30	417.6122
117.23	409.5994
121.12	336.9133
121.78	364.1191
122.06	352.7452
123.07	369.3109
131.20	351.8423
133.52	307.0857
136.00	342.4701

136.47	336.2720
140.51	0.0000
140.51	0.0000
143.76	315.7006
144.24	308.4054
144.24	308.4054
145.44	358.3202
152.43	331.2334
153.25	355.8327
154.21	374.1101
154.21	374.1101
156.02	328.7746
158.56	325.0212
159.00	351.7555
162.66	343.9822
163.33	352.6694
165.86	358.5496
176.60	309.0891
177.52	306.0185
181.07	0.0000
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185.72	295.5154
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197.04	310.4011
205.31	281.7795
210.85	256.2557
215.65	280.4121
222.11	279.1103
227.38	269.8796
228.16	272.1949
228.18	272.1968
235.69	255.8584
235.96	255.8918
235.96	255.8918
238.63	254.6601
238.63	254.6601
240.99	254.9432
242.00	219.1989
244.70	210.5534
252.40	212.6469
252.80	226.1180
256.23	236.5612
256.23	236.5612
260.90	0.0000
264.66	202.5687
268.22	198.3813
269.46	187.6621
269.46	187.6621
271.23	176.0689
273.65	260.6158
276.40	199.0903
277.37	173.0195
277.60	173.0358
278.00	181.1157
279.20	182.1145
279.54	200.2651
280.46	241.1372
283.69	201.5290
284.31	183.4200
285.41	172.6050
285.90	0.0000
287.50	214.3239
293.27	0.0000
295.22	177.8768
295.96	241.8028
298.57	242.0648
299.98	242.2039
299.98	242.2039
300.09	242.2169
300.09	242.2169
300.13	242.2201
301.36	192.0454
302.85	178.4350
304.50	163.2952
304.50	163.2952
304.85	149.5820
308.46	181.5934
311.90	165.3135

316.51	161.0184
319.41	153.8339
320.08	159.4020
323.87	197.4746
323.87	197.4746
328.76	195.0771
333.37	171.3441
334.37	189.9403
334.37	189.9403
338.28	154.0363
338.28	154.0363
338.32	154.0384
338.32	154.0384
338.32	154.0384
340.48	143.9483
340.55	143.9521
344.28	163.6873
351.06	163.1696
351.93	149.2324
356.01	147.9021
364.49	139.6147
366.42	0.0000
383.85	128.3201
388.16	127.5677
388.63	124.7539
391.69	133.4027
400.66	134.7648
401.81	145.2604
402.40	150.9879
404.85	145.4116
410.95	111.4271
414.70	164.0131
423.72	121.4655
427.09	125.4303
427.87	115.8865
433.94	126.6713
453.88	99.4757
463.37	95.2520
468.07	85.6904
473.00	118.5300
476.78	90.4604
477.60	96.3208
487.02	104.4021
492.35	0.0000
497.08	102.7608
511.00	108.0973
514.00	118.0276
527.90	0.0000
529.87	0.0000
531.02	69.1882
537.26	91.0948
546.56	0.0000
563.25	94.7495
569.33	91.9102
569.50	91.9146
569.70	91.9191
583.19	76.2115
600.60	95.7051
602.73	86.3986
604.72	119.3416
609.32	108.0423
609.32	108.0423
610.33	102.6843
614.28	77.5127
618.01	98.1651
621.93	85.0951
621.93	85.0951
633.25	75.1815
635.95	93.5341
636.99	88.4741
645.85	90.7100
657.76	105.6316
661.66	86.9756
661.66	86.9756
664.57	0.0000
666.33	66.5869
666.50	66.5901
677.62	80.1252

685.70	78.2228
695.00	94.9031
696.49	86.6824
696.51	86.6824
697.00	104.2376
702.65	94.0437
706.68	104.4768
711.68	76.6377
720.70	80.0621
721.93	0.0000
722.78	72.6831
722.91	72.6865
723.31	70.9626
724.19	67.5137
727.33	95.6274
733.00	58.9784
735.93	74.2072
739.50	0.0000
747.24	75.1834
752.31	84.6782
753.82	75.2959
756.73	79.5310
763.94	100.6219
765.81	88.0810
766.42	87.0446
777.92	0.0000
778.90	72.5646
783.70	58.9559
785.37	62.1358
795.86	67.5578
801.95	70.8178
810.29	69.8865
810.76	72.0126
815.77	60.4275
818.51	56.2206
832.01	85.1055
834.85	75.5762
836.80	0.0000
846.77	67.2297
856.80	60.5971
860.56	61.0009
871.09	53.6267
873.19	52.5769
875.33	0.0000
879.36	54.7914
880.51	58.0289
883.24	56.9854
884.68	52.7001
889.28	64.5908
898.04	61.4698
911.20	64.8765
911.20	64.8765
911.20	64.8765
926.50	59.6500
937.49	80.4298
944.13	75.0914
946.00	77.2974
949.00	56.6452
962.29	50.9653
964.08	58.2656
966.15	55.7389
968.97	55.7688
968.97	55.7688
968.97	55.7688
983.53	61.4059
996.26	93.4294
1001.03	54.0905
1004.73	83.4852
1037.84	70.1522
1038.76	0.0000
1048.07	67.5078
1050.41	62.9089
1050.41	62.9089
1063.66	74.1895
1085.87	54.9308
1099.45	60.6624
1112.07	61.7300
1115.54	54.5480

1120.29	48.7056
1120.29	48.7056
1120.55	48.7077
1121.30	48.7140
1131.51	0.0000
1173.23	53.8712
1177.93	63.3714
1189.05	79.5977
1204.77	67.4552
1221.41	92.4058
1231.02	72.5148
1235.36	111.7108
1238.28	80.2402
1260.41	0.0000
1271.85	42.2580
1274.44	45.1564
1274.54	42.2759
1291.59	47.2056
1298.22	0.0000
1312.11	36.7259
1332.49	43.6267
1365.19	25.3324
1368.63	0.0000
1384.29	25.1263
1408.01	38.2415
1457.56	0.0000
1460.82	23.7148
1489.16	20.8342
1505.03	25.8529
1596.21	27.7898
1620.50	23.2330
1678.03	0.0000
1690.97	16.3125
1764.49	6.1748
1764.49	6.1748
1770.23	10.5929
1771.35	15.8913
1791.20	0.0000
1836.06	8.3060

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030007

Total Uranium Activity	1.3273E+01	ug/g
Total Uranium Counting Unc.	6.0484E+00	ug/g
Total Uranium Tpu	3.0859E-06	ug/g
Total Uranium Mda	3.1693E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G248030007
*  ANALYST       : MXR1           DETECTOR    : GAM19
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 13-MAR-2010 14:33:12.39  SAMPLE ALQT: 155.110 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.929E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.164E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.390E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.655E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:37:09.23

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030008.CNF;1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:33:38
Sample ID        : G248030008 Sample quantity   : 1.26800E+02 GRAM
Detector name    : GAM20 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:33.68 0.5%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 958221 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	63.09*	159	537	0.88	126.16	122	9	2.21E-02	27.9	
2	4	74.96*	561	588	1.34	149.86	143	15	7.80E-02	8.7	2.61E+00
3	4	77.29*	688	420	0.94	154.51	143	15	9.55E-02	6.2	
4	3	87.39	310	399	1.20	174.69	165	28	4.30E-02	12.1	1.69E+00
5	3	90.10	162	275	0.91	180.11	165	28	2.25E-02	17.2	
6	3	92.94*	343	418	1.33	185.78	165	28	4.77E-02	12.5	
7	0	185.98*	179	350	1.35	371.59	367	10	2.48E-02	21.7	
8	0	209.58	121	294	1.00	418.73	415	9	1.68E-02	27.1	
9	5	238.76*	1312	156	1.06	477.01	469	22	1.82E-01	3.2	2.14E+00
10	5	241.70	359	269	1.97	482.87	469	22	4.98E-02	14.1	
11	0	270.58	109	237	2.16	540.57	535	11	1.51E-02	29.1	
12	0	278.21	66	193	0.82	555.81	551	9	9.18E-03	40.4	
13	3	295.40	438	125	1.21	590.16	582	26	6.08E-02	6.4	1.28E+00
14	3	300.30*	103	148	1.70	599.94	582	26	1.43E-02	25.9	
15	0	327.90	75	130	0.74	655.08	651	10	1.04E-02	30.7	
16	0	338.49	232	147	1.11	676.24	671	10	3.22E-02	11.8	
17	0	352.21*	717	220	1.24	703.66	697	14	9.96E-02	5.8	
18	0	463.62	72	142	0.82	926.27	921	12	1.00E-02	34.9	
19	0	511.34*	146	149	1.73	1021.63	1014	17	2.03E-02	23.3	
20	0	583.75*	376	102	1.26	1166.36	1161	11	5.22E-02	7.5	
21	0	609.88*	495	136	1.25	1218.58	1212	14	6.87E-02	6.8	
22	0	728.03*	103	72	1.45	1454.78	1448	15	1.43E-02	20.7	
23	0	911.79*	305	53	1.77	1822.25	1813	16	4.23E-02	7.9	
24	3	965.45	68	19	2.23	1929.59	1924	25	9.48E-03	17.8	2.20E+00
25	3	970.03*	175	11	1.77	1938.74	1924	25	2.43E-02	9.0	
26	0	1121.46	138	46	2.00	2241.70	2233	17	1.91E-02	14.2	
27	0	1239.25	48	78	1.60	2477.39	2470	13	6.66E-03	40.6	
28	0	1378.97*	45	20	2.06	2757.04	2748	16	6.28E-03	27.0	
29	0	1461.95*	1229	18	1.85	2923.17	2915	18	1.71E-01	3.0	
30	0	1731.53	32	10	1.34	3463.05	3455	13	4.44E-03	26.8	
31	0	1765.83*	118	0	1.94	3531.74	3524	18	1.65E-02	9.6	
32	0	1848.14	31	7	2.53	3696.66	3689	15	4.33E-03	26.1	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:37:12

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Configuration       : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030008.CNF;1
Analyses by        : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title       : MXR1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:33:38
Sample ID          : G248030008 Sample quantity : 126.80 GRAM
Sample type        : SOLID Sample geometry :
Detector name      : GAMMA20 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:33.68 0.5%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.725E+01	2.880E+00	5.088E-01	4.437E-02	53.565
CD-109	+	88.03	*	3.690E+00	9.548E-01	1.064E+00	1.006E-01	3.467
SN-126	+	64.28		1.066E+00	6.151E-01	6.323E-01	9.155E-02	1.685
	+	86.94		1.484E+00	7.125E-01	4.309E-01	1.789E-01	3.443
	+	87.57	*	3.569E-01	9.235E-02	1.032E-01	9.710E-03	3.457
HG-203		70.83		7.116E-01	1.374E+00	2.048E+00	3.195E-01	0.348
		72.87		1.535E+00	7.807E-01	1.294E+00	1.961E-01	1.186
	+	279.20	*	7.080E-02	5.772E-02	6.313E-02	6.407E-03	1.121
TL-208	+	277.37		6.293E-01	5.160E-01	6.158E-01	8.298E-02	1.022
	+	583.19	*	4.861E-01	8.831E-02	5.815E-02	5.973E-03	8.359
		860.56		7.875E-01	3.149E-01	5.955E-01	6.309E-02	1.323
BI-211		72.87		5.556E+00	2.733E+00	4.686E+00	3.700E-01	1.186
	+	351.06	*	4.142E+00	6.246E-01	2.939E-01	2.816E-02	14.093
PB-212	+	74.82		2.670E+00	5.758E-01	4.782E-01	6.041E-02	5.585
	+	77.11		1.900E+00	2.840E-01	2.783E-01	2.302E-02	6.826
	+	238.63	*	1.698E+00	2.118E-01	8.458E-02	9.032E-03	20.074
	+	300.09		2.078E+00	1.101E+00	1.120E+00	1.292E-01	1.856
BI-214	+	609.32	*	1.238E+00	2.177E-01	1.034E-01	1.155E-02	11.970
	+	1120.29		1.755E+00	5.341E-01	4.363E-01	4.742E-02	4.022
	+	1764.49		2.085E+00	4.349E-01	2.133E-01	1.752E-02	9.774
PB-214	+	74.82		4.733E+00	9.851E-01	8.475E-01	9.585E-02	5.585
	+	77.11		3.349E+00	5.719E-01	4.906E-01	5.731E-02	6.826
	+	242.00		2.815E+00	8.543E-01	5.143E-01	5.800E-02	5.474
	+	295.22		1.559E+00	2.706E-01	1.979E-01	2.338E-02	7.875
	+	351.93	*	1.503E+00	2.414E-01	1.069E-01	1.180E-02	14.064
RA-224	+	240.99	*	4.978E+00	1.483E+00	9.064E-01	8.761E-02	5.492
RA-226	+	609.32	*	1.238E+00	2.177E-01	1.034E-01	1.155E-02	11.970
	+	1120.29		1.755E+00	5.341E-01	4.363E-01	4.742E-02	4.022
	+	1764.49		2.085E+00	4.349E-01	2.133E-01	1.752E-02	9.774
AC-228	+	338.32		1.489E+00	7.159E-01	3.729E-01	1.562E-01	3.993
	+	911.20	*	1.880E+00	3.796E-01	2.206E-01	2.773E-02	8.520
	+	968.97		1.863E+00	5.709E-01	2.797E-01	6.919E-02	6.661
RA-228	+	338.32		1.489E+00	7.159E-01	3.729E-01	1.562E-01	3.993
	+	911.20	*	1.880E+00	3.796E-01	2.206E-01	2.773E-02	8.520

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.863E+00	5.709E-01	2.797E-01	6.919E-02	6.661
	+	74.82		2.670E+00	5.148E-01	4.782E-01	3.895E-02	5.585
	+	77.11		1.900E+00	2.840E-01	2.783E-01	2.302E-02	6.826
	+	238.63	*	1.698E+00	2.118E-01	8.458E-02	9.032E-03	20.074
	+	300.09		2.078E+00	1.668E+00	1.120E+00	6.874E-01	1.856
TH-232	+	338.32		1.489E+00	3.783E-01	3.729E-01	3.494E-02	3.993
	+	911.20	*	1.880E+00	3.796E-01	2.206E-01	2.773E-02	8.520
	+	968.97		1.863E+00	5.709E-01	2.797E-01	6.919E-02	6.661
TH-234	+	63.29	*	2.765E+00	1.621E+00	1.573E+00	2.794E-01	1.758
	+	92.59		3.349E+00	1.123E+00	8.799E-01	1.961E-01	3.806
U-235	+	89.96		1.959E+00	8.330E-01	1.086E+00	2.700E-01	1.804
	+	93.35		2.530E+00	8.651E-01	6.627E-01	1.542E-01	3.818
		143.76	*	3.280E-03	1.999E-01	3.167E-01	5.342E-02	0.010
		163.33		2.640E-01	4.208E-01	6.838E-01	1.230E-01	0.386
	+	185.72		1.498E-01	6.652E-02	6.283E-02	5.655E-03	2.385
		205.31		1.482E-01	4.846E-01	7.353E-01	1.357E-01	0.202
NP-237	+	86.48	*	1.065E+00	3.547E-01	3.102E-01	7.113E-02	3.433
		95.86		2.353E-01	8.990E-01	1.315E+00	3.171E-01	0.179
U-238	+	63.29	*	2.765E+00	1.621E+00	1.573E+00	2.794E-01	1.758
	+	92.59		3.349E+00	8.925E-01	8.799E-01	8.032E-02	3.806
ANH-511	+	511.00	*	1.449E-01	6.895E-02	4.255E-02	3.965E-03	3.404

---- 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	*	-3.173E-03	3.456E-01	5.604E-01	5.446E-02	-0.006
NA-22		1274.54	*	-5.415E-03	4.474E-02	7.119E-02	5.897E-03	-0.076
NA-24		1368.63	*	5.194E+02	4.474E-02	Half-Life too short		
SC-46		889.28	*	1.922E-02	3.883E-02	6.702E-02	6.681E-03	0.287
	+	1120.55		3.145E-01	9.337E-02	1.334E-01	1.141E-02	2.357
V-48		944.13		4.690E-01	1.069E+00	1.835E+00	1.791E-01	0.256
		983.53	*	-5.428E-02	8.581E-02	1.309E-01	1.252E-02	-0.415
		1312.11		3.551E-02	9.983E-02	1.675E-01	1.398E-02	0.212
CR-51		320.08	*	-2.052E-01	4.082E-01	6.557E-01	6.570E-02	-0.313
MN-54		834.85	*	5.189E-04	3.473E-02	5.769E-02	5.827E-03	0.009
CO-56		846.77	*	9.838E-03	3.830E-02	6.494E-02	6.545E-03	0.151
		1037.84		-1.854E-01	2.726E-01	4.084E-01	3.937E-02	-0.454
	+	1238.28		1.810E-01	1.479E-01	1.835E-01	1.552E-02	0.986
		1771.35		-4.326E-02	2.151E-01	2.829E-01	2.320E-02	-0.153
CO-57		122.06	*	-4.777E-04	2.353E-02	3.777E-02	3.152E-03	-0.013
		136.47		1.705E-01	1.919E-01	3.187E-01	2.882E-02	0.535
CO-58		810.76	*	-2.302E-02	3.793E-02	5.934E-02	6.026E-03	-0.388
FE-59		1099.45	*	-8.790E-03	9.231E-02	1.488E-01	1.404E-02	-0.059
		1291.59		7.523E-02	1.297E-01	2.222E-01	2.113E-02	0.339
CO-60		1173.23		-2.576E-02	4.331E-02	6.594E-02	5.302E-03	-0.391
		1332.49	*	1.680E-02	3.510E-02	5.996E-02	5.022E-03	0.280
ZN-65		1115.54	*	-6.146E-02	9.806E-02	1.248E-01	1.074E-02	-0.492
SE-75		121.12		-8.919E-02	1.278E-01	1.983E-01	2.156E-02	-0.450

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		4.092E-02	3.774E-02	6.316E-02	5.338E-03	0.648
		264.66	*	-3.944E-02	4.708E-02	6.891E-02	6.824E-03	-0.572
	+	279.54		1.889E-01	1.540E-01	1.807E-01	1.850E-02	1.046
		400.66		-1.305E-01	2.522E-01	3.983E-01	4.361E-02	-0.328
SR-85		514.00	*	1.062E-01	4.543E-02	7.628E-02	7.123E-03	1.392
Y-88		898.04		-1.313E-02	4.215E-02	6.628E-02	6.613E-03	-0.198
		1836.06	*	3.480E-02	3.214E-02	6.303E-02	5.086E-03	0.552
Y-91		1204.77	*	6.911E-01	2.269E+01	3.682E+01	2.990E+00	0.019
NB-94		702.65	*	3.120E-02	3.471E-02	6.142E-02	6.214E-03	0.508
		871.09		2.569E-02	3.069E-02	5.459E-02	5.471E-03	0.470
NB-95		765.81	*	-3.677E-02	4.411E-02	6.814E-02	6.925E-03	-0.540
NB-95M		235.69	*	3.714E-02	1.395E-01	2.093E-01	2.252E-02	0.177
ZR-95		724.19		-2.289E-02	1.008E-01	1.429E-01	1.538E-02	-0.160
		756.73	*	3.789E-02	7.166E-02	1.246E-01	1.363E-02	0.304
MO-99		140.51		-6.491E-05	7.166E-02	Half-Life	too short	
		181.07		-7.105E-05	7.166E-02	Half-Life	too short	
		366.42		-3.724E-04	7.166E-02	Half-Life	too short	
		739.50	*	-9.828E-06	7.166E-02	Half-Life	too short	
		777.92		-1.618E-04	7.166E-02	Half-Life	too short	
TC-99M		140.51	*	-4.688E+18	7.166E-02	Half-Life	too short	
RU-103		497.08	*	5.334E-03	3.858E-02	6.319E-02	9.066E-03	0.084
	+	610.33		1.445E+01	3.148E+00	3.295E+00	5.611E-01	4.385
RH-106		621.93	*	-4.471E-02	2.979E-01	4.690E-01	6.623E-02	-0.095
		1050.41		5.902E-01	2.254E+00	3.785E+00	3.455E-01	0.156
RU-106		621.93	*	-4.471E-02	2.978E-01	4.690E-01	4.642E-02	-0.095
		1050.41		5.902E-01	2.254E+00	3.785E+00	3.455E-01	0.156
AG-108M		433.94	*	-2.032E-02	2.668E-02	4.087E-02	3.684E-03	-0.497
		614.28		2.551E-03	3.571E-02	5.018E-02	5.076E-03	0.051
		722.91		-2.800E-02	3.897E-02	5.170E-02	5.366E-03	-0.542
AG-110M		657.76	*	-2.031E-02	3.478E-02	5.594E-02	5.731E-03	-0.363
		677.62		-9.049E-02	2.822E-01	4.614E-01	4.746E-02	-0.196
		706.68		-1.042E-01	2.117E-01	3.414E-01	3.529E-02	-0.305
		763.94		-1.279E-01	1.465E-01	2.250E-01	2.332E-02	-0.569
		884.68		-5.500E-02	4.780E-02	6.944E-02	7.098E-03	-0.792
		937.49		-1.895E-02	1.098E-01	1.778E-01	1.789E-02	-0.107
		1384.29		1.001E-02	1.577E-01	2.309E-01	2.001E-02	0.043
		1505.03		-1.137E-01	2.651E-01	4.153E-01	3.521E-02	-0.274
SN-113		391.69	*	5.030E-04	4.286E-02	7.036E-02	6.070E-03	0.007
CD-115		260.90		3.529E-04	4.286E-02	Half-Life	too short	
		492.35		-2.468E-04	4.286E-02	Half-Life	too short	
		527.90	*	-7.264E-05	4.286E-02	Half-Life	too short	
SN-117M		156.02		8.947E-01	3.177E+00	5.118E+00	4.400E-01	0.175
		158.56	*	-4.050E-02	7.553E-02	1.169E-01	1.009E-02	-0.347
TE-123M		159.00	*	-5.508E-03	2.816E-02	4.434E-02	3.852E-03	-0.124
SB-124		602.73		2.682E-03	4.582E-02	6.800E-02	6.677E-03	0.039
		645.85		-2.723E-01	4.762E-01	7.640E-01	7.958E-02	-0.356
		722.78		-3.171E-01	4.234E-01	5.591E-01	5.765E-02	-0.567
		1690.97	*	1.243E-02	5.906E-02	1.023E-01	8.914E-03	0.121
SB-125		427.87	*	-4.063E-02	8.039E-02	1.260E-01	1.115E-02	-0.322

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		6.378E-01	4.496E-01	5.384E-01	5.170E-02	1.185
		600.60		-3.983E-02	1.838E-01	2.892E-01	3.000E-02	-0.138
		635.95		6.377E-02	2.360E-01	4.064E-01	4.293E-02	0.157
TE-125M		109.28	*	-9.571E+00	1.006E+01	1.549E+01	1.611E+00	-0.618
I-126		388.63		4.526E-02	2.246E-01	3.734E-01	3.145E-02	0.121
		666.33	*	-2.446E-01	3.200E-01	5.072E-01	5.096E-02	-0.482
		753.82		1.825E+00	2.531E+00	4.450E+00	4.522E-01	0.410
SB-126		414.70		-2.844E-02	1.034E-01	1.657E-01	1.420E-02	-0.172
		666.50		-9.119E-02	1.114E-01	1.757E-01	1.765E-02	-0.519
		695.00		7.134E-02	1.077E-01	1.891E-01	1.911E-02	0.377
		697.00		1.521E-01	3.845E-01	6.628E-01	6.700E-02	0.229
		720.70	*	1.576E-01	2.054E-01	3.373E-01	3.420E-02	0.467
		856.80		-1.290E+00	7.207E-01	9.849E-01	9.905E-02	-1.310
SB-127		252.40		-3.846E+00	1.382E+01	2.268E+01	9.629E+00	-0.170
		473.00		-1.164E+00	5.466E+00	8.727E+00	1.317E+00	-0.133
		685.70	*	1.826E+00	4.041E+00	7.021E+00	1.027E+00	0.260
		783.70		8.614E+00	1.202E+01	2.101E+01	3.245E+00	0.410
I-131		80.19		2.635E+00	9.632E+00	1.128E+01	9.807E-01	0.234
		284.31		8.375E-01	2.456E+00	4.167E+00	4.320E-01	0.201
		364.49	*	1.785E-04	1.919E-01	3.159E-01	2.981E-02	0.001
		636.99		-7.769E-02	2.450E+00	4.120E+00	4.300E-01	-0.019
TE-132		49.72		-1.828E+01	4.880E+01	7.933E+01	1.008E+01	-0.230
		111.76		3.158E+01	1.455E+02	2.330E+02	3.049E+01	0.136
		116.30		6.344E+01	1.239E+02	2.034E+02	2.654E+01	0.312
		228.16	*	-2.825E-01	2.927E+00	4.905E+00	8.772E-01	-0.058
BA-133		81.00		8.217E-03	1.084E-01	1.251E-01	1.944E-02	0.066
		276.40		3.467E-01	4.811E-01	6.321E-01	9.453E-02	0.548
		302.85		5.747E-02	1.347E-01	2.034E-01	2.820E-02	0.283
		356.01	*	2.074E-02	4.043E-02	6.115E-02	8.112E-03	0.339
		383.85		-1.144E-01	2.671E-01	4.252E-01	5.257E-02	-0.269
I-133		529.87	*	-3.745E-01	2.671E-01	Half-Life	too short	
		875.33		-2.446E+01	2.671E-01	Half-Life	too short	
		1298.22		-7.539E+01	2.671E-01	Half-Life	too short	
CS-134		563.25		-4.445E-02	3.415E-01	5.426E-01	5.264E-02	-0.082
		569.33		1.170E-01	1.820E-01	3.074E-01	3.002E-02	0.381
		604.72		1.458E-02	3.701E-02	5.383E-02	5.300E-03	0.271
		795.86	*	8.537E-02	4.710E-02	8.733E-02	8.910E-03	0.978
		801.95		-1.564E-01	3.611E-01	5.684E-01	5.790E-02	-0.275
		1365.19		-1.069E+00	1.030E+00	1.458E+00	1.286E-01	-0.733
CS-135		268.22	*	8.549E-02	1.676E-01	2.547E-01	2.822E-02	0.336
I-135		546.56		-2.753E+17	1.676E-01	Half-Life	too short	
		836.80		-8.257E+17	1.676E-01	Half-Life	too short	
		1038.76		-2.258E+17	1.676E-01	Half-Life	too short	
		1131.51		-1.336E+17	1.676E-01	Half-Life	too short	
		1260.41	*	-2.762E+17	1.676E-01	Half-Life	too short	
		1457.56		2.220E+18	1.676E-01	Half-Life	too short	
		1678.03		5.157E+17	1.676E-01	Half-Life	too short	
		1791.20		2.911E+17	1.676E-01	Half-Life	too short	
CS-136		153.25		1.035E+00	1.200E+00	1.977E+00	2.022E-01	0.523

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		-6.818E-01	7.146E-01	1.072E+00	1.045E-01	-0.636
		273.65		7.978E-02	1.055E+00	1.135E+00	1.200E-01	0.070
		340.55		4.892E-01	2.460E-01	3.981E-01	3.840E-02	1.229
		818.51		2.378E-03	9.870E-02	1.643E-01	1.666E-02	0.014
		1048.07	*	-4.019E-02	1.334E-01	2.105E-01	1.999E-02	-0.191
		1235.36		-3.096E-01	9.259E-01	1.232E+00	1.412E-01	-0.251
BA-137M		661.66	*	6.732E-03	3.585E-02	6.108E-02	6.130E-03	0.110
CS-137		661.66	*	7.111E-03	3.787E-02	6.453E-02	6.485E-03	0.110
CE-139		165.86	*	8.031E-03	2.959E-02	4.756E-02	4.152E-03	0.169
BA-140		162.66		5.635E-01	1.140E+00	1.851E+00	1.714E-01	0.304
		304.85		-7.082E-01	1.957E+00	2.756E+00	8.165E-01	-0.257
		423.72		2.693E+00	2.802E+00	4.639E+00	1.526E+00	0.580
		537.26	*	-8.249E-02	3.676E-01	5.795E-01	1.979E-01	-0.142
LA-140	+	328.76		8.720E-01	5.423E-01	7.004E-01	6.970E-02	1.245
		487.02		1.749E-01	1.913E-01	3.301E-01	3.188E-02	0.530
		815.77		-1.520E-02	4.311E-01	7.140E-01	7.856E-02	-0.021
		1596.21	*	5.787E-02	1.123E-01	2.002E-01	1.690E-02	0.289
CE-141		145.44	*	-2.024E-02	6.964E-02	1.096E-01	9.465E-03	-0.185
CE-143		57.36		-7.227E-03	6.964E-02	Half-Life	too short	
		293.27	*	1.573E-02	6.964E-02	Half-Life	too short	
		664.57		5.033E-02	6.964E-02	Half-Life	too short	
		721.93		1.522E-02	6.964E-02	Half-Life	too short	
CE-144		80.12		7.479E-01	2.895E+00	3.388E+00	2.902E-01	0.221
		133.52	*	-1.831E-01	1.902E-01	2.876E-01	4.356E-02	-0.637
PM-144		476.78		4.892E-02	6.114E-02	1.048E-01	1.027E-02	0.467
		618.01		8.748E-03	3.040E-02	4.979E-02	5.027E-03	0.176
		696.49	*	1.733E-02	3.367E-02	5.848E-02	5.914E-03	0.296
PR-144		696.51	*	1.273E+00	2.527E+00	4.386E+00	4.433E-01	0.290
		1489.16		5.970E+00	1.027E+01	1.870E+01	1.585E+00	0.319
PM-146		453.88	*	-2.697E-03	4.043E-02	6.547E-02	7.086E-03	-0.041
		633.25		4.523E-01	1.344E+00	2.191E+00	8.439E-01	0.206
		735.93		-3.513E-02	1.439E-01	2.213E-01	6.316E-02	-0.159
		747.24		-2.955E-02	9.181E-02	1.491E-01	2.318E-02	-0.198
ND-147	+	91.11		9.864E-01	3.541E-01	7.139E-01	7.067E-02	1.382
		319.41		-1.142E+00	4.855E+00	7.935E+00	7.636E-01	-0.144
		531.02	*	-5.502E-01	8.009E-01	1.206E+00	1.862E-01	-0.456
PM-149		285.90	*	2.604E-04	8.009E-01	Half-Life	too short	
EU-152		121.78		-1.320E-02	6.728E-02	1.071E-01	1.035E-02	-0.123
		244.70		2.015E-01	3.184E-01	4.904E-01	4.758E-02	0.411
		344.28	*	-8.225E-03	9.505E-02	1.508E-01	1.471E-02	-0.055
		778.90		-1.973E-01	2.405E-01	3.703E-01	3.762E-02	-0.533
	+	964.08		7.819E-01	2.885E-01	5.188E-01	5.012E-02	1.507
		1085.87		2.620E-01	3.902E-01	6.749E-01	5.975E-02	0.388
		1112.07		-1.027E-01	2.967E-01	4.517E-01	3.898E-02	-0.227
		1408.01		3.647E-01	1.999E-01	3.885E-01	3.282E-02	0.939
GD-153		69.67		3.848E-01	1.605E+00	2.374E+00	1.816E-01	0.162
		97.43	*	-6.030E-02	8.811E-02	1.223E-01	1.084E-02	-0.493
		103.18		-1.277E-01	9.948E-02	1.505E-01	1.302E-02	-0.848
EU-154		123.07		2.137E-02	4.755E-02	7.784E-02	8.670E-03	0.275

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	723.31		-9.019E-02	1.737E-01	2.366E-01	2.578E-02	-0.381
		873.19		6.682E-02	2.451E-01	4.162E-01	5.386E-02	0.161
		996.26		-1.218E-01	3.290E-01	5.178E-01	9.275E-02	-0.235
		1004.73		-1.278E-01	2.198E-01	3.401E-01	4.167E-02	-0.376
		1274.44	*	-3.036E-02	1.275E-01	2.004E-01	2.228E-02	-0.152
		86.55		4.340E-01	1.124E-01	1.703E-01	1.595E-02	2.548
		105.31	*	7.485E-02	9.596E-02	1.582E-01	1.375E-02	0.473
		86.79		1.228E+00	3.177E-01	4.827E-01	4.495E-02	2.543
		197.04		6.478E-02	5.616E-01	9.438E-01	8.639E-02	0.069
		215.65		2.331E-01	7.776E-01	1.287E+00	1.208E-01	0.181
TB-160	+	298.57		1.732E-01	1.121E-01	1.987E-01	1.953E-02	0.872
		879.36	*	9.186E-02	1.367E-01	2.326E-01	2.326E-02	0.395
		962.29		-1.320E-01	5.359E-01	7.353E-01	7.110E-02	-0.180
		966.15		5.835E-01	2.153E-01	4.056E-01	3.914E-02	1.439
		1177.93		4.048E-01	3.773E-01	6.691E-01	5.388E-02	0.605
		1271.85		5.085E-01	6.835E-01	1.193E+00	9.862E-02	0.426
		80.57		8.480E-02	3.081E-01	3.609E-01	3.108E-02	0.235
		184.41		4.635E-02	3.763E-02	6.154E-02	5.527E-03	0.753
		280.46		4.240E-02	8.271E-02	1.260E-01	1.254E-02	0.336
		410.95		2.646E-02	2.308E-01	3.804E-01	3.247E-02	0.070
HO-166M	+	711.68	*	6.173E-03	5.536E-02	9.357E-02	9.478E-03	0.066
		752.31		5.007E-02	2.620E-01	4.440E-01	4.512E-02	0.113
		810.29		-1.640E-02	5.208E-02	8.394E-02	8.509E-03	-0.195
		67.75		-7.742E-02	1.082E-01	1.532E-01	1.152E-02	-0.505
		100.11		4.938E-02	1.603E-01	2.627E-01	2.300E-02	0.188
		152.43		1.236E-01	3.470E-01	5.614E-01	4.802E-02	0.220
		222.11		1.263E-01	3.355E-01	5.744E-01	5.437E-02	0.220
		1121.30		8.578E-01	2.547E-01	3.657E-01	3.125E-02	2.346
		1189.05		2.913E-01	3.031E-01	5.342E-01	4.317E-02	0.545
		1221.41	*	9.425E-02	1.979E-01	3.336E-01	2.722E-02	0.283
TA-182	+	1231.02		2.612E-01	5.000E-01	8.021E-01	6.562E-02	0.326
		295.96		1.231E+00	1.985E-01	3.149E-01	3.119E-02	3.908
		308.46		-2.286E-02	9.529E-02	1.560E-01	1.525E-02	-0.147
		316.51	*	2.937E-02	3.524E-02	6.093E-02	5.893E-03	0.482
		468.07		3.466E-03	7.773E-02	1.109E-01	1.067E-02	0.031
		72.81		2.836E-01	1.559E-01	2.665E-01	2.103E-02	1.064
		74.97		7.699E-01	1.481E-01	2.043E-01	1.650E-02	3.769
		569.70		2.061E-02	2.790E-02	4.748E-02	4.587E-03	0.434
		1063.66	*	-6.757E-03	5.067E-02	8.161E-02	7.369E-03	-0.083
		1770.23		2.265E-02	4.171E-01	6.002E-01	4.924E-02	0.038
IR-192	+	46.54	*	1.381E+00	1.914E+00	3.228E+00	2.966E-01	0.428
		404.85	*	-3.015E-01	7.140E-01	1.113E+00	5.382E-01	-0.271
		427.09		-5.627E-01	1.378E+00	2.139E+00	9.899E-01	-0.263
		832.01		2.840E-01	9.777E-01	1.642E+00	8.561E-01	0.173
		727.33	*	2.034E+00	8.850E-01	1.128E+00	1.530E-01	1.803
		785.37		2.153E+00	3.033E+00	5.317E+00	5.400E-01	0.405
		1620.50		6.724E-01	2.193E+00	3.801E+00	3.201E-01	0.177
		271.23		6.209E-01	3.683E-01	4.278E-01	4.860E-02	1.451
		401.81	*	2.795E-01	3.813E-01	6.508E-01	9.615E-02	0.429
BI-207	+							
PB-210	+							
PB-211	+							
BI-212	+							
RN-219	+							

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		1.313E-02	2.451E-01	2.824E-01	2.447E-02	0.047
		83.79		1.186E-01	1.204E-01	1.826E-01	1.637E-02	0.649
		94.87		1.161E+00	4.661E-01	7.364E-01	6.625E-02	1.577
		144.24		-3.170E-02	6.694E-01	1.057E+00	1.003E-01	-0.030
		154.21		6.413E-01	3.817E-01	6.450E-01	6.065E-02	0.994
	+	269.46		4.824E-01	2.850E-01	3.308E-01	3.323E-02	1.458
		323.87	*	3.209E-01	6.233E-01	9.434E-01	1.681E-01	0.340
	+	338.28		5.909E+00	1.582E+00	2.230E+00	2.814E-01	2.650
	AC-227	79.69		2.095E-01	1.257E+00	1.684E+00	2.894E-01	0.124
		235.96		1.467E-01	1.589E-01	2.460E-01	2.752E-02	0.596
		256.23	*	1.587E-01	2.364E-01	4.072E-01	5.262E-02	0.390
		299.98		2.286E+00	1.222E+00	1.531E+00	2.074E-01	1.493
TH-227		304.50		-5.840E-02	1.605E+00	2.337E+00	4.010E-01	-0.025
		334.37		2.153E-01	1.831E+00	2.506E+00	4.021E-01	0.086
		79.80		4.540E-01	1.873E+00	2.187E+00	4.756E-01	0.208
		235.96		1.467E-01	1.588E-01	2.460E-01	2.620E-02	0.596
		256.23	*	1.587E-01	2.366E-01	4.072E-01	5.857E-02	0.390
	+	299.98		2.286E+00	1.222E+00	1.531E+00	2.074E-01	1.493
TH-229		304.50		-5.840E-02	1.605E+00	2.337E+00	4.010E-01	-0.025
		334.37		2.153E-01	1.831E+00	2.506E+00	4.021E-01	0.086
		85.43		4.687E-01	1.888E-01	3.222E-01	2.948E-02	1.454
	+	88.47		5.502E-01	1.424E-01	2.133E-01	2.009E-02	2.580
PA-231		193.51	*	-2.201E-01	4.861E-01	8.078E-01	7.356E-02	-0.273
	+	210.85		2.237E+00	1.230E+00	1.595E+00	1.488E-01	1.402
		283.69	*	6.710E-01	1.343E+00	2.223E+00	3.423E-01	0.302
TH-231	+	301.36		1.469E+00	7.830E-01	9.688E-01	1.261E-01	1.516
		81.07		1.313E-02	2.451E-01	2.824E-01	2.447E-02	0.047
PA-233		83.79		1.186E-01	1.204E-01	1.826E-01	1.637E-02	0.649
		94.87		1.161E+00	4.661E-01	7.364E-01	6.625E-02	1.577
		144.24		-3.170E-02	6.694E-01	1.057E+00	1.003E-01	-0.030
		154.21		6.413E-01	3.817E-01	6.450E-01	6.065E-02	0.994
	+	269.46		4.824E-01	2.850E-01	3.308E-01	3.323E-02	1.458
		323.87	*	3.209E-01	6.233E-01	9.434E-01	1.681E-01	0.340
	+	338.28		5.909E+00	1.582E+00	2.230E+00	2.814E-01	2.650
	+	300.13		1.034E+00	5.585E-01	6.913E-01	1.075E-01	1.496
		311.90	*	-1.319E-02	6.169E-02	1.011E-01	1.004E-02	-0.130
		340.48		1.668E+00	8.292E-01	1.209E+00	2.941E-01	1.380
PA-234		94.67		4.308E-01	1.689E-01	2.822E-01	3.577E-02	1.526
		98.44		3.437E-02	9.151E-02	1.320E-01	7.367E-02	0.260
		111.00		4.298E-02	1.711E-01	2.788E-01	3.338E-02	0.154
		131.20		-4.504E-03	1.001E-01	1.600E-01	1.337E-02	-0.028
		569.50		1.703E-01	2.500E-01	4.235E-01	4.091E-02	0.402
		733.00		-8.279E-03	3.735E-01	5.419E-01	1.237E-01	-0.015
		880.51		2.332E-01	2.663E-01	4.605E-01	4.603E-02	0.506
		883.24		-3.904E-02	2.639E-01	4.278E-01	2.884E-01	-0.091
		926.50		-2.026E-02	1.518E-01	2.466E-01	6.341E-02	-0.082
		946.00	*	-2.382E-02	2.894E-01	4.725E-01	9.123E-02	-0.050
PA-234M		949.00		-1.902E-02	4.360E-01	7.145E-01	6.955E-02	-0.027
		766.42		-2.478E+00	1.107E+01	1.795E+01	9.157E+00	-0.138

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		5.758E-01	4.752E+00	7.898E+00	8.448E-01	0.073
	99.53			4.616E-02	1.449E-01	2.376E-01	2.086E-02	0.194
	103.37			-1.050E-01	8.897E-02	1.355E-01	1.171E-02	-0.775
	106.12			8.104E-02	7.743E-02	1.287E-01	1.103E-02	0.630
	117.23	*		1.313E-01	3.742E-01	6.111E-01	5.118E-02	0.215
AM-241	228.18			-2.694E-02	1.912E-01	3.197E-01	3.048E-02	-0.084
	277.60	+		2.876E-01	2.344E-01	3.071E-01	3.055E-02	0.937
	59.54	*		7.869E-02	1.150E-01	1.750E-01	1.369E-02	0.450
CM-247	278.00	+		1.222E+00	9.956E-01	1.284E+00	1.278E-01	0.951
	287.50			1.670E-02	1.161E+00	1.871E+00	1.854E-01	0.009
CF-249	402.40	*		1.179E-02	3.528E-02	5.902E-02	4.990E-03	0.200
	252.80			-2.578E-01	8.776E-01	1.448E+00	1.416E-01	-0.178
	333.37			2.260E-01	2.299E-01	2.772E-01	2.617E-02	0.815
CF-251	388.16	*		2.287E-02	3.827E-02	6.510E-02	5.490E-03	0.351
	177.52	*		4.610E-02	1.261E-01	2.029E-01	1.803E-02	0.227
	227.38			-9.734E-02	3.147E-01	5.220E-01	4.972E-02	-0.186
	285.41			3.045E-01	1.981E+00	3.328E+00	3.302E-01	0.092

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030008      *
* Acquisition date   : 13-MAR-2010 14:33:38 Detector SN#                   *
* Detector ID        : GAM20 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:33.68 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID           : G248030008 Analyst initials: MXR1                 *
* Batch Number        : 958221 Sample Quantity : 1.2680E+02 GRAM          *
* Recovery             : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                                *
*
* Standard Weight     : 0.00000                                           *
* CALIB. DATE/TIME    : 26-AUG-2009 06:32:11 MS Isotope                   *
* MSD DPM              : 0.000 MSD Isotope                               *
* LCS DPM              : 0.000 LCS Isotope                               *
* LCSD DPM             : 0.000 LCSD Isotope                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.725E+01	2.822E+00	5.086E-01	0.000E+00
CD-109	3.690E+00	9.357E-01	1.109E+00	0.000E+00
SN-126	3.569E-01	9.051E-02	1.075E-01	0.000E+00
HG-203	7.080E-02	5.656E-02	6.469E-02	0.000E+00
TL-208	4.861E-01	8.654E-02	5.894E-02	0.000E+00
BI-211	4.142E+00	6.122E-01	3.001E-01	0.000E+00
PB-212	1.698E+00	2.076E-01	8.686E-02	0.000E+00
BI-214	1.238E+00	2.134E-01	1.047E-01	0.000E+00
PB-214	1.503E+00	2.366E-01	1.091E-01	0.000E+00
RA-224	4.978E+00	1.453E+00	9.306E-01	0.000E+00
RA-226	1.238E+00	2.134E-01	1.047E-01	0.000E+00
AC-228	1.880E+00	3.720E-01	2.221E-01	0.000E+00
RA-228	1.880E+00	3.720E-01	2.221E-01	0.000E+00
TH-228	1.698E+00	2.076E-01	8.686E-02	0.000E+00
TH-232	1.880E+00	3.720E-01	2.221E-01	0.000E+00
TH-234	2.765E+00	1.589E+00	1.646E+00	0.000E+00
U-235	3.280E-03	1.959E-01	3.276E-01	0.000E+00
NP-237	1.065E+00	3.476E-01	3.232E-01	0.000E+00
U-238	2.765E+00	1.589E+00	1.646E+00	0.000E+00
ANH-511	1.449E-01	6.758E-02	4.322E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.173E-03	3.387E-01	5.697E-01	0.000E+00 NOT IDENT.
NA-22	-5.415E-03	4.385E-02	7.131E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.347E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.922E-02	3.805E-02	6.750E-02	0.000E+00 FAIL ABUN
V-48	-5.428E-02	8.410E-02	1.317E-01	0.000E+00 NOT IDENT.
CR-51	-2.052E-01	4.001E-01	6.705E-01	0.000E+00 NOT IDENT.
MN-54	5.189E-04	3.403E-02	5.816E-02	0.000E+00 NOT IDENT.

CO-56	9.838E-03	3.753E-02	6.546E-02	0.000E+00	FAIL ABUN
CO-57	-4.777E-04	2.306E-02	3.916E-02	0.000E+00	NOT IDENT.
CO-58	-2.302E-02	3.717E-02	5.985E-02	0.000E+00	NOT IDENT.
FE-59	-8.790E-03	9.047E-02	1.494E-01	0.000E+00	NOT IDENT.
CO-60	1.680E-02	3.440E-02	6.002E-02	0.000E+00	NOT IDENT.
ZN-65	-6.146E-02	9.610E-02	1.253E-01	0.000E+00	NOT IDENT.
SE-75	-3.944E-02	4.614E-02	7.066E-02	0.000E+00	FAIL ABUN
SR-85	0.000E+00	4.452E-02	7.746E-02	0.000E+00	NOT IDENT.
Y-88	3.480E-02	3.149E-02	6.279E-02	0.000E+00	NOT IDENT.
Y-91	6.911E-01	2.223E+01	3.692E+01	0.000E+00	NOT IDENT.
NB-94	3.120E-02	3.401E-02	6.208E-02	0.000E+00	NOT IDENT.
NB-95	-3.677E-02	4.323E-02	6.879E-02	0.000E+00	NOT IDENT.
NB-95M	3.714E-02	1.367E-01	2.150E-01	0.000E+00	NOT IDENT.
ZR-95	3.789E-02	7.022E-02	1.258E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	6.797E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.075E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.334E-03	3.781E-02	6.420E-02	0.000E+00	FAIL ABUN
RH-106	-4.471E-02	2.919E-01	4.749E-01	0.000E+00	NOT IDENT.
RU-106	-4.471E-02	2.919E-01	4.749E-01	0.000E+00	NOT IDENT.
AG-108M	-2.032E-02	2.615E-02	4.161E-02	0.000E+00	NOT IDENT.
AG-110M	-2.031E-02	3.408E-02	5.660E-02	0.000E+00	NOT IDENT.
SN-113	5.030E-04	4.200E-02	7.174E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	9.069E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-4.050E-02	7.402E-02	1.207E-01	0.000E+00	NOT IDENT.
TE-123M	-5.508E-03	2.760E-02	4.580E-02	0.000E+00	NOT IDENT.
SB-124	1.243E-02	5.788E-02	1.021E-01	0.000E+00	NOT IDENT.
SB-125	-4.063E-02	7.879E-02	1.283E-01	0.000E+00	FAIL ABUN
TE-125M	-9.571E+00	9.858E+00	1.609E+01	0.000E+00	NOT IDENT.
I-126	-2.446E-01	3.136E-01	5.131E-01	0.000E+00	NOT IDENT.
SB-126	1.576E-01	2.013E-01	3.408E-01	0.000E+00	NOT IDENT.
SB-127	1.826E+00	3.960E+00	7.099E+00	0.000E+00	NOT IDENT.
I-131	1.785E-04	1.880E-01	3.225E-01	0.000E+00	NOT IDENT.
TE-132	-2.825E-01	2.869E+00	5.040E+00	0.000E+00	NOT IDENT.
BA-133	2.074E-02	3.962E-02	6.243E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.440E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.537E-02	4.616E-02	8.810E-02	0.000E+00	NOT IDENT.
CS-135	8.549E-02	1.643E-01	2.611E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.001E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.019E-02	1.307E-01	2.115E-01	0.000E+00	NOT IDENT.
BA-137M	6.732E-03	3.513E-02	6.180E-02	0.000E+00	NOT IDENT.
CS-137	7.111E-03	3.712E-02	6.528E-02	0.000E+00	NOT IDENT.
CE-139	8.031E-03	2.900E-02	4.910E-02	0.000E+00	NOT IDENT.
BA-140	-8.249E-02	3.603E-01	5.881E-01	0.000E+00	NOT IDENT.
LA-140	5.787E-02	1.101E-01	1.999E-01	0.000E+00	FAIL ABUN
CE-141	-2.024E-02	6.824E-02	1.134E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.783E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.831E-01	1.864E-01	2.978E-01	0.000E+00	NOT IDENT.
PM-144	1.733E-02	3.300E-02	5.912E-02	0.000E+00	NOT IDENT.
PR-144	1.273E+00	2.476E+00	4.434E+00	0.000E+00	NOT IDENT.
PM-146	-2.697E-03	3.962E-02	6.661E-02	0.000E+00	NOT IDENT.
ND-147	-5.502E-01	7.848E-01	1.224E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	7.464E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-8.225E-03	9.314E-02	1.540E-01	0.000E+00	FAIL ABUN
GD-153	-6.030E-02	8.635E-02	1.272E-01	0.000E+00	NOT IDENT.
EU-154	-3.036E-02	1.250E-01	2.007E-01	0.000E+00	NOT IDENT.
EU-155	7.485E-02	9.404E-02	1.644E-01	0.000E+00	FAIL ABUN
TB-160	9.186E-02	1.339E-01	2.344E-01	0.000E+00	FAIL ABUN
HO-166M	6.173E-03	5.425E-02	9.456E-02	0.000E+00	NOT IDENT.
TA-182	9.425E-02	1.939E-01	3.344E-01	0.000E+00	FAIL ABUN
IR-192	2.937E-02	3.453E-02	6.232E-02	0.000E+00	FAIL ABUN
BI-207	-6.757E-03	4.965E-02	8.198E-02	0.000E+00	FAIL ABUN
PB-210	1.381E+00	1.876E+00	3.392E+00	0.000E+00	NOT IDENT.
PB-211	-3.015E-01	6.997E-01	1.134E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.673E-01	1.140E+00	0.000E+00	FAIL ABUN
RN-219	2.795E-01	3.737E-01	6.633E-01	0.000E+00	FAIL ABUN
RA-223	3.209E-01	6.108E-01	9.645E-01	0.000E+00	FAIL ABUN
AC-227	1.587E-01	2.316E-01	4.177E-01	0.000E+00	FAIL ABUN
TH-227	1.587E-01	2.318E-01	4.177E-01	0.000E+00	FAIL ABUN
TH-229	-2.201E-01	4.763E-01	8.320E-01	0.000E+00	FAIL ABUN
PA-231	6.710E-01	1.316E+00	2.277E+00	0.000E+00	FAIL ABUN
TH-231	3.209E-01	6.108E-01	9.645E-01	0.000E+00	FAIL ABUN
PA-233	-1.319E-02	6.046E-02	1.034E-01	0.000E+00	FAIL ABUN
PA-234	-2.382E-02	2.836E-01	4.754E-01	0.000E+00	NOT IDENT.
PA-234M	5.758E-01	4.657E+00	7.941E+00	0.000E+00	NOT IDENT.
NP-239	1.313E-01	3.667E-01	6.339E-01	0.000E+00	FAIL ABUN
AM-241	7.869E-02	1.127E-01	1.832E-01	0.000E+00	NOT IDENT.
CM-247	1.179E-02	3.457E-02	6.015E-02	0.000E+00	FAIL ABUN
CF-249	2.287E-02	3.751E-02	6.638E-02	0.000E+00	NOT IDENT.

CF-251	4.610E-02	1.235E-01	2.093E-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]G248030008.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:33:38
Sample ID          : G248030008 Sample quantity : 1.26800E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:33.68 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958221 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	1229	10.66*	1.252E+00	2.725E+01	2.725E+01	10.57
CD-109	88.03	310	3.70*	6.944E+00	3.569E+00	3.690E+00	25.88
SN-126	64.28	159	9.60	4.606E+00	1.066E+00	1.066E+00	57.72
	86.94	310	8.90	6.944E+00	1.484E+00	1.484E+00	48.02
	87.57	310	37.00*	6.944E+00	3.569E-01	3.569E-01	25.88
HG-203	70.83	-----	3.69	5.621E+00	-----	Line Not Found	-----
	72.87	-----	6.19	5.845E+00	-----	Line Not Found	-----
	279.20	66	81.56*	4.711E+00	5.092E-02	7.080E-02	81.53
TL-208	277.37	66	6.60	4.711E+00	6.293E-01	6.293E-01	82.01
	583.19	376	85.00*	2.694E+00	4.861E-01	4.861E-01	18.17
	860.56	-----	12.50	1.954E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.845E+00	-----	Line Not Found	-----
	351.06	717	12.92*	3.967E+00	4.142E+00	4.142E+00	15.08
PB-212	74.82	561	10.28	6.055E+00	2.670E+00	2.670E+00	21.56
	77.11	688	17.10	6.267E+00	1.900E+00	1.900E+00	14.95
	238.63	1312	43.60*	5.247E+00	1.698E+00	1.698E+00	12.47
	300.09	103	3.30	4.459E+00	2.078E+00	2.078E+00	52.97
BI-214	609.32	495	45.49*	2.601E+00	1.238E+00	1.238E+00	17.59
	1120.29	138	14.92	1.556E+00	1.755E+00	1.755E+00	30.44
	1764.49	118	15.30	1.100E+00	2.085E+00	2.085E+00	20.86
PB-214	74.82	561	5.80	6.055E+00	4.733E+00	4.733E+00	20.81
	77.11	688	9.70	6.267E+00	3.349E+00	3.349E+00	17.08
	242.00	359	7.25	5.203E+00	2.815E+00	2.815E+00	30.34
	295.22	438	18.42	4.512E+00	1.558E+00	1.559E+00	17.36
	351.93	717	35.60*	3.967E+00	1.503E+00	1.503E+00	16.06
RA-224	240.99	359	4.10*	5.203E+00	4.978E+00	4.978E+00	29.79
RA-226	609.32	495	45.49*	2.601E+00	1.238E+00	1.238E+00	17.59
	1120.29	138	14.92	1.556E+00	1.755E+00	1.755E+00	30.44
	1764.49	118	15.30	1.100E+00	2.085E+00	2.085E+00	20.86
AC-228	338.32	232	11.27	4.085E+00	1.489E+00	1.489E+00	48.08
	911.20	305	25.80*	1.859E+00	1.880E+00	1.880E+00	20.19
	968.97	175	15.80	1.763E+00	1.863E+00	1.863E+00	30.64

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	232	11.27	4.085E+00	1.489E+00	1.489E+00	48.08
	911.20	305	25.80*	1.859E+00	1.880E+00	1.880E+00	20.19
	968.97	175	15.80	1.763E+00	1.863E+00	1.863E+00	30.64
TH-228	74.82	561	10.28	6.055E+00	2.670E+00	2.670E+00	19.28
	77.11	688	17.10	6.267E+00	1.900E+00	1.900E+00	14.95
	238.63	1312	43.60*	5.247E+00	1.698E+00	1.698E+00	12.47
TH-232	300.09	103	3.30	4.459E+00	2.078E+00	2.078E+00	80.27
	338.32	232	11.27	4.085E+00	1.489E+00	1.489E+00	25.41
	911.20	305	25.80*	1.859E+00	1.880E+00	1.880E+00	20.19
TH-234	968.97	175	15.80	1.763E+00	1.863E+00	1.863E+00	30.64
	63.29	159	3.70*	4.606E+00	2.765E+00	2.765E+00	58.64
	92.59	343	4.23	7.173E+00	3.349E+00	3.349E+00	33.52
U-235	89.96	162	3.47	7.067E+00	1.959E+00	1.959E+00	42.52
	93.35	343	5.60	7.173E+00	2.530E+00	2.530E+00	34.19
	143.76	-----	10.96*	7.037E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.638E+00	-----	Line Not Found	-----
	185.72	179	57.20	6.173E+00	1.498E-01	1.498E-01	44.39
	205.31	-----	5.01	5.804E+00	-----	Line Not Found	-----
NP-237	86.48	310	12.40*	6.944E+00	1.065E+00	1.065E+00	33.31
	95.86	-----	2.68	7.260E+00	-----	Line Not Found	-----
U-238	63.29	159	3.70*	4.606E+00	2.765E+00	2.765E+00	58.64
	92.59	343	4.23	7.173E+00	3.349E+00	3.349E+00	26.65
ANH-511	511.00	146	100.00*	2.991E+00	1.449E-01	1.449E-01	47.60

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 3
Number of lines tentatively identified by NID 29 90.63%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.725E+01	2.725E+01	0.288E+01	10.57	
CD-109	461.40D	1.03	3.569E+00	3.690E+00	0.955E+00	25.88	
SN-126	2.30E+05Y	1.00	3.569E-01	3.569E-01	0.924E-01	25.88	
HG-203	46.59D	1.39	5.092E-02	7.080E-02	5.772E-02	81.53	
TL-208	1.41E+10Y	1.00	4.861E-01	4.861E-01	0.883E-01	18.17	
BI-211	7.04E+08Y	1.00	4.142E+00	4.142E+00	0.625E+00	15.08	
PB-212	1.41E+10Y	1.00	1.698E+00	1.698E+00	0.212E+00	12.47	
BI-214	1600.00Y	1.00	1.238E+00	1.238E+00	0.218E+00	17.59	
PB-214	1600.00Y	1.00	1.503E+00	1.503E+00	0.241E+00	16.06	
RA-224	1.41E+10Y	1.00	4.978E+00	4.978E+00	1.483E+00	29.79	
RA-226	1600.00Y	1.00	1.238E+00	1.238E+00	0.218E+00	17.59	
AC-228	1.41E+10Y	1.00	1.880E+00	1.880E+00	0.380E+00	20.19	
RA-228	1.41E+10Y	1.00	1.880E+00	1.880E+00	0.380E+00	20.19	
TH-228	1.41E+10Y	1.00	1.698E+00	1.698E+00	0.212E+00	12.47	
TH-232	1.41E+10Y	1.00	1.880E+00	1.880E+00	0.380E+00	20.19	
TH-234	4.47E+09Y	1.00	2.765E+00	2.765E+00	1.621E+00	58.64	
U-235	7.04E+08Y	1.00	1.498E-01	1.498E-01	0.665E-01	44.39	K
NP-237	2.14E+06Y	1.00	1.065E+00	1.065E+00	0.355E+00	33.31	
U-238	4.47E+09Y	1.00	2.765E+00	2.765E+00	1.621E+00	58.64	
ANH-511	1.00E+09Y	1.00	1.449E-01	1.449E-01	0.690E-01	47.60	

Total Activity : 6.074E+01 6.088E+01

Grand Total Activity : 6.074E+01 6.088E+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	209.58	121	294	1.00	418.73	415	9	1.68E-02	54.2	5.73E+00	T
0	270.58	109	237	2.16	540.57	535	11	1.51E-02	58.2	4.81E+00	T
0	327.90	75	130	0.74	655.08	651	10	1.04E-02	61.4	4.18E+00	T
0	463.62	72	142	0.82	926.27	921	12	1.00E-02	69.8	3.23E+00	T
0	728.03	103	72	1.45	1454.78	1448	15	1.43E-02	41.3	2.25E+00	T
3	965.45	68	19	2.23	1929.59	1924	25	9.48E-03	35.6	1.77E+00	T
0	1239.25	48	78	1.60	2477.39	2470	13	6.66E-03	81.3	1.43E+00	T
0	1378.97	45	20	2.06	2757.04	2748	16	6.28E-03	54.0	1.31E+00	
0	1731.53	32	10	1.34	3463.05	3455	13	4.44E-03	53.7	1.11E+00	
0	1848.14	31	7	2.53	3696.66	3689	15	4.33E-03	52.2	1.07E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030008.CNF;1  *
* Acquisition date   : 13-MAR-2010 14:33:38  Detector SN#      :             *
* Detector ID        : GAM20                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:33.68             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 19-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G248030008             Analyst initials: MXR1          *
* Batch Number       : 958221                 Sample Quantity : 1.26800E+02 GRAM *
*****
*                                     QC DATA                                *
*                                     *                                       *
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11.7MS Isotope        :             *
* MSD ID              :                      MSD Isotope        :             *
* LCS ID              : 1032-A                LCS Isotope       :             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.725E+01	2.880E+00	5.088E-01	4.437E-02	53.565
CD-109	3.690E+00	9.548E-01	1.064E+00	1.006E-01	3.467
SN-126	3.569E-01	9.235E-02	1.032E-01	9.710E-03	3.457
HG-203	7.080E-02	5.772E-02	6.313E-02	6.407E-03	1.121
TL-208	4.861E-01	8.831E-02	5.815E-02	5.973E-03	8.359
BI-211	4.142E+00	6.246E-01	2.939E-01	2.816E-02	14.093
PB-212	1.698E+00	2.118E-01	8.458E-02	9.032E-03	20.074
BI-214	1.238E+00	2.177E-01	1.034E-01	1.155E-02	11.970
PB-214	1.503E+00	2.414E-01	1.069E-01	1.180E-02	14.064
RA-224	4.978E+00	1.483E+00	9.064E-01	8.761E-02	5.492
RA-226	1.238E+00	2.177E-01	1.034E-01	1.155E-02	11.970
AC-228	1.880E+00	3.796E-01	2.206E-01	2.773E-02	8.520
RA-228	1.880E+00	3.796E-01	2.206E-01	2.773E-02	8.520
TH-228	1.698E+00	2.118E-01	8.458E-02	9.032E-03	20.074
TH-232	1.880E+00	3.796E-01	2.206E-01	2.773E-02	8.520
TH-234	2.765E+00	1.621E+00	1.573E+00	2.794E-01	1.758
U-235	1.498E-01	6.652E-02	3.167E-01	5.342E-02	0.473
NP-237	1.065E+00	3.547E-01	3.102E-01	7.113E-02	3.433

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	2.765E+00	1.621E+00	1.573E+00	2.794E-01	1.758
ANH-511	1.449E-01	6.895E-02	4.255E-02	3.965E-03	3.404

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.173E-03		3.456E-01	5.604E-01	5.446E-02	-0.006
NA-22	-5.415E-03		4.474E-02	7.119E-02	5.897E-03	-0.076
NA-24	5.194E+02		6.875E+02	Half-Life	too short	
SC-46	1.922E-02		3.883E-02	6.702E-02	6.681E-03	0.287
V-48	-5.428E-02		8.581E-02	1.309E-01	1.252E-02	-0.415
CR-51	-2.052E-01		4.082E-01	6.557E-01	6.570E-02	-0.313
MN-54	5.189E-04		3.473E-02	5.769E-02	5.827E-03	0.009
CO-56	9.838E-03		3.830E-02	6.494E-02	6.545E-03	0.151
CO-57	-4.777E-04		2.353E-02	3.777E-02	3.152E-03	-0.013
CO-58	-2.302E-02		3.793E-02	5.934E-02	6.026E-03	-0.388
FE-59	-8.790E-03		9.231E-02	1.488E-01	1.404E-02	-0.059
CO-60	1.680E-02		3.510E-02	5.996E-02	5.022E-03	0.280
ZN-65	-6.146E-02		9.806E-02	1.248E-01	1.074E-02	-0.492
SE-75	-3.944E-02		4.708E-02	6.891E-02	6.824E-03	-0.572
SR-85	1.062E-01		4.543E-02	7.628E-02	7.123E-03	1.392
Y-88	3.480E-02		3.214E-02	6.303E-02	5.086E-03	0.552
Y-91	6.911E-01		2.269E+01	3.682E+01	2.990E+00	0.019
NB-94	3.120E-02		3.471E-02	6.142E-02	6.214E-03	0.508
NB-95	-3.677E-02		4.411E-02	6.814E-02	6.925E-03	-0.540
NB-95M	3.714E-02		1.395E-01	2.093E-01	2.252E-02	0.177
ZR-95	3.789E-02		7.166E-02	1.246E-01	1.363E-02	0.304
MO-99	-9.828E-06		3.468E-05	Half-Life	too short	
TC-99M	-4.688E+18		4.630E+18	Half-Life	too short	
RU-103	5.334E-03		3.858E-02	6.319E-02	9.066E-03	0.084
RH-106	-4.471E-02		2.979E-01	4.690E-01	6.623E-02	-0.095
RU-106	-4.471E-02		2.978E-01	4.690E-01	4.642E-02	-0.095
AG-108M	-2.032E-02		2.668E-02	4.087E-02	3.684E-03	-0.497
AG-110M	-2.031E-02		3.478E-02	5.594E-02	5.731E-03	-0.363
SN-113	5.030E-04		4.286E-02	7.036E-02	6.070E-03	0.007
CD-115	-7.264E-05		4.627E-05	Half-Life	too short	
SN-117M	-4.050E-02		7.553E-02	1.169E-01	1.009E-02	-0.347
TE-123M	-5.508E-03		2.816E-02	4.434E-02	3.852E-03	-0.124
SB-124	1.243E-02		5.906E-02	1.023E-01	8.914E-03	0.121
SB-125	-4.063E-02		8.039E-02	1.260E-01	1.115E-02	-0.322
TE-125M	-9.571E+00		1.006E+01	1.549E+01	1.611E+00	-0.618
I-126	-2.446E-01		3.200E-01	5.072E-01	5.096E-02	-0.482
SB-126	1.576E-01		2.054E-01	3.373E-01	3.420E-02	0.467
SB-127	1.826E+00		4.041E+00	7.021E+00	1.027E+00	0.260
I-131	1.785E-04		1.919E-01	3.159E-01	2.981E-02	0.001
TE-132	-2.825E-01		2.927E+00	4.905E+00	8.772E-01	-0.058
BA-133	2.074E-02		4.043E-02	6.115E-02	8.112E-03	0.339

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-3.745E-01		7.345E-01	Half-Life too short		
CS-134	8.537E-02		4.710E-02	8.733E-02	8.910E-03	0.978
CS-135	8.549E-02		1.676E-01	2.547E-01	2.822E-02	0.336
I-135	-2.762E+17		1.531E+17	Half-Life too short		
CS-136	-4.019E-02		1.334E-01	2.105E-01	1.999E-02	-0.191
BA-137M	6.732E-03		3.585E-02	6.108E-02	6.130E-03	0.110
CS-137	7.111E-03		3.787E-02	6.453E-02	6.485E-03	0.110
CE-139	8.031E-03		2.959E-02	4.756E-02	4.152E-03	0.169
BA-140	-8.249E-02		3.676E-01	5.795E-01	1.979E-01	-0.142
LA-140	5.787E-02		1.123E-01	2.002E-01	1.690E-02	0.289
CE-141	-2.024E-02		6.964E-02	1.096E-01	9.465E-03	-0.185
CE-143	1.573E-02		2.950E-03	Half-Life too short		
CE-144	-1.831E-01		1.902E-01	2.876E-01	4.356E-02	-0.637
PM-144	1.733E-02		3.367E-02	5.848E-02	5.914E-03	0.296
PR-144	1.273E+00		2.527E+00	4.386E+00	4.433E-01	0.290
PM-146	-2.697E-03		4.043E-02	6.547E-02	7.086E-03	-0.041
ND-147	-5.502E-01		8.009E-01	1.206E+00	1.862E-01	-0.456
PM-149	2.604E-04		3.808E-04	Half-Life too short		
EU-152	-8.225E-03		9.505E-02	1.508E-01	1.471E-02	-0.055
GD-153	-6.030E-02		8.811E-02	1.223E-01	1.084E-02	-0.493
EU-154	-3.036E-02		1.275E-01	2.004E-01	2.228E-02	-0.152
EU-155	7.485E-02		9.596E-02	1.582E-01	1.375E-02	0.473
TB-160	9.186E-02		1.367E-01	2.326E-01	2.326E-02	0.395
HO-166M	6.173E-03		5.536E-02	9.357E-02	9.478E-03	0.066
TA-182	9.425E-02		1.979E-01	3.336E-01	2.722E-02	0.283
IR-192	2.937E-02		3.524E-02	6.093E-02	5.893E-03	0.482
BI-207	-6.757E-03		5.067E-02	8.161E-02	7.369E-03	-0.083
PB-210	1.381E+00		1.914E+00	3.228E+00	2.966E-01	0.428
PB-211	-3.015E-01		7.140E-01	1.113E+00	5.382E-01	-0.271
BI-212	2.034E+00	+	8.850E-01	1.128E+00	1.530E-01	1.803
RN-219	2.795E-01		3.813E-01	6.508E-01	9.615E-02	0.429
RA-223	3.209E-01		6.233E-01	9.434E-01	1.681E-01	0.340
AC-227	1.587E-01		2.364E-01	4.072E-01	5.262E-02	0.390
TH-227	1.587E-01		2.366E-01	4.072E-01	5.857E-02	0.390
TH-229	-2.201E-01		4.861E-01	8.078E-01	7.356E-02	-0.273
PA-231	6.710E-01		1.343E+00	2.223E+00	3.423E-01	0.302
TH-231	3.209E-01		6.233E-01	9.434E-01	1.681E-01	0.340
PA-233	-1.319E-02		6.169E-02	1.011E-01	1.004E-02	-0.130
PA-234	-2.382E-02		2.894E-01	4.725E-01	9.123E-02	-0.050
PA-234M	5.758E-01		4.752E+00	7.898E+00	8.448E-01	0.073
NP-239	1.313E-01		3.742E-01	6.111E-01	5.118E-02	0.215
AM-241	7.869E-02		1.150E-01	1.750E-01	1.369E-02	0.450
CM-247	1.179E-02		3.528E-02	5.902E-02	4.990E-03	0.200
CF-249	2.287E-02		3.827E-02	6.510E-02	5.490E-03	0.351
CF-251	4.610E-02		1.261E-01	2.029E-01	1.803E-02	0.227

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248030008          *
* Acquisition date   : 13-MAR-2010 14:33:38 Detector SN#      :           *
* Detector ID        : GAM20                      Sensitivity   : 5.000      *
* Geometry           : CAN                      Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit: 75.000     *
* Elapsed real time  : 0 02:00:33.68             Half life ratio : 8.000     *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248030008             Analyst initials: MXR1         *
* Batch Number       : 958221                 Sample Quantity : 1.2680E+02 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 MS Isotope      :           *
* MSD DPM             : 0.000                  MSD Isotope    :           *
* LCS DPM             : 0.000                  LCS Isotope     :           *
* LCSD DPM            : 0.000                  LCSD Isotope    :           *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.725E+01	2.822E+00	2.545E-01	1.440E+00
CD-109	3.690E+00	9.357E-01	5.546E-01	4.774E-01
SN-126	3.569E-01	9.051E-02	5.380E-02	4.618E-02
HG-203	7.080E-02	5.656E-02	3.236E-02	2.886E-02
TL-208	4.861E-01	8.654E-02	2.949E-02	4.416E-02
BI-211	4.142E+00	6.122E-01	1.502E-01	3.123E-01
PB-212	1.698E+00	2.076E-01	4.345E-02	1.059E-01
BI-214	1.238E+00	2.134E-01	5.240E-02	1.089E-01
PB-214	1.503E+00	2.366E-01	5.461E-02	1.207E-01
RA-224	4.978E+00	1.453E+00	4.656E-01	7.414E-01
RA-226	1.238E+00	2.134E-01	5.240E-02	1.089E-01
AC-228	1.880E+00	3.720E-01	1.111E-01	1.898E-01
RA-228	1.880E+00	3.720E-01	1.111E-01	1.898E-01
TH-228	1.698E+00	2.076E-01	4.345E-02	1.059E-01
TH-232	1.880E+00	3.720E-01	1.111E-01	1.898E-01
TH-234	2.765E+00	1.589E+00	8.234E-01	8.106E-01
U-235	3.280E-03	1.959E-01	1.639E-01	9.994E-02
NP-237	1.065E+00	3.476E-01	1.617E-01	1.773E-01
U-238	2.765E+00	1.589E+00	8.234E-01	8.106E-01
ANH-511	1.449E-01	6.758E-02	2.162E-02	3.448E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.173E-03	3.387E-01	2.850E-01	1.728E-01 NOT IDENT.
NA-22	-5.415E-03	4.385E-02	3.568E-02	2.237E-02 NOT IDENT.
NA-24	5.194E+08	1.347E+09	0.000E+00	6.875E+08 SHORT HLIF
SC-46	1.922E-02	3.805E-02	3.377E-02	1.941E-02 FAIL ABUN
V-48	-5.428E-02	8.410E-02	6.589E-02	4.291E-02 NOT IDENT.
CR-51	-2.052E-01	4.001E-01	3.355E-01	2.041E-01 NOT IDENT.
MN-54	5.189E-04	3.403E-02	2.910E-02	1.736E-02 NOT IDENT.

CO-56	9.838E-03	3.753E-02	3.275E-02	1.915E-02	FAIL ABUN
CO-57	-4.777E-04	2.306E-02	1.959E-02	1.176E-02	NOT IDENT.
CO-58	-2.302E-02	3.717E-02	2.994E-02	1.896E-02	NOT IDENT.
FE-59	-8.790E-03	9.047E-02	7.476E-02	4.616E-02	NOT IDENT.
CO-60	1.680E-02	3.440E-02	3.003E-02	1.755E-02	NOT IDENT.
ZN-65	-6.146E-02	9.610E-02	6.268E-02	4.903E-02	NOT IDENT.
SE-75	-3.944E-02	4.614E-02	3.535E-02	2.354E-02	FAIL ABUN
SR-85	1.062E-01	4.452E-02	3.875E-02	2.272E-02	NOT IDENT.
Y-88	3.480E-02	3.149E-02	3.141E-02	1.607E-02	NOT IDENT.
Y-91	6.911E-01	2.223E+01	1.847E+01	1.134E+01	NOT IDENT.
NB-94	3.120E-02	3.401E-02	3.106E-02	1.735E-02	NOT IDENT.
NB-95	-3.677E-02	4.323E-02	3.441E-02	2.206E-02	NOT IDENT.
NB-95M	3.714E-02	1.367E-01	1.075E-01	6.974E-02	NOT IDENT.
ZR-95	3.789E-02	7.022E-02	6.293E-02	3.583E-02	NOT IDENT.
MO-99	-9.828E+00	6.797E+01	0.000E+00	3.468E+01	SHORT HLIF
TC-99M	-4.688E+24	9.075E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.334E-03	3.781E-02	3.212E-02	1.929E-02	FAIL ABUN
RH-106	-4.471E-02	2.919E-01	2.376E-01	1.489E-01	NOT IDENT.
RU-106	-4.471E-02	2.919E-01	2.376E-01	1.489E-01	NOT IDENT.
AG-108M	-2.032E-02	2.615E-02	2.082E-02	1.334E-02	NOT IDENT.
AG-110M	-2.031E-02	3.408E-02	2.831E-02	1.739E-02	NOT IDENT.
SN-113	5.030E-04	4.200E-02	3.589E-02	2.143E-02	NOT IDENT.
CD-115	-7.264E+01	9.069E+01	0.000E+00	4.627E+01	SHORT HLIF
SN-117M	-4.050E-02	7.402E-02	6.039E-02	3.776E-02	NOT IDENT.
TE-123M	-5.508E-03	2.760E-02	2.291E-02	1.408E-02	NOT IDENT.
SB-124	1.243E-02	5.788E-02	5.106E-02	2.953E-02	NOT IDENT.
SB-125	-4.063E-02	7.879E-02	6.420E-02	4.020E-02	FAIL ABUN
TE-125M	-9.571E+00	9.858E+00	8.050E+00	5.029E+00	NOT IDENT.
I-126	-2.446E-01	3.136E-01	2.567E-01	1.600E-01	NOT IDENT.
SB-126	1.576E-01	2.013E-01	1.705E-01	1.027E-01	NOT IDENT.
SB-127	1.826E+00	3.960E+00	3.552E+00	2.020E+00	NOT IDENT.
I-131	1.785E-04	1.880E-01	1.613E-01	9.593E-02	NOT IDENT.
TE-132	-2.825E-01	2.869E+00	2.521E+00	1.464E+00	NOT IDENT.
BA-133	2.074E-02	3.962E-02	3.124E-02	2.021E-02	NOT IDENT.
I-133	-3.745E+05	1.440E+06	0.000E+00	7.345E+05	SHORT HLIF
CS-134	8.537E-02	4.616E-02	4.408E-02	2.355E-02	NOT IDENT.
CS-135	8.549E-02	1.643E-01	1.306E-01	8.380E-02	NOT IDENT.
I-135	-2.762E+23	3.001E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.019E-02	1.307E-01	1.058E-01	6.670E-02	NOT IDENT.
BA-137M	6.732E-03	3.513E-02	3.092E-02	1.793E-02	NOT IDENT.
CS-137	7.111E-03	3.712E-02	3.266E-02	1.894E-02	NOT IDENT.
CE-139	8.031E-03	2.900E-02	2.456E-02	1.480E-02	NOT IDENT.
BA-140	-8.249E-02	3.603E-01	2.942E-01	1.838E-01	NOT IDENT.
LA-140	5.787E-02	1.101E-01	1.000E-01	5.615E-02	FAIL ABUN
CE-141	-2.024E-02	6.824E-02	5.672E-02	3.482E-02	NOT IDENT.
CE-143	1.573E+04	5.783E+03	0.000E+00	2.950E+03	SHORT HLIF
CE-144	-1.831E-01	1.864E-01	1.490E-01	9.512E-02	NOT IDENT.
PM-144	1.733E-02	3.300E-02	2.958E-02	1.683E-02	NOT IDENT.
PR-144	1.273E+00	2.476E+00	2.218E+00	1.263E+00	NOT IDENT.
PM-146	-2.697E-03	3.962E-02	3.332E-02	2.022E-02	NOT IDENT.
ND-147	-5.502E-01	7.848E-01	6.124E-01	4.004E-01	FAIL ABUN
PM-149	2.604E+02	7.464E+02	0.000E+00	3.808E+02	SHORT HLIF
EU-152	-8.225E-03	9.314E-02	7.707E-02	4.752E-02	FAIL ABUN
GD-153	-6.030E-02	8.635E-02	6.362E-02	4.406E-02	NOT IDENT.
EU-154	-3.036E-02	1.250E-01	1.004E-01	6.377E-02	NOT IDENT.
EU-155	7.485E-02	9.404E-02	8.223E-02	4.798E-02	FAIL ABUN
TB-160	9.186E-02	1.339E-01	1.172E-01	6.834E-02	FAIL ABUN
HO-166M	6.173E-03	5.425E-02	4.731E-02	2.768E-02	NOT IDENT.
TA-182	9.425E-02	1.939E-01	1.673E-01	9.893E-02	FAIL ABUN
IR-192	2.937E-02	3.453E-02	3.118E-02	1.762E-02	FAIL ABUN
BI-207	-6.757E-03	4.965E-02	4.101E-02	2.533E-02	FAIL ABUN
PB-210	1.381E+00	1.876E+00	1.697E+00	9.572E-01	NOT IDENT.
PB-211	-3.015E-01	6.997E-01	5.673E-01	3.570E-01	NOT IDENT.
BI-212	2.034E+00	8.673E-01	5.702E-01	4.425E-01	FAIL ABUN
RN-219	2.795E-01	3.737E-01	3.318E-01	1.906E-01	FAIL ABUN
RA-223	3.209E-01	6.108E-01	4.825E-01	3.116E-01	FAIL ABUN
AC-227	1.587E-01	2.316E-01	2.090E-01	1.182E-01	FAIL ABUN
TH-227	1.587E-01	2.318E-01	2.090E-01	1.183E-01	FAIL ABUN
TH-229	-2.201E-01	4.763E-01	4.163E-01	2.430E-01	FAIL ABUN
PA-231	6.710E-01	1.316E+00	1.139E+00	6.716E-01	FAIL ABUN
TH-231	3.209E-01	6.108E-01	4.825E-01	3.116E-01	FAIL ABUN
PA-233	-1.319E-02	6.046E-02	5.175E-02	3.084E-02	FAIL ABUN
PA-234	-2.382E-02	2.836E-01	2.379E-01	1.447E-01	NOT IDENT.
PA-234M	5.758E-01	4.657E+00	3.973E+00	2.376E+00	NOT IDENT.
NP-239	1.313E-01	3.667E-01	3.172E-01	1.871E-01	FAIL ABUN
AM-241	7.869E-02	1.127E-01	9.167E-02	5.749E-02	NOT IDENT.
CM-247	1.179E-02	3.457E-02	3.009E-02	1.764E-02	FAIL ABUN
CF-249	2.287E-02	3.751E-02	3.321E-02	1.914E-02	NOT IDENT.

CF-251

4.610E-02

1.235E-01

1.047E-01

6.303E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	278.1652
49.72	307.4655
57.36	0.0000
59.54	303.9812
63.29	383.9750
63.29	383.9750
64.28	444.0663
67.75	492.3603
69.67	445.1913
70.83	456.7534
72.81	463.8786
72.87	463.9248
72.87	463.9248
74.82	465.4049
74.82	465.4049
74.82	465.4049
74.97	465.5181
77.11	467.1183
77.11	467.1183
77.11	467.1183
79.69	423.5633
79.80	402.9710
80.12	403.1714
80.19	403.2150
80.57	397.2461
81.00	403.7209
81.07	403.7645
81.07	403.7645
83.79	413.2396
83.79	413.2396
85.43	371.0090
86.48	371.5866
86.55	371.6264
86.79	371.7568
86.94	371.8401
87.57	372.1841
88.03	372.4358
88.47	372.6748
89.96	373.4824
91.11	374.0999
92.59	374.8893
92.59	374.8893
93.35	375.2931
94.67	375.9902
94.87	323.2729
94.87	323.2729
95.86	330.0654
97.43	351.4550
98.44	296.2034
99.53	298.7697
100.11	284.1071
103.18	319.4653
103.37	319.5459
105.31	271.0747
106.12	272.4343
109.28	348.9318
111.00	303.2840
111.76	303.5748
116.30	288.9947
117.23	282.7973
121.12	292.8701
121.78	278.8829
122.06	269.1301
123.07	261.7855
131.20	298.5370
133.52	298.2112
136.00	234.5611

136.47	239.1324
140.51	0.0000
140.51	0.0000
143.76	294.8450
144.24	294.9975
144.24	294.9975
145.44	296.4978
152.43	270.3872
153.25	267.2165
154.21	248.2129
154.21	248.2129
156.02	282.7339
158.56	281.1816
159.00	265.3603
162.66	254.8970
163.33	250.4897
165.86	252.2557
176.60	283.8121
177.52	244.6341
181.07	0.0000
184.41	259.0226
185.72	260.2058
193.51	262.8985
197.04	247.7792
205.31	226.7244
210.85	237.8043
215.65	235.2517
222.11	211.4412
227.38	207.7898
228.16	199.7459
228.18	201.5652
235.69	227.9520
235.96	222.1516
235.96	222.1516
238.63	197.7094
238.63	197.7094
240.99	198.0637
242.00	198.2153
244.70	167.7228
252.40	182.1835
252.80	186.8629
256.23	171.5659
256.23	171.5659
260.90	0.0000
264.66	194.0669
268.22	182.5830
269.46	172.2557
269.46	172.2557
271.23	193.4653
273.65	180.2725
276.40	200.6836
277.37	194.2905
277.60	176.0572
278.00	176.1057
279.20	159.8488
279.54	159.8876
280.46	138.8569
283.69	144.7795
284.31	149.4341
285.41	154.2775
285.90	0.0000
287.50	155.9833
293.27	0.0000
295.22	142.9047
295.96	142.9733
298.57	143.2182
299.98	143.3510
299.98	143.3510
300.09	143.3601
300.09	143.3601
300.13	143.3647
301.36	143.4792
302.85	127.1485
304.50	138.0190
304.50	138.0190
304.85	142.6515
308.46	150.8624
311.90	157.9341

316.51	134.2490
319.41	148.0367
320.08	150.0356
323.87	114.8771
323.87	114.8771
328.76	146.3632
333.37	101.4927
334.37	128.8962
334.37	128.8962
338.28	155.6252
338.28	155.6252
338.32	155.6301
338.32	155.6301
338.32	155.6301
340.48	150.5391
340.55	150.5438
344.28	140.3264
351.06	120.3153
351.93	120.3767
356.01	99.6941
364.49	114.2928
366.42	0.0000
383.85	117.5409
388.16	113.7897
388.63	111.8045
391.69	112.9998
400.66	126.7223
401.81	103.4677
402.40	112.6328
404.85	133.0988
410.95	116.1970
414.70	111.3185
423.72	91.3154
427.09	99.6938
427.87	98.7056
433.94	104.1640
453.88	103.1119
463.37	95.2142
468.07	98.9921
473.00	98.8036
476.78	80.0252
477.60	101.1240
487.02	78.2919
492.35	0.0000
497.08	71.2131
511.00	85.5646
514.00	75.3973
527.90	0.0000
529.87	0.0000
531.02	85.2418
537.26	84.3889
546.56	0.0000
563.25	83.1343
569.33	69.0870
569.50	69.0908
569.70	66.9030
583.19	93.7418
600.60	99.9481
602.73	94.8464
604.72	83.6499
609.32	79.1188
609.32	79.1188
610.33	79.1513
614.28	69.6706
618.01	69.3243
621.93	72.7898
621.93	72.7898
633.25	65.2323
635.95	62.1472
636.99	63.9745
645.85	75.9404
657.76	92.6243
661.66	89.1211
661.66	89.1211
664.57	0.0000
666.33	100.2058
666.50	100.2112
677.62	70.4317

685.70	57.7951
695.00	69.0326
696.49	76.4366
696.51	76.4366
697.00	78.2909
702.65	82.1403
706.68	89.6492
711.68	68.5132
720.70	55.7256
721.93	0.0000
722.78	79.0006
722.91	79.0048
723.31	74.3672
724.19	72.8389
727.33	67.9545
733.00	60.6249
735.93	70.0214
739.50	0.0000
747.24	72.1649
752.31	68.5320
753.82	62.9303
756.73	59.2317
763.94	76.3370
765.81	87.7006
766.42	83.0027
777.92	0.0000
778.90	72.9244
783.70	64.5021
785.37	63.5878
795.86	54.2808
801.95	56.2949
810.29	57.3999
810.76	63.1496
815.77	55.5829
818.51	56.5902
832.01	64.5349
834.85	63.6281
836.80	0.0000
846.77	53.2181
856.80	94.1440
860.56	46.6395
871.09	41.9145
873.19	44.8668
875.33	0.0000
879.36	38.1097
880.51	39.0996
883.24	53.8063
884.68	67.5311
889.28	49.0015
898.04	56.0064
911.20	59.1797
911.20	59.1797
911.20	59.1797
926.50	46.5617
937.49	60.6202
944.13	43.8088
946.00	56.7815
949.00	58.8243
962.29	53.3724
964.08	36.7114
966.15	32.0570
968.97	32.0820
968.97	32.0820
968.97	32.0820
983.53	52.3428
996.26	53.5344
1001.03	59.6712
1004.73	69.8541
1037.84	44.9389
1038.76	0.0000
1048.07	45.0592
1050.41	40.9863
1050.41	40.9863
1063.66	54.4932
1085.87	49.6336
1099.45	48.7648
1112.07	56.6669
1115.54	60.7686

1120.29	54.2344
1120.29	54.2344
1120.55	54.2369
1121.30	54.2471
1131.51	0.0000
1173.23	63.3867
1177.93	47.5928
1189.05	45.5972
1204.77	60.6655
1221.41	57.6967
1231.02	57.5555
1235.36	73.2448
1238.28	61.1358
1260.41	0.0000
1271.85	33.5036
1274.44	55.1512
1274.54	52.9884
1291.59	35.8214
1298.22	0.0000
1312.11	32.7114
1332.49	26.2852
1365.19	31.2497
1368.63	0.0000
1384.29	25.3103
1408.01	25.0389
1457.56	0.0000
1460.82	24.3718
1489.16	13.1973
1505.03	28.3679
1596.21	17.3203
1620.50	18.3653
1678.03	0.0000
1690.97	7.8324
1764.49	6.8005
1764.49	6.8005
1770.23	10.2108
1771.35	10.2129
1791.20	0.0000
1836.06	7.0271

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030008

Total Uranium Activity	8.2268E+00	ug/g
Total Uranium Counting Unc.	4.7276E+00	ug/g
Total Uranium Tpu	2.4120E-06	ug/g
Total Uranium Mda	2.4508E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G248030008
*  ANALYST       : MXR1            DETECTOR    : GAM20
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 13-MAR-2010 14:33:38.01  SAMPLE ALQT: 126.800 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.431E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.209E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.528E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.715E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:36:23.47

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030009.CNF;1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:34:11
Sample ID        : G248030009 Sample quantity   : 1.25920E+02 GRAM
Detector name    : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.26 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 958221 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	63.35*	297	732	1.05	126.95	123	10	4.13E-02	18.3	
2	2	74.91	529	614	1.22	150.05	143	19	7.35E-02	8.9	2.22E+00
3	2	77.19*	828	570	1.10	154.60	143	19	1.15E-01	6.2	
4	6	87.28*	281	461	1.03	174.76	164	29	3.90E-02	13.5	3.54E+00
5	6	89.92	241	583	1.30	180.04	164	29	3.35E-02	18.7	
6	6	92.74*	703	532	1.37	185.67	164	29	9.76E-02	7.4	
7	0	99.05*	128	485	1.49	198.27	194	9	1.78E-02	32.7	
8	0	129.27	82	542	1.46	258.67	254	9	1.13E-02	52.8	
9	0	185.86*	306	622	1.06	371.74	366	11	4.25E-02	17.4	
10	0	209.79	239	496	1.82	419.54	414	12	3.33E-02	19.8	
11	3	238.75*	1742	284	1.19	477.41	470	20	2.42E-01	3.0	1.16E+00
12	3	241.70	435	413	1.89	483.32	470	20	6.04E-02	12.4	
13	0	295.30*	597	322	1.26	590.41	584	13	8.30E-02	7.5	
14	0	300.83	200	232	1.75	601.48	597	11	2.78E-02	16.6	
15	0	327.94	119	228	1.73	655.64	651	9	1.65E-02	24.6	
16	0	338.55*	384	298	1.68	676.86	671	13	5.33E-02	10.7	
17	0	352.04*	923	263	1.41	703.81	699	11	1.28E-01	4.8	
18	0	462.92*	141	240	1.92	925.40	918	16	1.97E-02	26.2	
19	0	510.80*	183	297	2.10	1021.10	1012	20	2.54E-02	26.7	
20	0	583.24*	619	239	1.67	1165.89	1157	18	8.60E-02	7.2	
21	0	609.54*	776	179	1.80	1218.46	1212	16	1.08E-01	5.4	
22	1	661.81	385	73	2.21	1322.95	1315	20	5.35E-02	7.0	2.78E+00
23	1	665.64	68	57	1.88	1330.60	1315	20	9.50E-03	24.2	
24	0	727.26*	131	144	2.12	1453.78	1449	14	1.81E-02	21.5	
25	0	861.19*	79	88	2.10	1721.53	1715	13	1.09E-02	28.9	
26	0	911.22*	423	121	2.07	1821.56	1811	18	5.88E-02	8.1	
27	3	964.76	103	52	2.51	1928.61	1923	30	1.43E-02	16.4	1.35E+00
28	3	969.30	301	61	2.64	1937.69	1923	30	4.19E-02	8.5	
29	0	1120.34*	214	60	2.45	2239.70	2230	17	2.98E-02	11.1	
30	0	1461.07*	2019	59	2.83	2921.17	2910	20	2.80E-01	2.4	
31	0	1729.87	41	20	0.89	3458.91	3450	16	5.70E-03	28.9	
32	0	1764.85*	167	14	3.18	3528.90	3519	20	2.32E-02	10.5	
33	0	1847.56	44	25	2.53	3694.40	3683	19	6.06E-03	28.0	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:36:26

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030009.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:34:11
Sample ID        : G248030009 Sample quantity : 125.92 GRAM
Sample type       : SOLID Sample geometry :
Detector name    : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.26 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	*	2.957E+01	3.066E+00	4.787E-01	4.385E-02	61.781
CD-109	+	88.03	*	3.122E+00	8.929E-01	1.190E+00	1.129E-01	2.623
SN-126	+	64.28		2.124E+00	8.351E-01	6.479E-01	9.409E-02	3.278
	+	86.94		1.255E+00	6.219E-01	4.833E-01	2.007E-01	2.598
	+	87.57	*	3.020E-01	8.636E-02	1.156E-01	1.091E-02	2.613
BA-137M	+	661.66	*	3.563E-01	6.254E-02	4.861E-02	5.126E-03	7.330
CS-137	+	661.66	*	3.764E-01	6.609E-02	5.135E-02	5.422E-03	7.330
TL-208		277.37		5.130E-01	3.915E-01	6.455E-01	1.074E-01	0.795
	+	583.19	*	5.523E-01	9.994E-02	5.268E-02	5.707E-03	10.486
	+	860.56		6.427E-01	3.788E-01	3.776E-01	4.399E-02	1.702
BI-211		72.87		4.285E+00	3.030E+00	4.930E+00	3.946E-01	0.869
	+	351.06	*	3.945E+00	5.958E-01	3.155E-01	3.682E-02	12.503
PB-212	+	74.82		2.482E+00	5.412E-01	5.198E-01	6.600E-02	4.775
	+	77.11		2.231E+00	3.347E-01	2.994E-01	2.503E-02	7.454
	+	238.63	*	1.776E+00	2.579E-01	8.685E-02	1.151E-02	20.446
	+	300.09		3.058E+00	1.108E+00	1.114E+00	1.633E-01	2.745
BI-214	+	609.32	*	1.335E+00	2.117E-01	1.036E-01	1.208E-02	12.891
	+	1120.29		1.826E+00	4.528E-01	4.309E-01	4.781E-02	4.238
	+	1764.49		1.900E+00	4.301E-01	2.727E-01	2.272E-02	6.967
PB-214	+	74.82		4.399E+00	9.267E-01	9.212E-01	1.049E-01	4.775
	+	77.11		3.934E+00	6.734E-01	5.277E-01	6.199E-02	7.454
	+	242.00		2.682E+00	7.593E-01	5.274E-01	7.294E-02	5.086
	+	295.22		1.619E+00	3.439E-01	2.049E-01	3.074E-02	7.902
	+	351.93	*	1.432E+00	2.302E-01	1.122E-01	1.445E-02	12.758
RA-224	+	240.99	*	4.743E+00	1.314E+00	9.299E-01	1.164E-01	5.101
RA-226	+	609.32	*	1.335E+00	2.117E-01	1.036E-01	1.208E-02	12.891
	+	1120.29		1.826E+00	4.528E-01	4.309E-01	4.781E-02	4.238
	+	1764.49		1.900E+00	4.301E-01	2.727E-01	2.272E-02	6.967
AC-228	+	338.32		1.838E+00	8.751E-01	3.415E-01	1.452E-01	5.383
	+	911.20	*	1.754E+00	3.715E-01	1.902E-01	2.576E-02	9.226
	+	968.97		2.147E+00	6.510E-01	3.308E-01	8.317E-02	6.491
RA-228	+	338.32		1.838E+00	8.751E-01	3.415E-01	1.452E-01	5.383
	+	911.20	*	1.754E+00	3.715E-01	1.902E-01	2.576E-02	9.226
	+	968.97		2.147E+00	6.510E-01	3.308E-01	8.317E-02	6.491

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.482E+00	4.852E-01	5.198E-01	4.286E-02	4.775
	+	77.11		2.231E+00	3.347E-01	2.994E-01	2.503E-02	7.454
	+	238.63	*	1.776E+00	2.579E-01	8.685E-02	1.151E-02	20.446
	+	300.09		3.058E+00	2.151E+00	1.114E+00	6.912E-01	2.745
TH-232	+	338.32		1.838E+00	4.505E-01	3.415E-01	4.061E-02	5.383
	+	911.20	*	1.754E+00	3.715E-01	1.902E-01	2.576E-02	9.226
	+	968.97		2.147E+00	6.510E-01	3.308E-01	8.317E-02	6.491
TH-234	+	63.29	*	5.510E+00	2.240E+00	1.747E+00	3.108E-01	3.155
	+	92.59		6.301E+00	1.687E+00	9.736E-01	2.169E-01	6.472
U-235	+	89.96		2.697E+00	1.213E+00	1.208E+00	3.005E-01	2.231
	+	93.35		4.760E+00	1.314E+00	7.321E-01	1.703E-01	6.502
		143.76	*	8.252E-02	2.013E-01	3.350E-01	5.725E-02	0.246
		163.33		-2.156E-01	4.409E-01	7.006E-01	1.296E-01	-0.308
	+	185.72		2.095E-01	7.616E-02	6.564E-02	6.873E-03	3.191
		205.31		-2.050E-01	5.370E-01	7.557E-01	1.473E-01	-0.271
NP-237	+	86.48	*	9.011E-01	3.195E-01	3.484E-01	7.994E-02	2.587
		95.86		7.290E-01	1.144E+00	1.342E+00	3.231E-01	0.543
U-238	+	63.29	*	5.510E+00	2.240E+00	1.747E+00	3.108E-01	3.155
	+	92.59		6.301E+00	1.097E+00	9.736E-01	8.856E-02	6.472
ANH-511	+	511.00	*	1.267E-01	6.886E-02	4.339E-02	4.348E-03	2.920

---- 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	*	5.643E-02	3.438E-01	5.602E-01	5.845E-02	0.101
NA-22		1274.54	*	-5.165E-02	3.989E-02	5.927E-02	5.108E-03	-0.871
NA-24		1368.63	*	-3.404E+03	3.989E-02	Half-Life	too short	
SC-46		889.28	*	-1.020E-02	3.714E-02	6.046E-02	6.768E-03	-0.169
	+	1120.55		3.273E-01	7.813E-02	1.192E-01	1.053E-02	2.747
V-48		944.13		4.847E-01	1.095E+00	1.855E+00	2.012E-01	0.261
		983.53	*	-1.127E-01	8.429E-02	1.197E-01	1.255E-02	-0.942
		1312.11		-5.505E-02	1.002E-01	1.582E-01	1.393E-02	-0.348
CR-51		320.08	*	4.307E-03	4.062E-01	6.800E-01	8.801E-02	0.006
MN-54		834.85	*	-1.426E-02	3.390E-02	5.511E-02	6.122E-03	-0.259
CO-56		846.77	*	-1.738E-02	3.798E-02	6.141E-02	6.836E-03	-0.283
		1037.84		-1.361E-01	2.955E-01	4.661E-01	4.803E-02	-0.292
		1238.28		1.499E-01	9.091E-02	1.624E-01	1.407E-02	0.923
		1771.35		1.236E-01	2.354E-01	3.618E-01	3.007E-02	0.342
CO-57		122.06	*	-4.368E-03	2.648E-02	4.172E-02	3.440E-03	-0.105
		136.47		-2.328E-02	1.940E-01	3.267E-01	3.028E-02	-0.071
CO-58		810.76	*	-8.736E-03	3.682E-02	6.069E-02	6.720E-03	-0.144
FE-59		1099.45	*	-5.080E-02	9.557E-02	1.493E-01	1.462E-02	-0.340
		1291.59		8.868E-02	1.177E-01	2.051E-01	2.021E-02	0.432
CO-60		1173.23		-1.236E-02	4.030E-02	6.592E-02	5.302E-03	-0.187
		1332.49	*	-3.149E-02	3.643E-02	5.286E-02	4.714E-03	-0.596
ZN-65		1115.54	*	-5.890E-02	9.923E-02	1.283E-01	1.144E-02	-0.459
SE-75		121.12		4.636E-02	1.409E-01	2.261E-01	2.441E-02	0.205
		136.00		-3.410E-04	3.815E-02	6.450E-02	5.598E-03	-0.005

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		5.451E-03	4.684E-02	7.565E-02	1.018E-02	0.072
	279.54			2.232E-02	1.153E-01	1.859E-01	2.640E-02	0.120
	400.66			-2.197E-01	2.532E-01	3.962E-01	4.627E-02	-0.555
SR-85	514.00	*		1.447E-01	5.152E-02	8.077E-02	8.104E-03	1.792
Y-88	898.04			1.627E-03	3.833E-02	6.369E-02	7.156E-03	0.026
	1836.06	*		-2.507E-03	3.393E-02	4.780E-02	3.865E-03	-0.052
Y-91	1204.77	*		4.512E-01	2.091E+01	3.485E+01	2.866E+00	0.013
NB-94	702.65	*		5.347E-03	3.059E-02	5.043E-02	5.404E-03	0.106
	871.09			1.074E-02	3.089E-02	5.242E-02	5.856E-03	0.205
NB-95	765.81	*		8.092E-02	4.639E-02	8.063E-02	8.818E-03	1.004
NB-95M	235.69	*		6.976E-02	1.508E-01	2.185E-01	2.891E-02	0.319
ZR-95	724.19			1.902E-01	1.059E-01	1.661E-01	1.891E-02	1.145
	756.73	*		5.893E-02	6.913E-02	1.176E-01	1.369E-02	0.501
MO-99	140.51			-1.466E-04	6.913E-02	Half-Life	too short	
	181.07			-1.180E-05	6.913E-02	Half-Life	too short	
	366.42			-1.495E-04	6.913E-02	Half-Life	too short	
	739.50	*		2.162E-05	6.913E-02	Half-Life	too short	
	777.92			-1.196E-04	6.913E-02	Half-Life	too short	
TC-99M	140.51	*		-1.060E+19	6.913E-02	Half-Life	too short	
RU-103	497.08	*		7.279E-03	3.999E-02	6.505E-02	9.643E-03	0.112
	610.33			1.559E+01	3.181E+00	2.864E+00	4.971E-01	5.442
RH-106	621.93	*		-6.419E-02	3.007E-01	4.905E-01	7.116E-02	-0.131
	1050.41			1.087E+00	2.403E+00	4.038E+00	3.941E-01	0.269
RU-106	621.93	*		-6.419E-02	3.006E-01	4.905E-01	5.123E-02	-0.131
	1050.41			1.087E+00	2.403E+00	4.038E+00	3.941E-01	0.269
AG-108M	433.94	*		3.796E-03	2.783E-02	4.568E-02	4.495E-03	0.083
	614.28			-7.490E-03	3.733E-02	5.220E-02	5.563E-03	-0.143
	722.91			-2.092E-02	3.845E-02	5.078E-02	5.594E-03	-0.412
AG-110M	657.76	*		2.698E-02	3.712E-02	5.537E-02	5.951E-03	0.487
	677.62			-4.432E-02	2.801E-01	4.543E-01	4.914E-02	-0.098
	706.68			4.743E-03	1.996E-01	3.261E-01	3.565E-02	0.015
	763.94			-4.694E-02	1.692E-01	2.696E-01	2.998E-02	-0.174
	884.68			-2.001E-02	4.408E-02	7.080E-02	8.073E-03	-0.283
	937.49			1.437E-02	1.043E-01	1.737E-01	1.937E-02	0.083
	1384.29			-1.514E-01	1.621E-01	2.443E-01	2.238E-02	-0.620
	1505.03			6.419E-02	2.777E-01	4.614E-01	4.103E-02	0.139
SN-113	391.69	*		-1.275E-02	4.371E-02	7.088E-02	6.768E-03	-0.180
CD-115	260.90			-1.055E-04	4.371E-02	Half-Life	too short	
	492.35			5.391E-05	4.371E-02	Half-Life	too short	
	527.90	*		-3.283E-05	4.371E-02	Half-Life	too short	
SN-117M	156.02			6.704E-01	3.170E+00	5.343E+00	5.009E-01	0.125
	158.56	*		-5.972E-02	7.651E-02	1.244E-01	1.180E-02	-0.480
TE-123M	159.00	*		-1.452E-02	2.874E-02	4.722E-02	4.510E-03	-0.308
SB-124	602.73			-2.084E-03	4.516E-02	6.409E-02	6.658E-03	-0.033
	645.85			2.380E-01	4.899E-01	8.274E-01	9.034E-02	0.288
	722.78			-2.444E-01	4.179E-01	5.494E-01	6.017E-02	-0.445
	1690.97	*		2.927E-02	6.688E-02	1.170E-01	1.043E-02	0.250
SB-125	427.87	*		-1.002E-02	8.801E-02	1.428E-01	1.385E-02	-0.070
	463.37			8.857E-01	4.724E-01	5.043E-01	5.218E-02	1.756

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M		600.60		6.367E-02	1.717E-01	2.836E-01	3.095E-02	0.225
		635.95		-2.058E-01	2.435E-01	3.789E-01	4.193E-02	-0.543
		109.28	*	-6.555E+00	1.074E+01	1.676E+01	1.727E+00	-0.391
		388.63		7.292E-02	2.262E-01	3.779E-01	3.578E-02	0.193
I-126	+	666.33	*	5.686E-01	2.814E-01	5.245E-01	5.541E-02	1.084
		753.82		5.189E-01	2.294E+00	3.773E+00	4.112E-01	0.138
		414.70		-1.804E-01	1.121E-01	1.671E-01	1.582E-02	-1.079
	+	666.50		1.986E-01	9.827E-02	1.812E-01	1.915E-02	1.096
SB-126		695.00		-3.749E-03	1.113E-01	1.766E-01	1.887E-02	-0.021
		697.00		-2.919E-02	3.602E-01	5.856E-01	6.263E-02	-0.050
		720.70	*	-2.361E-01	2.377E-01	2.999E-01	3.234E-02	-0.787
		856.80		2.563E-01	7.300E-01	1.072E+00	1.195E-01	0.239
SB-127		252.40		2.582E+00	1.465E+01	2.375E+01	1.028E+01	0.109
		473.00		3.087E+00	5.473E+00	9.083E+00	1.414E+00	0.340
		685.70	*	-2.723E-02	4.210E+00	6.886E+00	1.034E+00	-0.004
		783.70		9.243E+00	1.189E+01	1.995E+01	3.192E+00	0.463
I-131		80.19		-8.199E+00	1.108E+01	1.211E+01	1.062E+00	-0.677
		284.31		-6.186E-01	2.812E+00	4.446E+00	6.300E-01	-0.139
		364.49	*	-3.383E-02	1.906E-01	3.128E-01	3.481E-02	-0.108
		636.99		-1.974E+00	2.481E+00	3.869E+00	4.235E-01	-0.510
TE-132		49.72		-1.375E+01	6.708E+01	1.118E+02	1.432E+01	-0.123
		111.76		1.992E+01	1.529E+02	2.451E+02	3.189E+01	0.081
		116.30		-9.324E+01	1.347E+02	2.079E+02	2.697E+01	-0.448
		228.16	*	1.263E+00	3.325E+00	5.472E+00	1.058E+00	0.231
BA-133		81.00		-1.117E-01	1.256E-01	1.345E-01	2.096E-02	-0.830
		276.40		2.156E-01	3.628E-01	5.918E-01	1.055E-01	0.364
		302.85		9.143E-02	1.458E-01	2.199E-01	3.627E-02	0.416
		356.01	*	1.780E-02	4.300E-02	6.348E-02	9.347E-03	0.280
I-133		383.85		-1.666E-01	2.677E-01	4.261E-01	5.630E-02	-0.391
		529.87	*	-9.108E-01	2.677E-01	Half-Life	too short	
		875.33		-1.413E+01	2.677E-01	Half-Life	too short	
		1298.22		-5.770E+01	2.677E-01	Half-Life	too short	
CS-134		563.25		6.683E-02	3.275E-01	5.513E-01	5.688E-02	0.121
		569.33		9.415E-03	1.889E-01	3.152E-01	3.269E-02	0.030
		604.72		8.990E-04	3.552E-02	5.066E-02	5.275E-03	0.018
		795.86	*	7.858E-02	4.367E-02	7.670E-02	8.490E-03	1.025
CS-135		801.95		-2.039E-01	3.663E-01	5.667E-01	6.275E-02	-0.360
		1365.19		6.188E-02	1.089E+00	1.800E+00	1.677E-01	0.034
		268.22	*	1.509E-01	1.624E-01	2.679E-01	3.875E-02	0.563
		546.56		-2.365E+17	1.624E-01	Half-Life	too short	
I-135		836.80		8.161E+17	1.624E-01	Half-Life	too short	
		1038.76		-6.384E+17	1.624E-01	Half-Life	too short	
		1131.51		-9.528E+16	1.624E-01	Half-Life	too short	
		1260.41	*	-2.092E+17	1.624E-01	Half-Life	too short	
CS-136		1457.56		5.195E+19	1.624E-01	Half-Life	too short	
		1678.03		6.654E+15	1.624E-01	Half-Life	too short	
		1791.20		3.209E+17	1.624E-01	Half-Life	too short	
		153.25		1.174E+00	1.226E+00	2.105E+00	2.277E-01	0.558
		176.60		-4.399E-02	6.877E-01	1.139E+00	1.245E-01	-0.039

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		273.65		-1.588E+00	8.105E-01	1.143E+00	1.629E-01	-1.390
		340.55		1.191E+00	2.779E-01	4.284E-01	5.160E-02	2.781
		818.51		5.768E-02	9.468E-02	1.638E-01	1.816E-02	0.352
		1048.07	*	-3.291E-02	1.474E-01	2.369E-01	2.397E-02	-0.139
		1235.36		9.635E-01	7.880E-01	1.379E+00	1.601E-01	0.698
CE-139		165.86	*	1.165E-03	2.999E-02	5.008E-02	4.911E-03	0.023
BA-140		162.66		-2.928E-02	1.184E+00	1.918E+00	1.953E-01	-0.015
		304.85		6.985E-01	1.954E+00	2.903E+00	8.979E-01	0.241
		423.72		5.977E-01	2.761E+00	4.545E+00	1.506E+00	0.132
		537.26	*	3.210E-02	3.555E-01	5.973E-01	2.051E-01	0.054
LA-140	+	328.76		1.035E+00	5.265E-01	7.897E-01	9.981E-02	1.311
		487.02		2.907E-02	1.915E-01	3.114E-01	3.228E-02	0.093
		815.77		2.188E-01	4.285E-01	7.373E-01	8.753E-02	0.297
		1596.21	*	-1.228E-01	1.274E-01	1.931E-01	1.693E-02	-0.636
CE-141		145.44	*	1.008E-01	7.040E-02	1.226E-01	1.116E-02	0.822
CE-143		57.36		5.131E-03	7.040E-02	Half-Life	too short	
		293.27	*	2.530E-02	7.040E-02	Half-Life	too short	
	+	664.57		6.988E-02	7.040E-02	Half-Life	too short	
		721.93		-2.472E-02	7.040E-02	Half-Life	too short	
CE-144		80.12		-2.396E+00	3.333E+00	3.649E+00	3.155E-01	-0.657
		133.52	*	5.142E-02	2.109E-01	3.186E-01	4.855E-02	0.161
PM-144		476.78		-4.910E-03	6.405E-02	1.031E-01	1.083E-02	-0.048
		618.01		1.321E-02	3.370E-02	5.123E-02	5.449E-03	0.258
		696.49	*	-2.261E-03	3.159E-02	5.139E-02	5.498E-03	-0.044
PR-144		696.51	*	-1.698E-01	2.373E+00	3.860E+00	4.128E-01	-0.044
		1489.16		-9.980E+00	1.154E+01	1.691E+01	1.506E+00	-0.590
PM-146		453.88	*	2.829E-02	4.003E-02	6.556E-02	7.538E-03	0.432
		633.25		-3.771E-01	1.290E+00	2.076E+00	8.025E-01	-0.182
		735.93		-8.025E-03	1.574E-01	2.274E-01	6.545E-02	-0.035
		747.24		-2.032E-02	8.462E-02	1.350E-01	2.163E-02	-0.151
ND-147	+	91.11		1.358E+00	5.264E-01	8.287E-01	8.193E-02	1.638
		319.41		2.057E+00	4.820E+00	8.197E+00	1.038E+00	0.251
		531.02	*	-3.930E-01	7.688E-01	1.248E+00	1.979E-01	-0.315
PM-149		285.90	*	-6.877E-05	7.688E-01	Half-Life	too short	
EU-152		121.78		-3.428E-02	7.612E-02	1.186E-01	1.135E-02	-0.289
		244.70		5.737E-01	3.467E-01	5.255E-01	6.654E-02	1.092
		344.28	*	-5.857E-02	1.038E-01	1.442E-01	1.733E-02	-0.406
		778.90		-5.927E-02	2.466E-01	3.922E-01	4.304E-02	-0.151
	+	964.08		7.888E-01	2.721E-01	4.943E-01	5.274E-02	1.596
		1085.87		-2.900E-01	3.919E-01	6.045E-01	5.632E-02	-0.480
		1112.07		-4.899E-02	3.171E-01	4.299E-01	3.852E-02	-0.114
		1408.01		3.354E-03	1.759E-01	2.887E-01	2.581E-02	0.012
GD-153		69.67		1.474E+00	1.703E+00	2.594E+00	2.014E-01	0.568
		97.43	*	5.331E-02	1.124E-01	1.313E-01	1.155E-02	0.406
		103.18		-3.546E-02	1.237E-01	1.743E-01	1.489E-02	-0.203
EU-154		123.07		1.915E-02	5.282E-02	8.475E-02	9.391E-03	0.226
		723.31		3.073E-02	1.728E-01	2.447E-01	2.815E-02	0.126
		873.19		-1.285E-01	2.599E-01	4.171E-01	5.781E-02	-0.308
		996.26		-4.734E-01	3.574E-01	5.167E-01	9.502E-02	-0.916

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		2.637E-02	2.035E-01	3.363E-01	4.341E-02	0.078
		1274.44	*	-1.458E-01	1.131E-01	1.673E-01	1.903E-02	-0.871
		86.55		3.672E-01	1.051E-01	1.732E-01	1.629E-02	2.120
		105.31	*	1.063E-01	1.057E-01	1.747E-01	1.499E-02	0.608
TB-160	+	86.79		1.039E+00	2.971E-01	4.849E-01	4.535E-02	2.143
		197.04		-2.337E-01	6.190E-01	9.701E-01	1.055E-01	-0.241
		215.65		7.309E-01	8.697E-01	1.294E+00	1.495E-01	0.565
		298.57		3.226E-01	1.830E-01	2.096E-01	2.809E-02	1.539
HO-166M		879.36	*	1.069E-01	1.306E-01	2.274E-01	2.543E-02	0.470
		962.29		9.392E-01	5.933E-01	9.342E-01	9.984E-02	1.005
		966.15	+	5.887E-01	2.031E-01	5.049E-01	5.378E-02	1.166
		1177.93		-1.861E-01	3.321E-01	5.330E-01	4.301E-02	-0.349
	+	1271.85		-2.932E-01	6.756E-01	1.082E+00	9.301E-02	-0.271
		80.57		-2.726E-01	3.565E-01	3.887E-01	3.378E-02	-0.701
		184.41		1.664E-01	6.051E-02	7.005E-02	7.303E-03	2.376
		280.46		-1.355E-02	8.601E-02	1.366E-01	1.908E-02	-0.099
		410.95		4.080E-01	2.467E-01	4.282E-01	4.042E-02	0.953
		711.68	*	4.481E-03	5.915E-02	9.686E-02	1.041E-02	0.046
		752.31		-2.913E-01	2.455E-01	3.625E-01	3.949E-02	-0.803
		810.29		-8.880E-03	5.120E-02	8.472E-02	9.366E-03	-0.105
TA-182	+	67.75		-1.447E-01	1.172E-01	1.628E-01	1.242E-02	-0.889
		100.11		3.799E-01	2.508E-01	2.956E-01	2.561E-02	1.285
		152.43		1.154E-01	3.571E-01	6.048E-01	5.580E-02	0.191
	+	222.11		1.236E-01	3.467E-01	5.727E-01	6.758E-02	0.216
		1121.30		8.927E-01	2.131E-01	3.244E-01	2.864E-02	2.752
		1189.05		1.120E-01	2.867E-01	4.890E-01	3.977E-02	0.229
IR-192	+	1221.41	*	-1.257E-01	1.910E-01	3.046E-01	2.533E-02	-0.413
		1231.02		-6.724E-01	4.868E-01	7.397E-01	6.191E-02	-0.909
		295.96		1.279E+00	2.588E-01	2.843E-01	3.847E-02	4.497
		308.46		6.840E-02	9.430E-02	1.586E-01	2.076E-02	0.431
		316.51	*	1.162E-02	3.447E-02	5.847E-02	7.473E-03	0.199
		468.07		-3.043E-02	7.720E-02	1.044E-01	1.080E-02	-0.292
HG-203		70.83		6.892E-01	1.461E+00	2.186E+00	3.423E-01	0.315
		72.87		1.184E+00	8.510E-01	1.362E+00	2.071E-01	0.869
		279.20	*	1.956E-02	4.368E-02	7.104E-02	1.004E-02	0.275
BI-207	+	72.81		2.184E-01	1.736E-01	2.815E-01	2.252E-02	0.776
		74.97		7.156E-01	1.396E-01	2.097E-01	1.715E-02	3.412
		569.70		2.377E-03	2.898E-02	4.844E-02	4.975E-03	0.049
		1063.66	*	2.262E-02	4.830E-02	8.118E-02	7.793E-03	0.279
PB-210		1770.23		1.287E+00	5.066E-01	9.635E-01	8.009E-02	1.336
PB-211		46.54	*	7.468E-02	2.905E+00	4.711E+00	4.339E-01	0.016
		404.85	*	-2.139E-01	6.994E-01	1.118E+00	5.426E-01	-0.191
		427.09		5.148E-01	1.461E+00	2.395E+00	1.112E+00	0.215
BI-212	+	832.01		-1.291E-01	8.823E-01	1.455E+00	7.616E-01	-0.089
		727.33	*	1.746E+00	7.911E-01	1.012E+00	1.423E-01	1.726
		785.37		5.575E+00	3.037E+00	5.333E+00	5.862E-01	1.045
		1620.50		7.225E-01	2.221E+00	3.807E+00	3.319E-01	0.190
RN-219		271.23		3.975E-01	2.478E-01	4.111E-01	6.074E-02	0.967
		401.81	*	-2.817E-01	3.877E-01	6.100E-01	9.348E-02	-0.462

---- 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		-2.615E-01	2.821E-01	3.034E-01	2.652E-02	-0.862
		83.79		1.541E-01	1.421E-01	1.958E-01	1.766E-02	0.787
		94.87		1.742E+00	5.748E-01	7.620E-01	6.813E-02	2.286
		144.24		2.486E-01	6.761E-01	1.125E+00	1.112E-01	0.221
		154.21		4.146E-01	3.844E-01	6.617E-01	6.662E-02	0.627
		269.46		1.448E-01	1.904E-01	3.130E-01	4.297E-02	0.463
		323.87	*	-3.169E-01	6.709E-01	9.424E-01	1.842E-01	-0.336
	+	338.28		7.295E+00	1.891E+00	2.179E+00	3.180E-01	3.347
	AC-227	79.69		7.314E-02	1.540E+00	1.778E+00	3.064E-01	0.041
		235.96		4.397E-01	1.867E-01	2.793E-01	3.795E-02	1.574
TH-227		256.23	*	7.576E-02	2.565E-01	4.180E-01	6.511E-02	0.181
	+	299.98		3.363E+00	1.242E+00	1.536E+00	2.503E-01	2.190
		304.50		3.077E-01	1.616E+00	2.390E+00	4.617E-01	0.129
		334.37		-2.002E+00	2.013E+00	2.522E+00	4.470E-01	-0.794
		79.80		1.499E-01	2.032E+00	2.349E+00	5.116E-01	0.064
TH-229		235.96		4.397E-01	1.861E-01	2.793E-01	3.672E-02	1.574
		256.23	*	7.576E-02	2.566E-01	4.180E-01	7.026E-02	0.181
	+	299.98		3.363E+00	1.242E+00	1.536E+00	2.503E-01	2.190
		304.50		3.077E-01	1.616E+00	2.390E+00	4.617E-01	0.129
		334.37		-2.002E+00	2.013E+00	2.522E+00	4.470E-01	-0.794
PA-231		85.43		4.132E-01	2.401E-01	3.387E-01	3.116E-02	1.220
	+	88.47		4.656E-01	1.331E-01	2.188E-01	2.066E-02	2.128
		193.51	*	5.925E-02	5.164E-01	8.547E-01	9.186E-02	0.069
TH-231	+	210.85		3.553E+00	1.461E+00	1.592E+00	1.812E-01	2.232
		283.69	*	1.637E-03	1.455E+00	2.325E+00	4.229E-01	0.001
	+	301.36		2.161E+00	7.936E-01	9.925E-01	1.571E-01	2.177
PA-233		81.07		-2.615E-01	2.821E-01	3.034E-01	2.652E-02	-0.862
		83.79		1.541E-01	1.421E-01	1.958E-01	1.766E-02	0.787
		94.87		1.742E+00	5.748E-01	7.620E-01	6.813E-02	2.286
		144.24		2.486E-01	6.761E-01	1.125E+00	1.112E-01	0.221
		154.21		4.146E-01	3.844E-01	6.617E-01	6.662E-02	0.627
		269.46		1.448E-01	1.904E-01	3.130E-01	4.297E-02	0.463
		323.87	*	-3.169E-01	6.709E-01	9.424E-01	1.842E-01	-0.336
	+	338.28		7.295E+00	1.891E+00	2.179E+00	3.180E-01	3.347
	PA-234	300.13		1.522E+00	5.737E-01	6.935E-01	1.248E-01	2.194
		311.90	*	-3.000E-02	5.809E-02	9.501E-02	1.245E-02	-0.316
PA-234M		340.48		3.551E+00	1.151E+00	1.282E+00	3.255E-01	2.769
	+	94.67		8.427E-01	2.316E-01	2.954E-01	3.733E-02	2.853
		98.44		1.844E-01	1.586E-01	1.477E-01	8.241E-02	1.249
		111.00		-4.161E-02	1.855E-01	2.936E-01	3.491E-02	-0.142
		131.20		1.415E-02	1.113E-01	1.676E-01	1.420E-02	0.084
		569.50		-5.173E-04	2.587E-01	4.305E-01	4.422E-02	-0.001
		733.00		1.198E-01	4.098E-01	5.836E-01	1.351E-01	0.205
		880.51		1.899E-01	2.453E-01	4.262E-01	4.767E-02	0.446
		883.24		-8.344E-02	2.575E-01	4.078E-01	2.756E-01	-0.205
		926.50		-9.277E-02	1.486E-01	2.309E-01	6.046E-02	-0.402
PA-234M		946.00	*	7.957E-02	2.700E-01	4.532E-01	9.008E-02	0.176
		949.00		1.518E-01	3.932E-01	6.644E-01	7.179E-02	0.228
		766.42		2.346E+01	1.656E+01	2.041E+01	1.045E+01	1.149

---- 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	*	7.725E+00	4.584E+00	8.112E+00	9.296E-01	0.952
		99.53		3.346E-01	2.209E-01	2.652E-01	2.305E-02	1.261
		103.37		-4.726E-02	1.117E-01	1.563E-01	1.334E-02	-0.302
		106.12		4.511E-02	8.442E-02	1.376E-01	1.163E-02	0.328
		117.23	*	-2.022E-01	4.043E-01	6.302E-01	5.208E-02	-0.321
AM-241		228.18		8.342E-02	2.164E-01	3.567E-01	4.292E-02	0.234
		277.60		2.255E-01	1.769E-01	2.936E-01	4.093E-02	0.768
		59.54	*	1.056E-01	1.422E-01	2.187E-01	1.709E-02	0.483
CM-247		278.00		1.082E+00	7.601E-01	1.263E+00	1.763E-01	0.857
		287.50		1.309E+00	1.259E+00	2.080E+00	2.861E-01	0.630
		402.40	*	-1.113E-02	3.520E-02	5.686E-02	5.333E-03	-0.196
CF-249		252.80		5.113E-01	9.057E-01	1.493E+00	1.937E-01	0.342
		333.37		-2.246E-01	2.626E-01	2.746E-01	3.323E-02	-0.818
		388.16	*	1.225E-02	3.678E-02	6.148E-02	5.836E-03	0.199
CF-251		177.52	*	2.791E-02	1.248E-01	2.086E-01	2.125E-02	0.134
		227.38		3.766E-02	3.506E-01	5.729E-01	6.875E-02	0.066
		285.41		-3.777E-01	2.210E+00	3.502E+00	4.839E-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]G248030009
* Acquisition date   : 13-MAR-2010 14:34:11 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 02:00:02.26 Half life ratio : 8.000
*****
*                               SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248030009 Analyst initials: MXR1
* Batch Number       : 958221 Sample Quantity : 1.2592E+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	2.957E+01	3.005E+00	4.784E-01	0.000E+00
CD-109	3.122E+00	8.750E-01	1.238E+00	0.000E+00
SN-126	3.020E-01	8.464E-02	1.202E-01	0.000E+00
BA-137M	3.563E-01	6.129E-02	4.914E-02	0.000E+00
CS-137	3.764E-01	6.477E-02	5.192E-02	0.000E+00
TL-208	5.523E-01	9.794E-02	5.336E-02	0.000E+00
BI-211	3.945E+00	5.839E-01	3.219E-01	0.000E+00
PB-212	1.776E+00	2.527E-01	8.910E-02	0.000E+00
BI-214	1.335E+00	2.075E-01	1.048E-01	0.000E+00
PB-214	1.432E+00	2.256E-01	1.145E-01	0.000E+00
RA-224	4.743E+00	1.288E+00	9.539E-01	0.000E+00
RA-226	1.335E+00	2.075E-01	1.048E-01	0.000E+00
AC-228	1.754E+00	3.640E-01	1.914E-01	0.000E+00
RA-228	1.754E+00	3.640E-01	1.914E-01	0.000E+00
TH-228	1.776E+00	2.527E-01	8.910E-02	0.000E+00
TH-232	1.754E+00	3.640E-01	1.914E-01	0.000E+00
TH-234	5.510E+00	2.195E+00	1.825E+00	0.000E+00
U-235	8.252E-02	1.973E-01	3.461E-01	0.000E+00
NP-237	9.011E-01	3.132E-01	3.625E-01	0.000E+00
U-238	5.510E+00	2.195E+00	1.825E+00	0.000E+00
ANH-511	1.267E-01	6.748E-02	4.404E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	5.643E-02	3.369E-01	5.690E-01	0.000E+00 NOT IDENT.
NA-22	-5.165E-02	3.909E-02	5.936E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.679E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.020E-02	3.640E-02	6.086E-02	0.000E+00 FAIL ABUN
V-48	-1.127E-01	8.261E-02	1.203E-01	0.000E+00 NOT IDENT.
CR-51	4.307E-03	3.981E-01	6.947E-01	0.000E+00 NOT IDENT.

MN-54	-1.426E-02	3.322E-02	5.553E-02	0.000E+00	NOT IDENT.
CO-56	-1.738E-02	3.722E-02	6.187E-02	0.000E+00	NOT IDENT.
CO-57	-4.368E-03	2.595E-02	4.320E-02	0.000E+00	NOT IDENT.
CO-58	-8.736E-03	3.609E-02	6.118E-02	0.000E+00	NOT IDENT.
FE-59	-5.080E-02	9.366E-02	1.498E-01	0.000E+00	NOT IDENT.
CO-60	-3.149E-02	3.570E-02	5.290E-02	0.000E+00	NOT IDENT.
ZN-65	-5.890E-02	9.724E-02	1.287E-01	0.000E+00	NOT IDENT.
SE-75	5.451E-03	4.591E-02	7.750E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.048E-02	8.196E-02	0.000E+00	NOT IDENT.
Y-88	-2.507E-03	3.326E-02	4.761E-02	0.000E+00	NOT IDENT.
Y-91	4.512E-01	2.050E+01	3.493E+01	0.000E+00	NOT IDENT.
NB-94	5.347E-03	2.997E-02	5.095E-02	0.000E+00	NOT IDENT.
NB-95	8.092E-02	4.547E-02	8.135E-02	0.000E+00	NOT IDENT.
NB-95M	6.976E-02	1.477E-01	2.242E-01	0.000E+00	NOT IDENT.
ZR-95	5.893E-02	6.775E-02	1.187E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	6.726E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.727E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	7.279E-03	3.919E-02	6.604E-02	0.000E+00	FAIL ABUN
RH-106	-6.419E-02	2.947E-01	4.963E-01	0.000E+00	NOT IDENT.
RU-106	-6.419E-02	2.946E-01	4.963E-01	0.000E+00	NOT IDENT.
AG-108M	3.796E-03	2.727E-02	4.646E-02	0.000E+00	NOT IDENT.
AG-110M	2.698E-02	3.638E-02	5.599E-02	0.000E+00	NOT IDENT.
SN-113	-1.275E-02	4.284E-02	7.220E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	9.001E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-5.972E-02	7.498E-02	1.284E-01	0.000E+00	NOT IDENT.
TE-123M	-1.452E-02	2.816E-02	4.872E-02	0.000E+00	NOT IDENT.
SB-124	2.927E-02	6.554E-02	1.167E-01	0.000E+00	NOT IDENT.
SB-125	-1.002E-02	8.625E-02	1.453E-01	0.000E+00	FAIL ABUN
TE-125M	-6.555E+00	1.053E+01	1.738E+01	0.000E+00	NOT IDENT.
I-126	0.000E+00	2.757E-01	5.302E-01	0.000E+00	FAIL ABUN
SB-126	-2.361E-01	2.329E-01	3.028E-01	0.000E+00	FAIL ABUN
SB-127	-2.723E-02	4.126E+00	6.959E+00	0.000E+00	NOT IDENT.
I-131	-3.383E-02	1.868E-01	3.190E-01	0.000E+00	NOT IDENT.
TE-132	1.263E+00	3.258E+00	5.617E+00	0.000E+00	NOT IDENT.
BA-133	1.780E-02	4.214E-02	6.476E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.408E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.280E-02	7.735E-02	0.000E+00	NOT IDENT.
CS-135	1.509E-01	1.591E-01	2.744E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.948E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.291E-02	1.445E-01	2.379E-01	0.000E+00	NOT IDENT.
CE-139	1.165E-03	2.939E-02	5.164E-02	0.000E+00	NOT IDENT.
BA-140	3.210E-02	3.484E-01	6.058E-01	0.000E+00	NOT IDENT.
LA-140	-1.228E-01	1.249E-01	1.927E-01	0.000E+00	FAIL ABUN
CE-141	1.008E-01	6.899E-02	1.267E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.377E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.142E-02	2.066E-01	3.295E-01	0.000E+00	NOT IDENT.
PM-144	-2.261E-03	3.096E-02	5.192E-02	0.000E+00	NOT IDENT.
PR-144	-1.698E-01	2.325E+00	3.900E+00	0.000E+00	NOT IDENT.
PM-146	2.829E-02	3.923E-02	6.665E-02	0.000E+00	NOT IDENT.
ND-147	-3.930E-01	7.534E-01	1.266E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	8.308E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.857E-02	1.017E-01	1.471E-01	0.000E+00	FAIL ABUN
GD-153	5.331E-02	1.102E-01	1.364E-01	0.000E+00	NOT IDENT.
EU-154	-1.458E-01	1.109E-01	1.676E-01	0.000E+00	NOT IDENT.
EU-155	1.063E-01	1.036E-01	1.813E-01	0.000E+00	FAIL ABUN
TB-160	1.069E-01	1.280E-01	2.290E-01	0.000E+00	FAIL ABUN
HO-166M	4.481E-03	5.797E-02	9.783E-02	0.000E+00	FAIL ABUN
TA-182	-1.257E-01	1.872E-01	3.052E-01	0.000E+00	FAIL ABUN
IR-192	1.162E-02	3.378E-02	5.974E-02	0.000E+00	FAIL ABUN
HG-203	1.956E-02	4.280E-02	7.272E-02	0.000E+00	NOT IDENT.
BI-207	2.262E-02	4.733E-02	8.151E-02	0.000E+00	FAIL ABUN
PB-210	7.468E-02	2.847E+00	4.944E+00	0.000E+00	NOT IDENT.
PB-211	-2.139E-01	6.854E-01	1.138E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.753E-01	1.022E+00	0.000E+00	FAIL ABUN
RN-219	-2.817E-01	3.799E-01	6.212E-01	0.000E+00	NOT IDENT.
RA-223	-3.169E-01	6.575E-01	9.626E-01	0.000E+00	FAIL ABUN
AC-227	7.576E-02	2.514E-01	4.284E-01	0.000E+00	FAIL ABUN
TH-227	7.576E-02	2.514E-01	4.284E-01	0.000E+00	FAIL ABUN
TH-229	5.925E-02	5.061E-01	8.794E-01	0.000E+00	FAIL ABUN
PA-231	1.637E-03	1.426E+00	2.380E+00	0.000E+00	FAIL ABUN
TH-231	-3.169E-01	6.575E-01	9.626E-01	0.000E+00	FAIL ABUN
PA-233	-3.000E-02	5.693E-02	9.710E-02	0.000E+00	FAIL ABUN
PA-234	7.957E-02	2.646E-01	4.558E-01	0.000E+00	FAIL ABUN
PA-234M	7.725E+00	4.492E+00	8.152E+00	0.000E+00	NOT IDENT.
NP-239	-2.022E-01	3.962E-01	6.530E-01	0.000E+00	FAIL ABUN
AM-241	1.056E-01	1.393E-01	2.287E-01	0.000E+00	NOT IDENT.
CM-247	-1.113E-02	3.450E-02	5.791E-02	0.000E+00	NOT IDENT.
CF-249	1.225E-02	3.605E-02	6.264E-02	0.000E+00	NOT IDENT.

CF-251 2.791E-02 1.223E-01 2.149E-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]G248030009.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:34:11
Sample ID          : G248030009 Sample quantity : 1.25920E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.26 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 958221 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	2019	10.66*	1.909E+00	2.957E+01	2.957E+01	10.37
CD-109	88.03	281	3.70*	7.485E+00	3.020E+00	3.122E+00	28.60
SN-126	64.28	297	9.60	4.345E+00	2.124E+00	2.124E+00	39.32
	86.94	281	8.90	7.485E+00	1.255E+00	1.255E+00	49.54
	87.57	281	37.00*	7.485E+00	3.020E-01	3.020E-01	28.60
BA-137M	661.66	385	89.90*	3.589E+00	3.558E-01	3.563E-01	17.55
CS-137	661.66	385	85.10*	3.589E+00	3.759E-01	3.764E-01	17.56
TL-208	277.37	---	6.60	6.182E+00	---	Line Not Found	---
	583.19	619	85.00*	3.930E+00	5.523E-01	5.523E-01	18.09
	860.56	79	12.50	2.921E+00	6.427E-01	6.427E-01	58.93
BI-211	72.87	---	1.23	5.897E+00	---	Line Not Found	---
	351.06	923	12.92*	5.400E+00	3.945E+00	3.945E+00	15.10
PB-212	74.82	529	10.28	6.179E+00	2.482E+00	2.482E+00	21.80
	77.11	828	17.10	6.471E+00	2.231E+00	2.231E+00	15.00
	238.63	1742	43.60*	6.708E+00	1.776E+00	1.776E+00	14.52
	300.09	200	3.30	5.907E+00	3.058E+00	3.058E+00	36.23
BI-214	609.32	776	45.49*	3.810E+00	1.335E+00	1.335E+00	15.86
	1120.29	214	14.92	2.346E+00	1.826E+00	1.826E+00	24.80
	1764.49	167	15.30	1.716E+00	1.900E+00	1.900E+00	22.64
PB-214	74.82	529	5.80	6.179E+00	4.399E+00	4.399E+00	21.06
	77.11	828	9.70	6.471E+00	3.934E+00	3.934E+00	17.12
	242.00	435	7.25	6.664E+00	2.682E+00	2.682E+00	28.31
	295.22	597	18.42	5.969E+00	1.619E+00	1.619E+00	21.23
	351.93	923	35.60*	5.400E+00	1.432E+00	1.432E+00	16.08
RA-224	240.99	435	4.10*	6.664E+00	4.743E+00	4.743E+00	27.71
RA-226	609.32	776	45.49*	3.810E+00	1.335E+00	1.335E+00	15.86
	1120.29	214	14.92	2.346E+00	1.826E+00	1.826E+00	24.80
	1764.49	167	15.30	1.716E+00	1.900E+00	1.900E+00	22.64
AC-228	338.32	384	11.27	5.524E+00	1.838E+00	1.838E+00	47.61
	911.20	423	25.80*	2.788E+00	1.754E+00	1.754E+00	21.17
	968.97	301	15.80	2.648E+00	2.147E+00	2.147E+00	30.32
RA-228	338.32	384	11.27	5.524E+00	1.838E+00	1.838E+00	47.61

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	423	25.80*	2.788E+00	1.754E+00	1.754E+00	21.17
	968.97	301	15.80	2.648E+00	2.147E+00	2.147E+00	30.32
	74.82	529	10.28	6.179E+00	2.482E+00	2.482E+00	19.55
	77.11	828	17.10	6.471E+00	2.231E+00	2.231E+00	15.00
	238.63	1742	43.60*	6.708E+00	1.776E+00	1.776E+00	14.52
TH-232	300.09	200	3.30	5.907E+00	3.058E+00	3.058E+00	70.35
	338.32	384	11.27	5.524E+00	1.838E+00	1.838E+00	24.51
	911.20	423	25.80*	2.788E+00	1.754E+00	1.754E+00	21.17
TH-234	968.97	301	15.80	2.648E+00	2.147E+00	2.147E+00	30.32
	63.29	297	3.70*	4.345E+00	5.510E+00	5.510E+00	40.66
	92.59	703	4.23	7.862E+00	6.301E+00	6.301E+00	26.77
U-235	89.96	241	3.47	7.681E+00	2.697E+00	2.697E+00	44.97
	93.35	703	5.60	7.862E+00	4.760E+00	4.760E+00	27.61
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
	185.72	306	57.20	7.607E+00	2.095E-01	2.095E-01	36.36
NP-237	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
	86.48	281	12.40*	7.485E+00	9.011E-01	9.011E-01	35.46
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	297	3.70*	4.345E+00	5.510E+00	5.510E+00	40.66
	92.59	703	4.23	7.862E+00	6.301E+00	6.301E+00	17.41
ANH-511	511.00	183	100.00*	4.299E+00	1.267E-01	1.267E-01	54.35

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 3
Number of lines tentatively identified by NID 30 90.91%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.957E+01	2.957E+01	0.307E+01	10.37	
CD-109	461.40D	1.03	3.020E+00	3.122E+00	0.893E+00	28.60	
SN-126	2.30E+05Y	1.00	3.020E-01	3.020E-01	0.864E-01	28.60	
BA-137M	30.08Y	1.00	3.558E-01	3.563E-01	0.625E-01	17.55	
CS-137	30.08Y	1.00	3.759E-01	3.764E-01	0.661E-01	17.56	
TL-208	1.41E+10Y	1.00	5.523E-01	5.523E-01	0.999E-01	18.09	
BI-211	7.04E+08Y	1.00	3.945E+00	3.945E+00	0.596E+00	15.10	
PB-212	1.41E+10Y	1.00	1.776E+00	1.776E+00	0.258E+00	14.52	
BI-214	1600.00Y	1.00	1.335E+00	1.335E+00	0.212E+00	15.86	
PB-214	1600.00Y	1.00	1.432E+00	1.432E+00	0.230E+00	16.08	
RA-224	1.41E+10Y	1.00	4.743E+00	4.743E+00	1.314E+00	27.71	
RA-226	1600.00Y	1.00	1.335E+00	1.335E+00	0.212E+00	15.86	
AC-228	1.41E+10Y	1.00	1.754E+00	1.754E+00	0.371E+00	21.17	
RA-228	1.41E+10Y	1.00	1.754E+00	1.754E+00	0.371E+00	21.17	
TH-228	1.41E+10Y	1.00	1.776E+00	1.776E+00	0.258E+00	14.52	
TH-232	1.41E+10Y	1.00	1.754E+00	1.754E+00	0.371E+00	21.17	
TH-234	4.47E+09Y	1.00	5.510E+00	5.510E+00	2.240E+00	40.66	
U-235	7.04E+08Y	1.00	2.095E-01	2.095E-01	0.762E-01	36.36	K
NP-237	2.14E+06Y	1.00	9.011E-01	9.011E-01	3.195E-01	35.46	
U-238	4.47E+09Y	1.00	5.510E+00	5.510E+00	2.240E+00	40.66	
ANH-511	1.00E+09Y	1.00	1.267E-01	1.267E-01	0.689E-01	54.35	

Total Activity : 6.804E+01 6.815E+01

Grand Total Activity : 6.804E+01 6.815E+01

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

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	99.05	128	485	1.49	198.27	194	9	1.78E-02	65.4	8.17E+00	T
0	129.27	82	542	1.46	258.67	254	9	1.13E-02	****	8.53E+00	
0	209.79	239	496	1.82	419.54	414	12	3.33E-02	39.5	7.18E+00	T
0	327.94	119	228	1.73	655.64	651	9	1.65E-02	49.3	5.63E+00	T
0	462.92	141	240	1.92	925.40	918	16	1.97E-02	52.3	4.58E+00	T
1	665.64	68	57	1.88	1330.60	1315	20	9.50E-03	48.3	3.57E+00	T
0	727.26	131	144	2.12	1453.78	1449	14	1.81E-02	43.1	3.34E+00	T
3	964.76	103	52	2.51	1928.61	1923	30	1.43E-02	32.8	2.66E+00	T
0	1729.87	41	20	0.89	3458.91	3450	16	5.70E-03	57.8	1.73E+00	
0	1847.56	44	25	2.53	3694.40	3683	19	6.06E-03	55.9	1.69E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248030009.CNF;1
* Acquisition date   : 13-MAR-2010 14:34:11   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 02:00:02.26          Half life ratio     : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library  : SOLID
* Sample ID          : G248030009             Analyst initials: MXR1
* Batch Number       : 958221                 Sample Quantity   : 1.25920E+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	2.957E+01	3.066E+00	4.787E-01	4.385E-02	61.781
CD-109	3.122E+00	8.929E-01	1.190E+00	1.129E-01	2.623
SN-126	3.020E-01	8.636E-02	1.156E-01	1.091E-02	2.613
BA-137M	3.563E-01	6.254E-02	4.861E-02	5.126E-03	7.330
CS-137	3.764E-01	6.609E-02	5.135E-02	5.422E-03	7.330
TL-208	5.523E-01	9.994E-02	5.268E-02	5.707E-03	10.486
BI-211	3.945E+00	5.958E-01	3.155E-01	3.682E-02	12.503
PB-212	1.776E+00	2.579E-01	8.685E-02	1.151E-02	20.446
BI-214	1.335E+00	2.117E-01	1.036E-01	1.208E-02	12.891
PB-214	1.432E+00	2.302E-01	1.122E-01	1.445E-02	12.758
RA-224	4.743E+00	1.314E+00	9.299E-01	1.164E-01	5.101
RA-226	1.335E+00	2.117E-01	1.036E-01	1.208E-02	12.891
AC-228	1.754E+00	3.715E-01	1.902E-01	2.576E-02	9.226
RA-228	1.754E+00	3.715E-01	1.902E-01	2.576E-02	9.226
TH-228	1.776E+00	2.579E-01	8.685E-02	1.151E-02	20.446
TH-232	1.754E+00	3.715E-01	1.902E-01	2.576E-02	9.226
TH-234	5.510E+00	2.240E+00	1.747E+00	3.108E-01	3.155
U-235	2.095E-01	7.616E-02	3.350E-01	5.725E-02	0.625

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	9.011E-01	3.195E-01	3.484E-01	7.994E-02	2.587
U-238	5.510E+00	2.240E+00	1.747E+00	3.108E-01	3.155
ANH-511	1.267E-01	6.886E-02	4.339E-02	4.348E-03	2.920

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.643E-02		3.438E-01	5.602E-01	5.845E-02	0.101
NA-22	-5.165E-02		3.989E-02	5.927E-02	5.108E-03	-0.871
NA-24	-3.404E+03		8.567E+02	Half-Life too short		
SC-46	-1.020E-02		3.714E-02	6.046E-02	6.768E-03	-0.169
V-48	-1.127E-01		8.429E-02	1.197E-01	1.255E-02	-0.942
CR-51	4.307E-03		4.062E-01	6.800E-01	8.801E-02	0.006
MN-54	-1.426E-02		3.390E-02	5.511E-02	6.122E-03	-0.259
CO-56	-1.738E-02		3.798E-02	6.141E-02	6.836E-03	-0.283
CO-57	-4.368E-03		2.648E-02	4.172E-02	3.440E-03	-0.105
CO-58	-8.736E-03		3.682E-02	6.069E-02	6.720E-03	-0.144
FE-59	-5.080E-02		9.557E-02	1.493E-01	1.462E-02	-0.340
CO-60	-3.149E-02		3.643E-02	5.286E-02	4.714E-03	-0.596
ZN-65	-5.890E-02		9.923E-02	1.283E-01	1.144E-02	-0.459
SE-75	5.451E-03		4.684E-02	7.565E-02	1.018E-02	0.072
SR-85	1.447E-01		5.152E-02	8.077E-02	8.104E-03	1.792
Y-88	-2.507E-03		3.393E-02	4.780E-02	3.865E-03	-0.052
Y-91	4.512E-01		2.091E+01	3.485E+01	2.866E+00	0.013
NB-94	5.347E-03		3.059E-02	5.043E-02	5.404E-03	0.106
NB-95	8.092E-02		4.639E-02	8.063E-02	8.818E-03	1.004
NB-95M	6.976E-02		1.508E-01	2.185E-01	2.891E-02	0.319
ZR-95	5.893E-02		6.913E-02	1.176E-01	1.369E-02	0.501
MO-99	2.162E-05		3.431E-05	Half-Life too short		
TC-99M	-1.060E+19		4.963E+18	Half-Life too short		
RU-103	7.279E-03		3.999E-02	6.505E-02	9.643E-03	0.112
RH-106	-6.419E-02		3.007E-01	4.905E-01	7.116E-02	-0.131
RU-106	-6.419E-02		3.006E-01	4.905E-01	5.123E-02	-0.131
AG-108M	3.796E-03		2.783E-02	4.568E-02	4.495E-03	0.083
AG-110M	2.698E-02		3.712E-02	5.537E-02	5.951E-03	0.487
SN-113	-1.275E-02		4.371E-02	7.088E-02	6.768E-03	-0.180
CD-115	-3.283E-05		4.592E-05	Half-Life too short		
SN-117M	-5.972E-02		7.651E-02	1.244E-01	1.180E-02	-0.480
TE-123M	-1.452E-02		2.874E-02	4.722E-02	4.510E-03	-0.308
SB-124	2.927E-02		6.688E-02	1.170E-01	1.043E-02	0.250
SB-125	-1.002E-02		8.801E-02	1.428E-01	1.385E-02	-0.070
TE-125M	-6.555E+00		1.074E+01	1.676E+01	1.727E+00	-0.391
I-126	5.686E-01	+	2.814E-01	5.245E-01	5.541E-02	1.084
SB-126	-2.361E-01		2.377E-01	2.999E-01	3.234E-02	-0.787
SB-127	-2.723E-02		4.210E+00	6.886E+00	1.034E+00	-0.004
I-131	-3.383E-02		1.906E-01	3.128E-01	3.481E-02	-0.108
TE-132	1.263E+00		3.325E+00	5.472E+00	1.058E+00	0.231

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	1.780E-02		4.300E-02	6.348E-02	9.347E-03	0.280
I-133	-9.108E-01		7.182E-01	Half-Life too short		
CS-134	7.858E-02		4.367E-02	7.670E-02	8.490E-03	1.025
CS-135	1.509E-01		1.624E-01	2.679E-01	3.875E-02	0.563
I-135	-2.092E+17		1.504E+17	Half-Life too short		
CS-136	-3.291E-02		1.474E-01	2.369E-01	2.397E-02	-0.139
CE-139	1.165E-03		2.999E-02	5.008E-02	4.911E-03	0.023
BA-140	3.210E-02		3.555E-01	5.973E-01	2.051E-01	0.054
LA-140	-1.228E-01		1.274E-01	1.931E-01	1.693E-02	-0.636
CE-141	1.008E-01		7.040E-02	1.226E-01	1.116E-02	0.822
CE-143	2.530E-02		4.274E-03	Half-Life too short		
CE-144	5.142E-02		2.109E-01	3.186E-01	4.855E-02	0.161
PM-144	-2.261E-03		3.159E-02	5.139E-02	5.498E-03	-0.044
PR-144	-1.698E-01		2.373E+00	3.860E+00	4.128E-01	-0.044
PM-146	2.829E-02		4.003E-02	6.556E-02	7.538E-03	0.432
ND-147	-3.930E-01		7.688E-01	1.248E+00	1.979E-01	-0.315
PM-149	-6.877E-05		4.239E-04	Half-Life too short		
EU-152	-5.857E-02		1.038E-01	1.442E-01	1.733E-02	-0.406
GD-153	5.331E-02		1.124E-01	1.313E-01	1.155E-02	0.406
EU-154	-1.458E-01		1.131E-01	1.673E-01	1.903E-02	-0.871
EU-155	1.063E-01		1.057E-01	1.747E-01	1.499E-02	0.608
TB-160	1.069E-01		1.306E-01	2.274E-01	2.543E-02	0.470
HO-166M	4.481E-03		5.915E-02	9.686E-02	1.041E-02	0.046
TA-182	-1.257E-01		1.910E-01	3.046E-01	2.533E-02	-0.413
IR-192	1.162E-02		3.447E-02	5.847E-02	7.473E-03	0.199
HG-203	1.956E-02		4.368E-02	7.104E-02	1.004E-02	0.275
BI-207	2.262E-02		4.830E-02	8.118E-02	7.793E-03	0.279
PB-210	7.468E-02		2.905E+00	4.711E+00	4.339E-01	0.016
PB-211	-2.139E-01		6.994E-01	1.118E+00	5.426E-01	-0.191
BI-212	1.746E+00	+	7.911E-01	1.012E+00	1.423E-01	1.726
RN-219	-2.817E-01		3.877E-01	6.100E-01	9.348E-02	-0.462
RA-223	-3.169E-01		6.709E-01	9.424E-01	1.842E-01	-0.336
AC-227	7.576E-02		2.565E-01	4.180E-01	6.511E-02	0.181
TH-227	7.576E-02		2.566E-01	4.180E-01	7.026E-02	0.181
TH-229	5.925E-02		5.164E-01	8.547E-01	9.186E-02	0.069
PA-231	1.637E-03		1.455E+00	2.325E+00	4.229E-01	0.001
TH-231	-3.169E-01		6.709E-01	9.424E-01	1.842E-01	-0.336
PA-233	-3.000E-02		5.809E-02	9.501E-02	1.245E-02	-0.316
PA-234	7.957E-02		2.700E-01	4.532E-01	9.008E-02	0.176
PA-234M	7.725E+00		4.584E+00	8.112E+00	9.296E-01	0.952
NP-239	-2.022E-01		4.043E-01	6.302E-01	5.208E-02	-0.321
AM-241	1.056E-01		1.422E-01	2.187E-01	1.709E-02	0.483
CM-247	-1.113E-02		3.520E-02	5.686E-02	5.333E-03	-0.196
CF-249	1.225E-02		3.678E-02	6.148E-02	5.836E-03	0.199
CF-251	2.791E-02		1.248E-01	2.086E-01	2.125E-02	0.134

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248030009
* Acquisition date   : 13-MAR-2010 14:34:11 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 02:00:02.26                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248030009                      Analyst initials: MXR1
* Batch Number       : 958221                          Sample Quantity : 1.2592E+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	2.957E+01	3.005E+00	2.393E-01	1.533E+00
CD-109	3.122E+00	8.750E-01	6.194E-01	4.464E-01
SN-126	3.020E-01	8.464E-02	6.016E-02	4.318E-02
BA-137M	3.563E-01	6.129E-02	2.459E-02	3.127E-02
CS-137	3.764E-01	6.477E-02	2.597E-02	3.305E-02
TL-208	5.523E-01	9.794E-02	2.669E-02	4.997E-02
BI-211	3.945E+00	5.839E-01	1.611E-01	2.979E-01
PB-212	1.776E+00	2.527E-01	4.458E-02	1.289E-01
BI-214	1.335E+00	2.075E-01	5.244E-02	1.058E-01
PB-214	1.432E+00	2.256E-01	5.729E-02	1.151E-01
RA-224	4.743E+00	1.288E+00	4.772E-01	6.571E-01
RA-226	1.335E+00	2.075E-01	5.244E-02	1.058E-01
AC-228	1.754E+00	3.640E-01	9.574E-02	1.857E-01
RA-228	1.754E+00	3.640E-01	9.574E-02	1.857E-01
TH-228	1.776E+00	2.527E-01	4.458E-02	1.289E-01
TH-232	1.754E+00	3.640E-01	9.574E-02	1.857E-01
TH-234	5.510E+00	2.195E+00	9.131E-01	1.120E+00
U-235	8.252E-02	1.973E-01	1.732E-01	1.007E-01
NP-237	9.011E-01	3.132E-01	1.814E-01	1.598E-01
U-238	5.510E+00	2.195E+00	9.131E-01	1.120E+00
ANH-511	1.267E-01	6.748E-02	2.203E-02	3.443E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	5.643E-02	3.369E-01	2.847E-01	1.719E-01 NOT IDENT.
NA-22	-5.165E-02	3.909E-02	2.970E-02	1.994E-02 NOT IDENT.
NA-24	-3.404E+09	1.679E+09	0.000E+00	8.567E+08 SHORT HLIF
SC-46	-1.020E-02	3.640E-02	3.045E-02	1.857E-02 FAIL ABUN
V-48	-1.127E-01	8.261E-02	6.019E-02	4.215E-02 NOT IDENT.
CR-51	4.307E-03	3.981E-01	3.476E-01	2.031E-01 NOT IDENT.

MN-54	-1.426E-02	3.322E-02	2.778E-02	1.695E-02	NOT IDENT.
CO-56	-1.738E-02	3.722E-02	3.095E-02	1.899E-02	NOT IDENT.
CO-57	-4.368E-03	2.595E-02	2.161E-02	1.324E-02	NOT IDENT.
CO-58	-8.736E-03	3.609E-02	3.061E-02	1.841E-02	NOT IDENT.
FE-59	-5.080E-02	9.366E-02	7.495E-02	4.779E-02	NOT IDENT.
CO-60	-3.149E-02	3.570E-02	2.647E-02	1.822E-02	NOT IDENT.
ZN-65	-5.890E-02	9.724E-02	6.438E-02	4.961E-02	NOT IDENT.
SE-75	5.451E-03	4.591E-02	3.877E-02	2.342E-02	NOT IDENT.
SR-85	1.447E-01	5.048E-02	4.100E-02	2.576E-02	NOT IDENT.
Y-88	-2.507E-03	3.326E-02	2.382E-02	1.697E-02	NOT IDENT.
Y-91	4.512E-01	2.050E+01	1.748E+01	1.046E+01	NOT IDENT.
NB-94	5.347E-03	2.997E-02	2.549E-02	1.529E-02	NOT IDENT.
NB-95	8.092E-02	4.547E-02	4.070E-02	2.320E-02	NOT IDENT.
NB-95M	6.976E-02	1.477E-01	1.122E-01	7.538E-02	NOT IDENT.
ZR-95	5.893E-02	6.775E-02	5.939E-02	3.457E-02	NOT IDENT.
MO-99	2.162E+01	6.726E+01	0.000E+00	3.431E+01	SHORT HLIF
TC-99M	-1.060E+25	9.727E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	7.279E-03	3.919E-02	3.304E-02	1.999E-02	FAIL ABUN
RH-106	-6.419E-02	2.947E-01	2.483E-01	1.503E-01	NOT IDENT.
RU-106	-6.419E-02	2.946E-01	2.483E-01	1.503E-01	NOT IDENT.
AG-108M	3.796E-03	2.727E-02	2.325E-02	1.391E-02	NOT IDENT.
AG-110M	2.698E-02	3.638E-02	2.801E-02	1.856E-02	NOT IDENT.
SN-113	-1.275E-02	4.284E-02	3.612E-02	2.186E-02	NOT IDENT.
CD-115	-3.283E+01	9.001E+01	0.000E+00	4.592E+01	SHORT HLIF
SN-117M	-5.972E-02	7.498E-02	6.423E-02	3.826E-02	NOT IDENT.
TE-123M	-1.452E-02	2.816E-02	2.437E-02	1.437E-02	NOT IDENT.
SB-124	2.927E-02	6.554E-02	5.837E-02	3.344E-02	NOT IDENT.
SB-125	-1.002E-02	8.625E-02	7.270E-02	4.400E-02	FAIL ABUN
TE-125M	-6.555E+00	1.053E+01	8.697E+00	5.372E+00	NOT IDENT.
I-126	5.686E-01	2.757E-01	2.653E-01	1.407E-01	FAIL ABUN
SB-126	-2.361E-01	2.329E-01	1.515E-01	1.188E-01	FAIL ABUN
SB-127	-2.723E-02	4.126E+00	3.481E+00	2.105E+00	NOT IDENT.
I-131	-3.383E-02	1.868E-01	1.596E-01	9.532E-02	NOT IDENT.
TE-132	1.263E+00	3.258E+00	2.810E+00	1.662E+00	NOT IDENT.
BA-133	1.780E-02	4.214E-02	3.240E-02	2.150E-02	NOT IDENT.
I-133	-9.108E+05	1.408E+06	0.000E+00	7.182E+05	SHORT HLIF
CS-134	7.858E-02	4.280E-02	3.870E-02	2.184E-02	NOT IDENT.
CS-135	1.509E-01	1.591E-01	1.373E-01	8.118E-02	NOT IDENT.
I-135	-2.092E+23	2.948E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.291E-02	1.445E-01	1.190E-01	7.370E-02	NOT IDENT.
CE-139	1.165E-03	2.939E-02	2.583E-02	1.500E-02	NOT IDENT.
BA-140	3.210E-02	3.484E-01	3.031E-01	1.778E-01	NOT IDENT.
LA-140	-1.228E-01	1.249E-01	9.641E-02	6.372E-02	FAIL ABUN
CE-141	1.008E-01	6.899E-02	6.337E-02	3.520E-02	NOT IDENT.
CE-143	2.530E+04	8.377E+03	0.000E+00	4.274E+03	SHORT HLIF
CE-144	5.142E-02	2.066E-01	1.648E-01	1.054E-01	NOT IDENT.
PM-144	-2.261E-03	3.096E-02	2.598E-02	1.579E-02	NOT IDENT.
PR-144	-1.698E-01	2.325E+00	1.951E+00	1.186E+00	NOT IDENT.
PM-146	2.829E-02	3.923E-02	3.334E-02	2.002E-02	NOT IDENT.
ND-147	-3.930E-01	7.534E-01	6.332E-01	3.844E-01	FAIL ABUN
PM-149	-6.877E+01	8.308E+02	0.000E+00	4.239E+02	SHORT HLIF
EU-152	-5.857E-02	1.017E-01	7.362E-02	5.191E-02	FAIL ABUN
GD-153	5.331E-02	1.102E-01	6.824E-02	5.621E-02	NOT IDENT.
EU-154	-1.458E-01	1.109E-01	8.384E-02	5.656E-02	NOT IDENT.
EU-155	1.063E-01	1.036E-01	9.071E-02	5.285E-02	FAIL ABUN
TB-160	1.069E-01	1.280E-01	1.146E-01	6.528E-02	FAIL ABUN
HO-166M	4.481E-03	5.797E-02	4.894E-02	2.958E-02	FAIL ABUN
TA-182	-1.257E-01	1.872E-01	1.527E-01	9.548E-02	FAIL ABUN
IR-192	1.162E-02	3.378E-02	2.989E-02	1.723E-02	FAIL ABUN
HG-203	1.956E-02	4.280E-02	3.638E-02	2.184E-02	NOT IDENT.
BI-207	2.262E-02	4.733E-02	4.078E-02	2.415E-02	FAIL ABUN
PB-210	7.468E-02	2.847E+00	2.473E+00	1.452E+00	NOT IDENT.
PB-211	-2.139E-01	6.854E-01	5.695E-01	3.497E-01	NOT IDENT.
BI-212	1.746E+00	7.753E-01	5.111E-01	3.956E-01	FAIL ABUN
RN-219	-2.817E-01	3.799E-01	3.108E-01	1.938E-01	NOT IDENT.
RA-223	-3.169E-01	6.575E-01	4.816E-01	3.355E-01	FAIL ABUN
AC-227	7.576E-02	2.514E-01	2.143E-01	1.283E-01	FAIL ABUN
TH-227	7.576E-02	2.514E-01	2.143E-01	1.283E-01	FAIL ABUN
TH-229	5.925E-02	5.061E-01	4.400E-01	2.582E-01	FAIL ABUN
PA-231	1.637E-03	1.426E+00	1.190E+00	7.276E-01	FAIL ABUN
TH-231	-3.169E-01	6.575E-01	4.816E-01	3.355E-01	FAIL ABUN
PA-233	-3.000E-02	5.693E-02	4.858E-02	2.905E-02	FAIL ABUN
PA-234	7.957E-02	2.646E-01	2.281E-01	1.350E-01	FAIL ABUN
PA-234M	7.725E+00	4.492E+00	4.079E+00	2.292E+00	NOT IDENT.
NP-239	-2.022E-01	3.962E-01	3.267E-01	2.022E-01	FAIL ABUN
AM-241	1.056E-01	1.393E-01	1.144E-01	7.108E-02	NOT IDENT.
CM-247	-1.113E-02	3.450E-02	2.897E-02	1.760E-02	NOT IDENT.
CF-249	1.225E-02	3.605E-02	3.134E-02	1.839E-02	NOT IDENT.

CF-251	2.791E-02	1.223E-01	1.075E-01	6.239E-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	342.3680
49.72	340.1248
57.36	0.0000
59.54	378.4748
63.29	408.2725
63.29	408.2725
64.28	409.8009
67.75	532.3920
69.67	469.0537
70.83	514.3256
72.81	561.2137
72.87	561.3303
72.87	561.3303
74.82	565.0477
74.82	565.0477
74.82	565.0477
74.97	565.3322
77.11	569.3511
77.11	569.3511
77.11	569.3511
79.69	520.5332
79.80	520.7163
80.12	604.5237
80.19	604.6583
80.57	605.3881
81.00	606.2135
81.07	606.3481
81.07	606.3481
83.79	530.3914
83.79	530.3914
85.43	533.0554
86.48	534.7467
86.55	534.8583
86.79	535.2422
86.94	535.4860
87.57	536.4925
88.03	537.2266
88.47	537.9269
89.96	540.2836
91.11	542.0903
92.59	544.3964
92.59	544.3964
93.35	545.5740
94.67	357.5573
94.87	357.7572
94.87	357.7572
95.86	381.3700
97.43	383.0265
98.44	367.8104
99.53	383.5890
100.11	400.5363
103.18	448.3169
103.37	463.3824
105.31	425.3979
106.12	447.3245
109.28	485.5296
111.00	464.0781
111.76	457.0905
116.30	472.3820
117.23	448.3922
121.12	426.0911
121.78	465.8505
122.06	444.2825
123.07	424.5491
131.20	432.7943
133.52	405.2179
136.00	408.6113

136.47	411.6908
140.51	0.0000
140.51	0.0000
143.76	429.7041
144.24	433.7429
144.24	433.7429
145.44	408.4717
152.43	453.7058
153.25	440.5979
154.21	432.1766
154.21	432.1766
156.02	448.4991
158.56	459.9666
159.00	445.4336
162.66	423.1325
163.33	445.2574
165.86	423.7191
176.60	400.0833
177.52	395.8986
181.07	0.0000
184.41	414.7516
185.72	424.8346
193.51	405.5144
197.04	394.8616
205.31	417.4763
210.85	388.4654
215.65	340.4832
222.11	336.6551
227.38	368.3035
228.16	366.6228
228.18	366.6335
235.69	400.7563
235.96	392.4821
235.96	392.4821
238.63	335.9996
238.63	335.9996
240.99	337.0647
242.00	337.5184
244.70	265.8703
252.40	300.1817
252.80	278.8056
256.23	326.5211
256.23	326.5211
260.90	0.0000
264.66	315.7851
268.22	328.1445
269.46	346.2280
269.46	346.2280
271.23	311.7249
273.65	429.7365
276.40	323.6434
277.37	290.7282
277.60	289.6942
278.00	289.8336
279.20	319.1614
279.54	319.2884
280.46	324.0892
283.69	302.9604
284.31	324.4357
285.41	310.2894
285.90	0.0000
287.50	277.3549
293.27	0.0000
295.22	264.3265
295.96	264.5472
298.57	245.6136
299.98	245.9993
299.98	245.9993
300.09	246.0322
300.09	246.0322
300.13	246.0421
301.36	244.8575
302.85	257.4472
304.50	239.6045
304.50	239.6045
304.85	232.0635
308.46	225.8290
311.90	255.6975

316.51	249.5408
319.41	245.6599
320.08	253.2801
323.87	260.2138
323.87	260.2138
328.76	297.5592
333.37	320.9995
334.37	300.5317
334.37	300.5317
338.28	235.3063
338.28	235.3063
338.32	235.3185
338.32	235.3185
338.32	235.3185
340.48	221.8803
340.55	210.8025
344.28	256.1319
351.06	253.0437
351.93	242.3593
356.01	210.8121
364.49	214.1482
366.42	0.0000
383.85	222.9758
388.16	208.9208
388.63	213.9843
391.69	229.5396
400.66	245.4446
401.81	241.6641
402.40	230.7052
404.85	243.3123
410.95	215.1598
414.70	272.8647
423.72	215.4371
427.09	199.5818
427.87	216.1805
433.94	196.5684
453.88	171.6974
463.37	173.6754
468.07	194.8521
473.00	178.1592
476.78	200.0663
477.60	194.8369
487.02	178.9606
492.35	0.0000
497.08	153.1327
511.00	180.9965
514.00	199.7014
527.90	0.0000
529.87	0.0000
531.02	166.8567
537.26	168.4981
546.56	0.0000
563.25	163.8594
569.33	185.4269
569.50	186.3978
569.70	182.6172
583.19	161.1743
600.60	175.6308
602.73	183.1236
604.72	178.3495
609.32	167.7063
609.32	167.7063
610.33	167.8113
614.28	172.6845
618.01	155.8492
621.93	168.0046
621.93	168.0046
633.25	150.3425
635.95	154.5464
636.99	144.7257
645.85	140.4922
657.76	134.1468
661.66	127.6950
661.66	127.6950
664.57	0.0000
666.33	129.6151
666.50	129.6282
677.62	136.9583

685.70	140.6251
695.00	150.5590
696.49	151.7066
696.51	151.7096
697.00	151.7488
702.65	149.1271
706.68	151.5100
711.68	162.2480
720.70	169.1061
721.93	0.0000
722.78	146.1254
722.91	146.1340
723.31	133.6879
724.19	121.2649
727.33	128.6091
733.00	139.7373
735.93	149.1449
739.50	0.0000
747.24	123.1675
752.31	144.5953
753.82	118.2982
756.73	111.0690
763.94	187.9077
765.81	146.6418
766.42	147.7469
777.92	0.0000
778.90	142.2460
783.70	134.0027
785.37	112.6541
795.86	106.7585
801.95	134.1088
810.29	119.1317
810.76	122.8822
815.77	112.9079
818.51	106.5132
832.01	127.8700
834.85	142.1602
836.80	0.0000
846.77	129.6870
856.80	119.8191
860.56	99.0651
871.09	109.1036
873.19	126.4478
875.33	0.0000
879.36	94.1343
880.51	94.1821
883.24	111.6144
884.68	112.6480
889.28	114.8040
898.04	109.4313
911.20	97.3912
911.20	97.3912
911.20	97.3912
926.50	102.9272
937.49	116.2036
944.13	105.6621
946.00	103.7677
949.00	99.9379
962.29	109.6867
964.08	113.2501
966.15	99.6442
968.97	99.7576
968.97	99.7576
968.97	99.7576
983.53	112.3848
996.26	145.2254
1001.03	87.9057
1004.73	119.4013
1037.84	108.6396
1038.76	0.0000
1048.07	118.3210
1050.41	102.9785
1050.41	102.9785
1063.66	100.3831
1085.87	138.7705
1099.45	121.6317
1112.07	105.0694
1115.54	129.1907

1120.29	118.3164
1120.29	118.3164
1120.55	114.6304
1121.30	114.6606
1131.51	0.0000
1173.23	122.3987
1177.93	117.8818
1189.05	112.6447
1204.77	122.7563
1221.41	150.2252
1231.02	183.3292
1235.36	136.4921
1238.28	116.4174
1260.41	0.0000
1271.85	99.1985
1274.44	114.8527
1274.54	114.8563
1291.59	70.4597
1298.22	0.0000
1312.11	92.5743
1332.49	73.3338
1365.19	58.0460
1368.63	0.0000
1384.29	90.5795
1408.01	72.9668
1457.56	0.0000
1460.82	49.3799
1489.16	53.9154
1505.03	58.3157
1596.21	73.0167
1620.50	45.8008
1678.03	0.0000
1690.97	23.3060
1764.49	26.6858
1764.49	26.6858
1770.23	16.0330
1771.35	23.1651
1791.20	0.0000
1836.06	26.3090

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248030009

Total Uranium Activity	1.6431E+01	ug/g
Total Uranium Counting Unc.	6.5322E+00	ug/g
Total Uranium Tpu	3.3328E-06	ug/g
Total Uranium Mda	2.7176E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*             2040 SAVAGE ROAD                     *
*             CHARLESTON , SC 29417                 *
*             GROSS GAMMA REPORT                   *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G248030009
*  ANALYST       : MXR1            DETECTOR    : GAM22
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 13-MAR-2010 14:34:11.13  SAMPLE ALQT: 125.920 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.039E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.215E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.785E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.358E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:37:57.76

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054956.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 13-MAR-2010 14:34:56
Sample ID          : G1202054956      Sample quantity   : 1.55860E+02 GRAM
Detector name      : GAM23             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.84  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 958221            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	186.43*	49	96	4.43	372.87	367	15	6.78E-03	50.9	
2	0	238.44*	28	57	0.90	476.89	473	9	3.92E-03	57.8	
3	0	510.47*	42	28	2.01	1020.94	1013	16	5.82E-03	46.2	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:38:00

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054956.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 3-MAR-2010 00:00:00   Acquisition date : 13-MAR-2010 14:34:56
Sample ID         : G1202054956           Sample quantity  : 155.86 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA23               Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:00.84   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
ANH-511	+	511.00	*	3.967E-02	3.670E-02	2.724E-02	1.582E-03	1.457

---- 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	*	-1.406E-02	1.647E-01	2.685E-01	1.824E-02	-0.052
NA-22		1274.54	*	-6.885E-03	1.943E-02	2.894E-02	1.944E-03	-0.238
NA-24		1368.63	*	-4.008E-04	1.943E-02	Half-Life too short		
K-40		1460.82	*	2.256E-01	2.499E-01	4.509E-01	3.373E-02	0.500
SC-46		889.28	*	6.921E-03	1.846E-02	3.267E-02	2.919E-03	0.212
		1120.55		7.099E-03	1.938E-02	3.427E-02	2.233E-03	0.207
V-48		944.13		-6.216E-02	3.382E-01	5.418E-01	4.721E-02	-0.115
		983.53	*	8.715E-03	2.320E-02	4.153E-02	3.455E-03	0.210
		1312.11		-5.714E-03	3.498E-02	5.487E-02	3.904E-03	-0.104
CR-51		320.08	*	-5.978E-02	1.738E-01	2.821E-01	1.847E-02	-0.212
MN-54		834.85	*	1.928E-02	2.093E-02	3.897E-02	3.086E-03	0.495
CO-56		846.77	*	1.548E-03	2.076E-02	3.506E-02	2.852E-03	0.044
		1037.84		1.099E-01	1.600E-01	2.931E-01	2.400E-02	0.375
		1238.28		1.304E-02	3.123E-02	5.559E-02	3.698E-03	0.235
		1771.35		2.452E-02	1.687E-01	2.885E-01	1.785E-02	0.085
CO-57		122.06	*	6.059E-03	1.115E-02	1.912E-02	1.127E-03	0.317
		136.47		-9.813E-02	9.748E-02	1.465E-01	9.508E-03	-0.670
CO-58		810.76	*	-5.755E-04	1.626E-02	2.706E-02	2.033E-03	-0.021
FE-59		1099.45	*	-9.362E-03	3.814E-02	5.948E-02	4.579E-03	-0.157
		1291.59		1.804E-02	5.599E-02	9.740E-02	8.085E-03	0.185
CO-60		1173.23		-6.054E-03	1.949E-02	2.978E-02	1.680E-03	-0.203
		1332.49	*	5.442E-04	2.195E-02	3.585E-02	2.632E-03	0.015
ZN-65		1115.54	*	-1.778E-02	3.766E-02	5.550E-02	3.665E-03	-0.320
SE-75		121.12		3.857E-02	5.884E-02	1.016E-01	9.310E-03	0.380
		136.00		-2.336E-02	1.843E-02	2.702E-02	1.527E-03	-0.864
		264.66	*	1.309E-02	2.215E-02	3.746E-02	2.181E-03	0.350
		279.54		2.739E-02	5.435E-02	9.535E-02	6.004E-03	0.287
		400.66		-7.335E-02	1.181E-01	1.809E-01	1.640E-02	-0.405

---- 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	*		4.044E-02	2.373E-02	4.163E-02	2.416E-03	0.971
Y-88	898.04			-2.034E-03	1.962E-02	3.208E-02	2.933E-03	-0.063
	1836.06	*		9.311E-03	1.813E-02	3.464E-02	2.040E-03	0.269
Y-91	1204.77	*		-4.504E+00	7.056E+00	9.438E+00	5.629E-01	-0.477
NB-94	702.65	*		-1.593E-03	1.882E-02	2.999E-02	1.713E-03	-0.053
	871.09			1.568E-02	1.777E-02	3.351E-02	2.878E-03	0.468
NB-95	765.81	*		3.350E-03	1.999E-02	3.297E-02	2.216E-03	0.102
NB-95M	235.69	*		2.643E-02	6.744E-02	9.885E-02	7.317E-03	0.267
ZR-95	724.19			-1.643E-03	3.993E-02	6.383E-02	4.497E-03	-0.026
	756.73	*		1.687E-02	3.785E-02	6.493E-02	5.010E-03	0.260
MO-99	140.51			-1.258E+00	3.664E+00	5.834E+00	1.330E+00	-0.216
	181.07			7.140E-01	3.235E+00	4.698E+00	8.215E-01	0.152
	366.42			7.259E+00	1.631E+01	2.840E+01	1.665E+00	0.256
	739.50	*		1.745E-02	1.965E+00	3.166E+00	4.627E-01	0.006
	777.92			2.610E+00	5.878E+00	1.049E+01	7.260E-01	0.249
TC-99M	140.51	*		-2.617E+04	5.878E+00	Half-Life too short		
RU-103	497.08	*		-1.511E-02	1.876E-02	2.721E-02	3.385E-03	-0.555
	610.33			1.740E-01	4.026E-01	6.863E-01	1.024E-01	0.254
RH-106	621.93	*		6.367E-02	1.833E-01	3.109E-01	3.548E-02	0.205
	1050.41			-3.521E-01	1.118E+00	1.720E+00	1.294E-01	-0.205
RU-106	621.93	*		6.367E-02	1.832E-01	3.109E-01	1.670E-02	0.205
	1050.41			-3.521E-01	1.118E+00	1.720E+00	1.294E-01	-0.205
AG-108M	433.94	*		-5.350E-04	1.518E-02	2.500E-02	1.563E-03	-0.021
	614.28			2.106E-03	2.196E-02	3.556E-02	2.083E-03	0.059
	722.91			1.287E-04	1.745E-02	2.814E-02	1.806E-03	0.005
CD-109	88.03	*		-3.671E-01	3.596E-01	5.516E-01	5.385E-02	-0.666
AG-110M	657.76	*		6.123E-03	1.747E-02	2.979E-02	1.656E-03	0.206
	677.62			-5.476E-02	1.560E-01	2.374E-01	1.361E-02	-0.231
	706.68			-5.137E-02	1.136E-01	1.703E-01	1.046E-02	-0.302
	763.94			1.097E-02	8.655E-02	1.416E-01	9.903E-03	0.077
	884.68			-1.535E-02	2.451E-02	3.623E-02	3.303E-03	-0.424
	937.49			1.754E-02	5.172E-02	9.100E-02	8.263E-03	0.193
	1384.29			2.823E-02	5.895E-02	1.101E-01	8.334E-03	0.256
	1505.03			-1.074E-02	1.461E-01	2.305E-01	1.637E-02	-0.047
SN-113	391.69	*		-3.408E-03	2.362E-02	3.869E-02	2.383E-03	-0.088
CD-115	260.90			-7.339E+00	1.792E+01	2.747E+01	1.578E+00	-0.267
	492.35			3.205E+00	4.879E+00	8.669E+00	5.061E-01	0.370
	527.90	*		4.756E-01	1.344E+00	2.314E+00	1.335E-01	0.206
SN-117M	156.02			7.441E-01	8.303E-01	1.448E+00	7.579E-02	0.514
	158.56	*		-1.056E-02	2.159E-02	3.383E-02	1.758E-03	-0.312
TE-123M	159.00	*		1.559E-03	1.348E-02	2.217E-02	1.170E-03	0.070
SB-124	602.73			-5.566E-03	2.200E-02	3.470E-02	1.902E-03	-0.160
	645.85			1.147E-01	2.649E-01	4.547E-01	2.730E-02	0.252
	722.78			1.219E-03	1.664E-01	2.684E-01	1.692E-02	0.005
	1690.97	*		8.292E-03	4.847E-02	8.395E-02	5.875E-03	0.099
SB-125	427.87	*		6.660E-03	4.354E-02	7.343E-02	4.461E-03	0.091
	463.37			2.963E-02	1.436E-01	2.423E-01	1.642E-02	0.122
	600.60			-1.158E-02	1.001E-01	1.604E-01	1.034E-02	-0.072
	635.95			7.362E-03	1.316E-01	2.155E-01	1.371E-02	0.034

---- 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	*		-1.360E+00	4.334E+00	6.979E+00	6.341E-01	-0.195
I-126	388.63			2.291E-02	7.004E-02	1.203E-01	6.958E-03	0.190
	666.33	*		3.194E-02	8.943E-02	1.523E-01	7.884E-03	0.210
	753.82			3.238E-03	7.661E-01	1.232E+00	8.034E-02	0.003
SB-126	414.70			-1.289E-02	3.119E-02	4.933E-02	2.871E-03	-0.261
	666.50			2.043E-04	3.153E-02	5.106E-02	2.644E-03	0.004
	695.00			1.063E-02	3.301E-02	5.573E-02	3.120E-03	0.191
	697.00			2.091E-02	1.162E-01	1.924E-01	1.083E-02	0.109
	720.70	*		1.846E-02	5.973E-02	9.880E-02	5.921E-03	0.187
	856.80			5.785E-02	1.953E-01	3.400E-01	2.829E-02	0.170
SN-126	64.28			-5.685E-02	2.836E-01	4.679E-01	7.122E-02	-0.121
	86.94			-1.584E-02	1.394E-01	2.294E-01	9.541E-02	-0.069
	87.57	*		-2.854E-02	3.443E-02	5.359E-02	5.215E-03	-0.533
SB-127	252.40			-5.390E-02	9.779E-01	1.557E+00	6.340E-01	-0.035
	473.00			9.190E-02	3.782E-01	6.412E-01	6.333E-02	0.143
	685.70	*		-6.787E-02	3.121E-01	4.869E-01	3.751E-02	-0.139
	783.70			3.626E-01	7.423E-01	1.334E+00	1.348E-01	0.272
I-131	80.19			4.180E-01	1.271E+00	2.167E+00	1.993E-01	0.193
	284.31			-2.344E-03	4.892E-01	8.241E-01	5.301E-02	-0.003
	364.49	*		-4.031E-04	4.282E-02	7.134E-02	4.632E-03	-0.006
	636.99			1.771E-02	5.420E-01	8.836E-01	5.313E-02	0.020
TE-132	49.72			9.693E-01	4.401E+00	7.527E+00	7.280E-01	0.129
	111.76			1.783E+00	5.886E+00	9.920E+00	8.143E-01	0.180
	116.30			2.334E+00	5.314E+00	9.023E+00	7.146E-01	0.259
	228.16	*		-5.204E-02	1.399E-01	2.171E-01	2.937E-02	-0.240
BA-133	81.00			-1.567E-02	3.975E-02	6.411E-02	1.017E-02	-0.244
	276.40			8.511E-03	1.852E-01	2.967E-01	3.736E-02	0.029
	302.85			3.500E-03	7.004E-02	1.182E-01	1.354E-02	0.030
	356.01	*		-1.032E-02	2.248E-02	3.579E-02	4.051E-03	-0.288
	383.85			-6.264E-02	1.624E-01	2.594E-01	2.767E-02	-0.241
I-133	529.87	*		1.682E-05	1.624E-01	Half-Life	too short	
	875.33			-1.150E-03	1.624E-01	Half-Life	too short	
	1298.22			-1.683E-03	1.624E-01	Half-Life	too short	
CS-134	563.25			-2.040E-02	2.205E-01	3.482E-01	2.014E-02	-0.059
	569.33			5.766E-02	1.080E-01	1.880E-01	1.093E-02	0.307
	604.72			-2.889E-03	1.888E-02	3.011E-02	1.658E-03	-0.096
	795.86	*		8.601E-03	2.216E-02	3.927E-02	2.868E-03	0.219
	801.95			-5.579E-02	1.798E-01	2.851E-01	2.108E-02	-0.196
	1365.19			3.205E-01	5.486E-01	1.031E+00	8.020E-02	0.311
CS-135	268.22	*		-3.507E-02	8.011E-02	1.222E-01	9.337E-03	-0.287
I-135	546.56			1.243E+05	8.011E-02	Half-Life	too short	
	836.80			3.322E+04	8.011E-02	Half-Life	too short	
	1038.76			5.593E+04	8.011E-02	Half-Life	too short	
	1131.51			1.073E+04	8.011E-02	Half-Life	too short	
	1260.41	*		-3.661E+03	8.011E-02	Half-Life	too short	
	1457.56			8.655E+04	8.011E-02	Half-Life	too short	
	1678.03			-4.711E+04	8.011E-02	Half-Life	too short	
	1791.20			1.114E+05	8.011E-02	Half-Life	too short	
CS-136	153.25			2.323E-02	3.266E-01	5.360E-01	4.111E-02	0.043

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		1.652E-01	1.825E-01	3.182E-01	2.081E-02	0.519
		273.65		-3.868E-02	2.047E-01	3.204E-01	2.189E-02	-0.121
		340.55		-3.376E-03	5.066E-02	8.414E-02	5.357E-03	-0.040
		818.51		-9.119E-03	2.690E-02	4.227E-02	3.225E-03	-0.216
		1048.07	*	-3.204E-03	3.912E-02	6.349E-02	5.055E-03	-0.050
		1235.36		6.631E-02	1.815E-01	3.179E-01	3.235E-02	0.209
BA-137M		661.66	*	-3.907E-03	1.932E-02	3.034E-02	1.550E-03	-0.129
CS-137		661.66	*	-4.127E-03	2.041E-02	3.206E-02	1.646E-03	-0.129
CE-139		165.86	*	-1.596E-03	1.457E-02	2.351E-02	1.199E-03	-0.068
BA-140		162.66		1.927E-01	3.100E-01	5.287E-01	3.205E-02	0.364
		304.85		5.131E-02	5.253E-01	8.901E-01	2.544E-01	0.058
		423.72		-6.229E-02	7.775E-01	1.275E+00	4.117E-01	-0.049
		537.26	*	5.892E-02	9.677E-02	1.694E-01	5.642E-02	0.348
LA-140		328.76		3.456E-02	1.160E-01	1.996E-01	1.319E-02	0.173
		487.02		3.479E-03	5.652E-02	9.370E-02	6.188E-03	0.037
		815.77		2.502E-02	1.024E-01	1.796E-01	1.564E-02	0.139
		1596.21	*	1.299E-02	2.765E-02	5.277E-02	3.621E-03	0.246
CE-141		145.44	*	1.332E-02	2.908E-02	4.907E-02	2.768E-03	0.271
CE-143		57.36		-3.078E+00	5.909E+01	9.875E+01	1.077E+01	-0.031
		293.27	*	-5.842E-01	6.059E+00	1.011E+01	2.086E+00	-0.058
		664.57		2.020E+01	6.481E+01	1.091E+02	3.199E+01	0.185
		721.93		-4.753E+01	7.108E+01	9.718E+01	2.666E+01	-0.489
CE-144		80.12		1.887E-01	1.015E+00	1.713E+00	1.570E-01	0.110
		133.52	*	2.496E-02	8.942E-02	1.498E-01	2.069E-02	0.167
PM-144		476.78		-2.089E-03	3.493E-02	5.711E-02	3.941E-03	-0.037
		618.01		-1.003E-02	1.949E-02	2.955E-02	1.705E-03	-0.339
		696.49	*	7.096E-03	1.874E-02	3.187E-02	1.792E-03	0.223
PR-144		696.51	*	5.298E-01	1.399E+00	2.379E+00	1.337E-01	0.223
		1489.16		2.130E+00	8.107E+00	1.387E+01	9.896E-01	0.154
PM-146		453.88	*	1.109E-02	2.203E-02	3.844E-02	3.266E-03	0.288
		633.25		-6.617E-01	7.917E-01	1.048E+00	3.939E-01	-0.631
		735.93		3.323E-02	6.714E-02	1.167E-01	3.196E-02	0.285
		747.24		-3.001E-02	5.346E-02	7.763E-02	1.040E-02	-0.387
ND-147		91.11		2.232E-01	9.921E-02	1.818E-01	1.788E-02	1.228
		319.41		-1.010E-02	1.309E+00	2.194E+00	1.296E-01	-0.005
		531.02	*	1.168E-01	1.872E-01	3.346E-01	4.519E-02	0.349
PM-149		285.90	*	-7.434E+00	1.132E+01	1.786E+01	2.532E+00	-0.416
EU-152		121.78		2.210E-02	3.283E-02	5.679E-02	4.349E-03	0.389
		244.70		-1.722E-02	1.664E-01	2.546E-01	1.440E-02	-0.068
		344.28	*	2.561E-03	4.855E-02	8.159E-02	5.404E-03	0.031
		778.90		1.203E-01	1.271E-01	2.418E-01	1.678E-02	0.498
		964.08		4.064E-02	1.210E-01	2.125E-01	1.810E-02	0.191
		1085.87		-5.195E-03	1.609E-01	2.629E-01	1.850E-02	-0.020
		1112.07		2.394E-02	1.355E-01	2.308E-01	1.534E-02	0.104
		1408.01		8.338E-02	9.594E-02	1.854E-01	1.348E-02	0.450
GD-153		69.67		2.081E-01	8.290E-01	1.407E+00	1.230E-01	0.148
		97.43	*	-7.117E-03	4.138E-02	6.413E-02	5.239E-03	-0.111
		103.18		-8.777E-03	5.012E-02	8.172E-02	6.107E-03	-0.107
EU-154		123.07		-1.545E-03	2.301E-02	3.763E-02	3.546E-03	-0.041

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EU-155		723.31		-2.155E-02	8.455E-02	1.304E-01	9.422E-03	-0.165
		873.19		-5.156E-02	1.539E-01	2.429E-01	2.891E-02	-0.212
		996.26		2.834E-02	1.749E-01	2.978E-01	5.138E-02	0.095
		1004.73		-2.172E-01	1.285E-01	1.403E-01	1.577E-02	-1.548
		1274.44	*	-2.079E-02	5.493E-02	8.118E-02	8.123E-03	-0.256
		86.55		1.402E-02	4.004E-02	6.814E-02	6.624E-03	0.206
		105.31	*	-1.583E-03	4.864E-02	8.016E-02	5.907E-03	-0.020
		86.79		5.052E-03	1.036E-01	1.727E-01	1.668E-02	0.029
		197.04		1.090E-01	2.728E-01	4.552E-01	2.423E-02	0.239
		215.65		2.209E-01	3.513E-01	5.967E-01	3.261E-02	0.370
TB-160		298.57		2.637E-02	5.148E-02	9.040E-02	5.312E-03	0.292
		879.36	*	3.099E-02	6.990E-02	1.245E-01	1.088E-02	0.249
		962.29		1.504E-01	2.385E-01	4.343E-01	3.708E-02	0.346
		966.15		1.165E-02	8.625E-02	1.463E-01	1.243E-02	0.080
		1177.93		-2.380E-02	1.479E-01	2.339E-01	1.331E-02	-0.102
		1271.85		1.277E-01	2.926E-01	5.244E-01	3.500E-02	0.244
		80.57		-5.178E-03	1.119E-01	1.856E-01	1.706E-02	-0.028
		184.41		-1.019E-02	2.243E-02	3.245E-02	1.696E-03	-0.314
		280.46		1.830E-02	4.264E-02	7.443E-02	4.335E-03	0.246
		410.95		1.398E-01	1.316E-01	2.408E-01	1.400E-02	0.580
HO-166M		711.68	*	2.935E-03	3.164E-02	5.175E-02	3.029E-03	0.057
		752.31		2.289E-03	1.520E-01	2.449E-01	1.591E-02	0.009
		810.29		5.468E-03	2.510E-02	4.369E-02	3.268E-03	0.125
		67.75		-5.467E-02	5.732E-02	8.824E-02	7.683E-03	-0.620
		100.11		7.112E-03	7.809E-02	1.301E-01	1.018E-02	0.055
		152.43		8.489E-03	1.604E-01	2.630E-01	1.390E-02	0.032
		222.11		1.070E-02	1.606E-01	2.602E-01	1.434E-02	0.041
		1121.30		1.334E-05	5.504E-02	9.044E-02	5.881E-03	0.000
		1189.05		-8.013E-02	1.212E-01	1.662E-01	9.646E-03	-0.482
		1221.41	*	4.497E-02	7.699E-02	1.408E-01	8.645E-03	0.319
TA-182		1231.02		1.362E-01	1.976E-01	3.646E-01	2.275E-02	0.374
		295.96		-3.369E-02	4.840E-02	7.618E-02	4.542E-03	-0.442
		308.46		-4.080E-02	4.506E-02	6.869E-02	4.093E-03	-0.594
		316.51	*	4.347E-03	1.696E-02	2.912E-02	1.728E-03	0.149
		468.07		7.304E-03	3.223E-02	5.461E-02	3.684E-03	0.134
		70.83		3.254E-01	5.885E-01	1.015E+00	1.638E-01	0.321
		72.87		-2.381E-01	3.430E-01	5.421E-01	8.482E-02	-0.439
		279.20	*	7.733E-03	1.832E-02	3.194E-02	1.962E-03	0.242
		72.81		-7.147E-02	8.523E-02	1.338E-01	1.180E-02	-0.534
		74.97		4.146E-02	4.544E-02	8.014E-02	7.131E-03	0.517
HG-203		569.70		4.019E-03	1.648E-02	2.775E-02	1.563E-03	0.145
		1063.66	*	9.447E-03	2.473E-02	4.369E-02	3.210E-03	0.216
		1770.23		-1.173E-01	3.421E-01	5.204E-01	3.222E-02	-0.225
		277.37		-6.392E-03	2.070E-01	3.292E-01	3.553E-02	-0.019
		583.19	*	-8.442E-03	1.883E-02	2.928E-02	1.896E-03	-0.288
		860.56		2.587E-02	1.417E-01	2.433E-01	2.199E-02	0.106
		46.54	*	-1.146E+00	2.538E+00	3.918E+00	3.027E-01	-0.293
		72.87		-1.022E+00	1.467E+00	2.328E+00	2.054E-01	-0.439
		351.06	*	-5.793E-02	1.170E-01	1.881E-01	1.226E-02	-0.308
BI-207								
TL-208								
PB-210								
BI-211								

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-211	404.85	*	-2.207E-01	3.726E-01	5.505E-01	2.641E-01	-0.401	
	427.09		2.444E-01	7.445E-01	1.267E+00	5.808E-01	0.193	
	832.01		3.382E-01	5.650E-01	9.760E-01	5.050E-01	0.347	
BI-212	727.33	*	4.237E-03	2.324E-01	3.754E-01	4.079E-02	0.011	
	785.37		8.513E-02	1.387E+00	2.351E+00	1.657E-01	0.036	
	1620.50		-3.594E-01	1.355E+00	2.105E+00	1.427E-01	-0.171	
PB-212	74.82		1.423E-01	1.595E-01	2.800E-01	3.690E-02	0.508	
	77.11		1.060E-02	8.825E-02	1.482E-01	1.334E-02	0.071	
	+ 238.63	*	3.365E-02	3.899E-02	5.697E-02	4.133E-03	0.591	
	300.09		1.311E-01	3.960E-01	6.843E-01	5.778E-02	0.192	
BI-214	609.32	*	2.084E-02	4.579E-02	7.455E-02	5.652E-03	0.280	
	1120.29		5.023E-02	1.204E-01	2.146E-01	2.007E-02	0.234	
	1764.49		5.855E-02	1.550E-01	2.778E-01	1.727E-02	0.211	
PB-214	74.82		2.523E-01	2.824E-01	4.963E-01	5.914E-02	0.508	
	77.11		1.868E-02	1.556E-01	2.613E-01	3.190E-02	0.071	
	242.00		3.680E-02	1.836E-01	2.639E-01	2.134E-02	0.139	
	295.22		-3.084E-02	6.636E-02	1.067E-01	9.359E-03	-0.289	
	351.93	*	-2.530E-02	4.319E-02	6.882E-02	5.875E-03	-0.368	
RN-219	271.23		-6.190E-02	1.179E-01	1.779E-01	1.427E-02	-0.348	
	401.81	*	-9.734E-02	1.964E-01	3.061E-01	4.112E-02	-0.318	
RA-223	81.07		-3.598E-02	8.993E-02	1.451E-01	1.339E-02	-0.248	
	83.79		-7.065E-04	5.506E-02	8.634E-02	8.133E-03	-0.008	
	94.87		-3.562E-01	2.301E-01	3.386E-01	2.890E-02	-1.052	
	144.24		1.082E-01	3.670E-01	5.965E-01	4.116E-02	0.181	
	154.21		-8.659E-02	1.899E-01	2.989E-01	1.950E-02	-0.290	
	269.46		-4.543E-02	9.300E-02	1.411E-01	8.516E-03	-0.322	
	323.87	*	-5.412E-02	3.287E-01	5.423E-01	8.762E-02	-0.100	
	338.28		-6.828E-02	4.816E-01	7.950E-01	8.197E-02	-0.086	
RA-224	240.99	*	1.754E-01	3.321E-01	4.968E-01	2.799E-02	0.353	
RA-226	609.32	*	2.084E-02	4.579E-02	7.455E-02	5.652E-03	0.280	
	1120.29		5.023E-02	1.204E-01	2.146E-01	2.007E-02	0.234	
	1764.49		5.855E-02	1.550E-01	2.778E-01	1.727E-02	0.211	
AC-227	79.69		1.635E-01	5.058E-01	8.608E-01	1.506E-01	0.190	
	235.96		4.670E-02	8.621E-02	1.283E-01	1.027E-02	0.364	
	256.23	*	2.395E-02	1.330E-01	2.166E-01	2.205E-02	0.111	
	299.98		8.379E-02	4.398E-01	7.513E-01	8.288E-02	0.112	
	304.50		3.664E-02	8.181E-01	1.380E+00	2.109E-01	0.027	
	334.37		-2.821E-01	9.175E-01	1.492E+00	2.129E-01	-0.189	
TH-227	79.80		2.500E-01	6.700E-01	1.142E+00	2.512E-01	0.219	
	235.96		4.670E-02	8.619E-02	1.283E-01	9.277E-03	0.364	
	256.23	*	2.395E-02	1.331E-01	2.166E-01	2.594E-02	0.111	
	299.98		8.379E-02	4.398E-01	7.513E-01	8.288E-02	0.112	
	304.50		3.664E-02	8.181E-01	1.380E+00	2.109E-01	0.027	
	334.37		-2.821E-01	9.175E-01	1.492E+00	2.129E-01	-0.189	
AC-228	338.32		-1.576E-02	1.217E-01	2.008E-01	8.283E-02	-0.078	
	911.20	*	2.211E-02	6.459E-02	1.138E-01	1.352E-02	0.194	
	968.97		-6.488E-02	1.170E-01	1.722E-01	4.186E-02	-0.377	
RA-228	338.32		-1.576E-02	1.217E-01	2.008E-01	8.283E-02	-0.078	
	911.20	*	2.211E-02	6.459E-02	1.138E-01	1.352E-02	0.194	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228		968.97		-6.488E-02	1.170E-01	1.722E-01	4.186E-02	-0.377
		74.82		1.423E-01	1.589E-01	2.800E-01	2.511E-02	0.508
		77.11		1.060E-02	8.825E-02	1.482E-01	1.334E-02	0.071
+ TH-229		238.63	*	3.365E-02	3.899E-02	5.697E-02	4.133E-03	0.591
		300.09		1.311E-01	4.038E-01	6.843E-01	4.167E-01	0.192
		85.43		-1.009E-02	9.252E-02	1.444E-01	1.379E-02	-0.070
PA-231		88.47		-9.675E-02	5.868E-02	8.551E-02	8.269E-03	-1.131
		193.51	*	1.285E-01	2.860E-01	4.260E-01	2.256E-02	0.302
		210.85		-4.376E-01	4.059E-01	5.865E-01	3.184E-02	-0.746
TH-231		283.69	*	1.988E-02	7.033E-01	1.188E+00	1.561E-01	0.017
		301.36		-6.319E-02	2.770E-01	4.562E-01	4.740E-02	-0.139
		81.07		-3.598E-02	8.993E-02	1.451E-01	1.339E-02	-0.248
TH-232		83.79		-7.065E-04	5.506E-02	8.634E-02	8.133E-03	-0.008
		94.87		-3.562E-01	2.301E-01	3.386E-01	2.890E-02	-1.052
		144.24		1.082E-01	3.670E-01	5.965E-01	4.116E-02	0.181
PA-233		154.21		-8.659E-02	1.899E-01	2.989E-01	1.950E-02	-0.290
		269.46		-4.543E-02	9.300E-02	1.411E-01	8.516E-03	-0.322
		323.87	*	-5.412E-02	3.287E-01	5.423E-01	8.762E-02	-0.100
TH-234		338.28		-6.828E-02	4.816E-01	7.950E-01	8.197E-02	-0.086
		338.32		-1.576E-02	1.215E-01	2.008E-01	1.186E-02	-0.078
		911.20	*	2.211E-02	6.459E-02	1.138E-01	1.352E-02	0.194
PA-234		968.97		-6.488E-02	1.170E-01	1.722E-01	4.186E-02	-0.377
		300.13		6.528E-02	1.972E-01	3.407E-01	4.573E-02	0.192
		311.90	*	-8.304E-03	3.202E-02	5.241E-02	3.277E-03	-0.158
PA-234M		340.48		-1.185E-02	2.748E-01	4.576E-01	1.063E-01	-0.026
		94.67		-6.094E-03	7.902E-02	1.303E-01	1.611E-02	-0.047
		98.44		2.558E-02	4.614E-02	7.176E-02	3.997E-02	0.356
TH-234		111.00		1.849E-02	8.596E-02	1.440E-01	1.558E-02	0.128
		131.20		2.937E-02	4.755E-02	8.170E-02	4.618E-03	0.359
		569.50		6.379E-02	1.474E-01	2.539E-01	1.430E-02	0.251
U-235		733.00		-1.926E-01	1.830E-01	2.246E-01	4.800E-02	-0.858
		880.51		4.211E-02	1.431E-01	2.498E-01	2.190E-02	0.169
		883.24		2.884E-02	1.452E-01	2.478E-01	1.667E-01	0.116
PA-234M		926.50		-2.709E-02	9.286E-02	1.463E-01	3.712E-02	-0.185
		946.00	*	8.017E-02	1.311E-01	2.416E-01	4.541E-02	0.332
		949.00		3.501E-02	1.825E-01	3.150E-01	2.730E-02	0.111
TH-234		766.42		1.491E+00	5.401E+00	8.989E+00	4.535E+00	0.166
		1001.03	*	1.949E+00	2.134E+00	4.079E+00	3.892E-01	0.478
		63.29	*	-1.086E-01	7.764E-01	1.286E+00	2.366E-01	-0.084
U-235		92.59		7.120E-02	3.692E-01	6.248E-01	1.387E-01	0.114
		89.96		-5.245E-01	4.244E-01	6.146E-01	1.530E-01	-0.853
		93.35		-5.599E-02	2.749E-01	4.555E-01	1.055E-01	-0.123
+ NP-237		143.76	*	2.756E-02	1.105E-01	1.791E-01	2.789E-02	0.154
		163.33		-1.776E-02	2.159E-01	3.494E-01	5.786E-02	-0.051
		185.72		3.755E-02	3.831E-02	4.102E-02	2.148E-03	0.915
U-238		205.31		2.895E-02	2.335E-01	3.811E-01	6.422E-02	0.076
		86.48	*	3.352E-02	9.896E-02	1.679E-01	3.874E-02	0.200
		95.86		-1.494E+00	5.957E-01	6.125E-01	1.464E-01	-2.439
		63.29	*	-1.086E-01	7.764E-01	1.286E+00	2.366E-01	-0.084

----- 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			7.120E-02	3.689E-01	6.248E-01	5.561E-02	0.114
	99.53			4.152E-02	7.458E-02	1.284E-01	1.014E-02	0.323
	103.37			3.381E-03	4.542E-02	7.550E-02	5.626E-03	0.045
	106.12			-6.525E-03	3.812E-02	6.212E-02	4.453E-03	-0.105
	117.23	*		-7.913E-02	2.144E-01	3.189E-01	1.985E-02	-0.248
	228.18			-4.185E-02	1.099E-01	1.705E-01	9.469E-03	-0.245
AM-241	277.60			1.018E-02	9.334E-02	1.504E-01	8.747E-03	0.068
	59.54	*		-1.204E-01	8.626E-02	1.285E-01	1.196E-02	-0.937
CM-247	278.00			5.140E-02	3.798E-01	6.476E-01	3.766E-02	0.079
	287.50			-3.041E-02	6.003E-01	1.007E+00	5.885E-02	-0.030
CF-249	402.40	*		-6.668E-05	1.707E-02	2.832E-02	1.641E-03	-0.002
	252.80			-1.557E-01	5.004E-01	7.769E-01	4.429E-02	-0.200
	333.37			-5.467E-03	9.716E-02	1.619E-01	9.563E-03	-0.034
CF-251	388.16	*		1.648E-02	2.121E-02	3.797E-02	2.197E-03	0.434
	177.52	*		-9.410E-03	6.451E-02	1.035E-01	5.356E-03	-0.091
	227.38			4.477E-02	1.763E-01	2.901E-01	1.609E-02	0.154
	285.41			-1.167E+00	1.108E+00	1.686E+00	9.846E-02	-0.692

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]G1202054956 *
* Acquisition date   : 13-MAR-2010 14:34:56 Detector SN#      :      *
* Detector ID        : GAM23          Sensitivity             : 5.000  *
* Geometry           : CAN            Energy tolerance:       : 1.500  *
* Elapsed live time  : 0 02:00:00.00 Abundance limit :       : 75.000 *
* Elapsed real time  : 0 02:00:00.84 Half life ratio :       : 8.000  *
*****
*               SAMPLE DATA          *
*                                     *
* Sample date        : 3-MAR-2010 00:00:00 Nuclide Library : SOLID *
* Sample ID          : G1202054956   Analyst initials: MXR1   *
* Batch Number       : 958221        Sample Quantity : 1.5586E+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)	
ANH-511	3.967E-02	3.597E-02	2.828E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.406E-02	1.614E-01	2.793E-01	0.000E+00 NOT IDENT.
NA-22	-6.885E-03	1.904E-02	2.931E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.420E+03	0.000E+00	0.000E+00 SHORT HLIF
K-40	2.256E-01	2.449E-01	4.548E-01	0.000E+00 NOT IDENT.
SC-46	6.921E-03	1.809E-02	3.341E-02	0.000E+00 NOT IDENT.
V-48	8.715E-03	2.273E-02	4.236E-02	0.000E+00 NOT IDENT.
CR-51	-5.978E-02	1.703E-01	2.966E-01	0.000E+00 NOT IDENT.
MN-54	1.928E-02	2.051E-02	3.993E-02	0.000E+00 NOT IDENT.
CO-56	1.548E-03	2.034E-02	3.590E-02	0.000E+00 NOT IDENT.
CO-57	6.059E-03	1.093E-02	2.061E-02	0.000E+00 NOT IDENT.
CO-58	-5.755E-04	1.594E-02	2.775E-02	0.000E+00 NOT IDENT.
FE-59	-9.362E-03	3.737E-02	6.047E-02	0.000E+00 NOT IDENT.
CO-60	5.442E-04	2.151E-02	3.625E-02	0.000E+00 NOT IDENT.
ZN-65	-1.778E-02	3.690E-02	5.641E-02	0.000E+00 NOT IDENT.
SE-75	1.309E-02	2.171E-02	3.958E-02	0.000E+00 NOT IDENT.
SR-85	4.044E-02	2.325E-02	4.322E-02	0.000E+00 NOT IDENT.
Y-88	9.311E-03	1.777E-02	3.471E-02	0.000E+00 NOT IDENT.
Y-91	-4.504E+00	6.915E+00	9.571E+00	0.000E+00 NOT IDENT.
NB-94	-1.593E-03	1.844E-02	3.087E-02	0.000E+00 NOT IDENT.
NB-95	3.350E-03	1.959E-02	3.386E-02	0.000E+00 NOT IDENT.
NB-95M	2.643E-02	6.609E-02	1.048E-01	0.000E+00 NOT IDENT.
ZR-95	1.687E-02	3.709E-02	6.670E-02	0.000E+00 NOT IDENT.
MO-99	1.745E-02	1.926E+00	3.255E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	7.464E+10	0.000E+00	0.000E+00 SHORT HLIF
RU-103	-1.511E-02	1.839E-02	2.828E-02	0.000E+00 NOT IDENT.
RH-106	6.367E-02	1.797E-01	3.211E-01	0.000E+00 NOT IDENT.

RU-106	6.367E-02	1.796E-01	3.211E-01	0.000E+00	NOT IDENT.
AG-108M	-5.350E-04	1.487E-02	2.608E-02	0.000E+00	NOT IDENT.
CD-109	-3.671E-01	3.524E-01	5.992E-01	0.000E+00	NOT IDENT.
AG-110M	6.123E-03	1.712E-02	3.072E-02	0.000E+00	NOT IDENT.
SN-113	-3.408E-03	2.315E-02	4.046E-02	0.000E+00	NOT IDENT.
CD-115	4.756E-01	1.317E+00	2.400E+00	0.000E+00	NOT IDENT.
SN-117M	-1.056E-02	2.115E-02	3.622E-02	0.000E+00	NOT IDENT.
TE-123M	1.559E-03	1.321E-02	2.373E-02	0.000E+00	NOT IDENT.
SB-124	8.292E-03	4.750E-02	8.432E-02	0.000E+00	NOT IDENT.
SB-125	6.660E-03	4.267E-02	7.661E-02	0.000E+00	NOT IDENT.
TE-125M	-1.360E+00	4.247E+00	7.542E+00	0.000E+00	NOT IDENT.
I-126	3.194E-02	8.765E-02	1.571E-01	0.000E+00	NOT IDENT.
SB-126	1.846E-02	5.853E-02	1.016E-01	0.000E+00	NOT IDENT.
SN-126	-2.854E-02	3.374E-02	5.823E-02	0.000E+00	NOT IDENT.
SB-127	-6.787E-02	3.059E-01	5.016E-01	0.000E+00	NOT IDENT.
I-131	-4.031E-04	4.196E-02	7.475E-02	0.000E+00	NOT IDENT.
TE-132	-5.204E-02	1.371E-01	2.303E-01	0.000E+00	NOT IDENT.
BA-133	-1.032E-02	2.203E-02	3.752E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.281E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.601E-03	2.172E-02	4.029E-02	0.000E+00	NOT IDENT.
CS-135	-3.507E-02	7.850E-02	1.291E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.672E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.204E-03	3.834E-02	6.465E-02	0.000E+00	NOT IDENT.
BA-137M	-3.907E-03	1.893E-02	3.129E-02	0.000E+00	NOT IDENT.
CS-137	-4.127E-03	2.000E-02	3.306E-02	0.000E+00	NOT IDENT.
CE-139	-1.596E-03	1.427E-02	2.514E-02	0.000E+00	NOT IDENT.
BA-140	5.892E-02	9.484E-02	1.757E-01	0.000E+00	NOT IDENT.
LA-140	1.299E-02	2.710E-02	5.309E-02	0.000E+00	NOT IDENT.
CE-141	1.332E-02	2.850E-02	5.264E-02	0.000E+00	NOT IDENT.
CE-143	-5.842E-01	5.938E+00	1.065E+01	0.000E+00	NOT IDENT.
CE-144	2.496E-02	8.763E-02	1.610E-01	0.000E+00	NOT IDENT.
PM-144	7.096E-03	1.837E-02	3.281E-02	0.000E+00	NOT IDENT.
PR-144	5.298E-01	1.371E+00	2.450E+00	0.000E+00	NOT IDENT.
PM-146	1.109E-02	2.159E-02	4.004E-02	0.000E+00	NOT IDENT.
ND-147	1.168E-01	1.835E-01	3.471E-01	0.000E+00	NOT IDENT.
PM-149	-7.434E+00	1.109E+01	1.884E+01	0.000E+00	NOT IDENT.
EU-152	2.561E-03	4.757E-02	8.561E-02	0.000E+00	NOT IDENT.
GD-153	-7.117E-03	4.055E-02	6.949E-02	0.000E+00	NOT IDENT.
EU-154	-2.079E-02	5.383E-02	8.220E-02	0.000E+00	NOT IDENT.
EU-155	-1.583E-03	4.767E-02	8.670E-02	0.000E+00	NOT IDENT.
TB-160	3.099E-02	6.850E-02	1.273E-01	0.000E+00	NOT IDENT.
HO-166M	2.935E-03	3.101E-02	5.326E-02	0.000E+00	NOT IDENT.
TA-182	4.497E-02	7.545E-02	1.428E-01	0.000E+00	NOT IDENT.
IR-192	4.347E-03	1.662E-02	3.063E-02	0.000E+00	NOT IDENT.
HG-203	7.733E-03	1.795E-02	3.370E-02	0.000E+00	NOT IDENT.
BI-207	9.447E-03	2.424E-02	4.447E-02	0.000E+00	NOT IDENT.
TL-208	-8.442E-03	1.846E-02	3.030E-02	0.000E+00	NOT IDENT.
PB-210	-1.146E+00	2.487E+00	4.323E+00	0.000E+00	NOT IDENT.
BI-211	-5.793E-02	1.147E-01	1.973E-01	0.000E+00	NOT IDENT.
PB-211	-2.207E-01	3.651E-01	5.752E-01	0.000E+00	NOT IDENT.
BI-212	4.237E-03	2.278E-01	3.861E-01	0.000E+00	NOT IDENT.
PB-212	3.365E-02	3.821E-02	6.035E-02	0.000E+00	FAIL ABUN
BI-214	2.084E-02	4.488E-02	7.705E-02	0.000E+00	NOT IDENT.
PB-214	-2.530E-02	4.232E-02	7.217E-02	0.000E+00	NOT IDENT.
RN-219	-9.734E-02	1.924E-01	3.199E-01	0.000E+00	NOT IDENT.
RA-223	-5.412E-02	3.221E-01	5.700E-01	0.000E+00	NOT IDENT.
RA-224	1.754E-01	3.255E-01	5.262E-01	0.000E+00	NOT IDENT.
RA-226	2.084E-02	4.488E-02	7.705E-02	0.000E+00	NOT IDENT.
AC-227	2.395E-02	1.304E-01	2.290E-01	0.000E+00	NOT IDENT.
TH-227	2.395E-02	1.304E-01	2.290E-01	0.000E+00	NOT IDENT.
AC-228	2.211E-02	6.329E-02	1.163E-01	0.000E+00	NOT IDENT.
RA-228	2.211E-02	6.329E-02	1.163E-01	0.000E+00	NOT IDENT.
TH-228	3.365E-02	3.821E-02	6.035E-02	0.000E+00	FAIL ABUN
TH-229	1.285E-01	2.803E-01	4.538E-01	0.000E+00	NOT IDENT.
PA-231	1.988E-02	6.893E-01	1.253E+00	0.000E+00	NOT IDENT.
TH-231	-5.412E-02	3.221E-01	5.700E-01	0.000E+00	NOT IDENT.
TH-232	2.211E-02	6.329E-02	1.163E-01	0.000E+00	NOT IDENT.
PA-233	-8.304E-03	3.138E-02	5.514E-02	0.000E+00	NOT IDENT.
PA-234	8.017E-02	1.285E-01	2.467E-01	0.000E+00	NOT IDENT.
PA-234M	1.949E+00	2.091E+00	4.159E+00	0.000E+00	NOT IDENT.
TH-234	-1.086E-01	7.609E-01	1.408E+00	0.000E+00	NOT IDENT.
U-235	2.756E-02	1.083E-01	1.922E-01	0.000E+00	FAIL ABUN
NP-237	3.352E-02	9.698E-02	1.825E-01	0.000E+00	NOT IDENT.
U-238	-1.086E-01	7.609E-01	1.408E+00	0.000E+00	NOT IDENT.
NP-239	-7.913E-02	2.101E-01	3.440E-01	0.000E+00	NOT IDENT.
AM-241	-1.204E-01	8.453E-02	1.410E-01	0.000E+00	NOT IDENT.
CM-247	-6.668E-05	1.672E-02	2.959E-02	0.000E+00	NOT IDENT.
CF-249	1.648E-02	2.079E-02	3.971E-02	0.000E+00	NOT IDENT.

CF-251

-9.410E-03

6.322E-02

1.105E-01

0.000E+00 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054956.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 13-MAR-2010 14:34:56
Sample ID          : G1202054956      Sample quantity   : 1.55860E+02 GRAM
Detector name      : GAM23             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.84  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 958221            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
ANH-511	511.00	42	100.00*	2.546E+00	3.967E-02	3.967E-02	92.52

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202054956

Page : 2
Acquisition date : 13-MAR-2010 14:34:56

Total number of lines in spectrum 3
Number of unidentified lines 0
Number of lines tentatively identified by NID 3 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
ANH-511	1.00E+09Y	1.00	3.967E-02	3.967E-02	3.670E-02	92.52	
Total Activity :			3.967E-02	3.967E-02			

Grand Total Activity : 3.967E-02 3.967E-02

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

Unidentified Energy Lines
Sample ID : G1202054956

Page : 3
Acquisition date : 13-MAR-2010 14:34:56

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.43	49	96	4.43	372.87	367	15	6.78E-03	****	5.48E+00	T
0	238.44	28	57	0.90	476.89	473	9	3.92E-03	****	4.64E+00	T

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054956.CNF;1
* Acquisition date   : 13-MAR-2010 14:34:56   Detector SN#      :
* Detector ID        : GAM23                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:00.84           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 3-MAR-2010 00:00:00.   Nuclide Library : SOLID
* Sample ID          : G1202054956           Analyst initials: MXR1
* Batch Number       : 958221                Sample Quantity : 1.55860E+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
ANH-511	3.967E-02	3.670E-02	2.724E-02	1.582E-03	1.457

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.406E-02		1.647E-01	2.685E-01	1.824E-02	-0.052
NA-22	-6.885E-03		1.943E-02	2.894E-02	1.944E-03	-0.238
NA-24	-4.008E-04		1.235E-03	Half-Life too short		
K-40	2.256E-01		2.499E-01	4.509E-01	3.373E-02	0.500
SC-46	6.921E-03		1.846E-02	3.267E-02	2.919E-03	0.212
V-48	8.715E-03		2.320E-02	4.153E-02	3.455E-03	0.210
CR-51	-5.978E-02		1.738E-01	2.821E-01	1.847E-02	-0.212
MN-54	1.928E-02		2.093E-02	3.897E-02	3.086E-03	0.495
CO-56	1.548E-03		2.076E-02	3.506E-02	2.852E-03	0.044
CO-57	6.059E-03		1.115E-02	1.912E-02	1.127E-03	0.317
CO-58	-5.755E-04		1.626E-02	2.706E-02	2.033E-03	-0.021

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59	-9.362E-03		3.814E-02	5.948E-02	4.579E-03	-0.157
CO-60	5.442E-04		2.195E-02	3.585E-02	2.632E-03	0.015
ZN-65	-1.778E-02		3.766E-02	5.550E-02	3.665E-03	-0.320
SE-75	1.309E-02		2.215E-02	3.746E-02	2.181E-03	0.350
SR-85	4.044E-02		2.373E-02	4.163E-02	2.416E-03	0.971
Y-88	9.311E-03		1.813E-02	3.464E-02	2.040E-03	0.269
Y-91	-4.504E+00		7.056E+00	9.438E+00	5.629E-01	-0.477
NB-94	-1.593E-03		1.882E-02	2.999E-02	1.713E-03	-0.053
NB-95	3.350E-03		1.999E-02	3.297E-02	2.216E-03	0.102
NB-95M	2.643E-02		6.744E-02	9.885E-02	7.317E-03	0.267
ZR-95	1.687E-02		3.785E-02	6.493E-02	5.010E-03	0.260
MO-99	1.745E-02		1.965E+00	3.166E+00	4.627E-01	0.006
TC-99M	-2.617E+04		3.808E+04	Half-Life too short		
RU-103	-1.511E-02		1.876E-02	2.721E-02	3.385E-03	-0.555
RH-106	6.367E-02		1.833E-01	3.109E-01	3.548E-02	0.205
RU-106	6.367E-02		1.832E-01	3.109E-01	1.670E-02	0.205
AG-108M	-5.350E-04		1.518E-02	2.500E-02	1.563E-03	-0.021
CD-109	-3.671E-01		3.596E-01	5.516E-01	5.385E-02	-0.666
AG-110M	6.123E-03		1.747E-02	2.979E-02	1.656E-03	0.206
SN-113	-3.408E-03		2.362E-02	3.869E-02	2.383E-03	-0.088
CD-115	4.756E-01		1.344E+00	2.314E+00	1.335E-01	0.206
SN-117M	-1.056E-02		2.159E-02	3.383E-02	1.758E-03	-0.312
TE-123M	1.559E-03		1.348E-02	2.217E-02	1.170E-03	0.070
SB-124	8.292E-03		4.847E-02	8.395E-02	5.875E-03	0.099
SB-125	6.660E-03		4.354E-02	7.343E-02	4.461E-03	0.091
TE-125M	-1.360E+00		4.334E+00	6.979E+00	6.341E-01	-0.195
I-126	3.194E-02		8.943E-02	1.523E-01	7.884E-03	0.210
SB-126	1.846E-02		5.973E-02	9.880E-02	5.921E-03	0.187
SN-126	-2.854E-02		3.443E-02	5.359E-02	5.215E-03	-0.533
SB-127	-6.787E-02		3.121E-01	4.869E-01	3.751E-02	-0.139
I-131	-4.031E-04		4.282E-02	7.134E-02	4.632E-03	-0.006
TE-132	-5.204E-02		1.399E-01	2.171E-01	2.937E-02	-0.240
BA-133	-1.032E-02		2.248E-02	3.579E-02	4.051E-03	-0.288
I-133	1.682E-05		3.715E-05	Half-Life too short		
CS-134	8.601E-03		2.216E-02	3.927E-02	2.868E-03	0.219
CS-135	-3.507E-02		8.011E-02	1.222E-01	9.337E-03	-0.287
I-135	-3.661E+03		1.873E+04	Half-Life too short		
CS-136	-3.204E-03		3.912E-02	6.349E-02	5.055E-03	-0.050
BA-137M	-3.907E-03		1.932E-02	3.034E-02	1.550E-03	-0.129
CS-137	-4.127E-03		2.041E-02	3.206E-02	1.646E-03	-0.129
CE-139	-1.596E-03		1.457E-02	2.351E-02	1.199E-03	-0.068
BA-140	5.892E-02		9.677E-02	1.694E-01	5.642E-02	0.348
LA-140	1.299E-02		2.765E-02	5.277E-02	3.621E-03	0.246
CE-141	1.332E-02		2.908E-02	4.907E-02	2.768E-03	0.271
CE-143	-5.842E-01		6.059E+00	1.011E+01	2.086E+00	-0.058
CE-144	2.496E-02		8.942E-02	1.498E-01	2.069E-02	0.167
PM-144	7.096E-03		1.874E-02	3.187E-02	1.792E-03	0.223
PR-144	5.298E-01		1.399E+00	2.379E+00	1.337E-01	0.223

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146	1.109E-02		2.203E-02	3.844E-02	3.266E-03	0.288
ND-147	1.168E-01		1.872E-01	3.346E-01	4.519E-02	0.349
PM-149	-7.434E+00		1.132E+01	1.786E+01	2.532E+00	-0.416
EU-152	2.561E-03		4.855E-02	8.159E-02	5.404E-03	0.031
GD-153	-7.117E-03		4.138E-02	6.413E-02	5.239E-03	-0.111
EU-154	-2.079E-02		5.493E-02	8.118E-02	8.123E-03	-0.256
EU-155	-1.583E-03		4.864E-02	8.016E-02	5.907E-03	-0.020
TB-160	3.099E-02		6.990E-02	1.245E-01	1.088E-02	0.249
HO-166M	2.935E-03		3.164E-02	5.175E-02	3.029E-03	0.057
TA-182	4.497E-02		7.699E-02	1.408E-01	8.645E-03	0.319
IR-192	4.347E-03		1.696E-02	2.912E-02	1.728E-03	0.149
HG-203	7.733E-03		1.832E-02	3.194E-02	1.962E-03	0.242
BI-207	9.447E-03		2.473E-02	4.369E-02	3.210E-03	0.216
TL-208	-8.442E-03		1.883E-02	2.928E-02	1.896E-03	-0.288
PB-210	-1.146E+00		2.538E+00	3.918E+00	3.027E-01	-0.293
BI-211	-5.793E-02		1.170E-01	1.881E-01	1.226E-02	-0.308
PB-211	-2.207E-01		3.726E-01	5.505E-01	2.641E-01	-0.401
BI-212	4.237E-03		2.324E-01	3.754E-01	4.079E-02	0.011
PB-212	3.365E-02	+	3.899E-02	5.697E-02	4.133E-03	0.591
BI-214	2.084E-02		4.579E-02	7.455E-02	5.652E-03	0.280
PB-214	-2.530E-02		4.319E-02	6.882E-02	5.875E-03	-0.368
RN-219	-9.734E-02		1.964E-01	3.061E-01	4.112E-02	-0.318
RA-223	-5.412E-02		3.287E-01	5.423E-01	8.762E-02	-0.100
RA-224	1.754E-01		3.321E-01	4.968E-01	2.799E-02	0.353
RA-226	2.084E-02		4.579E-02	7.455E-02	5.652E-03	0.280
AC-227	2.395E-02		1.330E-01	2.166E-01	2.205E-02	0.111
TH-227	2.395E-02		1.331E-01	2.166E-01	2.594E-02	0.111
AC-228	2.211E-02		6.459E-02	1.138E-01	1.352E-02	0.194
RA-228	2.211E-02		6.459E-02	1.138E-01	1.352E-02	0.194
TH-228	3.365E-02	+	3.899E-02	5.697E-02	4.133E-03	0.591
TH-229	1.285E-01		2.860E-01	4.260E-01	2.256E-02	0.302
PA-231	1.988E-02		7.033E-01	1.188E+00	1.561E-01	0.017
TH-231	-5.412E-02		3.287E-01	5.423E-01	8.762E-02	-0.100
TH-232	2.211E-02		6.459E-02	1.138E-01	1.352E-02	0.194
PA-233	-8.304E-03		3.202E-02	5.241E-02	3.277E-03	-0.158
PA-234	8.017E-02		1.311E-01	2.416E-01	4.541E-02	0.332
PA-234M	1.949E+00		2.134E+00	4.079E+00	3.892E-01	0.478
TH-234	-1.086E-01		7.764E-01	1.286E+00	2.366E-01	-0.084
U-235	2.756E-02		1.105E-01	1.791E-01	2.789E-02	0.154
NP-237	3.352E-02		9.896E-02	1.679E-01	3.874E-02	0.200
U-238	-1.086E-01		7.764E-01	1.286E+00	2.366E-01	-0.084
NP-239	-7.913E-02		2.144E-01	3.189E-01	1.985E-02	-0.248
AM-241	-1.204E-01		8.626E-02	1.285E-01	1.196E-02	-0.937
CM-247	-6.668E-05		1.707E-02	2.832E-02	1.641E-03	-0.002
CF-249	1.648E-02		2.121E-02	3.797E-02	2.197E-03	0.434
CF-251	-9.410E-03		6.451E-02	1.035E-01	5.356E-03	-0.091

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202054956
* Acquisition date   : 13-MAR-2010 14:34:56 Detector SN#      :
* Detector ID        : GAM23                               Sensitivity      : 5.000
* Geometry           : CAN                               Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit : 75.000
* Elapsed real time  : 0 02:00:00.84                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date       : 3-MAR-2010 00:00:00 Nuclide Library : SOLID
* Sample ID         : G1202054956                     Analyst initials: MXRl
* Batch Number      : 958221                           Sample Quantity : 1.5586E+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
ANH-511	3.967E-02	3.597E-02	1.415E-02	1.835E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-1.406E-02	1.614E-01	1.397E-01	8.236E-02	NOT IDENT.
NA-22	-6.885E-03	1.904E-02	1.466E-02	9.716E-03	NOT IDENT.
NA-24	-4.008E+02	2.420E+03	0.000E+00	1.235E+03	SHORT HLIF
K-40	2.256E-01	2.449E-01	2.275E-01	1.250E-01	NOT IDENT.
SC-46	6.921E-03	1.809E-02	1.672E-02	9.228E-03	NOT IDENT.
V-48	8.715E-03	2.273E-02	2.119E-02	1.160E-02	NOT IDENT.
CR-51	-5.978E-02	1.703E-01	1.484E-01	8.689E-02	NOT IDENT.
MN-54	1.928E-02	2.051E-02	1.998E-02	1.047E-02	NOT IDENT.
CO-56	1.548E-03	2.034E-02	1.796E-02	1.038E-02	NOT IDENT.
CO-57	6.059E-03	1.093E-02	1.031E-02	5.574E-03	NOT IDENT.
CO-58	-5.755E-04	1.594E-02	1.388E-02	8.130E-03	NOT IDENT.
FE-59	-9.362E-03	3.737E-02	3.025E-02	1.907E-02	NOT IDENT.
CO-60	5.442E-04	2.151E-02	1.814E-02	1.097E-02	NOT IDENT.
ZN-65	-1.778E-02	3.690E-02	2.822E-02	1.883E-02	NOT IDENT.
SE-75	1.309E-02	2.171E-02	1.980E-02	1.107E-02	NOT IDENT.
SR-85	4.044E-02	2.325E-02	2.162E-02	1.186E-02	NOT IDENT.
Y-88	9.311E-03	1.777E-02	1.737E-02	9.066E-03	NOT IDENT.
Y-91	-4.504E+00	6.915E+00	4.789E+00	3.528E+00	NOT IDENT.
NB-94	-1.593E-03	1.844E-02	1.544E-02	9.408E-03	NOT IDENT.
NB-95	3.350E-03	1.959E-02	1.694E-02	9.997E-03	NOT IDENT.
NB-95M	2.643E-02	6.609E-02	5.241E-02	3.372E-02	NOT IDENT.
ZR-95	1.687E-02	3.709E-02	3.337E-02	1.893E-02	NOT IDENT.
MO-99	1.745E-02	1.926E+00	1.628E+00	9.827E-01	NOT IDENT.
TC-99M	-2.617E+10	7.464E+10	0.000E+00	3.808E+10	SHORT HLIF
RU-103	-1.511E-02	1.839E-02	1.415E-02	9.381E-03	NOT IDENT.
RH-106	6.367E-02	1.797E-01	1.606E-01	9.167E-02	NOT IDENT.

RU-106	6.367E-02	1.796E-01	1.606E-01	9.162E-02	NOT IDENT.
AG-108M	-5.350E-04	1.487E-02	1.305E-02	7.588E-03	NOT IDENT.
CD-109	-3.671E-01	3.524E-01	2.998E-01	1.798E-01	NOT IDENT.
AG-110M	6.123E-03	1.712E-02	1.537E-02	8.735E-03	NOT IDENT.
SN-113	-3.408E-03	2.315E-02	2.024E-02	1.181E-02	NOT IDENT.
CD-115	4.756E-01	1.317E+00	1.201E+00	6.722E-01	NOT IDENT.
SN-117M	-1.056E-02	2.115E-02	1.812E-02	1.079E-02	NOT IDENT.
TE-123M	1.559E-03	1.321E-02	1.187E-02	6.738E-03	NOT IDENT.
SB-124	8.292E-03	4.750E-02	4.219E-02	2.424E-02	NOT IDENT.
SB-125	6.660E-03	4.267E-02	3.833E-02	2.177E-02	NOT IDENT.
TE-125M	-1.360E+00	4.247E+00	3.773E+00	2.167E+00	NOT IDENT.
I-126	3.194E-02	8.765E-02	7.858E-02	4.472E-02	NOT IDENT.
SB-126	1.846E-02	5.853E-02	5.085E-02	2.986E-02	NOT IDENT.
SN-126	-2.854E-02	3.374E-02	2.913E-02	1.721E-02	NOT IDENT.
SB-127	-6.787E-02	3.059E-01	2.510E-01	1.561E-01	NOT IDENT.
I-131	-4.031E-04	4.196E-02	3.740E-02	2.141E-02	NOT IDENT.
TE-132	-5.204E-02	1.371E-01	1.152E-01	6.995E-02	NOT IDENT.
BA-133	-1.032E-02	2.203E-02	1.877E-02	1.124E-02	NOT IDENT.
I-133	1.682E+01	7.281E+01	0.000E+00	3.715E+01	SHORT HLIF
CS-134	8.601E-03	2.172E-02	2.016E-02	1.108E-02	NOT IDENT.
CS-135	-3.507E-02	7.850E-02	6.458E-02	4.005E-02	NOT IDENT.
I-135	-3.661E+09	3.672E+10	0.000E+00	1.873E+10	SHORT HLIF
CS-136	-3.204E-03	3.834E-02	3.234E-02	1.956E-02	NOT IDENT.
BA-137M	-3.907E-03	1.893E-02	1.565E-02	9.660E-03	NOT IDENT.
CS-137	-4.127E-03	2.000E-02	1.654E-02	1.021E-02	NOT IDENT.
CE-139	-1.596E-03	1.427E-02	1.258E-02	7.283E-03	NOT IDENT.
BA-140	5.892E-02	9.484E-02	8.790E-02	4.839E-02	NOT IDENT.
LA-140	1.299E-02	2.710E-02	2.656E-02	1.383E-02	NOT IDENT.
CE-141	1.332E-02	2.850E-02	2.634E-02	1.454E-02	NOT IDENT.
CE-143	-5.842E-01	5.938E+00	5.328E+00	3.030E+00	NOT IDENT.
CE-144	2.496E-02	8.763E-02	8.057E-02	4.471E-02	NOT IDENT.
PM-144	7.096E-03	1.837E-02	1.642E-02	9.371E-03	NOT IDENT.
PR-144	5.298E-01	1.371E+00	1.226E+00	6.997E-01	NOT IDENT.
PM-146	1.109E-02	2.159E-02	2.003E-02	1.101E-02	NOT IDENT.
ND-147	1.168E-01	1.835E-01	1.736E-01	9.360E-02	NOT IDENT.
PM-149	-7.434E+00	1.109E+01	9.423E+00	5.658E+00	NOT IDENT.
EU-152	2.561E-03	4.757E-02	4.283E-02	2.427E-02	NOT IDENT.
GD-153	-7.117E-03	4.055E-02	3.477E-02	2.069E-02	NOT IDENT.
EU-154	-2.079E-02	5.383E-02	4.113E-02	2.746E-02	NOT IDENT.
EU-155	-1.583E-03	4.767E-02	4.337E-02	2.432E-02	NOT IDENT.
TB-160	3.099E-02	6.850E-02	6.371E-02	3.495E-02	NOT IDENT.
HO-166M	2.935E-03	3.101E-02	2.665E-02	1.582E-02	NOT IDENT.
TA-182	4.497E-02	7.545E-02	7.144E-02	3.850E-02	NOT IDENT.
IR-192	4.347E-03	1.662E-02	1.532E-02	8.479E-03	NOT IDENT.
HG-203	7.733E-03	1.795E-02	1.686E-02	9.159E-03	NOT IDENT.
BI-207	9.447E-03	2.424E-02	2.225E-02	1.236E-02	NOT IDENT.
TL-208	-8.442E-03	1.846E-02	1.516E-02	9.416E-03	NOT IDENT.
PB-210	-1.146E+00	2.487E+00	2.163E+00	1.269E+00	NOT IDENT.
BI-211	-5.793E-02	1.147E-01	9.870E-02	5.850E-02	NOT IDENT.
PB-211	-2.207E-01	3.651E-01	2.877E-01	1.863E-01	NOT IDENT.
BI-212	4.237E-03	2.278E-01	1.932E-01	1.162E-01	NOT IDENT.
PB-212	3.365E-02	3.821E-02	3.019E-02	1.950E-02	FAIL ABUN
BI-214	2.084E-02	4.488E-02	3.855E-02	2.290E-02	NOT IDENT.
PB-214	-2.530E-02	4.232E-02	3.611E-02	2.159E-02	NOT IDENT.
RN-219	-9.734E-02	1.924E-01	1.600E-01	9.819E-02	NOT IDENT.
RA-223	-5.412E-02	3.221E-01	2.852E-01	1.643E-01	NOT IDENT.
RA-224	1.754E-01	3.255E-01	2.633E-01	1.661E-01	NOT IDENT.
RA-226	2.084E-02	4.488E-02	3.855E-02	2.290E-02	NOT IDENT.
AC-227	2.395E-02	1.304E-01	1.146E-01	6.652E-02	NOT IDENT.
TH-227	2.395E-02	1.304E-01	1.146E-01	6.653E-02	NOT IDENT.
AC-228	2.211E-02	6.329E-02	5.820E-02	3.229E-02	NOT IDENT.
RA-228	2.211E-02	6.329E-02	5.820E-02	3.229E-02	NOT IDENT.
TH-228	3.365E-02	3.821E-02	3.019E-02	1.950E-02	FAIL ABUN
TH-229	1.285E-01	2.803E-01	2.270E-01	1.430E-01	NOT IDENT.
PA-231	1.988E-02	6.893E-01	6.270E-01	3.517E-01	NOT IDENT.
TH-231	-5.412E-02	3.221E-01	2.852E-01	1.643E-01	NOT IDENT.
TH-232	2.211E-02	6.329E-02	5.820E-02	3.229E-02	NOT IDENT.
PA-233	-8.304E-03	3.138E-02	2.758E-02	1.601E-02	NOT IDENT.
PA-234	8.017E-02	1.285E-01	1.234E-01	6.557E-02	NOT IDENT.
PA-234M	1.949E+00	2.091E+00	2.080E+00	1.067E+00	NOT IDENT.
TH-234	-1.086E-01	7.609E-01	7.046E-01	3.882E-01	NOT IDENT.
U-235	2.756E-02	1.083E-01	9.616E-02	5.527E-02	FAIL ABUN
NP-237	3.352E-02	9.698E-02	9.129E-02	4.948E-02	NOT IDENT.
U-238	-1.086E-01	7.609E-01	7.046E-01	3.882E-01	NOT IDENT.
NP-239	-7.913E-02	2.101E-01	1.721E-01	1.072E-01	NOT IDENT.
AM-241	-1.204E-01	8.453E-02	7.053E-02	4.313E-02	NOT IDENT.
CM-247	-6.668E-05	1.672E-02	1.481E-02	8.533E-03	NOT IDENT.
CF-249	1.648E-02	2.079E-02	1.987E-02	1.061E-02	NOT IDENT.

CF-251

-9.410E-03

6.322E-02

5.528E-02

3.225E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	79.5076
49.72	73.6009
57.36	76.3937
59.54	110.8337
63.29	91.9708
63.29	91.9708
64.28	92.1089
67.75	106.6123
69.67	95.6565
70.83	89.2393
72.81	119.6327
72.87	115.8746
72.87	115.8746
74.82	84.0714
74.82	84.0714
74.82	84.0714
74.97	83.1439
77.11	91.9151
77.11	91.9151
77.11	91.9151
79.69	77.9701
79.80	77.9814
80.12	82.7715
80.19	78.9732
80.57	86.6285
81.00	94.2974
81.07	94.3061
81.07	94.3061
83.79	82.2125
83.79	82.2125
85.43	89.0905
86.48	83.4535
86.55	83.4612
86.79	91.1629
86.94	93.0999
87.57	109.5030
88.03	119.1771
88.47	146.1680
89.96	147.4011
91.11	88.7586
92.59	86.0188
92.59	86.0188
93.35	90.9348
94.67	110.4571
94.87	144.4040
94.87	144.4040
95.86	166.8907
97.43	83.5999
98.44	66.1803
99.53	76.0088
100.11	80.9353
103.18	86.1124
103.37	80.2583
105.31	85.3380
106.12	84.4332
109.28	92.6094
111.00	83.8995
111.76	83.9682
116.30	86.3601
117.23	93.3997
121.12	69.8336
121.78	67.8840
122.06	67.9035
123.07	75.9701
131.20	72.5559
133.52	75.7490
136.00	102.2514

136.47	99.2591
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140.51	0.0000
143.76	97.8984
144.24	94.8810
144.24	94.8810
145.44	94.9853
152.43	84.2791
153.25	88.4539
154.21	96.7639
154.21	96.7639
156.02	68.0489
158.56	95.0659
159.00	83.7309
162.66	77.7723
163.33	89.2295
165.86	89.4204
176.60	61.8912
177.52	85.0323
181.07	84.2212
184.41	97.9543
185.72	92.9830
193.51	68.0317
197.04	79.9376
205.31	73.9953
210.85	80.7535
215.65	63.7444
222.11	61.8636
227.38	65.3568
228.16	75.2003
228.18	75.2013
235.69	71.8596
235.96	71.8726
235.96	71.8726
238.63	79.0252
238.63	79.0252
240.99	56.2836
242.00	56.3211
244.70	64.2289
252.40	60.9103
252.80	66.4645
256.23	61.0591
256.23	61.0591
260.90	65.6926
264.66	50.2219
268.22	64.8725
269.46	66.0410
269.46	66.0410
271.23	63.8719
273.65	61.7214
276.40	60.6997
277.37	65.2341
277.60	61.8683
278.00	63.0085
279.20	57.6492
279.54	56.7600
280.46	54.9879
283.69	53.2873
284.31	53.3067
285.41	69.6149
285.90	64.2094
287.50	53.4068
293.27	53.5869
295.22	57.2845
295.96	62.7671
298.57	49.1952
299.98	57.4406
299.98	57.4406
300.09	54.7090
300.09	54.7090
300.13	54.7104
301.36	59.3109
302.85	54.7947
304.50	53.9319
304.50	53.9319
304.85	52.1141
308.46	56.8005
311.90	51.4021

316.51	47.8518
319.41	52.5364
320.08	57.1661
323.87	53.5884
323.87	53.5884
328.76	48.1711
333.37	58.5049
334.37	60.3940
334.37	60.3940
338.28	54.0019
338.28	54.0019
338.32	54.0026
338.32	54.0026
338.32	54.0026
340.48	41.9464
340.55	41.9480
344.28	44.8313
351.06	48.7373
351.93	51.5719
356.01	54.4982
364.49	48.1263
366.42	38.7268
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388.63	41.0584
391.69	46.8557
400.66	39.3724
401.81	39.3934
402.40	31.7158
404.85	43.2977
410.95	33.7712
414.70	44.4614
423.72	36.8798
427.09	29.1595
427.87	30.1421
433.94	35.0987
453.88	30.4880
463.37	35.5487
468.07	29.6829
473.00	30.7359
476.78	35.7491
477.60	35.7614
487.02	30.9141
492.35	24.9850
497.08	35.0461
511.00	38.2619
514.00	28.5625
527.90	21.2851
529.87	0.0000
531.02	16.2367
537.26	17.2926
546.56	0.0000
563.25	29.7887
569.33	26.7668
569.50	26.7687
569.70	27.8002
583.19	20.6938
600.60	33.3164
602.73	39.5929
604.72	35.4493
609.32	29.2407
609.32	29.2407
610.33	33.4297
614.28	32.4297
618.01	38.7570
621.93	28.3203
621.93	28.3203
633.25	30.5357
635.95	20.0247
636.99	22.1402
645.85	24.3213
657.76	20.1713
661.66	27.6383
661.66	27.6383
664.57	23.4088
666.33	21.2930
666.50	25.5527
677.62	23.5082

685.70	24.6408
695.00	23.6398
696.49	23.6511
696.51	23.6511
697.00	25.8053
702.65	28.0052
706.68	28.0408
711.68	21.6040
720.70	17.3316
721.93	23.8401
722.78	18.4265
722.91	18.4273
723.31	22.7662
724.19	18.4348
727.33	17.3672
733.00	23.9212
735.93	13.0597
739.50	18.5211
747.24	26.2090
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753.82	21.8843
756.73	19.7130
763.94	23.0477
765.81	19.7662
766.42	17.5730
777.92	17.4491
778.90	12.8610
783.70	15.6387
785.37	15.6463
795.86	16.6168
801.95	17.5709
810.29	12.0508
810.76	13.9066
815.77	10.2127
818.51	16.7245
832.01	17.7209
834.85	18.6682
836.80	0.0000
846.77	20.6026
856.80	18.7813
860.56	16.9204
871.09	12.2552
873.19	21.6945
875.33	0.0000
879.36	15.1169
880.51	15.1217
883.24	15.1325
884.68	19.8691
889.28	13.2623
898.04	16.1416
911.20	12.3864
911.20	12.3864
911.20	12.3864
926.50	19.1317
937.49	12.4705
944.13	14.4135
946.00	8.6523
949.00	9.6210
962.29	13.5144
964.08	12.5546
966.15	15.4600
968.97	18.3715
968.97	18.3715
968.97	18.3715
983.53	7.7633
996.26	13.6283
1001.03	8.7713
1004.73	16.5829
1037.84	12.7821
1038.76	0.0000
1048.07	12.8127
1050.41	12.8202
1050.41	12.8202
1063.66	10.8814
1085.87	9.9430
1099.45	12.9656
1112.07	11.0022
1115.54	14.0137

1120.29	9.0187
1120.29	9.0187
1120.55	9.0190
1121.30	11.0251
1131.51	0.0000
1173.23	13.1793
1177.93	12.1777
1189.05	13.2243
1204.77	10.2063
1221.41	8.1937
1231.02	9.2366
1235.36	10.2722
1238.28	8.2227
1260.41	0.0000
1271.85	7.2447
1274.44	11.3903
1274.54	11.3907
1291.59	9.3516
1298.22	0.0000
1312.11	12.5200
1332.49	11.5232
1365.19	4.2170
1368.63	0.0000
1384.29	3.1743
1408.01	5.3143
1457.56	0.0000
1460.82	5.3666
1489.16	8.6309
1505.03	7.5734
1596.21	2.8267
1620.50	8.5153
1678.03	0.0000
1690.97	6.7009
1764.49	7.7492
1764.49	7.7492
1770.23	10.6647
1771.35	8.7272
1791.20	0.0000
1836.06	2.9385

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202054956

Total Uranium Activity	-3.1039E-01	ug/g
Total Uranium Counting Unc.	2.2641E+00	ug/g
Total Uranium Tpu	1.1551E-06	ug/g
Total Uranium Mda	2.0967E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G1202054956
*  ANALYST       : MXR1            DETECTOR    : GAM23
*  SAMPLE DATE   : 3-MAR-2010 00:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 13-MAR-2010 14:34:56.44  SAMPLE ALQT: 155.860 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.582E-02
GROSS GAMMA ERROR (pCi/GRAM ) : 3.873E-02
GROSS GAMMA MDA (pCi/GRAM ) : 8.257E-02
GROSS GAMMA DLC (pCi/GRAM ) : 3.873E-02

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 16:38:46.91

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration       : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054957.CNF;1
Sample date        : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:35:26
Sample ID         : G1202054957 Sample quantity : 1.36060E+02 GRAM
Detector name     : GAM25 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.12 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 958221 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	46.54*	177	482	0.93	92.65	89	7	2.45E-02	23.1	
2	0	63.31*	697	687	0.73	126.17	123	7	9.67E-02	7.5	
3	3	74.82*	795	499	0.84	149.19	144	17	1.10E-01	5.5	2.42E+00
4	3	77.13*	1328	440	0.91	153.81	144	17	1.84E-01	3.7	
5	0	84.24*	162	514	0.87	168.03	165	6	2.25E-02	24.0	
6	3	87.19*	480	566	1.10	173.94	171	23	6.67E-02	9.3	4.46E+00
7	3	89.91	310	456	0.98	179.38	171	23	4.30E-02	12.3	
8	3	92.65*	1186	464	1.10	184.86	171	23	1.65E-01	4.4	
9	3	94.45	118	429	1.12	188.44	171	23	1.64E-02	40.6	
10	0	98.77*	120	474	1.45	197.10	193	9	1.67E-02	34.4	
11	0	128.93*	143	581	1.91	257.41	252	12	1.99E-02	34.9	
12	0	143.93*	80	367	1.13	287.41	284	8	1.12E-02	43.9	
13	0	185.79*	404	444	1.18	371.11	366	12	5.60E-02	11.8	
14	0	209.46*	125	288	1.27	418.45	414	9	1.74E-02	26.4	
15	0	238.58*	1305	418	0.92	476.68	473	8	1.81E-01	3.9	
16	0	241.85*	297	255	1.85	483.23	481	7	4.12E-02	11.2	
17	0	270.03	158	257	1.16	539.59	535	11	2.19E-02	21.2	
18	0	295.23*	436	207	1.05	589.98	585	10	6.06E-02	7.9	
19	0	299.99	125	162	0.91	599.50	595	9	1.73E-02	20.6	
20	0	329.54	110	326	4.79	658.60	651	18	1.52E-02	39.9	
21	0	338.16	340	190	1.10	675.84	669	12	4.73E-02	9.7	
22	0	351.88*	809	172	1.14	703.28	699	10	1.12E-01	4.7	
23	0	463.04	83	93	1.28	925.58	920	10	1.16E-02	24.3	
24	0	510.72*	150	182	1.54	1020.95	1014	16	2.08E-02	23.7	
25	0	582.99*	445	120	1.48	1165.48	1157	15	6.19E-02	7.3	
26	0	609.35*	582	117	1.35	1218.20	1210	14	8.08E-02	5.8	
27	0	661.83*	225	108	1.13	1323.14	1317	13	3.12E-02	12.1	
28	0	727.72	107	89	1.74	1454.92	1447	14	1.49E-02	21.2	
29	0	861.03	42	69	1.35	1721.55	1716	12	5.84E-03	43.0	
30	0	910.99*	296	61	1.56	1821.47	1812	18	4.11E-02	8.6	
31	0	969.22	128	101	1.50	1937.93	1930	13	1.78E-02	18.5	
32	0	1002.74	34	73	1.46	2004.96	1998	14	4.72E-03	56.2	
33	0	1121.08*	128	100	1.75	2241.65	2232	20	1.78E-02	21.5	
34	0	1238.67	39	88	1.18	2476.85	2471	13	5.39E-03	52.3	
35	0	1378.69	49	11	2.47	2756.90	2751	16	6.81E-03	21.2	
36	0	1460.76*	1104	21	2.15	2921.05	2910	21	1.53E-01	3.2	
37	0	1588.11	20	8	1.06	3175.78	3169	11	2.73E-03	36.3	
38	0	1729.62	32	3	2.45	3458.81	3451	13	4.50E-03	20.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1764.53*	109	0	2.68	3528.64	3521	15	1.51E-02	10.0	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 16:38:51

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054957.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:35:26
Sample ID         : G1202054957 Sample quantity : 136.06 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA25 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.12 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	*	2.578E+01	2.749E+00	4.864E-01	4.142E-02	53.005
CD-109	+	88.03	*	3.933E+00	8.409E-01	7.482E-01	8.041E-02	5.257
SN-126	+	64.28		2.047E+00	4.481E-01	2.973E-01	4.737E-02	6.886
	+	86.94		1.582E+00	7.237E-01	2.994E-01	1.253E-01	5.283
	+	87.57	*	3.805E-01	8.134E-02	7.223E-02	7.745E-03	5.268
BA-137M	+	661.66	*	3.097E-01	8.254E-02	5.934E-02	6.573E-03	5.219
CS-137	+	661.66	*	3.272E-01	8.721E-02	6.268E-02	6.952E-03	5.219
TL-208		277.37		6.517E-01	3.672E-01	6.193E-01	8.901E-02	1.052
	+	583.19	*	5.790E-01	1.071E-01	5.524E-02	6.222E-03	10.481
	+	860.56		5.261E-01	4.558E-01	4.994E-01	5.218E-02	1.053
PB-210	+	46.54	*	1.249E+00	5.921E-01	5.714E-01	5.852E-02	2.186
BI-211		72.87		1.831E+00	1.703E+00	2.565E+00	2.589E-01	0.714
	+	351.06	*	4.446E+00	6.268E-01	3.019E-01	3.181E-02	14.728
PB-212	+	74.82		2.201E+00	3.928E-01	2.799E-01	3.938E-02	7.863
	+	77.11		2.220E+00	2.800E-01	1.696E-01	1.738E-02	13.089
	+	238.63	*	1.547E+00	2.142E-01	9.815E-02	1.121E-02	15.759
	+	300.09		2.344E+00	1.008E+00	1.087E+00	1.364E-01	2.156
BI-214	+	609.32	*	1.469E+00	2.459E-01	1.006E-01	1.218E-02	14.611
	+	1120.29		1.696E+00	7.529E-01	4.871E-01	5.310E-02	3.483
	+	1764.49		2.088E+00	4.533E-01	3.051E-01	2.514E-02	6.844
PB-214	+	74.82		3.902E+00	6.607E-01	4.962E-01	6.396E-02	7.863
	+	77.11		3.915E+00	5.899E-01	2.991E-01	3.934E-02	13.089
	+	242.00		2.136E+00	5.419E-01	5.202E-01	6.250E-02	4.106
	+	295.22		1.452E+00	2.950E-01	1.907E-01	2.444E-02	7.612
	+	351.93	*	1.614E+00	2.443E-01	1.093E-01	1.299E-02	14.760
RA-224	+	240.99	*	3.777E+00	9.329E-01	1.204E+00	1.265E-01	3.138
RA-226	+	609.32	*	1.469E+00	2.459E-01	1.006E-01	1.218E-02	14.611
	+	1120.29		1.696E+00	7.529E-01	4.871E-01	5.310E-02	3.483
	+	1764.49		2.088E+00	4.533E-01	3.051E-01	2.514E-02	6.844
AC-228	+	338.32		2.072E+00	9.617E-01	2.977E-01	1.254E-01	6.961
	+	911.20	*	1.887E+00	3.992E-01	2.234E-01	2.731E-02	8.447
	+	968.97		1.412E+00	6.284E-01	3.355E-01	8.258E-02	4.210
RA-228	+	338.32		2.072E+00	9.617E-01	2.977E-01	1.254E-01	6.961
	+	911.20	*	1.887E+00	3.992E-01	2.234E-01	2.731E-02	8.447

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.412E+00	6.284E-01	3.355E-01	8.258E-02	4.210
	+	74.82		2.201E+00	3.304E-01	2.799E-01	2.863E-02	7.863
	+	77.11		2.220E+00	2.800E-01	1.696E-01	1.738E-02	13.089
	+	238.63	*	1.547E+00	2.142E-01	9.815E-02	1.121E-02	15.759
	+	300.09		2.344E+00	1.736E+00	1.087E+00	6.695E-01	2.156
TH-229	+	85.43		3.208E-01	1.574E-01	1.886E-01	2.002E-02	1.701
	+	88.47		5.866E-01	1.254E-01	1.118E-01	1.204E-02	5.247
		193.51	*	2.592E-01	4.360E-01	7.307E-01	6.969E-02	0.355
	+	210.85		2.091E+00	1.125E+00	1.125E+00	1.115E-01	1.860
TH-232	+	338.32		2.072E+00	4.576E-01	2.977E-01	3.103E-02	6.961
	+	911.20	*	1.887E+00	3.992E-01	2.234E-01	2.731E-02	8.447
	+	968.97		1.412E+00	6.284E-01	3.355E-01	8.258E-02	4.210
TH-234	+	63.29	*	5.311E+00	1.286E+00	7.643E-01	1.451E-01	6.950
	+	92.59		8.369E+00	2.072E+00	6.465E-01	1.494E-01	12.945
U-235	+	89.96		2.640E+00	9.352E-01	7.785E-01	1.984E-01	3.391
	+	93.35		6.322E+00	1.623E+00	4.901E-01	1.181E-01	12.899
	+	143.76	*	2.673E-01	2.396E-01	2.603E-01	4.782E-02	1.027
		163.33		3.673E-01	3.803E-01	6.316E-01	1.152E-01	0.582
	+	185.72		3.031E-01	7.713E-02	5.357E-02	5.016E-03	5.658
		205.31		-1.271E-01	4.662E-01	6.615E-01	1.239E-01	-0.192
NP-237	+	86.48	*	1.135E+00	3.400E-01	2.246E-01	5.284E-02	5.054
	+	95.86		1.322E+00	1.123E+00	8.572E-01	2.145E-01	1.542
U-238	+	63.29	*	5.311E+00	1.286E+00	7.643E-01	1.451E-01	6.950
	+	92.59		8.369E+00	1.183E+00	6.465E-01	7.103E-02	12.945
ANH-511	+	511.00	*	1.474E-01	7.136E-02	4.366E-02	4.494E-03	3.375

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	9.757E-02	3.506E-01	5.820E-01	6.160E-02	0.168
NA-22		1274.54	*	-3.166E-02	4.544E-02	6.924E-02	5.678E-03	-0.457
NA-24		1368.63	*	1.512E+02	4.544E-02	Half-Life too short		
SC-46		889.28	*	1.270E-03	4.594E-02	7.491E-02	7.174E-03	0.017
	+	1120.55		3.040E-01	1.334E-01	1.492E-01	1.282E-02	2.038
V-48		944.13		5.267E-02	1.258E+00	2.042E+00	1.916E-01	0.026
		983.53	*	3.317E-03	9.811E-02	1.586E-01	1.469E-02	0.021
		1312.11		1.764E-02	1.122E-01	1.870E-01	1.524E-02	0.094
CR-51		320.08	*	-1.742E-01	3.931E-01	6.460E-01	7.170E-02	-0.270
MN-54		834.85	*	7.012E-03	4.075E-02	6.761E-02	6.861E-03	0.104
CO-56		846.77	*	-2.758E-02	3.983E-02	6.043E-02	6.063E-03	-0.456
		1037.84		2.259E-01	3.546E-01	6.241E-01	5.917E-02	0.362
	+	1238.28		1.527E-01	1.601E-01	1.981E-01	1.680E-02	0.771
		1771.35		-3.536E-03	2.519E-01	3.577E-01	2.945E-02	-0.010
CO-57		122.06	*	-2.755E-03	1.849E-02	3.100E-02	3.998E-03	-0.089
		136.47		-9.496E-02	1.649E-01	2.691E-01	3.298E-02	-0.353
CO-58		810.76	*	-3.228E-02	4.330E-02	6.614E-02	6.862E-03	-0.488
FE-59		1099.45	*	-4.902E-02	1.104E-01	1.770E-01	1.667E-02	-0.277
		1291.59		2.730E-02	1.421E-01	2.378E-01	2.234E-02	0.115

---- 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			3.043E-03	4.783E-02	7.970E-02	6.560E-03	0.038
	1332.49	*		-2.251E-02	3.884E-02	5.897E-02	4.789E-03	-0.382
ZN-65	1115.54	*		-5.756E-02	1.158E-01	1.560E-01	1.348E-02	-0.369
SE-75	121.12			-5.367E-02	9.755E-02	1.604E-01	2.341E-02	-0.335
	136.00			-3.331E-02	3.274E-02	5.220E-02	6.194E-03	-0.638
	264.66	*		9.677E-04	4.336E-02	6.574E-02	7.206E-03	0.015
	279.54			-1.033E-01	1.093E-01	1.626E-01	1.856E-02	-0.635
	400.66			1.820E-01	2.488E-01	4.284E-01	4.945E-02	0.425
SR-85	514.00	*		2.843E-02	4.778E-02	7.111E-02	7.336E-03	0.400
Y-88	898.04			-2.788E-02	4.409E-02	6.708E-02	6.379E-03	-0.416
	1836.06	*		2.470E-02	4.047E-02	7.328E-02	5.988E-03	0.337
Y-91	1204.77	*		-5.061E+00	2.440E+01	3.961E+01	3.260E+00	-0.128
NB-94	702.65	*		-5.509E-03	3.362E-02	5.524E-02	6.066E-03	-0.100
	871.09			-7.819E-03	3.424E-02	5.456E-02	5.337E-03	-0.143
NB-95	765.81	*		2.611E-02	5.085E-02	8.674E-02	9.266E-03	0.301
NB-95M	235.69	*		7.695E-02	1.245E-01	1.853E-01	2.126E-02	0.415
ZR-95	724.19			-5.173E-02	1.220E-01	1.677E-01	1.926E-02	-0.308
	756.73	*		1.604E-02	8.049E-02	1.350E-01	1.549E-02	0.119
MO-99	140.51			-4.452E-05	8.049E-02	Half-Life	too short	
	181.07			1.260E-05	8.049E-02	Half-Life	too short	
	366.42			-4.470E-04	8.049E-02	Half-Life	too short	
	739.50	*		-6.929E-05	8.049E-02	Half-Life	too short	
	777.92			-2.451E-04	8.049E-02	Half-Life	too short	
TC-99M	140.51	*		-3.224E+18	8.049E-02	Half-Life	too short	
RU-103	497.08	*		-3.745E-02	4.397E-02	6.608E-02	9.898E-03	-0.567
	610.33			1.716E+01	3.620E+00	3.523E+00	6.221E-01	4.870
RH-106	621.93	*		-2.022E-01	2.962E-01	4.689E-01	6.976E-02	-0.431
	1050.41			2.094E+00	2.739E+00	4.865E+00	4.374E-01	0.430
RU-106	621.93	*		-2.022E-01	2.955E-01	4.689E-01	5.135E-02	-0.431
	1050.41			2.094E+00	2.739E+00	4.865E+00	4.374E-01	0.430
AG-108M	433.94	*		-3.235E-03	2.873E-02	4.685E-02	4.603E-03	-0.069
	614.28			2.870E-03	3.575E-02	5.289E-02	5.894E-03	0.054
	722.91			-1.704E-03	4.211E-02	6.036E-02	6.716E-03	-0.028
AG-110M	657.76	*		-1.087E-02	3.746E-02	5.265E-02	5.933E-03	-0.207
	677.62			1.598E-02	3.090E-01	5.096E-01	5.730E-02	0.031
	706.68			1.820E-01	2.229E-01	3.907E-01	4.362E-02	0.466
	763.94			-2.144E-02	1.877E-01	3.074E-01	3.346E-02	-0.070
	884.68			-7.690E-03	5.085E-02	8.154E-02	8.055E-03	-0.094
	937.49			-2.186E-02	1.067E-01	1.688E-01	1.635E-02	-0.129
	1384.29			1.076E-01	1.364E-01	2.262E-01	1.908E-02	0.475
	1505.03			-2.164E-01	2.922E-01	4.170E-01	3.457E-02	-0.519
SN-113	391.69	*		-1.708E-02	4.285E-02	6.921E-02	6.465E-03	-0.247
CD-115	260.90			-9.650E-05	4.285E-02	Half-Life	too short	
	492.35			2.172E-04	4.285E-02	Half-Life	too short	
	527.90	*		2.209E-05	4.285E-02	Half-Life	too short	
SN-117M	156.02			-6.628E-01	2.674E+00	4.391E+00	4.378E-01	-0.151
	158.56	*		4.436E-02	6.152E-02	1.049E-01	1.018E-02	0.423
TE-123M	159.00	*		1.717E-02	2.353E-02	4.010E-02	3.894E-03	0.428
SB-124	602.73			-2.209E-03	4.142E-02	6.053E-02	6.579E-03	-0.036

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		645.85		1.646E-01	5.283E-01	9.049E-01	1.034E-01	0.182
		722.78		1.062E-02	4.604E-01	6.648E-01	7.355E-02	0.016
		1690.97	*	3.772E-02	8.050E-02	1.446E-01	1.253E-02	0.261
		427.87	*	5.814E-03	8.669E-02	1.432E-01	1.383E-02	0.041
	+	463.37		7.206E-01	3.576E-01	4.999E-01	5.221E-02	1.441
TE-125M		600.60		1.037E-01	1.603E-01	2.763E-01	3.142E-02	0.375
		635.95		-1.315E-01	2.540E-01	4.080E-01	4.716E-02	-0.322
		109.28	*	-1.940E+00	7.629E+00	1.268E+01	1.701E+00	-0.153
I-126		388.63		7.177E-04	2.303E-01	3.821E-01	3.508E-02	0.002
		666.33	*	-7.297E-02	3.822E-01	5.446E-01	6.029E-02	-0.134
SB-126		753.82		1.158E+00	2.777E+00	4.731E+00	5.087E-01	0.245
		414.70		-8.705E-02	1.068E-01	1.664E-01	1.558E-02	-0.523
		666.50		-3.103E-02	1.332E-01	1.889E-01	2.091E-02	-0.164
		695.00		4.353E-02	1.189E-01	2.030E-01	2.234E-02	0.214
SB-127		697.00		-1.512E-01	4.109E-01	6.651E-01	7.315E-02	-0.227
		720.70	*	1.240E-01	2.400E-01	3.652E-01	3.986E-02	0.340
		856.80		-5.126E-02	8.428E-01	1.181E+00	1.173E-01	-0.043
		252.40		-1.183E+00	1.309E+01	2.080E+01	8.880E+00	-0.057
		473.00		-3.497E-01	5.674E+00	9.213E+00	1.442E+00	-0.038
I-131		685.70	*	1.841E+00	4.831E+00	8.262E+00	1.263E+00	0.223
		783.70		1.762E+01	1.269E+01	2.265E+01	3.560E+00	0.778
		80.19		1.998E+00	4.944E+00	7.245E+00	7.586E-01	0.276
		284.31		-1.432E+00	2.544E+00	3.879E+00	4.468E-01	-0.369
TE-132		364.49	*	8.953E-02	1.857E-01	3.183E-01	3.283E-02	0.281
		636.99		5.309E-01	2.680E+00	4.565E+00	5.224E-01	0.116
		49.72		-2.019E+00	1.343E+01	1.982E+01	2.737E+00	-0.102
		111.76		7.623E+01	1.197E+02	2.017E+02	3.176E+01	0.378
BA-133		116.30		1.176E+01	9.434E+01	1.604E+02	2.564E+01	0.073
		228.16	*	1.448E+00	2.924E+00	4.811E+00	8.798E-01	0.301
		81.00		1.999E-02	6.344E-02	8.123E-02	1.347E-02	0.246
		276.40		3.999E-01	3.373E-01	5.603E-01	8.831E-02	0.714
		302.85		6.190E-03	1.293E-01	1.939E-01	2.853E-02	0.032
I-133		356.01	*	1.151E-02	4.059E-02	6.110E-02	8.522E-03	0.188
		383.85		2.048E-02	2.812E-01	4.689E-01	6.060E-02	0.044
		529.87	*	4.217E-01	2.812E-01	Half-Life	too short	
		875.33		-1.395E+01	2.812E-01	Half-Life	too short	
CS-134		1298.22		-3.260E+00	2.812E-01	Half-Life	too short	
		563.25		1.525E-01	3.677E-01	6.083E-01	6.525E-02	0.251
		569.33		1.809E-01	2.056E-01	3.476E-01	3.751E-02	0.520
		604.72		-1.682E-02	3.509E-02	4.889E-02	5.327E-03	-0.344
CS-135		795.86	*	6.402E-02	4.955E-02	8.862E-02	9.329E-03	0.722
		801.95		-4.184E-01	3.989E-01	5.885E-01	6.161E-02	-0.711
		1365.19		-1.811E-01	1.143E+00	1.823E+00	1.565E-01	-0.099
		268.22	*	1.726E-01	1.628E-01	2.458E-01	2.967E-02	0.702
I-135		546.56		1.957E+17	1.628E-01	Half-Life	too short	
		836.80		7.795E+17	1.628E-01	Half-Life	too short	
		1038.76		3.659E+17	1.628E-01	Half-Life	too short	
		1131.51		-1.639E+17	1.628E-01	Half-Life	too short	
		1260.41	*	1.094E+17	1.628E-01	Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1457.56			3.031E+19	1.628E-01	Half-Life	too short	
	1678.03			6.450E+17	1.628E-01	Half-Life	too short	
	1791.20			-2.706E+17	1.628E-01	Half-Life	too short	
	153.25			7.945E-01	1.013E+00	1.728E+00	2.018E-01	0.460
	176.60			3.954E-01	5.884E-01	9.944E-01	9.951E-02	0.398
	273.65			-5.812E-01	7.493E-01	9.877E-01	1.151E-01	-0.588
	340.55			2.793E-01	2.026E-01	3.265E-01	3.481E-02	0.855
	818.51			-8.373E-04	1.088E-01	1.783E-01	1.838E-02	-0.005
	1048.07	*		1.282E-02	1.668E-01	2.813E-01	2.633E-02	0.046
	1235.36			2.436E-01	1.119E+00	1.620E+00	1.860E-01	0.150
CE-139	165.86	*		-1.265E-02	2.641E-02	4.271E-02	3.808E-03	-0.296
BA-140	162.66			7.630E-01	9.968E-01	1.663E+00	1.632E-01	0.459
LA-140	304.85			-5.666E-01	1.802E+00	2.725E+00	8.184E-01	-0.208
	423.72			1.044E-01	2.772E+00	4.575E+00	1.516E+00	0.023
	537.26	*		-4.056E-02	3.810E-01	6.084E-01	2.095E-01	-0.067
	328.76			1.210E+00	9.742E-01	7.441E-01	8.185E-02	1.626
	487.02			1.205E-01	1.843E-01	3.140E-01	3.312E-02	0.384
	815.77			-6.196E-02	4.768E-01	7.729E-01	8.637E-02	-0.080
CE-141	1596.21	*		9.278E-02	1.253E-01	2.240E-01	1.863E-02	0.414
CE-143	145.44	*		4.799E-02	6.328E-02	9.816E-02	1.092E-02	0.489
CE-143	57.36			-3.225E-04	6.328E-02	Half-Life	too short	
	293.27	*		1.407E-02	6.328E-02	Half-Life	too short	
	664.57			1.033E-01	6.328E-02	Half-Life	too short	
	721.93			2.050E-02	6.328E-02	Half-Life	too short	
CE-144	80.12			5.451E-01	1.483E+00	2.170E+00	2.251E-01	0.251
PM-144	133.52	*		9.055E-02	1.754E-01	2.703E-01	4.712E-02	0.335
	476.78			1.931E-02	6.465E-02	1.075E-01	1.145E-02	0.180
	618.01			-1.078E-03	3.019E-02	5.066E-02	5.638E-03	-0.021
PR-144	696.49	*		-1.805E-02	3.624E-02	5.806E-02	6.390E-03	-0.311
	696.51	*		-1.364E+00	2.722E+00	4.359E+00	4.795E-01	-0.313
	1489.16			-2.244E+00	1.164E+01	1.819E+01	1.506E+00	-0.123
PM-146	453.88	*		2.248E-02	4.334E-02	7.314E-02	8.452E-03	0.307
ND-147	633.25			-3.739E-01	1.299E+00	2.117E+00	8.213E-01	-0.177
	735.93			7.336E-02	1.467E-01	2.501E-01	7.201E-02	0.293
	747.24			-2.805E-03	1.074E-01	1.773E-01	2.830E-02	-0.016
	91.11			1.329E+00	3.607E-01	5.928E-01	6.807E-02	2.242
	319.41			-1.729E+00	4.653E+00	7.682E+00	8.255E-01	-0.225
	531.02	*		-1.684E-01	8.895E-01	1.414E+00	2.273E-01	-0.119
	285.90	*		4.328E-05	8.895E-01	Half-Life	too short	
EU-152	121.78			-1.645E-02	5.173E-02	8.607E-02	1.185E-02	-0.191
GD-153	244.70			1.719E-01	3.000E-01	4.457E-01	4.714E-02	0.386
	344.28	*		2.082E-02	8.626E-02	1.419E-01	1.524E-02	0.147
	778.90			-1.977E-01	2.628E-01	4.035E-01	4.276E-02	-0.490
	964.08			4.666E-01	3.875E-01	6.031E-01	5.625E-02	0.774
	1085.87			-3.526E-01	3.933E-01	5.993E-01	5.277E-02	-0.588
	1112.07			4.913E-02	3.769E-01	5.710E-01	4.939E-02	0.086
	1408.01			6.111E-02	1.848E-01	3.133E-01	2.574E-02	0.195
	69.67			-3.834E-01	8.212E-01	1.274E+00	1.273E-01	-0.301
	97.43	*		1.348E-01	9.393E-02	9.600E-02	1.081E-02	1.404

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		103.18		-5.789E-02	8.537E-02	1.265E-01	1.469E-02	-0.458
		123.07		1.634E-02	3.746E-02	6.413E-02	9.491E-03	0.255
		723.31		-8.731E-02	1.975E-01	2.700E-01	3.134E-02	-0.323
		873.19		1.094E-01	2.759E-01	4.663E-01	5.942E-02	0.235
		996.26		-6.246E-02	4.364E-01	5.921E-01	1.052E-01	-0.105
		1004.73		-8.848E-02	3.003E-01	3.899E-01	4.704E-02	-0.227
EU-155		1274.44	*	-5.345E-02	1.255E-01	1.970E-01	2.178E-02	-0.271
	+	86.55		4.626E-01	9.906E-02	1.290E-01	1.386E-02	3.586
		105.31	*	8.013E-02	7.385E-02	1.294E-01	1.530E-02	0.619
TB-160	+	86.79		1.309E+00	2.798E-01	3.738E-01	3.993E-02	3.502
		197.04		2.121E-02	5.125E-01	8.374E-01	8.051E-02	0.025
		215.65		3.322E-01	6.821E-01	1.130E+00	1.131E-01	0.294
	+	298.57		3.529E-01	1.503E-01	1.928E-01	2.121E-02	1.831
		879.36	*	4.348E-02	1.478E-01	2.474E-01	2.397E-02	0.176
		962.29		5.668E-01	7.424E-01	1.117E+00	1.043E-01	0.507
HO-166M		966.15		7.342E-01	3.208E-01	5.294E-01	4.935E-02	1.387
		1177.93		-1.824E-02	4.389E-01	7.249E-01	5.967E-02	-0.025
		1271.85		-1.951E-01	7.828E-01	1.255E+00	1.028E-01	-0.155
	+	80.57		5.236E-02	1.820E-01	2.329E-01	2.420E-02	0.225
		184.41		2.408E-01	6.128E-02	5.973E-02	5.575E-03	4.032
		280.46		-9.937E-02	8.130E-02	1.182E-01	1.319E-02	-0.840
TA-182		410.95		3.420E-01	2.392E-01	4.239E-01	3.950E-02	0.807
		711.68	*	-5.752E-02	6.209E-02	9.513E-02	1.042E-02	-0.605
		752.31		-2.932E-01	3.038E-01	4.621E-01	4.973E-02	-0.634
		810.29		-7.836E-02	6.334E-02	9.176E-02	9.508E-03	-0.854
	+	67.75		2.051E-02	5.196E-02	8.282E-02	8.240E-03	0.248
		100.11		2.974E-01	2.073E-01	2.058E-01	2.351E-02	1.445
IR-192		152.43		8.176E-02	2.989E-01	5.019E-01	5.187E-02	0.163
	+	222.11		-3.994E-02	3.214E-01	5.159E-01	5.232E-02	-0.077
		1121.30		8.293E-01	3.639E-01	4.095E-01	3.518E-02	2.025
		1189.05		4.375E-02	3.582E-01	5.986E-01	4.928E-02	0.073
		1221.41	*	1.814E-01	2.205E-01	3.866E-01	3.180E-02	0.469
		1231.02		4.885E-01	5.781E-01	9.515E-01	7.821E-02	0.513
HG-203	+	295.96		1.146E+00	2.210E-01	2.911E-01	3.226E-02	3.937
		308.46		3.301E-02	8.711E-02	1.501E-01	1.640E-02	0.220
		316.51	*	3.024E-03	3.352E-02	5.679E-02	6.134E-03	0.053
BI-207		468.07		-2.576E-02	7.004E-02	1.020E-01	1.068E-02	-0.252
		70.83		-1.097E-01	7.582E-01	1.094E+00	1.844E-01	-0.100
		72.87		5.058E-01	4.751E-01	7.087E-01	1.162E-01	0.714
PB-211		279.20	*	3.043E-03	4.015E-02	6.390E-02	7.241E-03	0.048
	+	72.81		8.967E-02	9.742E-02	1.461E-01	1.474E-02	0.614
		74.97		6.347E-01	9.496E-02	1.330E-01	1.352E-02	4.773
BI-212		569.70		2.874E-02	3.180E-02	5.385E-02	5.760E-03	0.534
		1063.66	*	2.898E-02	5.576E-02	9.721E-02	8.676E-03	0.298
		1770.23		-6.186E-02	4.550E-01	6.206E-01	5.110E-02	-0.100
BI-212		404.85	*	-2.169E-01	6.822E-01	1.092E+00	5.297E-01	-0.199
		427.09		-1.272E-01	1.448E+00	2.367E+00	1.099E+00	-0.054
		832.01		-7.156E-01	1.164E+00	1.710E+00	8.915E-01	-0.419
BI-212	+	727.33	*	2.161E+00	9.652E-01	1.222E+00	1.726E-01	1.767

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219		785.37		9.722E-01	3.233E+00	5.448E+00	5.749E-01	0.178
		1620.50		1.863E+00	2.277E+00	4.239E+00	3.524E-01	0.439
	+	271.23		8.325E-01	3.675E-01	4.203E-01	5.192E-02	1.981
RA-223		401.81	*	6.451E-02	3.902E-01	6.517E-01	9.921E-02	0.099
		81.07		4.233E-02	1.435E-01	1.837E-01	1.912E-02	0.230
	+	83.79		1.909E-01	9.365E-02	1.340E-01	1.412E-02	1.425
	+	94.87		6.226E-01	5.103E-01	5.226E-01	5.808E-02	1.192
	+	144.24		8.958E-01	7.932E-01	9.786E-01	1.165E-01	0.915
		154.21		1.280E-01	3.227E-01	5.437E-01	5.907E-02	0.235
	+	269.46		6.468E-01	2.835E-01	3.297E-01	3.673E-02	1.962
		323.87	*	1.203E-01	6.447E-01	9.700E-01	1.789E-01	0.124
	+	338.28		8.224E+00	1.945E+00	2.362E+00	3.169E-01	3.482
AC-227		79.69		-1.854E-01	7.338E-01	1.042E+00	1.893E-01	-0.178
		235.96		1.376E-01	1.417E-01	2.146E-01	2.549E-02	0.642
		256.23	*	-1.498E-02	2.305E-01	3.666E-01	5.016E-02	-0.041
	+	299.98		2.578E+00	1.124E+00	1.508E+00	2.174E-01	1.710
		304.50		-1.518E-02	1.530E+00	2.259E+00	4.031E-01	-0.007
		334.37		9.459E-01	2.195E+00	2.514E+00	4.198E-01	0.376
TH-227		79.80		1.753E-01	9.489E-01	1.377E+00	3.101E-01	0.127
		235.96		1.376E-01	1.417E-01	2.146E-01	2.440E-02	0.642
		256.23	*	-1.498E-02	2.305E-01	3.666E-01	5.524E-02	-0.041
	+	299.98		2.578E+00	1.124E+00	1.508E+00	2.174E-01	1.710
		304.50		-1.518E-02	1.530E+00	2.259E+00	4.031E-01	-0.007
		334.37		9.459E-01	2.195E+00	2.514E+00	4.198E-01	0.376
PA-231		283.69	*	1.345E-01	1.331E+00	2.119E+00	3.431E-01	0.063
	+	301.36		1.656E+00	7.194E-01	9.390E-01	1.307E-01	1.764
		81.07		4.233E-02	1.435E-01	1.837E-01	1.912E-02	0.230
TH-231		83.79		1.909E-01	9.365E-02	1.340E-01	1.412E-02	1.425
	+	94.87		6.226E-01	5.103E-01	5.226E-01	5.808E-02	1.192
	+	144.24		8.958E-01	7.932E-01	9.786E-01	1.165E-01	0.915
		154.21		1.280E-01	3.227E-01	5.437E-01	5.907E-02	0.235
	+	269.46		6.468E-01	2.835E-01	3.297E-01	3.673E-02	1.962
		323.87	*	1.203E-01	6.447E-01	9.700E-01	1.789E-01	0.124
	+	338.28		8.224E+00	1.945E+00	2.362E+00	3.169E-01	3.482
	+	300.13		1.167E+00	5.163E-01	6.755E-01	1.102E-01	1.727
		311.90	*	-2.790E-02	5.770E-02	9.482E-02	1.047E-02	-0.294
PA-234		340.48		1.022E+00	6.529E-01	9.978E-01	2.470E-01	1.024
	+	94.67		2.257E-01	1.860E-01	2.016E-01	2.871E-02	1.119
	+	98.44		1.444E-01	1.283E-01	1.088E-01	6.119E-02	1.327
		111.00		-5.515E-02	1.376E-01	2.298E-01	3.398E-02	-0.240
		131.20		-3.552E-02	9.312E-02	1.353E-01	1.652E-02	-0.262
		569.50		2.511E-01	2.818E-01	4.769E-01	5.100E-02	0.527
		733.00		2.026E-01	4.133E-01	6.247E-01	1.447E-01	0.324
		880.51		4.884E-02	2.755E-01	4.563E-01	4.416E-02	0.107
		883.24		-9.937E-02	2.993E-01	4.593E-01	3.094E-01	-0.216
		926.50		-5.308E-02	1.782E-01	2.793E-01	7.141E-02	-0.190
		946.00	*	3.210E-01	3.075E-01	5.369E-01	1.027E-01	0.598
		949.00		-8.565E-02	4.572E-01	7.253E-01	6.796E-02	-0.118
PA-234M		766.42		7.604E+00	1.326E+01	2.176E+01	1.113E+01	0.349

---- 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	*	6.878E+00	5.769E+00	9.124E+00	9.557E-01	0.754
		99.53		2.619E-01	1.825E-01	1.926E-01	2.193E-02	1.360
		103.37		-2.773E-02	7.088E-02	1.136E-01	1.321E-02	-0.244
		106.12		5.517E-03	5.816E-02	9.933E-02	1.172E-02	0.056
		117.23	*	-4.611E-01	2.884E-01	4.464E-01	5.599E-02	-1.033
		228.18		9.259E-02	1.899E-01	3.132E-01	3.215E-02	0.296
		277.60		3.074E-01	1.664E-01	2.847E-01	3.170E-02	1.080
AM-241		59.54	*	6.745E-03	5.333E-02	7.884E-02	8.191E-03	0.086
CM-247		278.00		1.189E+00	6.996E-01	1.193E+00	1.329E-01	0.997
		287.50		1.239E+00	1.147E+00	1.916E+00	2.128E-01	0.646
		402.40	*	-4.840E-03	3.502E-02	5.741E-02	5.291E-03	-0.084
CF-249		252.80		1.536E-01	8.195E-01	1.324E+00	1.420E-01	0.116
		333.37		1.467E-01	2.304E-01	2.699E-01	2.838E-02	0.544
		388.16	*	1.068E-02	3.783E-02	6.378E-02	5.865E-03	0.167
CF-251		177.52	*	8.631E-03	1.096E-01	1.808E-01	1.659E-02	0.048
		227.38		2.019E-01	3.119E-01	5.181E-01	5.309E-02	0.390
		285.41		-9.119E-01	2.096E+00	3.226E+00	3.587E-01	-0.283

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]G1202054957      *
* Acquisition date   : 13-MAR-2010 14:35:26 Detector SN#      :              *
* Detector ID        : GAM25                      Sensitivity    : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:02.12             Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202054957             Analyst initials: MXR1         *
* Batch Number       : 958221                  Sample Quantity : 1.3606E+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	2.578E+01	2.694E+00	4.876E-01	0.000E+00
CD-109	3.933E+00	8.241E-01	7.902E-01	0.000E+00
SN-126	3.805E-01	7.971E-02	7.628E-02	0.000E+00
BA-137M	3.097E-01	8.089E-02	6.040E-02	0.000E+00
CS-137	3.272E-01	8.547E-02	6.381E-02	0.000E+00
TL-208	5.790E-01	1.050E-01	5.636E-02	0.000E+00
PB-210	1.249E+00	5.803E-01	6.102E-01	0.000E+00
BI-211	4.446E+00	6.143E-01	3.110E-01	0.000E+00
PB-212	1.547E+00	2.100E-01	1.018E-01	0.000E+00
BI-214	1.469E+00	2.410E-01	1.025E-01	0.000E+00
PB-214	1.614E+00	2.394E-01	1.126E-01	0.000E+00
RA-224	3.777E+00	9.143E-01	1.248E+00	0.000E+00
RA-226	1.469E+00	2.410E-01	1.025E-01	0.000E+00
AC-228	1.887E+00	3.913E-01	2.260E-01	0.000E+00
RA-228	1.887E+00	3.913E-01	2.260E-01	0.000E+00
TH-228	1.547E+00	2.100E-01	1.018E-01	0.000E+00
TH-229	2.592E-01	4.273E-01	7.609E-01	0.000E+00
TH-232	1.887E+00	3.913E-01	2.260E-01	0.000E+00
TH-234	5.311E+00	1.260E+00	8.118E-01	0.000E+00
U-235	2.673E-01	2.348E-01	2.725E-01	0.000E+00
NP-237	1.135E+00	3.332E-01	2.373E-01	0.000E+00
U-238	5.311E+00	1.260E+00	8.118E-01	0.000E+00
ANH-511	1.474E-01	6.993E-02	4.466E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	9.757E-02	3.436E-01	5.961E-01	0.000E+00 NOT IDENT.
NA-22	-3.166E-02	4.453E-02	6.960E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.594E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.270E-03	4.502E-02	7.583E-02	0.000E+00 FAIL ABUN

V-48	3.317E-03	9.615E-02	1.602E-01	0.000E+00	NOT IDENT.
CR-51	-1.742E-01	3.853E-01	6.666E-01	0.000E+00	NOT IDENT.
MN-54	7.012E-03	3.994E-02	6.852E-02	0.000E+00	NOT IDENT.
CO-56	-2.758E-02	3.903E-02	6.122E-02	0.000E+00	FAIL ABUN
CO-57	-2.755E-03	1.812E-02	3.255E-02	0.000E+00	NOT IDENT.
CO-58	-3.228E-02	4.244E-02	6.706E-02	0.000E+00	NOT IDENT.
FE-59	-4.902E-02	1.082E-01	1.784E-01	0.000E+00	NOT IDENT.
CO-60	-2.251E-02	3.806E-02	5.922E-02	0.000E+00	NOT IDENT.
ZN-65	-5.756E-02	1.135E-01	1.573E-01	0.000E+00	NOT IDENT.
SE-75	9.677E-04	4.249E-02	6.807E-02	0.000E+00	NOT IDENT.
SR-85	2.843E-02	4.683E-02	7.273E-02	0.000E+00	NOT IDENT.
Y-88	2.470E-02	3.966E-02	7.314E-02	0.000E+00	NOT IDENT.
Y-91	-5.061E+00	2.391E+01	3.986E+01	0.000E+00	NOT IDENT.
NB-94	-5.509E-03	3.295E-02	5.616E-02	0.000E+00	NOT IDENT.
NB-95	2.611E-02	4.984E-02	8.805E-02	0.000E+00	NOT IDENT.
NB-95M	7.695E-02	1.220E-01	1.922E-01	0.000E+00	NOT IDENT.
ZR-95	1.604E-02	7.888E-02	1.371E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.392E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.022E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.745E-02	4.309E-02	6.763E-02	0.000E+00	FAIL ABUN
RH-106	-2.022E-01	2.902E-01	4.779E-01	0.000E+00	NOT IDENT.
RU-106	-2.022E-01	2.896E-01	4.779E-01	0.000E+00	NOT IDENT.
AG-108M	-3.235E-03	2.815E-02	4.807E-02	0.000E+00	NOT IDENT.
AG-110M	-1.087E-02	3.671E-02	5.360E-02	0.000E+00	NOT IDENT.
SN-113	-1.708E-02	4.200E-02	7.115E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	9.813E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	4.436E-02	6.029E-02	1.096E-01	0.000E+00	NOT IDENT.
TE-123M	1.717E-02	2.306E-02	4.191E-02	0.000E+00	NOT IDENT.
SB-124	3.772E-02	7.889E-02	1.445E-01	0.000E+00	NOT IDENT.
SB-125	5.814E-03	8.495E-02	1.470E-01	0.000E+00	FAIL ABUN
TE-125M	-1.940E+00	7.477E+00	1.334E+01	0.000E+00	NOT IDENT.
I-126	-7.297E-02	3.745E-01	5.543E-01	0.000E+00	NOT IDENT.
SB-126	1.240E-01	2.352E-01	3.712E-01	0.000E+00	NOT IDENT.
SB-127	1.841E+00	4.734E+00	8.404E+00	0.000E+00	NOT IDENT.
I-131	8.953E-02	1.820E-01	3.277E-01	0.000E+00	NOT IDENT.
TE-132	1.448E+00	2.865E+00	4.995E+00	0.000E+00	NOT IDENT.
BA-133	1.151E-02	3.978E-02	6.292E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.577E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.402E-02	4.856E-02	8.989E-02	0.000E+00	NOT IDENT.
CS-135	1.726E-01	1.595E-01	2.544E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.968E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.282E-02	1.635E-01	2.839E-01	0.000E+00	NOT IDENT.
CE-139	-1.265E-02	2.588E-02	4.460E-02	0.000E+00	NOT IDENT.
BA-140	-4.056E-02	3.734E-01	6.218E-01	0.000E+00	NOT IDENT.
LA-140	9.278E-02	1.227E-01	2.242E-01	0.000E+00	FAIL ABUN
CE-141	4.799E-02	6.201E-02	1.027E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.553E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	9.055E-02	1.719E-01	2.833E-01	0.000E+00	NOT IDENT.
PM-144	-1.805E-02	3.552E-02	5.904E-02	0.000E+00	NOT IDENT.
PR-144	-1.364E+00	2.667E+00	4.433E+00	0.000E+00	NOT IDENT.
PM-146	2.248E-02	4.247E-02	7.498E-02	0.000E+00	NOT IDENT.
ND-147	-1.684E-01	8.717E-01	1.445E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	7.544E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	2.082E-02	8.454E-02	1.462E-01	0.000E+00	NOT IDENT.
GD-153	0.000E+00	9.205E-02	1.012E-01	0.000E+00	FAIL ABUN
EU-154	-5.345E-02	1.230E-01	1.980E-01	0.000E+00	NOT IDENT.
EU-155	8.013E-02	7.237E-02	1.363E-01	0.000E+00	FAIL ABUN
TB-160	4.348E-02	1.448E-01	2.505E-01	0.000E+00	FAIL ABUN
HO-166M	-5.752E-02	6.085E-02	9.670E-02	0.000E+00	FAIL ABUN
TA-182	1.814E-01	2.161E-01	3.890E-01	0.000E+00	FAIL ABUN
IR-192	3.024E-03	3.285E-02	5.861E-02	0.000E+00	FAIL ABUN
HG-203	3.043E-03	3.934E-02	6.610E-02	0.000E+00	NOT IDENT.
BI-207	2.898E-02	5.465E-02	9.806E-02	0.000E+00	FAIL ABUN
PB-211	-2.169E-01	6.685E-01	1.122E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.458E-01	1.242E+00	0.000E+00	FAIL ABUN
RN-219	6.451E-02	3.824E-01	6.696E-01	0.000E+00	FAIL ABUN
RA-223	1.203E-01	6.318E-01	1.001E+00	0.000E+00	FAIL ABUN
AC-227	-1.498E-02	2.258E-01	3.798E-01	0.000E+00	FAIL ABUN
TH-227	-1.498E-02	2.258E-01	3.798E-01	0.000E+00	FAIL ABUN
PA-231	1.345E-01	1.304E+00	2.191E+00	0.000E+00	FAIL ABUN
TH-231	1.203E-01	6.318E-01	1.001E+00	0.000E+00	FAIL ABUN
PA-233	-2.790E-02	5.654E-02	9.788E-02	0.000E+00	FAIL ABUN
PA-234	3.210E-01	3.014E-01	5.428E-01	0.000E+00	FAIL ABUN
PA-234M	6.878E+00	5.654E+00	9.215E+00	0.000E+00	NOT IDENT.
NP-239	-4.611E-01	2.827E-01	4.690E-01	0.000E+00	FAIL ABUN
AM-241	6.745E-03	5.226E-02	8.383E-02	0.000E+00	NOT IDENT.
CM-247	-4.840E-03	3.432E-02	5.899E-02	0.000E+00	NOT IDENT.
CF-249	1.068E-02	3.707E-02	6.558E-02	0.000E+00	NOT IDENT.

CF-251	8.631E-03	1.074E-01	1.886E-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]G1202054957.CNF;1
Sample date    : 19-FEB-2010 12:00:00 Acquisition date : 13-MAR-2010 14:35:26
Sample ID      : G1202054957 Sample quantity : 1.36060E+02 GRAM
Detector name  : GAM25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.12 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 958221 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	1104	10.66*	1.108E+00	2.578E+01	2.578E+01	10.66
CD-109	88.03	480	3.70*	9.405E+00	3.805E+00	3.933E+00	21.38
SN-126	64.28	697	9.60	9.778E+00	2.047E+00	2.047E+00	21.89
	86.94	480	8.90	9.405E+00	1.582E+00	1.582E+00	45.75
	87.57	480	37.00*	9.405E+00	3.805E-01	3.805E-01	21.38
BA-137M	661.66	225	89.90*	2.230E+00	3.093E-01	3.097E-01	26.65
CS-137	661.66	225	85.10*	2.230E+00	3.267E-01	3.272E-01	26.66
TL-208	277.37	-----	6.60	4.738E+00	-----	Line Not Found	-----
	583.19	445	85.00*	2.497E+00	5.790E-01	5.790E-01	18.50
	860.56	42	12.50	1.764E+00	5.261E-01	5.261E-01	86.63
PB-210	46.54	177	4.25*	9.191E+00	1.247E+00	1.249E+00	47.41
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	809	12.92*	3.886E+00	4.446E+00	4.446E+00	14.10
PB-212	74.82	795	10.28	9.694E+00	2.201E+00	2.201E+00	17.85
	77.11	1328	17.10	9.651E+00	2.220E+00	2.220E+00	12.61
	238.63	1305	43.60*	5.340E+00	1.547E+00	1.547E+00	13.85
	300.09	125	3.30	4.443E+00	2.344E+00	2.344E+00	43.01
BI-214	609.32	582	45.49*	2.401E+00	1.469E+00	1.469E+00	16.73
	1120.29	128	14.92	1.397E+00	1.696E+00	1.696E+00	44.39
	1764.49	109	15.30	9.412E-01	2.088E+00	2.088E+00	21.71
PB-214	74.82	795	5.80	9.694E+00	3.901E+00	3.902E+00	16.93
	77.11	1328	9.70	9.651E+00	3.914E+00	3.915E+00	15.07
	242.00	297	7.25	5.283E+00	2.136E+00	2.136E+00	25.37
	295.22	436	18.42	4.502E+00	1.452E+00	1.452E+00	20.32
	351.93	809	35.60*	3.886E+00	1.614E+00	1.614E+00	15.14
RA-224	240.99	297	4.10*	5.283E+00	3.777E+00	3.777E+00	24.70
RA-226	609.32	582	45.49*	2.401E+00	1.469E+00	1.469E+00	16.73
	1120.29	128	14.92	1.397E+00	1.696E+00	1.696E+00	44.39
	1764.49	109	15.30	9.412E-01	2.088E+00	2.088E+00	21.71
AC-228	338.32	340	11.27	4.020E+00	2.072E+00	2.072E+00	46.41
	911.20	296	25.80*	1.678E+00	1.887E+00	1.887E+00	21.16
	968.97	128	15.80	1.588E+00	1.412E+00	1.412E+00	44.49

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	340	11.27	4.020E+00	2.072E+00	2.072E+00	46.41
	911.20	296	25.80*	1.678E+00	1.887E+00	1.887E+00	21.16
	968.97	128	15.80	1.588E+00	1.412E+00	1.412E+00	44.49
TH-228	74.82	795	10.28	9.694E+00	2.201E+00	2.201E+00	15.01
	77.11	1328	17.10	9.651E+00	2.220E+00	2.220E+00	12.61
	238.63	1305	43.60*	5.340E+00	1.547E+00	1.547E+00	13.85
TH-229	300.09	125	3.30	4.443E+00	2.344E+00	2.344E+00	74.07
	85.43	162	14.70	9.486E+00	3.208E-01	3.208E-01	49.05
	88.47	480	24.00	9.405E+00	5.866E-01	5.866E-01	21.38
TH-232	193.51	-----	4.41*	6.239E+00	-----	Line Not Found	-----
	210.85	125	2.80	5.892E+00	2.091E+00	2.091E+00	53.77
	338.32	340	11.27	4.020E+00	2.072E+00	2.072E+00	22.08
TH-234	911.20	296	25.80*	1.678E+00	1.887E+00	1.887E+00	21.16
	968.97	128	15.80	1.588E+00	1.412E+00	1.412E+00	44.49
	63.29	697	3.70*	9.778E+00	5.311E+00	5.311E+00	24.20
U-235	92.59	1186	4.23	9.244E+00	8.369E+00	8.369E+00	24.76
	89.96	310	3.47	9.327E+00	2.640E+00	2.640E+00	35.43
	93.35	1186	5.60	9.244E+00	6.322E+00	6.322E+00	25.67
NP-237	143.76	80	10.96*	7.563E+00	2.673E-01	2.673E-01	89.64
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
	185.72	404	57.20	6.420E+00	3.031E-01	3.031E-01	25.45
U-238	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
	86.48	480	12.40*	9.405E+00	1.135E+00	1.135E+00	29.94
	95.86	118	2.68	9.188E+00	1.322E+00	1.322E+00	84.96
ANH-511	63.29	697	3.70*	9.778E+00	5.311E+00	5.311E+00	24.20
	92.59	1186	4.23	9.244E+00	8.369E+00	8.369E+00	14.13
	511.00	150	100.00*	2.808E+00	1.474E-01	1.474E-01	48.43

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 5
Number of lines tentatively identified by NID 34 87.18%

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	2.578E+01	2.578E+01	0.275E+01	10.66	
CD-109	461.40D	1.03	3.805E+00	3.933E+00	0.841E+00	21.38	
SN-126	2.30E+05Y	1.00	3.805E-01	3.805E-01	0.813E-01	21.38	
BA-137M	30.08Y	1.00	3.093E-01	3.097E-01	0.825E-01	26.65	
CS-137	30.08Y	1.00	3.267E-01	3.272E-01	0.872E-01	26.66	
TL-208	1.41E+10Y	1.00	5.790E-01	5.790E-01	1.071E-01	18.50	
PB-210	22.20Y	1.00	1.247E+00	1.249E+00	0.592E+00	47.41	
BI-211	7.04E+08Y	1.00	4.446E+00	4.446E+00	0.627E+00	14.10	
PB-212	1.41E+10Y	1.00	1.547E+00	1.547E+00	0.214E+00	13.85	
BI-214	1600.00Y	1.00	1.469E+00	1.469E+00	0.246E+00	16.73	
PB-214	1600.00Y	1.00	1.614E+00	1.614E+00	0.244E+00	15.14	
RA-224	1.41E+10Y	1.00	3.777E+00	3.777E+00	0.933E+00	24.70	
RA-226	1600.00Y	1.00	1.469E+00	1.469E+00	0.246E+00	16.73	
AC-228	1.41E+10Y	1.00	1.887E+00	1.887E+00	0.399E+00	21.16	
RA-228	1.41E+10Y	1.00	1.887E+00	1.887E+00	0.399E+00	21.16	
TH-228	1.41E+10Y	1.00	1.547E+00	1.547E+00	0.214E+00	13.85	
TH-229	7340.00Y	1.00	5.866E-01	5.866E-01	1.254E-01	21.38	K
TH-232	1.41E+10Y	1.00	1.887E+00	1.887E+00	0.399E+00	21.16	
TH-234	4.47E+09Y	1.00	5.311E+00	5.311E+00	1.286E+00	24.20	
U-235	7.04E+08Y	1.00	2.673E-01	2.673E-01	2.396E-01	89.64	
NP-237	2.14E+06Y	1.00	1.135E+00	1.135E+00	0.340E+00	29.94	
U-238	4.47E+09Y	1.00	5.311E+00	5.311E+00	1.286E+00	24.20	
ANH-511	1.00E+09Y	1.00	1.474E-01	1.474E-01	0.714E-01	48.43	
Total Activity :			6.672E+01	6.685E+01			

Grand Total Activity : 6.672E+01 6.685E+01

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

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	98.77	120	474	1.45	197.10	193	9	1.67E-02	68.8	9.05E+00	T
0	128.93	143	581	1.91	257.41	252	12	1.99E-02	69.8	8.04E+00	
0	270.03	158	257	1.16	539.59	535	11	2.19E-02	42.4	4.84E+00	T
0	329.54	110	326	4.79	658.60	651	18	1.52E-02	79.8	4.11E+00	T
0	463.04	83	93	1.28	925.58	920	10	1.16E-02	48.5	3.06E+00	T
0	727.72	107	89	1.74	1454.92	1447	14	1.49E-02	42.4	2.05E+00	T
0	1002.74	34	73	1.46	2004.96	1998	14	4.72E-03	****	1.54E+00	
0	1238.67	39	88	1.18	2476.85	2471	13	5.39E-03	****	1.28E+00	T
0	1378.69	49	11	2.47	2756.90	2751	16	6.81E-03	42.4	1.17E+00	
0	1588.11	20	8	1.06	3175.78	3169	11	2.73E-03	72.6	1.03E+00	
0	1729.62	32	3	2.45	3458.81	3451	13	4.50E-03	41.7	9.58E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054957.CNF;1
* Acquisition date   : 13-MAR-2010 14:35:26   Detector SN#      :
* Detector ID        : GAM25                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:02.12           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 19-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G1202054957           Analyst initials: MXR1
* Batch Number       : 958221                Sample Quantity : 1.36060E+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        :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.578E+01	2.749E+00	4.864E-01	4.142E-02	53.005
CD-109	3.933E+00	8.409E-01	7.482E-01	8.041E-02	5.257
SN-126	3.805E-01	8.134E-02	7.223E-02	7.745E-03	5.268
BA-137M	3.097E-01	8.254E-02	5.934E-02	6.573E-03	5.219
CS-137	3.272E-01	8.721E-02	6.268E-02	6.952E-03	5.219
TL-208	5.790E-01	1.071E-01	5.524E-02	6.222E-03	10.481
PB-210	1.249E+00	5.921E-01	5.714E-01	5.852E-02	2.186
BI-211	4.446E+00	6.268E-01	3.019E-01	3.181E-02	14.728
PB-212	1.547E+00	2.142E-01	9.815E-02	1.121E-02	15.759
BI-214	1.469E+00	2.459E-01	1.006E-01	1.218E-02	14.611
PB-214	1.614E+00	2.443E-01	1.093E-01	1.299E-02	14.760
RA-224	3.777E+00	9.329E-01	1.204E+00	1.265E-01	3.138
RA-226	1.469E+00	2.459E-01	1.006E-01	1.218E-02	14.611
AC-228	1.887E+00	3.992E-01	2.234E-01	2.731E-02	8.447
RA-228	1.887E+00	3.992E-01	2.234E-01	2.731E-02	8.447
TH-228	1.547E+00	2.142E-01	9.815E-02	1.121E-02	15.759
TH-229	5.866E-01	1.254E-01	7.307E-01	6.969E-02	0.803
TH-232	1.887E+00	3.992E-01	2.234E-01	2.731E-02	8.447

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	5.311E+00	1.286E+00	7.643E-01	1.451E-01	6.950
U-235	2.673E-01	2.396E-01	2.603E-01	4.782E-02	1.027
NP-237	1.135E+00	3.400E-01	2.246E-01	5.284E-02	5.054
U-238	5.311E+00	1.286E+00	7.643E-01	1.451E-01	6.950
ANH-511	1.474E-01	7.136E-02	4.366E-02	4.494E-03	3.375

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	9.757E-02		3.506E-01	5.820E-01	6.160E-02	0.168
NA-22	-3.166E-02		4.544E-02	6.924E-02	5.678E-03	-0.457
NA-24	1.512E+02		8.131E+02	Half-Life too short		
SC-46	1.270E-03		4.594E-02	7.491E-02	7.174E-03	0.017
V-48	3.317E-03		9.811E-02	1.586E-01	1.469E-02	0.021
CR-51	-1.742E-01		3.931E-01	6.460E-01	7.170E-02	-0.270
MN-54	7.012E-03		4.075E-02	6.761E-02	6.861E-03	0.104
CO-56	-2.758E-02		3.983E-02	6.043E-02	6.063E-03	-0.456
CO-57	-2.755E-03		1.849E-02	3.100E-02	3.998E-03	-0.089
CO-58	-3.228E-02		4.330E-02	6.614E-02	6.862E-03	-0.488
FE-59	-4.902E-02		1.104E-01	1.770E-01	1.667E-02	-0.277
CO-60	-2.251E-02		3.884E-02	5.897E-02	4.789E-03	-0.382
ZN-65	-5.756E-02		1.158E-01	1.560E-01	1.348E-02	-0.369
SE-75	9.677E-04		4.336E-02	6.574E-02	7.206E-03	0.015
SR-85	2.843E-02		4.778E-02	7.111E-02	7.336E-03	0.400
Y-88	2.470E-02		4.047E-02	7.328E-02	5.988E-03	0.337
Y-91	-5.061E+00		2.440E+01	3.961E+01	3.260E+00	-0.128
NB-94	-5.509E-03		3.362E-02	5.524E-02	6.066E-03	-0.100
NB-95	2.611E-02		5.085E-02	8.674E-02	9.266E-03	0.301
NB-95M	7.695E-02		1.245E-01	1.853E-01	2.126E-02	0.415
ZR-95	1.604E-02		8.049E-02	1.350E-01	1.549E-02	0.119
MO-99	-6.929E-05		3.771E-05	Half-Life too short		
TC-99M	-3.224E+18		4.093E+18	Half-Life too short		
RU-103	-3.745E-02		4.397E-02	6.608E-02	9.898E-03	-0.567
RH-106	-2.022E-01		2.962E-01	4.689E-01	6.976E-02	-0.431
RU-106	-2.022E-01		2.955E-01	4.689E-01	5.135E-02	-0.431
AG-108M	-3.235E-03		2.873E-02	4.685E-02	4.603E-03	-0.069
AG-110M	-1.087E-02		3.746E-02	5.265E-02	5.933E-03	-0.207
SN-113	-1.708E-02		4.285E-02	6.921E-02	6.465E-03	-0.247
CD-115	2.209E-05		5.006E-05	Half-Life too short		
SN-117M	4.436E-02		6.152E-02	1.049E-01	1.018E-02	0.423
TE-123M	1.717E-02		2.353E-02	4.010E-02	3.894E-03	0.428
SB-124	3.772E-02		8.050E-02	1.446E-01	1.253E-02	0.261
SB-125	5.814E-03		8.669E-02	1.432E-01	1.383E-02	0.041
TE-125M	-1.940E+00		7.629E+00	1.268E+01	1.701E+00	-0.153
I-126	-7.297E-02		3.822E-01	5.446E-01	6.029E-02	-0.134
SB-126	1.240E-01		2.400E-01	3.652E-01	3.986E-02	0.340
SB-127	1.841E+00		4.831E+00	8.262E+00	1.263E+00	0.223

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	8.953E-02		1.857E-01	3.183E-01	3.283E-02	0.281
TE-132	1.448E+00		2.924E+00	4.811E+00	8.798E-01	0.301
BA-133	1.151E-02		4.059E-02	6.110E-02	8.522E-03	0.188
I-133	4.217E-01		8.047E-01	Half-Life	too short	
CS-134	6.402E-02		4.955E-02	8.862E-02	9.329E-03	0.722
CS-135	1.726E-01		1.628E-01	2.458E-01	2.967E-02	0.702
I-135	1.094E+17		1.514E+17	Half-Life	too short	
CS-136	1.282E-02		1.668E-01	2.813E-01	2.633E-02	0.046
CE-139	-1.265E-02		2.641E-02	4.271E-02	3.808E-03	-0.296
BA-140	-4.056E-02		3.810E-01	6.084E-01	2.095E-01	-0.067
LA-140	9.278E-02		1.253E-01	2.240E-01	1.863E-02	0.414
CE-141	4.799E-02		6.328E-02	9.816E-02	1.092E-02	0.489
CE-143	1.407E-02		2.833E-03	Half-Life	too short	
CE-144	9.055E-02		1.754E-01	2.703E-01	4.712E-02	0.335
PM-144	-1.805E-02		3.624E-02	5.806E-02	6.390E-03	-0.311
PR-144	-1.364E+00		2.722E+00	4.359E+00	4.795E-01	-0.313
PM-146	2.248E-02		4.334E-02	7.314E-02	8.452E-03	0.307
ND-147	-1.684E-01		8.895E-01	1.414E+00	2.273E-01	-0.119
PM-149	4.328E-05		3.849E-04	Half-Life	too short	
EU-152	2.082E-02		8.626E-02	1.419E-01	1.524E-02	0.147
GD-153	1.348E-01	+	9.393E-02	9.600E-02	1.081E-02	1.404
EU-154	-5.345E-02		1.255E-01	1.970E-01	2.178E-02	-0.271
EU-155	8.013E-02		7.385E-02	1.294E-01	1.530E-02	0.619
TB-160	4.348E-02		1.478E-01	2.474E-01	2.397E-02	0.176
HO-166M	-5.752E-02		6.209E-02	9.513E-02	1.042E-02	-0.605
TA-182	1.814E-01		2.205E-01	3.866E-01	3.180E-02	0.469
IR-192	3.024E-03		3.352E-02	5.679E-02	6.134E-03	0.053
HG-203	3.043E-03		4.015E-02	6.390E-02	7.241E-03	0.048
BI-207	2.898E-02		5.576E-02	9.721E-02	8.676E-03	0.298
PB-211	-2.169E-01		6.822E-01	1.092E+00	5.297E-01	-0.199
BI-212	2.161E+00	+	9.652E-01	1.222E+00	1.726E-01	1.767
RN-219	6.451E-02		3.902E-01	6.517E-01	9.921E-02	0.099
RA-223	1.203E-01		6.447E-01	9.700E-01	1.789E-01	0.124
AC-227	-1.498E-02		2.305E-01	3.666E-01	5.016E-02	-0.041
TH-227	-1.498E-02		2.305E-01	3.666E-01	5.524E-02	-0.041
PA-231	1.345E-01		1.331E+00	2.119E+00	3.431E-01	0.063
TH-231	1.203E-01		6.447E-01	9.700E-01	1.789E-01	0.124
PA-233	-2.790E-02		5.770E-02	9.482E-02	1.047E-02	-0.294
PA-234	3.210E-01		3.075E-01	5.369E-01	1.027E-01	0.598
PA-234M	6.878E+00		5.769E+00	9.124E+00	9.557E-01	0.754
NP-239	-4.611E-01		2.884E-01	4.464E-01	5.599E-02	-1.033
AM-241	6.745E-03		5.333E-02	7.884E-02	8.191E-03	0.086
CM-247	-4.840E-03		3.502E-02	5.741E-02	5.291E-03	-0.084
CF-249	1.068E-02		3.783E-02	6.378E-02	5.865E-03	0.167
CF-251	8.631E-03		1.096E-01	1.808E-01	1.659E-02	0.048

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202054957
* Acquisition date   : 13-MAR-2010 14:35:26 Detector SN#      :
* Detector ID        : GAM25                               Sensitivity      : 5.000
* Geometry           : CAN                               Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit : 75.000
* Elapsed real time  : 0 02:00:02.12                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 19-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202054957                     Analyst initials: MXR1
* Batch Number       : 958221                           Sample Quantity : 1.3606E+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	2.578E+01	2.694E+00	2.440E-01	1.375E+00
CD-109	3.933E+00	8.241E-01	3.953E-01	4.204E-01
SN-126	3.805E-01	7.971E-02	3.816E-02	4.067E-02
BA-137M	3.097E-01	8.089E-02	3.022E-02	4.127E-02
CS-137	3.272E-01	8.547E-02	3.192E-02	4.361E-02
TL-208	5.790E-01	1.050E-01	2.820E-02	5.356E-02
PB-210	1.249E+00	5.803E-01	3.053E-01	2.961E-01
BI-211	4.446E+00	6.143E-01	1.556E-01	3.134E-01
PB-212	1.547E+00	2.100E-01	5.094E-02	1.071E-01
BI-214	1.469E+00	2.410E-01	5.129E-02	1.229E-01
PB-214	1.614E+00	2.394E-01	5.634E-02	1.221E-01
RA-224	3.777E+00	9.143E-01	6.246E-01	4.665E-01
RA-226	1.469E+00	2.410E-01	5.129E-02	1.229E-01
AC-228	1.887E+00	3.913E-01	1.131E-01	1.996E-01
RA-228	1.887E+00	3.913E-01	1.131E-01	1.996E-01
TH-228	1.547E+00	2.100E-01	5.094E-02	1.071E-01
TH-229	2.592E-01	4.273E-01	3.807E-01	2.180E-01
TH-232	1.887E+00	3.913E-01	1.131E-01	1.996E-01
TH-234	5.311E+00	1.260E+00	4.061E-01	6.428E-01
U-235	2.673E-01	2.348E-01	1.363E-01	1.198E-01
NP-237	1.135E+00	3.332E-01	1.187E-01	1.700E-01
U-238	5.311E+00	1.260E+00	4.061E-01	6.428E-01
ANH-511	1.474E-01	6.993E-02	2.234E-02	3.568E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	9.757E-02	3.436E-01	2.982E-01	1.753E-01 NOT IDENT.
NA-22	-3.166E-02	4.453E-02	3.482E-02	2.272E-02 NOT IDENT.
NA-24	1.512E+08	1.594E+09	0.000E+00	8.131E+08 SHORT HLIF
SC-46	1.270E-03	4.502E-02	3.794E-02	2.297E-02 FAIL ABUN

V-48	3.317E-03	9.615E-02	8.015E-02	4.906E-02	NOT IDENT.
CR-51	-1.742E-01	3.853E-01	3.335E-01	1.966E-01	NOT IDENT.
MN-54	7.012E-03	3.994E-02	3.428E-02	2.038E-02	NOT IDENT.
CO-56	-2.758E-02	3.903E-02	3.063E-02	1.991E-02	FAIL ABUN
CO-57	-2.755E-03	1.812E-02	1.629E-02	9.246E-03	NOT IDENT.
CO-58	-3.228E-02	4.244E-02	3.355E-02	2.165E-02	NOT IDENT.
FE-59	-4.902E-02	1.082E-01	8.928E-02	5.519E-02	NOT IDENT.
CO-60	-2.251E-02	3.806E-02	2.963E-02	1.942E-02	NOT IDENT.
ZN-65	-5.756E-02	1.135E-01	7.868E-02	5.789E-02	NOT IDENT.
SE-75	9.677E-04	4.249E-02	3.406E-02	2.168E-02	NOT IDENT.
SR-85	2.843E-02	4.683E-02	3.639E-02	2.389E-02	NOT IDENT.
Y-88	2.470E-02	3.966E-02	3.659E-02	2.024E-02	NOT IDENT.
Y-91	-5.061E+00	2.391E+01	1.994E+01	1.220E+01	NOT IDENT.
NB-94	-5.509E-03	3.295E-02	2.810E-02	1.681E-02	NOT IDENT.
NB-95	2.611E-02	4.984E-02	4.405E-02	2.543E-02	NOT IDENT.
NB-95M	7.695E-02	1.220E-01	9.617E-02	6.224E-02	NOT IDENT.
ZR-95	1.604E-02	7.888E-02	6.859E-02	4.024E-02	NOT IDENT.
MO-99	-6.929E+01	7.392E+01	0.000E+00	3.771E+01	SHORT HLIF
TC-99M	-3.224E+24	8.022E+24	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.745E-02	4.309E-02	3.383E-02	2.199E-02	FAIL ABUN
RH-106	-2.022E-01	2.902E-01	2.391E-01	1.481E-01	NOT IDENT.
RU-106	-2.022E-01	2.896E-01	2.391E-01	1.477E-01	NOT IDENT.
AG-108M	-3.235E-03	2.815E-02	2.405E-02	1.436E-02	NOT IDENT.
AG-110M	-1.087E-02	3.671E-02	2.682E-02	1.873E-02	NOT IDENT.
SN-113	-1.708E-02	4.200E-02	3.560E-02	2.143E-02	NOT IDENT.
CD-115	2.209E+01	9.813E+01	0.000E+00	5.006E+01	SHORT HLIF
SN-117M	4.436E-02	6.029E-02	5.483E-02	3.076E-02	NOT IDENT.
TE-123M	1.717E-02	2.306E-02	2.097E-02	1.176E-02	NOT IDENT.
SB-124	3.772E-02	7.889E-02	7.230E-02	4.025E-02	NOT IDENT.
SB-125	5.814E-03	8.495E-02	7.355E-02	4.334E-02	FAIL ABUN
TE-125M	-1.940E+00	7.477E+00	6.672E+00	3.815E+00	NOT IDENT.
I-126	-7.297E-02	3.745E-01	2.773E-01	1.911E-01	NOT IDENT.
SB-126	1.240E-01	2.352E-01	1.857E-01	1.200E-01	NOT IDENT.
SB-127	1.841E+00	4.734E+00	4.205E+00	2.415E+00	NOT IDENT.
I-131	8.953E-02	1.820E-01	1.639E-01	9.283E-02	NOT IDENT.
TE-132	1.448E+00	2.865E+00	2.499E+00	1.462E+00	NOT IDENT.
BA-133	1.151E-02	3.978E-02	3.148E-02	2.029E-02	NOT IDENT.
I-133	4.217E+05	1.577E+06	0.000E+00	8.047E+05	SHORT HLIF
CS-134	6.402E-02	4.856E-02	4.497E-02	2.477E-02	NOT IDENT.
CS-135	1.726E-01	1.595E-01	1.273E-01	8.140E-02	NOT IDENT.
I-135	1.094E+23	2.968E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.282E-02	1.635E-01	1.420E-01	8.342E-02	NOT IDENT.
CE-139	-1.265E-02	2.588E-02	2.231E-02	1.320E-02	NOT IDENT.
BA-140	-4.056E-02	3.734E-01	3.111E-01	1.905E-01	NOT IDENT.
LA-140	9.278E-02	1.227E-01	1.122E-01	6.263E-02	FAIL ABUN
CE-141	4.799E-02	6.201E-02	5.140E-02	3.164E-02	NOT IDENT.
CE-143	1.407E+04	5.553E+03	0.000E+00	2.833E+03	SHORT HLIF
CE-144	9.055E-02	1.719E-01	1.417E-01	8.772E-02	NOT IDENT.
PM-144	-1.805E-02	3.552E-02	2.954E-02	1.812E-02	NOT IDENT.
PR-144	-1.364E+00	2.667E+00	2.218E+00	1.361E+00	NOT IDENT.
PM-146	2.248E-02	4.247E-02	3.751E-02	2.167E-02	NOT IDENT.
ND-147	-1.684E-01	8.717E-01	7.230E-01	4.448E-01	FAIL ABUN
PM-149	4.328E+01	7.544E+02	0.000E+00	3.849E+02	SHORT HLIF
EU-152	2.082E-02	8.454E-02	7.316E-02	4.313E-02	NOT IDENT.
GD-153	1.348E-01	9.205E-02	5.063E-02	4.697E-02	FAIL ABUN
EU-154	-5.345E-02	1.230E-01	9.906E-02	6.274E-02	NOT IDENT.
EU-155	8.013E-02	7.237E-02	6.818E-02	3.692E-02	FAIL ABUN
TB-160	4.348E-02	1.448E-01	1.253E-01	7.389E-02	FAIL ABUN
HO-166M	-5.752E-02	6.085E-02	4.838E-02	3.105E-02	FAIL ABUN
TA-182	1.814E-01	2.161E-01	1.946E-01	1.103E-01	FAIL ABUN
IR-192	3.024E-03	3.285E-02	2.932E-02	1.676E-02	FAIL ABUN
HG-203	3.043E-03	3.934E-02	3.307E-02	2.007E-02	NOT IDENT.
BI-207	2.898E-02	5.465E-02	4.906E-02	2.788E-02	FAIL ABUN
PB-211	-2.169E-01	6.685E-01	5.612E-01	3.411E-01	NOT IDENT.
BI-212	2.161E+00	9.458E-01	6.214E-01	4.826E-01	FAIL ABUN
RN-219	6.451E-02	3.824E-01	3.350E-01	1.951E-01	FAIL ABUN
RA-223	1.203E-01	6.318E-01	5.006E-01	3.223E-01	FAIL ABUN
AC-227	-1.498E-02	2.258E-01	1.900E-01	1.152E-01	FAIL ABUN
TH-227	-1.498E-02	2.258E-01	1.900E-01	1.152E-01	FAIL ABUN
PA-231	1.345E-01	1.304E+00	1.096E+00	6.653E-01	FAIL ABUN
TH-231	1.203E-01	6.318E-01	5.006E-01	3.223E-01	FAIL ABUN
PA-233	-2.790E-02	5.654E-02	4.897E-02	2.885E-02	FAIL ABUN
PA-234	3.210E-01	3.014E-01	2.715E-01	1.538E-01	FAIL ABUN
PA-234M	6.878E+00	5.654E+00	4.610E+00	2.885E+00	NOT IDENT.
NP-239	-4.611E-01	2.827E-01	2.347E-01	1.442E-01	FAIL ABUN
AM-241	6.745E-03	5.226E-02	4.194E-02	2.666E-02	NOT IDENT.
CM-247	-4.840E-03	3.432E-02	2.951E-02	1.751E-02	NOT IDENT.
CF-249	1.068E-02	3.707E-02	3.281E-02	1.891E-02	NOT IDENT.

CF-251

8.631E-03

1.074E-01

9.434E-02

5.481E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	301.5555
49.72	331.4813
57.36	0.0000
59.54	453.1828
63.29	464.5829
63.29	464.5829
64.28	473.5270
67.75	482.5298
69.67	514.9565
70.83	497.0659
72.81	492.5140
72.87	492.6127
72.87	492.6127
74.82	472.8163
74.82	472.8163
74.82	472.8163
74.97	473.0471
77.11	476.3204
77.11	476.3204
77.11	476.3204
79.69	440.7904
79.80	411.9740
80.12	412.3828
80.19	412.4714
80.57	411.3426
81.00	399.7730
81.07	399.8586
81.07	399.8586
83.79	413.7577
83.79	413.7577
85.43	417.4178
86.48	418.7070
86.55	418.7926
86.79	382.1052
86.94	382.2755
87.57	382.9756
88.03	383.4840
88.47	383.9713
89.96	385.6079
91.11	386.8638
92.59	388.4650
92.59	388.4650
93.35	389.2833
94.67	390.6976
94.87	390.9105
94.87	390.9105
95.86	268.0521
97.43	269.1859
98.44	290.2811
99.53	291.1178
100.11	289.0038
103.18	338.9994
103.37	326.0100
105.31	293.7508
106.12	316.8582
109.28	323.7079
111.00	353.9808
111.76	329.1740
116.30	286.5941
117.23	312.1131
121.12	270.9441
121.78	265.9571
122.06	267.9223
123.07	256.8143
131.20	309.5570
133.52	277.8932
136.00	314.0743

136.47	299.5432
140.51	0.0000
140.51	0.0000
143.76	283.2776
144.24	283.5470
144.24	283.5470
145.44	260.6115
152.43	287.1094
153.25	271.2573
154.21	288.0707
154.21	288.0707
156.02	294.8251
158.56	233.2898
159.00	237.3512
162.66	244.7827
163.33	251.9111
165.86	295.2221
176.60	227.8005
177.52	257.1725
181.07	0.0000
184.41	223.1692
185.72	235.3064
193.51	219.7536
197.04	251.9353
205.31	239.9520
210.85	207.1342
215.65	211.2290
222.11	226.0248
227.38	203.9406
228.16	205.2380
228.18	205.2438
235.69	201.3352
235.96	201.4065
235.96	201.4065
238.63	317.1501
238.63	317.1501
240.99	415.3870
242.00	240.9793
244.70	165.6326
252.40	173.9591
252.80	166.2381
256.23	190.4830
256.23	190.4830
260.90	0.0000
264.66	169.8212
268.22	173.9647
269.46	170.8069
269.46	170.8069
271.23	171.1670
273.65	197.4071
276.40	169.9176
277.37	154.0188
277.60	154.0597
278.00	154.1305
279.20	186.5973
279.54	210.8677
280.46	211.0948
283.69	166.7256
284.31	183.0636
285.41	190.2556
285.90	0.0000
287.50	147.6809
293.27	0.0000
295.22	152.0121
295.96	144.3909
298.57	144.8063
299.98	154.2260
299.98	154.2260
300.09	154.2446
300.09	154.2446
300.13	154.2526
301.36	126.1188
302.85	146.1941
304.50	142.1875
304.50	142.1875
304.85	151.7240
308.46	137.4406
311.90	166.6070

316.51	156.6149
319.41	160.7014
320.08	160.8127
323.87	150.9219
323.87	150.9219
328.76	135.6333
333.37	124.5428
334.37	124.6674
334.37	124.6674
338.28	110.4291
338.28	110.4291
338.32	110.4327
338.32	110.4327
338.32	110.4327
340.48	125.4248
340.55	125.4331
344.28	126.9496
351.06	140.1371
351.93	138.9486
356.01	118.3322
364.49	112.2943
366.42	0.0000
383.85	135.4190
388.16	128.2227
388.63	133.1000
391.69	130.5567
400.66	114.0311
401.81	129.7529
402.40	128.8418
404.85	133.0242
410.95	111.0999
414.70	136.1049
423.72	123.2129
427.09	116.5769
427.87	113.6591
433.94	118.2251
453.88	115.0070
463.37	88.5753
468.07	98.7671
473.00	108.4254
476.78	101.4827
477.60	103.6163
487.02	78.2501
492.35	0.0000
497.08	107.1953
511.00	91.2733
514.00	115.7129
527.90	0.0000
529.87	0.0000
531.02	98.9910
537.26	89.6845
546.56	0.0000
563.25	87.9272
569.33	78.3388
569.50	78.3474
569.70	78.3561
583.19	83.4755
600.60	68.0000
602.73	76.5996
604.72	91.7284
609.32	73.2856
609.32	73.2856
610.33	79.9680
614.28	75.6205
618.01	78.2126
621.93	83.8624
621.93	83.8624
633.25	73.4082
635.95	79.0377
636.99	70.8095
645.85	77.6405
657.76	74.4434
661.66	85.7963
661.66	85.7963
664.57	0.0000
666.33	95.0568
666.50	95.0668
677.62	70.5615

685.70	80.3225
695.00	84.5239
696.49	97.8978
696.51	97.9003
697.00	95.0732
702.65	86.7766
706.68	75.4936
711.68	93.8967
720.70	68.9897
721.93	0.0000
722.78	78.7019
722.91	78.7078
723.31	88.3634
724.19	101.2625
727.33	69.5496
733.00	62.9703
735.93	65.9746
739.50	0.0000
747.24	87.8203
752.31	100.7595
753.82	75.3833
756.73	74.5119
763.94	103.3107
765.81	93.5574
766.42	95.5554
777.92	0.0000
778.90	79.2910
783.70	55.6322
785.37	72.5794
795.86	63.9500
801.95	78.1657
810.29	87.5268
810.76	76.4769
815.77	63.5429
818.51	63.6245
832.01	89.4266
834.85	78.3498
836.80	0.0000
846.77	62.4044
856.80	70.2218
860.56	73.7698
871.09	59.9796
873.19	50.7191
875.33	0.0000
879.36	52.9324
880.51	52.9586
883.24	62.3774
884.68	59.2961
889.28	68.7957
898.04	65.9162
911.20	56.8160
911.20	56.8160
911.20	56.8160
926.50	59.2990
937.49	52.1223
944.13	59.7311
946.00	43.7647
949.00	59.8500
962.29	78.7975
964.08	80.6451
966.15	82.5065
968.97	43.0952
968.97	43.0952
968.97	43.0952
983.53	54.1809
996.26	59.8971
1001.03	52.7348
1004.73	63.7366
1037.84	57.1689
1038.76	0.0000
1048.07	63.8677
1050.41	53.7331
1050.41	53.7331
1063.66	56.7904
1085.87	65.6991
1099.45	71.6768
1112.07	69.6300
1115.54	79.6763

1120.29	62.7075
1120.29	62.7075
1120.55	62.7129
1121.30	62.7290
1131.51	0.0000
1173.23	66.7623
1177.93	78.4951
1189.05	73.9250
1204.77	70.4004
1221.41	64.8855
1231.02	68.3741
1235.36	94.8047
1238.28	77.9491
1260.41	0.0000
1271.85	52.9504
1274.44	52.9935
1274.54	57.9929
1291.59	45.2344
1298.22	0.0000
1312.11	41.4738
1332.49	34.6060
1365.19	26.7215
1368.63	0.0000
1384.29	12.4019
1408.01	29.1359
1457.56	0.0000
1460.82	20.0669
1489.16	19.1587
1505.03	31.0001
1596.21	16.4221
1620.50	14.1629
1678.03	0.0000
1690.97	11.5292
1764.49	11.7326
1764.49	11.7326
1770.23	10.2795
1771.35	10.2821
1791.20	0.0000
1836.06	12.9197

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202054957

Total Uranium Activity	1.5925E+01	ug/g
Total Uranium Counting Unc.	3.7496E+00	ug/g
Total Uranium Tpu	1.9131E-06	ug/g
Total Uranium Mda	1.2099E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221          SAMPLE ID   : G1202054957
*  ANALYST       : MXR1            DETECTOR    : GAM25
*  SAMPLE DATE   : 19-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 13-MAR-2010 14:35:26.38  SAMPLE ALQT: 136.060 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.033E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.382E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.890E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.891E+00

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VAX/VMS Nuclide Identification Report Generated 13-MAR-2010 15:40:27.09

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                                   *
*                               Charleston, SC 29414                             *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054958.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 13-MAR-2010 14:40:01
Sample ID          : G1202054958           Sample quantity  : 1.55440E+02 GRAM
Detector name      : GAM13                 Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00         Elapsed real time: 0 01:00:01.66 0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials  : MXR1
Abundance limit    : 75.00000              Sensitivity         : 5.00000
Batch ID           : 958221                 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	59.56	7252	1477	1.37	118.66	112	12	2.01E+00	1.6	
2	4	74.84	233	498	1.16	149.21	145	14	6.46E-02	17.2	1.23E+00
3	4	77.15*	336	585	1.49	153.84	145	14	9.33E-02	14.9	
4	3	88.03	1669	511	1.37	175.60	171	20	4.64E-01	3.3	1.14E+00
5	0	122.05*	213	427	1.44	243.63	240	12	5.93E-02	20.6	
6	0	186.28*	128	380	1.61	372.08	366	13	3.55E-02	33.8	
7	0	238.33*	458	433	1.78	476.18	469	13	1.27E-01	10.6	
8	0	295.29*	106	274	2.00	590.09	584	11	2.94E-02	32.0	
9	0	351.98*	150	272	1.46	703.48	695	14	4.17E-02	25.0	
10	0	583.01*	179	108	1.43	1165.54	1158	13	4.96E-02	14.3	
11	0	609.38	134	147	1.45	1218.29	1210	13	3.73E-02	20.5	
12	0	661.29*	2134	160	1.75	1322.12	1316	16	5.93E-01	2.5	
13	0	910.81*	130	95	1.78	1821.21	1815	13	3.61E-02	17.9	
14	0	1172.53	1570	114	1.90	2344.72	2335	19	4.36E-01	3.0	
15	0	1331.68	1498	33	2.35	2663.08	2655	21	4.16E-01	2.8	

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

VMS Nuclide Identification Report V3.1 Generated 13-MAR-2010 15:40:30

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202054958.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 3-MAR-2010 00:00:00 Acquisition date : 13-MAR-2010 14:40:01
 Sample ID : G1202054958 Sample quantity : 155.44 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA13 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.66 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

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	*	1.863E-01	8.025E-02	6.658E-02	8.284E-03	2.798
		136.47		2.513E-01	3.353E-01	5.801E-01	6.852E-02	0.433
CO-60	+	1173.23		6.366E+00	6.391E-01	1.527E-01	1.228E-02	41.685
	+	1332.49	*	6.732E+00	6.914E-01	1.230E-01	1.064E-02	54.731
CD-109	+	88.03	*	3.042E+01	3.684E+00	1.681E+00	1.700E-01	18.093
SN-126		64.28		1.555E-01	4.810E-01	7.664E-01	1.246E-01	0.203
	+	86.94		1.245E+01	5.255E+00	7.951E-01	3.315E-01	15.653
	+	87.57	*	2.994E+00	3.625E-01	1.652E-01	1.670E-02	18.118
BA-137M	+	661.66	*	5.823E+00	5.857E-01	1.482E-01	1.286E-02	39.282
CS-137	+	661.66	*	6.151E+00	6.196E-01	1.566E-01	1.361E-02	39.282
TL-208		277.37		-1.842E-01	7.320E-01	1.171E+00	1.529E-01	-0.157
	+	583.19	*	4.607E-01	1.387E-01	1.270E-01	1.224E-02	3.629
		860.56		4.954E-01	7.583E-01	1.299E+00	1.198E-01	0.381
BI-211		72.87		3.257E+00	3.722E+00	5.557E+00	5.673E-01	0.586
	+	351.06	*	1.653E+00	8.400E-01	7.275E-01	6.932E-02	2.272
PB-212	+	74.82		1.476E+00	5.479E-01	6.270E-01	8.829E-02	2.354
	+	77.11		1.283E+00	4.040E-01	3.786E-01	3.845E-02	3.389
	+	238.63	*	1.110E+00	2.612E-01	1.935E-01	1.999E-02	5.733
		300.09		-3.302E-01	1.911E+00	2.655E+00	2.963E-01	-0.124
PB-214	+	74.82		2.616E+00	9.598E-01	1.111E+00	1.434E-01	2.354
	+	77.11		2.262E+00	7.362E-01	6.674E-01	8.732E-02	3.389
		242.00		1.035E+00	7.864E-01	1.205E+00	1.318E-01	0.859
	+	295.22		7.099E-01	4.621E-01	4.694E-01	5.360E-02	1.512
	+	351.93	*	5.999E-01	3.066E-01	2.646E-01	2.912E-02	2.267
TH-228	+	74.82		1.476E+00	5.290E-01	6.270E-01	6.425E-02	2.354
	+	77.11		1.283E+00	4.040E-01	3.786E-01	3.845E-02	3.389
	+	238.63	*	1.110E+00	2.612E-01	1.935E-01	1.999E-02	5.733
		300.09		-3.302E-01	1.922E+00	2.655E+00	1.628E+00	-0.124
AM-241	+	59.54	*	1.329E+01	1.532E+00	2.485E-01	2.756E-02	53.482

---- 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	*	1.761E-01	7.322E-01	1.226E+00	1.190E-01	0.144

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		-1.474E-03	6.879E-02	1.143E-01	9.660E-03	-0.013
NA-24	1368.63	*		3.236E-04	6.879E-02	Half-Life too short		
K-40	1460.82	*		4.762E-01	7.047E-01	1.259E+00	1.126E-01	0.378
SC-46	889.28	*		1.201E-02	1.057E-01	1.758E-01	1.493E-02	0.068
	1120.55			1.457E-01	1.328E-01	2.298E-01	1.887E-02	0.634
V-48	944.13			8.199E-01	2.265E+00	3.801E+00	3.220E-01	0.216
	983.53	*		-4.971E-02	1.650E-01	2.646E-01	2.238E-02	-0.188
	1312.11			5.166E-04	1.053E-01	1.752E-01	1.503E-02	0.003
CR-51	320.08	*		5.019E-02	7.129E-01	1.149E+00	1.118E-01	0.044
MN-54	834.85	*		6.243E-02	9.480E-02	1.635E-01	1.416E-02	0.382
CO-56	846.77	*		-7.796E-02	1.015E-01	1.594E-01	1.376E-02	-0.489
	1037.84			1.941E-02	7.943E-01	1.298E+00	1.150E-01	0.015
	1238.28			9.584E-02	1.165E-01	2.113E-01	1.809E-02	0.454
	1771.35			-1.039E+00	5.567E-01	5.783E-01	4.854E-02	-1.796
CO-58	810.76	*		4.454E-03	9.403E-02	1.569E-01	1.370E-02	0.028
FE-59	1099.45	*		-1.017E-02	2.395E-01	3.877E-01	3.488E-02	-0.026
	1291.59			5.790E-02	1.709E-01	2.968E-01	2.874E-02	0.195
ZN-65	1115.54	*		-3.667E-01	2.450E-01	3.511E-01	2.892E-02	-1.044
SE-75	121.12	+		9.597E-01	4.188E-01	4.444E-01	6.307E-02	2.160
	136.00			6.292E-02	6.335E-02	1.103E-01	1.259E-02	0.570
	264.66	*		-4.134E-03	8.553E-02	1.388E-01	1.304E-02	-0.030
	279.54			-9.080E-02	2.047E-01	3.237E-01	3.135E-02	-0.280
	400.66			-3.780E-01	5.708E-01	9.219E-01	1.030E-01	-0.410
SR-85	514.00	*		-2.516E-01	9.303E-02	1.256E-01	1.147E-02	-2.003
Y-88	898.04			-1.658E-02	1.160E-01	1.897E-01	1.612E-02	-0.087
	1836.06	*		-3.050E-02	6.528E-02	9.938E-02	8.212E-03	-0.307
Y-91	1204.77	*		1.620E+01	3.199E+01	5.628E+01	4.598E+00	0.288
NB-94	702.65	*		6.295E-02	8.079E-02	1.364E-01	1.193E-02	0.461
	871.09			6.857E-02	9.548E-02	1.648E-01	1.410E-02	0.416
NB-95	765.81	*		4.475E-04	9.486E-02	1.586E-01	1.390E-02	0.003
NB-95M	235.69	*		2.765E-01	2.541E-01	3.858E-01	4.024E-02	0.717
ZR-95	724.19			2.021E-01	2.010E-01	3.561E-01	3.376E-02	0.568
	756.73	*		-1.232E-02	1.566E-01	2.606E-01	2.516E-02	-0.047
MO-99	140.51			-1.007E+01	1.128E+01	1.782E+01	4.402E+00	-0.565
	181.07			1.299E+00	1.046E+01	1.542E+01	2.909E+00	0.084
	366.42			6.909E+01	6.612E+01	1.165E+02	1.045E+01	0.593
	739.50	*		-1.681E+00	8.934E+00	1.477E+01	2.340E+00	-0.114
	777.92			-1.094E+01	2.637E+01	4.270E+01	3.738E+00	-0.256
TC-99M	140.51	*		-2.008E+05	2.637E+01	Half-Life too short		
RU-103	497.08	*		-1.099E-02	8.861E-02	1.451E-01	2.071E-02	-0.076
	610.33	+		6.406E+00	2.832E+00	3.519E+00	5.816E-01	1.821
RH-106	621.93	*		3.790E-01	7.219E-01	1.210E+00	1.628E-01	0.313
	1050.41			-2.744E-01	6.961E+00	1.131E+01	9.474E-01	-0.024
RU-106	621.93	*		3.790E-01	7.209E-01	1.210E+00	1.078E-01	0.313
	1050.41			-2.744E-01	6.961E+00	1.131E+01	9.474E-01	-0.024
AG-108M	433.94	*		2.858E-03	7.040E-02	1.175E-01	1.078E-02	0.024
	614.28			7.788E-02	8.524E-02	1.301E-01	1.199E-02	0.599
	722.91			-2.510E-02	8.616E-02	1.419E-01	1.282E-02	-0.177
AG-110M	657.76	*		8.208E-01	1.509E-01	2.530E-01	2.267E-02	3.244

Sample ID : G1202054958

Acquisition date : 13-MAR-2010 14:40:01

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		677.62		3.200E-01	6.992E-01	1.164E+00	1.043E-01	0.275
		706.68		1.984E-01	5.150E-01	8.486E-01	7.633E-02	0.234
		763.94		7.965E-02	3.636E-01	6.162E-01	5.545E-02	0.129
		884.68		-3.399E-02	1.365E-01	2.219E-01	1.950E-02	-0.153
		937.49		-1.052E-01	3.365E-01	5.429E-01	4.771E-02	-0.194
		1384.29		7.291E-02	2.540E-01	4.375E-01	3.900E-02	0.167
		1505.03		8.759E-02	5.093E-01	8.575E-01	7.460E-02	0.102
SN-113		391.69	*	-1.233E-03	9.657E-02	1.618E-01	1.444E-02	-0.008
CD-115		260.90		1.161E+01	6.897E+01	1.132E+02	1.058E+01	0.103
		492.35		8.933E+00	2.298E+01	3.871E+01	3.524E+00	0.231
		527.90	*	-1.233E+00	6.558E+00	1.064E+01	9.724E-01	-0.116
SN-117M		156.02		-8.612E-01	2.967E+00	4.910E+00	4.716E-01	-0.175
		158.56	*	5.272E-02	7.253E-02	1.248E-01	1.168E-02	0.422
TE-123M		159.00	*	1.962E-02	4.622E-02	7.868E-02	7.370E-03	0.249
SB-124		602.73		1.015E-02	1.005E-01	1.425E-01	1.281E-02	0.071
		645.85		2.266E-01	1.023E+00	1.682E+00	1.559E-01	0.135
		722.78		-2.538E-01	8.206E-01	1.350E+00	1.209E-01	-0.188
		1690.97	*	8.641E-02	1.409E-01	2.540E-01	2.260E-02	0.340
SB-125		427.87	*	-6.108E-02	2.119E-01	3.478E-01	3.142E-02	-0.176
		463.37		7.597E-01	6.899E-01	1.196E+00	1.154E-01	0.635
		600.60		2.111E-01	4.281E-01	6.797E-01	6.535E-02	0.311
		635.95		-5.196E-02	6.667E-01	1.074E+00	1.023E-01	-0.048
TE-125M		109.28	*	4.367E+00	1.446E+01	2.325E+01	3.004E+00	0.188
I-126		388.63		-7.547E-02	2.882E-01	4.770E-01	4.152E-02	-0.158
		666.33	*	2.792E-02	4.765E-01	6.668E-01	5.792E-02	0.042
		753.82		1.760E+00	3.309E+00	5.721E+00	5.016E-01	0.308
SB-126		414.70		-1.265E-02	1.342E-01	2.231E-01	1.965E-02	-0.057
		666.50		9.485E-03	1.617E-01	2.263E-01	1.966E-02	0.042
		695.00		1.150E-01	1.412E-01	2.396E-01	2.093E-02	0.480
		697.00		-1.373E-01	4.938E-01	7.780E-01	6.799E-02	-0.177
		720.70	*	-1.993E-01	2.585E-01	4.111E-01	3.602E-02	-0.485
		856.80		2.859E-01	9.539E-01	1.610E+00	1.385E-01	0.178
SB-127		252.40		-2.331E+00	3.858E+00	5.906E+00	2.443E+00	-0.395
		473.00		2.193E-01	1.766E+00	2.941E+00	3.544E-01	0.075
		685.70	*	1.227E+00	1.385E+00	2.362E+00	2.426E-01	0.520
		783.70		1.907E+00	3.490E+00	6.026E+00	6.853E-01	0.316
I-131		80.19		1.069E+00	4.143E+00	6.025E+00	6.118E-01	0.177
		284.31		4.067E-01	2.046E+00	3.345E+00	3.266E-01	0.122
		364.49	*	-6.100E-04	1.649E-01	2.777E-01	2.613E-02	-0.002
		636.99		1.479E+00	2.578E+00	4.330E+00	4.021E-01	0.342
TE-132		49.72		1.040E+01	4.203E+00	7.002E+00	7.948E-01	1.486
		111.76		-1.718E+01	2.052E+01	3.097E+01	3.902E+00	-0.555
		116.30		6.261E-01	1.751E+01	2.774E+01	3.582E+00	0.023
		228.16	*	-1.858E-01	5.082E-01	8.185E-01	1.259E-01	-0.227
BA-133		81.00		-8.618E-02	1.341E-01	1.856E-01	3.045E-02	-0.464
		276.40		4.434E-02	6.717E-01	1.093E+00	1.594E-01	0.041
		302.85		-1.697E-01	3.023E-01	4.723E-01	6.408E-02	-0.359
		356.01	*	-2.063E-02	9.770E-02	1.434E-01	1.900E-02	-0.144
		383.85		1.111E-01	6.111E-01	1.035E+00	1.297E-01	0.107

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	529.87	*		-1.144E-04	6.111E-01	Half-Life	too short	
	875.33			2.433E-03	6.111E-01	Half-Life	too short	
	1298.22			-1.126E-02	6.111E-01	Half-Life	too short	
CS-134	563.25			-6.942E-02	7.936E-01	1.290E+00	1.184E-01	-0.054
	569.33			-8.837E-02	4.345E-01	6.997E-01	6.441E-02	-0.126
	604.72			-1.421E-02	9.026E-02	1.249E-01	1.125E-02	-0.114
	795.86	*		-5.360E-02	1.131E-01	1.825E-01	1.605E-02	-0.294
	801.95			-2.793E-01	9.537E-01	1.556E+00	1.365E-01	-0.180
	1365.19			-6.635E-01	1.875E+00	2.925E+00	2.653E-01	-0.227
CS-135	268.22	*		6.618E-02	3.037E-01	4.987E-01	5.294E-02	0.133
I-135	546.56			-3.946E+05	3.037E-01	Half-Life	too short	
	836.80			2.869E+05	3.037E-01	Half-Life	too short	
	1038.76			9.568E+03	3.037E-01	Half-Life	too short	
	1131.51			-6.846E+04	3.037E-01	Half-Life	too short	
	1260.41	*		-7.469E+04	3.037E-01	Half-Life	too short	
	1457.56			2.288E+05	3.037E-01	Half-Life	too short	
	1678.03			2.122E+04	3.037E-01	Half-Life	too short	
	1791.20			1.195E+05	3.037E-01	Half-Life	too short	
CS-136	153.25			1.530E-01	1.102E+00	1.860E+00	2.107E-01	0.082
	176.60			6.784E-02	6.600E-01	1.104E+00	1.062E-01	0.061
	273.65			-3.728E-01	7.914E-01	1.253E+00	1.259E-01	-0.298
	340.55			2.072E-01	2.398E-01	3.997E-01	3.796E-02	0.518
	818.51			4.999E-02	1.499E-01	2.546E-01	2.215E-02	0.196
	1048.07	*		8.817E-02	2.334E-01	3.903E-01	3.415E-02	0.226
	1235.36			4.456E-01	6.507E-01	1.160E+00	1.337E-01	0.384
CE-139	165.86	*		-4.444E-03	4.744E-02	7.893E-02	6.818E-03	-0.056
BA-140	162.66			-6.971E-01	1.065E+00	1.713E+00	1.631E-01	-0.407
	304.85			1.877E+00	2.212E+00	3.609E+00	1.065E+00	0.520
	423.72			1.138E+00	3.515E+00	5.923E+00	1.952E+00	0.192
	537.26	*		-5.338E-01	5.089E-01	7.221E-01	2.459E-01	-0.739
LA-140	328.76			7.946E-01	4.753E-01	8.197E-01	7.973E-02	0.969
	487.02			1.703E-01	2.583E-01	4.412E-01	4.235E-02	0.386
	815.77			-1.743E-01	6.562E-01	1.072E+00	1.040E-01	-0.163
	1596.21	*		-3.148E-02	1.124E-01	1.744E-01	1.508E-02	-0.181
CE-141	145.44	*		4.156E-03	9.084E-02	1.531E-01	1.637E-02	0.027
CE-143	57.36			9.651E+02	1.866E+02	2.432E+02	2.998E+01	3.968
	293.27	*		5.211E+01	3.222E+01	4.733E+01	1.036E+01	1.101
	664.57			4.209E+03	1.366E+03	1.016E+03	3.062E+02	4.142
	721.93			-2.175E+02	3.133E+02	4.926E+02	1.388E+02	-0.442
CE-144	80.12			8.158E-01	3.270E+00	4.753E+00	4.816E-01	0.172
	133.52	*		-2.602E-01	3.228E-01	5.225E-01	8.944E-02	-0.498
PM-144	476.78			3.625E-02	1.543E-01	2.584E-01	2.526E-02	0.140
	618.01			-4.283E-02	7.443E-02	1.158E-01	1.061E-02	-0.370
	696.49	*		5.085E-03	8.102E-02	1.309E-01	1.144E-02	0.039
PR-144	696.51	*		2.931E-01	6.044E+00	9.752E+00	8.522E-01	0.030
	1489.16			6.504E+00	1.950E+01	3.396E+01	2.956E+00	0.191
PM-146	453.88	*		4.401E-02	1.005E-01	1.704E-01	1.857E-02	0.258
	633.25			2.764E+00	3.490E+00	5.693E+00	2.178E+00	0.485
	735.93			-2.002E-01	3.250E-01	5.127E-01	1.439E-01	-0.390

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147		747.24		-1.110E-02	2.425E-01	4.049E-01	5.941E-02	-0.027
		91.11		6.177E-01	2.989E-01	5.004E-01	5.451E-02	1.234
		319.41		-1.722E+00	5.425E+00	8.563E+00	7.973E-01	-0.201
PM-149		531.02	*	4.711E-01	9.479E-01	1.600E+00	2.441E-01	0.294
		285.90	*	3.396E+01	4.508E+01	7.522E+01	1.201E+01	0.452
		121.78		5.422E-01	2.350E-01	2.542E-01	3.391E-02	2.133
EU-152	+	244.70		-1.482E+00	7.017E-01	9.669E-01	8.979E-02	-1.532
		344.28	*	-1.645E-01	2.404E-01	3.158E-01	3.046E-02	-0.521
		778.90		-2.665E-01	6.021E-01	9.731E-01	8.519E-02	-0.274
GD-153		964.08		6.094E-02	8.764E-01	1.444E+00	1.222E-01	0.042
		1085.87		-8.181E-01	1.115E+00	1.714E+00	1.423E-01	-0.477
		1112.07		-7.739E-01	8.353E-01	1.258E+00	1.036E-01	-0.615
EU-154		1408.01		-2.475E-01	3.415E-01	5.082E-01	4.419E-02	-0.487
		69.67		-8.271E-01	1.771E+00	2.678E+00	2.749E-01	-0.309
		97.43	*	-2.801E-02	1.286E-01	1.800E-01	1.921E-02	-0.156
EU-155	+	103.18		8.121E-02	1.603E-01	2.608E-01	2.881E-02	0.311
		123.07		3.832E-01	1.675E-01	1.787E-01	2.574E-02	2.144
		723.31		1.054E-02	3.858E-01	6.485E-01	6.241E-02	0.016
TB-160		873.19		-8.367E-02	7.937E-01	1.304E+00	1.545E-01	-0.064
		996.26		2.057E-01	9.782E-01	1.623E+00	2.822E-01	0.127
		1004.73		-1.233E-01	5.858E-01	9.439E-01	1.086E-01	-0.131
HO-166M		1274.44	*	-1.709E-03	1.957E-01	3.257E-01	3.662E-02	-0.005
	+	86.55		3.624E+00	4.411E-01	3.860E-01	3.931E-02	9.387
		105.31	*	-7.109E-02	1.615E-01	2.511E-01	2.831E-02	-0.283
TA-182	+	86.79		9.223E+00	1.117E+00	1.062E+00	1.074E-01	8.683
		197.04		4.400E-01	9.794E-01	1.649E+00	1.476E-01	0.267
		215.65		-1.518E-01	1.344E+00	2.202E+00	2.005E-01	-0.069
IR-192		298.57		1.104E-01	2.522E-01	3.659E-01	3.429E-02	0.302
		879.36	*	-4.601E-02	3.717E-01	6.096E-01	5.198E-02	-0.075
		962.29		-1.135E+00	1.551E+00	2.437E+00	2.064E-01	-0.466
TA-182		966.15		1.199E+00	5.859E-01	1.049E+00	8.881E-02	1.143
		1177.93		-1.887E-02	8.177E-01	1.124E+00	9.057E-02	-0.017
		1271.85		7.924E-02	1.041E+00	1.752E+00	1.477E-01	0.045
TA-182		80.57		-9.179E-02	3.704E-01	5.254E-01	5.322E-02	-0.175
		184.41		1.633E-02	6.963E-02	1.102E-01	9.727E-03	0.148
		280.46		-6.078E-02	1.649E-01	2.619E-01	2.457E-02	-0.232
TA-182		410.95		-1.462E-01	5.574E-01	9.192E-01	8.076E-02	-0.159
		711.68	*	1.432E-02	1.448E-01	2.341E-01	2.050E-02	0.061
		752.31		5.083E-01	6.558E-01	1.148E+00	1.007E-01	0.443
TA-182		810.29		4.792E-03	1.485E-01	2.477E-01	2.158E-02	0.019
		67.75		1.956E-03	1.013E-01	1.645E-01	1.695E-02	0.012
		100.11		-1.397E-01	2.519E-01	3.884E-01	4.212E-02	-0.360
TA-182		152.43		3.419E-01	5.554E-01	9.535E-01	9.477E-02	0.359
		222.11		2.584E-01	6.485E-01	1.084E+00	9.923E-02	0.238
		1121.30		5.292E-01	3.658E-01	6.450E-01	5.296E-02	0.820
IR-192		1189.05		2.698E-01	5.431E-01	9.204E-01	7.460E-02	0.293
		1221.41	*	-1.981E-03	3.065E-01	5.122E-01	4.218E-02	-0.004
	+	1231.02		-6.049E-01	7.123E-01	1.078E+00	8.920E-02	-0.561
IR-192		295.96		5.031E-01	3.259E-01	4.009E-01	3.782E-02	1.255

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HG-203		308.46		6.932E-02	1.930E-01	3.165E-01	2.972E-02	0.219
		316.51	*	-5.275E-02	7.004E-02	1.076E-01	1.005E-02	-0.490
		468.07		-1.121E-01	1.584E-01	2.520E-01	2.430E-02	-0.445
		70.83		-5.095E-01	1.435E+00	2.034E+00	3.455E-01	-0.250
		72.87		7.582E-01	8.720E-01	1.293E+00	2.130E-01	0.586
BI-207		279.20	*	3.061E-03	6.824E-02	1.109E-01	1.062E-02	0.028
		72.81		1.704E-01	2.134E-01	3.178E-01	3.245E-02	0.536
	+	74.97		4.253E-01	1.523E-01	2.324E-01	2.366E-02	1.830
		569.70		7.349E-04	6.748E-02	1.103E-01	1.003E-02	0.007
		1063.66	*	-1.840E-02	1.468E-01	2.369E-01	1.978E-02	-0.078
PB-210		1770.23		-2.843E+00	1.245E+00	1.162E+00	9.757E-02	-2.447
		46.54	*	-2.964E+00	1.265E+00	1.903E+00	2.083E-01	-1.557
PB-211		404.85	*	2.526E-01	1.653E+00	2.777E+00	1.345E+00	0.091
		427.09		-7.715E-01	3.575E+00	5.863E+00	2.715E+00	-0.132
BI-212		832.01		-3.352E-01	2.602E+00	4.276E+00	2.218E+00	-0.078
		727.33	*	6.988E-01	1.187E+00	2.058E+00	2.585E-01	0.340
		785.37		3.179E+00	7.331E+00	1.257E+01	1.099E+00	0.253
		1620.50		2.018E+00	4.069E+00	7.202E+00	6.209E-01	0.280
	+	609.32	*	6.723E-01	2.844E-01	3.667E-01	3.815E-02	1.833
RN-219		1120.29		8.261E-01	8.121E-01	1.396E+00	1.480E-01	0.592
		1764.49		1.579E+00	5.821E-01	1.217E+00	1.023E-01	1.298
		271.23		2.885E-01	4.623E-01	7.691E-01	8.379E-02	0.375
RA-223		401.81	*	-9.111E-03	9.154E-01	1.531E+00	2.287E-01	-0.006
		81.07		-1.895E-01	3.035E-01	4.219E-01	4.272E-02	-0.449
		83.79		1.249E-02	1.880E-01	2.695E-01	2.726E-02	0.046
		94.87		1.410E+00	6.824E-01	1.060E+00	1.114E-01	1.331
		144.24		-2.256E-01	1.087E+00	1.815E+00	2.086E-01	-0.124
RA-224		154.21		-2.593E-01	6.419E-01	1.058E+00	1.111E-01	-0.245
		269.46		1.123E-01	3.546E-01	5.827E-01	5.550E-02	0.193
		323.87	*	-1.556E+00	1.452E+00	2.151E+00	3.802E-01	-0.723
		338.28		4.081E+00	2.162E+00	3.666E+00	4.582E-01	1.113
		240.99	*	5.138E+00	1.573E+00	2.534E+00	2.348E-01	2.028
RA-226	+	609.32	*	6.723E-01	2.844E-01	3.667E-01	3.815E-02	1.833
		1120.29		8.261E-01	8.121E-01	1.396E+00	1.480E-01	0.592
		1764.49		1.579E+00	5.821E-01	1.217E+00	1.023E-01	1.298
AC-227		79.69		1.926E-01	1.665E+00	2.405E+00	4.338E-01	0.080
		235.96		6.638E-01	3.386E-01	5.278E-01	5.735E-02	1.258
		256.23	*	2.384E-01	5.078E-01	8.444E-01	1.061E-01	0.282
		299.98		-3.264E-01	2.103E+00	2.926E+00	3.869E-01	-0.112
		304.50		6.215E-01	3.414E+00	5.551E+00	9.395E-01	0.112
TH-227		334.37		-8.432E+00	4.111E+00	5.498E+00	8.761E-01	-1.534
		79.80		2.191E-01	2.197E+00	3.171E+00	7.110E-01	0.069
		235.96		6.638E-01	3.378E-01	5.278E-01	5.442E-02	1.258
		256.23	*	2.384E-01	5.080E-01	8.444E-01	1.188E-01	0.282
		299.98		-3.264E-01	2.103E+00	2.926E+00	3.869E-01	-0.112
AC-228		304.50		6.215E-01	3.414E+00	5.551E+00	9.395E-01	0.112
		334.37		-8.432E+00	4.111E+00	5.498E+00	8.761E-01	-1.534
		338.32		1.044E+00	6.870E-01	9.262E-01	3.875E-01	1.127
	+	911.20	*	1.636E+00	6.158E-01	8.789E-01	1.009E-01	1.861

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228		968.97		9.737E-01	8.187E-01	1.373E+00	3.337E-01	0.709
		338.32		1.044E+00	6.870E-01	9.262E-01	3.875E-01	1.127
	+	911.20	*	1.636E+00	6.158E-01	8.789E-01	1.009E-01	1.861
TH-229		968.97		9.737E-01	8.187E-01	1.373E+00	3.337E-01	0.709
		85.43		6.571E-01	3.323E-01	5.058E-01	5.114E-02	1.299
	+	88.47		4.616E+00	5.589E-01	5.785E-01	5.863E-02	7.978
PA-231		193.51	*	-7.322E-04	9.322E-01	1.544E+00	1.377E-01	0.000
		210.85		1.418E+00	1.635E+00	2.774E+00	2.516E-01	0.511
		283.69	*	7.288E-01	2.937E+00	4.812E+00	7.240E-01	0.151
TH-231		301.36		3.626E-02	1.200E+00	1.864E+00	2.366E-01	0.019
		81.07		-1.895E-01	3.035E-01	4.219E-01	4.272E-02	-0.449
		83.79		1.249E-02	1.880E-01	2.695E-01	2.726E-02	0.046
TH-232		94.87		1.410E+00	6.824E-01	1.060E+00	1.114E-01	1.331
		144.24		-2.256E-01	1.087E+00	1.815E+00	2.086E-01	-0.124
		154.21		-2.593E-01	6.419E-01	1.058E+00	1.111E-01	-0.245
PA-233		269.46		1.123E-01	3.546E-01	5.827E-01	5.550E-02	0.193
		323.87	*	-1.556E+00	1.452E+00	2.151E+00	3.802E-01	-0.723
		338.28		4.081E+00	2.162E+00	3.666E+00	4.582E-01	1.113
PA-234		338.32		1.044E+00	5.389E-01	9.262E-01	8.528E-02	1.127
	+	911.20	*	1.636E+00	6.158E-01	8.789E-01	1.009E-01	1.861
		968.97		9.737E-01	8.187E-01	1.373E+00	3.337E-01	0.709
PA-234M		300.13		-1.704E-01	9.514E-01	1.321E+00	2.018E-01	-0.129
		311.90	*	1.019E-02	1.307E-01	2.111E-01	2.020E-02	0.048
		340.48		1.261E+00	1.337E+00	2.186E+00	5.308E-01	0.577
TH-234		94.67		5.948E-01	2.620E-01	3.997E-01	5.506E-02	1.488
		98.44		-4.043E-03	1.321E-01	1.994E-01	1.120E-01	-0.020
		111.00		1.449E-03	2.881E-01	4.569E-01	6.562E-02	0.003
U-235		131.20		-1.470E-02	1.651E-01	2.781E-01	3.266E-02	-0.053
		569.50		-3.486E-02	5.990E-01	9.745E-01	8.860E-02	-0.036
		733.00		3.509E-01	8.149E-01	1.400E+00	3.116E-01	0.251
NP-237		880.51		-6.979E-02	7.646E-01	1.256E+00	1.071E-01	-0.056
		883.24		-1.927E-01	8.220E-01	1.321E+00	8.880E-01	-0.146
		926.50		-3.158E-01	5.044E-01	7.855E-01	1.981E-01	-0.402
U-238		946.00	*	2.740E-02	9.459E-01	1.557E+00	2.912E-01	0.018
		949.00		9.238E-02	1.389E+00	2.292E+00	1.941E-01	0.040
		766.42		6.813E+00	2.664E+01	4.484E+01	2.276E+01	0.152
U-238		1001.03	*	2.840E+00	1.274E+01	2.119E+01	2.079E+00	0.134
		63.29	*	-5.076E-01	1.270E+00	1.962E+00	3.784E-01	-0.259
		92.59		3.374E-01	1.071E+00	1.874E+00	4.277E-01	0.180
U-238		89.96		9.689E+00	2.818E+00	2.678E+00	6.754E-01	3.618
		93.35		2.502E-01	8.107E-01	1.418E+00	3.379E-01	0.176
		143.76	*	-1.405E-01	3.290E-01	5.428E-01	9.829E-02	-0.259
U-238		163.33		-4.211E-01	7.230E-01	1.161E+00	2.099E-01	-0.363
	+	185.72		2.005E-01	1.368E-01	1.484E-01	1.313E-02	1.351
		205.31		-1.372E-01	8.623E-01	1.413E+00	2.592E-01	-0.097
U-238		86.48	*	4.827E+00	1.231E+00	9.277E-01	2.160E-01	5.203
		95.86		1.716E-01	1.363E+00	1.950E+00	4.828E-01	0.088
		63.29	*	-5.076E-01	1.270E+00	1.962E+00	3.784E-01	-0.259
U-238		92.59		3.374E-01	1.068E+00	1.874E+00	1.944E-01	0.180

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	99.53			-1.187E-01	2.358E-01	3.647E-01	3.941E-02	-0.325
	103.37			3.265E-02	1.500E-01	2.410E-01	2.666E-02	0.135
	106.12			-6.655E-03	1.306E-01	2.070E-01	2.328E-02	-0.032
	117.23	*		-1.894E-01	6.830E-01	1.010E+00	1.218E-01	-0.188
	228.18			-1.467E-01	4.009E-01	6.464E-01	5.943E-02	-0.227
	277.60			-9.024E-02	3.336E-01	5.331E-01	5.000E-02	-0.169
CM-247	278.00			-7.356E-01	1.421E+00	2.239E+00	2.100E-01	-0.329
	287.50			-4.019E-01	2.522E+00	4.046E+00	3.796E-01	-0.099
	402.40	*		2.011E-03	8.398E-02	1.407E-01	1.229E-02	0.014
CF-249	252.80			-1.826E+00	1.900E+00	2.940E+00	2.740E-01	-0.621
	333.37			-2.889E-01	3.855E-01	5.908E-01	5.458E-02	-0.489
	388.16	*		-2.954E-02	8.858E-02	1.461E-01	1.273E-02	-0.202
CF-251	177.52	*		5.556E-02	2.169E-01	3.650E-01	3.197E-02	0.152
	227.38			-4.491E-01	6.559E-01	1.040E+00	9.556E-02	-0.432
	285.41			2.303E+00	4.368E+00	7.252E+00	6.804E-01	0.318
ANH-511	511.00	*		6.818E-02	8.117E-02	1.472E-01	1.344E-02	0.463

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]G1202054958      *
* Acquisition date   : 13-MAR-2010 14:40:01 Detector SN#                   *
* Detector ID        : GAM13 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 01:00:01.66 Half life ratio : 8.000                *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 3-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202054958 Analyst initials: MXR1                 *
* Batch Number       : 958221 Sample Quantity : 1.5544E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 10-FEB-2010 14:02:26 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	1.863E-01	7.865E-02	7.171E-02	0.000E+00
CO-60	6.732E+00	6.776E-01	1.244E-01	0.000E+00
CD-109	3.042E+01	3.610E+00	1.825E+00	0.000E+00
SN-126	2.994E+00	3.553E-01	1.794E-01	0.000E+00
BA-137M	5.823E+00	5.739E-01	1.528E-01	0.000E+00
CS-137	6.151E+00	6.072E-01	1.614E-01	0.000E+00
TL-208	4.607E-01	1.359E-01	1.313E-01	0.000E+00
BI-211	1.653E+00	8.232E-01	7.627E-01	0.000E+00
PB-212	1.110E+00	2.560E-01	2.049E-01	0.000E+00
PB-214	5.999E-01	3.005E-01	2.774E-01	0.000E+00
TH-228	1.110E+00	2.560E-01	2.049E-01	0.000E+00
AM-241	1.329E+01	1.502E+00	2.724E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.761E-01	7.176E-01	1.275E+00	0.000E+00 NOT IDENT.
NA-22	-1.474E-03	6.741E-02	1.157E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.729E+03	0.000E+00	0.000E+00 SHORT HLIF
K-40	4.762E-01	6.906E-01	1.270E+00	0.000E+00 NOT IDENT.
SC-46	1.201E-02	1.036E-01	1.798E-01	0.000E+00 NOT IDENT.
V-48	-4.971E-02	1.617E-01	2.698E-01	0.000E+00 NOT IDENT.
CR-51	5.019E-02	6.987E-01	1.208E+00	0.000E+00 NOT IDENT.
MN-54	6.243E-02	9.290E-02	1.675E-01	0.000E+00 NOT IDENT.
CO-56	-7.796E-02	9.947E-02	1.633E-01	0.000E+00 NOT IDENT.
CO-58	4.454E-03	9.215E-02	1.609E-01	0.000E+00 NOT IDENT.
FE-59	-1.017E-02	2.347E-01	3.941E-01	0.000E+00 NOT IDENT.
ZN-65	-3.667E-01	2.401E-01	3.568E-01	0.000E+00 NOT IDENT.
SE-75	-4.134E-03	8.382E-02	1.466E-01	0.000E+00 FAIL ABUN
SR-85	-2.516E-01	9.117E-02	1.304E-01	0.000E+00 NOT IDENT.
Y-88	-3.050E-02	6.397E-02	9.958E-02	0.000E+00 NOT IDENT.

Y-91	1.620E+01	3.135E+01	5.707E+01	0.000E+00	NOT IDENT.
NB-94	6.295E-02	7.917E-02	1.404E-01	0.000E+00	NOT IDENT.
NB-95	4.475E-04	9.296E-02	1.628E-01	0.000E+00	NOT IDENT.
NB-95M	2.765E-01	2.490E-01	4.087E-01	0.000E+00	NOT IDENT.
ZR-95	-1.232E-02	1.535E-01	2.677E-01	0.000E+00	NOT IDENT.
MO-99	-1.681E+00	8.756E+00	1.518E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.195E+11	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.099E-02	8.684E-02	1.507E-01	0.000E+00	FAIL ABUN
RH-106	3.790E-01	7.075E-01	1.250E+00	0.000E+00	NOT IDENT.
RU-106	3.790E-01	7.065E-01	1.250E+00	0.000E+00	NOT IDENT.
AG-108M	2.858E-03	6.899E-02	1.225E-01	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	1.479E-01	2.609E-01	0.000E+00	NOT IDENT.
SN-113	-1.233E-03	9.464E-02	1.691E-01	0.000E+00	NOT IDENT.
CD-115	-1.233E+00	6.427E+00	1.104E+01	0.000E+00	NOT IDENT.
SN-117M	5.272E-02	7.108E-02	1.335E-01	0.000E+00	NOT IDENT.
TE-123M	1.962E-02	4.529E-02	8.418E-02	0.000E+00	NOT IDENT.
SB-124	8.641E-02	1.380E-01	2.551E-01	0.000E+00	NOT IDENT.
SB-125	-6.108E-02	2.076E-01	3.627E-01	0.000E+00	NOT IDENT.
TE-125M	4.367E+00	1.417E+01	2.511E+01	0.000E+00	NOT IDENT.
I-126	2.792E-02	4.670E-01	6.872E-01	0.000E+00	NOT IDENT.
SB-126	-1.993E-01	2.533E-01	4.228E-01	0.000E+00	NOT IDENT.
SB-127	1.227E+00	1.358E+00	2.433E+00	0.000E+00	NOT IDENT.
I-131	-6.100E-04	1.616E-01	2.909E-01	0.000E+00	NOT IDENT.
TE-132	-1.858E-01	4.980E-01	8.678E-01	0.000E+00	NOT IDENT.
BA-133	-2.063E-02	9.575E-02	1.502E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.613E+02	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-5.360E-02	1.108E-01	1.872E-01	0.000E+00	NOT IDENT.
CS-135	6.618E-02	2.976E-01	5.265E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.412E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.817E-02	2.287E-01	3.974E-01	0.000E+00	NOT IDENT.
CE-139	-4.444E-03	4.649E-02	8.436E-02	0.000E+00	NOT IDENT.
BA-140	-5.338E-01	4.987E-01	7.486E-01	0.000E+00	NOT IDENT.
LA-140	-3.148E-02	1.101E-01	1.754E-01	0.000E+00	NOT IDENT.
CE-141	4.156E-03	8.903E-02	1.642E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.157E+01	4.986E+01	0.000E+00	NOT IDENT.
CE-144	-2.602E-01	3.163E-01	5.615E-01	0.000E+00	NOT IDENT.
PM-144	5.085E-03	7.940E-02	1.347E-01	0.000E+00	NOT IDENT.
PR-144	2.931E-01	5.923E+00	1.004E+01	0.000E+00	NOT IDENT.
PM-146	4.401E-02	9.850E-02	1.774E-01	0.000E+00	NOT IDENT.
ND-147	4.711E-01	9.290E-01	1.660E+00	0.000E+00	NOT IDENT.
PM-149	3.396E+01	4.418E+01	7.929E+01	0.000E+00	NOT IDENT.
EU-152	-1.645E-01	2.356E-01	3.312E-01	0.000E+00	FAIL ABUN
GD-153	-2.801E-02	1.260E-01	1.949E-01	0.000E+00	NOT IDENT.
EU-154	-1.709E-03	1.917E-01	3.297E-01	0.000E+00	FAIL ABUN
EU-155	-7.109E-02	1.583E-01	2.714E-01	0.000E+00	FAIL ABUN
TB-160	-4.601E-02	3.643E-01	6.236E-01	0.000E+00	FAIL ABUN
HO-166M	1.432E-02	1.419E-01	2.408E-01	0.000E+00	NOT IDENT.
TA-182	-1.981E-03	3.004E-01	5.192E-01	0.000E+00	NOT IDENT.
IR-192	-5.275E-02	6.864E-02	1.131E-01	0.000E+00	FAIL ABUN
HG-203	3.061E-03	6.687E-02	1.169E-01	0.000E+00	NOT IDENT.
BI-207	-1.840E-02	1.439E-01	2.410E-01	0.000E+00	FAIL ABUN
PB-210	-2.964E+00	1.240E+00	2.098E+00	0.000E+00	NOT IDENT.
PB-211	2.526E-01	1.620E+00	2.901E+00	0.000E+00	NOT IDENT.
BI-212	6.988E-01	1.164E+00	2.116E+00	0.000E+00	NOT IDENT.
BI-214	0.000E+00	2.787E-01	3.789E-01	0.000E+00	FAIL ABUN
RN-219	-9.111E-03	8.971E-01	1.600E+00	0.000E+00	NOT IDENT.
RA-223	-1.556E+00	1.423E+00	2.260E+00	0.000E+00	NOT IDENT.
RA-224	0.000E+00	1.541E+00	2.682E+00	0.000E+00	NOT IDENT.
RA-226	0.000E+00	2.787E-01	3.789E-01	0.000E+00	FAIL ABUN
AC-227	2.384E-01	4.976E-01	8.926E-01	0.000E+00	NOT IDENT.
TH-227	2.384E-01	4.978E-01	8.926E-01	0.000E+00	NOT IDENT.
AC-228	0.000E+00	6.035E-01	8.981E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	6.035E-01	8.981E-01	0.000E+00	FAIL ABUN
TH-229	-7.322E-04	9.136E-01	1.644E+00	0.000E+00	FAIL ABUN
PA-231	7.288E-01	2.878E+00	5.073E+00	0.000E+00	NOT IDENT.
TH-231	-1.556E+00	1.423E+00	2.260E+00	0.000E+00	NOT IDENT.
TH-232	0.000E+00	6.035E-01	8.981E-01	0.000E+00	FAIL ABUN
PA-233	1.019E-02	1.280E-01	2.221E-01	0.000E+00	NOT IDENT.
PA-234	2.740E-02	9.270E-01	1.590E+00	0.000E+00	NOT IDENT.
PA-234M	2.840E+00	1.249E+01	2.160E+01	0.000E+00	NOT IDENT.
TH-234	-5.076E-01	1.244E+00	2.148E+00	0.000E+00	NOT IDENT.
U-235	-1.405E-01	3.224E-01	5.823E-01	0.000E+00	FAIL ABUN
NP-237	0.000E+00	1.206E+00	1.008E+00	0.000E+00	NOT IDENT.
U-238	-5.076E-01	1.244E+00	2.148E+00	0.000E+00	NOT IDENT.
NP-239	-1.894E-01	6.694E-01	1.088E+00	0.000E+00	NOT IDENT.
CM-247	2.011E-03	8.230E-02	1.470E-01	0.000E+00	NOT IDENT.
CF-249	-2.954E-02	8.681E-02	1.527E-01	0.000E+00	NOT IDENT.
CF-251	5.556E-02	2.125E-01	3.894E-01	0.000E+00	NOT IDENT.

ANH-511 6.818E-02 7.955E-02 1.529E-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]G1202054958.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 13-MAR-2010 14:40:01
Sample ID          : G1202054958          Sample quantity  : 1.55440E+02 GRAM
Detector name      : GAM13                Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00        Elapsed real time: 0 01:00:01.66  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials  : MXR1
Abundance limit    : 75.00000             Sensitivity         : 5.00000
Batch ID           : 958221               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	213	85.60*	6.640E+00	1.813E-01	1.863E-01	43.07
	136.47	-----	10.68	6.339E+00	-----	Line Not Found	-----
CO-60	1173.23	1570	99.85	1.197E+00	6.341E+00	6.366E+00	10.04
	1332.49	1498	99.98*	1.079E+00	6.706E+00	6.732E+00	10.27
CD-109	88.03	1669	3.70*	7.275E+00	2.994E+01	3.042E+01	12.11
SN-126	64.28	-----	9.60	7.397E+00	-----	Line Not Found	-----
	86.94	1669	8.90	7.275E+00	1.245E+01	1.245E+01	42.22
	87.57	1669	37.00*	7.275E+00	2.994E+00	2.994E+00	12.11
BA-137M	661.66	2134	89.90*	1.970E+00	5.819E+00	5.823E+00	10.06
CS-137	661.66	2134	85.10*	1.970E+00	6.147E+00	6.151E+00	10.07
TL-208	277.37	-----	6.60	4.098E+00	-----	Line Not Found	-----
	583.19	179	85.00*	2.203E+00	4.607E-01	4.607E-01	30.10
	860.56	-----	12.50	1.561E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	7.416E+00	-----	Line Not Found	-----
	351.06	150	12.92*	3.397E+00	1.653E+00	1.653E+00	50.82
PB-212	74.82	233	10.28	7.408E+00	1.476E+00	1.476E+00	37.12
	77.11	336	17.10	7.394E+00	1.283E+00	1.283E+00	31.49
	238.63	458	43.60*	4.577E+00	1.110E+00	1.110E+00	23.54
	300.09	-----	3.30	3.858E+00	-----	Line Not Found	-----
PB-214	74.82	233	5.80	7.408E+00	2.616E+00	2.616E+00	36.69
	77.11	336	9.70	7.394E+00	2.262E+00	2.262E+00	32.55
	242.00	-----	7.25	4.528E+00	-----	Line Not Found	-----
	295.22	106	18.42	3.907E+00	7.099E-01	7.099E-01	65.09
	351.93	150	35.60*	3.397E+00	5.999E-01	5.999E-01	51.11
TH-228	74.82	233	10.28	7.408E+00	1.476E+00	1.476E+00	35.84
	77.11	336	17.10	7.394E+00	1.283E+00	1.283E+00	31.49
	238.63	458	43.60*	4.577E+00	1.110E+00	1.110E+00	23.54
	300.09	-----	3.30	3.858E+00	-----	Line Not Found	-----
AM-241	59.54	7252	35.90*	7.340E+00	1.329E+01	1.329E+01	11.53

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202054958

Page : 2
Acquisition date : 13-MAR-2010 14:40:01

Total number of lines in spectrum 15
Number of unidentified lines 0
Number of lines tentatively identified by NID 15 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.03	1.813E-01	1.863E-01	0.803E-01	43.07	
CO-60	5.27Y	1.00	6.706E+00	6.732E+00	0.691E+00	10.27	
CD-109	461.40D	1.02	2.994E+01	3.042E+01	0.368E+01	12.11	
SN-126	2.30E+05Y	1.00	2.994E+00	2.994E+00	0.363E+00	12.11	
BA-137M	30.08Y	1.00	5.819E+00	5.823E+00	0.586E+00	10.06	
CS-137	30.08Y	1.00	6.147E+00	6.151E+00	0.620E+00	10.07	
TL-208	1.41E+10Y	1.00	4.607E-01	4.607E-01	1.387E-01	30.10	
BI-211	7.04E+08Y	1.00	1.653E+00	1.653E+00	0.840E+00	50.82	
PB-212	1.41E+10Y	1.00	1.110E+00	1.110E+00	0.261E+00	23.54	
PB-214	1600.00Y	1.00	5.999E-01	5.999E-01	3.066E-01	51.11	
TH-228	1.41E+10Y	1.00	1.110E+00	1.110E+00	0.261E+00	23.54	
AM-241	432.60Y	1.00	1.329E+01	1.329E+01	0.153E+01	11.53	

Total Activity : 7.001E+01 7.053E+01

Grand Total Activity : 7.001E+01 7.053E+01

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

Unidentified Energy Lines
Sample ID : G1202054958

Page : 3
Acquisition date : 13-MAR-2010 14:40:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.28	128	380	1.61	372.08	366	13	3.55E-02	67.6	5.38E+00	T
0	609.38	134	147	1.45	1218.29	1210	13	3.73E-02	41.0	2.12E+00	T
0	910.81	130	95	1.78	1821.21	1815	13	3.61E-02	35.9	1.49E+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]G1202054958.CNF;1 *
* Acquisition date   : 13-MAR-2010 14:40:01  Detector SN#      :          *
* Detector ID        : GAM13                      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 01:00:01.66             Half life ratio : 8.00000    *
*****
*                               SAMPLE DATA                              *
*                               *                                         *
* Sample date        : 3-MAR-2010 00:00:00.  Nuclide Library : SOLID        *
* Sample ID           : G1202054958           Analyst initials: MXR1        *
* Batch Number        : 958221                Sample Quantity : 1.55440E+02 GRAM *
*****
*                               QC DATA                                 *
*                               *                                         *
* CALIB. DATE/TIME   : 10-FEB-2010 14:02:26.9MS Isotope         :          *
* MSD ID              :                      MSD Isotope         :          *
* LCS ID              : 1032-A                LCS Isotope         :          *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	1.863E-01	8.025E-02	6.658E-02	8.284E-03	2.798
CO-60	6.732E+00	6.914E-01	1.230E-01	1.064E-02	54.731
CD-109	3.042E+01	3.684E+00	1.681E+00	1.700E-01	18.093
SN-126	2.994E+00	3.625E-01	1.652E-01	1.670E-02	18.118
BA-137M	5.823E+00	5.857E-01	1.482E-01	1.286E-02	39.282
CS-137	6.151E+00	6.196E-01	1.566E-01	1.361E-02	39.282
TL-208	4.607E-01	1.387E-01	1.270E-01	1.224E-02	3.629
BI-211	1.653E+00	8.400E-01	7.275E-01	6.932E-02	2.272
PB-212	1.110E+00	2.612E-01	1.935E-01	1.999E-02	5.733
PB-214	5.999E-01	3.066E-01	2.646E-01	2.912E-02	2.267
TH-228	1.110E+00	2.612E-01	1.935E-01	1.999E-02	5.733
AM-241	1.329E+01	1.532E+00	2.485E-01	2.756E-02	53.482

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.761E-01		7.322E-01	1.226E+00	1.190E-01	0.144

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-1.474E-03		6.879E-02	1.143E-01	9.660E-03	-0.013
NA-24	3.236E-04		3.944E-03	Half-Life too short		
K-40	4.762E-01		7.047E-01	1.259E+00	1.126E-01	0.378
SC-46	1.201E-02		1.057E-01	1.758E-01	1.493E-02	0.068
V-48	-4.971E-02		1.650E-01	2.646E-01	2.238E-02	-0.188
CR-51	5.019E-02		7.129E-01	1.149E+00	1.118E-01	0.044
MN-54	6.243E-02		9.480E-02	1.635E-01	1.416E-02	0.382
CO-56	-7.796E-02		1.015E-01	1.594E-01	1.376E-02	-0.489
CO-58	4.454E-03		9.403E-02	1.569E-01	1.370E-02	0.028
FE-59	-1.017E-02		2.395E-01	3.877E-01	3.488E-02	-0.026
ZN-65	-3.667E-01		2.450E-01	3.511E-01	2.892E-02	-1.044
SE-75	-4.134E-03		8.553E-02	1.388E-01	1.304E-02	-0.030
SR-85	-2.516E-01		9.303E-02	1.256E-01	1.147E-02	-2.003
Y-88	-3.050E-02		6.528E-02	9.938E-02	8.212E-03	-0.307
Y-91	1.620E+01		3.199E+01	5.628E+01	4.598E+00	0.288
NB-94	6.295E-02		8.079E-02	1.364E-01	1.193E-02	0.461
NB-95	4.475E-04		9.486E-02	1.586E-01	1.390E-02	0.003
NB-95M	2.765E-01		2.541E-01	3.858E-01	4.024E-02	0.717
ZR-95	-1.232E-02		1.566E-01	2.606E-01	2.516E-02	-0.047
MO-99	-1.681E+00		8.934E+00	1.477E+01	2.340E+00	-0.114
TC-99M	-2.008E+05		1.120E+05	Half-Life too short		
RU-103	-1.099E-02		8.861E-02	1.451E-01	2.071E-02	-0.076
RH-106	3.790E-01		7.219E-01	1.210E+00	1.628E-01	0.313
RU-106	3.790E-01		7.209E-01	1.210E+00	1.078E-01	0.313
AG-108M	2.858E-03		7.040E-02	1.175E-01	1.078E-02	0.024
AG-110M	8.208E-01		1.509E-01	2.530E-01	2.267E-02	3.244
SN-113	-1.233E-03		9.657E-02	1.618E-01	1.444E-02	-0.008
CD-115	-1.233E+00		6.558E+00	1.064E+01	9.724E-01	-0.116
SN-117M	5.272E-02		7.253E-02	1.248E-01	1.168E-02	0.422
TE-123M	1.962E-02		4.622E-02	7.868E-02	7.370E-03	0.249
SB-124	8.641E-02		1.409E-01	2.540E-01	2.260E-02	0.340
SB-125	-6.108E-02		2.119E-01	3.478E-01	3.142E-02	-0.176
TE-125M	4.367E+00		1.446E+01	2.325E+01	3.004E+00	0.188
I-126	2.792E-02		4.765E-01	6.668E-01	5.792E-02	0.042
SB-126	-1.993E-01		2.585E-01	4.111E-01	3.602E-02	-0.485
SB-127	1.227E+00		1.385E+00	2.362E+00	2.426E-01	0.520
I-131	-6.100E-04		1.649E-01	2.777E-01	2.613E-02	-0.002
TE-132	-1.858E-01		5.082E-01	8.185E-01	1.259E-01	-0.227
BA-133	-2.063E-02		9.770E-02	1.434E-01	1.900E-02	-0.144
I-133	-1.144E-04		1.843E-04	Half-Life too short		
CS-134	-5.360E-02		1.131E-01	1.825E-01	1.605E-02	-0.294
CS-135	6.618E-02		3.037E-01	4.987E-01	5.294E-02	0.133
I-135	-7.469E+04		4.802E+04	Half-Life too short		
CS-136	8.817E-02		2.334E-01	3.903E-01	3.415E-02	0.226
CE-139	-4.444E-03		4.744E-02	7.893E-02	6.818E-03	-0.056
BA-140	-5.338E-01		5.089E-01	7.221E-01	2.459E-01	-0.739
LA-140	-3.148E-02		1.124E-01	1.744E-01	1.508E-02	-0.181
CE-141	4.156E-03		9.084E-02	1.531E-01	1.637E-02	0.027

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-143	5.211E+01		3.222E+01	4.733E+01	1.036E+01	1.101
CE-144	-2.602E-01		3.228E-01	5.225E-01	8.944E-02	-0.498
PM-144	5.085E-03		8.102E-02	1.309E-01	1.144E-02	0.039
PR-144	2.931E-01		6.044E+00	9.752E+00	8.522E-01	0.030
PM-146	4.401E-02		1.005E-01	1.704E-01	1.857E-02	0.258
ND-147	4.711E-01		9.479E-01	1.600E+00	2.441E-01	0.294
PM-149	3.396E+01		4.508E+01	7.522E+01	1.201E+01	0.452
EU-152	-1.645E-01		2.404E-01	3.158E-01	3.046E-02	-0.521
GD-153	-2.801E-02		1.286E-01	1.800E-01	1.921E-02	-0.156
EU-154	-1.709E-03		1.957E-01	3.257E-01	3.662E-02	-0.005
EU-155	-7.109E-02		1.615E-01	2.511E-01	2.831E-02	-0.283
TB-160	-4.601E-02		3.717E-01	6.096E-01	5.198E-02	-0.075
HO-166M	1.432E-02		1.448E-01	2.341E-01	2.050E-02	0.061
TA-182	-1.981E-03		3.065E-01	5.122E-01	4.218E-02	-0.004
IR-192	-5.275E-02		7.004E-02	1.076E-01	1.005E-02	-0.490
HG-203	3.061E-03		6.824E-02	1.109E-01	1.062E-02	0.028
BI-207	-1.840E-02		1.468E-01	2.369E-01	1.978E-02	-0.078
PB-210	-2.964E+00		1.265E+00	1.903E+00	2.083E-01	-1.557
PB-211	2.526E-01		1.653E+00	2.777E+00	1.345E+00	0.091
BI-212	6.988E-01		1.187E+00	2.058E+00	2.585E-01	0.340
BI-214	6.723E-01	+	2.844E-01	3.667E-01	3.815E-02	1.833
RN-219	-9.111E-03		9.154E-01	1.531E+00	2.287E-01	-0.006
RA-223	-1.556E+00		1.452E+00	2.151E+00	3.802E-01	-0.723
RA-224	5.138E+00		1.573E+00	2.534E+00	2.348E-01	2.028
RA-226	6.723E-01	+	2.844E-01	3.667E-01	3.815E-02	1.833
AC-227	2.384E-01		5.078E-01	8.444E-01	1.061E-01	0.282
TH-227	2.384E-01		5.080E-01	8.444E-01	1.188E-01	0.282
AC-228	1.636E+00	+	6.158E-01	8.789E-01	1.009E-01	1.861
RA-228	1.636E+00	+	6.158E-01	8.789E-01	1.009E-01	1.861
TH-229	-7.322E-04		9.322E-01	1.544E+00	1.377E-01	0.000
PA-231	7.288E-01		2.937E+00	4.812E+00	7.240E-01	0.151
TH-231	-1.556E+00		1.452E+00	2.151E+00	3.802E-01	-0.723
TH-232	1.636E+00	+	6.158E-01	8.789E-01	1.009E-01	1.861
PA-233	1.019E-02		1.307E-01	2.111E-01	2.020E-02	0.048
PA-234	2.740E-02		9.459E-01	1.557E+00	2.912E-01	0.018
PA-234M	2.840E+00		1.274E+01	2.119E+01	2.079E+00	0.134
TH-234	-5.076E-01		1.270E+00	1.962E+00	3.784E-01	-0.259
U-235	-1.405E-01		3.290E-01	5.428E-01	9.829E-02	-0.259
NP-237	4.827E+00		1.231E+00	9.277E-01	2.160E-01	5.203
U-238	-5.076E-01		1.270E+00	1.962E+00	3.784E-01	-0.259
NP-239	-1.894E-01		6.830E-01	1.010E+00	1.218E-01	-0.188
CM-247	2.011E-03		8.398E-02	1.407E-01	1.229E-02	0.014
CF-249	-2.954E-02		8.858E-02	1.461E-01	1.273E-02	-0.202
CF-251	5.556E-02		2.169E-01	3.650E-01	3.197E-02	0.152
ANH-511	6.818E-02		8.117E-02	1.472E-01	1.344E-02	0.463

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]G1202054958          *
* Acquisition date   : 13-MAR-2010 14:40:01 Detector SN#      :              *
* Detector ID        : GAM13 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 01:00:01.66 Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 3-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202054958 Analyst initials: MXR1         *
* Batch Number       : 958221 Sample Quantity : 1.5544E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 10-FEB-2010 14:02:26 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	1.863E-01	7.865E-02	3.588E-02	4.013E-02
CO-60	6.732E+00	6.776E-01	6.222E-02	3.457E-01
CD-109	3.042E+01	3.610E+00	9.133E-01	1.842E+00
SN-126	2.994E+00	3.553E-01	8.977E-02	1.813E-01
BA-137M	5.823E+00	5.739E-01	7.645E-02	2.928E-01
CS-137	6.151E+00	6.072E-01	8.076E-02	3.098E-01
TL-208	4.607E-01	1.359E-01	6.570E-02	6.933E-02
BI-211	1.653E+00	8.232E-01	3.816E-01	4.200E-01
PB-212	1.110E+00	2.560E-01	1.025E-01	1.306E-01
PB-214	5.999E-01	3.005E-01	1.388E-01	1.533E-01
TH-228	1.110E+00	2.560E-01	1.025E-01	1.306E-01
AM-241	1.329E+01	1.502E+00	1.363E-01	7.661E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.761E-01	7.176E-01	6.380E-01	3.661E-01 NOT IDENT.
NA-22	-1.474E-03	6.741E-02	5.791E-02	3.439E-02 NOT IDENT.
NA-24	3.236E+02	7.729E+03	0.000E+00	3.944E+03 SHORT HLIF
K-40	4.762E-01	6.906E-01	6.353E-01	3.524E-01 NOT IDENT.
SC-46	1.201E-02	1.036E-01	8.996E-02	5.284E-02 NOT IDENT.
V-48	-4.971E-02	1.617E-01	1.350E-01	8.248E-02 NOT IDENT.
CR-51	5.019E-02	6.987E-01	6.044E-01	3.565E-01 NOT IDENT.
MN-54	6.243E-02	9.290E-02	8.378E-02	4.740E-02 NOT IDENT.
CO-56	-7.796E-02	9.947E-02	8.168E-02	5.075E-02 NOT IDENT.
CO-58	4.454E-03	9.215E-02	8.050E-02	4.702E-02 NOT IDENT.
FE-59	-1.017E-02	2.347E-01	1.972E-01	1.198E-01 NOT IDENT.
ZN-65	-3.667E-01	2.401E-01	1.785E-01	1.225E-01 NOT IDENT.
SE-75	-4.134E-03	8.382E-02	7.332E-02	4.277E-02 FAIL ABUN
SR-85	-2.516E-01	9.117E-02	6.524E-02	4.652E-02 NOT IDENT.
Y-88	-3.050E-02	6.397E-02	4.982E-02	3.264E-02 NOT IDENT.

Y-91	1.620E+01	3.135E+01	2.855E+01	1.600E+01	NOT IDENT.
NB-94	6.295E-02	7.917E-02	7.026E-02	4.039E-02	NOT IDENT.
NB-95	4.475E-04	9.296E-02	8.146E-02	4.743E-02	NOT IDENT.
NB-95M	2.765E-01	2.490E-01	2.045E-01	1.271E-01	NOT IDENT.
ZR-95	-1.232E-02	1.535E-01	1.339E-01	7.832E-02	NOT IDENT.
MO-99	-1.681E+00	8.756E+00	7.595E+00	4.467E+00	NOT IDENT.
TC-99M	-2.008E+11	2.195E+11	0.000E+00	1.120E+11	SHORT HLIF
RU-103	-1.099E-02	8.684E-02	7.541E-02	4.430E-02	FAIL ABUN
RH-106	3.790E-01	7.075E-01	6.253E-01	3.610E-01	NOT IDENT.
RU-106	3.790E-01	7.065E-01	6.253E-01	3.605E-01	NOT IDENT.
AG-108M	2.858E-03	6.899E-02	6.126E-02	3.520E-02	NOT IDENT.
AG-110M	8.208E-01	1.479E-01	1.305E-01	7.546E-02	NOT IDENT.
SN-113	-1.233E-03	9.464E-02	8.461E-02	4.828E-02	NOT IDENT.
CD-115	-1.233E+00	6.427E+00	5.523E+00	3.279E+00	NOT IDENT.
SN-117M	5.272E-02	7.108E-02	6.681E-02	3.626E-02	NOT IDENT.
TE-123M	1.962E-02	4.529E-02	4.212E-02	2.311E-02	NOT IDENT.
SB-124	8.641E-02	1.380E-01	1.276E-01	7.043E-02	NOT IDENT.
SB-125	-6.108E-02	2.076E-01	1.815E-01	1.059E-01	NOT IDENT.
TE-125M	4.367E+00	1.417E+01	1.256E+01	7.229E+00	NOT IDENT.
I-126	2.792E-02	4.670E-01	3.438E-01	2.383E-01	NOT IDENT.
SB-126	-1.993E-01	2.533E-01	2.115E-01	1.293E-01	NOT IDENT.
SB-127	1.227E+00	1.358E+00	1.217E+00	6.927E-01	NOT IDENT.
I-131	-6.100E-04	1.616E-01	1.455E-01	8.247E-02	NOT IDENT.
TE-132	-1.858E-01	4.980E-01	4.341E-01	2.541E-01	NOT IDENT.
BA-133	-2.063E-02	9.575E-02	7.516E-02	4.885E-02	NOT IDENT.
I-133	-1.144E+02	3.613E+02	0.000E+00	1.843E+02	SHORT HLIF
CS-134	-5.360E-02	1.108E-01	9.365E-02	5.655E-02	NOT IDENT.
CS-135	6.618E-02	2.976E-01	2.634E-01	1.518E-01	NOT IDENT.
I-135	-7.469E+10	9.412E+10	0.000E+00	4.802E+10	SHORT HLIF
CS-136	8.817E-02	2.287E-01	1.988E-01	1.167E-01	NOT IDENT.
CE-139	-4.444E-03	4.649E-02	4.220E-02	2.372E-02	NOT IDENT.
BA-140	-5.338E-01	4.987E-01	3.745E-01	2.545E-01	NOT IDENT.
LA-140	-3.148E-02	1.101E-01	8.776E-02	5.619E-02	NOT IDENT.
CE-141	4.156E-03	8.903E-02	8.212E-02	4.542E-02	NOT IDENT.
CE-143	5.211E+01	3.157E+01	2.494E+01	1.611E+01	NOT IDENT.
CE-144	-2.602E-01	3.163E-01	2.809E-01	1.614E-01	NOT IDENT.
PM-144	5.085E-03	7.940E-02	6.740E-02	4.051E-02	NOT IDENT.
PR-144	2.931E-01	5.923E+00	5.023E+00	3.022E+00	NOT IDENT.
PM-146	4.401E-02	9.850E-02	8.877E-02	5.025E-02	NOT IDENT.
ND-147	4.711E-01	9.290E-01	8.303E-01	4.740E-01	NOT IDENT.
PM-149	3.396E+01	4.418E+01	3.967E+01	2.254E+01	NOT IDENT.
EU-152	-1.645E-01	2.356E-01	1.657E-01	1.202E-01	FAIL ABUN
GD-153	-2.801E-02	1.260E-01	9.752E-02	6.430E-02	NOT IDENT.
EU-154	-1.709E-03	1.917E-01	1.650E-01	9.783E-02	FAIL ABUN
EU-155	-7.109E-02	1.583E-01	1.358E-01	8.075E-02	FAIL ABUN
TB-160	-4.601E-02	3.643E-01	3.120E-01	1.859E-01	FAIL ABUN
HO-166M	1.432E-02	1.419E-01	1.205E-01	7.239E-02	NOT IDENT.
TA-182	-1.981E-03	3.004E-01	2.598E-01	1.533E-01	NOT IDENT.
IR-192	-5.275E-02	6.864E-02	5.659E-02	3.502E-02	FAIL ABUN
HG-203	3.061E-03	6.687E-02	5.850E-02	3.412E-02	NOT IDENT.
BI-207	-1.840E-02	1.439E-01	1.206E-01	7.340E-02	FAIL ABUN
PB-210	-2.964E+00	1.240E+00	1.050E+00	6.327E-01	NOT IDENT.
PB-211	2.526E-01	1.620E+00	1.451E+00	8.265E-01	NOT IDENT.
BI-212	6.988E-01	1.164E+00	1.059E+00	5.936E-01	NOT IDENT.
BI-214	6.723E-01	2.787E-01	1.896E-01	1.422E-01	FAIL ABUN
RN-219	-9.111E-03	8.971E-01	8.003E-01	4.577E-01	NOT IDENT.
RA-223	-1.556E+00	1.423E+00	1.131E+00	7.258E-01	NOT IDENT.
RA-224	5.138E+00	1.541E+00	1.342E+00	7.864E-01	NOT IDENT.
RA-226	6.723E-01	2.787E-01	1.896E-01	1.422E-01	FAIL ABUN
AC-227	2.384E-01	4.976E-01	4.466E-01	2.539E-01	NOT IDENT.
TH-227	2.384E-01	4.978E-01	4.466E-01	2.540E-01	NOT IDENT.
AC-228	1.636E+00	6.035E-01	4.493E-01	3.079E-01	FAIL ABUN
RA-228	1.636E+00	6.035E-01	4.493E-01	3.079E-01	FAIL ABUN
TH-229	-7.322E-04	9.136E-01	8.226E-01	4.661E-01	FAIL ABUN
PA-231	7.288E-01	2.878E+00	2.538E+00	1.468E+00	NOT IDENT.
TH-231	-1.556E+00	1.423E+00	1.131E+00	7.258E-01	NOT IDENT.
TH-232	1.636E+00	6.035E-01	4.493E-01	3.079E-01	FAIL ABUN
PA-233	1.019E-02	1.280E-01	1.111E-01	6.533E-02	NOT IDENT.
PA-234	2.740E-02	9.270E-01	7.955E-01	4.730E-01	NOT IDENT.
PA-234M	2.840E+00	1.249E+01	1.080E+01	6.371E+00	NOT IDENT.
TH-234	-5.076E-01	1.244E+00	1.074E+00	6.348E-01	NOT IDENT.
U-235	-1.405E-01	3.224E-01	2.913E-01	1.645E-01	FAIL ABUN
NP-237	4.827E+00	1.206E+00	5.042E-01	6.153E-01	NOT IDENT.
U-238	-5.076E-01	1.244E+00	1.074E+00	6.348E-01	NOT IDENT.
NP-239	-1.894E-01	6.694E-01	5.445E-01	3.415E-01	NOT IDENT.
CM-247	2.011E-03	8.230E-02	7.353E-02	4.199E-02	NOT IDENT.
CF-249	-2.954E-02	8.681E-02	7.642E-02	4.429E-02	NOT IDENT.
CF-251	5.556E-02	2.125E-01	1.948E-01	1.084E-01	NOT IDENT.

ANH-511	6.818E-02	7.955E-02	7.647E-02	4.059E-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	746.5900
49.72	862.2397
57.36	1107.8119
59.54	850.1638
63.29	431.3137
63.29	431.3137
64.28	396.3606
67.75	439.2723
69.67	460.9927
70.83	472.7637
72.81	447.7689
72.87	447.8308
72.87	447.8308
74.82	451.9778
74.82	451.9778
74.82	451.9778
74.97	452.1312
77.11	454.3098
77.11	454.3098
77.11	454.3098
79.69	412.5078
79.80	412.6066
80.12	396.6378
80.19	396.6973
80.57	427.9388
81.00	459.2806
81.07	459.3494
81.07	459.3494
83.79	457.1022
83.79	457.1022
85.43	429.0793
86.48	492.6205
86.55	492.6912
86.79	527.5513
86.94	527.7173
87.57	392.9963
88.03	393.3650
88.47	393.7172
89.96	394.9011
91.11	395.8090
92.59	396.9693
92.59	396.9693
93.35	397.5612
94.67	262.9312
94.87	251.3054
94.87	251.3054
95.86	270.2491
97.43	259.2758
98.44	248.3012
99.53	273.8261
100.11	278.6351
103.18	254.1248
103.37	268.9660
105.31	290.4132
106.12	287.4144
109.28	272.9710
111.00	271.4910
111.76	291.4310
116.30	265.8342
117.23	267.8766
121.12	272.4123
121.78	268.8391
122.06	268.9617
123.07	269.4029
131.20	269.3167
133.52	296.2313
136.00	247.0409

136.47	255.3058
140.51	275.8362
140.51	0.0000
143.76	274.4225
144.24	261.8833
144.24	261.8833
145.44	258.6924
152.43	247.4610
153.25	259.7149
154.21	275.7365
154.21	275.7365
156.02	267.1782
158.56	238.4160
159.00	245.9830
162.66	262.1147
163.33	251.1429
165.86	238.8660
176.60	238.3707
177.52	231.0384
181.07	230.7174
184.41	257.7401
185.72	263.1422
193.51	253.9564
197.04	254.0286
205.31	252.5001
210.85	252.0798
215.65	264.3339
222.11	247.1545
227.38	251.5430
228.16	244.6982
228.18	244.7038
235.69	248.4214
235.96	248.4887
235.96	248.4887
238.63	295.1618
238.63	295.1618
240.99	235.0564
242.00	232.0240
244.70	320.6470
252.40	236.2523
252.80	247.6959
256.23	220.5533
256.23	220.5533
260.90	227.7686
264.66	212.9150
268.22	213.6185
269.46	207.5713
269.46	207.5713
271.23	203.7065
273.65	234.6747
276.40	201.4978
277.37	209.0668
277.60	208.0530
278.00	213.4106
279.20	194.6016
279.54	208.4137
280.46	208.5851
283.69	204.9359
284.31	206.1102
285.41	192.4837
285.90	189.3749
287.50	213.0798
293.27	195.3029
295.22	226.3060
295.96	252.4194
298.57	216.8424
299.98	232.6080
299.98	232.6080
300.09	232.6295
300.09	232.6295
300.13	232.6377
301.36	218.0924
302.85	241.8076
304.50	208.6318
304.50	208.6318
304.85	181.6608
308.46	189.7987
311.90	180.5493

316.51	206.3410
319.41	207.9198
320.08	200.3657
323.87	233.9243
323.87	233.9243
328.76	155.4537
333.37	216.8752
334.37	273.5200
334.37	273.5200
338.28	174.3851
338.28	174.3851
338.32	174.3899
338.32	174.3899
338.32	174.3899
340.48	188.0311
340.55	188.0414
344.28	198.1767
351.06	203.0091
351.93	203.1417
356.01	171.1136
364.49	176.7164
366.42	154.2783
383.85	162.6404
388.16	193.5450
388.63	188.9994
391.69	186.6281
400.66	208.2281
401.81	187.9226
402.40	187.0684
404.85	193.9031
410.95	197.5034
414.70	185.7966
423.72	171.7958
427.09	184.4692
427.87	185.5085
433.94	180.5302
453.88	165.4828
463.37	181.9276
468.07	195.0598
473.00	169.3569
476.78	159.9841
477.60	161.0361
487.02	144.2653
492.35	153.5720
497.08	156.9523
511.00	138.2975
514.00	249.1562
527.90	137.5887
529.87	0.0000
531.02	114.6874
537.26	144.3476
546.56	0.0000
563.25	118.7159
569.33	120.1164
569.50	117.0476
569.70	116.0319
583.19	112.0097
600.60	114.7266
602.73	133.9886
604.72	137.6007
609.32	118.7095
609.32	118.7095
610.33	104.7949
614.28	89.2479
618.01	125.1708
621.93	103.2780
621.93	103.2780
633.25	98.5378
635.95	122.0050
636.99	108.2654
645.85	91.6627
657.76	108.9591
661.66	136.3545
661.66	136.3545
664.57	111.0909
666.33	114.7656
666.50	114.7760
677.62	91.9229

685.70	92.2549
695.00	96.9939
696.49	112.3243
696.51	112.3243
697.00	116.7125
702.65	103.8784
706.68	111.7293
711.68	105.3844
720.70	120.3019
721.93	124.9600
722.78	117.6510
722.91	117.6589
723.31	110.3223
724.19	99.3274
727.33	104.9871
733.00	85.8517
735.93	100.7460
739.50	99.9712
747.24	117.9385
752.31	95.8500
753.82	94.9796
756.73	98.8229
763.94	102.8542
765.81	117.9045
766.42	114.1888
777.92	100.6151
778.90	103.4764
783.70	87.6530
785.37	96.1998
795.86	121.2240
801.95	106.3239
810.29	105.7178
810.76	104.7856
815.77	111.6680
818.51	101.2771
832.01	120.0485
834.85	109.6025
836.80	0.0000
846.77	127.4775
856.80	109.5377
860.56	104.8359
871.09	106.2169
873.19	121.9025
875.33	0.0000
879.36	118.2675
880.51	112.4497
883.24	123.3289
884.68	120.4550
889.28	114.7696
898.04	127.9211
911.20	135.5804
911.20	135.5804
911.20	135.5804
926.50	126.2274
937.49	145.6644
944.13	133.9973
946.00	142.0896
949.00	140.2307
962.29	183.1238
964.08	174.1721
966.15	130.9733
968.97	135.1314
968.97	135.1314
968.97	135.1314
983.53	115.5215
996.26	102.7775
1001.03	103.9569
1004.73	111.2243
1037.84	96.9413
1038.76	0.0000
1048.07	98.2896
1050.41	103.5400
1050.41	103.5400
1063.66	108.1260
1085.87	121.4328
1099.45	110.3705
1112.07	119.2303
1115.54	138.3666

1120.29	98.3660
1120.29	98.3660
1120.55	98.3735
1121.30	88.8740
1131.51	0.0000
1173.23	65.5249
1177.93	60.8484
1189.05	44.2398
1204.77	36.2292
1221.41	44.7974
1231.02	50.5308
1235.36	33.7268
1238.28	29.0657
1260.41	0.0000
1271.85	29.3306
1274.44	32.1916
1274.54	32.1916
1291.59	23.7776
1298.22	0.0000
1312.11	27.7317
1332.49	34.6063
1365.19	21.3255
1368.63	0.0000
1384.29	20.4536
1408.01	35.2693
1457.56	0.0000
1460.82	22.8219
1489.16	12.9859
1505.03	22.0575
1596.21	18.4231
1620.50	13.3763
1678.03	0.0000
1690.97	11.4903
1764.49	8.4841
1764.49	8.4841
1770.23	44.5942
1771.35	36.1084
1791.20	0.0000
1836.06	16.9431

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202054958

Total Uranium Activity	-1.5752E+00	ug/g
Total Uranium Counting Unc.	3.7047E+00	ug/g
Total Uranium Tpu	1.8901E-06	ug/g
Total Uranium Mda	3.1994E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 958221                          SAMPLE ID   : G1202054958
*  ANALYST       : MXR1                             DETECTOR    : GAM13
*  SAMPLE DATE   : 3-MAR-2010 00:00:00.00          COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 13-MAR-2010 14:40:01.04          SAMPLE ALQT  : 155.440 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.674E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.930E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.801E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.365E+00

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Radiochemistry Batch Checklist, Rev10

Batch# 964052 Product: H3 Date: 3/23/10

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

GEL Laboratories, LLC

RADcheckdistrev10, revised 1/13/2010

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

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

LANL

3/14 - 3/25

Tritium Que Sheet

11-MAR-10

95 / Vacuum

Batch #: 964052

Analyst: KKK2 First Client Due Date 25-MAR-10 Internal Due Date: 14-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: 3/14/10

Initials: KKK Pipet ID: 2970968 Witness: PL 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)	Moisture % (mL)
248030001-1	RE15-10-7902	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	45-2	1		462.90	390.69	72.21
248030002-1	RE15-10-7901	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	60-4	3		266.44	173.99	92.45
248030003-1	RE15-10-8027	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	45-1	2		328.78	250.53	78.25
248030004-1	RE15-10-8028	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	45-2	3		514.93	459.32	55.61
248030005-1	RE15-10-8030	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	44-3	4		537.07	489.81	47.26
248030006-1	RE15-10-8031	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	44-4	5		513.41	409.70	103.71
248030007-1	RE15-10-8029	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	44-5	6		423.38	324.31	99.07
248030008-1	RE15-10-8032	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	44-6	7		556.76	484.94	71.82
248030009-1	RE15-10-8067	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	19-FEB-10	10	44-7	8		462.31	379.56	82.75
248112001-1	RE15-10-8404	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-8	9		393.86	356.84	37.02
248112002-1	RE15-10-8396	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-9	10		420.06	383.51	36.55
248112003-1	RE15-10-8393	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-10	11		500.15	400.10	100.05
248112004-1	RE15-10-8395	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-11	12		347.22	331.94	15.28
248112005-1	RE15-10-8398	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-12	13		373.37	325.58	47.79
248112006-1	RE15-10-8394	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-13	14		370.87	332.67	38.20
248112007-1	RE15-10-8399	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-14	15		2435.92	284.92	51.00
248112008-1	RE15-10-8397	SAMPLE		.25 pCi/mL SOIL	LANL010	LANL010	22-FEB-10	10	44-15	16		511.47	480.21	31.20
1202068207-1	MB for batch 964052	MB		.25 pCi/mL SOIL	QC ACCOUNT	QC ACCOUNT	22-FEB-10	10	44-16	17		20.00	0.00	20.00
1202068208-1	RE15-10-8394(248112006DUP)	DUP		.25 pCi/mL SOIL	QC ACCOUNT	QC ACCOUNT	22-FEB-10	10	44-17	18		370.87	332.67	38.20
1202068209-1	LCS for batch 964052	LCS		.25 pCi/mL SOIL	QC ACCOUNT	QC ACCOUNT	22-FEB-10	10	44-18	19		20.00	0.00	20.00

Bkg Rack #: 454-1

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) 4140127, LS6000 (Brown) 7060655, Wallac (Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange D606095168

Calibration Used : Ecoscint Ultra (10 mL sample/13 mL Ecoscint Ultra)
Data Reviewed By: KKK 3/23/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

DATE	3/15/2010	INITIALS	KXK2	BATCH NUMBER	964052	
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
248030001	462.90	0.156	72.21	390.69	10	
248030002	266.44	0.347	92.45	173.99	10	
248030003	328.78	0.238	78.25	250.53	10	
248030004	514.93	0.108	55.61	459.32	10	
248030005	537.07	0.088	47.26	489.81	10	
248030006	513.41	0.202	103.71	409.70	10	
248030007	423.38	0.234	99.07	324.31	10	
248030008	556.76	0.129	71.82	484.94	10	
248030009	462.31	0.179	82.75	379.56	10	
248112001	393.86	0.094	37.02	356.84	10	
248112002	420.06	0.087	36.55	383.51	10	
248112003	500.75	0.201	100.65	400.10	10	
248112004	347.22	0.044	15.28	331.94	10	
248112005	373.37	0.128	47.79	325.58	10	
248112006	370.87	0.103	38.20	332.67	10	
248112007	435.92	0.117	51.00	384.92	10	
248112008	511.47	0.061	31.20	480.27	10	
MB	20.00	1.000	20.00	0.00	10	
DUP	370.87	0.103	38.20	332.67	10	
LCS	20.00	1.000	20.00	0.00	10	

Tritium Solid

Filename : H3VAC.XLS
File type : Excel
Version # : 1.2.6

Batch : 964052
Analyst : KKK2
Prep Date : 3/14/2010

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry: 10mL DW/13mL
Eoscient Ultra

Spike S/N :
Spike Exp Date :
Spike Activity (dpm/ml):
Spike Volume Added:

Pipet, 0.1 ml Stdev : +/-
Pipet, 0.5 ml Stdev : +/-
Pipet, 1.0 ml Stdev : +/-
Pipet, 5.0 ml Stdev : +/-

LCS S/N : 0134-K
LCS Exp Date : 3/27/2010
LCS Activity (dpm/ml): 2456.44
LCS Volume Added: 0.10

Procedure Code : LSC_VH3S
Paramname : Tritium
Required MDC : 250 pC/L
Half-life of Tritium : 12.32 years

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	248030001.1	462.90	0.0722	0.0100	2.5729E-05	390.69	15.60%	1	2/19/2010 12:00
2	248030002.1	266.44	0.0825	0.0100	2.5729E-05	173.99	34.70%	2	2/19/2010 12:00
3	248030003.1	328.78	0.0783	0.0100	2.5729E-05	250.53	23.80%	3	2/19/2010 12:00
4	248030004.1	514.93	0.0556	0.0100	2.5729E-05	459.32	10.80%	4	2/19/2010 12:00
5	248030005.1	537.07	0.0473	0.0100	2.5729E-05	489.81	8.80%	5	2/19/2010 12:00
6	248030006.1	513.41	0.1037	0.0100	2.5729E-05	409.70	20.20%	6	2/19/2010 12:00
7	248030007.1	423.36	0.0991	0.0100	2.5729E-05	324.31	23.40%	7	2/19/2010 12:00
8	248030008.1	556.76	0.0718	0.0100	2.5729E-05	484.94	12.90%	8	2/19/2010 12:00
9	248030009.1	462.31	0.0828	0.0100	2.5729E-05	379.58	17.90%	9	2/19/2010 12:00
10	248112001.1	383.86	0.0370	0.0100	2.5729E-05	356.84	9.40%	10	2/22/2010 12:00
11	248112002.1	420.06	0.0366	0.0100	2.5729E-05	383.51	8.70%	11	2/22/2010 12:00
12	248112003.1	500.75	0.1007	0.0100	2.5729E-05	400.10	20.10%	12	2/22/2010 12:00
13	248112004.1	347.22	0.0153	0.0100	2.5729E-05	331.94	4.40%	13	2/22/2010 12:00
14	248112005.1	373.37	0.0478	0.0100	2.5729E-05	326.58	12.80%	14	2/22/2010 12:00
15	248112006.1	370.87	0.0382	0.0100	2.5729E-05	332.67	10.30%	15	2/22/2010 12:00
16	248112007.1	435.92	0.0510	0.0100	2.5729E-05	384.92	11.70%	16	2/22/2010 12:00
17	248112008.1	511.47	0.0312	0.0100	2.5729E-05	480.27	6.10%	17	2/22/2010 12:00
18	1202068207.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	18	3/14/2010 0:00
19	1202068208.1	370.87	0.0382	0.0100	2.5729E-05	332.67	10.30%	15	2/22/2010 12:00
20	1202068209.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	19	3/14/2010 0:00

Page 2

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

Results		Decision Level	Critical Level	Required MDC	MDC	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	1 SIGMA Counting Uncertainty	1 SIGMA Total Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
Pos.	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	CPM	CPM	pCi/L	pCi/L						
1	166.5454	117.5825	250	245.5287	258.2526	0.300	0.300	1.150	0.345	77.4690	79.5296		SAMPLE				
2	200.6044	141.8284	250	300.5822	517.4508	0.197	0.197	2.240	0.441	101.9848	108.1653		SAMPLE				
3	163.3703	115.3408	250	240.8487	270.9520	0.282	0.282	1.230	0.347	76.3840	78.6806		SAMPLE				
4	161.5758	114.0739	250	238.2031	226.5811	0.329	0.329	1.040	0.343	74.6210	76.2714		SAMPLE				
5	166.7216	138.8871	250	294.7642	3078.5912	0.052	0.052	13.500	0.692	156.7275	265.5898		SAMPLE				
6	193.8747	136.8772	250	290.4986	328.1853	0.285	0.285	1.470	0.419	93.5698	96.3211		SAMPLE				
7	167.5261	118.2749	250	246.9754	212.3364	0.362	0.362	0.940	0.340	76.8601	78.2699		SAMPLE				
8	171.0791	120.7833	250	252.2135	188.8514	0.417	0.417	0.810	0.337	77.8093	78.8901		SAMPLE				
9	162.9202	115.0231	250	240.1851	221.8761	0.339	0.339	1.010	0.342	75.0938	76.6673		SAMPLE				
10	166.8401	117.7905	250	245.9840	251.9605	0.308	0.308	1.120	0.344	77.4554	79.4184		SAMPLE				
11	165.5189	116.8563	250	244.0133	446.3613	0.182	0.182	2.000	0.363	81.1104	86.8640		SAMPLE				
12	165.3992	116.7733	250	243.8399	84.7484	0.881	0.881	0.390	0.327	73.0082	73.2444		SAMPLE				
13	191.8702	135.4620	250	287.4950	344.6773	0.271	0.271	1.560	0.422	93.1935	96.2357		SAMPLE				
14	169.5968	119.7297	250	250.0133	182.0814	0.402	0.402	0.840	0.338	77.2868	78.4381		SAMPLE				
15	195.9181	138.3199	250	293.5604	318.1078	0.296	0.296	1.410	0.417	94.1514	98.7231		SAMPLE				
16	192.1451	135.8561	250	287.9070	358.4470	0.262	0.262	1.820	0.424	93.7197	96.9878		SAMPLE				
17	166.2390	117.3662	250	245.0779	150.1834	0.499	0.499	0.670	0.334	74.8888	75.6158		SAMPLE				
18	168.1966	118.7483	250	247.9840	52.1826	1.408	1.408	0.230	0.324	73.4372	73.5270		MB				
19	167.7064	118.4021	250	247.2412	187.6903	0.407	0.407	0.830	0.338	76.3784	77.4889	248112008.1	DUP	51.6%	0.3743	5532.5304	97.7%
20	288.7833	203.8835	250	452.8870	5405.3733	0.058	0.058	23.980	1.378	310.8991	488.2504		LCS				

PAGE: 1

ID: TRITIUM

18 MAR 2010 14:32

USER: 3

COMMENT: BLUE

PRESET TIME : 95.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : EDIT

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 RWM LIST : OFF

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

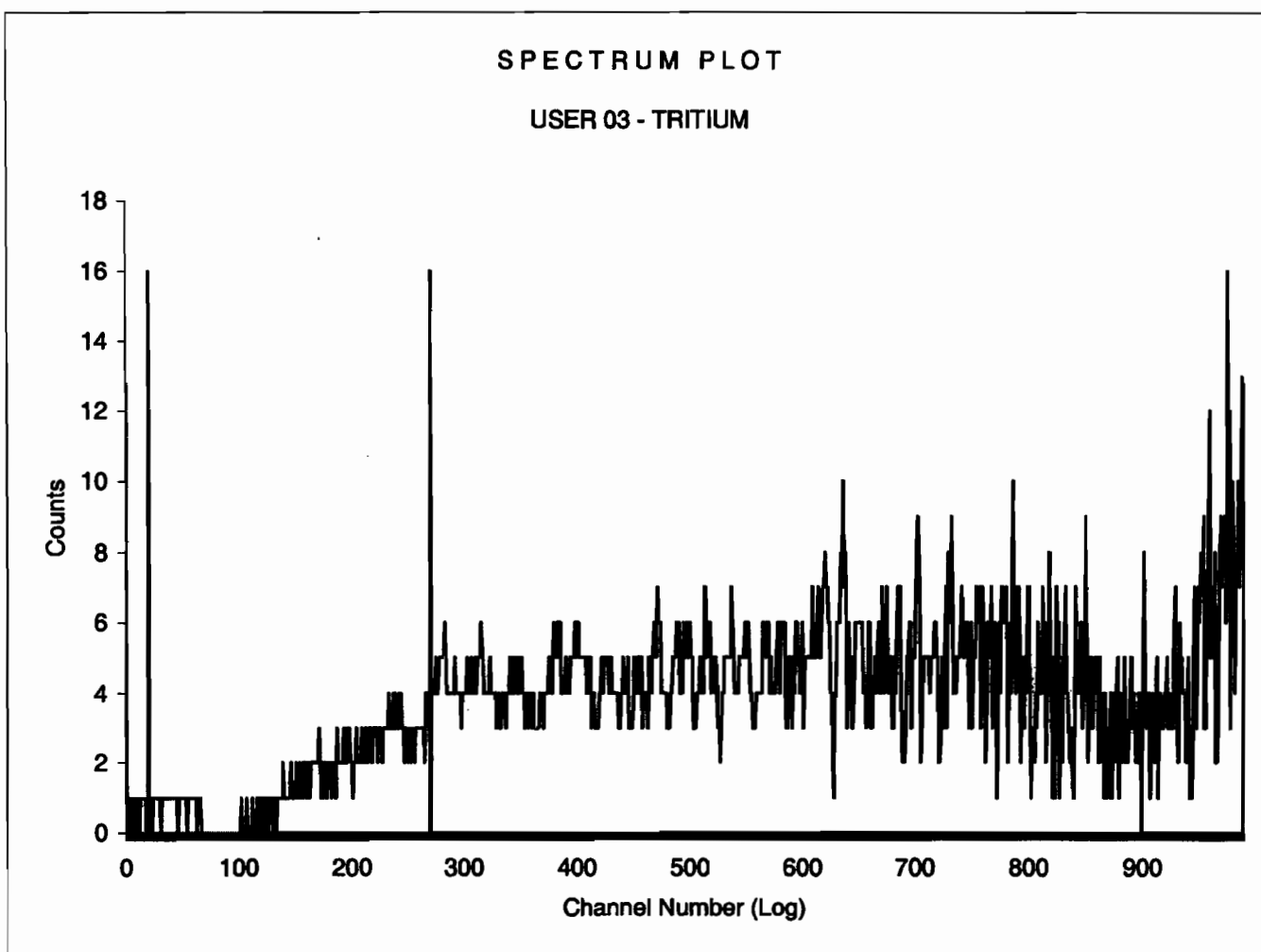
CHAN: 20.0 - 270.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 990.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

ALPHA-BETA DISCRIMINATION: NO

SAM NO	POS	TIME MIN	H#	<u>WIND1</u>		<u>WIND2</u>		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	1-1	95.00	123.0	3.91	14.46	39.48	3.42	8.26	100.02

Sample Count Start Time:	18 Mar 2010 14:38:38		
Data Capture Date	18 Mar 2010 16:13:10		
User Filename	S03031801-1A.XLS		
	U03031801-1A.XLS		
Spectrum Type	Log Counts		
User Number	03		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	1-1	95.00
H#, Total Counts:	123.0	4483	
Win1: Tritium - Start, End, Counts:	20	270	374
Win2: - Start, End, Counts:	0	990	3751



PAGE: 1

ID: TRITIUM

18 MAR 2010 16:13

USER: 4

COMMENT: BLUE

PRESET TIME : 40.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : EDIT

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 RWM LIST : OFF

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 20.0 - 270.0 %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		

MISSING SAMPLE

2	44-2	40.00	125.2	4.22	20.74	40.90	5.17	8.24	42.40
3	44-3	40.00	129.0	6.15	15.60	41.80	5.11	8.10	85.32
4	44-4	40.00	123.5	5.00	18.47	41.83	5.11	8.02	128.21
5	44-5	40.00	121.0	4.75	18.87	40.85	5.17	7.92	171.14
6	44-6	40.00	126.4	17.50	8.32	54.35	4.44	6.42	214.04
7	44-7	40.00	124.4	5.38	17.43	42.42	5.07	7.79	256.98
8	44-8	40.00	127.3	4.57	19.56	40.70	5.18	7.89	299.89
9	44-9	40.00	127.1	4.88	18.78	40.75	5.17	7.87	342.79
10	44-10	40.00	122.1	4.78	18.86	41.45	5.12	7.46	385.71
11	44-11	40.00	124.2	4.20	20.70	40.40	5.19	7.56	428.62
12	44-12	40.00	124.7	4.90	18.57	42.92	5.02	7.34	471.52
13	38-1	40.00	123.0	4.85	14.83	43.45	4.82	6.84	513.55
14	38-2	40.00	123.0	5.47	16.37	43.33	4.95	5.71	556.26

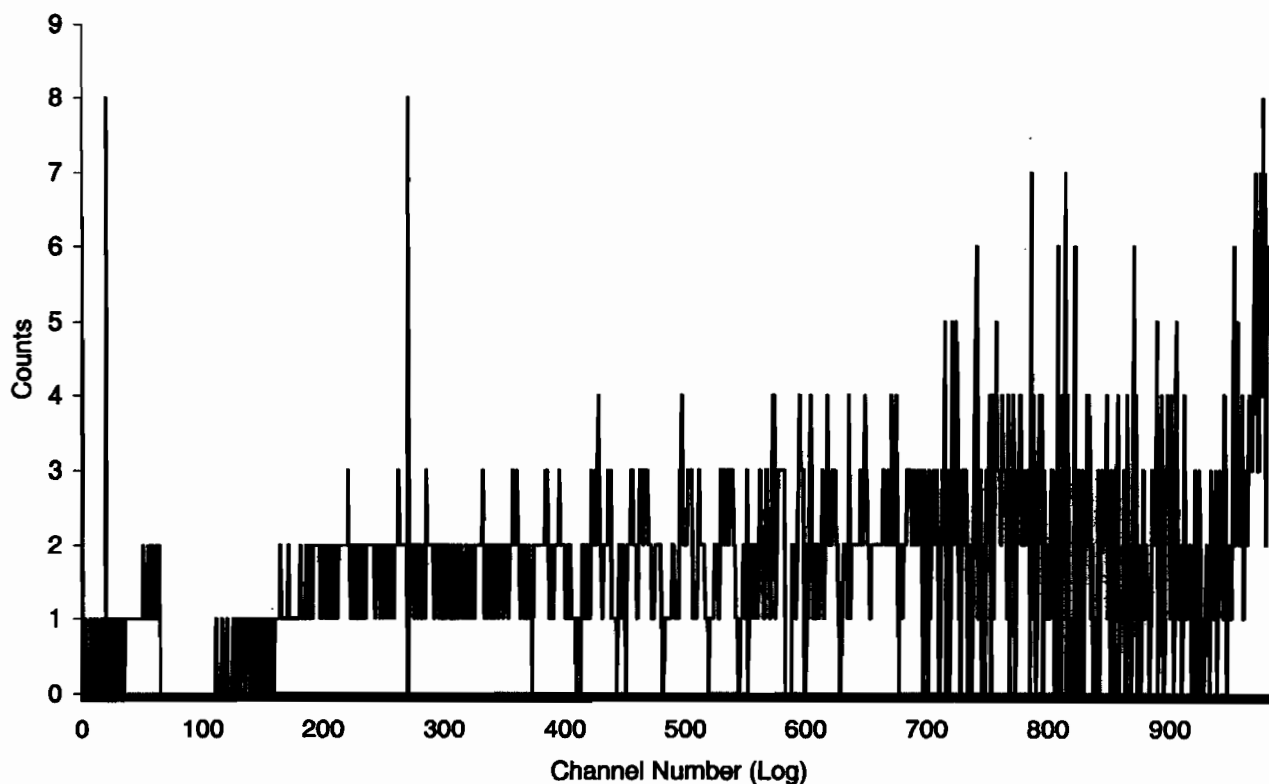
INSTRUMENT CALIBRATION: Mini 19 MAR 2010 01:33

Calibration successful

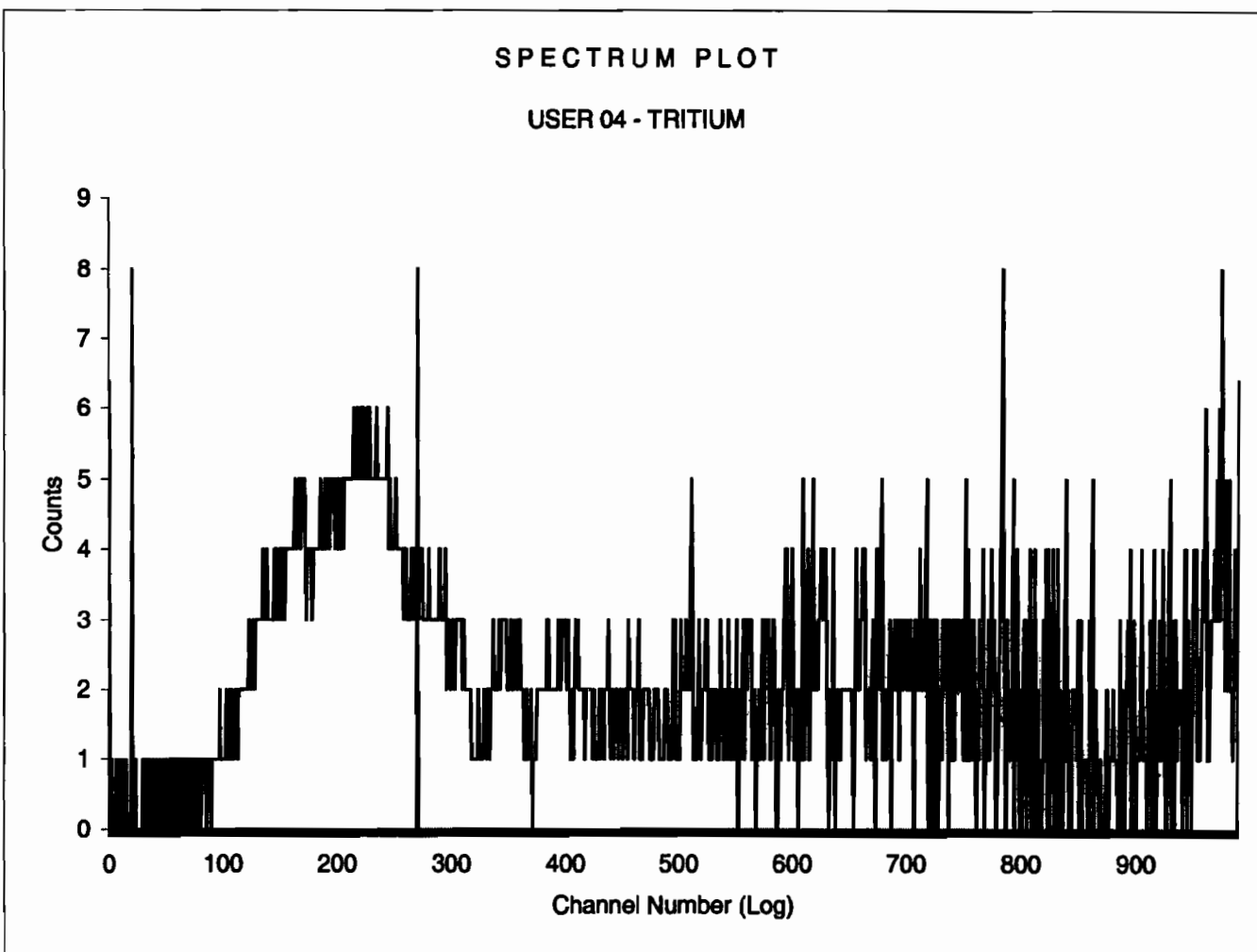
Sample Count Start Time:	18 Mar 2010 16:59:59		
Data Capture Date	18 Mar 2010 17:39:19		
User Filename	S04031844-3A.XLS		
	U04031844-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	44-3	40.00
H#, Total Counts:	129.0	1924	
Win1: Tritium - Start, End, Counts:	20	270	246
Win2: - Start, End, Counts:	0	990	1699

SPECTRUM PLOT

USER 04 - TRITIUM



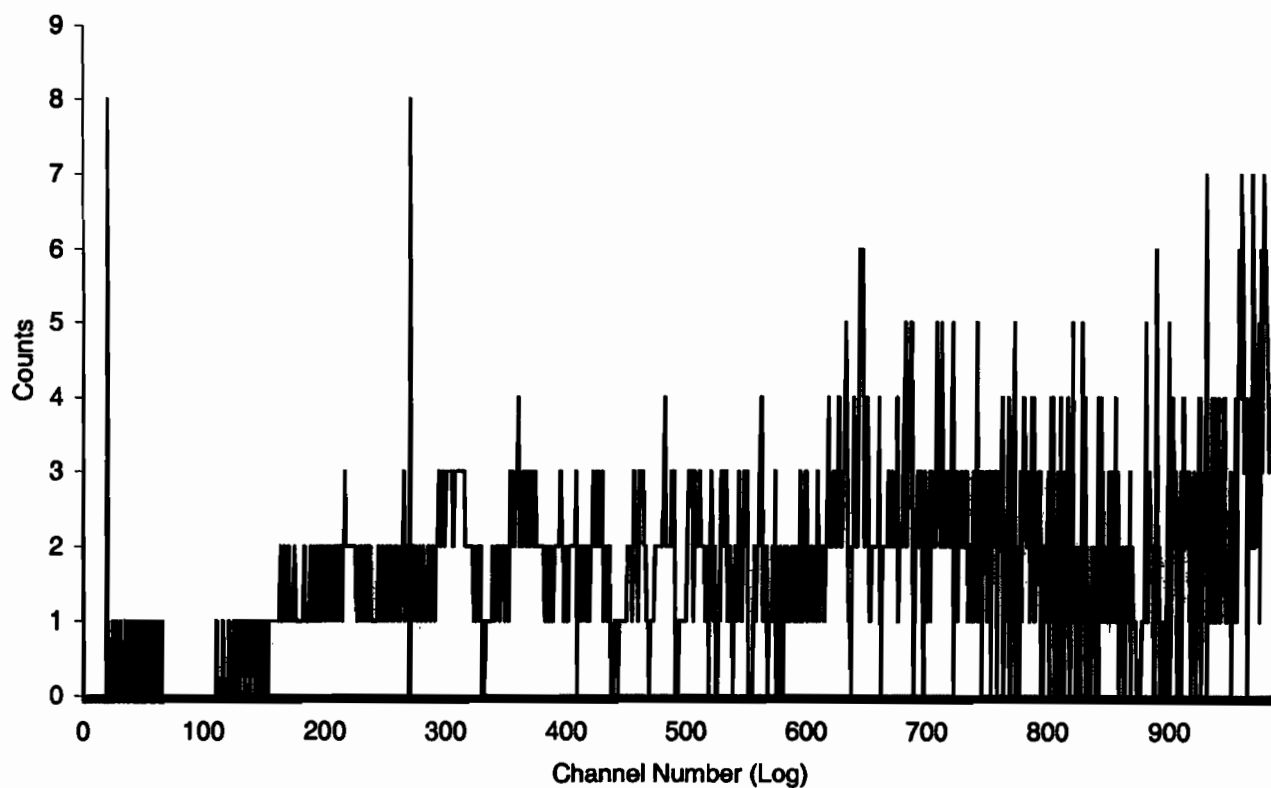
Sample Count Start Time:	18 Mar 2010 19:08:42		
Data Capture Date	18 Mar 2010 19:48:03		
User Filename	S04031844-6A.XLS		
	U04031844-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	44-6	40.00
H#, Total Counts:	126.4	2385	
Win1: Tritium - Start, End, Counts:	20	270	703
Win2: - Start, End, Counts:	0	990	2172



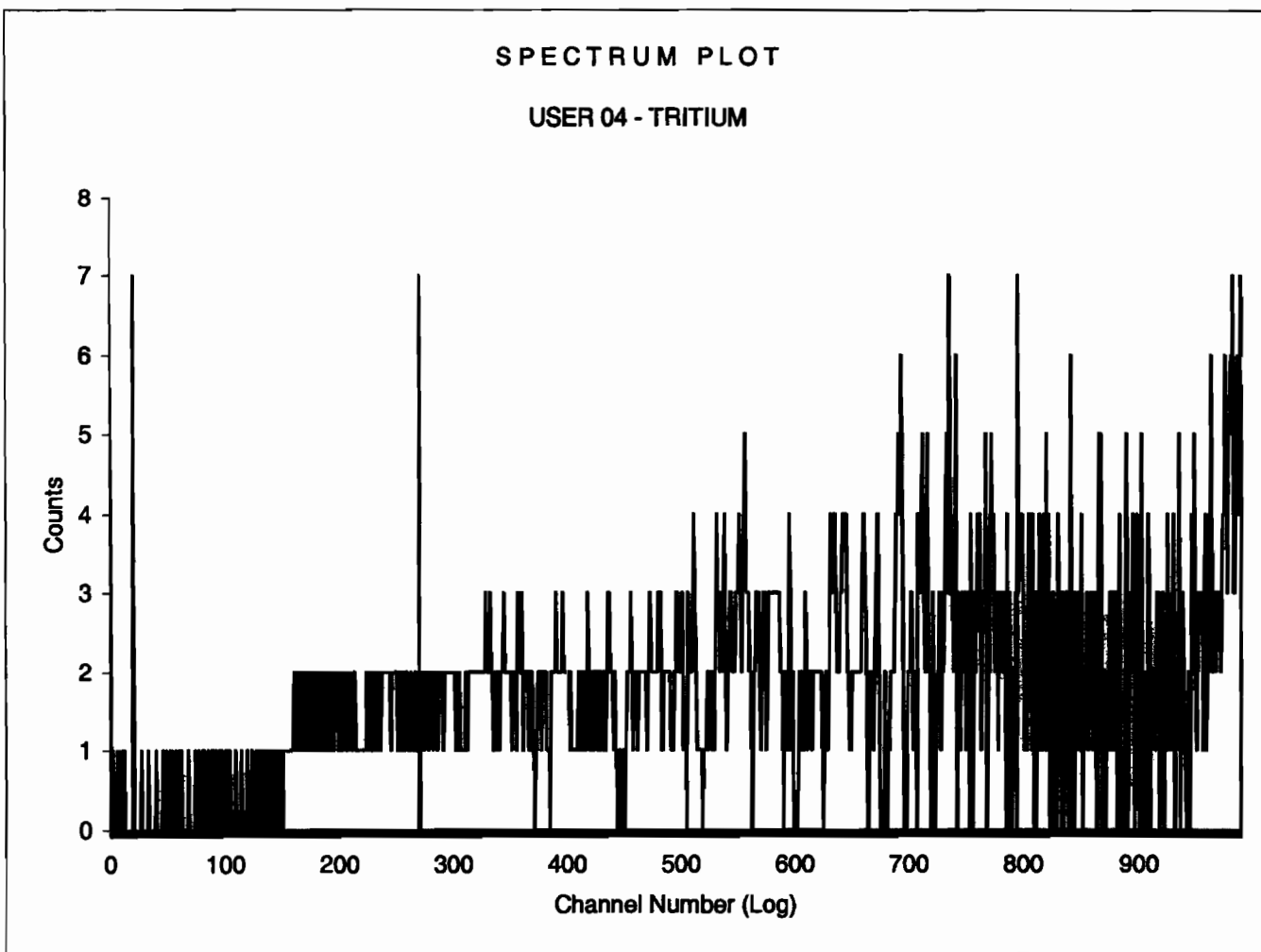
Sample Count Start Time:	18 Mar 2010 19:51:39		
Data Capture Date	18 Mar 2010 20:30:58		
User Filename	S04031844-7A.XLS		
	U04031844-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	44-7	40.00
H#, Total Counts:	124.4	1903	
Win1: Tritium - Start, End, Counts:	20	270	216
Win2: - Start, End, Counts:	0	990	1701

SPECTRUM PLOT

USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 00:50:56		
Data Capture Date	19 Mar 2010 01:30:16		
User Filename	S04031938-2A.XLS		
	U04031844-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	14	38-2	40.00
H#, Total Counts:	123.0	1998	
Win1: Tritium - Start, End, Counts:	20	270	219
Win2: - Start, End, Counts:	0	990	1737



PAGE: 1

ID: TRITIUM

19 MAR 2010 02:41

USER: 4

COMMENT: BLUE

PRESET TIME : 40.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : EDIT

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 RWM LIST : OFF

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 20.0 - 270.0 %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	POS	TIME	H#	WIND1		WIND2		LUMEX	ELAPSED
				CPM	%ERROR	CPM	%ERROR		

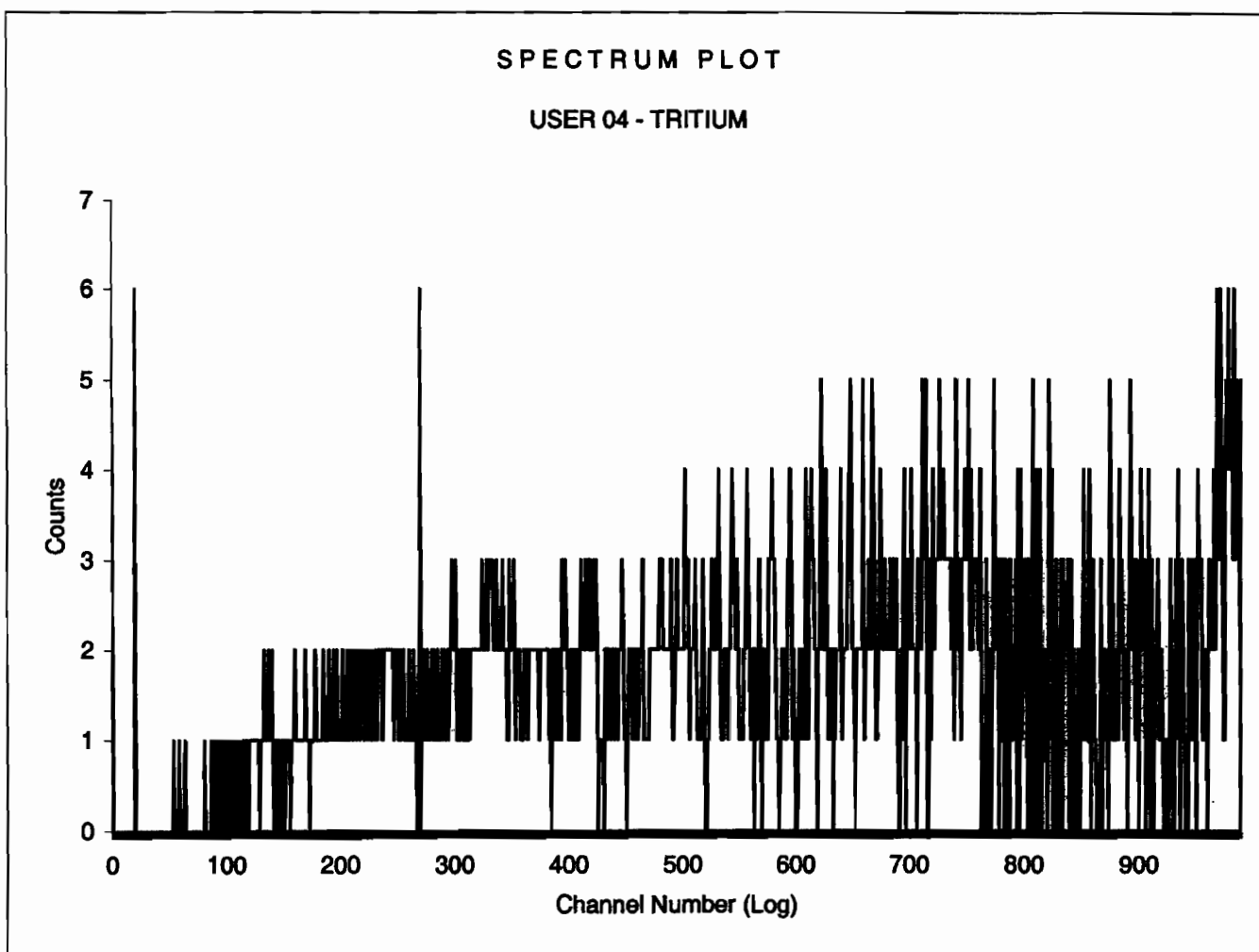
MISSING SAMPLE

3	60-3	40.00	127.4	4.80	15.20	40.25	5.02	1.43	41.53
4	60-4	40.00	125.9	5.32	14.36	41.35	4.95	1.45	83.57
5	60-5	40.00	123.2	5.53	14.11	41.70	4.93	1.45	125.62
6	60-6	40.00	125.7	4.53	18.67	42.30	5.03	6.30	170.50
7	60-7	40.00	126.8	3.95	16.75	41.90	4.91	1.06	210.49
8	60-8	40.00	127.3	4.68	18.41	41.50	5.08	6.35	253.35

3/23/10

3/23/10

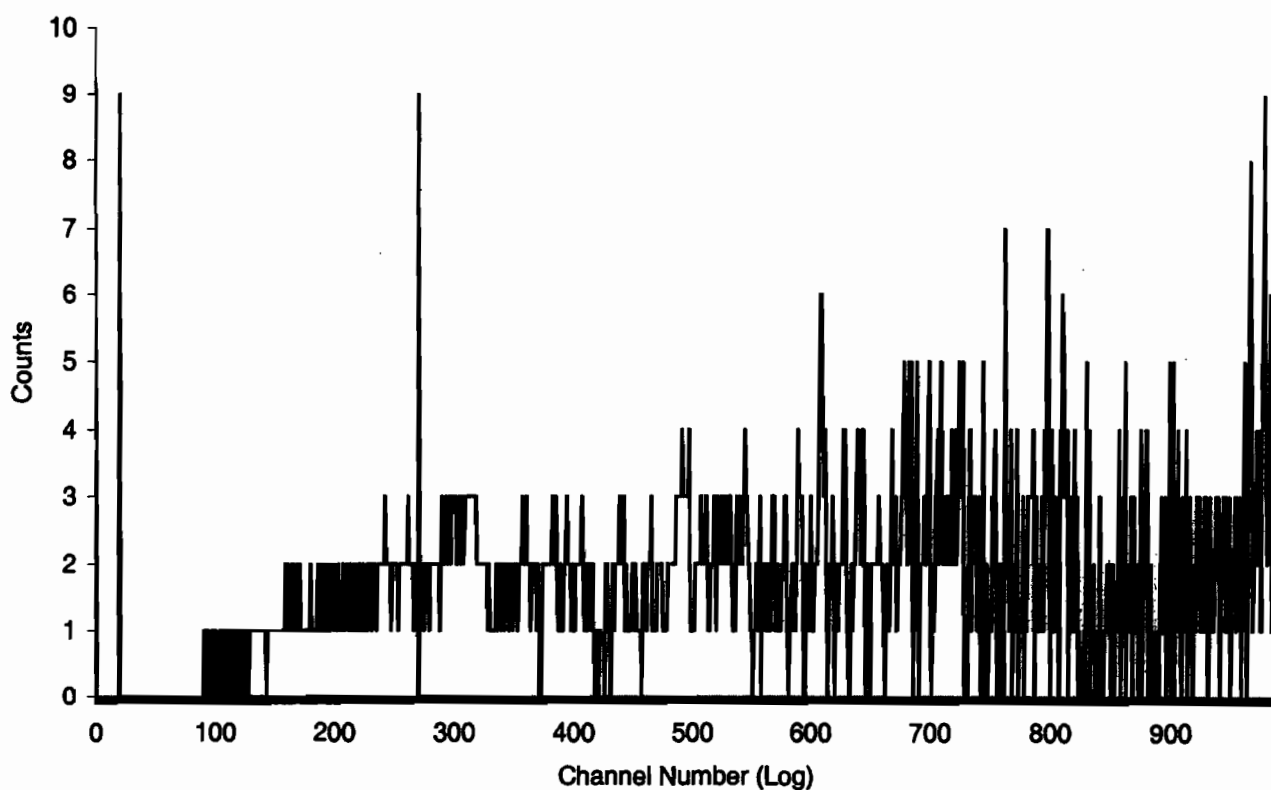
Sample Count Start Time:	19 Mar 2010 03:25:39		
Data Capture Date	19 Mar 2010 04:05:36		
User Filename	S04031960-4A.XLS		
	U04031960-3A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	60-4	40.00
H#, Total Counts:	125.9	1910	
Win1: Tritium - Start, End, Counts:	20	270	214
Win2: - Start, End, Counts:	0	990	1657



Sample Count Start Time:	19 Mar 2010 04:07:42		
Data Capture Date	19 Mar 2010 04:47:39		
User Filename	S04031960-5A.XLS		
	U04031960-3A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	60-5	40.00
H#, Total Counts:	123.2	1948	
Win1: Tritium - Start, End, Counts:	20	270	223
Win2: - Start, End, Counts:	0	990	1675

SPECTRUM PLOT

USER 04 - TRITIUM



PAGE: 1

ID: TRITIUM

19 MAR 2010 06:53

USER: 5

COMMENT: BLUE

PRESET TIME : 15.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : EDIT

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 RWM LIST : OFF

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 20.0 - 270.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 990.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

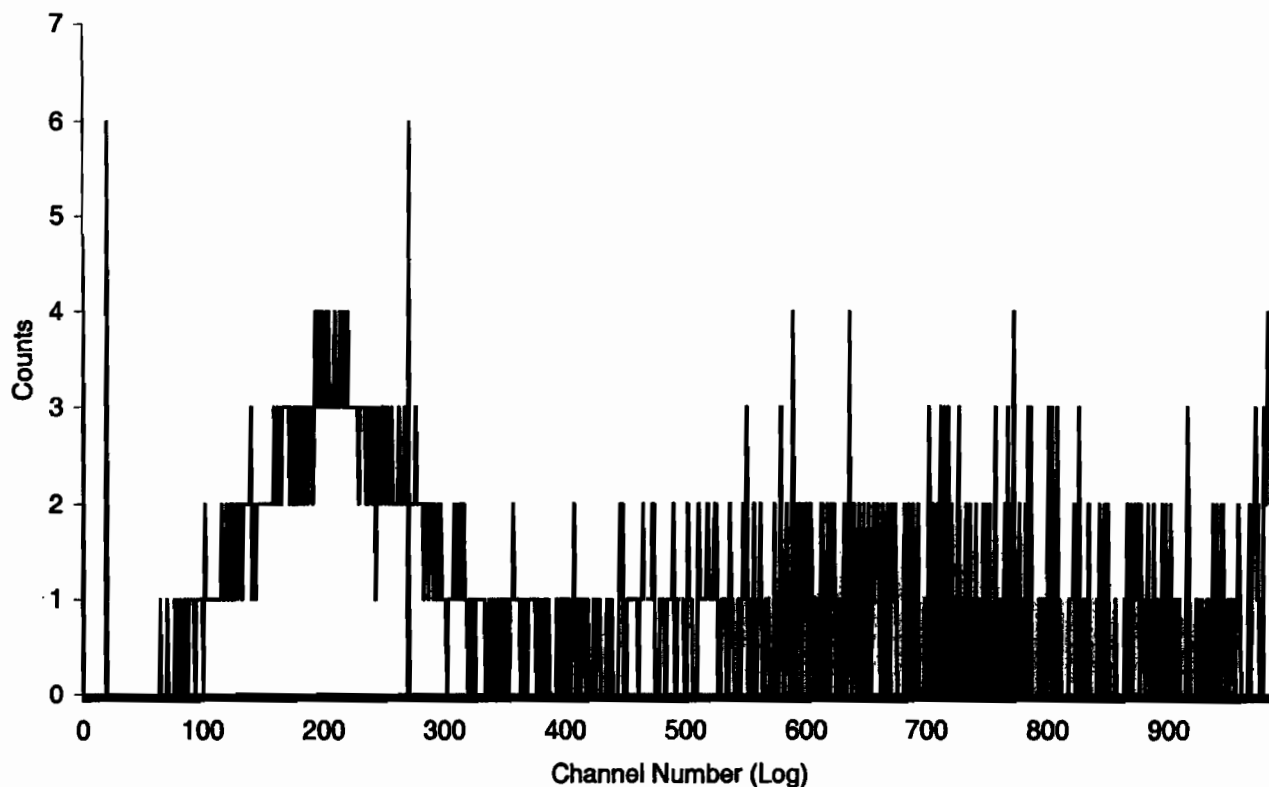
ALPHA-BETA DISCRIMINATION: NO

SAM NO	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	26-1	15.00	126.3	27.87	9.82	68.53	6.25	0.48	15.23

Sample Count Start Time:	19 Mar 2010 06:57:47		
Data Capture Date	19 Mar 2010 07:11:57		
User Filename	S05031926-1A.XLS		
	U05031926-1A.XLS		
Spectrum Type	Log Counts		
User Number	05		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	26-1	15.00
H#, Total Counts:	126.3	1112	
Win1: Tritium - Start, End, Counts:	20	270	420
Win2: - Start, End, Counts:	0	990	1029

SPECTRUM PLOT

USER 05 - TRITIUM



ID: TRITIUM

19 MAR 2010 07:32

USER: 4

COMMENT: BLUE

PRESET TIME : 65.00

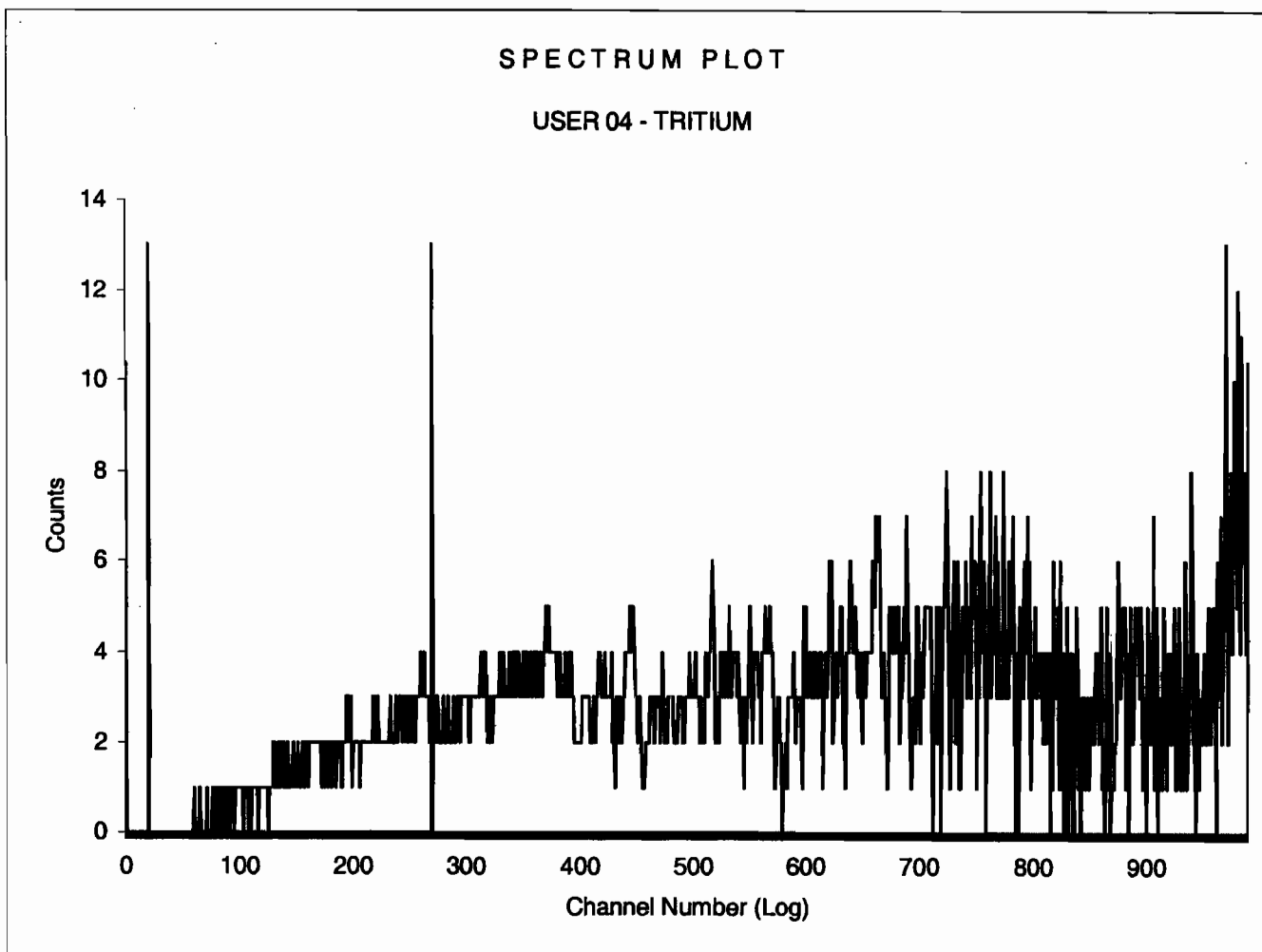
DATA CALC :	CPM	H# :	YES	SAMPLE REPEATS:	1	PRINTER	:EDIT
COUNT BLANK :	NO	IC# :	NO	REPLICATES :	1	RS232	:EDIT
TWO PHASE :	NO	ADC :	NO	CYCLE REPEATS :	1	DISK	: OFF
SCINTILLATOR:	LIQUID	LUMEX:	YES	LOW SAMPLE REJ:	0	RWM LIST	: OFF
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:	none				

CHAN:	20.0 - 270.0	%ERROR:	0.00	FACTOR:	1.000000	BKG. SUB:	0
CHAN:	0.0 - 990.0	%ERROR:	0.00	FACTOR:	1.000000	BKG. SUB:	0

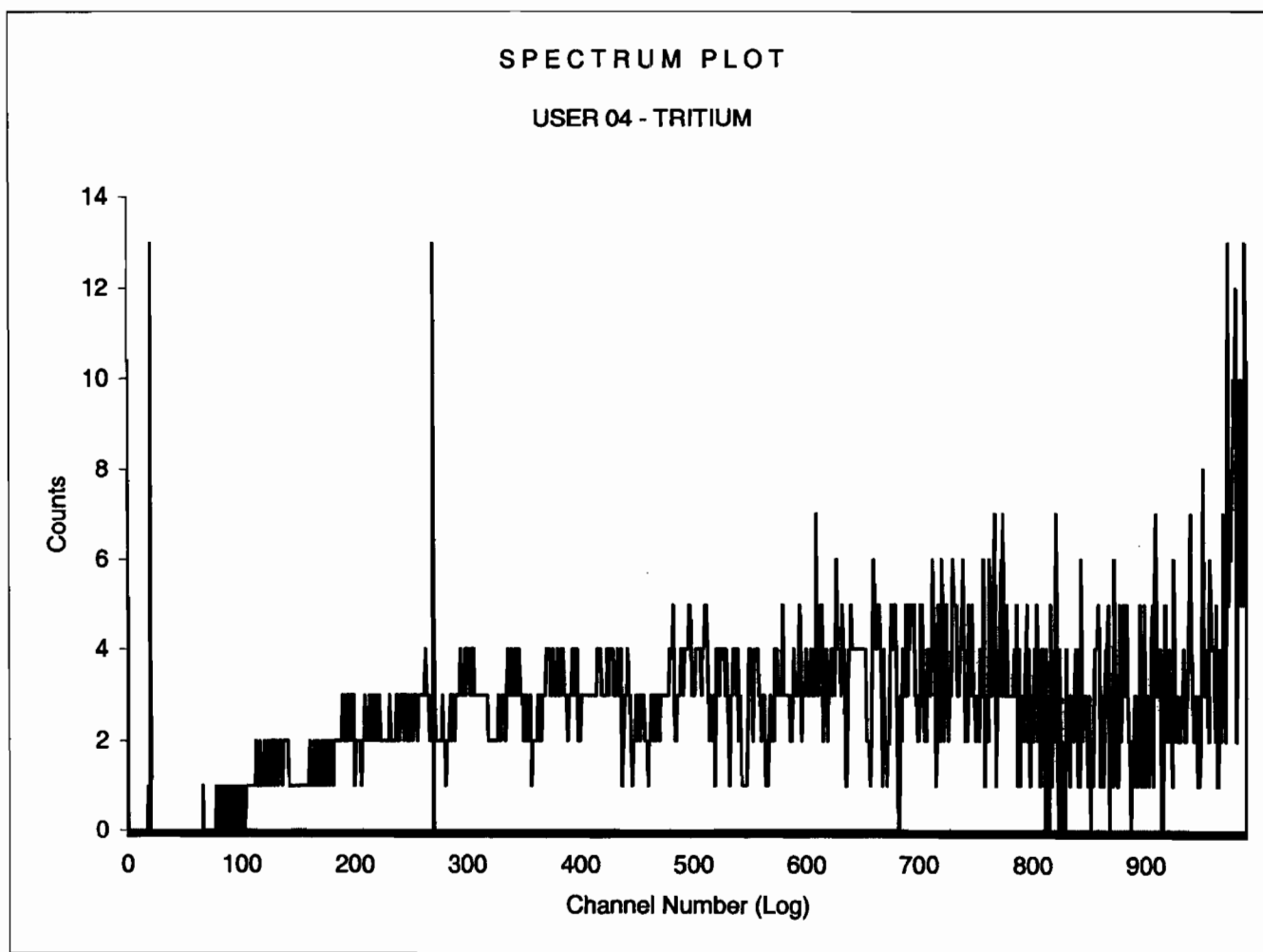
ALPHA-BETA DISCRIMINATION: NO

S#	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	1 **-1	65.00	125.2	5.06	11.34	42.66	3.81	0.71	66.97
3	2 **-2	65.00	122.5	5.14	11.22	40.83	3.89	0.70	134.46
4	3 **-3	65.00	120.9	4.95	13.88	42.11	3.95	0.71	203.51
7	4 **-4	65.00	126.0	4.85	13.94	40.14	4.06	0.64	272.56
8	5 **-5	65.00	128.8	4.72	14.70	41.66	3.99	0.87	341.63
9	6 **-6	65.00	122.1	4.92	11.56	41.14	3.88	0.85	409.15
10	7 **-7	65.00	125.5	5.03	11.46	41.29	3.88	0.91	476.71
11	8 **-8	65.00	124.4	5.91	10.53	43.54	3.78	0.86	544.23
12	9 **-9	65.00	124.3	4.29	12.46	39.98	3.94	0.90	611.75
14	10 **-10	65.00	127.7	4.75	11.76	40.48	3.92	0.86	679.27
17	11 **-11	65.00	125.0	4.58	12.06	40.25	3.93	0.95	746.80
18	12 **-12	65.00	127.0	4.14	12.71	40.54	3.91	0.90	814.33
19	13 38-1	65.00	126.2	4.74	11.83	42.22	3.83	0.88	881.98

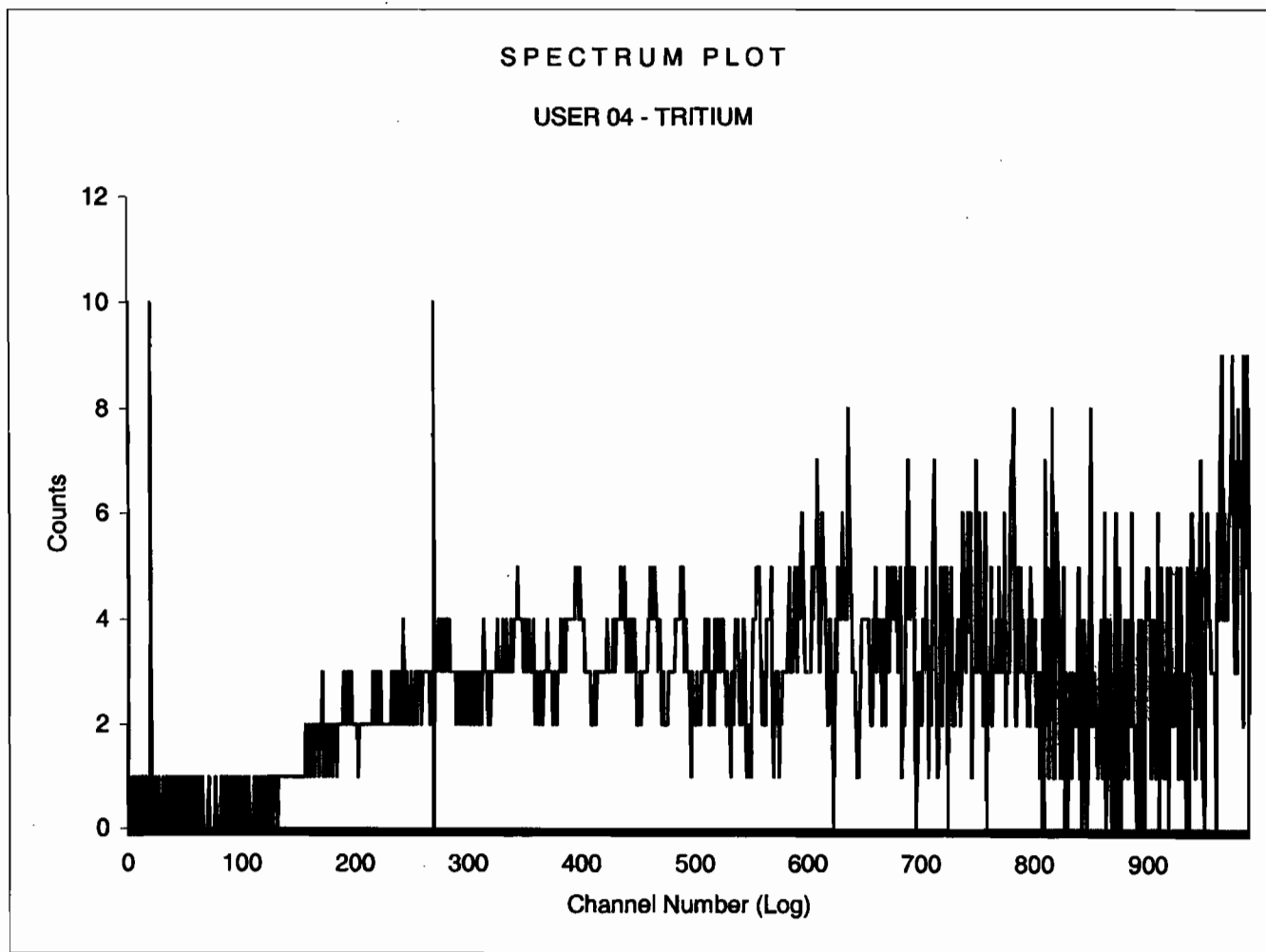
Sample Count Start Time:	19 Mar 2010 07:34:53		
Data Capture Date	19 Mar 2010 08:40:40		
User Filename	S040319---1A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	** -1	65.00
H#, Total Counts:	125.2	3170	
Win1: Tritium - Start, End, Counts:	20	270	332
Win2: - Start, End, Counts:	0	990	2775



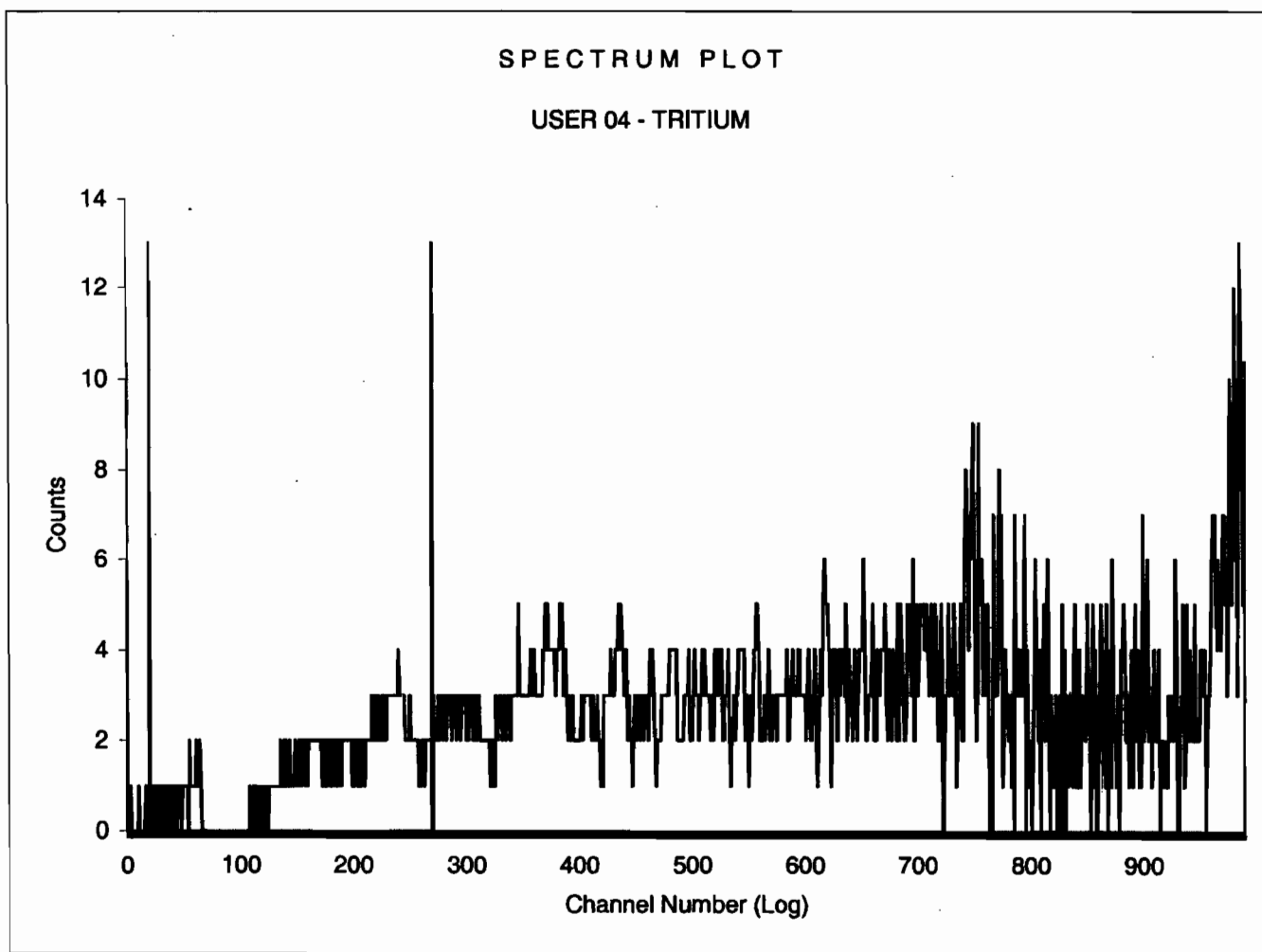
Sample Count Start Time:	19 Mar 2010 08:42:23		
Data Capture Date	19 Mar 2010 09:47:50		
User Filename	S040319---2A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	**2	65.00
H#, Total Counts:	122.5	3079	
Win1: Tritium - Start, End, Counts:	20	270	337
Win2: - Start, End, Counts:	0	990	2662



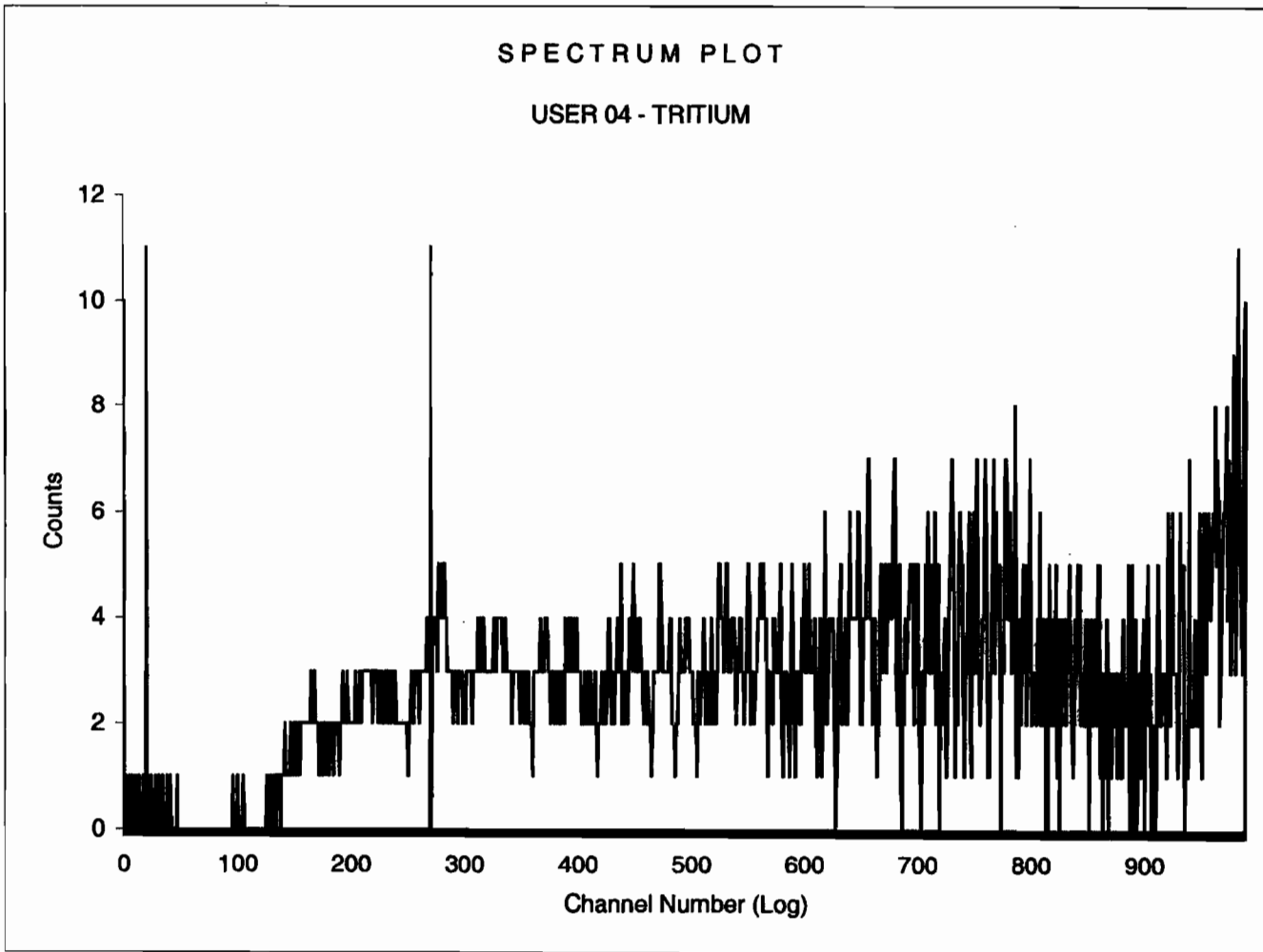
Sample Count Start Time:	19 Mar 2010 09:51:26		
Data Capture Date	19 Mar 2010 10:56:53		
User Filename	S040319---3A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	** -3	65.00
H#, Total Counts:	120.9	3086	
Win1: Tritium - Start, End, Counts:	20	270	324
Win2: - Start, End, Counts:	0	990	2736



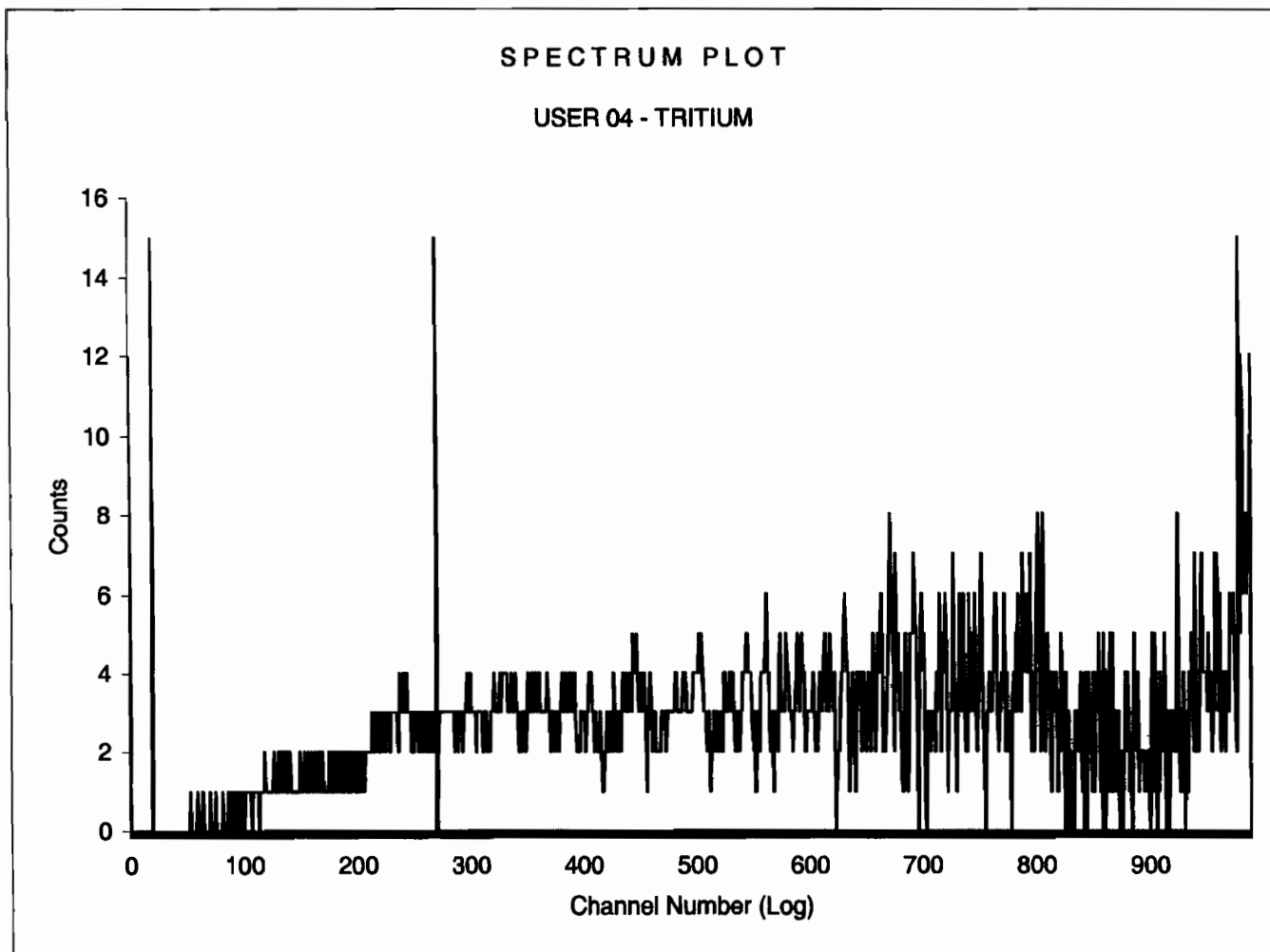
Sample Count Start Time:	19 Mar 2010 11:00:29		
Data Capture Date	19 Mar 2010 12:05:55		
User Filename	S040319---4A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	**4	65.00
H#, Total Counts:	126.0	2995	
Win1: Tritium - Start, End, Counts:	20	270	317
Win2: - Start, End, Counts:	0	990	2636



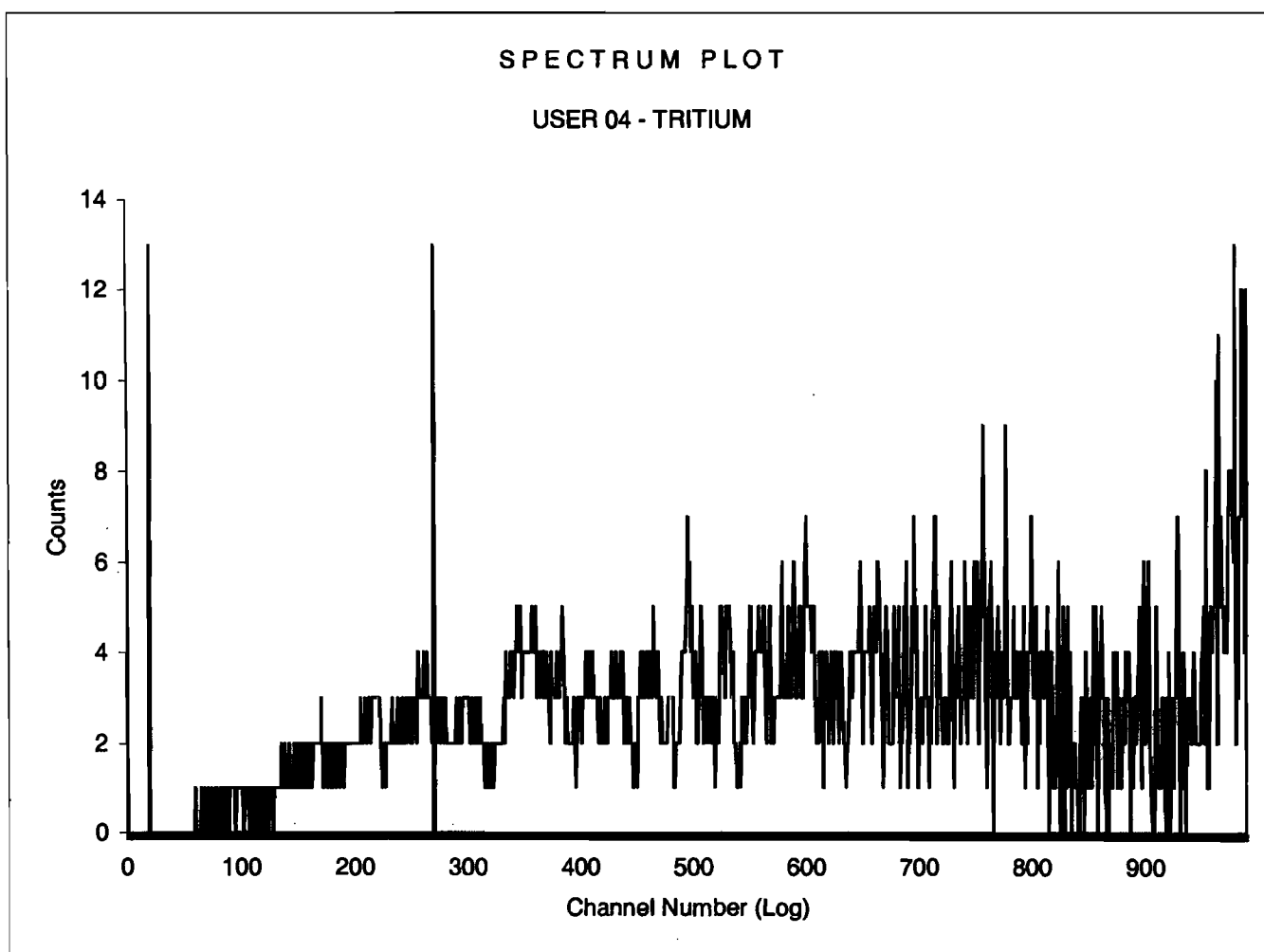
Sample Count Start Time:	19 Mar 2010 12:09:33		
Data Capture Date	19 Mar 2010 13:15:00		
User Filename	S040319---5A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	** -5	65.00
H#, Total Counts:	128.8	3115	
Win1: Tritium - Start, End, Counts:	20	270	310
Win2: - Start, End, Counts:	0	990	2704



Sample Count Start Time:	19 Mar 2010 13:17:04		
Data Capture Date	19 Mar 2010 14:22:31		
User Filename	S040319---6A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	**6	65.00
H#, Total Counts:	122.1	3063	
Win1: Tritium - Start, End, Counts:	20	270	322
Win2: - Start, End, Counts:	0	990	2681



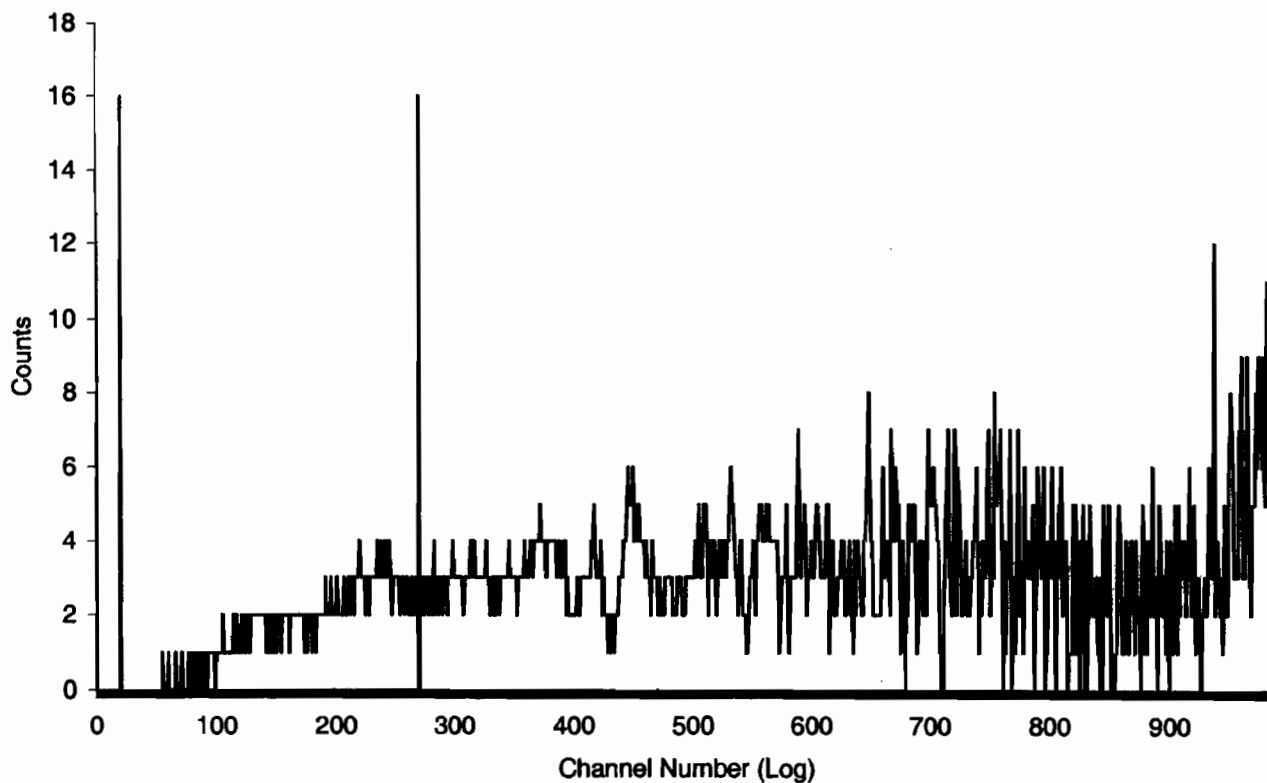
Sample Count Start Time:	19 Mar 2010 14:24:38		
Data Capture Date	19 Mar 2010 15:30:04		
User Filename	S040319---7A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	**7	65.00
H#, Total Counts:	125.5	3107	
Win1: Tritium - Start, End, Counts:	20	270	330
Win2: - Start, End, Counts:	0	990	2696



Sample Count Start Time:	19 Mar 2010 15:32:09		
Data Capture Date	19 Mar 2010 16:38:06		
User Filename	S040319---8A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	**8	65.00
H#, Total Counts:	124.4	3249	
Win1: Tritium - Start, End, Counts:	20	270	386
Win2: - Start, End, Counts:	0	990	2838

SPECTRUM PLOT

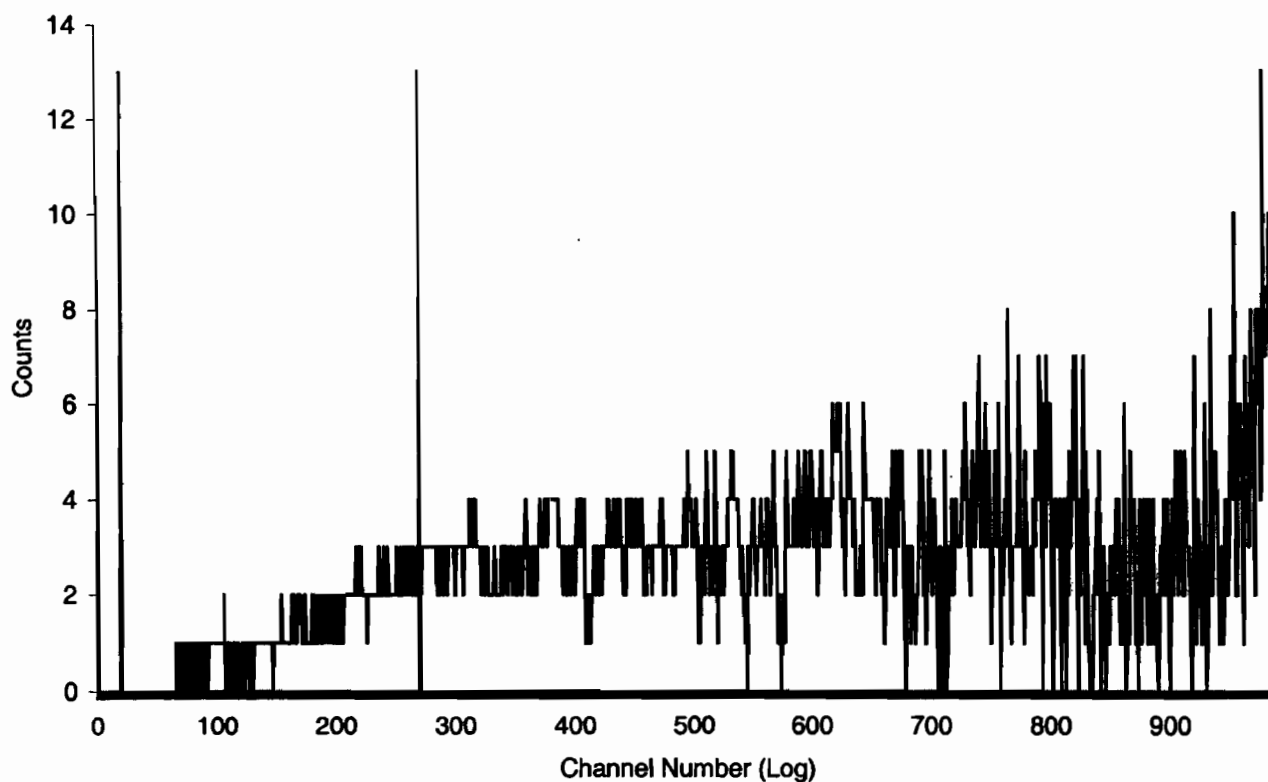
USER 04 - TRITIUM



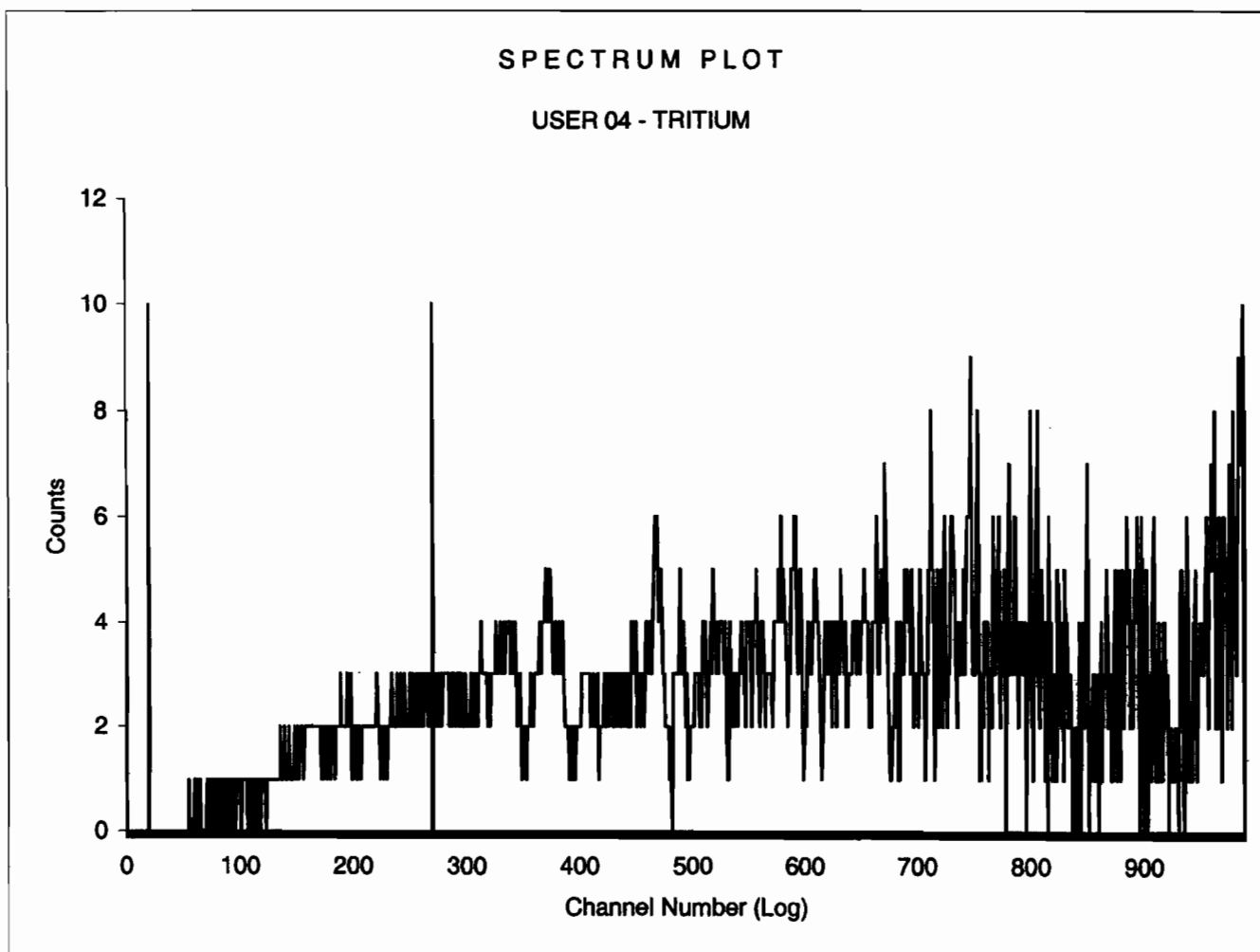
Sample Count Start Time:	19 Mar 2010 16:39:40		
Data Capture Date	19 Mar 2010 17:45:07		
User Filename	S040319---9A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	**9	65.00
H#, Total Counts:	124.3	2960	
Win1: Tritium - Start, End, Counts:	20	270	281
Win2: - Start, End, Counts:	0	990	2610

SPECTRUM PLOT

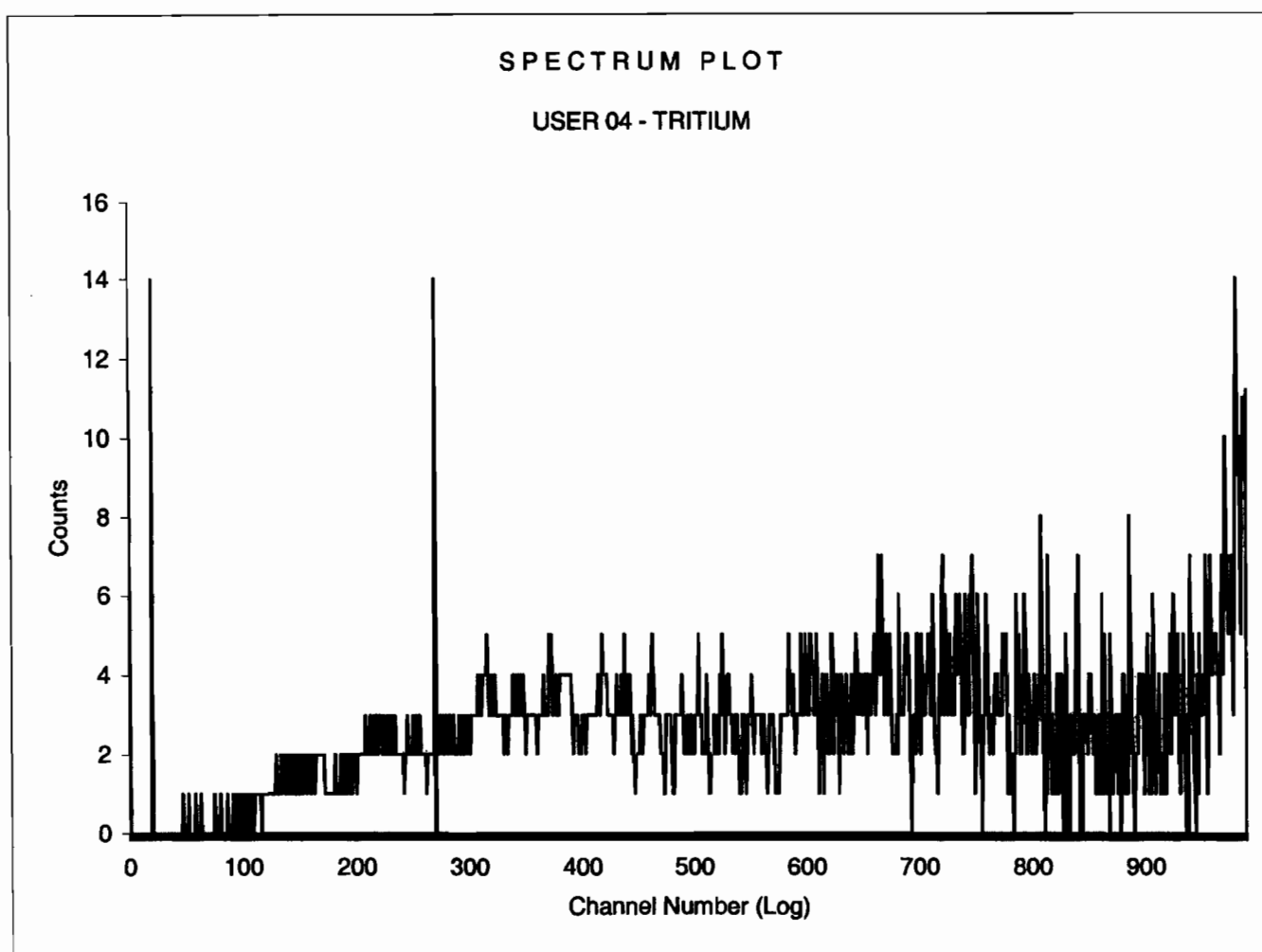
USER 04 - TRITIUM



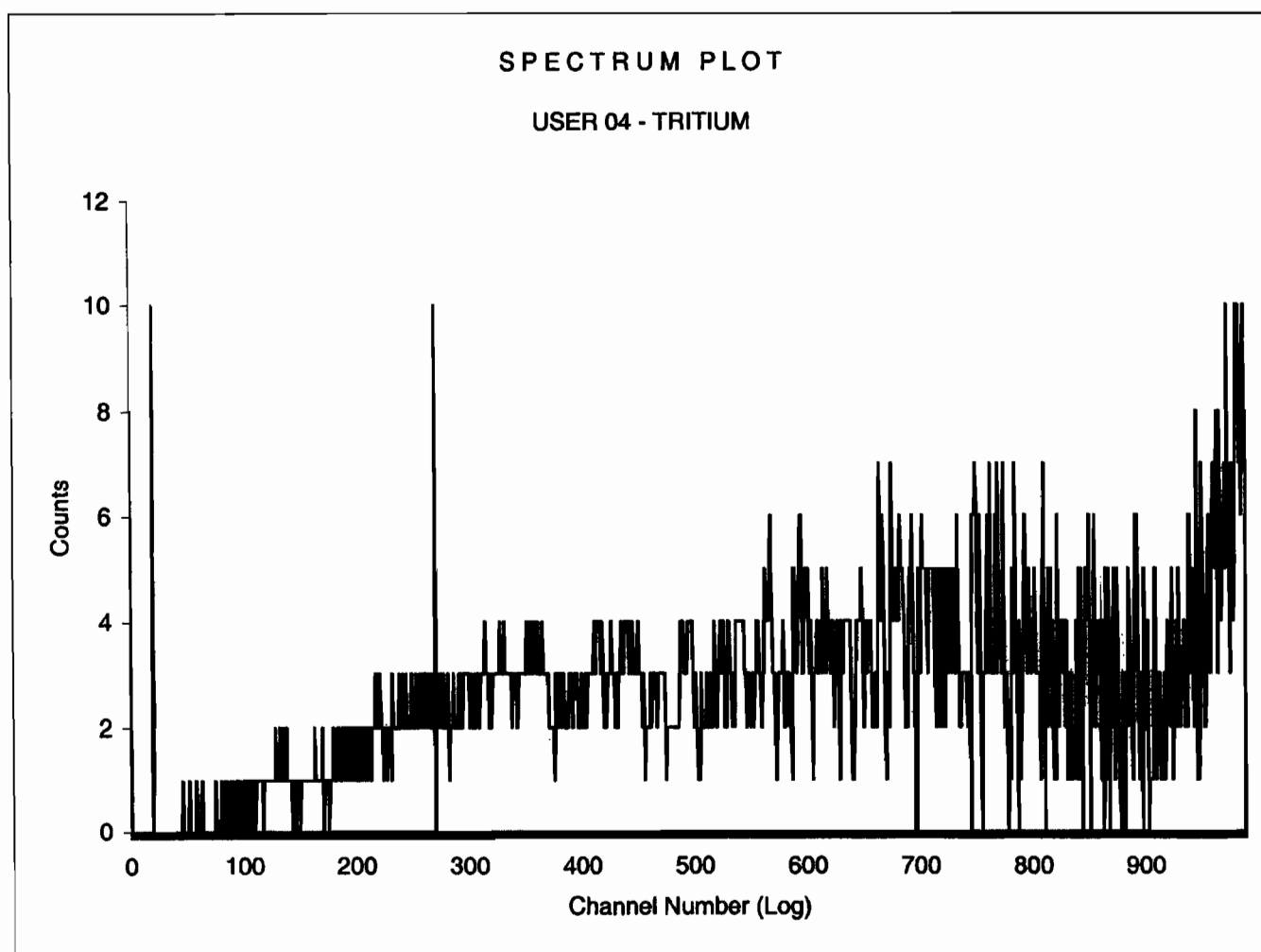
Sample Count Start Time:	19 Mar 2010 17:47:11		
Data Capture Date	19 Mar 2010 18:52:39		
User Filename	S040319---10A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	** -10	65.00
H#, Total Counts:	127.7	3046	
Win1: Tritium - Start, End, Counts:	20	270	312
Win2: - Start, End, Counts:	0	990	2639



Sample Count Start Time:	19 Mar 2010 18:54:43		
Data Capture Date	19 Mar 2010 20:00:10		
User Filename	S040319---11A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	**11	65.00
H#, Total Counts:	125.0	3018	
Win1: Tritium - Start, End, Counts:	20	270	300
Win2: - Start, End, Counts:	0	990	2619



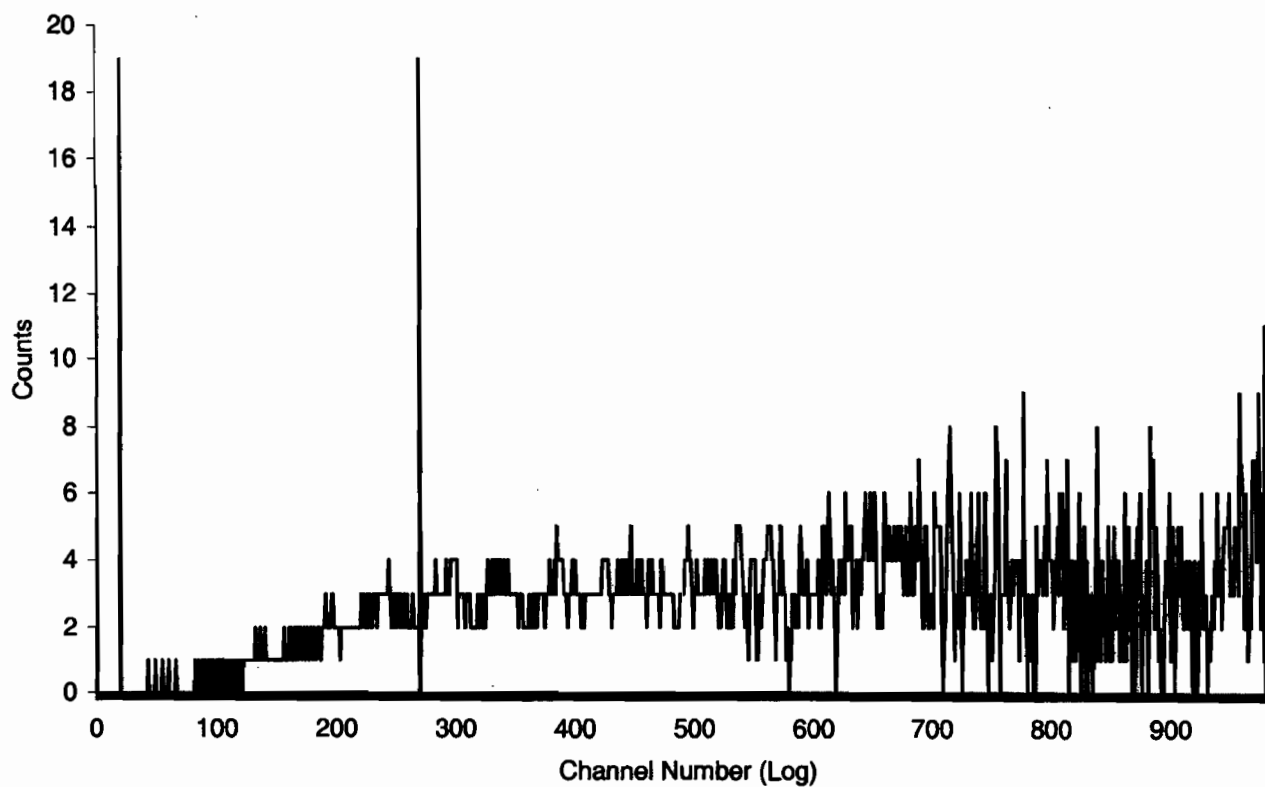
Sample Count Start Time:	19 Mar 2010 20:02:15		
Data Capture Date	19 Mar 2010 21:07:42		
User Filename	S040319---12A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	** -12	65.00
H#, Total Counts:	127.0	3075	
Win1: Tritium - Start, End, Counts:	20	270	272
Win2: - Start, End, Counts:	0	990	2636



Sample Count Start Time:	19 Mar 2010 21:09:54		
Data Capture Date	19 Mar 2010 22:15:21		
User Filename	S04031938-1B.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	13	38-1	65.00
H#, Total Counts:	126.2	3129	
Win1: Tritium - Start, End, Counts:	20	270	310
Win2: - Start, End, Counts:	0	990	2747

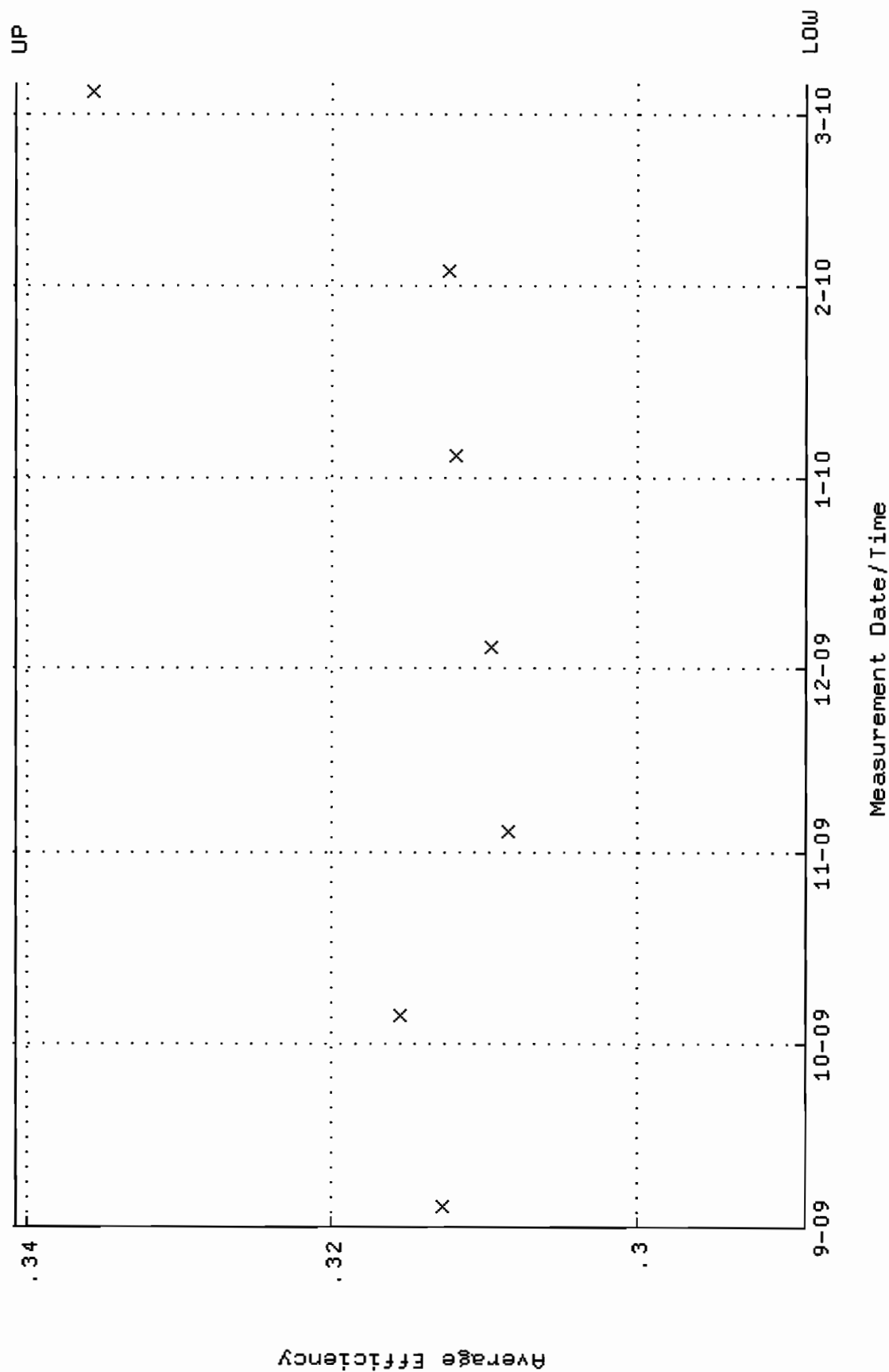
SPECTRUM PLOT

USER 04 - TRITIUM

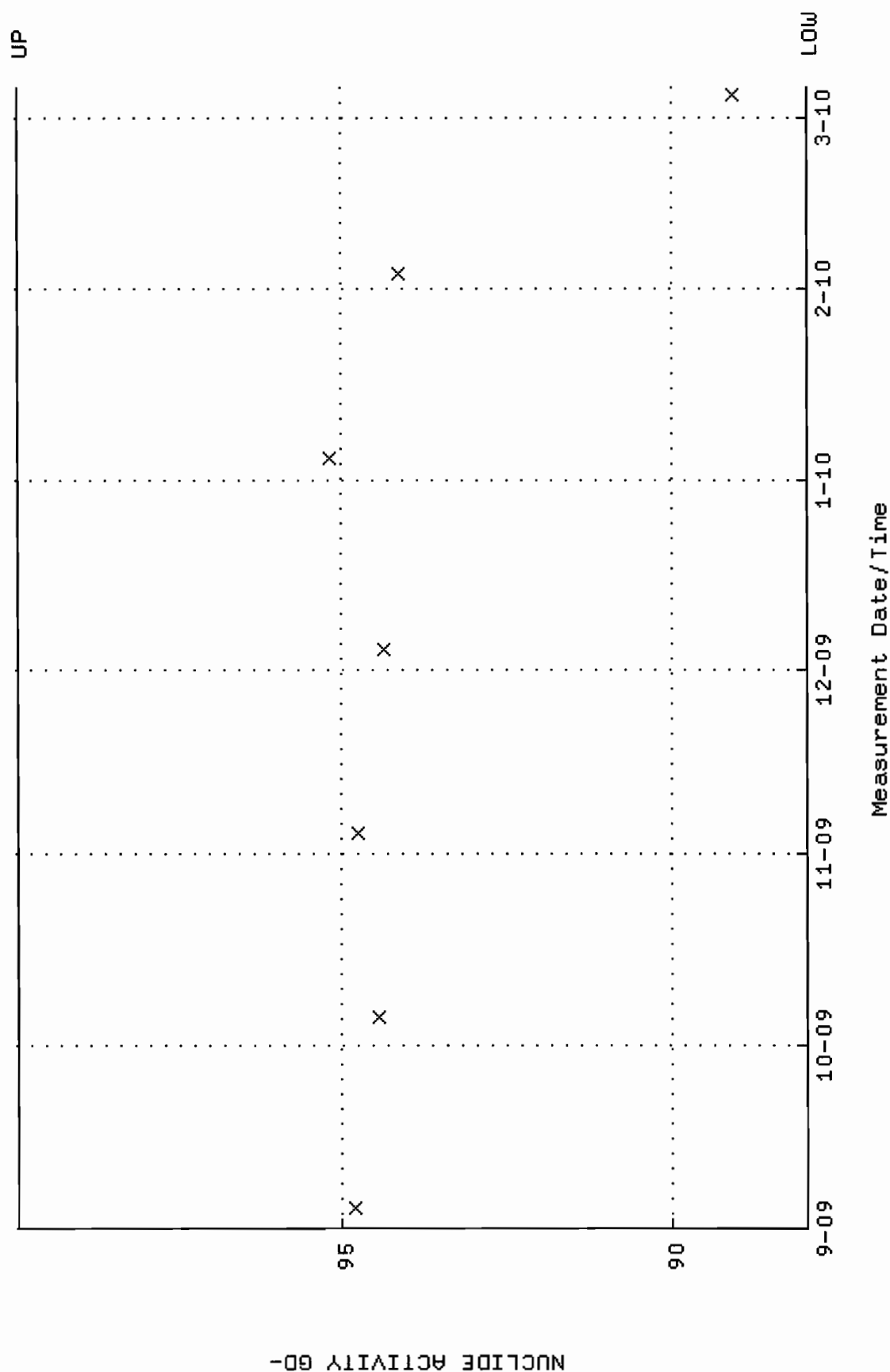


BACKGROUND AND EFFICIENCY DATA

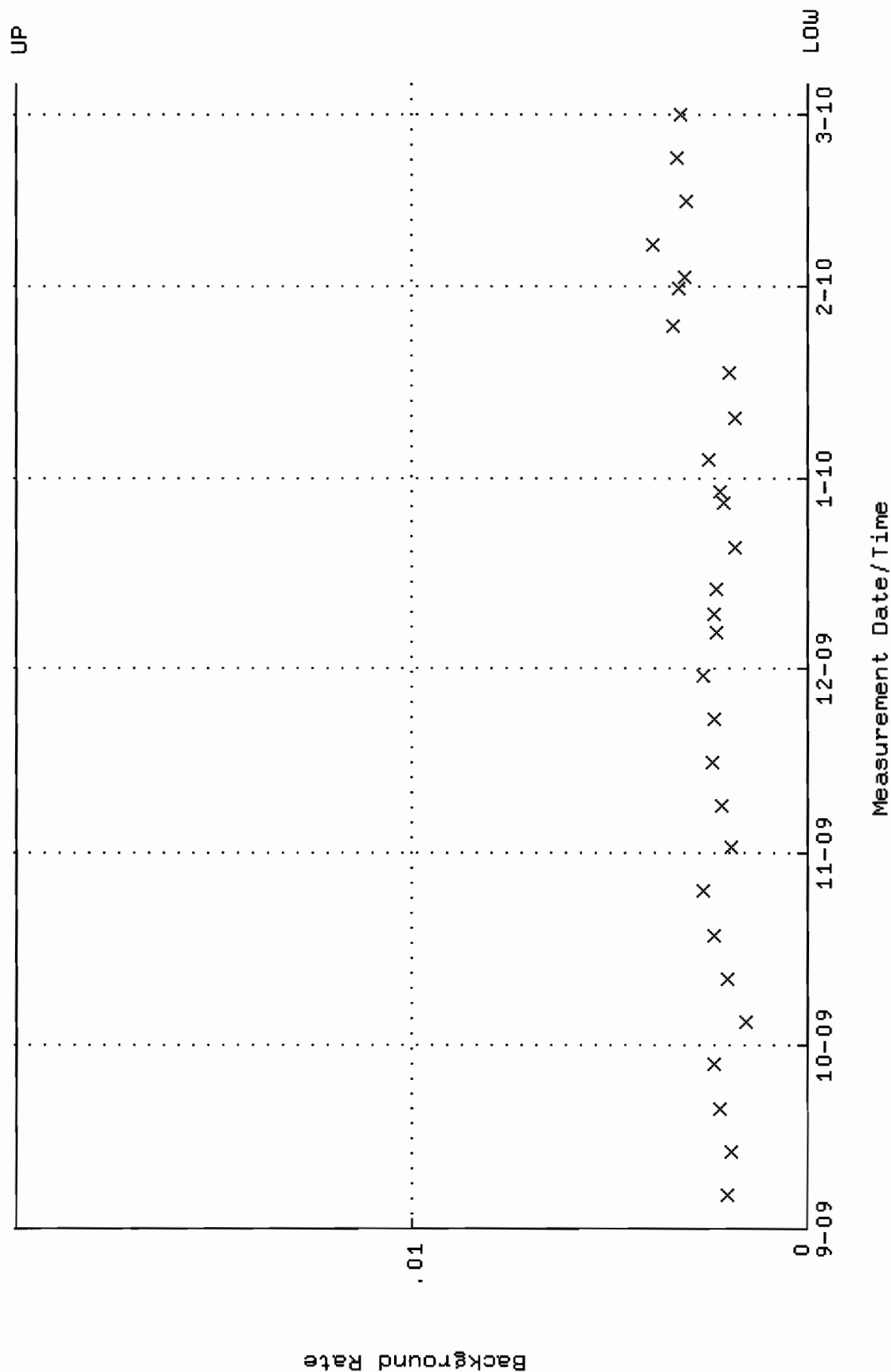
QA filename : DKA100:[ENV_ALPHA.QA.W]W014.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.288973 through 0.340739



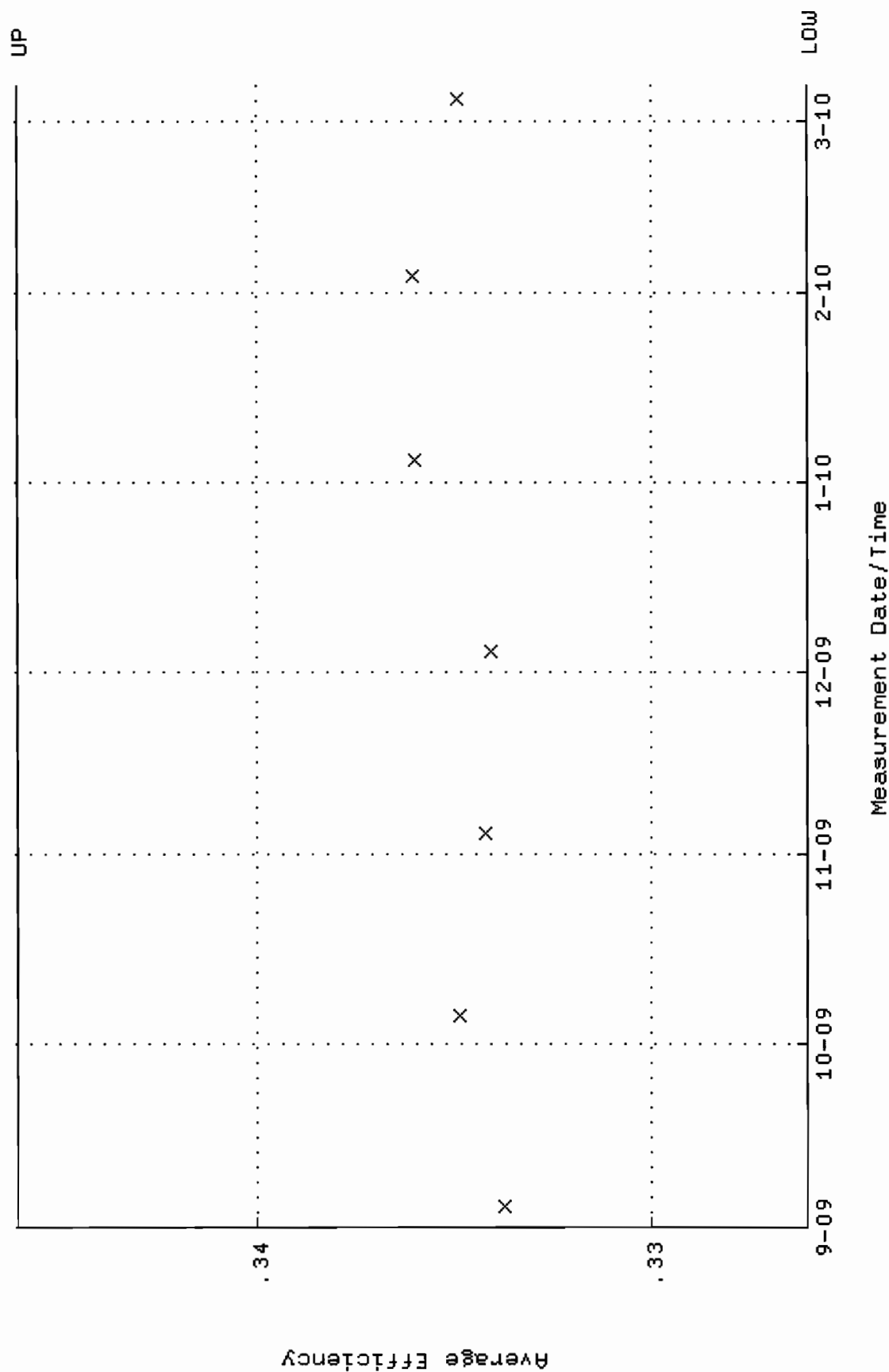
QA filename : DKA100:[ENV_ALPHA.QA.W]W014.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.9529 through 99.8771



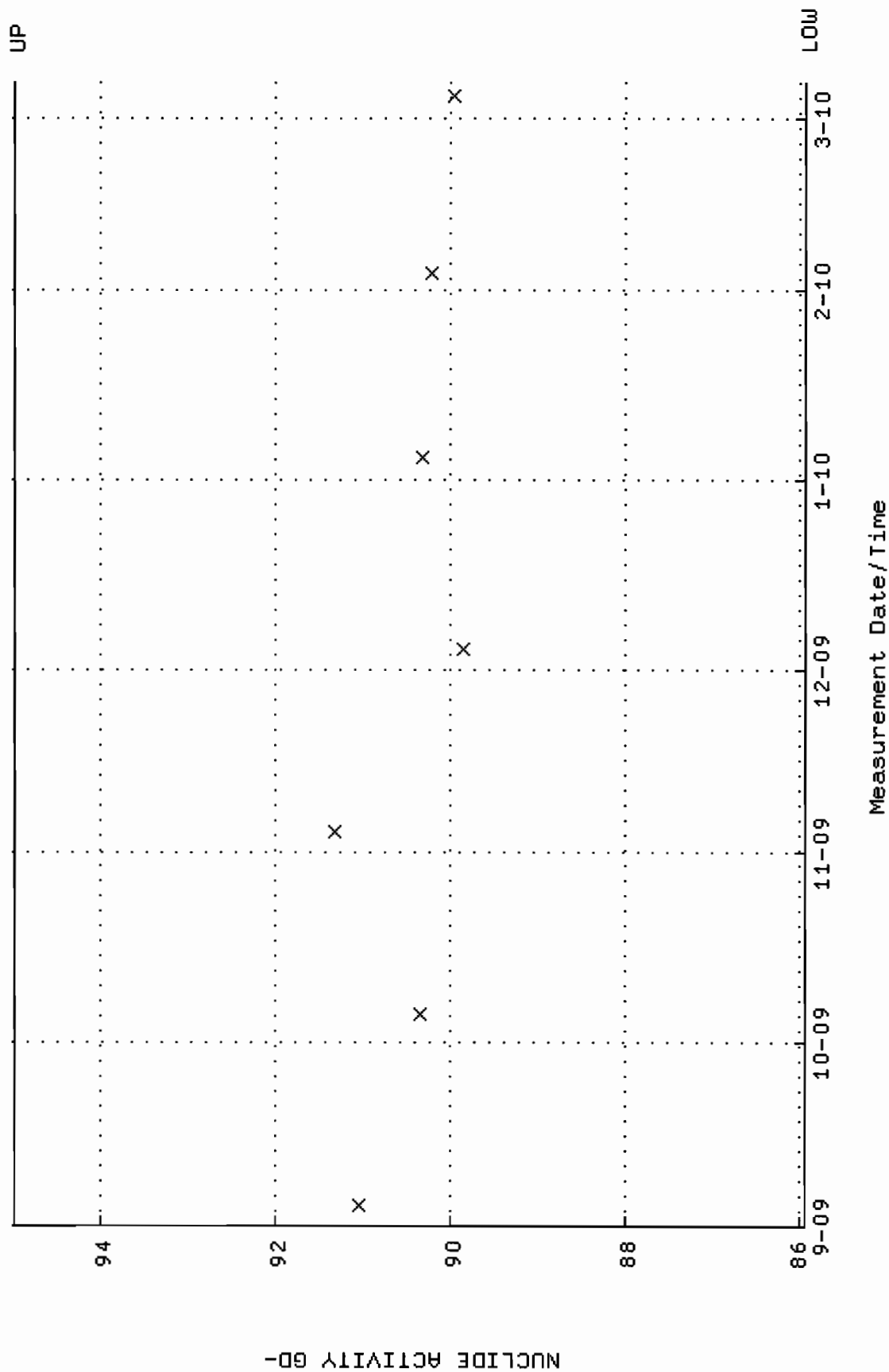
QA filename : DKA100:[ENV_ALPHA.QA.B]B014.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



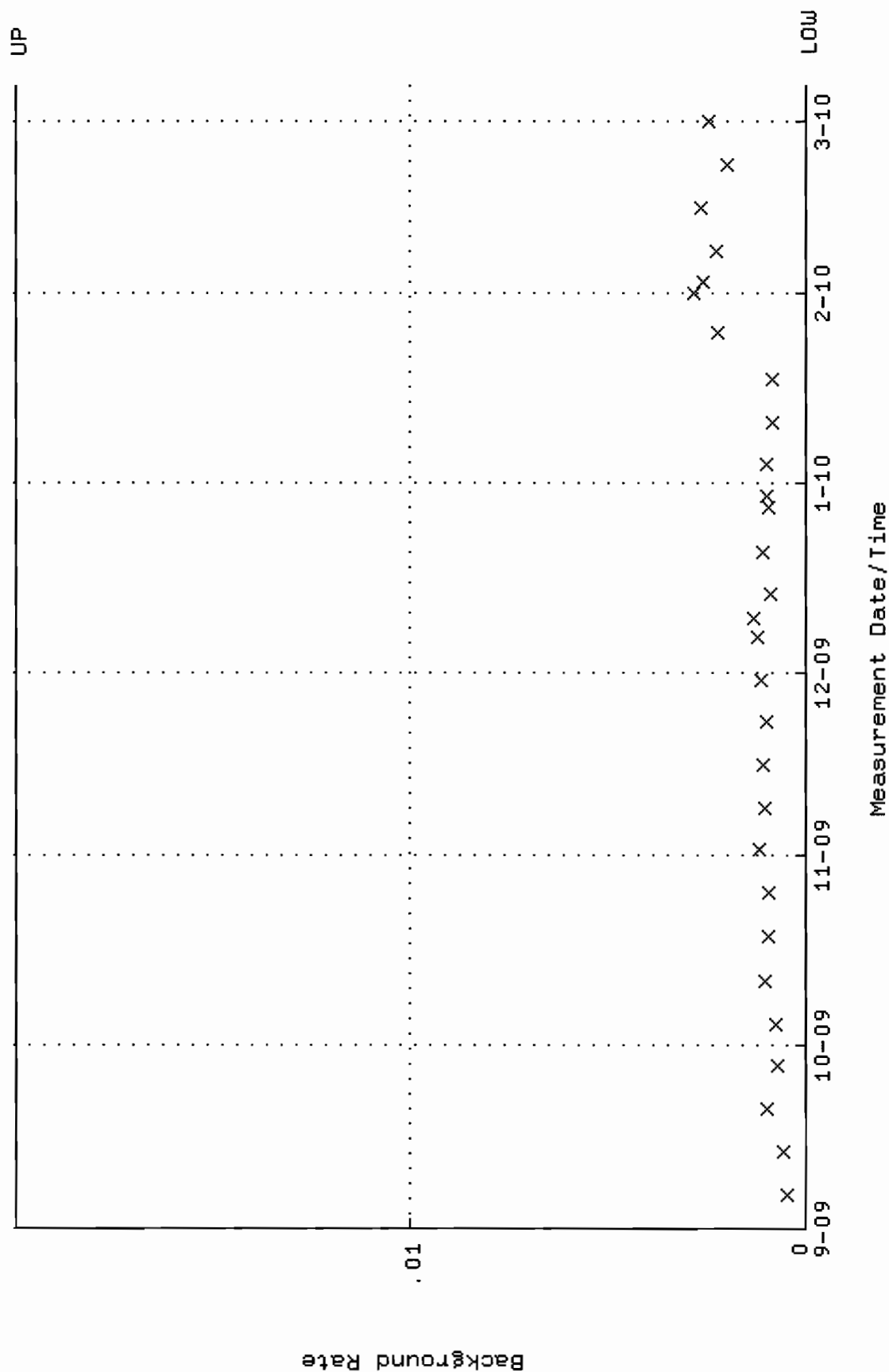
QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.326058 through 0.346058



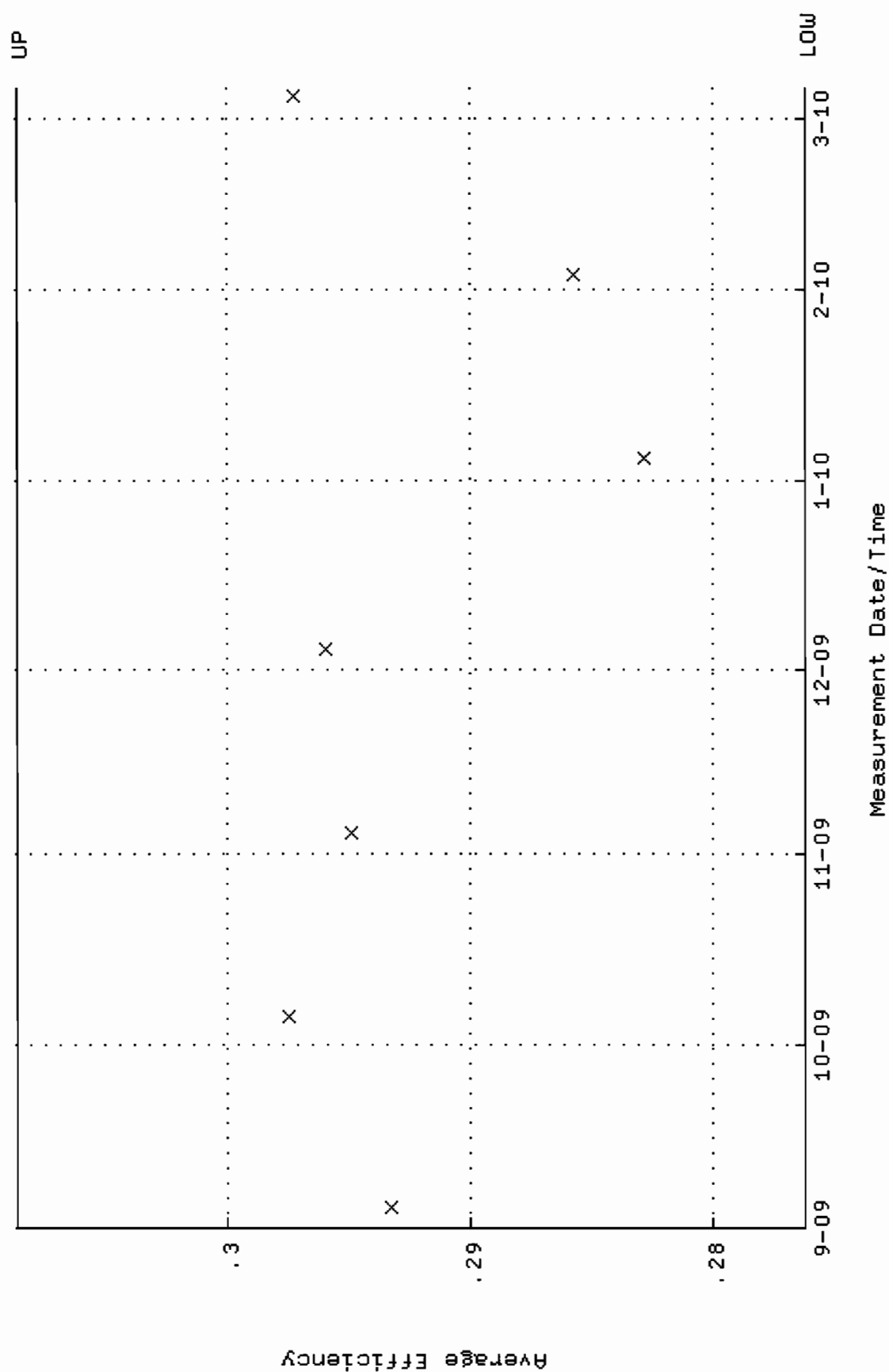
QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.9280 through 94.9730



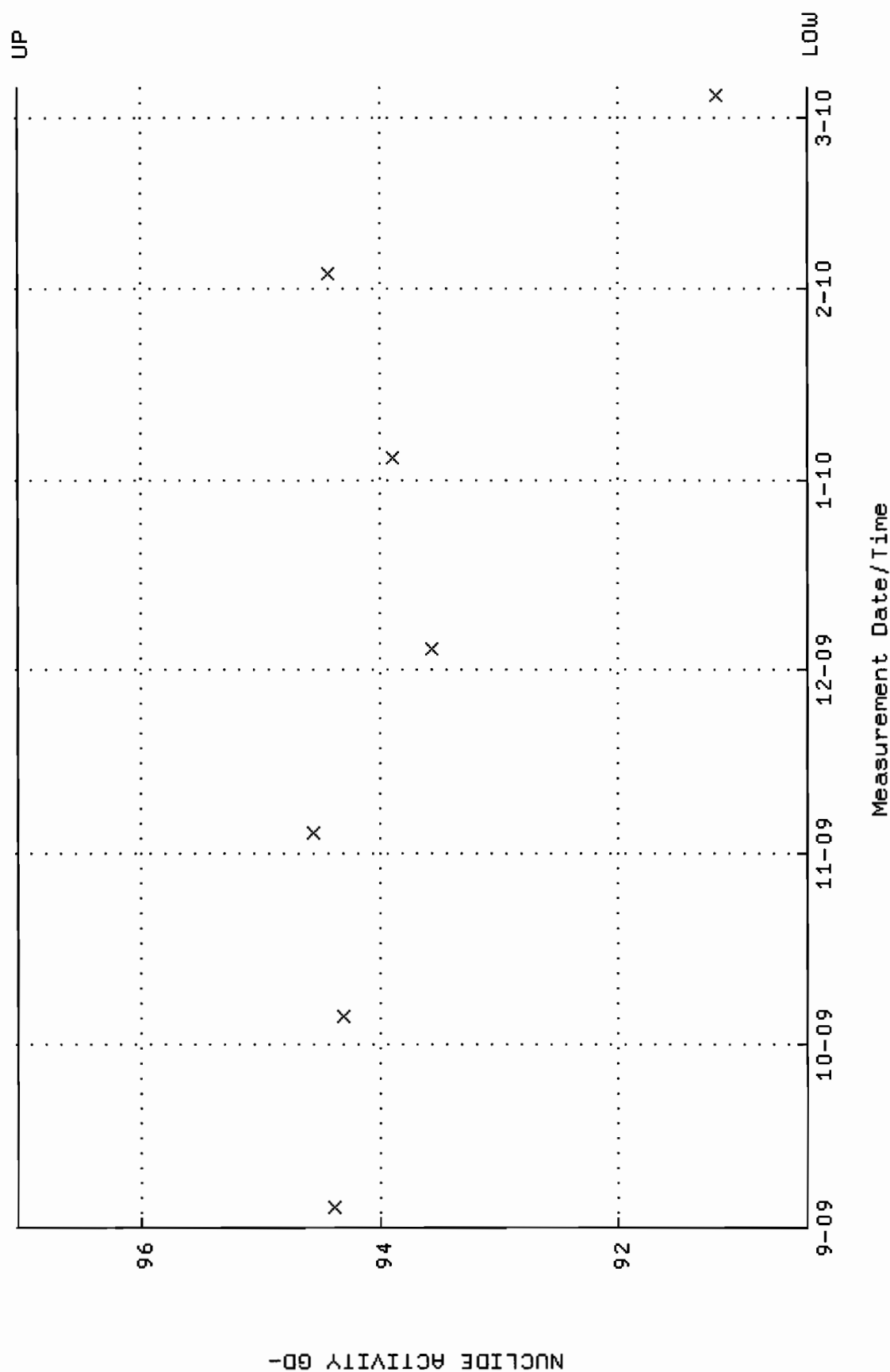
QA filename : DKA100:[ENV_ALPHA.QA.B]B016.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:02 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



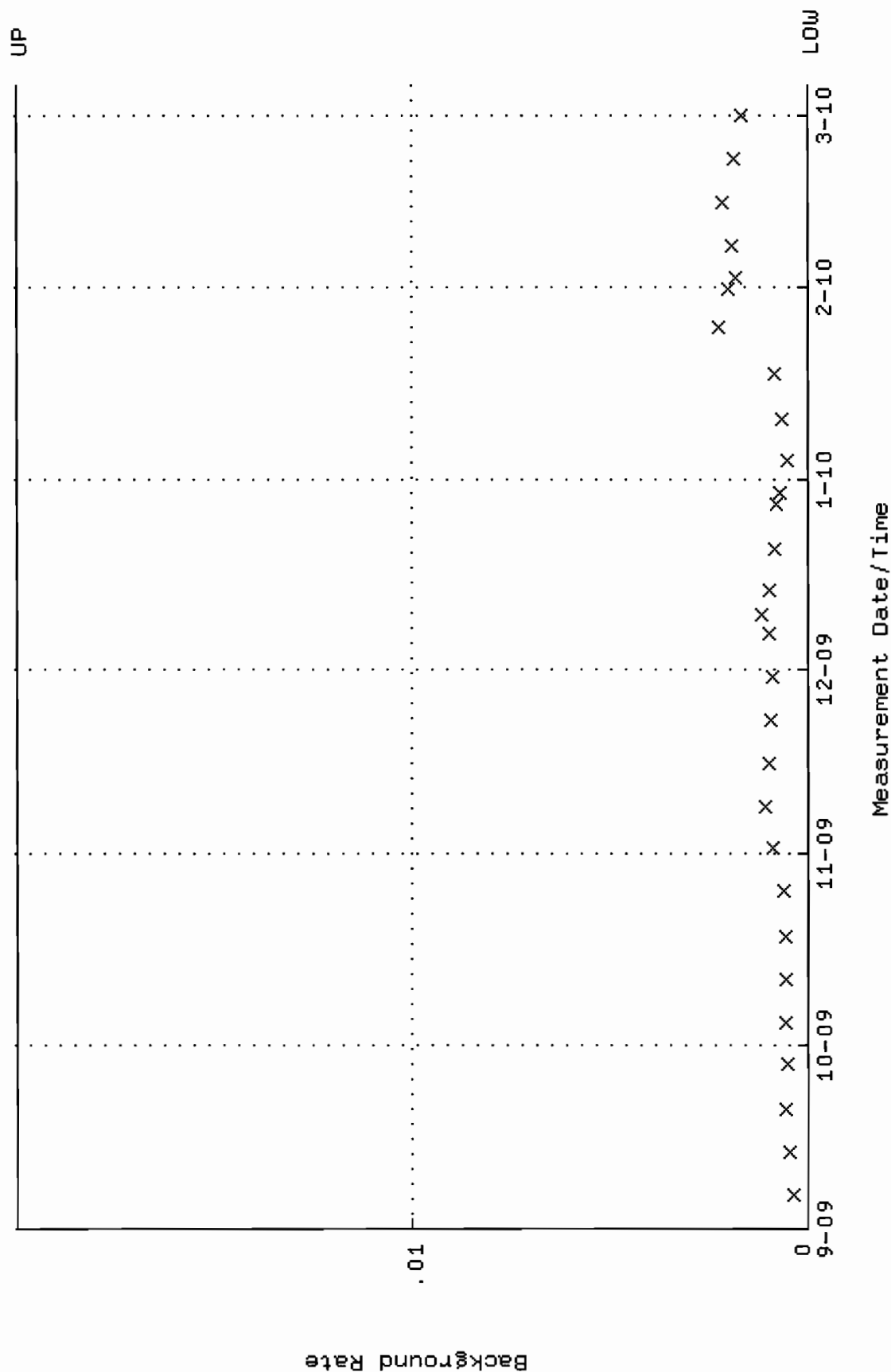
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.276155 through 0.308631



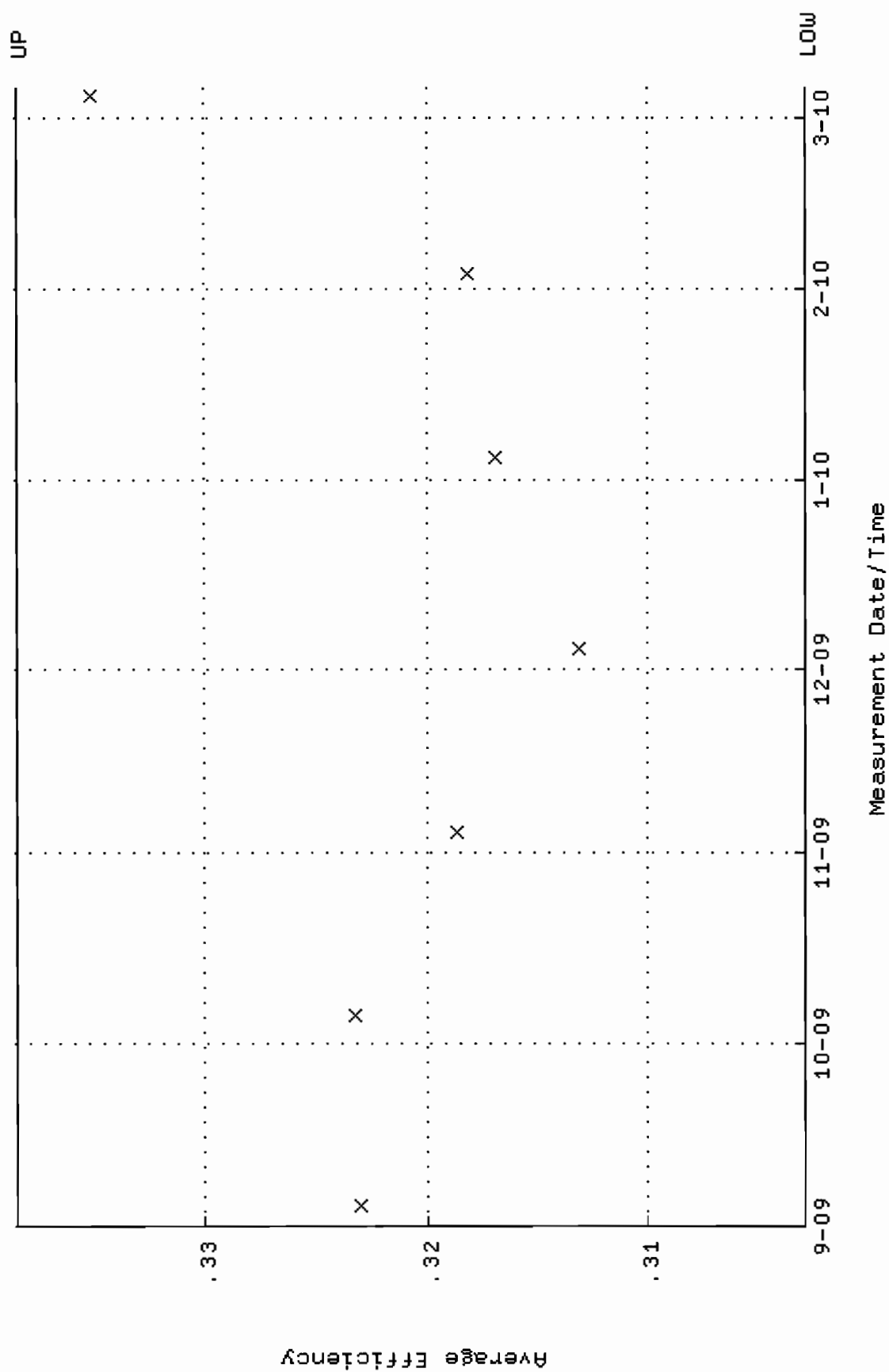
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.4251 through 97.0169



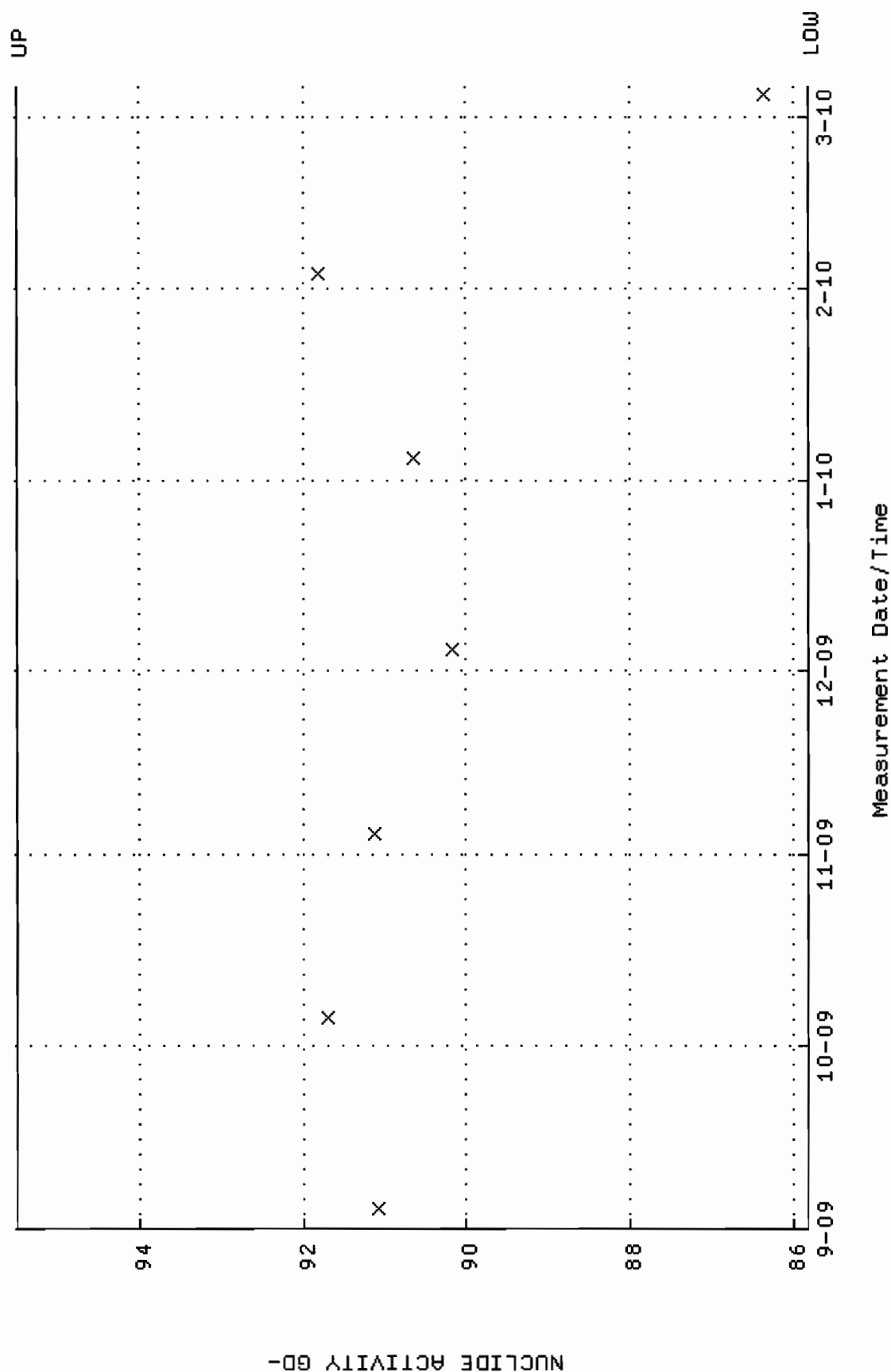
QA filename : DKA100:[ENV_ALPHA.QA.B]B017.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



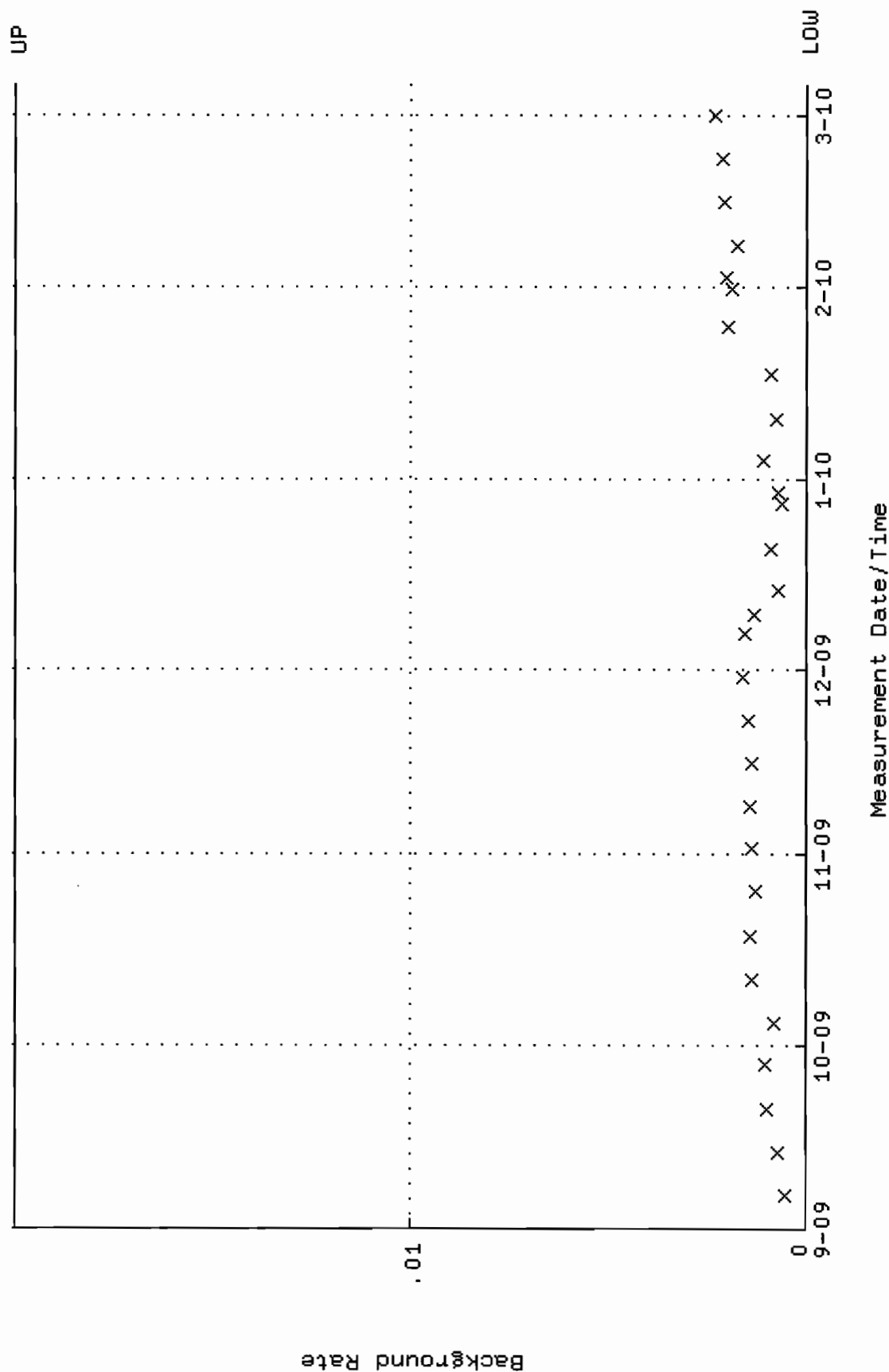
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.302900 through 0.338496



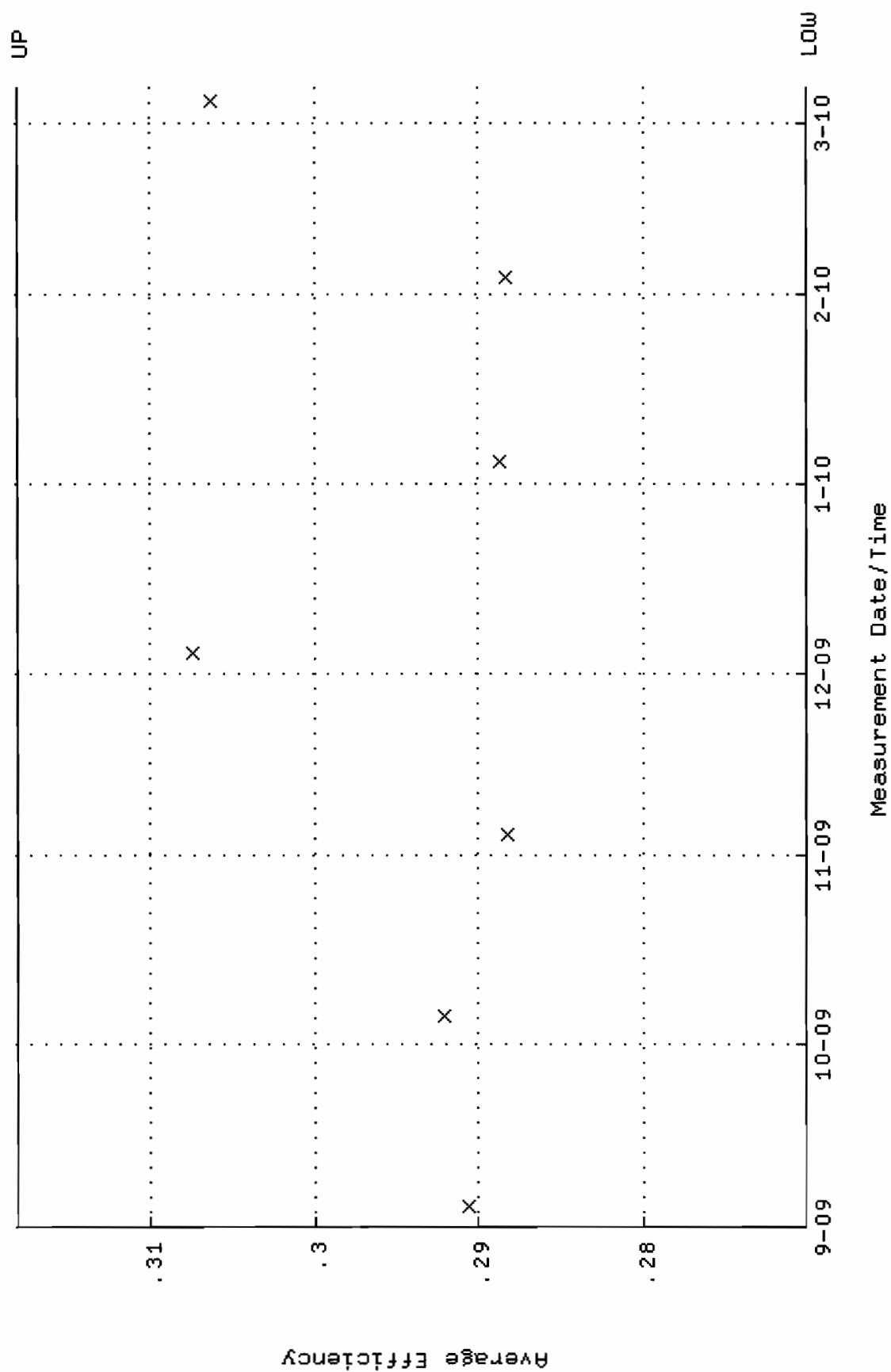
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.8111 through 95.5079



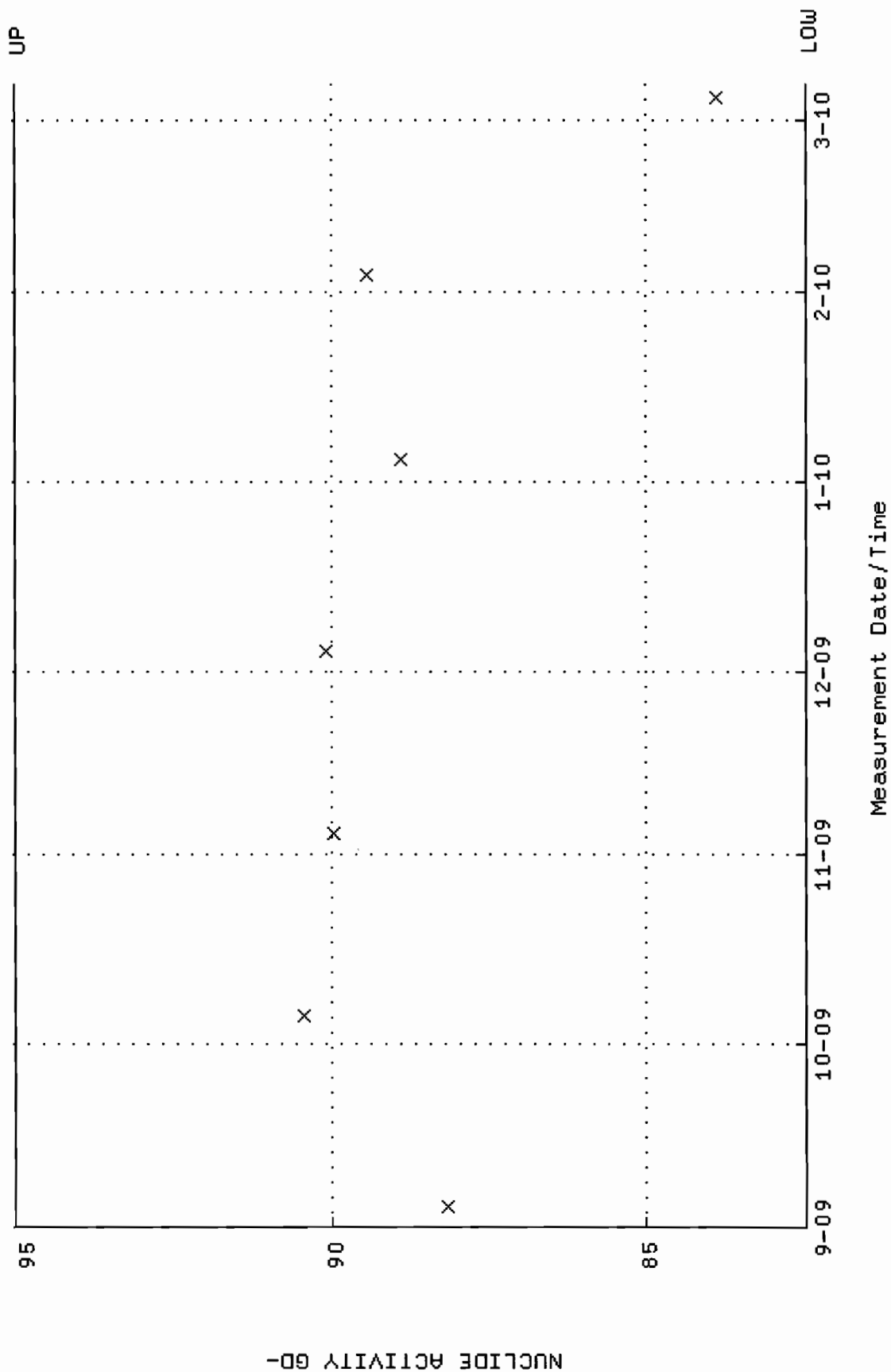
QA filename : DKA100:[ENV_ALPHA.QA.B]B018.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



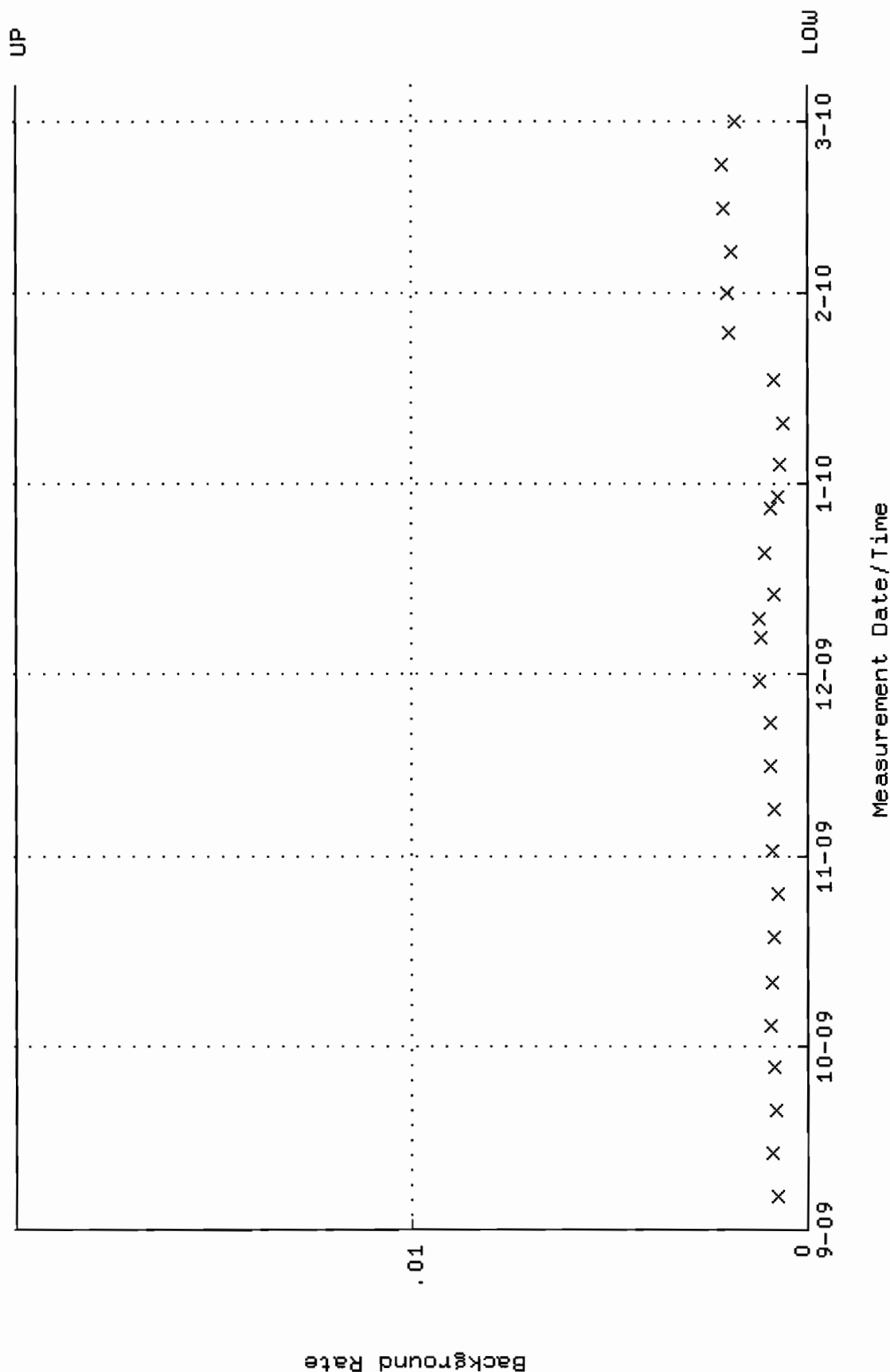
QA filename : DKA100:[ENV_ALPHA.QA.W]w019.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.270093 through 0.318005



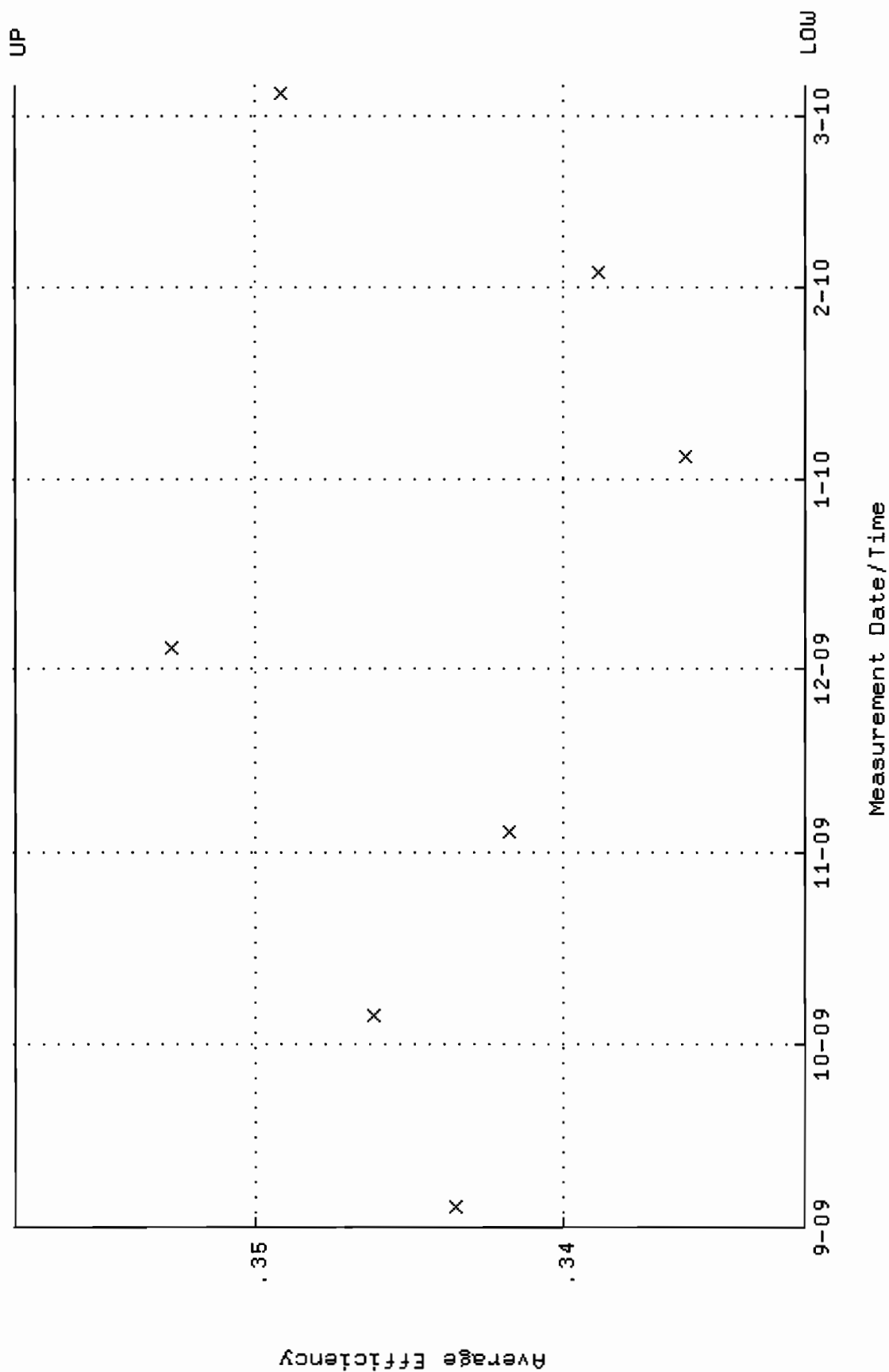
QA filename : DKA100:[ENV_ALPHA.QA.W]W019.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4717 through 95.0017



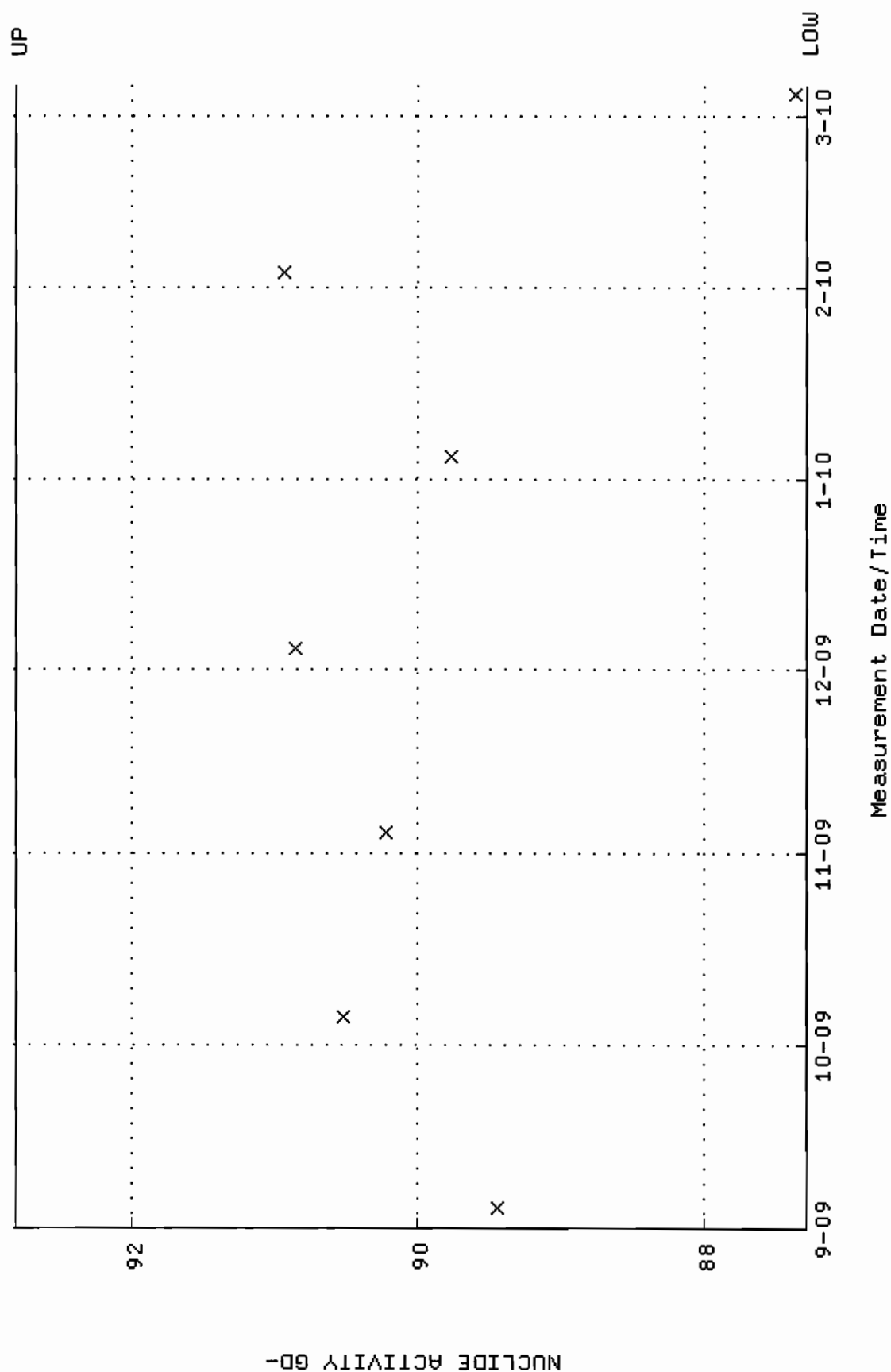
QA filename : DKA100:[ENV_ALPHA.QA.B]B019.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:03 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



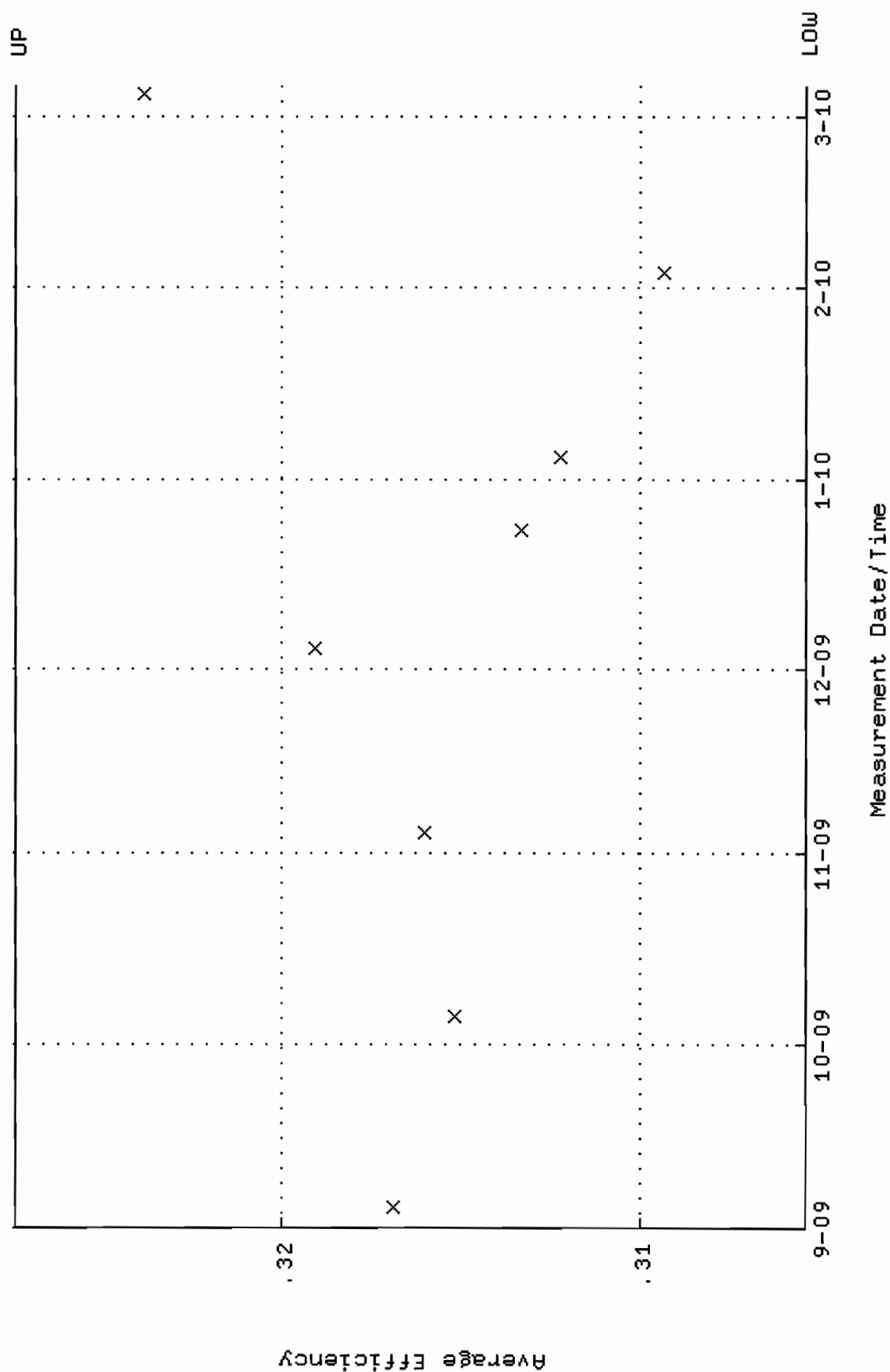
QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.332206 through 0.357714



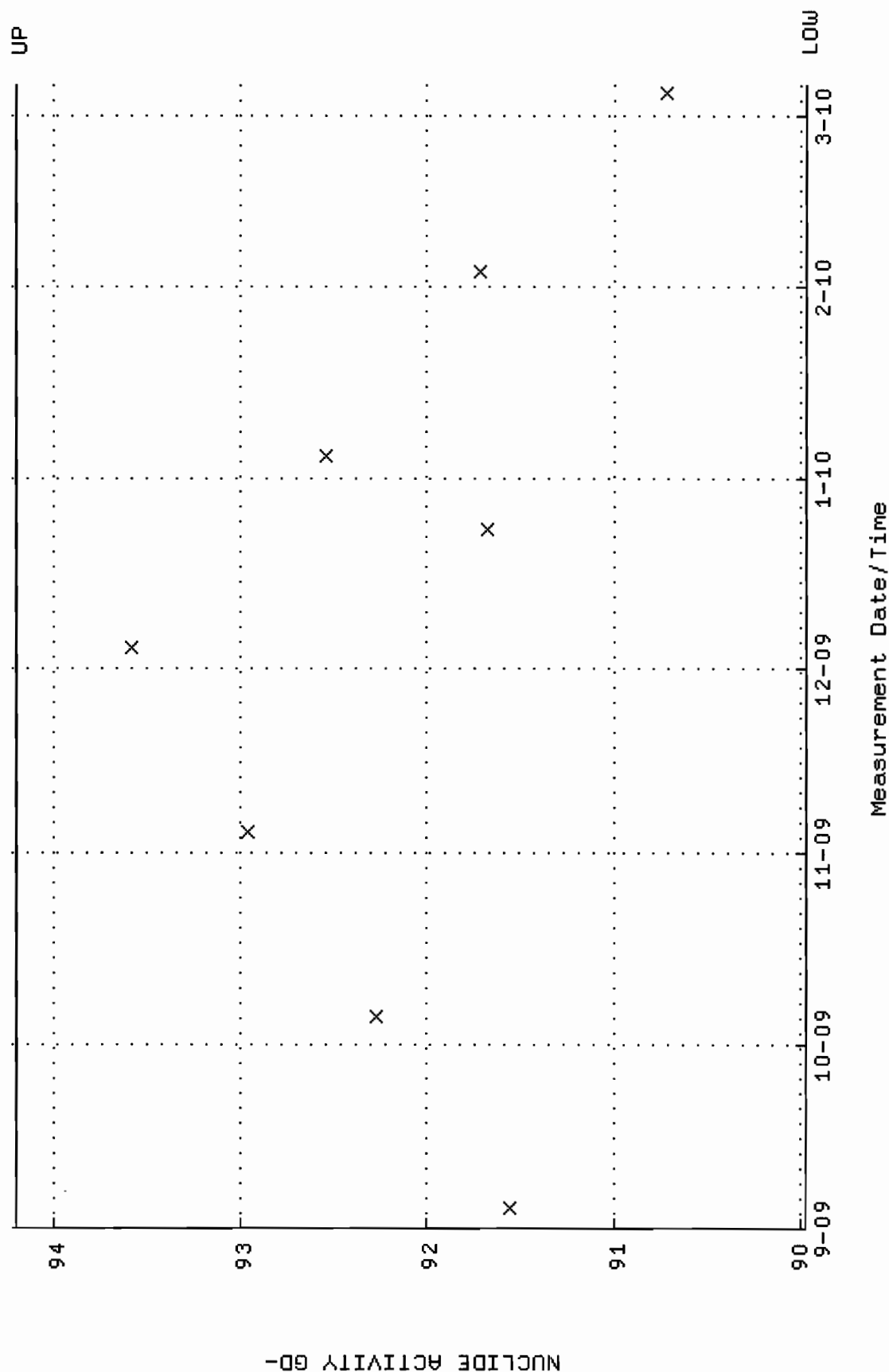
QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.2879 through 92.8099



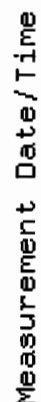
QA filename : DKA100:[ENV_ALPHA.QA.W]W022.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.305380 through 0.327376



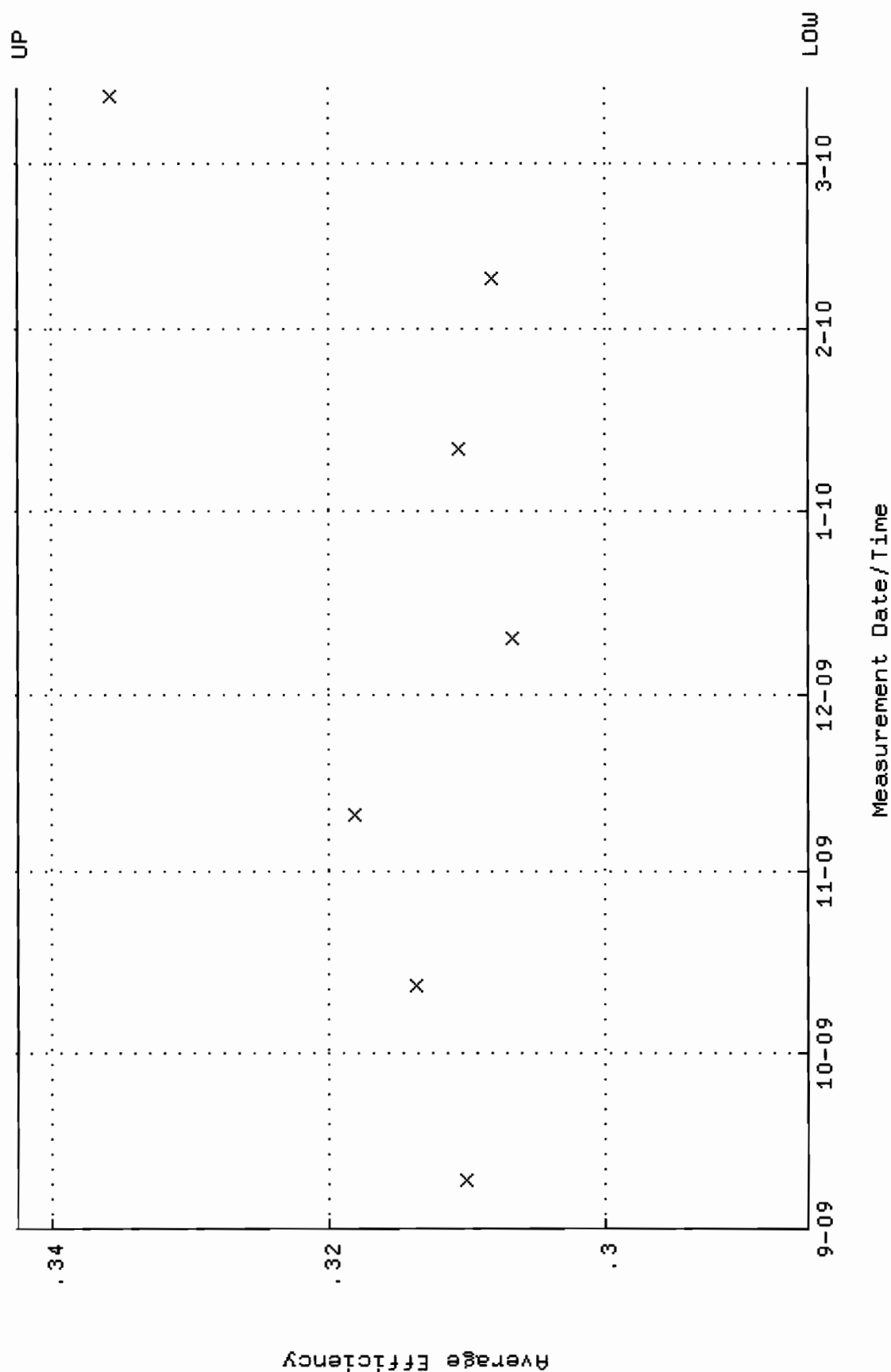
QA filename : DKA100:[ENV_ALPHA.QA.W]W022.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.9706 through 94.2088



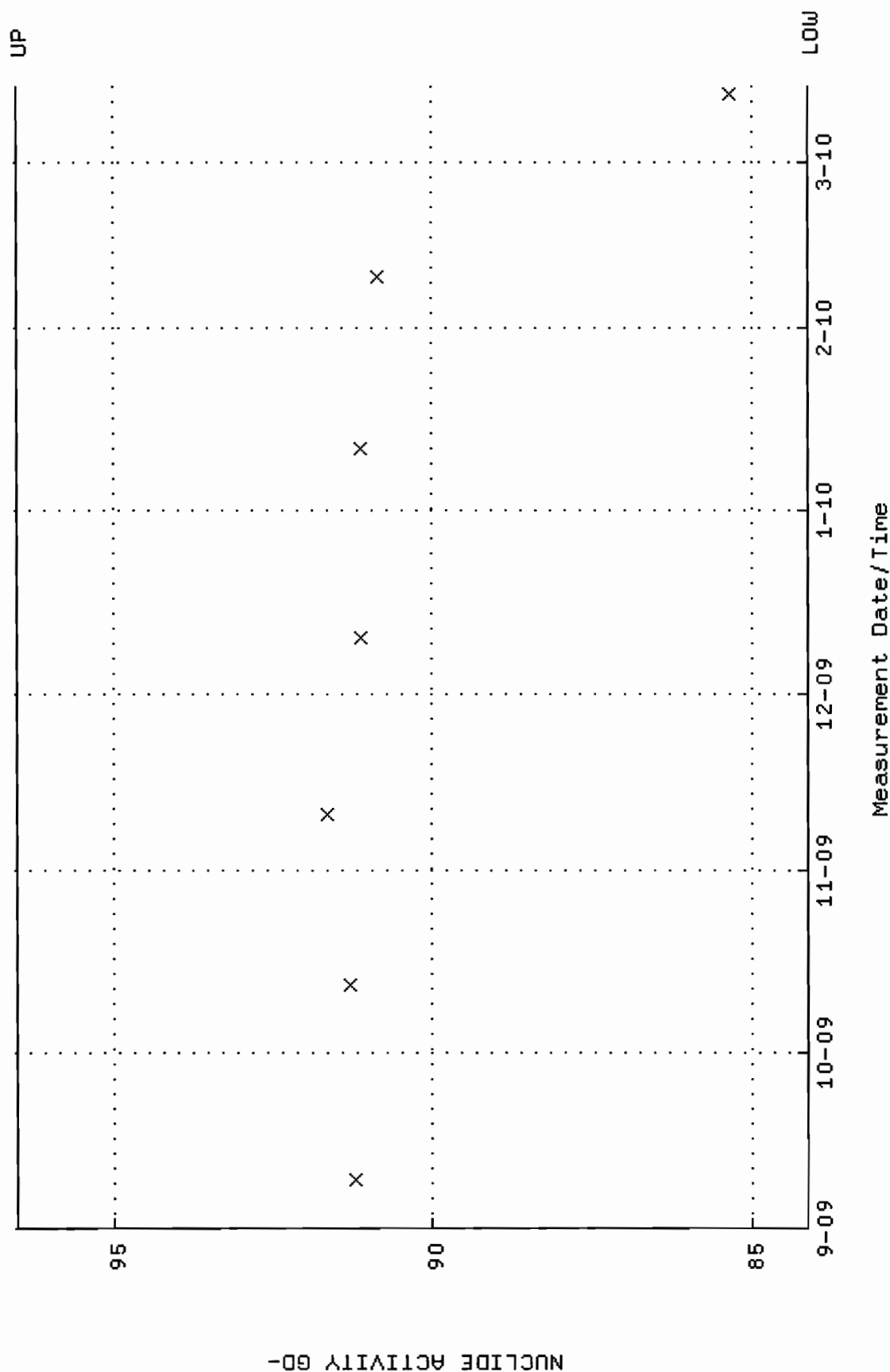
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



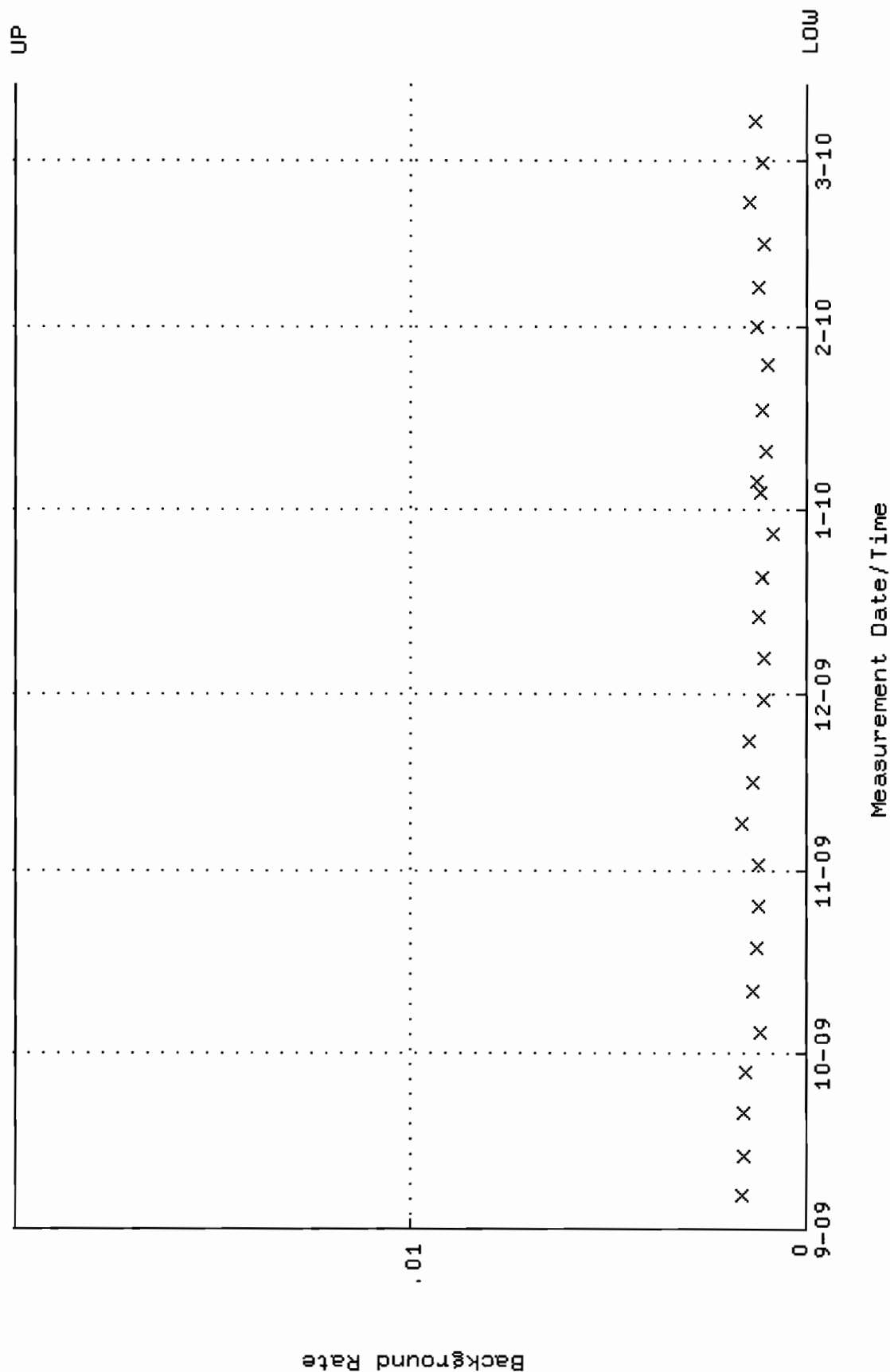
QA filename : DKA100:[ENV_ALPHA.QA.w]W065.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.285385 through 0.342467



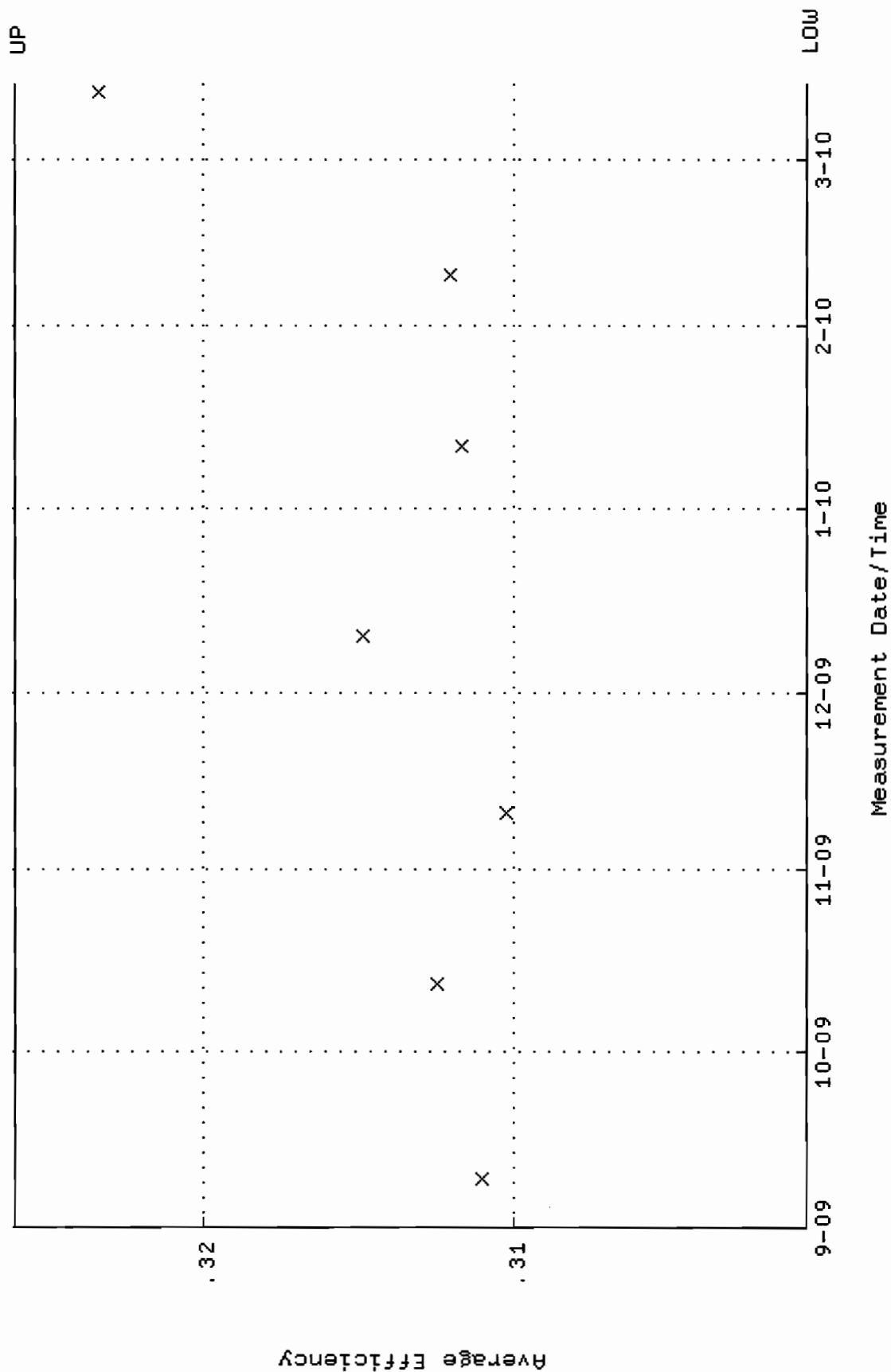
QA filename : DKA100:[ENV_ALPHA.QA.W]W065.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.1135 through 96.5061



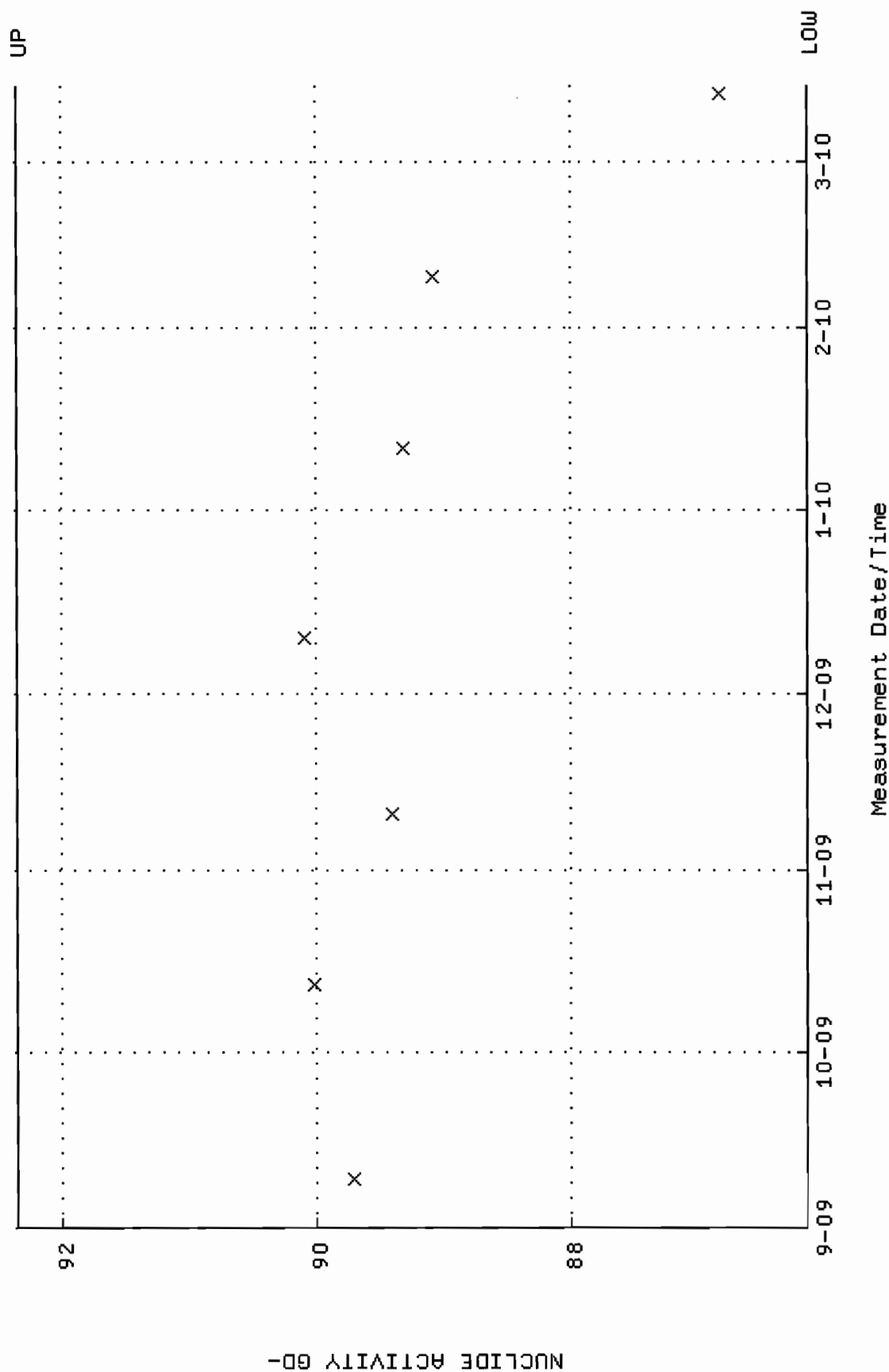
QA filename : DKA100:[ENV_ALPHA.QA.B]B065.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



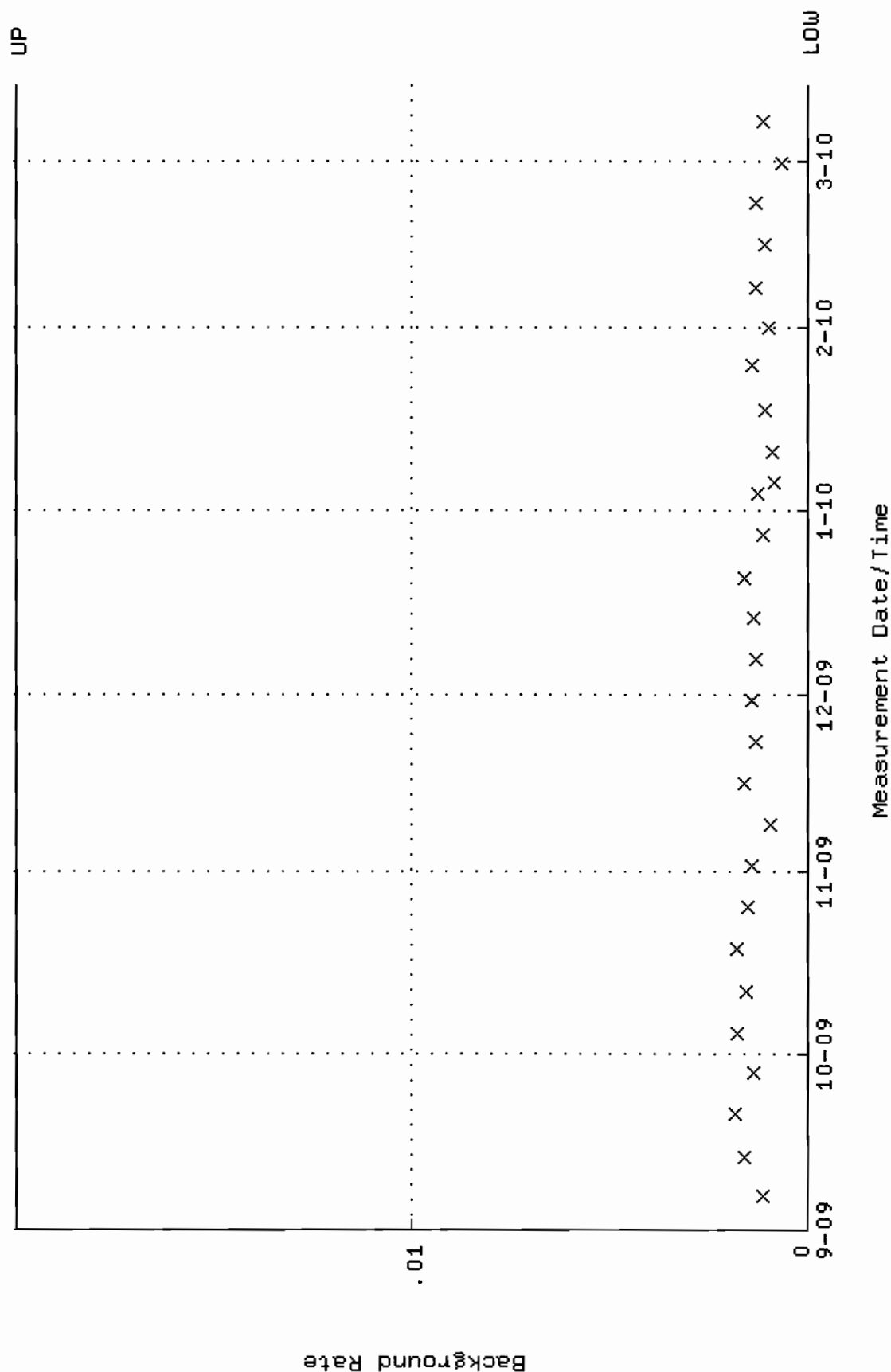
QA filename : DKA100:[ENV_ALPHA.QA.W]W066.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.300663 through 0.326009



QA filename : DKA100:[ENV_ALPHA.QA.W]W066.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1435 through 92.3575



QA filename : DKA100:[ENV_ALPHA.QA.B]B066.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

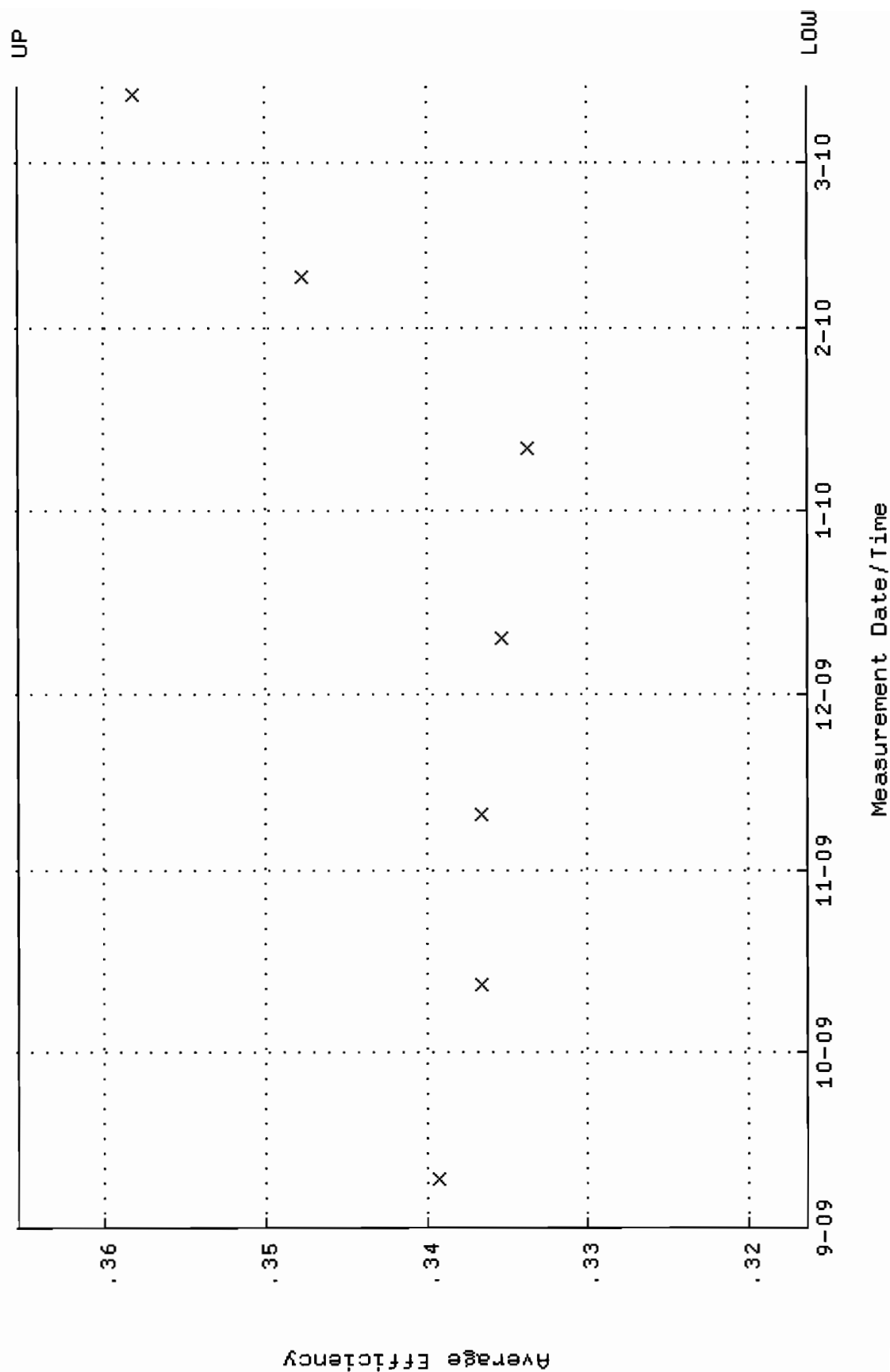


QA filename : DKA100:[ENV_ALPHA.QA.W]W083.QAF;5

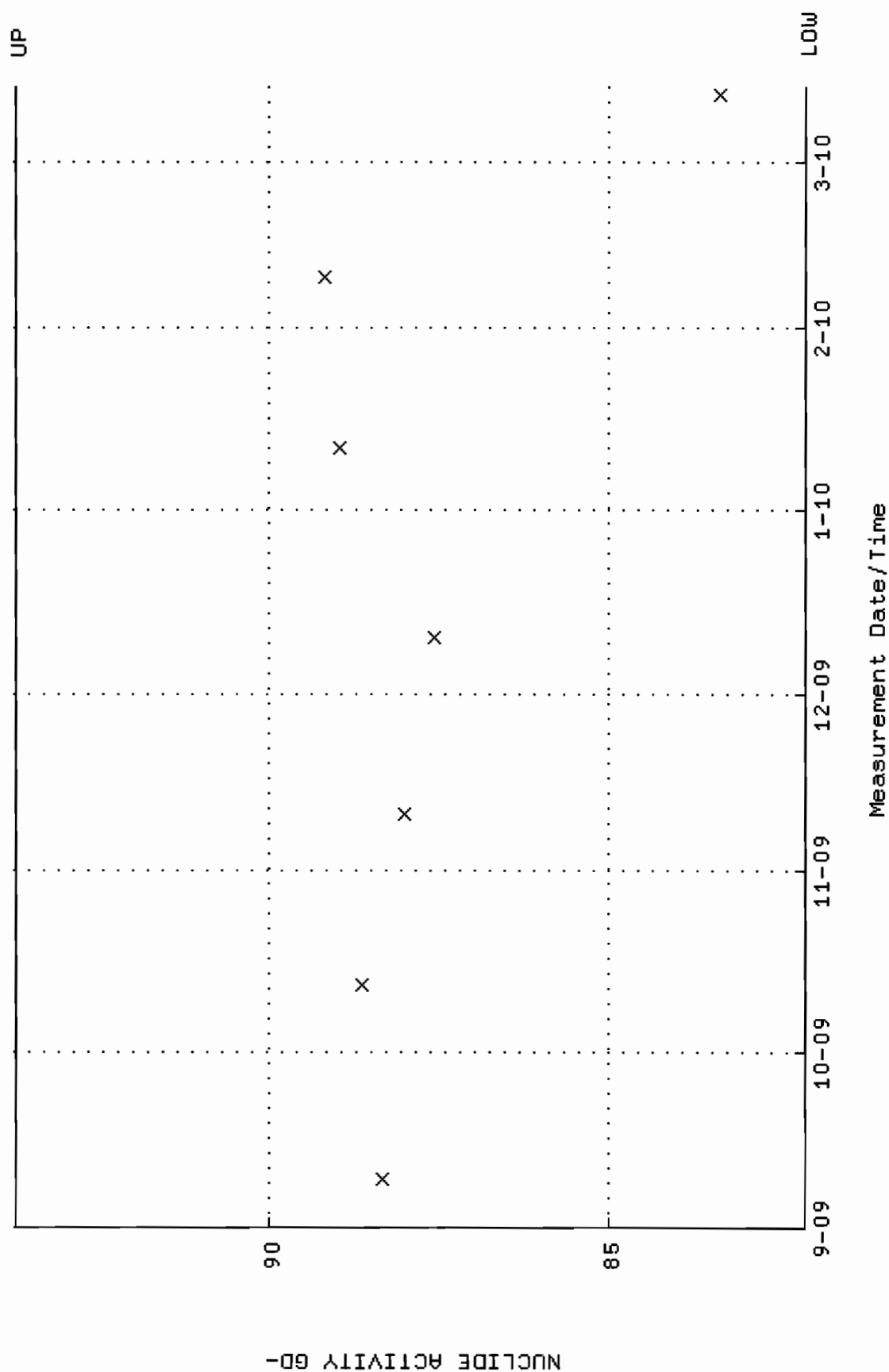
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00

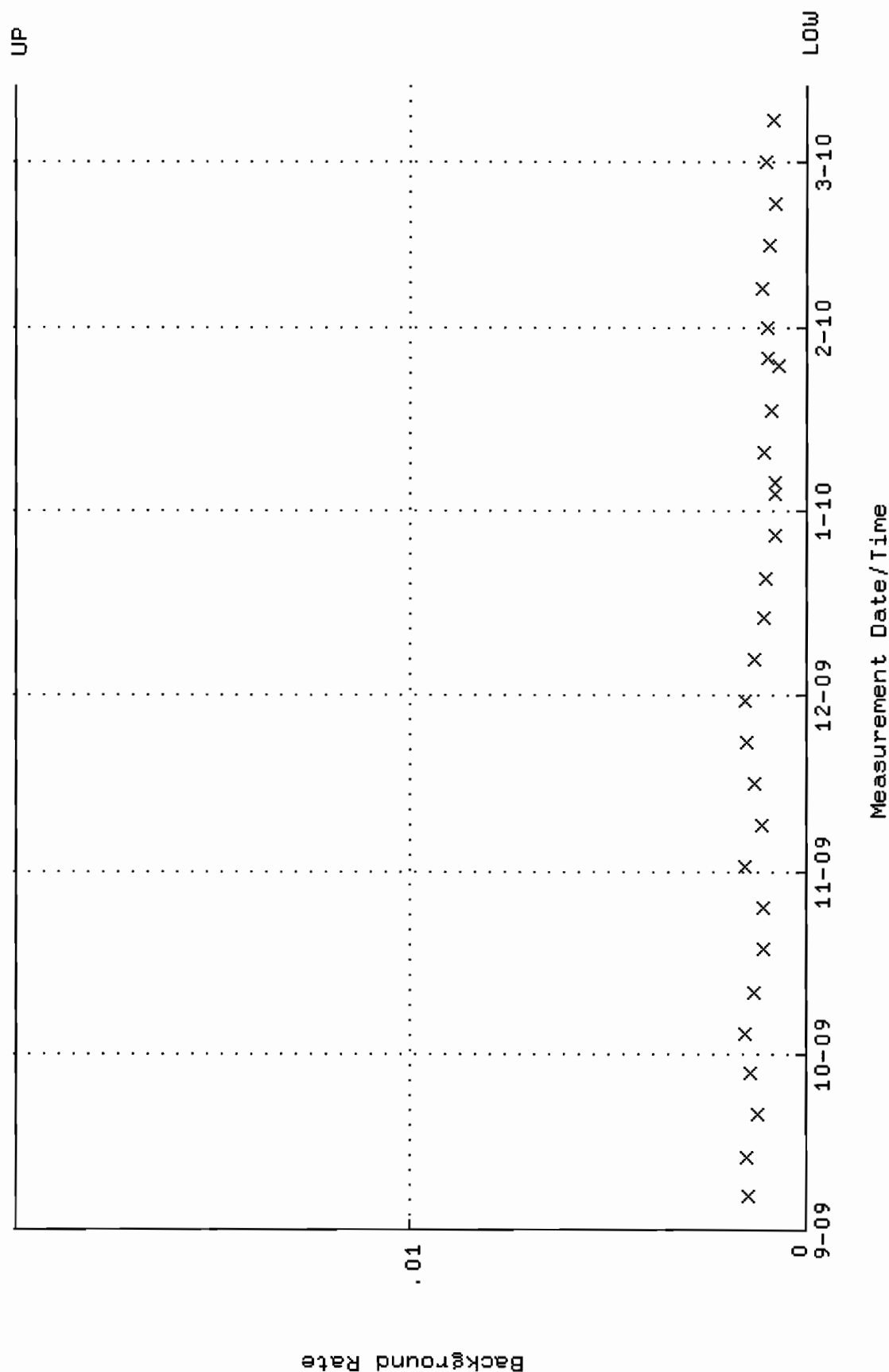
Lower/Upper Lmts: 0.316282 through 0.365366



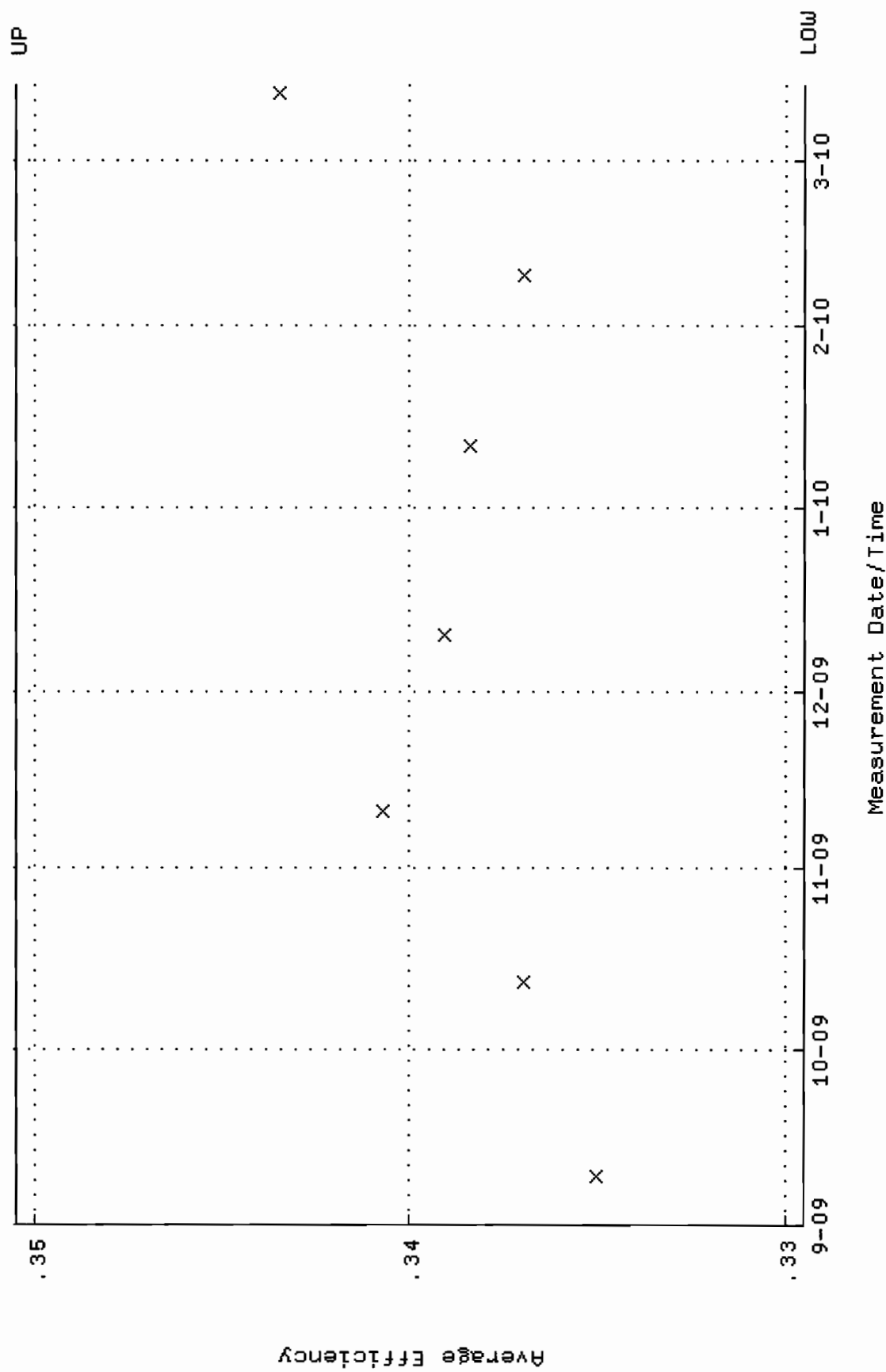
QA filename : DKA100:[ENV_ALPHA.QA.W]W083.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.1020 through 93.7348



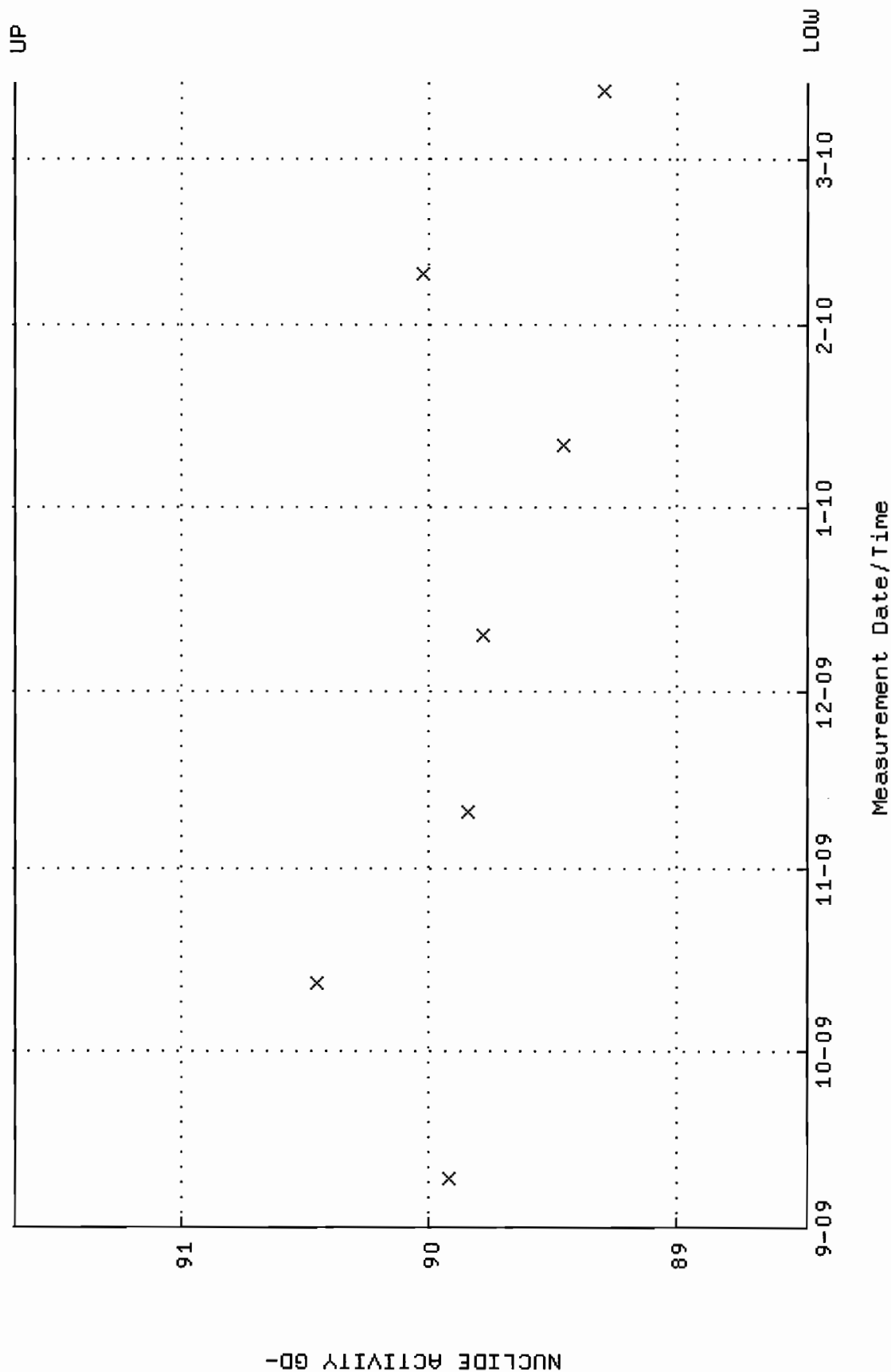
QA filename : DKA100:[ENV_ALPHA.QA.B]B083.QAF;3
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



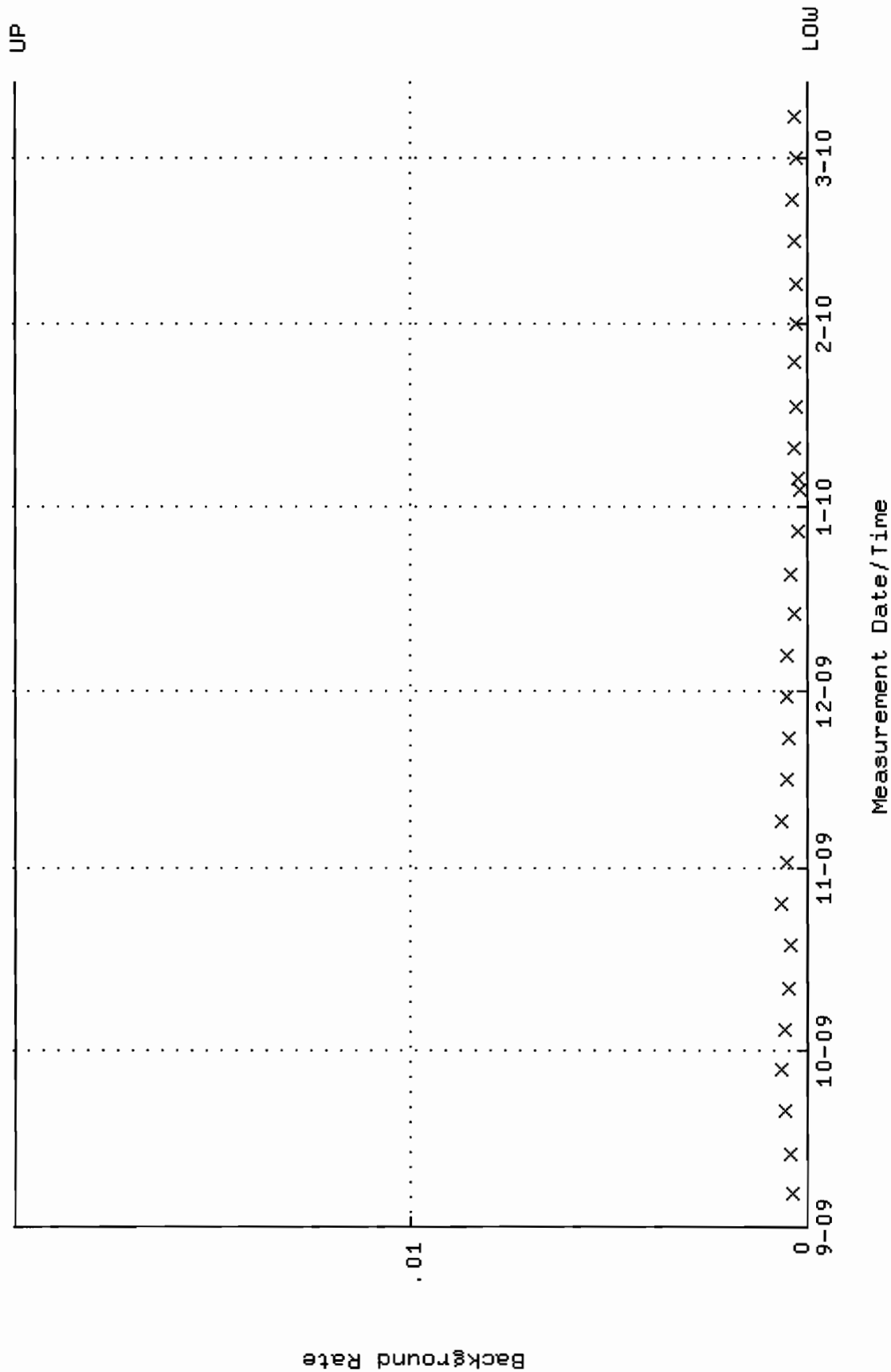
QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.329490 through 0.350492



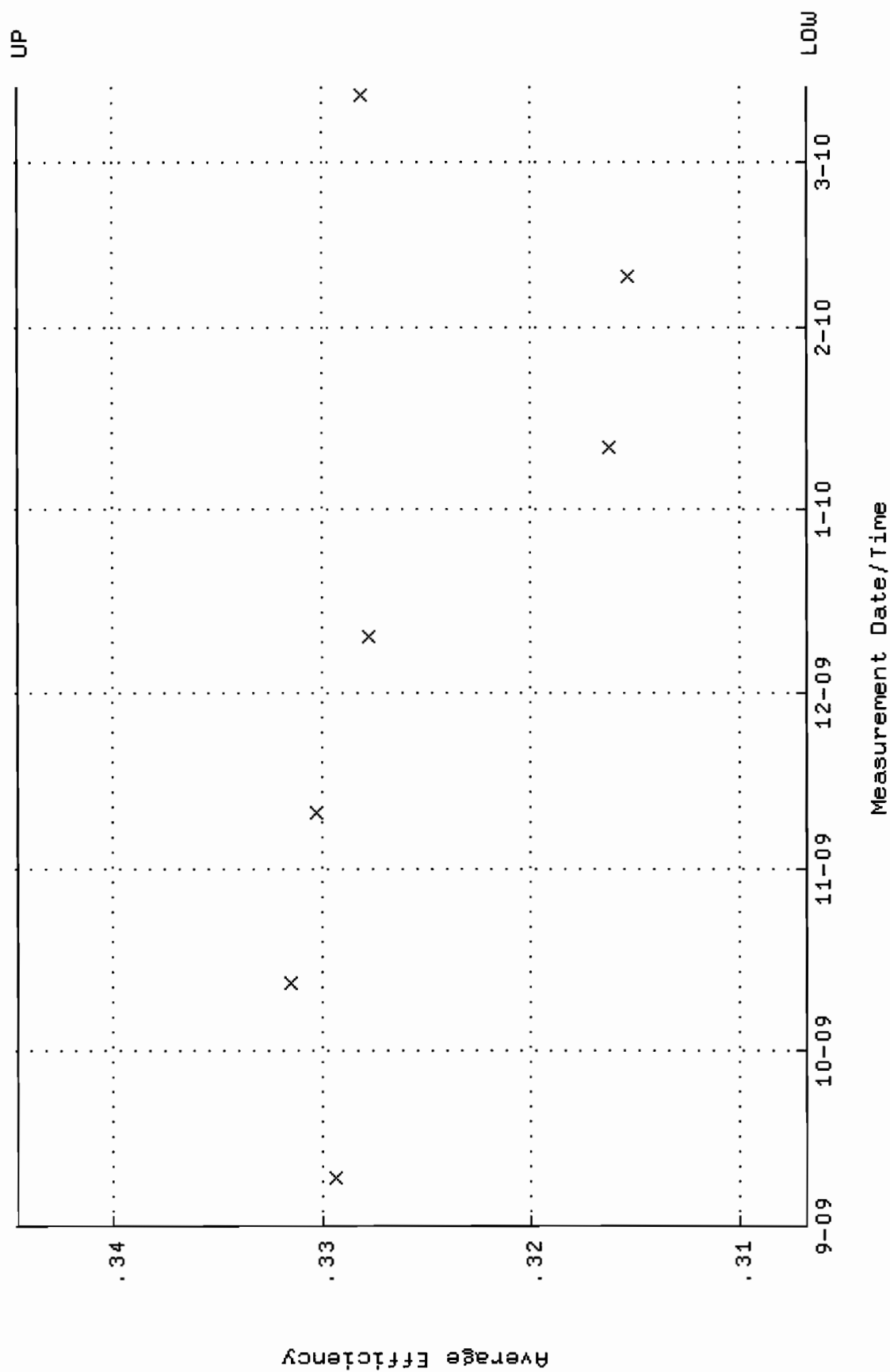
QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4771 through 91.6651



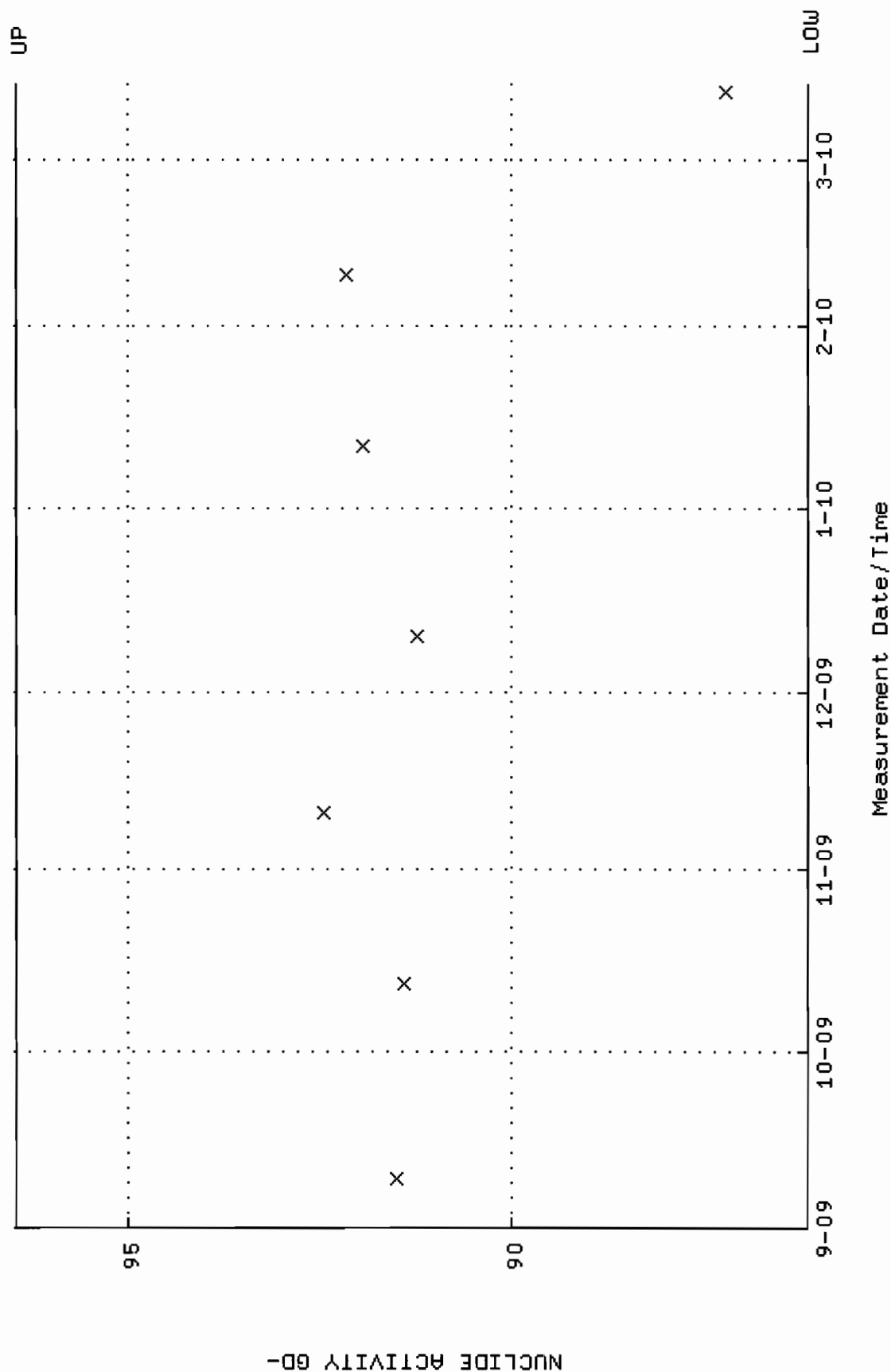
QA filename : DKA100:[ENV_ALPHA.QA.B]B084.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



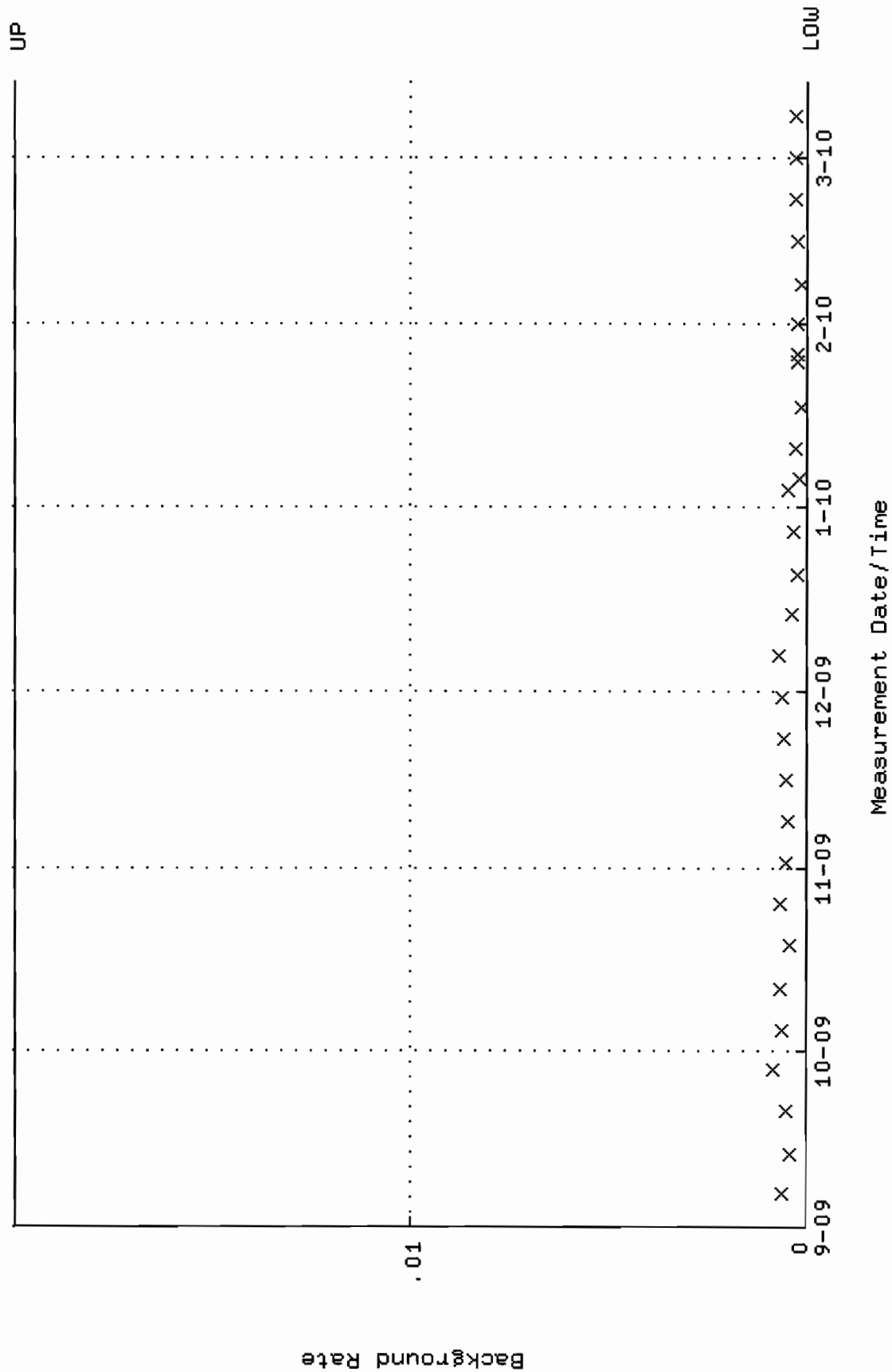
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.306815 through 0.344543



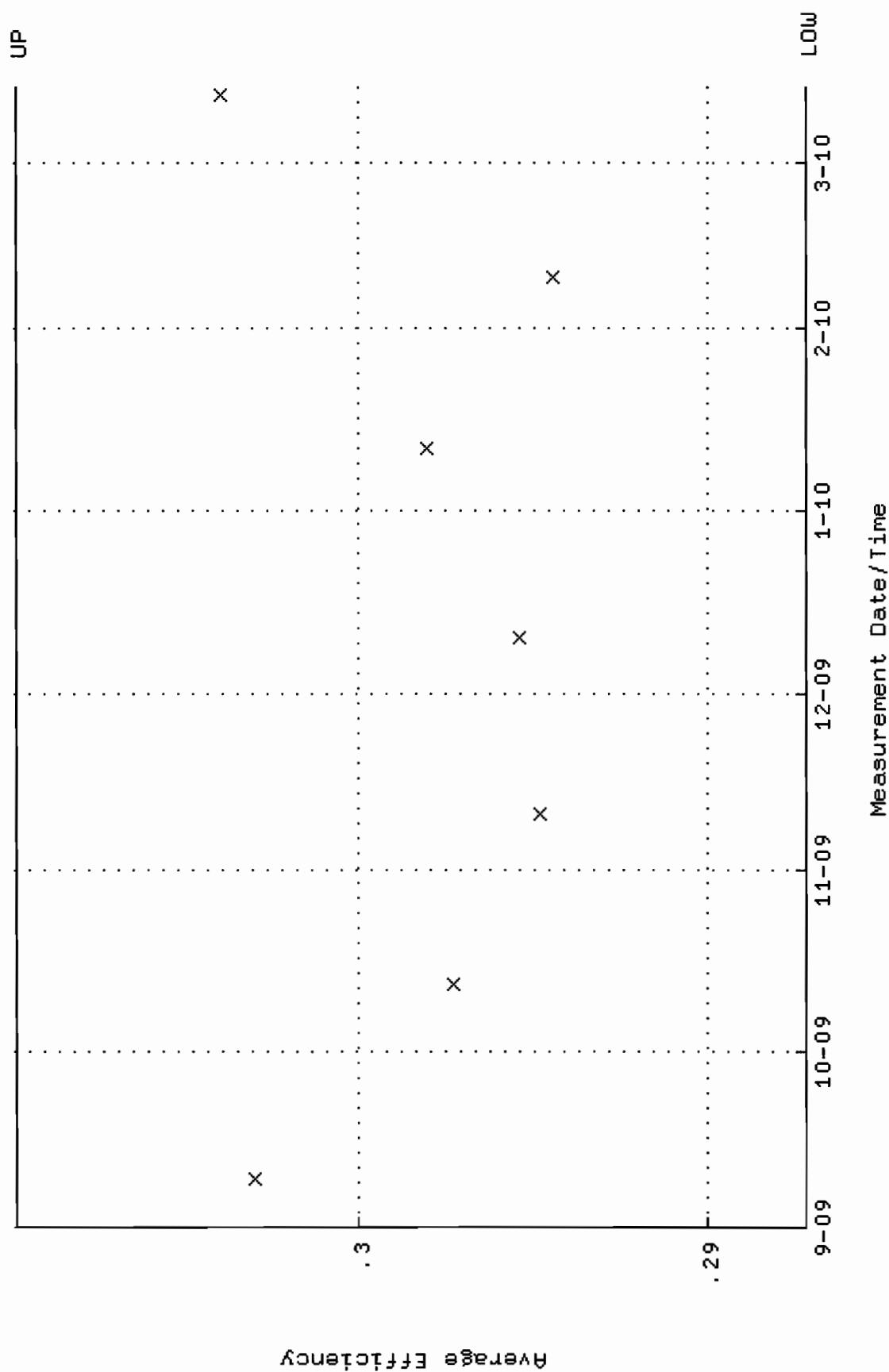
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1313 through 96.4525



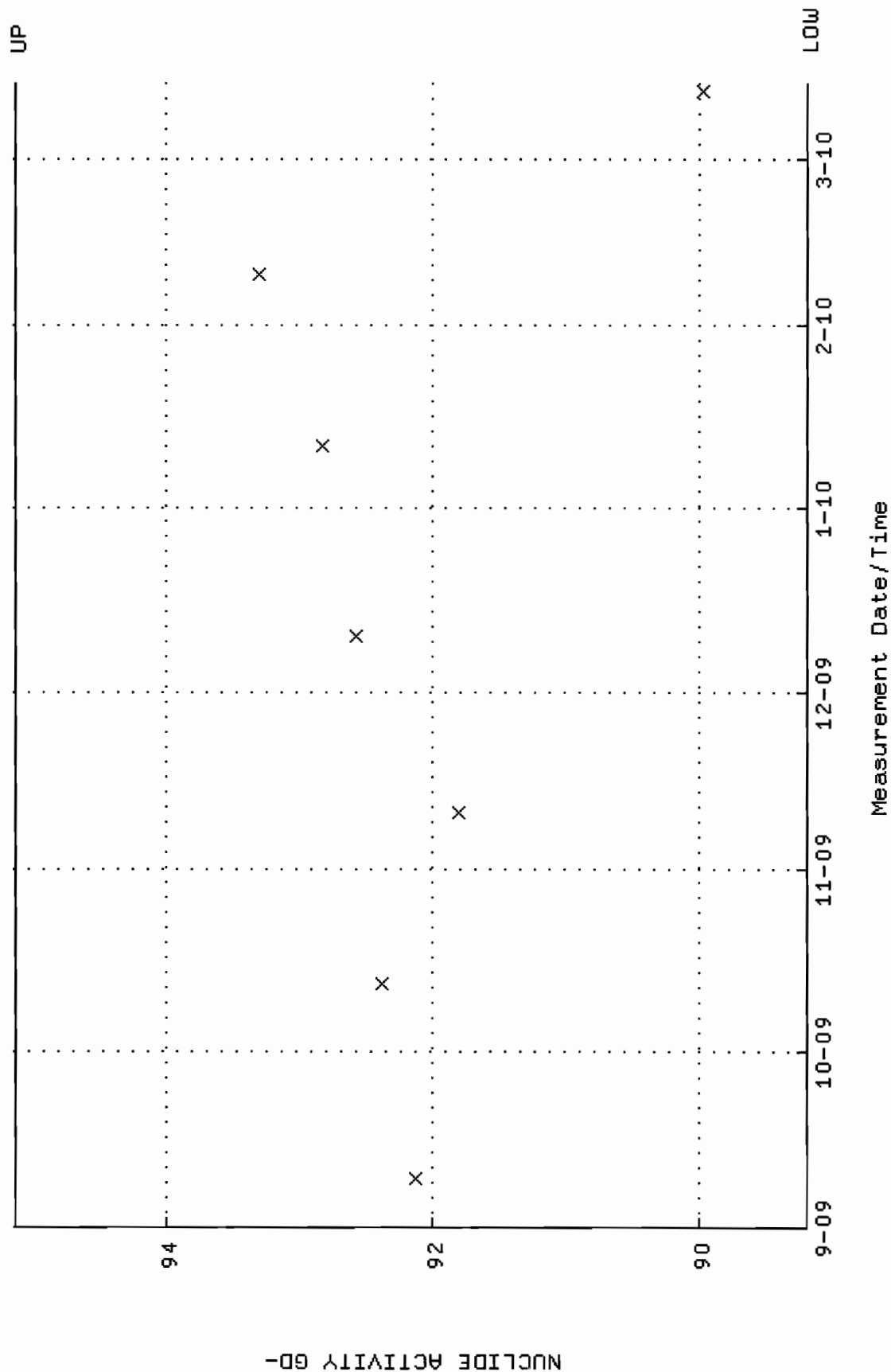
QA filename : DKA100:[ENV_ALPHA.QA.B]B085.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



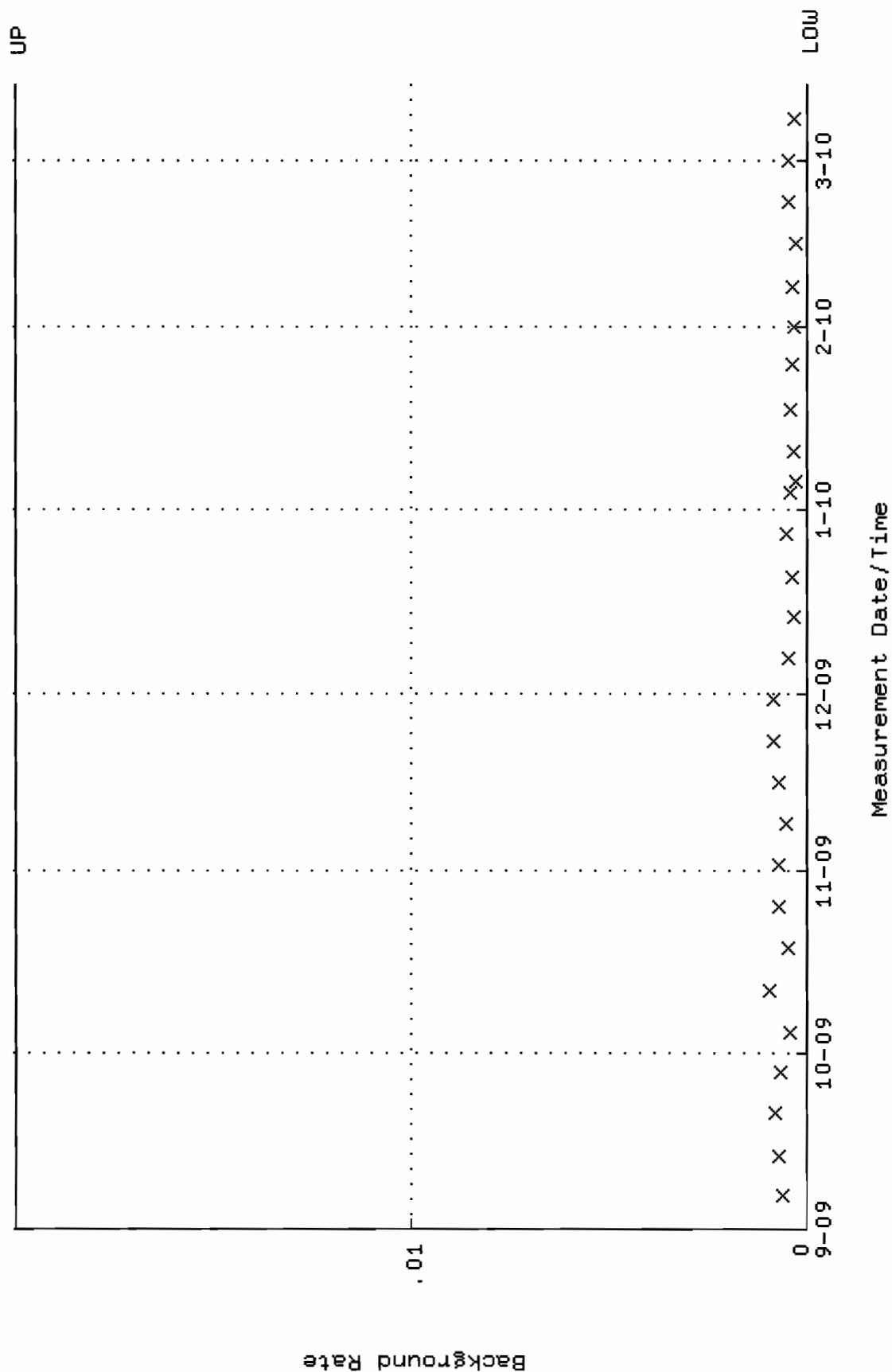
QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.287158 through 0.309794



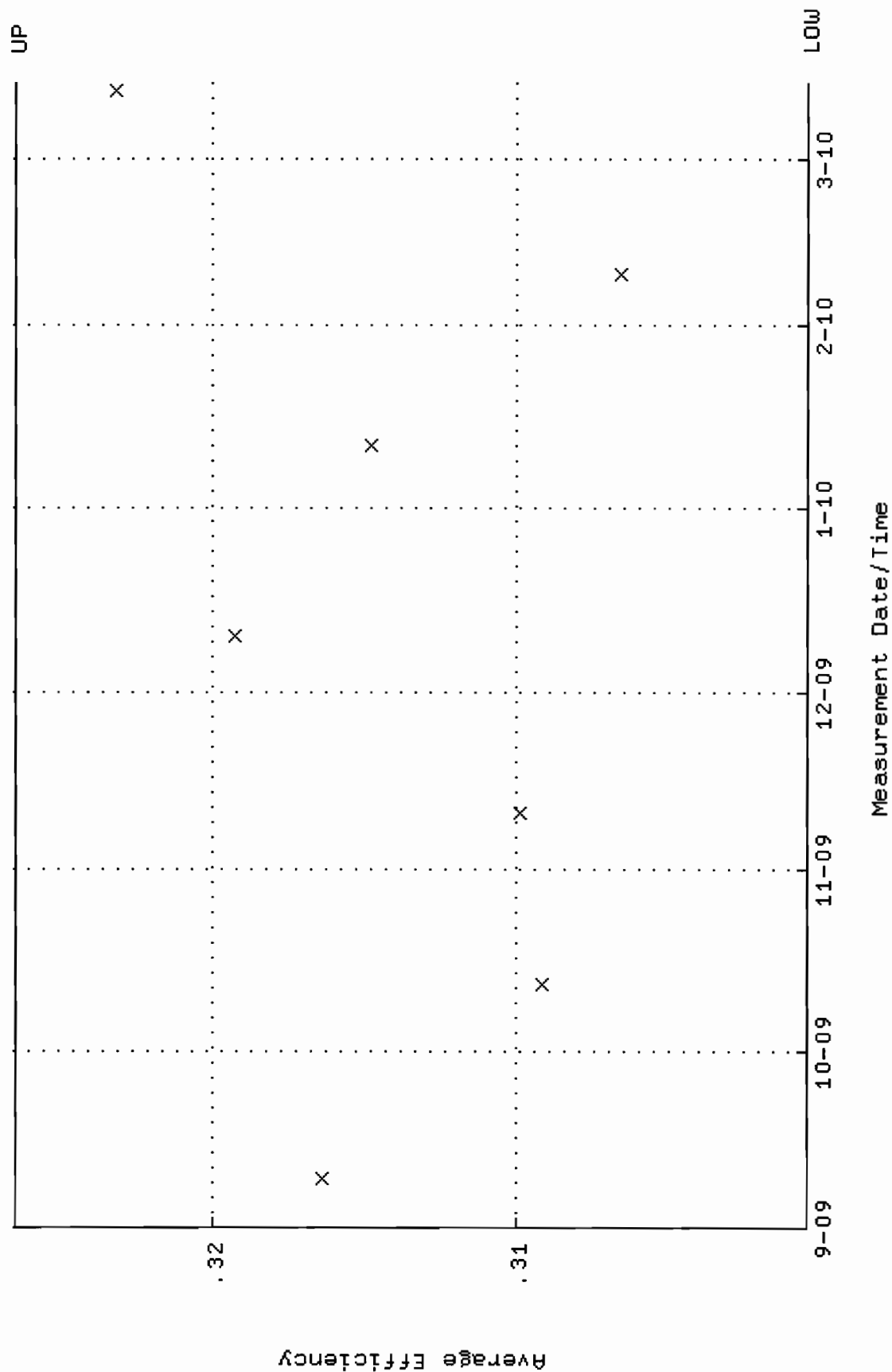
QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1886 through 95.1274



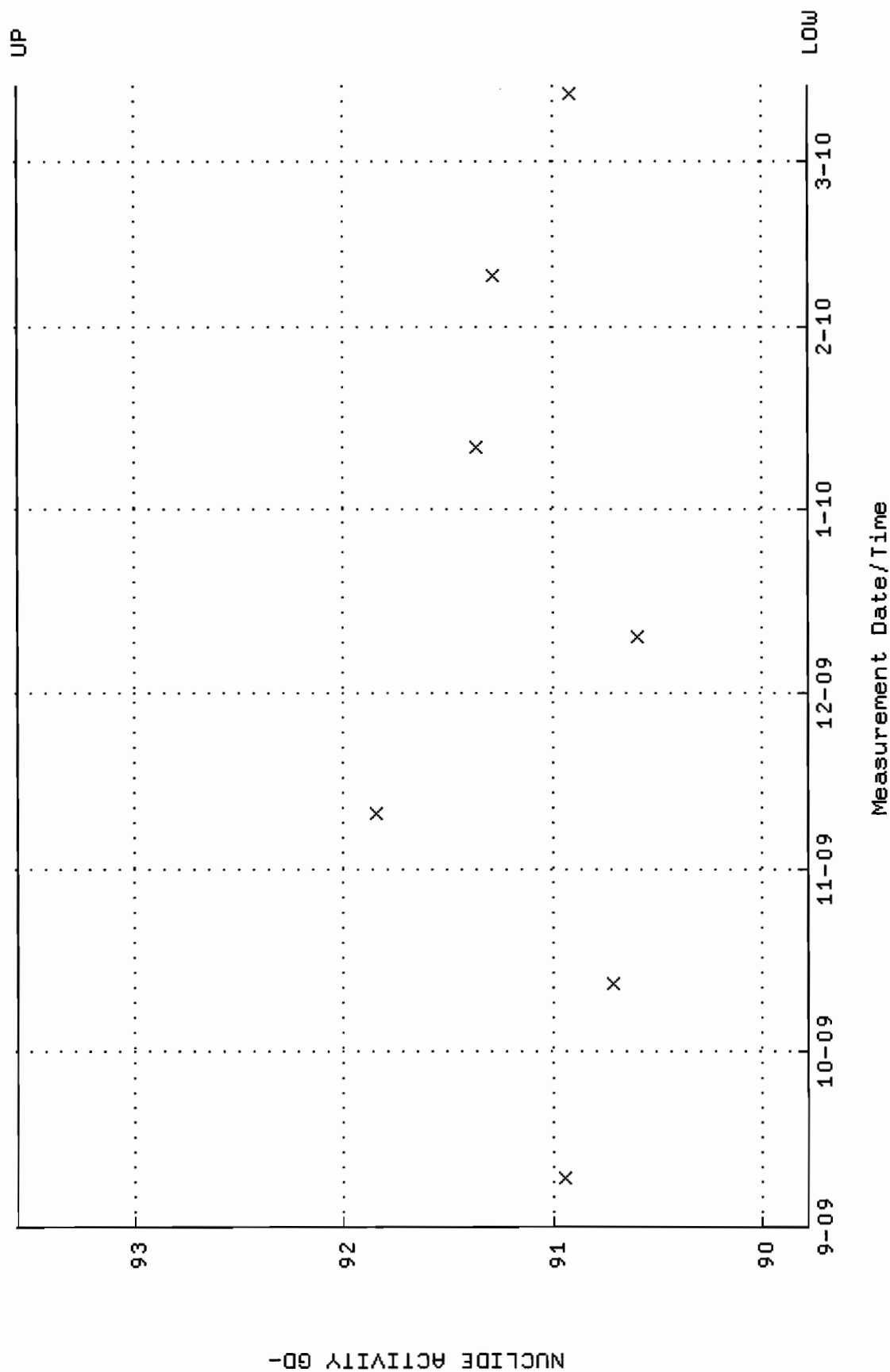
QA filename : DKA100:[ENV_ALPHA.QA.B]B086.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



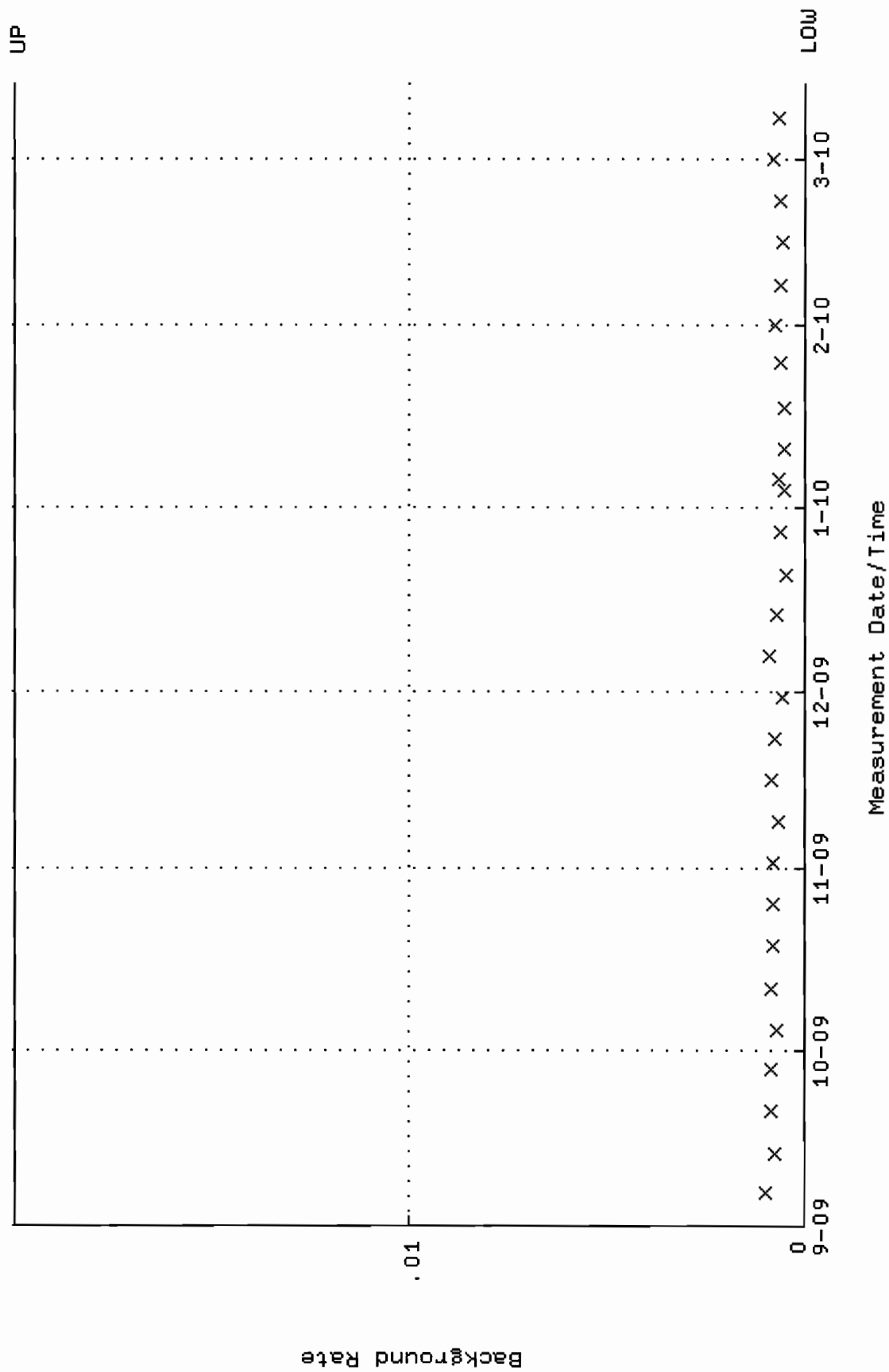
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.300487 through 0.326465



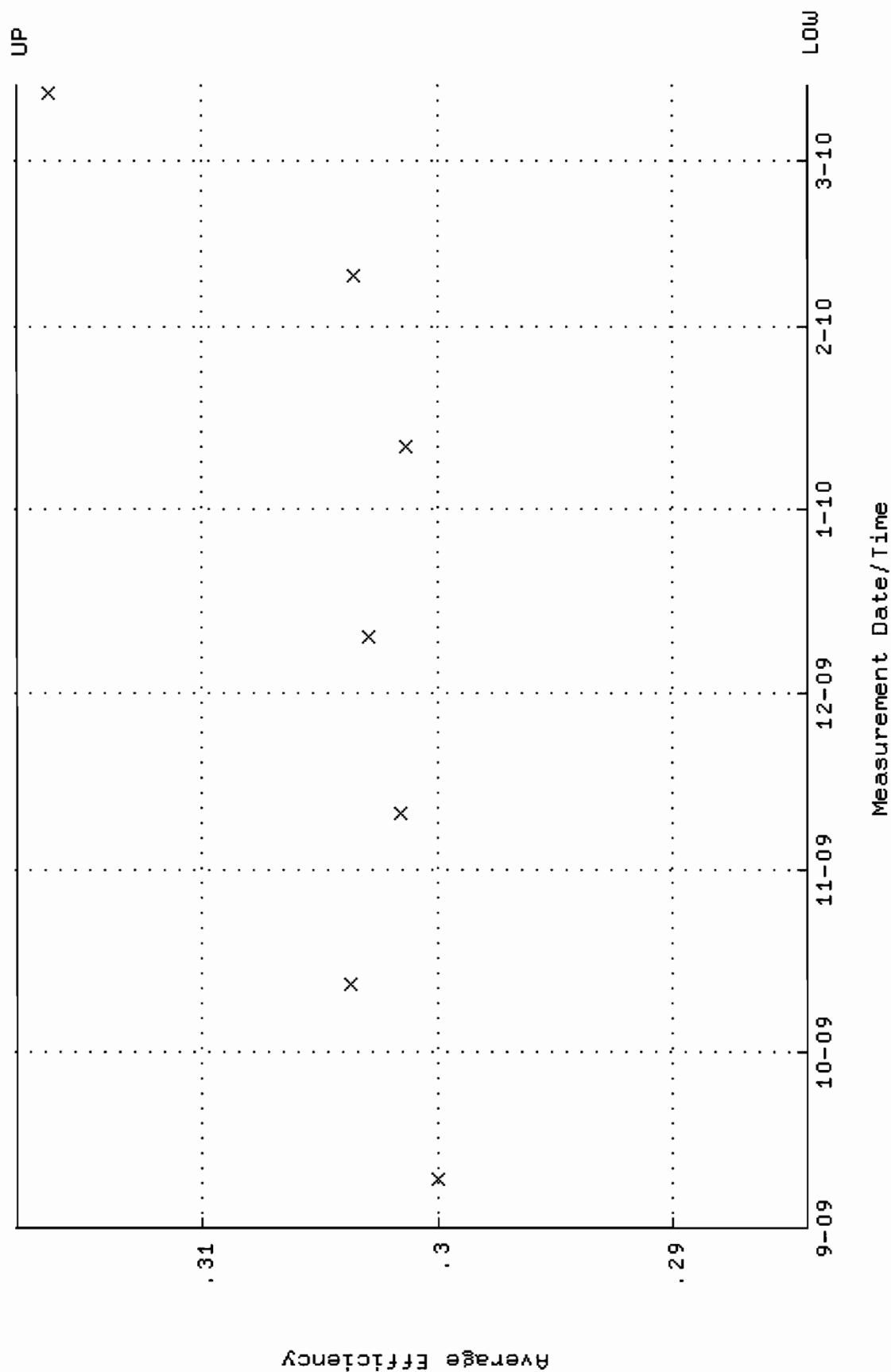
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.7763 through 93.5625



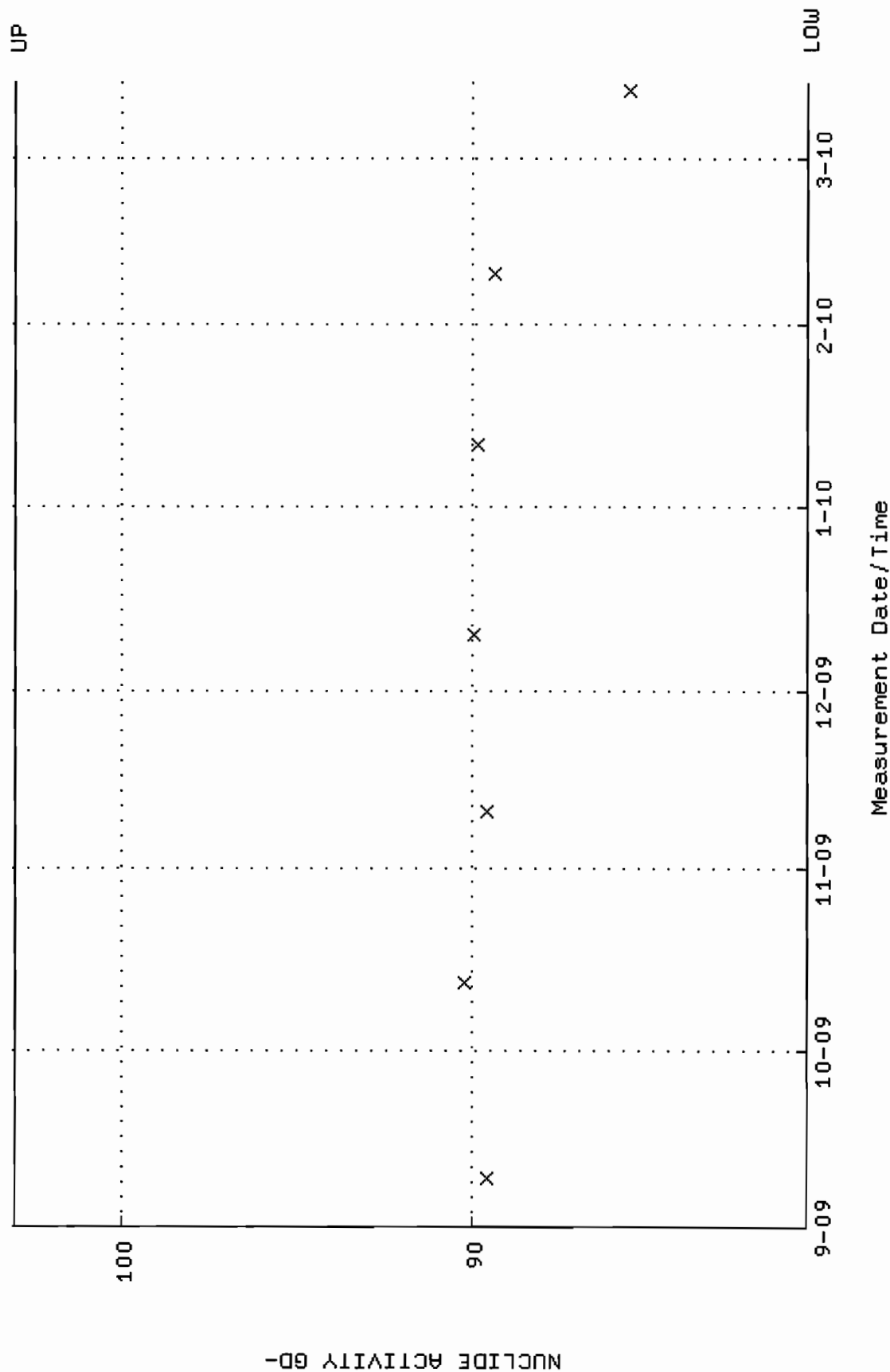
QA filename : DKA100:[ENV_ALPHA.QA.B]B087.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



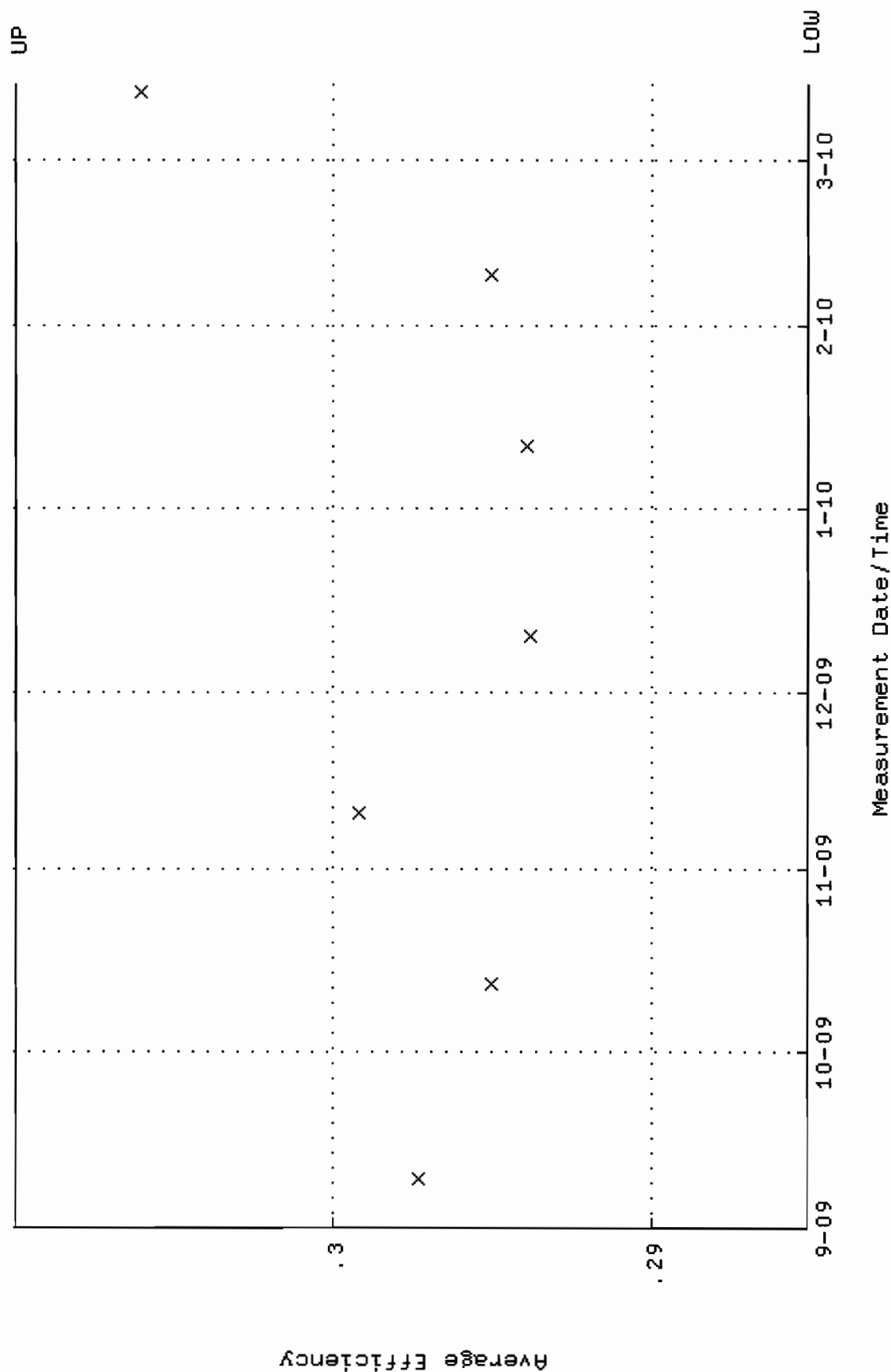
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF; 4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.284264 through 0.317864



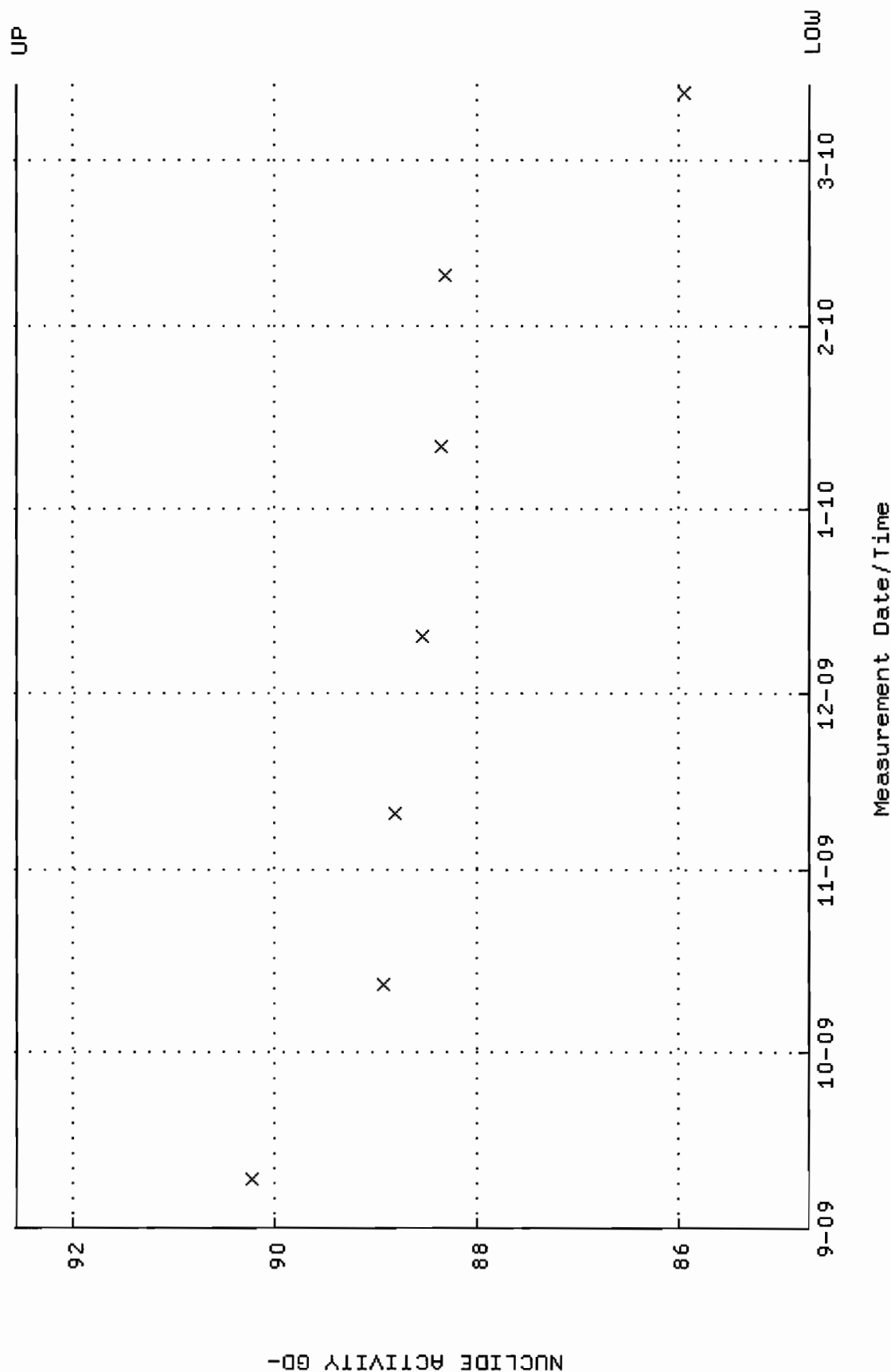
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.4493 through 103.037



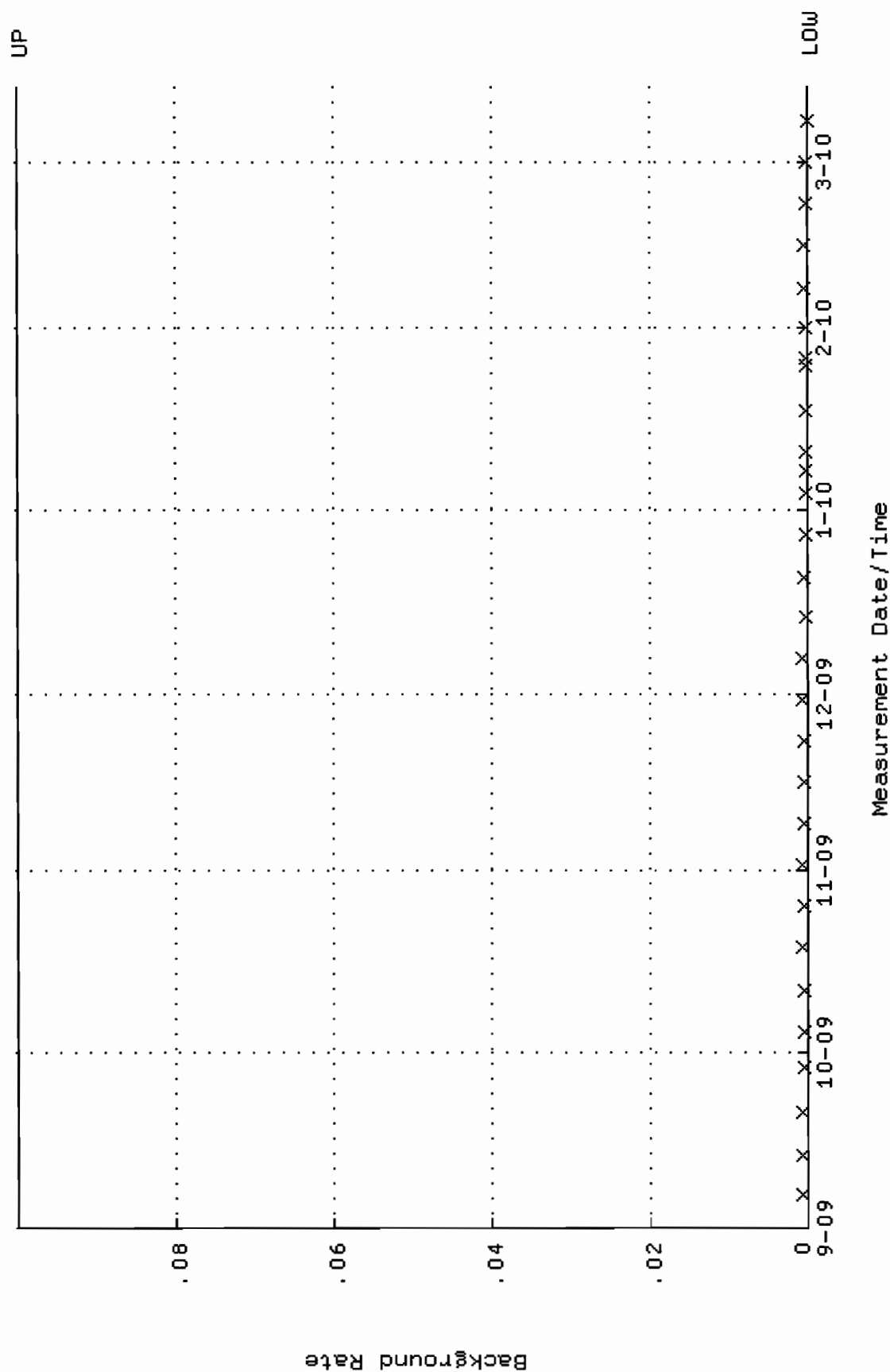
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.285061 through 0.309915



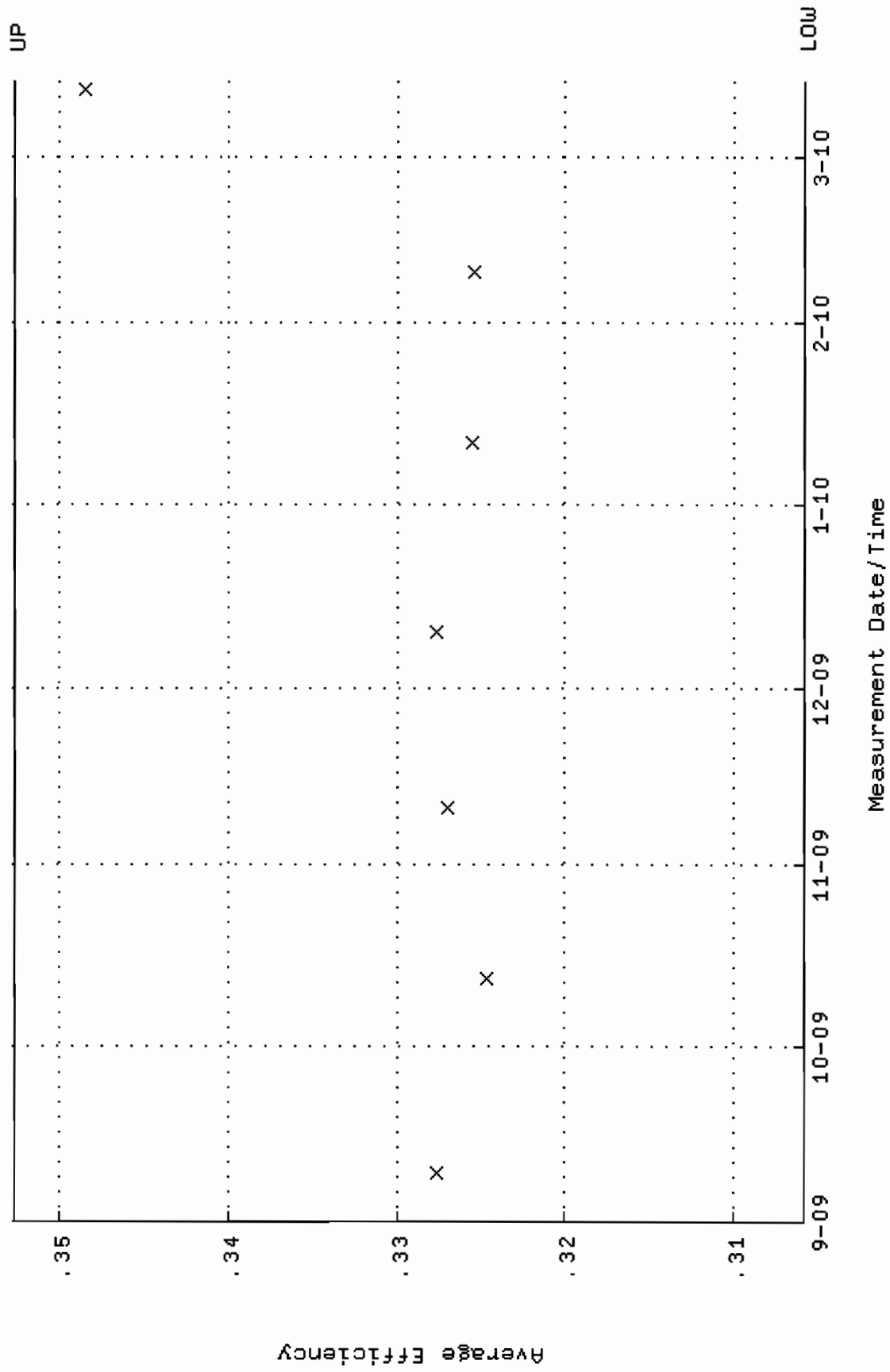
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.7074 through 92.5526



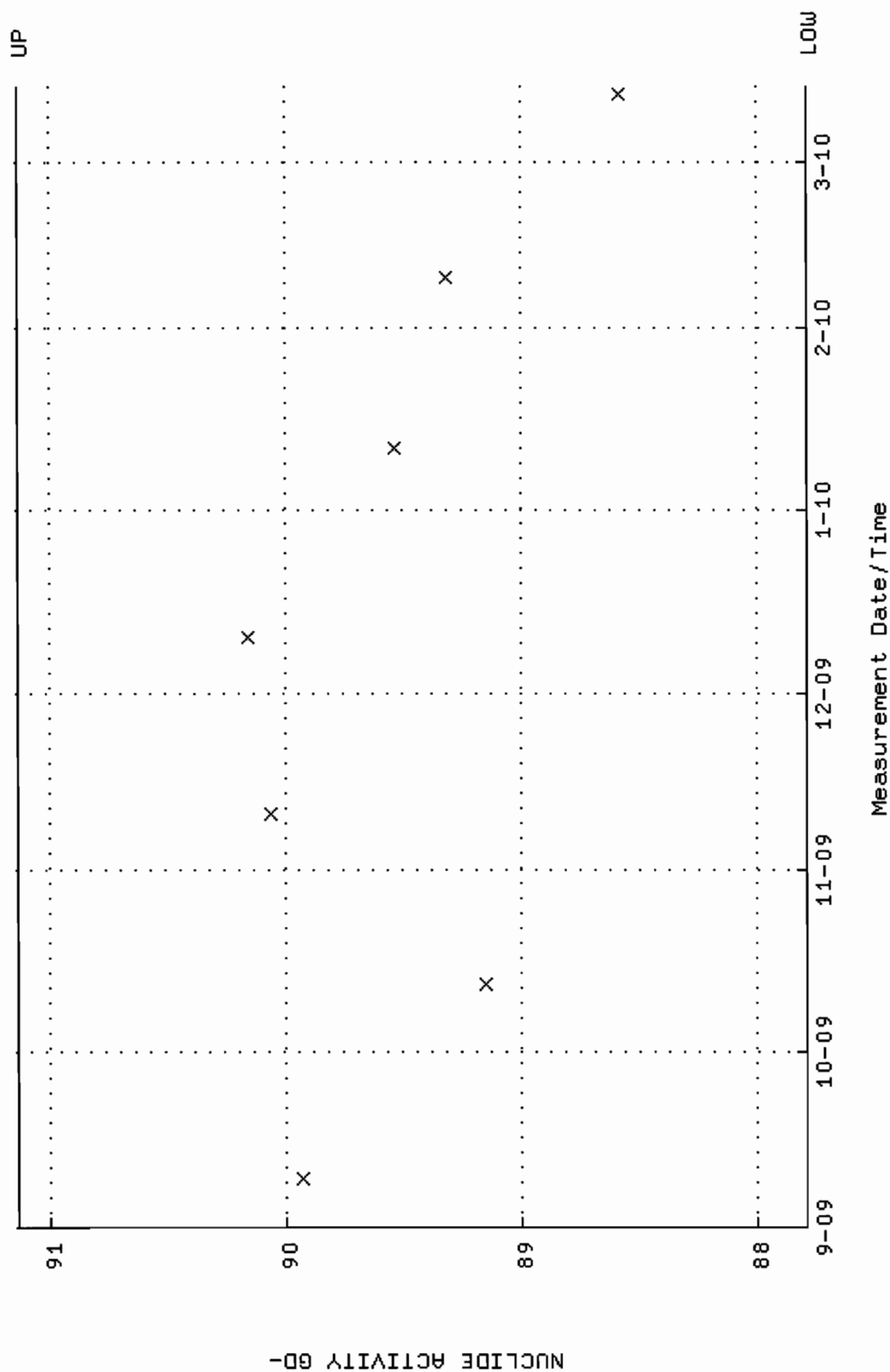
QA filename : DKA100:[ENV_ALPHA.QA.B]B089.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



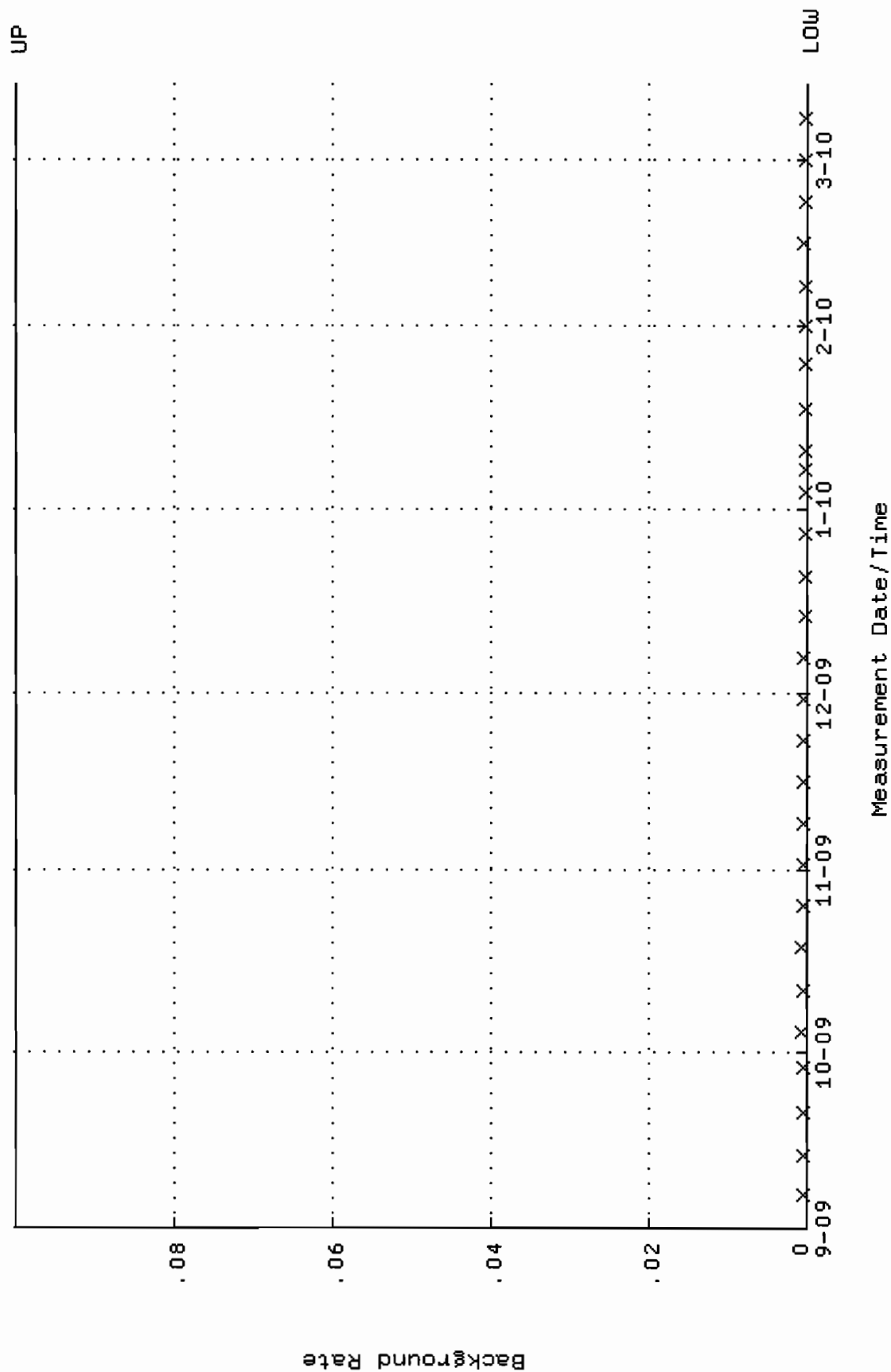
QA filename : DKA100:[ENV-ALPHA.QA.W]W090.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.305824 through 0.352694



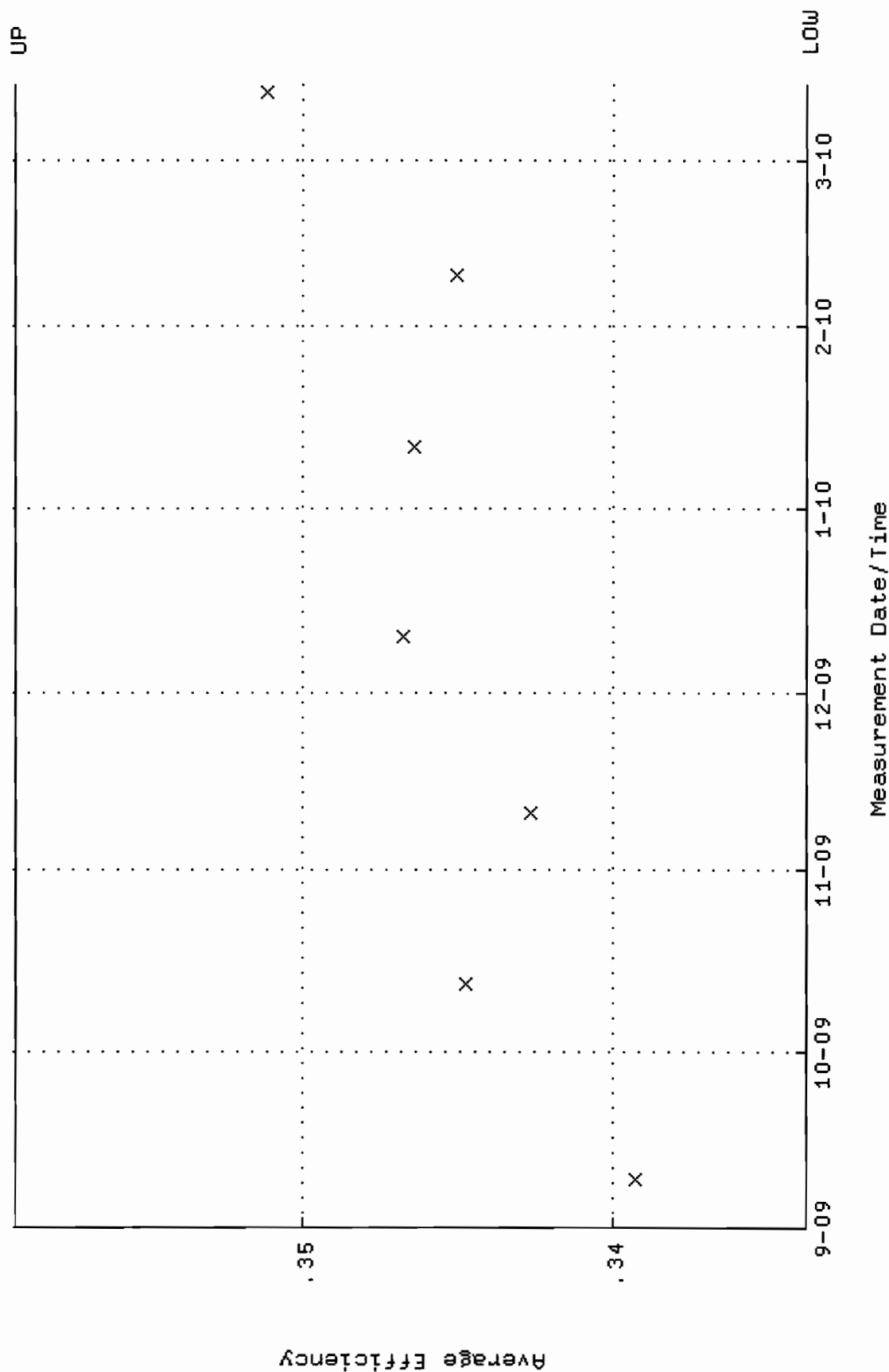
QA filename : DKA100:[ENV-ALPHA.QA.W]W090.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7860 through 91.1302



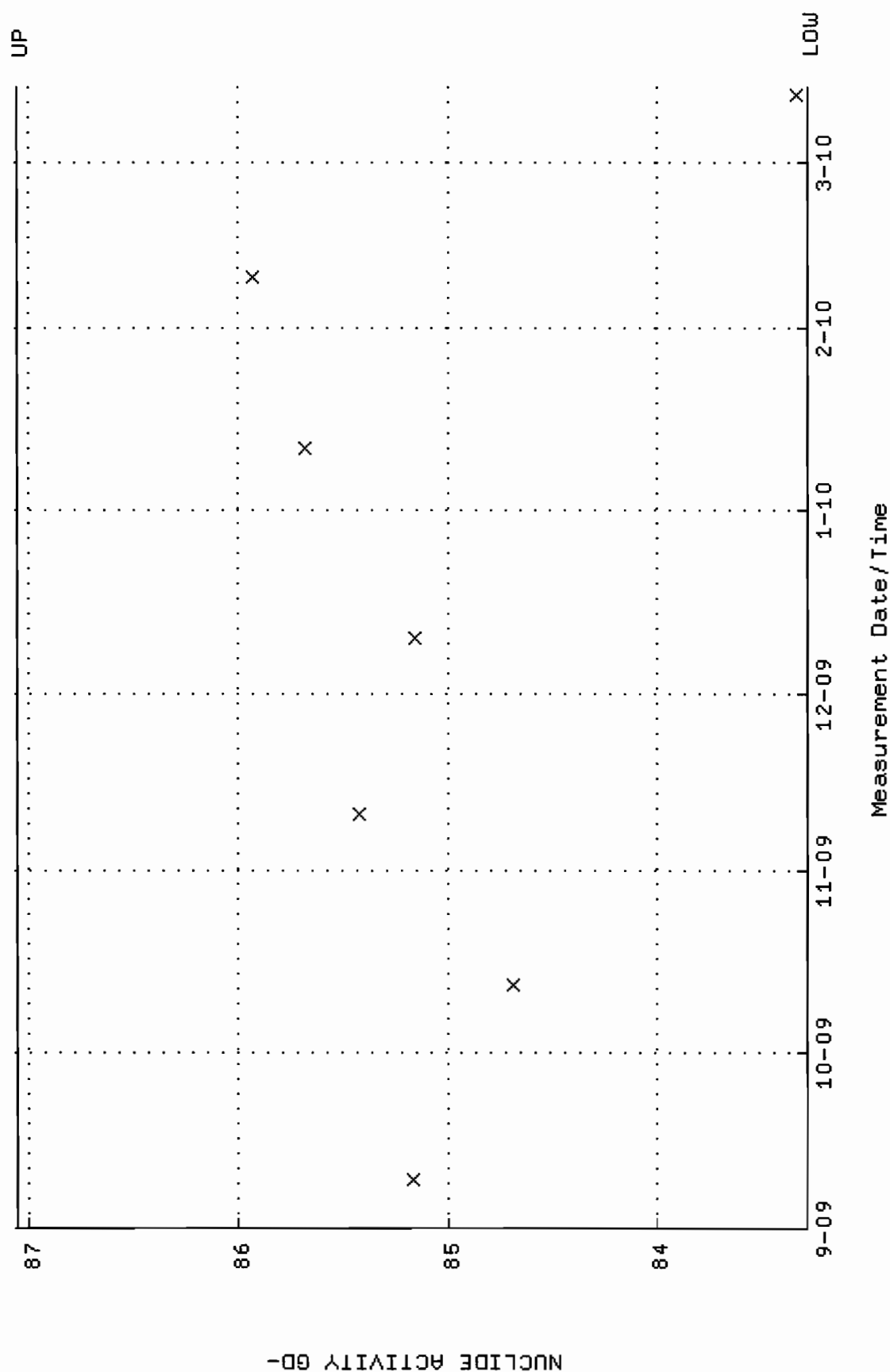
QA filename : DKA100:[ENV_ALPHA.QA.B]B090.QAF;2
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 Lower/Upper Lmts: 0.000000E+00 through 0.100000



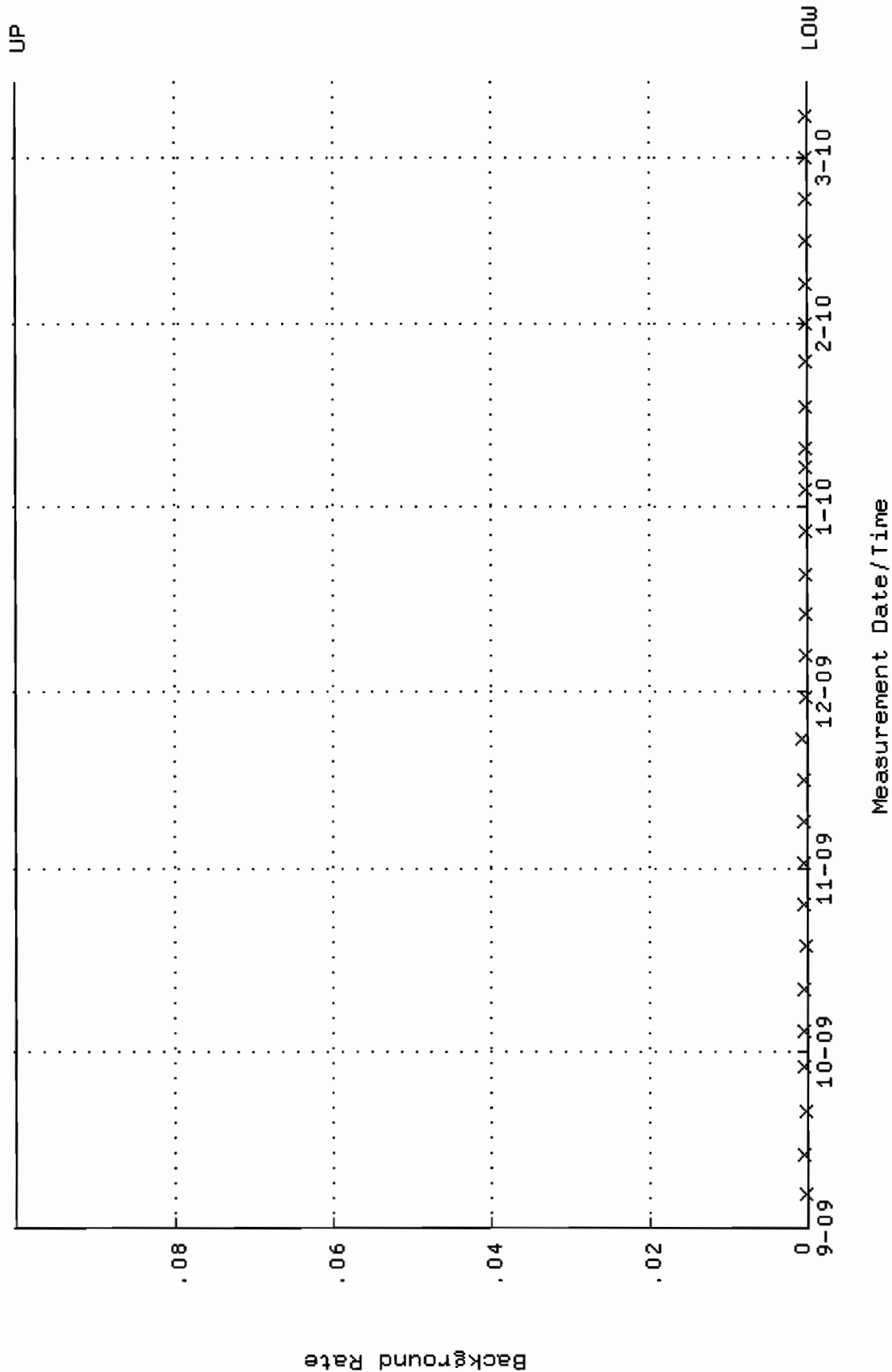
QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.333733 through 0.359273



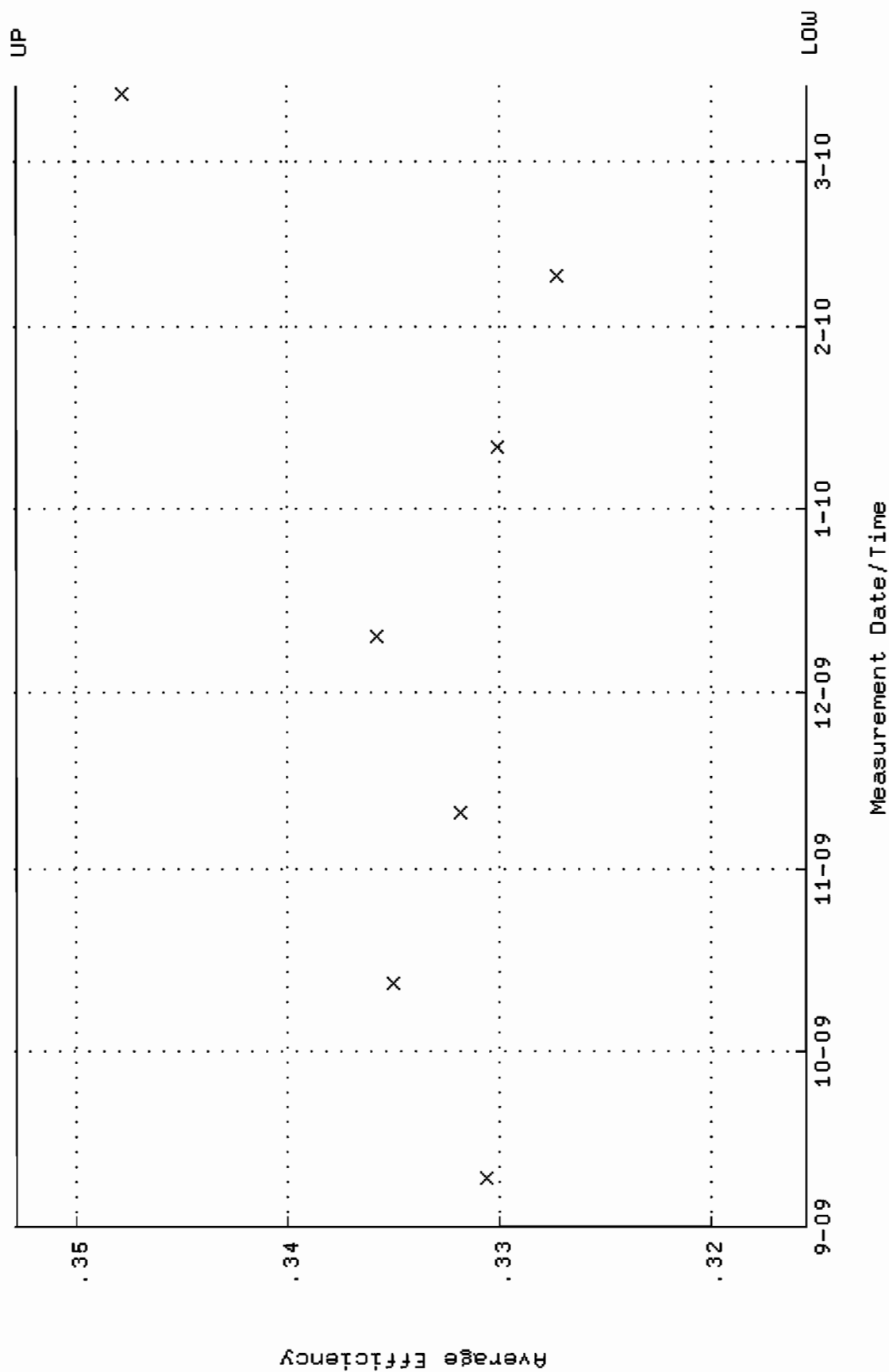
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.2831 through 87.0563



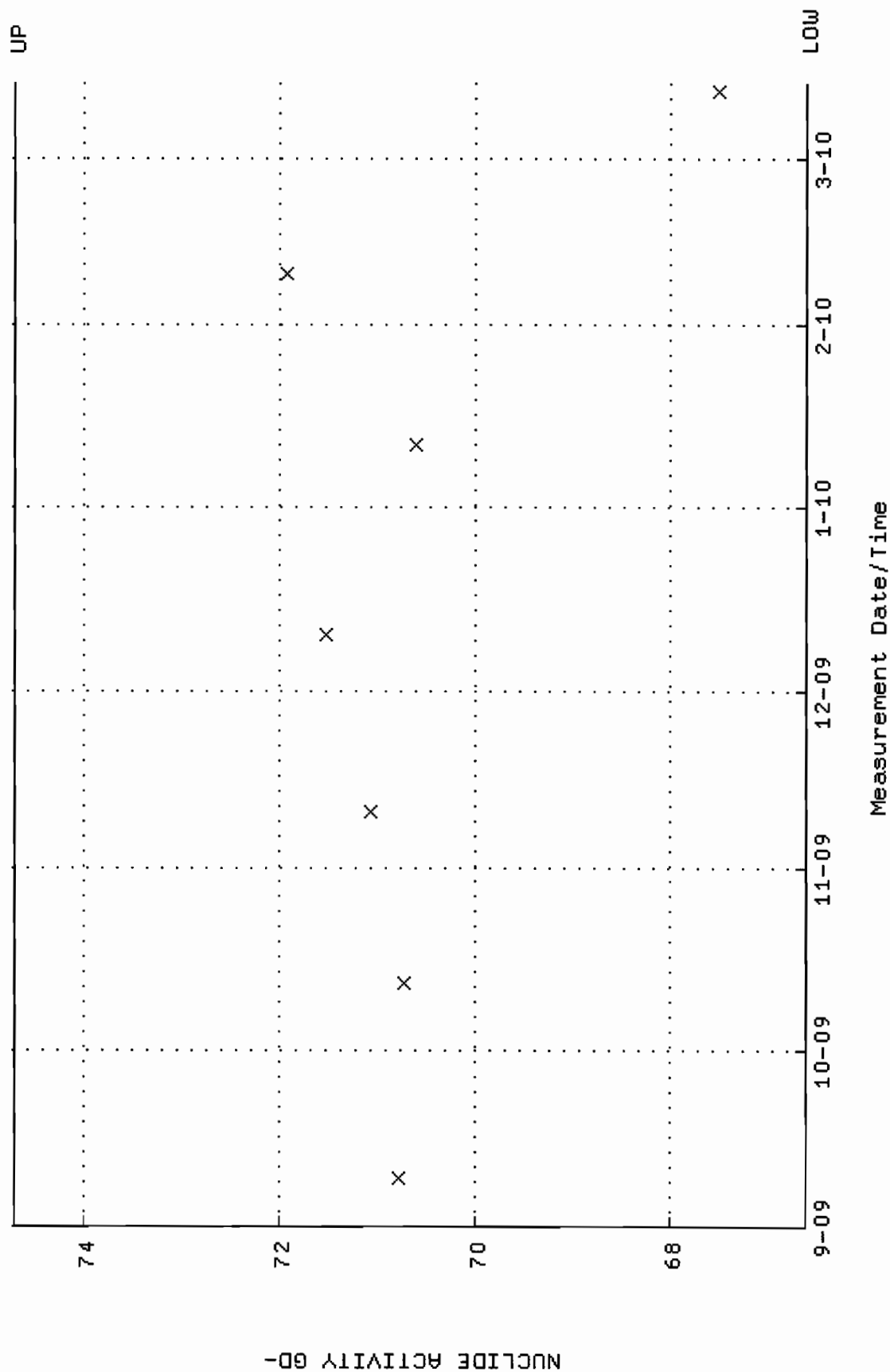
QA filename : DKA100:[ENV_ALPHA.QA.B]B091.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



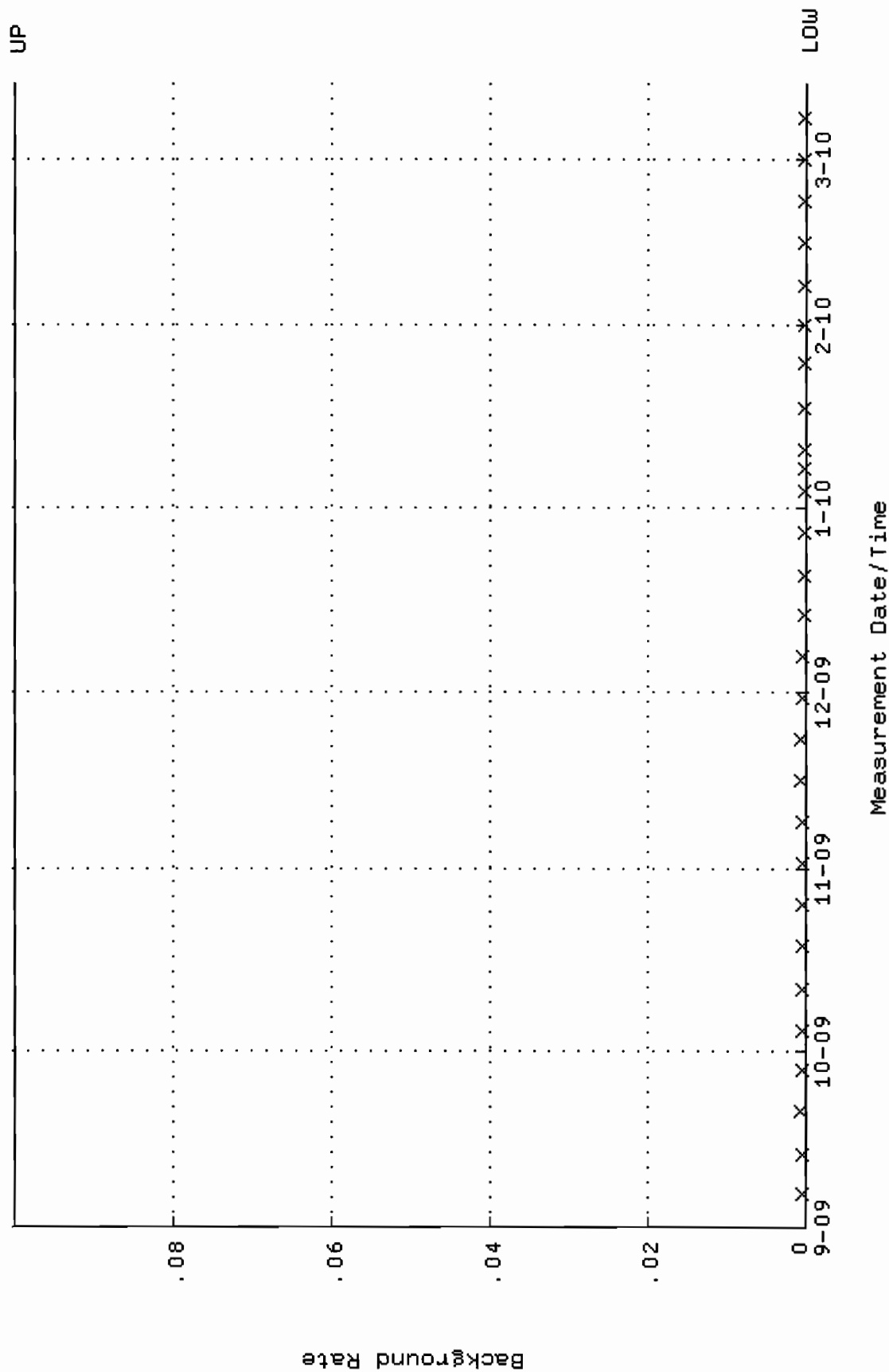
QA filename : DKA100:[ENV_ALPHA.QA.W]W102.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.315554 through 0.352816



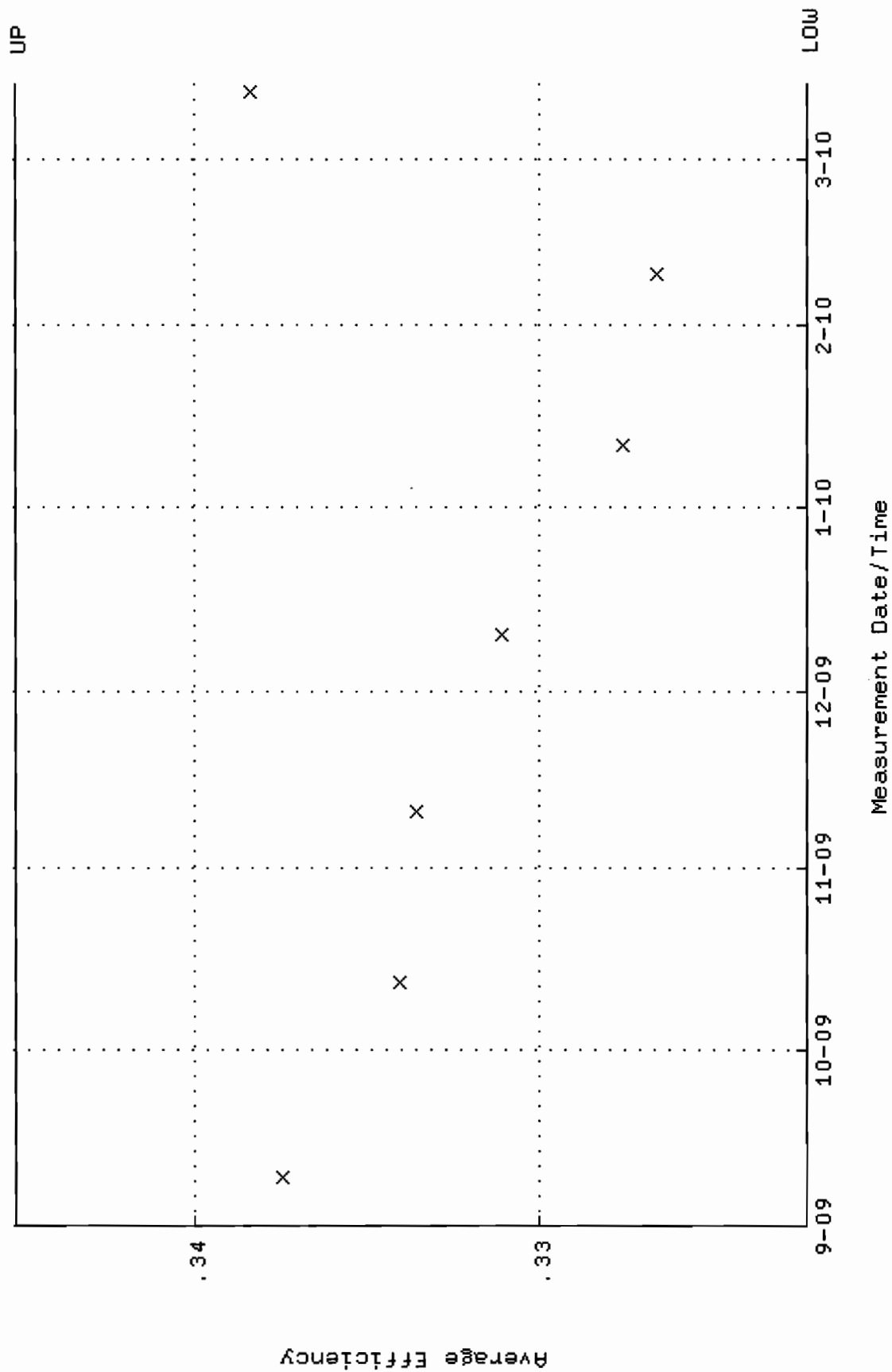
QA filename : DKA100:[ENV_ALPHA.QA.W]W102.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 66.6183 through 74.7119



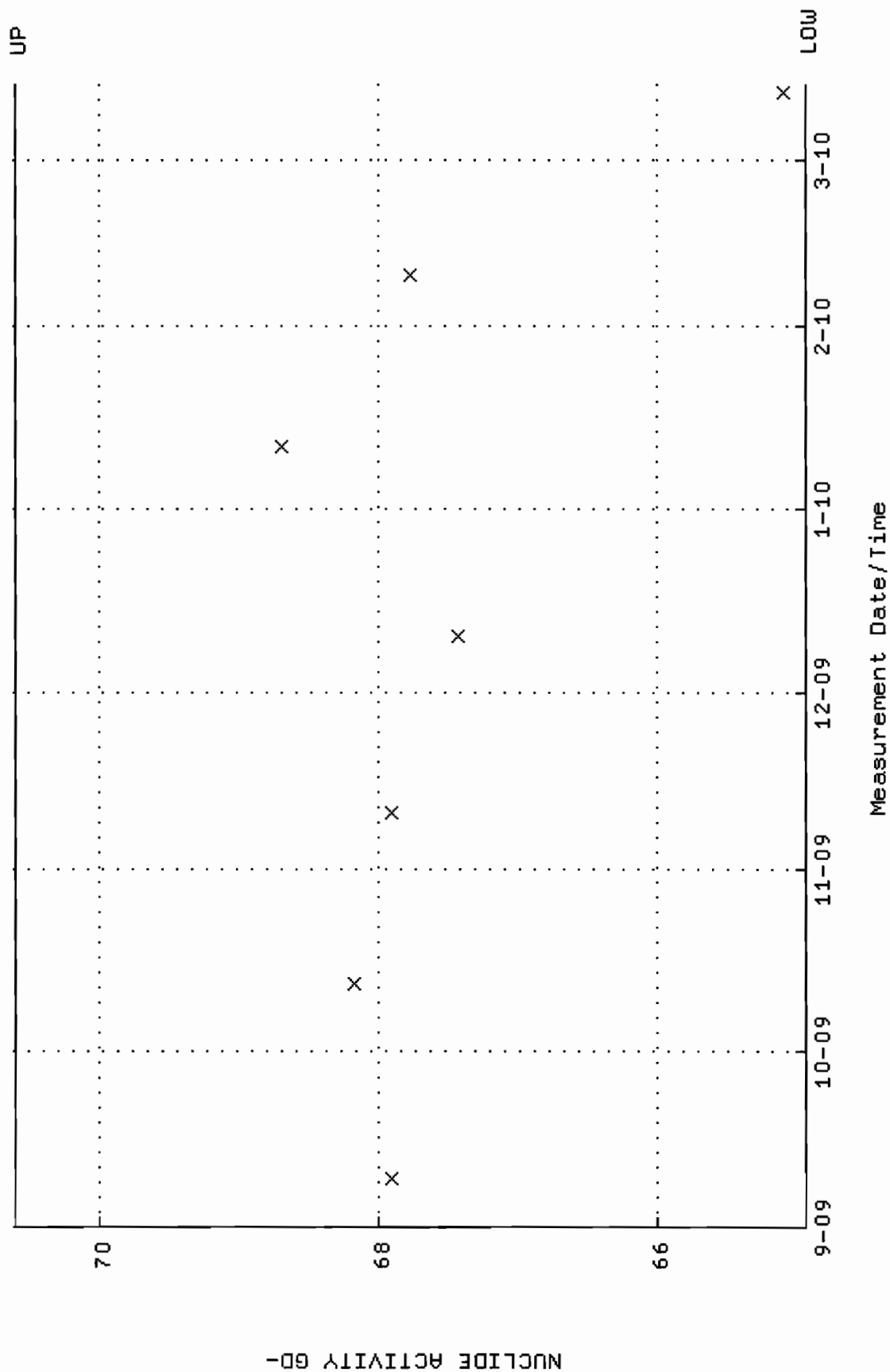
QA filename : DKA100:[ENV_ALPHA.QA.B]B102.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



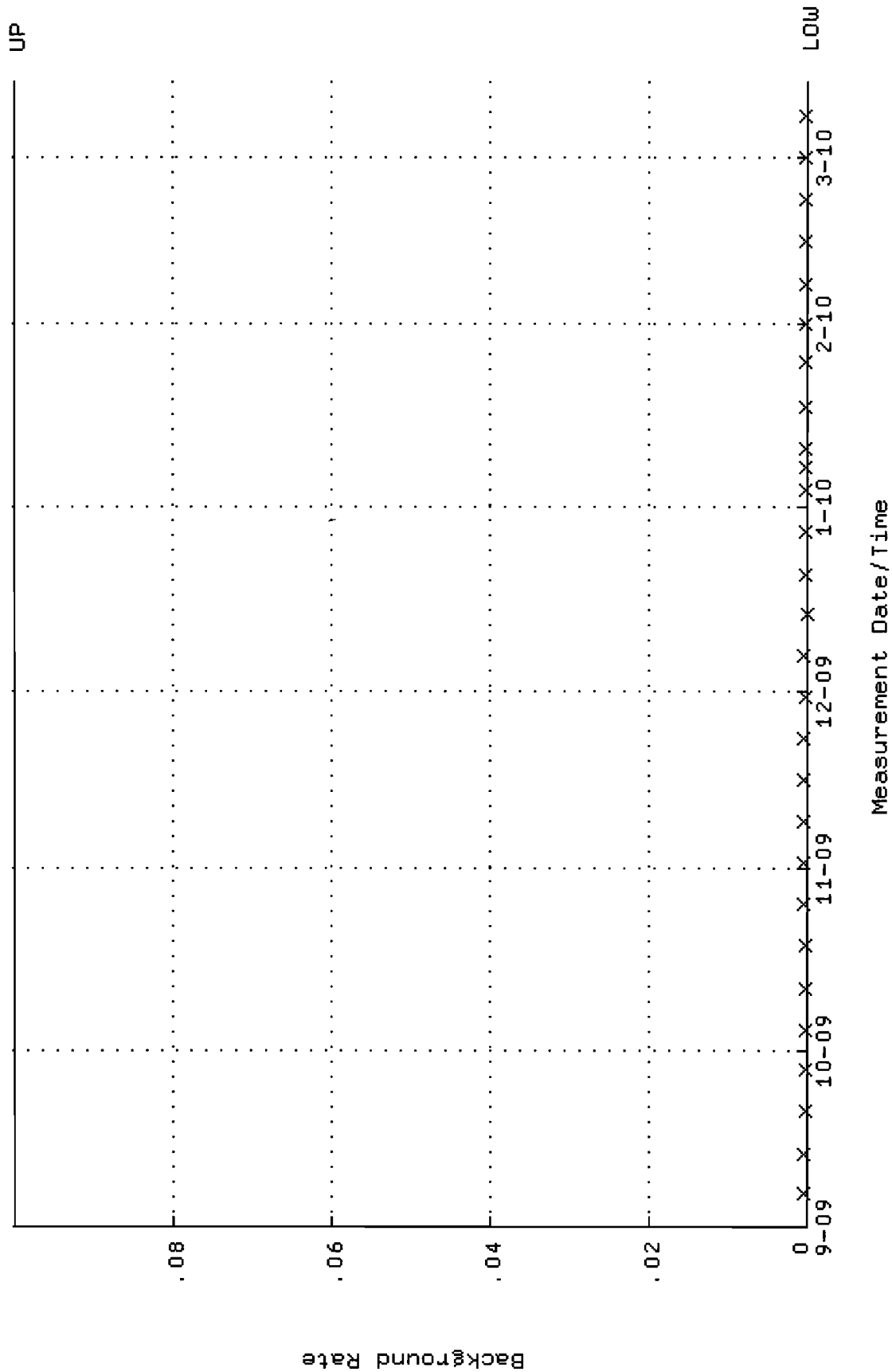
QA filename : DKA100:[ENV_ALPHA.QA.W]w103.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.322227 through 0.345175



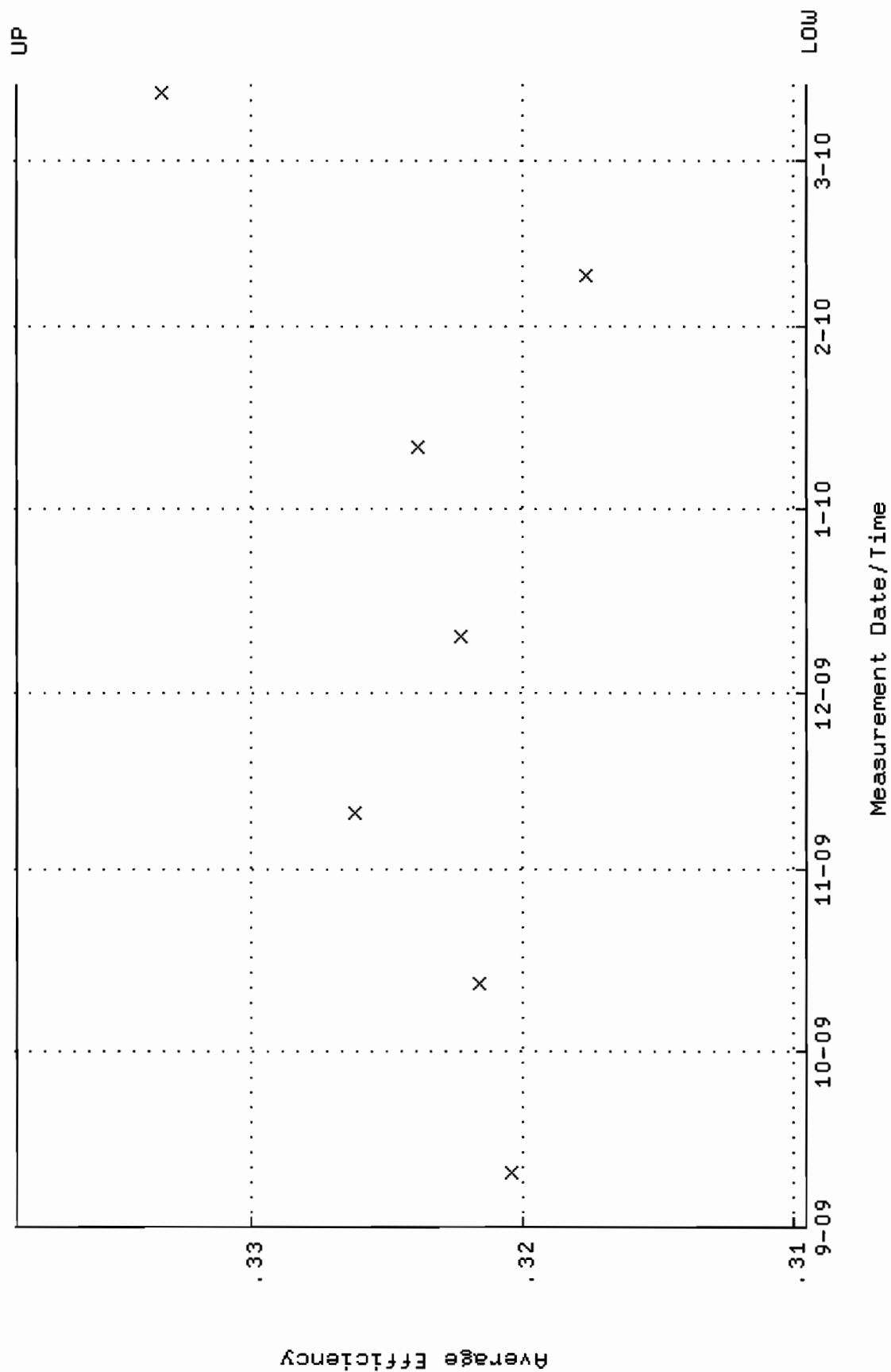
QA filename : DKA100:[ENV_ALPHA.QA.W]w103.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 64.9318 through 70.5959



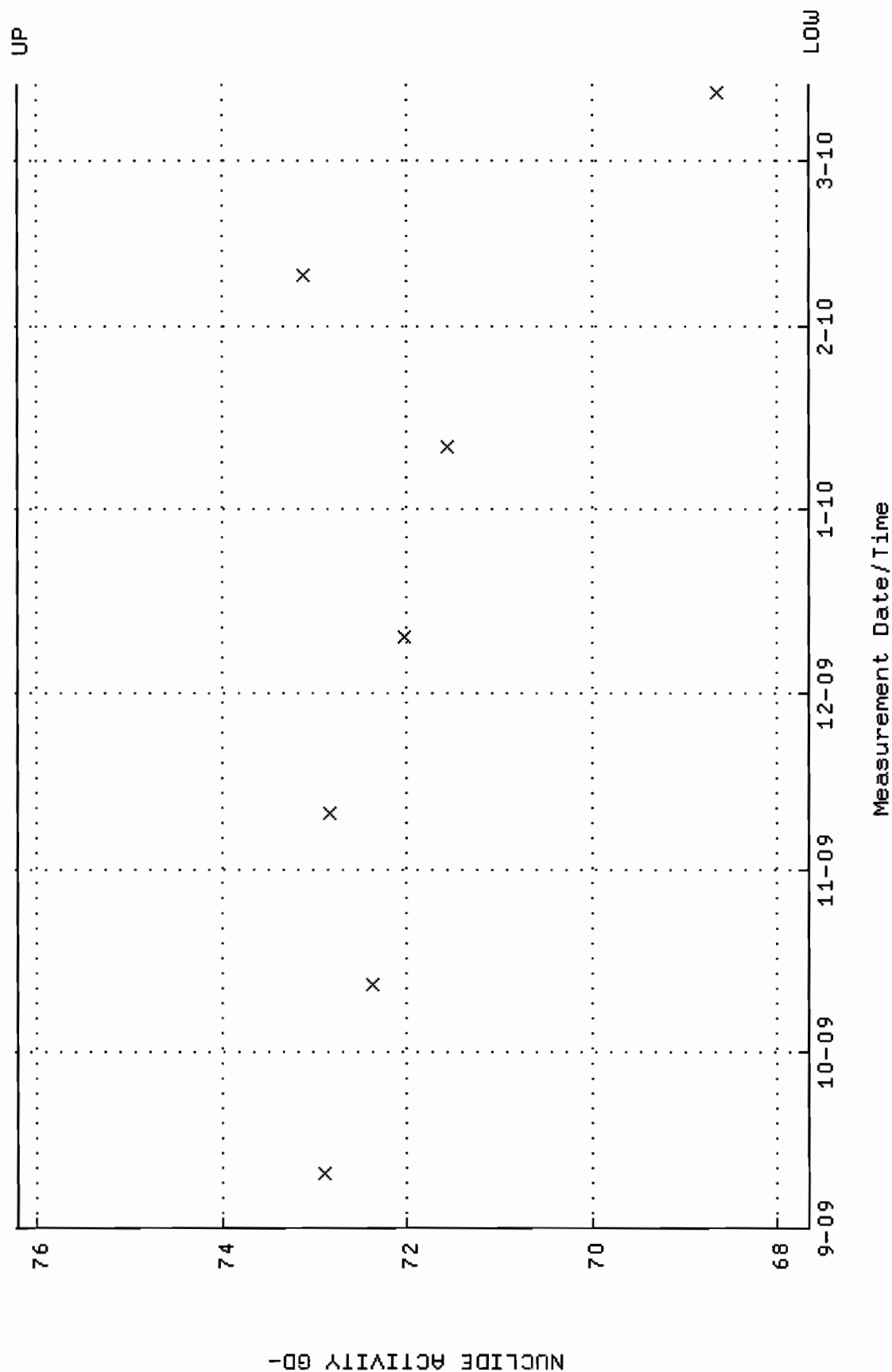
QA filename : DKA100:[ENV_ALPHA.QA.B]B103.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



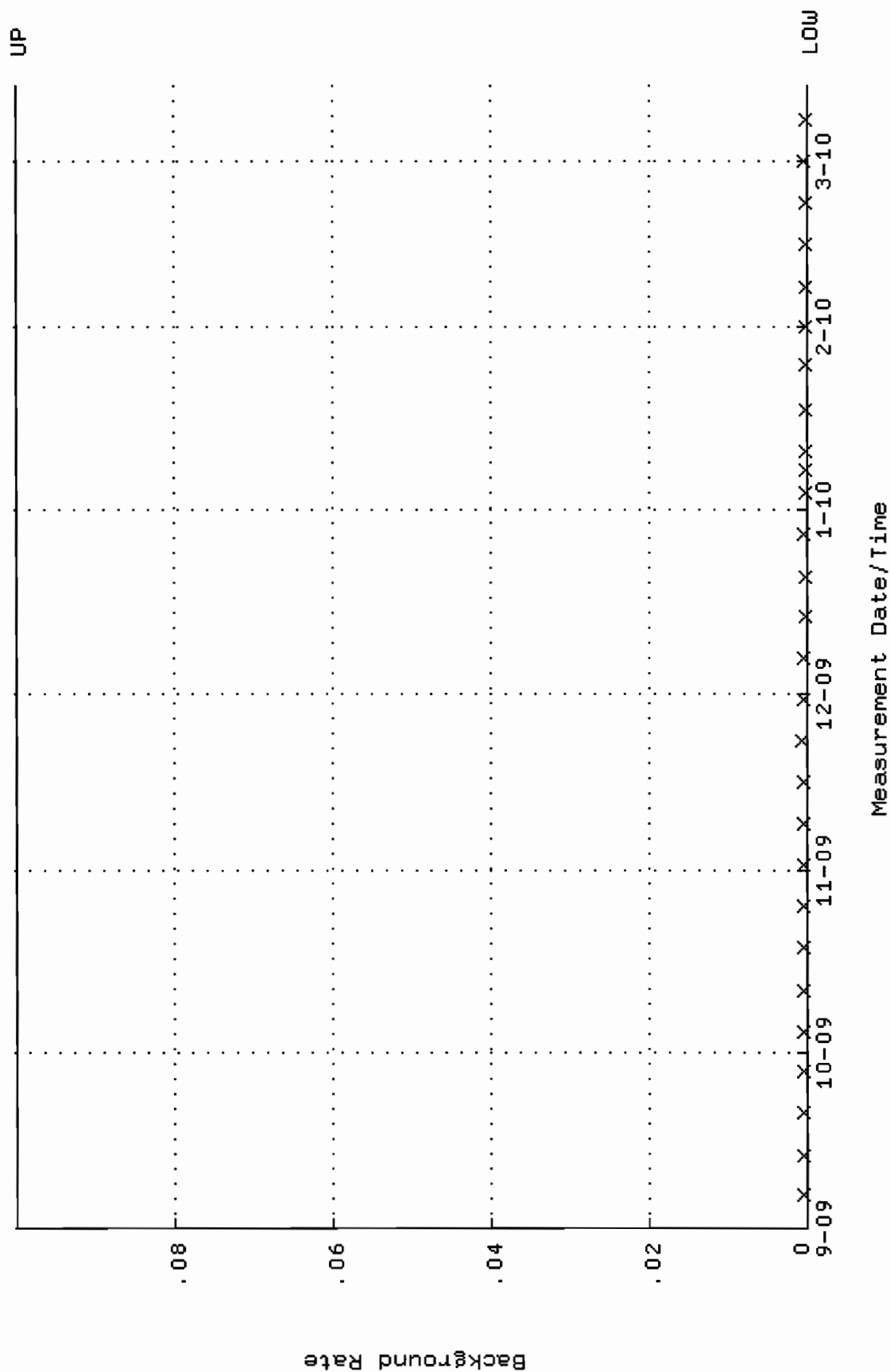
QA filename : DKA100:[ENV_ALPHA.QA.W]w105.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 08:05:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.309544 through 0.338666



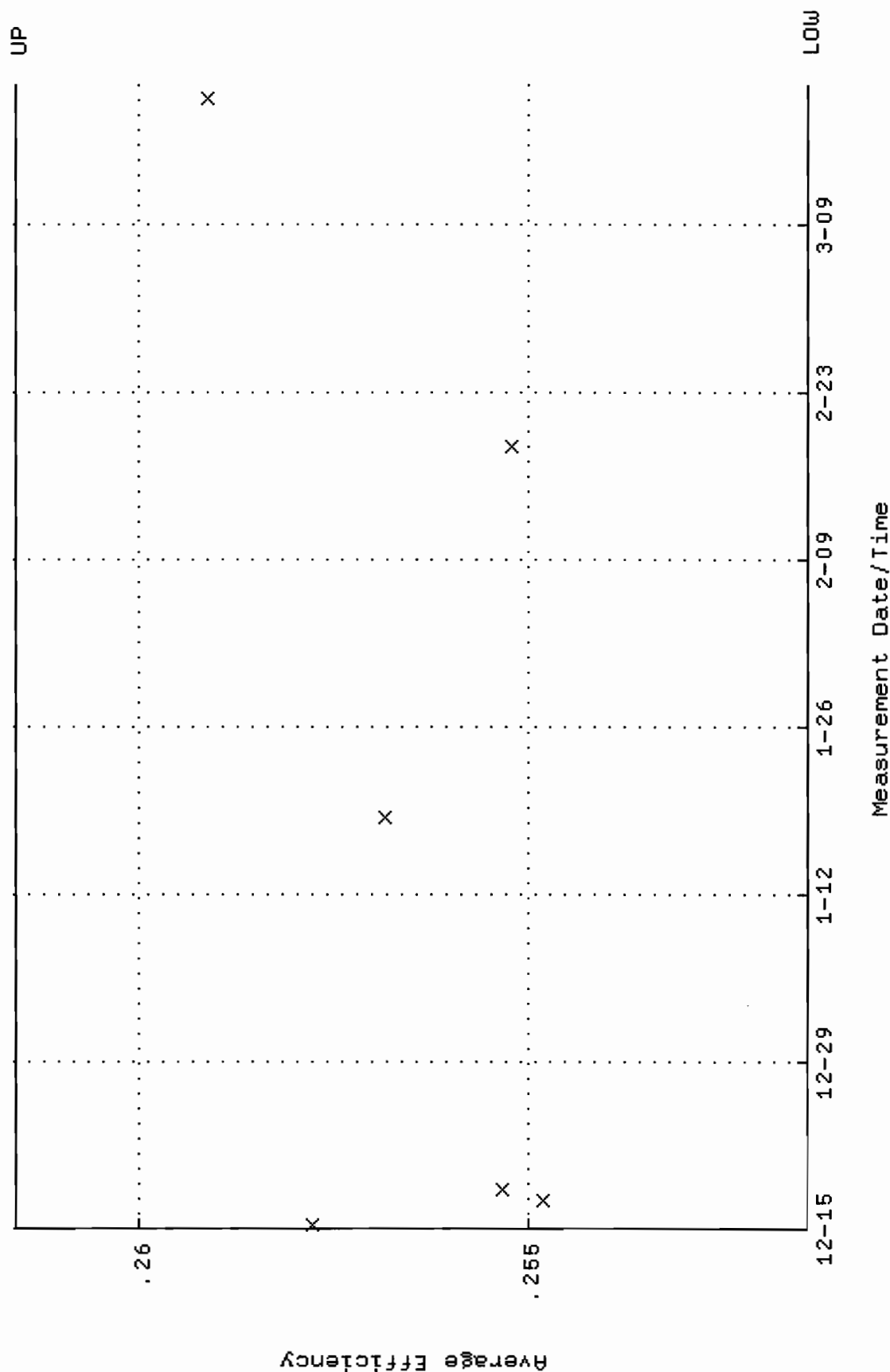
QA filename : DKA100:[ENV_ALPHA.QA.W]w105.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 08:05:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 67.6585 through 76.2091



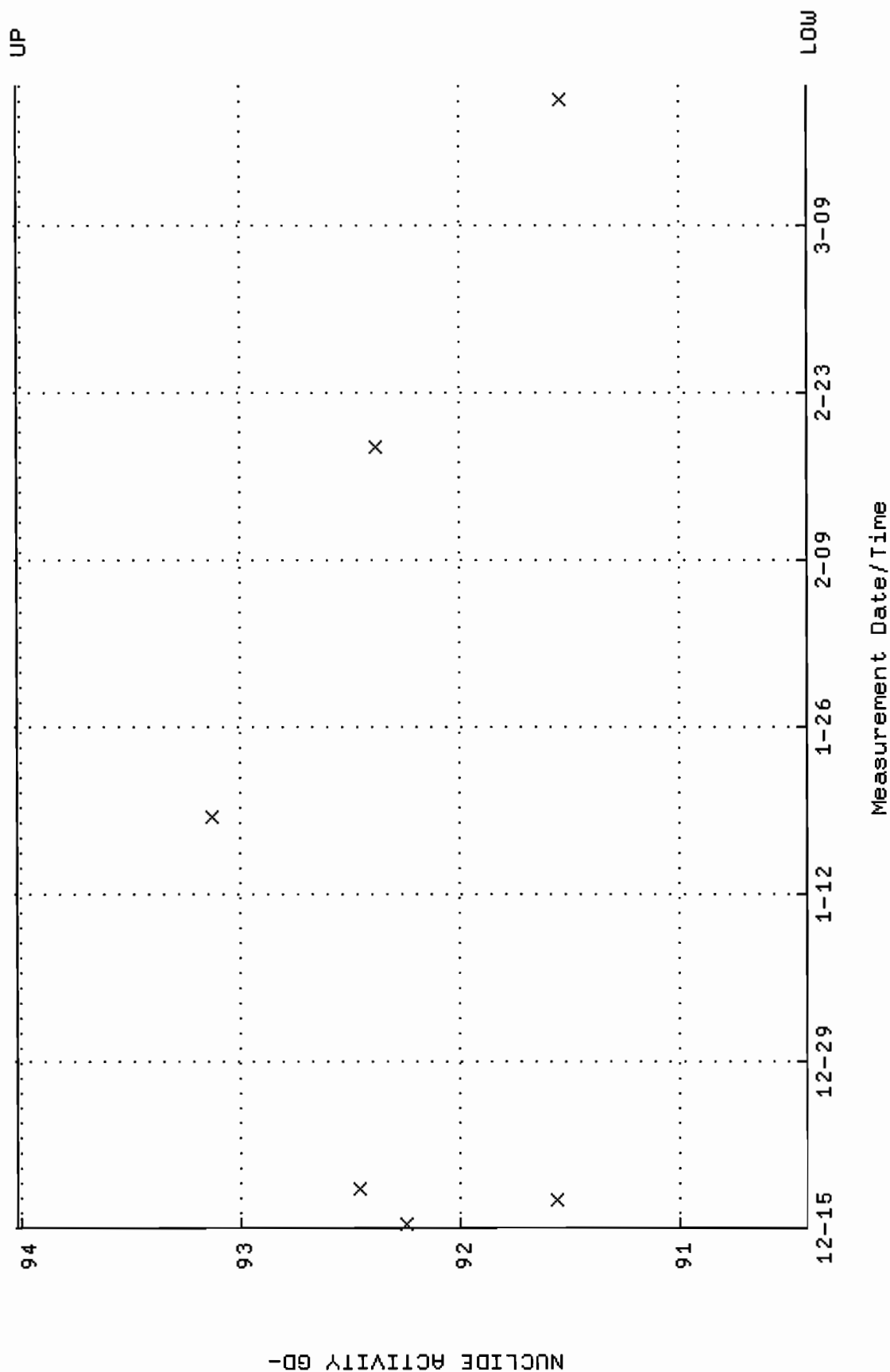
QA filename : DKA100:[ENV_ALPHA.QA.B]B105.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



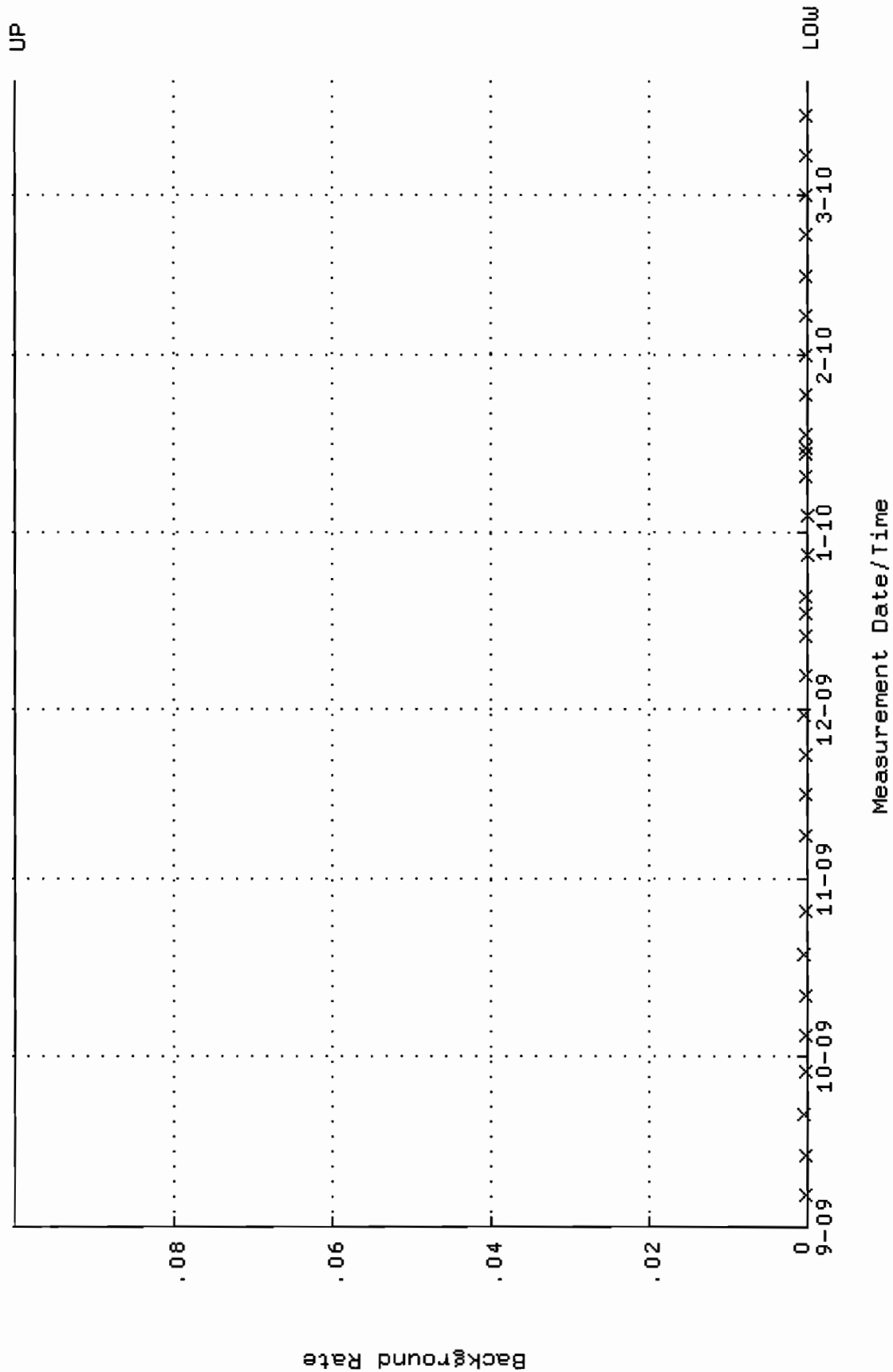
QA filename : DKA100:[ENV_ALPHA.QA.W]W119.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.251416 through 0.261570



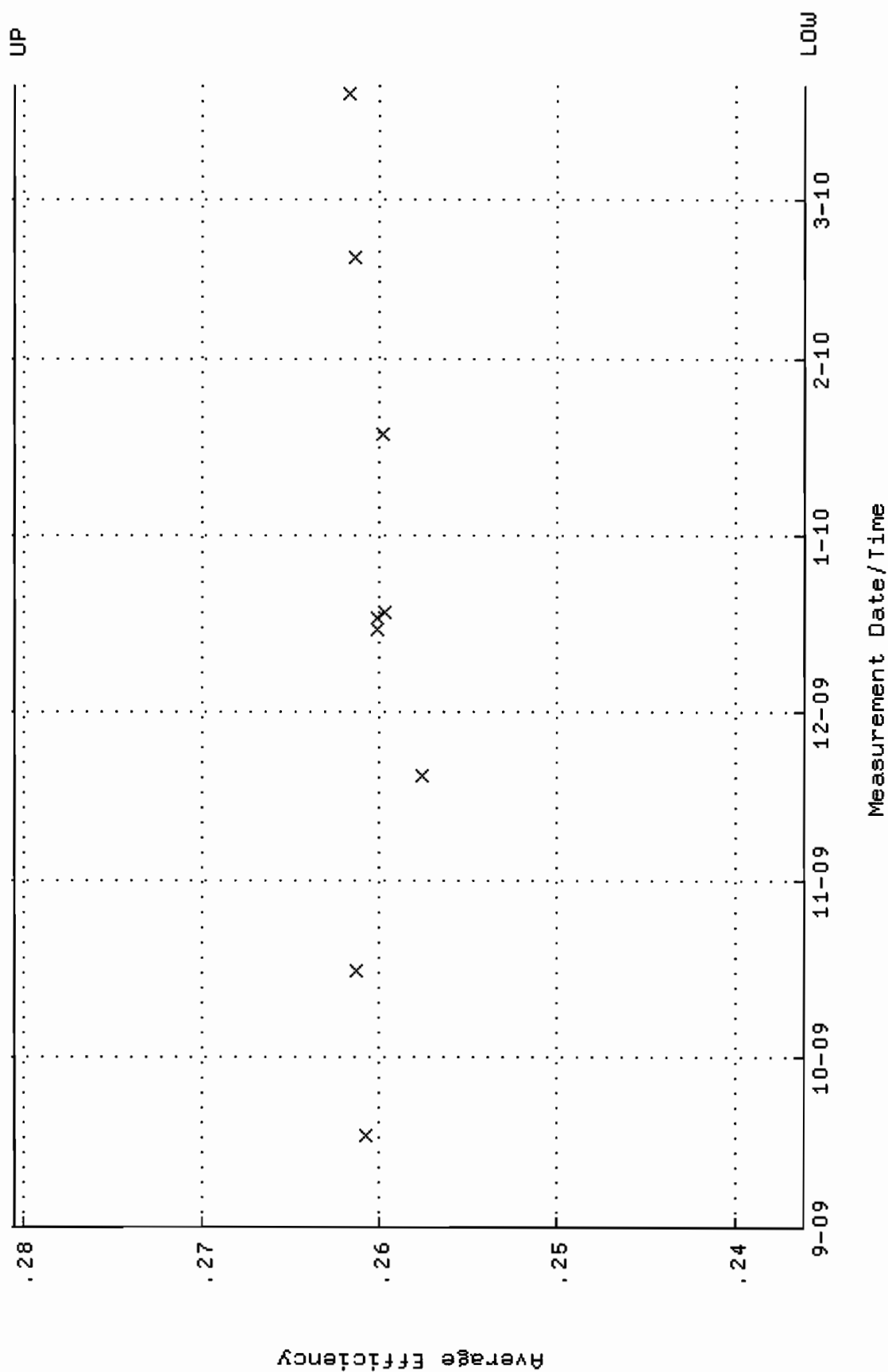
QA filename : DKA100:[ENV_ALPHA.QA.W]W119.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.4178 through 94.0134



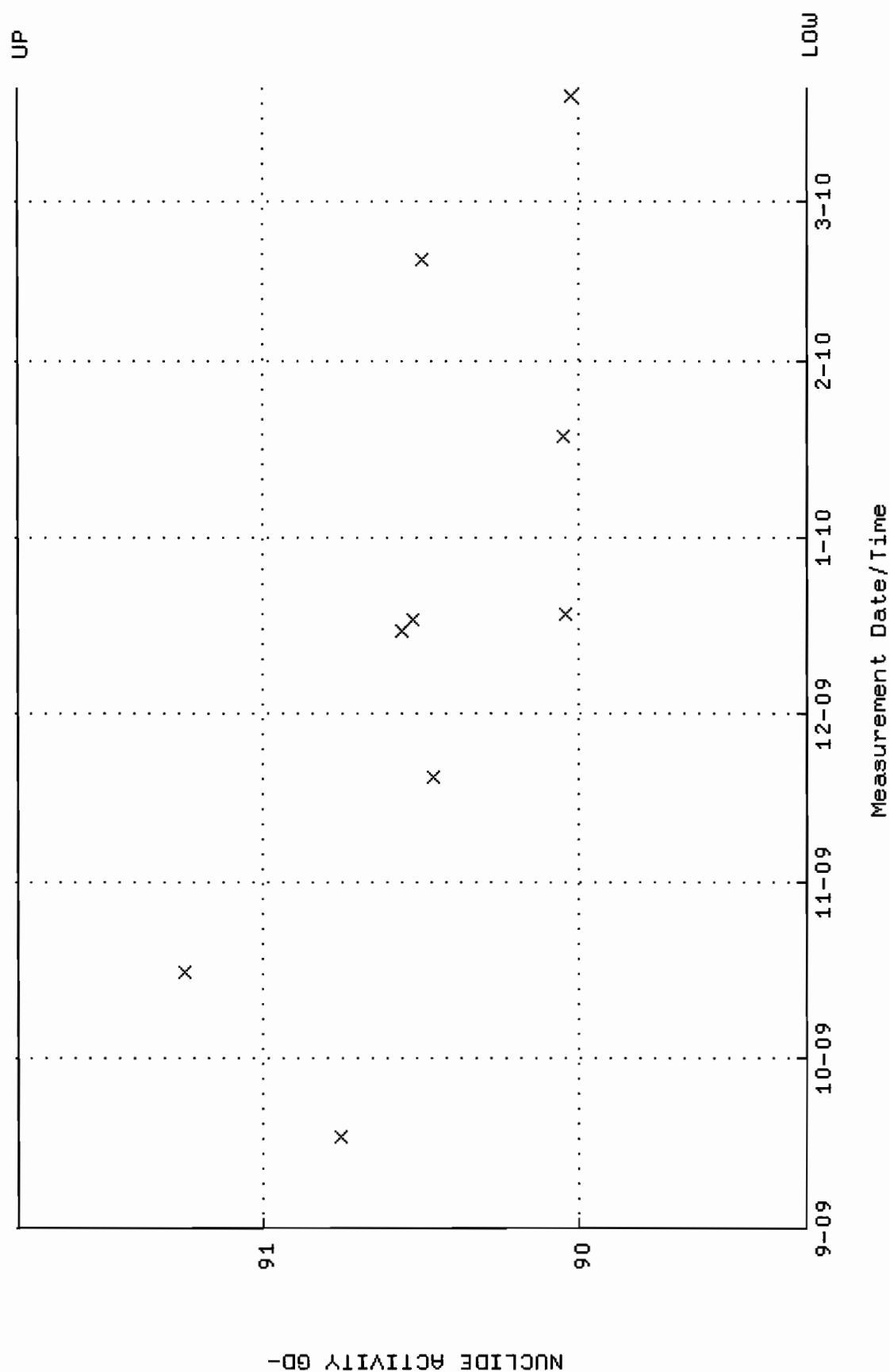
QA filename : DKA100:[ENV_ALPHA.QA.B]B119.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:34 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



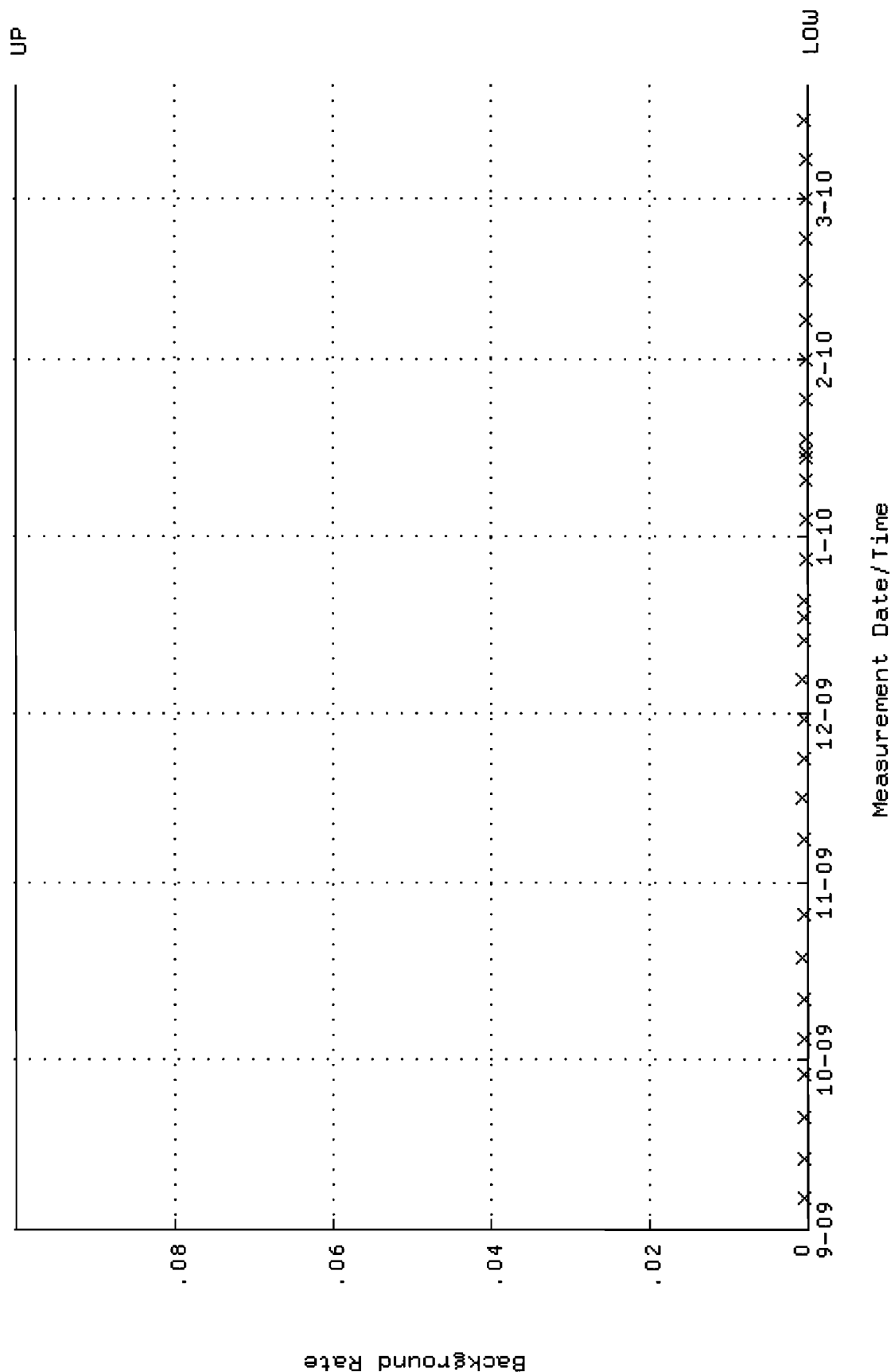
QA filename : DKA100:[ENV-ALPHA.QA.W]W120.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:19 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.236163 through 0.280493



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

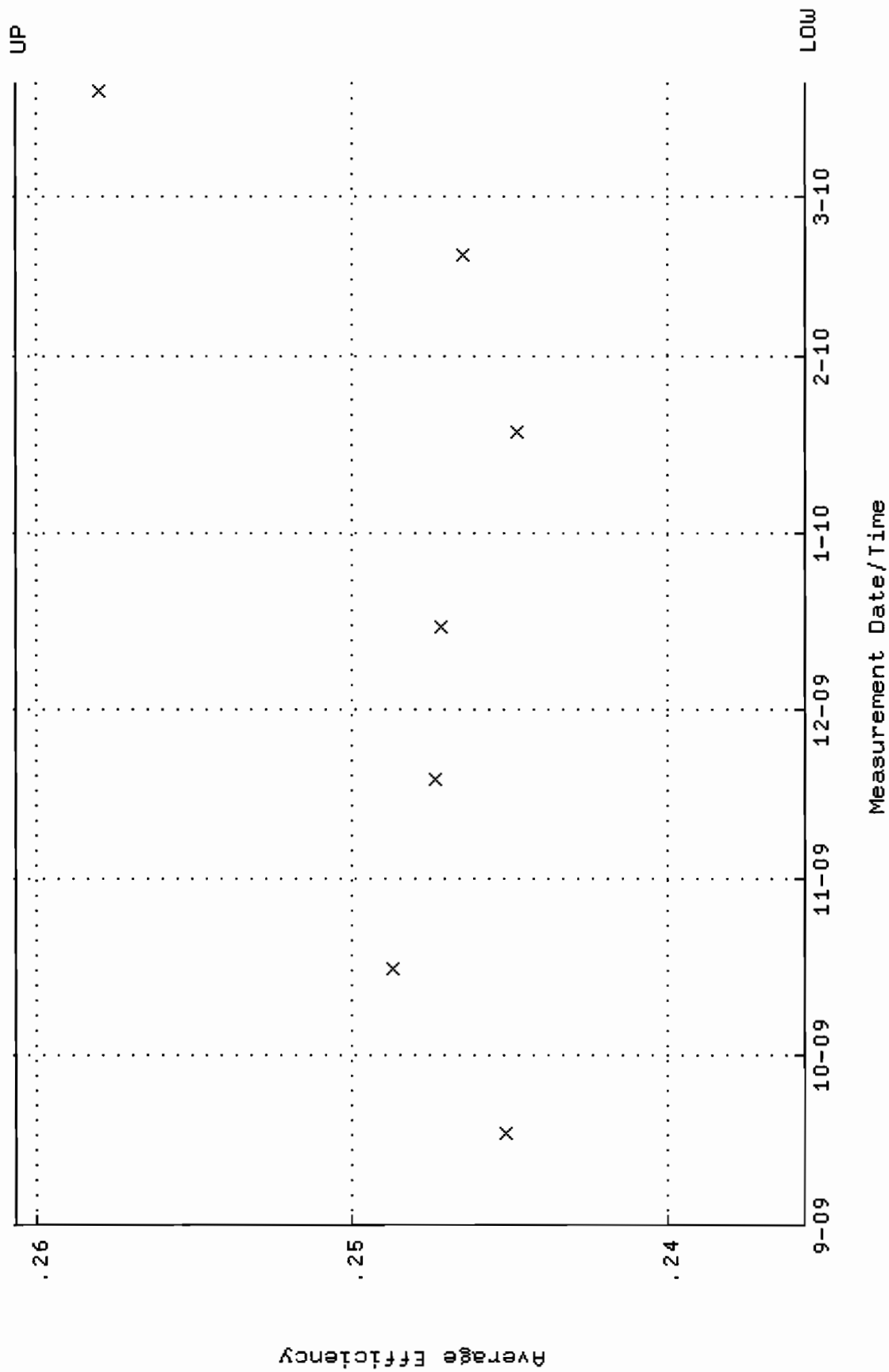


QA filename : DKA100:[ENV_ALPHA.QA.W]w121.QAF;1

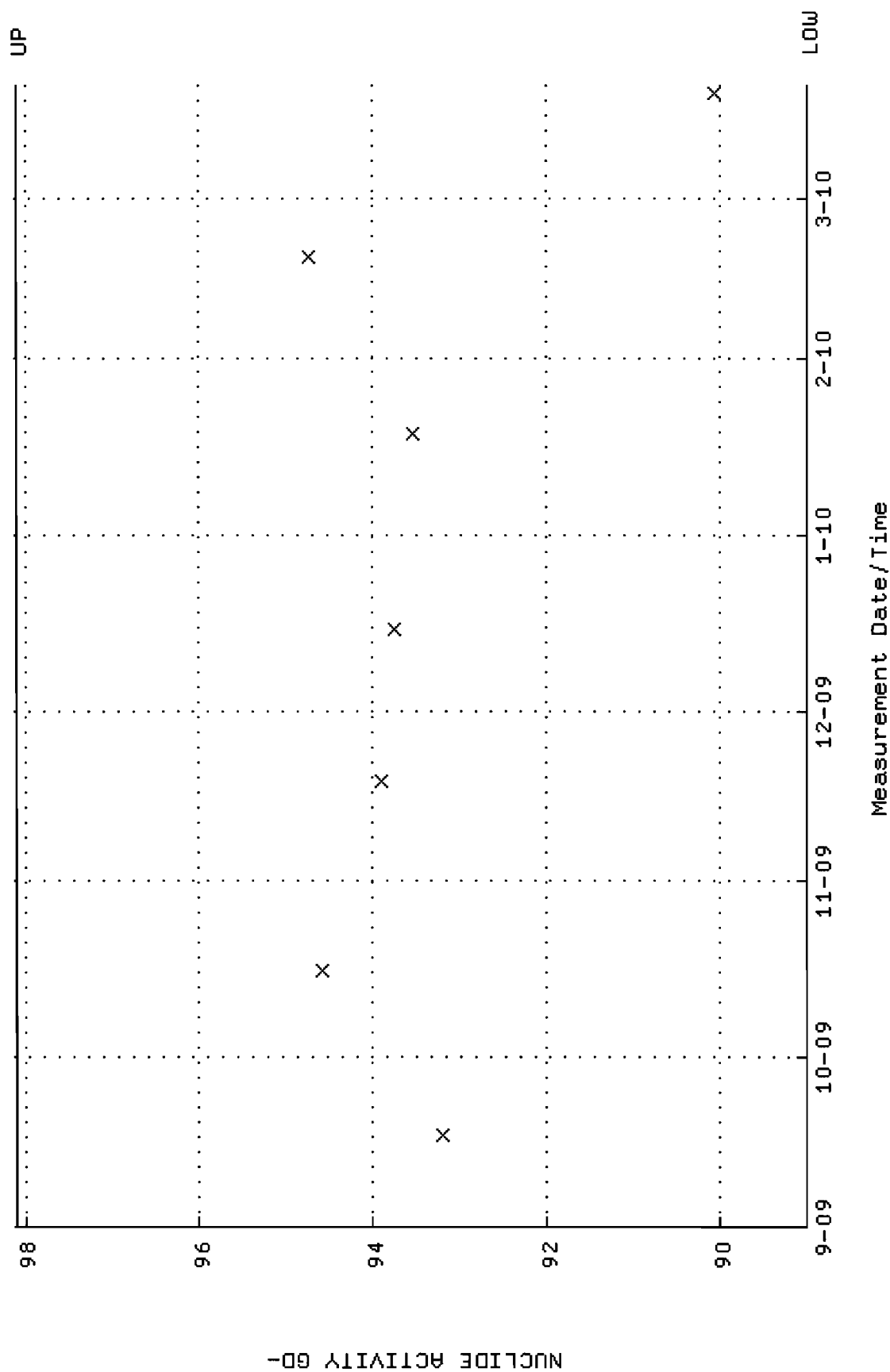
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00

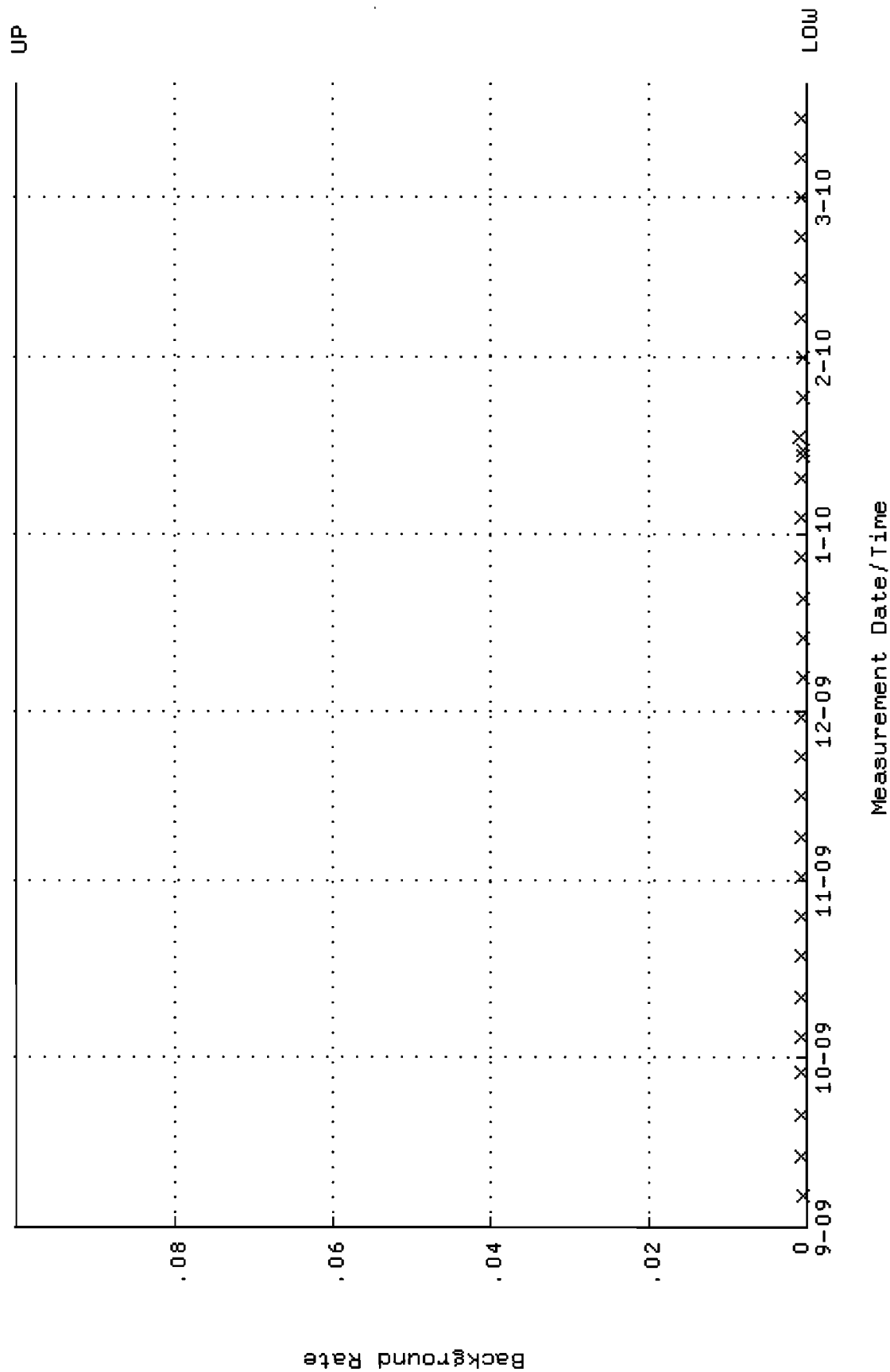
Lower/Upper Lmts: 0.235679 through 0.260639



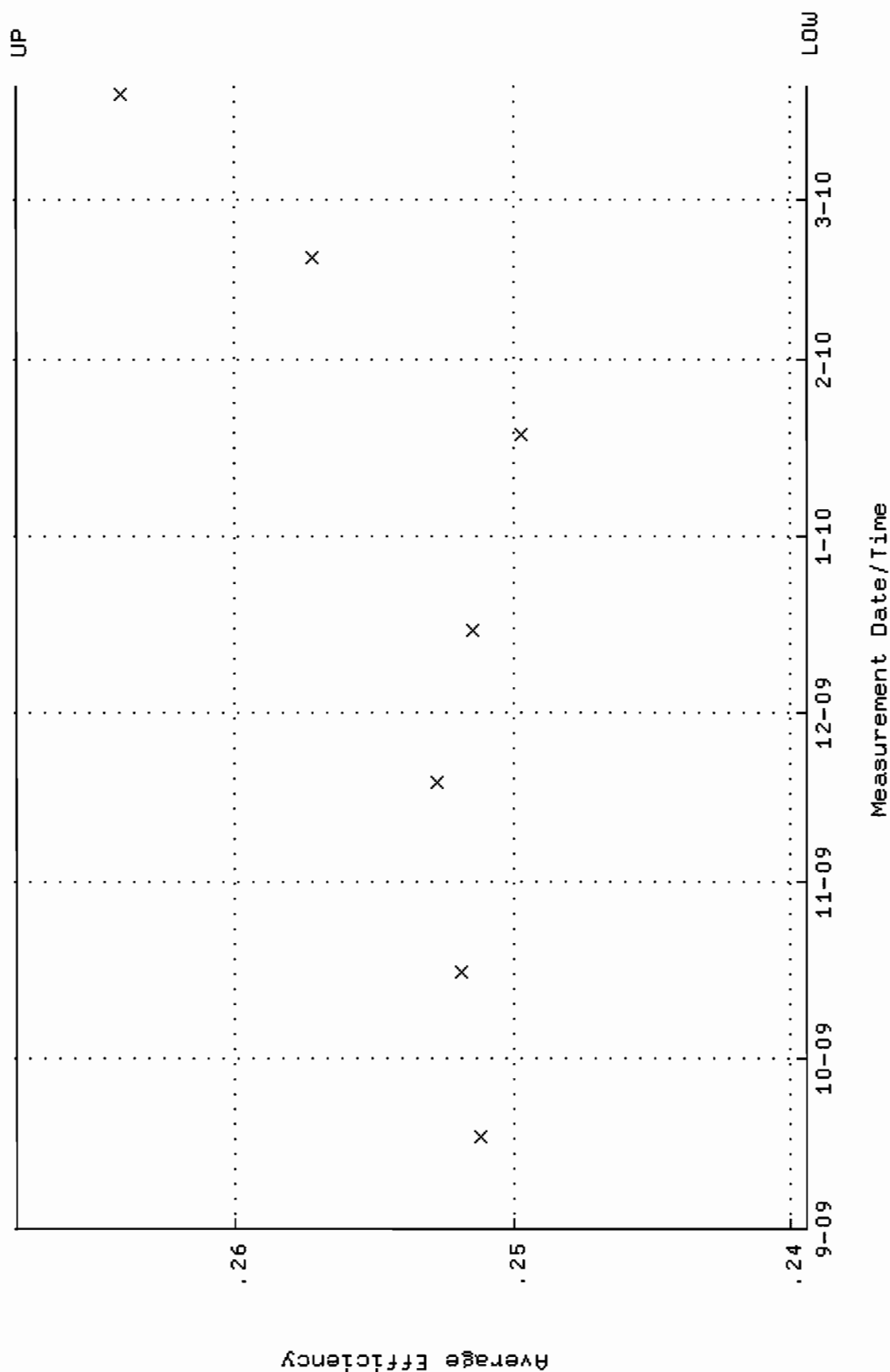
QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.9962 through 98.1012



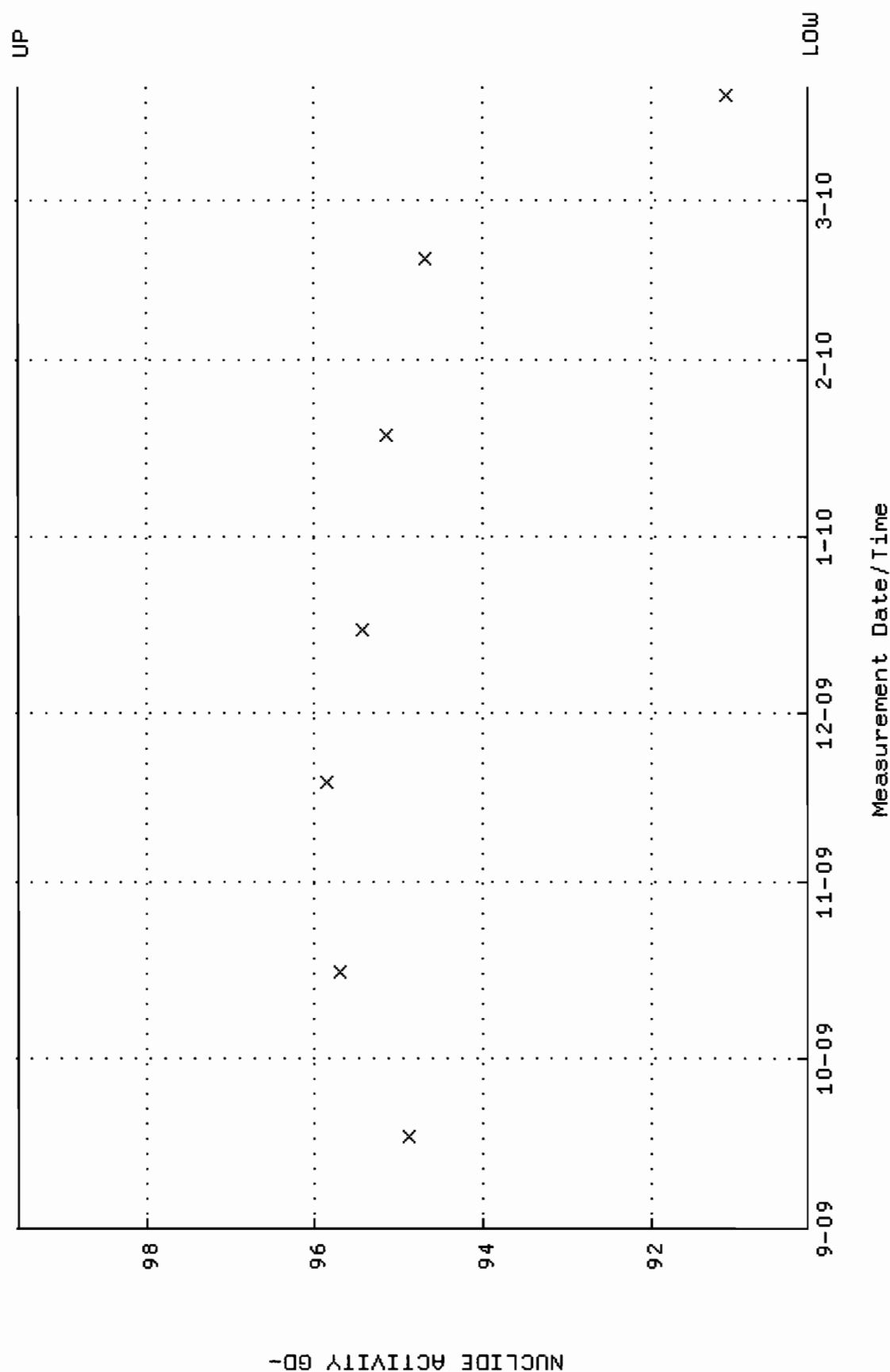
QA filename : DKA100:[ENV_ALPHA.QA.B]B121.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:43 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



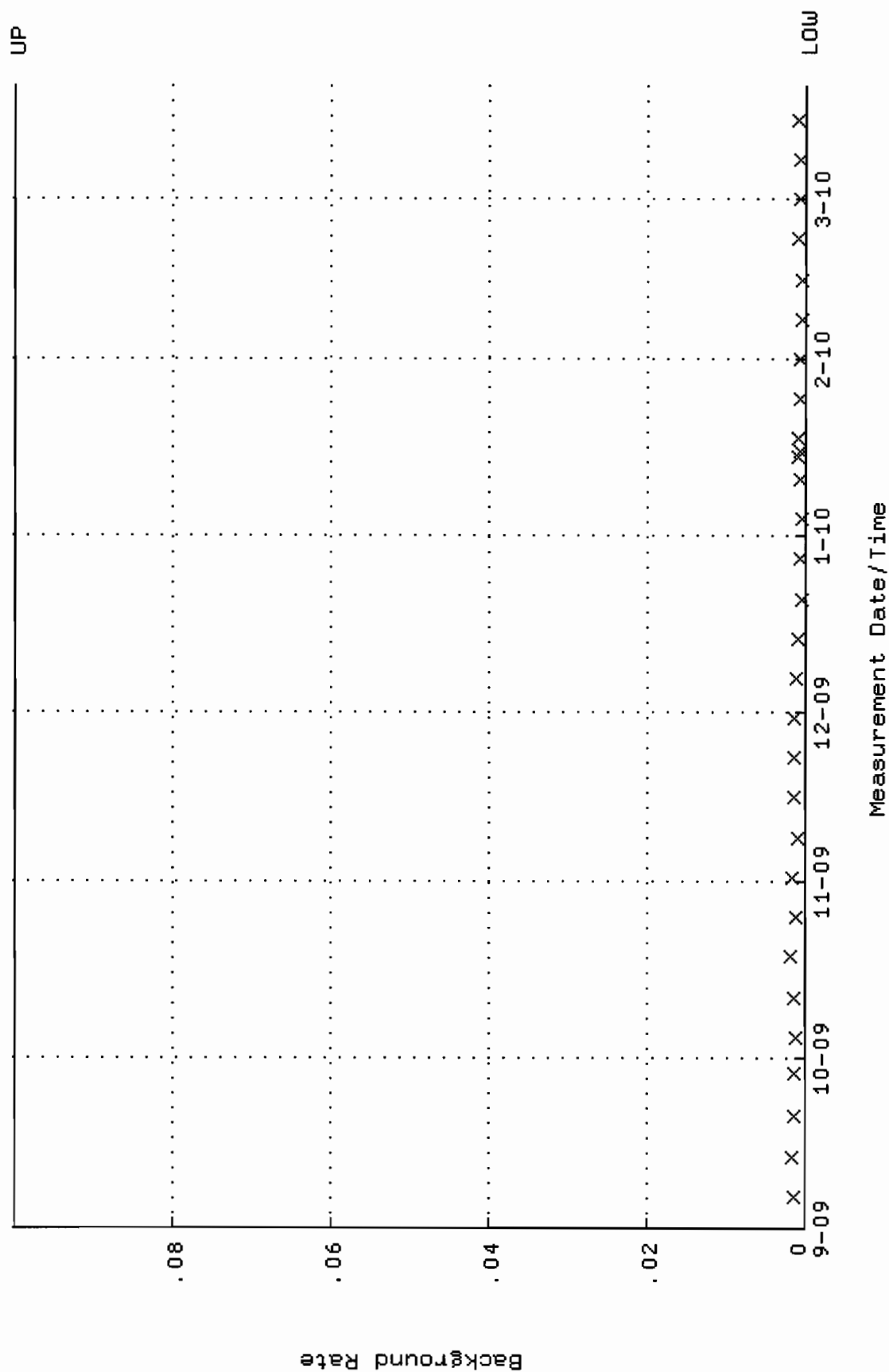
QA filename : DKA100:[ENV_ALPHA.QA.W]W122.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.239412 through 0.267828



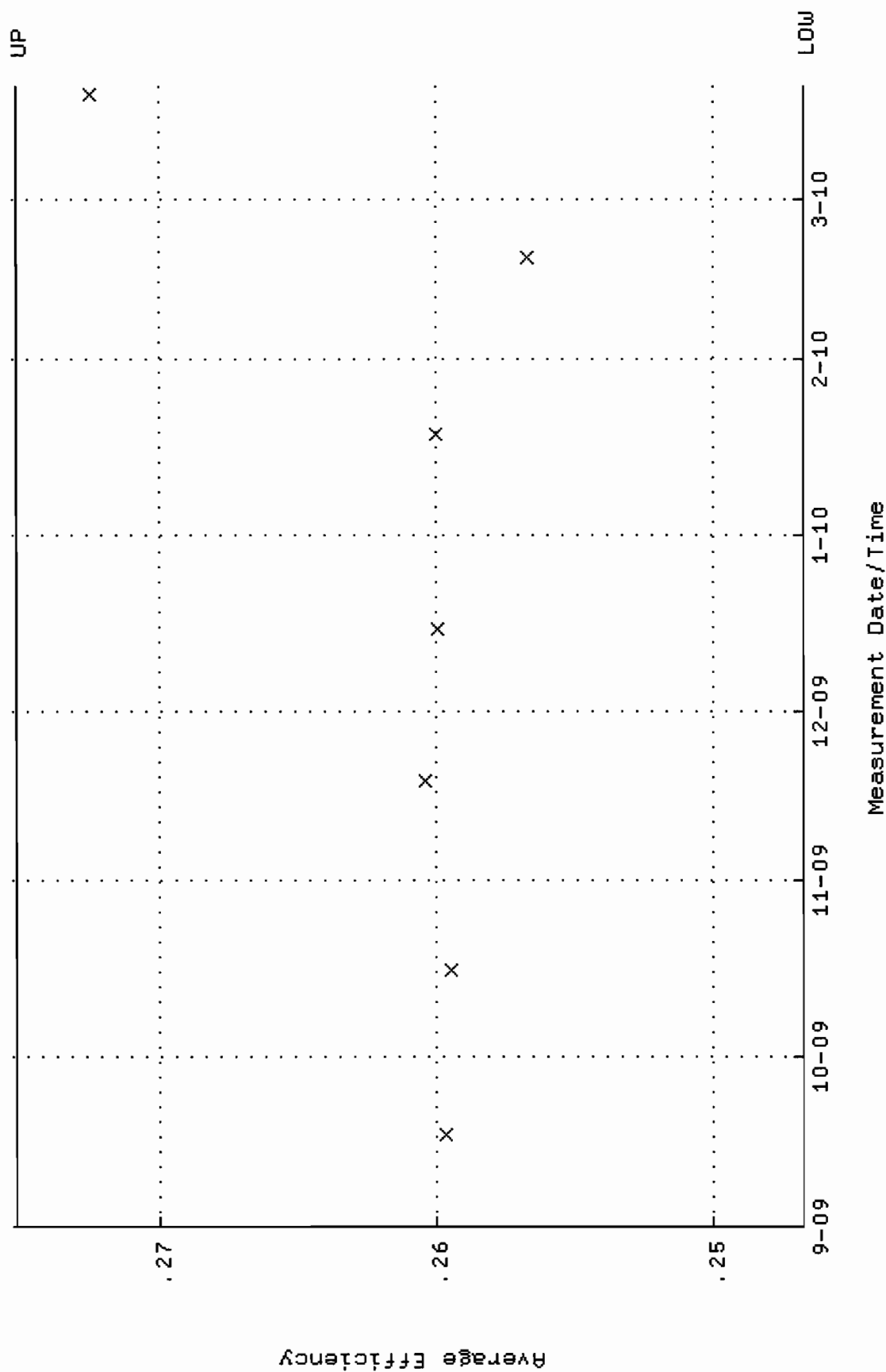
QA filename : DKA100:[ENV_ALPHA.QA.W]w122.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.1506 through 99.5122



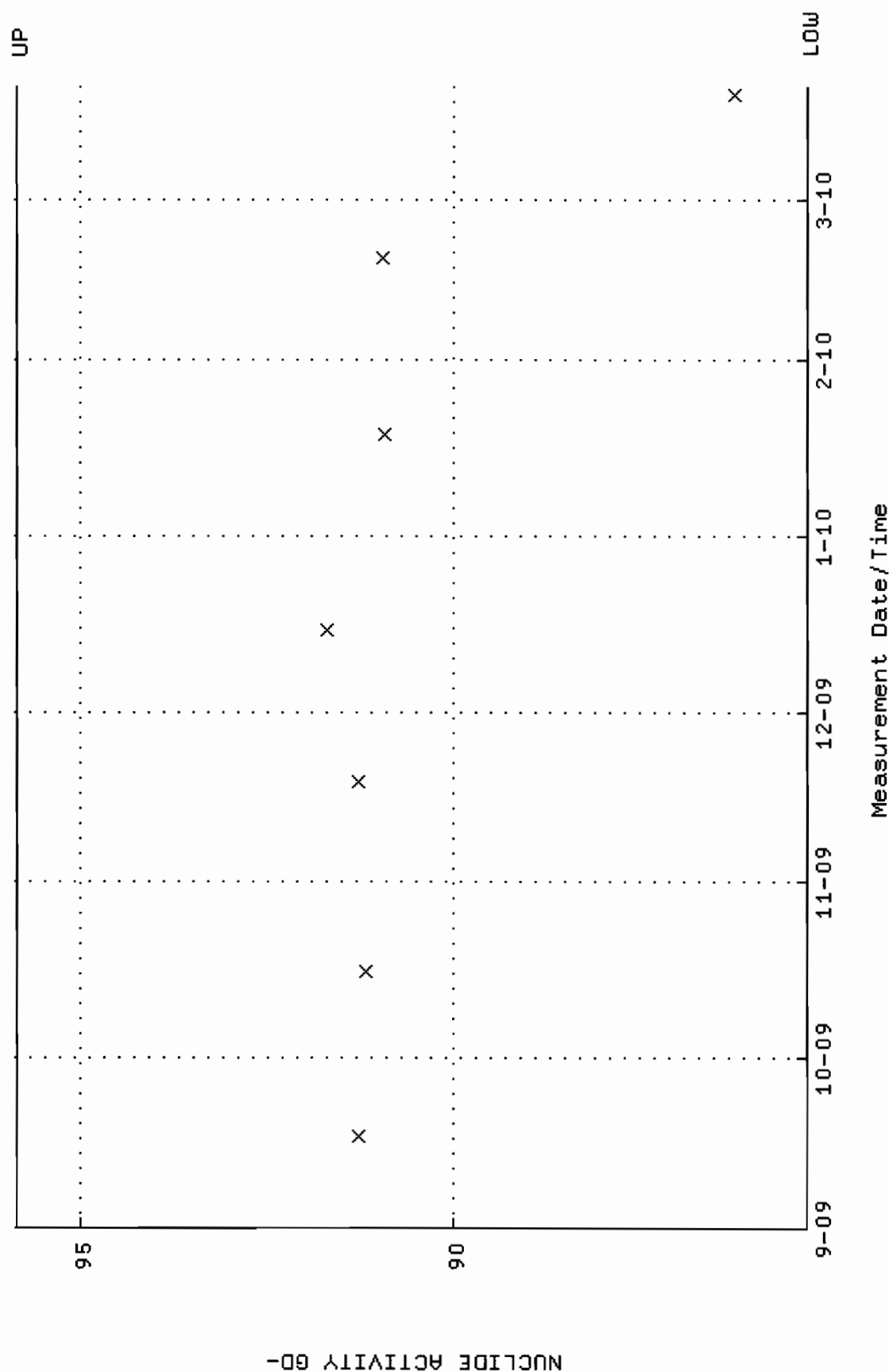
QA filename : DKA100:[ENV_ALPHA.QA.B]B122.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:48 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



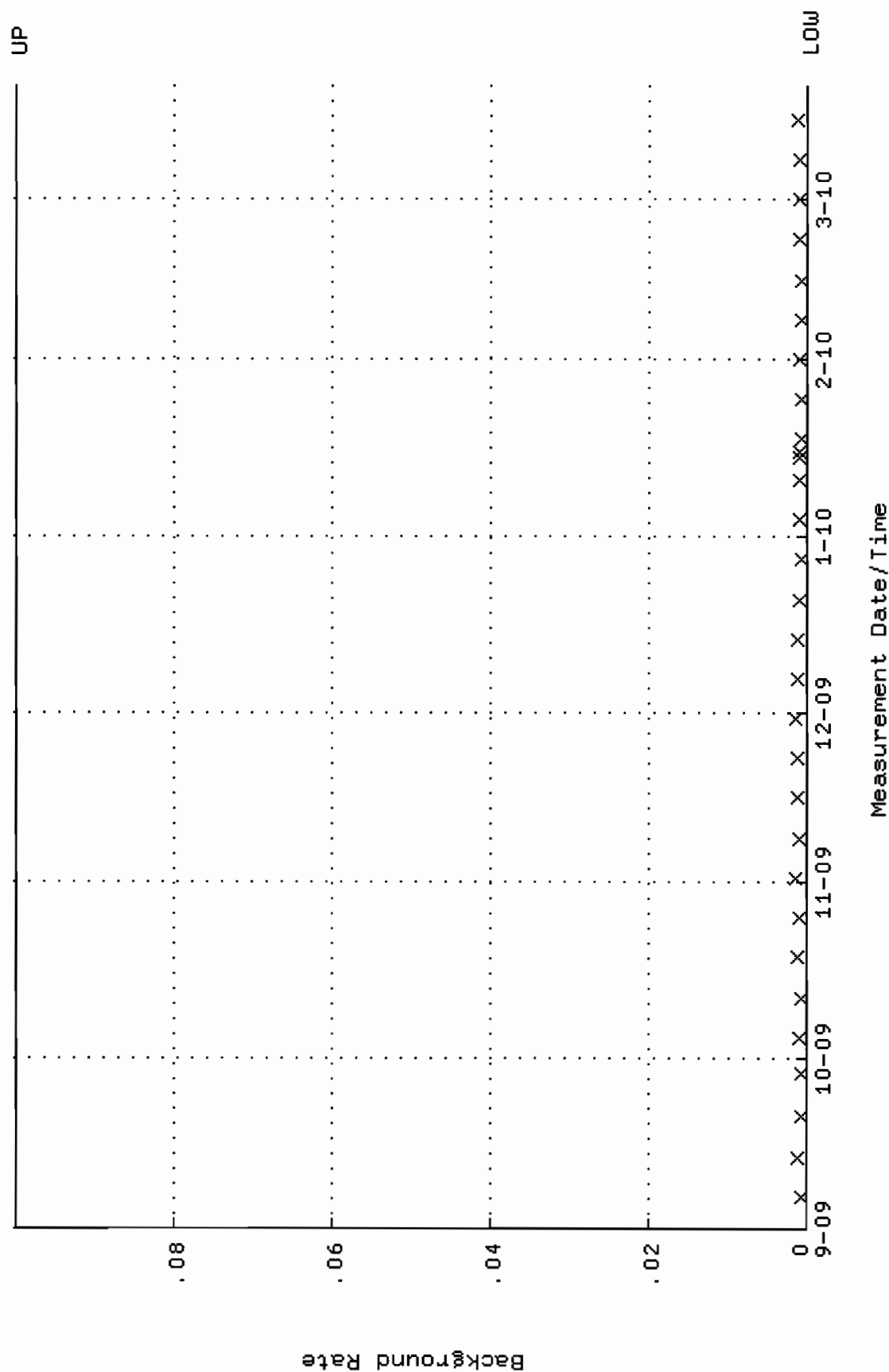
QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.246718 through 0.275204



QA filename : DKA100:[ENV_ALPHA.QA.W]w123.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.2791 through 95.8339



QA filename : DKA100:[ENV_ALPHA.QA.B]B123.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

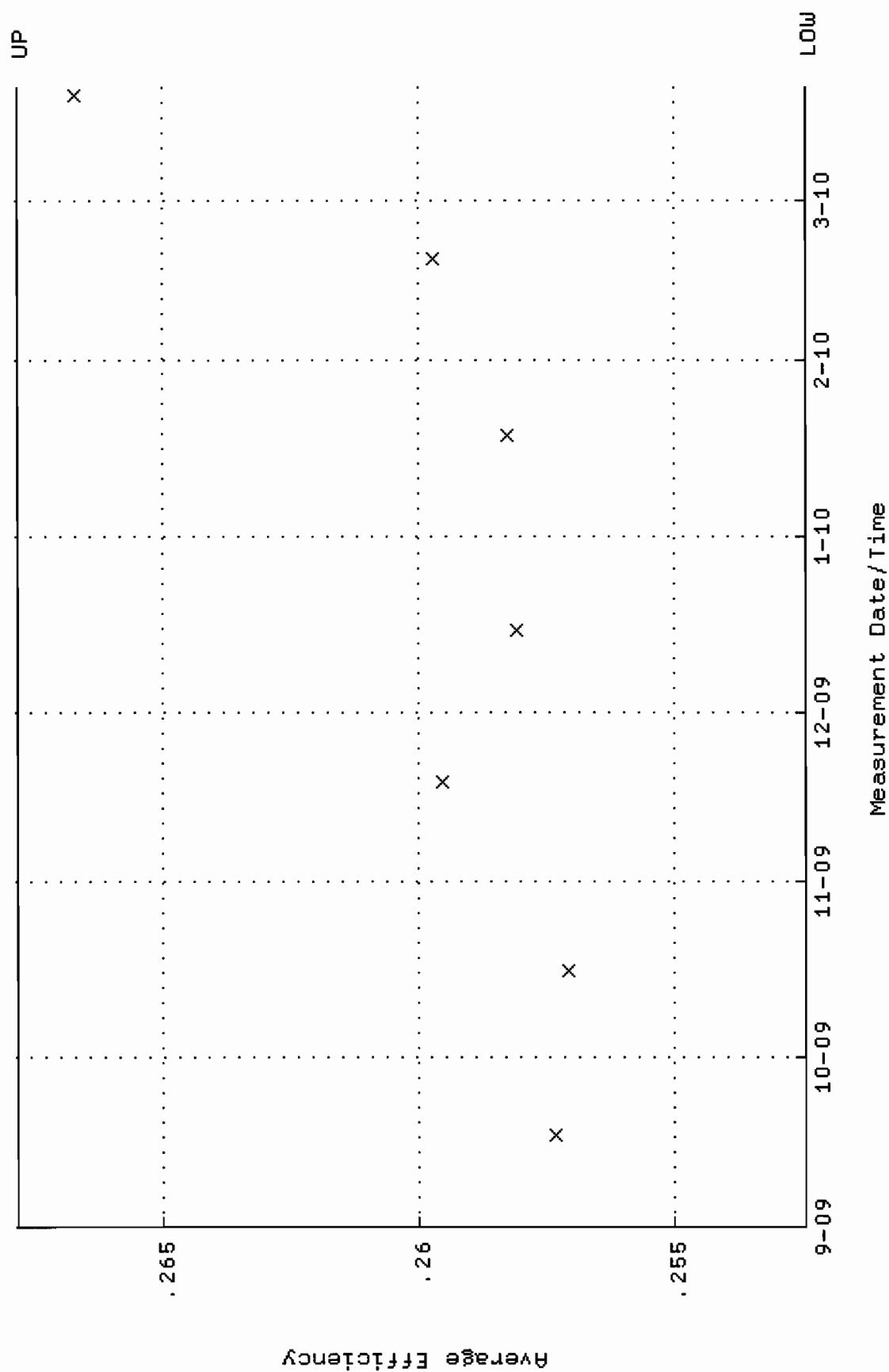


QA filename : DKA100:[ENV_ALPHA.QA.W]W124.QAF;1

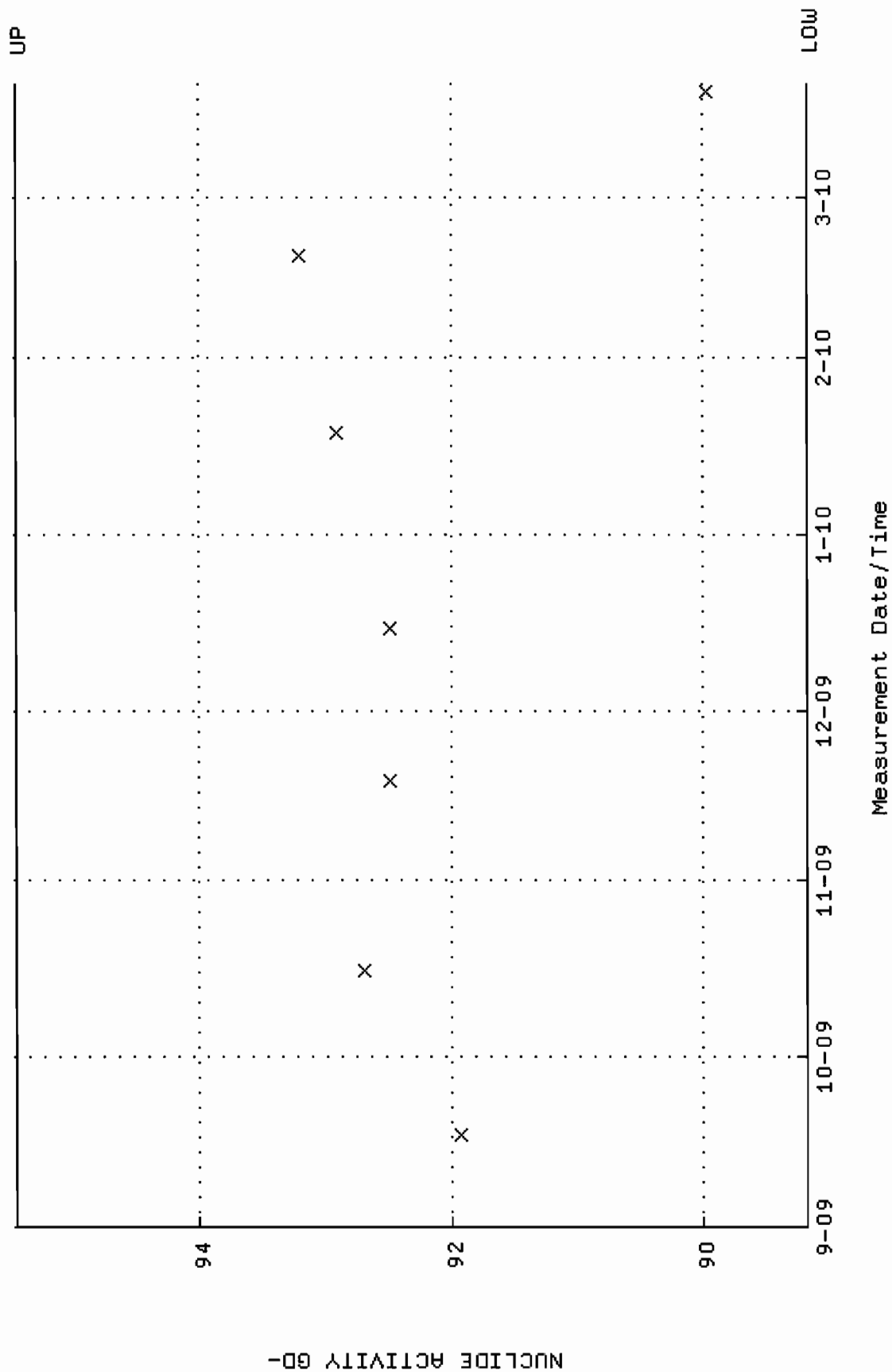
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00

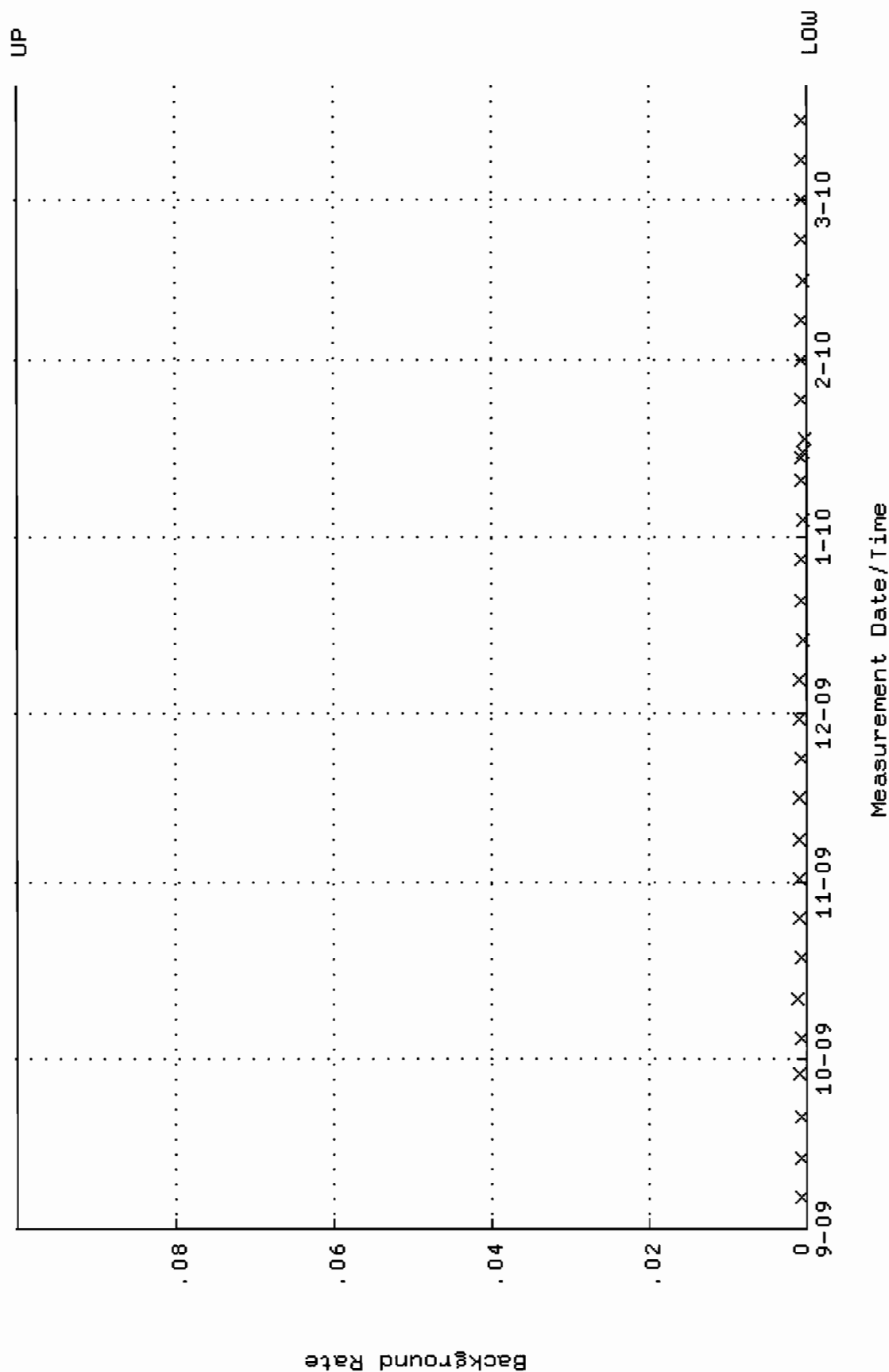
Lower/Upper Lmts: 0.252448 through 0.267830



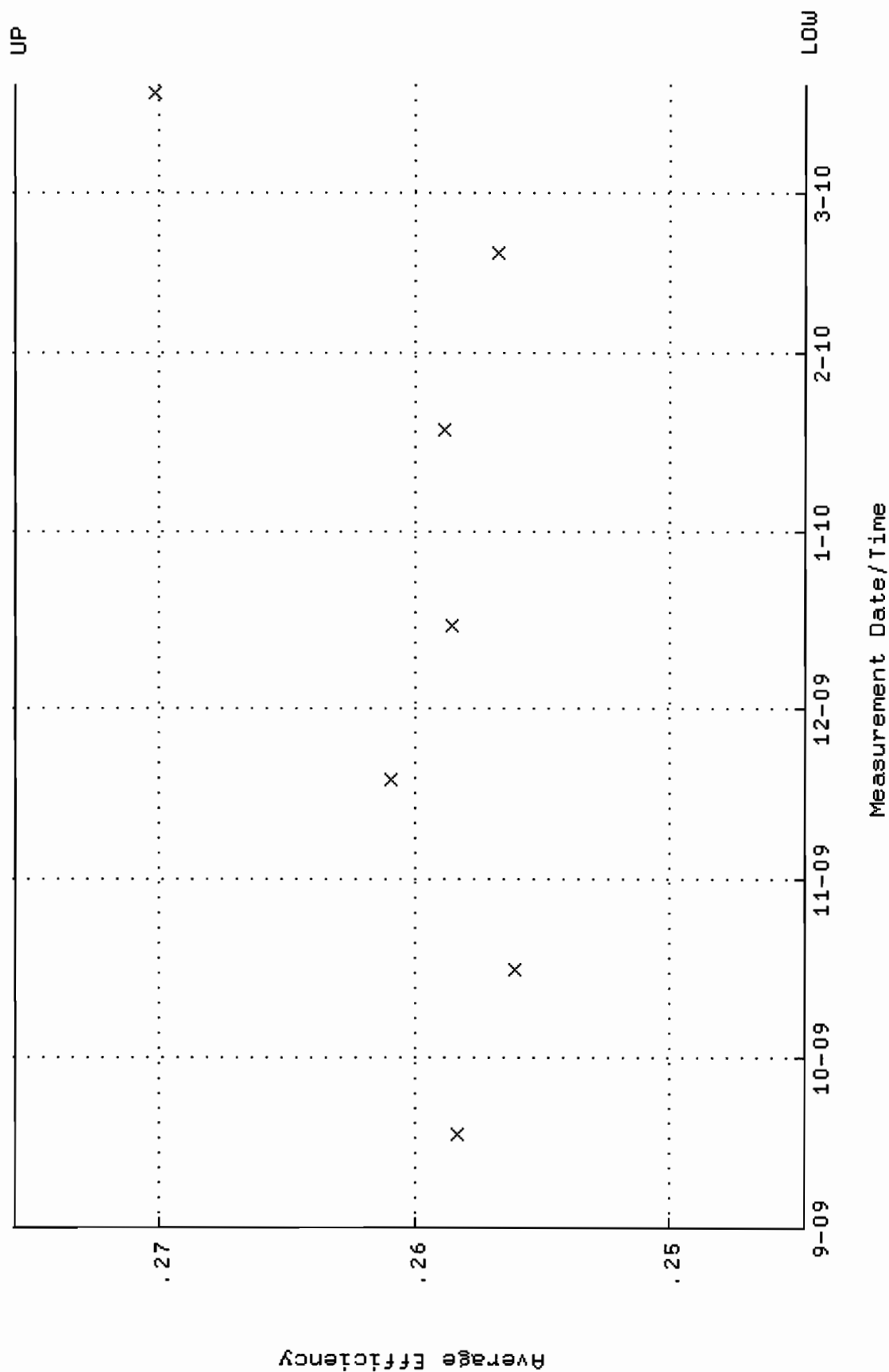
QA filename : DKA100:[ENV_ALPHA.QA.W]W124.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1805 through 95.4483



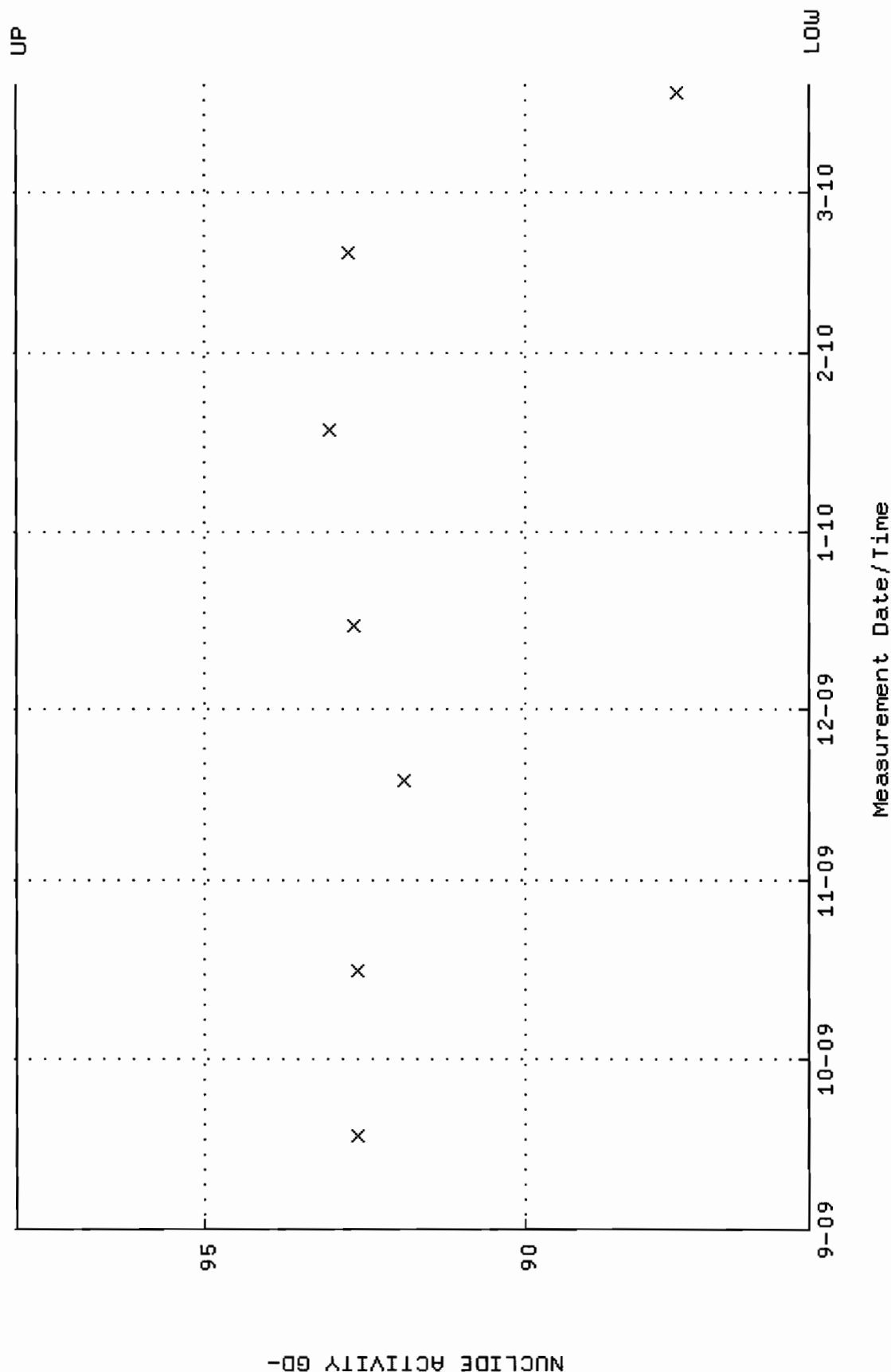
QA filename : DKA100:[ENV_ALPHA.QA.B]B124.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:56 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



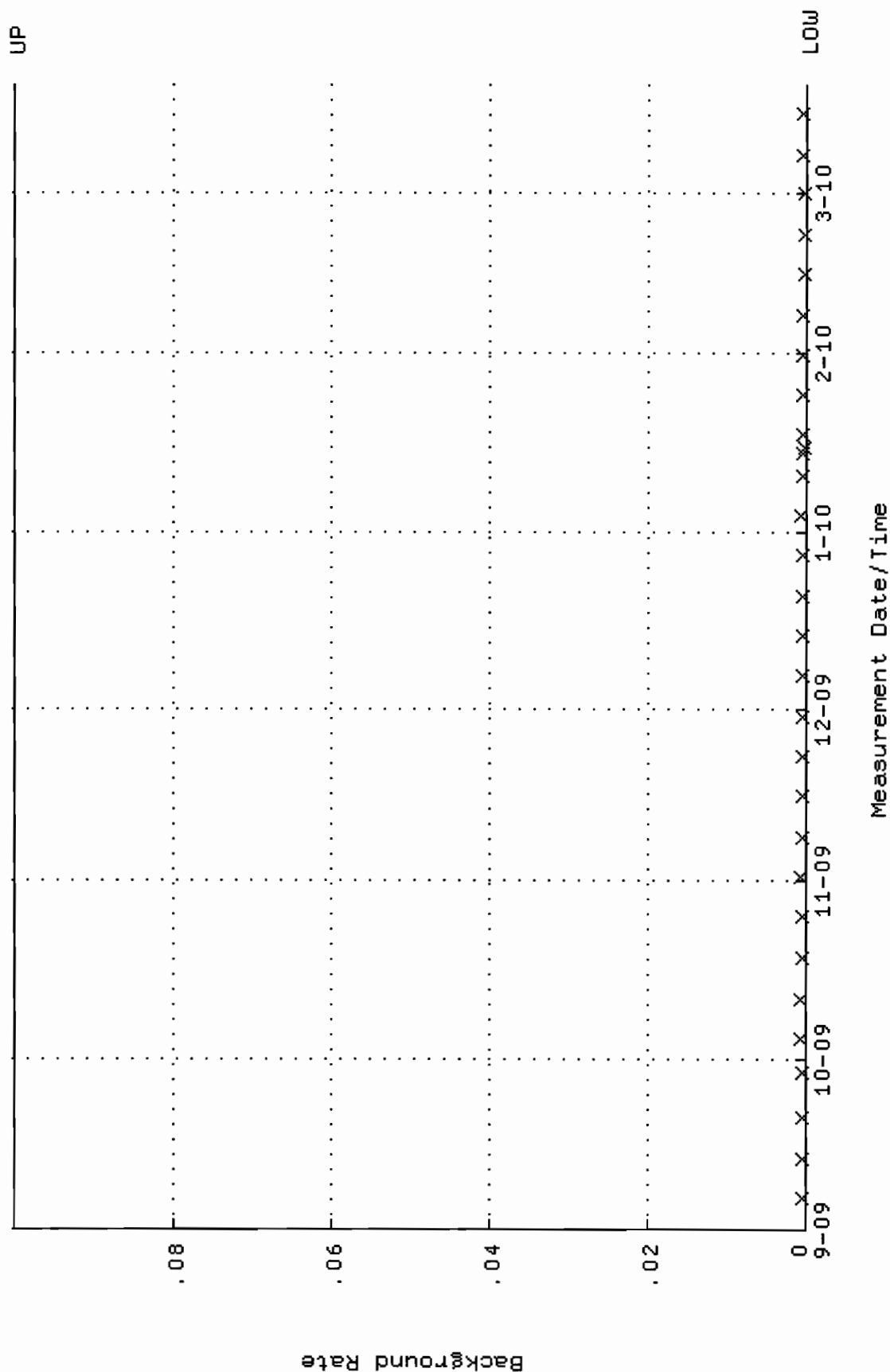
QA filename : DKA100:[ENV_ALPHA.QA.W]W125.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.244676 through 0.275622



QA filename : DKA100:[ENV_ALPHA.QA.W]w125.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5532 through 97.9632



QA filename : DKA100:[ENV_ALPHA.QA.B]B125.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:01 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

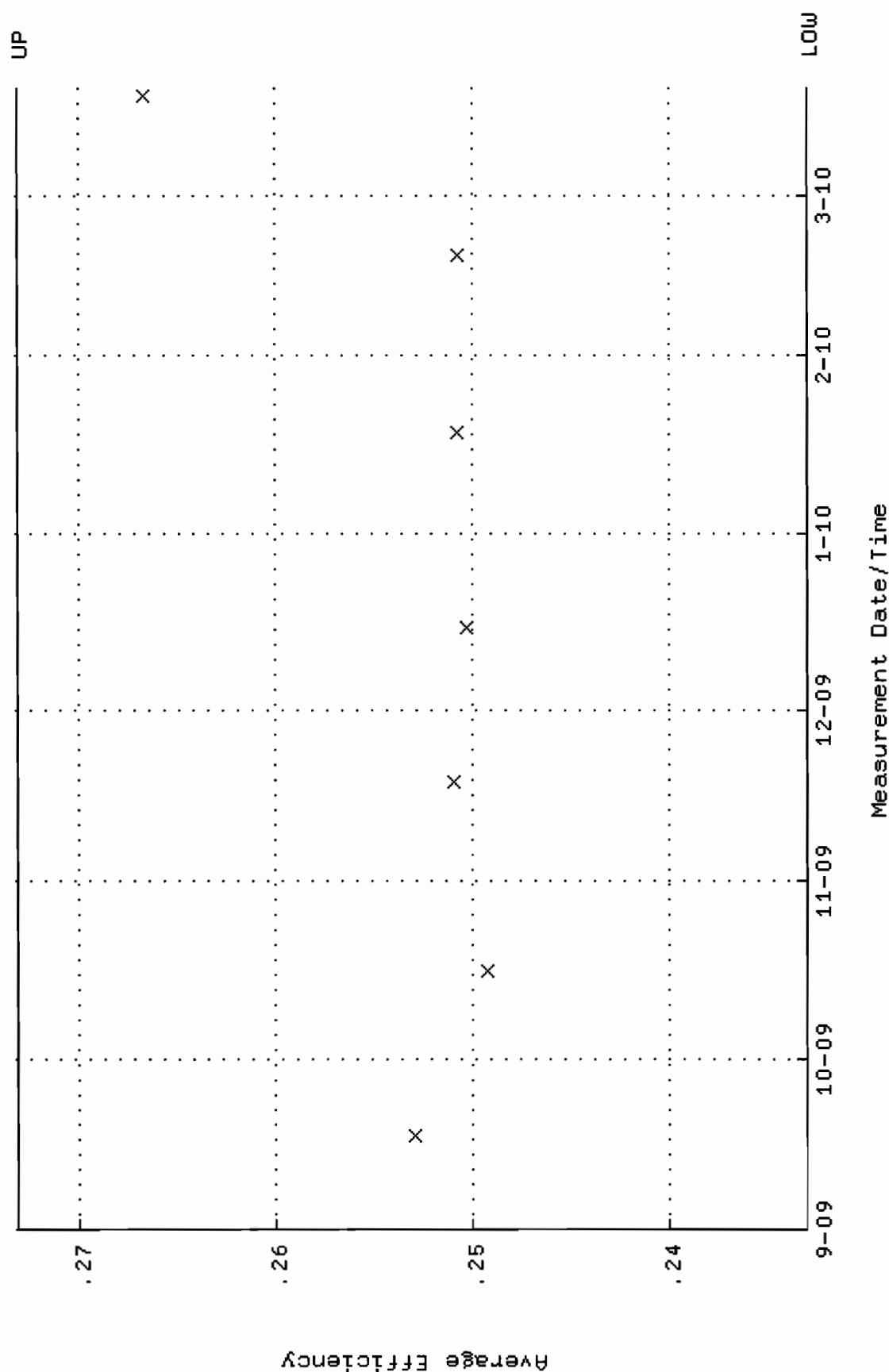


QA filename : DKA100:[ENV_ALPHA.QA.W]w126.QAF;1

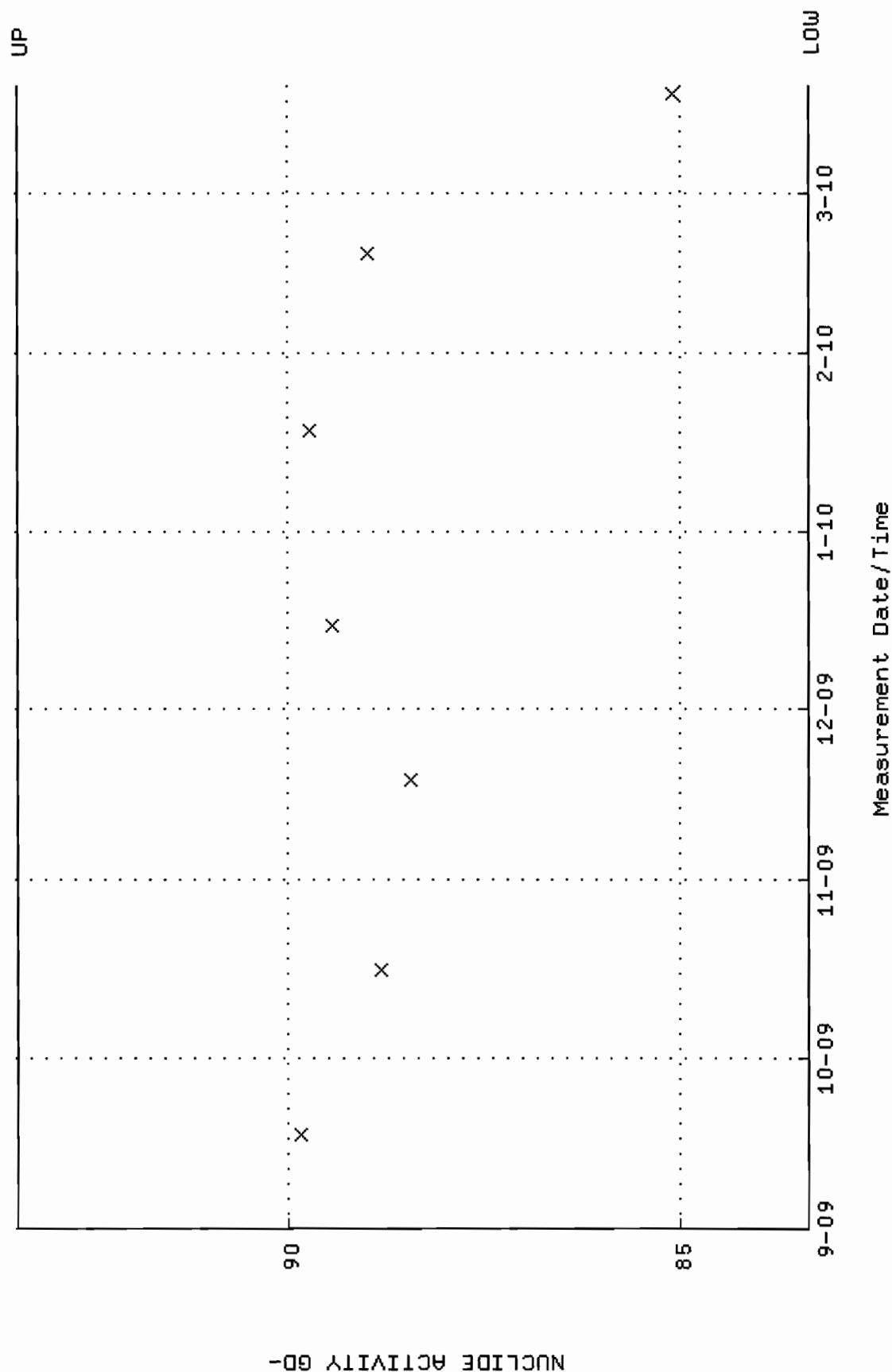
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00

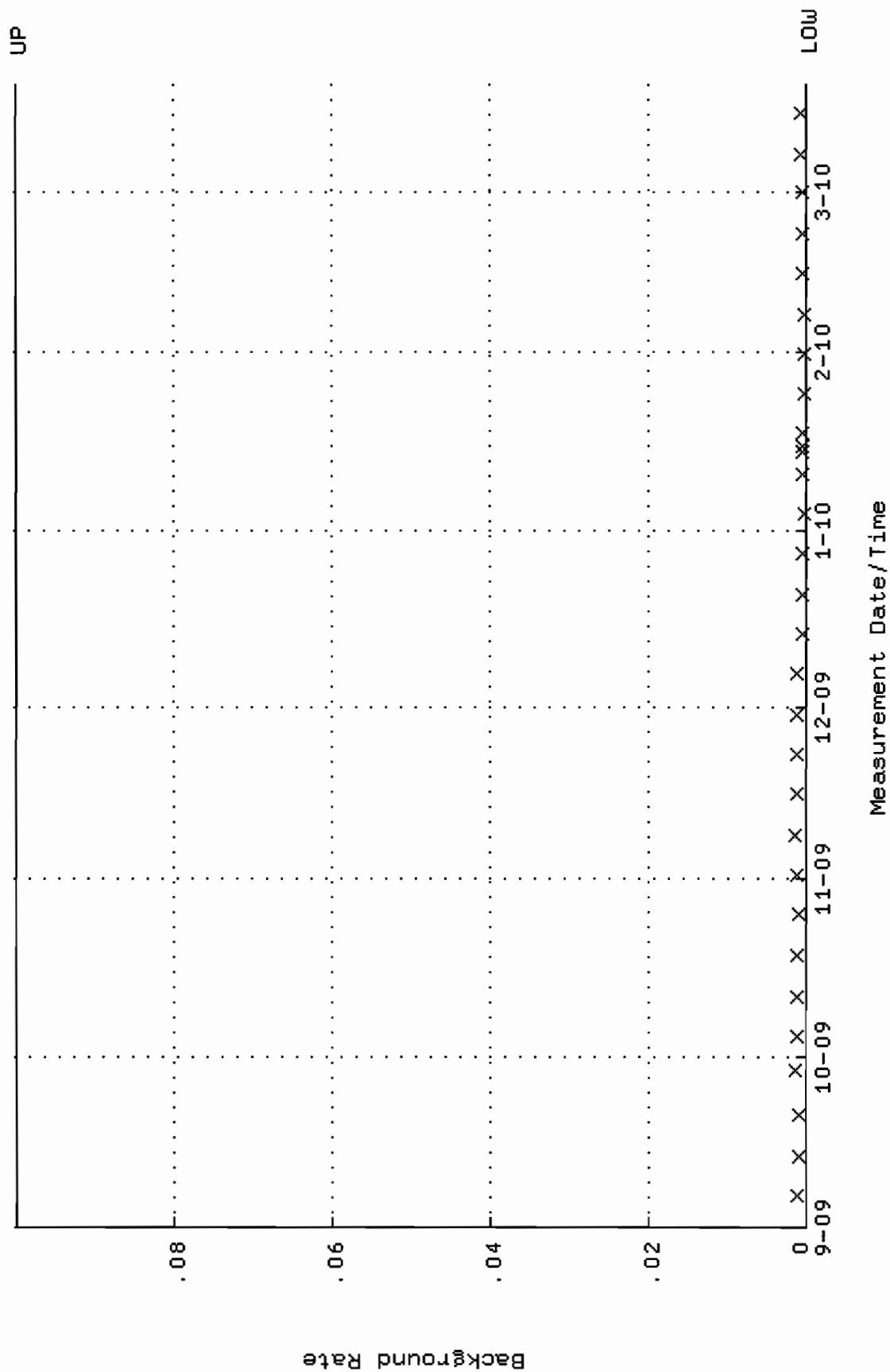
Lower/Upper Lmts: 0.233045 through 0.273065



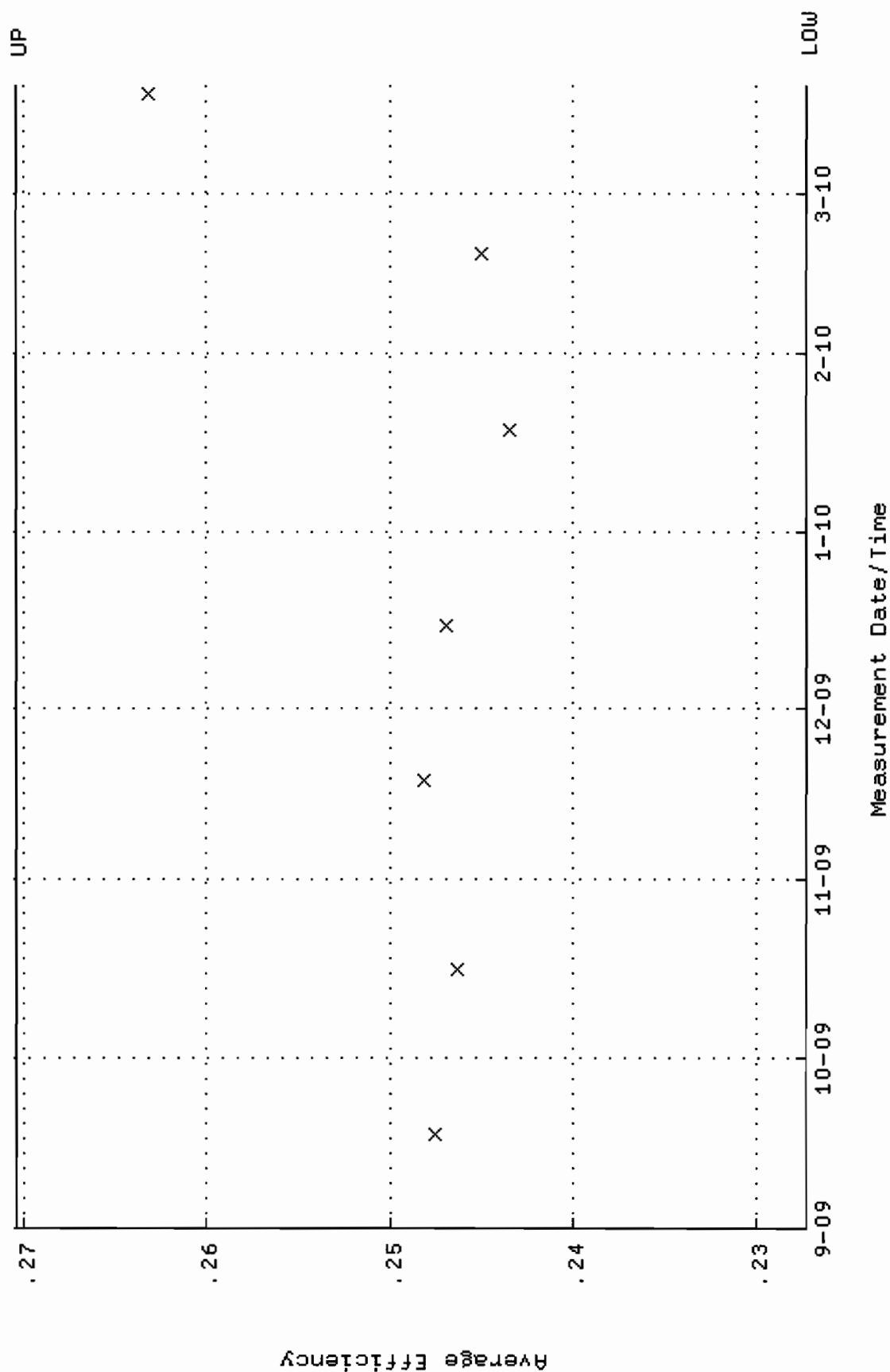
QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.3533 through 93.4269



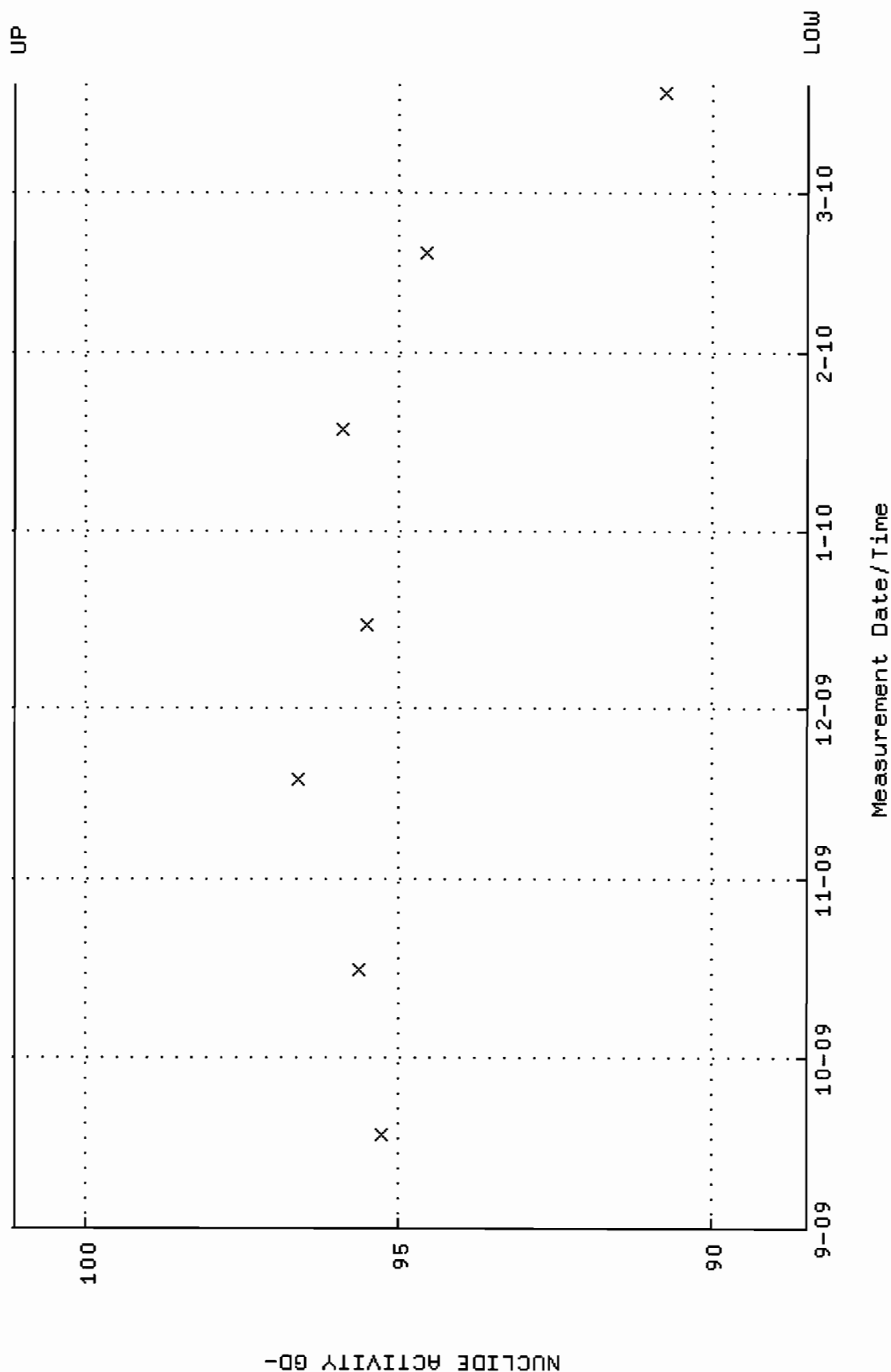
QA filename : DKA100:[ENV_ALPHA.QA.B]B126.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:05 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



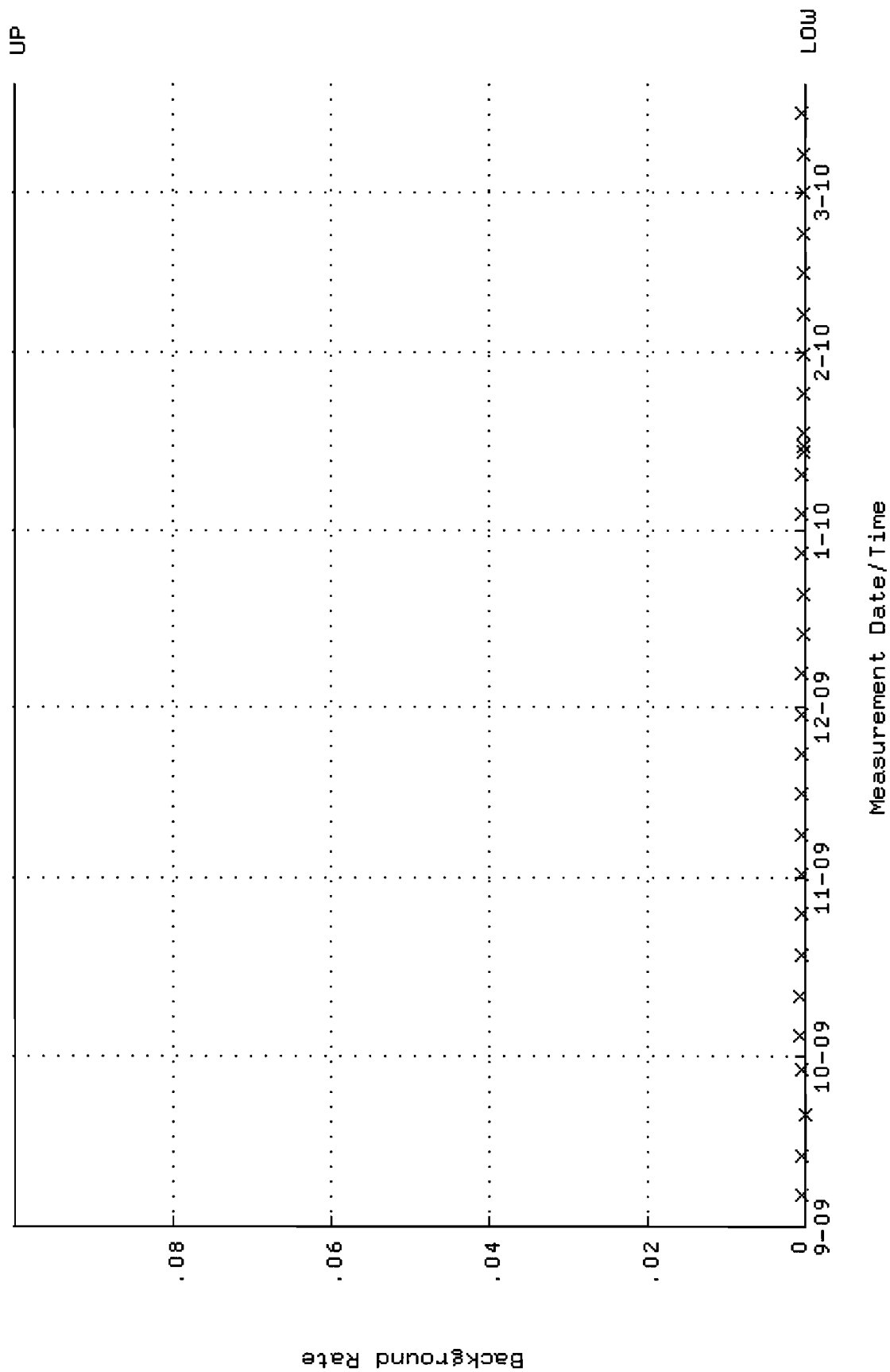
QA filename : DKA100:[ENV_ALPHA.QA.W]W127.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.227212 through 0.270396



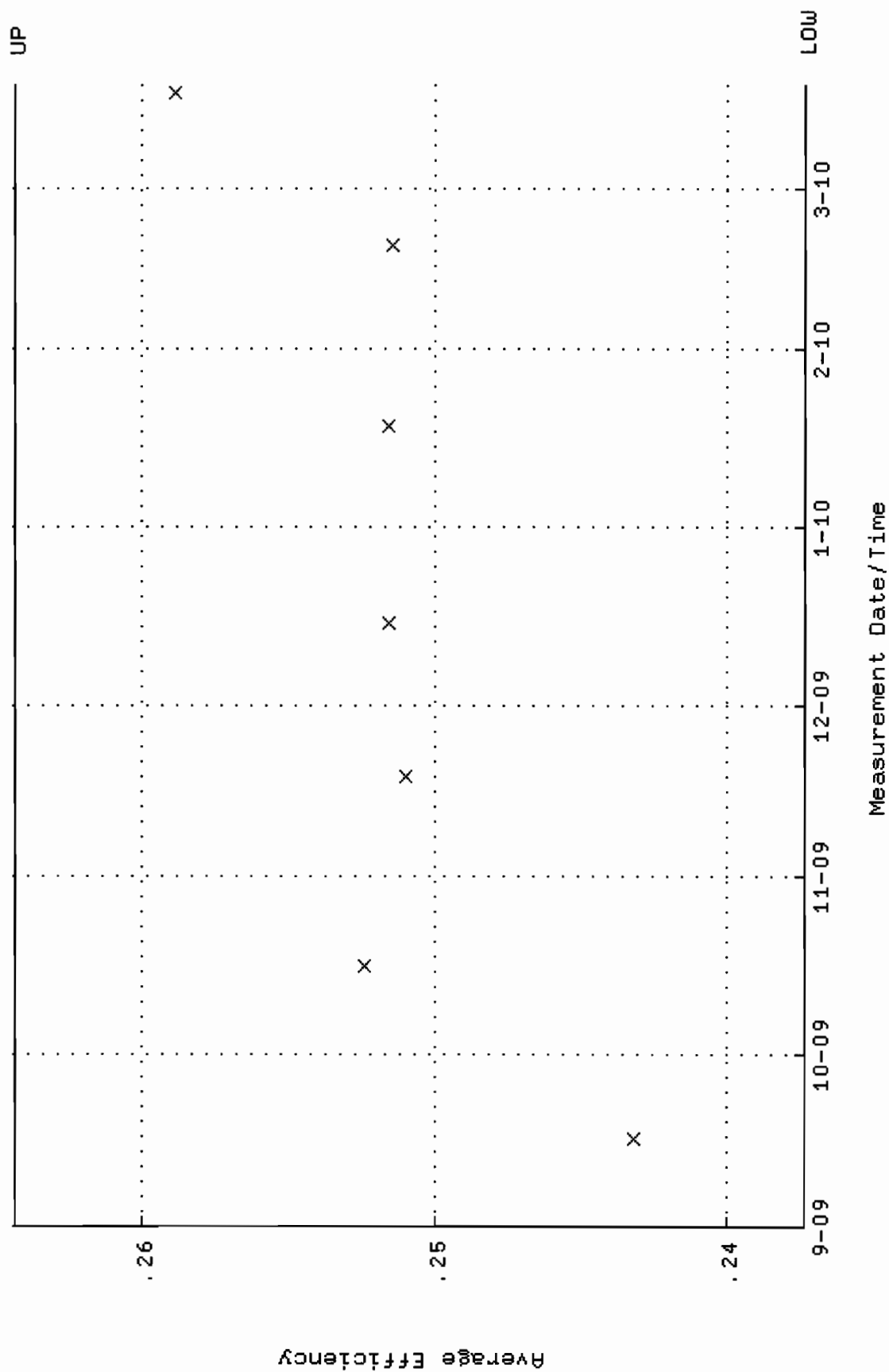
QA filename : DKA100:[ENV_ALPHA.QA.W]w127.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4641 through 101.145



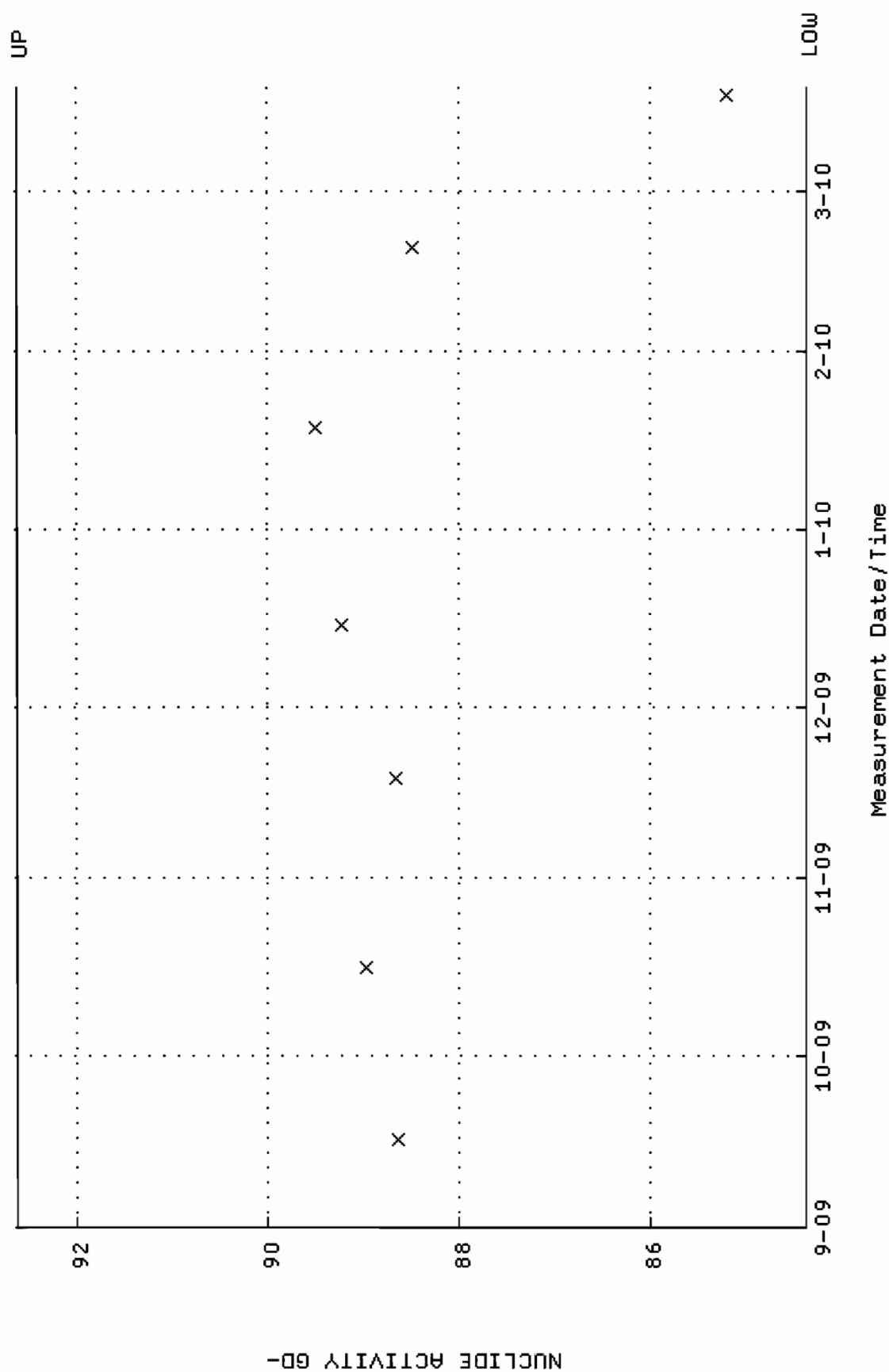
QA filename : DKA100:[ENV_ALPHA.QA.B]B127.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



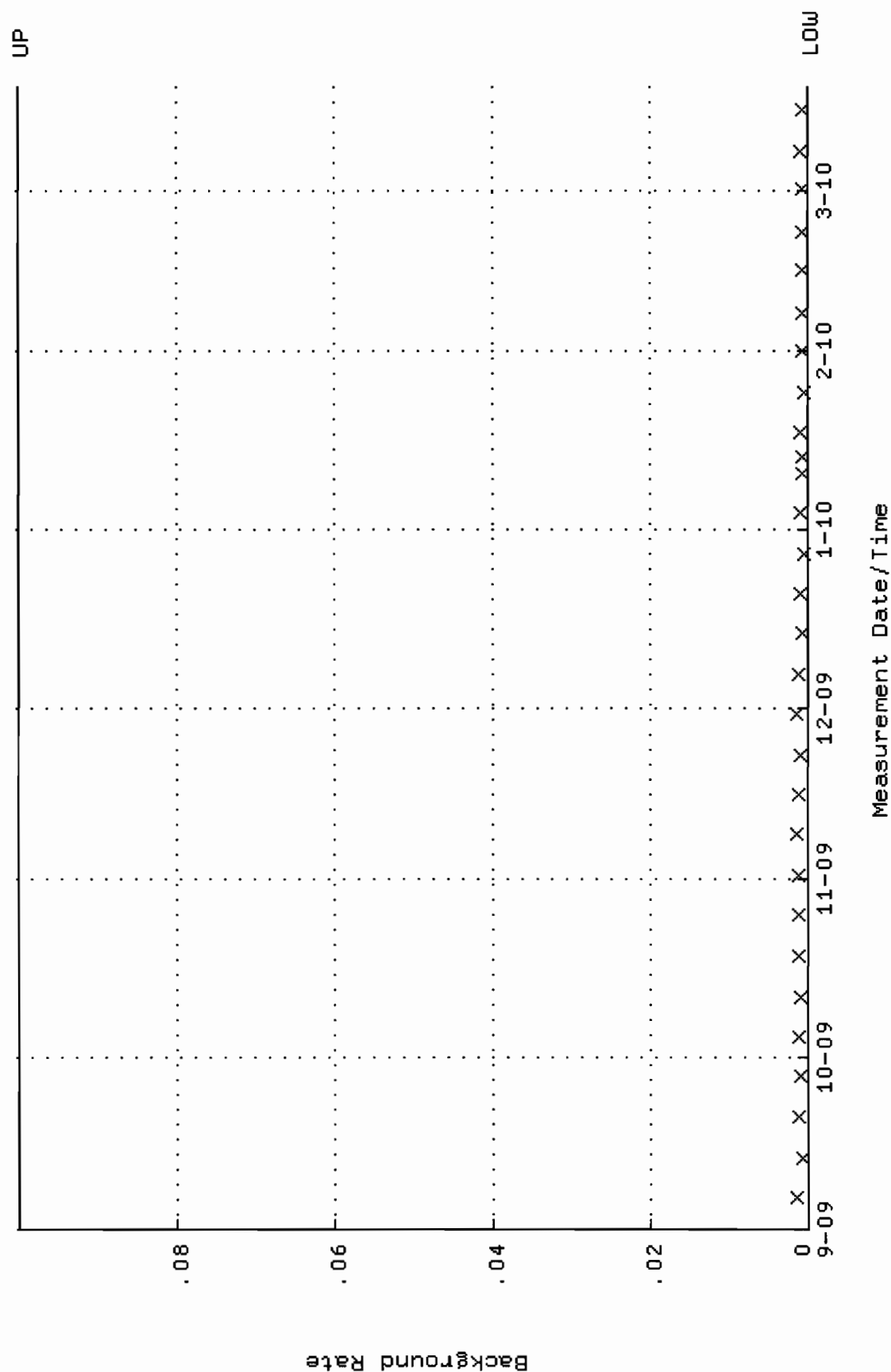
QA filename : DKA100:[ENV_ALPHA.QA.W]w144.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 16-SEP-2009 07:04:02 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.237368 through 0.264286



QA filename : DKA100:[ENV_ALPHA.QA.W]W144.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 16-SEP-2009 07:04:02 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.3705 through 92.6214



QA filename : DKA100:[ENV_ALPHA.QA.B]B144.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:42:22 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

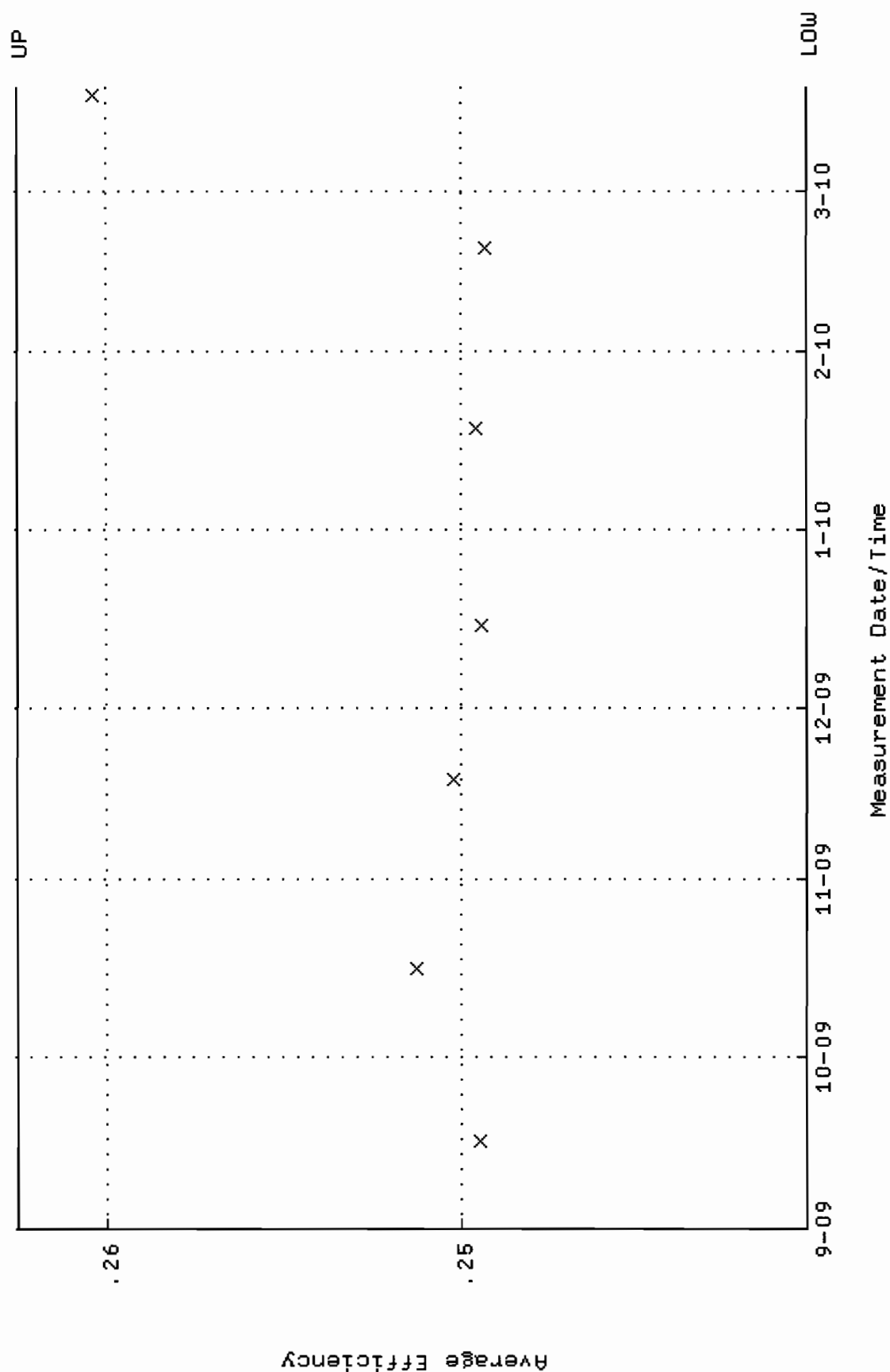


QA filename : DKA100:[ENV_ALPHA.QA.W]W145.QAF;1

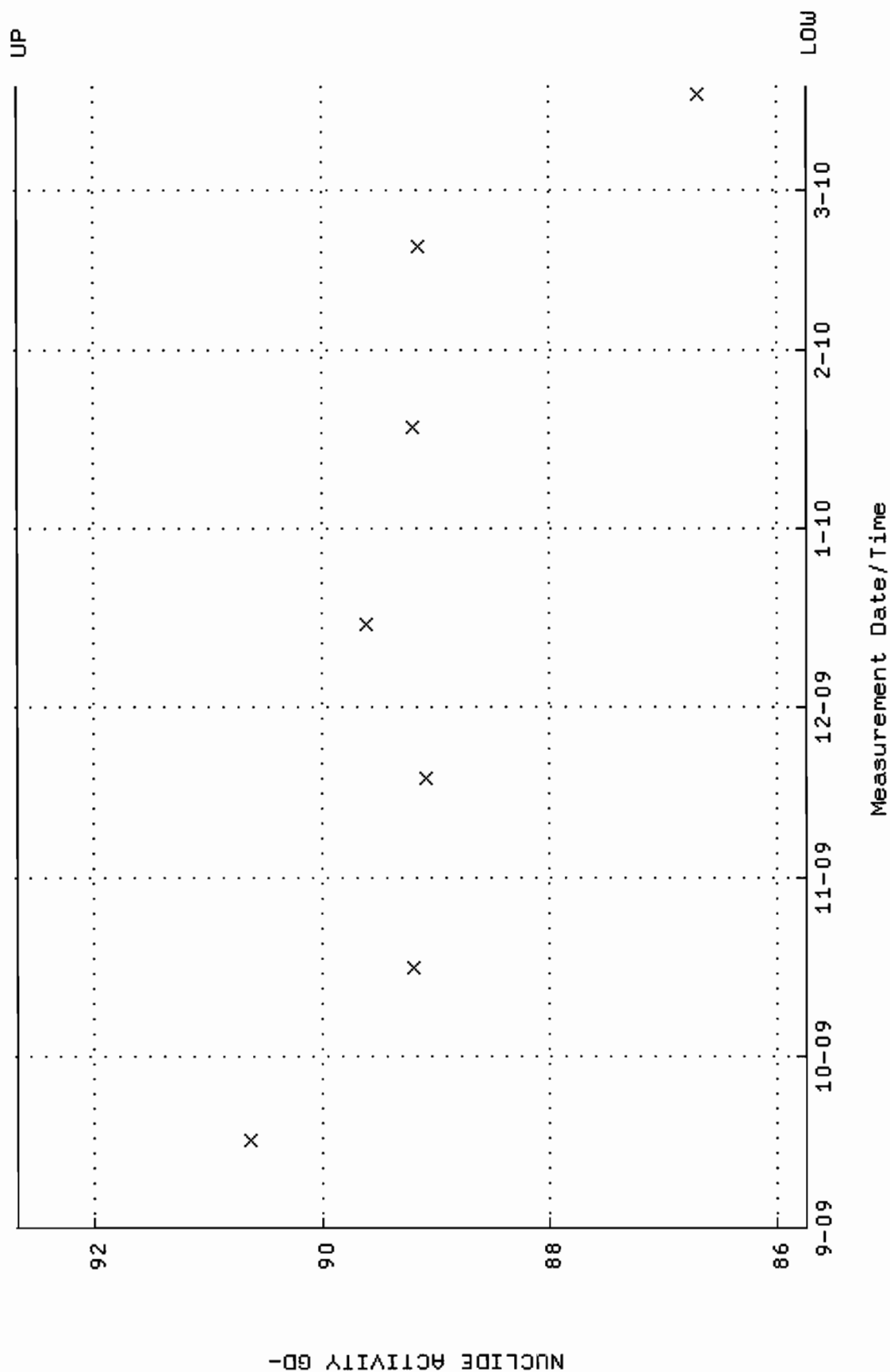
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 16-SEP-2009 07:04:08 through 18-MAR-2010 12:00:00

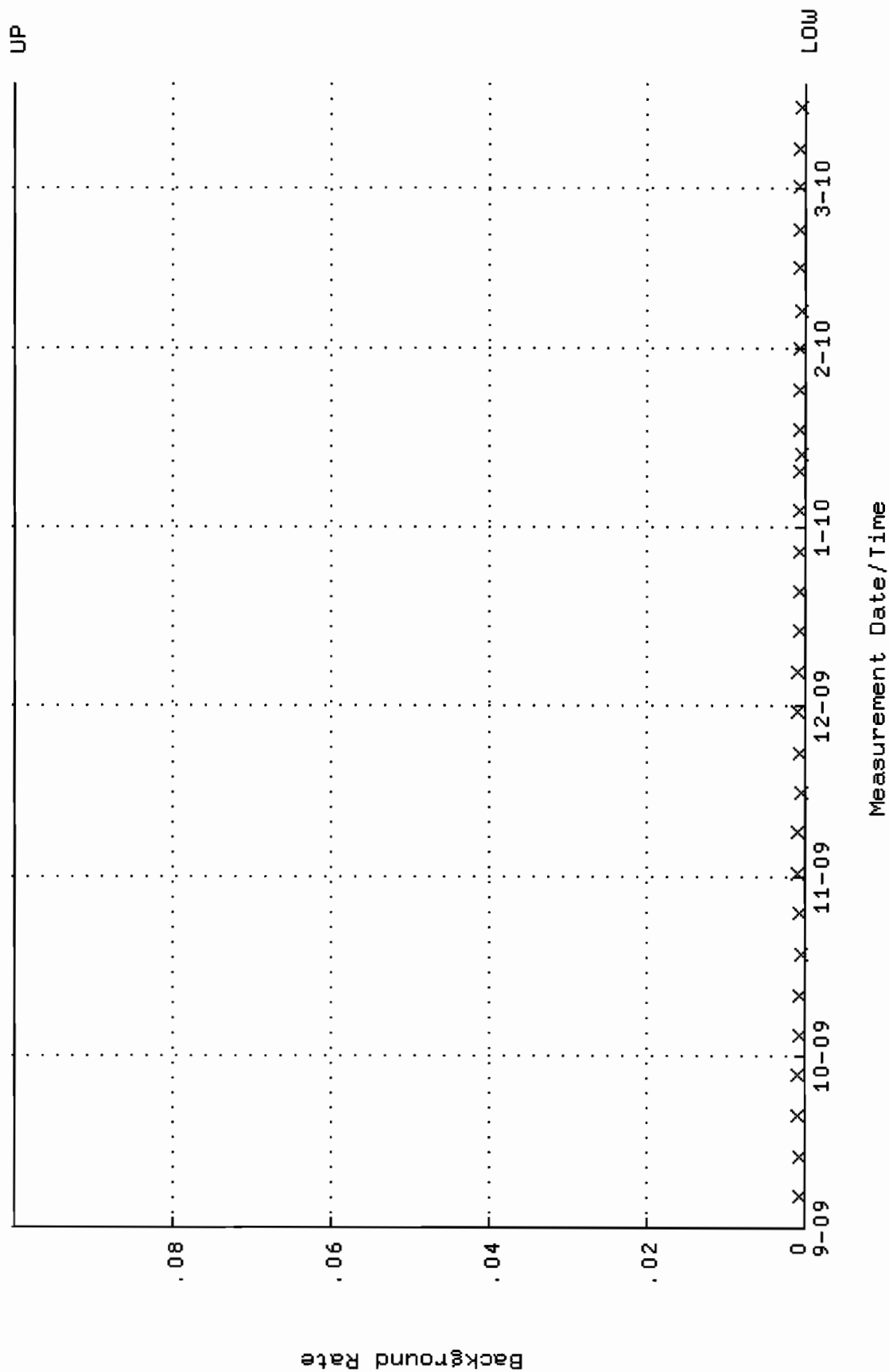
Lower/Upper Lmts: 0.240306 through 0.262496



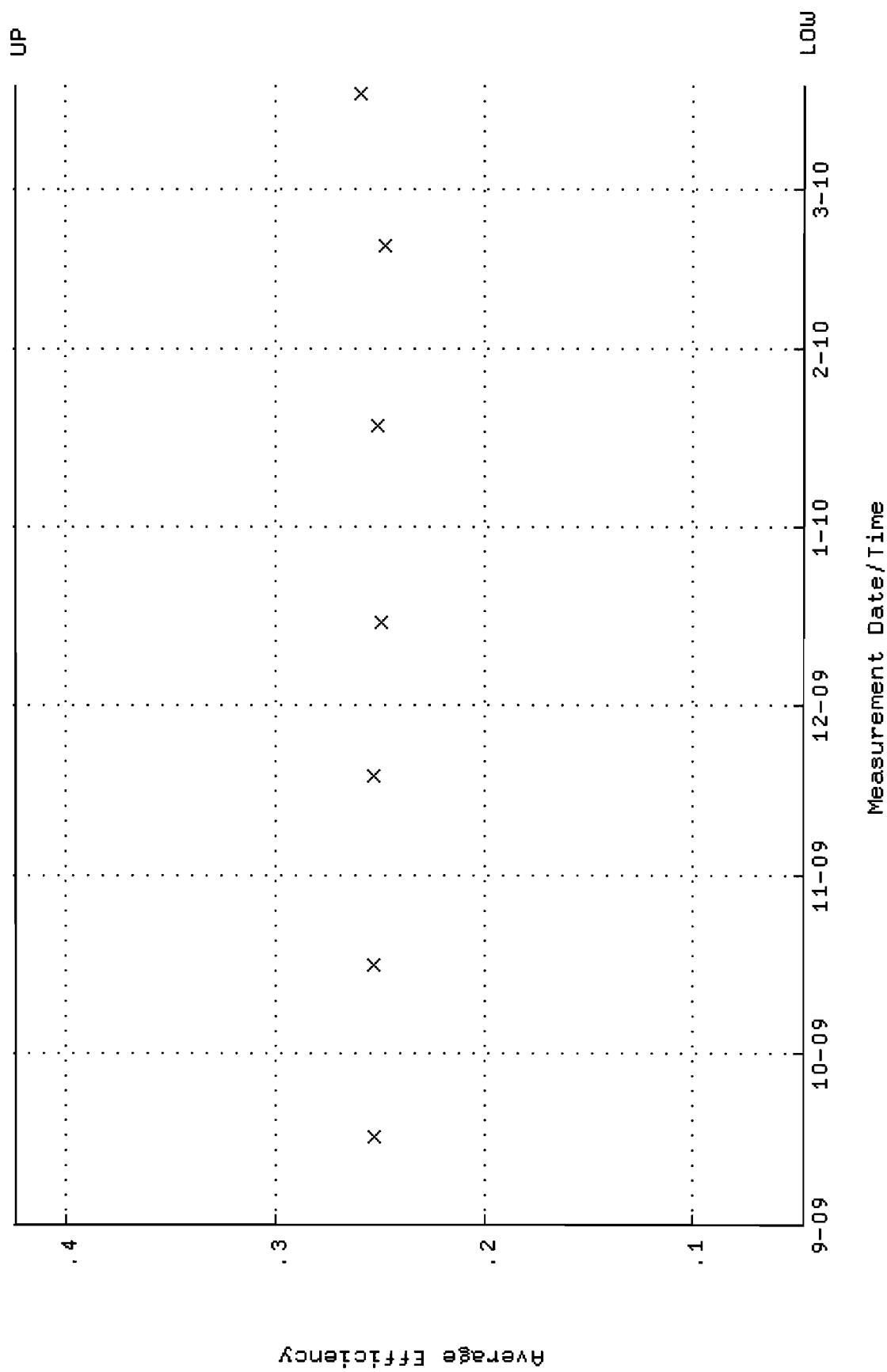
QA filename : DKA100:[ENV_ALPHA.QA.W]w145.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 16-SEP-2009 07:04:08 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.7312 through 92.6692



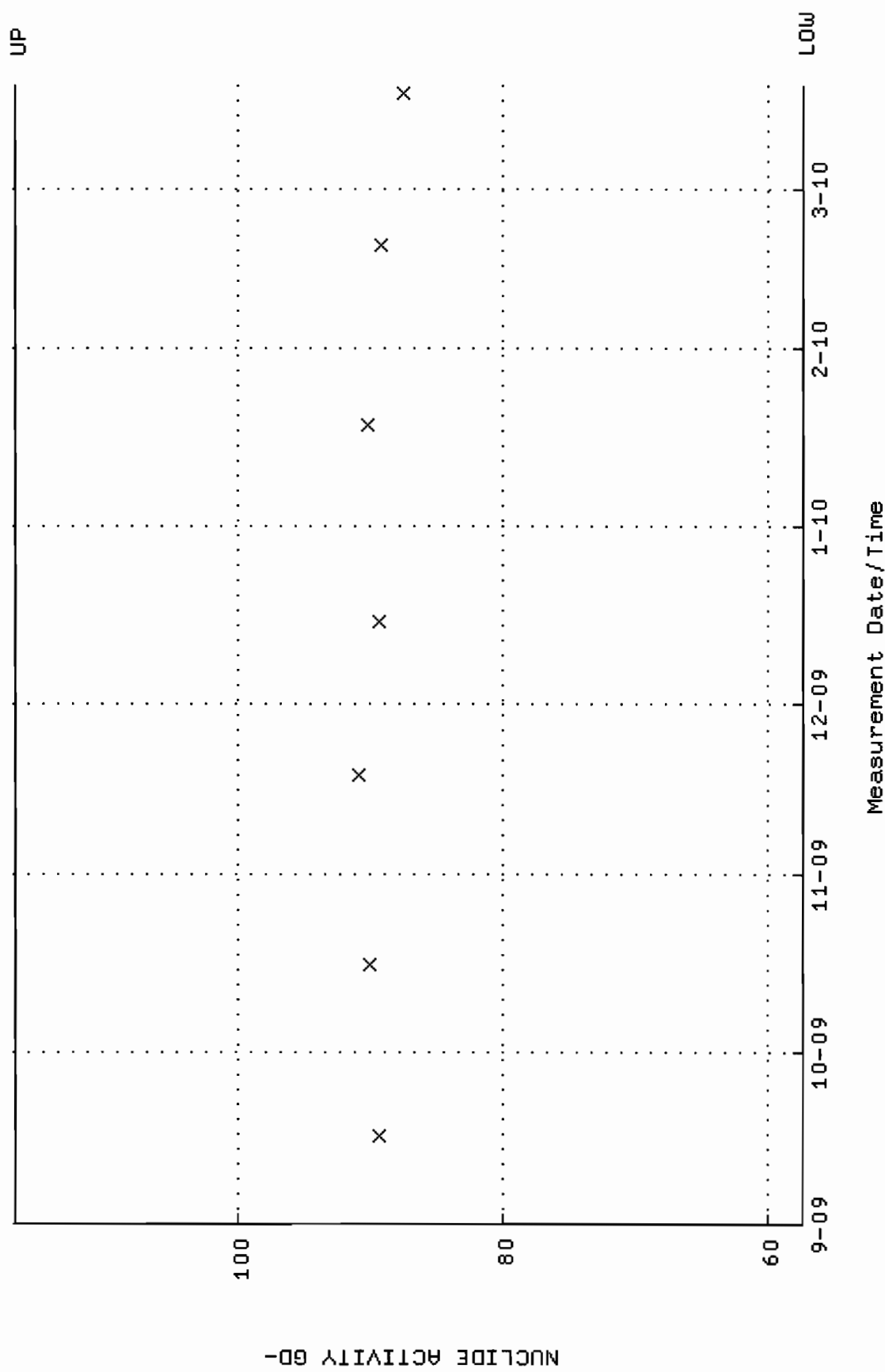
QA filename : DKA100:[ENV_ALPHA.QA.B]B145.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:42:26 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



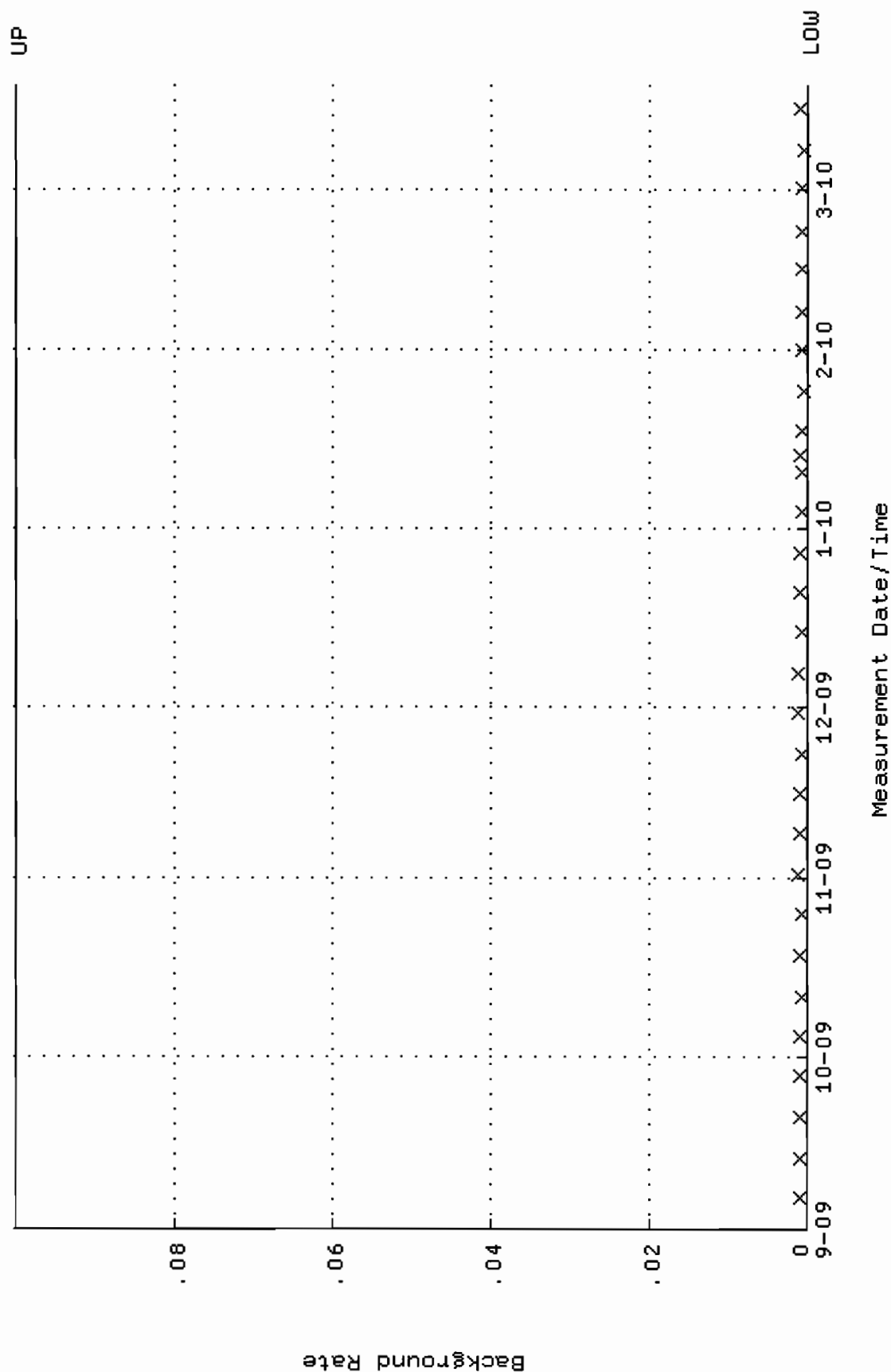
QA filename : DKA100:[ENV_ALPHA.QA.W]W146.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 16-SEP-2009 07:04:13 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 4.713000E-02 through 0.423864



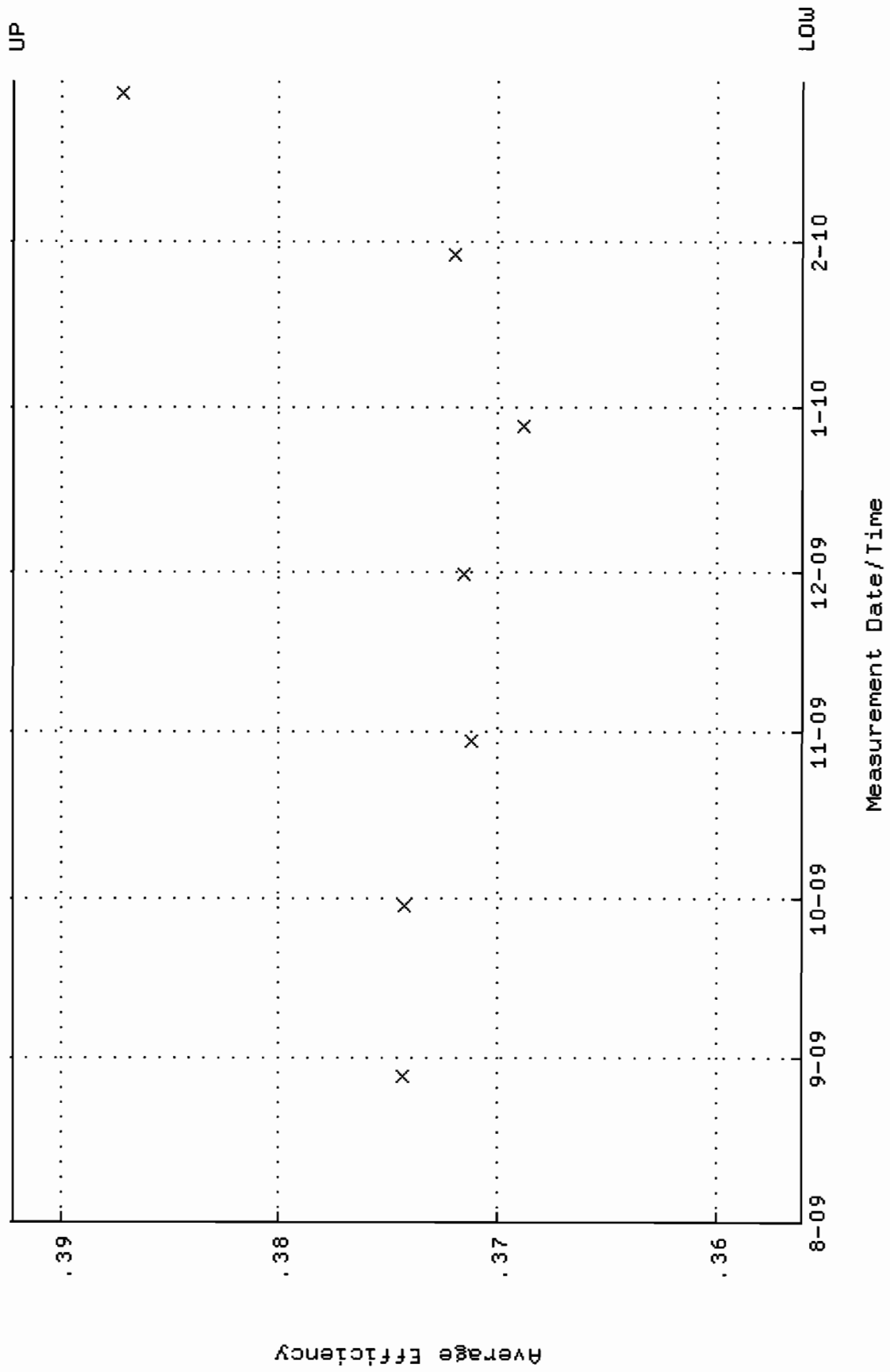
QA filename : DKA100:[ENV_ALPHA.QA.W]u146.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 16-SEP-2009 07:04:13 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 57.4058 through 116.767



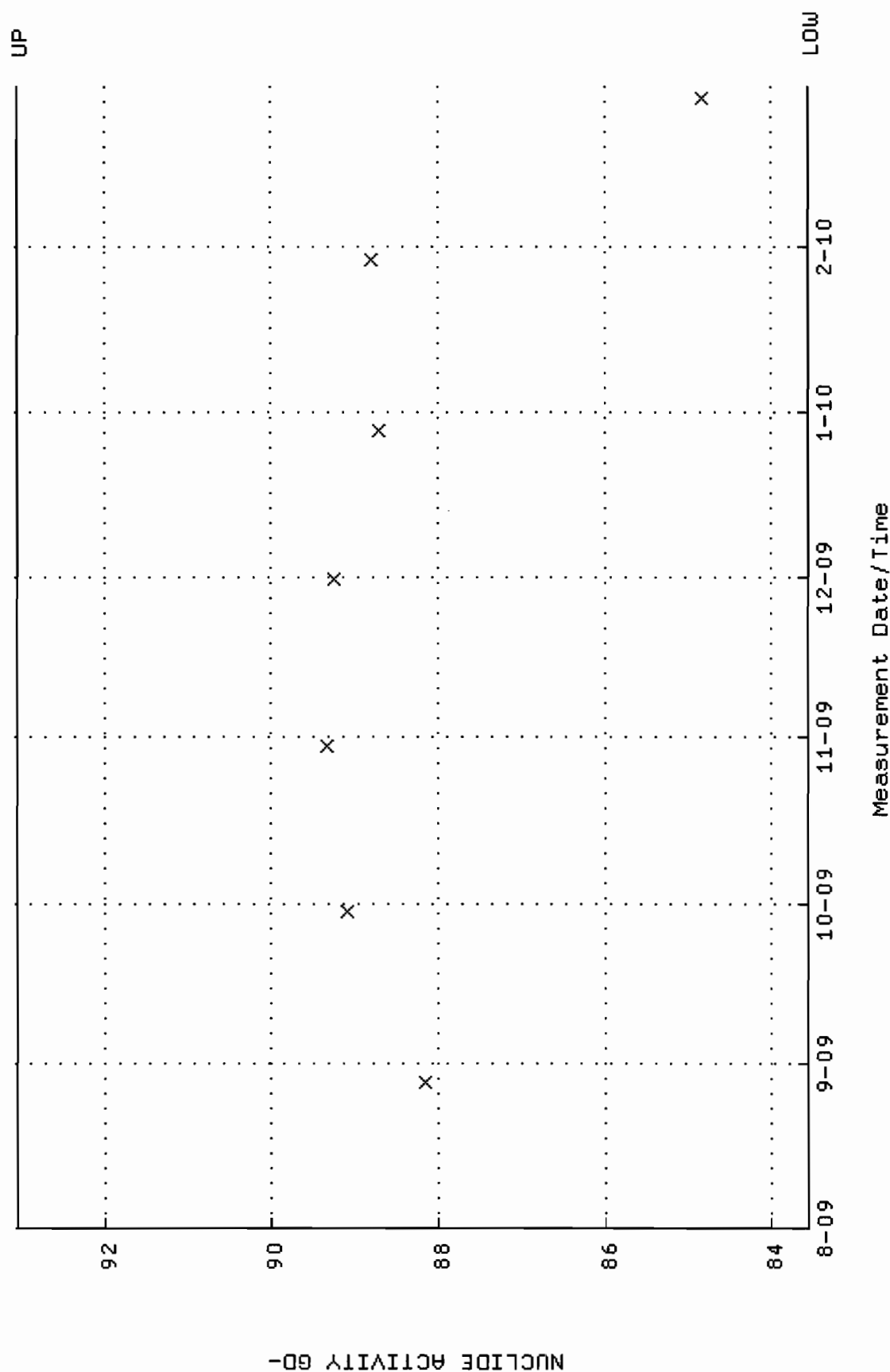
QA filename : DKA100:[ENV_ALPHA.QA.B]B146.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:42:30 through 18-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



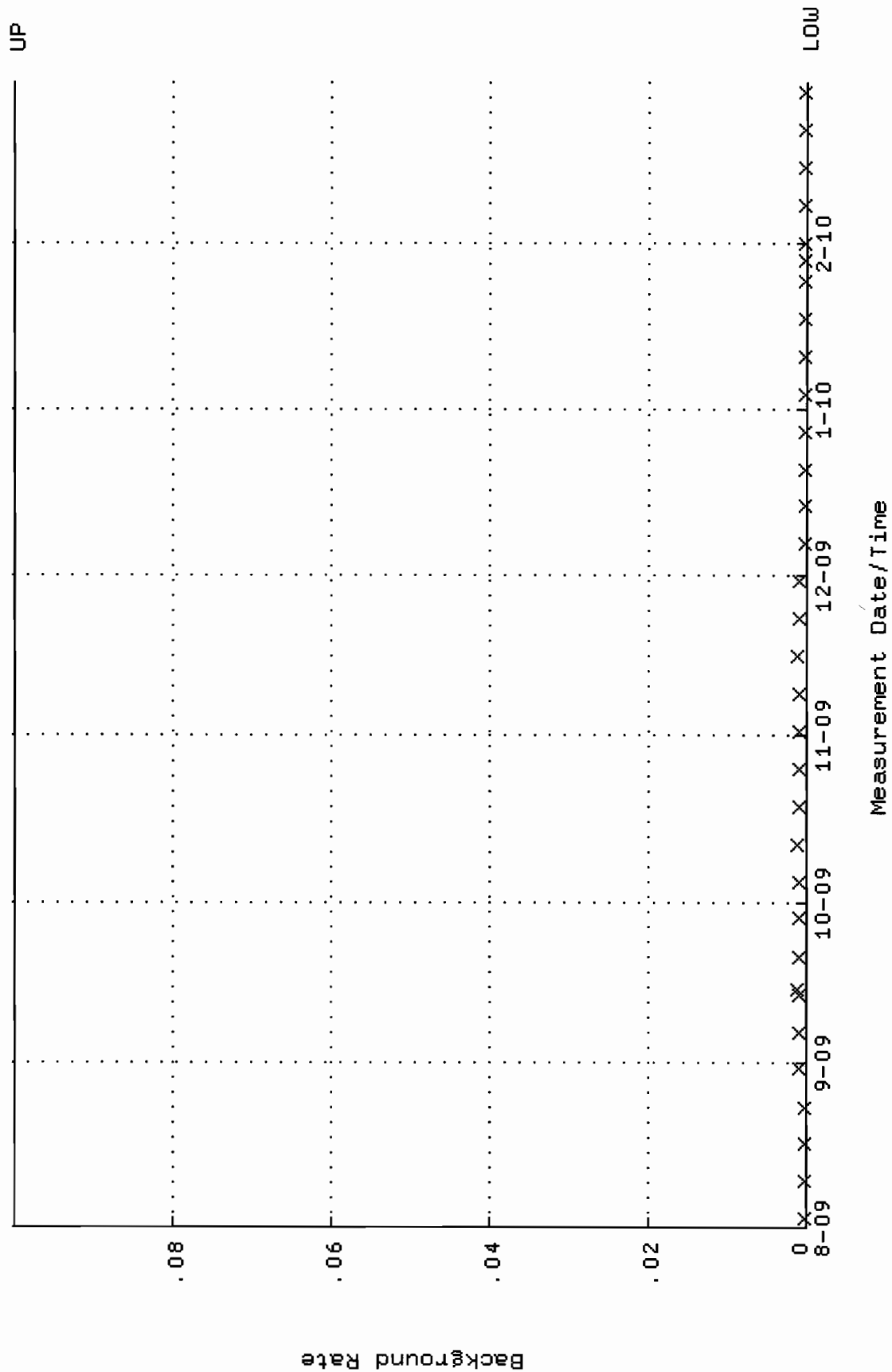
QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.356063 through 0.392181



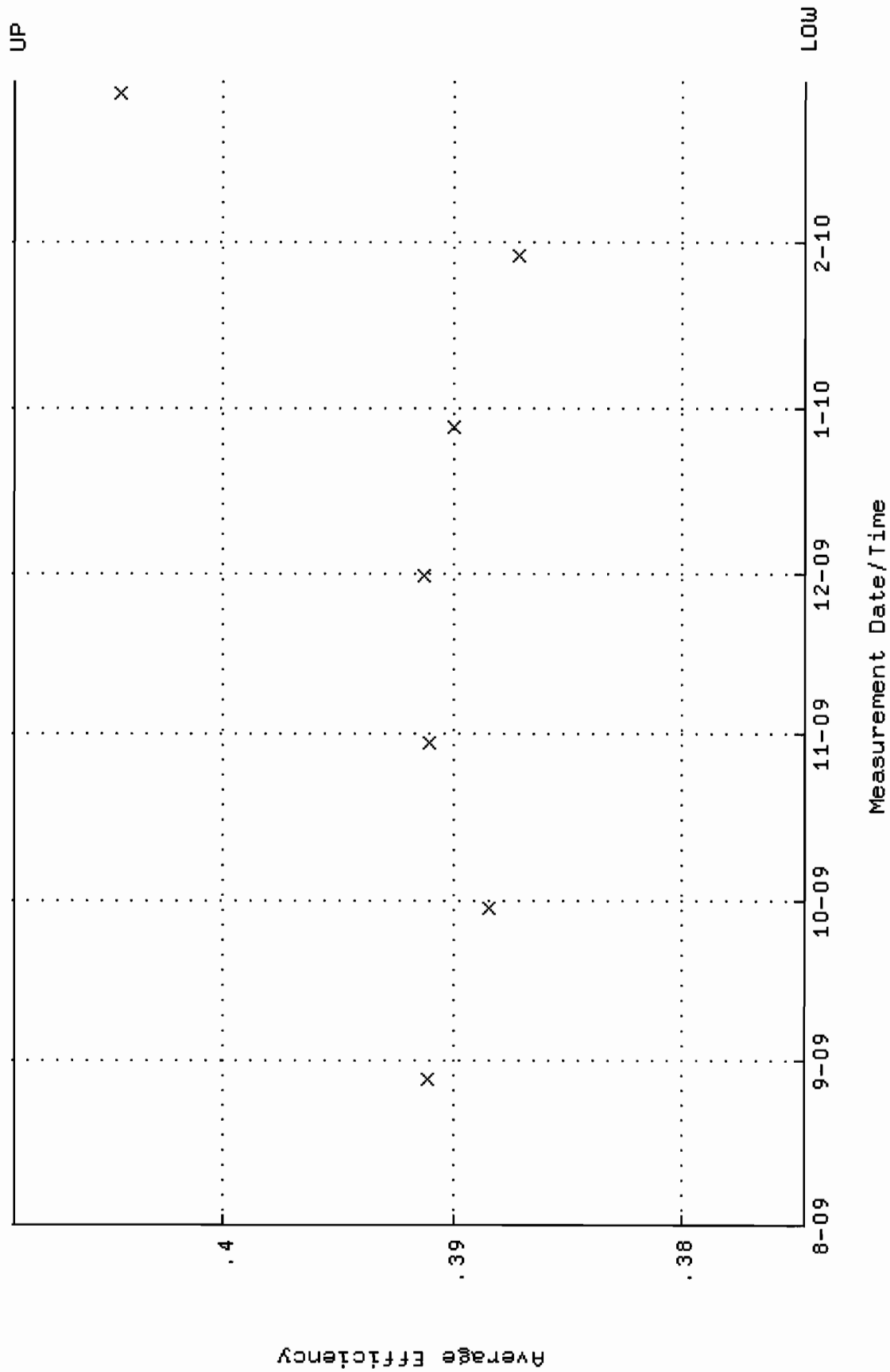
QA filename : DKA100:[ENV-ALPHA.QA.W]W232.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.5615 through 93.0435



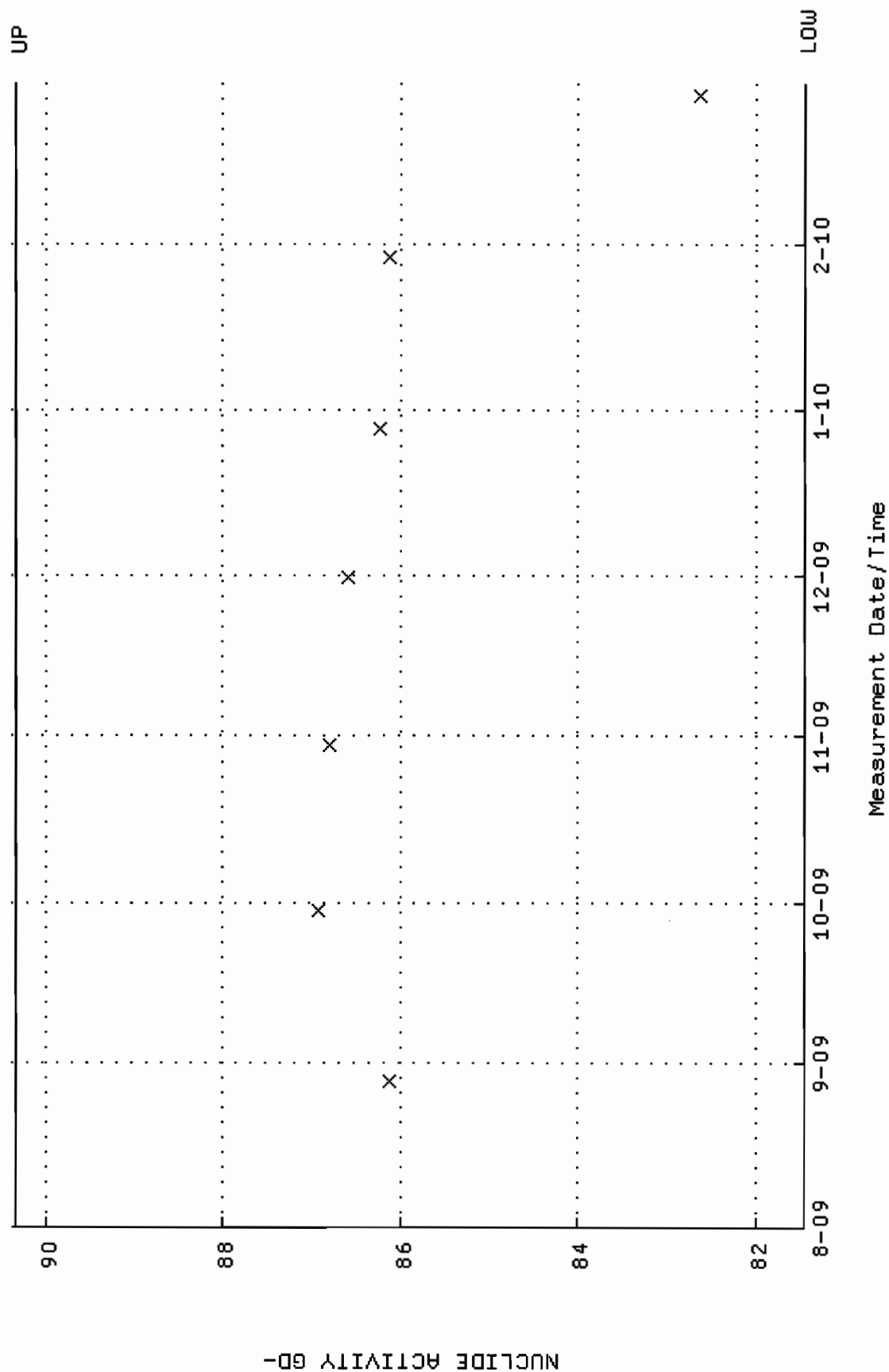
QA filename : DKA100:[ENV_ALPHA.QA.B]B232.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:47 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



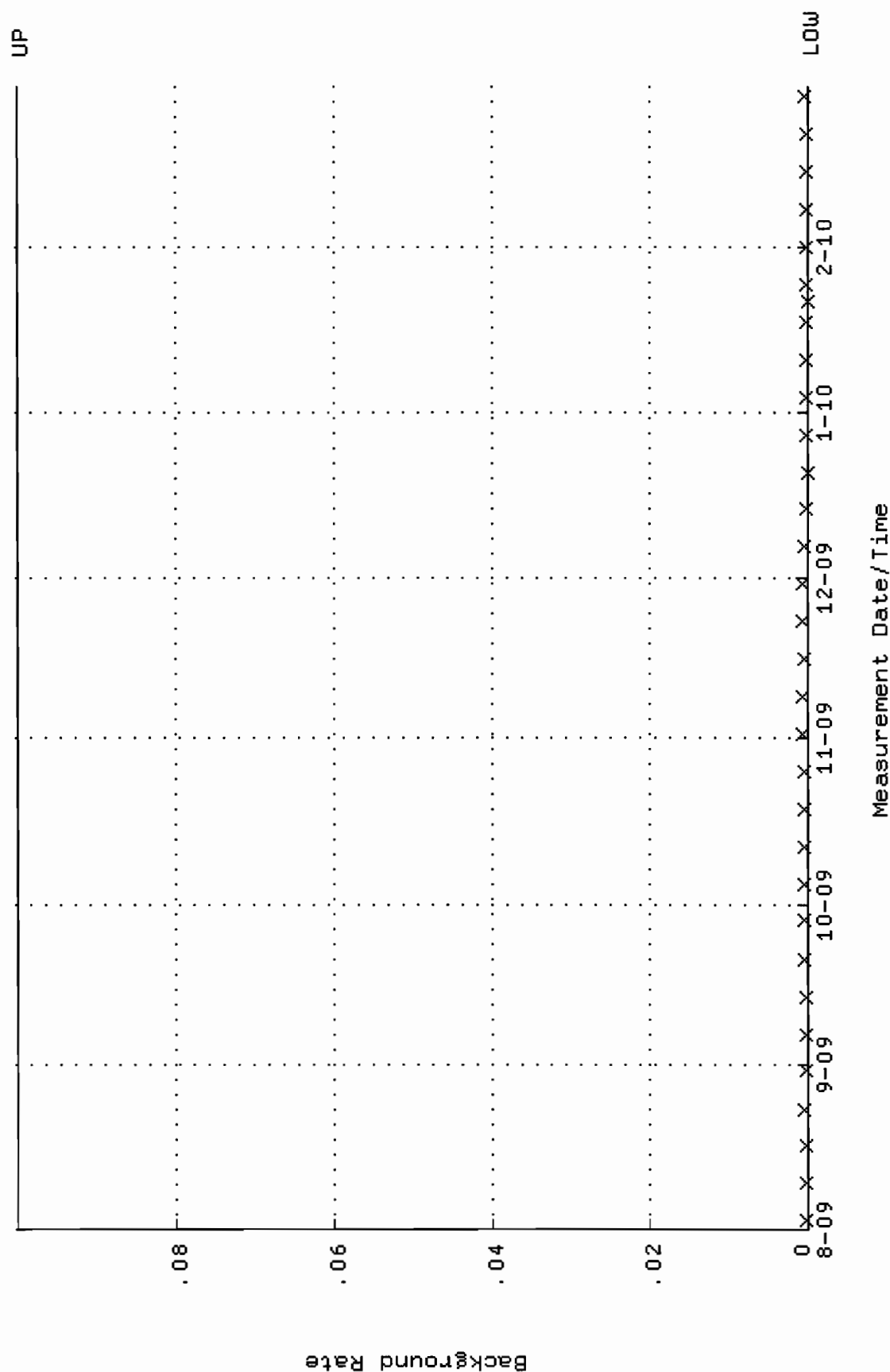
QA filename : DKA100:[ENV_ALPHA.QA.W]W251.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:12 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.374659 through 0.409089



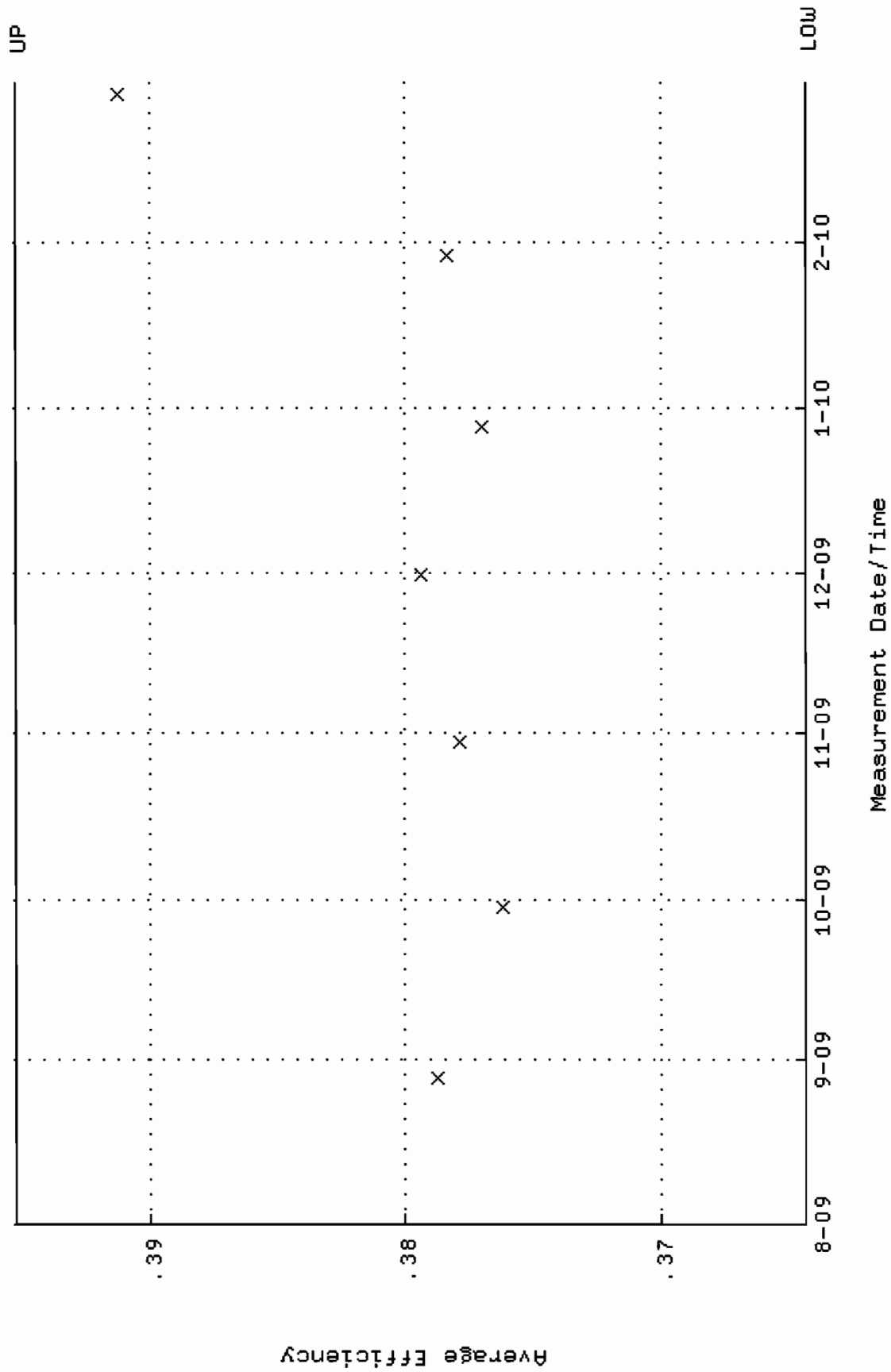
QA filename : DKA100:[ENV_ALPHA.QA.W]W251.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:12 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.4582 through 90.3490



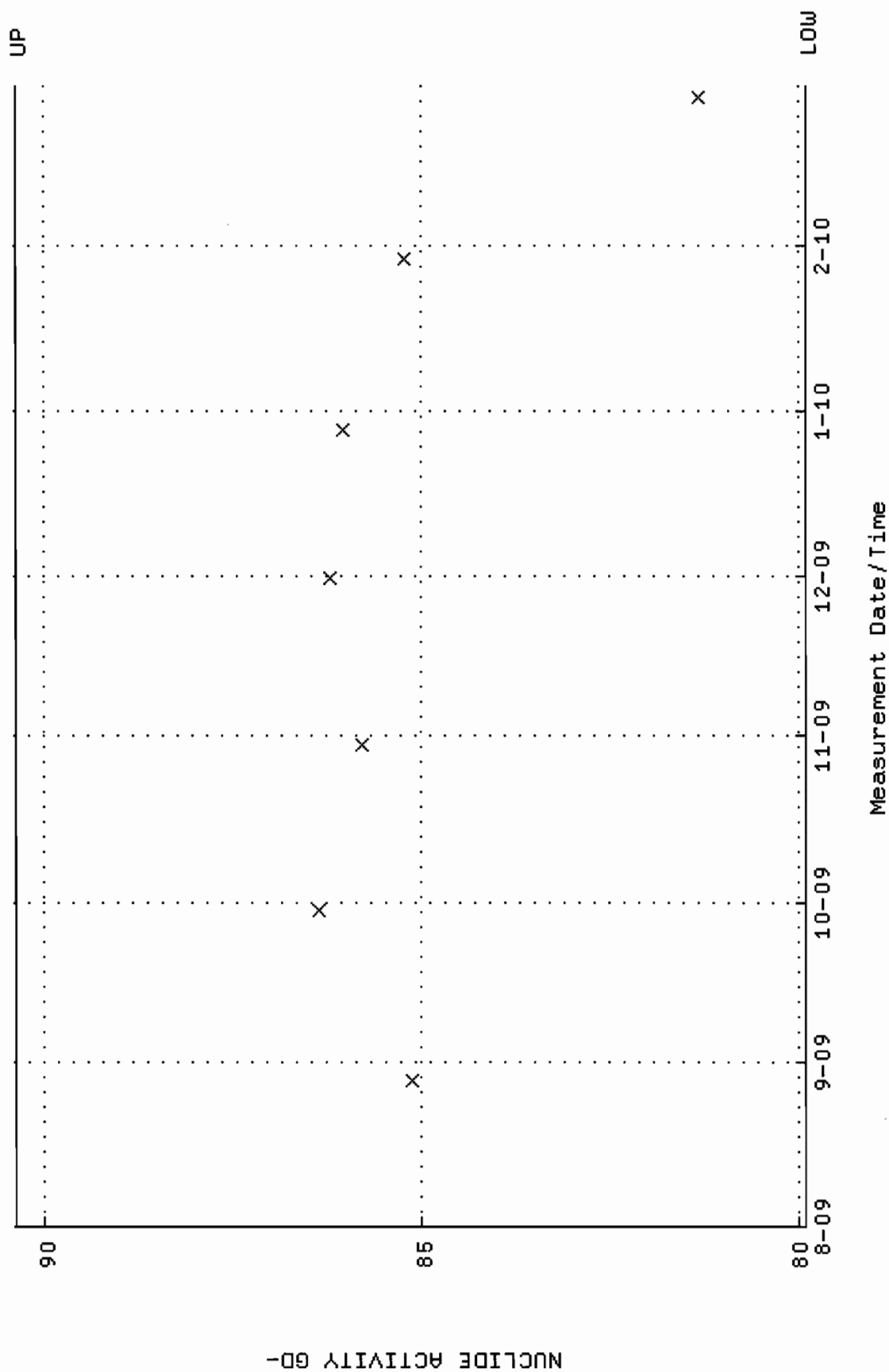
QA filename : DKA100:[ENV_ALPHA.QA.B]B251.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:28:13 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



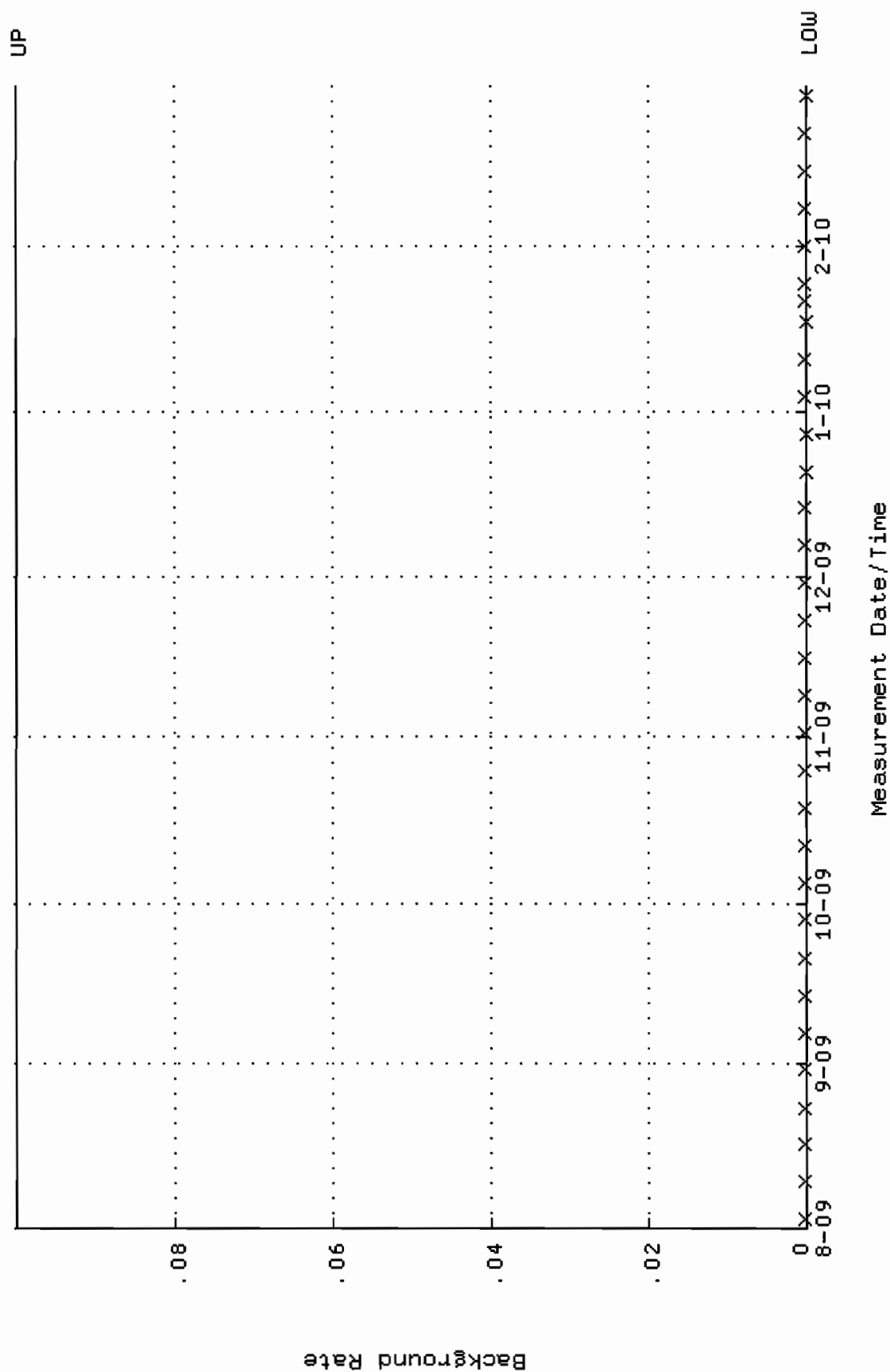
QA filename : DKA100:[ENV_ALPHA.QA.W]W252.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:17 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.364281 through 0.395267



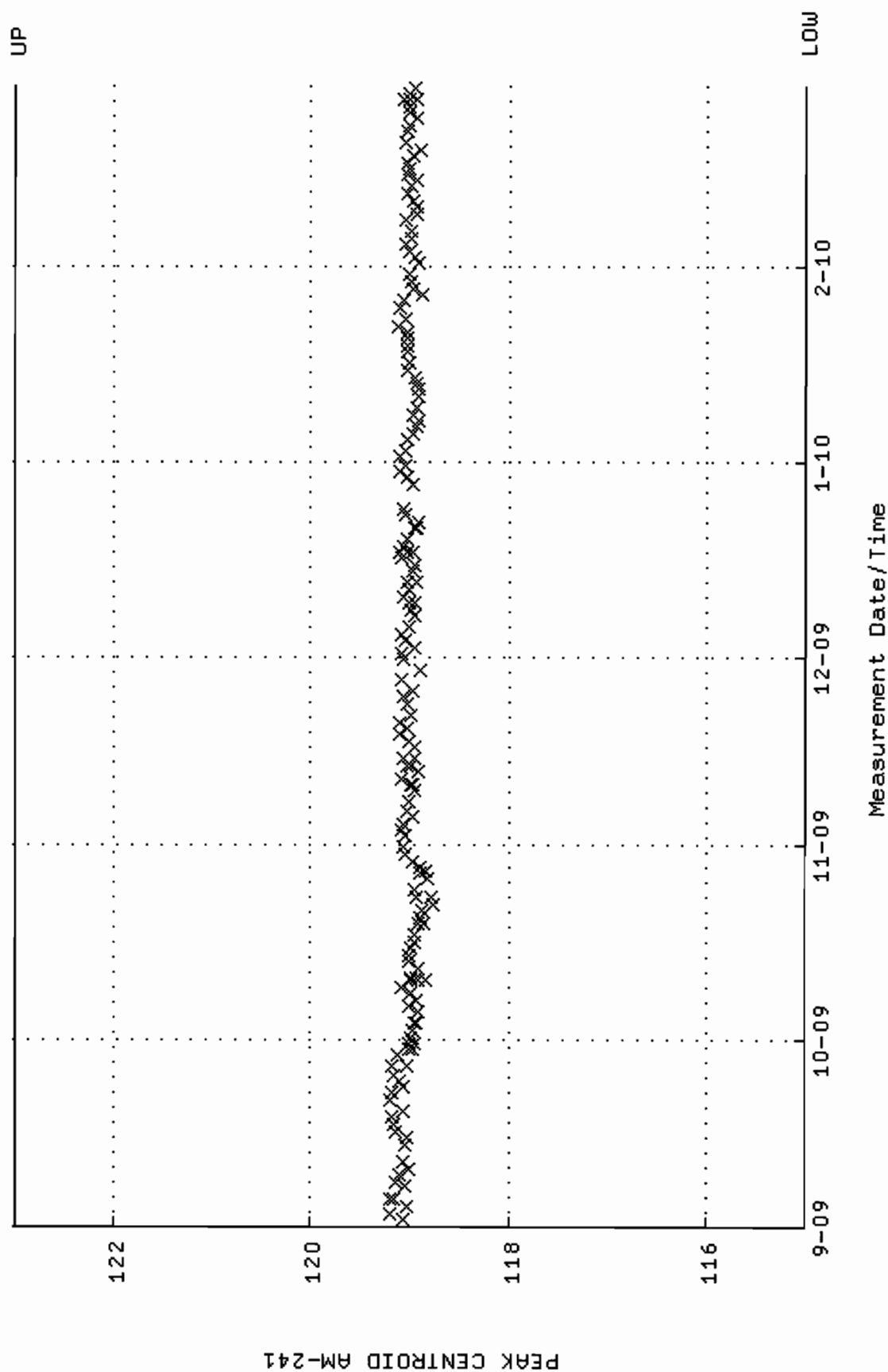
QA filename : DKA100:[ENV_ALPHA.QA.W]W252.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:17 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 79.9099 through 90.3785



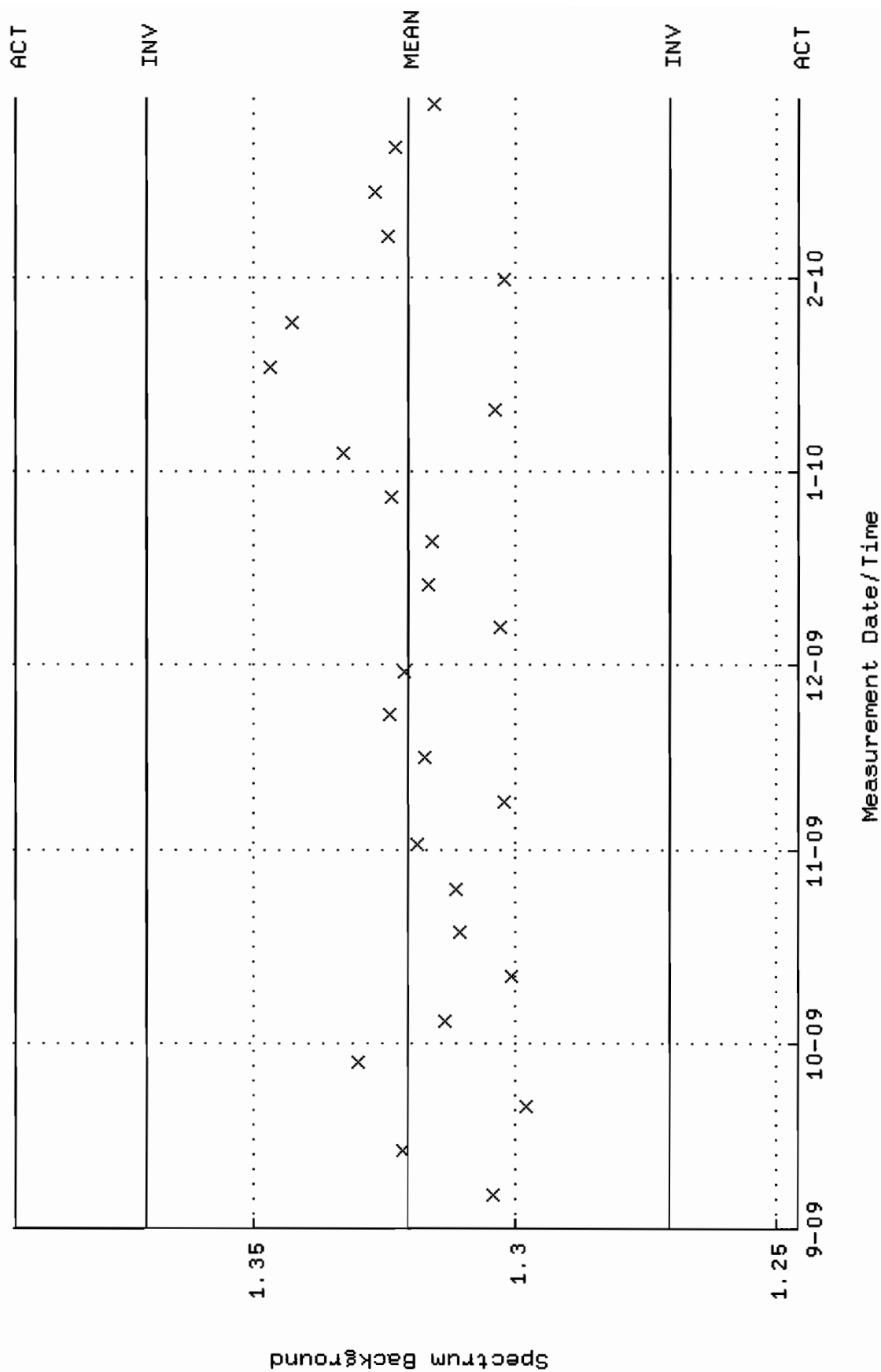
QA filename : DKA100:[ENV_ALPHA.QA.B]B252.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:28:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



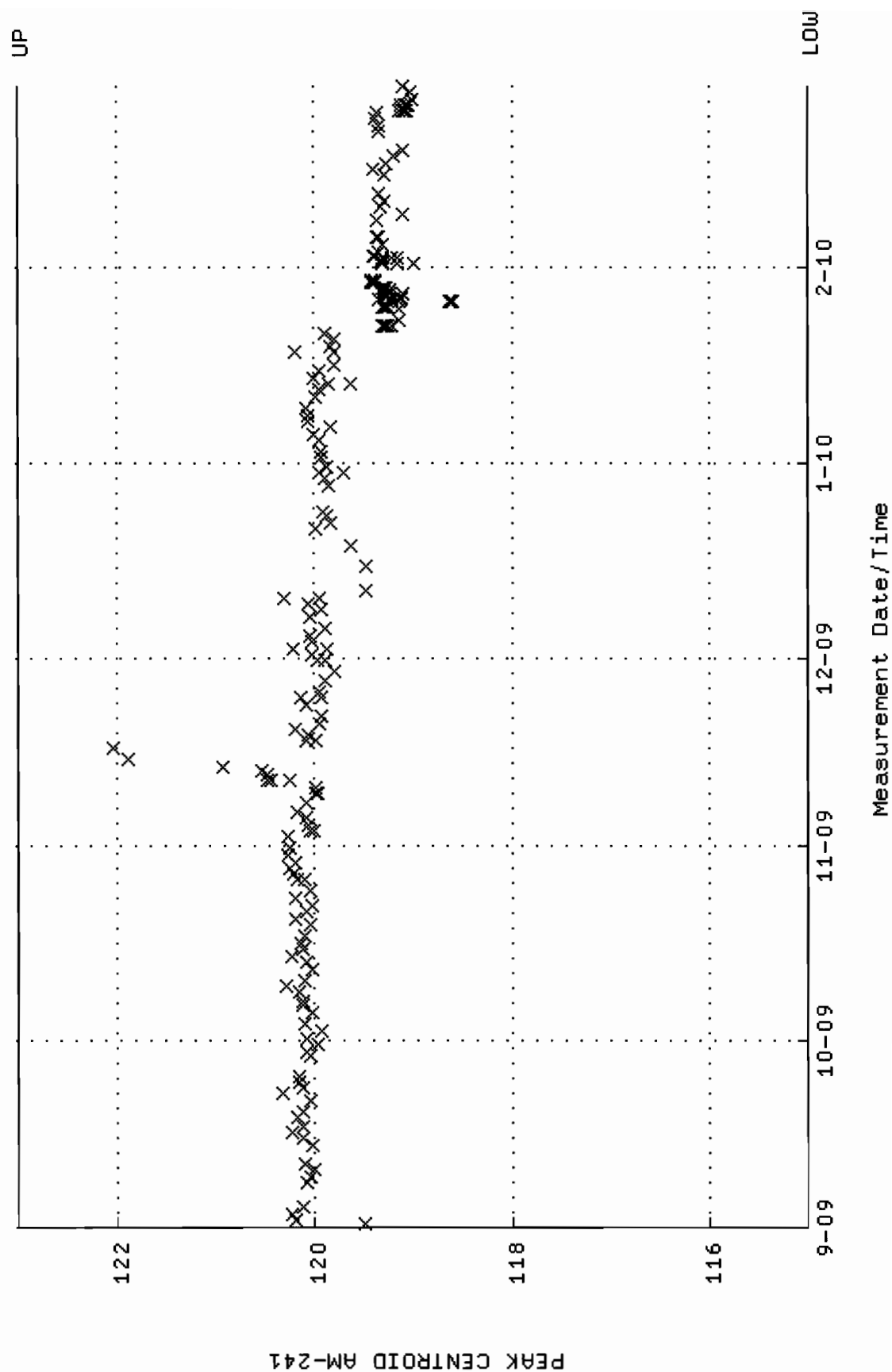
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM04-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:22:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



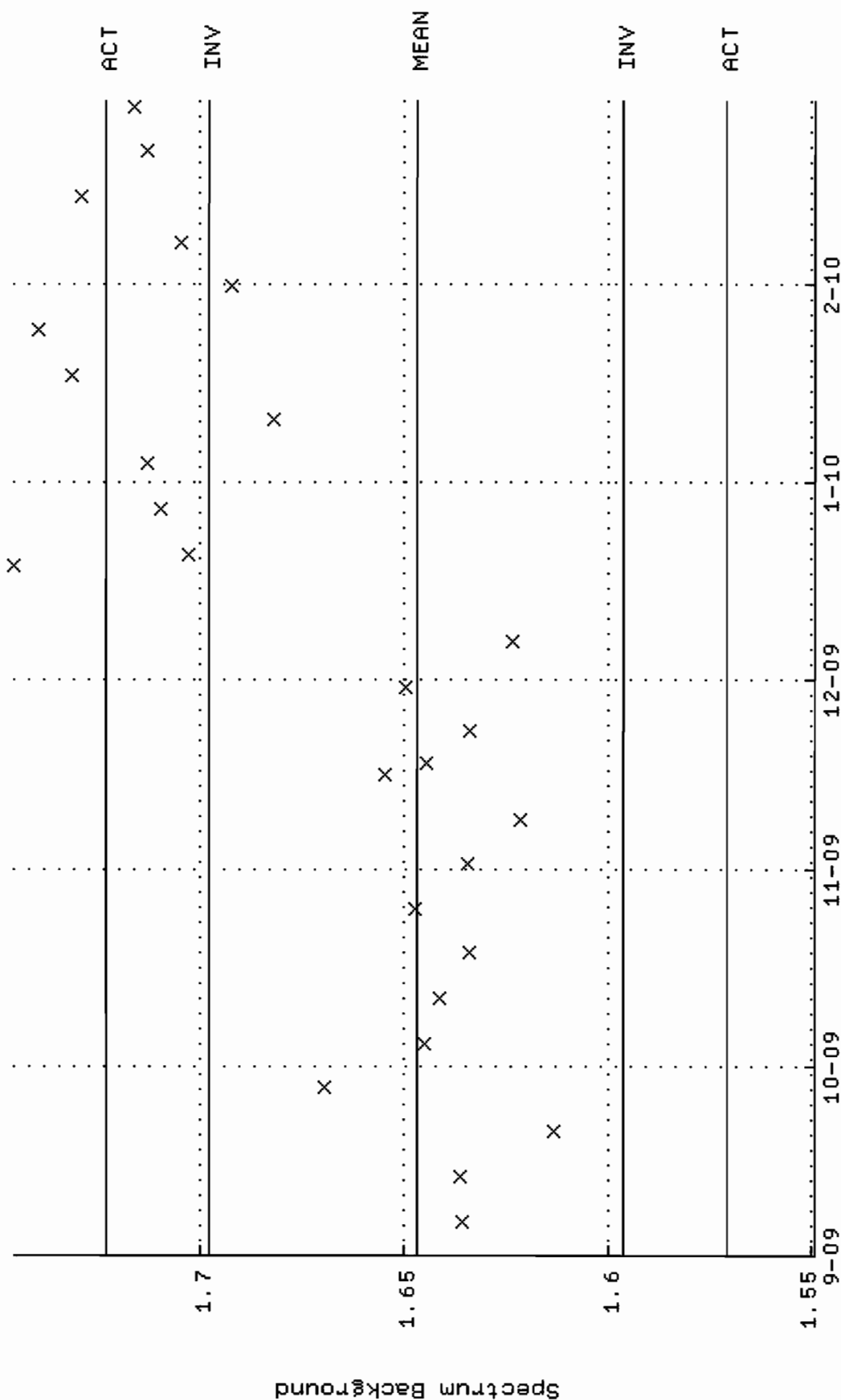
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM04.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:38:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



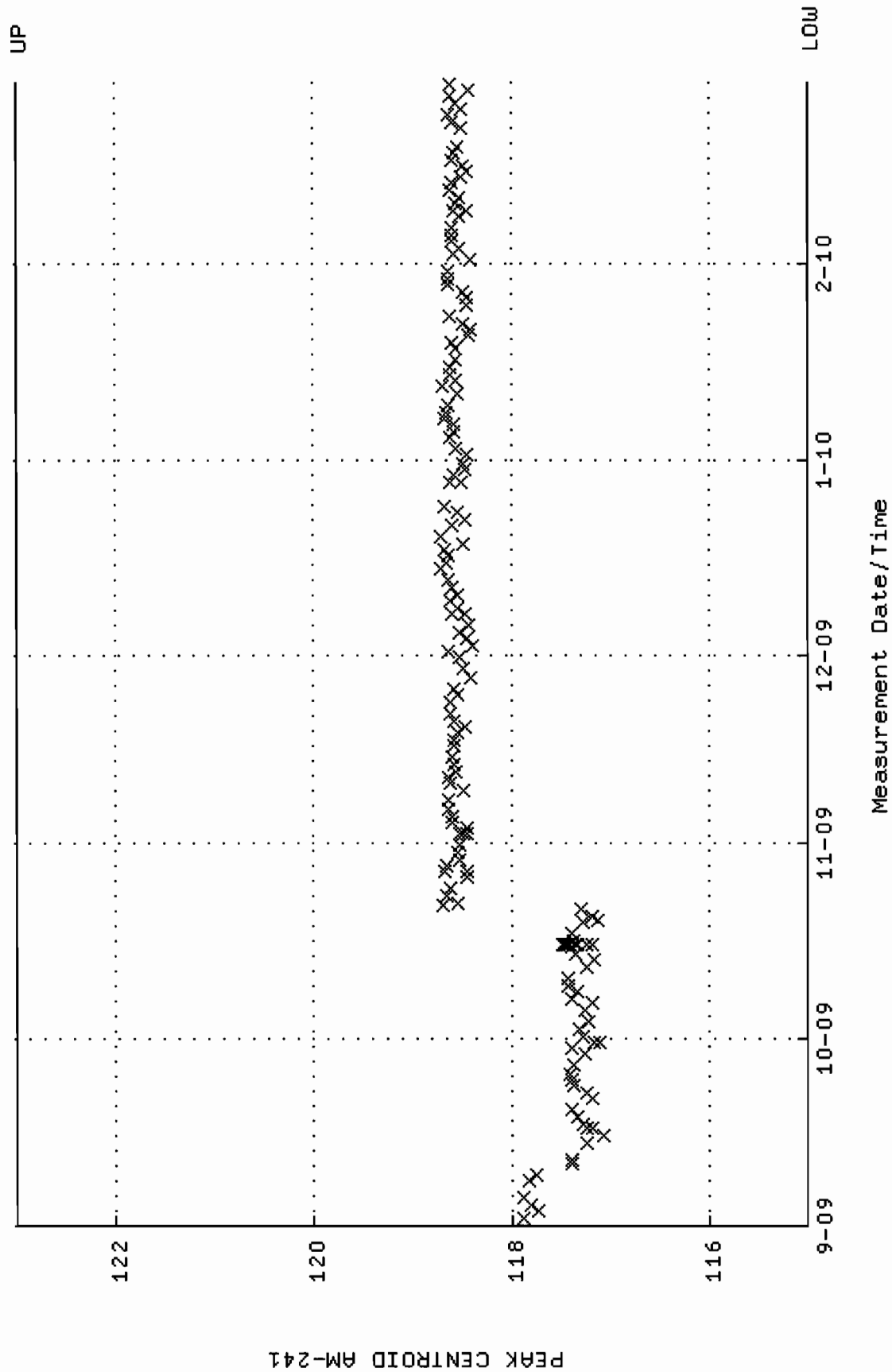
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM05_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-SEP-2009 14:54:46 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



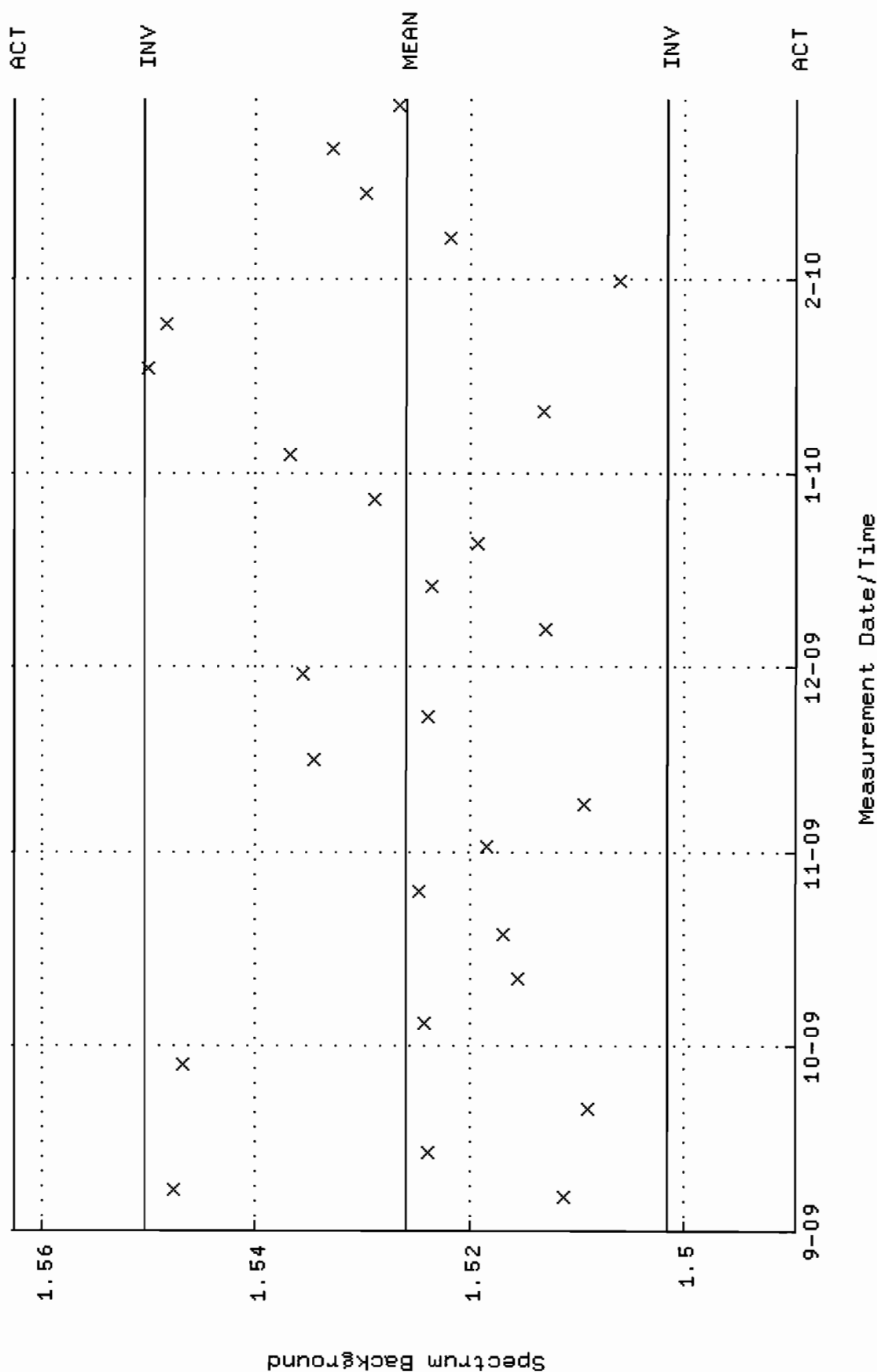
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM05.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



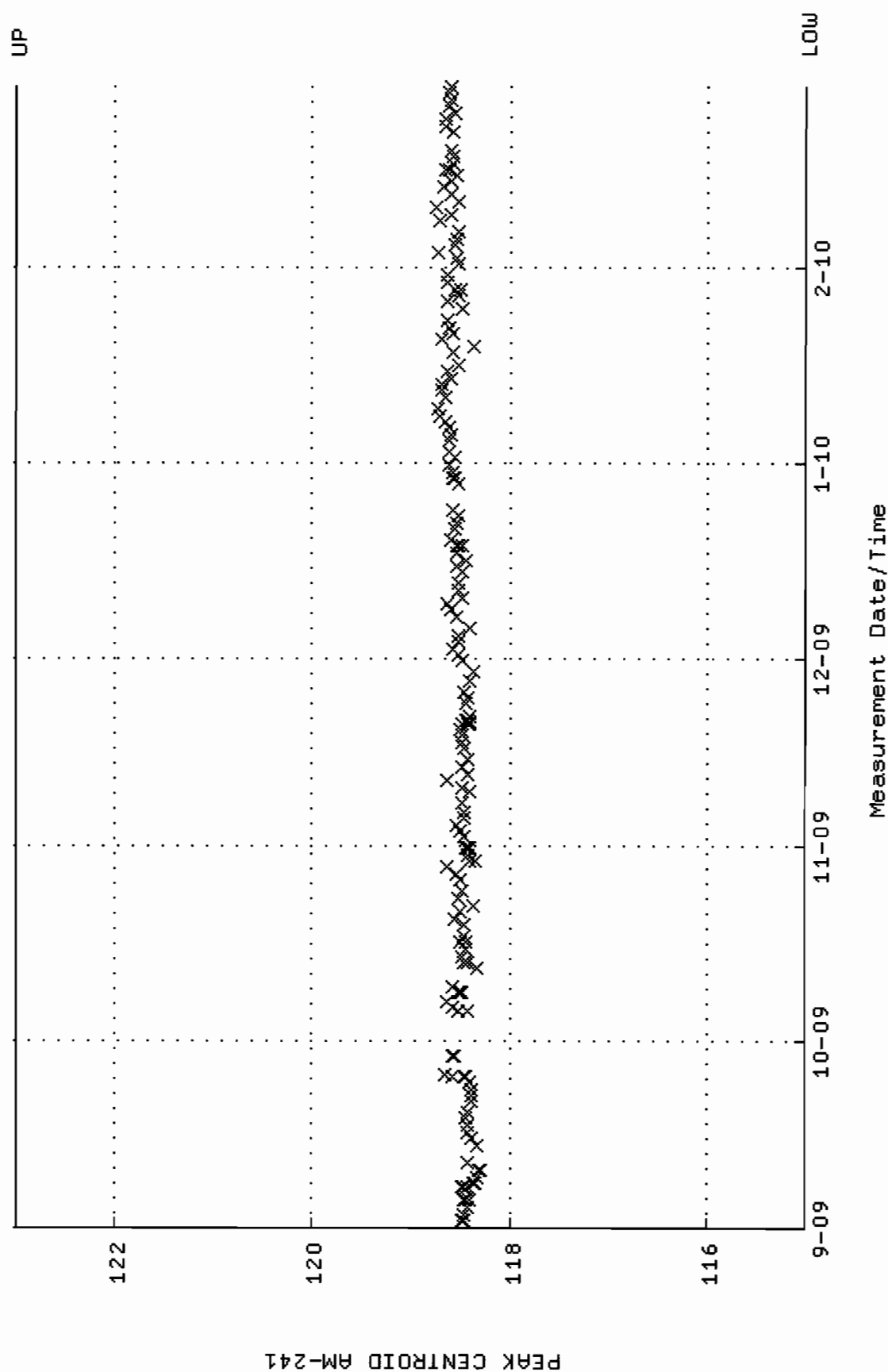
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:19 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



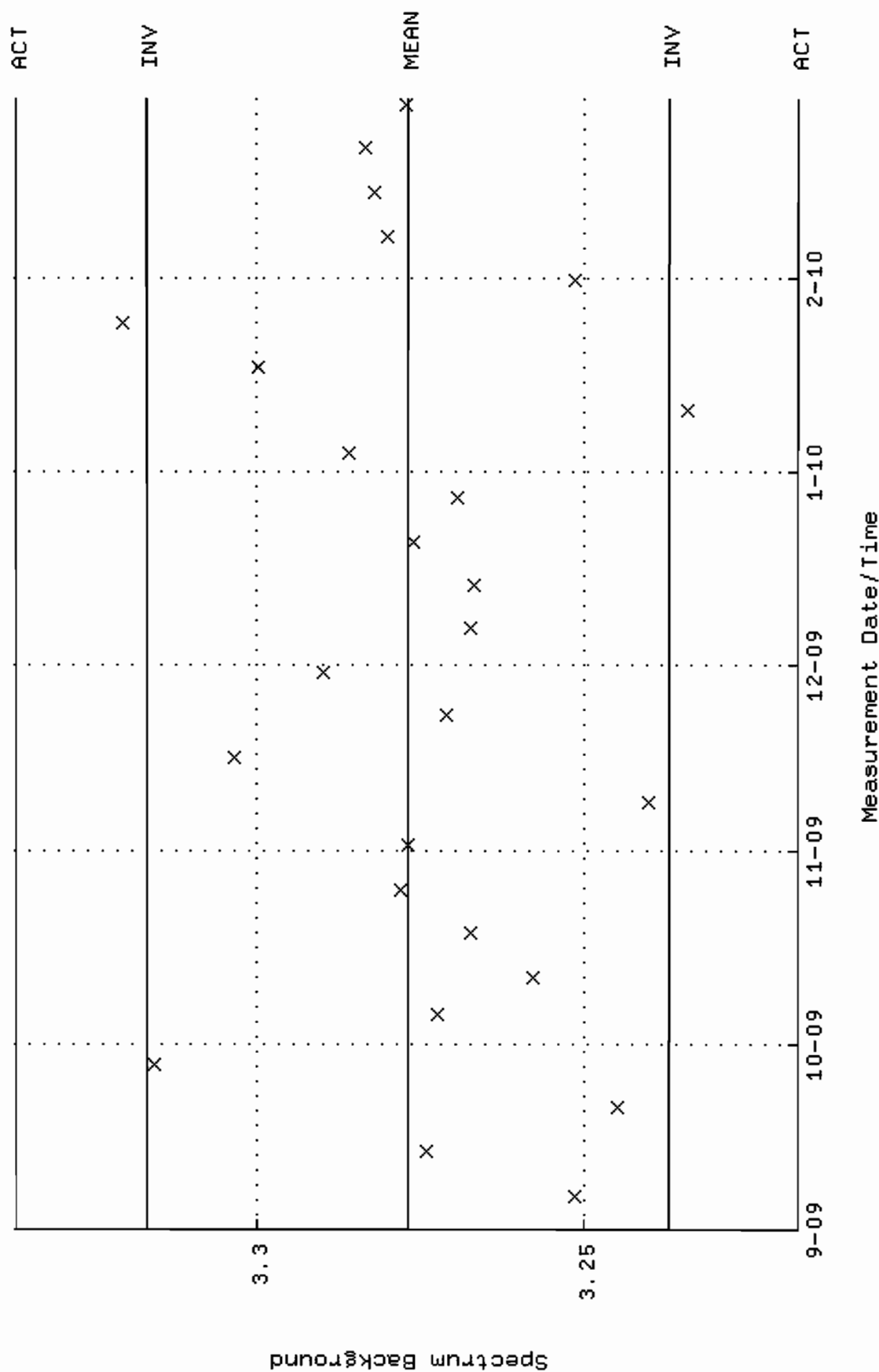
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



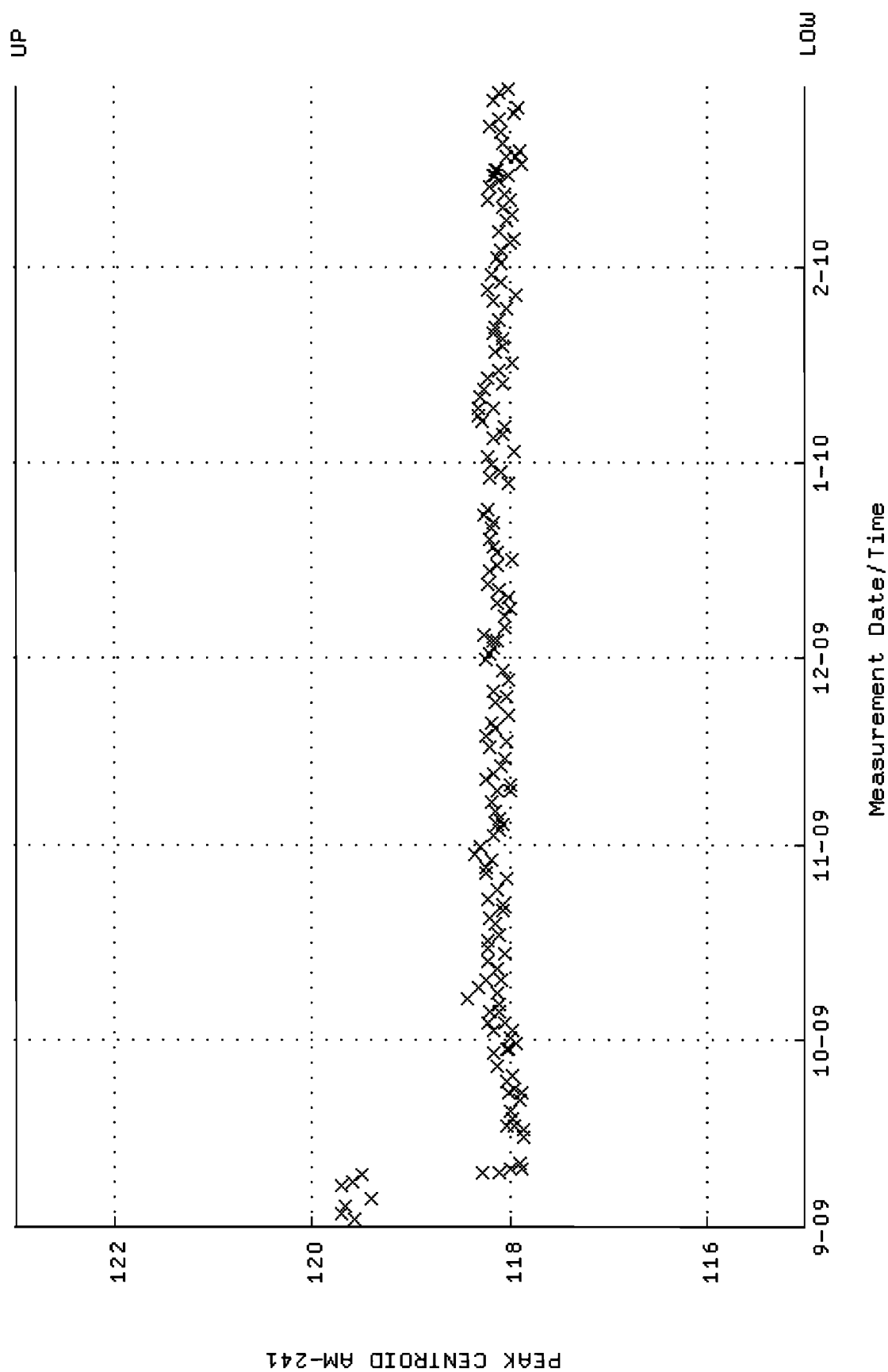
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM13-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:27 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



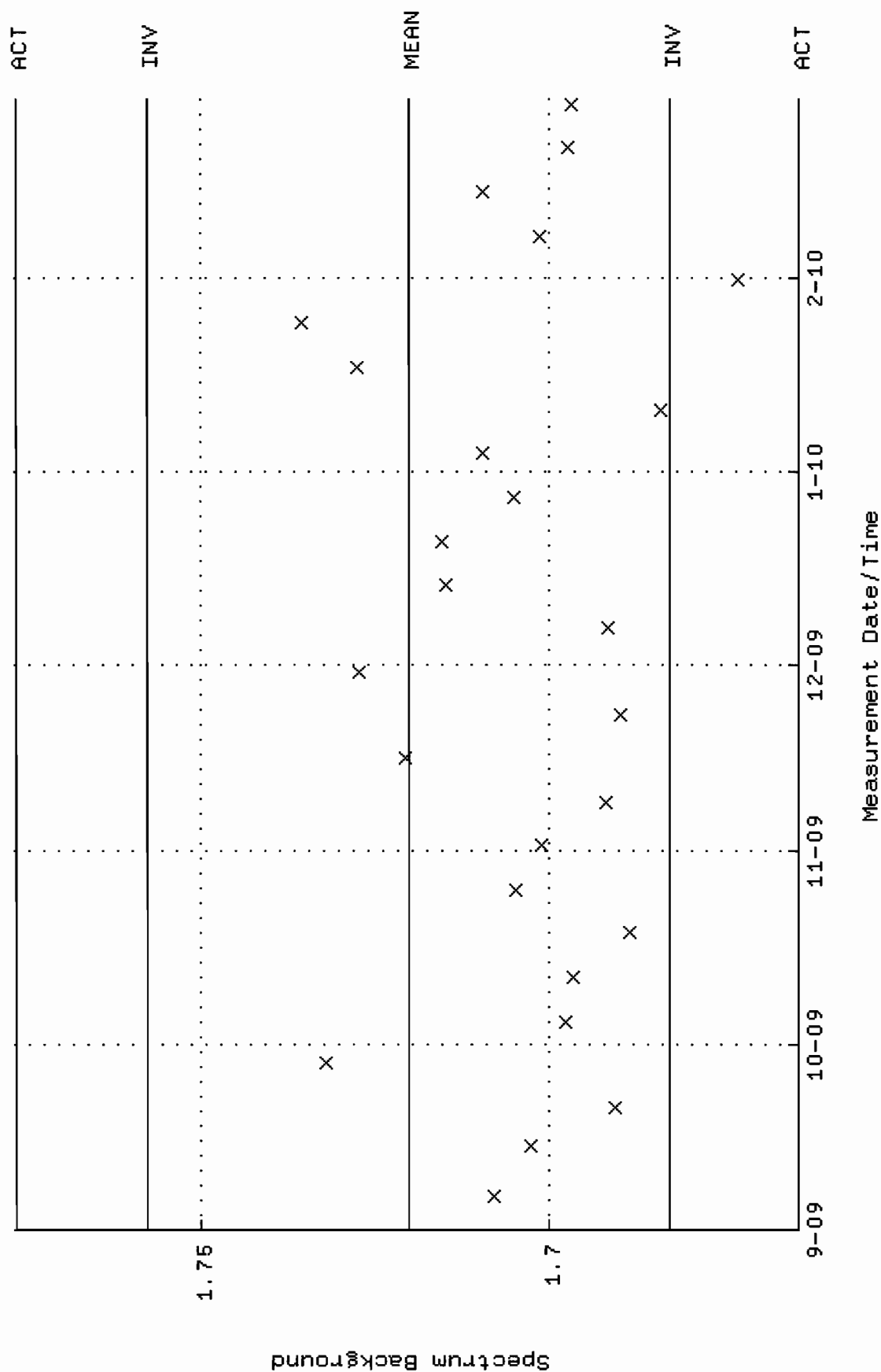
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM13.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:42:44 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



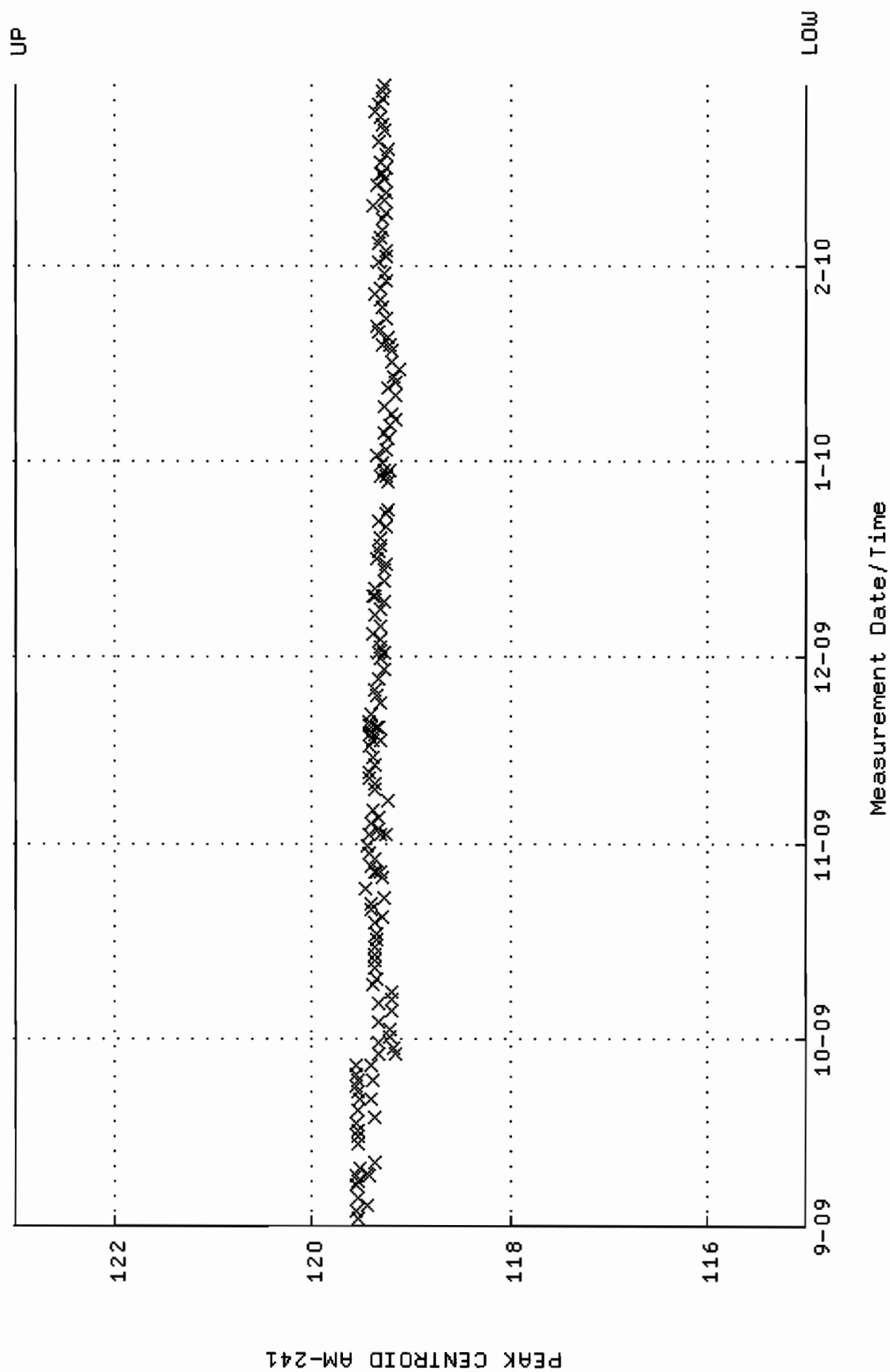
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM15_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 06:32:23 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



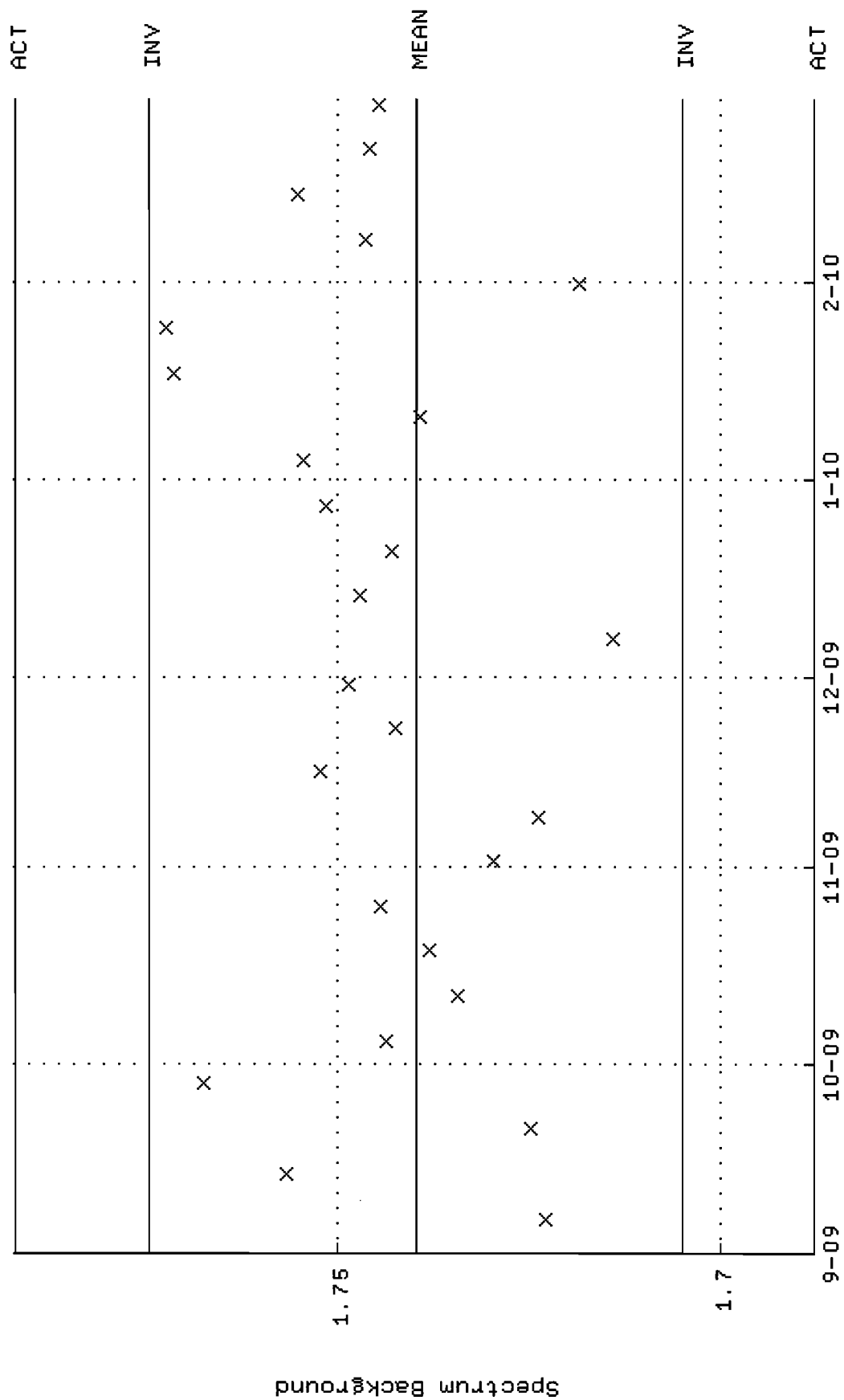
QA filename : DKA100:[CANNBERRA.GAMMA.SCUSR.QA]LBC_GAM15.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:43:44 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



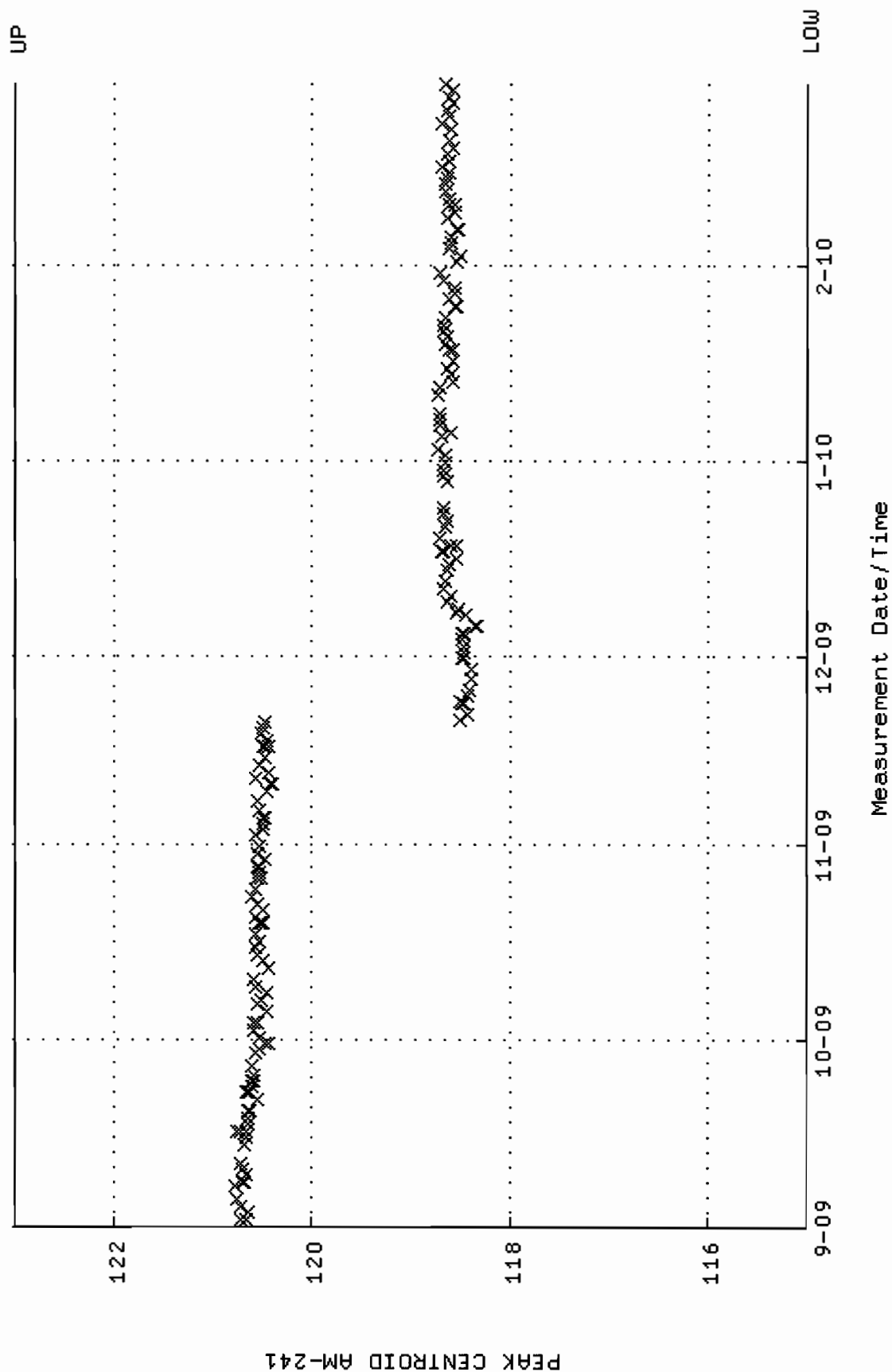
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM16_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



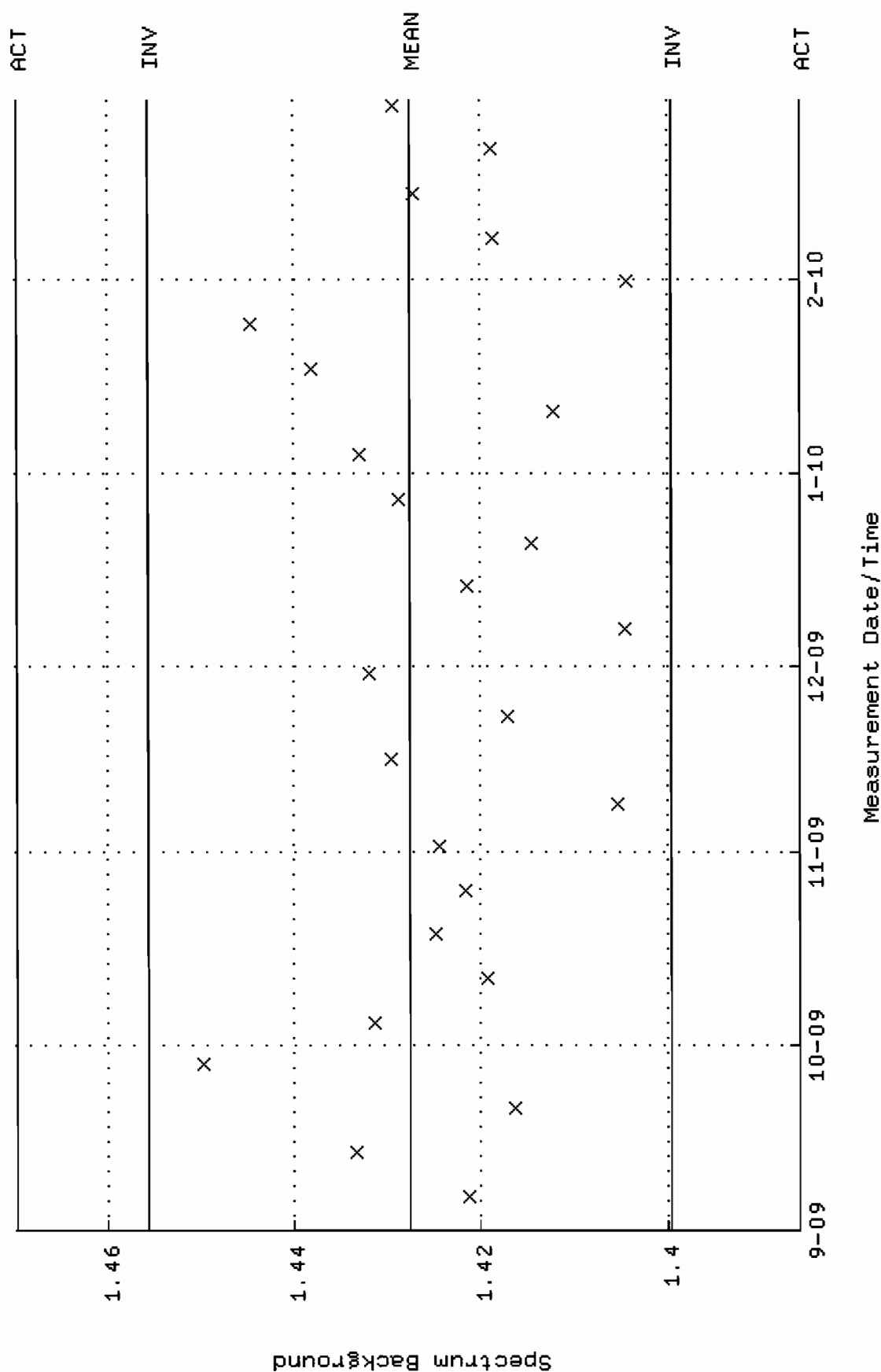
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:09 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



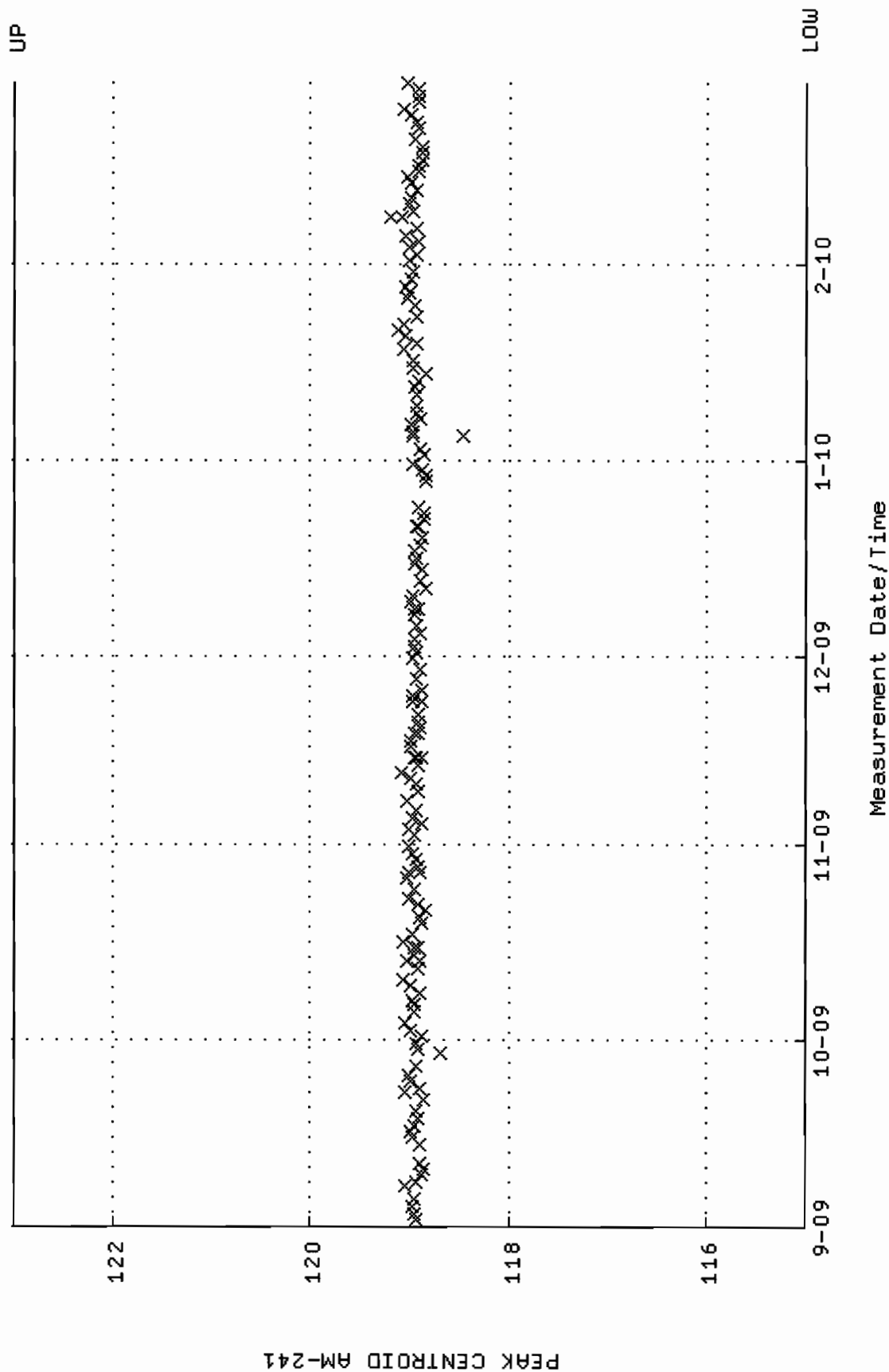
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM17_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:49 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



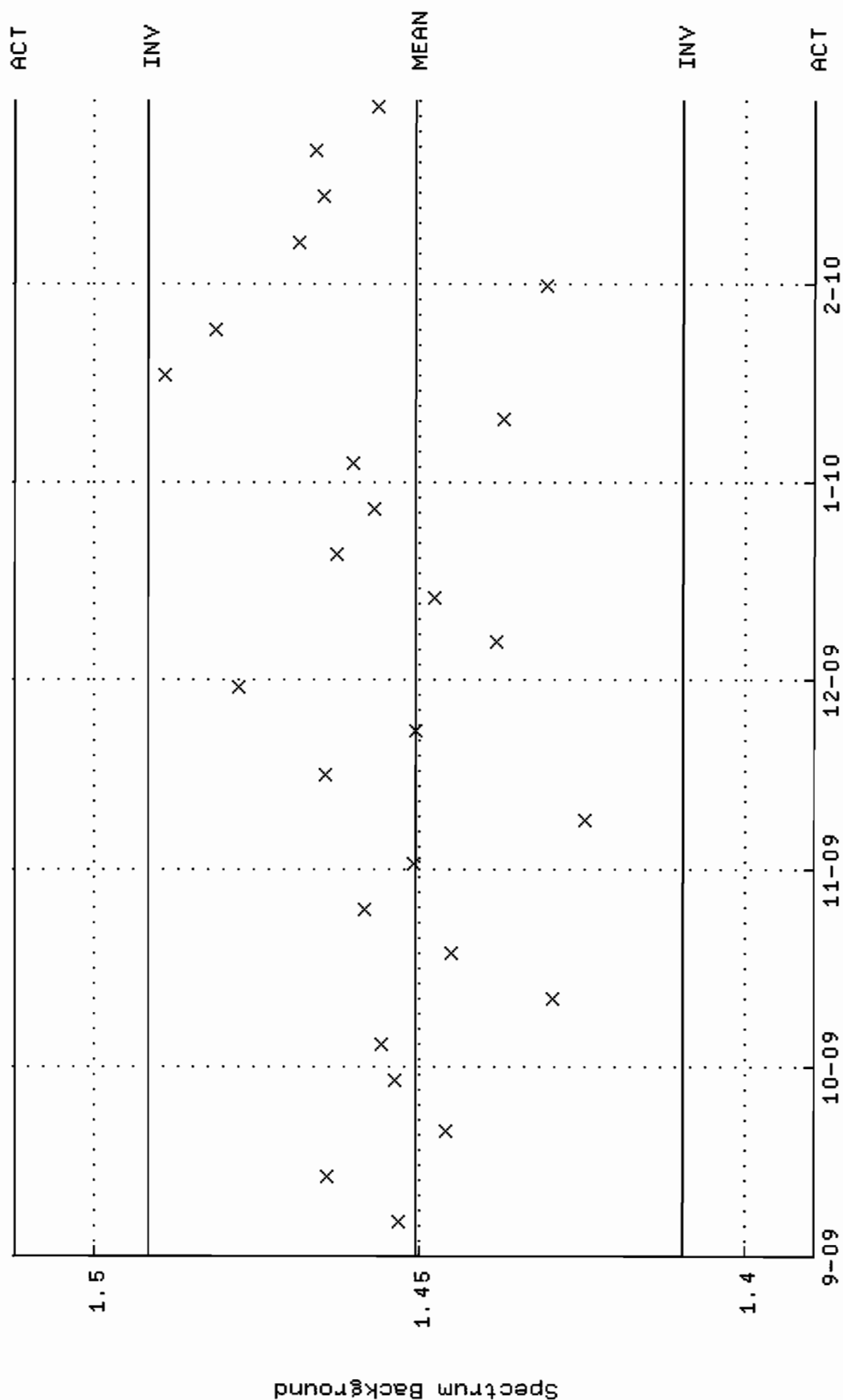
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM17.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



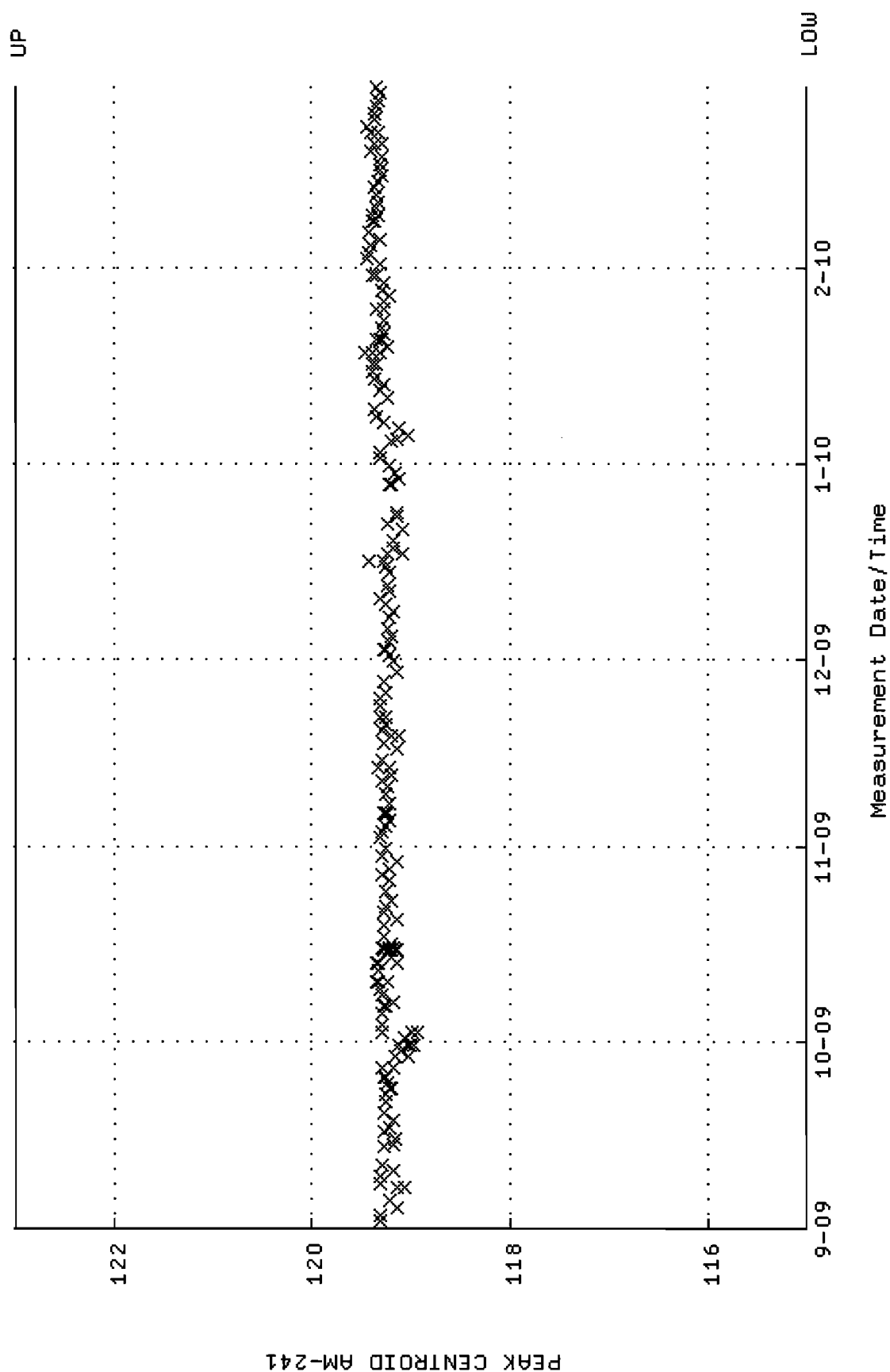
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 05:06:58 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



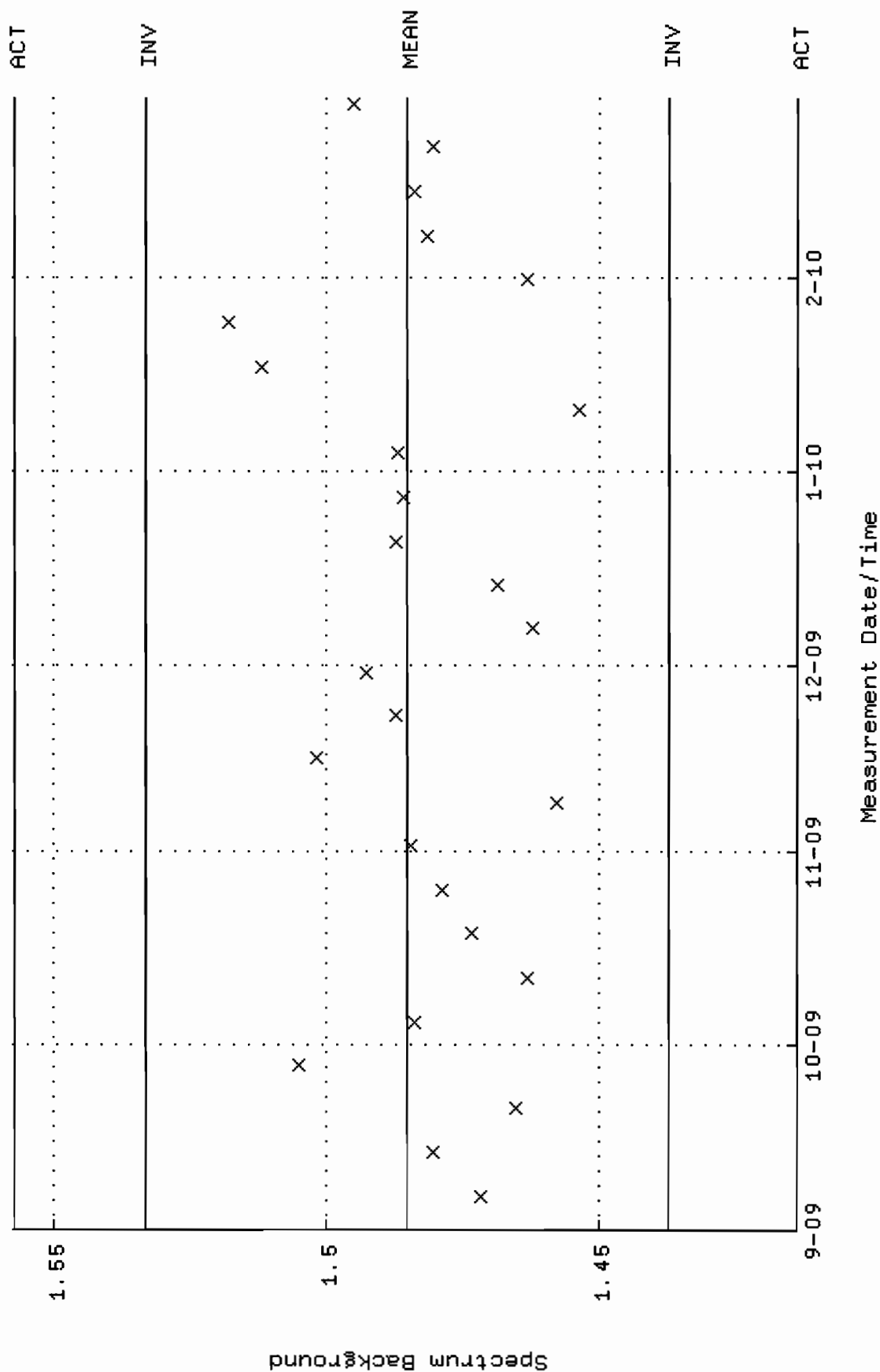
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM19.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:39 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.45067 +- 2.046038E-02 (1.41 %)



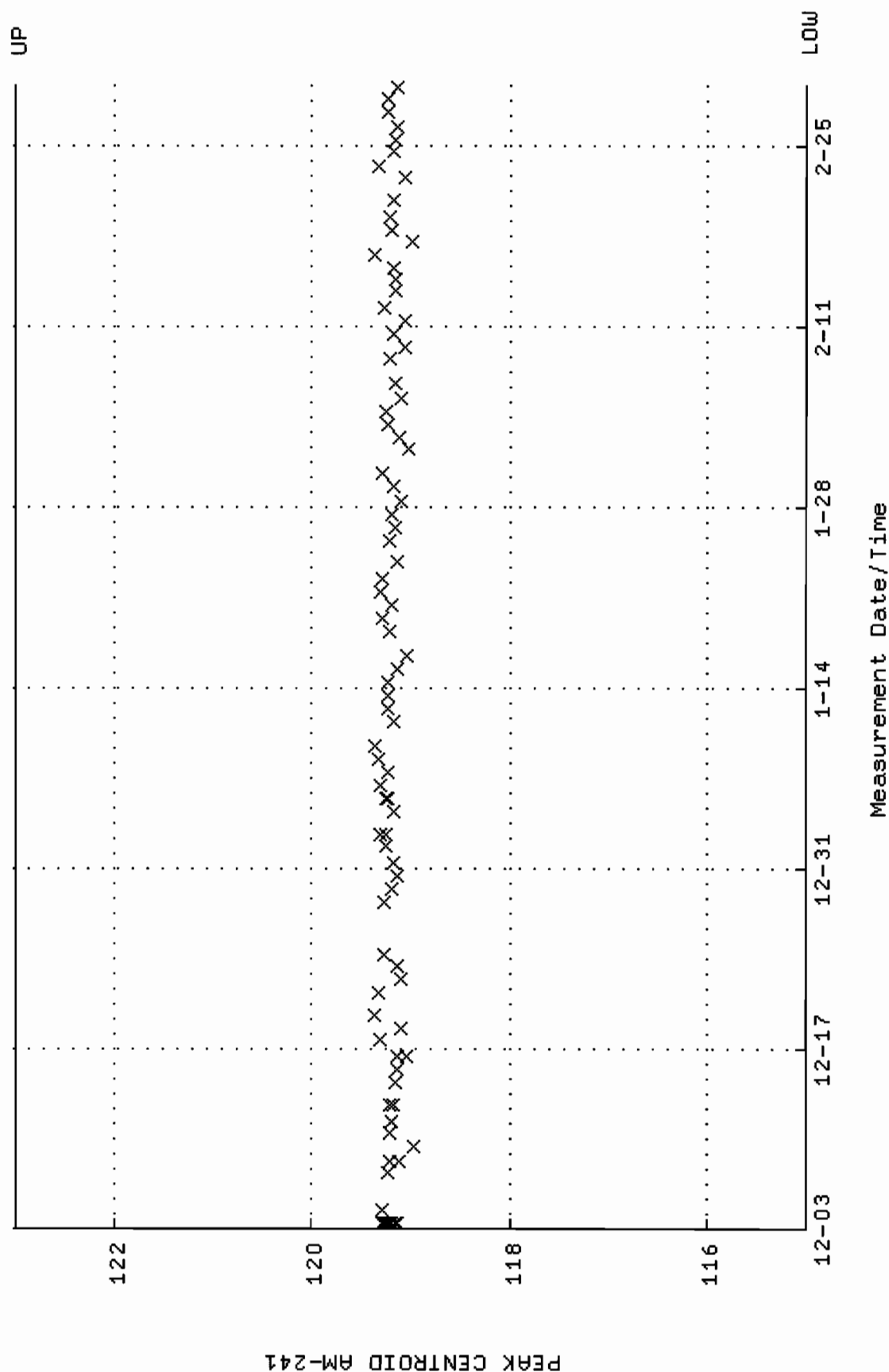
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM20_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:11 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



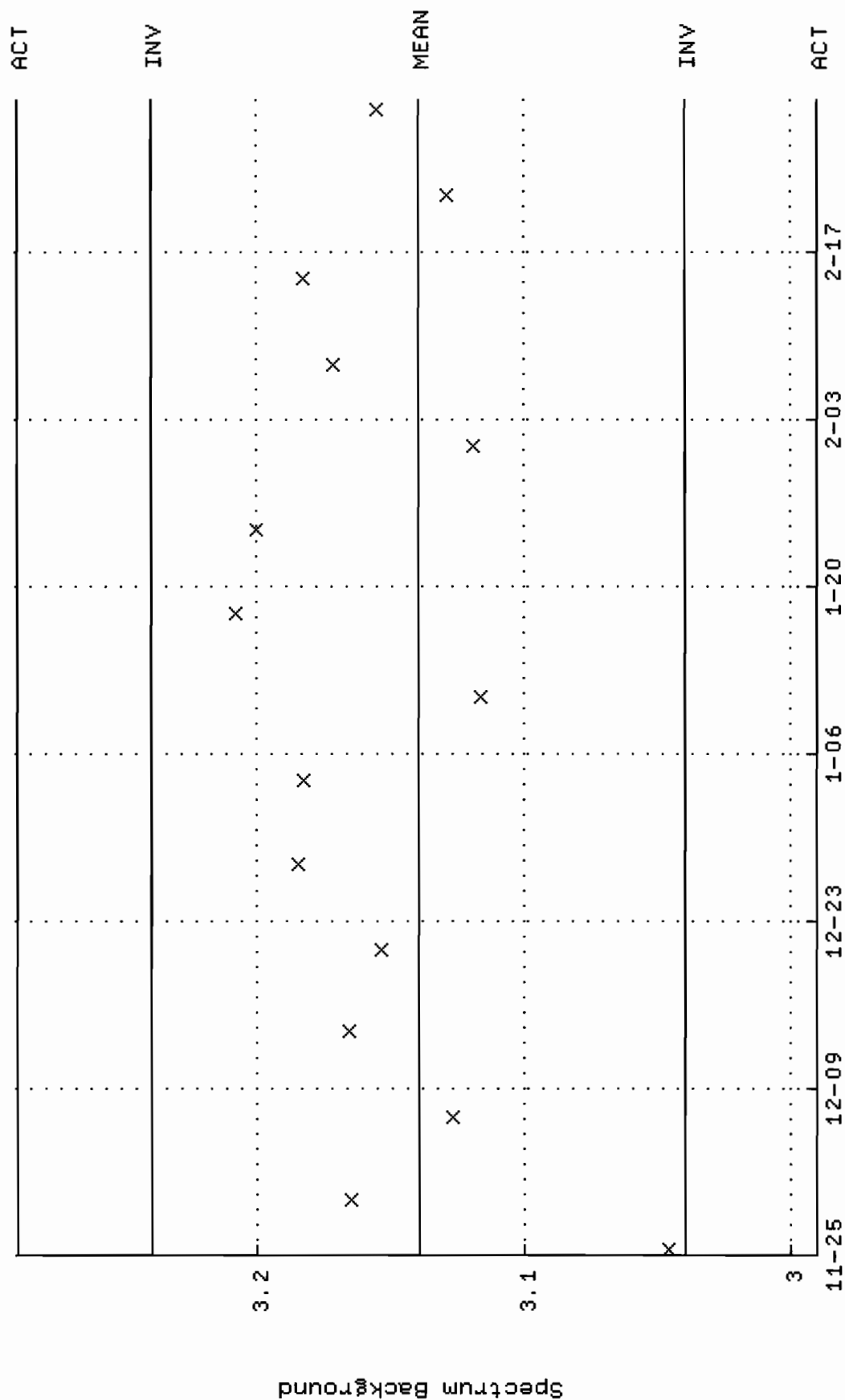
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM20.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:46:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



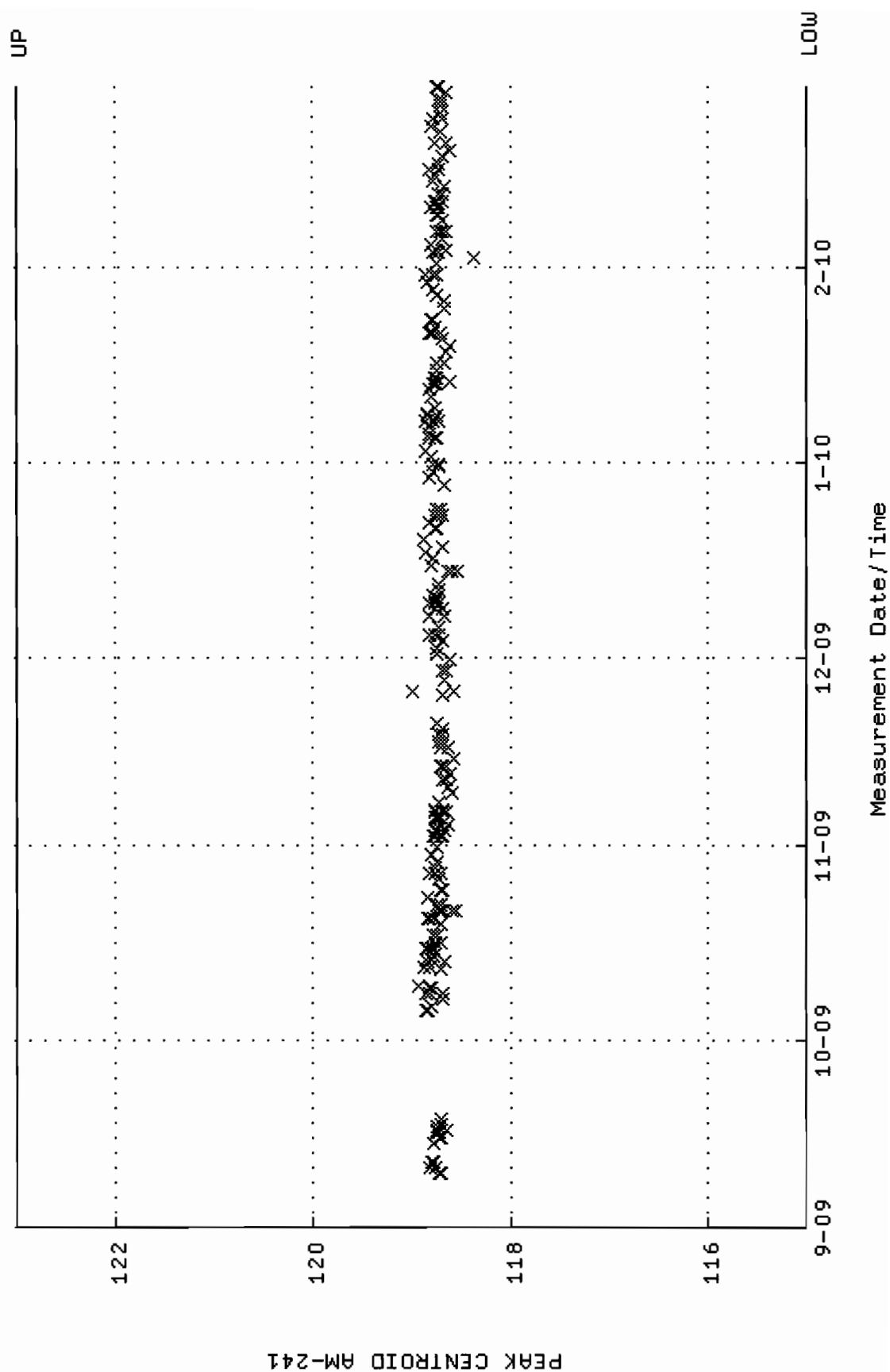
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM22_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



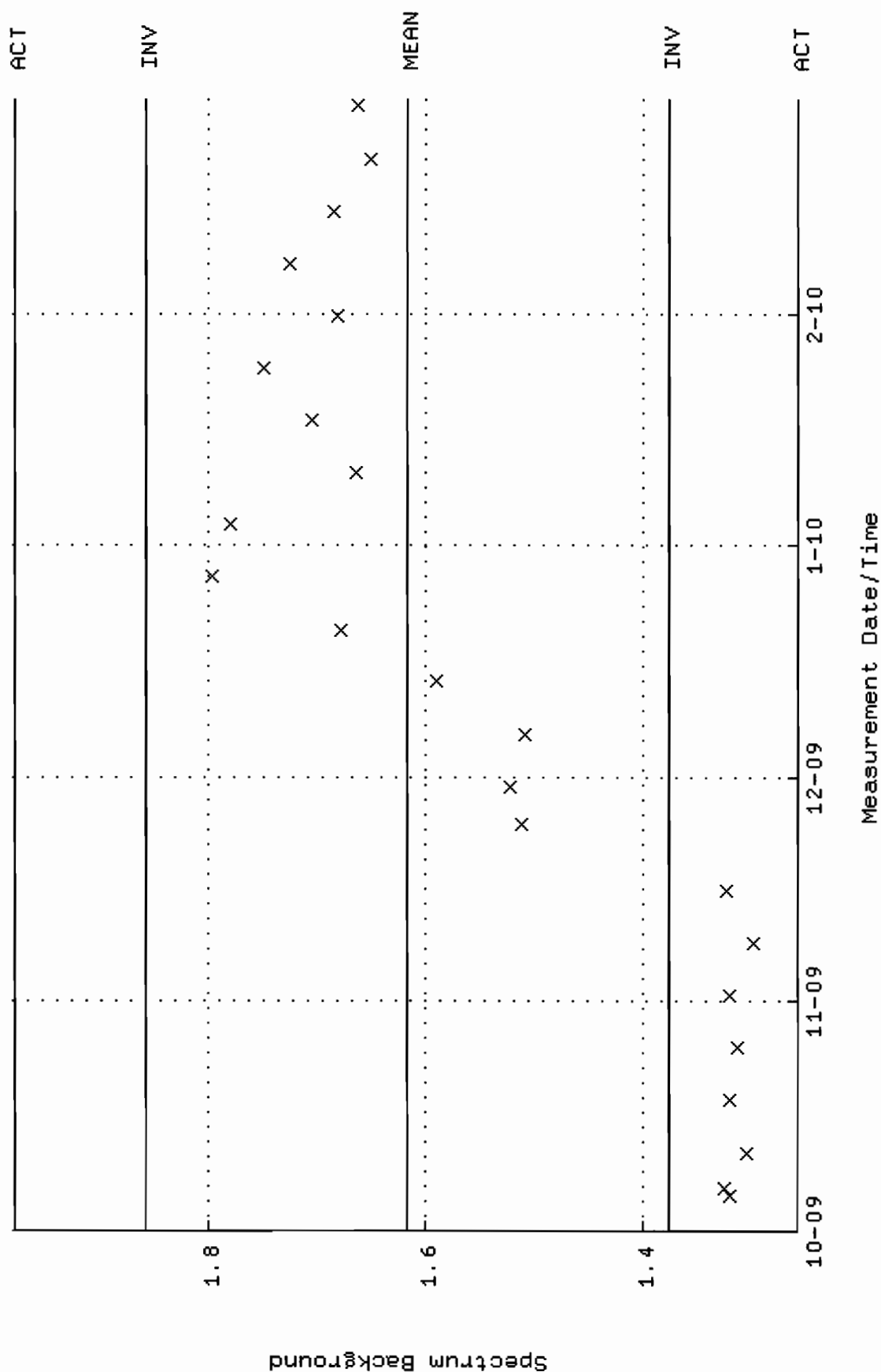
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



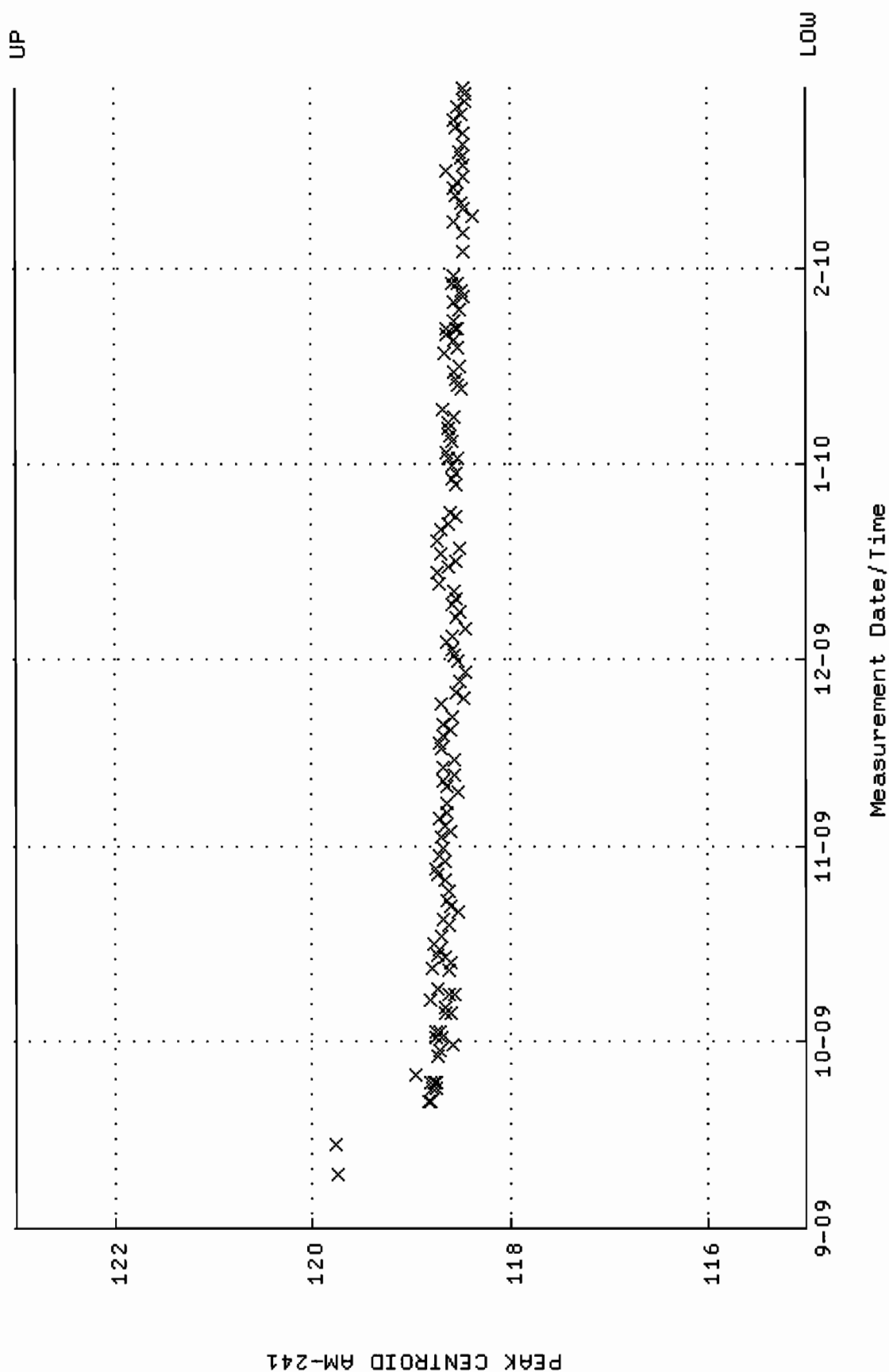
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM23_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:19:12 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



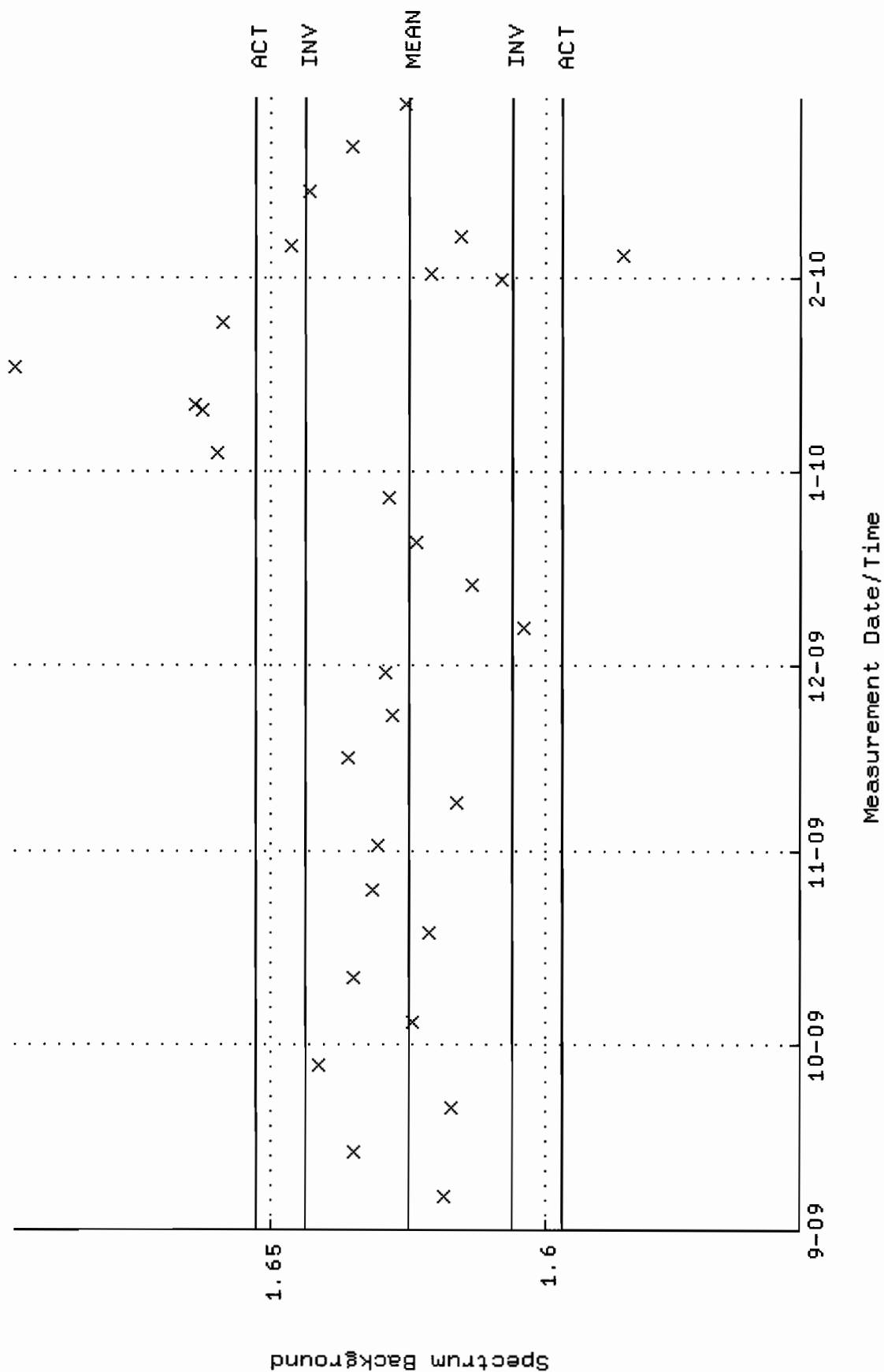
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM23.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-OCT-2009 15:13:53 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)

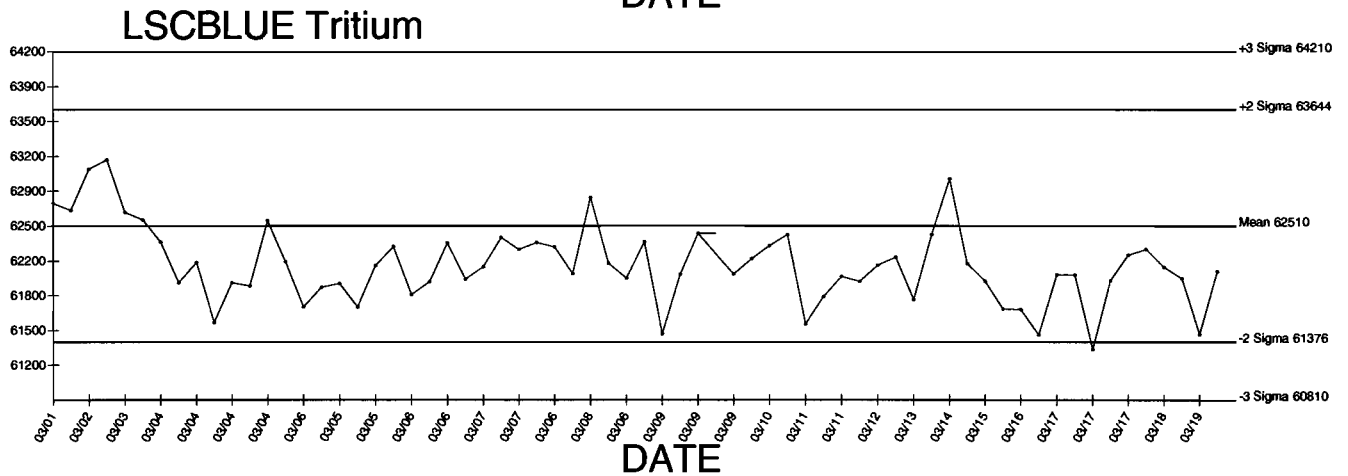
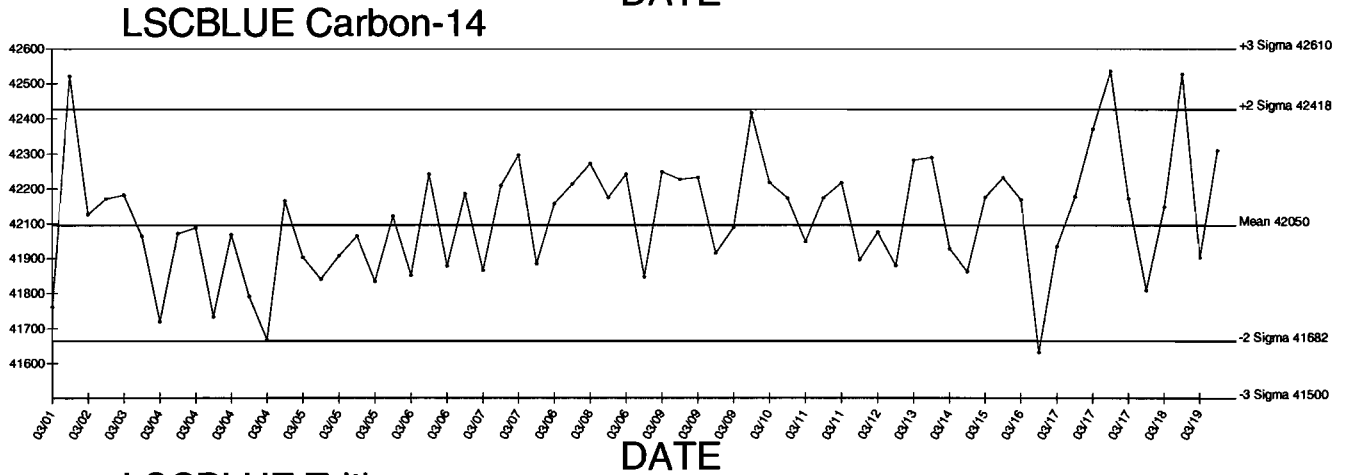
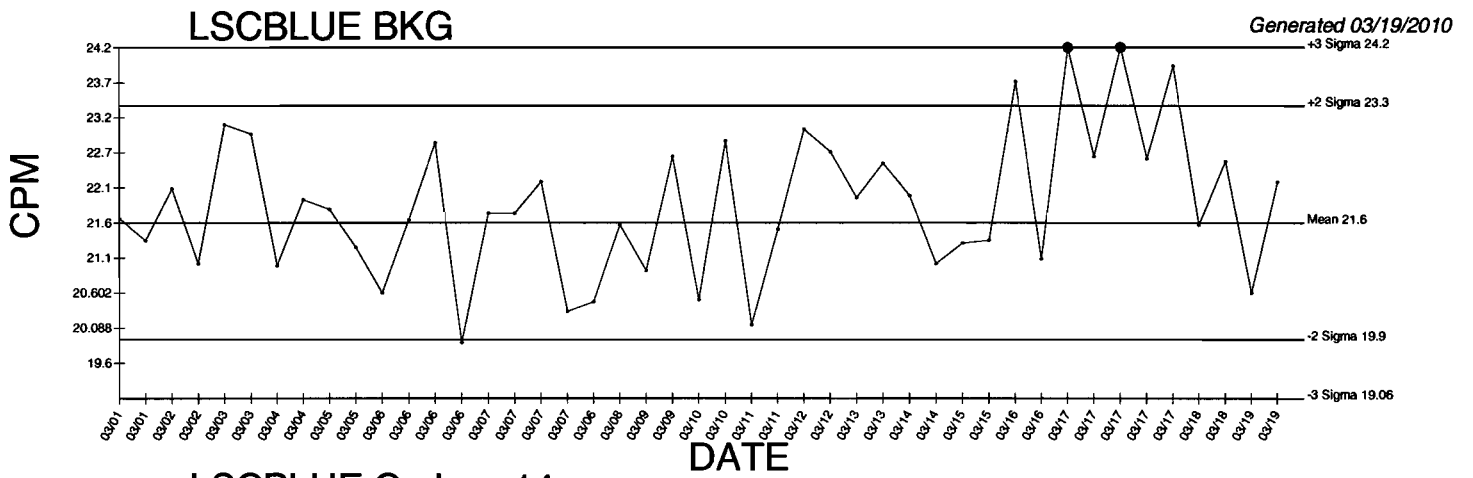


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM25_2LMB.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:18:34 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



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 %)





● 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

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W.F. Case

Page 1 of 2

2C-5-023-061a

Amersham
The Health Science Group

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	0134	Isotope:	Tritium
Prepared By:	Angela Johnson	Prepared By:	Angela Johnson
Carrier Conc:	DI WATER	Prep Date:	02/21/2001
Reference Date:	03/01/1996	Verification Date:	09/10/2008
Ampoule Mass (g):	5 g	Expiration Date:	03/27/2010
Uncertainty:	+/- 2.5 %	Primary Code:	0134-A
LogBook No:	RC S 023 061	Dilution(mL):	100 mL
		Mass of Parent(g):	3.3659 g
		Density(g/mL):	1.0004
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/20/2004	Amanda Fehr	5.86	1000	0134-H	5773.1566 dpm/mL	07/25/2006	07/25/2007
12/20/2005	Amanda Fehr	5.5451	1000	0134-I	5462.92 dpm/mL	12/20/2006	12/20/2007
07/11/2007	Daniel Roy	5.5863	1000	0134-J	5503.5128 dpm/ml	07/29/2008	07/29/2009
03/25/2009	Mary Aders	5.4917	1000	0134-K	5410.3147 dpm/ml	03/27/2009	03/27/2010

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

M. Aders 4/9/2009	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff Mass, Used (mL)	Source DPM/mL
	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 *exception taken due to full recovery of standard
 Two sigma = 63.06694556 dpm/mL
 10 % of Mean = 270.9776428 dpm/mL
 Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. Ten mL of Ecosint 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 Ecosint 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

Heather J. Adams 4/9/09
 Amanda J. Dehn 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:

J.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

 Tel 404-352-8677
 Fax 404-352-2837

www.analytiscinc.com

ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

CALIBRATION DATE: October 1, 2006 12:00 EST

Isotope	Energy (keV)	Calibration Method ¹	Statistics ²	Calibration ²	Peak Fitting ²	Geometry ²	Impurities ²	Weighing	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1032	Isotope:	Mixed Gamma
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL	Prep Date:	11/30/2006
Reference Date:	10/01/2006	Verification Date:	12/02/2009
Ampoule Mass (g):	5.31725 g	Expiration Date:	12/02/2010
Uncertainty:	+/- 2.81 %	Primary Code:	1032-A
LogBook No:	RC-S-045-073	Dilution(mL):	100 mL
		Mass of Parent(g):	5.2579 g
		Density(g/mL):	1.0611
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
-----------	----------	--------------	---------------	------	-------------	-------------------	-----------------

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Am-241

Isotope	Result	pCi/L - Ver. Jar. 1
Mixed Gamma N1	2534	pCi/L
Mixed Gamma N2	2510	pCi/L
Mixed Gamma N3	2413	pCi/L

Mean Value (Counting) = 2485.67 Pass
Stdev = 64.065 Rule 3 (Pass/Fail)

Certificate Value = 2485.68018 pCi/L
Lower Limit = 2357.536524 pCi/L
Upper Limit = 2613.796809 pCi/L
Rule 1 (Pass/Fail) Pass
Two sigma = 128.1301422
10 % of Mean = 248.5666667
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. Jar. 1
Mixed Gamma N1	854.2	pCi/L
Mixed Gamma N2	907.6	pCi/L
Mixed Gamma N3	898.9	pCi/L

Mean Value (Counting) =
Stdev =

886.90
28.651

95.01

Rule 3 (Pass/Fail)

Certificate Value =
Lower Limit =
Upper Limit =
Rule 1 (Pass/Fail)
Two sigma =
10 % of Mean =
Rule 2 (Pass/Fail)

933.44144
829.597644
944.202356
Pass
57.30235597
88.69000000
Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Handwritten:
12/2/09
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - VER-1ae-5
Mixed Gamma N1	1572	pCi/L - VER-1ae-2
Mixed Gamma N2	1495	pCi/L - VER-1ae-3
Mixed Gamma N3	1501	

Mean Value (Counting) =
Stdev =

1522.67
42.829
98.50
Rule 3 (Pass/Fail)

Certificate Value =
Lower Limit =
Upper Limit =
Rule 1 (Pass/Fail)
Two sigma =
10 % of Mean =
Rule 2 (Pass/Fail)

1545.8378
1437.008431
1608.324902
Pass
85.65823564
152.26666667
Pass

pCi/L
pCi/L
pCi/L

U.S. Stamp issued 12/2/09
12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATE 4/11/2000 *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 NRM-1 through 6
 7 " baghouse dirt

}

Use 1/4 gm x 10 samples WITH Together
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM-1	TRM-2	TRM-3	TRM-4
U-238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U-234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th-230	471 ± 11	24.5 ± 0.6	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 ± 2	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

9911627-01-2021

SF 2001-COC (10-97)

Internal Lab
Batch No.

SARAWR No. N/A

Press F1 for instructions for each field.

AR/COC-

Page 1 of 1

602945

Dept. No./Mail Stop: 7132 / 1042 Project/Task Manager: PAM PUISSANT Project Name: Record Center Code: N/A Logbook Ref. No.: N/A Service Order No.:		Date Samples Shipped: 11-16-99 SMO USE Origin/Worksheet No.: 206494 Lab Contact: EDIE KENT Lab Destination: G.E.L. SMO Contact/Phone: Doug Salimi / 844-3110 Send Report to SMO: Suzi Jensen/844-3184		Contract No.: AJ-2480A Case No.: 10204 13 SMO Authorization: [Signature] Bill to: Sandia National Laboratories Supplier Services, Dept. P.O. Box 5800 MS 0154	
Location Building N/A Room N/A Sample No. - Fraction Tech Area VI		Reference LOV (available at SMO) Container Type Volume Sample Type Sample Method Preservative		Special Instructions/QC EDD ☐ Yes ☒ No Raw data package ☐ Yes ☒ No These samples characterized in device sent to be held at Hack	
RMMA ☐ Yes ☒ No Ref. No. Sample Disposal ☐ Return to Client ☒ Disposal by lab		Sample Tracking Date Entered (mm/dd/yy) Entered by: [Signature]		QC Limits Company/Organization/Phone Weston / 7577 / 845-0887	
Turnaround Time ☒ Normal ☐ Rush Required Report Date Name Douglas E. Perry Signature: [Signature]		QC Limits Company/Organization/Phone Weston / 7577 / 845-0887		Special Instructions/QC EDD ☐ Yes ☒ No Raw data package ☐ Yes ☒ No These samples characterized in device sent to be held at Hack	
Sample Team Members 1. Relinquished by D. E. Perry SMO Org. 7-77 Date 11-16-99 Time 0900 1. Received by _____ Date _____ Time _____ 2. Relinquished by _____ Date _____ Time _____ 2. Received by _____ Date _____ Time _____ 3. Relinquished by _____ Date _____ Time _____ 3. Received by _____ Date _____ Time _____		Relinquished by Date Time		Relinquished by Date Time	

Original	1 st Copy	2 nd Copy	3 rd Copy	Field Copy (Pink)
To Accompany Samples, Laboratory Copy (White)	To Accompany Samples, Return to SMO (Blue)	SMO Suspense Copy (Yellow)		

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 DATE 4/14/2000

Amanda L. Lehy 4/30/04
 Lott & Staley SLP/MS

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

Attention Nancy Slater At GEL
9911627-01-20;
Page 1 of 1
AR/COC- 602945

SF 2001-COC (10-97) Internal Lab Batch No. SARWR No. N/A Press F1 for instructions for each field.

Dept. No./Mail Stop: 7132 / 1042 Project/Task Manager: PAM PUISSANT Project Name: Record Center Code: N/A Logbook Ref. No.: N/A Service Order No.:		Date Samples Shipped: 11-16-99 SMO USE Carrier/Waybill No.: 726794 Lab Contact: EDIE KENT Lab Destination: G.E.L. SMO Contact/Phone: Doug Salimi / 844-3110 Send Report to SMO: Suzi Jensen/844-3184		Contract No.: AJ-2480A Case No.: 10204 13 SMO Authorization: [Signature] Bill to: Sandia National Laboratories Supplier Services, Dept. P.O. Box 5800 MS 0154	
Location Building: N/A Sample No. - Fraction: N/A Tech Area: VI Room: N/A ER Sample ID or Sample Location Detail: 050484 - 001 PEM-1 050485 - 001 TRM-2 050486 - 001 TRM-2 N.B.H.D.		Reference LOV (available at SMO) Sample Matrix: S Container Type: P Volume: 1 L Preservative: 4C Sample Method: G SA Date/Time Collected: 11/15/99 1100 S 11/15/99 1100 S 11/15/99 1100 S		Parameter & Method Requested See Special Instructions Below Lab Sample ID	
RMMA ☐ Yes ☒ No Ref. No. Sample Disposal ☐ Return to Client ☒ Disposal by lab		Special Instructions/QC Requirements EDD ☐ Yes ☒ No Raw data package ☐ Yes ☒ No These "samples" are well characterized and materials being sent to GEL for backup to their history.		Abnormal Conditions on Receipt Lab Use	
Turnaround Time ☒ Normal ☐ Rush Required Report Date		Sample Tracking Data Entered (mm/dd/yy) Entered by: [Signature] QC Initials: [Signature] Company/Organization/Phone Weston / 7577 / 845-0807		Please list as separate report.	
Sample Team Members Name: Douglas E. Perry Signature: [Signature]		Init: [Signature] Company/Organization/Phone: Weston / 7577 / 845-0807		Date	
1. Relinquished by [Signature] Date 11-16-99 Time 0900		4. Relinquished by		Date	
1. Received by [Signature] Date		4. Received by		Date	
2. Relinquished by [Signature] Date		5. Relinquished by		Date	
2. Received by [Signature] Date		5. Received by		Date	
3. Relinquished by [Signature] Date		6. Relinquished by		Date	
3. Received by [Signature] Date		6. Received by		Date	

Original To Accompany Samples, Laboratory Copy (White) 1st Copy To Accompany Samples, Return to SMO (Blue) 2nd Copy SMO Suspense Copy (Yellow) 3rd Copy Field Copy (Pink)

CERTIFICATE OF CALIBRATION

ALPHA STANDARD SOLUTION

Radionuclide	Am-243	Customer:	GENERAL ENGINEERING LABS
Half Life:	7380 $\pm$ 40 years	P.O.No.:	9290-RAD
Catalog No.:	7243	Reference Date:	January 1 1994 12:00 PST.
Source No.:	445-96-2	Contained Radioactivity:	(Am-243) 101.2 μ Ci
		Contained Radioactivity:	(Am-243) 3750 kBq

Description of Solution

a. Mass of solution:	5.3739 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form:	Am(NO ₃) ₃ in 2N HNO ₃
c. Carrier content:	None added
d. Density:	1.0651 g/ml @ 20°C.

Radioimpurities

None detected

Radioactive Daughters

Np-239 (beta active) in equilibrium

Radionuclide Concentration

(Am-243) 18.84 μ Ci/g

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under:	228, 278	keV.
Branching ratio(s) used:	0.108, 0.1420	gamma rays per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	$\pm 3.0\%$
b. Random uncertainty in assay:	$\pm 0.4\%$
c. Random uncertainty in weighing(s):	$\pm 0.0\%$
d. Total uncertainty at the 99% confidence level:	$\pm 3.0\%$

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

Anna H. Khan
QUALITY CONTROL

Jan 3, 1994
Date Signed

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE

☒ 1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 2. SOAK TEST

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.

☒ 5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ 6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

 Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	05/11/2009
Ampoule Mass (g):	5.3739 g	Expiration Date:	05/11/2010
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(5.3419 g) * (18.84 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 2234238.9912 dpm/mL
(5.3419 g) * (18.84 uCi/g) * (2220000 dpm/uCi) / (1.0785 g/mL) / (100 mL) = 2071617.0528 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Julie Strock	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/30/2008	09/29/2009
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Am-243 Standard 445-96-2-SS

M. Aders	Isotope	Value	Uncertainty
5/15/2009	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590

Mean Value (Counting) = 1.340 101.99 Pass
 Stdev = 0.043588989 Rule 3 (Pass/Fail)

Target = 1.314
 Lower Limit = 1.252822021
 Upper Limit = 1.427177979
 Rule 1 Pass/Fail Pass
 Two sigma = 0.087177979
 10 % of Mean = 0.134
 Rule 2 (Pass/Fail) Pass

The analyst prepared three standard verification sources for standard 445-96-2-SS using 0.1 mL for each source. Each standard was combined with 0.1 mL of Cm-244 standard 0533-O and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Aders 5/15/09
Taheri
 07509



NATIONAL PHYSICAL LABORATORY

Teddington Middlesex UK TW11 0LW Telephone +44 20 8977 3222

Certificate of Calibration



0478

PLUTONIUM-236 SOLUTION R37-02

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

FOR: GEL Laboratories LLC
2040 Savage Road
Charleston, SC 29407
USA

FOR THE ATTENTION OF: Mr Tim Winters

NPL PRODUCT CODE: R37-02

IDENTIFICATION: A09881

DESCRIPTION: An aqueous solution of ^{236}Pu also containing 2 mol dm^{-3} of nitric acid. The solution is contained in a flame sealed ampoule of type Q and nominal volume 5 ml (squat) as defined in BS 795:1983.

DATE(S) OF CALIBRATION: 26 June 2009 to 1 July 2009

INTENDED USE: Calibration of instruments for response to ^{236}Pu

STORAGE: The material may be stored at room temperature in a suitably sealed container. Flame-sealed glass ampoules are recommended for long-term storage. Regulatory conditions may apply to the manner in which this material is stored.

MEASUREMENTS

The samples were prepared by gravimetric dilution of a ^{236}Pu solution, which had been previously standardised using liquid scintillation counting. The accuracy of the dilution factor was checked using liquid scintillation counting.

Reference: 2009100356

Page 1 of 3

Date of Issue: 4 November 2009

Signed:

(Authorised Signatory)

Checked by: *Ch. Ali*

Name: Dr Arvic Harms

for Managing Director

Page 670 of 683

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}Ra , ^{232}U , ^{228}Th , ^{237}Np
Activity concentration of ^{226}Ra :	11.0 mBq g^{-1}
Expanded uncertainty:	$\pm 4.0 \text{ mBq g}^{-1} (\pm 36 \%)$
Activity concentration of ^{232}U :	0.67 Bq g^{-1}
Expanded uncertainty:	$\pm 0.12 \text{ Bq g}^{-1} (\pm 18 \%)$
Activity concentration of ^{228}Th :	11.38 mBq g^{-1}
Expanded uncertainty:	$\pm 0.46 \text{ mBq g}^{-1} (\pm 4 \%)$
Activity concentration of ^{237}Np :	5.00 mBq g^{-1}
Expanded uncertainty:	$\pm 0.34 \text{ mBq g}^{-1} (\pm 8 \%)$
Sample Mass:	$4.97 \text{ g} \pm 0.02 \text{ g}$

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

Reference: 2009100356

Page 2 of 3

Checked by:

Cr all

NOTES

- [1]. The reported reference time is stated consistent with the format given in ISO 8601:2004. UTC is the abbreviation for Universal Time, Coordinated. The date is stated in the format YYYY-MM-DD such that 2008-09-01 represents 1 September 2008.
- [2]. The recommended half life of ^{236}Pu is 1044 (6) days and is taken from the evaluations published in *Nuclear Data Sheets*.
- [3]. The recommended half life of ^{226}Ra is $5.844 (50) \times 10^5$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [4]. The recommended half life of ^{232}U is 25800 (800) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [5]. The recommended half life of ^{237}Np is $7.83 (6) \times 10^8$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [6]. The recommended half life of ^{228}Th is 698.60 (46) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.



Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1430	Isotope:	Plutonium-236
Prepared By:	Ashley Drochter	Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO3	Prep Date:	01/27/2010
Reference Date:	07/01/2009	Verification Date:	01/27/2010
Ampoule Mass (g):	4.97 g	Expiration Date:	01/27/2011
Uncertainty:	+/- .36 %	Primary Code:	1430-A
LogBook No:	RC-S-051-149	Dilution(mL):	100 mL
		Mass of Parent(g):	4.8051 g
		Density(g/mL):	1.0610
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (100 \text{ mL}) = 492.4266 \text{ dpm/mL}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0610 \text{ g/mL}) / (100 \text{ mL}) = 464.1156 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/27/2010	Bethany Fiem	33.0429	200	1430-B	76.6786262 dpm/mL	01/27/2010	01/27/2011
03/01/2010	Ashley Drochter	15.2331	200	1430-C	35.3496 dpm/mL	03/01/2010	03/01/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Plutonium-236 Standard 1430-B

	Isotope	Value	Uncertainty
A. Drochter 1/29/2010	1430-B	3.080	0.4720
	1430-B	3.000	0.4660
	1430-B	2.960	0.4740
Mean Value (Counting) =	3.013	100.4268	% of Known Value
Stdev =	0.061101009		
Target =	3.00		
Lower Limit =	2.891131315		
Upper Limit =	3.135535352		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	0.122202019		
10 % of Mean =	0.301333333		
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.

Signature
2/1/10

1/28/10



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 4.18, 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. Mao
W. Mao, Radiochemist

QA Approved:

D. M. Montgomery
D. M. Montgomery, QA Manager

Date: 12-11-08



Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/ml	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/02/2009	12/02/2010
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/ml	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/08/2010	12/02/2010
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

Verification for Uranium-232 Standard 1283-H

Analyst: A. Drochter
Date: 12/10/09

Serial #	Value	Uncertainty
1283-H N1	2.020	pCi/L 0.238
1283-H N2	2.000	pCi/L 0.234
1283-H N3	2.060	pCi/L 0.242

Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)	
Target =	2.033	pCi/L		
Lower Limit =	1.965565657	pCi/L		
Upper Limit =	2.087767676	pCi/L		
Rule 1 Pass/Fail	Pass			
Two sigma =	0.061101009			
10 % of Mean =	0.202666667			
Rule 2 (Pass/Fail)	Pass			

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

A. Drochter
12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 958221

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248030001	SAMPLE	MXR1	GAM04	13-MAR-10 14:30	DONE	CAN	05-MAY-09 00:00
248030002	SAMPLE	MXR1	GAM05	13-MAR-10 14:30	DONE	CAN	11-JUN-09 00:00
248030003	SAMPLE	MXR1	GAM06	13-MAR-10 14:31	DONE	CAN	16-FEB-10 00:00
248030004	SAMPLE	MXR1	GAM15	13-MAR-10 14:31	DONE	CAN	03-FEB-10 00:00
248030005	SAMPLE	MXR1	GAM16	13-MAR-10 14:32	DONE	CAN	16-NOV-09 00:00
248030006	SAMPLE	MXR1	GAM17	13-MAR-10 14:32	DONE	CAN	06-JAN-10 00:00
248030007	SAMPLE	MXR1	GAM19	13-MAR-10 14:33	DONE	CAN	12-MAR-09 00:00
248030008	SAMPLE	MXR1	GAM20	13-MAR-10 14:33	DONE	CAN	26-AUG-09 00:00
248030009	SAMPLE	MXR1	GAM22	13-MAR-10 14:34	DONE	CAN	02-DEC-09 00:00
1202054956	MB	MXR1	GAM23	13-MAR-10 14:34	DONE	CAN	02-JUN-09 00:00
1202054957	DUP	MXR1	GAM25	13-MAR-10 14:35	DONE	CAN	07-OCT-09 00:00
1202054958	LCS	MXR1	GAM13	13-MAR-10 14:40	DONE	CAN	11-FEB-10 00:00

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 959854

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248063005	SAMPLE	CXM2	1228	09-MAR-10 08:06	DONE		
248063006	SAMPLE	CXM2	1229	09-MAR-10 08:06	DONE		
248063007	SAMPLE	CXM2	1230	09-MAR-10 08:06	DONE		
248063008	SAMPLE	CXM2	1231	09-MAR-10 08:07	DONE		
1202058731	MB	CXM2	1232	09-MAR-10 08:07	DONE		
1202058732	DUP	CXM2	1251	09-MAR-10 08:07	DONE		
1202058733	LCS	CXM2	1252	09-MAR-10 08:07	DONE		
248030001	SAMPLE	CXM2	1013	09-MAR-10 20:47	DUSE		
248030002	SAMPLE	CXM2	1014	09-MAR-10 20:47	DONE		
248030003	SAMPLE	CXM2	1016	09-MAR-10 20:47	DONE		
248030004	SAMPLE	CXM2	1017	09-MAR-10 20:47	DONE		
248030005	SAMPLE	CXM2	1018	09-MAR-10 20:47	DONE		
248030006	SAMPLE	CXM2	1019	09-MAR-10 20:47	DONE		
248030007	SAMPLE	CXM2	1020	09-MAR-10 20:47	DONE		
248030008	SAMPLE	CXM2	1022	09-MAR-10 20:47	DONE		
248030009	SAMPLE	CXM2	1023	09-MAR-10 20:47	DUSE		
248063001	SAMPLE	CXM2	1024	09-MAR-10 20:47	DONE		
248063002	SAMPLE	CXM2	1025	09-MAR-10 20:47	DONE		
248063003	SAMPLE	CXM2	1026	09-MAR-10 20:47	DUSE		
248063004	SAMPLE	CXM2	1027	09-MAR-10 20:47	DONE		
248030001	SAMPLE	CXM2	1065	11-MAR-10 16:19	DONE		
248030009	SAMPLE	CXM2	1066	11-MAR-10 16:19	DONE		
248063003	SAMPLE	CXM2	1067	11-MAR-10 16:19	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 959856

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248030001	SAMPLE	CXM2	1083	09-MAR-10 20:47	DONE		
248030002	SAMPLE	CXM2	1084	09-MAR-10 20:47	DONE		
248030003	SAMPLE	CXM2	1085	09-MAR-10 20:47	DONE		
248030004	SAMPLE	CXM2	1086	09-MAR-10 20:47	DONE		
248030005	SAMPLE	CXM2	1087	09-MAR-10 20:47	DONE		
248030006	SAMPLE	CXM2	1088	09-MAR-10 20:47	DONE		
248030007	SAMPLE	CXM2	1089	09-MAR-10 20:47	DONE		
248030008	SAMPLE	CXM2	1090	09-MAR-10 20:47	DONE		
248030009	SAMPLE	CXM2	1091	09-MAR-10 20:47	DONE		
248063001	SAMPLE	CXM2	1092	09-MAR-10 20:47	DONE		
248063002	SAMPLE	CXM2	1093	09-MAR-10 20:47	DONE		
248063003	SAMPLE	CXM2	1094	09-MAR-10 20:47	DONE		
248063004	SAMPLE	CXM2	1095	09-MAR-10 20:47	DONE		
248063005	SAMPLE	CXM2	1097	09-MAR-10 20:47	DUSE		
248063006	SAMPLE	CXM2	1099	09-MAR-10 20:47	DONE		
248063007	SAMPLE	CXM2	1100	09-MAR-10 20:47	DONE		
248063008	SAMPLE	CXM2	1101	09-MAR-10 20:47	DUSE		
1202058734	MB	CXM2	1102	09-MAR-10 20:47	DONE		
1202058735	DUP	CXM2	1103	09-MAR-10 20:47	DONE		
1202058736	LCS	CXM2	1105	09-MAR-10 20:47	DONE		
248063005	SAMPLE	CXM2	1076	11-MAR-10 13:06	DONE		
248063008	SAMPLE	CXM2	1080	11-MAR-10 13:06	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 959857

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248030001	SAMPLE	CXM2	1119	11-MAR-10 21:06	DONE		
248030002	SAMPLE	CXM2	1120	11-MAR-10 21:06	DONE		
248030003	SAMPLE	CXM2	1121	11-MAR-10 21:06	DONE		
248030004	SAMPLE	CXM2	1122	11-MAR-10 21:06	DONE		
248030005	SAMPLE	CXM2	1123	11-MAR-10 21:06	DONE		
248030006	SAMPLE	CXM2	1124	11-MAR-10 21:06	DONE		
248030007	SAMPLE	CXM2	1125	11-MAR-10 21:06	DONE		
248030008	SAMPLE	CXM2	1126	11-MAR-10 21:06	DONE		
248030009	SAMPLE	CXM2	1127	11-MAR-10 21:06	DONE		
248063001	SAMPLE	CXM2	1128	11-MAR-10 21:06	DONE		
248063002	SAMPLE	CXM2	1129	11-MAR-10 21:06	DONE		
248063003	SAMPLE	CXM2	1130	11-MAR-10 21:06	DONE		
248063004	SAMPLE	CXM2	1131	11-MAR-10 21:06	DONE		
248063005	SAMPLE	CXM2	1132	11-MAR-10 21:06	DONE		
248063006	SAMPLE	CXM2	1141	11-MAR-10 21:07	DONE		
248063007	SAMPLE	CXM2	1142	11-MAR-10 21:07	DONE		
248063008	SAMPLE	CXM2	1143	11-MAR-10 21:07	DONE		
1202058737	MB	CXM2	1144	11-MAR-10 21:07	DONE		
1202058738	DUP	CXM2	1145	11-MAR-10 21:07	DONE		
1202058739	LCS	CXM2	1146	11-MAR-10 21:07	DONE		

Instrument Run Log

Instrument Type: LSC

Batch ID: 964052

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248030002	SAMPLE	KXK2	LSCBLUE	18-MAR-10 16:59	DONE		
248030005	SAMPLE	KXK2	LSCBLUE	18-MAR-10 19:08	DONE		
248030006	SAMPLE	KXK2	LSCBLUE	18-MAR-10 19:51	DONE		
248112004	SAMPLE	KXK2	LSCBLUE	19-MAR-10 00:50	DONE		
248112006	SAMPLE	KXK2	LSCBLUE	19-MAR-10 03:25	DONE		
248112007	SAMPLE	KXK2	LSCBLUE	19-MAR-10 04:07	DONE		
1202068209	LCS	KXK2	LSCBLUE	19-MAR-10 06:57	DONE		
248030001	SAMPLE	KXK2	LSCBLUE	19-MAR-10 07:34	DONE		
248030003	SAMPLE	KXK2	LSCBLUE	19-MAR-10 08:42	DONE		
248030004	SAMPLE	KXK2	LSCBLUE	19-MAR-10 09:51	DONE		
248030007	SAMPLE	KXK2	LSCBLUE	19-MAR-10 11:00	DONE		
248030008	SAMPLE	KXK2	LSCBLUE	19-MAR-10 12:09	DONE		
248030009	SAMPLE	KXK2	LSCBLUE	19-MAR-10 13:17	DONE		
248112001	SAMPLE	KXK2	LSCBLUE	19-MAR-10 14:24	DONE		
248112002	SAMPLE	KXK2	LSCBLUE	19-MAR-10 15:32	DONE		
248112003	SAMPLE	KXK2	LSCBLUE	19-MAR-10 16:39	DONE		
248112005	SAMPLE	KXK2	LSCBLUE	19-MAR-10 17:47	DONE		
248112008	SAMPLE	KXK2	LSCBLUE	19-MAR-10 18:54	DONE		
1202068207	MB	KXK2	LSCBLUE	19-MAR-10 20:02	DONE		
1202068208	DUP	KXK2	LSCBLUE	19-MAR-10 21:09	DONE		